

## CABLE MANAGEMENT AND IDENTIFICATION SOLUTIONS



**HellermannTyton**



onHellermannTytonHel

## HellermannTyton

HellermannTyton is a leading, global manufacturer of systems and solutions which help world-class customers better manage and identify wire, cable, and components.

HellermannTyton is proud to manufacture products in Milwaukee, Wisconsin, our North American corporate headquarters and employ a growing number of workers in its offices and plants. With thanks to customers like you, we continue to expand our commitment to growing our manufacturing presence in the USA.



## TABLE OF CONTENTS

|                                                                                     |                                                  |                |
|-------------------------------------------------------------------------------------|--------------------------------------------------|----------------|
|                                                                                     | <b>INTRODUCTION</b>                              | <b>3-4</b>     |
|                                                                                     | <b>MATERIAL INFORMATION AND SPECIFICATIONS</b>   | <b>5-7</b>     |
|                                                                                     | <b>BUNDLING &amp; SECURING</b>                   | <b>9-107</b>   |
|    | Cable Ties                                       | 9-15           |
|                                                                                     | Cable Ties - High Temperature                    | 16-18          |
|                                                                                     | Cable Ties - Special Material                    | 19-27          |
|                                                                                     | Cable Ties - Special Purpose                     | 28-67          |
|                                                                                     | Clips                                            | 68-72          |
|                                                                                     | Grip Ties                                        | 73-75          |
|                                                                                     | Cable Tie Tools                                  | 76-90          |
|                                                                                     | Mounts                                           | 91-107         |
|    | <b>ROUTING &amp; PROTECTION</b>                  | <b>109-167</b> |
|                                                                                     | Wiring Duct                                      | 109-132        |
|                                                                                     | Helawrap                                         | 133-136        |
|                                                                                     | Spiralwrap                                       | 137-139        |
|                                                                                     | Convuluted Tubing                                | 140-142        |
|                                                                                     | Braided Sleeving                                 | 143-164        |
|                                                                                     | Grommet                                          | 165-166        |
|                                                                                     | Electrical Tape                                  | 167            |
|  | <b>CLAMPING</b>                                  | <b>169-181</b> |
|                                                                                     | Snapper Hose Clamps                              | 169-174        |
|                                                                                     | Screw Mount Cable Clamps                         | 175-177        |
|                                                                                     | Adhesive Cable Clamps                            | 178-179        |
|                                                                                     | Flat Ribbon Cable Clamps                         | 180            |
|                                                                                     | Nail Clips                                       | 181            |
|  | <b>IDENTIFICATION SYSTEMS</b>                    | <b>183-233</b> |
|                                                                                     | TagPrint PRO 3.0 Software                        | 183-187        |
|                                                                                     | SwiftMark Automatic Label Printer and Applicator | 188-191        |
|                                                                                     | Workstation Printers                             | 192-193        |
|                                                                                     | Thermal Transfer Labels                          | 194-201        |
|                                                                                     | Nameplate Labels                                 | 202-203        |
|                                                                                     | Continuous Vinyl Labels                          | 204            |
|                                                                                     | ShrinkTrak Heat Shrinkable Markers               | 205-208        |
|                                                                                     | TipTag Cable Markers                             | 209-210        |
|                                                                                     | Laser Tag Labels                                 | 211-216        |
|                                                                                     | Ink Jet Labels                                   | 217-221        |
|                                                                                     | Spirit 2100 Portable Printing System             | 222-224        |
|                                                                                     | Sport 1000 Handheld Printing System              | 225-227        |
|                                                                                     | Pre-Printed Installation Labels                  | 228-231        |
|                                                                                     | Rite-On Markers                                  | 232            |
|  | Wire Marker Tape                                 | 233            |
|                                                                                     | <b>WIRE CONNECTORS</b>                           | <b>235-237</b> |
|                                                                                     | HelaCon                                          | 235-237        |
|                                                                                     | <b>INDEX</b>                                     | <b>238-253</b> |

# Differentiated Solutions from HellermannTyton

## Product Differentiation

At HellermannTyton, we use cutting-edge materials and distinctive designs to manufacture the products which improve performance, exceed safety guidelines, and deliver reliable implementation at the lowest cost. Our varied and ever-evolving collection of solutions offer the differentiated advantage that enables project wins and delivers a point of difference to end-users.

## Product Depth

The breadth and depth of HellermannTyton's product line covers a range of highly engineered products from bundling and securing to routing, protection, insulation, network connectivity and identification solutions. We have all the major categories covered with our comprehensive line of products that offer a combination of flexibility, simplicity and value to an end-user customer. In this catalog, see what HellermannTyton offers in cable management and identification solutions. Check out our other catalogs or website for the full range of products.

## Vertical Market Support

Through advanced product suites, market specific tools and resources, HellermannTyton holds leading industry positions in key markets.

OEM  
MRO/Industrial  
Industrial Automation  
Renewable Energies  
Wire Processing  
Datacom

Let us know how we can lend our industry expertise and experience in these markets to your project.



Renewable Energy / Solar



Renewable Energy / Wind



OEM



MRO / Industrial



Wire Processing



Datacom



Industrial Automation

## Quality Certifications, Specifications & Warranty

### **ISO 9001**

#### **ISO 9001:2000**

The International Standards Organization (ISO) establishes worldwide standards for products and services in recognition of increasing globalization of markets. The ISO program determines the requirements for the quality assurance programs. HellermannTyton has achieved ISO 9001 certifications at all of its U.S. locations.

### **ISO/TS 16949**

#### **ISO/TS16949**

ISO / TS16949 is a recognized quality supplier standard for manufacturers servicing the automotive industry. HellermannTyton has achieved and maintains registration to this standard.

### **ISO 14001**

#### **ISO 14001**

ISO 14001 is a voluntary standard for Environmental Management Systems established by the International Organization for Standardization. Its goal is to provide benchmarks for reviewing and improving environmental performance. HellermannTyton takes an active role in this process of continuous improvement.



#### **International Electro-Technical Commission (IEC)**

Representatives from key industry suppliers participate in creating standards that provide continuous improvement for products and services. HellermannTyton chaired the committee that created standard 62275 (replaced 1565) for Wire Positioning Devices.



#### **RoHS / WEEE**

The scope of the European Union's Restriction of Hazardous Substances (RoHS) and the Waste Electrical and Electronic Equipment (WEEE) directives covers all electrical and electronic equipment and their components sold into the European Union. Throughout this catalog, you will see designations where materials are RoHS compliant.

## Trade Level Affiliations

#### **National Association of Electrical Distributors (NAED)**



#### **National Electrical Manufacturers Association (NEMA)**



#### **Building Consulting Services International**



**HellermannTyton** has worked very closely with its material suppliers to develop resins that are specifically formulated for fastener and cable tie production. HellermannTyton has spearheaded material advancements in component manufacturing to assure customers the finest quality of products. Environmental factors can have an adverse effect on fasteners. It is very important to use the most suitable material for each application. HellermannTyton fasteners are available in a variety of materials ranging from polyamides (nylon) to fluoropolymers. **All materials listed below are RoHS compliant.**



#### Polyamide 6.6 – General Purpose

General purpose polyamide 6.6 features lightweight, high strength and a wide temperature range. Polyamide 6.6 is hygroscopic, and therefore, absorbs or releases moisture depending on its environment. Thus, the moisture level of the material will affect tensile strength, stiffness and elongation of the product.

#### Polyamide 6.6 – Heat Stabilized

With similar properties and benefits as polyamide 6.6, products manufactured with heat stabilized polyamide 6.6 material have a chemical stabilizer added for higher continuous temperature applications.

#### \*Polyamide 6.6 – UV Resistant

Chemical inhibitors are used to give polyamide 6.6 material added properties to fight against premature aging of products due to the effects of ultraviolet rays.

#### Polyamide 6.6 – UV Stabilized (2% Carbon for Military Specification)

The physical properties of this material include carbon, which acts as a UV stabilizer, prolonging the life of the product under ultraviolet conditions. It also allows HellermannTyton black cable ties to meet the particular military specification for cable ties.

#### Polyamide 6.6 – V0 Flame Retardant

This material meets UL 94V-0 flammability requirements. Flame retardant additives generally reduce tensile strength when compared to general purpose polyamide 6.6, but this resin has been formulated to minimize such effects.

#### \*Polyamide 6.6 – Impact Modified, Heat Stabilized and UV Resistant

Impact modified polyamide 6.6 offers the increased flexibility, heat resistance and UV resistance of the high impact material with the added feature of greater resistance to vibration, heat and sunlight for mobile applications.

#### Polyamide 6.6 – Impact Modified, Heat Stabilized, UV Stabilized

This material has impact modifiers that increase flexibility, impact strength and improves resistance to moisture fluctuations. Heat stabilizers are added to increase heat resistance and UV stabilizers are added to increase UV resistance.

#### Polyamide 4.6

Polyamide 4.6, like polyamide 6.6, offers lightweight and high strength benefits, but offers an even wider temperature range. This material can be used at a higher continuous operating temperature than polyamide 6.6 - heat stabilized. In addition to having excellent heat resistance, polyamide 4.6 has low creep effects and retention of stiffness at elevated temperatures.

#### Polypropylene

Polypropylene is used in environments where chemical effects on polyamide are a concern. It is not affected by inorganic acids (hydrochloric), polyhydric alcohols (ethyleneglycol), neutral salts (sodium chloride) and basic salts (sodium bicarbonate). Polypropylene also resists a number of other chemicals with good results, although it has lower tensile strength than polyamide 6.6 (about half). Polypropylene has good UV resistance.

#### Polyamide 11

Polyamide 11 is a renewably sourced material which has excellent UV resistance and is resistant to many chemicals including metal oxides. Although it is not as strong as Polyamide 6.6 materials, it absorbs very little moisture which makes it ideal for outdoor applications.

#### Polyamide 12

Polyamide 12 possesses many of the same characteristics as Polyamide 11, however it absorbs slightly less moisture, making it ideal for outdoor applications.

#### Ethylentetrafluoroethylene - ETFE

ETFE is resistant to a wide range of chemicals, such as concentrated hydrofluoric and sulfuric acids, but it is not as strong as polyamide 6.6 materials. It is also a low water absorbing material, therefore, is not adversely affected by water. ETFE is radiation resistant up to 200 megarads and meets the fire and smoke requirements of IEEE 383. ETFE also withstands high temperatures and ultraviolet light exposure. Products made from ETFE material also have non-outgassing properties for zero gravity applications.

#### Polyacetal

Polyacetal has excellent dielectric properties, UV and chemical resistance, and a UL94-HB flame rating. It has been tested for excellent weatherability against moisture, sunlight, and other environmental conditions.

#### Polyetheretherketone – PEEK

This material is an excellent choice for high temperature environments. It also has excellent chemical resistance and is resistant to abrasion. PEEK material has a relatively high tensile strength and it has the ability to retain its tensile strength when continuously conditioned in water at elevated temperatures and pressures.

#### Thermoplastic Vulcanizate (TPV)

TPV is a durable rubber material that is chemical and abrasion resistant and remains flexible at low temperatures.

**For more information on RoHS/WEEE Compliance, go online to: <http://www.hellermann.tyton.com/rohs.asp>**

\* UV Resistant = Material contains less than 2% carbon or a UV additive to improve UV resistance.

| Material Specifications                                                          |                                  |                 |                                                         |                 |                |                            |               |                                                |
|----------------------------------------------------------------------------------|----------------------------------|-----------------|---------------------------------------------------------|-----------------|----------------|----------------------------|---------------|------------------------------------------------|
| MATERIAL                                                                         | CONTINUOUS OPERATING TEMPERATURE |                 | TENSILE STRENGTH AT 73°F DRY AS MOLDED ASTM D-638 (PSI) | UL FLAME RATING | OXYGEN INDEX % | GAMMA RADIATION RESISTANCE | UV RESISTANCE | MILITARY, FEDERAL, ASTM AND FDA SPECIFICATIONS |
|                                                                                  | MAX.                             | MIN.            |                                                         |                 |                |                            |               |                                                |
| <b>Polyamide 6.6 - General Purpose (PA66)</b>                                    | 185°F<br>85°C                    | -40°F<br>-40°C  | 12,000                                                  | 94V-2           | 28             | 1 x 10 <sup>5</sup> Rads   | Poor          | ASTM D-4066PA0111, FDA CFR177.1500             |
| <b>Polyamide 6.6 - Heat Stabilized (PA66HS)</b>                                  | 221°F<br>105°C                   | -40°F<br>-40°C  | 12,000                                                  | 94V-2           | 26             | 1 x 10 <sup>5</sup> Rads   | Poor          | ASTM D-4066PA0121                              |
| <b>*Polyamide 6.6 - UV resistant (PA66UV)</b>                                    | 185°F<br>85°C                    | -40°F<br>-40°C  | 12,000                                                  | 94V-2           | 26             | 1 x 10 <sup>5</sup> Rads   | Good          | -                                              |
| <b>Polyamide 6.6 - 2% Carbon UV stabilized (OUV)</b>                             | 185°F<br>85°C                    | -40°F<br>-40°C  | 12,000                                                  | 94V-2           | 26             | 1 x 10 <sup>5</sup> Rads   | Very Good     | ASTM D-4066PA0181, MS3367/8                    |
| <b>Polyamide 6.6 - Flame Retardant (PA66VO)</b>                                  | 185°F<br>85°C                    | -40°F<br>-40°C  | 10,800                                                  | 94V-0           | 34             | 1 x 10 <sup>5</sup> Rads   | Poor          | ASTM D-4066PA0110                              |
| <b>*Polyamide 6.6 - Impact Mod. Heat Stabilized, UV Resistant (PA66HIRHS)</b>    | 230°F<br>110°C                   | -40°F<br>-40°C  | 9,500                                                   | 94-HB           | N/A            | N/A                        | Very Good     | ASTM D-4066PA0161                              |
| <b>*Polyamide 6.6 - Impact Mod. Heat Stabilized, UV Stabilized (PA66HIRHSUV)</b> | 230°F<br>110°C                   | -40°F<br>-40°C  | 8,900                                                   | 94-HB           | 19             | 1 x 10 <sup>5</sup> Rads   | Very Good     | ASTM D-4066PA0151                              |
| <b>Polyamide 4.6 - Heat Stabilized (PA46)</b>                                    | 275°F<br>135°C                   | -40°F<br>-40°C  | 14,400                                                  | 94V-2           | 27             | 9 x 10 <sup>6</sup> Rads   | Poor          | ASTM D-4066PA0922                              |
| <b>Polypropylene - Chemical Resistant (PP)</b>                                   | 239°F<br>115°C                   | -40°F<br>-40°C  | 3,400                                                   | 94-HB           | N/A            | 1 x 10 <sup>5</sup> Rads   | Good          | ASTM D-4101PP0327                              |
| <b>Polyamide 11 - UV Resistant (PA11)</b>                                        | 203°F<br>95°C                    | -40°F<br>-40°C  | 6,600                                                   | 94-V2           | N/A            | 1 x 10 <sup>5</sup> Rads   | Excellent     | ASTM D-4000PA0321                              |
| <b>*Polyamide 12 - UV resistant (PA12)</b>                                       | 203°F<br>95°C                    | -40°F<br>-40°C  | 6,600                                                   | 94-V2           | N/A            | 1 x 10 <sup>5</sup> Rads   | Excellent     | ASTM D-4066PA411                               |
| <b>Ethlenterafluorineethylene (ETFE)</b>                                         | 302°F<br>150°C                   | -112°F<br>-80°C | 5,800                                                   | 94V-0           | 30             | 2 x 10 <sup>8</sup> Rads   | Oustanding    | UL2043, ASTM D-3159 Type 1 Grade 1             |
| <b>Polyacetal (POM)</b>                                                          | 185°F<br>85°C                    | -40°F<br>-40°C  | 6,500                                                   | 94-HB           | N/A            | N/A                        | Excellent     | -                                              |
| <b>Polyetheretherketone (PEEK)</b>                                               | 500°F<br>260°C                   | -67°F<br>-55°C  | 14,600                                                  | 94V-0           | 24             | 1 x 10 <sup>8</sup> Rads   | Poor          | 21CFR 177.2415, EEC 93/9/EEC 151G              |
| <b>Thermoplastic Vulcanizate (TPV)</b>                                           | 392°F<br>200°C                   | -50°F<br>-45°C  | n/a                                                     | 94V-0           | N/A            | N/A                        | Excellent     | -                                              |

\* UV Resistant = Material contains less than 2% carbon or a UV additive to improve UV resistance.

| Material Performance Guide |                               |                               |                            |                                        |                                  |                                                             |                                                             |                               |               |              |                           |                                    |            |      |     |
|----------------------------|-------------------------------|-------------------------------|----------------------------|----------------------------------------|----------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------|---------------|--------------|---------------------------|------------------------------------|------------|------|-----|
| ATTRIBUTE                  | POLYAMIDE 6.6 GENERAL PURPOSE | POLYAMIDE 6.6 HEAT STABILIZED | POLYAMIDE 6.6 UV RESISTANT | POLYAMIDE 6.6 - 2% CARBON UV RESISTANT | POLYAMIDE 6.6 FLAME RETARDANT VO | POLYAMIDE 6.6 IMPACT MODIFIED, HEAT STABILIZED UV RESISTANT | POLYAMIDE 6.6 IMPACT MODIFIED, HEAT STABILIZED UV RESISTANT | POLYAMIDE 4.6 HEAT STABILIZED | POLYPROPYLENE | POLYAMIDE 11 | POLYAMIDE 12 UV RESISTANT | ETHLENTERAFLUORINE-ETHYLENE — ETFE | POLYACETAL | PEEK | TPV |
|                            |                               |                               |                            |                                        |                                  |                                                             |                                                             |                               |               |              |                           |                                    |            |      |     |
| <b>Tensile Strength</b>    | 8                             | 8                             | 8                          | 9                                      | 7                                | 8                                                           | 7                                                           | 10                            | 2             | 6            | 6                         | 5                                  | 5          | 10   | -   |
| <b>High Temperature</b>    | 2                             | 3                             | 2                          | 2                                      | 2                                | 3                                                           | 2                                                           | 9                             | 2             | 1            | 1                         | 10                                 | 3          | 10   | 10  |
| <b>Flammability</b>        | 5                             | 5                             | 5                          | 5                                      | 10                               | 2                                                           | 2                                                           | 5                             | 2             | 2            | 2                         | 10                                 | 2          | 10   | 2   |
| <b>UV Resistance</b>       | 1                             | 1                             | 5                          | 7                                      | 1                                | 7                                                           | 2                                                           | 1                             | 5             | 8            | 8                         | 10                                 | 9          | 1    | 1   |
| <b>Radiation</b>           | 3                             | 3                             | 3                          | 3                                      | 3                                | 3                                                           | 3                                                           | 6                             | 3             | 3            | 3                         | 8                                  | 3          | 10   | -   |
| <b>Chemical Resistance</b> | 6                             | 6                             | 6                          | 6                                      | 6                                | 6                                                           | 6                                                           | 6                             | 8             | 8            | 8                         | 10                                 | -          | 10   | -   |
| - Hydrocarbons             | 8                             | 8                             | 8                          | 8                                      | 8                                | 8                                                           | 8                                                           | 8                             | 6             | 8            | 8                         | 10                                 | 8          | 10   | 4   |
| - Chlorinated Hydrocarbons | 6                             | 6                             | 6                          | 6                                      | 6                                | 6                                                           | 6                                                           | 6                             | 3             | 8            | 8                         | 10                                 | 5          | 10   | 4   |
| - Acids                    | 2                             | 2                             | 2                          | 2                                      | 2                                | 2                                                           | 2                                                           | 2                             | 8             | 5            | 5                         | 10                                 | 8          | 5    | 8   |
| - Bases                    | 8                             | 6                             | 6                          | 6                                      | 6                                | 6                                                           | 6                                                           | 6                             | 8             | 6            | 6                         | 10                                 | 8          | 10   | 8   |
| - Salts                    | 3                             | 3                             | 3                          | 3                                      | 3                                | 3                                                           | 3                                                           | 3                             | 10            | 8            | 8                         | 10                                 | 8          | 10   | 8   |
| <b>Relative Cost</b>       | Low                           | Low                           | Med                        | Med                                    | Med                              | Med                                                         | Med                                                         | Med                           | Med           | Med          | Med                       | High                               | Med        | High | Med |

10 = Most Recommended  
1 = Least Recommended

## Optimum storage conditions for cable ties made of polyamide (PA)

**HellermannTyton** cable ties and mounts are manufactured from high-quality polyamide (PA). This material is mainly processed using injection molding, but can also be extruded.

Polyamide is a hygroscopic material. This means that the material absorbs and loses moisture. For optimum handling of cable ties, it is important that the material is in a condition of equilibrium with a water content of approximately 2.5%.

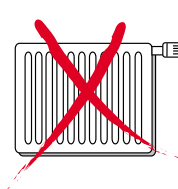
The packaging used by HellermannTyton ensures that the water content in the material remains constant. Therefore, it is important to store the products in their original packaging to preserve the quality of the ties and mounts.



Once opened you should use the ties as quickly as possible.

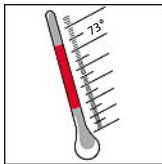


Do not expose the product to direct sunlight

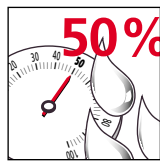


Store the product away from direct sources of heat

## Ideal storage conditions:



73 °F



50%  
relative  
humidity



# BUNDLING AND SECURING SOLUTIONS

|                               |        |
|-------------------------------|--------|
| Cable Ties                    | 9-15   |
| Cable Ties - High Temperature | 16-18  |
| Cable Ties - Special Material | 19-27  |
| Cable Ties - Special Purpose  | 28-67  |
| Clips                         | 68-72  |
| Grip Ties                     | 73-75  |
| Cable Tie Tools               | 76-90  |
| Mounts                        | 91-107 |

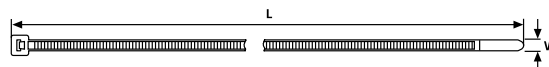


## Standard Cable Ties

## T18 - T30 Series - Natural and Black

## Material Data

|                       |                                                 |
|-----------------------|-------------------------------------------------|
| Material              | Polyamide 6.6 (PA66)                            |
| Operating Temperature | -40 °F to +185 °F (-40 °C to +85 °C) continuous |
| Flammability          | UL94 V2                                         |



File# E64139

File# E64139

## Product Selection

| Product Selection |          |       |                     |                       |       |            |       |               |       |           |       |         |           |
|-------------------|----------|-------|---------------------|-----------------------|-------|------------|-------|---------------|-------|-----------|-------|---------|-----------|
| Article No.       | Part No. | Type  | US Gov. Designation | Min. Tensile Strength |       | Length (L) |       | Max. Ø Bundle |       | Width (W) |       | Color   | Pkg. Qty. |
|                   |          |       |                     | lbs.                  | (N)   | in.        | (mm)  | in.           | (mm)  | in.       | (mm)  |         |           |
| T18S              |          |       |                     |                       |       |            |       |               |       |           |       |         |           |
| 111-02805         | T18S9C2  | T18S  | —                   | 18 lbs                | (80)  | 3.27"      | (83)  | .63"          | (16)  | .09"      | (2.3) | Natural | 100       |
| 111-02809         | T18S9M4  | T18S  | —                   | 18 lbs                | (80)  | 3.27"      | (83)  | .63"          | (16)  | .09"      | (2.3) |         | 1000      |
| 111-02810         | T18S0C2  | T18S  | —                   | 18 lbs                | (80)  | 3.27"      | (83)  | .63"          | (16)  | .09"      | (2.3) | Black   | 100       |
| 111-02811         | T18S0M4  | T18S  | —                   | 18 lbs                | (80)  | 3.27"      | (83)  | .63"          | (16)  | .09"      | (2.3) |         | 1000      |
| T18R              |          |       |                     |                       |       |            |       |               |       |           |       |         |           |
| 112-01819         | T18R9C2  | T18R  | MS3367-4-9          | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22)  | .10"      | (2.5) | Natural | 100       |
| 111-01872         | T18R9M4  | T18R  | MS3367-4-9          | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22)  | .10"      | (2.5) |         | 1000      |
| 111-00405         | T18R0C2  | T18R  | *                   | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22)  | .10"      | (2.5) | Black   | 100       |
| 111-01841         | T18R0M4  | T18R  | *                   | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22)  | .10"      | (2.5) |         | 1000      |
| T18I              |          |       |                     |                       |       |            |       |               |       |           |       |         |           |
| 111-02311         | T18I9C2  | T18I  | —                   | 18 lbs                | (80)  | 5.51"      | (140) | 1.38"         | (35)  | .10"      | (2.5) | Natural | 100       |
| 111-02322         | T18I9M4  | T18I  | —                   | 18 lbs                | (80)  | 5.51"      | (140) | 1.38"         | (35)  | .10"      | (2.5) |         | 1000      |
| 111-02308         | T18I0C2  | T18I  | —                   | 18 lbs                | (80)  | 5.51"      | (140) | 1.38"         | (35)  | .10"      | (2.5) | Black   | 100       |
| 111-02315         | T18I0M4  | T18I  | —                   | 18 lbs                | (80)  | 5.51"      | (140) | 1.38"         | (35)  | .10"      | (2.5) |         | 1000      |
| T18L              |          |       |                     |                       |       |            |       |               |       |           |       |         |           |
| 111-02189         | T18L9C2  | T18L  | —                   | 18 lbs                | (80)  | 8.0"       | (205) | 2.17"         | (55)  | .10"      | (2.5) | Natural | 100       |
| 111-02026         | T18L9M4  | T18L  | —                   | 18 lbs                | (80)  | 8.0"       | (205) | 2.17"         | (55)  | .10"      | (2.5) |         | 1000      |
| 111-00401         | T18L0C2  | T18L  | —                   | 18 lbs                | (80)  | 8.0"       | (205) | 2.17"         | (55)  | .10"      | (2.5) | Black   | 100       |
| 111-02015         | T18L0M4  | T18L  | —                   | 18 lbs                | (80)  | 8.0"       | (205) | 2.17"         | (55)  | .10"      | (2.5) |         | 1000      |
| T30R              |          |       |                     |                       |       |            |       |               |       |           |       |         |           |
| 112-03019         | T30R9C2  | T30R  | MS3367-5-9          | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35)  | .14"      | (3.5) | Natural | 100       |
| 111-03047         | T30R9M4  | T30R  | MS3367-5-9          | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35)  | .14"      | (3.5) |         | 1000      |
| 111-00438         | T30R0C2  | T30R  | *                   | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35)  | .14"      | (3.5) | Black   | 100       |
| 111-03034         | T30R0M4  | T30R  | *                   | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35)  | .14"      | (3.5) |         | 1000      |
| T30L              |          |       |                     |                       |       |            |       |               |       |           |       |         |           |
| 111-03325         | T30L9C2  | T30L  | —                   | 30 lbs                | (135) | 7.48"      | (190) | 1.97"         | (50)  | .14"      | (3.5) | Natural | 100       |
| 111-03327         | T30L9M4  | T30L  | —                   | 30 lbs                | (135) | 7.48"      | (190) | 1.97"         | (50)  | .14"      | (3.5) |         | 1000      |
| 111-03313         | T30L0C2  | T30L  | —                   | 30 lbs                | (135) | 7.48"      | (190) | 1.97"         | (50)  | .14"      | (3.5) | Black   | 100       |
| 111-03315         | T30L0M4  | T30L  | —                   | 30 lbs                | (135) | 7.48"      | (190) | 1.97"         | (50)  | .14"      | (3.5) |         | 1000      |
| T30LL             |          |       |                     |                       |       |            |       |               |       |           |       |         |           |
| 111-03515         | T30LL9C2 | T30LL | —                   | 30 lbs                | (135) | 11.42"     | (290) | 3.15"         | (80)  | .14"      | (3.5) | Natural | 100       |
| 111-03517         | T30LL9M4 | T30LL | —                   | 30 lbs                | (135) | 11.42"     | (290) | 3.15"         | (80)  | .14"      | (3.5) |         | 1000      |
| 111-03501         | T30LL0C2 | T30LL | —                   | 30 lbs                | (135) | 11.42"     | (290) | 3.15"         | (80)  | .14"      | (3.5) | Black   | 100       |
| 111-03511         | T30LL0M4 | T30LL | —                   | 30 lbs                | (135) | 11.42"     | (290) | 3.15"         | (80)  | .14"      | (3.5) |         | 1000      |
| T30XL             |          |       |                     |                       |       |            |       |               |       |           |       |         |           |
| 111-02900         | T30XL9C2 | T30XL | —                   | 30 lbs                | (135) | 14.37"     | (365) | 4.13"         | (105) | .14"      | (3.5) | Natural | 100       |
| 111-02907         | T30XL9M4 | T30XL | —                   | 30 lbs                | (135) | 14.37"     | (365) | 4.13"         | (105) | .14"      | (3.5) |         | 1000      |
| 111-02901         | T30XL0C2 | T30XL | —                   | 30 lbs                | (135) | 14.37"     | (365) | 4.13"         | (105) | .14"      | (3.5) | Black   | 100       |
| 111-02903         | T30XL0M4 | T30XL | —                   | 30 lbs                | (135) | 14.37"     | (365) | 4.13"         | (105) | .14"      | (3.5) |         | 1000      |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. MK9 and MK9P cannot be used with T18S cable ties.

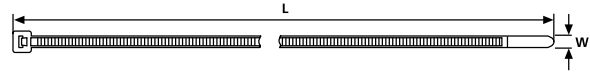
Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

\* Military black available. Contact HellermannTyton for more information.

## Standard Cable Ties

### T40 - T50 Series - Natural and Black

|                       |                                                        |
|-----------------------|--------------------------------------------------------|
| Material Data         |                                                        |
| Material              | <b>Polyamide 6.6 (PA66)</b>                            |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                         |



File# E64139

File# E64139

| Product Selection |          |         |                        |                          |       |            |       |               |       |            | File# E64139 | File# E64139 |
|-------------------|----------|---------|------------------------|--------------------------|-------|------------|-------|---------------|-------|------------|--------------|--------------|
| Article No.       | Part No. | Type    | US Gov.<br>Designation | Min. Tensile<br>Strength |       | Length (L) |       | Max. Ø Bundle |       | Width (W)  | Color        | Pkg. Qty.    |
|                   |          |         |                        | lbs.                     | (N)   | in.        | (mm)  | in.           | (mm)  | in.        |              |              |
| T40R              |          |         |                        |                          |       |            |       |               |       |            |              |              |
| 112-04019         | T40R9C2  | T40R(U) | —                      | 40 lbs                   | (178) | 8.27"      | (210) | 2.16"         | (55)  | .16" (4.0) | Natural      | 100          |
| 111-04131         | T40R9M4  | T40R(U) | —                      | 40 lbs                   | (178) | 8.27"      | (210) | 2.16"         | (55)  | .16" (4.0) |              | 1000         |
| 112-04060         | T40R0C2  | T40R(U) | —                      | 40 lbs                   | (178) | 8.27"      | (210) | 2.16"         | (55)  | .16" (4.0) | Black        | 100          |
| 111-04122         | T40R0M4  | T40R(U) | —                      | 40 lbs                   | (178) | 8.27"      | (210) | 2.16"         | (55)  | .16" (4.0) |              | 1000         |
| T40I              |          |         |                        |                          |       |            |       |               |       |            |              |              |
| 111-04609         | T40I9C2  | T40I    | —                      | 40 lbs                   | (178) | 11.42"     | (290) | 3.15"         | (80)  | .16" (4.0) | Natural      | 100          |
| 111-04612         | T40I9M4  | T40I    | —                      | 40 lbs                   | (178) | 11.42"     | (290) | 3.15"         | (80)  | .16" (4.0) |              | 1000         |
| 111-04600         | T40I0C2  | T40I    | —                      | 40 lbs                   | (178) | 11.42"     | (290) | 3.15"         | (80)  | .16" (4.0) | Black        | 100          |
| 111-04604         | T40I0M4  | T40I    | —                      | 40 lbs                   | (178) | 11.42"     | (290) | 3.15"         | (80)  | .16" (4.0) |              | 1000         |
| T40L              |          |         |                        |                          |       |            |       |               |       |            |              |              |
| 111-04300         | T40L9C2  | T40L    | —                      | 40 lbs                   | (178) | 14.4"      | (365) | 4.13"         | (105) | .16" (4.0) | Natural      | 100          |
| 111-04311         | T40L9M4  | T40L    | —                      | 40 lbs                   | (178) | 14.4"      | (365) | 4.13"         | (105) | .16" (4.0) |              | 1000         |
| 111-04301         | T40L0C2  | T40L    | —                      | 40 lbs                   | (178) | 14.4"      | (365) | 4.13"         | (105) | .16" (4.0) | Black        | 100          |
| 111-04305         | T40L0M4  | T40L    | —                      | 40 lbs                   | (178) | 14.4"      | (365) | 4.13"         | (105) | .16" (4.0) |              | 1000         |
| T50S              |          |         |                        |                          |       |            |       |               |       |            |              |              |
| 111-05811         | T50S9C2  | T50S    | —                      | 50 lbs                   | (225) | 5.9"       | (150) | 1.38"         | (35)  | .18" (4.6) | Natural      | 100          |
| 111-05813         | T50S9M4  | T50S    | —                      | 50 lbs                   | (225) | 5.9"       | (150) | 1.38"         | (35)  | .18" (4.6) |              | 1000         |
| 111-05806         | T50S0C2  | T50S    | —                      | 50 lbs                   | (225) | 5.9"       | (150) | 1.38"         | (35)  | .18" (4.6) | Black        | 100          |
| 111-05808         | T50S0M4  | T50S    | —                      | 50 lbs                   | (225) | 5.9"       | (150) | 1.38"         | (35)  | .18" (4.6) |              | 1000         |
| T50R              |          |         |                        |                          |       |            |       |               |       |            |              |              |
| 112-05019         | T50R9C2  | T50R    | MS3367-1-9             | 50 lbs                   | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18" (4.6) | Natural      | 100          |
| 111-04862         | T50R9M4  | T50R    | MS3367-1-9             | 50 lbs                   | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18" (4.6) |              | 1000         |
| 111-04878         | T50R0C2  | T50R    | *                      | 50 lbs                   | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18" (4.6) | Black        | 100          |
| 111-04846         | T50R0M4  | T50R    | *                      | 50 lbs                   | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18" (4.6) |              | 1000         |
| T50I              |          |         |                        |                          |       |            |       |               |       |            |              |              |
| 112-05219         | T50I9C2  | T50I    | MS3367-7-9             | 50 lbs                   | (225) | 11.8"      | (300) | 3.35"         | (85)  | .18" (4.6) | Natural      | 100          |
| 111-05230         | T50I9M4  | T50I    | MS3367-7-9             | 50 lbs                   | (225) | 11.8"      | (300) | 3.35"         | (85)  | .18" (4.6) |              | 1000         |
| 111-00444         | T50I0C2  | T50I    | *                      | 50 lbs                   | (225) | 11.8"      | (300) | 3.35"         | (85)  | .18" (4.6) | Black        | 100          |
| 111-05216         | T50I0M4  | T50I    | *                      | 50 lbs                   | (225) | 11.8"      | (300) | 3.35"         | (85)  | .18" (4.6) |              | 1000         |
| T50L              |          |         |                        |                          |       |            |       |               |       |            |              |              |
| 112-05419         | T50L9C2  | T50L    | MS3367-2-9             | 50 lbs                   | (225) | 15.35"     | (390) | 4.33"         | (110) | .18" (4.6) | Natural      | 100          |
| 111-05449         | T50L9M4  | T50L    | MS3367-2-9             | 50 lbs                   | (225) | 15.35"     | (390) | 4.33"         | (110) | .18" (4.6) |              | 1000         |
| 111-00445         | T50L0C2  | T50L    | *                      | 50 lbs                   | (225) | 15.35"     | (390) | 4.33"         | (110) | .18" (4.6) | Black        | 100          |
| 111-00504         | T50L0M4  | T50L    | *                      | 50 lbs                   | (225) | 15.35"     | (390) | 4.33"         | (110) | .18" (4.6) |              | 1000         |

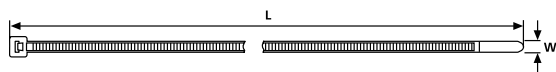
Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes.

Use **Part No.** for ordering and **Type** for specification purposes.

\* Military black available. Contact HellermannTyton for more information.

## Standard Cable Ties

### T18R and T30R Series - Colors



## Material Data

|                       |                                                 |
|-----------------------|-------------------------------------------------|
| Material              | Polyamide 6.6 (PA66)                            |
| Operating Temperature | -40 °F to +185 °F (-40 °C to +85 °C) continuous |
| Flammability          | UL94 V2                                         |



File# E64139



File# E64139

## Product Selection

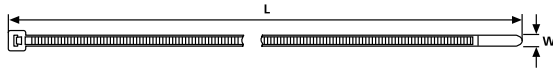
| Article No. | Part No.  | Type | Min. Tensile Strength |       | Length (L) |       | Max. Ø Bundle |      | Width (W) |       | Color  | Pkg. Qty. |
|-------------|-----------|------|-----------------------|-------|------------|-------|---------------|------|-----------|-------|--------|-----------|
|             |           |      | lbs.                  | (N)   | in.        | (mm)  | in.           | (mm) | in.       | (mm)  |        |           |
| T18R        |           |      |                       |       |            |       |               |      |           |       |        |           |
| 116-01811   | T18R1C2   | T18R | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22) | .10"      | (2.5) | Brown  | 100       |
| 111-01849   | T18R1M4   | T18R | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22) | .10"      | (2.5) |        | 1000      |
| 111-01880   | T18R2C2   | T18R | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22) | .10"      | (2.5) | Red    | 100       |
| 111-01882   | T18R2M4   | T18R | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22) | .10"      | (2.5) |        | 1000      |
| 116-01813   | T18R3C2   | T18R | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22) | .10"      | (2.5) | Orange | 100       |
| 111-01877   | T18R3M4   | T18R | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22) | .10"      | (2.5) |        | 1000      |
| 111-01896   | T18R4C2   | T18R | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22) | .10"      | (2.5) | Yellow | 100       |
| 111-01898   | T18R4M4   | T18R | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22) | .10"      | (2.5) |        | 1000      |
| 111-01853   | T18R5C2   | T18R | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22) | .10"      | (2.5) | Green  | 100       |
| 111-01855   | T18R5M4   | T18R | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22) | .10"      | (2.5) |        | 1000      |
| 111-01842   | T18R6C2   | T18R | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22) | .10"      | (2.5) | Blue   | 100       |
| 111-01845   | T18R6M4   | T18R | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22) | .10"      | (2.5) |        | 1000      |
| 116-01817   | T18R7C2   | T18R | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22) | .10"      | (2.5) | Purple | 100       |
| 111-01888   | T18R7M4   | T18R | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22) | .10"      | (2.5) |        | 1000      |
| 111-01857   | T18R8C2   | T18R | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22) | .10"      | (2.5) | Gray   | 100       |
| 111-01859   | T18R8M4   | T18R | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22) | .10"      | (2.5) |        | 1000      |
| 116-01819   | T18R10C2  | T18R | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22) | .10"      | (2.5) | White  | 100       |
| 111-01892   | T18R10M4  | T18R | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22) | .10"      | (2.5) |        | 1000      |
| T30R        |           |      |                       |       |            |       |               |      |           |       |        |           |
| 116-03011   | T30R1C2   | T30R | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35) | .14"      | (3.5) | Brown  | 100       |
| 111-03038   | T30R1M4   | T30R | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35) | .14"      | (3.5) |        | 1000      |
| 116-03012   | T30R2C2   | T30R | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35) | .14"      | (3.5) | Red    | 100       |
| 111-03056   | T30R2M4   | T30R | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35) | .14"      | (3.5) |        | 1000      |
| 116-03013   | T30R3C2   | T30R | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35) | .14"      | (3.5) | Orange | 100       |
| 111-03052   | T30R3M4   | T30R | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35) | .14"      | (3.5) |        | 1000      |
| 116-03014   | T30R4C2   | T30R | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35) | .14"      | (3.5) | Yellow | 100       |
| 111-03065   | T30R4M4   | T30R | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35) | .14"      | (3.5) |        | 1000      |
| 116-03015   | T30R5C2   | T30R | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35) | .14"      | (3.5) | Green  | 100       |
| 111-03041   | T30R5M4   | T30R | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35) | .14"      | (3.5) |        | 1000      |
| 116-03016   | T30R6C2   | T30R | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35) | .14"      | (3.5) | Blue   | 100       |
| 111-03036   | T30R6M4   | T30R | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35) | .14"      | (3.5) |        | 1000      |
| 116-03017   | T30R7C2   | T30R | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35) | .14"      | (3.5) | Purple | 100       |
| 111-03062   | T30R7M4   | T30R | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35) | .14"      | (3.5) |        | 1000      |
| 116-03018   | T30R8C2   | T30R | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35) | .14"      | (3.5) | Gray   | 100       |
| 111-03061   | T30R8M4   | T30R | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35) | .14"      | (3.5) |        | 1000      |
| 116-03019   | 116-03019 | T30R | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35) | .14"      | (3.5) | White  | 100       |
| 116-03064   | T30R10M4  | T30R | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35) | .14"      | (3.5) |        | 1000      |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. MK9 and MK9P cannot be used with T18S cable ties.

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Standard Cable Ties

### T50R and T50L Series - Colors



#### Material Data

|                       |                                                 |
|-----------------------|-------------------------------------------------|
| Material              | Polyamide 6.6 (PA66)                            |
| Operating Temperature | -40 °F to +185 °F (-40 °C to +85 °C) continuous |
| Flammability          | UL94 V2                                         |



File# E64139



File# E64139

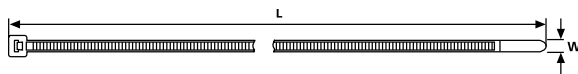
#### Product Selection

| Article No. | Part No. | Type | Min. Tensile Strength |       | Length (L) |       | Max. Ø Bundle |       | Width (W) |       | Color  | Pkg. Qty. |
|-------------|----------|------|-----------------------|-------|------------|-------|---------------|-------|-----------|-------|--------|-----------|
|             |          |      | lbs.                  | (N)   | in.        | (mm)  | in.           | (mm)  | in.       | (mm)  |        |           |
| T50R        |          |      |                       |       |            |       |               |       |           |       |        |           |
| 116-05011   | T50R1C2  | T50R | 50 lbs                | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) | Brown  | 100       |
| 111-04852   | T50R1M4  | T50R | 50 lbs                | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) |        | 1000      |
| 116-05012   | T50R2C2  | T50R | 50 lbs                | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) | Red    | 100       |
| 111-04868   | T50R2M4  | T50R | 50 lbs                | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) |        | 1000      |
| 116-05013   | T50R3C2  | T50R | 50 lbs                | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) | Orange | 100       |
| 111-04865   | T50R3M4  | T50R | 50 lbs                | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) |        | 1000      |
| 116-05014   | T50R4C2  | T50R | 50 lbs                | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) | Yellow | 100       |
| 111-04892   | T50R4M4  | T50R | 50 lbs                | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) |        | 1000      |
| 116-05015   | T50R5C2  | T50R | 50 lbs                | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) | Green  | 100       |
| 111-04854   | T50R5M4  | T50R | 50 lbs                | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) |        | 1000      |
| 116-05016   | T50R6C2  | T50R | 50 lbs                | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) | Blue   | 100       |
| 111-04849   | T50R6M4  | T50R | 50 lbs                | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) |        | 1000      |
| 116-05017   | T50R7C2  | T50R | 50 lbs                | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) | Purple | 100       |
| 111-04877   | T50R7M4  | T50R | 50 lbs                | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) |        | 1000      |
| 111-04870   | T50R8C2  | T50R | 50 lbs                | (225) | 7.9"       | (202) | 1.97"         | (50)  | .18"      | (4.6) | Gray   | 100       |
| 111-04872   | T50R8M4  | T50R | 50 lbs                | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) |        | 1000      |
| 116-05019   | T50R10C2 | T50R | 50 lbs                | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) | White  | 100       |
| 111-04879   | T50R10M4 | T50R | 50 lbs                | (225) | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) |        | 1000      |
| T50L        |          |      |                       |       |            |       |               |       |           |       |        |           |
| 111-05443   | T50L1C2  | T50L | 50 lbs                | (225) | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) | Brown  | 100       |
| 111-05444   | T50L1M4  | T50L | 50 lbs                | (225) | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) |        | 1000      |
| 111-05457   | T50L2C2  | T50L | 50 lbs                | (225) | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) | Red    | 100       |
| 111-05458   | T50L2M4  | T50L | 50 lbs                | (225) | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) |        | 1000      |
| 111-05451   | T50L3C2  | T50L | 50 lbs                | (225) | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) | Orange | 100       |
| 111-05454   | T50L3M4  | T50L | 50 lbs                | (225) | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) |        | 1000      |
| 111-05467   | T50L4C2  | T50L | 50 lbs                | (225) | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) | Yellow | 100       |
| 111-05468   | T50L4M4  | T50L | 50 lbs                | (225) | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) |        | 1000      |
| 111-05445   | T50L5C2  | T50L | 50 lbs                | (225) | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) | Green  | 100       |
| 111-00502   | T50L5M4  | T50L | 50 lbs                | (225) | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) |        | 1000      |
| 111-05431   | T50L6C2  | T50L | 50 lbs                | (225) | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) | Blue   | 100       |
| 111-05434   | T50L6M4  | T50L | 50 lbs                | (225) | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) |        | 1000      |
| 111-05464   | T50L7C2  | T50L | 50 lbs                | (225) | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) | Purple | 100       |
| 111-00503   | T50L7M4  | T50L | 50 lbs                | (225) | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) |        | 1000      |
| 111-05461   | T50L8C2  | T50L | 50 lbs                | (225) | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) | Gray   | 100       |
| 111-05462   | T50L8M4  | T50L | 50 lbs                | (225) | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) |        | 1000      |
| 111-05466   | T50L10C2 | T50L | 50 lbs                | (225) | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) | White  | 100       |
| 111-05465   | T50L10M4 | T50L | 50 lbs                | (225) | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) |        | 1000      |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. MK9 and MK9P cannot be used with T18S cable ties.

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Heavy Duty Cable Ties



## Material Data

|                       |                                                        |
|-----------------------|--------------------------------------------------------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                            |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                         |



## T120 Series



File# E64139

File# E64139

| Product Selection |          |       |                        | File# E64139             |       |            |       |               |       |           |       |         |           | File# E64139 |  |
|-------------------|----------|-------|------------------------|--------------------------|-------|------------|-------|---------------|-------|-----------|-------|---------|-----------|--------------|--|
| Article No.       | Part No. | Type  | US Gov.<br>Designation | Min. Tensile<br>Strength |       | Length (L) |       | Max. Ø Bundle |       | Width (W) |       | Color   | Pkg. Qty. |              |  |
|                   |          |       |                        | lbs.                     | (N)   | in.        | (mm)  | in.           | (mm)  | in.       | (mm)  |         |           |              |  |
| T120S             |          |       |                        |                          |       |            |       |               |       |           |       |         |           |              |  |
| 111-12819         | T120S9K2 | T120S | —                      | 120 lbs                  | (535) | 8.85"      | (225) | 2.17"         | (55)  | .30"      | (7.6) | Natural | 50        |              |  |
| 111-12813         | T120S9H4 | T120S | —                      | 120 lbs                  | (535) | 8.85"      | (225) | 2.17"         | (55)  | .30"      | (7.6) |         | 500       |              |  |
| 111-12803         | T120S0K2 | T120S | —                      | 120 lbs                  | (535) | 8.85"      | (225) | 2.17"         | (55)  | .30"      | (7.6) | Black   | 50        |              |  |
| 111-12808         | T120S0H4 | T120S | —                      | 120 lbs                  | (535) | 8.85"      | (225) | 2.17"         | (55)  | .30"      | (7.6) |         | 500       |              |  |
| T120I             |          |       |                        |                          |       |            |       |               |       |           |       |         |           |              |  |
| 111-12211         | T120I9K2 | T120I | —                      | 120 lbs                  | (535) | 11.81"     | (300) | 3.15"         | (80)  | .30"      | (7.6) | Natural | 50        |              |  |
| 111-12213         | T120I9H4 | T120I | —                      | 120 lbs                  | (535) | 11.81"     | (300) | 3.15"         | (80)  | .30"      | (7.6) |         | 500       |              |  |
| 111-12201         | T120I0K2 | T120I | —                      | 120 lbs                  | (535) | 11.81"     | (300) | 3.15"         | (80)  | .30"      | (7.6) | Black   | 50        |              |  |
| 111-12206         | T120I0H4 | T120I | —                      | 120 lbs                  | (535) | 11.81"     | (300) | 3.15"         | (80)  | .30"      | (7.6) |         | 500       |              |  |
| T120R             |          |       |                        |                          |       |            |       |               |       |           |       |         |           |              |  |
| 112-12019         | T120R9K2 | T120R | MS3367-3-9             | 120 lbs                  | (535) | 15.24"     | (387) | 4.13"         | (105) | .30"      | (7.6) | Natural | 50        |              |  |
| 111-12036         | T120R9H4 | T120R | MS3367-3-9             | 120 lbs                  | (535) | 15.24"     | (387) | 4.13"         | (105) | .30"      | (7.6) |         | 500       |              |  |
| 112-12060         | T120R0K2 | T120R | *                      | 120 lbs                  | (535) | 15.24"     | (387) | 4.13"         | (105) | .30"      | (7.6) | Black   | 50        |              |  |
| 111-12013         | T120R0H4 | T120R | *                      | 120 lbs                  | (535) | 15.24"     | (387) | 4.13"         | (105) | .30"      | (7.6) |         | 500       |              |  |
| T120L             |          |       |                        |                          |       |            |       |               |       |           |       |         |           |              |  |
| 111-12419         | T120L9K2 | T120L | MS3367-6-9             | 120 lbs                  | (535) | 30.0"      | (760) | 8.85"         | (225) | .30"      | (7.6) | Natural | 50        |              |  |
| 111-12405         | T120L0K2 | T120L | *                      | 120 lbs                  | (535) | 30.0"      | (760) | 8.85"         | (225) | .30"      | (7.6) | Black   | 50        |              |  |

Installation tools - MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes. \*Military black available. Contact HellermannTyton for more information.

## T150 Series



File# E64139

File# E64139

| Product Selection |            |          |                     | Min. Tensile Strength | Length (L)    |              | Max. Ø Bundle | Width (W) | Color | Pkg. Qty. |
|-------------------|------------|----------|---------------------|-----------------------|---------------|--------------|---------------|-----------|-------|-----------|
| Article No.       | Part No.   | Type     | US Gov. Designation |                       | lbs. (N)      | in. (mm)     | in. (mm)      | in. (mm)  |       |           |
| T150R             |            |          |                     |                       |               |              |               |           |       |           |
| 111-15203         | T150R9X2   | T150R(U) | –                   | 175 lbs (780)         | 15.35″ (390)  | 4.13″ (105)  | .35″ (8.8)    | Natural   | 25    |           |
| 111-15200         | T150R0X2   | T150R(U) | –                   | 175 lbs (780)         | 15.35″ (390)  | 4.13″ (105)  | .35″ (8.8)    | Black     | 25    |           |
| T150M             |            |          |                     |                       |               |              |               |           |       |           |
| 111-15619         | T150M9X2   | T150M    | –                   | 175 lbs (780)         | 21.00″ (530)  | 5.91″ (150)  | .35″ (8.9)    | Natural   | 25    |           |
| 111-00124         | T150M0X2   | T150M    | –                   | 175 lbs (780)         | 21.00″ (530)  | 5.91″ (150)  | .35″ (8.9)    | Black     | 25    |           |
| T150L             |            |          |                     |                       |               |              |               |           |       |           |
| 111-15419         | T150L9X2   | T150L    | –                   | 175 lbs (780)         | 32.28″ (820)  | 9.65″ (245)  | .35″ (8.9)    | Natural   | 25    |           |
| 111-15405         | T150L0X2   | T150L    | –                   | 175 lbs (780)         | 32.28″ (820)  | 9.65″ (245)  | .35″ (8.9)    | Black     | 25    |           |
| T150LL            |            |          |                     |                       |               |              |               |           |       |           |
| 111-15719         | T150LL9X2  | T150LL   | –                   | 175 lbs (780)         | 36.42″ (925)  | 10.83″ (275) | .35″ (8.9)    | Natural   | 25    |           |
| 111-15700         | T150LL0X2  | T150LL   | –                   | 175 lbs (780)         | 36.42″ (925)  | 10.83″ (275) | .35″ (8.9)    | Black     | 25    |           |
| T150XL            |            |          |                     |                       |               |              |               |           |       |           |
| 111-15519         | T150XL9X2  | T150XL   | –                   | 175 lbs (780)         | 43.11″ (1095) | 13.00″ (330) | .35″ (8.9)    | Natural   | 25    |           |
| 111-15500         | T150XL0X2  | T150XL   | –                   | 175 lbs (780)         | 43.11″ (1095) | 13.00″ (330) | .35″ (8.9)    | Black     | 25    |           |
| T150XLL           |            |          |                     |                       |               |              |               |           |       |           |
| 111-15304         | T150XLL9X2 | T150XLL  | –                   | 175 lbs (780)         | 52.17″ (1325) | 15.95″ (405) | .35″ (8.9)    | Natural   | 25    |           |
| 111-15300         | T150XLL0X2 | T150XLL  | –                   | 175 lbs (780)         | 52.17″ (1325) | 15.95″ (405) | .35″ (8.9)    | Black     | 25    |           |

Installation tools - MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

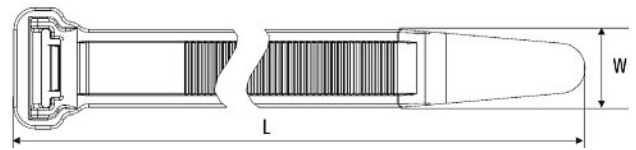
For product information visit or [www.hellermann.tyton.com](http://www.hellermann.tyton.com) or call **800-537-1512**

## Wide Strap Heavy Duty Cable Ties

The wide strap cable tie minimizes pinching on soft bundles and features a low profile head to provide compact bundling. A thinner strap provides increased flexibility for improved ergonomics

- Designed to minimize pinching of soft hoses and convoluted tubing
- Low profile head
- Clamping rails on the bottom of head to increase grip on round bundles
- Large bundle diameter range: .375" - 4.125" (9.5mm - 104.7mm)
- Flexible strap with bent tip for quick insertion into mounts

| Material Data         |                                                                          | RoHS |
|-----------------------|--------------------------------------------------------------------------|------|
| Material              | Polyamide 6.6 impact modified, Heat Stabilized, UV Resistant (PA66HIRHS) |      |
| Operating Temperature | -40 °F to +230 °F (-40 °C to +110 °C) continuous                         |      |
| Flammability          | UL94 HB                                                                  |      |



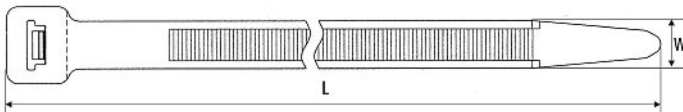
| Product Selection |                  |      | Min. Tensile Strength | Length (L)     | Max. Ø Bundle   | Width (W)  | Color | Pkg. Qty. |
|-------------------|------------------|------|-----------------------|----------------|-----------------|------------|-------|-----------|
| Article No.       | Part No.         | Type | lbs. (N)              | in. (mm)       | in. (mm)        | in. (mm)   |       |           |
| 111-12300         | <b>111-12300</b> | WSS  | 120 lbs (534)         | 9.1" (231.14)  | 2.25" (57.15)   | .5" (12.7) | Black | 300       |
| 111-12301         | <b>111-12301</b> | WSI  | 120 lbs (534)         | 12.1" (307.34) | 3.25" (82.55)   | .5" (12.7) | Black | 300       |
| 111-12302         | <b>111-12302</b> | WSR  | 120 lbs (534)         | 15.1" (383.54) | 4.125" (104.78) | .5" (12.7) | Black | 300       |

Installation tools - MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## T255 Series Heavy Duty Cable Ties

HellermannTyton's T255 series heavy duty cable ties are ideal for bundles requiring a strong cable tie that may also require a higher temperature rating than the T250 series. These ties have a tensile strength of 250 lbs.

| Material Data         |                                                                          | RoHS |
|-----------------------|--------------------------------------------------------------------------|------|
| Material              | Polyamide 6.6 impact modified, Heat Stabilized, UV Resistant (PA66HIRHS) |      |
| Operating Temperature | -40 °F to +230 °F (-40 °C to +110 °C) continuous                         |      |
| Flammability          | UL94 HB                                                                  |      |



**HELLERMANN** **TYTON** **US**  
File# E64139

| Product Selection |                    |       | Min. Tensile Strength | Length (L)   | Max. Ø Bundle | Width (W)   | Color | Pkg. Qty. |
|-------------------|--------------------|-------|-----------------------|--------------|---------------|-------------|-------|-----------|
| Article No.       | Part No.           | Type  | lbs. (N)              | in. (mm)     | in. (mm)      | in. (mm)    |       |           |
| 111-25500         | <b>T255S0HIRX2</b> | T255S | 250 lbs (1115)        | 8.86" (225)  | 2.16" (55)    | .49" (12.5) | Black | 25        |
| 111-25400         | <b>T255R0HIRX2</b> | T255R | 250 lbs (1115)        | 20.28" (520) | 5.71" (145)   | .49" (12.5) | Black | 25        |
| 111-25300         | <b>T255M0HIRX2</b> | T255M | 250 lbs (1115)        | 22.05" (565) | 6.30" (160)   | .49" (12.5) | Black | 25        |

Installation tools - MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

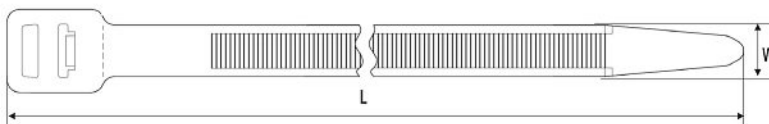
## Heavy Duty Cable Ties T250 Series

These cable ties offer a high minimum tensile strength and have a buckle feature which allows the end of the cable tie to be tucked away if necessary. The buckle also snaps into HellermannTyton lashing tie mounts (LTM).



T250 heavy duty cable tie and lashing tie mount application

| Material Data         |                                                        |
|-----------------------|--------------------------------------------------------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                            |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                         |



**UL**  
File# E64139

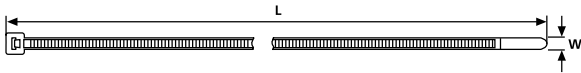
| Product Selection |           |        |                       |        |            |        |               |       |           |        |         |           |
|-------------------|-----------|--------|-----------------------|--------|------------|--------|---------------|-------|-----------|--------|---------|-----------|
| Article No.       | Part No.  | Type   | Min. Tensile Strength |        | Length (L) |        | Max. Ø Bundle |       | Width (W) |        | Color   | Pkg. Qty. |
|                   |           |        | lbs.                  | (N)    | in.        | (mm)   | in.           | (mm)  | in.       | (mm)   |         |           |
| T250S             |           |        |                       |        |            |        |               |       |           |        |         |           |
| 111-24702         | T250S9X2  | T250S  | 250 lbs               | (1115) | 9.05"      | (230)  | 2.17"         | (55)  | .49"      | (12.5) | Natural | 25        |
| 111-24700         | T250S0X2  | T250S  | 250 lbs               | (1115) | 9.05"      | (230)  | 2.17"         | (55)  | .49"      | (12.5) | Black   | 25        |
| T250R             |           |        |                       |        |            |        |               |       |           |        |         |           |
| 111-24803         | T250R9X2  | T250R  | 250 lbs               | (1115) | 20.47"     | (520)  | 5.71"         | (145) | .49"      | (12.5) | Natural | 25        |
| 111-24801         | T250R0X2  | T250R  | 250 lbs               | (1115) | 20.47"     | (520)  | 5.71"         | (145) | .49"      | (12.5) | Black   | 25        |
| T250M             |           |        |                       |        |            |        |               |       |           |        |         |           |
| 111-25002         | T250M9X2  | T250M  | 250 lbs               | (1115) | 22.24"     | (565)  | 5.90"         | (150) | .49"      | (12.5) | Natural | 25        |
| 111-25001         | T250M0X2  | T250M  | 250 lbs               | (1115) | 22.24"     | (565)  | 5.90"         | (150) | .49"      | (12.5) | Black   | 25        |
| T250I             |           |        |                       |        |            |        |               |       |           |        |         |           |
| 111-25219         | T250I9X2  | T250I  | 250 lbs               | (1115) | 28.54"     | (725)  | 8.00"         | (203) | .49"      | (12.5) | Natural | 25        |
| 111-00507         | T250I0X2  | T250I  | 250 lbs               | (1115) | 28.54"     | (725)  | 8.00"         | (203) | .49"      | (12.5) | Black   | 25        |
| T250L             |           |        |                       |        |            |        |               |       |           |        |         |           |
| 111-00436         | T250L9X2  | T250L  | 250 lbs               | (1115) | 34.65"     | (880)  | 10.00"        | (254) | .49"      | (12.5) | Natural | 25        |
| 111-24601         | T250L0X2  | T250L  | 250 lbs               | (1115) | 34.65"     | (880)  | 10.00"        | (254) | .49"      | (12.5) | Black   | 25        |
| T250XL            |           |        |                       |        |            |        |               |       |           |        |         |           |
| 111-00466         | T250XL9X2 | T250XL | 250 lbs               | (1115) | 40.55"     | (1030) | 12.00"        | (305) | .49"      | (12.5) | Natural | 25        |
| 111-25200         | T250XL0X2 | T250XL | 250 lbs               | (1115) | 40.55"     | (1030) | 12.00"        | (305) | .49"      | (12.5) | Black   | 25        |

Installation tools - MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## T18 - T120 Series - Heat Stabilized

HellermannTyton's heat stabilized cable ties provide excellent resistance when exposed to high heat.

| Material Data         |                                                  |
|-----------------------|--------------------------------------------------|
| Material              | Polyamide 6.6 heat stabilized (PA66HS)           |
| Operating Temperature | -40 °F to +257 °F (-40 °C to +125 °C) continuous |
| Flammability          | UL94 V2                                          |



File# E64139



File# E64139

File# E64139

File# E64139

| Product Selection |             |       | Min. Tensile Strength |              | Length (L)  |            | Max. Ø Bundle |       | Width (W) |  | Color | Pkg. Qty. |
|-------------------|-------------|-------|-----------------------|--------------|-------------|------------|---------------|-------|-----------|--|-------|-----------|
| Article No.       | Part No.    | Type  | lbs. (N)              | in. (mm)     | in. (mm)    | in. (mm)   | in. (mm)      |       |           |  |       |           |
| T18S              |             |       |                       |              |             |            |               |       |           |  |       |           |
| 111-02815         | T18S0HSM4   | T18S  | 18 lbs (80)           | 3.27" (83)   | .63" (16)   | .09" (2.3) |               | Black | 1000      |  |       |           |
| T18R              |             |       |                       |              |             |            |               |       |           |  |       |           |
| 111-01905         | T18R0HSC2   | T18R  | 18 lbs (80)           | 4" (100)     | .87" (22)   | .10" (2.5) |               | Black | 100       |  |       |           |
| 111-00476         | T18R0HSM4   | T18R  | 18 lbs (80)           | 4" (100)     | .87" (22)   | .10" (2.5) |               | Black | 1000      |  |       |           |
| T18I              |             |       |                       |              |             |            |               |       |           |  |       |           |
| 111-02305         | T18I0HSM4   | T18I  | 18 lbs (80)           | 5.5" (140)   | 1.38" (35)  | .10" (2.5) |               | Black | 1000      |  |       |           |
| T18L              |             |       |                       |              |             |            |               |       |           |  |       |           |
| 111-00403         | T18L0HSC2   | T18L  | 18 lbs (80)           | 8.0" (205)   | 2.17" (55)  | .10" (2.5) |               | Black | 100       |  |       |           |
| 111-00404         | T18L0HSM4   | T18L  | 18 lbs (80)           | 8.0" (205)   | 2.17" (55)  | .10" (2.5) |               | Black | 1000      |  |       |           |
| T30R              |             |       |                       |              |             |            |               |       |           |  |       |           |
| 111-03067         | T30R0HSC2   | T30R  | 30 lbs (135)          | 5.9" (150)   | 1.38" (35)  | .14" (3.5) |               | Black | 100       |  |       |           |
| 111-03068         | T30R0HSM4   | T30R  | 30 lbs (135)          | 5.9" (150)   | 1.38" (35)  | .14" (3.5) |               | Black | 1000      |  |       |           |
| T50R              |             |       |                       |              |             |            |               |       |           |  |       |           |
| 111-04900         | T50R0HSC2   | T50R  | 50 lbs (225)          | 7.9" (200)   | 1.97" (50)  | .18" (4.6) |               | Black | 100       |  |       |           |
| 111-04901         | T50R0HSM4   | T50R  | 50 lbs (225)          | 7.9" (200)   | 1.97" (50)  | .18" (4.6) |               | Black | 1000      |  |       |           |
| T50I              |             |       |                       |              |             |            |               |       |           |  |       |           |
| 111-05248         | T50I0HSC2   | T50I  | 50 lbs (225)          | 11.8" (300)  | 3.35" (85)  | .18" (4.6) |               | Black | 100       |  |       |           |
| 111-05251         | T50I0HSM4   | T50I  | 50 lbs (225)          | 11.8" (300)  | 3.35" (85)  | .18" (4.6) |               | Black | 1000      |  |       |           |
| T50L              |             |       |                       |              |             |            |               |       |           |  |       |           |
| 111-05470         | T50L0HSC2   | T50L  | 50 lbs (225)          | 15.35" (390) | 4.33" (110) | .18" (4.6) |               | Black | 100       |  |       |           |
| 111-05471         | T50L0HSM4   | T50L  | 50 lbs (225)          | 15.35" (390) | 4.33" (110) | .18" (4.6) |               | Black | 1000      |  |       |           |
| T120R             |             |       |                       |              |             |            |               |       |           |  |       |           |
| 111-12061         | T120R0HSMK2 | T120R | 120 lbs (535)         | 15.24" (387) | 4.13" (105) | .30" (7.6) |               | Black | 50        |  |       |           |
| 111-12058         | T120R0HSH4  | T120R | 120 lbs (535)         | 15.24" (387) | 4.13" (105) | .30" (7.6) |               | Black | 500       |  |       |           |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. MK9 and MK9P cannot be used with T18S cable ties.

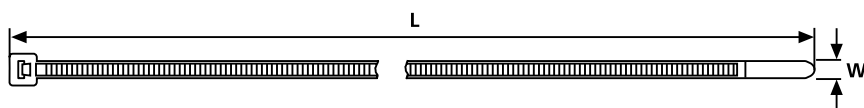
Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## PA46 Ties

HellermannTyton's high temperature cable ties provide excellent resistance in operating temperatures up to 275°F (135°C), while still maintaining tensile strength properties.



| Material Data         |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Polyamide 4.6 (PA46)</b>                             |
| Operating Temperature | <b>-40 °F to +275 °F (-40 °C to +135 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                          |



| Product Selection |                    | Type        | Min. Tensile Strength | Length (L)  | Max Ø Bundle | Width (W)  | Color | Pkg. Qty. |
|-------------------|--------------------|-------------|-----------------------|-------------|--------------|------------|-------|-----------|
| Article No.       | Part No.           |             | lbs. (N)              | in. (mm)    | in. (mm)     | in. (mm)   |       |           |
| 111-01836         | <b>T18R1STNLM5</b> | T18R1STNLM5 | 18 lbs. (80)          | 4" (100)    | .87" (22)    | .10" (2.5) | Brown | 100       |
| 111-01269         | <b>T30R1STNLM4</b> | T30R1STNLM4 | 30 lbs. (135)         | 5.9" (150)  | 1.38" (35)   | .14" (3.5) | Brown | 100       |
| 111-04839         | <b>T50R1STNLM5</b> | T50R1STNLM5 | 50 lbs. (225)         | 7.9" (200)  | 1.97" (50)   | .18" (4.6) | Brown | 100       |
| 111-05423         | <b>T50L1STNLM4</b> | T50L1STNLM4 | 50 lbs. (225)         | 15.3" (390) | 4.33" (110)  | .18" (4.6) | Brown | 100       |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. MK9 and MK9P cannot be used with T18S cable ties.

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## PEEK Tie For High Temperature Applications

HellermannTyton's high performance PEEK material withstands temperatures up to +464°F (+240°C) and is highly resistant to chemicals. The cable tie is designed with a contoured head making it ideal for space restricted areas. The outside serrations minimize any damage to the cable insulation. HellermannTyton's fir tree mount provides a secure grip in a mounting hole and protect against dirt and other impurities. The mount can slide along the strap of the tie for proper orientation. The fir tree mounts are designed to provide a low insertion force and high extraction force. HellermannTyton's cable tie anchor mounts are designed with a 4-way entry point which allows the mount to be placed parallel or perpendicular to the wire bundle.

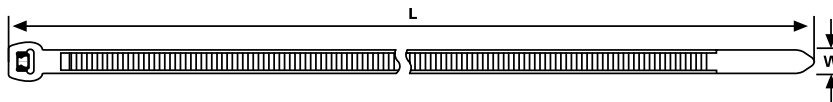


The contoured head takes up less space, provides a low insertion force, and offers high strength.

### Material Data

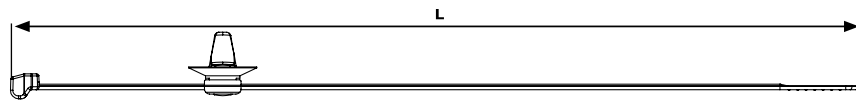
|                       |                                                  |
|-----------------------|--------------------------------------------------|
| Material              | Polyetheretherketone (PEEK)                      |
| Operating Temperature | -67 °F to +464 °F (-55 °C to +240 °C) continuous |
| Flammability          | UL94 V0                                          |

RoHS



### Product Selection

| Product Selection |                  | Type  | Min. Tensile Strength | Max Ø Bundle | Length (L) | Width (W)  | Mounting Hole Ø | Panel Thickness | Disc     | Color | Pkg. Qty. |
|-------------------|------------------|-------|-----------------------|--------------|------------|------------|-----------------|-----------------|----------|-------|-----------|
| Article No.       | Part No.         |       | lbs. (N)              | in. (mm)     | in. (mm)   | in. (mm)   | in. (mm)        | in. (mm)        | in. (mm) |       |           |
| Cable Ties        |                  |       |                       |              |            |            |                 |                 |          |       |           |
| 118-00032         | <b>118-00032</b> | PT2A  | 52 lbs. (230)         | 1.38" (35)   | 5.7" (145) | .13" (3.4) | —               | —               | —        | Beige | 100       |
| 111-01235         | <b>111-01235</b> | PT220 | 85 lbs. (380)         | 2.2" (56)    | 8.6" (220) | .18" (4.6) | —               | —               | —        | Beige | 100       |



### Product Selection

| Article No. | Part No.         | Type           | Min. Tensile Strength | Max Ø Bundle | Length (L) | Width (W)  | Mounting Hole Ø         | Panel Thickness          | Disc      | Color      | Pkg. Qty. |
|-------------|------------------|----------------|-----------------------|--------------|------------|------------|-------------------------|--------------------------|-----------|------------|-----------|
|             |                  |                | lbs. (N)              | in. (mm)     | in. (mm)   | in. (mm)   | in. (mm)                | in. (mm)                 | in. (mm)  |            |           |
| 156-00455   | <b>156-00455</b> | T50RO SP1SFT65 | 50 lbs. (225)         | 1.77" (45)   | 7.9" (200) | .18" (4.6) | .25" - .26" (6.3 - 6.7) | .028" - .051" (.7 - 1.3) | .63" (16) | Gray Beige | 100       |
| 156-00456   | <b>156-00456</b> | T50RO SP2SFT65 | 50 lbs. (225)         | 1.77" (45)   | 7.9" (200) | .18" (4.6) | .25" - .26" (6.3 - 6.7) | .028" - .051" (.7 - 1.3) | .63" (16) | Gray Beige | 100       |

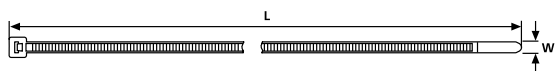


### Product Selection

| Product Selection |           | Type  | Cable Tie Series | Mounting  | Length (L)   | Width (W)   | Height (H)  | Color | Pkg. Qty. |
|-------------------|-----------|-------|------------------|-----------|--------------|-------------|-------------|-------|-----------|
| Article No.       | Part No.  |       |                  |           | in. (mm)     | in. (mm)    | in. (mm)    |       |           |
|                   |           |       |                  |           | Mounts       |             |             |       |           |
| 151-00757         | 151-00757 | CTAM1 | T18 - T50        | #10 Screw | .81 " (20.5) | .40" (10.2) | .22 " (5.5) | Beige | 100       |
| 151-00758         | 151-00758 | CTAM2 | T18 - T50        | #10 Screw | .81 " (20.5) | .40" (10.2) | .22 " (5.5) | Beige | 100       |

## UV Stabilized Cable Ties

Used in the solar industry and other applications, HellermannTyton offers cable ties made of UV stabilized PA66UV material. This provides additional protection against UV radiation for long-term outdoor use and is available in various styles, tensile strengths and bundle diameters.



| Material Data         |                                                 |
|-----------------------|-------------------------------------------------|
| Material              | Polyamide 6.6 – 2% Carbon UV Stabilized (OUV)   |
| Operating Temperature | -40 °F to +185 °F (-40 °C to +85 °C) continuous |
| Flammability          | UL94 V2                                         |



### Product Selection

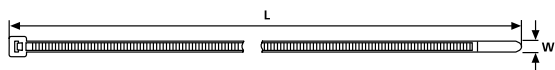
| Article No. | Part No.   | Type  | Min. Tensile Strength | Length      | Max Bundle | Width     | Color | Pkg. Qty |
|-------------|------------|-------|-----------------------|-------------|------------|-----------|-------|----------|
|             |            |       | lbs. (N)              | in. (mm)    | in. (mm)   | in. (mm)  |       |          |
| 111-03075   | T30R0UVC2  | T30R  | 30 (135)              | 5.9 (150)   | 1.38 (35)  | .14 (3.5) | Black | 100      |
| 111-04912   | T50R0UVC2  | T50R  | 50 (225)              | 7.9 (200)   | 1.97 (50)  | .18 (4.6) | Black | 100      |
| 111-05477   | T50L0UVC2  | T50L  | 50 (225)              | 15.35 (390) | 4.33 (110) | .18 (4.6) | Black | 100      |
| 111-00400   | T120R0UVC2 | T120R | 120 (535)             | 15.24 (387) | 4.13 (105) | .30 (7.6) | Black | 100      |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. MK9 and MK9P cannot be used with T18S cable ties.

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Heat/UV Stabilized Nylon 6.6 Cable Ties

Manufactured from a specially-formulated impact-resistant, heat and UV stabilized PA6.6 material, these cable ties offer increased flexibility, impact strength, heat and UV resistance to endure moisture fluctuations. These cable ties feature inside serrations providing a positive hold onto wire and cable bundles. The head design guarantees high tensile strength, as well as a low insertion force. The bent tail allows for quick and simple installation by hand.



| Material Data         |                                                                            |
|-----------------------|----------------------------------------------------------------------------|
| Material              | Polyamide 6.6 – High Impact Modified, Heat and UV Stabilized (PA66HIRHSUV) |
| Operating Temperature | -40 °F to +230 °F (-40 °C to +110 °C) continuous                           |
| Flammability          | UL94 HB                                                                    |



### Product Selection

| Article No. | Part No.   | Type | Min. Tensile Strength | Length      | Max Bundle | Width       | Color | Pkg. Qty |
|-------------|------------|------|-----------------------|-------------|------------|-------------|-------|----------|
|             |            |      | lbs. (N)              | in. (mm)    | in. (mm)   | in. (mm)    |       |          |
| 111-03066   | T30R0HIRM4 | T30R | 30 (135)              | 6.0" (150)  | 1.4" (35)  | 0.14" (3.6) | Black | 1000     |
| 111-01566   | T50R0HIRM4 | T50R | 50 (225)              | 8.0" (202)  | 2.0" (50)  | 0.18" (4.6) | Black | 1000     |
| 111-01128   | 111-01128  | T50L | 50 (225)              | 15.0" (390) | 4.3" (110) | 0.19" (4.7) | Black | 1000     |

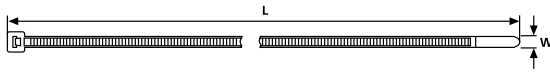
Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. MK9 and MK9P cannot be used with T18S cable ties.

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## PA11 Ties

These inside serrated cable ties are manufactured from Polyamide 11 which provides excellent UV, chemical and moisture resistance, allowing a longer life span in outdoor use. This material is recommended for applications exposed to metal oxides. The tie strap has smooth edges which prevent bundle damage.

| Material Data         |                                                        | RoHS |
|-----------------------|--------------------------------------------------------|------|
| Material              | <b>Polyamide 11 (PA11)</b>                             |      |
| Operating Temperature | <b>-40 °F to +203 °F (-40 °C to +95 °C) continuous</b> |      |
| Flammability          | <b>UL94 HB</b>                                         |      |



| Product Selection |           |       |                       |              |            |            |       |          |
|-------------------|-----------|-------|-----------------------|--------------|------------|------------|-------|----------|
| Article No.       | Part No.  | Type  | Min. Tensile Strength | Length       | Max Bundle | Width      | Color | Pkg. Qty |
|                   |           |       | lbs. (N)              | in. (mm)     | in. (mm)   | in. (mm)   |       |          |
| 111-01264         | 111-01264 | GL200 | 45 lbs (200)          | 8.0" (203)   | 2.0" (50)  | .18" (4.7) | Black | 100      |
| 111-01265         | 111-01265 | GL250 | 56 lbs (250)          | 10.0" (252)  | 2.6" (65)  | .19" (4.8) | Black | 100      |
| 111-01266         | 111-01266 | GL300 | 56 lbs (250)          | 12.01" (301) | 3.1" (80)  | .19" (4.8) | Black | 100      |

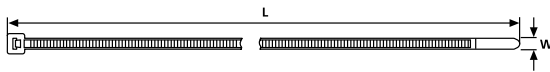
Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P.

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## PA12 Ties

These inside serrated cable ties are manufactured from Polyamide 12 which provides excellent UV, chemical and moisture resistance, allowing a longer life span in outdoor use. Polyamide 12 material absorbs slightly less moisture than Polyamide 11, yet is equally resistant to metal oxides. The bent tail allows for quick and simple installation through the head of the tie. The tie strap has smooth edges which prevent bundle damage.

| Material Data         |                                                        | RoHS |
|-----------------------|--------------------------------------------------------|------|
| Material              | <b>Polyamide 12 (PA12)</b>                             |      |
| Operating Temperature | <b>-40 °F to +203 °F (-40 °C to +95 °C) continuous</b> |      |
| Flammability          | <b>UL94 V2</b>                                         |      |



| Product Selection |           |           |                       |             |            |             |       |          |
|-------------------|-----------|-----------|-----------------------|-------------|------------|-------------|-------|----------|
| Article No.       | Part No.  | Type      | Min. Tensile Strength | Length      | Max Bundle | Width       | Color | Pkg. Qty |
|                   |           |           | lbs. (N)              | in. (mm)    | in. (mm)   | in. (mm)    |       |          |
| 111-01560         | 111-01560 | T50R      | 45 (200)              | 6.0" (150)  | 1.4" (35)  | 0.14" (3.6) | Black | 100      |
| 111-01562         | 111-01562 | T50L(US)  | 45 (200)              | 15.0" (390) | 4.3" (110) | 0.19" (4.8) | Black | 100      |
| 111-01563         | 111-01563 | T50XL(US) | 45 (200)              | 18.0" (467) | 5.3" (134) | 0.19" (4.8) | Black | 100      |

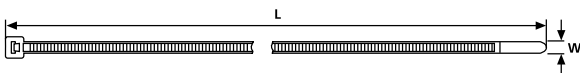
Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P.

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## T18 - T50 - Flame Retardant

HellermannTyton's flame retardant cable ties meet the UL 94V0 flammability requirements.

| Material Data         |                                                 |
|-----------------------|-------------------------------------------------|
| Material              | Polyamide 6.6 V0 (PA66V0)                       |
| Operating Temperature | -40 °F to +185 °F (-40 °C to +85 °C) continuous |
| Flammability          | UL94 V0                                         |



File# E64139 File# E64139

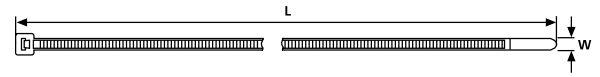
| Product Selection |           |      | File# E64139      File# E64139 |       |            |       |               |       |           |       |       |           |
|-------------------|-----------|------|--------------------------------|-------|------------|-------|---------------|-------|-----------|-------|-------|-----------|
| Article No.       | Part No.  | Type | Min. Tensile Strength          |       | Length (L) |       | Max. Ø Bundle |       | Width (W) |       | Color | Pkg. Qty. |
|                   |           |      | lbs.                           | (N)   | in.        | (mm)  | in.           | (mm)  | in.       | (mm)  |       |           |
| T18R              |           |      |                                |       |            |       |               |       |           |       |       |           |
| 111-01834         | T18R9VOC2 | T18R | 18 lbs                         | (80)  | 4"         | (100) | .87"          | (22)  | .10"      | (2.5) | White | 100       |
| 111-01835         | T18R9VOM4 | T18R | 18 lbs                         | (80)  | 4"         | (100) | .87"          | (22)  | .10"      | (2.5) | White | 1000      |
| 111-01833         | T18R0VOC2 | T18R | 18 lbs                         | (80)  | 4"         | (100) | .87"          | (22)  | .10"      | (2.5) | Black | 100       |
| T18I              |           |      |                                |       |            |       |               |       |           |       |       |           |
| 111-02304         | T18I9VOM4 | T18I | 18 lbs                         | (80)  | 5.5"       | (144) | 1.38"         | (35)  | .10"      | (2.5) | White | 1000      |
| T18L              |           |      |                                |       |            |       |               |       |           |       |       |           |
| 111-02045         | T18L9VOC2 | T18L | 18 lbs                         | (80)  | 7.95"      | (202) | 2.17"         | (55)  | .10"      | (2.5) | White | 100       |
| 111-02046         | T18L9VOM4 | T18L | 18 lbs                         | (80)  | 7.95"      | (202) | 2.17"         | (55)  | .10"      | (2.5) | White | 1000      |
| 111-02044         | T18L0VOC2 | T18L | 18 lbs                         | (80)  | 7.95"      | (202) | 2.17"         | (55)  | .10"      | (2.5) | Black | 100       |
| T30R              |           |      |                                |       |            |       |               |       |           |       |       |           |
| 111-03073         | T30R9VOC2 | T30R | 30 lbs                         | (135) | 5.83"      | (148) | 1.38"         | (35)  | .14"      | (3.6) | White | 100       |
| 111-03074         | T30R9VOM4 | T30R | 30 lbs                         | (135) | 5.83"      | (148) | 1.38"         | (35)  | .14"      | (3.6) | White | 1000      |
| 111-03072         | T30R0VOC2 | T30R | 30 lbs                         | (135) | 5.83"      | (148) | 1.38"         | (35)  | .14"      | (3.6) | Black | 100       |
| T50R              |           |      |                                |       |            |       |               |       |           |       |       |           |
| 111-04909         | T50R9VOC2 | T50R | 50 lbs                         | (225) | 7.95"      | (202) | 1.97"         | (50)  | .18"      | (4.6) | White | 100       |
| 111-04911         | T50R9VOM4 | T50R | 50 lbs                         | (225) | 7.95"      | (202) | 1.97"         | (50)  | .18"      | (4.6) | White | 1000      |
| 111-04887         | T50R0VOC2 | T50R | 50 lbs                         | (225) | 7.95"      | (202) | 1.97"         | (50)  | .18"      | (4.6) | Black | 100       |
| 111-04908         | T50R0VOM4 | T50R | 50 lbs                         | (225) | 7.95"      | (202) | 1.97"         | (50)  | .18"      | (4.6) | Black | 1000      |
| T50I              |           |      |                                |       |            |       |               |       |           |       |       |           |
| 111-05254         | T50I9VOC2 | T50I | 50 lbs                         | (225) | 11.82"     | (300) | 3.35"         | (85)  | .18"      | (4.6) | White | 100       |
| 111-05255         | T50I9VOM4 | T50I | 50 lbs                         | (225) | 11.82"     | (300) | 3.35"         | (85)  | .18"      | (4.6) | White | 1000      |
| 111-05258         | T50I0VOC2 | T50I | 50 lbs                         | (225) | 11.82"     | (300) | 3.35"         | (85)  | .18"      | (4.6) | Black | 100       |
| T50L              |           |      |                                |       |            |       |               |       |           |       |       |           |
| 111-05438         | T50L9VOC2 | T50L | 50 lbs                         | (225) | 15.35"     | (390) | 4.33"         | (110) | .19"      | (4.7) | White | 100       |
| 111-05476         | T50L9VOM4 | T50L | 50 lbs                         | (225) | 15.35"     | (390) | 4.33"         | (110) | .19"      | (4.7) | White | 1000      |
| 111-05475         | T50L0VOC2 | T50L | 50 lbs                         | (225) | 15.35"     | (390) | 4.33"         | (110) | .19"      | (4.7) | Black | 100       |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## T18 - T120 - Polypropylene

HellermannTyton's polypropylene cable ties offer added resistance to most chemicals.

| Material Data         |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Polypropylene (PP)</b>                               |
| Operating Temperature | <b>-40 °F to +239 °F (-40 °C to +115 °C) continuous</b> |
| Flammability          | <b>UL94 HB</b>                                          |

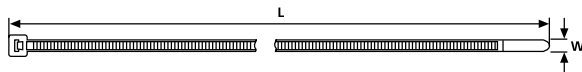


| Product Selection |            |       | Min. Tensile Strength |       | Length (L) |         | Max. Ø Bundle |        | Width (W) |       | Color   | Pkg. Qty. |
|-------------------|------------|-------|-----------------------|-------|------------|---------|---------------|--------|-----------|-------|---------|-----------|
| Article No.       | Part No.   | Type  |                       |       |            |         |               |        |           |       |         |           |
|                   |            |       | lbs.                  | (N)   | in.        | (mm)    | in.           | (mm)   | in.       | (mm)  |         |           |
| T18R              |            |       |                       |       |            |         |               |        |           |       |         |           |
| 111-01921         | T18R9PPC2  | T18R  | 11 lbs                | (49)  | 4"         | (100)   | .75"          | (19)   | .10"      | (2.5) | Natural | 100       |
| 111-01922         | T18R9PPM4  | T18R  | 11 lbs                | (49)  | 4"         | (100)   | .75"          | (19)   | .10"      | (2.5) | Natural | 1000      |
| 111-01917         | T18R0PPC2  | T18R  | 11 lbs                | (49)  | 4"         | (100)   | .75"          | (19)   | .10"      | (2.5) | Black   | 100       |
| 111-01918         | T18R0PPM4  | T18R  | 11 lbs                | (49)  | 4"         | (100)   | .75"          | (19)   | .10"      | (2.5) | Black   | 1000      |
| T30R              |            |       |                       |       |            |         |               |        |           |       |         |           |
| 111-03017         | T30R9PPC2  | T30R  | 20 lbs                | (89)  | 5.83"      | (148)   | 1.26"         | (32)   | .14"      | (3.6) | Natural | 100       |
| T50R              |            |       |                       |       |            |         |               |        |           |       |         |           |
| 111-04931         | T50R9PPC2  | T50R  | 30 lbs                | (133) | 8.0"       | (203.8) | 1.75"         | (44.5) | .19"      | (4.7) | Natural | 100       |
| 111-04928         | T50R0PPC2  | T50R  | 30 lbs                | (133) | 8.0"       | (203.8) | 1.75"         | (44.5) | .19"      | (4.7) | Black   | 100       |
| 111-04929         | T50R0PPM4  | T50R  | 30 lbs                | (133) | 8.0"       | (203.8) | 1.75"         | (44.5) | .19"      | (4.7) | Black   | 1000      |
| T50I              |            |       |                       |       |            |         |               |        |           |       |         |           |
| 111-05262         | T50I9PPM4  | T50I  | 30 lbs                | (133) | 11.8"      | (300)   | 3.35"         | (85)   | .18"      | (4.6) | Natural | 1000      |
| T120R             |            |       |                       |       |            |         |               |        |           |       |         |           |
| 111-12067         | T120R0PPK2 | T120R | 60 lbs                | (267) | 15.35"     | (390)   | 4.13"         | (105)  | .30"      | (7.6) | Black   | 50        |
| 111-12066         | T120R0PPH4 | T120R | 60 lbs                | (267) | 15.35"     | (390)   | 4.13"         | (105)  | .30"      | (7.6) | Black   | 500       |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## ETFE Cable Ties

ETFE ties provide excellent protection against radiation, ultraviolet light, and a wide range of chemicals. They are also rated for low outgassing applications. HellermannTyton's ETFE ties come in a standard color of blue for easy identification.



| Material Data         |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Ethylentetrafluorethylene (ETFE)</b>                 |
| Operating Temperature | <b>-112 °F to +338°F (-80 °C to +170 °C) continuous</b> |
| Flammability          | <b>UL94 V0</b>                                          |



| Product Selection |                  |       | Min. Tensile Strength |       | Length (L) |       | Max. Ø Bundle |       | Width (W) |       | Color | Pkg. Qty. |
|-------------------|------------------|-------|-----------------------|-------|------------|-------|---------------|-------|-----------|-------|-------|-----------|
| Article No.       | Part No.         | Type  | lbs.                  | (N)   | in.        | (mm)  | in.           | (mm)  | in.       | (mm)  |       |           |
| 111-00659         | <b>111-00659</b> | T18R  | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22)  | .10"      | (2.5) | Blue  | 100       |
| 111-00698         | <b>111-00698</b> | T30R  | 30 lbs                | (133) | 5.9"       | (150) | 1.42"         | (36)  | .14"      | (3.5) | Blue  | 100       |
| 111-00732         | <b>111-00732</b> | T50R  | 50 lbs                | (222) | 8"         | (200) | 1.97"         | (50)  | .18"      | (4.6) | Blue  | 100       |
| 111-00718         | <b>111-00718</b> | T50L  | 50 lbs                | (222) | 15"        | (380) | 4.13"         | (105) | .18"      | (4.6) | Blue  | 100       |
| 111-01125         | <b>111-01125</b> | T120R | 120 lbs               | (535) | 15"        | (380) | 4.13"         | (105) | .30"      | (7.6) | Blue  | 50        |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P.

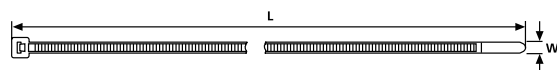
Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Cable Ties for Plenum Applications

HellermannTyton halar and U.L. Listed cable ties meet NEC regulations and can be used in applications where low smoke and low flame are a concern in air handling spaces.

### Halar Cable Ties

The raw material used to manufacture HellermannTyton halar cable ties is UL 94V0 rated. The halar ties come in a distinct color of red for easy identification.



| Material Data         |                                                      |
|-----------------------|------------------------------------------------------|
| Material              | PA66HL                                               |
| Operating Temperature | -104 °F to +300 °F<br>(-76 °C to +150 °C) continuous |
| Flammability          | UL94 V0                                              |

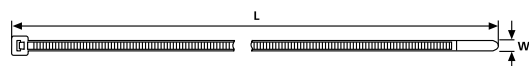


#### Product Selection

| Article No. | Part No.   | Type  | Min. Tensile Strength | Length (L) |         | Max. Ø Bundle |         | Width (W) |        | Color | Pkg. Qty. |
|-------------|------------|-------|-----------------------|------------|---------|---------------|---------|-----------|--------|-------|-----------|
|             |            |       | lbs. (N)              | in.        | (mm)    | in.           | (mm)    | in.       | (mm)   |       |           |
| 111-01900   | T18R2HALC2 | T18R  | 14 lbs (80)           | 4"         | (100)   | .87"          | (22)    | .10"      | (2.45) | Red   | 100       |
| 111-01902   | T18R2HALM4 | T18R  | 14 lbs (80)           | 4"         | (100)   | .87"          | (22)    | .10"      | (2.45) | Red   | 1000      |
| 111-04895   | T50R2HALC2 | T50R  | 40 lbs (177.9)        | 8.0"       | (203.2) | 1.75"         | (44.45) | .176"     | (4.5)  | Red   | 100       |
| 111-04897   | T50R2HALM4 | T50R  | 40 lbs (177.9)        | 8.0"       | (203.2) | 1.75"         | (44.45) | .176"     | (4.5)  | Red   | 1000      |
| 111-01332   | 111-01332  | T120R | 80 lbs (355.9)        | 15.5"      | (394.4) | 4.0"          | (101.6) | .31"      | (7.8)  | Red   | 50        |

Note: Halar ties are also available in natural color. Contact HellermannTyton for availability. Halar is a registered trademark of Solvay S.A. Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

### UL Rated Cable Ties



| Material Data         |                                                 |
|-----------------------|-------------------------------------------------|
| Material              | Polyamide 6.6 (PA66)                            |
| Operating Temperature | -40 °F to +185 °F (-40 °C to +85 °C) continuous |
| Flammability          | UL94 V2                                         |



#### Product Selection

| Article No. | Part No.  | Type | Min. Tensile Strength | Length (L) |       | Max. Ø Bundle |       | Width (W) |       | Color   | Pkg. Qty. |
|-------------|-----------|------|-----------------------|------------|-------|---------------|-------|-----------|-------|---------|-----------|
|             |           |      | lbs. (N)              | in.        | (mm)  | in.           | (mm)  | in.       | (mm)  |         |           |
| 111-00508   | T18R9C2UL | T18R | 18 lbs (80)           | 4"         | (100) | .86"          | (22)  | .10"      | (2.5) | Natural | 100       |
| 111-00509   | T18R9M4UL | T18R | 18 lbs (80)           | 4"         | (100) | .86"          | (22)  | .10"      | (2.5) | Natural | 1000      |
| 111-00510   | T18R2C2UL | T18R | 18 lbs (80)           | 4"         | (100) | .86"          | (22)  | .10"      | (2.5) | Red     | 100       |
| 111-00511   | T18R2M4UL | T18R | 18 lbs (80)           | 4"         | (100) | .86"          | (22)  | .10"      | (2.5) | Red     | 1000      |
| 111-00512   | T50R9C2UL | T50R | 50 lbs (225)          | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) | Natural | 100       |
| 111-00513   | T50R9M4UL | T50R | 50 lbs (225)          | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) | Natural | 1000      |
| 111-00514   | T50R2C2UL | T50R | 50 lbs (225)          | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) | Red     | 100       |
| 111-00515   | T50R2M4UL | T50R | 50 lbs (225)          | 7.9"       | (200) | 1.97"         | (50)  | .18"      | (4.6) | Red     | 1000      |
| 111-00516   | T50I9C2UL | T50I | 50 lbs (225)          | 11.8"      | (300) | 3.35"         | (85)  | .18"      | (4.6) | Natural | 100       |
| 111-00517   | T50I9M4UL | T50I | 50 lbs (225)          | 11.8"      | (300) | 3.35"         | (85)  | .18"      | (4.6) | Natural | 1000      |
| 111-00518   | T50I2C2UL | T50I | 50 lbs (225)          | 11.8"      | (300) | 3.35"         | (85)  | .18"      | (4.6) | Red     | 100       |
| 111-00519   | T50I2M4UL | T50I | 50 lbs (225)          | 11.8"      | (300) | 3.35"         | (85)  | .18"      | (4.6) | Red     | 1000      |
| 111-00520   | T50L9C2UL | T50L | 50 lbs (225)          | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) | Natural | 100       |
| 111-00521   | T50L9M4UL | T50L | 50 lbs (225)          | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) | Natural | 1000      |
| 111-00522   | T50L2C2UL | T50L | 50 lbs (225)          | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) | Red     | 100       |
| 111-00523   | T50L2M4UL | T50L | 50 lbs (225)          | 15.35"     | (390) | 4.33"         | (110) | .18"      | (4.6) | Red     | 1000      |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.



## Metal Content Tie

HellermannTyton's Metal Content Tie is designed for the food and beverage processing industries to meet the safety standards set by Hazard Analysis and Critical Control Points (HACCP) to minimize the risk of contamination. The Metal Content Tie is a nylon based tie with metal content dispersed throughout the head and strap, allowing the tie to be easily identifiable by metal detectors and X-ray inspections. It is ideally suited for the management of cables and tubing in processing and packaging areas. The plastic tie can be found by metal detectors and identified in food and other products that have accidentally been contaminated either through human error or loose, cut-off sections.

### Product Features

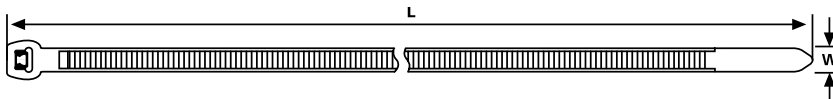
- Metal content dispersed throughout the head and strap ensures identification by metal detectors and X-ray machines.
- Industry standard blue color assists with visual detection and greatly reduces the risk of contamination.
- Three different sizes and two tensile strengths.



### Material Data

|                       |                                                        |
|-----------------------|--------------------------------------------------------|
| Material              | <b>Polyamide 6.6 with metal particles (PA66MP)</b>     |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C) continuous</b> |

RoHS



| Product Selection |                  | Type   | Min. Tensile Strength |       | Length (L) |       | Width (W) |       | Color | Pkg. Qty. |
|-------------------|------------------|--------|-----------------------|-------|------------|-------|-----------|-------|-------|-----------|
| Article No.       | Part No.         |        | lbs.                  | (N)   | in.        | (mm)  | in.       | (mm)  |       |           |
| 111-00829         | <b>111-00829</b> | MCT30R | 30 lbs.               | (135) | 5.91"      | (150) | .14"      | (3.5) | Blue  | 100       |
| 111-00830         | <b>111-00830</b> | MCT50R | 50 lbs.               | (225) | 7.87"      | (200) | .18"      | (4.6) | Blue  | 100       |
| 111-00831         | <b>111-00831</b> | MCT50L | 50 lbs.               | (225) | 15.35"     | (390) | .18"      | (4.6) | Blue  | 100       |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Stainless Steel Cable Ties

HellermannTyton's stainless steel ties are designed to secure hoses, cables, poles, pipes, and more when harsh environmental conditions may adversely affect the bundling application. Used where corrosion, vibration, weathering, radiation, and temperature extremes are a concern, HellermannTyton's stainless steel ties can be used in virtually any indoor, outdoor, and underground application.

### MK9SST Stainless Steel Cable Tie Installation Tool

| Product Selection |               |        | Description                                                                                                                                                                                                                                                                                             | Cable Tie Series                              | Pkg. Qty. |
|-------------------|---------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------|
| Article No.       | Part No.      | Type   |                                                                                                                                                                                                                                                                                                         |                                               |           |
| 110-95000         | <b>MK9SST</b> | MK9SST | Adapted for use with stainless steel ties, the MK9 Stainless Steel tool retains the same design features as the MK9 series. The MK9SST accommodates all HellermannTyton stainless steel ties. Comes standard with padded foam grips for comfort and control and a hook for hanging on a belt or tether. | All MBT Series for both 304 and 316 materials | 1         |

### 304 Material

Grade 304 material is commonly used for stainless steel bundling applications and suits most general purpose requirements. It features the ability to withstand most environmental conditions, particularly in applications where vibration, general weathering, radiation and temperature extremes are a concern.

- Self locking, ball bearing mechanism for quick and easy installation, either by hand or by tensioning tool
- Fully enclosed head does not allow dirt or grit to interfere with locking mechanism
- High tensile strength option for added strength and safety on heavy duty applications



HellermannTyton's MK9SST tool is durable and lightweight, offering superior stainless steel cable tie installation.

| Material Data         |                                         | RoHS |
|-----------------------|-----------------------------------------|------|
| Material              | Stainless Steel Type SS304 (SS304)      |      |
| Operating Temperature | -112 °F to +1000 °F (-80 °C to +538 °C) |      |

| Product Selection                   |                 |         | Min. Tensile Strength | Length (L)  | Max. Ø Bundle | Width (W)  | Pkg. Qty. |
|-------------------------------------|-----------------|---------|-----------------------|-------------|---------------|------------|-----------|
| Article No.                         | Part No.        | Type    |                       |             |               |            |           |
| <b>200 lb. Stainless Steel Ties</b> |                 |         | lbs. (N)              | in. (mm)    | in. (mm)      | in. (mm)   |           |
| 111-93058                           | <b>MBT5S-S</b>  | MBT5SS  | 200 lbs (900)         | 5.0" (127)  | 1" (25)       | .18" (4.6) | 100       |
| 111-93088                           | <b>MBT8S-S</b>  | MBT8SS  | 200 lbs (900)         | 7.9" (201)  | 2" (50)       | .18" (4.6) | 100       |
| 111-93148                           | <b>MBT14S-S</b> | MBT14SS | 200 lbs (900)         | 14.3" (362) | 4" (102)      | .18" (4.6) | 100       |
| 111-93208                           | <b>MBT20S-S</b> | MBT20SS | 200 lbs (900)         | 20.5" (521) | 6" (152)      | .18" (4.6) | 100       |
| 111-93278                           | <b>MBT27S-S</b> | MBT27SS | 200 lbs (900)         | 26.8" (681) | 8" (203)      | .18" (4.6) | 100       |
| 111-93338                           | <b>MBT33S-S</b> | MBT33SS | 200 lbs (900)         | 33" (838)   | 10" (254)     | .18" (4.6) | 100       |
| <b>450 lb. Stainless Steel Ties</b> |                 |         | lbs. (N)              | in. (mm)    | in. (mm)      | in. (mm)   |           |
| 111-94088                           | <b>MBT8H-S</b>  | MBT8HS  | 450 lbs (2000)        | 7.9" (201)  | 2" (50)       | .31" (7.9) | 50        |
| 111-94148                           | <b>MBT14H-S</b> | MBT14HS | 450 lbs (2000)        | 14.3" (362) | 4" (102)      | .31" (7.9) | 50        |
| 111-94208                           | <b>MBT20H-S</b> | MBT20HS | 450 lbs (2000)        | 20.5" (521) | 6" (152)      | .31" (7.9) | 50        |
| 111-94278                           | <b>MBT27H-S</b> | MBT27HS | 450 lbs (2000)        | 26.8" (681) | 8" (203)      | .31" (7.9) | 50        |
| 111-94338                           | <b>MBT33H-S</b> | MBT33HS | 450 lbs (2000)        | 33" (838)   | 10" (254)     | .31" (7.9) | 50        |

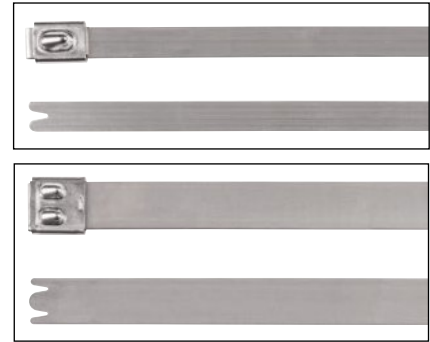
Installation tools for the above cable ties - MK9SST. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes. Stainless steel ties and materials should be tested thoroughly under end use conditions to determine suitability for the application.

## Stainless Steel Cable Ties *continued*

### 316 Material

Grade 316 material is highly resistant to corrosion and widely used in marine environments where chemicals, salts, acids, and temperature extremes may affect the bundling application. MBT stainless steel ties in 316 steel material are also available with a polyester protective coating. This coating creates a barrier and protectant from chemical reactions of dissimilar metals.

- Self locking, ball bearing mechanism for quick and easy installation, either by hand or by tensioning tool
- Fully enclosed head does not allow dirt or grit to interfere with locking mechanism
- High tensile strength option available for added strength and safety on heavy duty applications



Stainless Steel Cable Ties

#### Material Data

|                       |                                         |
|-----------------------|-----------------------------------------|
| Material              | Stainless Steel Type SS316 (SS316)      |
| Operating Temperature | -112 °F to +1000 °F (-80 °C to +538 °C) |



#### Product Selection

| Product Selection            |          |          | Min. Tensile Strength | Length (L)   | Max. Ø Bundle | Width (W)  |          | Pkg. Qty. |
|------------------------------|----------|----------|-----------------------|--------------|---------------|------------|----------|-----------|
| Article No.                  | Part No. | Type     |                       |              |               | lbs. (N)   | in. (mm) |           |
| 200 lb. Stainless Steel Ties |          |          |                       |              |               |            |          |           |
| 111-93059                    | MBT5S    | MBT5S    | 200 lbs (900)         | 5.0" (127)   | 1.0" (25.4)   | .18" (4.6) |          | 100       |
| 111-93089                    | MBT8S    | MBT8S    | 200 lbs (900)         | 7.9" (201)   | 2.0" (50)     | .18" (4.6) |          | 100       |
| 111-93149                    | MBT14S   | MBT14S   | 200 lbs (900)         | 14.3" (362)  | 4.0" (102)    | .18" (4.6) |          | 100       |
| 111-93209                    | MBT20S   | MBT20S   | 200 lbs (900)         | 20.5" (521)  | 6.0" (152)    | .18" (4.6) |          | 100       |
| 111-93279                    | MBT27S   | MBT27S   | 200 lbs (900)         | 26.8" (681)  | 8.0" (203)    | .18" (4.6) |          | 100       |
| 111-93339                    | MBT33S   | MBT33S   | 200 lbs (900)         | 33.0" (838)  | 10.0" (254)   | .18" (4.6) |          | 100       |
| 450 lb. Stainless Steel Ties |          |          |                       |              |               |            |          |           |
| 111-94089                    | MBT8H    | MBT8H    | 450 lbs (2000)        | 7.9" (201)   | 2.0" (50.8)   | .31" (7.9) |          | 50        |
| 111-94149                    | MBT14H   | MBT14H   | 450 lbs (2000)        | 14.3" (362)  | 4.0" (102)    | .31" (7.9) |          | 50        |
| 111-94209                    | MBT20H   | MBT20H   | 450 lbs (2000)        | 20.5" (521)  | 6.0" (152)    | .31" (7.9) |          | 50        |
| 111-94279                    | MBT27H   | MBT27H   | 450 lbs (2000)        | 26.8" (681)  | 8.0" (203)    | .31" (7.9) |          | 50        |
| 111-94339                    | MBT33H   | MBT33H   | 450 lbs (2000)        | 33.0" (838)  | 10.0" (254)   | .31" (7.9) |          | 50        |
| 607 lb. Stainless Steel Ties |          |          |                       |              |               |            |          |           |
| 111-95148                    | MBT14XHS | MBT14XHS | 607 lbs (2700)        | 14.3" (362)  | 4.0" (102)    | .5" (12.3) |          | 50        |
| 111-95208                    | MBT20XHS | MBT20XHS | 607 lbs (2700)        | 20.5" (521)  | 6.0" (152)    | .5" (12.3) |          | 50        |
| 111-95278                    | MBT27XHS | MBT27XHS | 607 lbs (2700)        | 26.8" (681)  | 8.0" (203)    | .5" (12.3) |          | 50        |
| 111-95338                    | MBT33XHS | MBT33XHS | 607 lbs (2700)        | 33.0" (838)  | 10.0" (254)   | .5" (12.3) |          | 50        |
| 111-95149                    | MBT14XH  | MBT14XH  | 607 lbs (2700)        | 14.3" (362)  | 4.0" (102)    | .5" (12.3) |          | 50        |
| 111-95209                    | MBT20XH  | MBT20XH  | 607 lbs (2700)        | 20.5" (521)  | 6.0" (152)    | .5" (12.3) |          | 50        |
| 111-95279                    | MBT27XH  | MBT27XH  | 607 lbs (2700)        | 26.8" (681)  | 8.0" (203)    | .5" (12.3) |          | 50        |
| 111-95339                    | MBT33XH  | MBT33XH  | 607 lbs (2700)        | 33.0" (838)  | 10.0" (254)   | .5" (12.3) |          | 50        |
| 922 lb. Stainless Steel Ties |          |          |                       |              |               |            |          |           |
| 111-01301                    | MBT14UH  | MBT14UH  | 922 lbs (4100)        | 14.3" (362)  | 4.0" (102)    | .6" (16.0) |          | 50        |
| 111-01302                    | MBT20UH  | MBT20UH  | 922 lbs (4100)        | 20.5" (521)  | 6.0" (152)    | .6" (16.0) |          | 50        |
| 111-01303                    | MBT27UH  | MBT27UH  | 922 lbs (4100)        | 26.8" (681)  | 8.0" (203)    | .6" (16.0) |          | 50        |
| 111-01304                    | MBT33UH  | MBT33UH  | 922 lbs (4100)        | 33.0" (838)  | 10.0" (254)   | .6" (16.0) |          | 50        |
| 111-01305                    | MBT43UH  | MBT43UH  | 922 lbs (4100)        | 43.0" (1092) | 13.0" (330)   | .6" (16.0) |          | 25        |
| 111-01306                    | MBT49UH  | MBT49UH  | 922 lbs (4100)        | 49.0" (1245) | 15.0" (380)   | .6" (16.0) |          | 25        |

Installation tools for the above cable ties - MK9SST. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes. Stainless steel ties and materials should be tested thoroughly under end use conditions to determine suitability for the application.

## Outside Serrated Cable Ties

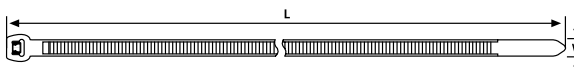
The outside serrated cable ties are for specific applications where thin walled or soft insulation is used (such as in aircraft, trains, etc.), and for applications that are very sensitive to the amount of force applied to the cable.



Outside serrated cable ties are also available in natural. Contact HellermannTyton for more information.

### Material Data

|                       |                                                     |
|-----------------------|-----------------------------------------------------|
| Material              | Polyamide 6.6 heat stabilized (PA66HS)              |
| Operating Temperature | -40 °F to +221 °F<br>(-40 °C to +105 °C) continuous |
| Flammability          | UL94 V2                                             |



### Product Selection

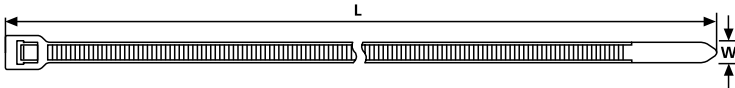
| Article No. | Part No.         | Type   | Min. Tensile Strength |       | Length (L) |       | Max. Ø Bundle |       | Width (W) |       | Color | Pkg. Qty. |
|-------------|------------------|--------|-----------------------|-------|------------|-------|---------------|-------|-----------|-------|-------|-----------|
|             |                  |        | lbs.                  | (N)   | in.        | (mm)  | in.           | (mm)  | in.       | (mm)  |       |           |
| 118-04700   | <b>118-04700</b> | T18ROS | 18 lbs                | (80)  | 3.94"      | (100) | .79"          | (20)  | .10"      | (2.5) | Black | 100       |
| 118-04800   | <b>118-04800</b> | T30ROS | 30 lbs                | (135) | 5.71"      | (145) | 1.34"         | (35)  | .13"      | (3.4) | Black | 100       |
| 118-04900   | <b>118-04900</b> | T30LOS | 30 lbs                | (135) | 7.87"      | (200) | 2.0"          | (50)  | .13"      | (3.4) | Black | 100       |
| 118-00110   | <b>118-00110</b> | T50SOS | 50 lbs                | (225) | 6.0"       | (150) | 1.36"         | (35)  | .18"      | (4.6) | Black | 1000      |
| 118-00111   | <b>118-00111</b> | T50ROS | 50 lbs                | (225) | 8"         | (200) | 1.95"         | (50)  | .18"      | (4.6) | Black | 1000      |
| 118-05900   | <b>118-05900</b> | T50LOS | 50 lbs                | (225) | 15"        | (384) | 4.29"         | (110) | .18"      | (4.6) | Black | 100       |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

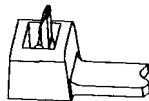
## Releasable Ties

The extended pawl allows for simple and quick release of the ties. Perfect for prototype construction and service requiring the addition of wires on existing harnesses.

| Material Data         |                                                            |
|-----------------------|------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                                |
| Operating Temperature | <b>-40 °F to +185 °F<br/>(-40 °C to +85 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                             |



RT40R



RT50S and RT50LL



File# E64139

| Product Selection |           |        |                       |       |            |       |               |       |           |       |         |           |
|-------------------|-----------|--------|-----------------------|-------|------------|-------|---------------|-------|-----------|-------|---------|-----------|
| Article No.       | Part No.  | Type   | Min. Tensile Strength |       | Length (L) |       | Max. Ø Bundle |       | Width (W) |       | Color   | Pkg. Qty. |
|                   |           |        | lbs. (N)              |       | in. (mm)   |       | in. (mm)      |       | in. (mm)  |       |         |           |
| RT40R             |           |        |                       |       |            |       |               |       |           |       |         |           |
| 115-06219         | RT40R9C2  | RT40R  | 40 lbs                | (178) | 8.46"      | (215) | 2.0"          | (51)  | .16"      | (4.0) | Natural | 100       |
| 115-06204         | RT40R9M4  | RT40R  | 40 lbs                | (178) | 8.46"      | (215) | 2.0"          | (51)  | .16"      | (4.0) |         | 1000      |
| 115-06200         | RT40R0C2  | RT40R  | 40 lbs                | (178) | 8.46"      | (215) | 2.0"          | (51)  | .16"      | (4.0) | Black   | 100       |
| 115-06202         | RT40R0M4  | RT40R  | 40 lbs                | (178) | 8.46"      | (215) | 2.0"          | (51)  | .16"      | (4.0) |         | 1000      |
| RT50S             |           |        |                       |       |            |       |               |       |           |       |         |           |
| 115-06319         | RT50S9C2  | RT50S  | 50 lbs                | (225) | 6.5"       | (165) | 1.38"         | (35)  | .18"      | (4.6) | Natural | 100       |
| 115-06304         | RT50S9M4  | RT50S  | 50 lbs                | (225) | 6.5"       | (165) | 1.38"         | (35)  | .18"      | (4.6) |         | 1000      |
| 115-06300         | RT50S0C2  | RT50S  | 50 lbs                | (225) | 6.5"       | (165) | 1.38"         | (35)  | .18"      | (4.6) | Black   | 100       |
| 115-00035         | RT50S0M4  | RT50S  | 50 lbs                | (225) | 6.5"       | (165) | 1.38"         | (35)  | .18"      | (4.6) |         | 1000      |
| RT50LL            |           |        |                       |       |            |       |               |       |           |       |         |           |
| 115-06102         | RT50LL9C2 | RT50LL | 50 lbs                | (225) | 15"        | (380) | 3.98"         | (101) | .18"      | (4.6) | Natural | 100       |
| 115-06104         | RT50LL9M4 | RT50LL | 50 lbs                | (225) | 15"        | (380) | 3.98"         | (101) | .18"      | (4.6) |         | 1000      |
| 115-00039         | RT50LL0C2 | RT50LL | 50 lbs                | (225) | 15"        | (380) | 3.98"         | (101) | .18"      | (4.6) | Black   | 100       |
| 115-06101         | RT50LL0M4 | RT50LL | 50 lbs                | (225) | 15"        | (380) | 3.98"         | (101) | .18"      | (4.6) |         | 1000      |

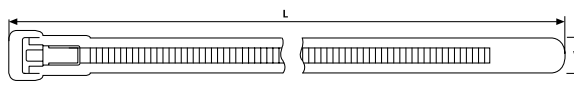
Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## REL Releasable Ties

for use in applications where there is the need to repeatedly open and close the tie.



| Material Data         |                                                        | RoHS |
|-----------------------|--------------------------------------------------------|------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                            |      |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C) continuous</b> |      |
| Flammability          | <b>UL94 V2</b>                                         |      |

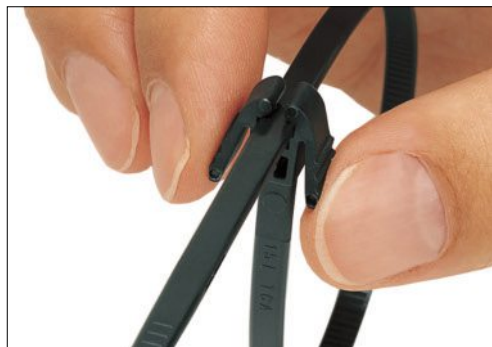


| Product Selection |           |        |                       |       |            |       |               |      |           |       |         |           |
|-------------------|-----------|--------|-----------------------|-------|------------|-------|---------------|------|-----------|-------|---------|-----------|
| Article No.       | Part No.  | Type   | Min. Tensile Strength |       | Length (L) |       | Max. Ø Bundle |      | Width (W) |       | Color   | Pkg. Qty. |
|                   |           |        | lbs.                  | (N)   | in.        | (mm)  | in.           | (mm) | in.       | (mm)  |         |           |
| REL50R            |           |        |                       |       |            |       |               |      |           |       |         |           |
| 115-00503         | REL50R9C2 | REL50R | 50 lbs                | (225) | 5.5"       | (140) | 1.38"         | (35) | .29"      | (7.4) | Natural | 100       |
| 115-00505         | REL50R9L4 | REL50R | 50 lbs                | (225) | 5.5"       | (140) | 1.38"         | (35) | .29"      | (7.4) |         | 200       |
| 115-00500         | REL50R0C2 | REL50R | 50 lbs                | (225) | 5.5"       | (140) | 1.38"         | (35) | .29"      | (7.4) | Black   | 100       |
| 115-00502         | REL50R0L4 | REL50R | 50 lbs                | (225) | 5.5"       | (140) | 1.38"         | (35) | .29"      | (7.4) |         | 200       |
| REL50L            |           |        |                       |       |            |       |               |      |           |       |         |           |
| 115-00605         | REL50L9C2 | REL50L | 50 lbs                | (225) | 9.84"      | (250) | 2.76"         | (70) | .29"      | (7.4) | Natural | 100       |
| 115-00607         | REL50L9L4 | REL50L | 50 lbs                | (225) | 9.84"      | (250) | 2.76"         | (70) | .29"      | (7.4) |         | 200       |
| 115-00600         | REL50L0C2 | REL50L | 50 lbs                | (225) | 9.84"      | (250) | 2.76"         | (70) | .29"      | (7.4) | Black   | 100       |
| 115-00602         | REL50L0L4 | REL50L | 50 lbs                | (225) | 9.84"      | (250) | 2.76"         | (70) | .29"      | (7.4) |         | 200       |

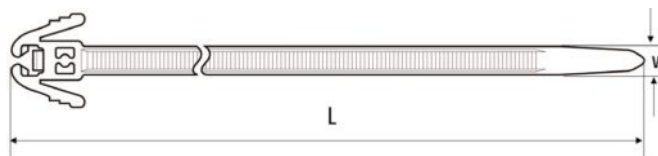
Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Pinch Releasable Ties

Patented pinch release mechanism for easy handling allows tie to be released using one hand.



| Material Data         |                                                        | RoHS |
|-----------------------|--------------------------------------------------------|------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                            |      |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C) continuous</b> |      |
| Flammability          | <b>UL94 V2</b>                                         |      |



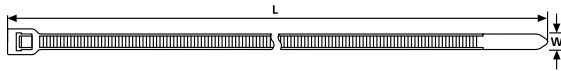
| Product Selection |                    |        |                       |       |            |       |               |      |       |
|-------------------|--------------------|--------|-----------------------|-------|------------|-------|---------------|------|-------|
| Article No.       | Part No.           | Type   | Min. Tensile Strength |       | Length (L) |       | Max. Ø Bundle |      | Color |
|                   |                    |        | lbs.                  | (N)   | in.        | (mm)  | in.           | (mm) |       |
| 115-40200         | <b>REZ200.NB3P</b> | REZ200 | 30 lbs                | (135) | 7.88"      | (200) | 1.97"         | (50) | Black |
| 115-40300         | <b>REZ300.NB3P</b> | REZ300 | 30 lbs                | (135) | 12.00"     | (305) | 3.15"         | (80) | Black |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Heavy Duty Releasable Cable Ties

The RT150 and RT250 heavy duty releasable cable ties feature an extended pawl which allows for simple and quick release of the ties.

### RT150 Heavy Duty Releasable Cable Ties



#### Material Data

|                       |                                                            |
|-----------------------|------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                                |
| Operating Temperature | <b>-40 °F to +185 °F<br/>(-40 °C to +85 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                             |



#### Product Selection

| Article No. | Part No.           | Type     | Min. Tensile Strength |       | Length (L) |       | Max. Ø Bundle |       | Width (W) |       | Color | Pkg. Qty. |
|-------------|--------------------|----------|-----------------------|-------|------------|-------|---------------|-------|-----------|-------|-------|-----------|
|             |                    |          | lbs.                  | (N)   | in.        | (mm)  | in.           | (mm)  | in.       | (mm)  |       |           |
| 115-00036   | <b>RT150REP0X2</b> | RT150REP | 175 lbs               | (780) | 15.35"     | (390) | 4"            | (105) | .346"     | (8.8) | Black | 25        |
| 115-00037   | <b>RT150MEP0X2</b> | RT150MEP | 175 lbs               | (780) | 21.06"     | (535) | 5.90"         | (150) | .346"     | (8.8) | Black | 25        |
| 115-00038   | <b>RT150LEP0X2</b> | RT150LEP | 175 lbs               | (780) | 32.28"     | (820) | 9.65"         | (245) | .346"     | (8.8) | Black | 25        |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

### RT250 Heavy Duty Releasable Cable Ties



#### Material Data

|                       |                                                            |
|-----------------------|------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                                |
| Operating Temperature | <b>-40 °F to +185 °F<br/>(-40 °C to +85 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                             |



File# E64139

#### Product Selection

| Product Selection |            |         | Min. Tensile Strength |        | Length (L) |          | Max. Ø Bundle |         | Width (W) |         | Color   | Pkg. Qty. |
|-------------------|------------|---------|-----------------------|--------|------------|----------|---------------|---------|-----------|---------|---------|-----------|
| Article No.       | Part No.   | Type    | lbs.                  | (N)    | in.        | (mm)     | in.           | (mm)    | in.       | (mm)    |         |           |
| RT250S            |            |         |                       |        |            |          |               |         |           |         |         |           |
| 131-75819         | RT250S9X2  | RT250S  | 250 lbs               | (1115) | 9.05"      | (230)    | 2.17"         | (55)    | .49"      | (12.5 ) | Natural | 25        |
| 115-41800         | RT250S0X2  | RT250S  | 250 lbs               | (1115) | 9.05"      | (230)    | 2.17"         | (55)    | .49"      | (12.5 ) | Black   | 25        |
| RT250R            |            |         |                       |        |            |          |               |         |           |         |         |           |
| 131-75019         | RT250R9X2  | RT250R  | 250 lbs               | (1115) | 20.47"     | (520)    | 5.71"         | (145)   | .49"      | (12.5)  | Natural | 25        |
| 115-41300         | RT250R0X2  | RT250R  | 250 lbs               | (1115) | 20.47"     | (520)    | 5.71"         | (145)   | .49"      | (12.5 ) | Black   | 25        |
| RT250M            |            |         |                       |        |            |          |               |         |           |         |         |           |
| 131-75619         | RT250M9X2  | RT250M  | 250 lbs               | (1115) | 22.24"     | (565)    | 5.90"         | (150)   | .49"      | (12.5 ) | Natural | 25        |
| 131-75610         | RT250M0X2  | RT250M  | 250 lbs               | (1115) | 22.24"     | (565)    | 5.90"         | (150)   | .49"      | (12.5 ) | Black   | 25        |
| RT250I            |            |         |                       |        |            |          |               |         |           |         |         |           |
| 131-75219         | RT250I9X2  | RT250I  | 250 lbs               | (1115) | 28.54"     | (725)    | 8.00"         | (203)   | .49"      | (12.5 ) | Natural | 25        |
| 115-41401         | RT250I0X2  | RT250I  | 250 lbs               | (1115) | 28.54"     | (725)    | 8.00"         | (203)   | .49"      | (12.5 ) | Black   | 25        |
| RT250L            |            |         |                       |        |            |          |               |         |           |         |         |           |
| 131-75419         | RT250L9X2  | RT250L  | 250 lbs               | (1115) | 34.65"     | (880)    | 10.00"        | (254)   | .49"      | (12.5)  | Natural | 25        |
| 115-41500         | RT250L0X2  | RT250L  | 250 lbs               | (1115) | 34.65"     | (880)    | 10.00"        | (254)   | .49"      | (12.5 ) | Black   | 25        |
| RT250XL           |            |         |                       |        |            |          |               |         |           |         |         |           |
| 131-75519         | RT250XL9X2 | RT250XL | 250 lbs               | (1115) | 40"        | (1016.0) | 12"           | (304.8) | .49"      | (12.5 ) | Natural | 25        |
| 131-75510         | RT250XL0X2 | RT250XL | 250 lbs               | (1115) | 40"        | (1016.0) | 12"           | (304.8) | .49"      | (12.5 ) | Black   | 25        |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Speedy Tie

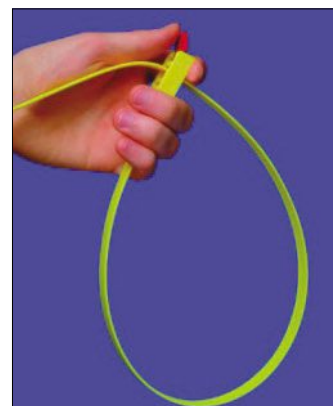
An entirely new design in cable management, the Speedy Tie is a fully re-usable, easily releasable lashing tie. The Speedy Tie's unique design allows it to be released with one hand.

- Just one click to tie and untie
- Fully re-usable
- Once applied, the tail can be neatly tucked away for added safety
- Highly visible yellow color — also available in black, impact modified material
- Versatile design allows use for multiple applications

The Speedy Tie is a versatile tool for countless applications, including:

- In plant transfer of products
- Temporary and secure bundling
- Packaging

| Material Data         |                                                            |
|-----------------------|------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                                |
| Color                 | <b>Yellow , Red</b>                                        |
| Operating Temperature | <b>-40 °F to +185 °F<br/>(-40 °C to +85 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                             |



*Speedy Tie - Quick and easy.*

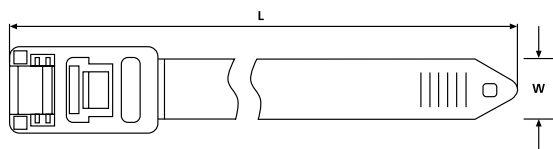
### Packaging Configurations

#### Distributor Packs

- Printed bag with a hang hole
- 60 SpeedyTies - 12 bags of 5

#### OEM Packs

- Plain bag (no hang hole)
- Standard box
- 300 SpeedyTies - 12 bags of 25

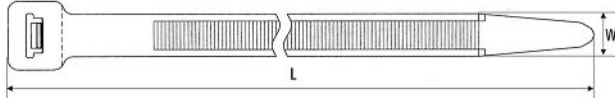


| Product Selection |                       |          | Description                                  | Min. Tensile Strength | Length (L)   | Max. Ø Bundle | Width (W) | Pkg. Qty. | Carton Qty. |
|-------------------|-----------------------|----------|----------------------------------------------|-----------------------|--------------|---------------|-----------|-----------|-------------|
| Article No.       | Part No.              | Type     |                                              | lbs. (N)              | in. (mm)     | in. (mm)      | in. (mm)  |           |             |
| 115-00001         | <b>RTT750HR.NX900</b> | RTT750HR | Distributor Pack - order in carton qty. only | 200 lbs (888)         | 29.52" (750) | 8.27" (210)   | .51" (13) | 5         | 60          |
| 115-00000         | <b>RTT750HR.NX1P</b>  | RTT750HR | OEM Pack - order in carton qty. only         | 200 lbs (888)         | 29.52" (750) | 8.27" (210)   | .51" (13) | 25        | 300         |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## RT255 Heavy Duty Releasable Ties

| Material Data         |                                                                          |
|-----------------------|--------------------------------------------------------------------------|
| Material              | Polyamide 6.6 impact modified, Heat Stabilized, UV Resistant (PA66HIRHS) |
| Operating Temperature | -40 °F to +230 °F (-40 °C to +110 °C)<br>continuous                      |
| Flammability          | UL94 HB                                                                  |



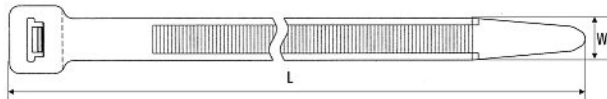
| Product Selection |              |        | Min. Tensile Strength |        | Length (L) |       | Max. Ø Bundle |       | Width (W) |        | Color | Pkg. Qty. |
|-------------------|--------------|--------|-----------------------|--------|------------|-------|---------------|-------|-----------|--------|-------|-----------|
| Article No.       | Part No.     | Type   | lbs.                  | (N)    | in.        | (mm)  | in.           | (mm)  | in.       | (mm)   |       |           |
| 115-01200         | RT255S0HIRX2 | RT255S | 250 lbs               | (1112) | 8.86"      | (225) | 2.16"         | (55)  | .49"      | (12.5) | Black | 25        |
| 115-01300         | RT255R0HIRX2 | RT255R | 250 lbs               | (1112) | 20.28"     | (515) | 5.71"         | (145) | .49"      | (12.5) | Black | 25        |
| 115-01400         | RT255M0HIRX2 | RT255M | 250 lbs               | (1112) | 22.05"     | (560) | 6.30"         | (160) | .49"      | (12.5) | Black | 25        |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## SR255 Heavy Duty Sub-Releasable Ties

The SR255 series releasable heavy duty cable tie offers a release that is lower than the head of the cable tie, facilitating easy installation with the use of a HellermannTyton cable tie tool.

| Material Data         |                                                                          |
|-----------------------|--------------------------------------------------------------------------|
| Material              | Polyamide 6.6 impact modified, Heat Stabilized, UV Resistant (PA66HIRHS) |
| Operating Temperature | -40 °F to +230 °F (-40 °C to +110 °C)<br>continuous                      |
| Flammability          | UL94 HB                                                                  |

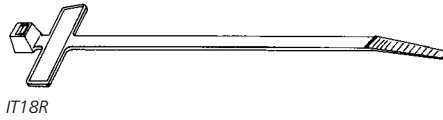


| Product Selection |                 |        | Min. Tensile Strength |        | Length (L) |       | Max. Ø Bundle |       | Width (W) |        | Color | Pkg. Qty. |
|-------------------|-----------------|--------|-----------------------|--------|------------|-------|---------------|-------|-----------|--------|-------|-----------|
| Article No.       | Part No.        | Type   | lbs.                  | (N)    | in.        | (mm)  | in.           | (mm)  | in.       | (mm)   |       |           |
| 115-42002         | SR255S0HIHSUVX2 | SR255S | 250 lbs               | (1112) | 8.86"      | (225) | 2.16"         | (50)  | .49"      | (12.5) | Black | 25        |
| 115-42101         | SR255X0HIHSUVX2 | SR255X | 250 lbs               | (1112) | 14"        | (372) | 3.94"         | (100) | .49"      | (12.5) | Black | 25        |

Installation tools - MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Identification Ties

Tie and identify bundles of cable in one operation. Large flat area for imprinting or writing the required information. Hot stamping available, which is subject to minimums and lead times.



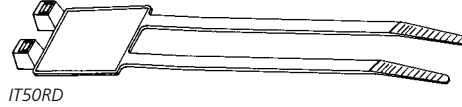
IT18R



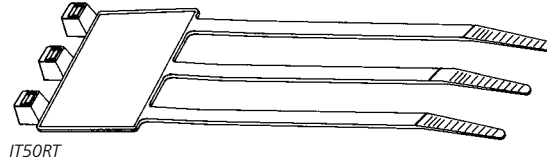
IT18FL



IT50R



IT50RD



IT50RT



IT50L

| Material Data         |                                                 |
|-----------------------|-------------------------------------------------|
| Material              | Polyamide 6.6 (PA66)                            |
| Operating Temperature | -40 °F to +185 °F (-40 °C to +85 °C) continuous |
| Flammability          | UL94 V2                                         |



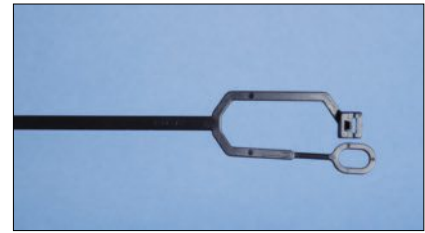
File# E64139

| Product Selection |                                             |        |                     |                       |       |            |       |               |        |           |       |         |           |
|-------------------|---------------------------------------------|--------|---------------------|-----------------------|-------|------------|-------|---------------|--------|-----------|-------|---------|-----------|
| Article No.       | Part No.                                    | Type   | US Gov. Designation | Min. Tensile Strength |       | Length (L) |       | Max. Ø Bundle |        | Width (W) |       | Color   | Pkg. Qty. |
|                   |                                             |        |                     | lbs.                  | (N)   | in.        | (mm)  | in.           | (mm)   | in.       | (mm)  |         |           |
| IT18R             | Marking Pad Size: .98" x .32" (25 x 8)      |        |                     |                       |       |            |       |               |        |           |       |         |           |
| 111-81819         | IT18R9C2                                    | IT18R  | MS3368-5-9E         | 18 lbs                | (80)  | 3.94"      | (100) | .75"          | (22.0) | .09"      | (2.3) | Natural | 100       |
| 111-81808         | IT18R9L4                                    | IT18R  | MS3368-5-9E         | 18 lbs                | (80)  | 3.94"      | (100) | .75"          | (22.0) | .09"      | (2.3) | Natural | 200       |
| 111-81801         | IT18R0C2                                    | IT18R  | *                   | 18 lbs                | (80)  | 3.94"      | (100) | .75"          | (22.0) | .09"      | (2.3) | Black   | 100       |
| 111-81803         | IT18R0L4                                    | IT18R  | *                   | 18 lbs                | (80)  | 3.94"      | (100) | .75"          | (22.0) | .09"      | (2.3) | Black   | 200       |
| IT18FL            | Marking Pad Size: .81" x .35" (20.5 x 9)    |        |                     |                       |       |            |       |               |        |           |       |         |           |
| 111-81919         | IT18FL9C2                                   | IT18FL | —                   | 18 lbs                | (80)  | 4.33"      | (110) | .75"          | (19.0) | .10"      | (2.5) | Natural | 100       |
| 111-81907         | IT18FL9L4                                   | IT18FL | —                   | 18 lbs                | (80)  | 4.33"      | (110) | .75"          | (19.0) | .10"      | (2.5) | Natural | 200       |
| 111-81910         | IT18FL0C2                                   | IT18FL | —                   | 18 lbs                | (80)  | 4.33"      | (110) | .75"          | (19.0) | .10"      | (2.5) | Black   | 100       |
| 111-81903         | IT18FL0L4                                   | IT18FL | —                   | 18 lbs                | (80)  | 4.33"      | (110) | .75"          | (19.0) | .10"      | (2.5) | Black   | 200       |
| IT50R             | Marking Pad Size: 1.10" x .51" (28 x 12.9)  |        |                     |                       |       |            |       |               |        |           |       |         |           |
| 111-85019         | IT50R9C2                                    | IT50R  | MS3368-1-9A         | 50 lbs                | (225) | 7.99"      | (203) | 1.75"         | (44.5) | .18"      | (4.6) | Natural | 100       |
| 111-85020         | IT50R9M4                                    | IT50R  | MS3368-1-9A         | 50 lbs                | (225) | 7.99"      | (203) | 1.75"         | (44.5) | .18"      | (4.6) | Natural | 1000      |
| 111-85011         | IT50R0C2                                    | IT50R  | *                   | 50 lbs                | (225) | 7.99"      | (203) | 1.75"         | (44.5) | .18"      | (4.6) | Black   | 100       |
| 111-85013         | IT50R0M4                                    | IT50R  | *                   | 50 lbs                | (225) | 7.99"      | (203) | 1.75"         | (44.5) | .18"      | (4.6) | Black   | 1000      |
| IT50RD            | Marking Pad Size: 1.14" x 1.04" (29 x 26.3) |        |                     |                       |       |            |       |               |        |           |       |         |           |
| 111-85219         | IT50RD9K2                                   | IT50RD | MS3368-3-9C         | 50 lbs                | (225) | 8.07"      | (205) | 1.73"         | (44.0) | .19"      | (4.7) | Natural | 50        |
| 111-85201         | IT50RD0K2                                   | IT50RD | *                   | 50 lbs                | (225) | 8.07"      | (205) | 1.73"         | (44.0) | .19"      | (4.7) | Black   | 50        |
| IT50RT            | Marking Pad Size: 1.81" x 1.04" (46 x 26.3) |        |                     |                       |       |            |       |               |        |           |       |         |           |
| 111-85119         | IT50RT9K2                                   | IT50RT | MS3368-4-9D         | 50 lbs                | (225) | 8.07"      | (205) | 1.73"         | (44.0) | .19"      | (4.7) | Natural | 50        |
| 111-85100         | IT50RT0K2                                   | IT50RT | *                   | 50 lbs                | (225) | 8.07"      | (205) | 1.73"         | (44.0) | .19"      | (4.7) | Black   | 50        |
| IT50L             | Marking Pad Size: .5" x 2.20" (12.8 x 56)   |        |                     |                       |       |            |       |               |        |           |       |         |           |
| 111-85319         | IT50L9C2                                    | IT50L  | MS3368-2-9A         | 50 lbs                | (225) | 15.35"     | (390) | 3.94"         | (100)  | .19"      | (4.7) | Natural | 100       |
| 111-85306         | IT50L9M4                                    | IT50L  | MS3368-2-9A         | 50 lbs                | (225) | 15.35"     | (390) | 3.94"         | (100)  | .19"      | (4.7) | Natural | 1000      |

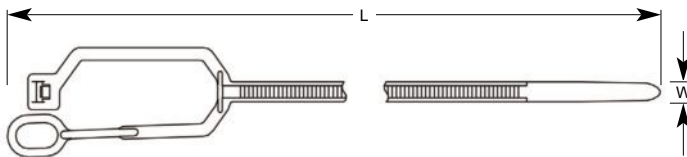
Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes. \* Military black available. Contact HellermannTyton for more information.

## Branch Cable Tie

The branch tie is ideal for wire harness applications where wires "branch" away from the main assembly. The branch tie reduces wire harness assembly time by eliminating the need to use electrical tape. After the tie is placed on the main assembly, the strap is inserted through the oval opening and then through the cable tie head. Once applied, the branch tie holds the branch in its proper position on the wire harness.



| Material Data         |                                                            | RoHS |
|-----------------------|------------------------------------------------------------|------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                                |      |
| Operating Temperature | <b>-40 °F to +185 °F<br/>(-40 °C to +85 °C) continuous</b> |      |
| Flammability          | <b>UL94 V2</b>                                             |      |



| Product Selection |           |       |               |           |                 |           |                       |       |            |       |           |       |       |           |
|-------------------|-----------|-------|---------------|-----------|-----------------|-----------|-----------------------|-------|------------|-------|-----------|-------|-------|-----------|
| Article No.       | Part No.  | Type  | Main Bundle Ø |           | Branch Bundle Ø |           | Min. Tensile Strength |       | Length (L) |       | Width (W) |       | Color | Pkg. Qty. |
|                   |           |       | in.           | (mm)      | in.             | (mm)      | lbs.                  | (N)   | in.        | (mm)  | in.       | (mm)  |       |           |
| 115-00042         | 115-00042 | YT200 | .63" – 1.57"  | (16 - 40) | .59" – 1.18"    | (15 - 30) | 33 lbs                | (147) | 7.87"      | (200) | .18"      | (4.7) | Black | 100       |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Kabelrap Bundling System

The patented Kabelrap bundling system offers a very high bundling strength and is particularly resistant to saltwater, oils, greases, and hydraulic fluids. Special hand tool required for installation.

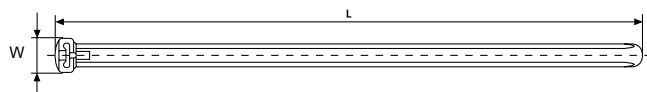


Required Tool - 121-00680



Kabelrap Application

| Material Data         |                                                        | RoHS |
|-----------------------|--------------------------------------------------------|------|
| Material              | <b>Polyamide 6.6 UV-resistant (PA66UV)</b>             |      |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C) continuous</b> |      |
| Flammability          | <b>UL94 V2</b>                                         |      |



| Product Selection |                  |        |                       |       |            |       |               |      |           |      |       |           |
|-------------------|------------------|--------|-----------------------|-------|------------|-------|---------------|------|-----------|------|-------|-----------|
| Article No.       | Part No.         | Type   | Min. Tensile Strength |       | Length (L) |       | Max. Ø Bundle |      | Width (W) |      | Color | Pkg. Qty. |
|                   |                  |        | lbs.                  | (N)   | in.        | (mm)  | in.           | (mm) | in.       | (mm) |       |           |
| 121-63560         | <b>121-63560</b> | KR6/35 | 110 lbs               | (490) | 14"        | (356) | 3.75"         | (93) | .25"      | (6)  | Black | 50        |
| 121-82160         | <b>121-82160</b> | KR8/21 | 175 lbs               | (785) | 8.25"      | (210) | 1.75"         | (47) | .31"      | (8)  | Black | 50        |
| 121-83360         | <b>121-83360</b> | KR8/33 | 175 lbs               | (785) | 13.25"     | (337) | 3.37"         | (86) | .31"      | (8)  | Black | 50        |

Required Installation Tool - 121-00680. Black is the standard color. Natural is available based upon minimums, custom terms and lead times. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

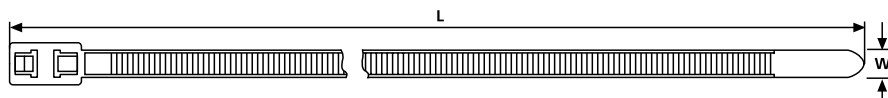
## Double Head Ties

Double head ties create two loops that separate two bundles. They also can be used to secure a bundle to an existing fixing point.

### Material Data

|                       |                                             |
|-----------------------|---------------------------------------------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                 |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C)</b> |
| continuous            |                                             |
| Flammability          | <b>UL94 V2</b>                              |

RoHS



**UL**  
us  
File# E64139

### Product Selection

| Product Selection |            |         | Product Description   |       |            |       |           |       |         |           |
|-------------------|------------|---------|-----------------------|-------|------------|-------|-----------|-------|---------|-----------|
| Article No.       | Part No.   | Type    | Min. Tensile Strength |       | Length (L) |       | Width (W) |       | Color   | Pkg. Qty. |
|                   |            |         | lbs.                  | (N)   | in.        | (mm)  | in.       | (mm)  |         |           |
| T50SDH            |            |         |                       |       |            |       |           |       |         |           |
| 117-00016         | 117-00016  | T50SDH  | 50 lbs                | (225) | 6.26"      | (159) | .19"      | (4.7) | Natural | 100       |
| 117-00017         | 117-00017  | T50SDH  | 50 lbs                | (225) | 6.26"      | (159) | .19"      | (4.7) |         | 1000      |
| 117-00018         | 117-00018  | T50SDH  | 50 lbs                | (225) | 6.26"      | (159) | .19"      | (4.7) | Black   | 100       |
| 117-00019         | 117-00019  | T50SDH  | 50 lbs                | (225) | 6.26"      | (159) | .19"      | (4.7) |         | 1000      |
| T50RDH            |            |         |                       |       |            |       |           |       |         |           |
| 117-05006         | T50RDH9C2  | T50RDH  | 50 lbs                | (225) | 8.25"      | (210) | .19"      | (4.7) | Natural | 100       |
| 117-05008         | T50RDH9M4  | T50RDH  | 50 lbs                | (225) | 8.25"      | (210) | .19"      | (4.7) |         | 1000      |
| 117-05004         | T50RDH0C2  | T50RDH  | 50 lbs                | (225) | 8.25"      | (210) | .19"      | (4.7) | Black   | 100       |
| 117-05005         | T50RDH0M4  | T50RDH  | 50 lbs                | (225) | 8.25"      | (210) | .19"      | (4.7) |         | 1000      |
| T50IDH            |            |         |                       |       |            |       |           |       |         |           |
| 117-05302         | T50IDH9C2  | T50IDH  | 50 lbs                | (225) | 12"        | (305) | .19"      | (4.7) | Natural | 100       |
| 117-05303         | T50IDH9M4  | T50IDH  | 50 lbs                | (225) | 12"        | (305) | .19"      | (4.7) |         | 1000      |
| 117-05362         | T50IDH0C2  | T50IDH  | 50 lbs                | (225) | 12"        | (305) | .19"      | (4.7) | Black   | 100       |
| 117-05300         | T50IDH0M4  | T50IDH  | 50 lbs                | (225) | 12"        | (305) | .19"      | (4.7) |         | 1000      |
| T50LDH            |            |         |                       |       |            |       |           |       |         |           |
| 117-05402         | T50LDH9C2  | T50LDH  | 50 lbs                | (225) | 15.5"      | (395) | .19"      | (4.7) | Natural | 100       |
| 117-05461         | T50LDH9M4  | T50LDH  | 50 lbs                | (225) | 15.5"      | (395) | .19"      | (4.7) |         | 1000      |
| 117-05400         | T50LDH0C2  | T50LDH  | 50 lbs                | (225) | 15.5"      | (395) | .19"      | (4.7) | Black   | 100       |
| 117-05401         | T50LDH0M4  | T50LDH  | 50 lbs                | (225) | 15.5"      | (395) | .19"      | (4.7) |         | 1000      |
| T120RDH           |            |         |                       |       |            |       |           |       |         |           |
| 117-05501         | T120RDH0K2 | T120RDH | 120 lbs               | (535) | 15.7"      | (398) | .29"      | (7.6) | Black   | 50        |
| 117-05500         | T120RDH0H4 | T120RDH | 120 lbs               | (535) | 15.7"      | (398) | .29"      | (7.6) |         | 500       |

Maximum bundle diameter is variable due to double loops. Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Clamp Ties

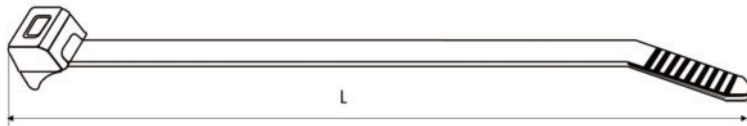
The clamp tie has triangular shaped tabs extending beneath the head, allowing for optimal surface contact and complete circumferential compression to 360 degrees. The clamps are recommended for soft rubber hose applications including fuel, water, and air vacuum lines.



| Material Data         |                                                        |
|-----------------------|--------------------------------------------------------|
| Color                 | <b>Natural</b>                                         |
| Material              | <b>Polyamide 6.6 (PA66)</b>                            |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                         |



| Material Data         |                                                         |
|-----------------------|---------------------------------------------------------|
| Color                 | <b>Black</b>                                            |
| Material              | <b>Polyamide 6.6 heat stabilized (PA66HS)</b>           |
| Operating Temperature | <b>-40 °F to +221 °F (-40 °C to +105 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                          |



File# E64139

File# E64139

| Product Selection |             |        | Min. Tensile Strength | Length (L) | Max. Ø Bundle | Width (W)  | Color   | Pkg. Qty. |
|-------------------|-------------|--------|-----------------------|------------|---------------|------------|---------|-----------|
| Article No.       | Part No.    | Type   |                       |            |               |            |         |           |
|                   |             |        |                       |            |               |            |         |           |
| CTT20R            |             |        |                       |            |               |            |         |           |
| 112-51919         | CTT20R9C2   | CTT20R | 20 lbs (90)           | 4" (100)   | .50" (13)     | .10" (2.5) | Natural | 100       |
| 112-51904         | CTT20R9M4   | CTT20R | 20 lbs (90)           | 4" (100)   | .50" (13)     | .10" (2.5) |         | 1000      |
| 112-51905         | CTT20R0HSC2 | CTT20R | 20 lbs (90)           | 4" (100)   | .50" (13)     | .10" (2.5) | Black   | 100       |
| 112-51960         | CTT20R0HSM4 | CTT20R | 20 lbs (90)           | 4" (100)   | .50" (13)     | .10" (2.5) |         | 1000      |
| CTT60R            |             |        |                       |            |               |            |         |           |
| 112-52104         | CTT60R9C2   | CTT60R | 60 lbs (265)          | 8" (205)   | 1.77" (45)    | .19" (4.7) | Natural | 100       |
| 112-52106         | CTT60R9M4   | CTT60R | 60 lbs (265)          | 8" (205)   | 1.77" (45)    | .19" (4.7) |         | 1000      |
| 112-52112         | CTT60R0HSC2 | CTT60R | 60 lbs (265)          | 8" (205)   | 1.77" (45)    | .19" (4.7) | Black   | 100       |
| 112-52114         | CTT60R0HSM4 | CTT60R | 60 lbs (265)          | 8" (205)   | 1.77" (45)    | .19" (4.7) |         | 1000      |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Dual Clamp Ties

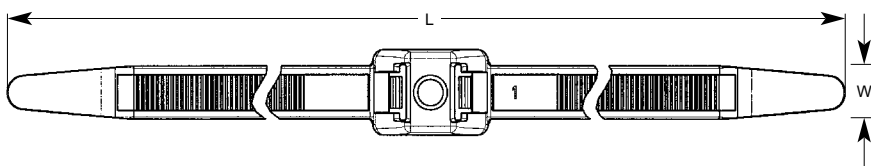
HellermannTyton's dual clamp ties are designed to provide parallel separation between hoses, wires, cables and tubing, protecting them from abrasion. These ties have an optional mounting hole for securing bundles along the chassis of trucks, trailers, and heavy duty equipment. The unique, one-piece design features the dual head centered on the strap.

Available in two lengths, the dual clamp ties accommodate bundles ranging from .25 inches to 2.3 inches. The flexible wide straps minimize pinching of hoses and convoluted tubing. The straps are also releasable.



U.S. Patent Number 5,966,781

| Material Data         |                                                                                 | RoHS |
|-----------------------|---------------------------------------------------------------------------------|------|
| Material              | <b>Polyamide 6.6 impact modified, Heat Stabilized, UV Resistant (PA66HIRHS)</b> |      |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                         |      |
| Flammability          | <b>UL94 HB</b>                                                                  |      |



| Product Selection |                    |       | Stud Ø       | Min. Tensile Strength | Length (L)  | Max. Ø Bundle (each side) | Width (W)   | Color | Pkg. Qty. |
|-------------------|--------------------|-------|--------------|-----------------------|-------------|---------------------------|-------------|-------|-----------|
| Article No.       | Part No.           | Type  |              |                       |             |                           |             |       |           |
| 115-30900         | <b>DCT90HIRK2</b>  | DCT9  | .25 " (6.35) | 150 lbs (670)         | 13.0" (331) | 1.3" (33.02)              | .50" (12.7) | Black | 50        |
| 115-00034         | <b>DCT90HIRC2</b>  | DCT9  | .25 " (6.35) | 150 lbs (670)         | 13.0" (331) | 1.3" (33.02)              | .50" (12.7) | Black | 100       |
| 115-31100         | <b>DCT110HIRK2</b> | DCT11 | .25 " (6.35) | 150 lbs (670)         | 19.2" (489) | 2.3" (58.42)              | .50" (12.7) | Black | 50        |
| 115-00033         | <b>DCT110HIRC2</b> | DCT11 | .25 " (6.35) | 150 lbs (670)         | 19.2" (489) | 2.3" (58.42)              | .50" (12.7) | Black | 100       |

Installation tools - MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Standoff Mounting Dual Clamp Ties

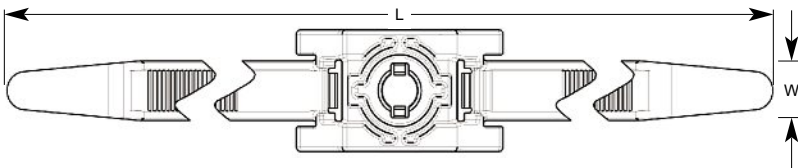
HellermannTyton's standoff dual clamp tie offers the same features as the standard dual clamp tie with a standoff mount that secures the bundle away from the side of the frame rail, protecting the bundles from bolts and other protrusions.

### Features

- Wide strap minimizes pinching of soft hoses & convoluted tubing
- Clamping rails increase circumferential grip on varying bundle diameters
- Locking stud mount pawls allow for easy hand insertion
- Nut or weld nesting counterbore provides flush mounting at the base
- Socket counterbore for fastening a nut provides added retention



| Material Data         |                                                                                 | RoHS |
|-----------------------|---------------------------------------------------------------------------------|------|
| Material              | <b>Polyamide 6.6 impact modified, Heat Stabilized, UV Resistant (PA66HIRHS)</b> |      |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                         |      |
| Flammability          | <b>UL94 HB</b>                                                                  |      |



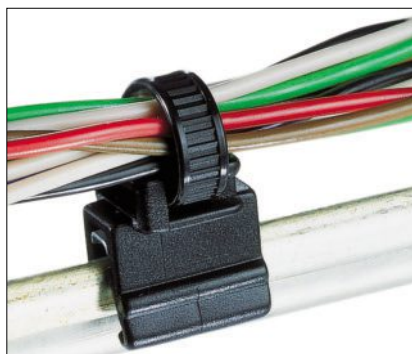
| Product Selection |                  |          | Stud Ø      | Min. Tensile Strength | Length (L)  | Max. Ø Bundle (each side) | Width (W)   | Color | Pkg. Qty. |
|-------------------|------------------|----------|-------------|-----------------------|-------------|---------------------------|-------------|-------|-----------|
| Article No.       | Part No.         | Type     |             |                       |             |                           |             |       |           |
| 117-00012         | <b>117-00012</b> | SDCTR312 | .31" (7.94) | 100 lbs (445)         | 20.1" (511) | 2.3" (58.42)              | .50" (12.7) | Black | 150       |
| 157-00060         | <b>157-00060</b> | SDCTL312 | .31" (7.94) | 100 lbs (445)         | 26.1" (663) | 3.4" (86.36)              | .50" (12.7) | Black | 150       |

Installation tools - MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Cable Ties and Edge Clips

HellermannTyton's edge clips are designed specifically to route bundles by securing them to the edge of a plastic or metal sheet without the need for a mounting hole. The clip is easy to secure and the extraction force is high due to the integrated metal clamp that holds the edge clip in place. Edge clips are available in three configurations: a two piece clip and tie assembly, a one piece clip and tie combination, and a edge clip and tape bar combination. When noted (\*), cable ties are outside serrated which can reduce bundle chafing.

### Two Pieces Edge Clip and Cable Tie Assemblies



T50ROSEC4A - the cable bundle runs parallel with the edge.

#### Material Data- Cable Tie

|                       |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Polyamide 6.6 heat stabilized (PA66HS)</b>           |
| Color                 | <b>Black</b>                                            |
| Operating Temperature | <b>-40 °F to +221 °F (-40 °C to +105 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                          |

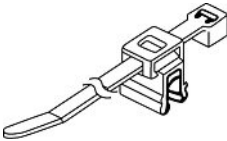
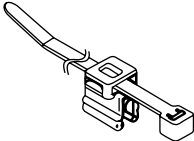
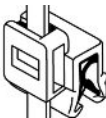
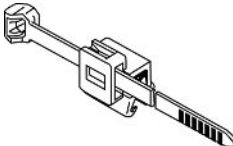
RoHS

#### Material Data - Edge Clip

|                       |                                                                                 |
|-----------------------|---------------------------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 impact modified, heat stabilized, UV resistant (PA66HIRHS)</b> |
| Color                 | <b>Black</b>                                                                    |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                         |
| Flammability          | <b>UL94 HB</b>                                                                  |

RoHS

#### Product Selection

| Product Selection                      |                  |            | Min. Tensile Strength | Length (L)  | Max. Ø Bundle | Pkg. |                                                                                       |
|----------------------------------------|------------------|------------|-----------------------|-------------|---------------|------|---------------------------------------------------------------------------------------|
| Article No.                            | Part No.         | Type       | lbs. (N)              | in. (mm)    | in. (mm)      | Qty. | Drawing                                                                               |
| Panel Thickness, — .039" .117" (1-3mm) |                  |            |                       |             |               |      |                                                                                       |
| 150-76090                              | <b>150-76090</b> | T30REC4A   | 30 lbs (135)          | 5.9 " (150) | 1.3" (33)     | 500  |  |
| 156-00858                              | <b>156-00858</b> | T50SOSEC4A | 50 lbs (225)          | 5.9" (150)  | 1.2" (31)     | 500  |                                                                                       |
| 156-00539                              | <b>156-00539</b> | T50REC4A   | 50 lbs (225)          | 8" (202)    | 1.8" (45)     | 500  |                                                                                       |
| 156-00860                              | <b>156-00860</b> | T50ROSEC4A | 50 lbs (225)          | 7.9" (200)  | 1.8" (45)     | 500  |                                                                                       |
| 156-00856                              | <b>156-00856</b> | T30REC4B   | 50 lbs (135)          | 5.9" (150)  | 1.3" (33)     | 500  |  |
| 156-00859                              | <b>156-00859</b> | T50SOSEC4B | 50 lbs (225)          | 6.5" (165)  | 1.2" (31)     | 500  |                                                                                       |
| 156-00861                              | <b>156-00861</b> | T50ROSEC4B | 50 lbs (225)          | 8" (202)    | 1.8" (45)     | 500  |                                                                                       |
| 156-00538                              | <b>156-00538</b> | T50REC4B   | 50 lbs (225)          | 7.9" (200)  | 1.8" (45)     | 500  |                                                                                       |
| 156-00865                              | <b>156-00865</b> | T50SOSEC5A | 50 lbs (225)          | 5.9" (150)  | 1.2" (31)     | 500  |  |
| 156-00864                              | <b>156-00864</b> | T50ROSEC5A | 50 lbs (225)          | 7.9" (200)  | 1.8" (45)     | 500  |                                                                                       |
| 156-01007                              | <b>156-01007</b> | T50RDHEC5A | 50 lbs (225)          | 8.3" (210)  | 1.8" (45)     | 500  |                                                                                       |
| 156-00541                              | <b>156-00541</b> | T50REC5A   | 50 lbs (225)          | 7.9" (200)  | 1.8" (45)     | 500  |                                                                                       |
| 156-00863                              | <b>156-00863</b> | T50SOSEC5B | 50 lbs (225)          | 5.9" (150)  | 1.2" (31)     | 500  |  |
| 156-00540                              | <b>156-00540</b> | T50REC5B   | 50 lbs (225)          | 8" (202)    | 1.8" (45)     | 500  |                                                                                       |
| 156-00862                              | <b>156-00862</b> | T50ROSEC5B | 50 lbs (225)          | 7.9" (200)  | 1.8" (45)     | 500  |                                                                                       |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. \* outside serrated cable tie. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

Two Piece Edge Clip and Cable Tie Assemblies *continued*

## Material Data- Cable Tie

|                       |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Polyamide 6.6 heat stabilized (PA66HS)</b>           |
| Color                 | <b>Black</b>                                            |
| Operating Temperature | <b>-40 °F to +221 °F (-40 °C to +105 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                          |

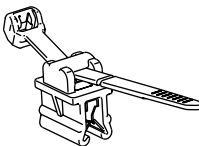
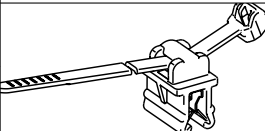
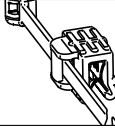
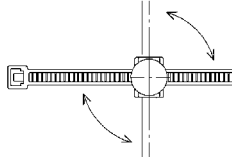


## Material Data - Edge Clip

|                       |                                                                                 |
|-----------------------|---------------------------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 impact modified, heat stabilized, UV resistant (PA66HIRHS)</b> |
| Color                 | <b>Black</b>                                                                    |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                         |
| Flammability          | <b>UL94 HB</b>                                                                  |



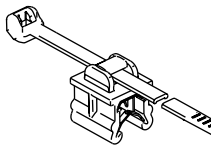
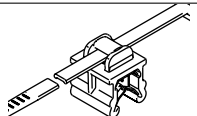
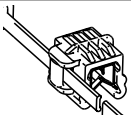
## Product Selection

| Product Selection                        |           |            | Min. Tensile Strength |            | Length (L) |  | Max. Ø Bundle |                                                                                       | Pkg. Qty. | Drawing |
|------------------------------------------|-----------|------------|-----------------------|------------|------------|--|---------------|---------------------------------------------------------------------------------------|-----------|---------|
| Article No.                              | Part No.  | Type       | lbs. (N)              | in. (mm)   | in. (mm)   |  |               |                                                                                       |           |         |
| Panel Thickness, — .039" - .117" (1-3mm) |           |            |                       |            |            |  |               |                                                                                       |           |         |
| 155-37104                                | 155-37104 | T18REC9    | 18 lbs (80)           | 3.9" (100) | .75" (19)  |  | 500           |  |           |         |
| 156-00866                                | 156-00866 | T50SOSEC9  | 50 lbs (225)          | 5.9" (150) | 1.2" (31)  |  | 500           |                                                                                       |           |         |
| 156-00867                                | 156-00867 | T50ROSEC9  | 50 lbs (225)          | 7.9" (200) | 1.8" (45)  |  | 500           |                                                                                       |           |         |
| 156-00868                                | 156-00868 | T18REC10   | 18 lbs (80)           | 3.9" (100) | .79" (20)  |  | 500           |  |           |         |
| 156-00871                                | 156-00871 | T50ROSEC10 | 50 lbs (225)          | 7.9" (200) | 1.8" (45)  |  | 500           |                                                                                       |           |         |
| 156-00017                                | 156-00017 | T50SOSEC21 | 50 lbs (225)          | 5.9" (150) | 1.3" (33)  |  | 500           |  |           |         |
| 156-00874                                | 156-00874 | T50ROSEC21 | 50 lbs (225)          | 7.9" (200) | 1.8" (45)  |  | 500           |                                                                                       |           |         |
| 156-00875                                | 156-00875 | T50SOSEC22 | 50 lbs (225)          | 5.9" (150) | 1.3" (33)  |  | 500           |  |           |         |
| 156-00876                                | 156-00876 | T50ROSEC22 | 50 lbs (225)          | 7.9" (200) | 1.8" (45)  |  | 500           |                                                                                       |           |         |
| 156-01601                                | 156-01601 | CBTO-50R   | 50 lbs (225)          | 8" (202)   | 1.85" (47) |  | 500           |  |           |         |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P.

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Two Piece Edge Clip and Cable Tie Assemblies *continued*

| Product Selection                        |           |            | Min. Tensile Strength |       | Length (L) |       | Max. Ø Bundle |      | Pkg. Qty. | Drawing                                                                             |
|------------------------------------------|-----------|------------|-----------------------|-------|------------|-------|---------------|------|-----------|-------------------------------------------------------------------------------------|
| Article No.                              | Part No.  | Type       | lbs.                  | (N)   | in.        | (mm)  | in.           | (mm) |           |                                                                                     |
| Panel Thickness — .117" - .234" (3-6 mm) |           |            |                       |       |            |       |               |      |           |                                                                                     |
| 156-04600                                | 156-04600 | T18ROSEC19 | 18 lbs                | (80)  | 3.9"       | (100) | .79"          | (20) | 500       |  |
| 156-04601                                | 156-04601 | T50SOSEC19 | 50 lbs                | (225) | 5.9"       | (150) | 1.2"          | (31) | 500       |                                                                                     |
| 156-00872                                | 156-00872 | T50ROSEC19 | 50 lbs                | (225) | 7.9"       | (200) | 1.8"          | (45) | 500       |                                                                                     |
| 156-00016                                | 156-00016 | T50SOSEC20 | 50 lbs                | (225) | 5.9"       | (150) | 1.3"          | (33) | 500       |  |
| 156-00873                                | 156-00873 | T50ROSEC20 | 50 lbs                | (225) | 7.9"       | (200) | 1.8"          | (45) | 500       |                                                                                     |
| 156-00877                                | 156-00877 | T50ROSEC23 | 50 lbs                | (225) | 7.9"       | (200) | 1.8"          | (45) | 500       |  |
| 156-00878                                | 156-00878 | T50ROSEC24 | 50 lbs                | (225) | 7.9"       | (200) | 1.8"          | (45) | 500       |  |

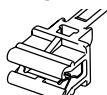
Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## One Piece Edge Clip and Cable Tie Combinations

The plastic area of the edge clips and the cable ties are molded together.

| Material Data         |                                                  |
|-----------------------|--------------------------------------------------|
| Material              | Polyamide 6.6 heat stabilized (PA66HS)           |
| Color                 | Black                                            |
| Operating Temperature | -40 °F to +221 °F (-40 °C to +105 °C) continuous |
| Flammability          | UL94 HB                                          |

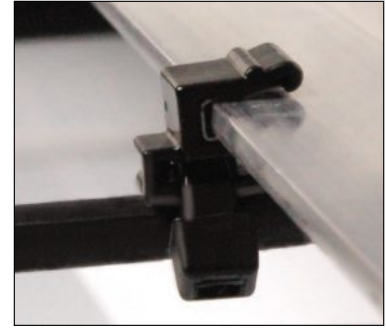


| Product Selection                        |           |             |                       |       |            |       |               |           |         |                                                                                       |
|------------------------------------------|-----------|-------------|-----------------------|-------|------------|-------|---------------|-----------|---------|---------------------------------------------------------------------------------------|
| Article No.                              | Part No.  | Type        | Min. Tensile Strength |       | Length (L) |       | Max. Ø Bundle | Pkg. Qty. | Drawing |                                                                                       |
|                                          |           |             | lbs.                  | (N)   | in.        | (mm)  | in.           |           |         | (mm)                                                                                  |
| Panel Thickness — .039" - .117" (1-3 mm) |           |             |                       |       |            |       |               |           |         |                                                                                       |
| 126-00036                                | 126-00036 | T50SOSEC34E | 40 lbs                | (180) | 6"         | (155) | 1.8"          | (35)      | 500     |  |
| 148-00200                                | 148-00200 | T50SOSECIZE | 40 lbs                | (180) | 6"         | (160) | 1.2"          | (35)      | 500     |  |
| 126-00000                                | 126-00000 | T50SOSEC1ZE | 40 lbs                | (180) | 8"         | (160) | 1.8"          | (35)      | 500     |  |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Edge Clip and UV Stabilized Tie Assemblies

HellermannTyton's high-performance edge clip and UV stabilized cable tie assemblies are designed specifically to route cables by securing them to a metal or plastic frame rail edge, eliminating the need for mounting holes and mechanical fasteners. The clip is easy to secure and the extraction force is high due to the integrated metal clamp that holds the edge clip in place. The cable tie firmly grips the cable, preventing chafing of the cable and ensuring long-term reliability.



### Material Data - Mounts

|                       |                                                                                      |
|-----------------------|--------------------------------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 – Impact Modified, Heat Stabilized, UV Stabilized (PA66HIRHSUV)</b> |
| Operating Temperature | <b>-40 °F to +230°F (-40 °C to +110 °C) continuous</b>                               |
| Flammability          | <b>UL94 HB</b>                                                                       |



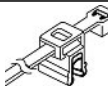
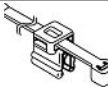
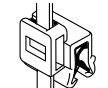
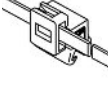
### Material Data - Ties

|                       |                                                       |
|-----------------------|-------------------------------------------------------|
| Material              | <b>Polyamide 6.6 – 2% Carbon UV Stabilized (OUV)</b>  |
| Operating Temperature | <b>-40 °F to +185°F (-40 °C to +85 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                        |



### Product Selection

duct Selection

| Article No.           | Part No.  | Type     | Min. Tensile Strength | Length    | Max Bundle | Color | Pkg. Qty | Drawing                                                                               |
|-----------------------|-----------|----------|-----------------------|-----------|------------|-------|----------|---------------------------------------------------------------------------------------|
|                       |           |          | lbs. (N)              | in. (mm)  | in. (mm)   |       |          |                                                                                       |
| 1-3 mm Edge Thickness |           |          |                       |           |            |       |          |                                                                                       |
| 156-00635             | 156-00635 | T50REC4A | 50 (225)              | 7.9 (200) | 1.8 (45)   | Black | 100      |   |
| 156-00588             | 156-00588 | T50REC4B | 50 (225)              | 7.9 (200) | 1.8 (45)   | Black | 100      |  |
| 156-00589             | 156-00589 | T50REC5A | 50 (225)              | 7.9 (200) | 1.8 (45)   | Black | 100      |  |
| 156-00468             | 156-00468 | T50REC5B | 50 (225)              | 7.9 (200) | 1.8 (45)   | Black | 100      |  |
| 3-6 mm Edge Thickness |           |          |                       |           |            |       |          |                                                                                       |
| 156-00590             | 156-00590 | T50REC19 | 50 (225)              | 7.9 (200) | 1.8 (45)   | Black | 100      |  |
| 156-00591             | 156-00591 | T50REC20 | 50 (225)              | 7.9 (200) | 1.8 (45)   | Black | 100      |  |
| 156-00592             | 156-00592 | T50REC23 | 50 (225)              | 7.9 (200) | 1.8 (45)   | Black | 100      |  |
| 156-00593             | 156-00593 | T50REC24 | 50 (225)              | 7.9 (200) | 1.8 (45)   | Black | 100      |  |

Use **Part No.** for ordering and **Type** for specification purposes.

## Edge Clip and Tape Clip Combination

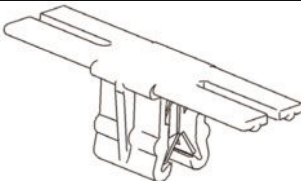
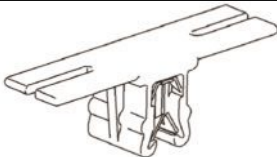
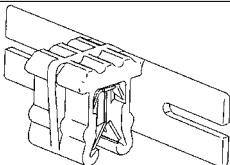
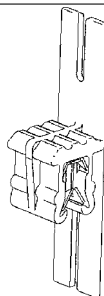
These clips can be secured to cables with cable ties or tape.

Material Data - Cable Tie and Tape Clip Combination

|                       |                                                                                 |
|-----------------------|---------------------------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 impact modified, heat stabilized, UV resistant (PA66HIRHS)</b> |
| Color                 | <b>Black</b>                                                                    |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                         |
| Flammability          | <b>UL94 HB</b>                                                                  |



Product Selection

| Product Selection                        |           |      |            |        |           |        |           |                                                                                       |
|------------------------------------------|-----------|------|------------|--------|-----------|--------|-----------|---------------------------------------------------------------------------------------|
| Article No.                              | Part No.  | Type | Length (L) |        | Width (W) |        | Pkg. Qty. | Drawing                                                                               |
|                                          |           |      | in.        | (mm)   | in.       | (mm)   |           |                                                                                       |
| Panel Thickness — .039" - .117" (1-3 mm) |           |      |            |        |           |        |           |                                                                                       |
| 151-03404                                | 151-03404 | EC14 | 1.57"      | (40.0) | .39"      | (10.0) | 500       |   |
| 151-03401                                | 151-03401 | EC15 | 1.57"      | (40.0) | .39"      | (10.0) | 500       |  |
| 151-03402                                | 151-03402 | EC16 | 1.57"      | (40.0) | .39"      | (10.0) | 500       |  |
| 151-03403                                | 151-03403 | EC17 | 1.57"      | (40.0) | .39"      | (10.0) | 500       |  |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

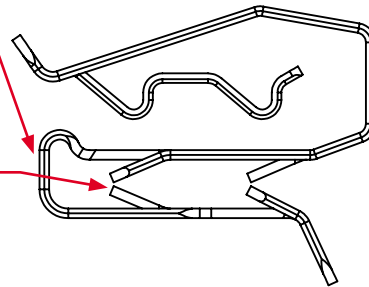
## Metal Edge Clip

HellermannTyton's metal edge clip manages wire and cable on solar panel frames and other channels. Developed for applications where plastic fasteners are not the preferred method, this corrosion-resistant 304 stainless steel clip has smooth, rounded edges that will not abrade wire or cable. The Metal Edge Clip has a larger thumb surface allowing for an effortless insertion by hand and eliminating the need for tools. This clip also features a dual-sided teeth design that makes for an easier insertion and a higher extraction force that tolerates extreme environments and provides assurance that cables are secure on the PV panel or other frame. The clip has a double-compression retention tab to handle either one or two cables. The Metal Edge Clip is easily removed with a flathead screwdriver.



### Product Features & Benefits:

- Larger thumb surface for simple installation.
- Coined edges that prevent the clip from chafing and damaging PV cables.
- Dual-sided teeth offer optimal retention in extreme conditions.
- Configuration fits frames from 1 to 3 mm in thickness.
- Engineered profile accommodates either single or multiple cables.



### Material Data

|                       |                                         |
|-----------------------|-----------------------------------------|
| Material              | Stainless Steel Type SS304 (SS304)      |
| Operating Temperature | -112 °F to +1000 °F (-80 °C to +538 °C) |



### Product Selection

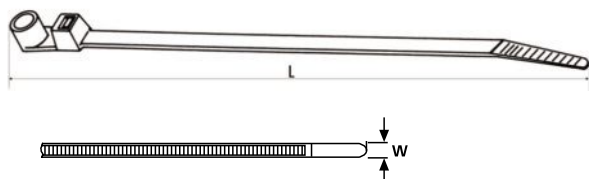
| Article No. | Part No.  | Type | Panel Thickness Min. in. (mm) | Panel Thickness Max. in. (mm) | Cable Dia. Min. in. (mm) | Cable Dia. Max. in. (mm) | Length in. (mm) | Width in. (mm) | Color | Bag Qty. | Carton Qty. | Sample Pack No. |
|-------------|-----------|------|-------------------------------|-------------------------------|--------------------------|--------------------------|-----------------|----------------|-------|----------|-------------|-----------------|
| 151-00982   | 151-00982 | MSC2 | .04" (1)                      | .12" (3)                      | .20" (5)                 | .30" (7.6)               | .95" (24)       | .50" (13)      | n/a   | 100      | 5000        | SPLMSC2         |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Screw Mount Ties

## Material Data

|                       |                                                 |
|-----------------------|-------------------------------------------------|
| Material              | Polyamide 6.6 (PA66)                            |
| Operating Temperature | -40 °F to +185 °F (-40 °C to +85 °C) continuous |
| Flammability          | UL94 V2                                         |



File# E64139

## Product Selection

| Product Selection |           |        |              |                                      |                        |                           |                       |         |              |  |
|-------------------|-----------|--------|--------------|--------------------------------------|------------------------|---------------------------|-----------------------|---------|--------------|--|
| Article No.       | Part No.  | Type   | Mounting     | Min. Tensile<br>Strength<br>lbs. (N) | Length (L)<br>in. (mm) | Max. Ø Bundle<br>in. (mm) | Width (W)<br>in. (mm) | Color   | Pkg.<br>Qty. |  |
| T18MR             |           |        |              |                                      |                        |                           |                       |         |              |  |
| 113-00026         | T18MR9C2  | T18MR  | # 4 screw    | 18 lbs (80)                          | 4.33" (110)            | .79" (20)                 | .10" (2.5)            | Natural | 100          |  |
| 113-00028         | T18MR9M4  | T18MR  |              | 18 lbs (80)                          | 4.33" (110)            | .79" (20)                 | .10" (2.5)            | Natural | 1000         |  |
| 113-00022         | T18MR0C2  | T18MR  |              | 18 lbs (80)                          | 4.33" (110)            | .79" (20)                 | .10" (2.5)            | Black   | 100          |  |
| 113-00024         | T18MR0M4  | T18MR  |              | 18 lbs (80)                          | 4.33" (110)            | .79" (20)                 | .10" (2.5)            | Black   | 1000         |  |
| T30MR             |           |        |              |                                      |                        |                           |                       |         |              |  |
| 113-03019         | T30MR9C2  | T30MR  | # 8 screw    | 30 lbs (135)                         | 6.30" (160)            | 1.26" (32)                | .14" (3.5)            | Natural | 100          |  |
| 113-00036         | T30MR9M4  | T30MR  |              | 30 lbs (135)                         | 6.30" (160)            | 1.26" (32)                | .14" (3.5)            | Natural | 1000         |  |
| 113-03010         | T30MR0C2  | T30MR  |              | 30 lbs (135)                         | 6.30" (160)            | 1.26" (32)                | .14" (3.5)            | Black   | 100          |  |
| 113-03011         | T30MR0M4  | T30MR  |              | 30 lbs (135)                         | 6.30" (160)            | 1.26" (32)                | .14" (3.5)            | Black   | 1000         |  |
| T50MR             |           |        |              |                                      |                        |                           |                       |         |              |  |
| 113-05004         | T50MR9C2  | T50MR  | # 10 screw   | 50 lbs (225)                         | 8.46" (215)            | 1.77" (45)                | .18" (4.6)            | Natural | 100          |  |
| 113-05007         | T50MR9M4  | T50MR  |              | 50 lbs (225)                         | 8.46" (215)            | 1.77" (45)                | .18" (4.6)            | Natural | 1000         |  |
| 113-05000         | T50MR0C2  | T50MR  |              | 50 lbs (225)                         | 8.46" (215)            | 1.77" (45)                | .18" (4.6)            | Black   | 100          |  |
| 113-05002         | T50MR0M4  | T50MR  |              | 50 lbs (225)                         | 8.46" (215)            | 1.77" (45)                | .18" (4.6)            | Black   | 1000         |  |
| T50MI             |           |        |              |                                      |                        |                           |                       |         |              |  |
| 113-00032         | T50MI9C2  | T50MI  | # 10 screw   | 50 lbs (225)                         | 12.40" (315)           | 3.35" (85)                | .19" (4.7)            | Natural | 100          |  |
| 113-00033         | T50MI9M4  | T50MI  |              | 50 lbs (225)                         | 12.40" (315)           | 3.35" (85)                | .19" (4.7)            | Natural | 1000         |  |
| 113-00038         | T50MI0C2  | T50MI  |              | 50 lbs (225)                         | 12.40" (315)           | 3.35" (85)                | .19" (4.7)            | Black   | 100          |  |
| 113-00031         | T50MI0M4  | T50MI  |              | 50 lbs (225)                         | 12.40" (315)           | 3.35" (85)                | .19" (4.7)            | Black   | 1000         |  |
| T50ML             |           |        |              |                                      |                        |                           |                       |         |              |  |
| 113-05419         | T50ML9C2  | T50ML  | # 10 screw   | 50 lbs (225)                         | 15.35" (390)           | 4.00" (100)               | .18" (4.6)            | Natural | 100          |  |
| 113-05403         | T50ML9M4  | T50ML  |              | 50 lbs (225)                         | 15.35" (390)           | 4.00" (100)               | .18" (4.6)            | Natural | 1000         |  |
| 113-00007         | T50ML0C2  | T50ML  |              | 50 lbs (225)                         | 15.35" (390)           | 4.00" (100)               | .18" (4.6)            | Black   | 100          |  |
| 113-00035         | T50ML0M4  | T50ML  |              | 50 lbs (225)                         | 15.35" (390)           | 4.00" (100)               | .18" (4.6)            | Black   | 1000         |  |
| T120MR            |           |        |              |                                      |                        |                           |                       |         |              |  |
| 113-12029         | T120MR9K2 | T120MR | # 1/4" screw | 120 lbs (535)                        | 15.55" (395)           | 4.02" (102)               | .30" (7.6)            | Natural | 50           |  |
| 113-00018         | T120MR9H4 | T120MR |              | 120 lbs (535)                        | 15.55" (395)           | 4.02" (102)               | .30" (7.6)            | Natural | 500          |  |
| 113-12020         | T120MR0K2 | T120MR |              | 120 lbs (535)                        | 15.55" (395)           | 4.02" (102)               | .30" (7.6)            | Black   | 50           |  |
| 113-00011         | T120MR0H4 | T120MR |              | 120 lbs (535)                        | 15.55" (395)           | 4.02" (102)               | .30" (7.6)            | Black   | 500          |  |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

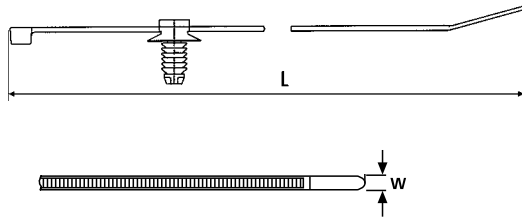
## Fir Tree Mount and Cable Tie Assemblies

HellermannTyton's fir tree mounts provide a secure grip in a mounting hole and protect against dirt and other impurities. The mount can slide along the strap of the tie for proper orientation. The fir tree mounts are designed to provide a low insertion force and high extraction force. These mounts are sold as an assembly with the cable tie.



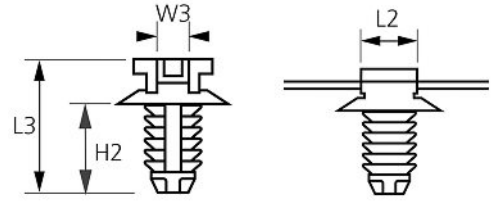
Material Data - All Cable Ties/ FT4, FT7, FT8 and FT10 Mounts

|                       |                                          |
|-----------------------|------------------------------------------|
| Material              | Polyamide 6.6 heat stabilized (PA66HS)   |
| Operating Temperature | -40 °F to +221 °F<br>(-40 °C to +105 °C) |
| Color                 | Black                                    |
| Flammability          | UL94 V2                                  |



Material Data - FT5, FT6 and FT6LG Mounts

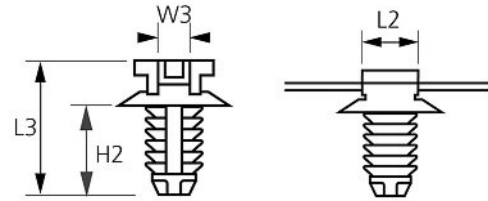
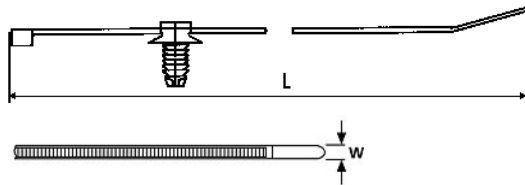
|                       |                                                                          |
|-----------------------|--------------------------------------------------------------------------|
| Material              | Polyamide 6.6 impact modified, heat stabilized, UV resistant (PA66HIRHS) |
| Operating Temperature | -40 °F to +230 °F<br>(-40 °C to +110 °C)                                 |
| Color                 | Black                                                                    |
| Flammability          | UL94 HB                                                                  |



Product Selection

| Product Selection                                                                               |           |         |                                |                        |                     |                    |                 |                      |                      |                     |                      |           |
|-------------------------------------------------------------------------------------------------|-----------|---------|--------------------------------|------------------------|---------------------|--------------------|-----------------|----------------------|----------------------|---------------------|----------------------|-----------|
| Article No.                                                                                     | Part No.  | Type    | Min. Tensile Strength lbs. (N) | Max. Ø Bundle in. (mm) | Cable Tie           |                    | Mount           |                      |                      |                     |                      | Pkg. Qty. |
|                                                                                                 |           |         |                                |                        | Length (L) in. (mm) | Width (W) in. (mm) | Disc Ø in. (mm) | Length (L2) in. (mm) | Length (L3) in. (mm) | Width (W3) in. (mm) | Height (H2) in. (mm) |           |
| FT4 – Mounting Hole Ø: .13" - .16" (3.3 – 4.0mm) - Panel Thickness: .04" - .118" (1.0 – 3.0mm)  |           |         |                                |                        |                     |                    |                 |                      |                      |                     |                      |           |
| 156-00953                                                                                       | 156-00953 | T30RFT4 | 30 lbs (135)                   | 1.38 " (35)            | 5.8 " (148)         | .14 " (3.6)        | .51 " (13.0)    | .33 " (8.5)          | .46 " (11.8)         | .20 " (5.0)         | .22 " (5.6)          | 500       |
| FT5 – Mounting Hole Ø: .177" - .197" (4.5-5.0mm) - Panel Thickness: .028" - .193" (0.7 - 3.0mm) |           |         |                                |                        |                     |                    |                 |                      |                      |                     |                      |           |
| 150-55850                                                                                       | 150-55850 | T30RFT5 | 30 lbs (135)                   | 1.38 " (35)            | 5.8 " (148)         | .14 " (3.6)        | .63 " (16.0)    | .46 " (11.6)         | .52 " (13.2)         | .20 " (5)           | .27 " (6.9)          | 500       |
| 156-00025                                                                                       | 156-00025 | T50RFT5 | 50 lbs (225)                   | 1.75 " (44.5)          | 8 " (203.2)         | .18 " (4.6)        | .63 " (16.0)    | .46 " (11.6)         | .52 " (13.2)         | .20 " (5)           | .27 " (6.9)          | 500       |
| FT6 – Mounting Hole Ø: .252" - .28" (6.4-7.1mm) - Panel Thickness: .028" - .193" (0.75 - 3.0mm) |           |         |                                |                        |                     |                    |                 |                      |                      |                     |                      |           |
| 150-77940                                                                                       | 150-77940 | T30RFT6 | 30 lbs (135)                   | 1.38 " (35)            | 5.8 " (148)         | .14 " (3.6)        | .63 " (16.0)    | .46 " (11.6)         | .54 " (13.8)         | .20 " (5)           | .295 " (7.5)         | 500       |
| 156-00156                                                                                       | 156-00156 | T50SFT6 | 50 lbs (225)                   | 1.38 " (35)            | 6.3 " (160)         | .18 " (4.6)        | .63 " (16.0)    | .46 " (11.6)         | .54 " (13.8)         | .20 " (5)           | .295 " (7.5)         | 500       |
| 156-00157                                                                                       | 156-00157 | T50RFT6 | 50 lbs (225)                   | 1.75 " (44.5)          | 8 " (203.2)         | .18 " (4.6)        | .63 " (16.0)    | .46 " (11.6)         | .54 " (13.8)         | .20 " (5)           | .295 " (7.5)         | 500       |
| 156-00066                                                                                       | 156-00066 | T50LFT6 | 50 lbs (225)                   | 4.33 " (110)           | 15 " (380)          | .18 " (4.7)        | .63 " (16)      | .46 " (11.6)         | .54 " (13.8)         | .20 " (5)           | .295 " (7.5)         | 500       |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

Fir Tree Mount and Cable Tie Assemblies *continued*

## Product Selection

| Product Selection                                                                                |           |           |                                         |                                 |                              |                             |                       |                               |                               |                              |                               |           |
|--------------------------------------------------------------------------------------------------|-----------|-----------|-----------------------------------------|---------------------------------|------------------------------|-----------------------------|-----------------------|-------------------------------|-------------------------------|------------------------------|-------------------------------|-----------|
| Article No.                                                                                      | Part No.  | Type      | Min.<br>Tensile<br>Strength<br>lbs. (N) | Max. Ø<br>Bundle<br>in.<br>(mm) | Cable Tie                    |                             | Mount                 |                               |                               |                              |                               | Pkg. Qty. |
|                                                                                                  |           |           |                                         |                                 | Length<br>(L)<br>in.<br>(mm) | Width<br>(W)<br>in.<br>(mm) | Disc Ø<br>in.<br>(mm) | Length<br>(L2)<br>in.<br>(mm) | Length<br>(L3)<br>in.<br>(mm) | Width<br>(W3)<br>in.<br>(mm) | Height<br>(H2)<br>in.<br>(mm) |           |
| FT6LG - Mounting Hole Ø: .256" - .276" (6.4-7.1mm) - Panel Thickness: .03" - .24" (0.75 - 6.0mm) |           |           |                                         |                                 |                              |                             |                       |                               |                               |                              |                               |           |
| 150-31090                                                                                        | 150-31090 | T30RFT6LG | 30 lbs<br>(135)                         | 1.38 " (35)                     | 5.8 " (148)                  | .14 " (3.6)                 | .63 " (16)            | .46 " (11.6)                  | .69 " (17.5)                  | .19 " (5)                    | .44 " (11.1)                  | 500       |
| 150-31093                                                                                        | 150-31093 | T50SFT6LG | 50 lbs<br>(225)                         | 1.38 " (35)                     | 6.3 " (160)                  | .18 " (4.6)                 | .63 " (16)            | .46 " (11.6)                  | .69 " (17.5)                  | .19 " (5)                    | .44 " (11.1)                  | 500       |
| 150-31091                                                                                        | 150-31091 | T50RFT6LG | 50 lbs<br>(225)                         | 1.75 " (44)                     | 8 " (203.2)                  | .18 " (4.6)                 | .63 " (16)            | .46 " (11.6)                  | .69 " (17.5)                  | .19 " (5)                    | .44 " (11.1)                  | 500       |
| 156-00054                                                                                        | 156-00054 | T50IFT6LG | 50 lbs<br>(225)                         | 3.35 " (85)                     | 11.8 " (300)                 | .18 " (4.6)                 | .63 " (16)            | .46 " (11.6)                  | .69 " (17.5)                  | .19 " (5)                    | .44 " (11.1)                  | 500       |
| FT7 - Mounting Hole Ø: .256" - .276" (6.5-7.0mm) - Panel Thickness: .031" - .276" (0.8 - 7.0mm)  |           |           |                                         |                                 |                              |                             |                       |                               |                               |                              |                               |           |
| 156-00057                                                                                        | 156-00057 | T30RFT7   | 30 lbs<br>(135)                         | 1.38 " (35)                     | 5.8 " (148)                  | .14 " (3.6)                 | .63 " (16)            | .46 " (11.6)                  | .75 " (19)                    | .20 " (5)                    | .5 " (12.7)                   | 500       |
| 156-00056                                                                                        | 156-00056 | T50SFT7   | 50 lbs<br>(225)                         | 1.38 " (35)                     | 6.3 " (160)                  | .18 " (4.6)                 | .63 " (16)            | .46 " (11.6)                  | .75 " (19)                    | .20 " (5)                    | .5 " (12.7)                   | 500       |
| 111-85871                                                                                        | 111-85871 | T50RFT7   | 50 lbs<br>(225)                         | 1.75 " (44)                     | 8 " (203.2)                  | .18 " (4.6)                 | .63 " (16)            | .46 " (11.6)                  | .75 " (19)                    | .20 " (5)                    | .5 " (12.7)                   | 500       |
| 111-05350                                                                                        | 111-05350 | T50IFT7   | 50 lbs<br>(225)                         | 3.35 " (85)                     | 11.8 " (300)                 | .18 " (4.6)                 | .63 " (16)            | .46 " (11.6)                  | .75 " (19)                    | .20 " (5)                    | .5 " (12.7)                   | 500       |
| 156-00055                                                                                        | 156-00055 | T50LFT7   | 50 lbs<br>(225)                         | 4.33 " (110)                    | 15 " (380)                   | .18 " (4.7)                 | .63 " (16)            | .46 " (11.6)                  | .75 " (19)                    | .20 " (5)                    | .5 " (12.7)                   | 500       |
| FT8 - Mounting Hole Ø: .3" - .31" (7.7-8.0mm) - Panel Thickness: .03" - .31" (0.8 - 8.0mm)       |           |           |                                         |                                 |                              |                             |                       |                               |                               |                              |                               |           |
| 156-00375                                                                                        | 156-00375 | T30RFT8   | 30 lbs<br>(135)                         | 1.38 " (35)                     | 5.8 " (148)                  | .14 " (3.6)                 | .63 " (16)            | .47 " (12.0)                  | .7 " (17.8)                   | .35 " (9)                    | .45 " (11.5)                  | 500       |
| 156-00376                                                                                        | 156-00376 | T50RFT8   | 50 lbs<br>(225)                         | 1.75 " (44)                     | 8 " (203.2)                  | .18 " (4.6)                 | .63 " (16)            | .47 " (12.0)                  | .7 " (17.8)                   | .35 " (9)                    | .45 " (11.5)                  | 500       |
| 156-00377                                                                                        | 156-00377 | T50IFT8   | 50 lbs<br>(225)                         | 3.35 " (81)                     | 11.8 " (300)                 | .18 " (4.6)                 | .63 " (16)            | .47 " (12.0)                  | .7 " (17.8)                   | .35 " (9)                    | .45 " (11.5)                  | 500       |
| 156-00378                                                                                        | 156-00378 | T50LFT8   | 50 lbs<br>(225)                         | 4.33 " (110)                    | 15 " (380)                   | .18 " (4.7)                 | .63 " (16)            | .47 " (12.0)                  | .7 " (17.8)                   | .35 " (9)                    | .45 " (11.5)                  | 500       |
| FT10 - Mounting Hole Ø: .38" - .39" (9.7-10.0mm) - Panel Thickness: .031" - .236" (0.8 - 5.0mm)  |           |           |                                         |                                 |                              |                             |                       |                               |                               |                              |                               |           |
| 156-00089                                                                                        | 156-00089 | T30RFT10  | 30 lbs<br>(135)                         | 1.38 " (35)                     | 5.8 " (148)                  | .14 " (3.6)                 | .71 " (18)            | .47 " (12)                    | .75 " (18.6)                  | .20 " (5)                    | .48 " (12.1)                  | 500       |
| 156-00090                                                                                        | 156-00090 | T50SFT10  | 50 lbs<br>(225)                         | 1.38 " (35)                     | 6.3 " (160)                  | .18 " (4.6)                 | .71 " (18)            | .47 " (12)                    | .75 " (18.6)                  | .20 " (5)                    | .48 " (12.1)                  | 500       |
| 156-00091                                                                                        | 156-00091 | T50RFT10  | 50 lbs<br>(225)                         | 1.75 " (44)                     | 8 " (203.2)                  | .18 " (4.6)                 | .71 " (18)            | .47 " (12)                    | .75 " (18.6)                  | .20 " (5)                    | .48 " (12.1)                  | 500       |
| 156-00092                                                                                        | 156-00092 | T50IFT10  | 50 lbs<br>(225)                         | 3.35 " (81)                     | 11.8 " (300)                 | .18 " (4.6)                 | .71 " (18.0)          | .47 " (12)                    | .75 " (18.6)                  | .20 " (5)                    | .48 " (12.1)                  | 500       |
| 156-00093                                                                                        | 156-00093 | T50LFT10  | 50 lbs<br>(225)                         | 4.33 " (110)                    | 15 " (380)                   | .18 " (4.7)                 | .71 " (18)            | .47 " (12)                    | .75 " (18.6)                  | .20 " (5)                    | .48 " (12.1)                  | 500       |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes.

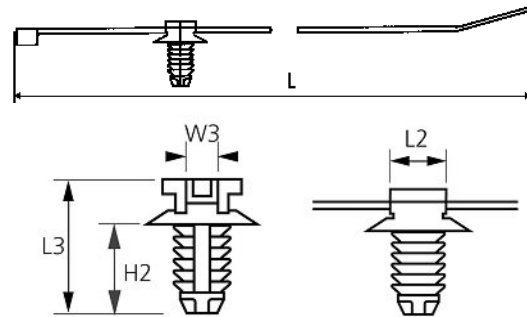
Use **Part No.** for ordering and **Type** for specification purposes.

## High Temperature Fir Tree Mount and Cable Tie Assemblies

HellermannTyton's high temperature fir tree mounts and cable tie assemblies provide excellent resistance in operating temperatures up to 275°F (135°C), while still maintaining tensile and retention strength properties.



| Material Data         |                                                  |
|-----------------------|--------------------------------------------------|
| Material              | Polyamide 4.6 (PA46)                             |
| Operating Temperature | -40 °F to +275 °F (-40 °C to +135 °C) continuous |
| Flammability          | UL94 V2                                          |



| Product Selection                                                                                   |                 | Min.<br>Tensile<br>Strength<br>lbs. (N) | Max. Ø<br>Bundle<br>in. (mm) | Cable Tie     |              | Mount     |                |                |               |                | Pkg.<br>Qty. |
|-----------------------------------------------------------------------------------------------------|-----------------|-----------------------------------------|------------------------------|---------------|--------------|-----------|----------------|----------------|---------------|----------------|--------------|
| Part No.                                                                                            | Type            |                                         |                              | Length<br>(L) | Width<br>(W) | Disc Ø    | Length<br>(L2) | Length<br>(L3) | Width<br>(W3) | Height<br>(H2) |              |
|                                                                                                     |                 |                                         |                              | in. (mm)      | in. (mm)     |           | in. (mm)       | in. (mm)       | in. (mm)      | in. (mm)       |              |
|                                                                                                     |                 |                                         |                              | in. (mm)      | in. (mm)     |           | in. (mm)       | in. (mm)       | in. (mm)      | in. (mm)       |              |
| FT5 - Mounting Hole Ø : .177" - .197" (4.5 - 5.0mm) - Panel Thickness: .028" - .12" (0.7 - 3.0mm)   |                 |                                         |                              |               |              |           |                |                |               |                |              |
| 150-55948                                                                                           | T30RFT5         | 30 lbs (135)                            | 1.34" (34)                   | 5.9" (150)    | .14" (3.6)   | .63" (16) | .46" (11.6)    | .52" (13.2)    | .20" (5.0)    | .27" (6.9)     | 500          |
| FT6 - Mounting Hole Ø : .25" - .28" (6.4 - 7.1mm) - Panel Thickness: .03" - .12" (0.75 - 3.0mm)     |                 |                                         |                              |               |              |           |                |                |               |                |              |
| 150-77938                                                                                           | T50RFT6         | 50 lbs (225)                            | 1.8" (45)                    | 7.87" (200)   | .18" (4.6)   | .63" (16) | .46" (11.6)    | .54" (13.8)    | .20" (5.0)    | .3" (7.5)      | 500          |
| 156-00085                                                                                           | T50RO<br>SFT6SD | 50 lbs (225)                            | 1.8" (45)                    | 7.87" (200)   | .18" (4.6)   | .63" (16) | .46" (11.6)    | .57" (14.5)    | .21" (5.2)    | .3" (7.5)      | 500          |
| FT6LG - Mounting Hole Ø : .25" - .28" (6.4 - 7.1mm) - Panel Thickness: .03" - .24" (0.75 - 6.0mm)   |                 |                                         |                              |               |              |           |                |                |               |                |              |
| 150-31098                                                                                           | T50RF<br>T6LG   | 50 lbs (225)                            | 1.8" (45)                    | 7.87" (200)   | .18" (4.6)   | .63" (16) | .46" (11.6)    | .69" (17.5)    | .20" (5.0)    | .44" (11.1)    | 500          |
| FT7HD - Mounting Hole Ø : .244" - .284" (6.2 - 7.2mm) - Panel Thickness: .03" - .276" (0.8 - 7.0mm) |                 |                                         |                              |               |              |           |                |                |               |                |              |
| 156-00457                                                                                           | T50RF<br>T7HD   | 50 lbs (225)                            | 1.8" (45)                    | 7.87" (200)   | .18" (4.6)   | .63" (16) | .46" (11.6)    | .78" (19.3)    | .232" (5.9)   | .36" (12.4)    | 500          |
| FT8G - Mounting Hole Ø : .32" - .33" (8.0 - 8.5mm) - Panel Thickness: .06" - .16" (1.5 - 4.0mm)     |                 |                                         |                              |               |              |           |                |                |               |                |              |
| 156-00235                                                                                           | T50RF<br>T8GSD  | 50 lbs (225)                            | 1.8" (45)                    | 7.87" (200)   | .18" (4.6)   | .63" (16) | .46" (11.6)    | .68" (17.2)    | .24" (6.0)    | .18" (4.6)     | 500          |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes.

Use **Part No.** for ordering and **Type** for specification purposes.

## Fir Tree Mount For Automatic Cable Tie Tool System

Engineered for use with HellermannTyton's automatic cable tie tool systems, this fir tree mount has an anti-rotational design and features a low insertion force and high extraction force. For more information on automatic tool systems, see page 88.

### Material Data

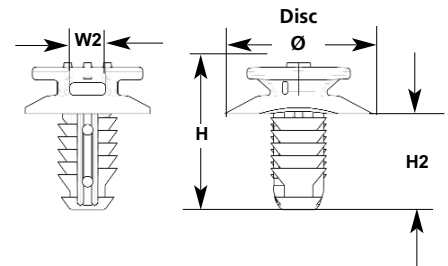
|                       |                                                                          |
|-----------------------|--------------------------------------------------------------------------|
| Material              | Polyamide 6.6 impact modified, heat stabilized, UV resistant (PA66HIRHS) |
| Color                 | Black                                                                    |
| Operating Temperature | -40 °F to +230 °F (-40 °C to +110 °C) continuous                         |
| Flammability          | UL94 HB                                                                  |



### Product Selection

| Article No.                                                                                             | Part No.         | Type  | Disc Ø in. (mm) | Width (W2) in. (mm) | Height (H) in. (mm) | Height (H2) in. (mm) | Pkg. Qty. |
|---------------------------------------------------------------------------------------------------------|------------------|-------|-----------------|---------------------|---------------------|----------------------|-----------|
| <b>FT7AT - Mounting Hole Ø: .24" - .28" (6.0 - 7.0mm) - Panel Thickness: .03" - .276" (0.8 - 7.0mm)</b> |                  |       |                 |                     |                     |                      |           |
| 151-00492                                                                                               | <b>151-00492</b> | FT7AT | .73" (18.6)     | .18" (4.5)          | .72" (18.34)        | .47" (11.9)          | 100       |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

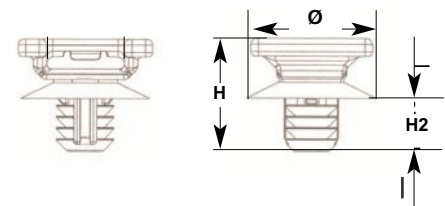
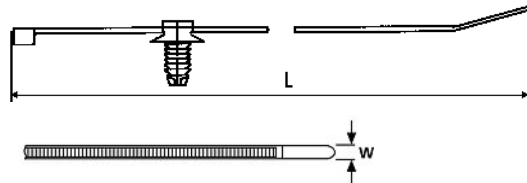


## Heavy Duty Fir Tree Mounts and Cable Tie Assemblies

The FT7HD, is a heavy duty alternative to HellermannTyton's standard FT7 mount and cable tie assembly. The H profile of the mount offers durability and the assembly is available with a 50 lb. cable tie in 8" and 11.8" lengths.

### Material Data

|                       |                                                                          |
|-----------------------|--------------------------------------------------------------------------|
| Material              | Polyamide 6.6 impact modified, heat stabilized, UV resistant (PA66HIRHS) |
| Color                 | Black                                                                    |
| Operating Temperature | -40 °F to +230 °F (-40 °C to +110 °C) continuous                         |
| Flammability          | UL94 HB                                                                  |



### Product Selection

| Article No.                                                                                      | Part No.  | Type      | Min. Tensile Strength lbs. (N) | Max. Ø Bundle in. (mm) | Cable Tie           |                    | Mount           |                     |                     |                      | Pkg. Qty. |
|--------------------------------------------------------------------------------------------------|-----------|-----------|--------------------------------|------------------------|---------------------|--------------------|-----------------|---------------------|---------------------|----------------------|-----------|
|                                                                                                  |           |           |                                |                        | Length (L) in. (mm) | Width (W) in. (mm) | Disc Ø in. (mm) | Width (W2) in. (mm) | Height (H) in. (mm) | Height (H2) in. (mm) |           |
| FT7HD - Mounting Hole Ø: .24" - .28" (6.2 - 7.2mm) - Panel Thickness: .03" - .276" (0.8 - 7.0mm) |           |           |                                |                        |                     |                    |                 |                     |                     |                      |           |
| 156-00329                                                                                        | 156-00329 | T50RFT7HD | 50 lbs (225)                   | 1.75" (44)             | 8" (203.2)          | .18" (4.6)         | .85" (21.6)     | .232" (5.9)         | .78" (19.8)         | .36" (12.4)          | 500       |
| 156-00282                                                                                        | 156-00282 | T50LFT7HD | 50 lbs (225)                   | 3.35" (85)             | 11.8" (300)         | .18" (4.6)         |                 |                     |                     |                      |           |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Heavy Duty Fir Tree Mounts and Cable Tie Assemblies *continued*

Designed specifically for 120 - 250 lb. cable ties, the heavy duty fir tree mounts are optimized for up to 3 to 1 extraction versus insertion force. The "H" profile provides a broad surface contact to minimize the pinching of bundles and will easily hold bundles ranging from 3/8" to 3". Heavy duty fir tree mounts are equipped with a friction tab that will hold the tie in the mount, allowing them to be preassembled prior to installation. These mounts are sold as an assembly with the cable tie.

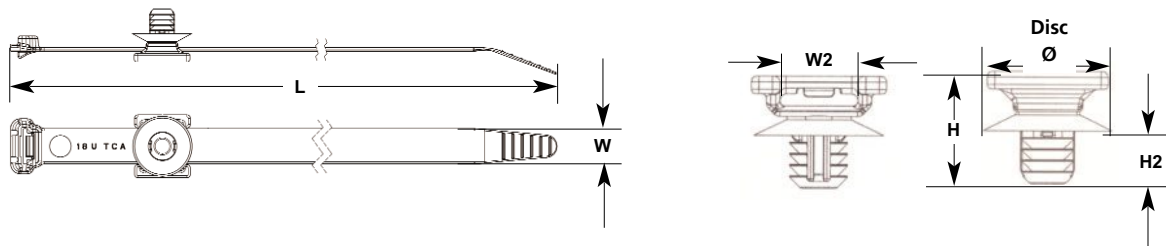
Material Data-Fir Tree Mount and WSS, WSI, WSR Cable Ties

|                       |                                                                                 |
|-----------------------|---------------------------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 impact modified, heat stabilized, UV resistant (PA66HIRHS)</b> |
| Color                 | <b>Black</b>                                                                    |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                         |
| Flammability          | <b>UL94 HB</b>                                                                  |



Material Data - T120R Cable Tie

|                       |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Polyamide 6.6 heat stabilized (PA66HS)</b>           |
| Color                 | <b>Black</b>                                            |
| Operating Temperature | <b>-40 °F to +221 °F (-40 °C to +105 °C) continuous</b> |
| Flammability          | <b>UL94 HB</b>                                          |



Product Selection

| Product Selection                                                                                  |           |           | Min.<br>Tensile<br>Strength<br>lbs. (N) | Max. Ø<br>Bundle<br>in.<br>(mm) | Cable Tie                    |                             | Mount                 |                              |                              |                               | Pkg.<br>Qty. |
|----------------------------------------------------------------------------------------------------|-----------|-----------|-----------------------------------------|---------------------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------|-------------------------------|--------------|
| Article<br>No.                                                                                     | Part No.  | Type      |                                         |                                 | Length<br>(L)<br>in.<br>(mm) | Width<br>(W)<br>in.<br>(mm) | Disc Ø<br>in.<br>(mm) | Width<br>(W2)<br>in.<br>(mm) | Height<br>(H)<br>in.<br>(mm) | Height<br>(H2)<br>in.<br>(mm) |              |
|                                                                                                    |           |           |                                         |                                 |                              |                             |                       |                              |                              |                               |              |
| FT9A - Mounting Hole Ø: .343" - .363" (8.75 - 9.25mm) - Panel Thickness: .04" - .26" (1.0 - 6.5mm) |           |           |                                         |                                 |                              |                             |                       |                              |                              |                               |              |
| 156-00067                                                                                          | 156-00067 | T120RFT9A | 120 lbs (534)                           | 4" (101.6)                      | 15.25" (387.4)               | .30" (7.6)                  | .85" (21.6)           | .51" (13)                    | .75" (19.1)                  | .36" (9)                      | 100          |
| 156-00068                                                                                          | 156-00068 | WSSFT9A   | 120 lbs (534)                           | 2.25" (57.1)                    | 9" (228.6)                   | .50" (12.7)                 | .85" (21.6)           | .51" (13)                    | .75" (19.1)                  | .36" (9)                      | 100          |
| 156-00069                                                                                          | 156-00069 | WSIFT9A   | 120 lbs (534)                           | 3.25" (82.5)                    | 12" (304.8)                  | .50" (12.7)                 | .85" (21.6)           | .51" (13)                    | .75" (19.1)                  | .36" (9)                      | 100          |
| 156-00070                                                                                          | 156-00070 | WSRFT9A   | 120 lbs (534)                           | 4.13" (104.8)                   | 15" (381)                    | .50" (12.7)                 | .85" (21.6)           | .51" (13)                    | .75" (19.1)                  | .36" (9)                      | 100          |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes.

Use **Part No.** for ordering and **Type** for specification purposes.

Product Selection

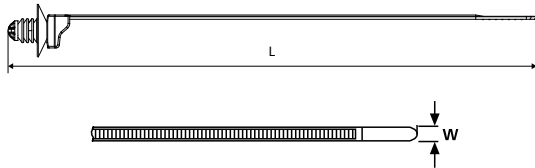
| Article No.                                                                                         | Part No.  | Type      | Min. Tensile Strength lbs. (N) | Max. Ø Bundle in. (mm) | Cable Tie           |                    | Mount           |                     |                     |                      | Pkg. Qty. |
|-----------------------------------------------------------------------------------------------------|-----------|-----------|--------------------------------|------------------------|---------------------|--------------------|-----------------|---------------------|---------------------|----------------------|-----------|
|                                                                                                     |           |           |                                |                        | Length (L) in. (mm) | Width (W) in. (mm) | Disc Ø in. (mm) | Width (W2) in. (mm) | Height (H) in. (mm) | Height (H2) in. (mm) |           |
| FT9B - Mounting Hole Ø: .343"- .363" (8.75 - 9.25mm) - Panel Thickness: .04" - .62" (1.0 - 15.8 mm) |           |           |                                |                        |                     |                    |                 |                     |                     |                      |           |
| 156-00071                                                                                           | 156-00071 | T120RFT9B | 120 lbs (534)                  | 4" (101.6)             | 15.25" (387.4)      | .30" (7.6)         | .85" (21.6)     | .51" (13)           | 1.12" (28.4)        | .73" (18.4)          | 100       |
| 156-00072                                                                                           | 156-00072 | WSSFT9B   | 120 lbs (534)                  | 2.25" (57.1)           | 9" (228.6)          | .50" (12.7)        | .85" (21.6)     | .51" (13)           | 1.12" (28.4)        | .73" (18.4)          | 100       |
| 156-00074                                                                                           | 156-00074 | WSRFT9B   | 120 lbs (534)                  | 4.13" (104.8)          | 15" (381)           | .50" (12.7)        | .85" (21.6)     | .51" (13)           | 1.12" (28.4)        | .73" (18.4)          | 100       |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes.

Use **Part No.** for ordering and **Type** for specification purposes.

## Cable Tie with Fir Tree Mount

This fir tree mount tie provides a low insertion force with a high extraction force. The outside serrations present a smooth surface to the cables preventing damage to the insulation. The unique head design allows the cable tie to firmly hold bundles as small as .06" diameter and the disc offers added water protection.



### Material Data

|                       |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Polyamide 6.6 heat stabilized (PA66HS)</b>           |
| Operating Temperature | <b>-40 °F to +257 °F (-40 °C to +125 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                          |



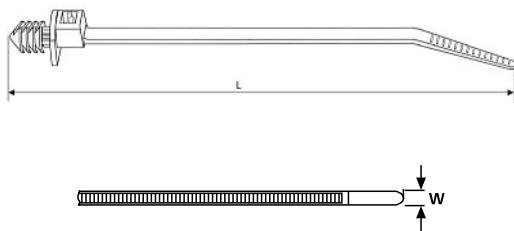
### Product Selection

| Article No. | Part No.         | Type           | Min. Tensile Strength | Mounting Hole Ø          | Panel Thickness        | Length (L) | Max. Ø Bundle | Width (W)  | Color | Pkg. Qty. |
|-------------|------------------|----------------|-----------------------|--------------------------|------------------------|------------|---------------|------------|-------|-----------|
|             |                  |                | lbs. (N)              | in. (mm)                 | in. (mm)               | in. (mm)   | in. (mm)      | in. (mm)   |       |           |
| 157-00108   | <b>157-00108</b> | T50SOSFT6E2    | 40 lbs (180)          | .248 - .275" (6.3 - 7.0) | .02 - .16" (.06 - 4.2) | 6.3" (160) | 1.4" (35)     | .18" (4.6) | Black | 1000      |
| 157-00097   | <b>157-00097</b> | T50SOSFT6LG-E  | 40 lbs (180)          | .248 - .275" (6.3 - 7.0) | .03 - .28" (.07 - 7.0) | 6.5" (165) | 1.4" (35)     | .18" (4.6) | Black | 1000      |
| 157-00140   | <b>157-00140</b> | T50SOSFT6LG-E2 | 40 lbs (180)          | .24 - .28" (6.1 - 7.0)   | .02 - .32" (.6 - 8.2)  | 6.7" (170) | 1.4" (35)     | .18" (4.6) | Black | 1000      |
| 157-00072   | <b>157-00072</b> | T50SOSFT8E     | 40 lbs (180)          | .31 - .33" (8.0 - 8.5)   | .02 - .24" (.6 - 6.0)  | 6.4" (163) | 1.4" (35)     | .18" (4.6) | Black | 1000      |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Fir Tree Push Mount Ties

Fir tree design grips to the inside of a hole. They can be used on sheet metal, wood, and cast iron. Type T50RTM25E has a longer fir tree for larger panel thicknesses.



### Material Data

|                       |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Polyamide 6.6 heat stabilized (PA66HS)</b>           |
| Operating Temperature | <b>-40 °F to +221 °F (-40 °C to +105 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                          |



### Material Data

|                       |                                                                                 |
|-----------------------|---------------------------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 impact modified, heat stabilized, UV resistant (PA66HIRHS)</b> |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                         |
| Flammability          | <b>UL94 HB</b>                                                                  |



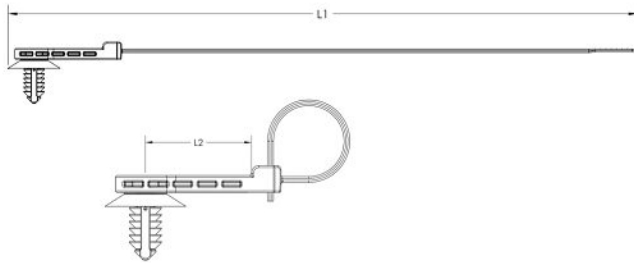
### Product Selection

| Product Selection                                      |               |           |                       |                            |                              |             |               |            |       |           |
|--------------------------------------------------------|---------------|-----------|-----------------------|----------------------------|------------------------------|-------------|---------------|------------|-------|-----------|
| Article No.                                            | Part No.      | Type      | Min. Tensile Strength | Mounting Hole Ø            | Panel Thickness              | Length (L)  | Max. Ø Bundle | Width (W)  | Color | Pkg. Qty. |
|                                                        |               |           | lbs. (N)              | in. (mm)                   | in. (mm)                     | in. (mm)    | in. (mm)      | in. (mm)   |       |           |
| Heat Stabilized Material                               |               |           |                       |                            |                              |             |               |            |       |           |
| 126-03501                                              | T50RTM250HSM4 | T50RTM25  | 50 lbs (225)          | .25" - .26"<br>(6.5 - 6.6) | .052" - .28"<br>(1.32 - 7.0) | 8.27" (210) | 1.97"(50.0)   | .19" (4.7) | Black | 1000      |
| Impact Modified Heat Stabilized, UV Resistant Material |               |           |                       |                            |                              |             |               |            |       |           |
| 126-03504                                              | T50RTM25E8HM4 | T50RTM25E | 50 lbs (225)          | .25" - .26"<br>(6.5 - 6.6) | .09" - .55"<br>(2.3 - 13.94) | 8.43" (214) | 1.97"(50.0)   | .19" (4.7) | Gray  | 1000      |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Offset Fir Tree Cable Ties

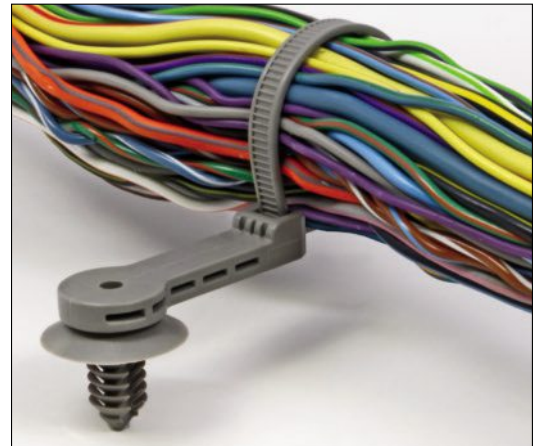
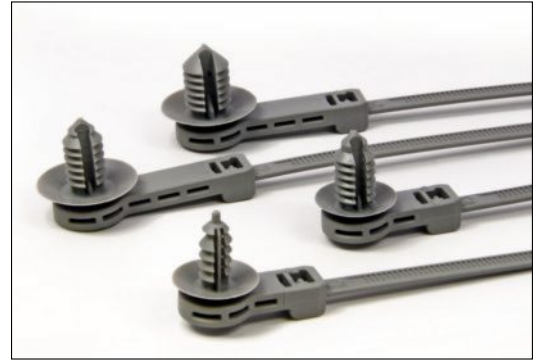
The Offset Cable Ties route and position wire and cable bundles away from a mounting hole. The offset bar between the fir tree and cable tie strap provides a robust and cored-out design to eliminate any potential bending of the wire or cable assembly once installed. The combination of 12.5mm and 25.0mm offset distances and various fir tree sizes offer coverage for a majority of industry offset routing applications. The outside serrations of the tie strap present a smooth surface to the cables preventing any possible damage to soft or delicate bundles.



### Material Data

|                       |                                                                                 |
|-----------------------|---------------------------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 impact modified, heat stabilized, UV resistant (PA66HIRHS)</b> |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                         |
| Flammability          | <b>UL94 HB</b>                                                                  |

RoHS



### Product Selection

| Article No. | Part No.         | Type              | Min. Tensile Strength | Mounting Hole Ø        | Length (L1)  | Length (L2) | Max. Ø Bundle | Color | Pkg. Qty. |
|-------------|------------------|-------------------|-----------------------|------------------------|--------------|-------------|---------------|-------|-----------|
|             |                  |                   | lbs. (N)              | in. (mm)               | in. (mm)     | in. (mm)    | in. (mm)      |       |           |
| 157-00118   | <b>157-00118</b> | T50ROSFTM6SO12.5A | 50 lbs (225)          | 6mm Threaded           | 8.5" (215.5) | 0.5" (12.5) | 1.97" (50)    | Gray  | 500       |
| 157-00130   | <b>157-00130</b> | T50ROSFT6SO12.5A  | 50 lbs (225)          | 0.24 - 0.28" (6.1-7.0) | 8.5" (215.5) | 0.5" (12.5) | 1.97" (50)    | Gray  | 500       |
| 157-00119   | <b>157-00119</b> | T50ROSFT6SO25A    | 50 lbs (225)          | 0.24 - 0.28" (6.1-7.0) | 9.0" (230.0) | 1.0" (25.0) | 1.97" (50)    | Gray  | 500       |
| 157-00120   | <b>157-00120</b> | T50ROSFT8SO25A    | 50 lbs (225)          | 0.30 - 0.33" (7.6-8.4) | 9.0" (230.0) | 1.0" (25.0) | 1.97" (50)    | Gray  | 500       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Oval Fir Tree Cable Ties

These cable ties feature a fir tree mount that has an innovative four-sided 360° branch design that offers full interference for a wide range of oval hole applications. This industry-first design allows for one part to be used across multiple hole diameters, and delivers cost savings through part consolidation. The clamp rails along the inside of the cable tie strap increase the grip around bundles, lowering the potential for lateral cable bundle movement.



| Material Data         |                                                                                 |
|-----------------------|---------------------------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 impact modified, heat stabilized, UV resistant (PA66HIRHS)</b> |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                         |
| Flammability          | <b>UL94 HB</b>                                                                  |



| Material Data         |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Polyamide 6.6 heat stabilized (PA66HS)</b>           |
| Operating Temperature | <b>-40 °F to +221 °F (-40 °C to +105 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                          |



| Material Data         |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Polyamide 4.6 (PA46)</b>                             |
| Operating Temperature | <b>-40 °F to +275 °F (-40 °C to +135 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                          |



| Product Selection |                  |               |                      |                  |             |               |           |  |           |
|-------------------|------------------|---------------|----------------------|------------------|-------------|---------------|-----------|--|-----------|
| Article No.       | Part No.         | Type          | Min.Tensile Strength | *Mounting Hole Ø | Length (L1) | Max. Bundle Ø |           |  | Pkg. Qty. |
|                   |                  |               | lbs. (N)             | in. (mm)         | in. (mm)    | in. (mm)      | Material  |  |           |
| 157-00143         | <b>157-00143</b> | T50SOSFTOVALU | 50 lbs (225)         | 6.2x12.2mm       | 6.6" (168)  | 1.38" (35)    | PA66HS    |  | 500       |
| 157-00142         | <b>157-00142</b> | T50ROSFTOVALU | 50 lbs (225)         | 6.5x12.5mm       | 8.6" (219)  | 1.97" (50)    | PA66HIRHS |  | 500       |
| 157-00157         | <b>157-00157</b> | T50ROSFTOVALU | 50 lbs (225)         | 6.5x13.0mm       | 8.6" (219)  | 1.97" (50)    | PA46      |  | 500       |
|                   |                  |               |                      | 7.0x12.0mm       |             |               |           |  |           |

\*Each oval fir tree cable ties fit all four mounting hole diameters. Dimensions are approximate and subject to technical changes.

Use **Part No.** for ordering and **Type** for specification purposes.

## Fir Tree Cable Tie for 6mm Threaded Holes

Ideal for use in applications where the ease of insertion and the difficulty of extraction is a primary concern, this fastening device provides for both a low insertion and high extraction force in 6mm threaded mounting holes. This cable tie with fir tree mount features a low-profile head that delivers compact bundling by securing the bundle near the threaded hole. The fir tree functions to spiral downward in a stairwell fashion to provide perfect alignment with the pitch of the threads in the hole. The clamp rails along the inside of the cable tie strap enhance the hold around bundles, lowering the potential for lateral cable bundle movement.



| Material Data         |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Polyamide 4.6 (PA46)</b>                             |
| Operating Temperature | <b>-40 °F to +275 °F (-40 °C to +135 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                          |



| Material Data         |                                                                                 |
|-----------------------|---------------------------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 impact modified, heat stabilized, UV resistant (PA66HIRHS)</b> |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                         |
| Flammability          | <b>UL94 HB</b>                                                                  |



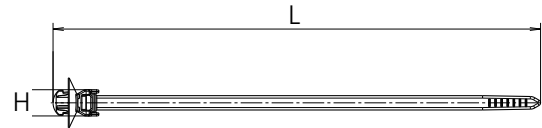
| Product Selection |                  |             |                       |                 |             |               |           |       |           |
|-------------------|------------------|-------------|-----------------------|-----------------|-------------|---------------|-----------|-------|-----------|
| Article No.       | Part No.         | Type        | Min. Tensile Strength | Mounting Hole Ø | Length (L1) | Max. Bundle Ø |           |       | Pkg. Qty. |
|                   |                  |             | lbs. (N)              | in. (mm)        | in. (mm)    | in. (mm)      | Material  | Color |           |
| 157-00112         | <b>157-00112</b> | T50ROSFTQM6 | 50 lbs (225)          | 6mm Threaded    | 8.6" (219)  | 1.97" (50)    | PA66HIRHS | Black | 500       |
| 157-00144         | <b>157-00144</b> | T50ROSFTQM6 | 50 lbs (225)          | 6mm Threaded    | 8.6" (219)  | 1.97" (50)    | PA46      | Brown | 500       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Domed Low Profile Push Mount Ties

The low profile push mount design provides an overall shortened length which assists in limiting protrusion on the opposing side of application surfaces. The rounded tip of the mount allows for a smoother surface in case of contact with surrounding components or human touch during service. The dome provides a tight, rattle-free installation and the outside serrated strap has ribs designed for convoluted tubing. The dome also acts as a seal to keep out dust and liquid.

| Material Data         |                                                  |
|-----------------------|--------------------------------------------------|
| Material              | Polyamide 6.6 heat stabilized (PA66HS)           |
| Operating Temperature | -40 °F to +221 °F (-40 °C to +105 °C) continuous |
| Flammability          | UL94 V2                                          |



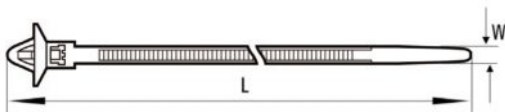
| Product Selection |                  |                   | Min. Tensile Strength | Mounting Hole Ø      | Panel Thickness          | Length (L) | Max. Ø Bundle | Width (W)  |       | Pkg. Qty. |
|-------------------|------------------|-------------------|-----------------------|----------------------|--------------------------|------------|---------------|------------|-------|-----------|
| Article No.       | Part No.         | Type              | lbs. (N)              | in. (mm)             | in. (mm)                 | in. (mm)   | in. (mm)      | in. (mm)   | Color |           |
| 126-00099         | <b>126-00099</b> | T50SOSKSFT5SE     | 40 (180)              | .189-.205" (4.8-5.2) | .027 - .051" (.70 - 1.3) | 6.2" (156) | 1.38" (35.0)  | .18" (4.6) | Black | 1000      |
| 126-00075         | <b>126-00075</b> | T50SOSKSFT5.4E    | 50 (225)              | .205-.220" (5.2-5.6) | .027 - .051" (.70 - 1.3) | 6.2" (156) | 1.38" (35.0)  | .18" (4.6) | Black | 500       |
| 126-00081         | <b>126-00081</b> | T50SOSKSFT6SE     | 40 (180)              | .248-.264" (6.3-6.7) | .027 - .051" (.70 - 1.3) | 6.2" (156) | 1.38" (35.0)  | .18" (4.6) | Black | 500       |
| 126-00086         | <b>126-00086</b> | T50SOSKSFT6.5S2-E | 50 (225)              | .25-.26" (6.3-6.7)   | .06 - .09" (1.7 - 2.3)   | 6.2" (156) | 1.38" (35.0)  | .18" (4.6) | Black | 500       |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Domed Push Mount Ties

The domed head tie provides a tight, rattle-free installation. The dome also acts as a seal to keep out dust and liquid.

| Material Data         |                                                  |
|-----------------------|--------------------------------------------------|
| Material              | Polyamide 6.6 heat stabilized (PA66HS)           |
| Operating Temperature | -40 °F to +221 °F (-40 °C to +105 °C) continuous |
| Flammability          | UL94 V2                                          |



| Product Selection |                  |         | Min. Tensile Strength | Mounting Hole Ø          | Panel Thickness           | Length (L) | Max. Ø Bundle | Width (W)   |         | Pkg. Qty. |
|-------------------|------------------|---------|-----------------------|--------------------------|---------------------------|------------|---------------|-------------|---------|-----------|
| Article No.       | Part No.         | Type    | lbs. (N)              | in. (mm)                 | in. (mm)                  | in. (mm)   | in. (mm)      | in. (mm)    | Color   |           |
| 111-85350         | <b>111-85350</b> | T50SD6  | 50lbs. (225)          | .25 - .30" (6.3 - 7.5)   | .023 - .047" (.06 - 1.2)  | 6.3" (160) | 1.22" (31)    | 1.22" (5.1) | Black   | 500       |
| 126-00015         | <b>126-00015</b> | T50SDOP | 50lbs. (225)          | .25 - .48" (6.2 - 12.2)  | .028 - .079" (0.7 - .028) | 6.3" (160) | 1.18" (30)    | 1.97" (5.0) | Black   | 500       |
| 126-02300         | <b>126-02300</b> | T50SSTS | 50lbs. (225)          | .24 - .255" (6.1 - 6.5)  | .027 - .059" (0.7 - .15)  | 6.7" (170) | 1.22" (31)    | .18" (4.6)  | Natural | 1000      |
| 111-85850         | <b>111-85850</b> | T50MD7  | 50lbs. (225)          | .267 - .283" (6.8 - 7.2) | .05 - .08" (1.2 - 2.0)    | 8.9" (225) | 2.3" (59)     | .2" (5)     | Black   | 100       |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Push Mount Ties

One-piece, all plastic ties for quick, simple cable mounting.



| Material Data         |                                                        |
|-----------------------|--------------------------------------------------------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                            |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                         |



**UL**  
File# E64139

File# E04139

| Product Selection |           |           |                       |       |                            |                           |             |               |            |         |           |
|-------------------|-----------|-----------|-----------------------|-------|----------------------------|---------------------------|-------------|---------------|------------|---------|-----------|
| Article No.       | Part No.  | Type      | Min. Tensile Strength |       | Mounting Hole Ø            | Panel Thickness           | Length (L)  | Max. Ø Bundle | Width (W)  | Color   | Pkg. Qty. |
|                   |           |           | lbs.                  | (N)   | in. (mm)                   | in. (mm)                  | in. (mm)    | in. (mm)      | in. (mm)   |         |           |
| T30RSF            |           |           |                       |       |                            |                           |             |               |            |         |           |
| 111-85603         | T30RSF9C2 | T30RSF(U) | 30 lbs                | (135) | .19" - .22"<br>(4.76-5.59) | .04" - .09"<br>(0.9-2.36) | 6.34" (161) | 1.25" (31.8)  | .14" (3.6) | Natural | 100       |
| 126-00704         | T30RSF9M4 | T30RSF(U) | 30 lbs                | (135) | .19" - .22"<br>(4.76-5.59) | .04" - .09"<br>(0.9-2.36) | 6.34" (161) | 1.25" (31.8)  | .14" (3.6) | Natural | 1000      |
| 126-00700         | T30RSF0C2 | T30RSF(U) | 30 lbs                | (135) | .19" - .22"<br>(4.76-5.59) | .04" - .09"<br>(0.9-2.36) | 6.34" (161) | 1.25" (31.8)  | .14" (3.6) | Black   | 100       |
| 126-00702         | T30RSF0M4 | T30RSF(U) | 30 lbs                | (135) | .19" - .22"<br>(4.76-5.59) | .04" - .09"<br>(0.9-2.36) | 6.34" (161) | 1.25" (31.8)  | .14" (3.6) | Black   | 1000      |
| T50SSF            |           |           |                       |       |                            |                           |             |               |            |         |           |
| 126-00043         | 126-00043 | T50SSF    | 50 lbs                | (225) | .25" - .28"<br>(6.4-7.1)   | .04" - .14"<br>(1.0-3.56) | 6.26" (159) | 1.38" (35)    | .19" (4.7) | Natural | 100       |
| 126-00044         | 126-00044 | T50SSF    | 50 lbs                | (225) | .25" - .28"<br>(6.4-7.1)   | .04" - .14"<br>(1.0-3.56) | 6.26" (159) | 1.38" (35)    | .19" (4.7) | Natural | 1000      |
| 126-00045         | 126-00045 | T50SSF    | 50 lbs                | (225) | .25" - .28"<br>(6.4-7.1)   | .04" - .14"<br>(1.0-3.56) | 6.26" (159) | 1.38" (35)    | .19" (4.7) | Black   | 100       |
| 126-00046         | 126-00046 | T50SSF    | 50 lbs                | (225) | .25" - .28"<br>(6.4-7.1)   | .04" - .14"<br>(1.0-3.56) | 6.26" (159) | 1.38" (35)    | .19" (4.7) | Black   | 1000      |
| T50RSF            |           |           |                       |       |                            |                           |             |               |            |         |           |
| 111-85789         | T50RSF9C2 | T50RSF(U) | 50 lbs                | (225) | .25" - .28"<br>(6.4-7.1)   | .04" - .14"<br>(1.0-3.56) | 8.27" (210) | 1.73" (44)    | .19" (4.7) | Natural | 100       |
| 126-01011         | T50RSF9M4 | T50RSF(U) | 50 lbs                | (225) | .25" - .28"<br>(6.4-7.1)   | .04" - .14"<br>(1.0-3.56) | 8.27" (210) | 1.73" (44)    | .19" (4.7) | Natural | 1000      |
| 126-01003         | T50RSF0C2 | T50RSF(U) | 50 lbs                | (225) | .25" - .28"<br>(6.4-7.1)   | .04" - .14"<br>(1.0-3.56) | 8.27" (210) | 1.73" (44)    | .19" (4.7) | Black   | 100       |
| 126-01004         | T50RSF0M4 | T50RSF(U) | 50 lbs                | (225) | .25" - .28"<br>(6.4-7.1)   | .04" - .14"<br>(1.0-3.56) | 8.27" (210) | 1.73" (44)    | .19" (4.7) | Black   | 1000      |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Wing Push Mount Ties

Wing design helps stabilize the tie in high vibration applications. They can be used on sheet metal, wood, and cast iron.

| Material Data         |                                                            |
|-----------------------|------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                                |
| Operating Temperature | <b>-40 °F to +185 °F<br/>(-40 °C to +85 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                             |

RoHS

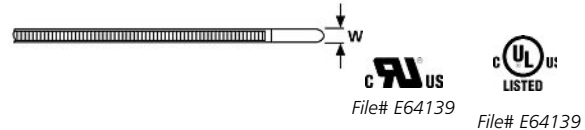
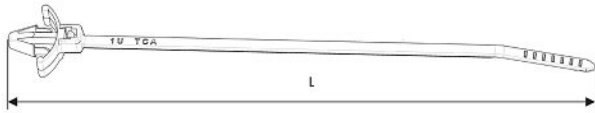


| Material Data         |                                                                                 |
|-----------------------|---------------------------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 impact modified, Heat Stabilized, UV Resistant (PA66HIRHS)</b> |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                         |
| Flammability          | <b>UL94 HB</b>                                                                  |

RoHS

| Material Data         |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Polyamide 6.6 heat stabilized (PA66HS)</b>           |
| Operating Temperature | <b>-40 °F to +221 °F (-40 °C to +105 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                          |

RoHS



Product Selection

Min. Tensile Strength

lbs. (N)

Mounting Hole Ø

in. (mm)

Panel Thickness

in. (mm)

Length (L)

in. (mm)

Max. Ø Bundle

in. (mm)

Width (W)

in. (mm)

Color

Material

Pkg. Qty.

Article No.

Part No.

Type

T18RWPM

126-00041

T18RWPM

18 lbs (80)

.19" - .22"  
(4.76-5.59)

.07" - .13"  
(1.85 - 3.18)

4.45" (113)

.87" (22)

.10" (2.5)

Natural

PA66

100

126-00603

T18RWPM9M4

T18RWPM

18 lbs (80)

.19" - .22"  
(4.76-5.59)

.07" - .13"  
(1.85 - 3.18)

4.45" (113)

.87" (22)

.10" (2.5)

PA66

1000

126-00042

126-00042\*

T18RWPM

18 lbs (80)

.19" - .22"  
(4.76-5.59)

.07" - .13"  
(1.85 - 3.18)

4.45" (113)

.87" (22)

.10" (2.5)

Black

PA66HS

1000

T50SSFM

126-00049

126-00049

T50SSFM

50 lbs (225)

.24" - .26"  
(6.0 - 6.6)

.03" - .12"  
(.7 - 3.0)

6.3" (160)

1.38" (35)

.18" (4.7)

Black

PA66HIRHS

500

126-00069

126-00069

T50SSFM

50 lbs (225)

.24" - .26"  
(6.0 - 6.6)

.03" - .12"  
(.7 - 3.0)

6.3" (160)

1.38" (35)

.18" (4.7)

Natural

PA66

500

T50SL6

111-85469

T50SL6.NN6P

T50SL6

50 lbs (225)

.24" - .26"  
(6.1 - 6.5)

.03" - .10"  
(0.8 - 2.5)

6.50" (165)

1.34" (34)

.18" (4.6)

Natural

PA66

500

T50SL7

111-85479

T50SL7.NN6P

T50SL7

50 lbs (225)

.27" - .28"  
(6.9 - 7.1)

.03" - .10"  
(0.8 - 2.5)

6.50" (165)

1.34" (34)

.18" (4.6)

Natural

PA66

500

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes. UL recognition applies to T18RWPM ties. \*UL listing applies to 126-00042.

## Arrowhead Mount Ties with Seal

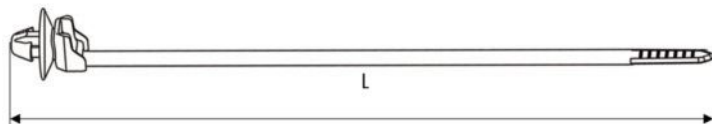
The arrowhead design of these ties offers a positive, low insertion force and a high extraction force. These ties feature a foam rubber seal which provides additional protection against moisture, dirt and other impurities.



### Material Data

|                       |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Polyamide 6.6 heat stabilized (PA66HS)</b>           |
| Operating Temperature | <b>-40 °F to +221 °F (-40 °C to +105 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                          |

RoHS



### Product Selection

| Article No. | Part No.         | Type                | Min. Tensile Strength | Mounting Hole Ø           | Panel Thickness            | Length (L)  | Max. Ø Bundle | Width (W)  | Color   | Pkg. Qty. |
|-------------|------------------|---------------------|-----------------------|---------------------------|----------------------------|-------------|---------------|------------|---------|-----------|
|             |                  |                     | lbs. (N)              | in. (mm)                  | in. (mm)                   | in. (mm)    | in. (mm)      | in. (mm)   |         |           |
| 126-03100   | <b>126-03100</b> | T50SOSSFT6.5E-MD    | 50 lbs (225)          | .25" - .26"<br>(6.3-6.7)  | .02" - .07"<br>(0.6 - 1.8) | 6.30" (160) | 1.38" (35)    | .18" (4.6) | Green   | 500       |
| 156-00264   | <b>156-00264</b> | T50SOSSFT6.5E-MD    | 50 lbs (225)          | .25" - .26"<br>(6.3-6.7)  | .02" - .07"<br>(0.6 - 1.8) | 6.30" (160) | 1.38" (35)    | .18" (4.6) | Black   | 500       |
| 126-00065*  | <b>126-00065</b> | T50SOSSFT6.5E-MS-MD | 50 lbs (225)          | .25" - .27"<br>(6.3-6.75) | .03" - .06"<br>(0.7 - 1.6) | 6.42" (163) | 1.38" (35)    | .18" (4.6) | Natural | 500       |
| 156-00444   | <b>156-00444</b> | T50ROSAH6MDU        | 50 lbs (225)          | .24 - .25"<br>(6.3 - 6.6) | .03" - .08"<br>(0.7 - 2.1) | 8.5" (216)  | 1.97" (50)    | .20" (5.0) | Natural | 500       |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

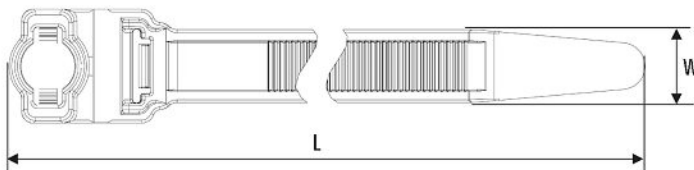
\*Arrowhead includes a pointed mount feature to assist in puncturing through plastic sheeting and other protective films.

## Wide Strap Heavy Duty Stud Mount Cable Ties

The wide strap stud mount cable tie minimizes pinching on soft bundles and features a low profile head to provide compact bundling. A thinner strap provides increased flexibility for improved ergonomics. Available with a 1/4" and 3/8" stud mount, the wide strap tie utilizes a strong hinge between the stud mount and head to provide superior holding ability on a threaded stud.

- Wide strap to minimize pinching of soft hoses and convoluted tubing
- Clamping rails to increase grip on round bundles
- Wide variation of bundle diameters: .375" - 4.125" (9.5mm - 104.7mm)
- Flexible strap
- Flexible hinge
- Mount provides low insertion and high extraction forces

| Material Data         |                                                                                 | RoHS |
|-----------------------|---------------------------------------------------------------------------------|------|
| Material              | <b>Polyamide 6.6 impact modified, Heat Stabilized, UV Resistant (PA66HIRHS)</b> |      |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                         |      |
| Flammability          | <b>UL94 HB</b>                                                                  |      |



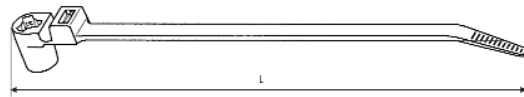
| Product Selection                |                  |        | Min. Tensile Strength | Length (L)     | Max. Ø Bundle   | Width (W)  | Color | Pkg. Qty. |
|----------------------------------|------------------|--------|-----------------------|----------------|-----------------|------------|-------|-----------|
| Article No.                      | Part No.         | Type   | lbs. (N)              | in. (mm)       | in. (mm)        | in. (mm)   |       |           |
| <b>1/4" (6.35 mm) Stud Mount</b> |                  |        |                       |                |                 |            |       |           |
| 157-00400                        | <b>157-00400</b> | WSS250 | 120 lbs (534)         | 9.7" (246.38)  | 2.25" (57.15)   | .5" (12.7) | Black | 300       |
| 157-00401                        | <b>157-00401</b> | WSI250 | 120 lbs (534)         | 12.7" (322.58) | 3.25" (82.55)   | .5" (12.7) | Black | 300       |
| 157-00402                        | <b>157-00402</b> | WSR250 | 120 lbs (534)         | 15.7" (398.78) | 4.125" (104.78) | .5" (12.7) | Black | 300       |
| <b>8 mm Stud Mount</b>           |                  |        |                       |                |                 |            |       |           |
| 157-00034                        | <b>157-00034</b> | WSS8MM | 120 lbs (534)         | 9.7" (246.38)  | 2.25" (57.15)   | .5" (12.7) | Black | 300       |
| 157-00035                        | <b>157-00035</b> | WSI8MM | 120 lbs (534)         | 12.7" (322.58) | 3.25" (82.55)   | .5" (12.7) | Black | 300       |
| 157-00036                        | <b>157-00036</b> | WSR8MM | 120 lbs (534)         | 15.7" (398.78) | 4.125" (104.78) | .5" (12.7) | Black | 300       |
| <b>3/8" (9.25 mm) Stud Mount</b> |                  |        |                       |                |                 |            |       |           |
| 157-00403                        | <b>157-00403</b> | WSS380 | 120 lbs (534)         | 9.7" (246.38)  | 2.25" (57.15)   | .5" (12.7) | Black | 300       |
| 157-00404                        | <b>157-00404</b> | WSI380 | 120 lbs (534)         | 12.7" (322.58) | 3.25" (82.55)   | .5" (12.7) | Black | 300       |
| 157-00405                        | <b>157-00405</b> | WSR380 | 120 lbs (534)         | 15.7" (398.78) | 4.125" (104.78) | .5" (12.7) | Black | 300       |

Installation tools - MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Stud Mount Tie

The stud mount tie mounts and secures a cable bundle in one component. The stud mount tie is designed for use on a 1/4" - 20 UNC threaded stud or the exposed threads of a machine screw.

| Material Data         |                                                                   |
|-----------------------|-------------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 impact modified, heat stabilized (PA66HIRHS)</b> |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>           |
| Flammability          | <b>UL94 HB</b>                                                    |



| Product Selection |                      |         | Stud Ø       | Min. Tensile Strength | Length (L)   | Max. Ø Bundle | Width (W)  | Color | Pkg. Qty. |
|-------------------|----------------------|---------|--------------|-----------------------|--------------|---------------|------------|-------|-----------|
| Article No.       | Part No.             | Type    | in. (mm)     | lbs. (N)              | in. (mm)     | in. (mm)      | in. (mm)   |       |           |
| 157-01300         | <b>T120RSM0HIRK2</b> | T120RSM | .25 " (6.25) | 120 lbs (535)         | 15.94" (405) | 3.98" (101)   | .30" (7.6) | Black | 50        |

Installation tools - MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Standoff Stud Mount Ties

This tie is easily mounted on the top of the stud, and the additional height gained by this design gives the bundle added clearance from the panel.

| Material Data         |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Polyamide 6.6 heat stabilized (PA66HS)</b>           |
| Operating Temperature | <b>-40 °F to +221 °F (-40 °C to +105 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                          |

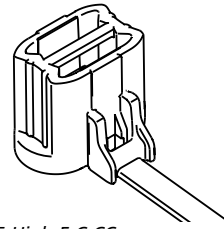


| Product Selection |                  |             | Stud Ø    | Min. Tensile Strength | Length (L)  | Max. Ø Bundle | Width (W)   | Color | Pkg. Qty. |
|-------------------|------------------|-------------|-----------|-----------------------|-------------|---------------|-------------|-------|-----------|
| Article No.       | Part No.         | Type        | in. (mm)  | lbs. (N)              | in. (mm)    | in. (mm)      | in. (mm)    |       |           |
| 155-30602         | <b>155-30602</b> | T50SSBS50TE | .20 " (5) | 45 lbs (200)          | 6.30" (160) | 1.38" (35)    | .181" (4.6) | Black | 500       |
| 157-00083         | <b>157-00083</b> | T50SSBS60TE | .24 " (6) | 45 lbs (200)          | 6.30" (160) | 1.38" (35)    | .181" (4.6) | Black | 1000      |

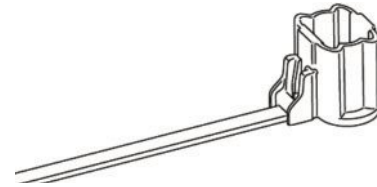
Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Oval Shaped Variable Stud Mount Ties

The special oval shape provides for an approximate .20" (5.5mm) lateral adjustment, allowing for any misalignment of the stud or incorrect positioning of the tie on the cables. The "soft push" mount allows it to be installed onto a weld stud without the use of any tools.



T50SOSSB5-High-E-C-CC



T50SOSSB5-High-E-O-US

### Material Data

|                       |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Polyamide 6.6 heat stabilized (PA66HS)</b>           |
| Operating Temperature | <b>-40 °F to +221 °F (-40 °C to +105 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                          |



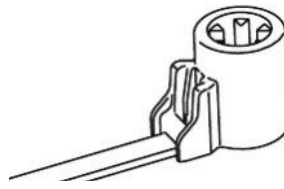
### Product Selection

| Article No. | Part No.         | Type                  | Stud Ø     |         | Min. Tensile Strength |       | Length (L) |       | Max. Ø Bundle |      | Width (W) |       | Color | Pkg. Qty. |
|-------------|------------------|-----------------------|------------|---------|-----------------------|-------|------------|-------|---------------|------|-----------|-------|-------|-----------|
|             |                  |                       | in. (mm)   | (5)/(6) | lbs. (N)              | (225) | in. (mm)   | (167) | in. (mm)      | (35) | in. (mm)  | (5.0) |       |           |
| 157-00105   | <b>157-00105</b> | T50SOSSB5-High-E-C-CC | .20"(.24") | (5)/(6) | 50 lbs                | (225) | 6.6"       | (167) | 1.4"          | (35) | .20"      | (5.0) | Black | 1000      |
| 157-00106   | <b>157-00106</b> | T50SOSSB5-High-E-O-US | .20"(.24") | (5)/(6) | 50 lbs                | (225) | 6.6"       | (167) | 1.4"          | (35) | .20"      | (5.0) | Black | 500       |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Stud Mount Ties with Outside Serrations

Providing an especially secure hold and the ability to mount the cables very close to the stud, this tie is outside serrated preventing damage to the insulation of the cable.



T50SOSSB5SE

### Material Data

|                       |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Polyamide 6.6 heat stabilized (PA66HS)</b>           |
| Operating Temperature | <b>-40 °F to +221 °F (-40 °C to +105 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                          |



### Product Selection

| Article No. | Part No.         | Type        | Stud Ø   |     | Min. Tensile Strength |       | Length (L) |       | Max. Ø Bundle |      | Width (W) |       | Color | Pkg. Qty. |
|-------------|------------------|-------------|----------|-----|-----------------------|-------|------------|-------|---------------|------|-----------|-------|-------|-----------|
|             |                  |             | in. (mm) | (5) | lbs. (N)              | (225) | in. (mm)   | (160) | in. (mm)      | (35) | in. (mm)  | (4.6) |       |           |
| 155-12300   | <b>155-12300</b> | T50SOSSB5SE | .20 "    | (5) | 50 lbs                | (225) | 6.30"      | (160) | 1.38"         | (35) | .18"      | (4.6) | Black | 500       |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Flexible Head Stud Mount Tie

Flexible head wraps around cable bundle for easy installation. Tie mounts onto #10-24" stud.

| Material Data         |                                                        | RoHS |
|-----------------------|--------------------------------------------------------|------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                            |      |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C) continuous</b> |      |
| Flammability          | <b>UL94 V2</b>                                         |      |



| Product Selection |                    |        | Stud Ø  | Min. Tensile Strength | Length (L) | Max. Ø Bundle | Width (W)  | Color | Pkg. Qty. |
|-------------------|--------------------|--------|---------|-----------------------|------------|---------------|------------|-------|-----------|
| Article No.       | Part No.           | Type   |         |                       |            |               |            |       |           |
| 111-07110         | <b>T50RS5.NB3P</b> | T50RS5 | #10-24" | 50 lbs (225)          | 7.5" (190) | 1.5" (40)     | .18" (4.6) | Black | 100       |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

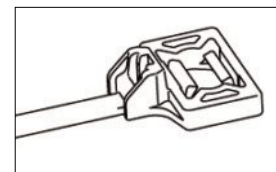
## Stud Mount Lateral Adjustment Tie

The special shape of this mount provides a .20" (5-6 mm) lateral adjustment to allow for any misalignment of the stud or incorrect positioning of the tie on the cables. The low profile of the mount allows for several ties to be installed one-on-top of the other (on the same stud) to accommodate different cable bundles.



| Material Data         |                                                         | RoHS |
|-----------------------|---------------------------------------------------------|------|
| Material              | <b>Polyamide 6.6 heat stabilized (PA66HS)</b>           |      |
| Operating Temperature | <b>-40 °F to +221 °F (-40 °C to +105 °C) continuous</b> |      |
| Flammability          | <b>UL94 V2</b>                                          |      |

*T50SOSWSP5E, parallel installation using two stud mount lateral ties.*



| Product Selection |                  |             | Stud Ø   | Min. Tensile Strength | Length (L)  | Max. Ø Bundle | Width (W)  | Color | Pkg. Qty. |
|-------------------|------------------|-------------|----------|-----------------------|-------------|---------------|------------|-------|-----------|
| Article No.       | Part No.         | Type        |          |                       |             |               |            |       |           |
| 155-23601         | <b>155-23601</b> | T50SOSWSP5E | .20" (5) | 50 lbs (225)          | 6.35" (163) | 1.4" (35)     | .18" (4.6) | Black | 500       |

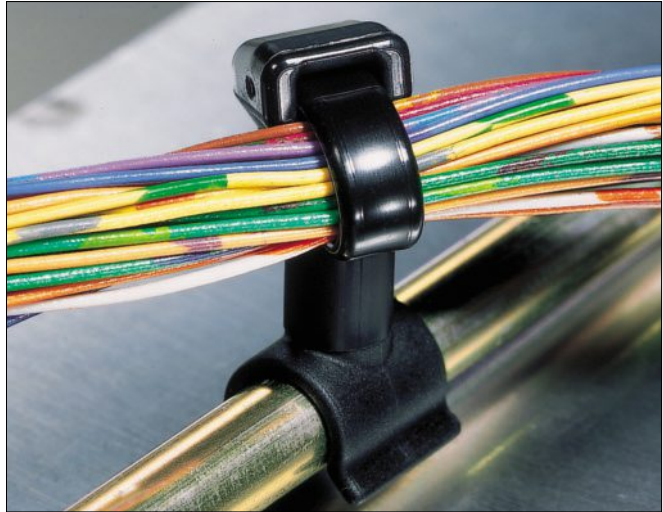
Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Wire and Hose Swivel Clip Ties

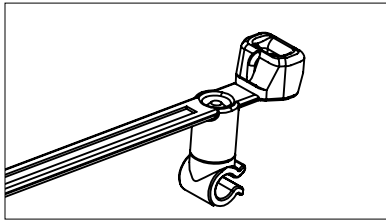
These simple to use inside serrated ties provide the opportunity to attach an additional wire or hose to an existing harness. Offering a full 360 degrees of rotation, the wire/hose can be oriented in any direction in relation to the main harness. It is ideally suited for any application in which the wire or hose can move in relation to the mounting point.

| Material Data         |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Polyamide 6.6 heat stabilized (PA66HS)</b>           |
| Operating Temperature | <b>-40 °F to +221 °F (-40 °C to +105 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                          |

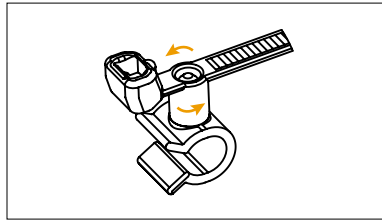
RoHS



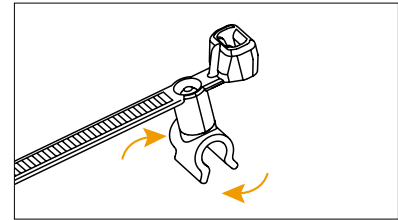
*T50SVC rotates in any direction.*



*T50SVC3.5*



*T50SVC6.5*



*T50SVC4/T50SVC5*

### Product Selection

| Article No. | Part No.         | Type      | Tensile Strength |       | Hose Clip Ø              | Maximum Bundle Ø | Length (L) | Width (W) | Color            | Pkg. Qty. |
|-------------|------------------|-----------|------------------|-------|--------------------------|------------------|------------|-----------|------------------|-----------|
|             |                  |           | lbs              | (N)   |                          |                  |            |           |                  |           |
| 156-00791   | <b>156-00791</b> | T50SVC3.5 | 50 lbs           | (222) | .13 - .17<br>(3.4 - 3.6) | 1.4 (35)         | 6.35 (163) | .18 (4.6) | Black            | 1000      |
| 156-00318   | <b>156-00318</b> | T50SVC4   | 50 lbs           | (225) | .15 - .17<br>(3.8 - 4.2) | 1.4 (35)         | 6.1 (155)  | .19 (4.7) | Black<br>Natural | 500       |
| 155-31202   | <b>155-31202</b> | T50SVC5   | 50 lbs           | (222) | .17 - .20<br>(4.5 - 5.2) | 1.4 (35)         | 6.35 (163) | .18 (4.6) | Black            | 500       |
| 156-00155   | <b>156-00155</b> | T50SVC6.5 | 50 lbs           | (222) | .26 - .32<br>(6.5 - 8.0) | 1.4 (35)         | 6.1 (155)  | .19 (4.7) | Black            | 500       |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Omega Clip Cable Ties

Omega Clip Cable Ties provide the opportunity to attach a wire or hose to an existing bundle. Offering a full range of orientations, the wire/hose can be oriented in any direction in relation to the main harness. The omega clip design is ideally suited for easing the application process on the production floor by allowing for an easy one-step snap fit of the harness assembly to the wire or hose.



Omega Clips secure cables to harnesses, hoses, or tubular frame rails.

### Material Data - Cable Ties

|                       |                                                         |             |
|-----------------------|---------------------------------------------------------|-------------|
| Material              | <b>Polyamide 6.6 heat stabilized (PA66HS)</b>           | <b>RoHS</b> |
| Operating Temperature | <b>-40 °F to +221 °F (-40 °C to +105 °C) continuous</b> |             |
| Flammability          | <b>UL94 V2</b>                                          |             |

### Material Data - Omega Clips

|                       |                                                                                 |             |
|-----------------------|---------------------------------------------------------------------------------|-------------|
| Material              | <b>Polyamide 6.6 impact modified, heat stabilized, UV resistant (PA66HIRHS)</b> | <b>RoHS</b> |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                         |             |
| Flammability          | <b>UL94 HB</b>                                                                  |             |

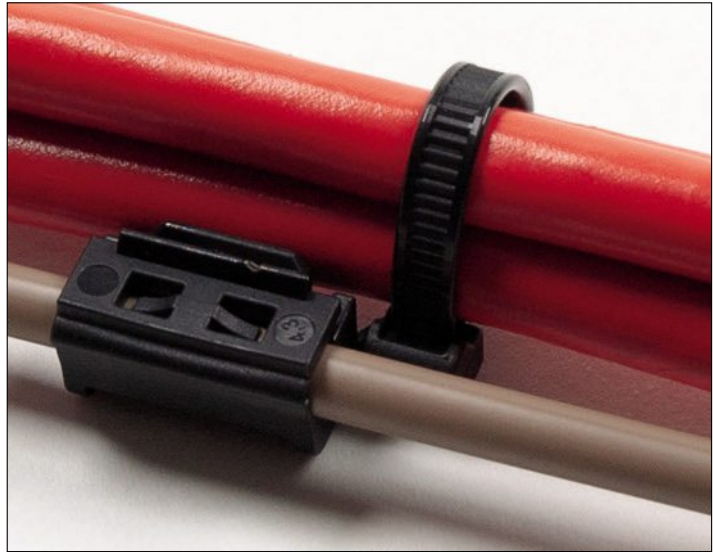
### Product Selection

| Article No. | Part No.         | Type             | Tensile Strength | Length (L) | Maximum Bundle Ø | Attaches to Diameter      | Color | Pkg. Qty. | Drawing |
|-------------|------------------|------------------|------------------|------------|------------------|---------------------------|-------|-----------|---------|
|             |                  |                  | lbs (N)          | in. (mm)   | in. (mm)         | in. (mm)                  |       |           |         |
| 156-00036   | <b>156-00036</b> | T50ROC1A         | 50 (225)         | 7.9 (200)  | 1.8 (45)         | 0.16 - 0.40 (4.0 - 10.0)  | Black | 500       |         |
| 156-00306   | <b>156-00306</b> | T50ROC1B         | 50 (225)         | 7.9 (200)  | 1.8 (45)         | 0.16 - 0.40 (4.0 - 10.0)  | Black | 500       |         |
| 156-00134   | <b>156-00134</b> | T50SVC OC10-14   | 50 (225)         | 6.0 (155)  | 1.4 (35)         | .40 - .55 (10.0 - 14.0)   | Black | 500       |         |
| 156-00135   | <b>156-00135</b> | T50SVC OC15-18   | 50 (225)         | 6.0 (155)  | 1.4 (35)         | .60 - .71 (15.0 - 18.0)   | Black | 500       |         |
| 156-00136   | <b>156-00136</b> | T50SVC OC19-24.5 | 50 (225)         | 6.0 (155)  | 1.4 (35)         | .75-.96 (19.0 - 24.5)     | Black | 500       |         |
| 156-00272   | <b>156-00272</b> | T50SVC OC25-31   | 50 (225)         | 6.0 (155)  | 1.4 (35)         | .98-1.22 (25.0 - 31.0)    | Black | 250       |         |
| 156-00273   | <b>156-00273</b> | T50SVC OC31-39   | 50 (225)         | 6.0 (155)  | 1.4 (35)         | 1.22 - 1.54 (31.0 - 39.0) | Black | 250       |         |
| 156-00137   | <b>156-00137</b> | T50SVC OC39-45   | 50 (225)         | 6.0 (155)  | 1.4 (35)         | 1.54 - 1.77 (39.0 - 45.0) | Black | 250       |         |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Wire Clamping Cable Ties

Wire Clamping Ties were designed as an innovative solution to mounting wire or cable harness assemblies to wire suspension frames found in seating applications. The clamp easily secures to the wire frame for a tight fit and is available in four different wire frame sizes and two separate orientations to provide both perpendicular and parallel routing. The wire clamp design is ideally suited for easing the application process on the production floor by allowing for an easy snap fit of the harness assembly to the wire frame.



| Material Data         |                                                  |
|-----------------------|--------------------------------------------------|
| Material              | Polyamide 6.6 heat stabilized (PA66HS)           |
| Operating Temperature | -40 °F to +221 °F (-40 °C to +105 °C) continuous |
| Flammability          | UL94 V2                                          |



| Product Selection |                  | Type         | Tensile Strength | Length (L) | Maximum Bundle Ø | Attaches to Diameter | Color | Pkg. Qty. | Drawing |
|-------------------|------------------|--------------|------------------|------------|------------------|----------------------|-------|-----------|---------|
| Article No.       | Part No.         |              | lbs (N)          | in. (mm)   | in. (mm)         | in. (mm)             |       |           |         |
| 148-00089         | <b>148-00089</b> | T50SOSWA1.8E | 50 (225)         | 6 (150)    | 1.4 (35)         | .07 (1.8)            | Black | 500       |         |
| 148-00088         | <b>148-00088</b> | T50SOSWA2.0E | 50 (225)         | 6 (150)    | 1.4 (35)         | .09 (2.18)           | Black | 500       |         |
| 148-00095         | <b>148-00095</b> | T50SOSWA3.4E | 50 (225)         | 6 (150)    | 1.4 (35)         | .13 (3.4)            | Black | 500       |         |
| 148-00092         | <b>148-00092</b> | T50SOSWA4.3E | 50 (225)         | 6 (150)    | 1.4 (35)         | .17 (4.3)            | Black | 500       |         |
| 148-00090         | <b>148-00090</b> | T50SOSWB1.8E | 50 (225)         | 6 (150)    | 1.4 (35)         | .07 (1.8)            | Black | 500       |         |
| 148-00093         | <b>148-00093</b> | T50SOSWB2.0E | 50 (225)         | 6 (150)    | 1.4 (35)         | .09 (2.18)           | Black | 500       |         |
| 148-00096         | <b>148-00096</b> | T50SOSWB3.4E | 50 (225)         | 6 (150)    | 1.4 (35)         | .13 (3.4)            | Black | 500       |         |
| 148-00091         | <b>148-00091</b> | T50SOSWB4.3E | 50 (225)         | 6 (150)    | 1.4 (35)         | .17 (4.3)            | Black | 500       |         |

Installation tools - EVO7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Button Head Ties

Button Head ties provide a one-piece mounting solution for bundles, eliminating the need for additional mounts and fasteners. The strap contains serrations on both sides and has two opposing pawls recessed within the domed head, enabling the strap to be directed either way through the button head.

These key features of the Button Head Ties present ease of installation and high durability.

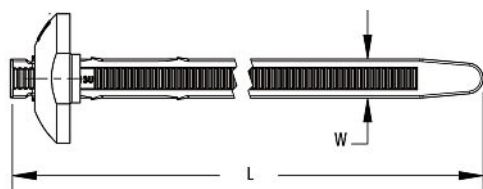
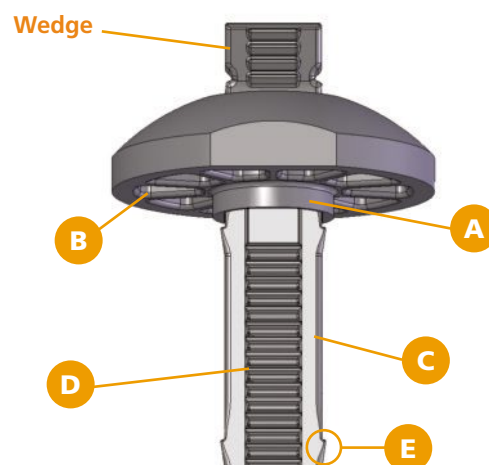
- A. Pilot Bushing** – Protects the strap from abrasion on the mounting hold edge
- B. Ribs** – Adds stability on the bottom of the head
- C. Strap** – Enhances flexibility due to its edge radiuses
- D. Serrations and Wedge** – Provides optimal strength when the strap serrations are seated in the head
- E. Lower Retainers** – Holds HellermannTyton's MSBT120 saddle mounts in place during assembly (BT130 only)



| Material Data- Button Head |                                                  |
|----------------------------|--------------------------------------------------|
| Material                   | Polyamide 6.6 heat stabilized (PA66HS)           |
| Color                      | Black                                            |
| Operating Temperature      | -40 °F to +221 °F (-40 °C to +105 °C) continuous |
| Flammability               | UL94 V2                                          |



| Material Data - Strap |                                                                          |
|-----------------------|--------------------------------------------------------------------------|
| Material              | Polyamide 6.6 impact modified, heat stabilized, UV resistant (PA66HIRHS) |
| Color                 | Black                                                                    |
| Operating Temperature | -40 °F to +230 °F (-40 °C to +110 °C) continuous                         |
| Flammability          | UL94 HB                                                                  |



Note: In order to assure the strap is fully locked in its final secure position, the installer must make sure that the "wedge" located at the end of the strap is fully seated in the button and flush with the top of the button. The MK9 cable tie tool is recommended and end use testing is advised.



MK9 Tool -  
See page 77

See page 77

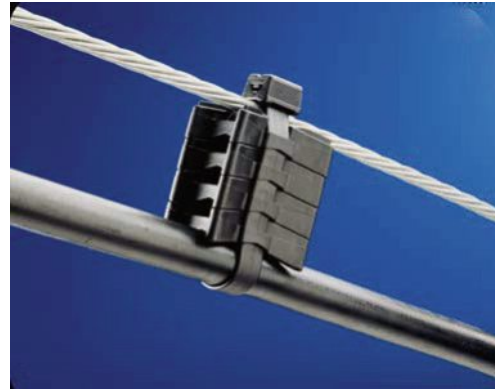
| Product Selection                                        |           |          | Min. Tensile Strength |       | Length (L) |         | Max. Ø Bundle |        | Width (W) |       | Color | Pkg. Qty. |
|----------------------------------------------------------|-----------|----------|-----------------------|-------|------------|---------|---------------|--------|-----------|-------|-------|-----------|
| Article No.                                              | Part No.  | Type     |                       |       |            |         |               |        |           |       |       |           |
|                                                          |           |          | lbs.                  | (N)   | in.        | (mm)    | in.           | (mm)   | in.       | (mm)  |       |           |
| BT105 Button Head Ties                                   |           |          |                       |       |            |         |               |        |           |       |       |           |
| 132-00010                                                | 132-00010 | BT105R   | 105 lbs               | (467) | 9.63"      | (244.4) | 2.62"         | (66.7) | .22"      | (5.6) | Black | 50        |
| 132-00011                                                | 132-00011 | BT105L   | 105 lbs               | (467) | 15"        | (381.5) | 4.33"         | (110)  | .22"      | (5.6) | Black | 50        |
| BT105 Button Head Ties with Pilot Bushings               |           |          |                       |       |            |         |               |        |           |       |       |           |
| 132-00006                                                | 132-00006 | BT105RP  | 105 lbs               | (467) | 9.63"      | (244.4) | 2.62"         | (66.7) | .22"      | (5.6) | Black | 50        |
| 132-00007                                                | 132-00007 | BT105LP  | 105 lbs               | (467) | 15"        | (381.5) | 4.33"         | (110)  | .22"      | (5.6) | Black | 50        |
| BT130 Button Head Ties with Retainers and Pilot Bushings |           |          |                       |       |            |         |               |        |           |       |       |           |
| 132-00008                                                | 132-00008 | BT130RDP | 130 lbs               | (578) | 10.51"     | (267.0) | 2.87"         | (73)   | .30"      | (7.6) | Black | 50        |
| 132-00009                                                | 132-00009 | BT130LDP | 130 lbs               | (578) | 15"        | (381.5) | 4.33"         | (110)  | .30"      | (7.6) | Black | 50        |

Installation tools - MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Extended Length Ties (EL-TY)

HellermannTyton's El-Ty is a high strength strapping system used for supporting, securing, fastening, and spacing cables, as well as a variety of other applications requiring extra-long, extremely durable strapping.

The El-Ty consists of a smooth strap and a separate, compact plastic head which encloses a stainless steel gripper. The stackable spacer accepts cable ties up to 1/2" wide for a versatile, easy to install spacing system.

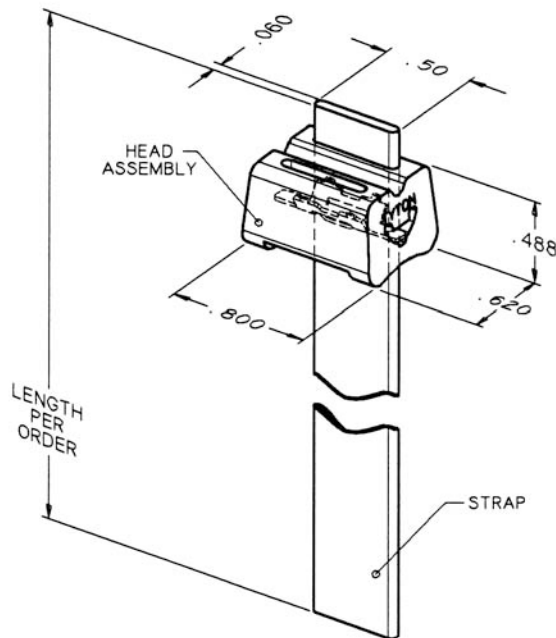


Material Data- Strap and Head

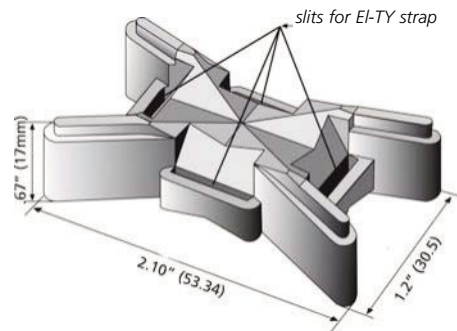
|                       |                                                 |             |
|-----------------------|-------------------------------------------------|-------------|
| Material              | <b>Polyacetal (POM)</b>                         | <b>RoHS</b> |
| Color                 | <b>Black</b>                                    |             |
| Operating Temperature | <b>-40 °F to +185 °F<br/>(-40 °C to +85 °C)</b> |             |
| Flammability          | <b>UL94 HB</b>                                  |             |
|                       |                                                 |             |

Material Data- Spacer

|                       |                                                             |             |
|-----------------------|-------------------------------------------------------------|-------------|
| Material              | <b>Polypropylene,<br/>UV-resistant (PP)</b>                 | <b>RoHS</b> |
| Color                 | <b>Black</b>                                                |             |
| Operating Temperature | <b>-40 °F to +239 °F (-40 °C to<br/>+115 °C) continuous</b> |             |
| Flammability          | <b>UL94 HB</b>                                              |             |
|                       |                                                             |             |



El-Ty Strap and Locking Head



El-Ty Spacer

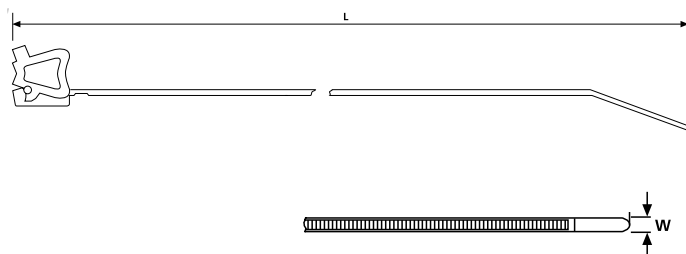
Product Selection

| Article No. | Part No.          | Type       | Description                                   | Color | Pkg. Qty. |
|-------------|-------------------|------------|-----------------------------------------------|-------|-----------|
| 111-30000   | <b>TELS-1</b>     | TELS1      | 1 - 50 ft reel of strap and 30 heads          | Black | 1         |
| 111-31000   | <b>TELS-H</b>     | TELSH      | Double entry and locking heads                | Black | 25        |
| 111-32108   | <b>TELS-13</b>    | TELS-13    | 10 - 13.5" straps and 10 double locking heads | Black | 1         |
| 111-32110   | <b>TELS-27</b>    | TELS-27    | 10 - 27" straps and 10 double locking heads   | Black | 1         |
| 111-32111   | <b>TELS-5K</b>    | TELS-5K    | 5 - 50 ft. reels and 150 heads                | Black | 1         |
| 111-32107   | <b>TELS-10K</b>   | TELS-10K   | 10 - 50 ft. reels and 300 heads               | Black | 1         |
| 111-32000   | <b>TELS-SPK2</b>  | TELS-SPK2  | EL-TY Spacer                                  | Black | 50        |
| 111-32106   | <b>TELS-SPOOL</b> | TELS-SPOOL | 50 ft. reel of strap                          | Black | 1         |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Aerial Support Spacer Ties

Aerial support spacer ties are two piece ties designed for standard spacing applications. The strap is molded from special high impact polyamide 6/6. The support spacer and head are made from a high density outdoor black polypropylene. Both materials offer resistance to sunlight, saltwater, and harsh chemical environments.



Material Data- Strap

|                       |                                                             |
|-----------------------|-------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 high impact modified (PA66HIR)</b>         |
| Color                 | <b>Black</b>                                                |
| Operating Temperature | <b>-40 °F to +230 °F<br/>(-40 °C to +110 °C) continuous</b> |
| Flammability          | <b>UL94 HB</b>                                              |



Material Data-Spacer/Head

|                       |                                                             |
|-----------------------|-------------------------------------------------------------|
| Material              | <b>Polypropylene, UV-resistant (PP)</b>                     |
| Color                 | <b>Black</b>                                                |
| Operating Temperature | <b>-40 °F to +239 °F<br/>(-40 °C to +115 °C) continuous</b> |
| Flammability          | <b>UL94 HB</b>                                              |



Product Selection

| Article No. | Part No.         | Type      | Min. Tensile Strength |       | Length (L) |         | Max. Ø Bundle |        | Width (W) |        | Color | Pkg. Qty. |
|-------------|------------------|-----------|-----------------------|-------|------------|---------|---------------|--------|-----------|--------|-------|-----------|
|             |                  |           | lbs.                  | (N)   | in.        | (mm)    | in.           | (mm)   | in.       | (mm)   |       |           |
| 111-98501   | <b>TAS100RWS</b> | TAS100RWS | 100 lbs               | (445) | 8.25"      | (209.6) | 1.75"         | (44.5) | .50"      | (12.7) | Black | 100       |
| 111-98500   | <b>TAS100MWS</b> | TAS100MWS | 100 lbs               | (445) | 10.7"      | (272.3) | 2.75"         | (70)   | .50"      | (12.7) | Black | 100       |
| 148-00022   | <b>TAS100LWS</b> | TAS100LWS | 100 lbs               | (445) | 16"        | (420)   | 4.5"          | (115)  | .50"      | (12.7) | Black | 100       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

Installation tools - MK9, MK9HT, MK9P.

## Bundling Clips

Bundling clips are designed to provide simple and easy methods for securing cable bundles, hoses or pipes. They are fastened onto the tape bar using bundle or cable ties. The different fixing orientations allow tape clips to be used with a wide range of panel thicknesses and hole diameters. Standard bundling clips are available as well as standoff and stud mount versions.



| Material Data         |                                                                                 |
|-----------------------|---------------------------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 impact modified, heat stabilized, UV resistant (PA66HIRHS)</b> |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                         |
| Flammability          | <b>UL94 HB</b>                                                                  |



| Material Data         |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Polyamide 6.6 heat stabilized (PA66HS)</b>           |
| Operating Temperature | <b>-40 °F to +221 °F (-40 °C to +105 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                          |



## Standard Bundling Clips

Standard bundling clips secure the bundle directly above the mounting hole.

| Product Selection |                  |                |                     |                         |                         |                         |           |         |           |         |
|-------------------|------------------|----------------|---------------------|-------------------------|-------------------------|-------------------------|-----------|---------|-----------|---------|
| Article No.       | Part No.         | Type           | Tape Bar Length (L) | Panel Thickness Minimum | Panel Thickness Maximum | Mounting Hole Ø         | Material  | Color   | Pkg. Qty. | Drawing |
|                   |                  |                | in. (mm)            | in. (mm)                | in. (mm)                | in. (mm)                |           |         |           |         |
| 151-00663         | <b>151-00663</b> | TC6FT6         | 1.55" (39.3)        | .03" (.07)              | .22" (5.7)              | .24 - .27" (6.2 - 6.8)  | PA66HIRHS | Black   | 2000      |         |
| 151-00651         | <b>151-00651</b> | TC6FT6LG       | 1.55" (39.3)        | .03" (.07)              | .71" (18)               | .24 - .27" (6.2 - 6.8)  | PA66HIRHS | Natural | 2000      |         |
| 155-30802         | <b>155-30802</b> | TC2FT6LG       | 2.17" (55)          | .02" (0.6)              | .2" (5.1)               | .25 - .28" (6.5 - 7.0)  | PA66HIRHS | Black   | 500       |         |
| 150-95500         | <b>150-95500</b> | TC5FT6S        | 1.46" (37)          | .03" (0.75)             | .06" (1.5)              | .26 - .28" (6.5 - 7.0)  | PA66HIRHS | Black   | 1000      |         |
| 151-02901         | <b>151-02901</b> | CHA2           | 2.13" (54)          | .03" (0.8)              | .08" (2)                | .26 - .28" (6.5 - 7.0)  | PA66      | Black   | 500       |         |
| 151-00605         | <b>151-00605</b> | TCOP6 2x122    | 2.17" (55)          | .02" (.6)               | .24" (6)                | .24 x .48" (6.2 x 12.2) | PA66HIRHS | Black   | 5000      |         |
| 151-00029         | <b>151-00029</b> | TCOP7 0x120    | 2.17" (55)          | .02" (.6)               | .24" (6)                | .28 x .47" (7.0 x 12)   | PA66HIRHS | Black   | 5000      |         |
| 155-11601         | <b>155-11601</b> | CLIP           | 2.17" (55)          | .06" (1.5)              | .12" (3.0)              | .25 - .28" (6.3 - 7.0)  | PA66HIRHS | Black   | 500       |         |
| 150-08110         | <b>150-08110</b> | CHA1           | 2.13" (54)          | .02" (.05)              | .05" (1.2)              | .25 - .28" (6.3 - 7.0)  | PA66      | Black   | 500       |         |
| 151-00790         | <b>151-00790</b> | BCOW FT6M      | 1.46" (37)          | .02" (.6)               | .14" (3.5)              | .26 - .28" (6.5 - 7.0)  | PA66HIRHS | Black   | 2000      |         |
| 102-69068         | <b>102-69068</b> | ATSBC2 KSFT6,5 | 1.5" (39)           | .06" (1.7)              | .09" (2.3)              | .25 - .27" (6.3 - 6.7)  | PA66HIRHS | Black   | 500       |         |
| 102-69067         | <b>102-69067</b> | ATSBC2 KSFT6,5 | 1.5" (39)           | .03" (.7)               | .05" (1.3)              | .25 - .27" (6.3 - 6.7)  | PA66HIRHS | Black   | 500       |         |
| 151-01109         | <b>151-01109</b> | BC90AH2        | 1.0" (25)           | .04" (1.0)              | .06" (1.5)              | .24 - .27" (6.2 - 6.8)  | PA66HIRHS | Black   | 5000      |         |
| 151-01125         | <b>151-01125</b> | SOC13FT6LGL    | 1.7" (43)           | .02" (0.6)              | .22" (5.7)              | .24 - .27" (6.1 - 6.9)  | PA66HIRHS | Gray    | 6000      |         |
| 151-01126         | <b>151-01126</b> | SOC13FT6LGR    | 1.7" (43)           | .02" (0.6)              | .22" (5.7)              | .24 - .27" (6.1 - 6.9)  | PA66HIRHS | Black   | 6000      |         |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Bundling Clips *continued*

### Standoff Bundling Clips

Standoff bundling clips secure the bundle away from the mounting hole.

| Product Selection |                  |                |                     |                         |                         |                         |                         |           |         |           |                                                                                       |
|-------------------|------------------|----------------|---------------------|-------------------------|-------------------------|-------------------------|-------------------------|-----------|---------|-----------|---------------------------------------------------------------------------------------|
| Article No.       | Part No.         | Type           | Tape Bar Length (L) | Panel Thickness Minimum | Panel Thickness Maximum | Distance Hole to Bundle | Mounting Hole Ø         | Material  | Color   | Pkg. Qty. | Drawing                                                                               |
|                   |                  |                | in. (mm)            | in. (mm)                | in. (mm)                | in. (mm)                | in. (mm)                |           |         |           |                                                                                       |
| 151-00623         | <b>151-00623</b> | SOCH FT6       | 2.2" (56)           | .03" (0.7)              | .22" (5.7)              | 1.2" (31)               | .25 - .27" (6.3 - 6.9)  | PA66HIRHS | Black   | 1500      |    |
| 151-00629         | <b>151-00629</b> | SOCH FT6       | 2.2" (56)           | .03" (0.7)              | .22" (5.7)              | 1.2" (31)               | .25 - .27" (6.3 - 6.9)  | PA66HIRHS | Black   | 1500      |    |
| 151-00650         | <b>151-00650</b> | SOC8 FT6       | 2.4" (61)           | .03" (0.7)              | .22" (5.7)              | .88" (22.4)             | .24 - .27" (6.2 - 6.8)  | PA66HIRHS | Natural | 1500      |    |
| 155-30902         | <b>155-30902</b> | SOC4 M.FT6     | 2.2" (55)           | .03" (0.7)              | 0.2" (5.1)              | .79" (20)               | .26 - .28" (6.5 - 7.0)  | PA66HIRHS | Black   | 500       |    |
| 151-00074         | <b>151-00074</b> | SOC4 M.FT6     | 2.2" (55)           | .03" (0.7)              | 0.2" (5.1)              | .51" (13)               | .26 - .28" (6.5 - 7.0)  | PA66HIRHS | Black   | 500       |    |
| 150-09201         | <b>150-09201</b> | COW2 ODP7      | 1.7" (42)           | .03" (0.8)              | .18" (4.5)              | .79" (20)               | .25 - .28" (6.3 - 7.0)  | PA66      | Brown   | 500       |    |
| 151-00080         | <b>151-00080</b> | COW3 ODP7      | 1.7" (42)           | .03" (0.8)              | .18" (4.5)              | 1.2" (30)               | .25 - .28" (6.3 - 7.0)  | PA66HS    | Black   | 500       |    |
| 151-00665         | <b>151-00665</b> | SOC8 FT6LG     | 1.6" (40)           | .03" (0.7)              | .23" (5.75)             | .276" (7)               | .26 - .28" (6.5 - 7.0)  | PA66HIRHS | Black   | 1000      |    |
| 155-01600         | <b>155-01600</b> | STAND-OFF CLIP | 1.6" (40)           | .02" (0.4)              | .06" (1.6)              | .98" (25)               | .26 - .27" (6.5 - 6.8)  | PA66HIRHS | Black   | 500       |   |
| 150-45397         | <b>150-45397</b> | STAND-OFF CLIP | 1.6" (40)           | .02" (0.4)              | .06" (1.6)              | 1.2" (31)               | .26 - .27" (6.5 - 6.8)  | PA66HIRHS | Black   | 500       |  |
| 151-02600         | <b>151-02600</b> | CH20D7         | 2.0" (50)           | .03" (0.8)              | .06" (1.6)              | .79" (20)               | .28" (7.0)              | PA66      | Black   | 100       |  |
| 151-00903         | <b>151-00903</b> | SOC10 FT6LG    | 2.3" (58)           | .02" (.6)               | .24" (6.7)              | .58" (14.5)             | .24 - .27" (6.1 - 6.9)  | PA66HIRHS | Natural | 3000      |  |
| 151-00932         | <b>151-00932</b> | SOC11 FTOVAL   | 2" (50)             | .02" (.06)              | .27" (6.8)              | .79" (20)               | .26 x .49" (6.5 x 12.5) | PA66HIRHS | Natural | 3000      |  |
| 151-00282         | <b>151-00282</b> | SOC1 0405      | 2.2" (55)           | .03" (0.7)              | .14" (3.5)              | .79" (20)               | .25 - .26" (6.3 - 6.7)  | PA66HIRHS | Black   | 500       |  |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

### Stud Mount Bundling Clips

Stud mount bundling clips are easily inserted onto welded studs to secure the bundle.

| Product Selection |                  |           |            |                            |                              |           |       |           |                                                                                       |
|-------------------|------------------|-----------|------------|----------------------------|------------------------------|-----------|-------|-----------|---------------------------------------------------------------------------------------|
| Article No.       | Part No.         | Type      | Length (L) | Recommended Weld Stud Size | Distance Weld Stud to Bundle | Material  | Color | Pkg. Qty. | Drawing                                                                               |
|                   |                  |           | in. (mm)   | in. (mm)                   | in. (mm)                     |           |       |           |                                                                                       |
| 151-00664         | <b>151-00664</b> | BCOS5     | 2.3 " (59) | .2 " (5)                   | —                            | PA66HIRHS | Black | 500       |  |
| 151-00281         | <b>151-00281</b> | BCOS6     | 2.3 " (59) | .24 " (6)                  | —                            | PA66HIRHS | Black | 500       |                                                                                       |
| 151-26101         | <b>151-26101</b> | TCSB5C-SD | 2.2 " (55) | .2 " (5)                   | .49 " (12.5)                 | PA66HS    | Black | 500       |  |
| 151-00017         | <b>151-00017</b> | Tape Bar  | 2.2 " (55) | .2 " (5)                   | .90 " (22.8)                 | PA66HIRHS | Black | 500       |  |
| 151-00016         | <b>151-00016</b> | BC30      | 2.2 " (55) | .2 " (5)                   | 1.9 " (30)                   | PA66HIRHS | Black | 500       |  |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Connector Clips

Connector Clips are initially installed onto the appropriate mating connector found on a wire or cable harness assembly. The connector is then secured to the attachment surface using the connector clip mount. The attachment surface can be a hole, edge, stud, or even another harness assembly depending on the connector clip mount being used.



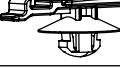
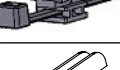
| Material Data         |                                                         | RoHS |
|-----------------------|---------------------------------------------------------|------|
| Material              | <b>Polyamide 6.6 heat stabilized (PA66HS)</b>           |      |
| Operating Temperature | <b>-40 °F to +221 °F (-40 °C to +105 °C) continuous</b> |      |
| Flammability          | <b>UL94 V2</b>                                          |      |

| Material Data         |                                                                                 | RoHS |
|-----------------------|---------------------------------------------------------------------------------|------|
| Material              | <b>Polyamide 6.6 impact modified, heat stabilized, UV resistant (PA66HIRHS)</b> |      |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                         |      |
| Flammability          | <b>UL94 HB</b>                                                                  |      |

| Product Selection |                  |                        |                         |                         |                                                      |           |         |           |         |
|-------------------|------------------|------------------------|-------------------------|-------------------------|------------------------------------------------------|-----------|---------|-----------|---------|
| Article No.       | Part No.         | Type                   | Panel Thickness Minimum | Panel Thickness Maximum | Mounting Hole Ø                                      | Material  | Color   | Pkg. Qty. | Drawing |
|                   |                  |                        | in. (mm)                | in. (mm)                | in. (mm)                                             |           |         |           |         |
| 151-00785         | <b>151-00785</b> | CCFT6LG                | .03" (.07)              | .16" (4.0)              | .24 - .26" (6.0 - 6.7)                               | PA66HIRHS | Black   | 5000      |         |
| 151-00786         | <b>151-00786</b> | CCFT6XLG               | .03" (.07)              | .43" (11.0)             | .24 - .26" (6.0 - 6.7)                               | PA66HIRHS | Black   | 5000      |         |
| 151-00775         | <b>151-00775</b> | CCSFT6.5               | .07" (1.7)              | .09" (2.3)              | .24 - .26" (6.0 - 6.7)                               | PA66HIRHS | Black   | 5000      |         |
| 155-32602         | <b>155-32602</b> | FT6LG.M.ST.<br>AUFN.II | .03" (.075)             | .20" (5.0)              | .26 - .28" (6.5 - 7.0)                               | PA66HIRHS | Black   | 500       |         |
| 151-00677         | <b>151-00677</b> | CC08                   | .03" (0.7)              | .23" (5.75)             | .25 - .27" (6.25 - 6.75)                             | PA66HIRHS | Natural | 5000      |         |
| 151-00925         | <b>151-00925</b> | CCOVAL                 | .02" (0.6)              | .24" (6.0)              | .24 x .48" (6.2 x 12.2)                              | PA66HIRHS | Black   | 5000      |         |
| 151-01108         | <b>151-01108</b> | CCOVAL2                | .02" (0.6)              | .24" (6.0)              | (6.2x12.2)<br>(6.5x12.5)<br>(6.5x13.0)<br>(7.0x12.0) | PA66HIRHS | Black   | 5000      |         |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

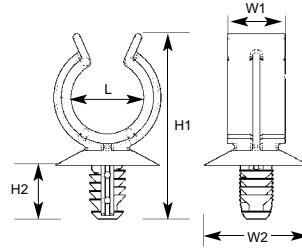
## Connector Clips *continued*

| Product Selection |                  |                               |                         |                         |                              |                     |       |           |                                                                                       |
|-------------------|------------------|-------------------------------|-------------------------|-------------------------|------------------------------|---------------------|-------|-----------|---------------------------------------------------------------------------------------|
| Article No.       | Part No.         | Type                          | Panel Thickness Minimum | Panel Thickness Maximum | Mounting Hole Ø              | Material            | Color | Pkg. Qty. | Drawing                                                                               |
|                   |                  |                               | in. (mm)                | in. (mm)                | in. (mm)                     |                     |       |           |                                                                                       |
| 155-30702         | <b>155-30702</b> | FT6LG.YAZ.<br>CONNECT-TS      | .03" (.07)              | .20" (5.1)              | .25 - .28"<br>(6.3 - 7.0)    | PA66HIRHS           | Black | 500       |    |
| 151-01136         | <b>151-01136</b> | CC12                          | .02" (0.6)              | .25" (6.5)              | .31 x .59"<br>(8.0x15.0)     | PA66HIRHS           | Black | 5000      |    |
| 151-00765         | <b>151-00765</b> | CC09                          | .02" (0.6)              | .25" (6.35)             | .35 x .67"<br>(9.0 x 17.0)   | PA66HIRHS           | Black | 1000      |    |
| 151-00704         | <b>151-00704</b> | YCCFT82x185                   | .06" (1.5)              | .18" (4.5)              | .322 x .728"<br>(8.5 x 18.5) | PA66HIRHS           | Black | 1000      |    |
| 151-00675         | <b>151-00675</b> | YCKKSFT6.5                    | .03" (.07)              | .05" (1.3)              | .25 - .26"<br>(6.3 - 6.7)    | PA66HIRHS           | Black | 500       |    |
| 151-00792         | <b>151-00792</b> | YCKKSFT<br>6.5-PT1.7-2.3      | .07" (1.7)              | .09" (2.3)              | .25 - .26"<br>(6.3 - 6.7)    | PA66HIRHS           | Black | 500       |    |
| 151-00835         | <b>151-00835</b> | YCKKSFT62x122<br>PT0.7-1.3    | .03" (.07)              | .05" (1.3)              | .24 x .48"<br>(6.2 x 12.2)   | PA66HS              | Black | 10000     |    |
| 151-00836         | <b>151-00836</b> | YCKKSFT62x122<br>PT1.7-2.3    | .07" (1.7)              | .09" (2.3)              | .24 x .48"<br>(6.2 x 12.2)   | PA66HS              | Black | 10000     |  |
| 151-00833         | <b>151-00833</b> | YCKKSFT62x122<br>PT0.7-1.3 90 | .03" (.07)              | .05" (1.3)              | .24 x .48"<br>(6.2 x 12.2)   | PA66HS              | Black | 10000     |  |
| 151-00834         | <b>151-00834</b> | YCKKSFT62x12<br>2PT1.7-2.3 90 | .07" (1.7)              | .09" (2.3)              | .24 x .48"<br>(6.2 x 12.2)   | PA66HS              | Black | 10000     |  |
| 151-00513         | <b>151-00513</b> | YCCSFT<br>62122               | .02" (.06)              | .04" (1.0)              | .24 x .48"<br>(6.2 x 12.2)   | PA66HIRHS           | Black | 500       |  |
| 155-31102         | <b>155-31102</b> | YAZ-CONN-<br>TAPE-CLIP        | —                       | —                       | —                            | PA66HS              | Black | 500       |  |
| 156-00507         | <b>156-00507</b> | T50RYCCA                      | —                       | —                       | —                            | PA66HS<br>PA66HIRHS | Black | 100       |  |
| 156-00521         | <b>156-00521</b> | T50RYCCB                      | —                       | —                       | —                            | PA66HS<br>PA66HIRHS | Black | 100       |  |
| 155-36002         | <b>155-36002</b> | STECKERHALTER<br>SITZ         | .02" (0.6)              | .12" (3.0)              | .26 - .28"<br>(6.7 - 7.0)    | PA66HIRHS           | Black | 1000      |  |
| 155-03800         | <b>155-03800</b> | FT6 LG-AMP                    | .03" (.07)              | .24" (6.0)              | .26 x .28"<br>(6.7 - 7.0)    | PA66HIRHS           | Black | 500       |  |
| 151-00429         | <b>151-00429</b> | EC42                          | .06" (1.5)              | .16" (4.0)              | —                            | PA66HIRHS           | Black | 500       |  |
| 151-00430         | <b>151-00430</b> | EC43                          | .06" (1.5)              | .16" (4.0)              | —                            | PA66HIRHS           | Black | 500       |  |
| 151-01113         | <b>151-01113</b> | EC46                          | .04" (1.0)              | .12" (3.0)              | —                            | PA66HIRHS           | Black | 10000     |  |

## Fir Tree Mount Tube Clip

Designed to offer a durable single-hole mounting, this tube clip allows the installer to insert the fir tree with minimal force while providing a secure hold.

| Material Data         |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Polyamide 6.6 impact modified (PA66HIR)</b>          |
| Color                 | <b>Black</b>                                            |
| Operating Temperature | <b>-40 °F to +110 °F (-40 °C to +230 °C) continuous</b> |
| Flammability          | <b>UL94 HB</b>                                          |



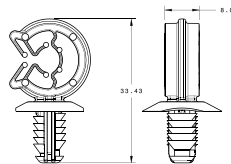
| Product Selection |                |                |                     |                |              |                |                |                 |                 |       |           |
|-------------------|----------------|----------------|---------------------|----------------|--------------|----------------|----------------|-----------------|-----------------|-------|-----------|
| Article No.       | Part No.       | Type           | Dimensions in. (mm) |                |              |                |                | Mounting Hole Ø | Panel Thickness | Color | Pkg. Qty. |
|                   |                |                | H1                  | H2             | W1           | W2             | L              |                 |                 |       |           |
| <b>151-14303</b>  | <b>PC15FT7</b> | <b>PC15FT7</b> | 1.07"<br>(27.1)     | .44"<br>(11.1) | .47"<br>(12) | .85"<br>(21.6) | .62"<br>(15.7) | .25"<br>(6.5)   | .12"<br>(3.055) | Black | 100       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## C Clip with Fir Tree Mount

The SC6.6 is designed for quick installation of cables to frames or rails. The unique fir tree design allows for easy insertion of the clip into a pre-drilled hole. Once installed, the cable can be quickly snapped in place for a secure fit. The SC6.6 is made of our durable impact modified, heat/UV stabilized PA6/6 material.

| Material Data         |                                                                                 |
|-----------------------|---------------------------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV)</b> |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                         |
| Flammability          | <b>UL94 HB</b>                                                                  |



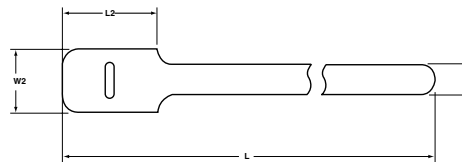
| Product Selection |           |       |                         |                         |                  |                 |             |       |           |
|-------------------|-----------|-------|-------------------------|-------------------------|------------------|-----------------|-------------|-------|-----------|
| Article No.       | Part No.  | Type  | Panel Thickness Minimum | Panel Thickness Maximum | Bundle Ø Maximum | Mounting Hole Ø | Material    | Color | Pkg. Qty. |
|                   |           |       | in. (mm)                | in. (mm)                | in. (mm)         | in. (mm)        |             |       |           |
| 151-00927         | 151-00927 | SC6.6 | .25" (6.35)             | .03" (.70)              | .30" (7.6)       | .26" (6.6)      | PA66HIRHSUV | Black | 100       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Grip Tie Straps

The Grip Tie is a low profile, one piece fastening device. Constructed of polyethylene hook and nylon loop and laminated back to back, the Grip Tie features quick release for repetitive access to cable and wire. It can be opened and closed numerous times without failure. The Grip Tie is reusable, adjustable, releasable, and easy to install.

Available in rolls and straps in 6", 8", 11" and 15" sizes. Grip Ties are available in a variety of colors and are versatile enough for applications ranging from network installations to bundling power cords. Grip Ties are also customizable with your company name (minimum quantities apply).

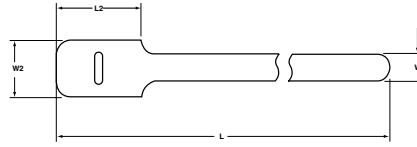


### Product Selection

|              |             |          | Min. Tensile Strength | Length (L) | Max. Ø Bundle | Width (W)     | Width (W2)   | Length (L2) |        | Pkg. Qty. |
|--------------|-------------|----------|-----------------------|------------|---------------|---------------|--------------|-------------|--------|-----------|
| Article No.  | Part No.    | Type     | lbs. (N)              | in. (mm)   | in. (mm)      | in. (mm)      | in. (mm)     | in. (mm)    | Color  |           |
| 6" Grip Ties |             |          |                       |            |               |               |              |             |        |           |
| 854-44316    | GT.375X60C2 | GT.375X6 | 40 lbs (177.93)       | 6" (152.4) | 1" (25.4)     | .375" (9.525) | .75" (19.05) | 1.5" (38.1) | Black  | 100       |
| 854-44339    | GT.50X60P2  | GT.50X6  | 40 lbs (177.93)       | 6" (152.4) | 1" (25.4)     | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) |        | 10        |
| 854-44336    | GT.50X60C2  | GT.50X6  | 40 lbs (177.93)       | 6" (152.4) | 1" (25.4)     | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) |        | 100       |
| 854-44342    | GT.50X62P2  | GT.50X6  | 40 lbs (177.93)       | 6" (152.4) | 1" (25.4)     | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) | Red    | 10        |
| 854-44341    | GT.50X62C2  | GT.50X6  | 40 lbs (177.93)       | 6" (152.4) | 1" (25.4)     | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) |        | 100       |
| 854-44344    | GT.50X63P2  | GT.50X6  | 40 lbs (177.93)       | 6" (152.4) | 1" (25.4)     | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) | Orange | 10        |
| 854-44343    | GT.50X63C2  | GT.50X6  | 40 lbs (177.93)       | 6" (152.4) | 1" (25.4)     | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) |        | 100       |
| 854-44346    | GT.50X64P2  | GT.50X6  | 40 lbs (177.93)       | 6" (152.4) | 1" (25.4)     | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) | Yellow | 10        |
| 854-44345    | GT.50X64C2  | GT.50x6  | 40 lbs (177.93)       | 6" (152.4) | 1" (25.4)     | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) |        | 100       |
| 854-44348    | GT.50X65P2  | GT.50x6  | 40 lbs (177.93)       | 6" (152.4) | 1" (25.4)     | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) | Green  | 10        |
| 854-44347    | GT.50X65C2  | GT.50X6  | 40 lbs (177.93)       | 6" (152.4) | 1" (25.4)     | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) |        | 100       |
| 854-44350    | GT.50X66P2  | GT.50X6  | 40 lbs (177.93)       | 6" (152.4) | 1" (25.4)     | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) | Blue   | 10        |
| 854-44349    | GT.50X66C2  | GT.50X6  | 40 lbs (177.93)       | 6" (152.4) | 1" (25.4)     | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) |        | 100       |
| 8" Grip Ties |             |          |                       |            |               |               |              |             |        |           |
| 854-44355    | GT.50X80P2  | GT.50x8  | 40 lbs (177.93)       | 8" (203.2) | 1.75" (44.45) | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) | Black  | 10        |
| 854-44353    | GT.50X80C2  | GT.50x8  | 40 lbs (177.93)       | 8" (203.2) | 1.75" (44.45) | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) |        | 100       |
| 854-44358    | GT.50X82P2  | GT.50X8  | 40 lbs (177.93)       | 8" (203.2) | 1.75" (44.45) | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) | Red    | 10        |
| 854-44357    | GT.50X82C2  | GT.50X8  | 40 lbs (177.93)       | 8" (203.2) | 1.75" (44.45) | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) |        | 100       |
| 854-44360    | GT.50X83P2  | GT.50X8  | 40 lbs (177.93)       | 8" (203.2) | 1.75" (44.45) | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) | Orange | 10        |
| 854-44359    | GT.50X83C2  | GT.50X8  | 40 lbs (177.93)       | 8" (203.2) | 1.75" (44.45) | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) |        | 100       |
| 854-44362    | GT.50X84P2  | GT.50X8  | 40 lbs (177.93)       | 8" (203.2) | 1.75" (44.45) | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) | Yellow | 10        |
| 854-44361    | GT.50X84C2  | GT.50X8  | 40 lbs (177.93)       | 8" (203.2) | 1.75" (44.45) | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) |        | 100       |
| 854-44364    | GT.50X85P2  | GT.50X8  | 40 lbs (177.93)       | 8" (203.2) | 1.75" (44.45) | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) | Green  | 10        |
| 854-44363    | GT.50X85C2  | GT.50X8  | 40 lbs (177.93)       | 8" (203.2) | 1.75" (44.45) | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) |        | 100       |
| 854-44366    | GT.50X86P2  | GT.50X8  | 40 lbs (177.93)       | 8" (203.2) | 1.75" (44.45) | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) | Blue   | 10        |
| 854-44365    | GT.50X86C2  | GT.50X8  | 40 lbs (177.93)       | 8" (203.2) | 1.75" (44.45) | .5" (12.7)    | 1" (25.4)    | 1.5" (38.1) |        | 100       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Grip Tie Straps *continued*



| Product Selection |             |          | Min. Tensile Strength | Length (L)  | Max. Ø Bundle  | Width (W)    | Width (W2)  | Length (L2) |        | Pkg. Qty. |
|-------------------|-------------|----------|-----------------------|-------------|----------------|--------------|-------------|-------------|--------|-----------|
| Article No.       | Part No.    | Type     |                       |             |                |              |             |             |        |           |
| 11" Grip Ties     |             |          |                       |             |                |              |             |             |        |           |
| 854-44320         | GT.50X110P2 | GT.50X11 | 40 lbs (177.93)       | 11" (279.4) | 2.63" (66.802) | .5" (12.7)   | 1" (25.4)   | 1.5" (38.1) | Black  | 10        |
| 854-44317         | GT.50X110C2 | GT.50X11 | 40 lbs (177.93)       | 11" (279.4) | 2.63" (66.802) | .5" (12.7)   | 1" (25.4)   | 1.5" (38.1) |        | 100       |
| 854-44323         | GT.50X112P2 | GT.50X11 | 40 lbs (177.93)       | 11" (279.4) | 2.63" (66.802) | .5" (12.7)   | 1" (25.4)   | 1.5" (38.1) | Red    | 10        |
| 854-44322         | GT.50X112C2 | GT.50X11 | 40 lbs (177.93)       | 11" (279.4) | 2.63" (66.802) | .5" (12.7)   | 1" (25.4)   | 1.5" (38.1) |        | 100       |
| 854-44325         | GT.50X113P2 | GT.50X11 | 40 lbs (177.93)       | 11" (279.4) | 2.63" (66.802) | .5" (12.7)   | 1" (25.4)   | 1.5" (38.1) | Orange | 10        |
| 854-44324         | GT.50X113C2 | GT.50X11 | 40 lbs (177.93)       | 11" (279.4) | 2.63" (66.802) | .5" (12.7)   | 1" (25.4)   | 1.5" (38.1) |        | 100       |
| 854-44327         | GT.50X114P2 | GT.50X11 | 40 lbs (177.93)       | 11" (279.4) | 2.63" (66.802) | .5" (12.7)   | 1" (25.4)   | 1.5" (38.1) | Yellow | 10        |
| 854-44326         | GT.50X114C2 | GT.50X11 | 40 lbs (177.93)       | 11" (279.4) | 2.63" (66.802) | .5" (12.7)   | 1" (25.4)   | 1.5" (38.1) |        | 100       |
| 854-44329         | GT.50X115P2 | GT.50X11 | 40 lbs (177.93)       | 11" (279.4) | 2.63" (66.802) | .5" (12.7)   | 1" (25.4)   | 1.5" (38.1) | Green  | 10        |
| 854-44328         | GT.50X115C2 | GT.50X11 | 40 lbs (177.93)       | 11" (279.4) | 2.63" (66.802) | .5" (12.7)   | 1" (25.4)   | 1.5" (38.1) |        | 100       |
| 854-44331         | GT.50X116P2 | GT.50X11 | 40 lbs (177.93)       | 11" (279.4) | 2.63" (66.802) | .5" (12.7)   | 1" (25.4)   | 1.5" (38.1) | Blue   | 10        |
| 854-44330         | GT.50X116C2 | GT.50X11 | 40 lbs (177.93)       | 11" (279.4) | 2.63" (66.802) | .5" (12.7)   | 1" (25.4)   | 1.5" (38.1) |        | 100       |
| 15" Grip Ties     |             |          |                       |             |                |              |             |             |        |           |
| 854-44371         | GT.75X150P2 | GT.75X15 | 50 lbs (222.41)       | 15" (381)   | 3.88" (98.552) | .75" (19.05) | 1.5" (38.1) | 2.5" (63.5) | Black  | 10        |
| 854-44369         | GT.75X150C2 | GT.75X15 | 50 lbs (222.41)       | 15" (381)   | 3.88" (98.552) | .75" (19.05) | 1.5" (38.1) | 2.5" (63.5) |        | 100       |
| 854-44374         | GT.75X152P2 | GT.75X15 | 50 lbs (222.41)       | 15" (381)   | 3.88" (98.552) | .75" (19.05) | 1.5" (38.1) | 2.5" (63.5) | Red    | 10        |
| 854-44373         | GT.75X152C2 | GT.75X15 | 50 lbs (222.41)       | 15" (381)   | 3.88" (98.552) | .75" (19.05) | 1.5" (38.1) | 2.5" (63.5) |        | 100       |
| 854-44376         | GT.75X153P2 | GT.75X15 | 50 lbs (222.41)       | 15" (381)   | 3.88" (98.552) | .75" (19.05) | 1.5" (38.1) | 2.5" (63.5) | Orange | 10        |
| 854-44375         | GT.75X153C2 | GT.75X15 | 50 lbs (222.41)       | 15" (381)   | 3.88" (98.552) | .75" (19.05) | 1.5" (38.1) | 2.5" (63.5) |        | 100       |
| 854-44377         | GT.75X154C2 | GT.75X15 | 50 lbs (222.41)       | 15" (381)   | 3.88" (98.552) | .75" (19.05) | 1.5" (38.1) | 2.5" (63.5) | Yellow | 100       |
| 854-44378         | GT.75X154P2 | GT.75X15 | 50 lbs (222.41)       | 15" (381)   | 3.88" (98.552) | .75" (19.05) | 1.5" (38.1) | 2.5" (63.5) |        | 10        |
| 854-44380         | GT.75X155P2 | GT.75X15 | 50 lbs (222.41)       | 15" (381)   | 3.88" (98.552) | .75" (19.05) | 1.5" (38.1) | 2.5" (63.5) | Green  | 10        |
| 854-44379         | GT.75X155C2 | GT.75X15 | 50 lbs (222.41)       | 15" (381)   | 3.88" (98.552) | .75" (19.05) | 1.5" (38.1) | 2.5" (63.5) |        | 100       |
| 854-44382         | GT.75X156P2 | GT.75X15 | 50 lbs (222.41)       | 15" (381)   | 3.88" (98.552) | .75" (19.05) | 1.5" (38.1) | 2.5" (63.5) | Blue   | 10        |
| 854-44381         | GT.75X156C2 | GT.75X15 | 50 lbs (222.41)       | 15" (381)   | 3.88" (98.552) | .75" (19.05) | 1.5" (38.1) | 2.5" (63.5) |        | 100       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Grip Tie Rolls

For custom-cut lengths, HellermannTyton offers the hook and loop strap on a five yard and 25 yard roll. Ideal for job site applications, desired lengths can be cut on the spot.

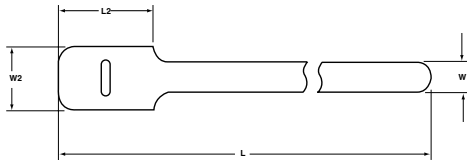


| Product Selection |            |           | Width (W) |         | Color  | Pkg. Qty.        |
|-------------------|------------|-----------|-----------|---------|--------|------------------|
| Article No.       | Part No.   | Type      | in.       | (mm)    |        |                  |
| 854-44384         | GT.75X1800 | GT.75X180 | .75"      | (19.05) | Black  | 180" (5 yds.)    |
| 854-44388         | GT.75X1802 | GT.75X180 | .75"      | (19.05) | Red    | 180" (5 yds.)    |
| 854-44389         | GT.75X1803 | GT.75X180 | .75"      | (19.05) | Orange | 180" (5 yds.)    |
| 854-44390         | GT.75X1804 | GT.75X180 | .75"      | (19.05) | Yellow | 180" (5 yds.)    |
| 854-44391         | GT.75X1805 | GT.75X180 | .75"      | (19.05) | Green  | 180" (5 yds.)    |
| 854-44392         | GT.75X1806 | GT.75X180 | .75"      | (19.05) | Blue   | 180" (5 yds.)    |
| 854-44395         | GT.75X6000 | GT.75X600 | .75"      | (19.05) | Black  | 600" (16.6 yds.) |
| 854-44396         | GT.75X9000 | GT.75X900 | .75"      | (19.05) | Black  | 900" (25 yds.)   |
| 854-44397         | GT.75X9004 | GT.75X900 | .75"      | (19.05) | Yellow | 900" (25 yds.)   |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Write-on Grip Ties

In situations where instant identification is needed, HellermannTyton provides Grip Ties with a white write-on area. This smudge-free surface is ideal for fast and easy identification with a ballpoint pen or felt-tip marker. The write-on area is approximately 3/8" (H) x 1-1/4" (W). It is positioned in the center of the black 6", 8" and 11" straps, as well as spaced every 12" on the Grip Tie rolls.

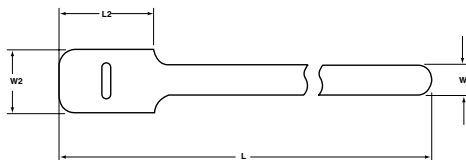


| Product Selection |              |            |                       |          |            |          |               |         |           |          |           |
|-------------------|--------------|------------|-----------------------|----------|------------|----------|---------------|---------|-----------|----------|-----------|
| Article No.       | Part No.     | Type       | Min. Tensile Strength |          | Length (L) |          | Max. Ø Bundle |         | Width (W) |          | Pkg. Qty. |
|                   |              |            | lbs. (N)              |          | in. (mm)   |          | in. (mm)      |         | in. (mm)  | in. (mm) |           |
| 854-44340         | GT.50X60P2W  | GT.50X6W   | 40 lbs                | (177.93) | 6"         | (152.4)  | 1"            | (25.4)  | .5"       | (12.7)   | 10        |
| 854-44338         | GT.50X60C2W  | GT.50X6W   | 40 lbs                | (177.93) | 6"         | (152.4)  | 1"            | (25.4)  | .5"       | (12.7)   | 100       |
| 854-44356         | GT.50X80P2W  | GT.50X8W   | 40 lbs                | (177.93) | 8"         | (203.2)  | 1.75"         | (44.45) | .5"       | (12.7)   | 10        |
| 854-44354         | GT.50X80C2W  | GT.50X8W   | 40 lbs                | (177.93) | 8"         | (203.2)  | 1.75"         | (44.45) | .5"       | (12.7)   | 100       |
| 854-44321         | GT.50X110P2W | GT.50X11W  | 40 lbs                | (177.93) | 11"        | (279.4)  | 2.63"         | (66.8)  | .5"       | (12.7)   | 10        |
| 854-44319         | GT.50X110C2W | GT.50X11W  | 40 lbs                | (177.93) | 11"        | (279.4)  | 2.63"         | (66.8)  | .5"       | (12.7)   | 10        |
| 854-44386         | GT.75X1800W  | GT.75X180W | -                     | -        | 180"       | (5 Yds.) | -             | -       | .75"      | (19.05)  | 180"      |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Grip Ties for Plenum Applications

HellermannTyton offers UL94V-2 flame rated Grip Ties for use in air handling spaces. These Grip Ties are UL Listed in accordance with the National Electrical Code regulations. They are available in three lengths as well as a 180" roll.



| Product Selection |               |           |                       |          |            |         |               |        |           |          |           |
|-------------------|---------------|-----------|-----------------------|----------|------------|---------|---------------|--------|-----------|----------|-----------|
| Article No.       | Part No.      | Type      | Min. Tensile Strength |          | Length (L) |         | Max. Ø Bundle |        | Width (W) |          | Pkg. Qty. |
|                   |               |           | lbs. (N)              |          | in. (mm)   |         | in. (mm)      |        | in. (mm)  | in. (mm) |           |
| 854-44352         | GT.50X6MP2V2  | GT.50X6   | 40 lbs                | (177.93) | 6"         | (152.4) | 1"            | (25.4) | .5"       | (12.7)   | 10        |
| 854-44368         | GT.50X8MP2V2  | GT.50X8   | 40 lbs                | (177.93) | 8"         | (203.2) | 1.91"         | (48.5) | .5"       | (12.7)   | 10        |
| 854-44334         | GT.50X12MP2V2 | GT.50X12  | 40 lbs                | (177.93) | 12"        | (304.8) | 3.18"         | (80.7) | .5"       | (12.7)   | 10        |
| 854-44394         | GT.75X180MV2  | GT.75X180 | -                     | -        | -          | -       | -             | -      | .75"      | (19.05)  | 180"      |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## EVO7™ Tool

At the heart of the EVO 7 lies revolutionary, patent-pending Tension/Lock/Cut (TLC) technology that dramatically changes how cable ties are cut. The key is TLC's ability to lock each tie in place at the desired tension prior to cutting. Because the tension is fixed at the trigger when squeezing begins, only a minimum of hand force and a shorter range of motion is required to cut through each tie.

### A. Easy Blade Replacement

One-way blade installation makes on-site blade replacement a snap.

### B. Long Narrow Nose

Allows you to cut cable ties in the tightest of spaces quickly and easily.

### C. Trigger

Made from soft-grip, non-slip material, the contoured full-length trigger incorporates individual finger grips to accommodate multiple hand sizes.

### D. Integrated Hanger Hook

Allows easy storage and accessibility.

### E. Contoured Ergonomically-Engineered Handle

Crafted from soft-grip, non-slip material, the grip features an integrated air cushion that conforms to your hand for maximum comfort.

### F. Tension Knob

Rotate the knob to any of 33 precise pre-set tension settings.

### G. Thumb Lock

To unlock the tension knob, slide the non-slip thumb lock forward, adjust to desired tension setting and release the thumb lock to lock in place.

### H. Impact-Resistant Housing

Made from durable, light-weight composite, the EVO 7 weighs 9.7 oz. (.275 kg), resists chemical contamination and is built to stand up to the toughest industrial environments.



Product Selection

| Article No. | Part No.         | Type    | Description                                                                                              | Cable Tie Series          | Pkg. Qty. |
|-------------|------------------|---------|----------------------------------------------------------------------------------------------------------|---------------------------|-----------|
| 110-70083   | <b>110-70083</b> | EVO7    | Standard hand span 3.5" (90mm).                                                                          | All 18-80 lb. Series Ties | 1         |
| 110-70084   | <b>110-70084</b> | EVO7SP  | Short hand span 3.1" (80mm).                                                                             | All 18-80 lb. Series Ties | 1         |
| 110-70106   | <b>110-70106</b> | BLADEKT | Blade replacement kit for EVO7 and EVO7SP. Contains (1) Blade & (1) Nose piece screw.                    |                           | 1         |
| 110-70091   | <b>110-70091</b> | T8SD    | T8 Star Driver for removal/insertion of tension lock out screw.                                          |                           | 1         |
| 110-70089   | <b>110-70089</b> | CALTOOL | Calibration tool to be used for removal of cap at back of tension knob and for calibrating tool on site. |                           | 1         |
| 110-99000   | <b>110-99000</b> | UC200   | UC200 Tension Gauge for tensile read outs when calibrating tools on site.                                |                           | 1         |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification.

## MARK 9 Tools

Specifically-developed for maximum ergonomic and performance values, the Mark 9 series tools combine reduced hand effort and durable components to ensure efficient cable tie assembly and a longer life cycle. The Mark 9 tools can be used with nearly every HellermannTyton cable tie. Able to accommodate ties up to .53" in width, the Mark 9 tools can be used with HellermannTyton's T18\* series cable ties as well as our heavy duty ties which include the T250 series and EL-TY. HellermannTyton offers a high-tension version of the Mark 9 (MK9HT) that has the same design features as the standard counterparts but with higher cut-off tension capabilities. The Mark 9 high tension tools offer a 5/8" stroke.



MK9



MK9HT



MK9SST

| Product Selection |                    |             |                                                                                                                                                     |            |                                                                                        |           |
|-------------------|--------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------------------|-----------|
| Article No.       | Part No.           | Type        | Description                                                                                                                                         | Mil. Spec. | Cable Tie Series                                                                       | Pkg. Qty. |
| 110-09500         | <b>MK9</b>         | MK9         | Durable and lightweight, the Mark 9 tool is user friendly and adjustable, with top-of-the-line design features. Accommodates heavy duty cable ties. | MS90387-1  | T18* thru T250 Series<br>CTT20 thru CTT175 Series<br>EL-TY Series<br>Wide Strap Series | 1         |
| 110-09000         | <b>MK9HT</b>       | MK9HT       | The Mark 9 High Tension tool has the same design features as the MK9, but offers an increased tension range.                                        |            | T18* thru T250 Series<br>CTT20 thru CTT175 Series<br>EL-TY Series<br>Wide Strap Series | 1         |
| 110-09800         | <b>MK9RE</b>       | MK9RE       | The MK9 Rounded Edge tool has the same design features as the MK9 although it has a special nose piece that leaves a 2mm round tail.                |            | T18* thru T250 Series<br>CTT20 thru CTT175 Series<br>EL-TY Series<br>Wide Strap Series | 1         |
| 110-09600         | <b>MK9REF</b>      | MK9REF      | The Mark 9 Reduced Effort tool has a reduced effort trigger mechanism for operators with small hands. It has a shorter pawl stroke.                 |            | T18* thru T250 Series<br>CTT20 thru CTT175 Series<br>EL-TY Series<br>Wide Strap Series | 1         |
| 110-95000         | <b>MK9SST</b>      | MK9SST      | Adapted for use with stainless steel ties, the MK9 Stainless Steel tool retains the same design features as the MK9 series.                         |            | All MBT Series for both 304 and 316 materials                                          | 1         |
| 110-00220         | <b>MK9BLADEKIT</b> | MK9BLADEKIT | Service kit for the MK9 tool includes replacement blade, screw for nose piece, and instructional card.                                              |            |                                                                                        | 1         |
| 110-00221         | <b>MK9-221</b>     | MK9-221     | Replacement blade for MK9 series.                                                                                                                   |            |                                                                                        | 1         |
| 110-05114         | <b>MK9SS-114</b>   | MK9SS-114   | Replacement blade for MK9SST series tools.                                                                                                          |            |                                                                                        | 1         |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification. \*Does not include T18S Series ties .08" wide.

## Other Mechanical Cable Tie Tools

HellermannTyton offers an assortment of mechanical tools which can be used with any HellermannTyton cable tie. When using these tools, the cable tie is hand applied and then manually tensioned and cut-off without the use of an extraneous power source.



MK7HT



TWT2

TWT1

Product Selection

| Article No. | Part No.     | Type  | Description                                                                                                                                                                       | Cable Tie Series                               | Pkg. Qty. |
|-------------|--------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|-----------|
| 110-07000   | <b>MK7HT</b> | MK7HT | Durable and lightweight, the Mark 7 High Tension tool is user friendly and adjustable; with top-of-the-line design features and offers an increased tension range.                | T30 thru T50 Series<br>CTT20 thru CTT60 Series | 1         |
| 110-20003   | <b>TWT1</b>  | MK20  | The TWT1 is a lightweight and economical twist tool for standard cable ties. Offers speed and efficiency. Fits into a pocket. (Color Orange).                                     | T18 thru T50 Series<br>CTT20 thru CTT60 Series | 1         |
| 110-21060   | <b>TWT2</b>  | MK21  | The TWT2 is a lightweight and economical twist tool for heavy duty cable ties. Offers speed and efficiency. Fits into a pocket. (Color Blue).                                     | T120 thru T150 Series<br>CTT175 Series         | 1         |
| 110-11150   | <b>T150</b>  | T150  | The T150 Tool is a heavy duty installer controlled tool for use in the field. Pliers' action provides mechanical advantage. Padded foam grip handles provide comfort and control. | T150 Series<br>CTT175 Series                   | 1         |
| 111-11250   | <b>T250</b>  | T250  | The T250 has the same design features as the T150 Tool, but can tension and cutoff a wider tie.                                                                                   | T150 thru T250 Series<br>CTT175 Series         | 1         |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification.

## Power Assisted Cable Tie Tools

HellermannTyton's Mark 7 and Mark 9 power assisted (MK7P & MK9P) tools utilize pneumatic power to tension and cut-off HellermannTyton cable ties. The MK7P and MK9P tools feature an ergonomic design while offering time/labor savings and ease of use benefits derived from pneumatic power. These tools feature a non-slip, comfortable grip, soft touch trigger, and one touch tensioning/cut-off capability. HellermannTyton's pneumatic cable tie tools are lightweight, high performance, and suited for extended use.

### Product Features

#### - Ergonomic

The ergonomic design of the pneumatic cable tie tools incorporates a comfortable grip, low weight, and easy trigger depression to reduce installer effort and strain while installing cable ties.

#### - Operation

MK7P & MK9P speed assembly. Just one pulse of the soft touch trigger assembly actuates an immediate tension and cut-off of the cable tie.

- Cable tie waste is ejected to the side after the cable tie is applied, ensuring smooth operation of the tool.
- Uses dry or lubricated air.
- Operates between 90 PSI and 105 PSI maximum.
- Supplied with a 6 inch lead which comes with a male quick connect fitting with a female coupler for 1/8" flow.

#### - Design

HellermannTyton's pneumatic tools are manufactured with tough, chromium steel components and high impact, glass reinforced nylon housings for maximum durability.

#### - Tensioning

An easy to read indicator verifies tension settings. The tools feature an easy dial-in tension adjustment, along with a lock-out capability. The tension adjustment on the MK7P and the MK9P is designed with an operator friendly, positive "click" design for easy use. The tension can readily be locked out to allow the tension adjustment to remain at a constant setting that can only be changed by approved personnel. The fine adjust tension knob has a unique lever feature used to reduce adjustment torque.



MK9P

## Mark 7 Pneumatic

The Mark 7 Pneumatic (MK7P) is built to perform in demanding production and manufacturing environments. Heavy duty precision parts ensure repeatability in the tensioning process. The MK7P fits comfortably in the operator's hand, reducing hand, arm and wrist fatigue. Due to its ergonomic features, HellermannTyton's MK7P makes it easier for the installer to consistently apply cable ties while maintaining correct tension and flush cut-off. Safety is enhanced, as the MK7P can eliminate sharp edges of a cut-off cable tie.



MK7P

### Material Data

|                    |                          |
|--------------------|--------------------------|
| Power Supply       | Dry or Lubricated Air    |
| Cycle Time         | 4 strokes per second     |
| Weight             | 16oz                     |
| Pawl Travel Stroke | 1.0" (2.54 cm)           |
| Tension Force      | 125 to 180 N, adjustable |

### Product Selection

| Article No. | Part No.        | Type              | Description                                                                                                                                                            | Cable Tie Series                               | Pkg. Qty. |
|-------------|-----------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|-----------|
| 110-07101   | <b>MK7P</b>     | MK7P              | Includes Mark 7 Pneumatic tool and quick connect fittings. Ergonomic tool uses pneumatic power and accomplishes rapid tension and cut-off with one trigger depression. | T18 thru T50 Series<br>CTT20 thru CTT60 Series | 1         |
| 110-07111   | <b>MK7P-342</b> | Replacement Blade | MK7P Replacement Blade                                                                                                                                                 |                                                | 1         |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes. Minimum order quantity for MK7P-342 is 5.

## MK9 Pneumatic

The Mark 9 Pneumatic (MK9P) is constructed with heavy-duty parts to ensure that it performs optimally in demanding environments. It is ideally designed to apply heavy-duty ties (T50-T250), clamp and button head ties.

Like the MK7P, HellermannTyton's MK9P incorporates the next level of ergonomic improvement with its low weight, comfortable grip and easy trigger depression. Very durable, the pneumatic MK9P features adjustable, easy to read tension settings. Lock-out features are standard.

The MK9P is available with lower air attachment (standard) or can be ordered with an upper air attachment.



MK9PUA (Upper Air)



MK9P

### Material Data

|                    |                          |
|--------------------|--------------------------|
| Power Supply       | Dry or Lubricated Air    |
| Cycle Time         | 2 strokes per second     |
| Weight             | 32oz                     |
| Pawl Travel Stroke | 1.25" (3.175 cm)         |
| Tension Force      | 125 to 310 N, adjustable |

### Product Selection

| Article No. | Part No. | Type     | Description                                                                                                                                                                                                                                                                                  | Cable Tie Series                                                                     | Pkg. Qty. |
|-------------|----------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------|
| 110-09101   | MK9P     | MK9P     | Includes Mark 9 Pneumatic tool and quick connect fittings. Ergonomic tool uses pneumatic power and accomplishes rapid tension and cut-off with one trigger depression.                                                                                                                       | T50 thru T250 Series<br>CTT20 thru CTT175 Series<br>EL-TY Series<br>Button Head Ties | 1         |
| 110-09112   | MK9PUA   | MK9P     | Includes Mark 9 Pneumatic tool and quick connect fittings with upper air option for top air connection. Includes a hanger for an optional overhead tool balancer (not included). Ergonomic tool uses pneumatic power and accomplishes rapid tension and cut-off with one trigger depression. | T50 thru T250 Series<br>CTT20 thru CTT175 Series<br>EL-TY Series<br>Button Head Ties | 1         |
| 110-09111   | MK9P-109 | MK9P-109 | MK9P Replacement Blade                                                                                                                                                                                                                                                                       |                                                                                      | 1**       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

\*\*Minimum order quantity of MK9P-109 is 5.

## Common Accessories for MK7P and MK9P

HellermannTyton offers a portable kit that incorporates carbon dioxide (CO<sub>2</sub>) as the primary air source. This unique feature will allow for greater flexibility, mobility and the elimination of air line to the tool.

### Product Selection

| Article No. | Part No.  | Type      | Description                                                                                          | Pkg. Qty. |
|-------------|-----------|-----------|------------------------------------------------------------------------------------------------------|-----------|
| 110-09005   | MKPCOHOSE | MKPCOHOSE | Regulator and hose that attaches to HPA tanks to supply portable air for all pneumatic series tools. | 1         |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Automatic Cable Tie Systems

HellermannTyton's automatic cable tie tool systems are compact, fast, reliable, and versatile accommodating a variety of wiring harness, and bundling and securing requirements. These tool systems are designed to provide significant labor and cost savings through process improvements, lower installed costs and greater consistency, quality and ergonomic benefits.

### Product Features

#### - Fast

Cable ties are installed quickly with one easy trigger depression, increasing productivity while decreasing labor costs.

#### - Reliable

HellermannTyton's automatic cable tie systems have been tested to perform extremely consistently without interruption to work flow.

#### - Ergonomic

The ergonomic design of the automatic cable tie tool systems feature a comfortable grip, low weight, and easy trigger depression to reduce installer effort and strain while installing cable ties.

#### - Easy to Use

Equipped with a self-diagnostic LED information panel, the automatic cable tie systems easily guide the user through the cycles of cable tie installations.

#### - Automation

The automatic cable tie systems can be implemented into fully automated applications to further increase productivity and decrease labor costs.

#### - Flexible Manufacturing/Versatility

HellermannTyton's automatic cable tie tool systems support principles of flexible manufacturing requirements and environments. The systems can be used in handheld, bench mount and overhead assembly configurations. The versatile overhead assembly option provides the ultimate integration to the customer's manufacturing area. HellermannTyton's automatic tools are powered by a standard 110 AC 24V (AT2000) and 110 AC 27 V (AT2060) electrical outlet that converts to a low DC voltage to the tool. All power systems offer the installer the mobility needed to tackle different harnessing requirements.

#### - Uniform Fastening Quality

HellermannTyton's automatic cable tie systems feature adjustable tension control to deliver consistent levels of cable tie fastening.

#### - Range

HellermannTyton offers the widest range of automatic cable tie tool systems which cover cable tie tensile strengths of 18, 30, and 50 pounds with bundle diameters between 1/16" to over 3".



AT2000



An LED panel shows the status of the tool.

| Product Selection |             |               |
|-------------------|-------------|---------------|
| Article No.       | Part No.    | Max. Ø Bundle |
| 120-00000         | AT2000      | .75" (20 mm)  |
| 103-00000         | AT2060      | 1.25" (31 mm) |
| 102-00000         | ATS10200000 | 3.14" (80 mm) |

## AT2000

The HellermannTyton Autotool 2000 completely installs cable ties on bundles up to 3/4" in diameter. This automatic cable tie tool is highly reliable and offers ergonomic benefits including low weight, easy trigger depression, a comfortable hand grip and correct balance - all which reduce operator strain. The AT2000 possesses an LED panel which makes it easier to maintain and operate the tool.

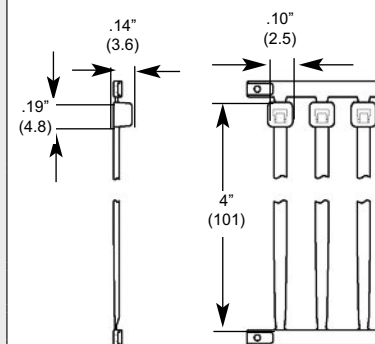


### AT2000 Technical Specifications

|               |                                                    |
|---------------|----------------------------------------------------|
| Power Supply  | <b>Electrical, with Power Pack or Battery Pack</b> |
| Cycle Time    | <b>0.8 s</b>                                       |
| Weight        | <b>2.6lbs</b>                                      |
| Installation  | <b>Handheld, bench mount or overhead</b>           |
| Tension Force | <b>Adjustable</b>                                  |

### AT2000 Cable Tie Specifications

|                                      |                                                                 |
|--------------------------------------|-----------------------------------------------------------------|
| <b>Operating Temperature</b>         |                                                                 |
| Natural Polyamide 6.6                | <b>-40 °F to +185 °F<br/>(-40 °C to +85 °C)<br/>continuous</b>  |
| Heat stabilized, black Polyamide 6.6 | <b>-40 °F to +221 °F<br/>(-40 °C to +105 °C)<br/>continuous</b> |
| Natural, Stanyl Polyamide 4.6        | <b>-40 °F to +275 °F<br/>(-40 °C to +135 °C)<br/>continuous</b> |
| Reel Diameter                        | <b>17.7 " (450)</b>                                             |
| Reel Width                           | <b>5.20 " (132)</b>                                             |



AT2000 Cable Ties

**US**  
File# E64139

### Product Selection

| Article No. | Part No.         | Type          | Description                                                           | Min. Tensile Strength<br>lbs. (N) | Max. Ø Bundle<br>in. (mm) | Pkg. Qty. |
|-------------|------------------|---------------|-----------------------------------------------------------------------|-----------------------------------|---------------------------|-----------|
| 120-00000   | <b>AT2000</b>    | Autotool 2000 | Includes AT2000 tool, power supply, power cord, tool cord, and manual |                                   |                           | 1         |
| 120-00060   | <b>120-00060</b> | Control Box   | Control Box for linking AT2000 to automation                          |                                   |                           | 1         |

### Natural Cable Ties

|           |                  |                  |                                                 |             |           |                                                                     |
|-----------|------------------|------------------|-------------------------------------------------|-------------|-----------|---------------------------------------------------------------------|
| 120-05001 | <b>T18RA50</b>   | T18RA50-N66-NA   | Cable ties on bandolier for use with the AT2000 | 18 lbs (80) | .75" (20) | 20,000 per carton includes:<br>50 per bandolier<br>500 per package  |
| 120-05004 | <b>T18RA5000</b> | T18RA5000-N66-NA | Cable ties on reel for use with the AT2000      | 18 lbs (80) | .75" (20) | 10,000 per carton includes:<br>5,000 per reel<br>2 reels per carton |

### Black, Heat Stabilized Cable Ties

|           |                     |                  |                                                 |             |           |                                                                     |
|-----------|---------------------|------------------|-------------------------------------------------|-------------|-----------|---------------------------------------------------------------------|
| 120-05003 | <b>T18RA50HSW</b>   | T18RA50-HSW-BK   | Cable ties on bandolier for use with the AT2000 | 18 lbs (80) | .75" (20) | 20,000 per carton includes:<br>50 per bandolier<br>500 per package  |
| 120-05007 | <b>T18RA5000HSW</b> | T18RA5000-HSW-BK | Cable ties on reel for use with the AT2000      | 18 lbs (80) | .75" (20) | 10,000 per carton includes:<br>5,000 per reel<br>2 reels per carton |

### Natural, Stanyl Cable Ties

|           |                    |                 |                                            |             |           |                                                                     |
|-----------|--------------------|-----------------|--------------------------------------------|-------------|-----------|---------------------------------------------------------------------|
| 120-05015 | <b>T18RA5000HR</b> | T18RA5000HR-N46 | Cable ties on reel for use with the AT2000 | 18 lbs (80) | .75" (20) | 10,000 per carton includes:<br>5,000 per reel<br>2 reels per carton |
|-----------|--------------------|-----------------|--------------------------------------------|-------------|-----------|---------------------------------------------------------------------|

V/O rated ties can be made available for the AT2000. Various tie colors available upon request (Contact HellermannTyton for lead time). Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes. For information on AT2000's Bench Mount System and Overhead Suspension Assembly see page 85 and 86. For information on Wire Retainers for Harness Boards and AT2000's battery pack see page 87.

## AT2060

HellermannTyton's AT2060 automatically installs cable ties for bundles up to 1-1/4". The many ergonomic benefits include easy trigger depression and low weight that reduces operator effort and strain. Operation and maintenance of the tool are enhanced by the self-diagnostic LED panel located on the AT2060.

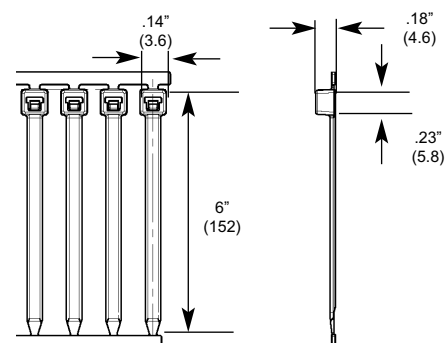


AT2060 Technical Specifications

|               |                         |
|---------------|-------------------------|
| Power Supply  | <b>Electrical</b>       |
| Cycle Time    | <b>1.2 seconds</b>      |
| Weight        | <b>3.9lbs</b>           |
| Pawl Travel   | <b>1.25" (3.175 cm)</b> |
| Stroke        |                         |
| Tension Force | <b>Adjustable</b>       |

AT2060 Cable Tie Specifications

|                                       |                                                  |
|---------------------------------------|--------------------------------------------------|
| <b>Operating Temperature</b>          |                                                  |
| Natural Polyamide 6.6                 | <b>-40 °F to +185 °F<br/>(-40 °C to +85 °C)</b>  |
| Heat stabilized, black, Polyamide 6.6 | <b>-40 °F to +221 °F<br/>(-40 °C to +105 °C)</b> |
| Reel Diameter                         | <b>17.7 " (450)</b>                              |
| Reel Width                            | <b>7.197 " (182.8)</b>                           |
| Reel Weight                           | <b>7 lbs</b>                                     |



Product Selection

| Article No. | Part No.      | Type   | Description                                                                                      | Min. Tensile Strength | Max. Ø Bundle | Pkg. Qty. |
|-------------|---------------|--------|--------------------------------------------------------------------------------------------------|-----------------------|---------------|-----------|
|             |               |        |                                                                                                  | lbs. (N)              | in. (mm)      |           |
| 103-00000   | <b>AT2060</b> | AT2060 | Includes AT2060 tool, power supply, power cord, tool cord, and maintenance and operation manual. |                       |               | 1         |

### Natural Cable Ties

|           |                  |           |                                                        |                 |            |                                                                    |
|-----------|------------------|-----------|--------------------------------------------------------|-----------------|------------|--------------------------------------------------------------------|
| 103-00002 | <b>T30RA30</b>   | T30RA     | Cable ties on a bandolier for use with the AT2060 tool | 30 lbs (133.44) | 1.25" (31) | 6,000 per carton includes:<br>30 per bandolier<br>600 per bag      |
| 103-00001 | <b>T30RA3000</b> | T30RA3000 | Cable ties on a reel for use with the AT2060 tool      | 30 lbs (133.44) | 1.25" (31) | 6,000 per carton includes:<br>3,000 per reel<br>2 reels per carton |

### Black, Heat Stabilized Cable Ties

|           |                     |       |                                                        |                 |            |                                                                    |
|-----------|---------------------|-------|--------------------------------------------------------|-----------------|------------|--------------------------------------------------------------------|
| 103-00003 | <b>T30RA300HS</b>   | T30RA | Cable ties on a bandolier for use with the AT2060 tool | 30 lbs (133.44) | 1.25" (31) | 6,000 per carton includes:<br>30 per bandolier<br>600 per bag      |
| 103-00004 | <b>T30RA30000HS</b> | T30RA | Cable ties on a reel for use with the AT2060 tool      | 30 lbs (133.44) | 1.25" (31) | 6,000 per carton includes:<br>3,000 per reel<br>2 reels per carton |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes. V/O rated ties and 4/6 ties for high temperatures can be made available for the AT2060. Various colors available upon request (Contact HellermannTyton for lead time).

For information on AT2060's Bench Mount System and Overhead Suspension Assembly see page 85 and 86.  
For information on Wire Retainers for Harness Boards see page 87.

## AT2000 and AT2060

### Fir Tree Mount For Automatic Cable Tie Tool System

This fir tree mount is designed for use with HellermannTyton Automatic Cable Tie Tool Systems. For more information on this system, contact HellermannTyton.

#### Material Data

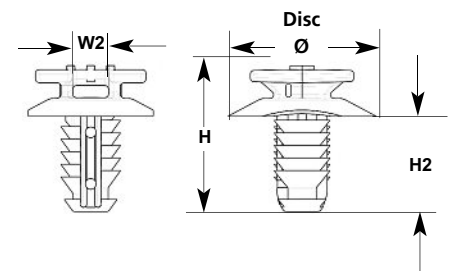
|                       |                                                                                      |
|-----------------------|--------------------------------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 high impact modified, Heat Stabilized, UV Resistant (PA66HIRHS)</b> |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C)</b>                                         |
| Flammability          | <b>continuous</b>                                                                    |
|                       | <b>UL94 HB</b>                                                                       |

RoHS

#### Product Selection

| Article No.                                                                                            | Part No.         | Type  | Disc Ø in. (mm) | Width (W2) in. (mm) | Height (H) in. (mm) | Height (H2) in. (mm) | Pkg. Qty. |
|--------------------------------------------------------------------------------------------------------|------------------|-------|-----------------|---------------------|---------------------|----------------------|-----------|
| <b>FT7AT - Mounting Hole Ø: .24" - .8" (6.2 - 7.2mm) - Panel Thickness: .03" - .276" (0.8 - 7.0mm)</b> |                  |       |                 |                     |                     |                      |           |
| 151-00492                                                                                              | <b>151-00492</b> | FT7AT | .73" (18.6)     | .18" (4.5)          | .72" (18.34)        | .47" (11.9)          | 100       |

Installation tools - MK7, MK7HT, MK7P, MK9, MK9HT, MK9P. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.



### AT2000 & AT2060 Bench Mount System

HellermannTyton offers a portable bench mount system which works with the AT2000 and AT2060 tool systems. It is extremely easy to set up and use. Within seconds, the AT2000 or the AT2060 can be converted from a handheld tool to a bench mount system. With the touch of the foot pedal, the cable tie is applied.



#### Product Selection

| Article No. | Part No.             | Type            | Description                                                 | Pkg. Qty. |
|-------------|----------------------|-----------------|-------------------------------------------------------------|-----------|
| 120-00040   | <b>AT2BENCHMOUNT</b> | Bench Mount Kit | Includes foot pedal, tie reel stand and tool mounting stand | 1         |

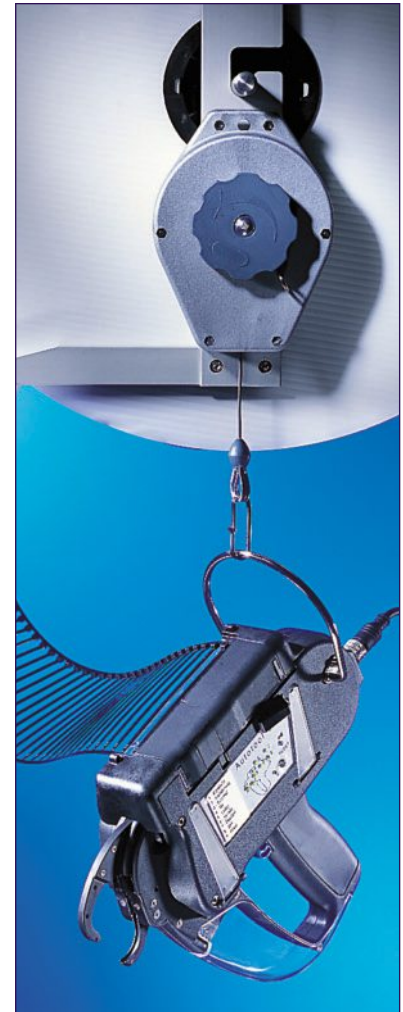
Use **Part No.** for ordering and **Type** for specification purposes.

## AT2000 and AT2060 Overhead Suspension Assembly

HellermannTyton's overhead suspension assembly system holds the AT2000 or AT2060, reel of cable ties, and power source. The overhead assembly is available in several configurations in a variety of mounting options and is easily integrated into various manufacturing environments. The modular design allows for easy additions or modifications of the system design.

The overhead assembly system provides additional ergonomic advantages to the AT2000 and AT2060. The system features overhead hanging, a trolley slide which allows for mobility within the frame, and an adjustable counter balance. These features allow for low operator strain and easy use. Since the assembly integrates the automatic cable tie systems and reel of ties, continuous feed is achieved. Reloading of cable ties is greatly reduced, further optimizing efficiencies.

For more information on the system, contact HellermannTyton.



## AT2000 Battery Pack

HellermannTyton's battery pack powers the AT2000 and is worn by the operator, allowing for complete mobility.

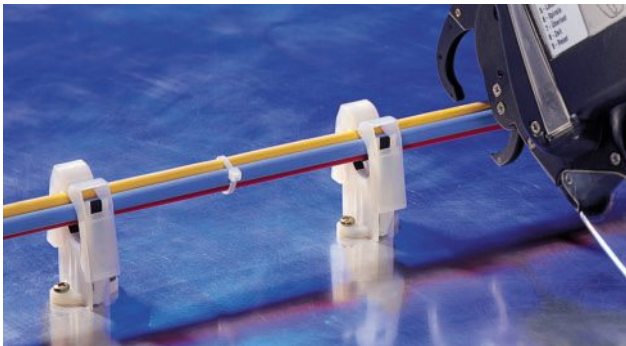


| Product Selection |                  |                 |                                           |           |
|-------------------|------------------|-----------------|-------------------------------------------|-----------|
| Article No.       | Part No.         | Type            | Description                               | Pkg. Qty. |
| 120-00031         | <b>120-00031</b> | Battery Pack    | Battery with belt clip and connector cord | 1         |
| 120-00021         | <b>120-00021</b> | Battery Charger | Charging unit for battery                 | 1         |

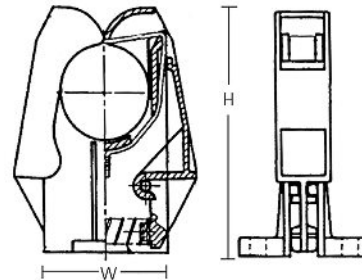
Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Wire Retainer for Harness Boards

Designed for use in harness board assemblies, these wire retainers stand-off wire and cable bundles for easier cable tie application. Wires are individually inserted, and bundles are preformed, making harnessing easier.



Wire Retainer for Harness Boards



| Product Selection |              |      |                        | Height (H) | Width (W)  | Max. Ø Bundle | Pkg. Qty. |
|-------------------|--------------|------|------------------------|------------|------------|---------------|-----------|
| Article No.       | Part No.     | Type | Description            | in. (mm)   | in. (mm)   | in. (mm)      |           |
| 120-00080         | <b>HH-20</b> | HH20 | Harness Board Assembly | 2.12" (54) | 1.22" (31) | .83" (20)     | 25        |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## AutoTool System 3080 For bundles up to 3.14"

HellermannTyton's ATS3080 automatically installs cable ties for bundles up to 3.14" in diameter with one trigger depression. This innovative system utilizes strap and closures (ordered separately) to achieve a waste free system. The ATS3080 uses only the required strap length required for the diameter. The strap is outside serrated so that it will not damage sensitive wire and cable bundles.

This well balanced tool has ergonomic benefits that include low weight and a comfortable hand grip which reduces operator strain and injury while installing cable ties. The ATS3080 possesses a LED panel that provides critical operational feedback that makes it easier to maintain and operate the tool.

The ATS3080 has three jaw diameters available: 1.18" (30mm), 1.96" (50mm), and 3.14" (80mm). The jaws are easily interchanged and further tool adjustment between the three jaw diameters is unnecessary.



ATS3080 Technical Specifications

|               |                                        |
|---------------|----------------------------------------|
| Power Supply  | <b>Electrical</b>                      |
| Cycle Time    | <b>approx. 1.3 sec. (50 mm jaw)</b>    |
| Weight        | <b>3.2lbs</b>                          |
| Installation  | <b>Mobile, bench mount or overhead</b> |
| Tension Force | <b>Adjustable</b>                      |



Closures and strap for ATS3080



ATS3080 Cable Tie Specifications

|                                |                                                                                 |
|--------------------------------|---------------------------------------------------------------------------------|
| Material                       | <b>Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV)</b> |
| Operating Temperature          | <b>-40 °C to +95 °C continuous, (+105 °C for 5000 h)</b>                        |
| Flammability                   | <b>UL94 HB</b>                                                                  |
| <b>Strap Reel Dimensions</b>   |                                                                                 |
| Reel Diameter                  | <b>15.25" (387 mm)</b>                                                          |
| Reel Width                     | <b>3.5" (88.9 mm)</b>                                                           |
| Reel Weight                    | <b>6lbs (2.72 kg)</b>                                                           |
| <b>Closure Reel Dimensions</b> |                                                                                 |
| Reel Diameter                  | <b>15.25" (387 mm)</b>                                                          |
| Reel Width                     | <b>3.5" (88.9 mm)</b>                                                           |
| Reel Weight                    | <b>3.5lbs (1.58 kg)</b>                                                         |





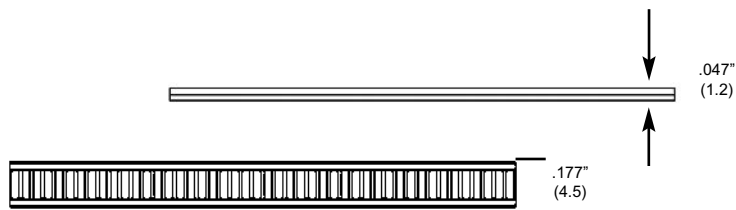
ATS3080 with mobile trolley unit



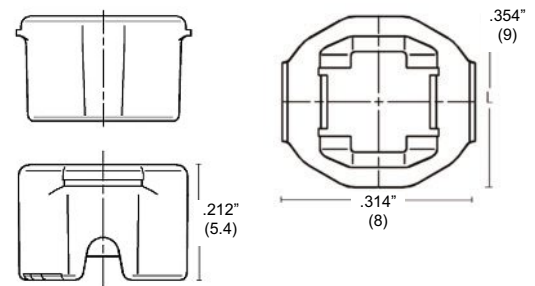
ATS3080 with overhead



ATS3080 with bench mount



Strap ATS3080



Closures ATS3080

| Product Selection                 |             |                          |                                                                                                                                                           |                                      |                   |
|-----------------------------------|-------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-------------------|
| Article No.                       | Part No.    | Type                     | Description                                                                                                                                               | Min Tensile Unlocking Strength (lbs) | Pkg. Qty. ft. (m) |
| 102-00000                         | ATS10200000 | ATS3080                  | Includes ATS3080 tool, power cord, tool cord, and maintenance and operation manual. Does not include power supply.                                        |                                      | 1                 |
| 102-00010                         | ATS10200010 | Power Pack ATS3080       | Power Supply Unit for ATS3080<br>Input: 230/115 VAC, 50-60 Hz<br>Output: 48 VDC, max. 50W                                                                 |                                      | 1                 |
| <b>Natural Strap and Closures</b> |             |                          |                                                                                                                                                           |                                      |                   |
| 102-66109                         | ATS10266109 | Strap Natural ATS3080    | ATS3080 Strap                                                                                                                                             | 50 lbs                               | 1640 ft. (500)    |
| 102-66209                         | ATS10266209 | Closures Natural ATS3080 | ATS3080 Closure                                                                                                                                           | 50 lbs                               | 5000 pcs          |
| <b>Black Strap and Closures</b>   |             |                          |                                                                                                                                                           |                                      |                   |
| 102-66110                         | ATS10266110 | Strap Black ATS3080      | ATS3080 Strap                                                                                                                                             | 50 lbs                               | 1640 ft. (500)    |
| 102-66210                         | ATS10266210 | Closures Black ATS3080   | ATS3080 Closures                                                                                                                                          | 50 lbs                               | 5000 pcs          |
| 102-00040                         | ATS10200040 | Bench Mount Kit          | Bench Mount Kit for ATS 3080<br>Integrated pneumatic system that coordinates tool and reels.<br>Foot pedal application, other actuation options available |                                      | 1                 |
| 102-00050                         | ATS10200050 | Overhead Suspender       | Overhead Suspender ATS 3080                                                                                                                               |                                      | 1                 |
| 102-00030                         | ATSTROLLEY  | Trolley ATS 3080         | Trolley                                                                                                                                                   |                                      | 1                 |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Quick Tool

HellermannTyton's Quick Tool is an automatic bench mount system suited for high volume cable tie applications. This air powered tool accommodates a reel of 5,000 ties and, like HellermannTyton's other automated systems, can be integrated into further automation as well as fully incorporated into conveyor or assembly line applications.

### Product Features

- The system is a one piece, bench top unit which increases efficiency through quick and reliable fastening.
- It can be installed where a 110 VAC electrical outlet and pneumatic air source are available.
- Provides consistent fastening tension.
- Controls fastening tension.
- Ties are available in two styles: standard and heat stabilized.
- Custom colors for Quick Tool ties are also available. Contact HellermannTyton for more information.



QS101 Cable Tie Specifications

|                                       |                                              |
|---------------------------------------|----------------------------------------------|
| <b>Operating Temperature</b>          |                                              |
| Natural                               | <b>-40 °F to +185 °F (-40 °C to +85 °C)</b>  |
| Polyamide 6.6                         |                                              |
| Heat stabilized, black, Polyamide 6.6 | <b>-40 °F to +221 °F (-40 °C to +105 °C)</b> |
| Reel Diameter                         | <b>18" (457 mm)</b>                          |
| Reel Width                            | <b>5.20" (132 mm)</b>                        |
| Reel Weight                           | <b>4.8 lbs (2.18 kg)</b>                     |



QS101 Technical Specifications

|               |                                          |
|---------------|------------------------------------------|
| Max. Ø Bundle | <b>0.630" (16.00 mm)</b>                 |
| Wattage       | <b>70W</b>                               |
| Power Supply  | <b>Electrical/Pneumatic Power</b>        |
| Cycle Time    | <b>1.2 Seconds</b>                       |
| Weight        | <b>40 lbs.</b>                           |
| Installation  | <b>Bench</b>                             |
| Tension Force | <b>Adjustable (9.92 lbs - 19.84 lbs)</b> |

Product Selection

| Article No. | Part No.     | Type  | Description                                                                       | Min Tensile Unlocking Strength (lbs) | Max. Ø Bundle | Width (W) | Length (L) | Pkg. Qty. |
|-------------|--------------|-------|-----------------------------------------------------------------------------------|--------------------------------------|---------------|-----------|------------|-----------|
|             |              |       |                                                                                   |                                      | in. (mm)      | in. (mm)  | in. (mm)   |           |
| 105-00000   | <b>QS101</b> | QS101 | Includes Quick Tool, power cord, maintenance and operation manual and foot pedal. |                                      |               |           |            | 1         |

### Natural Cable Ties

|           |               |        |                                                 |    |            |             |             |                                                         |
|-----------|---------------|--------|-------------------------------------------------|----|------------|-------------|-------------|---------------------------------------------------------|
| 105-00006 | <b>QTTIE9</b> | QTTIE9 | Cable ties on reel for use with the Quick Tool. | 18 | .63 " (16) | .10 " (2.5) | 4.0 " (101) | 10,000 per carton: 5,000 per reel<br>2 reels per carton |
|-----------|---------------|--------|-------------------------------------------------|----|------------|-------------|-------------|---------------------------------------------------------|

### Black Heat Stabilized Cable Ties

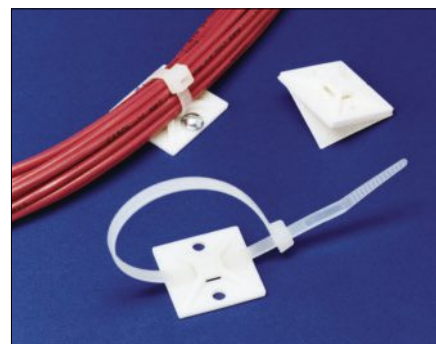
|           |                 |          |                                                 |    |            |             |             |                                                         |
|-----------|-----------------|----------|-------------------------------------------------|----|------------|-------------|-------------|---------------------------------------------------------|
| 105-00001 | <b>QTTIEOHS</b> | QTTIEOHS | Cable ties on reel for use with the Quick Tool. | 18 | .63 " (16) | .10 " (2.5) | 4.0 " (101) | 10,000 per carton: 5,000 per reel<br>2 reels per carton |
|-----------|-----------------|----------|-------------------------------------------------|----|------------|-------------|-------------|---------------------------------------------------------|

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes. Various colored cable ties available upon request. Contact HellermannTyton for more information and lead times.

## Cable Tie Mounts

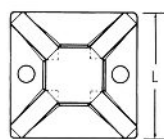
HellermannTyton's 4-way mounting bases are available in four sizes to accommodate T18 through T150 series cable ties. Insertion of ties can be made from all four sides. Each mount may be secured with two screws (four screws for the MB2.5 mount), with adhesive backing, or both, for ease of application and stability.

For applications where higher temperatures, certain chemicals, or UV radiation are a concern and an adhesive is the preferred method for securing, the acrylic adhesive 4-way mounting bases are recommended. The 2-way mounting bases may be secured with one screw, with adhesive backing, or both, and allow ties to be inserted from two sides.

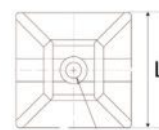


Adhesive mounts are supplied in pairs connected together on an adhesive liner.

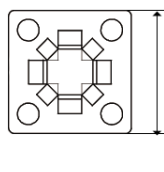
| Material Data         |                                                            |  |
|-----------------------|------------------------------------------------------------|--|
| Material              | <b>Polyamide 6.6 (PA66)</b>                                |  |
| Operating Temperature | <b>-40 °F to +185 °F<br/>(-40 °C to +85 °C) continuous</b> |  |
| Flammability          | <b>UL94 V2 (excluding adhesive)</b>                        |  |



4-way, MB3, MB4 and MB5 mounts



2-way mount



4-way, MB2.5 mount

## Cable Tie Mounting Bases - Screw Mount

**CA**  
US  
File# E64139

| Product Selection  |           |       |                  |           |                |                |              |      |            |      |       |           |
|--------------------|-----------|-------|------------------|-----------|----------------|----------------|--------------|------|------------|------|-------|-----------|
| Article No.        | Part No.  | Type  | Cable Tie Series | Mounting  | Length (L)     |                | Width (W)    |      | Height (H) |      | Color | Pkg. Qty. |
|                    |           |       |                  |           | in.            | (mm)           | in.          | (mm) | in.        | (mm) |       |           |
| 2- Way Screw Mount |           |       |                  |           |                |                |              |      |            |      |       |           |
| 151-29104          | MB4SH10C2 | MB4SH | T18 - T50        | # 6 Screw | 1.115" (28.32) | 1.115" (28.32) | .202" (5.13) |      | White      | 100  |       |           |
| 151-00323          | MB4SH10H4 | MB4SH |                  |           | 1.115" (28.32) | 1.115" (28.32) | .202" (5.13) |      | White      | 500  |       |           |
| 151-29100          | MB4SH0C2  | MB4SH |                  |           | 1.115" (28.32) | 1.115" (28.32) | .202" (5.13) |      | Black      | 100  |       |           |
| 151-29101          | MB4SH0H4  | MB4SH |                  |           | 1.115" (28.32) | 1.115" (28.32) | .202" (5.13) |      | Black      | 500  |       |           |
| 4- Way Screw Mount |           |       |                  |           |                |                |              |      |            |      |       |           |
| 151-28901          | MB2.510C2 | MB2.5 | T18              | # 3 Screw | .625" (15.88)  | .625" (15.88)  | .130" (3.3)  |      | White      | 100  |       |           |
| 151-28902          | MB2.510M4 | MB2.5 |                  |           | .625" (15.88)  | .625" (15.88)  | .130" (3.3)  |      | White      | 1000 |       |           |
| 151-00285          | MB2.50C2  | MB2.5 |                  |           | .625" (15.88)  | .625" (15.88)  | .130" (3.3)  |      | Black      | 100  |       |           |
| 151-00286          | MB2.50M4  | MB2.5 |                  |           | .625" (15.88)  | .625" (15.88)  | .130" (3.3)  |      | Black      | 1000 |       |           |
| 151-28302          | MB310C2   | MB3   | T18, T30         | #4 Screw  | .75" (19.0)    | .75" (19.0)    | .15" (3.8)   |      | White      | 100  |       |           |
| 151-28305          | MB310M4   | MB3   |                  |           | .75" (19.0)    | .75" (19.0)    | .15" (3.8)   |      | White      | 1000 |       |           |
| 151-00136          | MB30C2    | MB3   |                  |           | .75" (19.0)    | .75" (19.0)    | .15" (3.8)   |      | Black      | 100  |       |           |
| 151-28301          | MB30M4    | MB3   |                  |           | .75" (19.0)    | .75" (19.0)    | .15" (3.8)   |      | Black      | 1000 |       |           |
| 151-28802          | MB410C2   | MB4   | T18 - T50        | #8 Screw  | 1.12" (28.5)   | 1.12" (28.5)   | .19" (4.8)   |      | White      | 100  |       |           |
| 151-00319          | MB410H4   | MB4   |                  |           | 1.12" (28.5)   | 1.12" (28.5)   | .19" (4.8)   |      | White      | 500  |       |           |
| 151-00320          | MB40C2    | MB4   |                  |           | 1.12" (28.5)   | 1.12" (28.5)   | .19" (4.8)   |      | Black      | 100  |       |           |
| 151-28801          | MB40H4    | MB4   |                  |           | 1.12" (28.5)   | 1.12" (28.5)   | .19" (4.8)   |      | Black      | 500  |       |           |
| 151-00324          | MB510C2   | MB5   | T18 - T150       | #8 Screw  | 1.485" (37.7)  | 1.485" (37.7)  | .245" (6.2)  |      | White      | 100  |       |           |
| 151-28504          | MB510F4   | MB5   |                  |           | 1.485" (37.7)  | 1.485" (37.7)  | .245" (6.2)  |      | White      | 250  |       |           |
| 151-28500          | MB50C2    | MB5   |                  |           | 1.485" (37.7)  | 1.485" (37.7)  | .245" (6.2)  |      | Black      | 100  |       |           |
| 151-28501          | MB50F4    | MB5   |                  |           | 1.485" (37.7)  | 1.485" (37.7)  | .245" (6.2)  |      | Black      | 250  |       |           |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Cable Tie Mounting Bases - Rubber-Based Adhesive

| Product Selection                         |            |        |                  |          |                |                |              |       |           |
|-------------------------------------------|------------|--------|------------------|----------|----------------|----------------|--------------|-------|-----------|
| Article No.                               | Part No.   | Type   | Cable Tie Series | Mounting | Length (L)     | Width (W)      | Height (H)   | Color | Pkg. Qty. |
|                                           |            |        |                  |          | in. (mm)       | in. (mm)       | in. (mm)     |       |           |
| 2- Way Mount with Rubber - Based Adhesive |            |        |                  |          |                |                |              |       |           |
| 151-29203                                 | MB4SHA10C2 | MB4SHA | T18 - T50        | Adhesive | 1.115" (28.32) | 1.115" (28.32) | .232" (5.89) | White | 100       |
| 151-29206                                 | MB4SHA10H4 | MB4SHA |                  |          | 1.115" (28.32) | 1.115" (28.32) | .232" (5.89) | White | 500       |
| 151-29200                                 | MB4SHA0C2  | MB4SHA |                  |          | 1.115" (28.32) | 1.115" (28.32) | .232" (5.89) | Black | 100       |
| 4- Way Mount with Rubber - Based Adhesive |            |        |                  |          |                |                |              |       |           |
| 151-29002                                 | MB2.5A10C2 | MB2.5A | T18              | Adhesive | .625" (15.88)  | .625" (15.88)  | .160" (4.1)  | White | 100       |
| 151-00298                                 | MB2.5A10M4 | MB2.5A |                  |          | .625" (15.88)  | .625" (15.88)  | .160" (4.1)  | White | 1000      |
| 151-29000                                 | MB2.5A0C2  | MB2.5A |                  |          | .625" (15.88)  | .625" (15.88)  | .160" (4.1)  | Black | 100       |
| 151-29001                                 | MB2.5A0M4  | MB2.5A |                  |          | .625" (15.88)  | .625" (15.88)  | .160" (4.1)  | Black | 1000      |
| 151-28718                                 | MB3A10C2   | MB3A   | T18, T30         | Adhesive | .75" (19.0)    | .75" (19.0)    | .18" (4.6)   | White | 100       |
| 151-28721                                 | MB3A10M4   | MB3A   |                  |          | .75" (19.0)    | .75" (19.0)    | .18" (4.6)   | White | 1000      |
| 151-28710                                 | MB3A0C2    | MB3A   |                  |          | .75" (19.0)    | .75" (19.0)    | .18" (4.6)   | Black | 100       |
| 151-28713                                 | MB3A0M4    | MB3A   |                  |          | .75" (19.0)    | .75" (19.0)    | .18" (4.6)   | Black | 1000      |
| 151-28421                                 | MB4A10C2   | MB4A   | T18 - T50        | Adhesive | 1.12" (28.0)   | 1.12" (28.0)   | .22" (5.6)   | White | 100       |
| 151-00321                                 | MB4A10H4   | MB4A   |                  |          | 1.12" (28.0)   | 1.12" (28.0)   | .22" (5.6)   | White | 500       |
| 151-28403                                 | MB4A0C2    | MB4A   |                  |          | 1.12" (28.0)   | 1.12" (28.0)   | .22" (5.6)   | Black | 100       |
| 151-28406                                 | MB4A0H4    | MB4A   |                  |          | 1.12" (28.0)   | 1.12" (28.0)   | .22" (5.6)   | Black | 500       |
| 151-28529                                 | MB5A10C2   | MB5A   | T18 - T150       | Adhesive | 1.485" (37.7)  | 1.485" (37.7)  | .275" (6.9)  | White | 100       |
| 151-00427                                 | MB5A10F4   | MB5A   |                  |          | 1.485" (37.7)  | 1.485" (37.7)  | .275" (6.9)  | White | 250       |
| 151-28602                                 | MB5A0C2    | MB5A   |                  |          | 1.485" (37.7)  | 1.485" (37.7)  | .275" (6.9)  | Black | 100       |
| 151-28605                                 | MB5A0F4    | MB5A   |                  |          | 1.485" (37.7)  | 1.485" (37.7)  | .275" (6.9)  | Black | 250       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

**RU**  
US  
File# E64139

## Cable Tie Mounting Bases - Acrylic Adhesive

File# E04713

| Product Selection                    |            |      |                  |          |               |               |             |       |           |
|--------------------------------------|------------|------|------------------|----------|---------------|---------------|-------------|-------|-----------|
| Article No.                          | Part No.   | Type | Cable Tie Series | Mounting | Length (L)    | Width (W)     | Height (H)  | Color | Pkg. Qty. |
|                                      |            |      |                  |          | in. (mm)      | in. (mm)      | in. (mm)    |       |           |
| 4 - Way Screw Mount Acrylic Adhesive |            |      |                  |          |               |               |             |       |           |
| 151-00331                            | MB3A10A2C2 | MB3A | T18, T30         | Adhesive | .75" (19.0)   | .75" (19.0)   | .18" (4.6)  | White | 100       |
| 151-28717                            | MB3A10A2H4 | MB3A |                  |          | .75" (19.0)   | .75" (19.0)   | .18" (4.6)  | White | 500       |
| 151-28711                            | MB3A0A2C2  | MB3A |                  |          | .75" (19.0)   | .75" (19.0)   | .18" (4.6)  | Black | 100       |
| 151-28709                            | MB3A0A2H4  | MB3A |                  |          | .75" (19.0)   | .75" (19.0)   | .18" (4.6)  | Black | 500       |
| 151-28420                            | MB4A10A2C2 | MB4A | T18 - T50        | Adhesive | 1.12" (28.5)  | 1.12" (28.5)  | .23" (5.9)  | White | 100       |
| 151-00322                            | MB4A10A2H4 | MB4A |                  |          | 1.12" (28.5)  | 1.12" (28.5)  | .23" (5.9)  | White | 500       |
| 151-28402                            | MB4A0A2C2  | MB4A |                  |          | 1.12" (28.5)  | 1.12" (28.5)  | .23" (5.9)  | Black | 100       |
| 151-28405                            | MB4A0A2H4  | MB4A |                  |          | 1.12" (28.5)  | 1.12" (28.5)  | .23" (5.9)  | Black | 500       |
| 151-28607                            | MB5A10A2C2 | MB5A | T18 - T150       | Adhesive | 1.485" (37.7) | 1.485" (37.7) | .275" (6.9) | White | 100       |
| 151-28610                            | MB5A10A2F4 | MB5A |                  |          | 1.485" (37.7) | 1.485" (37.7) | .275" (6.9) | White | 250       |
| 151-28600                            | MB5A0A2C2  | MB5A |                  |          | 1.485" (37.7) | 1.485" (37.7) | .275" (6.9) | Black | 100       |
| 151-28604                            | MB5A0A2F4  | MB5A |                  |          | 1.485" (37.7) | 1.485" (37.7) | .275" (6.9) | Black | 250       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Cable Tie Mounting Bases - High Temperature/Heavy Bond Adhesive

For extreme heavy duty applications, our high temperature/heavy bond adhesive mounts work well on difficult surfaces such as paint or plastics. The mounts are made of our high temp, impact modified PA66 material and use a specially formulated acrylic adhesive making the bond extremely durable.

| Product Selection |                  |        |                  |          |             |             |            |       |           |
|-------------------|------------------|--------|------------------|----------|-------------|-------------|------------|-------|-----------|
| Article No.       | Part No.         | Type   | Cable Tie Series | Mounting | Length (L)  | Width (W)   | Height (H) | Color | Pkg. Qty. |
|                   |                  |        |                  |          | in. (mm)    | in. (mm)    | in. (mm)   |       |           |
| 151-00432         | <b>151-00432</b> | MB3APT | T18, T30         | Adhesive | .75" (19.0) | .75" (19.0) | .15" (3.8) | Black | 100       |
| 151-00433         | <b>151-00433</b> | MB4APT | T18 - T50        |          | 1.1" (28.0) | 1.1" (28.0) | .19" (4.7) | Black | 100       |

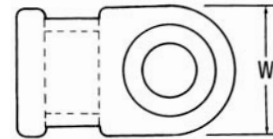
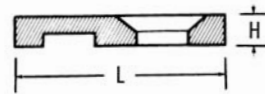
Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Low Profile Cable Tie Mounts

Low profile mounts are intended for use in securing bundles where space is limited. Each mount is fastened with a single screw.



| Material Data         |                                                        |
|-----------------------|--------------------------------------------------------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                            |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                         |



| Product Selection |               |      |                  |           |               |               |              |         |           |
|-------------------|---------------|------|------------------|-----------|---------------|---------------|--------------|---------|-----------|
| Article No.       | Part No.      | Type | Cable Tie Series | Mounting  | Length (L)    | Width (W)     | Height (H)   | Color   | Pkg. Qty. |
|                   |               |      |                  |           | in. (mm)      | in. (mm)      | in. (mm)     |         |           |
| 151-28119         | <b>MB19C2</b> | MB1  | T18              | #2 Screw  | .500" (12.70) | .312" (7.92)  | .130" (3.30) | Natural | 100       |
| 151-28101         | <b>MB19M4</b> |      |                  |           | .500" (12.70) | .312" (7.92)  | .130" (3.30) | Natural | 1000      |
| 151-00295         | <b>MB10C2</b> |      |                  |           | .500" (12.70) | .312" (7.92)  | .130" (3.30) | Black   | 100       |
| 151-00296         | <b>MB10M4</b> |      |                  |           | .500" (12.70) | .312" (7.92)  | .130" (3.30) | Black   | 1000      |
| 151-00227         | <b>MB29C2</b> | MB2  | T18 - T50        | # 8 Screw | .807" (20.50) | .490" (12.45) | .130" (3.30) | Natural | 100       |
| 151-00297         | <b>MB29M4</b> |      |                  |           | .807" (20.50) | .490" (12.45) | .130" (3.30) | Natural | 1000      |
| 151-28210         | <b>MB20C2</b> |      |                  |           | .807" (20.50) | .490" (12.45) | .130" (3.30) | Black   | 100       |
| 151-28202         | <b>MB20M4</b> |      |                  |           | .807" (20.50) | .490" (12.45) | .130" (3.30) | Black   | 1000      |

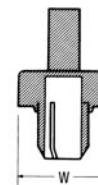
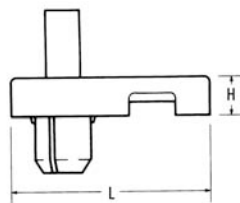
Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Low Profile Rivet Mounts

The low profile rivet mount is designed to secure wiring bundles and fastens with the drive rivet through a predrilled hole. This mount is ideal for use in applications where space is limited.



| Material Data         |                                                        |
|-----------------------|--------------------------------------------------------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                            |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                         |

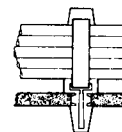
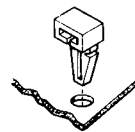
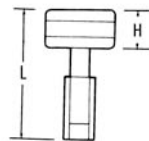
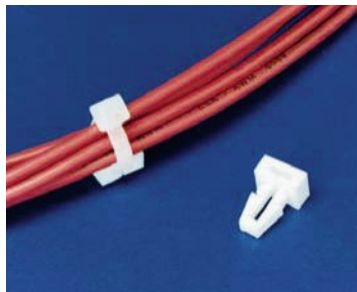


| Product Selection |                  |        |                  |                 |                      |               |               |              |         |           |
|-------------------|------------------|--------|------------------|-----------------|----------------------|---------------|---------------|--------------|---------|-----------|
| Article No.       | Part No.         | Type   | Cable Tie Series | Mounting Hole Ø | Max. Panel Thickness | Length (L)    | Width (W)     | Height (H)   | Color   | Pkg. Qty. |
|                   |                  |        |                  | in. (mm)        | in. (mm)             | in. (mm)      | in. (mm)      | in. (mm)     |         |           |
| 151-27000         | <b>LKCRF19C2</b> | LKCRF1 | T18 -            | .250" (6.35)    | .134" (3.4)          | .938" (23.82) | .470" (11.94) | .157" (3.99) | Natural | 100       |
| 151-27009         | <b>LKCRF19H4</b> | LKCRF1 | T50              | .250" (6.35)    | .134" (3.4)          | .938" (23.82) | .470" (11.91) | .157" (3.99) | Natural | 500       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Push Mounts

Intended for use in a predrilled hole, this push mount accepts T18 through T50 series cable ties. Once inserted through the hole, the mount locks into place.



### Material Data

|                       |                                                        |
|-----------------------|--------------------------------------------------------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                            |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                         |



**UL** US  
File# E64139

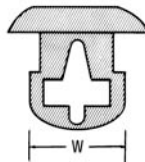
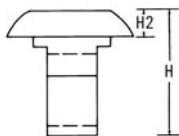
### Product Selection

| Article No. | Part No.         | Type  | Cable Tie Series | Mounting Hole Ø | Max. Panel Thickness | Length (L)    | Width (W)     | Height (H)   | Color | Pkg. Qty. |
|-------------|------------------|-------|------------------|-----------------|----------------------|---------------|---------------|--------------|-------|-----------|
|             |                  |       |                  | in. (mm)        | in. (mm)             | in. (mm)      | in. (mm)      | in. (mm)     |       |           |
| 151-40106   | <b>TM1SF10C2</b> | TM1SF | T18 - T50        | .25" (6.3)      | .134" (3.4)          | .616" (15.65) | .401" (10.19) | .181" (4.60) | White | 100       |
| 151-00328   | <b>TM1SF10M4</b> | TM1SF |                  | .25" (6.3)      | .134" (3.4)          | .616" (15.65) | .401" (10.19) | .181" (4.60) | White | 1000      |
| 151-40100   | <b>TM1SF0C2</b>  | TM1SF |                  | .25" (6.3)      | .134" (3.4)          | .616" (15.65) | .401" (10.19) | .181" (4.60) | Black | 100       |
| 151-40101   | <b>TM1SF0M4</b>  | TM1SF |                  | .25" (6.3)      | .134" (3.4)          | .616" (15.65) | .401" (10.19) | .181" (4.60) | Black | 1000      |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Push Button Mounts

The push button mounts are used where the back of the panel is accessible.



### Material Data

|                       |                                                        |
|-----------------------|--------------------------------------------------------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                            |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                         |



**UL** US  
File# E64139

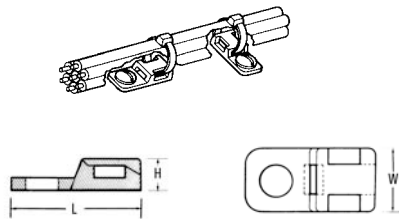
### Product Selection

| Article No. | Part No.       | Type | Cable Tie Series | Mounting Hole Ø | Max. Panel Thickness | Width (W)   | Height (H)   | Height (H2) | Color | Pkg. Qty. |
|-------------|----------------|------|------------------|-----------------|----------------------|-------------|--------------|-------------|-------|-----------|
|             |                |      |                  | in. (mm)        | in. (mm)             | in. (mm)    | in. (mm)     | in. (mm)    |       |           |
| 151-00230   | <b>PBM10C2</b> | PBM  | T18 - T50        | .25" (6.4)      | .122" (3.1)          | .26" (6.60) | .40" (10.16) | .08" (2.03) | White | 100       |
| 151-00231   | <b>PBM10M4</b> | PBM  |                  | .25" (6.4)      | .122" (3.1)          | .26" (6.60) | .40" (10.16) | .08" (2.03) | White | 1000      |
| 151-00228   | <b>PBM0C2</b>  | PBM  |                  | .25" (6.4)      | .122" (3.1)          | .26" (6.60) | .40" (10.16) | .08" (2.03) | Black | 100       |
| 151-00229   | <b>PBM0M4</b>  | PBM  |                  | .25" (6.4)      | .122" (3.1)          | .26" (6.60) | .40" (10.16) | .08" (2.03) | Black | 1000      |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Cable Tie Anchor Mounts (CTAM)

Cable ties may be inserted from any of the four sides of the CTAM. This feature allows the mount to be placed either parallel or perpendicular to the wires.



| Material Data         |                                                            |
|-----------------------|------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                                |
| Operating Temperature | <b>-40 °F to +185 °F<br/>(-40 °C to +85 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                             |



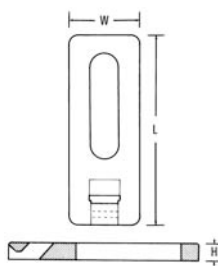
**UL**  
US  
File# E64139

| Product Selection |                  |       |                  |           |               |               |              |       |           |
|-------------------|------------------|-------|------------------|-----------|---------------|---------------|--------------|-------|-----------|
| Article No.       | Part No.         | Type  | Cable Tie Series | Mounting  | Width (W)     | Length (L)    | Height (H)   | Color | Pkg. Qty. |
|                   |                  |       |                  |           | in. (mm)      | in. (mm)      | in. (mm)     |       |           |
| 151-31103         | <b>CTAM110C2</b> | CTAM1 | T18 - T50        | #8 screw  | .400" (10.16) | .800" (20.32) | .200" (5.08) | White | 100       |
| 151-31106         | <b>CTAM110M4</b> | CTAM1 |                  |           | .400" (10.16) | .800" (20.32) | .200" (5.08) | White | 1000      |
| 151-31101         | <b>CTAM10C2</b>  | CTAM1 |                  |           | .400" (10.16) | .800" (20.32) | .200" (5.08) | Black | 100       |
| 151-00287         | <b>CTAM10M4</b>  | CTAM1 |                  |           | .400" (10.16) | .800" (20.32) | .200" (5.08) | Black | 1000      |
| 151-31203         | <b>CTAM210C2</b> | CTAM2 |                  | #10 screw | .400" (10.16) | .800" (20.32) | .200" (5.08) | White | 100       |
| 151-31205         | <b>CTAM210M4</b> | CTAM2 |                  |           | .400" (10.16) | .800" (20.32) | .200" (5.08) | White | 1000      |
| 151-31201         | <b>CTAM20C2</b>  | CTAM2 |                  |           | .400" (10.16) | .800" (20.32) | .200" (5.08) | Black | 100       |
| 151-31202         | <b>CTAM20M4</b>  | CTAM2 |                  |           | .400" (10.16) | .800" (20.32) | .200" (5.08) | Black | 1000      |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Cable Tie Anchor Plates (CTAP)

These plates have slotted mounting holes to provide for easier alignment of mount and bundles. Once aligned, they are fastened securely by tightening the applied screw. The CTAP2 allows an additional screw for maximum stability. Both plates are used perpendicularly to the wire bundle.



| Material Data         |                                                            |
|-----------------------|------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                                |
| Operating Temperature | <b>-40 °F to +185 °F<br/>(-40 °C to +85 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                             |



**UL**  
US  
File# E64139

| Product Selection |                  |       |                  |           |             |               |             |       |           |
|-------------------|------------------|-------|------------------|-----------|-------------|---------------|-------------|-------|-----------|
| Article No.       | Part No.         | Type  | Cable Tie Series | Mounting  | Width (W)   | Length (L)    | Height (H)  | Color | Pkg. Qty. |
|                   |                  |       |                  |           | in. (mm)    | in. (mm)      | in. (mm)    |       |           |
| 151-30100         | <b>CTAP110C2</b> | CTAP1 | T18 - T50        | #10 screw | .50" (12.7) | 1.34" (34.04) | .15" (3.81) | White | 100       |
| 151-00288         | <b>CTAP110M4</b> | CTAP1 |                  |           | .50" (12.7) | 1.34" (34.04) | .15" (3.81) | White | 1000      |
| 151-00289         | <b>CTAP10C2</b>  | CTAP1 |                  |           | .50" (12.7) | 1.34" (34.04) | .15" (3.81) | Black | 100       |
| 151-00290         | <b>CTAP10M4</b>  | CTAP1 |                  |           | .50" (12.7) | 1.34" (34.04) | .15" (3.81) | Black | 1000      |
| 151-30200         | <b>CTAP210C2</b> | CTAP2 |                  |           | .50" (12.7) | 2.13" (54.1)  | .14" (3.5)  | White | 100       |
| 151-00308         | <b>CTAP210H4</b> | CTAP2 |                  |           | .50" (12.7) | 2.13" (54.1)  | .14" (3.5)  | White | 500       |
| 151-00291         | <b>CTAP20C2</b>  | CTAP2 |                  |           | .50" (12.7) | 2.13" (54.1)  | .14" (3.5)  | Black | 100       |
| 151-00292         | <b>CTAP20M4</b>  | CTAP2 |                  |           | .50" (12.7) | 2.13" (54.1)  | .14" (3.5)  | Black | 500       |

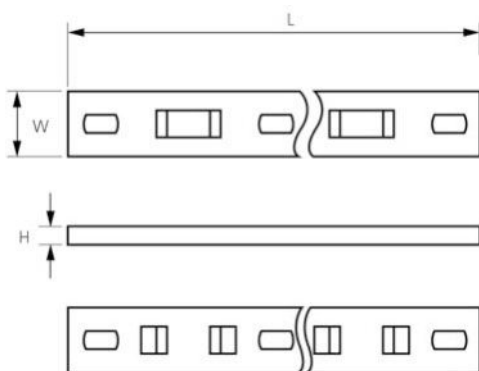
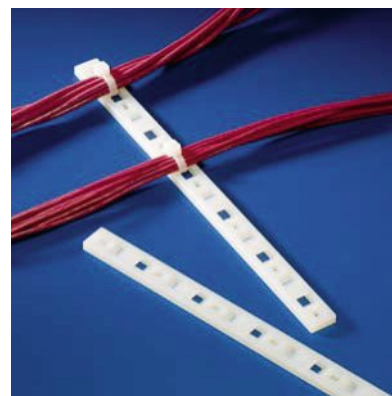
Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Cable Tie Mounting Plates

Allowing multiple cables to be run in parallel, these mounting plates are secured with two screws. The cables are attached to the mounting plate by using a cable tie through any combination of the available slots.

| Material Data         |                                                                  |
|-----------------------|------------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                                      |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C)</b><br><b>continuous</b> |
| Color                 | <b>Natural</b>                                                   |
| Flammability          | <b>UL94 V2</b>                                                   |

RoHS

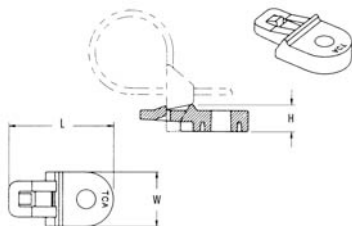


| Product Selection |                    |          | Cable Tie Series | Mounting       | Width (W) |        | Length (L) |         | Height (H) |        | Pkg. Qty. |
|-------------------|--------------------|----------|------------------|----------------|-----------|--------|------------|---------|------------|--------|-----------|
| Article No.       | Part No.           | Type     |                  |                | in.       | (mm)   | in.        | (mm)    | in.        | (mm)   |           |
| 154-00000         | <b>MP1M3.NN3P</b>  | MP1M3    | T18 - T50        | # 6 (M3) screw | .50"      | (12.7) | 1.75"      | (44.4)  | .125"      | (3.2)  | 100       |
| 154-00100         | <b>MP1M5.NN3P</b>  | MP1M5    |                  | #10 (M5) screw | .50"      | (12.7) | 1.75"      | (44.4)  | .125"      | (3.2)  | 100       |
| 151-24219         | <b>MP2M3.NN3P</b>  | MP2M3    |                  | # 6 (M3) screw | .50"      | (12.7) | 3.00"      | (76.2)  | .125"      | (3.2)  | 100       |
| 154-00300         | <b>MP2M5.NN3P</b>  | MP2M5    |                  | #10 (M5) screw | .50"      | (12.7) | 3.00"      | (76.2)  | .125"      | (3.2)  | 100       |
| 151-24319         | <b>MP3M3.NN3P</b>  | MP3M3    |                  | # 6 (M3) screw | .50"      | (12.7) | 4.25"      | (108.0) | .125"      | (3.2)  | 100       |
| 154-00500         | <b>MP3M5.NN3P</b>  | MP3M5    |                  | #10 (M5) screw | .50"      | (12.7) | 4.25"      | (108.0) | .125"      | (3.2)  | 100       |
| 151-24419         | <b>MP4M3.NN3P</b>  | MP4M3    |                  | # 6 (M3) screw | .50"      | (12.7) | 5.50"      | (139.8) | .125"      | (3.2)  | 100       |
| 154-00700         | <b>MP4M5.NN3P</b>  | MP4M5    |                  | #10 (M5) screw | .50"      | (12.7) | 5.50"      | (139.8) | .125"      | (3.2)  | 100       |
| 151-24519         | <b>MP5M3.NN3P</b>  | MP5M3    |                  | # 6 (M3) screw | .50"      | (12.7) | 6.75"      | (171.6) | .125"      | (3.2)  | 100       |
| 154-00900         | <b>MP5M5.NN3P</b>  | MP5M5    |                  | #10 (M5) screw | .50"      | (12.7) | 6.75"      | (171.6) | .125"      | (3.2)  | 100       |
| 154-00018         | <b>MSMP5/69C2</b>  | MSMP5/6  | T18 - T120       | # 6 (M3) screw | .618"     | (15.7) | 8.08"      | (205.3) | .21"       | (5.33) | 100       |
| 154-01200         | <b>MSMP5/109C2</b> | MSMP5/10 |                  | #10 (M5) screw | .618"     | (15.7) | 8.08"      | (205.3) | .21"       | (5.33) | 100       |
| 154-01302         | <b>MSMP6/69C2</b>  | MSMP6/6  |                  | # 6 (M3) screw | .618"     | (15.7) | 9.58"      | (243.3) | .21"       | (5.33) | 100       |
| 154-01300         | <b>MSMP6/109C2</b> | MSMP6/10 |                  | #10 (M5) screw | .618"     | (15.7) | 9.58"      | (243.3) | .21"       | (5.33) | 100       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Lashing Tie Mounts

The lashing tie mount is designed to snap into the T250 lashing tie. The tie head is assembled perpendicular to the mount. The strap is parallel to the mount when inserted into the head. The lashing tie mount is recommended for indoor or outdoor wall mount cable applications.



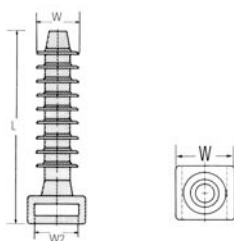
| Material Data         |                                                    | RoHS |
|-----------------------|----------------------------------------------------|------|
| Material              | Polyamide 6.6 heat stabilized (PA66HS)             |      |
| Operating Temperature | -40 °F to +221°F (-40 °C to +105 °C)<br>continuous |      |
| Flammability          | UL94 V2                                            |      |

| Product Selection |           |        |                  |            |               |               |              |       |           |
|-------------------|-----------|--------|------------------|------------|---------------|---------------|--------------|-------|-----------|
| Article No.       | Part No.  | Type   | Cable Tie Series | Mounting   | Width (W)     | Length (L)    | Height (H)   | Color | Pkg. Qty. |
|                   |           |        |                  |            | in. (mm)      | in. (mm)      | in. (mm)     |       |           |
| 151-00358         | LTM2500C2 | LTM250 | T250             | .25" screw | .733" (18.62) | 1.46" (37.08) | .378" (9.60) | Black | 100       |
| 151-00293         | LTM2500H4 | LTM250 |                  |            | .733" (18.62) | 1.46" (37.08) | .378" (9.60) | Black | 500       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Masonry Mounts

Masonry mounts provide a permanent method of attaching wire and cable to masonry surfaces. HellermannTyton's masonry mounts simply tap into predrilled holes and can be used for indoor and outdoor applications.



| Material Data         |                                                    | RoHS |
|-----------------------|----------------------------------------------------|------|
| Material              | Polyamide 6.6 (PA66)                               |      |
| Operating Temperature | -40 °F to +185 °F (-40 °C to +85 °C)<br>continuous |      |
| Flammability          | UL94 V2                                            |      |

| Product Selection |                 |       |                  |                 |              |            |           |            |            |       |           |
|-------------------|-----------------|-------|------------------|-----------------|--------------|------------|-----------|------------|------------|-------|-----------|
| Article No.       | Part No.        | Type  | Cable Tie Series | Mounting Hole Ø | Min. Depth   | Length (L) | Width (W) | Width (W2) | Width (W3) | Color | Pkg. Qty. |
|                   |                 |       |                  | in. (mm)        | in. (mm)     | in. (mm)   | in. (mm)  | in. (mm)   | in. (mm)   |       |           |
| 151-29800         | <b>MMB00C2</b>  | MMB0  | T18 - T50        | .188"           | 1.0" (25.4)  | 1.185"     | .355"     | .218"      | .236"      | Black | 100       |
| 151-00325         | <b>MMB00M4</b>  | MMB0  |                  | .188"           |              | 1.185"     | .355"     | .218"      | .236"      | Black | 1000      |
| 151-00116         | <b>MMB.50C2</b> | MMB.5 |                  | .25"            |              | 1.244"     | .375"     | .220"      | .308"      | Black | 100       |
| 151-30001         | <b>MMB.50M4</b> | MMB.5 |                  | .25"            |              | 1.244"     | .375"     | .220"      | .308"      | Black | 1000      |
| 151-00326         | <b>MMB10C2</b>  | MMB1  |                  | .312"           | 1.5" (38.10) | 1.71"      | .508"     | .374"      | .362"      | Black | 100       |
| 151-00327         | <b>MMB10H4</b>  | MMB1  |                  | .312"           |              | 1.71"      | .508"     | .374"      | .362"      | Black | 500       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Heavy Duty Mounts

The heavy duty mount, when used with a cable tie, eliminates the need to carry multiple sizes of fixed bundle diameter clamps, which reduces inventory and purchasing costs while simplifying the assembly process.

The heavy duty mount and cable tie combination makes it easy to service bundles in the field. Simply remove the cable tie, leave the mount in place, and replace the cable tie.

The heavy duty mounts are designed for use with HellermannTyton's heavy duty T250, T255, and wide strap cable ties to harness wires and hoses; however, they accept all standard cable ties up to .5" wide.



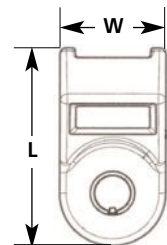
U.S. Patent Number 5,820,083

| Material Data         |                                                                                 | RoHS |
|-----------------------|---------------------------------------------------------------------------------|------|
| Material              | <b>Polyamide 6.6 impact modified, Heat Stabilized, UV Resistant (PA66HIRHS)</b> |      |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                         |      |
| Flammability          | <b>UL94 HB</b>                                                                  |      |

## Standard Torque Mounts

These mounts contain a small tab inside the mounting hole to temporarily engage the threads, which allows assemblers to pre-install the mount on a stud before securing with a washer and a nut.

| Product Selection |                     |        |             |               |                         |               |             |       |           |
|-------------------|---------------------|--------|-------------|---------------|-------------------------|---------------|-------------|-------|-----------|
| Article No.       | Part No.            | Type   | Mounting    | Max Torque    | Max Ø for Washer/Socket | Length (L)    | Width (W)   | Color | Pkg. Qty. |
|                   |                     |        | in. (mm)    | lb. - in.     | in. (mm)                | in. (mm)      | in. (mm)    |       |           |
| 151-00134         | <b>HDM190HIRC2</b>  | HDM19  | .1875 (4.8) | 115 lb. - in. | .73" (18.5)             | 1.43" (36.32) | .76" (19.3) | Black | 100       |
| 151-00436         | <b>HDM190HIRH4</b>  | HDM19  | .1875 (4.8) | 115 lb. - in. | .73" (18.5)             | 1.43" (36.32) | .76" (19.3) | Black | 500       |
| 151-00437         | <b>HDM250HIRC2</b>  | HDM25  | .25" (6.4)  | 115 lb. - in. | .73" (18.5)             | 1.43" (36.32) | .76" (19.3) | Black | 100       |
| 151-00438         | <b>HDM250HIRH4</b>  | HDM25  | .25" (6.4)  | 115 lb. - in. | .73" (18.5)             | 1.43" (36.32) | .76" (19.3) | Black | 500       |
| 151-00439         | <b>HDM3120HIRC2</b> | HDM312 | .3125" (8)  | 115 lb. - in. | .73" (18.5)             | 1.43" (36.32) | .76" (19.3) | Black | 100       |
| 151-00440         | <b>HDM3120HIRH4</b> | HDM312 | .3125" (8)  | 115 lb. - in. | .73" (18.5)             | 1.43" (36.32) | .76" (19.3) | Black | 500       |

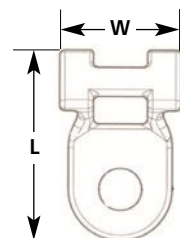


Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Medium Torque Mounts

The arched "H" profile of the saddle surface allows for a broad surface contact with the bundle, minimizing pinching and crushing of the bundles, and adjusts to a wide variety of bundle diameters.

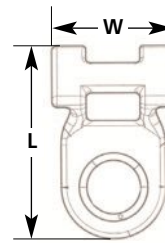
| Product Selection |                       |        |             |              |                         |            |           |       |           |
|-------------------|-----------------------|--------|-------------|--------------|-------------------------|------------|-----------|-------|-----------|
| Article No.       | Part No.              | Type   | Mounting    | Max Torque   | Max Ø for Washer/Socket | Length (L) | Width (W) | Color | Pkg. Qty. |
|                   |                       |        | in. (mm)    | lb. - ft.    | in. (mm)                | in. (mm)   | in. (mm)  |       |           |
| 151-00441         | <b>HDM321HIHSUVC2</b> | HDM321 | .3125" (8)  | 40 lb. - ft. | .90" (23)               | 1.8" (46)  | .96" (24) | Black | 100       |
| 151-07100         | <b>HDM321HIHSUVH4</b> | HDM321 | .3125" (8)  | 40 lb. - ft. | .90" (23)               | 1.8" (46)  | .96" (24) | Black | 500       |
| 151-00442         | <b>HDM401HIHSUVC2</b> | HDM401 | .375" (9.5) | 40 lb. - ft. | .90" (23)               | 1.8" (46)  | .96" (24) | Black | 100       |
| 151-07300         | <b>HDM401HIHSUVH4</b> | HDM401 | .375" (9.5) | 40 lb. - ft. | .90" (23)               | 1.8" (46)  | .96" (24) | Black | 500       |
| 151-00443         | <b>HDM501HIHSUVC2</b> | HDM501 | .5" (12.7)  | 40 lb. - ft. | .90" (23)               | 1.8" (46)  | .96" (24) | Black | 100       |
| 151-07500         | <b>HDM501HIHSUVH4</b> | HDM501 | .5" (12.7)  | 40 lb. - ft. | .90" (23)               | 1.8" (46)  | .96" (24) | Black | 500       |



Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## High Torque Mounts

The high torque mount is designed for use with power-assisted impact wrenches and is molded with a metal bushing to withstand the forces required to tighten grade 8 bolts. The arched "H" profile of the saddle surface allows for a broad surface contact with the bundle, minimizing pinching and crushing of bundles, and it adjusts to a wide variety of bundle diameters.

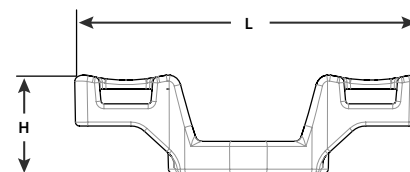
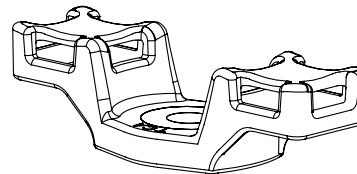


| Product Selection |                        |        |             |               |                         |            |           |       |           |
|-------------------|------------------------|--------|-------------|---------------|-------------------------|------------|-----------|-------|-----------|
| Article No.       | Part No.               | Type   | Mounting    | Max Torque    | Max Ø for Washer/Socket | Length (L) | Width (W) | Color | Pkg. Qty. |
|                   |                        |        | in. (mm)    | lb. - ft.     | in. (mm)                | in. (mm)   | in. (mm)  |       |           |
| 151-00444         | <b>HDM320BHIHSUVC2</b> | HDM320 | .3125" (8)  | 114 lb. - ft. | .9" (23)                | 1.85" (47) | .99" (25) | Black | 100       |
| 151-07000         | <b>HDM320BHIHSUVH4</b> | HDM320 | .3125" (8)  | 114 lb. - ft. | .9" (23)                | 1.85" (47) | .99" (25) | Black | 500       |
| 151-00445         | <b>HDM400BHISHUVC2</b> | HDM400 | .375" (9.5) | 114 lb. - ft. | 1.26" (32)              | 1.85" (47) | .99" (25) | Black | 100       |
| 151-07200         | <b>HDM400BHIHSUVH4</b> | HDM400 | .375" (9.5) | 114 lb. - ft. | 1.26" (32)              | 1.85" (47) | .99" (25) | Black | 500       |
| 151-00446         | <b>HDM500BHIHSUVC2</b> | HDM500 | .5" (12.7)  | 114 lb. - ft. | 1.26" (32)              | 1.85" (47) | .99" (25) | Black | 100       |
| 151-07400         | <b>HDM500BHIHSUVH4</b> | HDM500 | .5" (12.7)  | 114 lb. - ft. | 1.26" (32)              | 1.85" (47) | .99" (25) | Black | 500       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## High Torque Double Mount

This mount is designed for use with power-assisted impact wrenches and is molded with a metal bushing to withstand the forces required to tighten grade 8 bolts. The high torque double mount secures the bundle directly over the mounting fastener. The arched saddle surface allows for a broad surface contact with the bundle, minimizing pinching and crushing of the bundles, and accommodates a wide variety of bundle diameters.



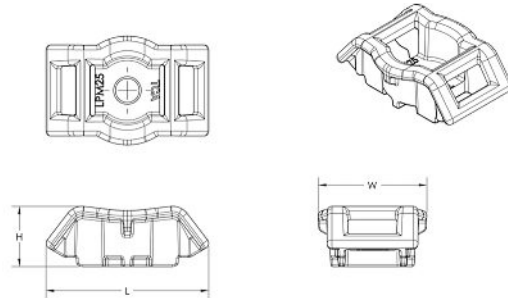
| Product Selection |                  |        |             |               |                         |            |             |       |           |
|-------------------|------------------|--------|-------------|---------------|-------------------------|------------|-------------|-------|-----------|
| Article No.       | Part No.         | Type   | Mounting    | Max Torque    | Max Ø for Washer/Socket | Length (L) | Height (H)  | Color | Pkg. Qty. |
|                   |                  |        | in. (mm)    | lb. - ft.     | in. (mm)                | in. (mm)   | in. (mm)    |       |           |
| 151-00756         | <b>151-00756</b> | HDM375 | .375" (9.5) | 114 lb. - ft. | 1.27" (32.5)            | 3.43" (87) | .99" (25.2) | Black | 100       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Low Profile Mount

The Low Profile Mount is used in conjunction with a cable tie to attach a bundle to a flat surface, making it ideal for applications where space is limited for positioning a bundle. This device is secured to the mounting surface with a .25" mechanical fastener and features a counter bore for easy access with a socket. HellermannTyton cable ties, up to .5" wide, are used to fasten bundles to the Low Profile Mount. Single bundles can be positioned on top of the mount, or two bundles can be separated using the two side saddles.

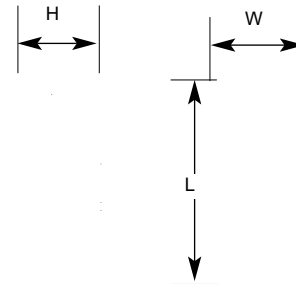
| Material Data         |                                                                              |
|-----------------------|------------------------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 – Impact Modified, Heat and UV Stabilized (PA66HIRHSUV)</b> |
| Operating Temperature | <b>-40 °F to +221°F (-40 °C to +105 °C) continuous</b>                       |
| Flammability          | <b>UL94 HB</b>                                                               |



| Product Selection |              | Bolt Hole Diameter | Max Torque          | Length (L)   | Width in (mm) | Height in (mm) | Cable Tie Series | Color | Pkg. Qty. |
|-------------------|--------------|--------------------|---------------------|--------------|---------------|----------------|------------------|-------|-----------|
| Article No.       | Part No.     |                    |                     | in. (mm)     | in. (mm)      | in. (mm)       |                  |       |           |
| 151-01122         | <b>LPM25</b> | .262" (6.65)       | 11.3 Nm (100 in/lb) | 1.78" (45.1) | 1.18" (30.0)  | .66" (16.7)    | T50 - T250       | Black | 500       |

## Mounting Cradle

The mounting cradle holds cables and harnesses secure yet clear of the panel surface. This cradle is for use with HellermannTyton cable ties.



| Material Data         |                                                        |
|-----------------------|--------------------------------------------------------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                            |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C) continuous</b> |
| Flammability          | <b>UL94 V2 (excluding adhesive)</b>                    |



| Product Selection |                  | Type          | Cable Tie Series | Length (L)  | Width (W) | Height (H)  | Mounting Hole Ø | Color   | Pkg. Qty. |
|-------------------|------------------|---------------|------------------|-------------|-----------|-------------|-----------------|---------|-----------|
| Article No.       | Part No.         |               |                  | in. (mm)    | in. (mm)  | in. (mm)    | in. (mm)        |         |           |
| <b>151-27010</b>  | <b>151-27010</b> | <b>LKC</b>    | T50 - T250       | .98" (76.2) | .67" (17) | .53" (13.5) | .21" (8)        | Black   | 100       |
| <b>151-27019</b>  | <b>151-27019</b> | <b>LKC</b>    | T50 - T250       | 1.6" (40)   | .75" (19) | .66" (16.8) | .21" (8)        | Natural | 100       |
| <b>151-27219</b>  | <b>151-27219</b> | <b>LKCSF1</b> | T50 - T250       | 1.6" (40)   | .75" (19) | .66" (16.8) | .23" (6)        | Natural | 100       |
| <b>151-27202</b>  | <b>151-27202</b> | <b>LKCSF1</b> | T50 - T250       | 1.6" (40)   | .75" (19) | .66" (16.8) | .23" (6)        | Black   | 100       |

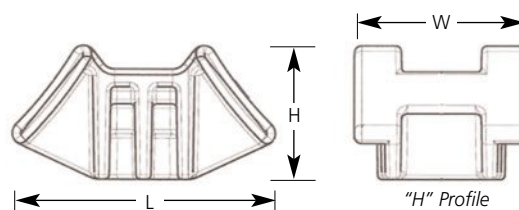
Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Two Way Saddle Mounts

This saddle mount is installed between two bundles (such as wires, cables, hoses, tubing, conduit, etc.) to separate them and prevent chafing and wear. Fastened to a frame rail or mounting bracket, the "H" profile on the saddle mount provides a tight circumferential loop on large and small bundles. Cable ties, which secure the bundles, are used with the mount. The two way saddle mount accommodates cable ties up to 1/2" wide.

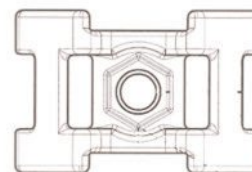
| Material Data         |                                                                                 |
|-----------------------|---------------------------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 impact modified, Heat Stabilized, UV Resistant (PA66HIRHS)</b> |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                         |
| Flammability          | <b>UL94 HB</b>                                                                  |

RoHS



### S2HM25

The hexagonal retention feature captures a bolt or nut requiring tool access from back side only.

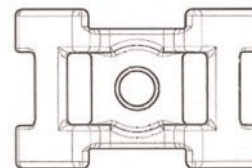


| Product Selection |                |        |                  |                          |             |              |              |             |       |           |
|-------------------|----------------|--------|------------------|--------------------------|-------------|--------------|--------------|-------------|-------|-----------|
| Article No.       | Part No.       | Type   | Cable Tie Series | Max Bundle Ø (each side) | Stud Ø      | Length (L)   | Width (W)    | Height (H)  | Color | Pkg. Qty. |
|                   |                |        |                  | in. (mm)                 | in. (mm)    | in. (mm)     | in. (mm)     | in. (mm)    |       |           |
| 151-29403         | S2HM250HIRHSH1 | S2HM25 | T50 - T250       | 3.5" (89)                | .25" (6.35) | 1.76" (44.8) | 1.17" (29.7) | .90" (22.9) | Black | 500       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

### S2CM25

A socket counterbore allows securing with a socket wrench from the top side for use with a weld stud or bolt.



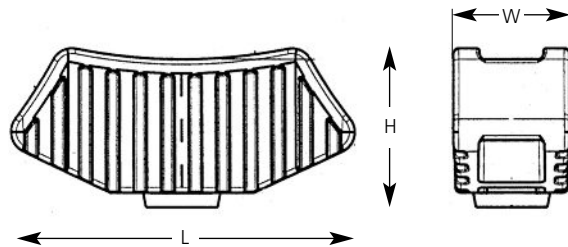
| Product Selection |                |        |                  |                          |             |              |              |             |       |           |
|-------------------|----------------|--------|------------------|--------------------------|-------------|--------------|--------------|-------------|-------|-----------|
| Article No.       | Part No.       | Type   | Cable Tie Series | Max Bundle Ø (each side) | Stud Ø      | Length (L)   | Width (W)    | Height (H)  | Color | Pkg. Qty. |
|                   |                |        |                  | in. (mm)                 | in. (mm)    | in. (mm)     | in. (mm)     | in. (mm)    |       |           |
| 151-29400         | S2CM258HIRHSH1 | S2CM25 | T50 - T250       | 3.5" (89)                | .25" (6.35) | 1.76" (44.8) | 1.17" (29.7) | .90" (22.9) | Gray  | 500       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Saddle Mount for the Button Head Tie

Designed to be used with HellermannTyton's button head ties, the saddle mount stands off bundles from frame rails, providing clearance from bolts and other protrusions for protection against abrasion. This mount also allows the flow-through of salt, dirt and other impurities from the road, preventing unwanted build-up on hoses and harnesses. The tie is snapped into the mount which allows the strap and tie assembly to be pre-installed on the frame rail or panel. The mount can secure three separate bundles, providing parallel spacing between the frame rail and adjacent bundles. The saddle mount is manufactured with a pilot bushing which prevents the cable tie from chafing against the burr edge of the mounting hole.

This product for use with the button head ties on p.65



| Material Data         |                                                                                 |
|-----------------------|---------------------------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 impact modified, Heat Stabilized, UV Resistant (PA66HIRHS)</b> |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                         |
| Flammability          | <b>UL94 HB</b>                                                                  |

RoHS

| Product Selection |                       |         | Mounting Hole Ø                  | Panel Thickness                | Standoff Height  | Length (L)      | Width (W)      | Height (H)     | Max Bundle Ø    |                                                          | Color | Pkg. Qty. |
|-------------------|-----------------------|---------|----------------------------------|--------------------------------|------------------|-----------------|----------------|----------------|-----------------|----------------------------------------------------------|-------|-----------|
| Article No.       | Part No.              | Type    | in. (mm)                         | in. (mm)                       | in. (mm)         | in. (mm)        | in. (mm)       | in. (mm)       | Center in. (mm) | Sides in. (mm)                                           |       |           |
| 151-29301         | <b>MSBT1200HIRSH1</b> | MSBT120 | .440" - .820"<br>(11.18 - 20.83) | .160" - .75"<br>(4.06 - 19.05) | .875"<br>(22.23) | 1.90"<br>(48.3) | .65"<br>(16.5) | .81"<br>(20.6) | 6.0"<br>(152.4) | 1.0"<br>(25.4)<br>(dependent upon size of center bundle) | Black | 500       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## H-Mount Series

HellermannTyton's new H-Mount product line offers a secure bundle mounting solution that utilizes existing frame bolts. H-Mounts fasten to three bolt sizes: 1/2", 5/8" and 3/4". The H-Mounts have three bundle mounting locations, each accommodating ties up to 1/2" wide.

### Application

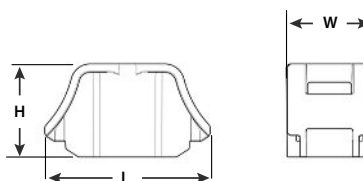
The preferred mount method is to use the specially designed drill bit to spin the H-Mount onto the bolt. The bit fits all 1/4" drills and has tapered sides to secure the H-Mount during installation.

### Benefits

- The H-Mounts utilize existing frame bolts which reduce component costs and improve installation time.
- The H-Mounts have a top tie slot which allows the bundle to be positioned directly over the bolt, and two curved tie slots on the sides that minimize bundle abrasion and position the bundles adjacent to the bolt yet away from the frame.

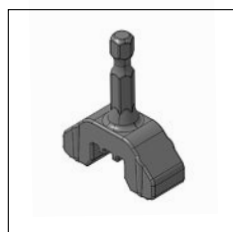


| Material Data         |                                                                          |
|-----------------------|--------------------------------------------------------------------------|
| Material              | Polyamide 6.6 high impact modified, heat and UV stabilized (PA66HIRHSUV) |
| Operating Temperature | -40 °F to +230 °F (-40 °C to +110 °C) continuous                         |
| Flammability          | UL94 HB                                                                  |



| Product Selection |                  |      |                |              |               |             |       |           |
|-------------------|------------------|------|----------------|--------------|---------------|-------------|-------|-----------|
| Article No.       | Part No.         | Type | Stud Bolt Size | Length (L)   | Width (W)     | Height (H)  | Color | Pkg. Qty. |
|                   |                  |      | in. (mm)       | in. (mm)     | in. (mm)      | in. (mm)    |       |           |
| 151-00812         | <b>151-00812</b> | HM5  | .5" (12.7)     | 1.97" (50.0) | 1.02" (25.98) | 1.1" (28.0) | Black | 900       |
| 151-00813         | <b>151-00813</b> | HM6  | .625" (15.9)   | 1.97" (50.0) | 1.02" (25.98) | 1.1" (28.0) | Black | 900       |
| 151-00814         | <b>151-00814</b> | HM7  | .75" (19.0)    | 1.97" (50.0) | 1.02" (25.98) | 1.1" (28.0) | Black | 900       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.



904-00284

| H Mount Drill Bit |                  |      |       |           |
|-------------------|------------------|------|-------|-----------|
| Article No.       | Part No.         | Type | Color | Pkg. Qty. |
| 904-00284         | <b>904-00284</b> | HBIT | Black | 1         |



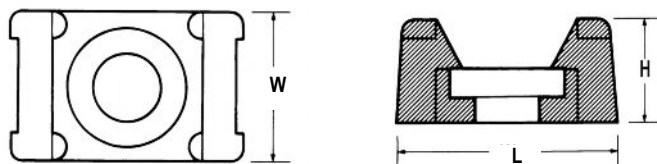
H Bit in the H Mount

## Cable Tie Mounts (CTM)

The CTM series is designed to provide stability to wire bundles. These mounts can accommodate miniature, intermediate, or standard cross-section cable ties. Each mount is secured with a single screw.



| Material Data         |                                                        |
|-----------------------|--------------------------------------------------------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                            |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                         |



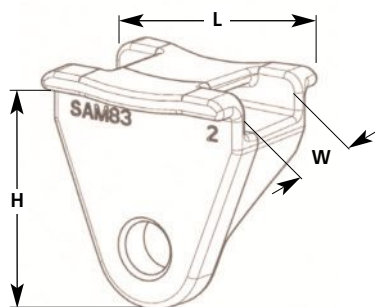
**UL**  
File# E64139

| Product Selection |          |      |                  |            |               |               |              |       |           |
|-------------------|----------|------|------------------|------------|---------------|---------------|--------------|-------|-----------|
| Article No.       | Part No. | Type | Cable Tie Series | Mounting   | Length (L)    | Width (W)     | Height (H)   | Color | Pkg. Qty. |
|                   |          |      |                  |            | in. (mm)      | in. (mm)      | in. (mm)     |       |           |
| 151-30303         | CTM010C2 | CTM0 | T18 - T50        | # 6 Screw  | .578" (14.68) | .375" (9.52)  | .266" (6.76) | White | 100       |
| 151-30305         | CTM010M4 |      |                  |            | .578" (14.68) | .375" (9.52)  | .266" (6.76) | White | 1000      |
| 151-30300         | CTM00C2  |      |                  |            | .578" (14.68) | .375" (9.52)  | .266" (6.76) | Black | 100       |
| 151-30301         | CTM00M4  |      |                  |            | .578" (14.68) | .375" (9.52)  | .266" (6.76) | Black | 1000      |
| 151-30404         | CTM110C2 | CTM1 |                  | # 8 Screw  | .579" (14.71) | .370" (9.40)  | .266" (6.76) | White | 100       |
| 151-30406         | CTM110M4 |      |                  |            | .579" (14.71) | .370" (9.40)  | .266" (6.76) | White | 1000      |
| 151-30400         | CTM10C2  |      |                  |            | .579" (14.71) | .370" (9.40)  | .266" (6.76) | Black | 100       |
| 151-30402         | CTM10M4  |      |                  |            | .579" (14.71) | .370" (9.40)  | .266" (6.76) | Black | 1000      |
| 151-30504         | CTM210C2 | CTM2 | .857" (21.77)    |            | .605" (15.37) | .372" (9.45)  | White        | 100   |           |
| 151-30506         | CTM210M4 |      | .857" (21.77)    |            | .605" (15.37) | .372" (9.45)  | White        | 1000  |           |
| 151-30500         | CTM20C2  |      | .857" (21.77)    |            | .605" (15.37) | .372" (9.45)  | Black        | 100   |           |
| 151-30501         | CTM20M4  |      | .857" (21.77)    |            | .605" (15.37) | .372" (9.45)  | Black        | 1000  |           |
| 151-30605         | CTM310C2 | CTM3 | T18 -T120        | #10 Screw  | .858" (21.79) | .609" (15.47) | .374" (9.50) | White | 100       |
| 151-30607         | CTM310M4 |      |                  |            | .858" (21.79) | .609" (15.47) | .374" (9.50) | White | 1000      |
| 151-30600         | CTM30C2  |      |                  |            | .858" (21.79) | .609" (15.47) | .374" (9.50) | Black | 100       |
| 151-30603         | CTM30M4  |      |                  |            | .858" (21.79) | .609" (15.47) | .374" (9.50) | Black | 1000      |
| 151-30703         | CTM410C2 | CTM4 |                  | .25" Screw | .864" (21.95) | .616" (15.65) | .372" (9.45) | White | 100       |
| 151-30705         | CTM410M4 |      |                  |            | .864" (21.95) | .616" (15.65) | .372" (9.45) | White | 1000      |
| 151-30700         | CTM40C2  |      |                  |            | .864" (21.95) | .616" (15.65) | .372" (9.45) | Black | 100       |
| 151-30702         | CTM40M4  |      |                  |            | .864" (21.95) | .616" (15.65) | .372" (9.45) | Black | 1000      |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Axial Oval Mounts

HellermannTyton's axial oval mounts stand off bundles from frame rails and cross members to prevent them from rubbing and chafing. The axial oval mount accommodates cable ties up to .5" wide.



### Material Data

|                       |                                                                                 |
|-----------------------|---------------------------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 impact modified, Heat Stabilized, UV Resistant (PA66HIRHS)</b> |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                         |
| Flammability          | <b>UL94 HB</b>                                                                  |

RoHS

### Product Selection

| Article No. | Part No.       | Type   | Cable Tie Series | Bolt Hole Ø | Offset Distance from Mounting Slot | Length (L)   | Width (W)    | Height (H)   | Color | Pkg. Qty. |
|-------------|----------------|--------|------------------|-------------|------------------------------------|--------------|--------------|--------------|-------|-----------|
|             |                |        |                  | in. (mm)    | in. (mm)                           | in. (mm)     | in. (mm)     | in. (mm)     |       |           |
| 151-29600   | SAM83HIRHSH1   | SAM83  | T50 - T250       | 5/16" (8)   | .78" (19.8)                        | 1.35" (34.3) | 1.02" (25.9) | 1.39" (35.3) | Gray  | 500       |
| 151-29701   | SAOM820HIRHSH1 | SAOM82 | T50 - T250       | 5/16" (8)   | .78" (19.8)                        | 1.35" (34.3) | 1.02" (25.9) | 1.39" (35.3) | Black | 500       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Dual Swivel Saddle Spacer

### DSWS4

These saddle spacers are installed between two bundles (such as wires, cables, hoses, tubing, conduit, etc.) to separate them and prevent chafing and wear. The mounts can be easily rotated by hand, allowing the bundles to be crossed and rotated at any angle. Cable ties, which secure the bundles, are used with the mounts. The dual swivel saddle spacers accommodate cable ties up to 1/2" wide.

The "H" profile of the saddles allows for broad surface contact with the bundle, minimizing pinching and crushing of the bundle, and it accepts a wide range of bundle diameters from .25 inches to 3 inches.

The DSWS4 Dual Swivel Saddle Spacer provides a .7 inch (17.8 millimeter) separation between bundles.

Friction tabs in the tie slots help hold the cable ties in place during assembly.

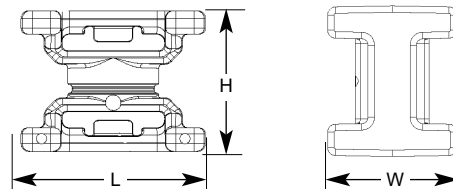
The DSWS4 is two-shot molded with polyacetal and polyamide 6.6 heat stabilized materials.



| Material Data         |                                                        |
|-----------------------|--------------------------------------------------------|
| Material              | <b>Polyacetal (POM)</b>                                |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C) continuous</b> |
| Flammability          | <b>UL94 HB</b>                                         |



| Material Data         |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Polyamide 6.6 heat stabilized (PA66HS)</b>           |
| Operating Temperature | <b>-40 °F to +221 °F (-40 °C to +105 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                          |



| Product Selection |                  |       |                  |                            |                             |             |            |            |       |           |
|-------------------|------------------|-------|------------------|----------------------------|-----------------------------|-------------|------------|------------|-------|-----------|
| Article No.       | Part No.         | Type  | Cable Tie Series | Bundle Ø                   | Minimum Extraction Strength | Length (L)  | Width (W)  | Height (H) | Color | Pkg. Qty. |
|                   |                  |       |                  | in. (mm)                   |                             |             |            |            |       |           |
| 151-06500         | <b>151-06500</b> | DSWS4 | T50 - T250       | .25" - 3"<br>(6.35 - 76.2) | 100 lb.<br>(445)            | .93" (23.6) | .8" (20.3) | .71" (18)  | Black | 2200      |
| 151-00644         | <b>151-00644</b> | DSWS4 | T50 - T250       | .25" - 3"<br>(6.35 - 76.2) | 100 lb.<br>(445)            | .93" (23.6) | .8" (20.3) | .71" (18)  | Black | 50        |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Dual Swivel Saddle Spacer

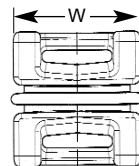
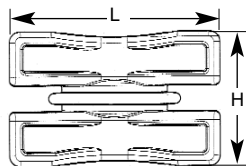
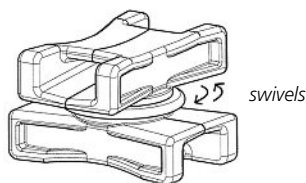
### DSWS5

These saddle spacers are installed between two bundles (such as wires, cables, hoses, tubing, conduit, etc.) to separate them and prevent chafing and wear. The spacers can be easily rotated by hand, allowing the bundles to be crossed and rotated at any angle. Cable ties, which secure the bundles, are used with the spacers.

The DSWS5 accepts bundle diameters ranging from .625 inches to 6 inches. The DSWS5 provides a .93 inch (23.6 millimeter) separation between bundles. The dual swivel saddle spacers accommodate cable ties up to 1/2" wide.



| Material Data         |                                                         |
|-----------------------|---------------------------------------------------------|
| Material              | <b>Polyamide 6.6 heat stabilized (PA66HS)</b>           |
| Operating Temperature | <b>-40 °F to +221 °F (-40 °C to +105 °C) continuous</b> |
| Flammability          | <b>UL94 V2</b>                                          |



| Product Selection |                   |       |                  |                              |             |           |             |       |           |
|-------------------|-------------------|-------|------------------|------------------------------|-------------|-----------|-------------|-------|-----------|
| Article No.       | Part No.          | Type  | Cable Tie Series | Bundle Ø                     | Length (L)  | Width (W) | Height (H)  | Color | Pkg. Qty. |
|                   |                   |       |                  | in. (mm)                     | in. (mm)    | in. (mm)  | in. (mm)    |       |           |
| 151-06502         | <b>DSWS50HSK2</b> | DSWS5 | T50 - T250       | .625" - 6"<br>(15.8 - 152.4) | 1.6" (40.6) | 1" (25.4) | .93" (23.6) | Black | 50        |
| 151-06501         | <b>DSWS50HSH1</b> | DSWS5 | T50 - T250       | .625" - 6"<br>(15.8 - 152.4) | 1.6" (40.6) | 1" (25.4) | .93" (23.6) | Black | 500       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

# ROUTING AND PROTECTION SOLUTIONS

|                         |         |
|-------------------------|---------|
| Wiring Duct .....       | 109-132 |
| Helawrap .....          | 133-136 |
| Spiralwrap .....        | 137-139 |
| Convuluted Tubing ..... | 140-142 |
| Braided Sleeving .....  | 143-164 |
| Grommet .....           | 165-166 |
| Electrical Tape .....   | 167     |



## Pro-Duct Wiring Duct

HellermannTyton's Pro-Duct wiring duct efficiently routes and protects wire and cable. Manufactured from high impact, rigid PVC, Pro-Duct includes solid, slotted and high density slotted styles. Pro-Duct comes in standard colors of white, gray and black in 6 foot lengths. Blue wiring duct is also available in a variety of standard sizes. Other colors are available. Contact HellermannTyton for minimum volume requirements.

### Pro-Duct Features

All styles of Pro-Duct wiring duct (solid, slotted and high density slotted) are designed with many installer preferred features:

- Cover is supplied with a film which protects against scratches and is writable for temporary identification during installation.
- Smooth edges protect installer and wires from abrasion.
- Cover is flush with the side of the duct for increased wire capacity. It also allows for tight, side-by-side placement.
- No cover slippage. The covers are provided with a non-slip lining. This ensures that the covers remain in place during vibration, yet they easily snap on and off, offering ready access to the wire run.
- Mounting holes are designed for installation versatility. Elongated mounting holes allow for changes in panel designs and installation flexibility.
- Mounting holes are standard. Contact HellermannTyton for duct without mounting holes.
- Enhanced wire capacity helps maximize space within panels.
- Interchangeable covers between solid, slotted, and high density slotted styles reduce inventory and increase versatility.
- Professional appearance increases panel's overall neatness.

*Pro-Duct is U.L. Recognized, CSA Certified, CE Compliant and carries a U.L. flame rating of 94V0.*

*Pro-Duct is lead-free and is made with flame retardant PVC.*



Lead Free



File # E64139



File # 49249



## Solid Wall Duct

Solid wall duct is designed for straight wire runs where break-outs are not required.

- Smooth edges
- Non-slip cover
- Professional appearance



## Slotted Wall Duct

Slotted wall duct features break-away fingers which provide additional access for wire leads.

Slotted wall duct is manufactured with two continuous score lines.

The first score line is at the base of the finger, allowing the finger to be bent and broken away when a greater opening is required. The second score line is lower allowing a section of the sidewall to be easily removed by cutting the sidewall down to the lower score line. Use HellermannTyton's TDNT notching tool and snap out the desired section. Both score lines provide smooth edges to ensure worker safety.

Strong fingers prevent unwanted breaking.

The fingers are easily deflected outward, allowing ready positioning of the wires within the slotted wall duct.

Restricted opening design in the finger of the duct helps keep wires in place.

Restriction also prevents unintended removal of wires and permits any individual wire to be traced without disconnection.



## High Density Slotted Duct

High density slotted wall duct comes with narrow fingers, equaling a 2-to-1 finger ratio compared to standard slotted wiring duct.

Narrow fingers reduce fanning of the wires to the terminal blocks.

Compact designs and components are more easily accommodated with the high density duct's 2-to-1 finger ratio.

High density duct also incorporates the double scored design, similar to the standard slotted wall duct.

With sizes 2" high and above, high density duct features a double restriction on each finger of the duct.

The double restriction helps retain wires in the bottom portion of the duct for easier installation.

Mounting holes are uniform in size to the solid and slotted wall duct but are offered every 2 inches to accommodate compact designs and installations.



## Adhesive Backing

Most sizes of Pro-Duct wiring duct are available with a pressure sensitive, rubber based adhesive backing. The adhesive backing can be utilized for temporary positioning. This is an optional feature and must be specified when ordering. For part number information, contact HellermannTyton or see notation at the end of each duct dimensional chart.

Please note: Adhesive duct orders are non-cancellable and non-returnable.

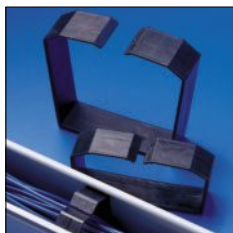
| Duct Width | Rows of Tape | Tape Width |
|------------|--------------|------------|
| .50"       | 1            | 3/8"       |
| .75"       | 1            | 1/2"       |
| 1.0"       | 1            | 3/4"       |
| 1.5"       | 1            | 1-1/8"     |
| 2.0"       | 2            | 3/4"       |
| 3.0"       | 2            | 3/4"       |
| 4.0"       | 2            | 3/4"       |

## Modular Packaging

Pro-Duct wiring duct is available in modular, easy to stock packaging. Each master carton contains 120 feet of duct divided into four inner cartons of 30 feet each. This better serves the inventory needs of users who require smaller quantities of several sizes. Due to weight restrictions, 3" x 5" and 4" x 5" sizes are only available in bulk packaging.

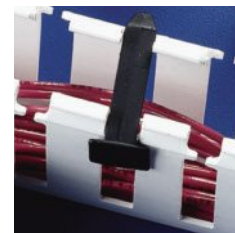
## Solid Style Wire Retainers

The solid wall wire retainer is inserted in the duct and snaps into place. The retainer can be used on any smooth, straight run of duct and can work with vertical and overhead applications. Solid wall wire retainers are manufactured from black PVC.



## Slotted Style Wire Retainers

The slotted wall wire retainer snaps in from the outside of the duct, allowing for fast and easy installation and removal. The retainer spans approximately 90% over the duct opening for effective wire management. Slotted wall wire retainers are manufactured from black nylon 6/6.

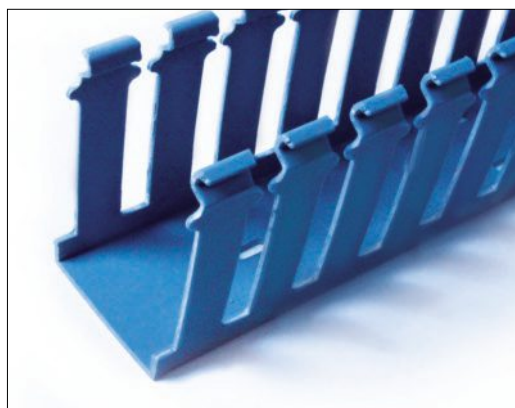


| Product Selection            |            |          |                                        |       |           |
|------------------------------|------------|----------|----------------------------------------|-------|-----------|
| Article No.                  | Part No.   | Type     | Description                            | Color | Pkg. Qty. |
| Solid Style Wire Retainers   |            |          |                                        |       |           |
| 181-20201                    | SDWR2X20K2 | SDWR2X20 | Wire Retainer for 2" X 2" Solid Duct   | Black | 50        |
| 181-00158                    | SDWR4X20K2 | SDWR4X20 | Wire Retainer for 4" X 2" Solid Duct   | Black | 50        |
| 181-00441                    | SDWR4X40P2 | SDWR4X40 | Wire Retainer for 4" X 4" Solid Duct   | Black | 10        |
| Slotted Style Wire Retainers |            |          |                                        |       |           |
| 181-20021                    | SLWR20C2   | SLWR20   | Wire Retainer for 2" Wide Slotted Duct | Black | 100       |
| 181-30031                    | SLWR30C2   | SLWR30   | Wire Retainer for 3" Wide Slotted Duct | Black | 100       |
| 181-40041                    | SLWR40C2   | SLWR40   | Wire Retainer for 4" Wide Slotted Duct | Black | 100       |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes.

## Intrinsic Blue Wiring Duct

Designed for identification purposes, HellermannTyton offers intrinsic blue Pro-Duct wiring duct. Manufactured from the same PVC material as HellermannTyton's standard duct, the blue color indicates that the wiring contained in the duct runs to intrinsically safe components in the control panel. Control panels used in chemical plants, grain elevators or other environments where explosive gases may exist are examples of where intrinsic blue duct might be needed. For more information contact HellermannTyton.



## Panel Mounting Rivets and Tool

HellermannTyton panel rivets are one piece drive rivets that provide a fast, economical means of affixing wiring duct. The rivet is inserted into a 3/16" pre-punched hole and the pin is driven into the base, thereby expanding the rivet legs and locking the duct and sub-panel in place. The panel thickness (including the duct thickness) should be a maximum of 3/16". A panel rivet tool is also available for quick and easy installation of the drive rivets.



### Product Selection

| Article No. | Part No. | Type | Description      | Color   | Pkg. Qty. |
|-------------|----------|------|------------------|---------|-----------|
| 181-00139   | PR1      | PR1  | Panel Rivet      | Natural | 1000      |
| 182-00001   | PRT1     | PRT1 | Panel Rivet Tool | Yellow  | 1         |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes.

## Corner Strips

HellermannTyton corner strips are supplied in six foot lengths which can be cut to provide a rounded corner for two duct sections meeting at right angles. They are made from PVC material and can be used with any size HellermannTyton wiring duct.



## Straight Connectors

HellermannTyton's PVC straight connectors join straight duct runs to cover and protect wires. The connectors can be used with all sizes of duct. Supplied in six foot lengths, they can be cut to fit duct sidewall heights.



### Product Selection

| Article No. | Part No. | Type | Description                | Color | Pkg. Qty. |
|-------------|----------|------|----------------------------|-------|-----------|
| 181-00001   | CSG      | CSG  | Corner Strip - Gray        | Gray  | 6         |
| 181-00002   | CSW      | CSW  | Corner Strip - White       | White | 6         |
| 181-00003   | SCG      | SCG  | Straight Connector - Gray  | Gray  | 6         |
| 181-00004   | SCW      | SCW  | Straight Connector - White | White | 6         |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes.

## Bench Mounted Wiring Duct Cutting Tool

The HellermannTyton Bench Mounted Wiring Duct Cutting Tool is used to accurately measure and cut all of HellermannTyton's slotted and high density slotted wiring duct, solid dividers and covers. The hand lever is ergonomically designed to reduce user fatigue. The measuring guide incorporates both imperial and metric values which eliminates the need for secondary measurement devices. The stop bar slides up and down the measuring guide, improving productivity on repetitive cuts. The long lasting, hardened blade produces burr free edges and improves productivity by eliminating the need for filing the edges after cutting. The integrated safety guide protects the operator from the blade during operation which preserves workplace safety.

| Product Selection |           |                   |           |
|-------------------|-----------|-------------------|-----------|
| Article No.       | Part No.  | Description       | Pkg. Qty. |
| 904-00295         | 904-00295 | Duct Cutter       | 1         |
| 904-00296         | 904-00296 | Replacement Blade | 1         |
| 904-00297         | 904-00297 | Safety Guide      | 1         |



## Duct Notching Tool

HellermannTyton's Duct Notching Tool is designed for use with HellermannTyton's slotted wall and slotted high density Pro-Duct wiring duct. This hand held tool features plastic grips for easy handling and allows users to notch a duct sidewall section down to the very base for finger and sidewall removal.

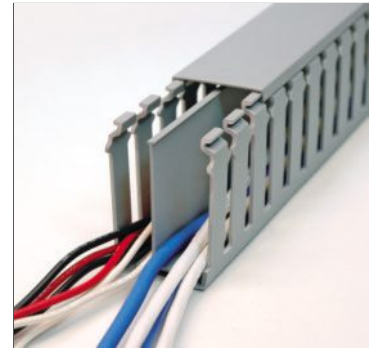


| Product Selection |          |      |               |           |
|-------------------|----------|------|---------------|-----------|
| Article No.       | Part No. | Type | Description   | Pkg. Qty. |
| 182-00002         | TDNT     | TDNT | Notching Tool | 1         |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes.

## Wiring Duct Solid Wall Dividers

HellermannTyton's Solid Wall Dividers can be securely mounted into all types of HellermannTyton wiring duct to separate high and low voltage reducing interference. The dividers simply snap or slide into the HellermannTyton specially designed mount, instantly creating multiple channels within a single duct size. The dividers have continuous score lines for smooth breakouts where needed. The top of the dividers has a double-sided lip which reduces the likelihood of wires falling out during installation. Dividers are available in gray and white colors. Contact HellermannTyton for additional colors.



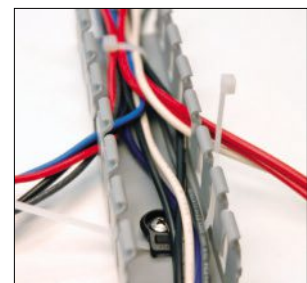
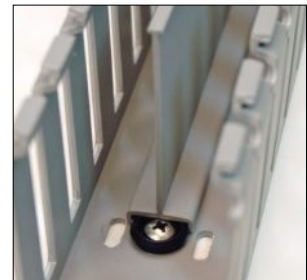
| Product Selection |           |         |            |             |                                 |       |                   |
|-------------------|-----------|---------|------------|-------------|---------------------------------|-------|-------------------|
| Article No.       | Part No.  | Type    | Width      | Height      | Description                     | Color | Pkg. Qty          |
|                   |           |         | in. (mm)   | in. (mm)    |                                 |       | ft. (6ft lengths) |
| 181-00300         | 181-00300 | DV1G4   | .75 (19.1) | .9 (22.9)   | Duct Divider for 1" High Duct   | Gray  | 120               |
| 181-00301         | 181-00301 | DV1.5G4 | .75 (19.1) | 1.4 (35.6)  | Duct Divider for 1.5" High Duct | Gray  | 120               |
| 181-00302         | 181-00302 | DV2G4   | .75 (19.1) | 1.85 (47.0) | Duct Divider for 2" High Duct   | Gray  | 120               |
| 181-00303         | 181-00303 | DV3G4   | .77 (19.6) | 2.85 (72.4) | Duct Divider for 3" High Duct   | Gray  | 120               |
| 181-00304         | 181-00304 | DV4G4   | .77 (19.6) | 3.85 (97.8) | Duct Divider for 4" High Duct   | Gray  | 120               |
| 181-00305         | 181-00305 | DV1W4   | .75 (19.1) | .9 (22.9)   | Duct Divider for 1" High Duct   | White | 120               |
| 181-00306         | 181-00306 | DV1.5W4 | .75 (19.1) | 1.4 (35.6)  | Duct Divider for 1.5" High Duct | White | 120               |
| 181-00307         | 181-00307 | DV2W4   | .75 (19.1) | 1.85 (47.0) | Duct Divider for 2" High Duct   | White | 120               |
| 181-00308         | 181-00308 | DV3W4   | .77 (19.6) | 2.85 (72.4) | Duct Divider for 3" High Duct   | White | 120               |
| 181-00309         | 181-00309 | DV4W4   | .77 (19.6) | 3.85 (97.8) | Duct Divider for 4" High Duct   | White | 120               |

## Universal Duct Mount

The HellermannTyton Universal Duct Mount is a multipurpose mount which secures duct dividers or secures wire bundles inside the duct with a cable tie. The mount can be installed with duct panel rivets or mechanical fasteners. The bottom of the mount has locator tabs that fit into the duct mounting holes preventing the mount from spinning during installation. The tabs also align the mount for easy divider installation. The top of the mount creates separation between wires and the fastener head which protects the wires from abrasion.

When used as a duct divider mount, the divider snaps or slides over the mount resulting in a quick, secure installation.

When used as a wire bundle mount, simply slide the cable tie through the four-way tie slot to secure the bundle. This method prevents the cables from falling outside the duct during installation and cover removal.



| Product Selection |           |      |       |          |           |
|-------------------|-----------|------|-------|----------|-----------|
| Article No.       | Part No.  | Type | Color | Material | Pkg. Qty. |
| 181-00684         | 181-00684 | DVM  | Black | PA66VO   | 100       |

## Covers

Covers for Pro-Duct wiring duct are sold separately and are interchangeable among the 3 styles of duct (solid, slotted and high density). The covers include a film which protects against scratches and is writable for temporary identification during installation. The film is easily removed when installation is complete. The inner sides of the covers have a non-slip lining, ensuring the cover will not slide down the duct.



| Product Selection |           |       |       |       |       |                     |
|-------------------|-----------|-------|-------|-------|-------|---------------------|
| Article No.       | Part No.  | Type  | Width |       | Color | Pkg. Qty            |
|                   |           |       | in.   | mm    |       | ft. (6 ft. lengths) |
| .5" wide covers   |           |       |       |       |       |                     |
| 181-00443         | 181-00443 | TC.5  | .76   | 19.3  | White | 120                 |
| 181-00442         | 181-00442 | TC.5  |       |       | Gray  | 120                 |
| 181-90050         | 181-90050 | TC.5  |       |       | Black | 120                 |
| .75" wide covers  |           |       |       |       |       |                     |
| 181-00447         | 181-00447 | TC.75 | 1.01  | 25.65 | White | 120                 |
| 181-00446         | 181-00446 | TC.75 |       |       | Gray  | 120                 |
| 181-00445         | 181-00445 | TC.75 |       |       | Black | 120                 |
| 1" wide covers    |           |       |       |       |       |                     |
| 181-91008         | 181-91008 | TC1   | 1.0   | 25.4  | White | 120                 |
| 181-91004         | 181-91004 | TC1   |       |       | Gray  | 120                 |
| 181-91000         | 181-91000 | TC1   |       |       | Black | 120                 |
| 1.5" wide covers  |           |       |       |       |       |                     |
| 181-91510         | 181-91510 | TC1.5 | 1.5   | 38.1  | White | 120                 |
| 181-91507         | 181-91507 | TC1.5 |       |       | Gray  | 120                 |
| 181-91503         | 181-91503 | TC1.5 |       |       | Black | 120                 |
| 2" wide covers    |           |       |       |       |       |                     |
| 181-92011         | 181-92011 | TC2   | 2.0   | 50.8  | White | 120                 |
| 181-92005         | 181-92005 | TC2   |       |       | Gray  | 120                 |
| 181-92001         | 181-92001 | TC2   |       |       | Black | 120                 |
| 2.5" wide covers  |           |       |       |       |       |                     |
| 181-00262         | 181-00262 | TC2.5 | 2.5   | 63.5  | White | 120                 |
| 181-00260         | 181-00260 | TC2.5 |       |       | Gray  | 120                 |
| 181-00311         | 181-00311 | TC2.5 |       |       | Black | 120                 |
| 3" wide covers    |           |       |       |       |       |                     |
| 181-93011         | 181-93011 | TC3   | 3.0   | 76.2  | White | 120                 |
| 181-93008         | 181-93008 | TC3   |       |       | Gray  | 120                 |
| 181-93003         | 181-93003 | TC3   |       |       | Black | 120                 |
| 4" wide covers    |           |       |       |       |       |                     |
| 181-94014         | 181-94014 | TC4   | 4.0   | 101.6 | White | 120                 |
| 181-94009         | 181-94009 | TC4   |       |       | Gray  | 120                 |
| 181-94003         | 181-94003 | TC4   |       |       | Black | 120                 |
| 6" wide covers    |           |       |       |       |       |                     |
| 181-96002         | 181-96002 | TC6   | 6.0   | 152.4 | White | 60                  |
| 181-96000         | 181-96000 | TC6   |       |       | Gray  | 60                  |
| 181-00448         | 181-00448 | TC6   |       |       | Black | 60                  |
| 8" wide covers    |           |       |       |       |       |                     |
| 181-00451         | 181-00451 | TC8   | 8.0   | 203.2 | White | 60                  |
| 181-00450         | 181-00450 | TC8   |       |       | Gray  | 60                  |
| 181-00449         | 181-00449 | TC8   |       |       | Black | 60                  |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes.

## Cover Hinge

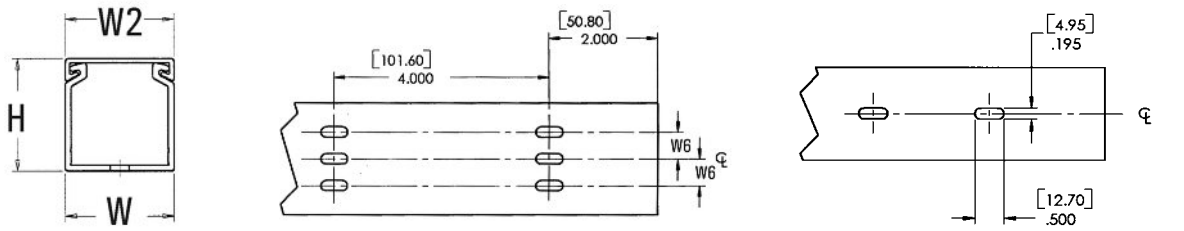
The hinge easily snaps onto the cover and the wiring duct (slotted wall duct only.) Once assembled, the hinge permits the cover to open like a door, providing easy access to the wires.



| Product Selection |          |      |                        |           |
|-------------------|----------|------|------------------------|-----------|
| Article No.       | Part No. | Type | Description            | Pkg. Qty. |
| 854-09272         | WMBH     | WMBH | Wire Management Hinges | 25        |

Use **Part No.** for ordering and **Type** for specification purposes.

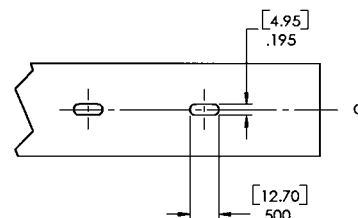
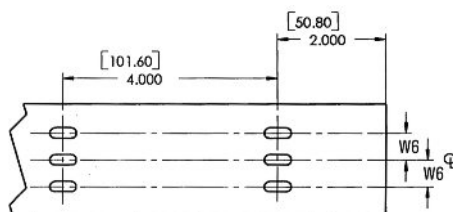
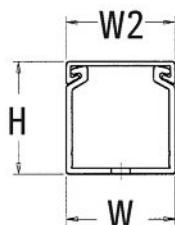
## Solid Wall Duct



| Product Selection                           |           |            |                |                |                |                              |              |       |                        |
|---------------------------------------------|-----------|------------|----------------|----------------|----------------|------------------------------|--------------|-------|------------------------|
| Article No.                                 | Part No.  | Type       | Width (W)      | Height (H)     | Width (W2)     | Width (W6)                   | Description  | Color | Pkg. Qty               |
|                                             |           |            | in.<br>(mm)    | in.<br>(mm)    | in.<br>(mm)    | in.<br>(mm)                  |              |       | ft.<br>(6 ft. lengths) |
| .5" x .5" (12.7 x 12.7) Nominal Duct Size   |           |            |                |                |                |                              |              |       |                        |
| 181-00453                                   | 181-00453 | SD.5X.5    | .5<br>(12.7)   | .55<br>(14.0)  | .76<br>(19.3)  | One<br>rows of<br>holes<br>☒ | Non-Adhesive | White | 120                    |
| 181-00525                                   | 181-00525 | SDA.5X.5   |                |                |                |                              | Adhesive     | White | 120                    |
| 181-00452                                   | 181-00452 | SD.5X.5    |                |                |                |                              | Non-Adhesive | Gray  | 120                    |
| 181-00524                                   | 181-00524 | SDA.5X.5   |                |                |                |                              | Adhesive     | Gray  | 120                    |
| 181-05500                                   | 181-05500 | SD.5X.5    |                |                |                |                              | Non-Adhesive | Black | 120                    |
| 181-00481                                   | 181-00481 | SDA.5X.5   |                |                |                |                              | Adhesive     | Black | 120                    |
| .5" x 1" (12.7 x 25.4) Nominal Duct Size    |           |            |                |                |                |                              |              |       |                        |
| 181-00143                                   | 181-00143 | SD.5X1     | .5<br>(12.7)   | 1.05<br>(26.7) | .76<br>(19.3)  | One<br>rows of<br>holes<br>☒ | Non-Adhesive | White | 120                    |
| 181-00528                                   | 181-00528 | SDA.5X1    |                |                |                |                              | Adhesive     | White | 120                    |
| 181-00145                                   | 181-00145 | SD.5X1     |                |                |                |                              | Non-Adhesive | Gray  | 120                    |
| 181-00526                                   | 181-00526 | SDA.5X1    |                |                |                |                              | Adhesive     | Gray  | 120                    |
| 181-00144                                   | 181-00144 | SD.5X1     |                |                |                |                              | Non-Adhesive | Black | 120                    |
| 181-00527                                   | 181-00527 | SDA.5X1    |                |                |                |                              | Adhesive     | Black | 120                    |
| .75" x .75" (19.1 x 19.1) Nominal Duct Size |           |            |                |                |                |                              |              |       |                        |
| 181-00456                                   | 181-00456 | SD.75X.75  | .75<br>(19.1)  | .8<br>(20.3)   | 1.01<br>(25.7) | One<br>rows of<br>holes<br>☒ | Non-Adhesive | White | 120                    |
| 181-00142                                   | 181-00142 | SDA.75X.75 |                |                |                |                              | Adhesive     | White | 120                    |
| 181-00455                                   | 181-00455 | SD.75X.75  |                |                |                |                              | Non-Adhesive | Gray  | 120                    |
| 181-00140                                   | 181-00140 | SDA.75X.75 |                |                |                |                              | Adhesive     | Gray  | 120                    |
| 181-00454                                   | 181-00454 | SD.75X.75  |                |                |                |                              | Non-Adhesive | Black | 120                    |
| 181-00141                                   | 181-00141 | SDA.75X.75 |                |                |                |                              | Adhesive     | Black | 120                    |
| 1" x 1" (25.4 x 25.4) Nominal Duct Size     |           |            |                |                |                |                              |              |       |                        |
| 181-11005                                   | 181-11005 | SD1X1      | 1.0<br>(25.4)  | 1.05<br>(26.7) | 1.0<br>(25.4)  | One<br>rows of<br>holes<br>☒ | Non-Adhesive | White | 120                    |
| 181-11008                                   | 181-11008 | SDA1X1     |                |                |                |                              | Adhesive     | White | 120                    |
| 181-11002                                   | 181-11002 | SD1X1      |                |                |                |                              | Non-Adhesive | Gray  | 120                    |
| 181-00493                                   | 181-00493 | SDA1X1     |                |                |                |                              | Adhesive     | Gray  | 120                    |
| 181-11000                                   | 181-11000 | SD1X1      |                |                |                |                              | Non-Adhesive | Black | 120                    |
| 181-00492                                   | 181-00492 | SDA1X1     |                |                |                |                              | Adhesive     | Black | 120                    |
| 1" x 1.5" (25.4 x 38.1) Nominal Duct Size   |           |            |                |                |                |                              |              |       |                        |
| 181-11502                                   | 181-11502 | SD1X1.5    | 1.02<br>(25.9) | 1.56<br>(39.6) | 1.0<br>(25.4)  | One<br>rows of<br>holes<br>☒ | Non-Adhesive | White | 120                    |
| 181-00491                                   | 181-00491 | SDA1X1.5   |                |                |                |                              | Adhesive     | White | 120                    |
| 181-11501                                   | 181-11501 | SD1X1.5    |                |                |                |                              | Non-Adhesive | Gray  | 120                    |
| 181-00490                                   | 181-00490 | SDA1X1.5   |                |                |                |                              | Adhesive     | Gray  | 120                    |
| 181-00457                                   | 181-00457 | SD1X1.5    |                |                |                |                              | Non-Adhesive | Black | 120                    |
| 181-00529                                   | 181-00529 | SDA1X1.5   |                |                |                |                              | Adhesive     | Black | 120                    |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes.  
Solid wall duct in larger sizes continued on the next page. Covers are listed on page 115.

## Solid Wall Duct



Lead Free File # E64139 File # 49249

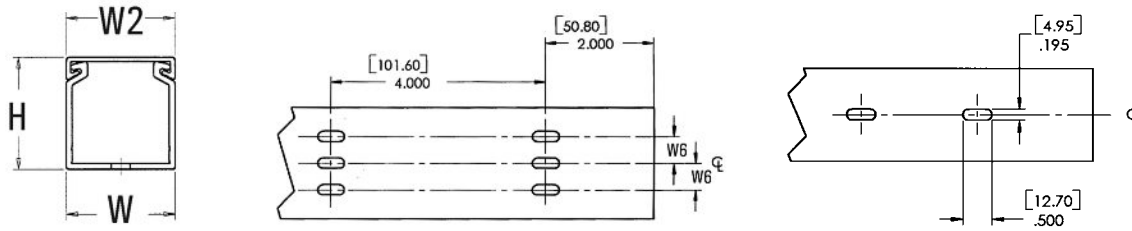
## Product Selection

| Product Selection                           |           |            | Width (W)      | Height (H)      | Width (W2)    | Width (W6)                   |              |       | Pkg. Qty               |
|---------------------------------------------|-----------|------------|----------------|-----------------|---------------|------------------------------|--------------|-------|------------------------|
| Article No.                                 | Part No.  | Type       | in.<br>(mm)    | in.<br>(mm)     | in.<br>(mm)   | in.<br>(mm)                  | Description  | Color | ft.<br>(6 ft. lengths) |
| 1" x 2" (25.4 x 50.8) Nominal Duct Size     |           |            |                |                 |               |                              |              |       |                        |
| 181-12002                                   | 181-12002 | SD1X2      | 1.03<br>(26.2) | 2.06<br>(52.3)  | 1.0<br>(25.4) | One<br>rows of<br>holes<br>☒ | Non-Adhesive | White | 120                    |
| 181-00495                                   | 181-00495 | SDA1X2     |                |                 |               |                              | Adhesive     | White | 120                    |
| 181-12001                                   | 181-12001 | SD1X2      |                |                 |               |                              | Non-Adhesive | Gray  | 120                    |
| 181-00494                                   | 181-00494 | SDA1X2     |                |                 |               |                              | Adhesive     | Gray  | 120                    |
| 181-00458                                   | 181-00458 | SD1X2      |                |                 |               |                              | Non-Adhesive | Black | 120                    |
| 181-00530                                   | 181-00530 | SDA1X2     |                |                 |               |                              | Adhesive     | Black | 120                    |
| 1" x 3" (25.4 x 76.2) Nominal Duct Size     |           |            |                |                 |               |                              |              |       |                        |
| 181-13001                                   | 181-13001 | SD1X3      | 1.02<br>(25.9) | 3.06<br>(77.7)  | 1.0<br>(25.4) | One<br>rows of<br>holes<br>☒ | Non-Adhesive | White | 120                    |
| 181-00496                                   | 181-00496 | SDA1X3     |                |                 |               |                              | Adhesive     | White | 120                    |
| 181-00136                                   | 181-00136 | SD1X3      |                |                 |               |                              | Non-Adhesive | Gray  | 120                    |
| 181-00671                                   | 181-00671 | SDA1X3     |                |                 |               |                              | Adhesive     | Gray  | 120                    |
| 181-00459                                   | 181-00459 | SD1X3      |                |                 |               |                              | Non-Adhesive | Black | 120                    |
| 181-00531                                   | 181-00531 | SDA1X3     |                |                 |               |                              | Adhesive     | Black | 120                    |
| 1" x 4" (25.4 x 101.6) Nominal Duct Size    |           |            |                |                 |               |                              |              |       |                        |
| 181-14000                                   | 181-14000 | SD1X4      | 1.0<br>(25.4)  | 4.06<br>(103.1) | 1.0<br>(25.4) | One<br>rows of<br>holes<br>☒ | Non-Adhesive | White | 120                    |
| 181-00497                                   | 181-00497 | SDA1X4     |                |                 |               |                              | Adhesive     | White | 120                    |
| 181-00461                                   | 181-00461 | SD1X4      |                |                 |               |                              | Non-Adhesive | Gray  | 120                    |
| 181-00533                                   | 181-00533 | SDA1X4     |                |                 |               |                              | Adhesive     | Gray  | 120                    |
| 181-00460                                   | 181-00460 | SD1X4      |                |                 |               |                              | Non-Adhesive | Black | 120                    |
| 181-00532                                   | 181-00532 | SDA1X4     |                |                 |               |                              | Adhesive     | Black | 120                    |
| 1.5" x 1" (38.1 x 25.4) Nominal Duct Size   |           |            |                |                 |               |                              |              |       |                        |
| 181-15102                                   | 181-15102 | SD1.5X1    | 1.5<br>(38.1)  | 1.05<br>(26.7)  | 1.5<br>(38.1) | One<br>rows of<br>holes<br>☒ | Non-Adhesive | White | 120                    |
| 181-00486                                   | 181-00486 | SDA1.5X1   |                |                 |               |                              | Adhesive     | White | 120                    |
| 181-15101                                   | 181-15101 | SD1.5X1    |                |                 |               |                              | Non-Adhesive | Gray  | 120                    |
| 181-00025                                   | 181-00025 | SDA1.5X1   |                |                 |               |                              | Adhesive     | Gray  | 120                    |
| 181-15100                                   | 181-15100 | SD1.5X1    |                |                 |               |                              | Non-Adhesive | Black | 120                    |
| 181-00485                                   | 181-00485 | SDA1.5X1   |                |                 |               |                              | Adhesive     | Black | 120                    |
| 1.5" x 1.5" (38.1 x 38.1) Nominal Duct Size |           |            |                |                 |               |                              |              |       |                        |
| 181-15503                                   | 181-15503 | SD1.5X1.5  | 1.52<br>(38.6) | 1.56<br>(39.6)  | 1.5<br>(38.1) | One<br>rows of<br>holes<br>☒ | Non-Adhesive | White | 120                    |
| 181-15504                                   | 181-15504 | SDA1.5X1.5 |                |                 |               |                              | Adhesive     | White | 120                    |
| 181-15502                                   | 181-15502 | SD1.5X1.5  |                |                 |               |                              | Non-Adhesive | Gray  | 120                    |
| 181-00483                                   | 181-00483 | SDA1.5X1.5 |                |                 |               |                              | Adhesive     | Gray  | 120                    |
| 181-15500                                   | 181-15500 | SD1.5X1.5  |                |                 |               |                              | Non-Adhesive | Black | 120                    |
| 181-00482                                   | 181-00482 | SDA1.5X1.5 |                |                 |               |                              | Adhesive     | Black | 120                    |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes.

Solid wall duct in larger sizes continued on the next page. Covers are listed on page 115.

## Solid Wall Duct



Lead Free File # E64139 File # 49249

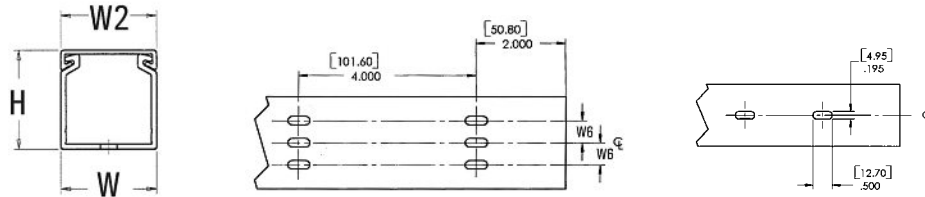


| Product Selection                          |           |          | Lead Free    File # E64139    File # 49249 |                 |               |                                        |              |       |                        |
|--------------------------------------------|-----------|----------|--------------------------------------------|-----------------|---------------|----------------------------------------|--------------|-------|------------------------|
| Article No.                                | Part No.  | Type     | Width (W)                                  | Height (H)      | Width (W2)    | Width (W6)                             | Description  | Color | Pkg. Qty               |
|                                            |           |          | in.<br>(mm)                                | in.<br>(mm)     | in.<br>(mm)   | in.<br>(mm)                            |              |       | ft.<br>(6 ft. lengths) |
| 1.5" x 2" (38.1 x 50.8) Nominal Duct Size  |           |          |                                            |                 |               |                                        |              |       |                        |
| 181-15202                                  | 181-15202 | SD1.5X2  | 1.53<br>(38.9)                             | 2.06<br>(52.3)  | 1.5<br>(38.1) | One<br>rows of<br>holes<br>☒           | Non-Adhesive | White | 120                    |
| 181-00488                                  | 181-00488 | SDA1.5X2 |                                            |                 |               |                                        | Adhesive     | White | 120                    |
| 181-15201                                  | 181-15201 | SD1.5X2  |                                            |                 |               |                                        | Non-Adhesive | Gray  | 120                    |
| 181-00487                                  | 181-00487 | SDA1.5X2 |                                            |                 |               |                                        | Adhesive     | Gray  | 120                    |
| 181-00462                                  | 181-00462 | SD1.5X2  |                                            |                 |               |                                        | Non-Adhesive | Black | 120                    |
| 181-00534                                  | 181-00534 | SDA1.5X2 |                                            |                 |               |                                        | Adhesive     | Black | 120                    |
| 1.5" x 3" (38.1 x 76.2) Nominal Duct Size  |           |          |                                            |                 |               |                                        |              |       |                        |
| 181-00464                                  | 181-00464 | SD1.5X3  | 1.52<br>(38.6)                             | 3.06<br>(77.7)  | 1.5<br>(38.1) | One<br>rows of<br>holes<br>☒           | Non-Adhesive | White | 120                    |
| 181-00536                                  | 181-00536 | SDA1.5X3 |                                            |                 |               |                                        | Adhesive     | White | 120                    |
| 181-15300                                  | 181-15300 | SD1.5X3  |                                            |                 |               |                                        | Non-Adhesive | Gray  | 120                    |
| 181-00489                                  | 181-00489 | SDA1.5X3 |                                            |                 |               |                                        | Adhesive     | Gray  | 120                    |
| 181-00463                                  | 181-00463 | SD1.5X3  |                                            |                 |               |                                        | Non-Adhesive | Black | 120                    |
| 181-00535                                  | 181-00535 | SDA1.5X3 |                                            |                 |               |                                        | Adhesive     | Black | 120                    |
| 1.5" x 4" (38.1 x 101.6) Nominal Duct Size |           |          |                                            |                 |               |                                        |              |       |                        |
| 181-00467                                  | 181-00467 | SD1.5X4  | 1.5<br>(38.1)                              | 4.06<br>(103.1) | 1.5<br>(38.1) | One<br>rows of<br>holes<br>☒           | Non-Adhesive | White | 120                    |
| 181-00539                                  | 181-00539 | SDA1.5X4 |                                            |                 |               |                                        | Adhesive     | White | 120                    |
| 181-00574                                  | 181-00574 | SD1.5X4  |                                            |                 |               |                                        | Non-Adhesive | Gray  | 120                    |
| 181-00538                                  | 181-00538 | SDA1.5X4 |                                            |                 |               |                                        | Adhesive     | Gray  | 120                    |
| 181-00465                                  | 181-00465 | SD1.5X4  |                                            |                 |               |                                        | Non-Adhesive | Black | 120                    |
| 181-00537                                  | 181-00537 | SDA1.5X4 |                                            |                 |               |                                        | Adhesive     | Black | 120                    |
| 2" x 1" (50.8 x 25.4) Nominal Duct Size    |           |          |                                            |                 |               |                                        |              |       |                        |
| 181-21003                                  | 181-21003 | SD2X1    | 2.01<br>(51.1)                             | 1.05<br>(26.7)  | 2.0<br>(50.8) | Three rows<br>of holes<br>.5<br>(12.7) | Non-Adhesive | White | 120                    |
| 181-00500                                  | 181-00500 | SDA2X1   |                                            |                 |               |                                        | Adhesive     | White | 120                    |
| 181-21001                                  | 181-21001 | SD2X1    |                                            |                 |               |                                        | Non-Adhesive | Gray  | 120                    |
| 181-00499                                  | 181-00499 | SDA2X1   |                                            |                 |               |                                        | Adhesive     | Gray  | 120                    |
| 181-21000                                  | 181-21000 | SD2X1    |                                            |                 |               |                                        | Non-Adhesive | Black | 120                    |
| 181-00498                                  | 181-00498 | SDA2X1   |                                            |                 |               |                                        | Adhesive     | Black | 120                    |
| 2" x 2" (50.8 x 50.8) Nominal Duct Size    |           |          |                                            |                 |               |                                        |              |       |                        |
| 181-22013                                  | 181-22013 | SD2X2    | 2.03<br>(51.6)                             | 2.06<br>(52.3)  | 2.0<br>(50.8) | Three rows<br>of holes<br>.5<br>(12.7) | Non-Adhesive | White | 120                    |
| 181-22018                                  | 181-22018 | SDA2X2   |                                            |                 |               |                                        | Adhesive     | White | 120                    |
| 181-22008                                  | 181-22008 | SD2X2    |                                            |                 |               |                                        | Non-Adhesive | Gray  | 120                    |
| 181-22016                                  | 181-22016 | SDA2X2   |                                            |                 |               |                                        | Adhesive     | Gray  | 120                    |
| 181-22005                                  | 181-22005 | SD2X2    |                                            |                 |               |                                        | Non-Adhesive | Black | 120                    |
| 181-00501                                  | 181-00501 | SDA2X2   |                                            |                 |               |                                        | Adhesive     | Black | 120                    |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes.

Solid wall duct in larger sizes continued on the next page. Covers are listed on page 115.

## Solid Wall Duct



Lead Free



File # E64139



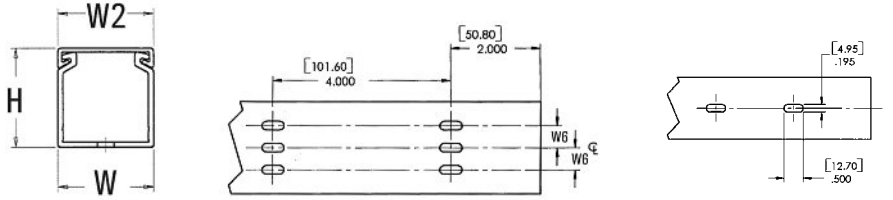
File # 49249



| Product Selection                         |           |          | Width (W)      | Height (H)      | Width (W2)    | Width (W6)                               |              |       | Pkg. Qty               |
|-------------------------------------------|-----------|----------|----------------|-----------------|---------------|------------------------------------------|--------------|-------|------------------------|
| Article No.                               | Part No.  | Type     | in.<br>(mm)    | in.<br>(mm)     | in.<br>(mm)   | in.<br>(mm)                              | Description  | Color | ft.<br>(6 ft. lengths) |
| 2" x 3" (50.8 x 76.2) Nominal Duct Size   |           |          |                |                 |               |                                          |              |       |                        |
| 181-23002                                 | 181-23002 | SD2X3    | 2.02<br>(51.3) | 3.06<br>(77.7)  | 2.0<br>(50.8) | Three<br>rows of<br>holes .5<br>(12.7)   | Non-Adhesive | White | 120                    |
| 181-00504                                 | 181-00504 | SDA2X3   |                |                 |               |                                          | Adhesive     | White | 120                    |
| 181-23001                                 | 181-23001 | SD2X3    |                |                 |               |                                          | Non-Adhesive | Gray  | 120                    |
| 181-00503                                 | 181-00503 | SDA2X3   |                |                 |               |                                          | Adhesive     | Gray  | 120                    |
| 181-00468                                 | 181-00468 | SD2X3    |                |                 |               |                                          | Non-Adhesive | Black | 120                    |
| 181-00540                                 | 181-00540 | SDA2X3   |                |                 |               |                                          | Adhesive     | Black | 120                    |
| 2" x 4" (50.8 x 101.6) Nominal Duct Size  |           |          |                |                 |               |                                          |              |       |                        |
| 181-24002                                 | 181-24002 | SD2X4    | 2.0<br>(50.8)  | 4.06<br>(103.1) | 2.0<br>(50.8) | Three<br>rows of<br>holes .5<br>(12.7)   | Non-Adhesive | White | 120                    |
| 181-00506                                 | 181-00506 | SDA2X4   |                |                 |               |                                          | Adhesive     | White | 120                    |
| 181-24000                                 | 181-24000 | SD2X4    |                |                 |               |                                          | Non-Adhesive | Gray  | 120                    |
| 181-00505                                 | 181-00505 | SDA2X4   |                |                 |               |                                          | Adhesive     | Gray  | 120                    |
| 181-00469                                 | 181-00469 | SD2X4    |                |                 |               |                                          | Non-Adhesive | Black | 120                    |
| 181-00541                                 | 181-00541 | SDA2X4   |                |                 |               |                                          | Adhesive     | Black | 120                    |
| 2" x 5" (50.8 x 127) Nominal Duct Size    |           |          |                |                 |               |                                          |              |       |                        |
| 181-00248                                 | 181-00248 | SD2X5    | 2.0<br>(50.8)  | 5.0<br>(127)    | 2.0<br>(50.8) | Three<br>rows of<br>holes .5<br>(12.7)   | Non-Adhesive | White | 120                    |
| 181-00250                                 | 181-00250 | SDA2X5   |                |                 |               |                                          | Adhesive     | White | 120                    |
| 181-00244                                 | 181-00244 | SD2X5    |                |                 |               |                                          | Non-Adhesive | Gray  | 120                    |
| 181-00246                                 | 181-00246 | SDA2X5   |                |                 |               |                                          | Adhesive     | Gray  | 120                    |
| 181-00312                                 | 181-00312 | SD2X5    |                |                 |               |                                          | Non-Adhesive | Black | 120                    |
| 181-00313                                 | 181-00313 | SDA2X5   |                |                 |               |                                          | Adhesive     | Black | 120                    |
| 2.5" x 3" (63.5 x 76.2) Nominal Duct Size |           |          |                |                 |               |                                          |              |       |                        |
| 181-00224                                 | 181-00224 | SD2.5X3  | 2.50<br>(63.5) | 3.0<br>(76.2)   | 2.5<br>(63.5) | Three<br>rows of<br>holes .75<br>(19.05) | Non-Adhesive | White | 120                    |
| 181-00226                                 | 181-00226 | SDA2.5X3 |                |                 |               |                                          | Adhesive     | White | 120                    |
| 181-00220                                 | 181-00220 | SD2.5X3  |                |                 |               |                                          | Non-Adhesive | Gray  | 120                    |
| 181-00222                                 | 181-00222 | SDA2.5X3 |                |                 |               |                                          | Adhesive     | Gray  | 120                    |
| 181-00314                                 | 181-00314 | SD2.5X3  |                |                 |               |                                          | Non-Adhesive | Black | 120                    |
| 181-00315                                 | 181-00315 | SDA2.5X3 |                |                 |               |                                          | Adhesive     | Black | 120                    |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes.  
Solid wall duct in larger sizes continued on the next page. Covers are listed on page 115.

## Solid Wall Duct



Lead Free



File # E64139



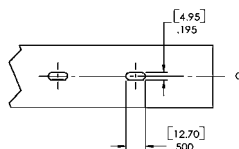
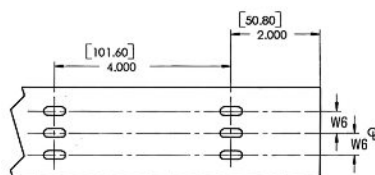
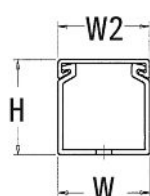
File # 49249



| Product Selection                        |           |        | Width (W)      | Height (H)      | Width (W2)    | Width (W6)                              |              |       | Pkg. Qty               |
|------------------------------------------|-----------|--------|----------------|-----------------|---------------|-----------------------------------------|--------------|-------|------------------------|
| Article No.                              | Part No.  | Type   | in.<br>(mm)    | in.<br>(mm)     | in.<br>(mm)   | in.<br>(mm)                             | Description  | Color | ft.<br>(6 ft. lengths) |
| 3" x 1" (76.2 x 25.4) Nominal Duct Size  |           |        |                |                 |               |                                         |              |       |                        |
| 181-31002                                | 181-31002 | SD3X1  | 3.04<br>(77.2) | 1.05<br>(26.7)  | 3.0<br>(76.2) | Three<br>rows of<br>holes 1.0<br>(25.4) | Non-Adhesive | White | 120                    |
| 181-00508                                | 181-00508 | SDA3X1 |                |                 |               |                                         | Adhesive     | White | 120                    |
| 181-31001                                | 181-31001 | SD3X1  |                |                 |               |                                         | Non-Adhesive | Gray  | 120                    |
| 181-00507                                | 181-00507 | SDA3X1 |                |                 |               |                                         | Adhesive     | Gray  | 120                    |
| 181-00470                                | 181-00470 | SD3X1  |                |                 |               |                                         | Non-Adhesive | Black | 120                    |
| 181-00672                                | 181-00672 | SDA3X1 |                |                 |               |                                         | Adhesive     | Black | 120                    |
| 3" x 2" (76.2 x 50.8) Nominal Duct Size  |           |        |                |                 |               |                                         |              |       |                        |
| 181-32003                                | 181-32003 | SD3X2  | 3.03<br>(77.0) | 2.06<br>(52.5)  | 3.0<br>(76.2) | Three<br>rows of<br>holes 1.0<br>(25.4) | Non-Adhesive | White | 120                    |
| 181-00510                                | 181-00510 | SDA3X2 |                |                 |               |                                         | Adhesive     | White | 120                    |
| 181-32002                                | 181-32002 | SD3X2  |                |                 |               |                                         | Non-Adhesive | Gray  | 120                    |
| 181-00509                                | 181-00509 | SDA3X2 |                |                 |               |                                         | Adhesive     | Gray  | 120                    |
| 181-00471                                | 181-00471 | SD3X2  |                |                 |               |                                         | Non-Adhesive | Black | 120                    |
| 181-00542                                | 181-00542 | SDA3X2 |                |                 |               |                                         | Adhesive     | Black | 120                    |
| 3" x 3" (76.2 x 76.2) Nominal Duct Size  |           |        |                |                 |               |                                         |              |       |                        |
| 181-33006                                | 181-33006 | SD3X3  | 3.02<br>(76.7) | 3.06<br>(77.7)  | 3.0<br>(76.2) | Three<br>rows of<br>holes 1.0<br>(25.4) | Non-Adhesive | White | 120                    |
| 181-00513                                | 181-00513 | SDA3X3 |                |                 |               |                                         | Adhesive     | White | 120                    |
| 181-33004                                | 181-33004 | SD3X3  |                |                 |               |                                         | Non-Adhesive | Gray  | 120                    |
| 181-00512                                | 181-00512 | SDA3X3 |                |                 |               |                                         | Adhesive     | Gray  | 120                    |
| 181-33000                                | 181-33000 | SD3X3  |                |                 |               |                                         | Non-Adhesive | Black | 120                    |
| 181-00511                                | 181-00511 | SDA3X3 |                |                 |               |                                         | Adhesive     | Black | 120                    |
| 3" x 4" (76.2 x 101.6) Nominal Duct Size |           |        |                |                 |               |                                         |              |       |                        |
| 181-34001                                | 181-34001 | SD3X4  | 3.0<br>(76.2)  | 4.06<br>(103.1) | 3.0<br>(76.2) | Three<br>rows of<br>holes 1.0<br>(25.4) | Non-Adhesive | White | 120                    |
| 181-00515                                | 181-00515 | SDA3X4 |                |                 |               |                                         | Adhesive     | White | 120                    |
| 181-34000                                | 181-34000 | SD3X4  |                |                 |               |                                         | Non-Adhesive | Gray  | 120                    |
| 181-00514                                | 181-00514 | SDA3X4 |                |                 |               |                                         | Adhesive     | Gray  | 120                    |
| 181-00472                                | 181-00472 | SD3X4  |                |                 |               |                                         | Non-Adhesive | Black | 120                    |
| 181-00147                                | 181-00147 | SDA3X4 |                |                 |               |                                         | Adhesive     | Black | 120                    |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes.  
Solid wall duct in larger sizes continued on the next page. Covers are listed on page 115.

## Solid Wall Duct



Lead Free File # E64139 File # 49249

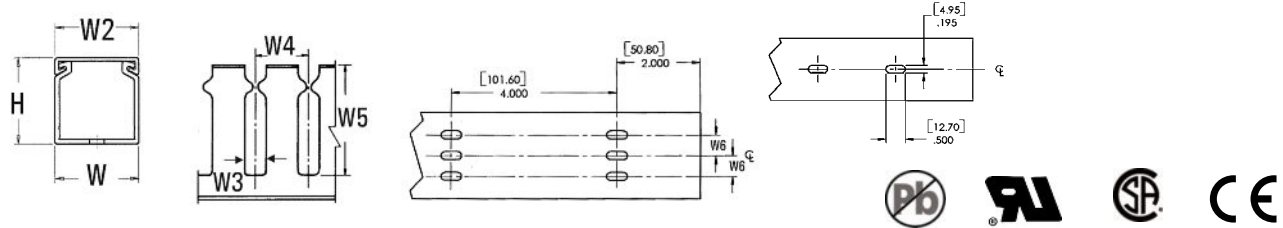
## Product Selection

| Product Selection                         |           |        | Width (W)       | Height (H)      | Width (W2)     | Width (W6)                              |              |       | Pkg. Qty               |
|-------------------------------------------|-----------|--------|-----------------|-----------------|----------------|-----------------------------------------|--------------|-------|------------------------|
|                                           |           |        | in.<br>(mm)     | in.<br>(mm)     | in.<br>(mm)    | in.<br>(mm)                             |              |       | ft.<br>(6 ft. lengths) |
| Article No.                               | Part No.  | Type   |                 |                 |                |                                         | Description  | Color |                        |
| 3" x 5" (76.2 x 127.0) Nominal Duct Size  |           |        |                 |                 |                |                                         |              |       |                        |
| 181-00475                                 | 181-00475 | SD3X5  | 3.0<br>(76.2)   | 5.06<br>(128.5) | 3.0<br>(76.2)  | Three rows f<br>holes<br>1.0<br>(25.4)  | Non-Adhesive | White | 60                     |
| 181-00544                                 | 181-00544 | SDA3X5 |                 |                 |                |                                         | Adhesive     | White | 60                     |
| 181-00474                                 | 181-00474 | SD3X5  |                 |                 |                |                                         | Non-Adhesive | Gray  | 60                     |
| 181-00148                                 | 181-00148 | SDA3X5 |                 |                 |                |                                         | Adhesive     | Gray  | 60                     |
| 181-00473                                 | 181-00473 | SD3X5  |                 |                 |                |                                         | Non-Adhesive | Black | 60                     |
| 181-00543                                 | 181-00543 | SDA3X5 |                 |                 |                |                                         | Adhesive     | Black | 60                     |
| 4" x 2" (101.6 x 50.8) Nominal Duct Size  |           |        |                 |                 |                |                                         |              |       |                        |
| 181-42004                                 | 181-42004 | SD4X2  | 4.03<br>(102.4) | 2.06<br>(52.3)  | 4.0<br>(101.6) | Three rows<br>of holes<br>1.5<br>(38.1) | Non-Adhesive | White | 120                    |
| 181-00517                                 | 181-00517 | SDA4X2 |                 |                 |                |                                         | Adhesive     | White | 120                    |
| 181-42002                                 | 181-42002 | SD4X2  |                 |                 |                |                                         | Non-Adhesive | Gray  | 120                    |
| 181-00516                                 | 181-00516 | SDA4X2 |                 |                 |                |                                         | Adhesive     | Gray  | 120                    |
| 181-00476                                 | 181-00476 | SD4X2  |                 |                 |                |                                         | Non-Adhesive | Black | 120                    |
| 181-00545                                 | 181-00545 | SDA4X2 |                 |                 |                |                                         | Adhesive     | Black | 120                    |
| 4" x 3" (101.6 x 76.2) Nominal Duct Size  |           |        |                 |                 |                |                                         |              |       |                        |
| 181-43002                                 | 181-43002 | SD4X3  | 4.03<br>(102.4) | 3.06<br>(77.7)  | 4.0<br>(101.6) | Three rows<br>of holes<br>1.5<br>(38.1) | Non-Adhesive | White | 120                    |
| 181-00519                                 | 181-00519 | SDA4X3 |                 |                 |                |                                         | Adhesive     | White | 120                    |
| 181-43001                                 | 181-43001 | SD4X3  |                 |                 |                |                                         | Non-Adhesive | Gray  | 120                    |
| 181-00518                                 | 181-00518 | SDA4X3 |                 |                 |                |                                         | Adhesive     | Gray  | 120                    |
| 181-00477                                 | 181-00477 | SD4X3  |                 |                 |                |                                         | Non-Adhesive | Black | 120                    |
| 181-00546                                 | 181-00546 | SDA4X3 |                 |                 |                |                                         | Adhesive     | Black | 120                    |
| 4" x 4" (101.6 x 101.6) Nominal Duct Size |           |        |                 |                 |                |                                         |              |       |                        |
| 181-44015                                 | 181-44015 | SD4X4  | 4.00<br>(101.6) | 4.06<br>(103.1) | 4.0<br>(101.6) | Three rows<br>of holes<br>1.5<br>(38.1) | Non-Adhesive | White | 120                    |
| 181-00521                                 | 181-00521 | SDA4X4 |                 |                 |                |                                         | Adhesive     | White | 120                    |
| 181-44009                                 | 181-44009 | SD4X4  |                 |                 |                |                                         | Non-Adhesive | Gray  | 120                    |
| 181-44018                                 | 181-44018 | SDA4X4 |                 |                 |                |                                         | Adhesive     | Gray  | 120                    |
| 181-44006                                 | 181-44006 | SD4X4  |                 |                 |                |                                         | Non-Adhesive | Black | 120                    |
| 181-00520                                 | 181-00520 | SDA4X4 |                 |                 |                |                                         | Adhesive     | Black | 120                    |
| 4" x 5" (101.6 x 127) Nominal Duct Size   |           |        |                 |                 |                |                                         |              |       |                        |
| 181-45001                                 | 181-45001 | SD4X5  | 4.0<br>(101.6)  | 5.06<br>(128.5) | 4.0<br>(101.6) | Three rows<br>of holes<br>1.5<br>(38.1) | Non-Adhesive | White | 60                     |
| 181-00523                                 | 181-00523 | SDA4X5 |                 |                 |                |                                         | Adhesive     | White | 60                     |
| 181-45000                                 | 181-45000 | SD4X5  |                 |                 |                |                                         | Non-Adhesive | Gray  | 60                     |
| 181-00522                                 | 181-00522 | SDA4X5 |                 |                 |                |                                         | Adhesive     | Gray  | 60                     |
| 181-00137                                 | 181-00137 | SD4X5  |                 |                 |                |                                         | Non-Adhesive | Black | 60                     |
| 181-00547                                 | 181-00547 | SDA4X5 |                 |                 |                |                                         | Adhesive     | Black | 60                     |
| 6" x 4" (152.4 x 101.6) Nominal Duct Size |           |        |                 |                 |                |                                         |              |       |                        |
| 181-64001                                 | 181-64001 | SD6X4  | 6.0<br>(152.4)  | 4.07<br>(103.4) | 6.0<br>(152.4) | No mounting<br>holes                    | Non-Adhesive | White | 60                     |
| 181-64000                                 | 181-64000 | SD6X4  |                 |                 |                |                                         | Non-Adhesive | Gray  | 60                     |
| 181-00479                                 | 181-00479 | SD6X4  |                 |                 |                |                                         | Non-Adhesive | Black | 60                     |
| 8" x 4" (203.2x 101.6) Nominal Duct Size  |           |        |                 |                 |                |                                         |              |       |                        |
| 181-84007                                 | 181-84007 | SD8X4  | 8.0<br>(203.2)  | 4.09<br>(103.9) | 8.0<br>(203.2) | No mounting<br>holes                    | Non-Adhesive | White | 30                     |
| 181-84004                                 | 181-84004 | SD8X4  |                 |                 |                |                                         | Non-Adhesive | Gray  | 30                     |
| 181-00480                                 | 181-00480 | SD8X4  |                 |                 |                |                                         | Non-Adhesive | Black | 30                     |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes. Covers are listed on page 115.

For product information visit or [www.hellermann.tyton.com](http://www.hellermann.tyton.com) or call 800-537-1512

## Slotted Wall Duct



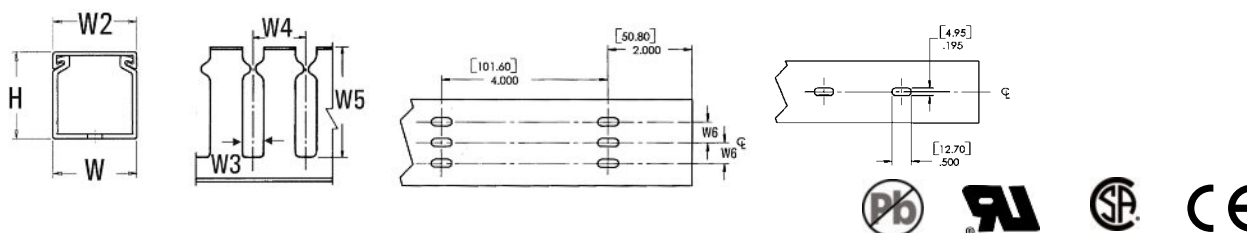
Lead Free File # E64139 File # 49249

### Product Selection

| Product Selection                         |           |          | Width (W)       | Height (H)       | Width (W2)    | Width (W3)   | Width (W4)    | Width (W5)     | Width (W6)               |              |       | Pkg. Qty            |
|-------------------------------------------|-----------|----------|-----------------|------------------|---------------|--------------|---------------|----------------|--------------------------|--------------|-------|---------------------|
| Article No.                               | Part No.  | Type     | in. (mm)        | in. (mm)         | in. (mm)      | in. (mm)     | in. (mm)      | in. (mm)       | in. (mm)                 | Description  | Color | ft. (6 ft. lengths) |
| 1" x 1" (25.4 x 25.4) Nominal Duct Size   |           |          |                 |                  |               |              |               |                |                          |              |       |                     |
| 181-11015                                 | 181-11015 | SL1x1    | 1.0<br>(25.4)   | 1.05<br>(26.7)   | 1.0<br>(25.4) | .4<br>(10.2) | 1.0<br>(25.4) | .75<br>(19.05) | One row of holes on<br>☒ | Non-Adhesive | White | 120                 |
| 181-11021                                 | 181-11021 | SLA1X1   |                 |                  |               |              |               |                |                          | Adhesive     | White | 120                 |
| 181-11013                                 | 181-11013 | SL1x1    |                 |                  |               |              |               |                |                          | Non-Adhesive | Gray  | 120                 |
| 181-11019                                 | 181-11019 | SLA1X1   |                 |                  |               |              |               |                |                          | Adhesive     | Gray  | 120                 |
| 181-11009                                 | 181-11009 | SL1x1    |                 |                  |               |              |               |                |                          | Non-Adhesive | Black | 120                 |
| 181-11016                                 | 181-11016 | SLA1X1   |                 |                  |               |              |               |                |                          | Adhesive     | Black | 120                 |
| 1" x 1.5" (25.4 x 38.1) Nominal Duct Size |           |          |                 |                  |               |              |               |                |                          |              |       |                     |
| 181-11507                                 | 181-11507 | SL1X1.5  | 1.02<br>(25.91) | 1.56<br>(26.1)   | 1.0<br>(25.4) | .4<br>(10.2) | 1.0<br>(25.4) | 1.19<br>(30.2) | One row of holes on<br>☒ | Non-Adhesive | White | 120                 |
| 181-11511                                 | 181-11511 | SLA1X1.5 |                 |                  |               |              |               |                |                          | Adhesive     | White | 120                 |
| 181-11505                                 | 181-11505 | SL1X1.5  |                 |                  |               |              |               |                |                          | Non-Adhesive | Gray  | 120                 |
| 181-11509                                 | 181-11509 | SLA1X1.5 |                 |                  |               |              |               |                |                          | Adhesive     | Gray  | 120                 |
| 181-00552                                 | 181-00552 | SL1X1.5  |                 |                  |               |              |               |                |                          | Non-Adhesive | Black | 120                 |
| 181-00564                                 | 181-00564 | SLA1X1.5 |                 |                  |               |              |               |                |                          | Adhesive     | Black | 120                 |
| 1" x 2" (25.4 x 50.8) Nominal Duct Size   |           |          |                 |                  |               |              |               |                |                          |              |       |                     |
| 181-12008                                 | 181-12008 | SL1X2    | 1.03<br>(26.16) | 2.06<br>(52.32)  | 1.0<br>(25.4) | .4<br>(10.2) | 1.0<br>(25.4) | 1.62<br>(41.1) | One row of holes on<br>☒ | Non-Adhesive | White | 120                 |
| 181-12013                                 | 181-12013 | SLA1X2   |                 |                  |               |              |               |                |                          | Adhesive     | White | 120                 |
| 181-12005                                 | 181-12005 | SL1X2    |                 |                  |               |              |               |                |                          | Non-Adhesive | Gray  | 120                 |
| 181-12011                                 | 181-12011 | SLA1X2   |                 |                  |               |              |               |                |                          | Adhesive     | Gray  | 120                 |
| 181-00024                                 | 181-00024 | SL1X2    |                 |                  |               |              |               |                |                          | Non-Adhesive | Black | 120                 |
| 181-00565                                 | 181-00565 | SLA1X2   |                 |                  |               |              |               |                |                          | Adhesive     | Black | 120                 |
| 1" x 3" (25.4 x 76.2) Nominal Duct Size   |           |          |                 |                  |               |              |               |                |                          |              |       |                     |
| 181-13008                                 | 181-13008 | SL1X3    | 1.02<br>(25.91) | 3.06<br>(77.72)  | 1.0<br>(25.4) | .4<br>(10.2) | 1.0<br>(25.4) | 2.6<br>(66.0)  | One row of holes on<br>☒ | Non-Adhesive | White | 120                 |
| 181-13012                                 | 181-13012 | SLA1X3   |                 |                  |               |              |               |                |                          | Adhesive     | White | 120                 |
| 181-13006                                 | 181-13006 | SL1X3    |                 |                  |               |              |               |                |                          | Non-Adhesive | Gray  | 120                 |
| 181-13010                                 | 181-13010 | SLA1X3   |                 |                  |               |              |               |                |                          | Adhesive     | Gray  | 120                 |
| 181-13003                                 | 181-13003 | SL1X3    |                 |                  |               |              |               |                |                          | Non-Adhesive | Black | 120                 |
| 181-00566                                 | 181-00566 | SLA1X3   |                 |                  |               |              |               |                |                          | Adhesive     | Black | 120                 |
| 1" x 4" (25.4 x 101.6) Nominal Duct Size  |           |          |                 |                  |               |              |               |                |                          |              |       |                     |
| 181-14006                                 | 181-14006 | SL1X4    | 1.0<br>(25.4)   | 4.06<br>(103.12) | 1.0<br>(25.4) | .4<br>(10.2) | 1.0<br>(25.4) | 3.6<br>(91.4)  | One row of holes on<br>☒ | Non-Adhesive | White | 120                 |
| 181-00569                                 | 181-00569 | SLA1X4   |                 |                  |               |              |               |                |                          | Adhesive     | White | 120                 |
| 181-14003                                 | 181-14003 | SL1X4    |                 |                  |               |              |               |                |                          | Non-Adhesive | Gray  | 120                 |
| 181-00568                                 | 181-00568 | SLA1X4   |                 |                  |               |              |               |                |                          | Adhesive     | Gray  | 120                 |
| 181-14001                                 | 181-14001 | SL1X4    |                 |                  |               |              |               |                |                          | Non-Adhesive | Black | 120                 |
| 181-00567                                 | 181-00567 | SLA1X4   |                 |                  |               |              |               |                |                          | Adhesive     | Black | 120                 |
| 1.5" x 1" (38.1 x 25.4) Nominal Duct Size |           |          |                 |                  |               |              |               |                |                          |              |       |                     |
| 181-15107                                 | 181-15107 | SL1.5X1  | 1.5<br>(38.1)   | 1.05<br>(26.67)  | 1.5<br>(38.1) | .4<br>(10.2) | 1.0<br>(25.4) | .75<br>(19.1)  | One row of holes on<br>☒ | Non-Adhesive | White | 120                 |
| 181-00572                                 | 181-00572 | SLA1.5X1 |                 |                  |               |              |               |                |                          | Adhesive     | White | 120                 |
| 181-15105                                 | 181-15105 | SL1.5X1  |                 |                  |               |              |               |                |                          | Non-Adhesive | Gray  | 120                 |
| 181-00571                                 | 181-00571 | SLA1.5X1 |                 |                  |               |              |               |                |                          | Adhesive     | Gray  | 120                 |
| 181-00548                                 | 181-00548 | SL1.5X1  |                 |                  |               |              |               |                |                          | Non-Adhesive | Black | 120                 |
| 181-00570                                 | 181-00570 | SLA1.5X1 |                 |                  |               |              |               |                |                          | Adhesive     | Black | 120                 |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes.  
Slotted wall duct in larger sizes continued on the next page. Covers are listed on page 115.

## Slotted Wall Duct



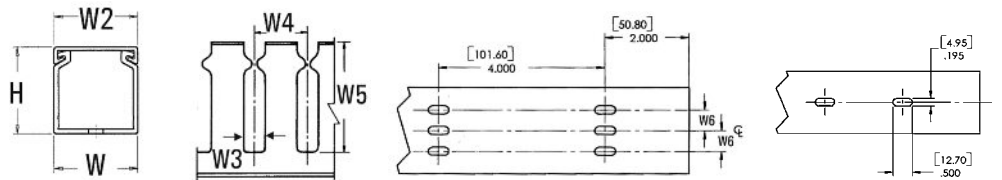
Lead Free File # E64139 File # 49249

| Product Selection                           |           |            | Lead Free    File # E64139    File # 49249 |                  |               |               |               |                |                               |              |       |                     |
|---------------------------------------------|-----------|------------|--------------------------------------------|------------------|---------------|---------------|---------------|----------------|-------------------------------|--------------|-------|---------------------|
| Article No.                                 | Part No.  | Type       | Width (W)                                  | Height (H)       | Width (W2)    | Width (W3)    | Width (W4)    | Width (W5)     | Width (W6)                    | Description  | Color | Pkg. Qty.           |
|                                             |           |            | in. (mm)                                   | in. (mm)         | in. (mm)      | in. (mm)      | in. (mm)      | in. (mm)       | in. (mm)                      |              |       | ft. (6 ft. lengths) |
| 1.5" x 1.5" (38.1 x 38.1) Nominal Duct Size |           |            |                                            |                  |               |               |               |                |                               |              |       |                     |
| 181-15511                                   | 181-15511 | SL1.5X1.5  | 1.52<br>(38.61)                            | 1.56<br>(34.6)   | 1.5<br>(38.1) | .4<br>(10.16) | 1.0<br>(25.4) | 1.19<br>(30.2) | One row of holes on<br><br>☒  | Non-Adhesive | White | 120                 |
| 181-15515                                   | 181-15515 | SLA1.5X1.5 |                                            |                  |               |               |               |                |                               | Adhesive     | White | 120                 |
| 181-15509                                   | 181-15509 | SL1.5X1.5  |                                            |                  |               |               |               |                |                               | Non-Adhesive | Gray  | 120                 |
| 181-15513                                   | 181-15513 | SLA1.5X1.5 |                                            |                  |               |               |               |                |                               | Adhesive     | Gray  | 120                 |
| 181-15505                                   | 181-15505 | SL1.5X1.5  |                                            |                  |               |               |               |                |                               | Non-Adhesive | Black | 120                 |
| 181-00027                                   | 181-00027 | SLA1.5X1.5 |                                            |                  |               |               |               |                |                               | Adhesive     | Black | 120                 |
| 1.5" x 2" (38.1 x 50.8) Nominal Duct Size   |           |            |                                            |                  |               |               |               |                |                               |              |       |                     |
| 181-15209                                   | 181-15209 | SL1.5X2    | 1.53<br>(38.86)                            | 2.06<br>(52.32)  | 1.5<br>(38.1) | .4<br>(10.16) | 1.0<br>(25.4) | 1.62<br>(41.1) | One row of holes on<br><br>☒  | Non-Adhesive | White | 120                 |
| 181-15213                                   | 181-15213 | SLA1.5X2   |                                            |                  |               |               |               |                |                               | Adhesive     | White | 120                 |
| 181-15207                                   | 181-15207 | SL1.5X2    |                                            |                  |               |               |               |                |                               | Non-Adhesive | Gray  | 120                 |
| 181-15211                                   | 181-15211 | SLA1.5X2   |                                            |                  |               |               |               |                |                               | Adhesive     | Gray  | 120                 |
| 181-15203                                   | 181-15203 | SL1.5X2    |                                            |                  |               |               |               |                |                               | Non-Adhesive | Black | 120                 |
| 181-00573                                   | 181-00573 | SLA1.5X2   |                                            |                  |               |               |               |                |                               | Adhesive     | Black | 120                 |
| 1.5" x 3" (38.1 x 76.2) Nominal Duct Size   |           |            |                                            |                  |               |               |               |                |                               |              |       |                     |
| 181-15306                                   | 181-15306 | SL1.5X3    | 1.52<br>(38.61)                            | 3.06<br>(77.72)  | 1.5<br>(38.1) | .4<br>(10.16) | 1.0<br>(25.4) | 2.6<br>(66.0)  | One row of holes on<br><br>☒  | Non-Adhesive | White | 120                 |
| 181-15308                                   | 181-15308 | SLA1.5X3   |                                            |                  |               |               |               |                |                               | Adhesive     | White | 120                 |
| 181-15304                                   | 181-15304 | SL1.5X3    |                                            |                  |               |               |               |                |                               | Non-Adhesive | Gray  | 120                 |
| 181-15307                                   | 181-15307 | SLA1.5X3   |                                            |                  |               |               |               |                |                               | Adhesive     | Gray  | 120                 |
| 181-00550                                   | 181-00550 | SL1.5X3    |                                            |                  |               |               |               |                |                               | Non-Adhesive | Black | 120                 |
| 181-00575                                   | 181-00575 | SLA1.5X3   |                                            |                  |               |               |               |                |                               | Adhesive     | Black | 120                 |
| 1.5" x 4" (38.1 x 101.6) Nominal Duct Size  |           |            |                                            |                  |               |               |               |                |                               |              |       |                     |
| 181-15406                                   | 181-15406 | SL1.5X4    | 1.5<br>(38.1)                              | 4.06<br>(103.12) | 1.5<br>(38.1) | .4<br>(10.16) | 1.0<br>(25.4) | 3.6<br>(91.4)  | One row of holes on<br><br>☒  | Non-Adhesive | White | 120                 |
| 181-00578                                   | 181-00578 | SLA1.5X4   |                                            |                  |               |               |               |                |                               | Adhesive     | White | 120                 |
| 181-15404                                   | 181-15404 | SL1.5X4    |                                            |                  |               |               |               |                |                               | Non-Adhesive | Gray  | 120                 |
| 181-00577                                   | 181-00577 | SLA1.5X4   |                                            |                  |               |               |               |                |                               | Adhesive     | Gray  | 120                 |
| 181-15400                                   | 181-15400 | SL1.5X4    |                                            |                  |               |               |               |                |                               | Non-Adhesive | Black | 120                 |
| 181-00576                                   | 181-00576 | SLA1.5X4   |                                            |                  |               |               |               |                |                               | Adhesive     | Black | 120                 |
| 2" x 1" (50.8 x 25.4) Nominal Duct Size     |           |            |                                            |                  |               |               |               |                |                               |              |       |                     |
| 181-21007                                   | 181-21007 | SL2X1      | 2.01<br>(51.05)                            | 1.05<br>(26.7)   | 2.0<br>(50.8) | .4<br>(10.16) | 1.0<br>(25.4) | .75<br>(19.1)  | Three rows of holes .5 (12.7) | Non-Adhesive | White | 120                 |
| 181-00580                                   | 181-00580 | SLA2X1     |                                            |                  |               |               |               |                |                               | Adhesive     | White | 120                 |
| 181-21005                                   | 181-21005 | SL2X1      |                                            |                  |               |               |               |                |                               | Non-Adhesive | Gray  | 120                 |
| 181-21009                                   | 181-21009 | SLA2X1     |                                            |                  |               |               |               |                |                               | Adhesive     | Gray  | 120                 |
| 181-00554                                   | 181-00554 | SL2X1      |                                            |                  |               |               |               |                |                               | Non-Adhesive | Black | 120                 |
| 181-00579                                   | 181-00579 | SLA2X1     |                                            |                  |               |               |               |                |                               | Adhesive     | Black | 120                 |
| 2" x 2" (50.8 x 50.8) Nominal Duct Size     |           |            |                                            |                  |               |               |               |                |                               |              |       |                     |
| 181-22028                                   | 181-22028 | SL2X2      | 2.03<br>(51.56)                            | 2.0<br>(50.8)    | 2.0<br>(50.8) | .4<br>(10.16) | 1.0<br>(25.4) | 1.62<br>(41.1) | Three rows of holes .5 (12.7) | Non-Adhesive | White | 120                 |
| 181-22034                                   | 181-22034 | SLA2X2     |                                            |                  |               |               |               |                |                               | Adhesive     | White | 120                 |
| 181-22024                                   | 181-22024 | SL2x2      |                                            |                  |               |               |               |                |                               | Non-Adhesive | Gray  | 120                 |
| 181-22032                                   | 181-22032 | SLA2X2     |                                            |                  |               |               |               |                |                               | Adhesive     | Gray  | 120                 |
| 181-22020                                   | 181-22020 | SL2x2      |                                            |                  |               |               |               |                |                               | Non-Adhesive | Black | 120                 |
| 181-22030                                   | 181-22030 | SLA2X2     |                                            |                  |               |               |               |                |                               | Adhesive     | Black | 120                 |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes.  
Slotted wall duct in larger sizes continued on the next page. Covers are listed on page 115.

For product information visit or [www.hellermann.tyton.com](http://www.hellermann.tyton.com) or call 800-537-1512

## Slotted Wall Duct



Lead Free



File # E64139



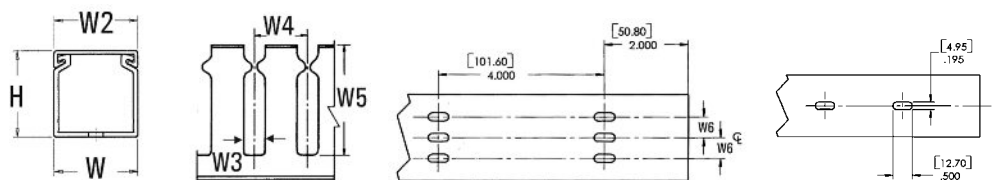
File # 49249



| Product Selection                         |           |          |                |                 |               |               |               |                |                                    |              |       |                     |  |
|-------------------------------------------|-----------|----------|----------------|-----------------|---------------|---------------|---------------|----------------|------------------------------------|--------------|-------|---------------------|--|
| Article No.                               | Part No.  | Type     | Width (W)      | Height (H)      | Width (W2)    | Width (W3)    | Width (W4)    | Width (W5)     | Width (W6)                         | Description  | Color | Pkg. Qty            |  |
|                                           |           |          | in. (mm)       | in. (mm)        | in. (mm)      | in. (mm)      | in. (mm)      | in. (mm)       | in. (mm)                           |              |       | ft. (6 ft. lengths) |  |
| 2" x 3" (50.8 x 76.2) Nominal Duct Size   |           |          |                |                 |               |               |               |                |                                    |              |       |                     |  |
| 181-23009                                 | 181-23009 | SL2X3    | 2.02<br>(51.3) | 3.06<br>(77.7)  | 2.0<br>(50.8) | .4<br>(10.16) | 1.0<br>(25.4) | 2.6<br>(66.0)  | Three rows of holes .5<br>(12.7)   | Non-Adhesive | White | 120                 |  |
| 181-23012                                 | 181-23012 | SLA2X3   |                |                 |               |               |               |                |                                    | Adhesive     | White | 120                 |  |
| 181-23007                                 | 181-23007 | SL2X3    |                |                 |               |               |               |                |                                    | Non-Adhesive | Gray  | 120                 |  |
| 181-00582                                 | 181-00582 | SLA2X3   |                |                 |               |               |               |                |                                    | Adhesive     | Gray  | 120                 |  |
| 181-23003                                 | 181-23003 | SL2X3    |                |                 |               |               |               |                |                                    | Non-Adhesive | Black | 120                 |  |
| 181-00581                                 | 181-00581 | SLA2X3   |                |                 |               |               |               |                |                                    | Adhesive     | Black | 120                 |  |
| 2" x 4" (50.8 x 101.6) Nominal Duct Size  |           |          |                |                 |               |               |               |                |                                    |              |       |                     |  |
| 181-24011                                 | 181-24011 | SL2X4    | 2.0<br>(50.8)  | 4.06<br>(103.1) | 2.0<br>(50.8) | .4<br>(10.16) | 1.0<br>(25.4) | 3.6<br>(91.4)  | Three rows of holes .5<br>(12.7)   | Non-Adhesive | White | 120                 |  |
| 181-24014                                 | 181-24014 | SLA2X4   |                |                 |               |               |               |                |                                    | Adhesive     | White | 120                 |  |
| 181-24008                                 | 181-24008 | SL2X4    |                |                 |               |               |               |                |                                    | Non-Adhesive | Gray  | 120                 |  |
| 181-24013                                 | 181-24013 | SLA2X4   |                |                 |               |               |               |                |                                    | Adhesive     | Gray  | 120                 |  |
| 181-24003                                 | 181-24003 | SL2X4    |                |                 |               |               |               |                |                                    | Non-Adhesive | Black | 120                 |  |
| 181-00583                                 | 181-00583 | SLA2X4   |                |                 |               |               |               |                |                                    | Adhesive     | Black | 120                 |  |
| 2" x 5" (50.8 x 127) Nominal Duct Size    |           |          |                |                 |               |               |               |                |                                    |              |       |                     |  |
| 181-00240                                 | 181-00240 | SL2X5    | 2.0<br>(50.8)  | 5.0<br>(127)    | 2.0<br>(50.8) | .40<br>(10.2) | 1.0<br>(25.1) | 4.6<br>(116.8) | Three rows of holes .5<br>(12.7)   | Non-Adhesive | White | 120                 |  |
| 181-00242                                 | 181-00242 | SLA2X5   |                |                 |               |               |               |                |                                    | Adhesive     | White | 120                 |  |
| 181-00236                                 | 181-00236 | SL2X5    |                |                 |               |               |               |                |                                    | Non-Adhesive | Gray  | 120                 |  |
| 181-00238                                 | 181-00238 | SLA2X5   |                |                 |               |               |               |                |                                    | Adhesive     | Gray  | 120                 |  |
| 181-00316                                 | 181-00316 | SL2X5    |                |                 |               |               |               |                |                                    | Non-Adhesive | Black | 120                 |  |
| 181-00317                                 | 181-00317 | SLA2X5   |                |                 |               |               |               |                |                                    | Adhesive     | Black | 120                 |  |
| 2.5" x 3" (63.5 x 76.2) Nominal Duct Size |           |          |                |                 |               |               |               |                |                                    |              |       |                     |  |
| 181-00216                                 | 181-00216 | SL2.5X3  | 2.5<br>(63.5)  | 3.0<br>(76.2)   | 2.5<br>(63.5) | .4<br>(10.2)  | 1.0<br>(25.1) | 2.6<br>(66.0)  | Three rows of holes .75<br>(19.05) | Non-Adhesive | White | 120                 |  |
| 181-00218                                 | 181-00218 | SLA2.5X3 |                |                 |               |               |               |                |                                    | Adhesive     | White | 120                 |  |
| 181-00212                                 | 181-00212 | SL2.5X3  |                |                 |               |               |               |                |                                    | Non-Adhesive | Gray  | 120                 |  |
| 181-00214                                 | 181-00214 | SLA2.5X3 |                |                 |               |               |               |                |                                    | Adhesive     | Gray  | 120                 |  |
| 181-00318                                 | 181-00318 | SL2.5X3  |                |                 |               |               |               |                |                                    | Non-Adhesive | Black | 120                 |  |
| 181-00319                                 | 181-00319 | SLA2.5X3 |                |                 |               |               |               |                |                                    | Adhesive     | Black | 120                 |  |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes. Slotted wall duct in larger sizes continued on the next page. Covers are listed on page 115.

## Slotted Wall Duct

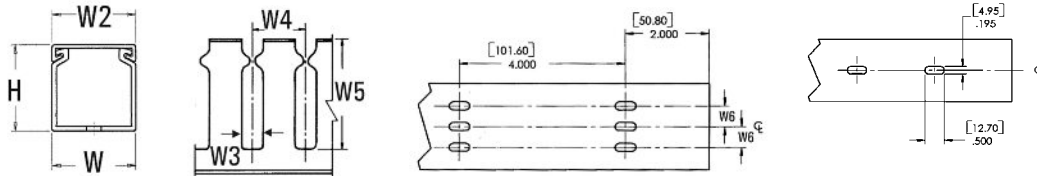


Lead Free File # E64139 File # 49249

|                                          |           |        | Width<br>(W)    | Height<br>(H)  | Width<br>(W2) | Width<br>(W3) | Width<br>(W4)  | Width<br>(W5)  | Width<br>(W6)                              |              |       | Pkg. Qty               |
|------------------------------------------|-----------|--------|-----------------|----------------|---------------|---------------|----------------|----------------|--------------------------------------------|--------------|-------|------------------------|
| Article No.                              | Part No.  | Type   | in.<br>(mm)     | in.<br>(mm)    | in.<br>(mm)   | in.<br>(mm)   | in.<br>(mm)    | in.<br>(mm)    | in.<br>(mm)                                | Description  | Color | ft. (6 ft.<br>lengths) |
| 3" x 1" (76.2 X 25.4) Nominal Duct Size  |           |        |                 |                |               |               |                |                |                                            |              |       |                        |
| 181-31007                                | 181-31007 | SL3X1  | 3.04<br>(77.22) | 1.0<br>(25.4)  | 3.0<br>(76.2) | .4<br>(10.16) | 1.0<br>(25.4)  | .75<br>(19.1)  | Three<br>rows of<br>holes<br>1.0<br>(25.4) | Non-Adhesive | White | 120                    |
| 181-00586                                | 181-00586 | SLA3X1 |                 |                |               |               |                |                |                                            | Adhesive     | White | 120                    |
| 181-00558                                | 181-00558 | SL3X1  |                 |                |               |               |                |                |                                            | Non-Adhesive | Gray  | 120                    |
| 181-00585                                | 181-00585 | SLA3X1 |                 |                |               |               |                |                |                                            | Adhesive     | Gray  | 120                    |
| 181-00557                                | 181-00557 | SL3X1  |                 |                |               |               |                |                |                                            | Non-Adhesive | Black | 120                    |
| 181-00584                                | 181-00584 | SLA3X1 |                 |                |               |               |                |                |                                            | Adhesive     | Black | 120                    |
| 3" x 2" (76.2 x 50.8) Nominal Duct Size  |           |        |                 |                |               |               |                |                |                                            |              |       |                        |
| 181-32009                                | 181-32009 | SL3X2  | 3.03<br>(76.96) | 2.0<br>(50.8)  | 3.0<br>(76.2) | .4<br>(10.16) | 1.0<br>(25.40) | 1.62<br>(41.1) | Three<br>rows of<br>holes<br>1.0<br>(25.4) | Non-Adhesive | White | 120                    |
| 181-32015                                | 181-32015 | SLA3X2 |                 |                |               |               |                |                |                                            | Adhesive     | White | 120                    |
| 181-32005                                | 181-32005 | SL3X2  |                 |                |               |               |                |                |                                            | Non-Adhesive | Gray  | 120                    |
| 181-32012                                | 181-32012 | SLA3X2 |                 |                |               |               |                |                |                                            | Adhesive     | Gray  | 120                    |
| 181-32004                                | 181-32004 | SL3X2  |                 |                |               |               |                |                |                                            | Non-Adhesive | Black | 120                    |
| 181-00587                                | 181-00587 | SLA3X2 |                 |                |               |               |                |                |                                            | Adhesive     | Black | 120                    |
| 3" x 3" (76.2 x 76.2) Nominal Duct Size  |           |        |                 |                |               |               |                |                |                                            |              |       |                        |
| 181-33018                                | 181-33018 | SL3X3  | 3.02<br>(76.71) | 3.0<br>(76.2)  | 3.0<br>(76.2) | .4<br>(10.2)  | 1.0<br>(25.1)  | 2.6<br>(66.0)  | Three<br>rows of<br>holes<br>1.0<br>(25.4) | Non-Adhesive | White | 120                    |
| 181-33022                                | 181-33022 | SL3X3  |                 |                |               |               |                |                |                                            | Adhesive     | White | 120                    |
| 181-33015                                | 181-33015 | SLA3X3 |                 |                |               |               |                |                |                                            | Non-Adhesive | Gray  | 120                    |
| 181-33021                                | 181-33021 | SLA3X3 |                 |                |               |               |                |                |                                            | Adhesive     | Gray  | 120                    |
| 181-33009                                | 181-33009 | SL3X3  |                 |                |               |               |                |                |                                            | Non-Adhesive | Black | 120                    |
| 181-00159                                | 181-00159 | SL3X3  |                 |                |               |               |                |                |                                            | Adhesive     | Black | 120                    |
| 3" x 4" (76.2 x 101.6) Nominal Duct Size |           |        |                 |                |               |               |                |                |                                            |              |       |                        |
| 181-34007                                | 181-34007 | SL3X4  | 3.0<br>(76.2)   | 4.0<br>(101.6) | 3.0<br>(76.2) | 0.4<br>(10.2) | 1.0<br>(25.1)  | 3.6<br>(91.4)  | Three<br>rows of<br>holes<br>1.0<br>(25.4) | Non-Adhesive | White | 120                    |
| 181-00590                                | 181-00590 | SL3X4  |                 |                |               |               |                |                |                                            | Adhesive     | White | 120                    |
| 181-34004                                | 181-34004 | SLA3X4 |                 |                |               |               |                |                |                                            | Non-Adhesive | Gray  | 120                    |
| 181-00589                                | 181-00589 | SLA3X4 |                 |                |               |               |                |                |                                            | Adhesive     | Gray  | 120                    |
| 181-34002                                | 181-34002 | SL3X4  |                 |                |               |               |                |                |                                            | Non-Adhesive | Black | 120                    |
| 181-00588                                | 181-00588 | SL3X4  |                 |                |               |               |                |                |                                            | Adhesive     | Black | 120                    |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes.  
Slotted wall duct in larger sizes continued on the next page. Covers are listed on page 115.

## Slotted Wall Duct



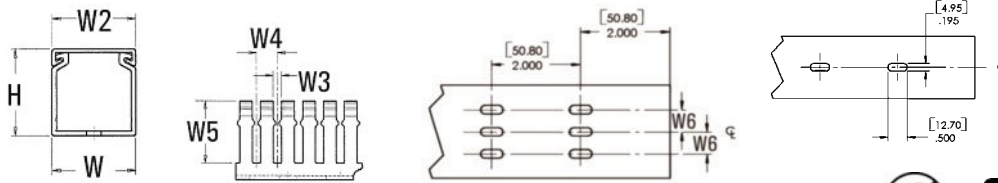
Lead Free File # E64139 File # 49249

## Product Selection

| Article No.                               | Part No.  | Type   | Width (W)     | Height (H)    | Width (W2)  | Width (W3) | Width (W4) | Width (W5)  | Width (W6)                     | Description  | Color | Pkg. Qty.           |
|-------------------------------------------|-----------|--------|---------------|---------------|-------------|------------|------------|-------------|--------------------------------|--------------|-------|---------------------|
|                                           |           |        | in. (mm)      | in. (mm)      | in. (mm)    | in. (mm)   | in. (mm)   | in. (mm)    | in. (mm)                       |              |       | ft. (6 ft. lengths) |
| 3" x 5" (76.2 x 127.0) Nominal Duct Size  |           |        |               |               |             |            |            |             |                                |              |       |                     |
| 181-00560                                 | 181-00560 | SL3X5  | 3.0 (76.2)    | 5.0 (127.0)   | 3.0 (76.2)  | .4 (10.16) | 1.0 (25.4) | 4.6 (116.8) | Three rows of holes 1.0 (25.4) | Non-Adhesive | White | 60                  |
| 181-00156                                 | 181-00156 | SLA3X5 |               |               |             |            |            |             |                                | Adhesive     | White | 60                  |
| 181-35005                                 | 181-35005 | SL3X5  |               |               |             |            |            |             |                                | Non-Adhesive | Gray  | 60                  |
| 181-00155                                 | 181-00155 | SLA3X5 |               |               |             |            |            |             |                                | Adhesive     | Gray  | 60                  |
| 181-35002                                 | 181-35002 | SL3X5  |               |               |             |            |            |             |                                | Non-Adhesive | Black | 60                  |
| 181-00157                                 | 181-00157 | SLA3X5 |               |               |             |            |            |             |                                | Adhesive     | Black | 60                  |
| 4" x 2" (101.6 x 50.8) Nominal Duct Size  |           |        |               |               |             |            |            |             |                                |              |       |                     |
| 181-42010                                 | 181-42010 | SL4X2  | 4.03 (102.36) | 2.06 (52.3)   | 4.0 (101.6) | .4 (10.16) | 1.0 (25.4) | 1.62 (41.1) | Three rows of holes 1.5 (38.1) | Non-Adhesive | White | 120                 |
| 181-42014                                 | 181-42014 | SLA4X2 |               |               |             |            |            |             |                                | Adhesive     | White | 120                 |
| 181-42008                                 | 181-42008 | SL4X2  |               |               |             |            |            |             |                                | Non-Adhesive | Gray  | 120                 |
| 181-00592                                 | 181-00592 | SLA4X2 |               |               |             |            |            |             |                                | Adhesive     | Gray  | 120                 |
| 181-42005                                 | 181-42005 | SL4X2  |               |               |             |            |            |             |                                | Non-Adhesive | Black | 120                 |
| 181-00591                                 | 181-00591 | SLA4X2 |               |               |             |            |            |             |                                | Adhesive     | Black | 120                 |
| 4" x 3" (101.6 x 76.2) Nominal Duct Size  |           |        |               |               |             |            |            |             |                                |              |       |                     |
| 181-43006                                 | 181-43006 | SL4X3  | 4.03 (102.36) | 3.0 (76.2)    | 4.0 (101.6) | .4 (10.16) | 1.0 (25.4) | 2.6 (66.0)  | Three rows of holes 1.5 (38.1) | Non-Adhesive | White | 120                 |
| 181-00594                                 | 181-00594 | SLA4X3 |               |               |             |            |            |             |                                | Adhesive     | White | 120                 |
| 181-43004                                 | 181-43004 | SL4X3  |               |               |             |            |            |             |                                | Non-Adhesive | Gray  | 120                 |
| 181-43008                                 | 181-43008 | SLA4X3 |               |               |             |            |            |             |                                | Adhesive     | Gray  | 120                 |
| 181-00562                                 | 181-00562 | SL4X3  |               |               |             |            |            |             |                                | Non-Adhesive | Black | 120                 |
| 181-00593                                 | 181-00593 | SLA4X3 |               |               |             |            |            |             |                                | Adhesive     | Black | 120                 |
| 4" x 4" (101.6 x 101.6) Nominal Duct Size |           |        |               |               |             |            |            |             |                                |              |       |                     |
| 181-44031                                 | 181-44031 | SL4X4  | 4.0 (101.6)   | 4.0 (101.6)   | 4.0 (101.6) | .4 (10.16) | 1.0 (25.4) | 3.6 (91.4)  | Three rows of holes 1.5 (38.1) | Non-Adhesive | White | 120                 |
| 181-44035                                 | 181-44035 | SLA4X4 |               |               |             |            |            |             |                                | Adhesive     | White | 120                 |
| 181-44027                                 | 181-44027 | SL4X4  |               |               |             |            |            |             |                                | Non-Adhesive | Gray  | 120                 |
| 181-44033                                 | 181-44033 | SLA4X4 |               |               |             |            |            |             |                                | Adhesive     | Gray  | 120                 |
| 181-44020                                 | 181-44020 | SL4X4  |               |               |             |            |            |             |                                | Non-Adhesive | Black | 120                 |
| 181-00595                                 | 181-00595 | SLA4X4 |               |               |             |            |            |             |                                | Adhesive     | Black | 120                 |
| 4" x 5" (101.6 x 127) Nominal Duct Size   |           |        |               |               |             |            |            |             |                                |              |       |                     |
| 181-45011                                 | 181-45011 | SL4X5  | 4.0 (101.6)   | 5.06 (128.52) | 4.0 (101.6) | .4 (10.16) | 1.0 (25.4) | 4.6 (116.8) | Three rows of holes 1.5 (38.1) | Non-Adhesive | White | 60                  |
| 181-45013                                 | 181-45013 | SLA4X5 |               |               |             |            |            |             |                                | Adhesive     | White | 60                  |
| 181-45010                                 | 181-45010 | SL4X5  |               |               |             |            |            |             |                                | Non-Adhesive | Gray  | 60                  |
| 181-00596                                 | 181-00596 | SLA4X5 |               |               |             |            |            |             |                                | Adhesive     | Gray  | 60                  |
| 181-45002                                 | 181-45002 | SL4X5  |               |               |             |            |            |             |                                | Non-Adhesive | Black | 60                  |
| 181-45012                                 | 181-45012 | SLA4X5 |               |               |             |            |            |             |                                | Adhesive     | Black | 60                  |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes.  
Covers are listed on page 115.

## High Density Slotted Duct



Lead Free File # E64139 File # 49249

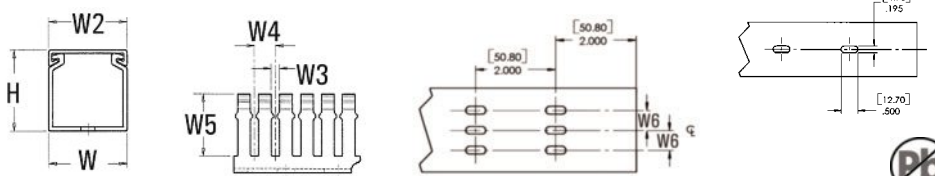
## Product Selection

| Product Selection                         |           |            | Width (W)      | Height (H)      | Width (W2)    | Width (W3)   | Width (W4)   | Width (W5)     | Width (W6)                                                                                                |              |       | Pkg. Qty.           |
|-------------------------------------------|-----------|------------|----------------|-----------------|---------------|--------------|--------------|----------------|-----------------------------------------------------------------------------------------------------------|--------------|-------|---------------------|
| Article No.                               | Part No.  | Type       | in. (mm)       | in. (mm)        | in. (mm)      | in. (mm)     | in. (mm)     | in. (mm)       | in. (mm)                                                                                                  | Description  | Color | ft. (6 ft. lengths) |
| 1" x 1" (25.4 x 25.4) Nominal Duct Size   |           |            |                |                 |               |              |              |                |                                                                                                           |              |       |                     |
| 184-11006                                 | 184-11006 | SLHD1X1    | 1.0<br>(25.4)  | 1.05<br>(26.7)  | 1.0<br>(25.4) | .16<br>(4.1) | .4<br>(10.2) | .75<br>(19.1)  | One row of holes on    | Non-Adhesive | White | 120                 |
| 181-00622                                 | 181-00622 | SLHDA1X1   |                |                 |               |              |              |                |                                                                                                           | Adhesive     | White | 120                 |
| 184-11004                                 | 184-11004 | SLHD1X1    |                |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Gray  | 120                 |
| 181-00621                                 | 181-00621 | SLHDA1X1   |                |                 |               |              |              |                |                                                                                                           | Adhesive     | Gray  | 120                 |
| 181-00597                                 | 181-00597 | SLHD1X1    |                |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Black | 120                 |
| 181-00637                                 | 181-00637 | SLHDA1X1   |                |                 |               |              |              |                |                                                                                                           | Adhesive     | Black | 120                 |
| 1" x 1.5" (25.4 x 38.1) Nominal Duct Size |           |            |                |                 |               |              |              |                |                                                                                                           |              |       |                     |
| 184-11012                                 | 184-11012 | SLHD1X1.5  | 1.02<br>(25.9) | 1.56<br>(39.6)  | 1.0<br>(25.4) | .16<br>(4.1) | .4<br>(10.2) | 1.19<br>(30.2) | One row of holes on  | Non-Adhesive | White | 120                 |
| 184-11009                                 | 184-11009 | SLHDA1X1.5 |                |                 |               |              |              |                |                                                                                                           | Adhesive     | White | 120                 |
| 184-11010                                 | 184-11010 | SLHD1X1.5  |                |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Gray  | 120                 |
| 184-11008                                 | 184-11008 | SLHDA1X1.5 |                |                 |               |              |              |                |                                                                                                           | Adhesive     | Gray  | 120                 |
| 181-00598                                 | 181-00598 | SLHD1X1.5  |                |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Black | 120                 |
| 181-00623                                 | 181-00623 | SLHDA1X1.5 |                |                 |               |              |              |                |                                                                                                           | Adhesive     | Black | 120                 |
| 1" x 2" (25.4 x 50.8) Nominal Duct Size   |           |            |                |                 |               |              |              |                |                                                                                                           |              |       |                     |
| 184-12007                                 | 184-12007 | SLHD1X2    | 1.03<br>(26.2) | 2.06<br>(52.3)  | 1.0<br>(25.4) | .16<br>(4.1) | .4<br>(10.2) | 1.62<br>(41.1) | One row of holes on  | Non-Adhesive | White | 120                 |
| 184-12004                                 | 184-12004 | SLHDA1X2   |                |                 |               |              |              |                |                                                                                                           | Adhesive     | White | 120                 |
| 184-12005                                 | 184-12005 | SLHD1X2    |                |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Gray  | 120                 |
| 184-12002                                 | 184-12002 | SLHDA1X2   |                |                 |               |              |              |                |                                                                                                           | Adhesive     | Gray  | 120                 |
| 181-00599                                 | 181-00599 | SLHD1X2    |                |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Black | 120                 |
| 181-00624                                 | 181-00624 | SLHDA1X2   |                |                 |               |              |              |                |                                                                                                           | Adhesive     | Black | 120                 |
| 1" x 3" (25.4 x 76.2) Nominal Duct Size   |           |            |                |                 |               |              |              |                |                                                                                                           |              |       |                     |
| 184-13007                                 | 184-13007 | SLHD1X3    | 1.02<br>(25.9) | 3.06<br>(77.7)  | 1.0<br>(25.4) | .16<br>(4.1) | .4<br>(10.2) | 2.6<br>(66.0)  | One row of holes on  | Non-Adhesive | White | 120                 |
| 184-13003                                 | 184-13003 | SLHDA1X3   |                |                 |               |              |              |                |                                                                                                           | Adhesive     | White | 120                 |
| 184-13005                                 | 184-13005 | SLHD1X3    |                |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Gray  | 120                 |
| 181-00626                                 | 181-00626 | SLHDA1X3   |                |                 |               |              |              |                |                                                                                                           | Adhesive     | Gray  | 120                 |
| 181-00600                                 | 181-00600 | SLHD1X3    |                |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Black | 120                 |
| 181-00625                                 | 181-00625 | SLHDA1X3   |                |                 |               |              |              |                |                                                                                                           | Adhesive     | Black | 120                 |
| 1" x 4" (25.4 x 101.6) Nominal Duct Size  |           |            |                |                 |               |              |              |                |                                                                                                           |              |       |                     |
| 184-14004                                 | 184-14004 | SLHD1X4    | 1.0<br>(25.4)  | 4.06<br>(103.1) | 1.0<br>(25.4) | .16<br>(4.1) | .4<br>(10.2) | 3.6<br>(91.4)  | One row of holes on  | Non-Adhesive | White | 120                 |
| 181-00629                                 | 181-00629 | SLHDA1X4   |                |                 |               |              |              |                |                                                                                                           | Adhesive     | White | 120                 |
| 184-14002                                 | 184-14002 | SLHD1X4    |                |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Gray  | 120                 |
| 181-00628                                 | 181-00628 | SLHDA1X4   |                |                 |               |              |              |                |                                                                                                           | Adhesive     | Gray  | 120                 |
| 181-00601                                 | 181-00601 | SLHD1X4    |                |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Black | 120                 |
| 181-00627                                 | 181-00627 | SLHDA1X4   |                |                 |               |              |              |                |                                                                                                           | Adhesive     | Black | 120                 |
| 1.5" x 1" (38.1 x 25.4) Nominal Duct Size |           |            |                |                 |               |              |              |                |                                                                                                           |              |       |                     |
| 184-15102                                 | 184-15102 | SLHD1.5X1  | 1.5<br>(38.1)  | 1.05<br>(26.7)  | 1.5<br>(38.1) | .16<br>(4.1) | .4<br>(10.2) | .75<br>(19.1)  | One row of holes on  | Non-Adhesive | White | 120                 |
| 181-00632                                 | 181-00632 | SLHDA1.5X1 |                |                 |               |              |              |                |                                                                                                           | Adhesive     | White | 120                 |
| 184-15101                                 | 184-15101 | SLHD1.5X1  |                |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Gray  | 120                 |
| 181-00631                                 | 181-00631 | SLHDA1.5X1 |                |                 |               |              |              |                |                                                                                                           | Adhesive     | Gray  | 120                 |
| 181-00602                                 | 181-00602 | SLHD1.5X1  |                |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Black | 120                 |
| 181-00630                                 | 181-00630 | SLHDA1.5X1 |                |                 |               |              |              |                |                                                                                                           | Adhesive     | Black | 120                 |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes.  
High density slotted wall duct in larger sizes continued on the next page. Covers are listed on page 115.

For product information visit or [www.hellermann.tyton.com](http://www.hellermann.tyton.com) or call 800-537-1512

## High Density Slotted Duct

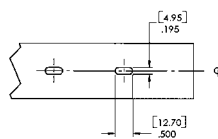
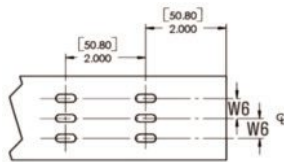
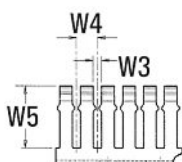
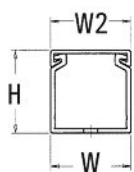


Lead Free File # E64139 File # 49249

| Product Selection                           |           |              | Lead Free    File # E64139    File # 49249 |                 |               |              |              |                |                                                                                                           |              |       |                     |
|---------------------------------------------|-----------|--------------|--------------------------------------------|-----------------|---------------|--------------|--------------|----------------|-----------------------------------------------------------------------------------------------------------|--------------|-------|---------------------|
| Article No.                                 | Part No.  | Type         | Width (W)                                  | Height (H)      | Width (W2)    | Width (W3)   | Width (W4)   | Width (W5)     | Width (W6)                                                                                                | Description  | Color | Pkg. Qty.           |
|                                             |           |              | in. (mm)                                   | in. (mm)        | in. (mm)      | in. (mm)     | in. (mm)     | in. (mm)       | in. (mm)                                                                                                  |              |       | ft. (6 ft. lengths) |
| 1.5" x 1.5" (38.1 x 38.1) Nominal Duct Size |           |              |                                            |                 |               |              |              |                |                                                                                                           |              |       |                     |
| 184-15155                                   | 184-15155 | SLHD1.5X1.5  | 1.52<br>(38.6)                             | 1.56<br>(39.6)  | 1.5<br>(38.1) | .16<br>(4.1) | .4<br>(10.2) | 1.19<br>(30.2) | One row of holes on    | Non-Adhesive | White | 120                 |
| 184-15153                                   | 184-15153 | SLHDA1.5X1.5 |                                            |                 |               |              |              |                |                                                                                                           | Adhesive     | White | 120                 |
| 184-15152                                   | 184-15152 | SLHD1.5X1.5  |                                            |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Gray  | 120                 |
| 184-15151                                   | 184-15151 | SLHDA1.5X1.5 |                                            |                 |               |              |              |                |                                                                                                           | Adhesive     | Gray  | 120                 |
| 181-00603                                   | 181-00603 | SLHD1.5X1.5  |                                            |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Black | 120                 |
| 181-00633                                   | 181-00633 | SLHD1.5X1.5  |                                            |                 |               |              |              |                |                                                                                                           | Adhesive     | Black | 120                 |
| 1.5" x 2" (38.1 x 50.8) Nominal Duct Size   |           |              |                                            |                 |               |              |              |                |                                                                                                           |              |       |                     |
| 184-15206                                   | 184-15206 | SLHD1.5X2    | 1.53<br>(38.9)                             | 2.06<br>(52.3)  | 1.5<br>(38.1) | .16<br>(4.1) | .4<br>(10.2) | 1.62<br>(41.1) | One row of holes on   | Non-Adhesive | White | 120                 |
| 184-15205                                   | 184-15205 | SLHDA1.5X2   |                                            |                 |               |              |              |                |                                                                                                           | Adhesive     | White | 120                 |
| 184-15202                                   | 184-15202 | SLHD1.5X2    |                                            |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Gray  | 120                 |
| 184-15201                                   | 184-15201 | SLHDA1.5X2   |                                            |                 |               |              |              |                |                                                                                                           | Adhesive     | Gray  | 120                 |
| 181-00604                                   | 181-00604 | SLHD1.5X2    |                                            |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Black | 120                 |
| 181-00634                                   | 181-00634 | SLHDA1.5X2   |                                            |                 |               |              |              |                |                                                                                                           | Adhesive     | Black | 120                 |
| 1.5" x 3" (38.1 x 76.2) Nominal Duct Size   |           |              |                                            |                 |               |              |              |                |                                                                                                           |              |       |                     |
| 184-15304                                   | 184-15304 | SLHD1.5X3    | 1.52<br>(38.6)                             | 3.06<br>(77.7)  | 1.5<br>(38.1) | .16<br>(4.1) | .4<br>(10.2) | 2.6<br>(66.0)  | One row of holes on  | Non-Adhesive | White | 120                 |
| 184-15301                                   | 184-15301 | SLHDA1.5X3   |                                            |                 |               |              |              |                |                                                                                                           | Adhesive     | White | 120                 |
| 184-15302                                   | 184-15302 | SLHD1.5X3    |                                            |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Gray  | 120                 |
| 181-00636                                   | 181-00636 | SLHDA1.5X3   |                                            |                 |               |              |              |                |                                                                                                           | Adhesive     | Gray  | 120                 |
| 181-00605                                   | 181-00605 | SLHD1.5X3    |                                            |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Black | 120                 |
| 181-00635                                   | 181-00635 | SLHDA1.5X3   |                                            |                 |               |              |              |                |                                                                                                           | Adhesive     | Black | 120                 |
| 1.5" x 4" (38.1 x 101.6) Nominal Duct Size  |           |              |                                            |                 |               |              |              |                |                                                                                                           |              |       |                     |
| 184-15403                                   | 184-15403 | SLHD1.5X4    | 1.5<br>(38.1)                              | 4.06<br>(103.1) | 1.5<br>(38.1) | .16<br>(4.1) | .4<br>(10.2) | 3.6<br>(91.4)  | One row of holes on  | Non-Adhesive | White | 120                 |
| 181-00639                                   | 181-00639 | SLHDA1.5X4   |                                            |                 |               |              |              |                |                                                                                                           | Adhesive     | White | 120                 |
| 184-15401                                   | 184-15401 | SLHD1.5X4    |                                            |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Gray  | 120                 |
| 181-00638                                   | 181-00638 | SLHDA1.5X4   |                                            |                 |               |              |              |                |                                                                                                           | Adhesive     | Gray  | 120                 |
| 181-00606                                   | 181-00606 | SLHD1.5X4    |                                            |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Black | 120                 |
| 181-00620                                   | 181-00620 | SLHDA1.5X4   |                                            |                 |               |              |              |                |                                                                                                           | Adhesive     | Black | 120                 |
| 2" x 1" (50.8 x 25.4) Nominal Duct Size     |           |              |                                            |                 |               |              |              |                |                                                                                                           |              |       |                     |
| 184-21003                                   | 184-21003 | SLHD2X1      | 2.01<br>(51.1)                             | 1.05<br>(26.7)  | 2.0<br>(50.8) | .16<br>(4.1) | .4<br>(10.2) | .75<br>(19.1)  | Three rows of holes .5 (12.7)                                                                             | Non-Adhesive | White | 120                 |
| 181-00642                                   | 181-00642 | SLHDA2X1     |                                            |                 |               |              |              |                |                                                                                                           | Adhesive     | White | 120                 |
| 184-21002                                   | 184-21002 | SLHD2X1      |                                            |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Gray  | 120                 |
| 181-00641                                   | 181-00641 | SLHDA2X1     |                                            |                 |               |              |              |                |                                                                                                           | Adhesive     | Gray  | 120                 |
| 181-00607                                   | 181-00607 | SLHD2X1      |                                            |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Black | 120                 |
| 181-00640                                   | 181-00640 | SLHDA2X1     |                                            |                 |               |              |              |                |                                                                                                           | Adhesive     | Black | 120                 |
| 2" x 2" (50.8 x 50.8) Nominal Duct Size     |           |              |                                            |                 |               |              |              |                |                                                                                                           |              |       |                     |
| 184-22008                                   | 184-22008 | SLHD2X2      | 2.03<br>(51.6)                             | 2.06<br>(52.3)  | 2.0<br>(50.8) | .16<br>(4.1) | .4<br>(10.2) | 1.62<br>(41.1) | Three rows of holes .5 (12.7)                                                                             | Non-Adhesive | White | 120                 |
| 184-22003                                   | 184-22003 | SLHDA2X2     |                                            |                 |               |              |              |                |                                                                                                           | Adhesive     | White | 120                 |
| 184-22005                                   | 184-22005 | SLHD2X2      |                                            |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Gray  | 120                 |
| 181-00644                                   | 181-00644 | SLHDA2X2     |                                            |                 |               |              |              |                |                                                                                                           | Adhesive     | Gray  | 120                 |
| 181-00608                                   | 181-00608 | SLHD2X2      |                                            |                 |               |              |              |                |                                                                                                           | Non-Adhesive | Black | 120                 |
| 181-00643                                   | 181-00643 | SLHDA2X2     |                                            |                 |               |              |              |                |                                                                                                           | Adhesive     | Black | 120                 |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes.  
High density slotted wall duct in larger sizes continued on the next page. Covers are listed on page 115.

## High Density Slotted Duct



Lead Free File # E64139 File # 49249

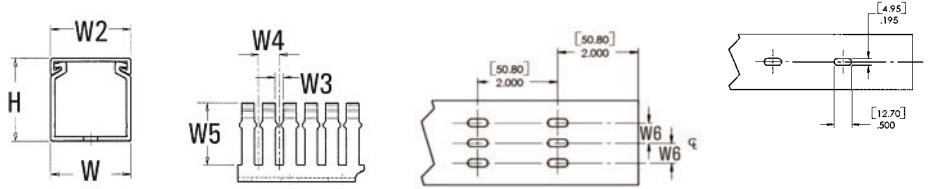


## Product Selection

| Product Selection                         |           |            | Width (W)   | Height (H)   | Width (W2) | Width (W3) | Width (W4) | Width (W5)  | Width (W6)                      |              |       | Pkg. Qty            |
|-------------------------------------------|-----------|------------|-------------|--------------|------------|------------|------------|-------------|---------------------------------|--------------|-------|---------------------|
| Article No.                               | Part No.  | Type       | in. (mm)    | in. (mm)     | in. (mm)   | in. (mm)   | in. (mm)   | in. (mm)    | in. (mm)                        | Description  | Color | ft. (6 ft. lengths) |
| 2" x 3" (50.8 x 76.2) Nominal Duct Size   |           |            |             |              |            |            |            |             |                                 |              |       |                     |
| 184-23006                                 | 184-23006 | SLHD2X3    | 2.02 (51.3) | 3.06 (77.7)  | 2.0 (50.8) | .16 (4.1)  | .4 (10.2)  | 2.6 (66.0)  | Three rows of holes .5 (12.7)   | Non-Adhesive | White | 120                 |
| 184-23003                                 | 184-23003 | SLHDA2X3   |             |              |            |            |            |             |                                 | Adhesive     | White | 120                 |
| 184-23004                                 | 184-23004 | SLHD2X3    |             |              |            |            |            |             |                                 | Non-Adhesive | Gray  | 120                 |
| 181-00646                                 | 181-00646 | SLHDA2X3   |             |              |            |            |            |             |                                 | Adhesive     | Gray  | 120                 |
| 181-00609                                 | 181-00609 | SLHD2X3    |             |              |            |            |            |             |                                 | Non-Adhesive | Black | 120                 |
| 181-00645                                 | 181-00645 | SLHDA2X3   |             |              |            |            |            |             |                                 | Adhesive     | Black | 120                 |
| 2" x 4" (50.8 x 101.6) Nominal Duct Size  |           |            |             |              |            |            |            |             |                                 |              |       |                     |
| 184-24007                                 | 184-24007 | SLHD2X4    | 2.0 (50.8)  | 4.06 (103.1) | 2.0 (50.8) | .16 (4.1)  | .4 (10.2)  | 3.6 (91.4)  | Three rows of holes .5 (12.7)   | Non-Adhesive | White | 120                 |
| 184-24003                                 | 184-24003 | SLHDA2X4   |             |              |            |            |            |             |                                 | Adhesive     | White | 120                 |
| 184-24004                                 | 184-24004 | SLHD2X4    |             |              |            |            |            |             |                                 | Non-Adhesive | Gray  | 120                 |
| 181-00648                                 | 181-00648 | SLHDA2X4   |             |              |            |            |            |             |                                 | Adhesive     | Gray  | 120                 |
| 181-00610                                 | 181-00610 | SLHD2X4    |             |              |            |            |            |             |                                 | Non-Adhesive | Black | 120                 |
| 181-00647                                 | 181-00647 | SLHDA2X4   |             |              |            |            |            |             |                                 | Adhesive     | Black | 120                 |
| 2" x 5" (50.8 x 127) Nominal Duct Size    |           |            |             |              |            |            |            |             |                                 |              |       |                     |
| 181-00265                                 | 181-00265 | SLHD2X5    | 2.0 (50.8)  | 5.0 (127.0)  | 2.0 (50.8) | .16 (4.1)  | .4 (10.2)  | 4.6 (116.8) | Three rows of holes .5 (12.7)   | Non-Adhesive | White | 120                 |
| 181-00259                                 | 181-00259 | SLHDA2X5   |             |              |            |            |            |             |                                 | Adhesive     | White | 120                 |
| 181-00252                                 | 181-00252 | SLHD2X5    |             |              |            |            |            |             |                                 | Non-Adhesive | Gray  | 120                 |
| 181-00254                                 | 181-00254 | SLHDA2X5   |             |              |            |            |            |             |                                 | Adhesive     | Gray  | 120                 |
| 181-00320                                 | 181-00320 | SLHD2X5    |             |              |            |            |            |             |                                 | Non-Adhesive | Black | 120                 |
| 181-00321                                 | 181-00321 | SLHDA2X5   |             |              |            |            |            |             |                                 | Adhesive     | Black | 120                 |
| 2.5" x 3" (63.5 x 76.2) Nominal Duct Size |           |            |             |              |            |            |            |             |                                 |              |       |                     |
| 181-00232                                 | 181-00232 | SLHD2.5X3  | 2.5 (63.5)  | 3.0 (76.2)   | 2.5 (63.5) | .16 (4.1)  | .4 (10.2)  | 2.6 (66.0)  | Three rows of holes .75 (19.05) | Non-Adhesive | White | 120                 |
| 181-00234                                 | 181-00234 | SLHDA2.5X3 |             |              |            |            |            |             |                                 | Adhesive     | White | 120                 |
| 181-00228                                 | 181-00228 | SLHD2.5X3  |             |              |            |            |            |             |                                 | Non-Adhesive | Gray  | 120                 |
| 181-00230                                 | 181-00230 | SLHDA2.5X3 |             |              |            |            |            |             |                                 | Adhesive     | Gray  | 120                 |
| 181-00322                                 | 181-00322 | SLHD2.5X3  |             |              |            |            |            |             |                                 | Non-Adhesive | Black | 120                 |
| 181-00323                                 | 181-00323 | SLHDA2.5X3 |             |              |            |            |            |             |                                 | Adhesive     | Black | 120                 |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes. High density slotted wall duct in larger sizes continued on the next page. Covers are listed on page 115.

## High Density Slotted Duct

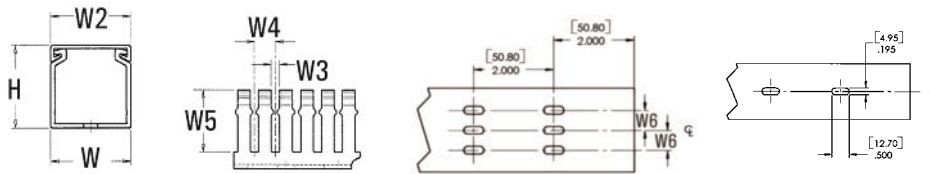


Lead Free File # E64139 File # 49249

|                                          |           |          | Width<br>(W)    | Height<br>(H)   | Width<br>(W2) | Width<br>(W3) | Width<br>(W4) | Width<br>(W5)  | Width<br>(W6)                              |              |       | Pkg. Qty               |
|------------------------------------------|-----------|----------|-----------------|-----------------|---------------|---------------|---------------|----------------|--------------------------------------------|--------------|-------|------------------------|
| Article No.                              | Part No.  | Type     | in.<br>(mm)     | in.<br>(mm)     | in.<br>(mm)   | in.<br>(mm)   | in.<br>(mm)   | in.<br>(mm)    | in.<br>(mm)                                | Description  | Color | ft. (6 ft.<br>lengths) |
| 3" x 1" (76.2 x 25.4) Nominal Duct Size  |           |          |                 |                 |               |               |               |                |                                            |              |       |                        |
| 181-00613                                | 181-00613 | SLHD3X1  | 3.02<br>(76.7)  | 1.0<br>(25.4)   | 3.0<br>(76.2) | .16<br>(4.1)  | .4<br>(10.2)  | .75<br>(19.1)  | Three<br>rows of<br>holes<br>1.0<br>(25.4) | Non-Adhesive | White | 120                    |
| 181-00652                                | 181-00652 | SLHDA3X1 |                 |                 |               |               |               |                |                                            | Adhesive     | White | 120                    |
| 181-00612                                | 181-00612 | SLHD3X1  |                 |                 |               |               |               |                |                                            | Non-Adhesive | Gray  | 120                    |
| 181-00651                                | 181-00651 | SLHDA3X1 |                 |                 |               |               |               |                |                                            | Adhesive     | Gray  | 120                    |
| 181-00611                                | 181-00611 | SLHD3X1  |                 |                 |               |               |               |                |                                            | Non-Adhesive | Black | 120                    |
| 181-00649                                | 181-00649 | SLHDA3X1 |                 |                 |               |               |               |                |                                            | Adhesive     | Black | 120                    |
| 3" x 2" (76.2 x 50.8) Nominal Duct Size  |           |          |                 |                 |               |               |               |                |                                            |              |       |                        |
| 184-32004                                | 184-32004 | SLHD3X2  | 3.03<br>(76.96) | 2.06<br>(52.3)  | 3.0<br>(76.2) | .16<br>(4.1)  | .4<br>(10.2)  | 1.62<br>(41.1) | Three<br>rows of<br>holes<br>1.0<br>(25.4) | Non-Adhesive | White | 120                    |
| 181-00655                                | 181-00655 | SLHDA3X2 |                 |                 |               |               |               |                |                                            | Adhesive     | White | 120                    |
| 184-32001                                | 184-32001 | SLHD3X2  |                 |                 |               |               |               |                |                                            | Non-Adhesive | Gray  | 120                    |
| 181-00654                                | 181-00654 | SLHDA3X2 |                 |                 |               |               |               |                |                                            | Adhesive     | Gray  | 120                    |
| 181-00614                                | 181-00614 | SLHD3X2  |                 |                 |               |               |               |                |                                            | Non-Adhesive | Black | 120                    |
| 181-00653                                | 181-00653 | SLHDA3X2 |                 |                 |               |               |               |                |                                            | Adhesive     | Black | 120                    |
| 3" x 3" (76.2 x 76.2) Nominal Duct Size  |           |          |                 |                 |               |               |               |                |                                            |              |       |                        |
| 184-33004                                | 184-33004 | SLHD3X3  | 3.02<br>(76.71) | 3.06<br>(77.7)  | 3.0<br>(76.2) | .16<br>(4.1)  | .4<br>(10.2)  | 2.6<br>(66.0)  | Three<br>rows of<br>holes<br>1.0<br>(25.4) | Non-Adhesive | White | 120                    |
| 184-33001                                | 184-33001 | SLHD3X3  |                 |                 |               |               |               |                |                                            | Adhesive     | White | 120                    |
| 184-33002                                | 184-33002 | SLHDA3X3 |                 |                 |               |               |               |                |                                            | Non-Adhesive | Gray  | 120                    |
| 181-00657                                | 181-00657 | SLHDA3X3 |                 |                 |               |               |               |                |                                            | Adhesive     | Gray  | 120                    |
| 181-00615                                | 181-00615 | SLHD3X3  |                 |                 |               |               |               |                |                                            | Non-Adhesive | Black | 120                    |
| 181-00656                                | 181-00656 | SLHD3X3  |                 |                 |               |               |               |                |                                            | Adhesive     | Black | 120                    |
| 3" x 4" (76.2 x 101.6) Nominal Duct Size |           |          |                 |                 |               |               |               |                |                                            |              |       |                        |
| 184-34005                                | 184-34005 | SLHD3X4  | 3.0<br>(76.2)   | 4.06<br>(103.1) | 3.0<br>(76.2) | .16<br>(4.1)  | .4<br>(10.2)  | 3.6<br>(91.4)  | Three<br>rows of<br>holes<br>1.0<br>(25.4) | Non-Adhesive | White | 120                    |
| 184-34001                                | 184-34001 | SLHD3X4  |                 |                 |               |               |               |                |                                            | Adhesive     | White | 120                    |
| 184-34003                                | 184-34003 | SLHDA3X4 |                 |                 |               |               |               |                |                                            | Non-Adhesive | Gray  | 120                    |
| 181-00659                                | 181-00659 | SLHDA3X4 |                 |                 |               |               |               |                |                                            | Adhesive     | Gray  | 120                    |
| 181-00616                                | 181-00616 | SLHD3X4  |                 |                 |               |               |               |                |                                            | Non-Adhesive | Black | 120                    |
| 181-00658                                | 181-00658 | SLHD3X4  |                 |                 |               |               |               |                |                                            | Adhesive     | Black | 120                    |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes.  
High density slotted wall duct in larger sizes continued on the next page. Covers are listed on page 115.

## High Density Slotted Duct



Lead Free



File # E64139



File # 49249



## Product Selection

| Product Selection                         |           |          |                 |                 |                |              |               |                |                                |              |       |                     |  |
|-------------------------------------------|-----------|----------|-----------------|-----------------|----------------|--------------|---------------|----------------|--------------------------------|--------------|-------|---------------------|--|
| Article No.                               | Part No.  | Type     | Width (W)       | Height (H)      | Width (W2)     | Width (W3)   | Width (W4)    | Width (W5)     | Width (W6)                     | Description  | Color | Pkg. Qty.           |  |
|                                           |           |          | in. (mm)        | in. (mm)        | in. (mm)       | in. (mm)     | in. (mm)      | in. (mm)       | in. (mm)                       |              |       | ft. (6 ft. lengths) |  |
| 4" x 2" (101.6 x 50.8) Nominal Duct Size  |           |          |                 |                 |                |              |               |                |                                |              |       |                     |  |
| 184-42003                                 | 184-42003 | SLHD4X2  | 4.03<br>(102.4) | 2.06<br>(52.3)  | 4.0<br>(101.6) | .16<br>(4.1) | .40<br>(10.2) | 1.62<br>(41.1) | Three rows of holes 1.5 (38.1) | Non-Adhesive | White | 120                 |  |
| 181-00665                                 | 181-00665 | SLHDA4X2 |                 |                 |                |              |               |                |                                | Adhesive     | White | 120                 |  |
| 184-42001                                 | 184-42001 | SLHD4X2  |                 |                 |                |              |               |                |                                | Non-Adhesive | Gray  | 120                 |  |
| 181-00664                                 | 181-00664 | SLHDA4X2 |                 |                 |                |              |               |                |                                | Adhesive     | Gray  | 120                 |  |
| 181-00617                                 | 181-00617 | SLHD4X2  |                 |                 |                |              |               |                |                                | Non-Adhesive | Black | 120                 |  |
| 181-00663                                 | 181-00663 | SLHDA4X2 |                 |                 |                |              |               |                |                                | Adhesive     | Black | 120                 |  |
| 4" x 3" (101.6 x 76.2) Nominal Duct Size  |           |          |                 |                 |                |              |               |                |                                |              |       |                     |  |
| 184-43003                                 | 184-43003 | SLHD4X3  | 4.03<br>(102.4) | 3.06<br>(77.7)  | 4.0<br>(101.6) | .16<br>(4.1) | .4<br>(10.2)  | 2.6<br>(66.0)  | Three rows of holes 1.5 (38.1) | Non-Adhesive | White | 120                 |  |
| 181-00152                                 | 181-00152 | SLHDA4X3 |                 |                 |                |              |               |                |                                | Adhesive     | White | 120                 |  |
| 184-43001                                 | 184-43001 | SLHD4X3  |                 |                 |                |              |               |                |                                | Non-Adhesive | Gray  | 120                 |  |
| 181-00153                                 | 181-00153 | SLHDA4X3 |                 |                 |                |              |               |                |                                | Adhesive     | Gray  | 120                 |  |
| 181-00618                                 | 181-00618 | SLHD4X2  |                 |                 |                |              |               |                |                                | Non-Adhesive | Black | 120                 |  |
| 181-00154                                 | 181-00154 | SLHDA4X3 |                 |                 |                |              |               |                |                                | Adhesive     | Black | 120                 |  |
| 4" x 4" (101.6 x 101.6) Nominal Duct Size |           |          |                 |                 |                |              |               |                |                                |              |       |                     |  |
| 184-44004                                 | 184-44004 | SLHD4X4  | 4.0<br>(101.6)  | 4.06<br>(103.1) | 4.0<br>(101.6) | .16<br>(4.1) | .4<br>(10.2)  | 3.6<br>(91.4)  | Three rows of holes 1.5 (38.1) | Non-Adhesive | White | 120                 |  |
| 184-44001                                 | 184-44001 | SLHDA4X4 |                 |                 |                |              |               |                |                                | Adhesive     | White | 120                 |  |
| 184-44002                                 | 184-44002 | SLHD4X4  |                 |                 |                |              |               |                |                                | Non-Adhesive | Gray  | 120                 |  |
| 181-00667                                 | 181-00667 | SLHDA4X4 |                 |                 |                |              |               |                |                                | Adhesive     | Gray  | 120                 |  |
| 181-00619                                 | 181-00619 | SLHD4X4  |                 |                 |                |              |               |                |                                | Non-Adhesive | Black | 120                 |  |
| 181-00666                                 | 181-00666 | SLHDA4X4 |                 |                 |                |              |               |                |                                | Adhesive     | Black | 120                 |  |

Dimensions are approximate and subject to technical changes. Use Part No. for ordering and Type for specification purposes. Covers are listed on page 115.

## Material Properties and Capacity Chart

Wiring Duct Material Properties

| Physical Properties                   | Material | ASTM Method | Test Units         | Test Results       |
|---------------------------------------|----------|-------------|--------------------|--------------------|
| Specific Gravity (Gray)               | PVC      | D-792       | —                  | 1.4                |
| Durometer Hardness                    | PVC      | D-2240      | Shore Hardness     | 77D                |
| Flexural Strength                     | PVC      | D-790       | psi                | 9,900              |
| Modulus of Elasticity (Tension)       | PVC      | D-638       | psi                | 351,000            |
| Continuous Operating Temperature      | PVC      | UL746B      | °F (°C)            | 122 (50)           |
| Heat Deflection Temperature (264 psi) | PVC      | D-648       | °F (°C)            | 161 (72)           |
| Tensile Strength (+73°F)              | PVC      | D-638       | psi                | 6,500              |
| Izod Impact Strength (+73°F)          | PVC      | D-256       | ft. lbs./in. notch | 15                 |
| Flame Resistance                      | PVC      | D-635       | —                  | Self-extinguishing |
| UL Standard 94                        | PVC      |             | .029 and .062      | 94V-O              |



Wiring Capacity

| Duct Size<br>(W"xH") | Duct Area<br>(Sq. In.) | ELECTRICAL |        |       |       |        |        |        | DATA   |       |        |
|----------------------|------------------------|------------|--------|-------|-------|--------|--------|--------|--------|-------|--------|
|                      |                        | 10 AWG     | 12 AWG | 14AWG | 14AWG | 16 AWG | 18 AWG | 22 AWG | CAT 5E | CAT 6 | CAT 6A |
|                      |                        | WIRE O.D.  |        |       |       |        |        |        |        |       |        |
|                      |                        | 0.176      | 0.158  | 0.165 | 0.139 | 0.125  | 0.113  | 0.065  | 0.217  | 0.240 | 0.354  |
| .5x.5                | 0.18                   | 4          | 5      | 4     | 6     | 7      | 9      | 27     | 2      | 2     | 1      |
| .5x1                 | 0.38                   | 8          | 10     | 9     | 13    | 15     | 19     | 57     | 5      | 4     | 2      |
| .75x.75              | 0.28                   | 6          | 7      | 7     | 9     | 11     | 14     | 42     | 4      | 3     | 1      |
| 1x1                  | 0.735                  | 15         | 19     | 17    | 24    | 30     | 37     | 111    | 10     | 8     | 4      |
| 1x1.5                | 1.135                  | 23         | 29     | 27    | 37    | 46     | 57     | 171    | 15     | 13    | 6      |
| 1x2                  | 1.515                  | 31         | 39     | 35    | 50    | 62     | 76     | 228    | 20     | 17    | 8      |
| 1x3                  | 2.22                   | 46         | 57     | 52    | 73    | 90     | 111    | 335    | 30     | 25    | 11     |
| 1x4                  | 2.936                  | 60         | 75     | 69    | 97    | 120    | 146    | 443    | 40     | 32    | 15     |
| 1.5x1                | 1.205                  | 25         | 31     | 28    | 40    | 49     | 60     | 182    | 16     | 13    | 6      |
| 1.5x1.5              | 1.85                   | 38         | 47     | 43    | 61    | 75     | 92     | 279    | 25     | 20    | 9      |
| 1.5x2                | 2.475                  | 51         | 63     | 58    | 82    | 101    | 123    | 373    | 33     | 27    | 13     |
| 1.5x3                | 3.669                  | 75         | 94     | 86    | 121   | 150    | 183    | 553    | 50     | 41    | 19     |
| 1.5x4                | 4.881                  | 100        | 125    | 114   | 161   | 199    | 243    | 736    | 66     | 54    | 25     |
| 2x1                  | 1.678                  | 35         | 43     | 39    | 55    | 68     | 84     | 253    | 23     | 19    | 9      |
| 2x2                  | 3.438                  | 71         | 88     | 80    | 113   | 140    | 171    | 518    | 47     | 38    | 17     |
| 2x3                  | 5.122                  | 105        | 131    | 120   | 169   | 209    | 255    | 772    | 69     | 57    | 26     |
| 2x4                  | 6.829                  | 140        | 174    | 160   | 225   | 278    | 341    | 1030   | 92     | 76    | 35     |
| 2x5                  | 8.488                  | 175        | 217    | 199   | 280   | 346    | 423    | 1280   | 115    | 94    | 43     |
| 2.5x3                | 6.564                  | 135        | 167    | 154   | 216   | 268    | 327    | 990    | 89     | 73    | 33     |
| 3x1                  | 2.57                   | 53         | 66     | 60    | 85    | 105    | 128    | 388    | 35     | 28    | 13     |
| 3x2                  | 5.36                   | 110        | 137    | 125   | 177   | 219    | 268    | 809    | 73     | 59    | 27     |
| 3x3                  | 8.03                   | 165        | 205    | 188   | 265   | 327    | 400    | 1210   | 109    | 89    | 41     |
| 3x4                  | 10.72                  | 221        | 274    | 251   | 354   | 437    | 535    | 1617   | 145    | 119   | 55     |
| 3x5                  | 13.38                  | 275        | 341    | 313   | 441   | 546    | 668    | 2017   | 181    | 148   | 68     |
| 4x2                  | 7.288                  | 150        | 186    | 171   | 240   | 297    | 364    | 1099   | 99     | 81    | 37     |
| 4x3                  | 10.932                 | 225        | 279    | 256   | 360   | 446    | 545    | 1648   | 148    | 121   | 56     |
| 4x4                  | 14.62                  | 301        | 373    | 342   | 482   | 596    | 729    | 2204   | 198    | 162   | 74     |
| 4x5                  | 18.27                  | 375        | 466    | 427   | 602   | 745    | 911    | 2754   | 247    | 202   | 93     |
| 6x4                  | 22.4                   | 461        | 572    | 524   | 739   | 913    | 1117   | 3377   | 303    | 248   | 114    |
| 8x4                  | 30.16                  | 620        | 770    | 706   | 994   | 1230   | 1505   | 4548   | 408    | 334   | 153    |

Formula used to calculate fill capacity: Number of wires = duct area / (1.57 x (wire o.d.)<sup>2</sup>) or duct area x (0.637/(wire o.d.)<sup>2</sup>) \* 50% Fill Capacity

## Helawrap Cable Management System

Helawrap is the flexible and complete solution for bundling, protecting and securing cables and wires in industrial, datacom and electrical applications. Material options include both rugged Polypropylene (PP) and flame retardant Polyamide 6 V0 (PA6V0). Helawrap bases and clips are specifically designed to organize Helawrap sleeving, which can be affixed effectively anywhere. An installation tool is available for quick and effortless assembly over long cable lengths.

### Application

Helawrap is designed to bundle and protect cable assemblies in the electrical industry, in panel building, on machines, transportation, electronics, and in industrial automation applications—especially within environments where movement and vibration are experienced. The easy branch-out feature and flexible sleeving also protect against unintentional bending of critical data transmission cables, making it ideal for sensitive data networking applications. Helawrap Polyamide 6 V0 is available for applications that require flame retardant properties.

### Benefits

- Unique open design allows for easy branch-offs at any point along the harness.
- Overwrap formation provides abrasion protection and accommodates multiple bundle configurations.
- Flexible construction and design is well suited for applications that involve movement and vibration.
- Innovative split shape allows for future access without disassembly.
- Eliminates pinch points and minimizes bending fatigue to wires and cables.
- Easy to use installation tool makes assembly fast and easy.
- Specially-designed swivel clips and bases help hold Helawrap sleeving in place.



*The protection and affixing of cables in a wiring cabinet with Helawrap sleeving.*



*Cables can be branched off at any point for better, more flexible protection.*

| Material Data         |                                                                    |
|-----------------------|--------------------------------------------------------------------|
| Series                | HWPP                                                               |
| Material              | Polypropylene (PP)                                                 |
| Operating Temperature | -76° F to +230° F, Intermittent<br>-60° C to +110° C, Intermittent |
| Melt Point            | 284° F / +140° C                                                   |
| Flammability          | UL 94 HB                                                           |



| Material Data         |                                                                   |
|-----------------------|-------------------------------------------------------------------|
| Series                | HWPA6-V0 Flame Retardant                                          |
| Material              | Polyamide 6 V0 (PA6V0)                                            |
| Operating Temperature | -40° F to +194° F, Intermittent<br>-40° C to +90° C, Intermittent |
| Melt Point            | 248° F / +120° C                                                  |
| Flammability          | UL 94 V0                                                          |



## HWPP Series - Polypropylene (PP)

Flexible cable protection for applications that require movement or vibration.

### Product Selection

| Part No.  | Nominal Size |     | Type   | Minimum Bundle Diameter |     | Maximum Bundle Diameter |     | Color | Package Quantity per Carton |      | Wall Thickness |      | Weight (est) |      |
|-----------|--------------|-----|--------|-------------------------|-----|-------------------------|-----|-------|-----------------------------|------|----------------|------|--------------|------|
|           | In.          | mm. |        | in.                     | mm. | in.                     | mm. |       | ft.                         | m.   | in.            | mm.  | lbs.         | kg.  |
| 161-64112 | .25          | 8   | HWPP8  | 0.28                    | 7   | 0.36                    | 9   | Black | 100                         | 30.5 | 0.029          | 0.75 | 1.61         | 0.73 |
| 161-64213 | .5           | 16  | HWPP16 | 0.51                    | 13  | 0.63                    | 16  | Black | 100                         | 30.5 | 0.031          | 0.80 | 2.55         | 1.16 |
| 161-64310 | .75          | 20  | HWPP20 | 0.71                    | 18  | 0.83                    | 21  | Black | 100                         | 30.5 | 0.037          | 0.95 | 2.56         | 1.18 |
| 161-64414 | 1            | 25  | HWPP25 | 0.91                    | 23  | 1.06                    | 27  | Black | 100                         | 30.5 | 0.041          | 1.05 | 6.45         | 2.93 |
| 161-64507 | 1.25         | 30  | HWPP30 | 1.14                    | 29  | 1.26                    | 32  | Black | 100                         | 30.5 | 0.051          | 1.30 | 9.68         | 4.39 |

Each package will include one corresponding application tool (HAT). Use Part No. for ordering and Type for specification purposes.

## HWPA6-V0 Series - Polyamide 6 V0 (PA6V0)

Flexible cable protection in dynamic conditions where flame retardant properties are required.

### Product Selection

| Part No.  | Nominal Size |     | Type     | Minimum Bundle Diameter |     | Maximum Bundle Diameter |     | Color | Package Quantity per Carton |      | Wall Thickness |      | Weight (est) |      |
|-----------|--------------|-----|----------|-------------------------|-----|-------------------------|-----|-------|-----------------------------|------|----------------|------|--------------|------|
|           | In.          | mm. |          | in.                     | mm. | in.                     | mm. |       | ft.                         | m.   | in.            | mm.  | lbs.         | kg.  |
| 161-63103 | .25          | 8   | HWPAV08  | 0.28                    | 7   | 0.36                    | 9   | Black | 100                         | 30.5 | 0.033          | 0.85 | 2.66         | 1.21 |
| 161-63203 | .5           | 16  | HWPAV016 | 0.51                    | 13  | 0.63                    | 16  | Black | 100                         | 30.5 | 0.033          | 0.85 | 3.95         | 1.79 |
| 161-63303 | .75          | 20  | HWPAV020 | 0.71                    | 18  | 0.83                    | 21  | Black | 100                         | 30.5 | 0.037          | 0.95 | 5.73         | 2.6  |
| 161-63403 | 1            | 25  | HWPAV025 | 0.91                    | 23  | 1.06                    | 27  | Black | 100                         | 30.5 | 0.041          | 1.05 | 8.06         | 3.66 |
| 161-63503 | 1.25         | 30  | HWPAV030 | 1.14                    | 29  | 1.26                    | 32  | Black | 100                         | 30.5 | 0.041          | 1.05 | 9.83         | 4.46 |

Use Part No. for ordering and Type for specification purposes.



## Helawrap Accessories HWClips and HWBases

Helawrap accessories consist of retaining clips and mounting plates designed specifically for the Helawrap cable sleeving. Each size clip is designed to fit with its corresponding Helawrap sleeving diameter (i.e. use HWCLIP16 with HWPP16).

### Material Data

|                       |                                                                    |
|-----------------------|--------------------------------------------------------------------|
| Series                | HWCLIP                                                             |
| Material              | Polyamide 6.6 High Impact Modified Heat Stabilized (PA66HIRHS)     |
| Operating Temperature | -40° F to +221° F, Intermittent<br>-40° C to +105° C, Intermittent |
| Melt Point            | 284° F / +140° C                                                   |
| Flammability          | UL 94 HB                                                           |



## Clips

Helawrap accessory clips and mounting plates can be linked together to bundle, protect and secure any number of cables on industrial machines, as well as in the door area of an automation wiring cabinet where repeated movement occurs.

Each clip size sits snugly around the corresponding Helawrap sleeving and holds it firmly in place. With an innovative coupling system, each clip is to be joined to a mounting plate or another clip of any size. Many clips can be linked together and each can turn freely. As a result, any number of differing cable sizes can be bundled together.



Multiple clips can be joined. Clips swivel freely.



For secure hold, R1 loop can be used (for HWClip25 and HWClip30 only).

### Product Selection

| Part No.  | Nominal size |      | Type     | Color | Pack Count | Weight |      |
|-----------|--------------|------|----------|-------|------------|--------|------|
|           | in.          | mm.  |          |       |            | lbs.   | kg.  |
| 161-64002 | .5           | 8    | HWCLIP08 | Black | 50         | 0.19   | 0.09 |
| 161-64004 | .75          | 16   | HWCLIP16 | Black | 50         | 0.3    | 0.14 |
| 161-64006 | 1.25         | 20   | HWCLIP20 | Black | 50         | 0.35   | 0.16 |
| 161-64008 | 2            | 25   | HWCLIP25 | Black | 50         | 0.42   | 0.19 |
| 161-64010 | 2.5          | 30   | HWCLIP30 | Black | 50         | 0.5    | 0.23 |
| 201-20010 | ----         | ---- | R1       | Black | 500        | 0.67   | 0.3  |

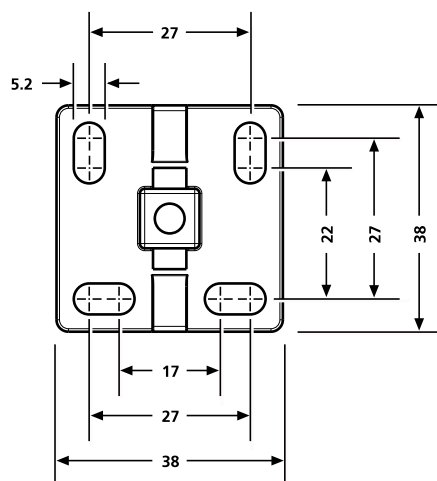
Use Part No. for ordering and Type for specification purposes.

## Bases

With the highly adaptable mounting plate, cables can be protected alongside most existing structures and installations. The plate can be affixed with screws, with a cable tie threaded through or around the base of the plate, or with an adhesive to provide a long-lasting hold.

### Benefits

- An innovative coupling system allows for an unlimited number of bundling combinations.
- Clips can be easily released and re-used.
- Clips swivel freely which reduces mechanical stress and eliminates pinch points.
- High Impact Polyamide 6.6 material provides firm fit even in rugged conditions.
- An R1 strap can be stretched over larger clips to provide a tight hold in rugged industrial applications.
- Consists of acrylate adhesive with base of polyurethane foam allowing it to adhere firmly and easily to nearly any surface.



### Product Selection

| Part No.  | Adhesive                                | Type    | Color | Pack Count | Weight |      |
|-----------|-----------------------------------------|---------|-------|------------|--------|------|
|           |                                         |         |       |            | lbs.   | kg.  |
| 161-64012 | Acrylate with base of Polyurethane foam | HWBASEA | Black | 50         | 0.35   | 0.16 |
| 161-64014 | ----                                    | HWBASE  | Black | 50         | 0.31   | 0.14 |

Use Part No. for ordering and Type for specification purposes.

## Application Tool (HAT)

The Helawrap applicator tool enables the end user to bundle cable rapidly and effortlessly. The applicator tool has been optimized to glide smoothly through the sleeving and allows easy insertion of cable into the Helawrap sleeving. The unique design also allows individual cables to be removed from the applicator tool and branched off through the sleeve opening. A tool is included with every Helawrap package.

### Product Selection

| Part No.  | Use with Nominal Size |     | Type  | Color | Pack Count | Weight |       |
|-----------|-----------------------|-----|-------|-------|------------|--------|-------|
|           | in.                   | mm. |       |       |            | lbs.   | kg.   |
| 161-60001 | .25                   | 8   | HAT8  | Blue  | 10         | 0.078  | 0.035 |
| 161-60002 | .5                    | 16  | HAT16 | Blue  | 10         | 0.27   | 0.122 |
| 161-60003 | .75                   | 20  | HAT20 | Blue  | 10         | 0.45   | 0.204 |
| 161-60004 | 1.0                   | 25  | HAT25 | Blue  | 10         | 0.71   | 0.321 |
| 161-60005 | 1.25                  | 30  | HAT30 | Blue  | 10         | 0.77   | 0.348 |

Use Part No. for ordering and Type for specification purposes.



Applicator tools HAT are available for every Helawrap sleeving size.



Insert one or more cables into the insertion slot of the applicator tool.



Place the applicator tool in one end of the Helawrap cable sleeving.



Simply slide the applicator tool through the Helawrap sleeving.

## Split Wrap Installation Tool

This installation tool is designed especially for post installation or retrofit applications. The Split Wrap tool has a twist barrel design that allows the tool to be inserted over a wire bundle that is currently in place. There is no need to disassemble the harness to add the Helawrap sleeving. Simply twist the white barrel to its open position, insert the bundle, twist the barrel to its closed position and pull the tool through the Helawrap sleeving. Wires can be branched off at any point by twisting the white barrel open at the desired location and removing the wires.

### Product Selection

| Part No.  | Use With Nominal Size |     | Type       | Color  | Pack Count | Weight |       |
|-----------|-----------------------|-----|------------|--------|------------|--------|-------|
|           | in.                   | mm. |            |        |            | lbs.   | kg.   |
| 170-03067 | .25                   | 8   | BSWTOOL14  | Orange | 1          | 0.03   | 0.014 |
| 170-03032 | .5                    | 16  | BSWTOOL12  | Orange | 1          | 0.03   | 0.014 |
| 170-03068 | .75                   | 20  | BSWTOOL34  | Orange | 1          | 0.04   | 0.018 |
| 170-03033 | 1.0                   | 25  | BSWTOOL1   | Orange | 1          | 0.05   | 0.023 |
| 170-03034 | 1.25                  | 30  | BSWTOOL114 | Orange | 1          | 0.06   | 0.028 |

Purchased separately. Use Part No. for ordering and Type for specification purposes.



## Spiralwrap

Spiralwrap protective sheathing allows flexible routing and lead-out of cables. The inner edges are beveled to prevent damage to cables. U.L. Recognized Spiralwrap is reusable and resistant to most chemicals. Natural and black are standard colors (see material descriptions). Colors may be available dependent upon volume requirements. Contact HellermannTyton for more information.

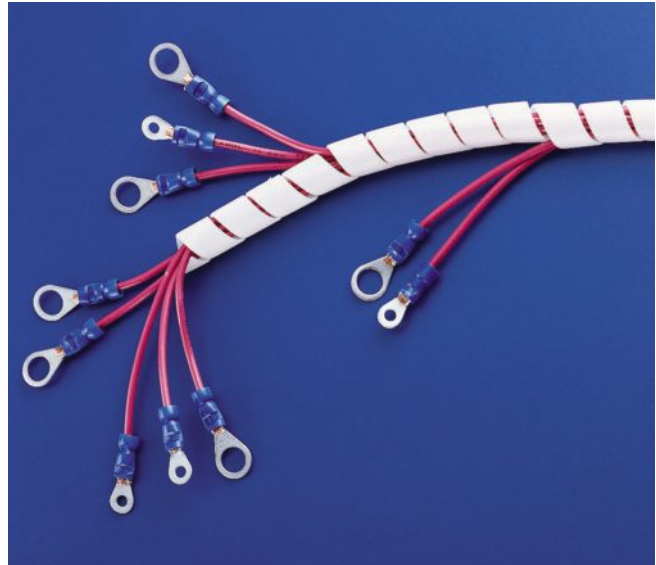
### Application

**Control Cabinet Doors:** Protects cable from friction when one end of the cable is fastened within the panel and the other is fastened to the panel door. Allows flexibility and prevents wire chafing when door is opened and closed.

**Robotics:** Protects hoses and wires during movement.

**Pneumatic Hoses:** Protects hoses from abrasion while on semi-trucks and other vehicles.

**Spark Plug Wires:** Lengthens the life of spark plug wires by reducing abrasion to wire insulation.



### Installation

Spiralwrap can be installed in two basic ways:

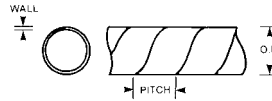
In a gapped installation, Spiralwrap is wrapped with space between the sheathing. This accommodates wire breakouts and also keeps the wire bundle flexible.

In a butted installation, Spiralwrap is wrapped so the sheathing completely insulates the wire bundle. This provides superior abrasion resistance and additional rigidity.

| Polyethylene (PE)      | Size |      |      |      |      |    |
|------------------------|------|------|------|------|------|----|
|                        | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" |
| Color                  |      |      |      |      |      |    |
| Brown (1)              | X    | X    |      | X    |      |    |
| Red (2)                | X    |      | X    | X    | X    | X  |
| Orange (3)             | X    |      | X    |      |      |    |
| Yellow (4)             | X    | X    | X    | X    | X    | X  |
| Green (5)              | X    | X    | X    |      |      |    |
| Blue (6)               | X    | X    | X    | X    | X    | X  |
| Purple (7)             | X    |      | X    |      |      |    |
| Gray (8)               |      |      |      |      |      |    |
| White (10)             | X    | X    | X    | X    | X    | X  |
| Pink (15)              |      |      | X    |      |      |    |
| DG Orange (DG3)        | X    | X    | X    | X    | X    | X  |
| DG Yellow (DG4)        |      |      | X    |      |      |    |
| DG Green (DG5)         |      |      |      |      |      |    |
| Glow in the Dark (DG9) |      |      | X    |      |      |    |
| DG Pink (DG15)         |      | X    | X    |      |      |    |

All size/color combinations denoted with an "X" in the table above are available upon request. Contact HellermannTyton for pricing, part numbers, minimum order quantities and lead times. Additional size/color combinations may be available upon request. Contact your local HellermannTyton representative for pricing and minimums.

## Spiralwrap continued



File # E147924

| Product Selection                              |          |        |               |                |               |               |               |         |           |  |
|------------------------------------------------|----------|--------|---------------|----------------|---------------|---------------|---------------|---------|-----------|--|
| Article No.                                    | Part No. | Type   | Ø D           | Wall Thickness | Pitch         | Min. Ø Bundle | Max. Ø Bundle | Color   | Pkg. Qty. |  |
|                                                |          |        | in. (mm)      | in. (mm)       | in. (mm)      | in. (mm)      | in. (mm)      |         |           |  |
| Natural Polyethylene (PE)                      |          |        |               |                |               |               |               |         |           |  |
| 161-05013                                      | 1NFP9C   | 1NFP   | .125" (3.18)  | .032" (.81)    | .187" (4.75)  | .0625" (1.60) | .50" (12.7)   | Natural | 100       |  |
| 161-05043                                      | 2NFP9C   | 2NFP   | .250" (6.35)  | .045" (1.14)   | .375" (9.53)  | .1875" (4.75) | 2" (50.8)     | Natural | 100       |  |
| 161-05027                                      | 2.5NFP9C | 2.5NFP | .375" (9.53)  | .052" (1.32)   | .438" (11.13) | .3125" (7.92) | 3" (76.2)     | Natural | 100       |  |
| 161-05055                                      | 3NFP9C   | 3NFP   | .5" (12.7)    | .062" (1.57)   | .563" (14.3)  | .375" (9.52)  | 4" (102)      | Natural | 100       |  |
| 161-05075                                      | 4NFP9C   | 4NFP   | .750" (19.05) | .065" (1.65)   | .750" (19.05) | .750" (19.10) | 5" (127)      | Natural | 100       |  |
| 161-05080                                      | 5NFP9C   | 5NFP   | 1" (25.4)     | .095" (2.41)   | 1" (25.4)     | 1" (25.4)     | 7" (178)      | Natural | 100       |  |
| Black Polyethylene (PE)                        |          |        |               |                |               |               |               |         |           |  |
| 161-05004                                      | 1NFP0C   | 1NFP   | .125" (3.18)  | .032" (.81)    | .187" (4.75)  | .0625" (1.60) | .50" (12.7)   | Black   | 100       |  |
| 161-05036                                      | 2NFP0C   | 2NFP   | .250" (6.35)  | .045" (1.14)   | .375" (9.53)  | .1875" (4.75) | 2" (50.8)     | Black   | 100       |  |
| 161-05024                                      | 2.5NFP0C | 2.5NFP | .375" (9.53)  | .052" (1.32)   | .438" (11.13) | .3125" (7.92) | 3" (76.2)     | Black   | 100       |  |
| 161-05052                                      | 3NFP0C   | 3NFP   | .5" (12.7)    | .062" (1.57)   | .5" (12.7)    | .375" (9.52)  | 4" (102)      | Black   | 100       |  |
| 161-05074                                      | 4NFP0C   | 4NFP   | .750" (19.05) | .065" (1.65)   | .750" (19.05) | .750" (19.10) | 5" (127)      | Black   | 100       |  |
| 161-05079                                      | 5NFP0C   | 5NFP   | 1" (25.4)     | .095" (2.41)   | 1" (25.4)     | 1" (25.4)     | 7" (178)      | Black   | 100       |  |
| Natural Polyethylene (PE), flame-retardant     |          |        |               |                |               |               |               |         |           |  |
| 161-05001                                      | 1FRP9C   | 1FRP   | .125" (3.18)  | .032" (.81)    | .187" (4.75)  | .0625" (1.60) | .50" (12.7)   | Natural | 100       |  |
| 161-05030                                      | 2FRP9C   | 2FRP   | .250" (6.35)  | .045" (1.14)   | .375" (9.53)  | .1875" (4.75) | 2" (50.8)     | Natural | 100       |  |
| 161-05017                                      | 2.5FRP9C | 2.5FRP | .375" (9.53)  | .052" (1.32)   | .438" (11.13) | .3125" (7.92) | 3" (76.2)     | Natural | 100       |  |
| 161-05049                                      | 3FRP9C   | 3FRP   | .5" (12.7)    | .062" (1.57)   | .563" (14.3)  | .375" (9.52)  | 4" (102)      | Natural | 100       |  |
| 161-05058                                      | 4FRP9C   | 4FRP   | .750" (19.05) | .065" (1.65)   | .750" (19.05) | .750" (19.10) | 5" (127)      | Natural | 100       |  |
| 161-05077                                      | 5FRP9C   | 5FRP   | 1" (25.4)     | .095" (2.41)   | 1" (25.4)     | 1" (25.4)     | 7" (178)      | Natural | 100       |  |
| Black Polyethylene (PE), flame-retardant       |          |        |               |                |               |               |               |         |           |  |
| 161-05000                                      | 1FRP0C   | 1FRP   | .125" (3.18)  | .032" (.81)    | .187" (4.75)  | .0625" (1.60) | .50" (12.7)   | Black   | 100       |  |
| 161-05029                                      | 2FRP0C   | 2FRP   | .250" (6.35)  | .045" (1.14)   | .375" (9.53)  | .1875" (4.75) | 2" (50.8)     | Black   | 100       |  |
| 161-05016                                      | 2.5FRP0C | 2.5FRP | .375" (9.53)  | .052" (1.32)   | .438" (11.13) | .3125" (7.92) | 3" (76.2)     | Black   | 100       |  |
| 161-05048                                      | 3FRP0C   | 3FRP   | .5" (12.7)    | .062" (1.57)   | .563" (14.3)  | .375" (9.52)  | 4" (102)      | Black   | 100       |  |
| 161-05057                                      | 4FRP0C   | 4FRP   | .750" (19.05) | .065" (1.65)   | .750" (19.05) | .750" (19.10) | 5" (127)      | Black   | 100       |  |
| 161-05084                                      | 5FRP0C   | 5FRP   | 1" (25.4)     | .095" (2.41)   | 1" (25.4)     | 1" (25.4)     | 7" (178)      | Black   | 100       |  |
| Natural Polyamide 6 (PA6)                      |          |        |               |                |               |               |               |         |           |  |
| 161-05003                                      | 1N9C     | 1N     | .125" (3.18)  | .015" (.38)    | .187" (4.75)  | .0625" (1.60) | .50" (12.7)   | Natural | 100       |  |
| 161-05034                                      | 2N9C     | 2N     | .250" (6.35)  | .0250" (.64)   | .375" (9.53)  | .1875" (4.75) | 2" (50.8)     | Natural | 100       |  |
| 161-05019                                      | 2.5N9C   | 2.5N   | .375" (9.53)  | .035" (.89)    | .438" (11.13) | .3125" (7.92) | 3" (76.2)     | Natural | 100       |  |
| 161-05051                                      | 3N9C     | 3N     | .5" (12.7)    | .035" (.89)    | .500" (12.7)  | .375" (9.52)  | 4" (102)      | Natural | 100       |  |
| 161-05072                                      | 4N9C     | 4N     | .750" (19.05) | .032" (.81)    | .750" (19.05) | .5" (12.7)    | 5" (127)      | Natural | 100       |  |
| 161-05085                                      | 5N9C     | 5N     | 1" (25.4)     | .032" (.81)    | 1" (25.4)     | 1" (25.4)     | 7" (178)      | Natural | 100       |  |
| Black Polyamide 6 (PA6)                        |          |        |               |                |               |               |               |         |           |  |
| 161-05002                                      | 1N0C     | 1N     | .125" (3.18)  | .015" (.38)    | .187" (4.75)  | .0625" (1.60) | .50" (12.7)   | Black   | 100       |  |
| 161-05032                                      | 2N0C     | 2N     | .250" (6.35)  | .025" (.64)    | .375" (9.53)  | .1875" (4.75) | 2" (50.8)     | Black   | 100       |  |
| 161-05018                                      | 2.5N0C   | 2.5N   | .375" (9.53)  | .035" (.89)    | .438" (11.13) | .3125" (7.92) | 3" (76.2)     | Black   | 100       |  |
| 161-05050                                      | 3N0C     | 3N     | .5" (12.7)    | .035" (.89)    | .50" (12.7)   | .375" (9.52)  | 4" (102)      | Black   | 100       |  |
| 161-05071                                      | 4N0C     | 4N     | .750" (19.05) | .032" (.81)    | .750" (19.05) | .50" (12.7)   | 5" (127)      | Black   | 100       |  |
| 161-05078                                      | 5N0C     | 5N     | 1" (25.4)     | .032" (.81)    | 1" (25.4)     | 1" (25.4)     | 7" (178)      | Black   | 100       |  |
| Natural Polytetrafluoroethylene -Teflon (PTFE) |          |        |               |                |               |               |               |         |           |  |
| 161-05015                                      | 1P9C     | 1P     | .125" (3.18)  | .020" (.76)    | .187" (4.75)  | .0625" (1.60) | .50" (12.7)   | Natural | 100       |  |
| 161-05047                                      | 2P9C     | 2P     | .250" (6.35)  | .030" (.76)    | .375" (9.53)  | .1875" (4.75) | 2" (50.8)     | Natural | 100       |  |
| 161-05028                                      | 2.5P9C   | 2.5P   | .375" (9.53)  | .030" (.76)    | .438" (11.13) | .3125" (7.92) | 2.5" (63.5)   | Natural | 100       |  |
| 161-05056                                      | 3P9C     | 3P     | .5" (12.7)    | .030" (.76)    | .5" (12.7)    | .375" (9.52)  | 3" (76.2)     | Natural | 100       |  |
| 161-05076                                      | 4P9C     | 4P     | .750" (19.05) | .032" (.81)    | .750" (19.05) | .5" (12.7)    | 4" (102)      | Natural | 100       |  |
| 161-05081                                      | 5P9C     | 5P     | 1" (25.4)     | .040 (1.02)    | 1" (25.4)     | .750" (19.10) | 5 " (127)     | Natural | 100       |  |

Teflon is a registered trademark of the DuPont Corporation. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Spiralwrap continued

## Material Data

|             | Material                                       | Operating Temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Abrasion Resistance | Specific Gravity D792-66 | Effect of Solvents      | Effect of Acids                      | Effect of Alkalies | Water Absorption | Flammability       | Mil. Spec & Approvals                                                                                            |
|-------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------|-------------------------|--------------------------------------|--------------------|------------------|--------------------|------------------------------------------------------------------------------------------------------------------|
| <b>RoHS</b> | <b>Polyethylene (PE)</b>                       | Polyethylene is ideal for general applications that are not affected by ordinary solvents. Available in colors. Ultraviolet resistant black polyethylene is for outdoor use. It has the same qualities as clear polyethylene, but also contains an ultraviolet absorber which permits it to be used in direct sunlight for long periods of time. Available by special order in gray.                                                                                               |                     |                          |                         |                                      |                    |                  |                    |                                                                                                                  |
|             | Natural Polyethylene (PE)                      | -76°F to +190°F<br>(-60°C to +88°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                | 22                  | 0.92                     | None below 122°F (50°C) | None                                 | None               | 0.014            | Flammable          | MIL I-631D<br>MIL P-21922B<br>Fed. Spec. LP390C<br>A-A-59602 Typel                                               |
|             | Black Polyethylene (PE)                        | -76°F to +190°F<br>(-60°C to +88°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                | 20                  | 0.93                     | None below 122°F (50°C) | None                                 | None               | 0.03             | Flammable          | MIL I-631D<br>MIL P-21922B<br>Fed. Spec. LP390C<br>A-A-59602 Typel                                               |
| <b>RoHS</b> | <b>Polyethylene (PE), flame-retardant</b>      | Suitable for applications requiring a self-extinguishing material. Lower cost than polyamide 6 or teflon materials. Note: Natural color is milky white.                                                                                                                                                                                                                                                                                                                            |                     |                          |                         |                                      |                    |                  |                    |                                                                                                                  |
|             | Natural Polyethylene (PE), flame-retardant     | -4°F to +176°F<br>(-20°C to + 80°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                | 27                  | 1.29                     | None below 122°F (50°C) | None                                 | None               | 0.02             | 94-V2              |                                                                                                                  |
|             | Black Polyethylene (PE), flame-retardant       | -4°F to +176°F<br>(-20°C to + 80°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                | 27                  | 1.29                     | None below 122°F (50°C) | None                                 | None               | 0.02             | 94-V2              |                                                                                                                  |
| <b>RoHS</b> | <b>Polyamide 6 (PA6)</b>                       | Natural polyamide 6 is recommended for use in enclosed environments where the possibility of fire exists. Self-extinguishing. Does not produce any toxic or irritation, even when exposed to open flame or excessive temperatures. Polyamide 6 is six times as strong as polyethylene. Black polyamide 6 features the same properties as natural polyamide 6 with the added benefit of an ultraviolet absorber so that it can be used in direct sunlight for long periods of time. |                     |                          |                         |                                      |                    |                  |                    |                                                                                                                  |
|             | Natural Polyamide 6 (PA6)                      | -40°F to +250°F<br>(-40°C to +121°C)                                                                                                                                                                                                                                                                                                                                                                                                                                               | 6-8                 | 1.14                     | None                    | Satisfactory except for strong acids | None               | 1.5              | Self Extinguishing | AS 1294<br>A-A 59602<br>Type II                                                                                  |
|             | Black Polyamide 6 (PA6)                        | -40°F to +250°F<br>(-40°C to +121°C)                                                                                                                                                                                                                                                                                                                                                                                                                                               | 6-8                 | 1.14                     | None                    | Satisfactory except for strong acids | None               | 1.5              | Self Extinguishing | AS 1294<br>A-A 59602<br>Type II                                                                                  |
| <b>RoHS</b> | <b>Polytetrafluoroethylene -Teflon (PTFE)</b>  | Polytetrafluoroethylene -Teflon (PTFE) offers the widest operating temperature range of any material. It's chemically inert and non-flammable. Natural color is milky white, available with special order in black and colors.                                                                                                                                                                                                                                                     |                     |                          |                         |                                      |                    |                  |                    |                                                                                                                  |
|             | Natural Polytetrafluoroethylene -Teflon (PTFE) | -450°F to +500°F<br>(-268°C to +260°C)                                                                                                                                                                                                                                                                                                                                                                                                                                             | 7                   | 2.1                      | None                    | None                                 | None               | 0.05             | Non-flammable      | AMS 3653C<br>AMS 3654<br>AMS 3655<br>ASTM D3295<br>MIL I-22129C<br>AS 1294<br>ASTMD1710<br>A-A 59602<br>Type III |

Teflon is a registered trademark of the DuPont Corporation.

For product information visit or [www.hellermann.tyton.com](http://www.hellermann.tyton.com) or call 800-537-1512

## Convoluted Tubing

Convoluted tubing provides an efficient method of routing and protecting wire harness assemblies, while reducing the chance of installation damage. It also can serve to protect valuable wiring circuits. HellermannTyton's convoluted tubing offers excellent protection against automotive fluids, vibration wear, water, snow, ice, and the effects of heat, cold, and sunlight on cables and wires. Available in standard, bulk, and dispenser box packaging.

### Applications

- Wire Harnesses
- Auto, Truck, and Bus Industry Applications
- Trailer & R.V. Manufacturing
- Snowmobiles and Watercraft
- Agricultural and Construction Machinery
- Electronic Equipment Wire Management



| Material Data         |                                             | RoHS |
|-----------------------|---------------------------------------------|------|
| Material              | <b>Polyethylene (PE)</b>                    |      |
| Operating Temperature | <b>-40 °F to +200 °F (-40 °C to +93 °C)</b> |      |
| Flammability          | <b>UL94 V2</b>                              |      |

| Material Data         |                                              | RoHS |
|-----------------------|----------------------------------------------|------|
| Material              | <b>Polyamide 6 (PA6)</b>                     |      |
| Operating Temperature | <b>-40 °F to +300 °F (-40 °C to +149 °C)</b> |      |
| Flammability          | <b>UL94 V2</b>                               |      |

The following materials are available as a special order. Minimums and custom terms apply. Contact HellermannTyton for more information.

| Material                            | Color                | Operating Temperature              |
|-------------------------------------|----------------------|------------------------------------|
| <b>Polypropylene</b>                | Black w/ Blue Stripe | -40 °F (-40 °C) to 275 °F (135 °C) |
| <b>Flame Retardant Polyethylene</b> | Gray                 | -40 °F (-40 °C) to 200 °F (93 °C)  |

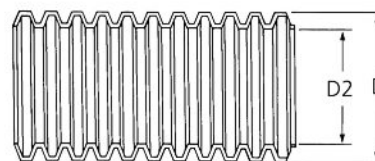
## Convoluted Tubing Dispenser Box

The convoluted tubing dispenser boxes offer an efficient packaging option. The sturdy and compact dispenser boxes allow for easy storage and moving around in the work area. The reel inside the box allows for tangle free dispensing, making it much easier to work with the product. Convoluted tubing in dispenser boxes is available in polyamide 6 material –1/4", 3/8", 1/2", 3/4" and 1" sizes.

| Product Selection |                  |        |                                                   |               |
|-------------------|------------------|--------|---------------------------------------------------|---------------|
| Article No.       | Part No.         | Type   | Description                                       | Pkg. Qty. ft. |
| 169-60022         | <b>169-60022</b> | CTN140 | 1/4" Convoluted Tubing, Slit - Polyamide 6, Black | 100 ft        |
| 169-60018         | <b>169-60018</b> | CTN380 | 3/8" Convoluted Tubing, Slit - Polyamide 6, Black | 100 ft        |
| 169-60019         | <b>169-60019</b> | CTN120 | 1/2" Convoluted Tubing, Slit - Polyamide 6, Black | 100 ft        |
| 169-60020         | <b>169-60020</b> | CTN340 | 3/4" Convoluted Tubing, Slit - Polyamide 6, Black | 100 ft        |
| 169-60021         | <b>169-60021</b> | CTN10  | 1" Convoluted Tubing, Slit - Polyamide 6, Black   | 50 ft         |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.



Convuluted Tubing *continued*

| Product Selection                                |                   |         | Nominal Ø<br>in. (mm) | Ø D<br>in. (mm) | Ø D2<br>in. (mm) | Wall Thickness<br>in. (mm) | Pkg. Qty.<br>ft. |
|--------------------------------------------------|-------------------|---------|-----------------------|-----------------|------------------|----------------------------|------------------|
| <b>Polyethylene (PE), Black</b>                  |                   |         |                       |                 |                  |                            |                  |
| 169-60509                                        | <b>CTP140STD</b>  | CTP140  | .250" (6.35)          | .40" (10.16)    | .27" (6.858)     | .004" (.1016)              | 3200 ft          |
| 169-60508                                        | <b>CTP140</b>     | CTP140  | .250" (6.35)          | .40" (10.16)    | .27" (6.858)     | .004" (.1016)              | 25000 ft         |
| 169-60515                                        | <b>CTP380STD</b>  | CTP380  | .380" (9.652)         | .526" (13.36)   | .380" (9.652)    | .005" (.127)               | 1900 ft          |
| 169-60514                                        | <b>CTP380</b>     | CTP380  | .380" (9.652)         | .526" (13.36)   | .380" (9.652)    | .005" (.127)               | 15000 ft         |
| 169-60507                                        | <b>CTP120STD</b>  | CTP120  | .50" (12.7)           | .70" (17.78)    | .516" (13.11)    | .005" (.127)               | 1100 ft          |
| 169-60506                                        | <b>CTP120</b>     | CTP120  | .50" (12.7)           | .70" (17.78)    | .516" (13.11)    | .005" (.127)               | 8500 ft          |
| 169-60517                                        | <b>CTP580STD</b>  | CTP580  | .625" (15.87)         | .837" (21.26)   | .639" (16.23)    | .005" (.127)               | 800 ft           |
| 169-60516                                        | <b>CTP580</b>     | CTP580  | .625" (15.87)         | .837" (21.26)   | .639" (16.23)    | .005" (.127)               | 5500 ft          |
| 169-60513                                        | <b>CTP340STD</b>  | CTP340  | .750" (19.05)         | .989" (25.12)   | .759" (19.28)    | .005" (.127)               | 550 ft           |
| 169-60512                                        | <b>CTP340</b>     | CTP340  | .750" (19.05)         | .989" (25.12)   | .759" (19.28)    | .005" (.127)               | 4200 ft          |
| 169-60501                                        | <b>CTP10STD</b>   | CTP10   | 1" (25.4)             | 1.32" (33.53)   | 1.06" (26.92)    | .005" (.127)               | 300 ft           |
| 169-60500                                        | <b>CTP10</b>      | CTP10   | 1" (25.4)             | 1.32" (33.53)   | 1.06" (26.92)    | .005" (.127)               | 2250 ft          |
| 169-60505                                        | <b>CTP1140STD</b> | CTP1140 | 1.250" (31.75)        | 1.50" (38.1)    | 1.257" (31.93)   | .006" (.1524)              | 250 ft           |
| 169-60504                                        | <b>CTP1140</b>    | CTP1140 | 1.250" (31.75)        | 1.50" (38.1)    | 1.257" (31.93)   | .006" (.1524)              | 1800 ft          |
| 169-60503                                        | <b>CTP1120STD</b> | CTP1120 | 1.5" (38.1)           | 1.947" (49.45)  | 1.65" (41.91)    | .006" (.1524)              | 150 ft           |
| 169-60502                                        | <b>CTP1120</b>    | CTP1120 | 1.5" (38.1)           | 1.947" (49.45)  | 1.65" (41.91)    | .006" (.1524)              | 1000 ft          |
| 169-60511                                        | <b>CTP20STD</b>   | CTP20   | 2" (50.8)             | 2.42" (61.47)   | 2.05" (52.07)    | .011" (.28)                | 100 ft           |
| <b>Polyamide 6 (PA6), Black with Gray Stripe</b> |                   |         |                       |                 |                  |                            |                  |
| 169-60009                                        | <b>CTN140STD</b>  | CTN140  | .250" (6.35)          | .40" (10.16)    | .27" (6.858)     | .004" (.1016)              | 3200 ft          |
| 169-60008                                        | <b>CTN140</b>     | CTN140  | .250" (6.35)          | .40" (10.16)    | .27" (6.858)     | .004" (.1016)              | 28000 ft         |
| 169-60015                                        | <b>CTN380STD</b>  | CTN380  | .380" (9.652)         | .526" (13.36)   | .380" (9.652)    | .005" (.127)               | 1900 ft          |
| 169-60014                                        | <b>CTN380</b>     | CTN380  | .380" (9.652)         | .526" (13.36)   | .380" (9.652)    | .005" (.127)               | 15000 ft         |
| 169-60007                                        | <b>CTN120STD</b>  | CTN120  | .50" (12.7)           | .70" (17.78)    | .516" (13.11)    | .005" (.127)               | 1200 ft          |
| 169-60006                                        | <b>CTN120</b>     | CTN120  | .50" (12.7)           | .70" (17.78)    | .516" (13.11)    | .005" (.127)               | 8500 ft          |
| 169-60017                                        | <b>CTN580STD</b>  | CTN580  | .625" (15.87)         | .837" (21.26)   | .639" (16.23)    | .005" (.127)               | 800 ft           |
| 169-60016                                        | <b>CTN580</b>     | CTN580  | .625" (15.87)         | .837" (21.26)   | .639" (16.23)    | .005" (.127)               | 5500 ft          |
| 169-60013                                        | <b>CTN340STD</b>  | CTN340  | .750" (19.05)         | .989" (25.12)   | .759" (19.28)    | .005" (.127)               | 550 ft           |
| 169-60012                                        | <b>CTN340</b>     | CTN340  | .750" (19.05)         | .989" (25.12)   | .759" (19.28)    | .005" (.127)               | 4200 ft          |
| 169-60001                                        | <b>CTN10STD</b>   | CTN10   | 1" (25.4)             | 1.32" (33.53)   | 1.06" (26.92)    | .005" (.127)               | 300 ft           |
| 169-60000                                        | <b>CTN10</b>      | CTN10   | 1" (25.4)             | 1.32" (33.53)   | 1.06" (26.92)    | .005" (.127)               | 2250 ft          |
| 169-60005                                        | <b>CTN1140STD</b> | CTN1140 | 1.250" (31.75)        | 1.50" (38.1)    | 1.257" (31.93)   | .006" (.1524)              | 250 ft           |
| 169-60004                                        | <b>CTN1140</b>    | CTN1140 | 1.250" (31.75)        | 1.50" (38.1)    | 1.257" (31.93)   | .006" (.1524)              | 1800 ft          |
| 169-60003                                        | <b>CTN1120STD</b> | CTN1120 | 1.5" (38.1)           | 1.947" (49.45)  | 1.65" (41.91)    | .006" (.1524)              | 150 ft           |
| 169-60002                                        | <b>CTN1120</b>    | CTN1120 | 1.5" (38.1)           | 1.947" (49.45)  | 1.65" (41.91)    | .006" (.1524)              | 1000 ft          |
| 169-60011                                        | <b>CTN20STD</b>   | CTN20   | 2" (50.8)             | 2.42" (61.47)   | 2.05" (52.07)    | .011" (.28)                | 100 ft           |

Standard tubing is slit. Unslit is available upon request. Please contact HellermannTyton for pre-cut length requirements. Colors are available dependent upon volume requirements. Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Convuluted Tubing Mounts

Designed especially for mounting convuluted tubing, these mounts are available in stud mount and fir tree mount versions and accommodate a range of tube diameters.

### Material Data

|                       |                                                                                      |
|-----------------------|--------------------------------------------------------------------------------------|
| Material              | <b>Polyamide 6.6 high impact modified, Heat Stabilized, UV Resistant (PA66HIRHS)</b> |
| Operating Temperature | <b>-40 °F to +230 °F (-40 °C to +110 °C) continuous</b>                              |
| Flammability          | <b>UL94 HB</b>                                                                       |



## Stud Mount

| Product Selection |           |            |        |       |                       |                          |      |       |           |                                                                                                           |
|-------------------|-----------|------------|--------|-------|-----------------------|--------------------------|------|-------|-----------|-----------------------------------------------------------------------------------------------------------|
| Article No.       | Part No.  | Type       | Tube Ø |       | Recommended Weld Stud | Minimum Weld Stud Height |      | Color | Pkg. Qty. | Drawing                                                                                                   |
|                   |           |            | in.    | (mm)  |                       | in.                      | (mm) |       |           |                                                                                                           |
| 151-00700         | 151-00700 | CTC4.5SBS6 | .175"  | (4.5) | M6                    | .39"                     | (10) | Black | 500       |                        |
| 151-00701         | 151-00701 | CTC7.5SBS6 | .29"   | (7.5) | M6                    | .39"                     | (10) | Black | 500       |                        |
| 151-00702         | 151-00702 | CTC10SBS6  | .39"   | (10)  | M6                    | .39"                     | (10) | Black | 500       |                        |
| 151-00703         | 151-00703 | CTC13SBS6  | .50"   | (13)  | M6                    | .39"                     | (10) | Black | 500       |  slots for cable tie |
| 151-00010         | 151-00010 | CTC17SBS6  | .66"   | (17)  | M6                    | .39"                     | (10) | Black | 500       |                      |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Fir Tree Mount

| Product Selection |           |             |            |                         |                       |       |           |                                                                                       |  |  |
|-------------------|-----------|-------------|------------|-------------------------|-----------------------|-------|-----------|---------------------------------------------------------------------------------------|--|--|
| Article No.       | Part No.  | Type        | Tube Ø     | Panel Thickness         | Mounting Hole Ø       | Color | Pkg. Qty. | Drawing                                                                               |  |  |
|                   |           |             | in. (mm)   | in. (mm)                | in. (mm)              |       |           |                                                                                       |  |  |
| 151-14314         | 151-14314 | CTC4.5FT6LG | .17" (4.5) | .029" - .234" (.75 - 6) | .25" - .27" (6.5 - 7) | Black | 500       |  |  |  |
| 151-14313         | 151-14313 | CTC7.5FT6LG | .29" (7.5) | .029" - .234" (.75 - 6) | .25" - .27" (6.5 - 7) | Black | 500       |  |  |  |
| 151-00018         | 151-00018 | CTC10FT6LG  | .39" (10)  | .029" - .234" (.75 - 6) | .25" - .27" (6.5 - 7) | Black | 500       |  |  |  |
| 151-00019         | 151-00019 | CTC13FT6LG  | .507" (13) | .029" - .234" (.75 - 6) | .25" - .27" (6.5 - 7) | Black | 500       |  |  |  |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Braided Sleeving

**HellermannTyton's line of expandable braided sleeving provides protection for hoses, cable assemblies, and wire bundles against abrasion and damage caused by excessive wear and motion.** Lightweight and flexible, the construction of braided sleeving allows it to expand beyond its nominal size to fit several bundle sizes and shapes. The relatively easy expansion and quick slip-over accommodates a variety of market applications. Securing the ends of braided sleeving is fast and easy with cable ties, electrical tape or heat shrink materials.

The braided sleeving lineup from HellermannTyton covers a range of materials, sizes and styles-including standard Polyester (PET), PA66 Nylon, Flame Retardant, Split Wrap and High Temperature products. The sleeving is also resistant to harsh environments such as chemicals, salts, solvents, de-icing fluids and petroleum products as well as being resilient against UV light. The unique physical weave of braided sleeving makes it extremely flexible yet it will not trap moisture or humidity. Most of the items can be cut with a hot knife, which shears the edges and reduces the amount of fraying that occurs during the lifetime of the product. For applications that do not allow access to a hot knife, a fray resistant version is available that can be cut with any ordinary scissors with minimal unravel.

### Market Applications

Automotive, Transportation, Industrial Equipment, Electronics, Automation/Robotics, Control Panels, Marine, Machine Tools, General Manufacturing

### Product Applications

Hose Assemblies, Cable Bundles, Wire Harnesses, Electrical Cables.

#### SELECTION GUIDE

| Materials Comparison | General Purpose                             |                                                                       |                                            | Flame Retardant                             |                                                              |                                                         |                                             |                                           |
|----------------------|---------------------------------------------|-----------------------------------------------------------------------|--------------------------------------------|---------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------|-------------------------------------------|
|                      | General Purpose Expandable Braided Sleeving | General Purpose Expandable Braided Sleeving Helagaine Dispenser Packs | Fray Resistant Expandable Braided Sleeving | Flame Retardant Expandable Braided Sleeving | Flame Retardant + Fray Resistant Expandable Braided Sleeving | Hook & Loop Flame Retardant Expandable Braided Sleeving | Split Wrap Flame Retardant Braided Sleeving | Electromagnetic Flame Retardant Helagaine |
| Color                | Black or Orange                             | Black                                                                 | Black                                      | Black or Gray                               | Black                                                        | Black                                                   | Black                                       | Tin Colored & Black                       |
| Temperature Range    | -94°F to 257°F                              | -58°F to 230°F                                                        | -94°F to 257°F                             | -94°F to 257°F                              | -94°F to 257°F                                               | -94°F to 257°F                                          | -94°F to 257°F                              | -40°F to 347°F                            |
|                      | -70°C to 125°C                              | -50°C to 150°C                                                        | -70°C to 125°C                             | -70°C to 125°C                              | -70°C to 125°C                                               | -70°C to 125°C                                          | -70°C to 125°C                              | -40°C to 175°C                            |
| Melt Point           | 482°F / 250°C                               | 482°F / 250°C                                                         | 482°F / 250°C                              | 482°F / 250°C                               | 482°F / 250°C                                                | 482°F / 250°C                                           | 446°F / 230°C                               | 392°F / 200°C                             |
| Flammability Rating  | UL 94-V0                                    |                                                                       | UL 94-V0                                   | UL VW-1                                     | UL VW-1                                                      | UL VW-1                                                 | UL VW-1                                     | UL94-V0                                   |
| ROHS                 | •                                           | •                                                                     | •                                          | •                                           | •                                                            | •                                                       | •                                           | •                                         |
| UL / CSA             | •                                           |                                                                       | •                                          | •                                           | •                                                            | •                                                       | •                                           |                                           |
| Other Certifications | FMVSS 302, FAR-25                           |                                                                       |                                            | FMVSS 302, Mil-202 FAR-25                   | Mil-202                                                      | Mil-202                                                 | FAR-25                                      | FMVSS 302                                 |
| Recommended Cutting  | Hot Knife                                   | Hot Knife                                                             | Scissors                                   | Hot Knife                                   | Scissors                                                     | Hot Knife                                               | Hot Knife                                   | Shears                                    |
| Abrasion Protection  | M                                           | M                                                                     | M                                          | M                                           | M                                                            | M                                                       | H                                           | H                                         |
| Outgassing           | M                                           | M                                                                     | M                                          | M                                           | M                                                            | M                                                       | M                                           | M                                         |
| Cut Resistance       | M                                           | M                                                                     | H                                          | M                                           | H                                                            | M                                                       | H                                           | H                                         |
| Chemical Resistance  | M                                           | M                                                                     | M                                          | M                                           | M                                                            | M                                                       | H                                           | H                                         |
| UV Resistance        | •                                           | •                                                                     | •                                          | •                                           | •                                                            | •                                                       | •                                           | •                                         |
| Halogen Free         | •                                           | •                                                                     | •                                          | •                                           | •                                                            | •                                                       | •                                           |                                           |
| Expandable           | •                                           | •                                                                     | •                                          | •                                           | •                                                            | •                                                       |                                             | •                                         |

VH = Very High H = High M=Medium L=Low

## Braided Sleeving *continued*

### Key Benefits

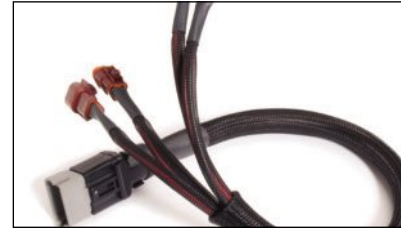
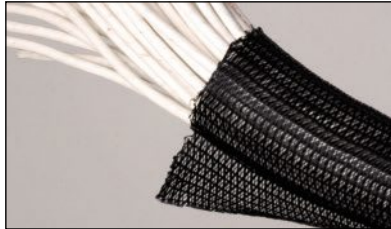
**Flexible Installation** Goes over cable bundles quickly and easily. Adjusts to fluctuations in bundle size or shape. Enables routing around obstructions, corners and edges.

**Less Bulk** Provides abrasion and corrosion protection without adding volume in tight spaces.

**Lightweight** Adds protection without increasing weight unlike convoluted tubing and spiral wrap materials.

**Aesthetics** Delivers a clean, crisp appearance.

**Moisture Dissipation** Results in no trapping of water, moisture or chemicals.



| Specialty                 |                                           |                                                     |                             |                                         |                                                 | Extreme Temperature                                                             |                                                     |                                                         |
|---------------------------|-------------------------------------------|-----------------------------------------------------|-----------------------------|-----------------------------------------|-------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------|
| Electromagnetic Helagaine | Polyamide 6.6 Expandable Braided Sleeving | Polyamide 6.6 Helagaine Expandable Braided Sleeving | Split Wrap Braided Sleeving | Hook & Loop Expandable Braided Sleeving | Plenum Rated Halar® Expandable Braided Sleeving | Extreme High Temperature Resin Saturated Fiberglass Expandable Braided Sleeving | High Temperature Nomex® Expandable Braided Sleeving | High Temperature Aluminum Laminated Fiberglass Sleeving |
| Tin Colored & Black       | Black                                     | Gray                                                | Black or Orange             | Black                                   | Black or White                                  | Black                                                                           | Green                                               | Silver                                                  |
| -40°F to 347°F            | -49°F to 302°F                            | -76°F to 302°F                                      | -94°F to 257°F              | -94°F to 257°F                          | -103°F to 302°F                                 | -94°F to 1,202°F                                                                | -320°F to 662°F                                     | -76°F to 491°F                                          |
| -40°C to 175°C            | -45°C to 150°C                            | -60°C to 150°C                                      | -70°C to 125°C              | -70°C to 125°C                          | -75°C to 150°C                                  | -70°C to 650°C                                                                  | -196°C to 350°C                                     | -60°C to 255°C                                          |
| 392°F / 200°C             | 491°F / 255°C                             | 491°F / 255°C                                       | 482°F / 250°C               | 482°F / 250°C                           | 482°F / 250°C                                   | 2,048°F / 1,120°C                                                               | NA                                                  | 2,048°F / 1,120°C                                       |
| UL94-V2                   | Non Flammable                             | UL 94-V2                                            | UL 94-V0                    | UL 94-V0                                | UL VW-1                                         | UL VW-1                                                                         | Non Flammable                                       | Non Flammable                                           |
| •                         | •                                         | •                                                   | •                           | •                                       | •                                               | •                                                                               | •                                                   | •                                                       |
|                           |                                           | •                                                   | •                           | •                                       | •                                               | •                                                                               |                                                     |                                                         |
| FMVSS 302                 |                                           | FMVSS 302                                           |                             | FAR-25                                  | UL 2024, NFPA 262, FAR-25, FMVSS 302            |                                                                                 |                                                     |                                                         |
| Shears                    | Hot Knife                                 | Hot Knife                                           | Hot Knife                   | Hot Knife                               | Hot Knife                                       | Scissors                                                                        | Scissors                                            | Scissors                                                |
| H                         | H                                         | H                                                   | M                           | M                                       | M                                               | VH                                                                              | L                                                   | NA                                                      |
| M                         | H                                         | H                                                   | M                           | M                                       | L                                               | L                                                                               | NA                                                  | NA                                                      |
| H                         | H                                         | H                                                   | M                           | M                                       | M                                               | VH                                                                              | L                                                   | H                                                       |
| H                         | H                                         | H                                                   | M                           | M                                       | M                                               | H                                                                               | M                                                   | H                                                       |
| •                         | •                                         | •                                                   | •                           | •                                       | •                                               | •                                                                               | •                                                   | •                                                       |
| •                         | •                                         | •                                                   | •                           |                                         |                                                 | •                                                                               | •                                                   | •                                                       |
| •                         | •                                         | •                                                   |                             | •                                       | •                                               | •                                                                               | •                                                   |                                                         |

Nomex® is a registered trademark of the DuPont Corporation. Halar® is a registered trademark of the Solvay Solexis Corporation.

## General Purpose Expandable Braided Sleeving

Designed to adjust and expand to irregular shapes, this general purpose sleeving is lightweight and offers a high tensile strength while still maintaining flexibility. This sleeving is an excellent choice for protecting wire and cable bundles from abrasion, chafing, and heat degradation.

### Application

Commonly used in electrical and industrial wire harnessing applications where economy and durability are required for the protection of wires, cables, tubing, bundles and pneumatic hoses.

### Benefits

- Adjusts to twisting and flexing without creating wrinkles, bends or bulges.
- Provides tough, durable protection through a wide range of temperatures.
- Expands up to 150% of flat diameter for easy installation.
- Offers excellent abrasion and cut-through resistance as well as inertness to most chemicals and fungus.



#### Material Data

|                       |                                  |
|-----------------------|----------------------------------|
| Material              | PET (Polyester)                  |
| Flammability          | UL 94-V0                         |
| Operating Temperature | -94°F to 257°F<br>-70°C to 125°C |
| Melt Point            | 482°F / 250°C                    |
| Abrasion Protection   | Medium                           |
| Recommended Cutting   | Hot Knife                        |



#### Product Selection

| Part No.  | Nominal Size |      | Type    | Expansion Range |               | Expansion Range |               | Color | Reel Length* |      | Weight |      |
|-----------|--------------|------|---------|-----------------|---------------|-----------------|---------------|-------|--------------|------|--------|------|
|           | in.          | mm.  |         | (Min.)<br>in.   | (Max.)<br>in. | (Min.)<br>mm.   | (Max.)<br>mm. |       | ft.          | m.   | lbs.   | kg.  |
| 170-03177 | 1/8          | 3.2  | BSP180  | .094            | .25           | 2.4             | 6.4           | Black | 225          | 68.6 | .41    | .19  |
| 170-03000 | 1/4          | 6.4  | BSP140  | .125            | .437          | 3.2             | 11.1          | Black | 200          | 61.0 | .52    | .24  |
| 170-03001 | 1/2          | 12.7 | BSP120  | .25             | .75           | 6.4             | 19.1          | Black | 100          | 30.5 | .77    | .35  |
| 170-03002 | 3/4          | 19.1 | BSP340  | .50             | 1.25          | 12.7            | 31.8          | Black | 75           | 22.9 | .90    | .41  |
| 170-03003 | 1            | 25.4 | BSP100  | .625            | 1.625         | 15.9            | 41.3          | Black | 65           | 19.8 | .87    | .40  |
| 170-03004 | 1-1/4        | 31.8 | BSP1140 | .75             | 1.75          | 19.1            | 44.5          | Black | 50           | 15.2 | .80    | .363 |
| 170-03005 | 1-1/2        | 38.1 | BSP1120 | 1.00            | 2.125         | 25.4            | 54.0          | Black | 40           | 12.2 | .79    | .358 |

#### Bulk Sized Reels

|           |       |      |          |      |       |      |      |       |      |       |      |      |
|-----------|-------|------|----------|------|-------|------|------|-------|------|-------|------|------|
| 170-03174 | 1/8   | 3.2  | BSP180B  | .094 | .25   | 2.4  | 6.4  | Black | 1000 | 304.8 | 1.8  | .82  |
| 170-03041 | 1/4   | 6.4  | BSP140B  | .125 | .437  | 3.2  | 11.1 | Black | 1000 | 304.8 | 2.60 | 1.18 |
| 170-03042 | 1/2   | 12.7 | BSP120B  | .25  | .75   | 6.4  | 19.1 | Black | 500  | 152.4 | 3.85 | 1.75 |
| 170-03043 | 3/4   | 19.1 | BSP340B  | .50  | 1.25  | 12.7 | 31.8 | Black | 250  | 76.2  | 3.00 | 1.36 |
| 170-03044 | 1     | 25.4 | BSP100B  | .625 | 1.625 | 15.9 | 41.3 | Black | 250  | 76.2  | 3.35 | 1.52 |
| 170-03045 | 1-1/4 | 31.8 | BSP1140B | .75  | 1.75  | 19.1 | 44.5 | Black | 250  | 76.2  | 4.00 | 1.81 |

Use Part No. for ordering and Type for specification. \*Pre-cut lengths available upon request.



## General Purpose Expandable Braided Sleeving Helagaine Dispenser Packs

This convenient package holds mini spools of expandable braided sleeving. Designed to save space and provide easy access when dispensing, this unit allows for the efficient handling and management of sleeving.

### Application

The perfect solution for use in field-service applications where a large spool of braided sleeving is not feasible or when only a small amount of sleeving is required for a quick-fix project.

### Benefits

- Expands (3:1 ratio) to allow for a wide range of bundle sizes.
- Dispenser box protects sleeving from dirt and keeps it from unraveling.



### Material Data

|                       |                                  |
|-----------------------|----------------------------------|
| Material              | PET (Polyester)                  |
| Operating Temperature | -58°F to 230°F<br>-50°C to 150°C |
| Melt Point            | 482°F / 250°C                    |
| Abrasion Protection   | Medium                           |
| Recommended Cutting   | Hot Knife                        |



### Product Selection

| Part No.  | Nominal Size |      | Type  | Expansion Range |               | Expansion Range |               | Color | Reel Length |      | Weight |     |
|-----------|--------------|------|-------|-----------------|---------------|-----------------|---------------|-------|-------------|------|--------|-----|
|           | in.          | mm.  |       | (Min.)<br>in.   | (Max.)<br>in. | (Min.)<br>mm.   | (Max.)<br>mm. |       | ft.         | m.   | lbs.   | kg. |
| 170-80150 | 1/4          | 6.4  | HLB15 | .20             | .83           | 5.1             | 21.1          | Black | 32.8        | 10.0 | .45    | .20 |
| 170-80250 | 1/2          | 12.7 | HLB25 | .40             | 1.18          | 10.2            | 30.0          | Black | 32.8        | 10.0 | .56    | .25 |
| 170-80350 | 1            | 25.4 | HLB35 | .71             | 2.13          | 18.0            | 54.1          | Black | 32.8        | 10.0 | .67    | .30 |

Use Part No. for ordering and Type for specification.

## General Purpose Expandable Braided Sleeving - Orange

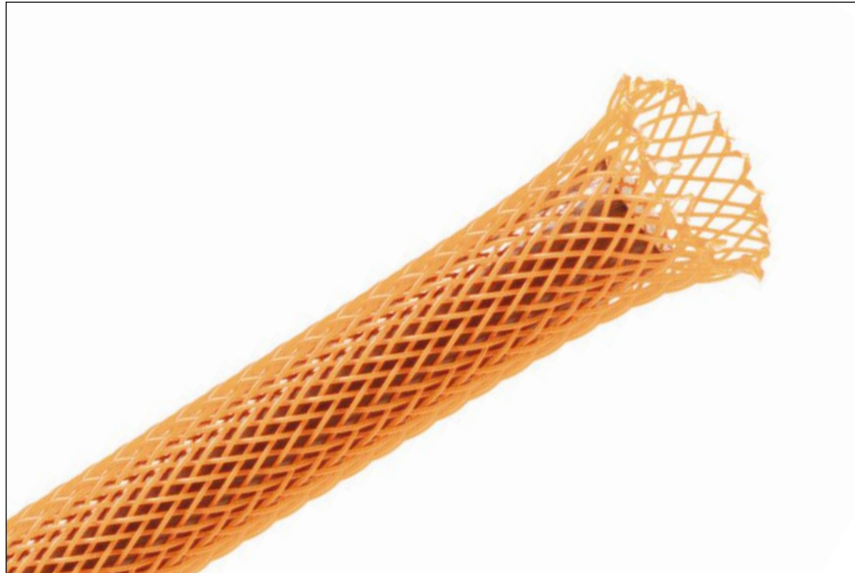
Orange PET braided sleeving is an extremely flexible, general purpose option for bundling and protecting wires and cables in abrasive type applications. Its color makes it ideal for systematic color coding of complex wiring installations.

### Application

Commonly used to shield cable harnesses in battery-powered vehicles, such as hybrid cars, golf carts, and light trucks.

### Benefits

- Provides easy visual and safety identification of critical wiring components.
- Offers high tensile strength while maintaining extreme flexibility.
- Expands up to 150% of flat diameter for easy installation.
- Does not trap heat and humidity.
- Installs quickly and accommodates expansions and varying cable assembly shapes, reducing installation costs.



### Material Data

|                       |                                  |
|-----------------------|----------------------------------|
| Material              | PET (Polyester)                  |
| Flammability          | UL 94-V0                         |
| Operating Temperature | -94°F to 257°F<br>-70°C to 125°C |
| Melt Point            | 482°F / 250°C                    |
| Abrasion Protection   | Medium                           |
| Recommended Cutting   | Hot Knife                        |



### Product Selection

| Part No.  | Nominal Size |      | Type     | Expansion Range |               | Expansion Range |               | Color  | Reel Length* |       | Weight |      |
|-----------|--------------|------|----------|-----------------|---------------|-----------------|---------------|--------|--------------|-------|--------|------|
|           | in.          | mm.  |          | (Min.)<br>in.   | (Max.)<br>in. | (Min.)<br>mm.   | (Max.)<br>mm. |        | ft.          | m.    | lbs.   | kg.  |
| 170-03076 | 1/4          | 6.4  | BSP143B  | .125            | .437          | 3.2             | 11.1          | Orange | 1000         | 304.8 | 2.6    | 1.18 |
| 170-03077 | 1/2          | 12.7 | BSP123B  | .25             | .75           | 6.4             | 19.1          | Orange | 500          | 152.4 | 3.85   | 1.75 |
| 170-03078 | 3/4          | 19.1 | BSP343B  | .50             | 1.25          | 12.7            | 31.8          | Orange | 250          | 76.2  | 3.0    | 1.36 |
| 170-03079 | 1            | 25.4 | BSP103B  | .625            | 1.625         | 15.9            | 41.3          | Orange | 250          | 76.2  | 3.35   | 1.52 |
| 170-03080 | 1-1/4        | 31.8 | BSP1143B | .75             | 1.75          | 19.1            | 44.5          | Orange | 250          | 76.2  | 4.0    | 1.81 |
| 170-03081 | 1-1/2        | 38.1 | BSP1123B | 1.00            | 2.125         | 25.4            | 54.0          | Orange | 200          | 61.0  | 6.6    | 3.0  |

Use Part No. for ordering and Type for specification. \*Pre-cut lengths available upon request.



## Fray Resistant Expandable Braided Sleeving

A versatile and economical general purpose sleeving that resists fraying when cut with ordinary scissors.

### Application

For use in automotive, industrial and computer applications where the wires, cables and hoses being covered endure frequent handling.

### Benefits

- Enables field installations without a hot knife thus reducing time and assembly costs.
- Expands up to 150% of flat diameter for easy installation.
- Offers excellent abrasion and cut-through resistance as well as inertness to most chemicals and fungus.



### Material Data

|                       |                                  |
|-----------------------|----------------------------------|
| Material              | PET (Polyester)                  |
| Flammability          | UL 94-V0                         |
| Operating Temperature | -94°F to 257°F<br>-70°C to 125°C |
| Melt Point            | 482°F / 250°C                    |
| Abrasion Protection   | Medium                           |
| Recommended Cutting   | Scissors                         |



### Product Selection

| Part No.  | Nominal Size |      | Type      | Expansion Range |               | Expansion Range |               | Color | Reel Length |      | Weight |     |
|-----------|--------------|------|-----------|-----------------|---------------|-----------------|---------------|-------|-------------|------|--------|-----|
|           | in.          | mm.  |           | (Min.)<br>in.   | (Max.)<br>in. | (Min.)<br>mm.   | (Max.)<br>mm. |       | ft.         | m.   | lbs.   | kg. |
| 170-03123 | 1/8          | 3.2  | BSPSC180  | .125            | .25           | 3.2             | 6.4           | Black | 100         | 30.5 | .40    | .18 |
| 170-03035 | 1/4          | 6.4  | BSPSC140  | .156            | .437          | 4.0             | 11.1          | Black | 100         | 30.5 | .46    | .21 |
| 170-03012 | 1/2          | 12.7 | BSPSC120  | .25             | .75           | 6.4             | 19.1          | Black | 100         | 30.5 | .82    | .37 |
| 170-03013 | 3/4          | 19.1 | BSPSC340  | .625            | 1.0           | 15.9            | 25.4          | Black | 75          | 22.9 | .83    | .38 |
| 170-03014 | 1            | 25.4 | BSPSC100  | .75             | 1.19          | 19.1            | 30.2          | Black | 50          | 15.2 | .62    | .28 |
| 170-03015 | 1-1/4        | 31.8 | BSPSC1140 | 1.0             | 1.50          | 25.4            | 38.1          | Black | 50          | 15.2 | .78    | .35 |
| 170-03016 | 1-1/2        | 38.1 | BSPSC1120 | 1.25            | 2.0           | 31.8            | 50.8          | Black | 50          | 15.2 | .93    | .42 |

Use Part No. for ordering and Type for specification.



## Flame Retardant Expandable Braided Sleeving

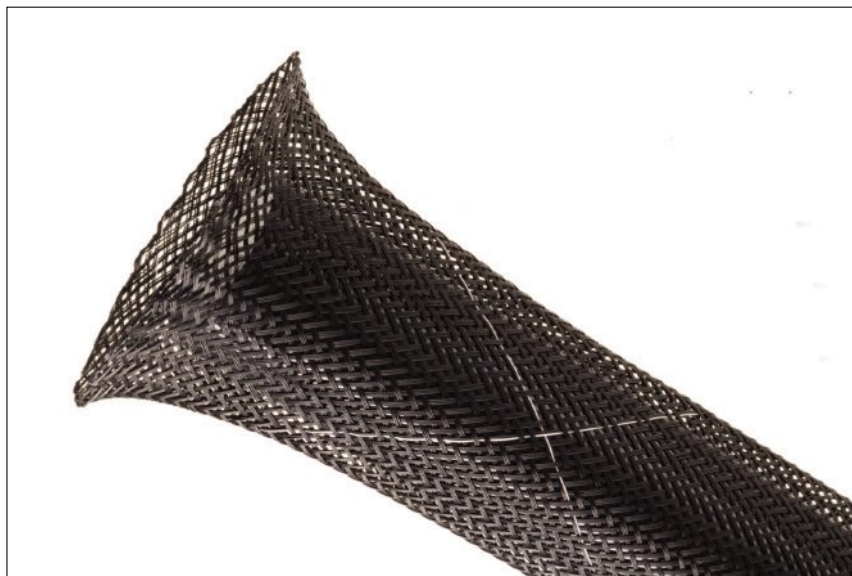
A flame retardant woven (threaded) polyester sleeving that is resistant to cuts and abrasion, and contains a combustion inhibitor allowing it to achieve a UL and CSA flame-resistance rating of VW-1.

### Application

This fire extinguishing braided sleeving is ideal for electronic and high tech applications because of its light weight and durable qualities.

### Benefits

- Resists gasoline, engine fluids, chemicals and cleaning solvents.
- Expands up to 150% of flat diameter for easy installation.
- Enables quick and easy installation over large connectors.



### Material Data

|                       |                                  |
|-----------------------|----------------------------------|
| Material              | Treated PET (Polyester)          |
| Flammability          | UL VW-1                          |
| Operating Temperature | -94°F to 257°F<br>-70°C to 125°C |
| Melt Point            | 482°F / 250°C                    |
| Abrasion Protection   | Medium                           |
| Recommended Cutting   | Hot Knife                        |



### Product Selection

| Part No.                | Nominal Size |      | Type       | Expansion Range |               | Expansion Range |               | Color | Reel Length |       | Weight |      |
|-------------------------|--------------|------|------------|-----------------|---------------|-----------------|---------------|-------|-------------|-------|--------|------|
|                         | in.          | mm.  |            | (Min.)<br>in.   | (Max.)<br>in. | (Min.)<br>mm.   | (Max.)<br>mm. |       | ft.         | m.    | lbs.   | kg.  |
| 170-03006               | 1/4          | 6.4  | BSPFR140   | .125            | .437          | 3.2             | 11.1          | Black | 200         | 61.0  | .48    | .22  |
| 170-03007               | 1/2          | 12.7 | BSPFR120   | .25             | .75           | 6.4             | 19.1          | Black | 100         | 30.5  | .72    | .33  |
| 170-03008               | 3/4          | 19.1 | BSPFR340   | .50             | 1.25          | 12.7            | 31.8          | Black | 75          | 22.9  | .65    | .30  |
| 170-03010               | 1-1/4        | 31.8 | BSPFR1140  | .75             | 1.75          | 19.1            | 44.5          | Black | 50          | 15.2  | .80    | .363 |
| 170-03011               | 1-1/2        | 38.1 | BSPFR1120  | 1.0             | 2.125         | 25.4            | 53.9          | Black | 40          | 12.2  | .79    | .358 |
| 170-03071               | 1/8          | 3.2  | BSPFR188   | .094            | .25           | 2.4             | 6.4           | Gray  | 225         | 68.6  | .40    | .18  |
| 170-03072               | 1/4          | 6.4  | BSPFR148   | .125            | .437          | 3.2             | 11.1          | Gray  | 200         | 61.0  | .48    | .22  |
| 170-03073               | 1/2          | 12.7 | BSPFR128   | .25             | .75           | 6.4             | 19.1          | Gray  | 100         | 30.5  | .72    | .33  |
| 170-03074               | 3/4          | 19.1 | BSPFR348   | .50             | 1.25          | 12.7            | 31.8          | Gray  | 75          | 22.9  | .65    | .30  |
| 170-03066               | 1-1/2        | 38.1 | BSPFR1128  | 1.0             | 2.125         | 25.4            | 53.9          | Gray  | 40          | 12.2  | .79    | .358 |
| <b>Bulk Sized Reels</b> |              |      |            |                 |               |                 |               |       |             |       |        |      |
| 170-03089               | 1/8          | 3.2  | BSPFR180B  | .094            | .25           | 2.4             | 6.4           | Black | 1000        | 304.8 | 1.6    | .73  |
| 170-03090               | 1/4          | 6.4  | BSPFR140B  | .125            | .437          | 3.2             | 11.1          | Black | 1000        | 304.8 | 2.4    | 1.1  |
| 170-03091               | 1/2          | 12.7 | BSPFR120B  | .25             | .75           | 6.4             | 19.1          | Black | 500         | 152.4 | 3.6    | 1.6  |
| 170-03092               | 3/4          | 19.1 | BSPFR340B  | .50             | 1.25          | 12.7            | 31.8          | Black | 250         | 76.2  | 2.2    | 1.0  |
| 170-03093               | 1            | 25.4 | BSPFR100B  | .625            | 1.625         | 15.9            | 41.3          | Black | 250         | 76.2  | 3.4    | 1.5  |
| 170-03094               | 1-1/4        | 31.8 | BSPFR1140B | .75             | 1.75          | 19.1            | 44.5          | Black | 250         | 76.2  | 4.0    | 1.8  |
| 170-03095               | 1-1/2        | 38.1 | BSPFR1120B | 1.0             | 2.125         | 25.4            | 54.0          | Black | 200         | 61.0  | 3.9    | 1.77 |

Use Part No. for ordering and Type for specification.



## Flame Retardant + Fray Resistant Expandable Braided Sleeving

This protective sleeving is self-extinguishing and can be cut with sharp scissors instead of a hot knife for fray-resistant ends.

### Application

Readily used in the automotive, audiovisual, industrial, wire, cable and computer industries where flame retardancy is required to reduce the likelihood of ignition and/or reduce the rate of flame spread. It is suited for situations where access to a hot knife is either impractical or impossible.

### Benefits

- Provides fuller coverage and a medium-to-high abrasion resistance.
- Expands for ease of installation in either the shop or the field.
- Offers increased braid density without loss of flexibility.
- Contains white tracer thread for simple identification of flame retardancy.
- Extinguishes quickly and reduces flame spread to surrounding components.



### Material Data

|                       |                                  |
|-----------------------|----------------------------------|
| Material              | Treated PET (Polyester)          |
| Flammability          | UL VW-1                          |
| Operating Temperature | -94°F to 257°F<br>-70°C to 125°C |
| Melt Point            | 482°F / 250°C                    |
| Abrasion Protection   | Medium                           |
| Recommended Cutting   | Scissors                         |



### Product Selection

| Part No.                | Nominal Size |      | Type        | Expansion Range |               | Expansion Range |               | Color | Reel Length |       | Weight |     |
|-------------------------|--------------|------|-------------|-----------------|---------------|-----------------|---------------|-------|-------------|-------|--------|-----|
|                         | in.          | mm.  |             | (Min.)<br>in.   | (Max.)<br>in. | (Min.)<br>mm.   | (Max.)<br>mm. |       | ft.         | m.    | lbs.   | kg. |
| 170-03036               | 1/4          | 6.4  | BSSCFR140   | .156            | .437          | 4.0             | 11.1          | Black | 100         | 30.5  | .40    | .18 |
| 170-03017               | 1/2          | 12.7 | BSSCFR120   | .25             | .75           | 6.4             | 19.1          | Black | 100         | 30.5  | .82    | .37 |
| 170-03018               | 3/4          | 19.1 | BSSCFR340   | .625            | 1.00          | 15.9            | 25.4          | Black | 75          | 22.9  | .83    | .38 |
| 170-03019               | 1            | 25.4 | BSSCFR100   | .75             | 1.188         | 19.1            | 30.2          | Black | 50          | 15.2  | .62    | .28 |
| 170-03020               | 1-1/4        | 31.8 | BSSCFR1140  | 1.0             | 1.50          | 25.4            | 38.1          | Black | 50          | 15.2  | .78    | .35 |
| 170-03021               | 1-1/2        | 38.1 | BSSCFR1120  | 1.25            | 2.0           | 31.8            | 50.8          | Black | 50          | 15.2  | .93    | .42 |
| <b>Bulk Sized Reels</b> |              |      |             |                 |               |                 |               |       |             |       |        |     |
| 170-03116               | 1/8          | 3.3  | BSSCFR180B  | .125            | .25           | 3.2             | 6.4           | Black | 1000        | 304.8 | 4.0    | 1.8 |
| 170-03117               | 1/4          | 6.4  | BSSCFR140B  | .156            | .437          | 4.0             | 11.1          | Black | 1000        | 304.8 | 4.6    | 2.1 |
| 170-03118               | 1/2          | 12.7 | BSSCFR120B  | .25             | .75           | 6.4             | 19.1          | Black | 500         | 152.4 | 4.1    | 1.9 |
| 170-03119               | 3/4          | 19.1 | BSSCFR340B  | .625            | 1.0           | 15.9            | 25.4          | Black | 250         | 76.2  | 2.78   | 1.3 |
| 170-03120               | 1            | 25.4 | BSSCFR100B  | .75             | 1.9           | 19.1            | 48.3          | Black | 250         | 76.2  | 3.1    | 1.4 |
| 170-03121               | 1-1/4        | 31.8 | BSSCFR1140B | 1.0             | 1.50          | 25.4            | 38.1          | Black | 250         | 76.2  | 3.9    | 1.8 |
| 170-03122               | 1-1/2        | 38.1 | BSSCFR1120B | 1.25            | 2.0           | 31.8            | 50.8          | Black | 250         | 76.2  | 4.63   | 2.1 |

Use Part No. for ordering and Type for specification.



## Hook & Loop Flame Retardant Expandable Braided Sleeving

Hook and loop edging keeps this flame retardant sleeving securely wrapped around cables, but allows for easy access when maintenance is necessary.

### Application

Ideal for high-technology applications, especially operating environments where harsh fluids are present.

### Benefits

- Conforms to irregular shapes and contours.
- Meets military specifications (Mil-202 approved).
- Cuts easily with a bench-mount hot knife.
- Resists chemicals and cleaning solvents.



### Material Data

|                       |                                  |
|-----------------------|----------------------------------|
| Material              | Treated PET (Polyester)          |
| Flammability          | UL VW-1                          |
| Operating Temperature | -94°F to 257°F<br>-70°C to 125°C |
| Melt Point            | 482°F / 250°C                    |
| Abrasion Protection   | Medium                           |
| Recommended Cutting   | Hot Knife                        |



### Product Selection

| Part No.  | Nominal Size |      | Type         | Wall Thickness |     | Color | Reel Length |      | Weight |      |
|-----------|--------------|------|--------------|----------------|-----|-------|-------------|------|--------|------|
|           | in.          | mm.  |              | in.            | in. |       | ft.         | m.   | lbs.   | kg.  |
| 170-03153 | 1/2          | 12.7 | BSHKLPR120B  | .25            | 6.4 | Black | 100         | 30.5 | 1.3    | .60  |
| 170-03154 | 3/4          | 19.1 | BSHKLPR340B  | .63            | 16  | Black | 100         | 30.5 | 1.8    | .82  |
| 170-03155 | 1-1/4        | 31.8 | BSHKLPR1140B | .63            | 16  | Black | 100         | 30.5 | 2.3    | 1.04 |
| 170-03156 | 2            | 50.8 | BSHKLPR200B  | .63            | 16  | Black | 100         | 30.5 | 3.2    | 1.45 |
| 170-03157 | 2-1/2        | 63.5 | BSHKLPR212B  | .63            | 16  | Black | 100         | 30.5 | 3.75   | 1.70 |

Use Part No. for ordering and Type for specification.



## Split Wrap Flame Retardant Braided Sleeving

Used when flame retardancy is a primary requirement, this protection option incorporates a lateral split which allows the tube to open up to accommodate a variety of bundling requirements and the semi-rigid braid configuration simply closes around the entire installation without the need for any additional fasteners.

### Application

Use this self-extinguishing product that complies with UL VW-1 standards where cables exit a wall and need to be managed for an uncluttered, clean appearance.

### Benefits

- Installs easily, saving assembly time.
- Allows for future accessibility without disassembly.
- Needs no fasteners (i.e., tape, hook and loop, etc.).
- Provides a greater flexibility than spiralwrap or convoluted tubing.
- Retains shape and rigidity throughout operating temperature range.



### Material Data

|                       |                                  |
|-----------------------|----------------------------------|
| Material              | Treated PET (Polyester)          |
| Flammability          | UL VW-1                          |
| Operating Temperature | -94°F to 257°F<br>-70°C to 125°C |
| Melt Point            | 446°F / 230°C                    |
| Abrasion Protection   | High                             |
| Recommended Cutting   | Hot Knife                        |



### Product Selection

| Part No.  | Nominal Size* |      | Type        | Wall Thickness |     | Color | Reel Length |       | Weight |     |
|-----------|---------------|------|-------------|----------------|-----|-------|-------------|-------|--------|-----|
|           | in.           | mm.  |             | in.            | mm. |       | ft.         | m.    | lbs.   | kg. |
| 170-03140 | 1/8           | 3.2  | BSSWFR180B  | .024           | .61 | Black | 400         | 121.9 | .80    | .36 |
| 170-03141 | 1/4           | 6.4  | BSSWFR140B  | .025           | .64 | Black | 200         | 61.0  | 1.2    | .54 |
| 170-03142 | 1/2           | 12.7 | BSSWFR120B  | .025           | .64 | Black | 150         | 45.7  | 2.1    | .95 |
| 170-03143 | 3/4           | 19.1 | BSSWFR340B  | .025           | .64 | Black | 100         | 30.5  | 1.6    | .73 |
| 170-03144 | 1             | 25.4 | BSSWFR100B  | .038           | .97 | Black | 100         | 30.5  | 20     | .91 |
| 170-03145 | 1-1/4         | 31.8 | BSSWFR1140B | .038           | .97 | Black | 75          | 22.9  | 1.8    | .82 |
| 170-03146 | 1-1/2         | 38.1 | BSSWFR1120B | .038           | .97 | Black | 75          | 22.9  | 2.1    | .95 |
| 170-03147 | 2             | 50.8 | BSSWFR200B  | .038           | .97 | Black | 50          | 15.2  | 1.8    | .82 |

Use Part No. for ordering and Type for specification. \*Nominal size measures internal diameter of sleeving.



## Electromagnetic Flame Retardant Helagaine

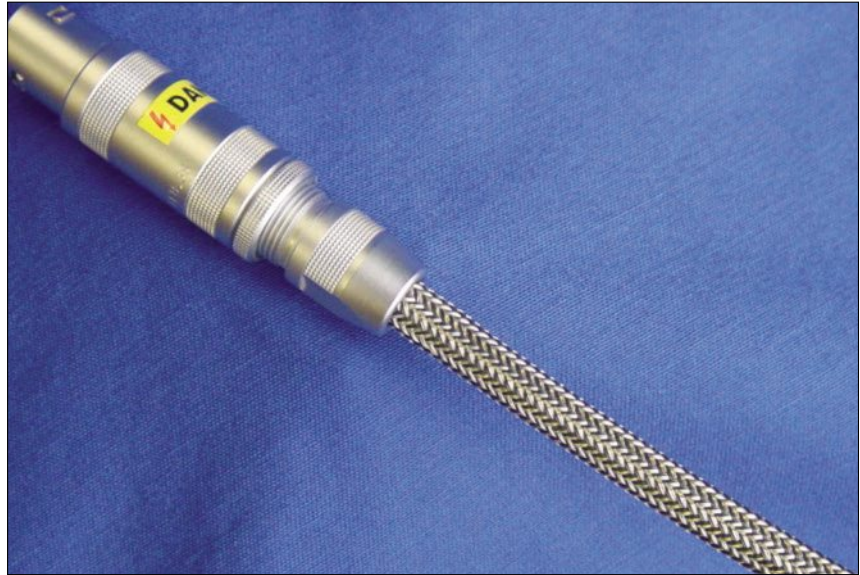
Helagaine VO (HEGEMIPVO) is tubular braided sleeving made from Polyester PBT monofilaments. The raw material is treated with non-burning agents so it has flame retardant and self-extinguishing properties. Rated VO by Underwriters Laboratories.

### Application

Excellent for use where flame can cause damage therefore the protection of highly sensitive wiring is critical, such as in laboratories, computer rooms, satellites, mass transit and airplanes.

### Benefits

- Shields or dissipates wire and cables from electromagnetic interference.
- Resists most chemicals.
- Expands (ratio 2:1) to allow for easy placement over bundles.



#### Material Data

|                       |                                      |
|-----------------------|--------------------------------------|
| Material              | PBT / Tin-Plated Copper (TNCU)       |
| Flammability          | UL 94-V0                             |
| Operating Temperature | -40°F to 347°F<br>-40°C to 175°C     |
| Melt Point            | 392°F / 200°C                        |
| Abrasion Protection   | High                                 |
| Recommended Cutting   | Shears                               |
| EMI Requirements      | 10 KHz to 1 GHz according to CISPR25 |



#### Product Selection

| Part No.  | Nominal Size |      | Type        | Expansion Range |               | Expansion Range |               | Color     | Reel Length |     | Weight |      |
|-----------|--------------|------|-------------|-----------------|---------------|-----------------|---------------|-----------|-------------|-----|--------|------|
|           | in.          | mm.  |             | (Min.)<br>in.   | (Max.)<br>in. | (Min.)<br>mm.   | (Max.)<br>mm. |           | ft.         | m.  | lbs.   | kg.  |
| 173-60400 | 1/8          | 3.2  | HEGEMIPV004 | .16             | .26           | 4.1             | 6.6           | Tin+Black | 328         | 100 | 4.74   | 2.2  |
| 173-60600 | 1/4          | 6.4  | HEGEMIPV006 | .20             | .40           | 5.1             | 10.2          | Tin+Black | 328         | 100 | 6.28   | 2.8  |
| 173-60800 | 5/16         | 7.9  | HEGEMIPV008 | .32             | .45           | 8.1             | 11.4          | Tin+Black | 328         | 100 | 5.84   | 2.6  |
| 173-61000 | 3/8          | 9.5  | HEGEMIPV010 | .32             | .52           | 8.1             | 13.2          | Tin+Black | 164         | 50  | 9.6    | 4.4  |
| 173-61200 | 7/16         | 11.1 | HEGEMIPV012 | .40             | .59           | 10.20           | 15.0          | Tin+Black | 164         | 50  | 10.6   | 4.8  |
| 173-61400 | 1/2          | 12.7 | HEGEMIPV014 | .47             | .71           | 11.9            | 18.0          | Tin+Black | 328         | 100 | 12.8   | 5.8  |
| 173-61600 | 9/16         | 14.3 | HEGEMIPV016 | .55             | .79           | 14.0            | 20.1          | Tin+Black | 328         | 100 | 15.9   | 7.2  |
| 173-61800 | 5/8          | 15.9 | HEGEMIPV018 | .63             | .87           | 16.0            | 22.1          | Tin+Black | 164         | 50  | 17.3   | 7.8  |
| 173-62000 | 3/4          | 19.1 | HEGEMIPV020 | .71             | .98           | 18.0            | 25.0          | Tin+Black | 164         | 50  | 22.1   | 10.0 |

Use Part No. for ordering and Type for specification.

## Electromagnetic Helagaine

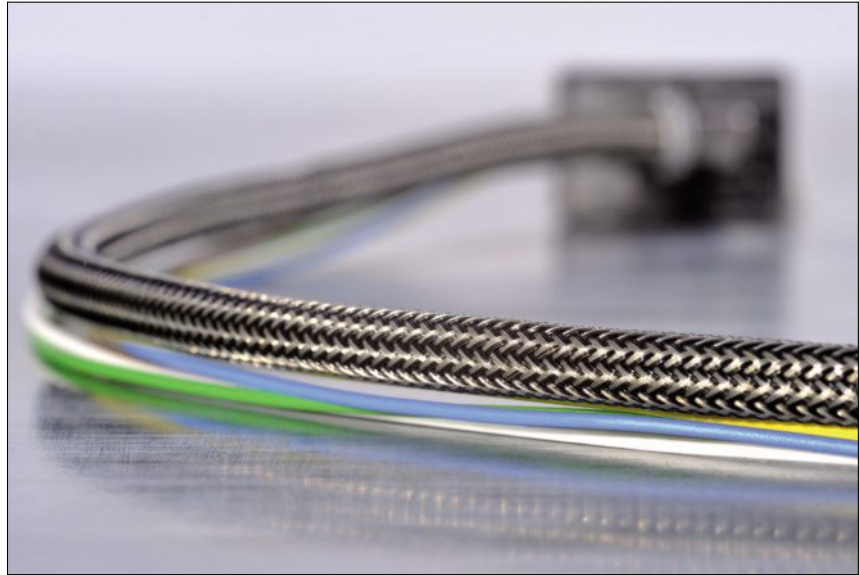
Helagaine (HEGEMIP) is a sleeving created from tin-plated copper and polyester threads that offers not only secure cable bundling but electromagnetic protection as well. The formulated mix of materials offers inside and outside abrasion resistance.

### Application

Particularly suitable for applications with movement and little space; ideal for short-run cables found in electrical appliances and radio equipment.

### Benefits

- Features a supporting inner tube that makes insertion of cable easier and protects the sleeve from deformation during transport.
- Attenuates electrical field interference.
- Provides electromagnetic and electrostatic shielding.
- Delivers added shielding in retrofit applications.
- Retains original form even when bent and twisted, unlike purely copper braids.



### Material Data

|                       |                                               |
|-----------------------|-----------------------------------------------|
| Material              | PET (Polyester) /<br>Tin-Plated Copper (TNCU) |
| Flammability          | UL 94-V2                                      |
| Operating Temperature | -40°F to 347°F<br>-40°C to 175°C              |
| Melt Point            | 392°F / 200°C                                 |
| Abrasion Protection   | High                                          |
| Recommended Cutting   | Shears                                        |
| EMI Requirements      | 10 KHz to 1 GHz according<br>to CISPR25       |



### Product Selection

| Part No.  | Nominal Size |      | Type      | Expansion Range |               | Expansion Range |               | Color     | Reel Length |     | Weight |      |
|-----------|--------------|------|-----------|-----------------|---------------|-----------------|---------------|-----------|-------------|-----|--------|------|
|           | in.          | mm.  |           | (Min.)<br>in.   | (Max.)<br>in. | (Min.)<br>mm.   | (Max.)<br>mm. |           | ft.         | m.  | lbs.   | kg.  |
| 173-00400 | 1/8          | 3.2  | HEGEMIP04 | .16             | .26           | 4.1             | 6.6           | Tin+Black | 328         | 100 | 4.74   | 2.2  |
| 173-00600 | 1/4          | 6.4  | HEGEMIP06 | .20             | .40           | 5.1             | 10.2          | Tin+Black | 328         | 100 | 6.28   | 2.8  |
| 173-00800 | 5/16         | 7.9  | HEGEMIP08 | .32             | .45           | 8.1             | 11.4          | Tin+Black | 328         | 100 | 5.84   | 2.6  |
| 173-01000 | 3/8          | 9.5  | HEGEMIP10 | .32             | .52           | 8.1             | 13.2          | Tin+Black | 164         | 50  | 9.6    | 4.4  |
| 173-01200 | 7/16         | 11.1 | HEGEMIP12 | .40             | .59           | 10.2            | 15.0          | Tin+Black | 164         | 50  | 10.6   | 4.8  |
| 173-01400 | 1/2          | 12.7 | HEGEMIP14 | .47             | .71           | 11.9            | 18.0          | Tin+Black | 328         | 100 | 12.8   | 5.8  |
| 173-01600 | 9/16         | 14.3 | HEGEMIP16 | .55             | .79           | 14.0            | 20.1          | Tin+Black | 328         | 100 | 15.9   | 7.2  |
| 173-01800 | 5/8          | 15.9 | HEGEMIP18 | .63             | .87           | 16.0            | 22.1          | Tin+Black | 164         | 50  | 17.3   | 7.8  |
| 173-02000 | 3/4          | 19.1 | HEGEMIP20 | .71             | .98           | 18.0            | 25.0          | Tin+Black | 164         | 50  | 22.1   | 10.0 |

Use Part No. for ordering and Type for specification.

## Polyamide 6.6 Expandable Braided Sleeving - Black

A pliable yet durable nylon sleeve that delivers excellent protection against cuts, abrasions and excessive wear caused by repetitive motion.

### Application

Used on hoses, pipes, wiring harnesses and cables installed in cars, trucks, military vehicles, trains and industrial equipment. Protects delicate wiring in engine compartments and near exhaust systems or used to organize wires and breakouts in electrical harnesses.

### Benefits

- Resists fuels, salts and solvents, gasoline, and other common contaminants.
- Offers a tight, 12 mil braid that provides full coverage but will not rot or retain moisture.
- Performs well in wet applications and where abiding substrate has a smooth surface.
- Expands up to 150% of flat diameter for easy installation.



### Material Data

|                       |                                  |
|-----------------------|----------------------------------|
| Material              | Polyamide 6.6 (Nylon)            |
| Flammability          | Non-Flammable                    |
| Operating Temperature | -49°F to 302°F<br>-45°C to 150°C |
| Melt Point            | 491°F / 255°C                    |
| Abrasion Protection   | High                             |
| Recommended Cutting   | Hot Knife                        |



### Product Selection

| Part No.                | Nominal Size |      | Type        | Expansion Range |            | Expansion Range |            | Color | Reel Length* |       | Weight |      |
|-------------------------|--------------|------|-------------|-----------------|------------|-----------------|------------|-------|--------------|-------|--------|------|
|                         | in.          | mm.  |             | (Min.) in.      | (Max.) in. | (Min.) mm.      | (Max.) mm. |       | ft.          | m.    | lbs.   | kg.  |
| 170-03069               | 1/4          | 6.4  | BSPA66140   | .125            | .375       | 3.2             | 9.5        | Black | 200          | 61.0  | .60    | .27  |
| 170-03027               | 1/2          | 12.7 | BSPA66120   | .375            | .75        | 9.5             | 19.1       | Black | 100          | 30.5  | 1.03   | .47  |
| 170-03028               | 3/4          | 19.1 | BSPA66340   | .50             | 1.25       | 12.7            | 31.8       | Black | 75           | 22.9  | 1.10   | .50  |
| 170-03029               | 1            | 25.4 | BSPA66100   | .625            | 1.375      | 15.9            | 35.0       | Black | 50           | 15.2  | .80    | .36  |
| 170-03030               | 1-1/4        | 31.8 | BSPA661140  | .75             | 1.50       | 19.1            | 38.1       | Black | 50           | 15.2  | .89    | .40  |
| <b>Bulk Sized Reels</b> |              |      |             |                 |            |                 |            |       |              |       |        |      |
| 170-03070               | 1/4          | 6.4  | BSPA66140B  | .125            | .375       | 3.2             | 9.5        | Black | 1000         | 304.8 | 3.10   | 1.41 |
| 170-03046               | 1/2          | 12.7 | BSPA66120B  | .375            | .75        | 9.5             | 19.1       | Black | 500          | 152.4 | 5.15   | 2.34 |
| 170-03047               | 3/4          | 19.1 | BSPA66340B  | .50             | 1.25       | 12.7            | 31.8       | Black | 250          | 76.2  | 3.68   | 1.67 |
| 170-03048               | 1            | 25.4 | BSPA66100B  | .625            | 1.375      | 15.9            | 35.0       | Black | 250          | 76.2  | 4.0    | 1.81 |
| 170-03049               | 1-1/4        | 31.8 | BSPA661140B | .75             | 1.50       | 19.1            | 38.1       | Black | 250          | 76.2  | 4.50   | 4    |

Use Part No. for ordering and Type for specification. \*Pre-cut lengths available upon request.

## Polyamide 6.6 Helagaine Expandable Braided Sleeving - Gray

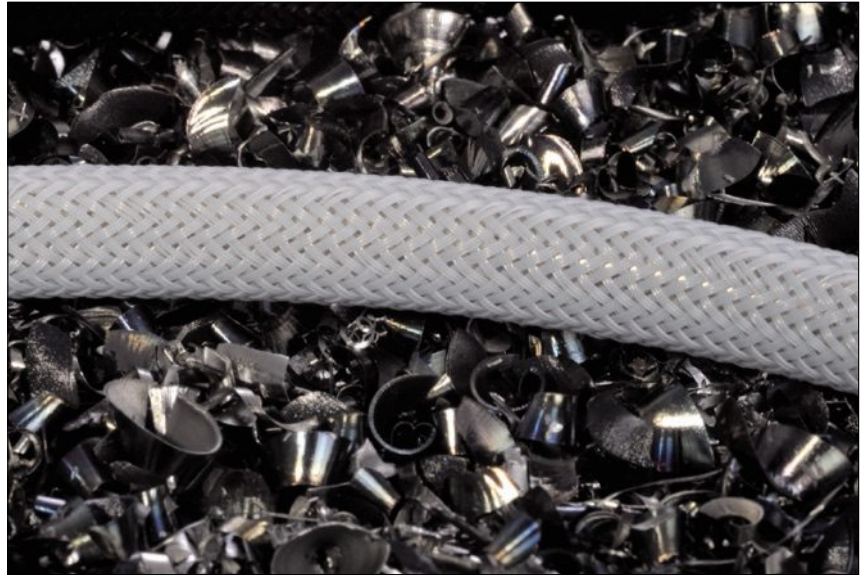
Made from heat-stabilized monofilament strands, this lightweight protection is a tougher sleeving with excellent resistance to abrasion. Despite its sturdy composition, Helagaine is expandable and durable and can easily be applied over irregular surfaces.

### Application

Suitable for automotive and transportation industry applications for the protection of sensitive cables and wires from abrasion.

### Benefits

- Offers a strand diameter that is approximately 10% larger than that of polyester, allowing for greater expandability.
- Resists fuels, salts and solvents, gasoline, and other common contaminants.
- Performs well in wet applications and where abiding substrate has a smooth surface.



#### Material Data

|                       |                                  |
|-----------------------|----------------------------------|
| Material              | Polyamide 6.6 (PA66)             |
| Flammability          | UL 94-V2                         |
| Operating Temperature | -76°F to 302°F<br>-60°C to 150°C |
| Melt Point            | 491°F / 255°C                    |
| Abrasion Protection   | High                             |
| Recommended Cutting   | Hot Knife                        |



#### Product Selection

| Part No.  | Nominal Size |     | Type      | Expansion Range |               | Expansion Range |               | Color | Reel Length |       | Weight |      |
|-----------|--------------|-----|-----------|-----------------|---------------|-----------------|---------------|-------|-------------|-------|--------|------|
|           | in.          | mm. |           | (Min.)<br>in.   | (Max.)<br>in. | (Min.)<br>mm.   | (Max.)<br>mm. |       | ft.         | m.    | lbs.   | kg.  |
| 170-20400 | 1/8          | 4   | HEGPA6604 | .12             | .24           | 3.0             | 6.1           | Gray  | 656         | 200.0 | 1.1    | .50  |
| 170-20600 | 3/16         | 6   | HEGPA6606 | .16             | .32           | 4.1             | 8.1           | Gray  | 328         | 100.0 | 1.3    | .59  |
| 170-20800 | 1/4          | 8   | HEGPA6608 | .20             | .40           | 5.1             | 10.2          | Gray  | 328         | 100.0 | 1.1    | .50  |
| 170-21000 | 3/8          | 10  | HEGPA6610 | .28             | .47           | 7.0             | 12.0          | Gray  | 328         | 100.0 | 2.09   | .95  |
| 170-21200 | 1/2          | 12  | HEGPA6612 | .32             | .55           | 8.1             | 14.0          | Gray  | 328         | 100.0 | 2.4    | 1.1  |
| 170-21500 | 5/8          | 16  | HEGPA6616 | .47             | .71           | 12.0            | 18.0          | Gray  | 164         | 50    | 2.76   | 1.25 |
| 170-22000 | 3/4          | 20  | HEGPA6620 | .59             | .91           | 15.0            | 23.1          | Gray  | 164         | 50.3  | 3.1    | 1.41 |
| 170-22500 | 1            | 25  | HEGPA6625 | .71             | 1.10          | 18.0            | 28.0          | Gray  | 164         | 50.3  | 3.9    | 1.77 |
| 170-23000 | 1-1/4        | 30  | HEGPA6630 | .98             | 1.26          | 24.9            | 32.0          | Gray  | 164         | 50.3  | 4.9    | 2.22 |
| 170-25000 | 2            | 50  | HEGPA6650 | 1.58            | 2.17          | 40.1            | 55.1          | Gray  | 164         | 50.3  | 10.4   | 4.72 |

Use Part No. for ordering and Type for specification.



## Split Wrap Braided Sleeving

A bundling and protection option with a lateral split and a semi-rigid braid configuration that is the ideal solution for circumstances where ease of installation is the primary concern. The lateral split allows the sleeving to open up to adjust to the bundling requirement while the 25% edge overlap folds back over the connector or splices.



### Application

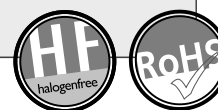
More flexible than spiral wraps or convoluted tubing, this product is a fast and easy option for adding protection in post-assembly or post-installation situations.

### Benefits

- Needs no fasteners (i.e., tape, hook and loop, etc.).
- Bends to a tight radius without distortion or splitting open.
- Allows future access without disassembly.
- Withstands cuts, abrasions and tension.

#### Material Data

|                       |                                  |
|-----------------------|----------------------------------|
| Material              | PET (Polyester)                  |
| Flammability          | UL 94-V0                         |
| Operating Temperature | -94°F to 257°F<br>-70°C to 125°C |
| Melt Point            | 482°F / 250°C                    |
| Abrasion Protection   | Medium                           |
| Recommended Cutting   | Hot Knife                        |



#### Product Selection

| Part No.                      | Nominal Size |       | Type        | Wall Thickness |     | Color | Reel Length* |         | Weight |     |
|-------------------------------|--------------|-------|-------------|----------------|-----|-------|--------------|---------|--------|-----|
|                               | in.          | mm.   |             | in.            | mm. |       | ft.          | m.      | lbs.   | kg. |
| 170-03037                     | 1/4          | 6.4   | BSPSW140    | .025           | .64 | Black | 100          | 30.5    | .60    | .27 |
| 170-03024                     | 1/2          | 12.7  | BSPSW120    | .025           | .64 | Black | 75           | 22.9    | 1.05   | .48 |
| 170-03038                     | 3/4          | 19.1  | BSPSW340    | .025           | .64 | Black | 50           | 15.2    | .80    | .36 |
| 170-03025                     | 1            | 25.4  | BSPSW100    | .038           | .97 | Black | 50           | 15.2    | 1.0    | .45 |
| 170-03026                     | 1-1/4        | 31.8  | BSPSW1140   | .038           | .97 | Black | 25           | 7.1     | .60    | .27 |
| <b>Bulk Box</b>               |              |       |             |                |     |       |              |         |        |     |
| 170-03124                     | 1/8          | 3.2   | BSPSW180B   | .024           | .61 | Black | 400          | 121.9   | .80    | .36 |
| 170-03125                     | 1/4          | 6.4   | BSPSW140B   | .025           | .64 | Black | 200          | 61.0    | 1.2    | .54 |
| 170-03126                     | 1/2          | 12.7  | BSPSW120B   | .025           | .64 | Black | 150          | 45.7    | 2.1    | .95 |
| 170-03127                     | 3/4          | 19.1  | BSPSW340B   | .025           | .64 | Black | 100          | 30.5    | 1.6    | .73 |
| 170-03128                     | 1            | 25.4  | BSPSW100B   | .038           | .97 | Black | 100          | 30.5    | 2.0    | .91 |
| 170-03129                     | 1-1/4        | 31.8  | BSPSW1140B  | .038           | .97 | Black | 75           | 22.9    | 1.8    | .82 |
| 170-03130                     | 1-1/2        | 38.1  | BSPSW1120B  | .038           | .97 | Black | 75           | 22.9    | 2.1    | .95 |
| 170-03131                     | 2            | 50.8  | BSPSW200B   | .038           | .97 | Black | 50           | 15.2    | 1.8    | .82 |
| <b>Large Bulk Sized Reels</b> |              |       |             |                |     |       |              |         |        |     |
| 170-03132                     | 1/8          | 3.2   | BSPSW180LB  | .024           | .61 | Black | 10,000       | 3,048.8 | 20.0   | 9.0 |
| 170-03133                     | 1/4          | 6.4   | BSPSW140LB  | .025           | .64 | Black | 3,000        | 914.4   | 18.0   | 8.2 |
| 170-03134                     | 1/2          | 12.7  | BSPSW120LB  | .025           | .64 | Black | 1,200        | 365.8   | 12.0   | 5.4 |
| 170-03135                     | 3/4          | 19.05 | BSPSW340LB  | .025           | .64 | Black | 500          | 152.4   | 16.8   | 7.6 |
| 170-03136                     | 1            | 25.4  | BSPSW100LB  | .038           | .97 | Black | 400          | 121.9   | 8.0    | 3.6 |
| 170-03137                     | 1-1/4        | 31.8  | BSPSW140LB  | .038           | .97 | Black | 300          | 91.4    | 8.0    | 3.6 |
| 170-03138                     | 1-1/2        | 38.1  | BSPSW1120LB | .038           | .97 | Black | 200          | 61.0    | 7.2    | 3.3 |
| 170-03139                     | 2            | 50.8  | BSPSW200LB  | .038           | .97 | Black | 150          | 45.7    | 5.4    | 2.4 |

Use Part No. for ordering and Type for specification. \*Additional sizes available upon request.



## Split Wrap Braided Sleeving - Orange

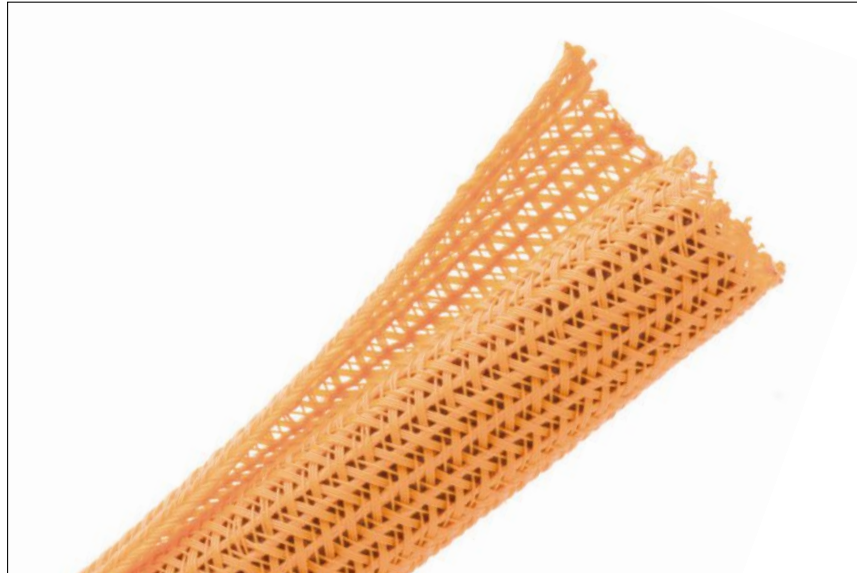
Used for safety identification, this bundling and protection option also offers a lateral split and a semi-rigid braid configuration that wraps around the bundle assembly without requiring any fasteners, such as hook & loop, cables ties or tape.

### Application

A non-expandable product that is an uncomplicated option for adding protection and identification in electrical-powered vehicles, aircraft and automotive applications.

### Benefits

- Contains the same physical properties of the General Purpose Black Split Wrap product.
- Needs no fasteners (i.e., tape, hook and loop, etc.).
- Bends to a tight radius without distortion or splitting open.
- Adapts easily and will not impair the flexibility of the harness assembly, nor will it fracture under stress.



### Material Data

|                       |                                  |
|-----------------------|----------------------------------|
| Material              | PET (Polyester)                  |
| Flammability          | UL 94-V0                         |
| Operating Temperature | -94°F to 257°F<br>-70°C to 125°C |
| Melt Point            | 482°F / 250°C                    |
| Abrasion Protection   | Medium                           |
| Recommended Cutting   | Hot Knife                        |



### Product Selection

| Part No.  | Nominal Size |      | Type       | Wall Thickness |     | Color  | Reel Length |      | Weight |     |
|-----------|--------------|------|------------|----------------|-----|--------|-------------|------|--------|-----|
|           | in.          | mm.  |            | in.            | mm. |        | ft.         | m.   | lbs.   | kg. |
| 170-03082 | 1/4          | 6.4  | BSPSW143B  | .025           | .64 | Orange | 200         | 61.0 | 1.2    | .54 |
| 170-03083 | 1/2          | 12.7 | BSPSW123B  | .025           | .64 | Orange | 150         | 45.7 | 2.1    | .95 |
| 170-03084 | 3/4          | 19.1 | BSPSW343B  | .025           | .64 | Orange | 100         | 30.5 | 1.6    | .73 |
| 170-03085 | 1            | 25.4 | BSPSW103B  | .038           | .97 | Orange | 100         | 30.5 | 2.0    | .91 |
| 170-03086 | 1-1/4        | 31.8 | BSPSW1143B | .038           | .97 | Orange | 75          | 22.9 | 1.8    | .82 |
| 170-03087 | 1-1/2        | 38.1 | BSPSW1123B | .038           | .97 | Orange | 75          | 22.9 | 2.1    | .95 |
| 170-03088 | 2            | 50.8 | BSPSW203B  | .038           | .97 | Orange | 50          | 15.2 | 1.8    | .82 |

Use Part No. for ordering and Type for specification.



## Hook & Loop Expandable Braided Sleeving

Designed for the quick and easy management of wires, this expandable sleeving has an internal hook and loop strap that is able to adhere to its outer PET braid, delivering flexibility that allows it to fit around odd-shaped connectors. Its color-matched hook-and-loop closure provides for an easy on-and-off installation, as well as instant and convenient access for harness break-outs and networks.

### Application

When component disassembly is not an option or when frequent access to bundles wires or cables is essential. The primary application for this sleeving is the wrapping and bunching of cables in a deployed situation (i.e., location recordings).

### Benefits

- Conforms to irregular shapes and contours.
- Wraps effortlessly over a cable bundle and closes; readily reopens.
- Saves time, allows those working on cables to easily splice or combine wires.
- Offers PET yarn construction for excellent protection against cuts and abrasions.



### Material Data

|                       |                                 |
|-----------------------|---------------------------------|
| Material              | PET (Polyester)                 |
| Flammability          | UL 94-VO                        |
| Operating Temperature | 94°F to 257°F<br>-70°C to 125°C |
| Melt Point            | 482°F / 250°C                   |
| Abrasion Protection   | Medium                          |
| Recommended Cutting   | Hot Knife                       |



### Product Selection

| Part No.  | Nominal Size |      | Type        | Wall Thickness |      | Color | Reel Length |      | Weight |      |
|-----------|--------------|------|-------------|----------------|------|-------|-------------|------|--------|------|
|           | in.          | mm.  |             | in.            | mm.  |       | ft.         | m.   | lbs.   | kg.  |
| 170-03148 | 1/2          | 12.7 | BSHKLP120B  | .25            | 6.4  | Black | 100         | 30.5 | 1.3    | .60  |
| 170-03149 | 3/4          | 19.1 | BSHKLP340B  | .63            | 16.0 | Black | 100         | 30.5 | 1.8    | .82  |
| 170-03150 | 1-1/4        | 31.8 | BSHKLP1140B | .63            | 16.0 | Black | 100         | 30.5 | 2.3    | 1.04 |
| 170-03151 | 2            | 50.8 | BSHKLP200B  | .63            | 16.0 | Black | 100         | 30.5 | 3.2    | 1.45 |
| 170-03152 | 2.5          | 63.5 | BSHKLP212B  | .63            | 16.0 | Black | 100         | 30.5 | 3.75   | 1.7  |

Use Part No. for ordering and Type for specification.



## Plenum Rated Halar® Expandable Braided Sleeving

Halar® self-extinguishing sleeving is used where flammability, high temperature endurance and low outgassing are the concern. This sleeving is made from strands of high temperature, flame resistant Halar monofilaments that are able to resist a wide range of corrosive chemicals and organic solvents.

### Application

Its low flame spread and smoke generation properties make it the perfect option for use in technologically-advanced applications, such as those in the automotive, aerospace and vital military markets.

### Benefits

- Resists gasoline and engine chemicals.
- Exceeds automotive industry requirements of FMVSS 302 as well as aviation industry requirements of FAR 25.
- Expands up to 150% for economical and expeditious installation.
- Withstands abrasion and won't degrade when exposed to Cobalt 60 radiation conditions.
- Meets UL 2024 and NFPA 262 specifications for plenum applications.



### Material Data

|                       |                                                       |
|-----------------------|-------------------------------------------------------|
| Material              | Ethylene Chlorotrifluoroethylene Monofilament (ECTFE) |
| Flammability          | UL VW-1                                               |
| Operating Temperature | -103°F to 302°F<br>-75°C to 150°C                     |
| Melt Point            | 482°F / 250°C                                         |
| Abrasion Protection   | Medium                                                |
| Recommended Cutting   | Hot Knife                                             |



### Product Selection

| Part No.  | Nominal Size |      | Type       | Expansion Range |               | Expansion Range |               | Color | Reel Length |      | Weight |      |
|-----------|--------------|------|------------|-----------------|---------------|-----------------|---------------|-------|-------------|------|--------|------|
|           | in.          | mm.  |            | (Min.)<br>in.   | (Max.)<br>in. | (Min.)<br>mm.   | (Max.)<br>mm. |       | ft.         | m.   | lbs.   | kg.  |
| 170-03098 | 1/8          | 3.2  | BSHLR180   | .094            | .25           | 2.4             | 6.4           | Black | 225         | 68.6 | .6     | .27  |
| 170-03100 | 1/4          | 6.4  | BSHLR140   | .125            | .437          | 3.2             | 11.1          | Black | 200         | 61.0 | .8     | .36  |
| 170-03102 | 3/8          | 9.5  | BSHLR380   | .187            | .625          | 4.7             | 15.9          | Black | 125         | 38.1 | 1.1    | .50  |
| 170-03104 | 1/2          | 12.7 | BSHLR120   | .25             | .75           | 6.4             | 19.1          | Black | 100         | 30.5 | 1.1    | .50  |
| 170-03106 | 3/4          | 19.1 | BSHLR340   | .50             | 1.25          | 12.7            | 31.8          | Black | 75          | 22.9 | 1.3    | .60  |
| 170-03108 | 1            | 25.4 | BSHLR100   | .625            | 1.625         | 15.9            | 41.3          | Black | 65          | 19.8 | 1.4    | .64  |
| 170-03110 | 1-1/4        | 31.8 | BSHLR1140  | .75             | 1.75          | 19.1            | 44.5          | Black | 50          | 15.2 | 1.3    | .60  |
| 170-03112 | 1-3/4        | 44.4 | BSHLR1340  | 1.25            | 2.75          | 31.8            | 69.9          | Black | 30          | 9.1  | 1.3    | .60  |
| 170-03114 | 2            | 50.8 | BSHLR200   | 1.50            | 3.50          | 38.1            | 88.9          | Black | 50          | 15.2 | 2.3    | 1.04 |
| 170-03099 | 1/8          | 3.2  | BSHLR1810  | .094            | .25           | 2.4             | 6.4           | White | 225         | 68.6 | .6     | .27  |
| 170-03101 | 1/4          | 6.4  | BSHLR1410  | .125            | .437          | 3.2             | 11.1          | White | 200         | 61.0 | .8     | .36  |
| 170-03103 | 3/8          | 9.5  | BSHLR3810  | .187            | .625          | 4.8             | 15.9          | White | 125         | 38.1 | 1.1    | .50  |
| 170-03105 | 1/2          | 12.7 | BSHLR1210  | .25             | .75           | 6.4             | 19.1          | White | 100         | 30.5 | 1.1    | .50  |
| 170-03107 | 3/4          | 19.1 | BSHLR3410  | .50             | 1.25          | 12.7            | 31.8          | White | 75          | 22.9 | 1.3    | .60  |
| 170-03109 | 1            | 25.4 | BSHLR1010  | .625            | 1.625         | 15.9            | 41.3          | White | 65          | 19.8 | 1.4    | .64  |
| 170-03111 | 1-1/4        | 31.8 | BSHLR11410 | .75             | 1.75          | 19.1            | 44.5          | White | 50          | 15.2 | 1.3    | .60  |
| 170-03113 | 1-3/4        | 44.4 | BSHLR13410 | 1.25            | 2.75          | 31.8            | 69.9          | White | 30          | 9.1  | 1.3    | .60  |
| 170-03115 | 2            | 50.8 | BSHLR2010  | 1.50            | 3.50          | 38.1            | 88.9          | White | 50          | 15.2 | 2.3    | 1.04 |

Use Part No. for ordering and Type for specification.

Halar® is a registered trademark of the Solvey Solexis Corporation.

Halar product is produced on 8" diameter mini spools, which will not fit in merchandising display.



## Extreme High Temperature Resin Saturated Fiberglass Expandable Braided Sleeving

An extremely high-temperature resistant sleeve designed as protection for wires and cables subjected to continuous temperature variations, vibration, abrasion, and mechanical stress.

### Application

Perfect for engine manifolds and exhaust systems or any application where fire and exceeding temperatures create a hazard to workforce and equipment.

### Benefits

- Provides thermal protection up to 1,200°F.
- Maintains its tight structure under extreme shaking, scraping, pressure and varying temperature conditions.
- Cuts cleanly with scissors and installs easily.
- Comes in a wide range of diameters.



### Material Data

|                       |                                    |
|-----------------------|------------------------------------|
| Material              | Resin Saturated Fiberglass         |
| Flammability          | UL VW-1                            |
| Operating Temperature | -94°F to 1,202°F<br>-70°C to 650°C |
| Melt Point            | 2,048°F / 1,120°C                  |
| Abrasion Protection   | Very High                          |
| Recommended Cutting   | Scissors                           |



### Product Selection

| Part No.                | Nominal Size |      | Type       | Wall Thickness |      | Maximum Diameter |      | Color | Reel Length |      | Weight |      |
|-------------------------|--------------|------|------------|----------------|------|------------------|------|-------|-------------|------|--------|------|
|                         | in.          | mm.  |            | in.            | mm.  | in.              | mm.  |       | ft.         | m.   | lbs.   | kg.  |
| 170-03058               | 1/4          | 6.4  | BSHTFG140  | .031           | .79  | .375             | 9.5  | Black | 50          | 15.2 | 1.0    | .45  |
| 170-03059               | 1/2          | 12.7 | BSHTFG120  | .046           | 1.67 | .75              | 19.1 | Black | 50          | 15.2 | 2.4    | 1.1  |
| 170-03060               | 3/4          | 19.1 | BSHTFG340  | .046           | 1.67 | 1.125            | 28.6 | Black | 50          | 15.2 | 3.2    | 1.5  |
| 170-03061               | 1            | 25.4 | BSHTFG100  | .057           | 1.45 | 1.625            | 41.3 | Black | 25          | 7.6  | 2.6    | 1.2  |
| <b>Bulk Sized Reels</b> |              |      |            |                |      |                  |      |       |             |      |        |      |
| 170-03050               | 1/4          | 6.4  | BSHTFG140B | .031           | .79  | .375             | 9.5  | Black | 200         | 61.0 | 4.0    | 1.81 |
| 170-03051               | 1/2          | 12.7 | BSHTFG120B | .046           | 1.17 | .75              | 19.1 | Black | 200         | 61.0 | 9.6    | 4.35 |
| 170-03052               | 3/4          | 19.1 | BSHTFG340B | .046           | 17   | 1.125            | 28.6 | Black | 200         | 61.0 | 12.8   | 5.81 |
| 170-03053               | 1            | 25.4 | BSHTFG100B | .057           | 1.45 | 1.625            | 41.3 | Black | 100         | 30.5 | 10.5   | 4.76 |

Use Part No. for ordering and Type for specification.



## High Temperature Nomex® Expandable Braided Sleeving

Manufactured with densely woven aramid fibers, this soft and flexible sleeving is self-extinguishing and is able to withstand temperatures reaching up to 662°F.

### Application

Excellent for use in extremely harsh environments including those with exposure to direct flame, high temperatures, as well as Beta, Gamma and X-ray radiation – in particular, military and aerospace wiring and harnessing applications.

### Benefits

- Does not melt and is unaffected by most acids.
- Provides excellent thermal stability against flames.
- Meets FMVSS 302 approval for use in automotive engineering.
- Cuts with ordinary scissors which reduces assembly time.



### Material Data

|                       |                                             |
|-----------------------|---------------------------------------------|
| Material              | Polyaramid Polymetaphenylene Isophthalamide |
| Flammability          | Non-Flammable                               |
| Operating Temperature | -320°F to 662°F<br>-196°C to 350°C          |
| Melt Point            | N/A                                         |
| Abrasion Protection   | Low                                         |
| Recommended Cutting   | Scissors                                    |



### Product Selection

| Part No.  | Nominal Size |      | Type       | Expansion Range |            | Expansion Range |            | Color | Reel Length |      | Weight |      |
|-----------|--------------|------|------------|-----------------|------------|-----------------|------------|-------|-------------|------|--------|------|
|           | in.          | mm.  |            | (Min.) in.      | (Max.) in. | (Min.) mm.      | (Max.) mm. |       | ft.         | m.   | lbs.   | kg.  |
| 170-03158 | 1/8          | 3.2  | BSNMX185B  | .062            | .25        | 1.6             | 6.4        | Green | 100         | 30.5 | .12    | .05  |
| 170-03159 | 1/4          | 6.4  | BSNMX145B  | .125            | .312       | 3.2             | 7.9        | Green | 100         | 30.5 | .50    | .23  |
| 170-03160 | 3/8          | 9.5  | BSNMX385B  | .25             | .50        | 6.4             | 12.7       | Green | 100         | 30.5 | .67    | .30  |
| 170-03161 | 1/2          | 12.7 | BSNMX125B  | .312            | .625       | 7.9             | 15.9       | Green | 100         | 30.5 | .91    | .41  |
| 170-03162 | 3/4          | 19.1 | BSNMX345B  | .562            | 1          | 14.3            | 25.4       | Green | 100         | 30.5 | 1.34   | .61  |
| 170-03163 | 1            | 25.4 | BSNMX105B  | .75             | 1.12       | 19.1            | 28.6       | Green | 100         | 30.5 | 2.42   | 1.1  |
| 170-03164 | 1-1/4        | 31.8 | BSNMX1145B | 1               | 1.5        | 25.4            | 38.1       | Green | 100         | 30.5 | 3.49   | 1.58 |
| 170-03165 | 1-1/2        | 38.1 | BSNMX1125B | 1.25            | 1.75       | 31.8            | 44.4       | Green | 100         | 30.5 | 4.03   | 1.83 |
| 170-03166 | 1-3/4        | 44.4 | BSNMX1345B | 1.50            | 2          | 38.1            | 50.9       | Green | 100         | 30.5 | 4.76   | 2.16 |

Use Part No. for ordering and Type for specification.

Nomex® is a registered trademark of the DuPont Corporation.

## High Temperature Aluminum Laminated Fiberglass Sleeving

A tubular shaped product that combines the protection of bonded aluminum and fiberglass into a single solution that is able to reflect radiant heat away from the sensitive contents inside the tube.

### Application

Terrific for applications when appearance and insulation are important for protecting delicate wire bundles, cables and hoses from damage caused by nearby exhaust pipes, headers or heat-generating components.

### Benefits

- Adds a layer of protection that prevents scraping; cut and abrasion resistant.
- Resists gasoline and engine chemicals.
- Creates an insulation barrier for vulnerable cable and wire materials within high-temperature environments.
- Cuts cleanly with scissors.



### Material Data

|                       |                                  |
|-----------------------|----------------------------------|
| Material              | Bonded Aluminum + Fiberglass     |
| Flammability          | Non-Flammable                    |
| Operating Temperature | -76°F to 491°F<br>-60°C to 255°C |
| Melt Point            | 2,048°F / 1,120°C                |
| Abrasion Protection   | N/A                              |
| Recommended Cutting   | Scissors                         |



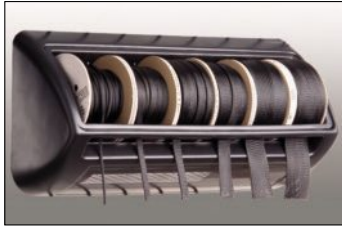
### Product Selection

| Part No.                | Nominal Size* |      | Type          | Wall Thickness<br>*.006 in. |     | Maximum Diameter |      | Color  | Reel Length |      | Weight |      |
|-------------------------|---------------|------|---------------|-----------------------------|-----|------------------|------|--------|-------------|------|--------|------|
|                         | in.           | mm.  |               | in.                         | mm. | in.              | mm.  |        | ft.         | m.   | lbs.   | kg.  |
| 170-03175               | 3/8           | 9.7  | BSHTTST38SR   | .025                        | .64 | .317             | 8.1  | Silver | 100         | 30.5 | 2.3    | 1.1  |
| 170-03062               | 1/2           | 12.7 | BSHTTST12SR   | .025                        | .64 | .437             | 11.1 | Silver | 100         | 30.5 | 2.6    | 1.2  |
| 170-03063               | 3/4           | 19.1 | BSHTTST34SR   | .025                        | .64 | .687             | 17.4 | Silver | 100         | 30.5 | 3.5    | 1.6  |
| 170-03064               | 1             | 25.4 | BSHTTST10SR   | .025                        | .64 | .937             | 23.8 | Silver | 100         | 30.5 | 4.5    | 2.0  |
| 170-03065               | 1-3/4         | 44.5 | BSHTTST134SR  | .025                        | .64 | 1.687            | 42.8 | Silver | 50          | 15.2 | 3.7    | 1.7  |
| 170-03097               | 2-1/2         | 63.5 | BSHTTST212SR  | .025                        | .64 | 2.375            | 60.3 | Silver | 50          | 15.2 | 5.05   | 2.3  |
| <b>Bulk Sized Reels</b> |               |      |               |                             |     |                  |      |        |             |      |        |      |
| 170-03054               | 1/2           | 12.7 | BSHTTST12SRB  | .025                        | .64 | .437             | 11.1 | Silver | 250         | 76.2 | 6.37   | 2.90 |
| 170-03055               | 3/4           | 19.1 | BSHTTST34SRB  | .025                        | .64 | .687             | 17.4 | Silver | 250         | 76.2 | 8.62   | 3.91 |
| 170-03056               | 1             | 25.4 | BSHTTST10SRB  | .025                        | .64 | .937             | 23.8 | Silver | 250         | 76.2 | 11.2   | 5.08 |
| 170-03057               | 1-3/4         | 44.5 | BSHTTST134SRB | .025                        | .64 | 1.687            | 42.8 | Silver | 100         | 30.5 | 7.40   | 3.36 |

Use Part No. for ordering and Type for specification. \*Nominal size measures external diameter of sleeving.

## Merchandising Display Rack

Designed to save space and provide easy access when dispensing braided sleeving, this unit allows for the efficient handling and management of sleeving.



- Simplifies cut-to-length counter sales.
- Dispenses easily from preformed slot.
- Includes mounting hardware.
- Constructed of durable ABS plastic.
- Holds six standard-sized spools; drop-in reels sold separately.
- Dimensions: 23.5"(W) x 10"(D) x 6"(H)

### Product Selection

| Part No.  | Type      | Color |
|-----------|-----------|-------|
| 170-03031 | BSDISPLAY | Black |

Use Part No. for ordering and Type for specification.

## Split Wrap Installation Tool

Use this wire loom tool to guide a cable or insert a cable harness inside the split wrap sleeving. Eases addition and removal of wires quickly and easily while protecting installer's hands from cuts. Can also be used with split loom convoluted tubing.



### Product Selection

| Part No.  | Size   | Type       | Description                           |
|-----------|--------|------------|---------------------------------------|
| 170-03067 | 1/4"   | BSWTOOL14  | 1/4" Split Wrap Installation Tool     |
| 170-03032 | 1/2"   | BSWTOOL12  | 1/2" Split Wrap Installation Tool     |
| 170-03068 | 3/4"   | BSWTOOL34  | 3/4" Split Wrap Installation Tool     |
| 170-03033 | 1"     | BSWTOOL1   | 1" Split Wrap Installation Tool       |
| 170-03034 | 1-1/4" | BSWTOOL114 | 1-1/4" – Split Wrap Installation Tool |

Use Part No. for ordering and Type for specification.

## Bench and Handheld Hot Knife Tools

For the best results during sleeving installation, the sleeving should be cut with a hot knife.



Bench Mount Braided Sleeve Hot Knife

- Designed for production Environments
- Uses 2.5" blade
- Lighted power switch
- Heats to 1,112°F in 30 sec.
- 110 volt operation
- Replaceable blades



Handheld Braided Sleeve Hot Knife

- Trigger switch
- Heats quickly
- 110 volt operation
- Replaceable blades

### Product Selection

| Part No.  | Type  | Color | Description                          |
|-----------|-------|-------|--------------------------------------|
| 170-03039 | BSBHK | White | Bench Mount Braided Sleeve Hot Knife |
| 170-03040 | BSPHK | Black | Handheld Braided Sleeve Hot Knife    |

Use Part No. for ordering and Type for specification.

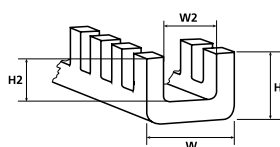
## Flexiform Edge Protection Grommet Strip

HellermannTyton's Flexiform grommet is a unique, continuous wire protection product which fits easily in all shapes and sizes of holes without the aid of tools or adhesives. Since Flexiform can be cut to the right length with scissors, it eliminates waste, helping keep grommet stock to a minimum. HellermannTyton's Flexiform grommet can be used on any type of material including wood, steel, aluminum, plexiglass, and glass. It is available in 9 sizes for thicknesses from .016" to .512".



Optimal protection of cables and wires at panel edges.

## Polyamide 6 Grommet



Flexiform grommet strip

### Material Data

|                       |                                             |
|-----------------------|---------------------------------------------|
| Material              | <b>Polyamide 6 (PA6)</b>                    |
| Color                 | <b>Natural</b>                              |
| Operating Temperature | <b>-76 °F to +203 °F (-60 °C to +95 °C)</b> |

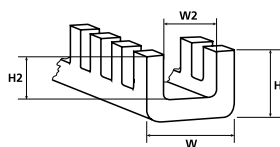
RoHS

### Product Selection

| Product Selection |          |       |                            |              |              |             |             |           |  |
|-------------------|----------|-------|----------------------------|--------------|--------------|-------------|-------------|-----------|--|
| Article No.       | Part No. | Type  | Panel Thickness            | Width (W)    | Width (W2)   | Height (H)  | Height (H2) | Pkg. Qty. |  |
|                   |          |       | in. (mm)                   | in. (mm)     | in. (mm)     | in. (mm)    | in. (mm)    | ft.       |  |
| Polyamide 6 (PA6) |          |       |                            |              |              |             |             |           |  |
| 251-21109         | FHA      | G51NA | .015" - .059" (0.4 - 1.5)  | .154" (3.9)  | .059" (1.5)  | .169" (4.3) | .106" (2.7) | 82 ft     |  |
| 251-21209         | FHB      | G51NB | .051" - .094" (1.3 - 2.4)  | .181" (4.6)  | .094" (2.4)  | .169" (4.3) | .106" (2.7) | 82 ft     |  |
| 251-21309         | FHC      | G51NC | .087" - .134" (2.2 - 3.4)  | .224" (5.7)  | .138" (3.5)  | .169" (4.3) | .106" (2.7) | 82 ft     |  |
| 251-21409         | FHD      | G51ND | .130" - .197" (3.3 - 5.0)  | .331" (8.4)  | .201" (5.1)  | .244" (6.2) | .169" (4.3) | 82 ft     |  |
| 251-21509         | FHE      | G51NE | .193" - .264" (4.9 - 6.7)  | .390" (9.9)  | .264" (6.7)  | .252" (6.4) | .177" (4.5) | 82 ft     |  |
| 251-21609         | FHF      | G51NF | .256" - .323" (6.5 - 8.2)  | .449" (11.4) | .327" (8.3)  | .268" (6.8) | .189" (4.8) | 82 ft     |  |
| 251-21709         | FHG      | G51NG | .315" - .394" (8.0 - 10.0) | .520" (13.2) | .398" (10.1) | .268" (6.8) | .189" (4.8) | 82 ft     |  |
| 251-21809         | FHH      | G51NH | .382" - .520" (9.7 - 13.2) | .646" (16.4) | .520" (13.2) | .268" (6.8) | .189" (4.8) | 82 ft     |  |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Polyethylene Grommet



Flexiform grommet strip

### Material Data

|                       |                                             |
|-----------------------|---------------------------------------------|
| Material              | <b>Polyethylene (PE)</b>                    |
| Color                 | <b>Natural</b>                              |
| Operating Temperature | <b>-22 °F to +176 °F (-30 °C to +80 °C)</b> |

RoHS

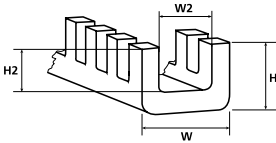
### Product Selection

| Product Selection |          |        |                            |              |              |             |             |           |  |
|-------------------|----------|--------|----------------------------|--------------|--------------|-------------|-------------|-----------|--|
| Article No.       | Part No. | Type   | Panel Thickness            | Width (W)    | Width (W2)   | Height (H)  | Height (H2) | Pkg. Qty. |  |
|                   |          |        | in. (mm)                   | in. (mm)     | in. (mm)     | in. (mm)    | in. (mm)    | ft.       |  |
| Polyethylene (PE) |          |        |                            |              |              |             |             |           |  |
| 251-10009         | FPA A    | G51PAA | .016" - .035" (0.4 - 0.9)  | .087" (2.2)  | .037" (0.95) | .094" (2.4) | .063" (1.6) | 82 ft     |  |
| 251-10109         | FPA      | G51PA  | .016" - .059" (0.4 - 1.5)  | .154" (3.9)  | .059" (1.5)  | .169" (4.3) | .106" (2.7) | 82 ft     |  |
| 251-10209         | FPB      | G51PB  | .051" - .094" (1.3 - 2.4)  | .181" (4.6)  | .094" (2.4)  | .169" (4.3) | .106" (2.7) | 82 ft     |  |
| 251-10309         | FPC      | G51PC  | .087" - .134" (2.2 - 3.4)  | .224" (5.7)  | .138" (3.5)  | .169" (4.3) | .106" (2.7) | 82 ft     |  |
| 251-10409         | FPD      | G51PD  | .130" - .197" (3.3 - 5.0)  | .331" (8.4)  | .201" (5.1)  | .244" (6.2) | .169" (4.3) | 82 ft     |  |
| 251-10509         | FPE      | G51PE  | .193" - .264" (4.9 - 6.7)  | .390" (9.9)  | .264" (6.7)  | .252" (6.4) | .177" (4.5) | 82 ft     |  |
| 251-10609         | FPF      | G51PF  | .256" - .323" (6.5 - 8.2)  | .449" (11.4) | .327" (8.3)  | .268" (6.8) | .189" (4.8) | 82 ft     |  |
| 251-10709         | FPG      | G51PG  | .315" - .394" (8.0 - 10.0) | .520" (13.2) | .398" (10.1) | .268" (6.8) | .189" (4.8) | 82 ft     |  |
| 251-10809         | FPH      | G51PH  | .382" - .520" (9.7 - 13.2) | .646" (16.4) | .520" (13.2) | .268" (6.8) | .189" (4.8) | 82 ft     |  |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Flexiform Edge Protection Grommet Strip *continued*

### Teflon Grommet



Flexiform grommet strip

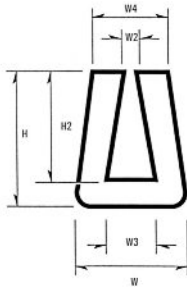
| Material Data         |                                               | RoHS |
|-----------------------|-----------------------------------------------|------|
| Material              | <b>Polytetrafluoroethylene -Teflon (PTFE)</b> |      |
| Color                 | <b>Natural</b>                                |      |
| Operating Temperature | <b>-76 °F to +500 °F (-60 °C to +260 °C)</b>  |      |
| Flammability          | <b>non-burning</b>                            |      |

| Product Selection                      |          |       |                            |              |              |             |             |           |
|----------------------------------------|----------|-------|----------------------------|--------------|--------------|-------------|-------------|-----------|
| Article No.                            | Part No. | Type  | Panel Thickness            | Width (W)    | Width (W2)   | Height (H)  | Height (H2) | Pkg. Qty. |
|                                        |          |       | in. (mm)                   | in. (mm)     | in. (mm)     | in. (mm)    | in. (mm)    | ft.       |
| Polytetrafluoroethylene -Teflon (PTFE) |          |       |                            |              |              |             |             |           |
| 251-30109                              | FTA      | G51TA | .015" - .059" (0.4 - 1.5)  | .153" (3.9)  | .059" (1.5)  | .169" (4.3) | .106" (2.7) | 9.7 ft    |
| 251-30209                              | FTB      | G51TB | .051" - .094" (1.3 - 2.4)  | .181" (4.6)  | .094" (2.4)  | .169" (4.3) | .106" (2.7) | 9.7 ft    |
| 251-30309                              | FTC      | G51TC | .087" - .134" (2.2 - 3.4)  | .224" (5.7)  | .138" (3.5)  | .169" (4.3) | .106" (2.7) | 9.7 ft    |
| 251-30409                              | FTD      | G51TD | .130" - .196" (3.3 - 5.0)  | .331" (8.4)  | .201" (5.1)  | .244" (6.2) | .169" (4.3) | 9.7 ft    |
| 251-30509                              | FTE      | G51TE | .193" - .264" (4.9 - 6.7)  | .390" (9.9)  | .264" (6.7)  | .252" (6.4) | .177" (4.5) | 9.7 ft    |
| 251-30609                              | FTF      | G51TF | .256" - .323" (6.5 - 8.2)  | .449" (11.4) | .327" (8.3)  | .268" (6.8) | .189" (4.8) | 9.7 ft    |
| 251-30709                              | FTG      | G51TG | .315" - .394" (8.0 - 10.0) | .520" (13.2) | .398" (10.1) | .268" (6.8) | .189" (4.8) | 9.7 ft    |
| 251-30809                              | FTH      | G51TH | .382" - .520" (9.7 - 13.2) | .646" (16.4) | .520" (13.2) | .268" (6.8) | .189" (4.8) | 9.7 ft    |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes. Teflon is a registered trademark of the DuPont Corporation.

## Self-Extinguishing Flexiform Grommet

HellermannTyton's Flexiform grommet is also manufactured from a self-extinguishing UL 94 V0 rated flexible PVC compound which ensures flexibility and ease of application.



| Material Data         |                                                        | RoHS |
|-----------------------|--------------------------------------------------------|------|
| Material              | <b>Flexible Polyvinyl Chloride, cadmium free (PVC)</b> |      |
| Color                 | <b>Black</b>                                           |      |
| Operating Temperature | <b>-85 °F to +221 °F (-65 °C to +105 °C)</b>           |      |
| Flammability          | <b>UL94 V0</b>                                         |      |

| Product Selection                               |           |      |                               |             |              |            |             |             |             |               |
|-------------------------------------------------|-----------|------|-------------------------------|-------------|--------------|------------|-------------|-------------|-------------|---------------|
| Article No.                                     | Part No.  | Type | Panel Thickness               | Width (W)   | Width (W2)   | Width (W3) | Width (W4)  | Height (H)  | Height (H2) | Pkg. Qty.     |
|                                                 |           |      | in. (mm)                      | in. (mm)    | in. (mm)     | in. (mm)   | in. (mm)    | in. (mm)    | in. (mm)    | ft. (Meters)  |
| Flexible Polyvinyl Chloride, cadmium free (PVC) |           |      |                               |             |              |            |             |             |             |               |
| 800-00004                                       | SM1BK75MT | SM1  | .03937" - .07874" (1.0 - 2.0) | .1969"(5.0) | .03937"(1.0) | .07" (1.8) | .165" (4.2) | .248" (6.3) | .192" (4.9) | 246.1 ft (75) |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Electrical Tape



HellermannTyton electrical tapes are used for color coding, cable splicing, terminating, wire insulating, and more. These conformable, high quality tapes have exceptional surface adhesive characteristics.

### Installation

For best results, the tape should be applied by using tension. When the application is complete, the memory of the tape returns, tightening the seal and making the taped area even more waterproof. For the best seal, each layer of tape should overlap the previous layer by approximately 50%. HellermannTyton electrical tapes are a fast, easy, and economical way of insulating, splicing, and terminating electrical connections.

| Product Selection    |          |        |               |      |        |             |           |
|----------------------|----------|--------|---------------|------|--------|-------------|-----------|
| Article No.          | Part No. | Type   | Width (W)     |      | Color  | Roll Length | Pkg. Qty. |
|                      |          |        | in.           | (mm) |        |             |           |
| 7.0 Mil PVC          |          |        |               |      |        |             |           |
| 904-00007            | ET330    | ET33   | .75 " (19.05) |      | Black  | 33 ft/Roll  | 10 Rolls  |
| 904-00008            | ET660    | ET66   | .75 " (19.05) |      | Black  | 66 ft/Roll  | 10 Rolls  |
| 8.0 Mil PVC          |          |        |               |      |        |             |           |
| 904-00010            | ETCW660  | ETCW66 | .75 " (19.05) |      | Black  | 66 ft/Roll  | 10 Rolls  |
| Butyll Rubber        |          |        |               |      |        |             |           |
| 904-00006            | ETSB6210 | ETSB   | .75 " (19.05) |      | Black  | 21 ft/Roll  | 10 Rolls  |
| 7.0 Mil PVC - Colors |          |        |               |      |        |             |           |
| 904-00011            | ETST661  | ETST66 | .75 " (19.05) |      | Brown  | 66 ft/Roll  | 10 Rolls  |
| 904-00012            | ETST6610 | ETST66 | .75 " (19.05) |      | White  | 66 ft/Roll  | 10 Rolls  |
| 904-00014            | ETST662  | ETST66 | .75 " (19.05) |      | Red    | 66 ft/Roll  | 10 Rolls  |
| 904-00016            | ETST663  | ETST66 | .75 " (19.05) |      | Orange | 66 ft/Roll  | 10 Rolls  |
| 904-00018            | ETST664  | ETST66 | .75 " (19.05) |      | Yellow | 66 ft/Roll  | 10 Rolls  |
| 904-00020            | ETST665  | ETST66 | .75 " (19.05) |      | Green  | 66 ft/Roll  | 10 Rolls  |
| 904-00022            | ETST666  | ETST66 | .75 " (19.05) |      | Blue   | 66 ft/Roll  | 10 Rolls  |
| 904-00024            | ETST667  | ETST66 | .75 " (19.05) |      | Purple | 66 ft/Roll  | 10 Rolls  |
| 904-00026            | ETST668  | ETST66 | .75 " (19.05) |      | Gray   | 66 ft/Roll  | 10 Rolls  |

Dimensions are approximate and subject to technical changes.

Use **Part No.** for ordering and **Type** for specification.

| Material Data             |           |                                                                                                             |                                         |                                                                                                                                                     |                                                                      |
|---------------------------|-----------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Product Type and Material | Thickness | Technical                                                                                                   | Operating Temperature                   | Description                                                                                                                                         | Agency Approvals                                                     |
| ET & ETST (PVC)           | 7.0 mil   | Adhesion: 16 oz./inch<br>Tensile Strength: 15.4 lbs./inch<br>Elongation: 180%<br>Breakdown Voltage: 7,800 V | +20 °F to 176 °F<br>(-7 °C to +80 °C)   | A heavy duty vinyl tape which is ideal for general purpose applications.                                                                            | U.L. Listed,<br>Meets U.L. 510,<br>Meets Mil-Std.<br>Mil - 1-7798-A  |
| ETCW (PVC)                | 8.0 mil   | Adhesion: 17 oz./inch<br>Tensile Strength: 20 lbs./inch<br>Elongation: 200%<br>Breakdown Voltage: 8,600 V   | 0 °F to +194 °F<br>(-18 °C to +90 °C)   | A heavy duty vinyl tape which is ideal for cold weather installations and "weather resistant" for outdoor installations.                            | U.L. Listed,<br>Meets U.L. 510,<br>Meets Mil-Std.<br>Mil - 1-24391-A |
| ETSB (Butyl Rubber)       | 20 mil    | Adhesion: n/a<br>Tensile Strength: n/a<br>Elongation: 600%<br>Breakdown Voltage: 14,000 V                   | -14 °F to +176 °F<br>(-26 °C to +80 °C) | A self-bonding butyl rubber tape which provides void-free insulation over irregular surfaces, such as splices. Outstanding self-bonding properties. | U.L. Listed,<br>Meets ASTM D-119                                     |

Snapper Hose Clamps .....169-174

Screw Mount Cable Clamps .....175-177

Adhesive Cable Clamps .....178-179

Flat Ribbon Cable Clamps .....180

Nail Clips .....181



## Snapper Hose Clamps

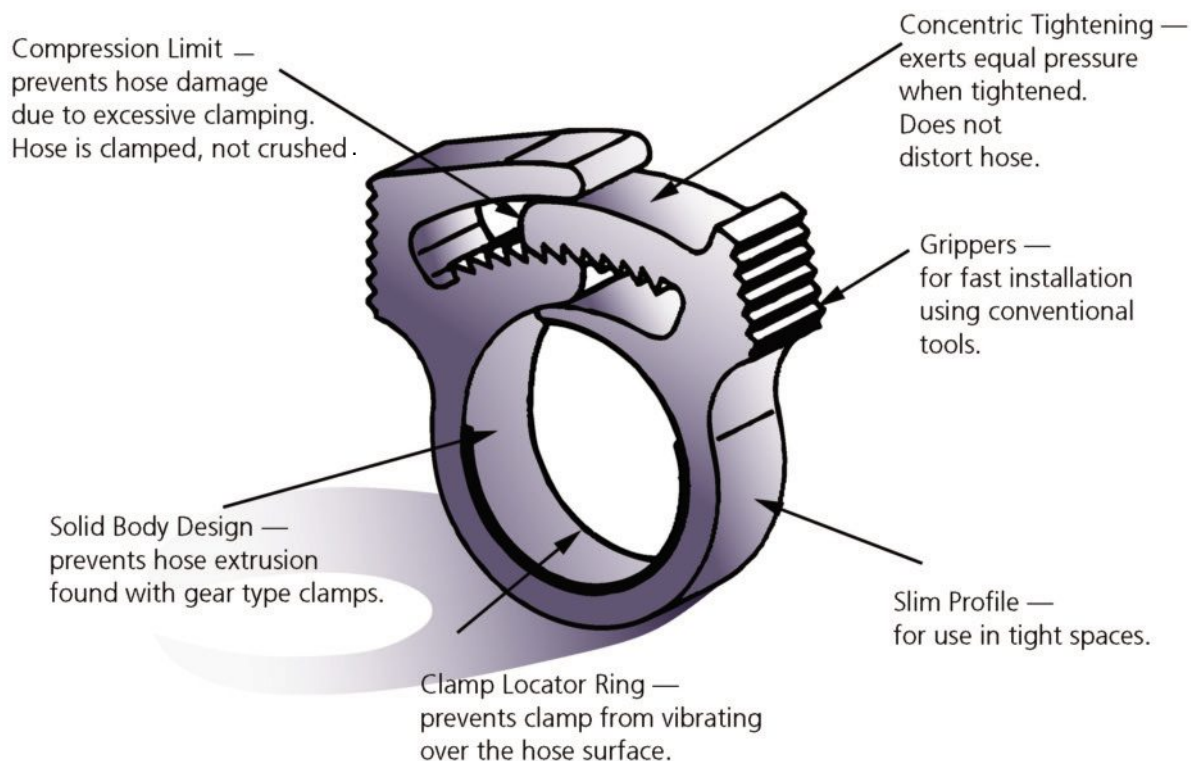
HellermannTyton's Snapper is a lightweight, corrosion resistant hose clamp manufactured from high performance, thermoplastic materials selected to work well in a variety of diverse environments. A quick, ratchet closure provides for reduced application time and allows for application after connection of the hose. Release is achieved by initiating opposed lateral movement of the ratchet ends. Heat stabilized materials are available for high temperature, motor and under-hood applications. Snappers are also stable in a wide variety of chemicals including salts, bases, alcohols, ethers, detergents, gasoline, lubricating oils, and greases.



The Snapper is available in 32 standard sizes ranging from 1/4" to 4-1/2" ID. Snappers are manufactured in white polyacetal and black polyamide 6.6 glass filled impact modified heat stabilized material. Custom designed and different colored or shaped Snappers are available based upon applications and volume requirements.

### Snapper Clamp Features

- Will not rust or corrode
- Installation and removal can be five times faster than conventional clamps
- Completely reusable
- Safety engineered
- No protruding band or cluster
- Can be installed with hose in place
- Will not damage hose
- One hand installation for tight places



## Snapper Hose Clamp Applications



Snapper clamp selection will vary with hose thickness and fitting sizes. End use testing is recommended to determine the actual size needed for each application.

### Snapper Clamp Applications

Snapper hose clamps are used in a variety of markets and diverse applications.

- Automotive
- Air Lines
- Pumps
- Marine
- Drain Lines
- Sprayers
- Truck
- Water Lines
- Fuel Lines
- Heavy Equipment
- Sprinkler Systems
- Garden Hoses
- Many more hose and tubing applications

| Double Braid Utility Hoses |               | Clear Vinyl Tubing |             | Neoprene Hoses |             | Fuel Line Hoses |            |
|----------------------------|---------------|--------------------|-------------|----------------|-------------|-----------------|------------|
| Diameter                   | Product       | (I.D.) - (O.D.)    | Product     | Diameter       | Product     | Diameter        | Product    |
| 1/4"                       | Snapper 8     | 3/16" - 5/16"      | Snapper 1.5 | 1/8"           | Snapper 1.5 | 1/4"            | Snapper 6  |
| 3/8"                       | Snapper 12    | 1/4" - 3/8"        | Snapper 4   | 3/16"          | Snapper 2   | 5/8"            | Snapper 8  |
| 1/2"                       | Snapper 19    | 5/16" - 7/16"      | Snapper 6   | 9/32"          | Snapper 8   | 3/8"            | Snapper 12 |
| 5/8"                       | Snapper 22    | 3/8" - 1/2"        | Snapper 8   | 3/8"           | Snapper 12  |                 |            |
| 3/4"                       | Snapper 28    | 1/2" - 5/8"        | Snapper 12  | Garden Hoses   |             | Heater Hoses    |            |
| 1"                         | Snapper 33/34 | 5/8" - 7/8"        | Snapper 19  | 1/2"           | Snapper 14  | 1/2"            | Snapper 18 |
| 1-1/4"                     | Snapper 38    | 3/4" - 1"          | Snapper 24  | 5/8"           | Snapper 18  | 5/8"            | Snapper 19 |
| 1-1/2"                     | Snapper 50    | 1" - 1-1/4"        | Snapper 32  | 3/4"           | Snapper 32  | 3/8"            | Snapper 24 |

## Snapper Hose Clamp Tools

Snapper installation tools are available in both pneumatic and mechanical versions. They are specifically developed to increase reliability, reduce operator fatigue and installation time.

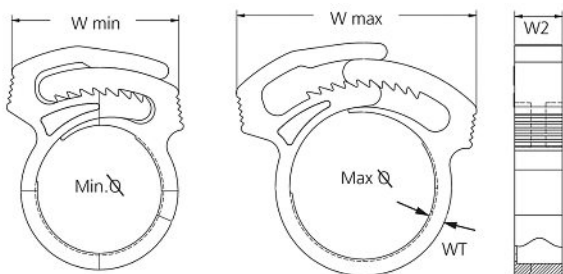


| Product Selection |             |             | Tool Description |                      |            | Snapper Range |
|-------------------|-------------|-------------|------------------|----------------------|------------|---------------|
| Article No.       | Part No.    | Type        | Type             | Use                  | Stroke     |               |
| 191-00010         | PHSNP2-36   | PHSNP2-36   | Pneumatic        | Production           | Horizontal | 2-36          |
| 191-00012         | PHSNP38-100 | PHSNP38-100 |                  |                      |            | 38-100        |
| 191-00014         | PSNP2-22    | PSNP2-22    |                  |                      | Vertical   | 2-22          |
| 191-00019         | PSNP24-70   | PSNP24-70   |                  |                      |            | 24-70         |
| 191-02220         | ASNP2-22    | ASNP2-22    | Mechanical       | Production           | Vertical   | 2-22          |
| 191-24700         | ASNP24-70   | ASNP24-70   |                  |                      |            | 24-70         |
| 191-01700         | MSNP1-70    | MSNP1-70    |                  | Maintenance/ Removal | Vertical   | 1-70          |

Use **Part No.** for ordering and **Type** for specification purposes.

## Snapper Hose Clamps

### Polyamide 6.6 Glass Filled Impact Modified Heat Stabilized



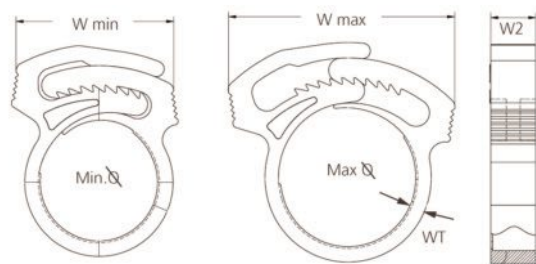
| Material Data         |                                                                        |
|-----------------------|------------------------------------------------------------------------|
| Material              | Polyamide 6.6 glass filled impact modified heat stabilized (PA66GF13%) |
| Operating Temperature | -40 °F to +221 °F (-40 °C to +105 °C)                                  |
| Color                 | Black                                                                  |
| Flammability          | UL94 HB                                                                |



| Product Selection |               |         |                  |                  |                        |                                 |                            |                            |           |
|-------------------|---------------|---------|------------------|------------------|------------------------|---------------------------------|----------------------------|----------------------------|-----------|
| Article No.       | Part No.      | Type    | Min. Ø           | Max. Ø           | Width (W2)<br>in. (mm) | Wall Thickness (WT)<br>in. (mm) | Width (W) Min.<br>in. (mm) | Width (W) Max.<br>in. (mm) | Pkg. Qty. |
| 192-10010         | SNP1GHS0C2    | SNP1    | 0.233 " (5.928)  | 0.262 " (6.643)  | 0.149" (3.838)         | 0.04 " (1.01)                   | 0.323" (8.181)             | 0.456" (11.615)            | 100       |
| 190-00019         | SNP1GHS0M4    |         | 0.233 " (5.928)  | 0.262 " (6.643)  | 0.149" (3.838)         | 0.04 " (1.01)                   | 0.323" (8.181)             | 0.456" (11.615)            | 1000      |
| 190-00029         | SNP1.25GHS0C2 | SNP1.25 | 0.275 " (6.95)   | 0.297 " (7.563)  | 0.15" (3.838)          | 0.042 " (1.111)                 | 0.408" (10.403)            | 0.491" (12.423)            | 100       |
| 190-00030         | SNP1.25GHS0M4 |         | 0.275 " (6.95)   | 0.297 " (7.563)  | 0.15" (3.838)          | 0.042 " (1.111)                 | 0.408" (10.403)            | 0.491" (12.423)            | 1000      |
| 190-00251         | SNP1.5GHS0C2  | SNP1.5  | 0.314 " (7.972)  | 0.35 " (8.891)   | 0.147" (3.737)         | 0.055 " (1.414)                 | 0.414" (10.504)            | 0.593" (15.049)            | 100       |
| 190-00035         | SNP1.5GHS0M4  |         | 0.314 " (7.972)  | 0.35 " (8.891)   | 0.147" (3.737)         | 0.055 " (1.414)                 | 0.414" (10.504)            | 0.593" (15.049)            | 1000      |
| 192-10020         | SNP2GHS0C2    | SNP2    | 0.359 " (9.096)  | 0.403 " (10.22)  | 0.233" (5.959)         | 0.068 " (1.717)                 | 0.477" (12.12)             | 0.679" (17.271)            | 100       |
| 190-00098         | SNP2GHS0M4    |         | 0.359 " (9.096)  | 0.403 " (10.22)  | 0.233" (5.959)         | 0.068 " (1.717)                 | 0.477" (12.12)             | 0.679" (17.271)            | 1000      |
| 190-00132         | SNP3GHS0C2    | SNP3    | 0.396 " (10.016) | 0.45 " (11.446)  | 0.234" (5.959)         | 0.07 " (1.818)                  | 0.567" (14.342)            | 0.805" (20.402)            | 100       |
| 190-00134         | SNP3GHS0M4    |         | 0.396 " (10.016) | 0.45 " (11.446)  | 0.234" (5.959)         | 0.07 " (1.818)                  | 0.567" (14.342)            | 0.805" (20.402)            | 1000      |
| 192-10040         | SNP4GH0C2     | SNP4    | 0.413 " (10.527) | 0.462 " (11.753) | 0.235" (5.959)         | 0.067 " (1.717)                 | 0.529" (13.433)            | 0.756" (19.19)             | 100       |
| 190-00167         | SNP4GHS0M4    |         | 0.413 " (10.527) | 0.462 " (11.753) | 0.235" (5.959)         | 0.067 " (1.717)                 | 0.529" (13.433)            | 0.756" (19.19)             | 1000      |
| 192-10060         | SNP6GHS0C2    | SNP6    | 0.459 " (11.651) | 0.522 " (13.286) | 0.235" (5.959)         | 0.07 " (1.818)                  | 0.578" (14.645)            | 0.846" (21.513)            | 100       |
| 190-00186         | SNP6GHS0M4    |         | 0.459 " (11.651) | 0.522 " (13.286) | 0.235" (5.959)         | 0.07 " (1.818)                  | 0.578" (14.645)            | 0.846" (21.513)            | 1000      |
| 192-10070         | SNP7GHS0C2    | SNP7    | 0.463 " (11.753) | 0.558 " (14.206) | 0.235" (5.959)         | 0.07 " (1.818)                  | 0.653" (16.564)            | 0.981" (24.947)            | 100       |
| 190-00202         | SNP7GHS0M4    |         | 0.463 " (11.753) | 0.558 " (14.206) | 0.235" (5.959)         | 0.07 " (1.818)                  | 0.653" (16.564)            | 0.981" (24.947)            | 1000      |
| 192-10080         | SNP8GHS0C2    | SNP8    | 0.524 " (13.286) | 0.599 " (15.228) | 0.233" (5.959)         | 0.07 " (1.818)                  | 0.653" (16.564)            | 0.981" (24.947)            | 100       |
| 190-00222         | SNP8GHS0M4    |         | 0.524 " (13.286) | 0.599 " (15.228) | 0.233" (5.959)         | 0.07 " (1.818)                  | 0.653" (16.564)            | 0.981" (24.947)            | 1000      |
| 192-10100         | SNP10GHS0C2   | SNP10   | 0.582 " (14.819) | 0.664 " (16.863) | 0.235" (5.959)         | 0.069 " (1.717)                 | 0.682" (17.372)            | 1.038" (26.361)            | 100       |
| 190-00043         | SNP10GHS0M4   |         | 0.582 " (14.819) | 0.664 " (16.863) | 0.235" (5.959)         | 0.069 " (1.717)                 | 0.682" (17.372)            | 1.038" (26.361)            | 1000      |
| 190-00254         | SNP12AGHS0C2  | SNP12A  | .626 " (15.9)    | .716 " (18.2)    | .233" (5.92)           | .070 " (1.78)                   | .816" (20.7)               | 1.172" (29.8)              | 100       |
| 190-00255         | SNP12AGHS0M4  |         | .626 " (15.9)    | .716 " (18.2)    | .233" (5.92)           | .070 " (1.78)                   | .816" (20.7)               | 1.172" (29.8)              | 1000      |
| 190-00300         | SNP14AGHS0C2  | SNP14A  | 0.729 " (18.52)  | 0.827 " (21.01)  | 0.234" (5.94)          | 0.070 " (1.78)                  | 0.823" (20.9)              | 1.185" (30.1)              | 100       |
| 190-00301         | SNP14AGHS0M4  |         | 0.729 " (18.52)  | 0.827 " (21.01)  | 0.234" (5.94)          | 0.070 " (1.78)                  | 0.823" (20.9)              | 1.185" (30.1)              | 1000      |
| 192-10160         | SNP16GHS0C2   | SNP16   | 0.776 " (19.735) | 0.867 " (21.973) | 0.234" (5.959)         | 0.068 " (1.717)                 | 0.795" (20.2)              | 1.222" (31.209)            | 100       |
| 190-00076         | SNP16GHS0M4   |         | 0.776 " (19.735) | 0.867 " (21.973) | 0.234" (5.959)         | 0.068 " (1.717)                 | 0.795" (20.2)              | 1.222" (31.209)            | 1000      |
| 190-00258         | SNP18AGHS0C2  | SNP18A  | .802 " (20.4)    | .940 " (23.9)    | .240" (6.1)            | .070 " (1.78)                   | .958" (24.3)               | 1.418" (36)                | 100       |
| 190-00259         | SNP18AGHS0M4  |         | .802 " (20.4)    | .940 " (23.9)    | .240" (6.1)            | .070 " (1.78)                   | .958" (24.3)               | 1.418" (36)                | 1000      |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.  
Snapper performance varies on application and environmental factors; end use testing is highly recommended.

## Snapper Hose Clamps Polyamide 6.6 Glass Filled Impact Modified Heat Stabilized *continued*



| Material Data         |                                                                        | RoHS |
|-----------------------|------------------------------------------------------------------------|------|
| Material              | Polyamide 6.6 glass filled impact modified heat stabilized (PA66GF13%) |      |
| Operating Temperature | -40 °F to +221 °F (-40 °C to +105 °C)                                  |      |
| Color                 | Black                                                                  |      |
| Flammability          | UL94 HB                                                                |      |

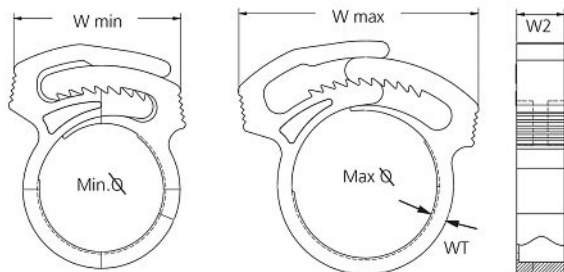
Product Selection

| Article No. | Part No.     | Type   | Min. Ø           | Max. Ø           | Width (W2)      | Wall Thickness (WT) | Width (W) Min.  | Width (W) Max.   | Pkg. Qty. |
|-------------|--------------|--------|------------------|------------------|-----------------|---------------------|-----------------|------------------|-----------|
|             |              |        |                  |                  | in. (mm)        | in. (mm)            | in. (mm)        | in. (mm)         |           |
| 190-00090   | SNP19GHS0C2  | SNP19  | 0.878 " (22.28)  | 1.011 " (25.652) | 0.234" (5.959)  | 0.071 " (1.818)     | 0.908" (23.028) | 1.423" (36.158)  | 100       |
| 190-00093   | SNP19GHS0M4  |        | 0.878 " (22.28)  | 1.011 " (25.652) | 0.234" (5.959)  | 0.071 " (1.818)     | 0.908" (23.028) | 1.423" (36.158)  | 1000      |
| 192-10220   | SNP22GHS0C2  | SNP22  | 0.948 " (24.119) | 1.096 " (27.798) | 0.236" (5.959)  | 0.071 " (1.818)     | 0.941" (23.937) | 1.488" (37.774)  | 100       |
| 190-00111   | SNP22GHS0M4  |        | 0.948 " (24.119) | 1.096 " (27.798) | 0.236" (5.959)  | 0.071 " (1.818)     | 0.941" (23.937) | 1.488" (37.774)  | 1000      |
| 192-10240   | SNP24GHS0C2  | SNP24  | 1.007 " (25.55)  | 1.16 " (29.434)  | 0.295" (7.474)  | 0.07 " (1.818)      | 0.973" (24.745) | 1.538" (39.087)  | 100       |
| 190-00119   | SNP24GHS0H4  |        | 1.007 " (25.55)  | 1.16 " (29.434)  | 0.295" (7.474)  | 0.07 " (1.818)      | 0.973" (24.745) | 1.538" (39.087)  | 500       |
| 190-00127   | SNP28GHS0C2  | SNP28  | 1.148 " (29.127) | 1.325 " (33.624) | 0.291" (7.373)  | 0.069 " (1.717)     | 1.018" (25.856) | 1.647" (41.814)  | 100       |
| 190-00128   | SNP28GHS0H4  |        | 1.148 " (29.127) | 1.325 " (33.624) | 0.291" (7.373)  | 0.069 " (1.717)     | 1.018" (25.856) | 1.647" (41.814)  | 500       |
| 192-10320   | SNP32GHS0K2  | SNP32  | 1.245 " (31.58)  | 1.436 " (36.485) | 0.29" (7.373)   | 0.069 " (1.717)     | 1.075" (27.27)  | 1.741" (44.238)  | 50        |
| 190-00140   | SNP32GHS0H4  |        | 1.245 " (31.58)  | 1.436 " (36.485) | 0.29" (7.373)   | 0.069 " (1.717)     | 1.075" (27.27)  | 1.741" (44.238)  | 500       |
| 190-00244   | SNP33GHS0K2  | SNP33  | 1.311 " (33.317) | 1.63 " (41.391)  | 0.293" (7.474)  | 0.068 " (1.717)     | 1.58" (9.797)   | 2.542" (64.539)  | 50        |
| 190-00148   | SNP33GHS0H4  |        | 1.311 " (33.317) | 1.63 " (41.391)  | 0.293" (7.474)  | 0.068 " (1.717)     | 1.58" (9.797)   | 2.542" (64.539)  | 500       |
| 190-00149   | SNP34GHS0K2  | SNP34  | 1.367 " (34.748) | 1.6 " (40.676)   | 0.295" (7.474)  | 0.069 " (1.717)     | 1.198" (30.401) | 1.986" (50.399)  | 50        |
| 190-00150   | SNP34GHS0H4  |        | 1.367 " (34.748) | 1.6 " (40.676)   | 0.295" (7.474)  | 0.069 " (1.717)     | 1.198" (30.401) | 1.986" (50.399)  | 500       |
| 192-10360   | SNP36GHS0K2  | SNP36  | 1.504 " (38.223) | 1.762 " (44.764) | 0.29" (7.373)   | 0.068 " (1.717)     | 1.274" (32.32)  | 2.113" (53.631)  | 50        |
| 190-00158   | SNP36GHS0H4  |        | 1.504 " (38.223) | 1.762 " (44.764) | 0.29" (7.373)   | 0.068 " (1.717)     | 1.274" (32.32)  | 2.113" (53.631)  | 500       |
| 192-10380   | SNP38GHS0K2  | SNP38  | 1.629 " (41.391) | 1.903 " (48.341) | 0.294" (7.474)  | 0.069 " (1.717)     | 1.362" (34.643) | 2.261" (57.469)  | 50        |
| 190-00163   | SNP38GHS0H4  |        | 1.629 " (41.391) | 1.903 " (48.341) | 0.294" (7.474)  | 0.069 " (1.717)     | 1.362" (34.643) | 2.261" (57.469)  | 500       |
| 191-00005   | SNP42NGHS0K2 | SNP42N | 1.768 " (44.866) | 2.054 " (52.224) | 0.358" (9.09)   | 0.069 " (1.717)     | 1.383" (35.148) | 2.325" (59.085)  | 50        |
| 191-00008   | SNP42NGHS0C2 |        | 1.768 " (44.866) | 2.054 " (52.224) | 0.358" (9.09)   | 0.069 " (1.717)     | 1.383" (35.148) | 2.325" (59.085)  | 100       |
| 192-10500   | SNP50GHS0C2  | SNP50  | 2.042 " (51.92)  | 2.327 " (59.07)  | 0.294" (7.474)  | 0.068 " (1.717)     | 1.425" (36.158) | 2.364" (60.095)  | 100       |
| 190-00197   | SNP60GHS0C2  | SNP60  | 2.308 " (58.66)  | 2.639 " (67.04)  | 0.294" (7.474)  | 0.068 " (1.717)     | 1.463" (38.481) | 2.585" (65.65)   | 100       |
| 190-00209   | SNP70GHS0C2  | SNP70  | 2.562 " (65.10)  | 2.961 " (75.22)  | 0.374" (9.494)  | 0.078 " (2.02)      | 1.834" (46.561) | 3.02" (76.659)   | 100       |
| 190-00215   | SNP76GHS0C2  | SNP76  | 2.901 " (73.69)  | 3.276 " (83.19)  | 0.391" (9.898)  | 0.067 " (1.717)     | 1.704" (43.329) | 2.862" (72.72)   | 100       |
| 190-00229   | SNP80GHS0C2  | SNP80  | 3.224 " (81.86)  | 3.600 " (91.47)  | 0.453" (11.514) | 0.101 " (2.525)     | 1.913" (48.581) | 3.171" (80.598)  | 100       |
| 190-00249   | SNP90GHS0C2  | SNP90  | 3.583 " (91.06)  | 4.008 " (101.79) | 0.389" (9.898)  | 0.068 " (1.717)     | 1.936" (49.187) | 3.236" (82.214)  | 100       |
| 192-11000   | SNP100GHS0X2 | SNP100 | 3.956 " (100.46) | 4.491 " (114.06) | 0.398" (10.1)   | 0.099 " (2.424)     | 2.068" (52.52)  | 3.543" (89.991)  | 25        |
| 190-00053   | SNP101GHS0X2 | SNP101 | 4.121 " (104.65) | 4.718 " (119.88) | 0.446" (11.312) | 0.099 " (2.525)     | 2.426" (61.61)  | 4.261" (108.272) | 25        |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes. Snapper performance varies on application and environmental factors; end use testing is highly recommended.

## Snapper Hose Clamps

### Polyacetal (POM)



#### Material Data

|                       |                                             |
|-----------------------|---------------------------------------------|
| Material              | <b>Polyacetal (POM)</b>                     |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C)</b> |
| Color                 | <b>White</b>                                |
| Flammability          | <b>UL94 HB</b>                              |



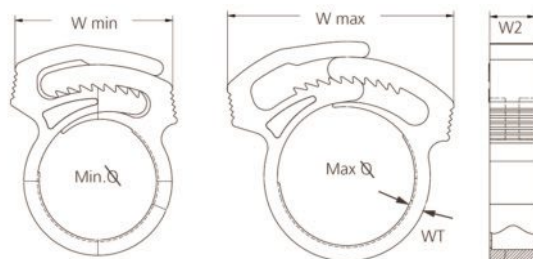
#### Product Selection

| Article No. | Part No.           | Type    | Min. Ø          | Max. Ø          | Width (W2)    | Wall Thickness (WT) | Width (W) Min. | Width (W) Max. | Pkg. Qty. |
|-------------|--------------------|---------|-----------------|-----------------|---------------|---------------------|----------------|----------------|-----------|
|             |                    |         |                 |                 | in. (mm)      | in. (mm)            | in. (mm)       | in. (mm)       |           |
| 190-00022   | <b>SNP110C2</b>    | SNP1    | 0.228 " (5.8)   | 0.256 " (6.5)   | 0.148" (3.8)  | 0.04 " (1)          | 0.32" (8.1)    | 0.451" (11.5)  | 100       |
| 190-00023   | <b>SNP110M4</b>    |         | 0.228 " (5.8)   | 0.256 " (6.5)   | 0.148" (3.8)  | 0.04 " (1)          | 0.32" (8.1)    | 0.451" (11.5)  | 1000      |
| 190-00027   | <b>SNP1.2510C2</b> | SNP1.25 | 0.269 " (6.8)   | 0.291 " (7.4)   | 0.149" (3.8)  | 0.042 " (1.1)       | 0.404" (10.3)  | 0.486" (12.3)  | 100       |
| 190-00028   | <b>SNP1.2510M4</b> |         | 0.269 " (6.8)   | 0.291 " (7.4)   | 0.149" (3.8)  | 0.042 " (1.1)       | 0.404" (10.3)  | 0.486" (12.3)  | 1000      |
| 190-00033   | <b>SNP1.510C2</b>  | SNP1.5  | 0.307 " (7.8)   | 0.342 " (8.7)   | 0.146" (3.7)  | 0.054 " (1.4)       | 0.41" (10.4)   | 0.587" (14.9)  | 100       |
| 190-00034   | <b>SNP1.510M4</b>  |         | 0.307 " (7.8)   | 0.342 " (8.7)   | 0.146" (3.7)  | 0.054 " (1.4)       | 0.41" (10.4)   | 0.587" (14.9)  | 1000      |
| 190-00101   | <b>SNP210C2</b>    | SNP2    | 0.351 " (8.9)   | 0.394 " (10)    | 0.231" (5.9)  | 0.067 " (1.7)       | 0.472" (12)    | 0.672" (17.1)  | 100       |
| 190-00102   | <b>SNP210M4</b>    |         | 0.351 " (8.9)   | 0.394 " (10)    | 0.231" (5.9)  | 0.067 " (1.7)       | 0.472" (12)    | 0.672" (17.1)  | 1000      |
| 190-00135   | <b>SNP310C2</b>    | SNP3    | 0.387 " (9.8)   | 0.44 " (11.2)   | 0.232" (5.9)  | 0.069 " (1.8)       | 0.561" (14.2)  | 0.797" (20.2)  | 100       |
| 190-00136   | <b>SNP310M4</b>    |         | 0.387 " (9.8)   | 0.44 " (11.2)   | 0.232" (5.9)  | 0.069 " (1.8)       | 0.561" (14.2)  | 0.797" (20.2)  | 1000      |
| 190-00165   | <b>SNP410C2</b>    | SNP4    | 0.404 " (10.3)  | 0.452 " (11.5)  | 0.233" (5.9)  | 0.066 " (1.7)       | 0.524" (13.3)  | 0.749" (19)    | 100       |
| 190-00170   | <b>SNP410M4</b>    |         | 0.404 " (10.3)  | 0.452 " (11.5)  | 0.233" (5.9)  | 0.066 " (1.7)       | 0.524" (13.3)  | 0.749" (19)    | 1000      |
| 190-00187   | <b>SNP610C2</b>    | SNP6    | 0.449 " (11.4)  | 0.511 " (13)    | 0.233" (5.9)  | 0.069 " (1.8)       | 0.572" (14.5)  | 0.838" (21.3)  | 100       |
| 190-00190   | <b>SNP610M4</b>    |         | 0.449 " (11.4)  | 0.511 " (13)    | 0.233" (5.9)  | 0.069 " (1.8)       | 0.572" (14.5)  | 0.838" (21.3)  | 1000      |
| 190-00204   | <b>SNP710C2</b>    | SNP7    | 0.453 " (11.5)  | 0.546 " (13.9)  | 0.233" (5.9)  | 0.069 " (1.8)       | 0.647" (16.4)  | 0.971" (24.7)  | 100       |
| 190-00206   | <b>SNP710M4</b>    |         | 0.453 " (11.5)  | 0.546 " (13.9)  | 0.233" (5.9)  | 0.069 " (1.8)       | 0.647" (16.4)  | 0.971" (24.7)  | 1000      |
| 190-00224   | <b>SNP810C2</b>    | SNP8    | 0.513 " (13)    | 0.586 " (14.9)  | 0.231" (5.9)  | 0.069 " (1.8)       | 0.647" (16.4)  | 0.971" (24.7)  | 100       |
| 190-00226   | <b>SNP810M4</b>    |         | 0.513 " (13)    | 0.586 " (14.9)  | 0.231" (5.9)  | 0.069 " (1.8)       | 0.647" (16.4)  | 0.971" (24.7)  | 1000      |
| 190-00045   | <b>SNP1010C2</b>   | SNP10   | 0.569 " (14.5)  | 0.65 " (16.5)   | 0.233" (5.9)  | 0.068 " (1.7)       | 0.675" (17.2)  | 1.028" (26.1)  | 100       |
| 190-00046   | <b>SNP1010M4</b>   |         | 0.569 " (14.5)  | 0.65 " (16.5)   | 0.233" (5.9)  | 0.068 " (1.7)       | 0.675" (17.2)  | 1.028" (26.1)  | 1000      |
| 190-00252   | <b>SNP12A10C2</b>  | SNP12A  | .615 " (15.62)  | .704 " (17.88)  | .233" (5.92)  | .070 " (1.78)       | .802" (20.37)  | 1.152" (29.26) | 100       |
| 190-00253   | <b>SNP12A10M4</b>  |         | .615 " (15.62)  | .704 " (17.88)  | .233" (5.92)  | .070 " (1.78)       | .802" (20.37)  | 1.152" (29.26) | 1000      |
| 190-00302   | <b>SNP14A10C2</b>  | SNP14A  | 0.714 " (18.4)  | 0.810 " (20.57) | 0.233" (5.92) | 0.069 " (1.75)      | 0.805" (20.45) | 1.157" (29.39) | 100       |
| 190-00303   | <b>SNP14A10M4</b>  |         | 0.714 " (18.4)  | 0.810 " (20.57) | 0.233" (5.92) | 0.069 " (1.75)      | 0.805" (20.45) | 1.157" (29.39) | 1000      |
| 190-00077   | <b>SNP1610C2</b>   | SNP16   | 0.759 " (19.31) | 0.848 " (21.5)  | 0.232" (5.9)  | 0.067 " (1.7)       | 0.787" (20)    | 1.21" (30.9)   | 100       |
| 190-00079   | <b>SNP1610M4</b>   |         | 0.759 " (19.31) | 0.848 " (21.5)  | 0.232" (5.9)  | 0.067 " (1.7)       | 0.787" (20)    | 1.21" (30.9)   | 1000      |
| 181-00256   | <b>SNP18A10C2</b>  | SNP18A  | .790 " (20)     | .933 " (23.7)   | .239" (6.07)  | .067 " (1.7)        | .940" (23.9)   | 1.391" (35.3)  | 100       |
| 190-00257   | <b>SNP18A10M4</b>  |         | .790 " (20)     | .933 " (23.7)   | .239" (6.07)  | .067 " (1.7)        | .940" (23.9)   | 1.391" (35.3)  | 1000      |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

Acetal black is also available based upon minimum volume requirements. Snapper performance varies on application and environmental factors; end use testing is highly recommended.

## Snapper Hose Clamps Polyacetal (POM) *continued*



### Material Data

|                       |                                             |
|-----------------------|---------------------------------------------|
| Material              | <b>Polyacetal (POM)</b>                     |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C)</b> |
| Color                 | <b>White</b>                                |
| Flammability          | <b>UL94 HB</b>                              |



### Product Selection

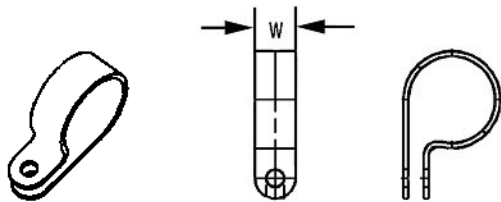
| Article No. | Part No.          | Type   | Min. Ø          | Max. Ø          | Width (W2)    | Wall Thickness (WT) | Width (W) Min. | Width (W) Max. | Pkg. Qty. |
|-------------|-------------------|--------|-----------------|-----------------|---------------|---------------------|----------------|----------------|-----------|
|             |                   |        |                 |                 | in. (mm)      | in. (mm)            | in. (mm)       | in. (mm)       |           |
| 190-00094   | <b>SNP1910C2</b>  | SNP19  | 0.859 " (21.8)  | 0.989 " (25.1)  | 0.232" (5.9)  | 0.07 " (1.8)        | 0.899" (22.8)  | 1.409" (35.8)  | 100       |
| 190-00095   | <b>SNP1910M4</b>  |        | 0.859 " (21.8)  | 0.989 " (25.1)  | 0.232" (5.9)  | 0.07 " (1.8)        | 0.899" (22.8)  | 1.409" (35.8)  | 1000      |
| 190-00113   | <b>SNP2210C2</b>  | SNP22  | 0.928 " (23.6)  | 1.072 " (27.2)  | 0.234" (5.9)  | 0.07 " (1.8)        | 0.932" (23.7)  | 1.473" (37.4)  | 100       |
| 190-00114   | <b>SNP2210M4</b>  |        | 0.928 " (23.6)  | 1.072 " (27.2)  | 0.234" (5.9)  | 0.07 " (1.8)        | 0.932" (23.7)  | 1.473" (37.4)  | 1000      |
| 190-00121   | <b>SNP2410C2</b>  | SNP24  | 0.985 " (25)    | 1.135 " (28.8)  | 0.292" (7.4)  | 0.069 " (1.8)       | 0.963" (24.5)  | 1.523" (38.7)  | 100       |
| 190-00122   | <b>SNP2410H4</b>  |        | 0.985 " (25)    | 1.135 " (28.8)  | 0.292" (7.4)  | 0.069 " (1.8)       | 0.963" (24.5)  | 1.523" (38.7)  | 500       |
| 190-00124   | <b>SNP2810C2</b>  | SNP28  | 1.123 " (28.5)  | 1.296 " (32.9)  | 0.288" (7.3)  | 0.068 " (1.7)       | 1.008" (25.6)  | 1.631" (41.4)  | 100       |
| 190-00125   | <b>SNP2810H4</b>  |        | 1.123 " (28.5)  | 1.296 " (32.9)  | 0.288" (7.3)  | 0.068 " (1.7)       | 1.008" (25.6)  | 1.631" (41.4)  | 500       |
| 190-00142   | <b>SNP3210K2</b>  | SNP32  | 1.218 " (30.9)  | 1.405 " (35.7)  | 0.287" (7.3)  | 0.068 " (1.7)       | 1.064" (27)    | 1.724" (43.8)  | 50        |
| 190-00143   | <b>SNP3210H4</b>  |        | 1.218 " (30.9)  | 1.405 " (35.7)  | 0.287" (7.3)  | 0.068 " (1.7)       | 1.064" (27)    | 1.724" (43.8)  | 500       |
| 190-00146   | <b>SNP3310K2</b>  | SNP33  | 1.283 " (32.6)  | 1.595 " (40.5)  | 0.29" (7.4)   | 0.067 " (1.7)       | 1.564" (9.7)   | 2.517" (63.9)  | 50        |
| 190-00147   | <b>SNP3310H4</b>  |        | 1.283 " (32.6)  | 1.595 " (40.5)  | 0.29" (7.4)   | 0.067 " (1.7)       | 1.564" (9.7)   | 2.517" (63.9)  | 500       |
| 190-00151   | <b>SNP3410K2</b>  | SNP34  | 1.338 " (34)    | 1.566 " (39.8)  | 0.292" (7.4)  | 0.068 " (1.7)       | 1.186" (30.1)  | 1.966" (49.9)  | 50        |
| 190-00152   | <b>SNP3410H4</b>  |        | 1.338 " (34)    | 1.566 " (39.8)  | 0.292" (7.4)  | 0.068 " (1.7)       | 1.186" (30.1)  | 1.966" (49.9)  | 500       |
| 190-00157   | <b>SNP3610K2</b>  | SNP36  | 1.472 " (37.4)  | 1.724 " (43.8)  | 0.287" (7.3)  | 0.067 " (1.7)       | 1.261" (32)    | 2.092" (53.1)  | 50        |
| 190-00156   | <b>SNP3610H4</b>  |        | 1.472 " (37.4)  | 1.724 " (43.8)  | 0.287" (7.3)  | 0.067 " (1.7)       | 1.261" (32)    | 2.092" (53.1)  | 500       |
| 190-00162   | <b>SNP3810K2</b>  | SNP38  | 1.594 " (40.5)  | 1.862 " (47.3)  | 0.291" (7.4)  | 0.068 " (1.7)       | 1.349" (34.3)  | 2.239" (56.9)  | 50        |
| 190-00245   | <b>SNP3810H4</b>  |        | 1.594 " (40.5)  | 1.862 " (47.3)  | 0.291" (7.4)  | 0.068 " (1.7)       | 1.349" (34.3)  | 2.239" (56.9)  | 500       |
| 190-00247   | <b>SNP42N10K2</b> | SNP42N | 1.73 " (43.9)   | 2.01 " (51.1)   | 0.354" (9)    | 0.068 " (1.7)       | 1.369" (34.8)  | 2.302" (58.5)  | 50        |
| 190-00246   | <b>SNP42N10C2</b> |        | 1.73 " (43.9)   | 2.01 " (51.1)   | 0.354" (9)    | 0.068 " (1.7)       | 1.369" (34.8)  | 2.302" (58.5)  | 100       |
| 190-00248   | <b>SNP5010C2</b>  | SNP50  | 1.999 " (50.8)  | 2.277 " (57.8)  | 0.291" (7.4)  | 0.067 " (1.7)       | 1.411" (35.8)  | 2.341" (59.5)  | 100       |
| 190-00196   | <b>SNP6010C2</b>  | SNP60  | 2.259 " (57.4)  | 2.582 " (65.6)  | 0.291" (7.4)  | 0.067 " (1.7)       | 1.449" (38.1)  | 2.559" (65)    | 100       |
| 190-00212   | <b>SNP7010C2</b>  | SNP70  | 2.507 " (63.7)  | 2.897 " (73.6)  | 0.37" (9.4)   | 0.077 " (2)         | 1.816" (46.1)  | 2.99" (75.9)   | 100       |
| 190-00217   | <b>SNP7610C2</b>  | SNP76  | 2.839 " (72.1)  | 3.206 " (81.4)  | 0.387" (9.8)  | 0.066 " (1.7)       | 1.687" (42.9)  | 2.834" (72)    | 100       |
| 190-00231   | <b>SNP8010C2</b>  | SNP80  | 3.155 " (80.1)  | 3.523 " (89.5)  | 0.449" (11.4) | 0.1 " (2.5)         | 1.894" (48.1)  | 3.14" (79.8)   | 100       |
| 190-00233   | <b>SNP9010C2</b>  | SNP90  | 3.506 " (89.1)  | 3.922 " (99.6)  | 0.385" (9.8)  | 0.067 " (1.7)       | 1.917" (48.7)  | 3.204" (81.4)  | 100       |
| 190-00052   | <b>SNP10010X2</b> | SNP100 | 3.871 " (98.3)  | 4.395 " (111.6) | 0.394" (10)   | 0.098 " (2.4)       | 2.048" (52)    | 3.508" (89.1)  | 25        |
| 190-00250   | <b>SNP10110X2</b> | SNP101 | 4.033 " (102.4) | 4.617 " (117.3) | 0.442" (11.2) | 0.098 " (2.5)       | 2.402" (61)    | 4.219" (107.2) | 25        |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Clamps and Clips

### P Clamps

HellermannTyton's P clamps are designed for locating wires, cables, and components in instruments, appliances, and electrical apparatus. These injection molded clamps are used for both internal and external installations. The inside edges are radiused to prevent cutting into cable insulation.



#### Material Data

|                       |                                               |
|-----------------------|-----------------------------------------------|
| Material              | <b>Polyamide 6.6 heat stabilized (PA66HS)</b> |
| Color                 | <b>Black</b>                                  |
| Operating Temperature | <b>-40 °F to +221 °F (-40 °C to +105 °C)</b>  |
| Flammability          | <b>UL94 V2</b>                                |



#### Product Selection

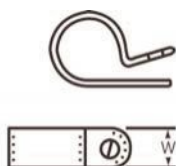
| Article No. | Part No.         | Type | Max. Ø Bundle | Width (W)     | Mounting Hole Centers | Mounting Hole Ø | Radius        | Pkg. Qty. |
|-------------|------------------|------|---------------|---------------|-----------------------|-----------------|---------------|-----------|
|             |                  |      | in. (mm)      | in. (mm)      | in. (mm)              | in. (mm)        | in. (mm)      |           |
| 211-60000   | <b>211-60000</b> | H1P  | .125" (3.2)   | .393" (10.0)  | .3346" (8.5)          | .1654" (4.2)    | .01969" (0.5) | 100       |
| 211-60010   | <b>211-60010</b> | H1P  | .125" (3.2)   | .393" (10.0)  | .3346" (8.5)          | .1654" (4.2)    | .01969" (0.5) | 1000      |
| 211-60001   | <b>211-60001</b> | H2P  | .196" (5.0)   | .3937" (10.0) | .375" (9.5)           | .1654" (4.2)    | .03937" (1.0) | 100       |
| 211-60020   | <b>211-60020</b> | H2P  | .196" (5.0)   | .3937" (10.0) | .375" (9.5)           | .1654" (4.2)    | .03937" (1.0) | 1000      |
| 211-60002   | <b>211-60002</b> | H3P  | .255" (6.5)   | .3937" (10.0) | .3937" (10.0)         | .1654" (4.2)    | .03937" (1.0) | 100       |
| 211-60040   | <b>211-60040</b> | H3P  | .255" (6.5)   | .3937" (10.0) | .3937" (10.0)         | .1654" (4.2)    | .03937" (1.0) | 1000      |
| 211-60003   | <b>211-60003</b> | H4P  | .314" (8.0)   | .3937" (10.0) | .3937" (10.0)         | .1654" (4.2)    | .03937" (1.0) | 100       |
| 211-60050   | <b>211-60050</b> | H4P  | .314" (8.0)   | .3937" (10.0) | .3937" (10.0)         | .1654" (4.2)    | .03937" (1.0) | 1000      |
| 211-60005   | <b>211-60005</b> | H6P  | .433" (11.0)  | .3937" (10.0) | .5118" (13.0)         | .1654" (4.2)    | .03937" (1.0) | 100       |
| 211-60061   | <b>211-60061</b> | H6P  | .433" (11.0)  | .3937" (10.0) | .5118" (13.0)         | .1654" (4.2)    | .03937" (1.0) | 1000      |
| 211-60006   | <b>211-60006</b> | H7P  | .492" (12.5)  | .3937" (10.0) | .5512" (14.0)         | .1654" (4.2)    | .05906" (1.5) | 100       |
| 211-60078   | <b>211-60078</b> | H7P  | .492" (12.5)  | .3937" (10.0) | .5512" (14.0)         | .1654" (4.2)    | .05906" (1.5) | 1000      |
| 211-60007   | <b>211-60007</b> | H8P  | .55" (14.0)   | .3937" (10.0) | .5906" (15.0)         | .1654" (4.2)    | .05906" (1.5) | 100       |
| 211-60090   | <b>211-60090</b> | H8P  | .55" (14.0)   | .3937" (10.0) | .5906" (15.0)         | .1654" (4.2)    | .05906" (1.5) | 1000      |
| 211-60008   | <b>211-60008</b> | H9P  | .629" (16.0)  | .3937" (10.0) | .63" (16.0)           | .1654" (4.2)    | .05906" (1.5) | 1000      |
| 211-60009   | <b>211-60009</b> | H10P | .688" (17.5)  | .3937" (10.0) | .6693" (17.0)         | .1654" (4.2)    | .05906" (1.5) | 1000      |
| 211-60120   | <b>211-60120</b> | H11P | .748" (19.0)  | .3937" (10.0) | .7087" (18.0)         | .1654" (4.2)    | .07874" (2.0) | 1000      |
| 211-60140   | <b>211-60140</b> | H13P | .866" (22.0)  | .4724" (12.0) | .8071" (20.5)         | .2047" (5.2)    | .07874" (2.0) | 1000      |
| 211-60160   | <b>211-60160</b> | H15P | 1.003" (25.5) | .4724" (12.0) | .9055" (23.0)         | .2047" (5.2)    | .09843" (2.5) | 1000      |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## T Clamps

### T3 Series

T Series clamps are injection molded and designed for applications in electronics, automotive, aircraft, and appliance industries. The T3 series has a 3/8" wide contact area. All contact edges have a full radius for product protection, and sizes are clearly marked on each clamp.



| Material Data         |                                             | RoHS |
|-----------------------|---------------------------------------------|------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                 |      |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C)</b> |      |
| Flammability          | <b>UL94 V2</b>                              |      |

**UL** US  
File# E64139

File# E64131

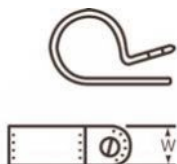
| Product Selection    |             |         |               |           |                       |                |       |           |
|----------------------|-------------|---------|---------------|-----------|-----------------------|----------------|-------|-----------|
| Article No.          | Part No.    | Type    | Max. Ø Bundle | Width (W) | Mounting Hole Centers | Wall Thickness | Color | Pkg. Qty. |
|                      |             |         | in. (mm)      | in. (mm)  | in. (mm)              | in. (mm)       |       |           |
| T Clamps - T3 Series |             |         |               |           |                       |                |       |           |
| 211-00132            | T3D012510M4 | T3D0125 | .125"         | .375"     | .329"                 | .050"          | White | 1000      |
| 211-00131            | T3D01250M4  | T3D0125 | (3.2)         | (9.5)     | (8.4)                 | (1.3)          | Black | 1000      |
| 211-00158            | T3D018710M4 | T3D0187 | .188"         | .375"     | .430"                 | .050"          | White | 1000      |
| 211-00133            | T3D01870M4  | T3D0187 | (4.7)         | (9.5)     | (10.9)                | (1.3)          | Black | 1000      |
| 211-00135            | T3D025010M4 | T3D0250 | .250"         | .375"     | .410"                 | .050"          | White | 1000      |
| 211-00134            | T3D02500M4  | T3D0250 | (6.3)         | (9.5)     | (10.4)                | (1.3)          | Black | 1000      |
| 211-00137            | T3D031210M4 | T3D0312 | .313"         | .375"     | .495"                 | .050"          | Black | 1000      |
| 211-00136            | T3D03120M4  | T3D0312 | (7.9)         | (9.5)     | (12.6)                | (1.3)          | Black | 1000      |
| 211-00139            | T3D037510M4 | T3D0375 | .375"         | .375"     | .595"                 | .050"          | White | 1000      |
| 211-00138            | T3D03750M4  | T3D0375 | (9.5)         | (9.5)     | (15.1)                | (1.3)          | Black | 1000      |
| 211-00140            | T3D043710M4 | T3D0437 | .438"         | .375"     | .574"                 | .050"          | White | 1000      |
| 211-00146            | T3D04370M4  | T3D0437 | (11.1)        | (9.5)     | (14.6)                | (1.3)          | Black | 1000      |
| 211-00141            | T3D050010M4 | T3D0500 | .500"         | .375"     | .605"                 | .050"          | White | 1000      |
| 211-00142            | T3D05000M4  | T3D0500 | (12.7)        | (9.5)     | (15.4)                | (1.3)          | Black | 1000      |
| 211-00143            | T3D056210M4 | T3D0562 | .563"         | .375"     | .606"                 | .050"          | White | 1000      |
| 211-00159            | T3D05620M4  | T3D0562 | (14.3)        | (9.5)     | (15.4)                | (1.3)          | Black | 1000      |
| 211-00145            | T3D062510M4 | T3D0625 | .625"         | .375"     | .678"                 | .050"          | White | 1000      |
| 211-00144            | T3D06250M4  | T3D0625 | (15.8)        | (9.5)     | (17.2)                | (1.3)          | Black | 1000      |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## T Clamps

### T5 Series

T Series clamps are injection molded and designed for applications in electronics, automotive, aircraft, and appliance industries. The T5 series provides a full 1/2" wide contact area. All contact edges have a full radius for product protection, and sizes are clearly marked on each clamp.



| Material Data         |                                      |
|-----------------------|--------------------------------------|
| Material              | Polyamide 6.6 (PA66)                 |
| Operating Temperature | -40 °F to +185 °F (-40 °C to +85 °C) |
| Flammability          | UL94 V2                              |



File# E64139

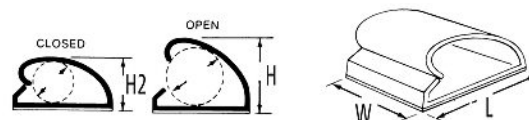
| Product Selection    |             |         |               |           |                       |                |       |           |  |
|----------------------|-------------|---------|---------------|-----------|-----------------------|----------------|-------|-----------|--|
| Article No.          | Part No.    | Type    | Max. Ø Bundle | Width (W) | Mounting Hole Centers | Wall Thickness | Color | Pkg. Qty. |  |
|                      |             |         | in. (mm)      | in. (mm)  | in. (mm)              | in. (mm)       |       |           |  |
| T Clamps - T5 Series |             |         |               |           |                       |                |       |           |  |
| 211-00117            | T5D012510M4 | T5D0125 | .125"         | .500"     | .315"                 | .050"          | White | 1000      |  |
| 211-00129            | T5D01250M4  | T5D0125 | (3.2)         | (12.7)    | (9.1)                 | (1.3)          | Black | 1000      |  |
| 211-00118            | T5D018710M4 | T5D0187 | .188"         | .500"     | .425"                 | .050"          | White | 1000      |  |
| 211-00130            | T5D01870M4  | T5D0187 | (4.7)         | (12.7)    | (10.8)                | (1.3)          | Black | 1000      |  |
| 211-00109            | T5D025010M4 | T5D0250 | .250"         | .500"     | .410"                 | .050"          | White | 1000      |  |
| 211-00123            | T5D02500M4  | T5D0250 | (6.3)         | (12.7)    | (11.7)                | (1.3)          | Black | 1000      |  |
| 211-00110            | T5D031210M4 | T5D0312 | .313"         | .500"     | .500"                 | .050"          | White | 1000      |  |
| 211-00147            | T5D03120M4  | T5D0312 | (7.9)         | (12.7)    | (12.7)                | (1.3)          | Black | 1000      |  |
| 211-00111            | T5D037510M4 | T5D0375 | .375"         | .500"     | .530"                 | .050"          | White | 1000      |  |
| 211-00124            | T5D03750M4  | T5D0375 | (9.5)         | (12.7)    | (13.4)                | (1.3)          | Black | 1000      |  |
| 211-00148            | T5D043710M4 | T5D0437 | .438"         | .500"     | .560"                 | .050"          | White | 1000      |  |
| 211-00149            | T5D04370M4  | T5D0437 | (11.1)        | (12.7)    | (14.2)                | (1.3)          | Black | 1000      |  |
| 211-00112            | T5D050010M4 | T5D0500 | .500"         | .500"     | .595"                 | .050"          | White | 1000      |  |
| 211-00125            | T5D05000M4  | T5D0500 | (12.7)        | (12.7)    | (15.1)                | (1.3)          | Black | 1000      |  |
| 211-00113            | T5D056210M4 | T5D0562 | .563"         | .500"     | .606"                 | .050"          | White | 1000      |  |
| 211-00150            | T5D05620M4  | T5D0562 | (14.3)        | (12.7)    | (15.4)                | (1.3)          | Black | 1000      |  |
| 211-00114            | T5D062510M4 | T5D0625 | .625"         | .500"     | .655"                 | .050"          | White | 1000      |  |
| 211-00126            | T5D06250M4  | T5D0625 | (15.8)        | (12.7)    | (16.6)                | (1.3)          | Black | 1000      |  |
| 211-00115            | T5D075010M4 | T5D0750 | .750"         | .500"     | .780"                 | .050"          | White | 1000      |  |
| 211-00127            | T5D07500M4  | T5D0750 | (19.0)        | (12.7)    | (19.8)                | (1.3)          | Black | 1000      |  |
| 211-00116            | T5D087510H4 | T5D0875 | .875"         | .500"     | .845"                 | .050"          | White | 500       |  |
| 211-00128            | T5D08750H4  | T5D0875 | (22.2)        | (12.7)    | (21.4)                | (1.3)          | Black | 500       |  |
| 211-00119            | T5D100010H4 | T5D1000 | 1.000"        | .500"     | .910"                 | .050"          | White | 500       |  |
| 211-00151            | T5D10000H4  | T5D1000 | (25.4)        | (12.7)    | (23.1)                | (1.3)          | Black | 500       |  |
| 211-00120            | T5D112510H4 | T5D1125 | 1.125"        | .500"     | .970"                 | .050"          | White | 500       |  |
| 211-00152            | T5D11250H4  | T5D1125 | (125)         | (12.7)    | (24.6)                | (1.3)          | Black | 500       |  |
| 211-00153            | T5D118710H4 | T5D1187 | 1.188"        | .500"     | 1.000"                | .050"          | White | 500       |  |
| 211-00154            | T5D11870H4  | T5D1187 | (30.1)        | (12.7)    | (25.4)                | (1.3)          | Black | 500       |  |
| 211-00121            | T5D125010F4 | T5D1250 | 1.250"        | .500"     | 1.060"                | .050"          | White | 250       |  |
| 211-00155            | T5D12500F4  | T5D1250 | (31.7)        | (12.7)    | (26.9)                | (1.3)          | Black | 250       |  |
| 211-00157            | T5D137510F4 | T5D1375 | 1.375"        | .500"     | 1.125"                | .050"          | White | 250       |  |
| 211-00156            | T5D13750F4  | T5D1375 | (34.9)        | (12.7)    | (28.9)                | (1.3)          | Black | 250       |  |
| 211-00122            | T5D150010F4 | T5D1500 | 1.500"        | .500"     | 1.190"                | .050"          | White | 250       |  |
|                      |             |         | (38.1)        | (12.7)    | (30.2)                | (1.3)          |       |           |  |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## WAC Adhesive

WAC Adhesive clamps offer a fast, convenient, low cost method of routing wires and cables. The easy to install adhesive system eliminates the time and expense of drilling holes. Ideal for economical wire and cable retention applications. Extruded from PVC. For 0.5" to 1" bundles.

| Material Data         |                                      |
|-----------------------|--------------------------------------|
| Material              | PVC (Polyvinylchloride)              |
| Color                 | Gray                                 |
| Operating Temperature | -20 °F to +150 °F (-28 °C to +65 °C) |
| Flammability          | UL94 V0 (excluding adhesive)         |



| Product Selection |                  |        | Min. Ø Bundle | Max. Ø Bundle | Length (L)   | Width (W)     | Height (H)    | Height (H2)  | Pkg. Qty. |
|-------------------|------------------|--------|---------------|---------------|--------------|---------------|---------------|--------------|-----------|
| Article No.       | Part No.         | Type   | in. (mm)      | in. (mm)      | in. (mm)     | in. (mm)      | in. (mm)      | in. (mm)     |           |
| 151-00667         | <b>151-00667</b> | WACO75 | 0.5" (12.7)   | 0.75" (19.1)  | 1.13" (28.7) | 1" (25.4)     | 0.62" (15.75) | 1.05" (26.7) | 500       |
| 151-00668         | <b>151-00668</b> | WAC100 | 0.75" (19.1)  | 1.0" (25.4)   | 1.5" (38.1)  | 1.25" (31.75) | 0.85" (21.59) | 1.39" (34.3) | 500       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

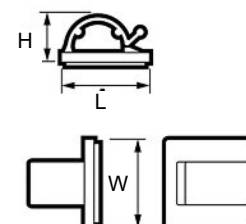
## RB Clips

RB self-adhesive clips are ideal for cable and pipe bundles. Bundles are easily snapped into or out of clips. The RB clips suit diameters of 1/8", 5/16", and 1/2".



Adhesive clips come in pairs connected together on adhesive liner.

| Material Data         |                                      |
|-----------------------|--------------------------------------|
| Material              | Polyamide 6.6 (PA66)                 |
| Color                 | Natural                              |
| Operating Temperature | -40 °F to +185 °F (-40 °C to +85 °C) |
| Flammability          | UL94 V2 (excluding adhesive)         |

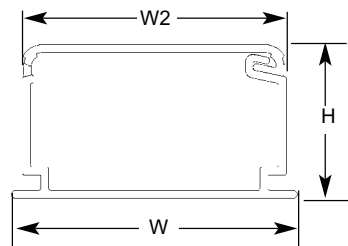
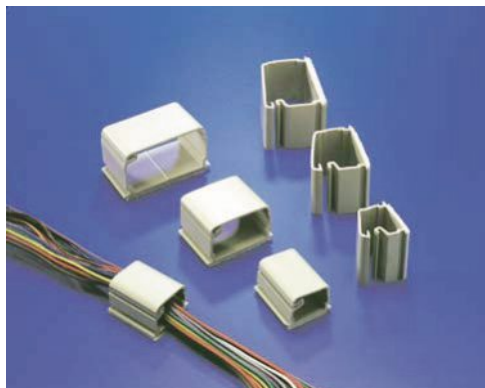


| Product Selection |               |      | Max. Ø Bundle | Length (L)    | Width (W)     | Height (H)  | Pkg. Qty. |
|-------------------|---------------|------|---------------|---------------|---------------|-------------|-----------|
| Article No.       | Part No.      | Type | in. (mm)      | in. (mm)      | in. (mm)      | in. (mm)    |           |
| 151-14005         | <b>RB5H4</b>  | RB5  | .1969" (5.0)  | .75" (19.0)   | .75" (19.0)   | .24" (6.0)  | 500       |
| 151-13608         | <b>RB8L4</b>  | RB8  | .315" (8.0)   | 1" (25.0)     | 1" (25.0)     | .45" (11.5) | 200       |
| 151-00506         | <b>RB14L4</b> | RB14 | .5512" (14.0) | 1.307" (33.2) | 1.079" (27.4) | .63" (16.0) | 200       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## TSR Adhesive Clips

TSR clips are designed for HellermannTyton's TSR surface raceway. The co-extruded hinge offers almost unlimited access to wire and cable without deformation or signs of wear often found when using many conventional clips. Designed for applications that require repeated access to the wire and cable, TSR clips are easy to open and close quickly and repeatedly. The tough, rubber-based adhesive allows for permanent bond to most surfaces. TSR clips are especially useful in prototype construction, engineering labs, or where constant changes are necessary.



### Material Data

|              |                              |
|--------------|------------------------------|
| Material     | PVC (Polyvinylchloride)      |
| Color        | Ivory                        |
| Flammability | UL94 V0 (excluding adhesive) |



### Product Selection

| Article No. | Part No.          | Type     | Max. Ø Bundle | Length (L)    | Width (W)    | Width (W2)    | Height (H)   | Pkg. Qty. |
|-------------|-------------------|----------|---------------|---------------|--------------|---------------|--------------|-----------|
|             |                   |          | in. (mm)      | in. (mm)      | in. (mm)     | in. (mm)      | in. (mm)     |           |
| 151-00278   | <b>SRCI0500C2</b> | SRCI0500 | .50" (12.7)   | .755" (19.17) | .84" (21.3)  | .75" (19.05)  | .50" (12.7)  | 100       |
| 151-00279   | <b>SRCI0750C2</b> | SRCI0750 | .75" (19.05)  | 1.25" (31.75) | 1.36" (34.5) | 1.25" (31.75) | .75" (19.05) | 100       |
| 151-00280   | <b>SRCI1000K2</b> | SRCI1000 | 1.0" (25.4)   | 1.75" (44.45) | 1.88" (47.8) | 1.75" (44.45) | 1.0" (25.4)  | 50        |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Dual Adjustable Flat Ribbon Cable Clamps

Designed to route, protect and secure flat ribbon cables in computers, electronics, panels and components, this unique adjustable clamp will not damage sensitive wire and cable. The clamp will adjust and close to the exact height of the ribbon cable, using only as much force as needed to secure the cable. The clamp is releasable on demand and adjustable on both sides. The low profile design allows for use in confined areas where space is a premium.

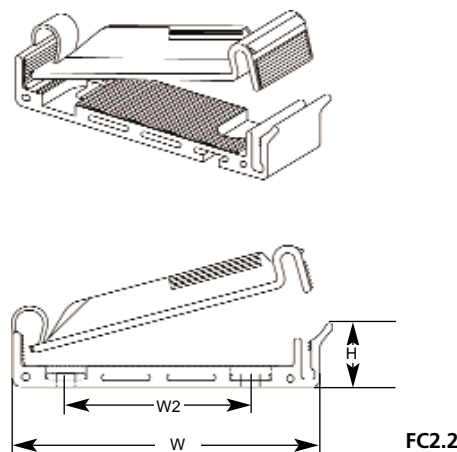
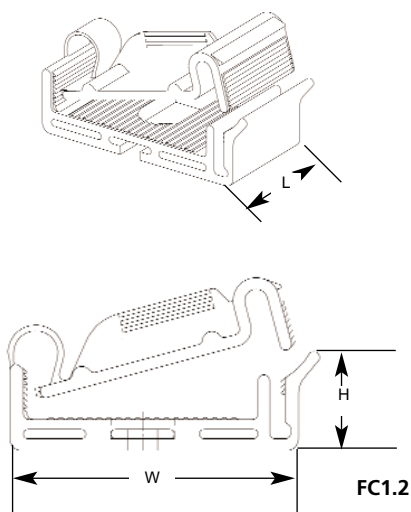
The clamp is adjustable so that single or stacked cable can be routed. The “snap clamp” design of this flat ribbon clamp makes it an excellent choice for specification and installation.

Both adhesive backed and non-adhesive screw mount versions are available.



### Material Data

|                       |                                             |
|-----------------------|---------------------------------------------|
| Material              | <b>Polyamide 6.6 (PA66)</b>                 |
| Color                 | <b>Telecom Gray</b>                         |
| Operating Temperature | <b>-40 °F to +185 °F (-40 °C to +85 °C)</b> |
| Flammability          | <b>UL94 V2 (excluding adhesive)</b>         |



### Product Selection

| Product Selection |          |        |            |      |           |        |            |        |            |         |                 |       |                 |         |           |
|-------------------|----------|--------|------------|------|-----------|--------|------------|--------|------------|---------|-----------------|-------|-----------------|---------|-----------|
| Article No.       | Part No. | Type   | Length (L) |      | Width (W) |        | Width (W2) |        | Height (H) |         | Mounting Hole Ø |       | Max Cable Width |         | Pkg. Qty. |
|                   |          |        | in. (mm)   |      | in. (mm)  |        | in. (mm)   |        | in. (mm)   |         | in. (mm)        |       | in. (mm)        |         |           |
| Adhesive          |          |        |            |      |           |        |            |        |            |         |                 |       |                 |         |           |
| 154-00013         | FC1.2AK2 | FC1.2A | .75"       | (19) | 1.5"      | (38.1) | n/a        | n/a    | .51"       | (13.1)  | n/a             | n/a   | 1.2 "           | (30.48) | 50        |
| 154-00012         | FC1.2AH4 | FC1.2A | .75"       | (19) | 1.5"      | (38.1) | n/a        | n/a    | .51"       | (12.9)  | n/a             | n/a   | 1.2 "           | (30.48) | 500       |
| 154-00017         | FC2.2AK2 | FC2.2A | .75"       | (19) | 2.5"      | (63.5) | n/a        | n/a    | .51"       | (12.75) | n/a             | n/a   | 2.0 "           | (50.8)  | 50        |
| 154-00016         | FC2.2AH4 | FC2.2A | .75"       | (19) | 2.5"      | (63.5) | n/a        | n/a    | .51"       | (12.75) | n/a             | n/a   | 2.0 "           | (50.8)  | 500       |
| Non-Adhesive      |          |        |            |      |           |        |            |        |            |         |                 |       |                 |         |           |
| 154-00011         | FC1.2K2  | FC1.2  | .75"       | (19) | 1.5"      | (38.1) | n/a        | n/a    | .51"       | (12.9)  | .138"           | (6.0) | 1.2 "           | (30.48) | 50        |
| 154-00010         | FC1.2H4  | FC1.2  | .75"       | (19) | 1.5"      | (38.1) | n/a        | n/a    | .51"       | (12.9)  | .138"           | (6.0) | 1.2 "           | (30.48) | 500       |
| 154-00015         | FC2.2K2  | FC2.2  | .75"       | (19) | 2.5"      | (63.5) | 1.5"       | (38.1) | .51"       | (12.95) | .138"           | (6.0) | 2.0 "           | (50.8)  | 50        |
| 154-00014         | FC2.2H4  | FC2.2  | .75"       | (19) | 2.5"      | (63.5) | 1.5"       | (38.1) | .51"       | (12.95) | .138"           | (6.0) | 2.0 "           | (50.8)  | 500       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Nail Clips

HellermannTyton nail clips are easy to use and highly reliable. The tough, precision engineered clips hold wire and cable securely in place. The nail is hardened for driving into wood, masonry joints, cinder block and mortar. The nails are also perpendicular to the work surface and are driven in straight, greatly reducing cracking. The nail clips do not have sharp edges, which reduce the chance of cutting cable jackets or sheaths and causing signal loss.

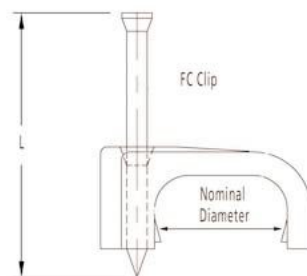
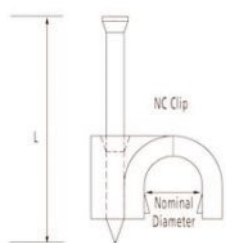


### Material Data

Material

Polyethylene (PE), Steel (ST)

RoHS



### Product Selection

| Article No. | Part No.       | Type  | Nominal Ø<br>in. (mm) | Length (L)<br>in. (mm) | Application                                           | Color | Pkg. Qty. |
|-------------|----------------|-------|-----------------------|------------------------|-------------------------------------------------------|-------|-----------|
| 148-00005   | <b>NC3.50</b>  | NC3.5 | .138" (3.5)           | .630" (16)             | 14# Ground Wire, Telecom 1 pair                       | Black | 100       |
| 148-00006   | <b>NC3.510</b> | NC3.5 | .138" (3.5)           | .630" (16)             |                                                       | White | 100       |
| 148-00007   | <b>NC50</b>    | NC5   | .197" (5)             | .630" (16)             | Telecom 4 pair                                        | Black | 100       |
| 148-00008   | <b>NC510</b>   | NC5   | .197" (5)             | .630" (16)             |                                                       | White | 100       |
| 148-00009   | <b>NC60</b>    | NC6   | .236" (6)             | .630" (16)             | Telecom 6 pair, RG59                                  | Black | 100       |
| 148-00010   | <b>NC610</b>   | NC6   | .236" (6)             | .630" (16)             |                                                       | White | 100       |
| 148-00011   | <b>NC70</b>    | NC7   | .276" (7)             | .787" (20)             | RG6 and RG59 Double Shielded                          | Black | 100       |
| 148-00012   | <b>NC710</b>   | NC7   | .276" (7)             | .787" (20)             |                                                       | White | 100       |
| 148-00013   | <b>NC80</b>    | NC8   | .315" (8)             | .787" (20)             | Telecom 10 pair RG7, and RG6 Double and Quad Shielded | Black | 100       |
| 148-00014   | <b>NC810</b>   | NC8   | .315" (8)             | .787" (20)             |                                                       | White | 100       |
| 148-00015   | <b>NC90</b>    | NC9   | .354" (9)             | .787" (20)             | Telecom 12 pair                                       | Black | 100       |
| 148-00016   | <b>NC910</b>   | NC9   | .354" (9)             | .787" (20)             |                                                       | White | 100       |
| 148-00003   | <b>NC110</b>   | NC11  | .433" (11)            | .984" (25)             | Telecom 25 pair                                       | Black | 100       |
| 148-00004   | <b>NC1110</b>  | NC11  | .433" (11)            | .984" (25)             |                                                       | White | 100       |
| 148-00017   | <b>FC140</b>   | FC14  | .551" (14)            | .984" (25)             | RG59 and RG6 Flat Twin and Ground                     | Black | 100       |
| 148-00018   | <b>FC1410</b>  | FC14  | .551" (14)            | .984" (25)             |                                                       | White | 100       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

# IDENTIFICATION SYSTEMS

|                                                           |         |
|-----------------------------------------------------------|---------|
| TagPrint® PRO 3.0 Software .....                          | 183-187 |
| SwiftMark Automatic Label Printer<br>and Applicator ..... | 188-191 |
| Workstation Printers .....                                | 192-193 |
| Thermal Transfer Labels .....                             | 194-201 |
| Nameplate Labels .....                                    | 202-203 |
| Continuous Vinyl Labels .....                             | 204     |
| ShrinkTrak Heat Shrinkable Markers .....                  | 205-208 |
| TipTag Cable Markers .....                                | 209-210 |
| Laser Tag Labels .....                                    | 211-216 |
| Ink Jet Labels .....                                      | 217-220 |
| Spirit 2100 Portable Printing System .....                | 221-223 |
| Sport 1000 Handheld Printing System .....                 | 224-226 |
| Pre-Printed Installation Labels .....                     | 227-230 |
| Rite-On Markers .....                                     | 231-232 |
| Wire Marker Tape .....                                    | 233     |



# TagPrint<sup>®</sup>PRO 3.0

## Increase Productivity, Reduce Errors and Decrease Time Spent Producing Labels with a Complete Labeling Management Solution from HellermannTyton

HellermannTyton's labeling system is comprised of the feature-rich labeling design software – TagPrint Pro 3.0, the highest quality thermal transfer, laser and ink jet printable labels, and a complete line of desk top thermal transfer printers.

### Simplify Your Label Design and Printing Process with TagPrint Pro 3.0

TagPrint Pro 3.0 is the cost-effective, easy-to-use label design and printing software in the HellermannTyton labeling system for achieving improved efficiency in wire and component marking, asset tagging, and structured cabling identification. Compatible with Windows<sup>®</sup> 7, Vista and XP as well as future operating systems such as Windows<sup>®</sup> 8, TagPrint Pro 3.0 delivers an individualized, task-based experience that enables a user to easily develop labels with bar codes, text and graphics to meet numerous applications.

Designed for the industry specific needs of a business producing products on a shop floor or labeling products at a remote job site, the intuitive interface of TagPrint Pro 3.0 simplifies the process of creating labels. TagPrint Pro 3.0 streamlines labeling production by offering a user full control over the importing or entering of data, advanced security features, the option to group label designs under a single file name or job number, and the ability to batch print to either one or more printers at the same time.

Increase efficiency and reduce labor. TagPrint Pro 3.0 allows for complete management of the labeling production process with a label design software system that simplifies the label creation process used to identify cables, tubes, conduits, components and equipment.

#### ① Familiar Task-based Navigation

TagPrint Pro 3.0 has a Ribbon interface that offers quick and easy access to the commands that are needed to complete a task. Commands are organized in logical groups, which are collected together under tabs. Each tab relates to a type of activity, such as "Label", "Table", "Print" and "Utility".

#### ② Batch Printing

3.0 has a "print-later" feature for the purpose of batching under one file name in a simple print utility. Using built-in Macros, design each label and then define print options for execution at time of printing. Access the project file and concurrently print labels to a single printer or multiple printers.

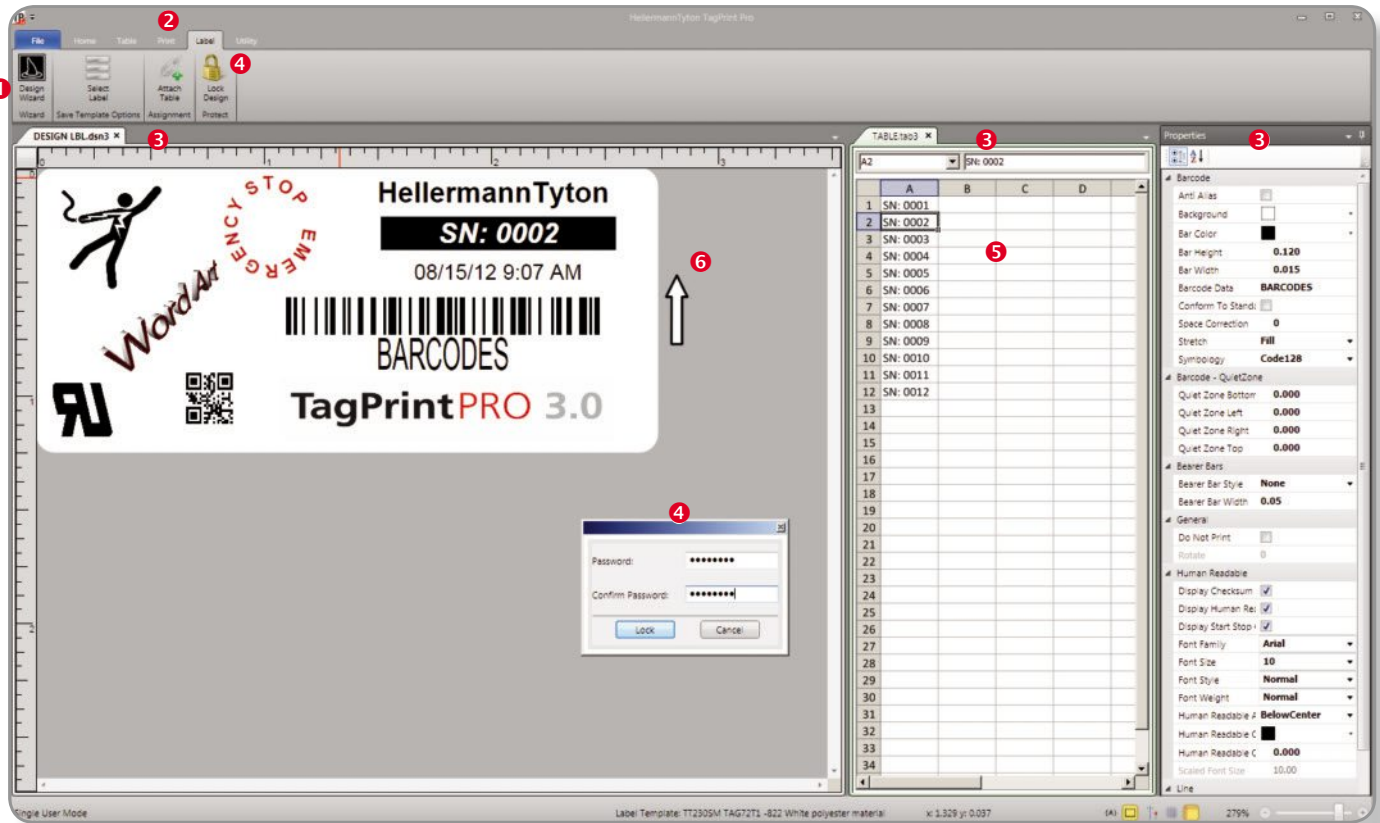
#### ③ At-a-glance Interface

Whether it is one label or a page of labels, the 3.0 interface was designed to allow ease of control over print jobs from a single screen. Information is viewable at a glance so a user can view object properties, data information, and actual label layout at the same time. When changes are made, information is updated.

#### ④ Built-in Security

TagPrint Pro 3.0 offers a built-in security system for the restriction of use or protection of data. This feature allows the user to lockout or password protect label designs and data tables from unauthorized label editing. Available for purchase as a single-user or network license.





### 5 Expanded Import Capabilities and “Live Sync”

3.0 has the ability to import a database that has been exported from another program (i.e., CAD) or connect to existing database (i.e., Excel) files with the added ability to sync up to that database at timed intervals set by the user. If enabled, this feature allows variable information to be updated automatically so that print data is fully controlled from one location without a manual refresh at each computer terminal.

### 6 Editing Convenience

Label designs can be edited in Portrait or Landscape mode, as well as show the direction of label feed next to the design.

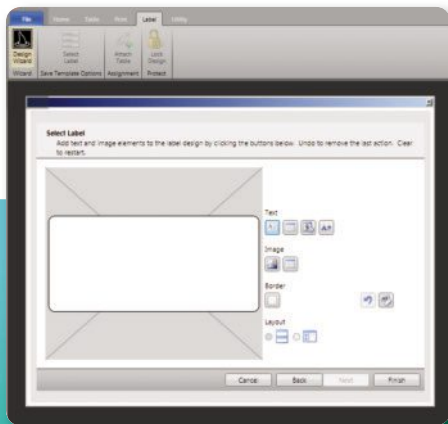
### “PIN” Favorites

TagPrint Pro 3.0 allows the user to “pin” saved label designs and data tables making them immediately available in the file menu.

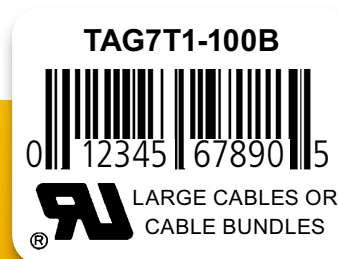
### Single-user License or Network Version Available

TagPrint Pro 3.0 is available as a single-user license or as a network version which allows a user to share printers, label designs, and data tables from multiple workstations within a single location.

## Enhanced Features

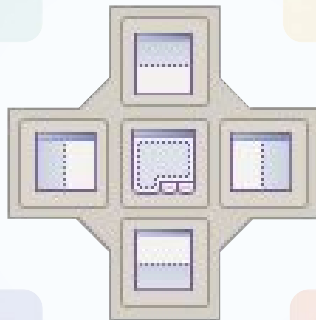


Optional **wizards** easily guide a user through the addition of text, images, and barcodes to create a label.



**Barcodes now automatically scale** and fit within the label eliminating the need to adjust barcode density, barcode ratio, and other attributes to get the barcode to fit on small labels.

The Screen View can be **Customized** by the End User.

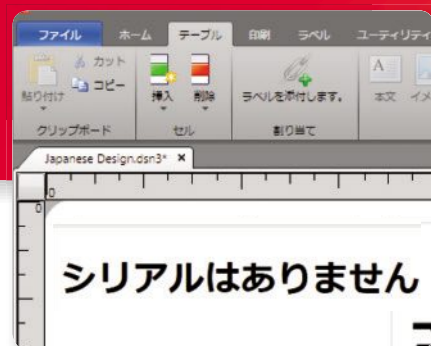


Manage and change the position and location of the screen attributes (snap-to properties).

Includes time stamp customization for easy insertion of date and/or time fields into the labels.



Interface can be configured to any one of a **number of supported languages** including: English, German, Spanish, French, Portuguese, Japanese and Korean.



## DESIGN FEATURES

- TagPrint® Pro 3.0 is What You See Is What You Get (WYSIWYG) label creation software with practical pull-down menus and a wide array of design options.
- In PREVIEW mode, view multiple labels on a sheet at one time.
- Word Art for user creation of unique text.
- Open and print multiple label designs at one time.
- Save label designs as .jpg, or .xml files.
- Scale text size by simply increasing or decreasing the text box size on the label design.
- Scale text by height or width or by character spacing.
- Auto-distribute text.
- Draw lines and boxes.
- Text path capabilities (make text go in a circle).
- TagPrint Pro 3.0 allows for various templates and data tables to be open concurrently.

## GRAPHIC FEATURES

- Manipulate graphics by forcing them to fit or automatically centering them in a specified area.
- Easily link graphics to the table for adding different graphics to different labels.
- Software includes hundreds of clip art images (or use your own).
- Flip, rotate, inverse or mirror image graphics and text.
- Adjust opacity of text and graphics.

## BAR CODE FEATURES

- Human readable on top, side or bottom of the bar code.
- Control the position of the barcode properties box in TagPrint Pro 3.0.
- Allow "bold" text in the bar code.
- Print the most popular bar code symbologies. Datamatrix ECC 200, Code 39, Code 39 Extended, Code 128, EAN/UCC 128, QR Code, EAN 13, Interleaved 2/5, PDF417, UPC-A as well as many other types.
- Preview the barcodes on-screen before printing to ensure they will fit in the space provided.
- Control bar code specifications such as module, ratio, compensation and height.

## PRINTING FEATURES

- Full software control of printer features and settings, eliminating the need to go to the printer driver.
- PREVIEW mode allows the user to check accuracy prior to printing.
- Print to virtually all thermal transfer, laser, ink jet or dot matrix printers with a valid 32 or 64 bit Windows or Windows NT driver.
- Select a "Do Not Print" option for specific objects on the label.
- Allows the user to customize the print functions.
- Stores heat and speed settings in the template, when saved.

## TABLE FEATURES

- Open imported files directly into the table.
- Reuse the same table with different label designs.
- Create serial numbers automatically.
- TagPrint Pro 3.0 will auto size text when printing from a table.
- Data in the table will text wrap so that all the data in a cell is always visible.
- Copy rows to columns automatically.
- Cut and paste between cells.
- Insert and delete columns and rows.
- Import using the ASCII or ODBC utility field.
- Store saved label designs in each row of a column within a single table.
- Print multiple, different label designs from a single table.

## Product Selection

| Part No.  | Type           | Description                 | Pkg. Qty. |
|-----------|----------------|-----------------------------|-----------|
| 556-00035 | TAGPRINT3      | Single-user License         | 1         |
| 556-00042 | TAGPRINT3UPGRD | Single-user License Upgrade | 1         |
| 556-00036 | TAGPRINT3LIC   | 2-3 Network User            | 1         |
| 556-00037 | TAGPRINT5LIC   | 2-5 Network User            | 1         |
| 556-00038 | TAGPRINT10LIC  | 2-10 Network User           | 1         |
| 556-00039 | TAGPRINT25LIC  | 2-25 Network User           | 1         |

**SUPPORTED GRAPHIC TYPES**

BMP Bitmap, EMF Windows Metafile (Extended), GIF, JPEG, PNG, TIF, PCX, WMF

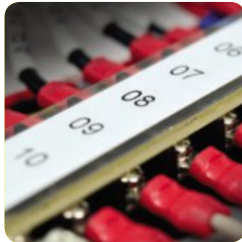
**SYSTEM REQUIREMENTS****Single User:**

PC running Microsoft Windows XP, SP3, Vista SP1 or later,  
Windows 7, 32-bit or 64-bit  
.NET Framework 4  
512 MB RAM (XP SP3)  
1.0 GB RAM (Vista / Windows 7)  
500 MB Available Hard Disk Space

**Network User:**

PC running Microsoft Windows 7, Windows Server 2008  
.NET Framework 4  
Microsoft SQL Server Express Edition 2008  
1.0 GB RAM  
500 MB Available Hard Disk Space

Made in the USA.



Wire & Cable Marking

Terminal Block Marking

Control Panel and Component Marking

Rating Plate Identification

Voice and Date Equipment Labeling

Conduit and Voltage Marking

110-block Marking

Cable Tray Identification

## SwiftMark Automatic Label Printer and Applicator

Designed specifically for the wire and cable industry, the SwiftMark sets a new standard in labeling efficiency. The SwiftMark Automatic Label Printer and Applicator prints self-laminating vinyl labels and applies them to various sizes of wire and cable, increasing labeling productivity by up to 300%. With a cycle time of just over 4 seconds, the SwiftMark can print and apply labels in a fraction of the time required to manually print and apply labels, which increases productivity and reduces labeling errors while providing the highest printing and application quality.

Labels can be quickly and easily designed in the accompanying Tagprint Pro software, and label files can be downloaded and stored on the SwiftMark via a USB ethernet, Parallel port, or serial connection. Simply select the file and label quantity using the user-friendly touch screen, and labeling is as simple as placing the cable in the machine and pressing a button or foot pedal.

The SwiftMark has a simple interface which makes it very easy to use, yet it is capable of printing advanced label sequences such as label sets with different serial numbers and text on each label.

### Product Features

- Fastest cycle time in the industry
- Touch screen LCD
- Marks to within .5" of the end of the cable
- Labels cables from .06" to .75" in diameter
- Works with various sizes of self-laminating adhesive labels
- Ribbon save feature minimizes ribbon usage by up to 85%
- 300 d.p.i. thermal transfer printer
- Stores label files on removable SD card
- USB, parallel port, and serial connections
- Accommodates various types of cables
- Eliminates label wrinkles or "flags"
- Adjustable wire grippers
- Easy to load with labels and ribbon
- Automatically keeps track of application cycles
- Foot pedal, touch screen, and 24V wrap initiation options
- Electric universal power supply
- View label on touch screen prior to printing
- Ethernet connectivity



Labels are designed in TagPrint Pro and downloaded to the SwiftMark.



The SwiftMark prints and automatically applies labels to various sizes of wire and cable.

| Material Data                  |                                      |
|--------------------------------|--------------------------------------|
| Width                          | 19.56" (497 mm)                      |
| Height                         | 14.67" (372.6 mm)                    |
| Depth                          | 31.6" (802.6 mm)                     |
| Weight                         | 80 lbs.                              |
| Operating Temperature          | +40 °F to +104 °F (+4 °C to +40 °C)  |
| Storage Temperature            | -30 °F to +160 °F (-34 °C to +71 °C) |
| Minimum-Maximum Cable Diameter | .06" to .75" (1.52 to 19.05 mm)      |
| Minimum-Maximum Label Width    | .5" to 2.0" (12.7 to 50.8 mm)        |
| Print Method                   | Thermal Transfer                     |

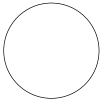
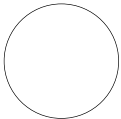
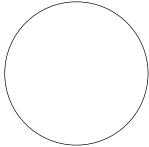
### Product Selection

| Article No. | Part No.         | Type   | Description                                   | Pkg. Qty. |
|-------------|------------------|--------|-----------------------------------------------|-----------|
| 558-00060   | <b>558-00060</b> | SMLA1  | SwiftMark Printer Applicator                  | 1         |
| 558-00065   | <b>558-00065</b> | SMFP01 | Foot Pedal for SwiftMark and Autotool Systems | 1         |
| 558-00066   | <b>558-00066</b> | SMSC01 | Replacement shipping case                     | 1         |

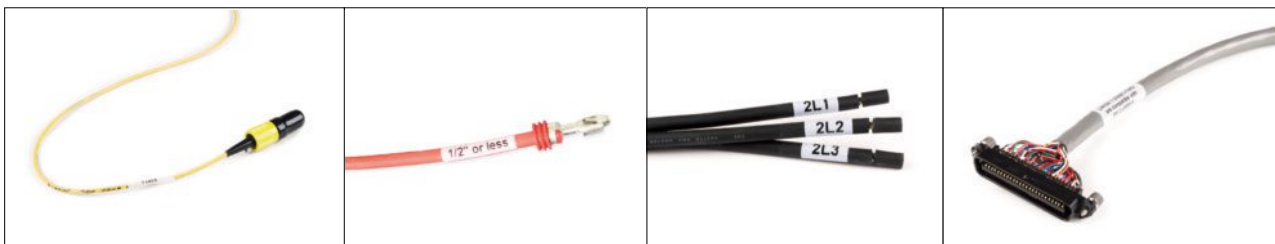
Use **Part No.** for ordering and **Type** for specification purposes.

## Wire Diameter Guide to SwiftMark Labels

This guide can be used to determine which labels will work best with the wire diameter selected. Simply place the end of the wire over the appropriate circle to select the best label size.

| If your wire or cable diameter is less than or equal to below, use: |                                                                                     | Label Size | Label Width     | Approximate Wire Gauge |
|---------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------|-----------------|------------------------|
| .10"                                                                |    | 558-00179  | 0.5" (12.7 mm)  | 18 - 22                |
| .17"                                                                |    | 558-00045  | 0.5" (12.7 mm)  | 6 - 16                 |
|                                                                     |                                                                                     | 558-00046  | 0.5" (12.7 mm)  |                        |
|                                                                     |                                                                                     | 558-00047  | 1.0" (25.4 mm)  |                        |
|                                                                     |                                                                                     | 558-00063  | 1.5" (38.1 mm)  |                        |
|                                                                     |                                                                                     | 558-00069  | 1.0" (25.4 mm)  |                        |
| .30"                                                                |    | 558-00071  | 1.0" (25.4 mm)  | 6 - 16<br>14 - 18      |
|                                                                     |                                                                                     | 558-00045  | 0.5" (12.7 mm)  |                        |
|                                                                     |                                                                                     | 558-00046  | 1.0" (25.4 mm)  |                        |
|                                                                     |                                                                                     | 558-00047  | 1.5" (38.1 mm)  |                        |
|                                                                     |                                                                                     | 558-00061  | 2.0" (50.8 mm)  |                        |
| .50"                                                                |   | 558-00051  | 1.0" (25.4 mm)  | 1/0 - 8                |
|                                                                     |                                                                                     | 558-00052  | 1.5" (38.1 mm)  |                        |
|                                                                     |                                                                                     | 558-00053  | 2.0" (50.8 mm)  |                        |
| .60"                                                                |  | 558-00056  | 1.5" (38.1 mm)  | 3/0 - 6                |
|                                                                     |                                                                                     | 558-00057  | 1.75" (44.5 mm) |                        |
|                                                                     |                                                                                     | 558-00059  | 2.0" (50.8 mm)  |                        |
|                                                                     |                                                                                     | 558-00058  | 2.0" (50.8 mm)  |                        |
| .75"                                                                |  | 558-00059  | 2.0" (50.8 mm)  | 4/0 - 3/0              |

## Examples of SwiftMark Applications



The SwiftMark is gentle on delicate fiber optic cables and small wires.

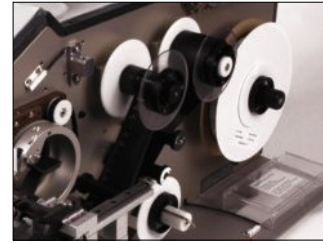
The SwiftMark can place a label to within .5" of the end of a cable.

Sets of labels can be printed for wire groups with different data on each conductor.

Even pre-terminated wire and cable can be marked using the SwiftMark.

## SwiftMark Thermal Transfer Printer Ribbon

The SwiftMark utilizes a ribbon save feature that maximizes ribbon life. The ribbon only moves enough to accommodate each line of text printed and does not advance on a 1 to 1 ratio with label media. Label and ribbon loading is easy and the user has complete access to the entire ribbon and label path.



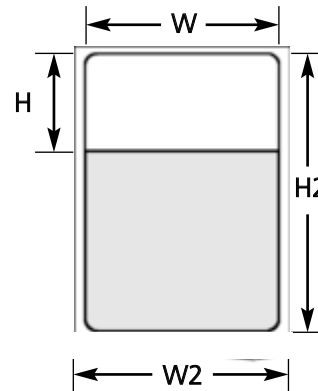
| Product Selection |                 |          |       |       |        |        |       |
|-------------------|-----------------|----------|-------|-------|--------|--------|-------|
| Article No.       | Part No.        | Type     | Color | Width |        | Length |       |
|                   |                 |          |       | In.   | (mm)   | Ft.    | (M)   |
| 556-00165         | <b>SM100OUT</b> | SM100OUT | Black | 2.0   | (50.8) | 984    | (300) |
| 558-00227         | <b>SMWAXOUT</b> | SMWAXOUT | Black | 2.0   |        | 984    | (300) |

Use **Part No.** for ordering and **Type** for specification purposes. *UL Recognized when used with HellermannTyton SwiftMark labels.*

## SwiftMark Thermal Transfer Labels

SwiftMark labels utilize a high quality self-laminating vinyl film that is UL recognized when used with SwiftMark thermal transfer printer ribbon. The vinyl has a highly adhesive bond that adheres quickly and strongly to the recommended wire insulation types.

| Material Data     |                                                                                     |
|-------------------|-------------------------------------------------------------------------------------|
| Material          | Clear Vinyl                                                                         |
| Printer           | SwiftMark                                                                           |
| Liner             | 3.1 mil high speed dispensing 50# paper                                             |
| Temperature Range | -40°F to +175°F (-40°C to +80°C)                                                    |
| Adhesive Type     | Acrylic                                                                             |
| Application       | For marking wire and cable                                                          |
| Certifications    |  |
| Ribbon            | TT100OUTSM                                                                          |



| Product Selection |           |                  |           |        |                              |         |                      |        |                     |         |              |      |              |       |           |
|-------------------|-----------|------------------|-----------|--------|------------------------------|---------|----------------------|--------|---------------------|---------|--------------|------|--------------|-------|-----------|
| Article No.       | Part No.  | Type             | Width (W) |        | Height of Printable Area (H) |         | Height of Label (H2) |        | Width of Liner (W2) |         | Min. Ø Cable |      | Max. Ø Cable |       | Pkg. Qty. |
|                   |           |                  | In.       | (mm.)  | In.                          | (mm.)   | In.                  | (mm)   | In.                 | (mm.)   | In.          | (mm) | In.          | (mm.) |           |
| 558-00045         | 558-00045 | TAG38-76W127SM   | .5"       | (12.7) | .5"                          | (12.7)  | 1.44"                | (36.5) | .90"                | (22.86) | .14"         | 3.5  | .3"          | 7.6   | 2500      |
| 558-00046         | 558-00046 | TAG38-76W254SM   | 1.0"      | (25.4) | .5"                          | (12.7)  | 1.44"                | (36.5) | 1.13"               | (28.57) | .14"         | 3.5  | .3"          | 7.6   | 2500      |
| 558-00047         | 558-00047 | TAG38-76W381SM   | 1.5"      | (38.1) | .5"                          | (12.7)  | 1.44"                | (36.5) | 1.63"               | (41.27) | .14"         | 3.5  | .3"          | 7.6   | 2500      |
| 558-00061         | 558-00061 | TAG38-76W508SM   | 2.0"      | (50.8) | .75"                         | (19.05) | 1.44"                | (36.5) | 1.13"               | (28.57) | .14"         | 3.5  | .3"          | 7.6   | 2500      |
| 558-00179         | 558-00179 | TAG15-30W127SM   | .5"       | (12.7) | .35"                         | (8.89)  | .875"                | (22.2) | .90"                | (22.86) | .06"         | 1.5  | .13"         | 3.3   | 4500      |
| 558-00063         | 558-00063 | TAG20-47W203SM   | .8"       | (20.3) | .35"                         | (8.89)  | .94"                 | (23.9) | 1.13"               | (31.75) | .08"         | 2.0  | .18"         | 4.7   | 2500      |
| 558-00052         | 558-00052 | TAG61-121W254SM  | 1.0"      | (25.4) | .75"                         | (19.05) | 2.25"                | (57.1) | 1.13"               | (28.57) | .24"         | 5.5  | .47"         | 12.1  | 1000      |
| 558-00053         | 558-00053 | TAG61-121W381SM  | 1.5"      | (38.1) | .75"                         | (19.05) | 2.25"                | (57.1) | 1.63"               | (41.27) | .24"         | 5.5  | .47"         | 12.1  | 1000      |
| 558-00056         | 558-00056 | TAG85-100W381SM  | 1.5"      | (38.1) | 1.0"                         | (25.4)  | 3.0"                 | (76.2) | 1.63"               | (41.27) | .33"         | 8.5  | .39"         | 10.0  | 1000      |
| 558-00057         | 558-00057 | TAG85-100W444SM  | 1.75"     | (44.5) | 1.0"                         | (25.4)  | 3.0"                 | (76.2) | 1.88"               | (47.62) | .33"         | 8.5  | .39"         | 10.0  | 1000      |
| 558-00058         | 558-00058 | TAG85-100W508SM  | 2.0"      | (50.8) | 1.0"                         | (25.4)  | 3.0"                 | (76.2) | 2.13"               | (53.97) | .33"         | 8.5  | .39"         | 10.0  | 1000      |
| 558-00059         | 558-00059 | TAG111-190W508SM | 2.0"      | (50.8) | 1.5"                         | (38.1)  | 3.75"                | (95.3) | 2.13"               | (53.97) | .60"         | 11.1 | .75"         | 19.0  | 1000      |
| 558-00069         | 558-00069 | TAG26-53W254SM   | 1.0"      | (25.4) | .35"                         | (8.89)  | 1.0"                 | (25.4) | 1.13"               | (28.57) | .10"         | 2.6  | .20"         | 5.3   | 5000      |
| 558-00071         | 558-00071 | TAG38-81W254SM   | 1.0"      | (25.4) | .5"                          | (12.7)  | 1.5"                 | (38.1) | 1.13"               | (28.57) | .15"         | 3.8  | .32"         | 8.1   | 2500      |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Label Sizes



## TT230SM Printer

HellermannTyton's TT230SM thermal transfer printer is the next generation of printer available for small to medium volume users looking for an easy to use and functional thermal transfer printer. The TT230SM prints to a wide variety of materials including all of HellermannTyton labels and ShrinkTrak. The TT230SM is also Ethernet network ready, which gives the user options on placing the unit away from the host computer. The TT230SM comes with a label holder (caddy) for loading large reels behind the printer for easy dispensing and printing. There also is an optional carrying case that can be used to safely transport the printer to remote job sites.



### Product Features

- Print on ShrinkTrak
- Print on Adhesive Labels
- Print on Tiptags
- Uses standard ribbons
- Print head 300dpi
- Barcodes: standard and 2D
- Print speed up to 3" (76.2mm) per second
- Max print width 4.1" (106mm)
- Max label width 4.37" (111mm)
- Max print length 39" (101cm)
- 8MB DRAM, 2MB Flash
- Interfaces: RS232-C, Ethernet, USB v.2.0 and Centronics
- Windows drivers: 2000, XP, NT4.0, Vista, 7
- Dimensions: 7.95" (201mm) x 10.16" (258mm) x 6.81" (172mm)
- Weight 4.4lbs (2kg)

| Article No. | Part No.         | Type         | Description                       | Pkg. Qty. |
|-------------|------------------|--------------|-----------------------------------|-----------|
| 556-00230   | <b>556-00230</b> | TT230SM      | TT230SM Printer                   | 1         |
| 556-00231   | <b>556-00231</b> | CASE230SM    | Carrying Case for TT230SM Printer | 1         |
| 556-00236   | <b>556-00236</b> | TT230BATTERY | TT230SM Rechargeable Battery Pack | 1         |

## TT230SM Thermal Transfer Ribbons

| Product Selection |             |              |             |                |       |     |         |         |      |     |      |       |            |           |       |            |      |
|-------------------|-------------|--------------|-------------|----------------|-------|-----|---------|---------|------|-----|------|-------|------------|-----------|-------|------------|------|
| Article No.       | Part No.    | Type         | Color       | Label Material |       |     |         |         |      |     |      |       |            | Width (W) |       | Length (L) |      |
|                   |             |              |             | Paper          | 100   | 250 | 795     | 822     | 822C | 900 | 1500 | DTH   | ShrinkTrak | In.       | (mm)  | Ft.        | (M)  |
| 556-00147**       | TT822OUTSM2 | TT822OUTSM2  | Red         | •              | •     | •   | •       |         |      |     | •    |       |            | 4.33      | (110) | 242        | (74) |
| 556-00148**       | TT822OUTSM3 | TT822OUTSM3  | Orange      | •              | •     | •   | •       | •       | •    |     | •    |       |            | 4.33      | (110) | 242        | (74) |
| 556-00149**       | TT822OUTSM4 | TT822OUTSM4  | Yellow      | •              | •     | •   | •       | •       | •    |     | •    |       |            | 4.33      | (110) | 242        | (74) |
| 556-00150**       | TT822OUTSM5 | TT822OUTSM5  | Green       | •              | •     | •   | •       | •       | •    |     | •    |       |            | 4.33      | (110) | 242        | (74) |
| 556-00151**       | TT822OUTSM6 | TT822OUTSM6  | Blue        | •              | •     | •   | •       | •       | •    |     | •    |       |            | 4.33      | (110) | 242        | (74) |
| 556-00152**       | TT822OUTSM7 | TT822OUTSM7  | Purple      | •              | •     | •   | •       | •       | •    |     | •    |       |            | 4.33      | (110) | 242        | (74) |
| 556-00153**       | TT822OUTSM8 | TT822OUTSM8  | Silver Gray |                |       |     |         |         |      |     | •    |       | •          | 4.33      | (110) | 242        | (74) |
| 556-00143**       | TTDTHOUTSM  | TTDTHOUTSM   | Black       |                |       |     |         |         |      |     |      | • (5) | • (5)      | 4.33      | (110) | 242        | (74) |
| 556-00145         | TT822OUTSM  | TT822OUTSM   | Black       | •              | (1)   | •   | • (1,2) | • (1,2) | •    |     | •    |       | • (4)      | 4.33      | (110) | 242        | (74) |
| 556-00163         | TTTSTOUTSM  | TTTSTOUTSM   | Black       |                | ° (1) | °   |         |         |      |     |      |       | • (4)      | 4.33      | (110) | 242        | (74) |
| 556-00169         | TT100OUTSM  | TT100OUTSM   | Black       | •              | ° (1) | °   |         |         |      |     |      |       | • (4)      | 4.33      | (110) | 242        | (74) |
| 556-00190         | 556-00190   | TTWHITEOUTSM | White       |                |       |     |         |         |      |     | •    |       |            | 4.33      | (110) | 229        | (70) |

Use **Part No.** for ordering and **Type** for specification purposes.

• =Recommended ribbon

° =Acceptable ribbon alternative

(1) UL Recognized material / ribbon combination with HellermannTyton thermal transfer printers

(2) CSA Normal Use approved material / ribbon combination with HellermannTyton thermal transfer printers

(3) CSA Heavy Duty Use approved material / ribbon combination with HellermannTyton thermal transfer printers

(4) Meets ASM-DTL-23053/5 Class I & III, SAE-AS81531 for print performance

(5) Outstanding chemical, abrasion and solvent resistance where UL and CSA requirements are not needed

\*\* 24 ribbon minimum order

\* for use on black ShrinkTrak

## TTM430/TTM460 Thermal Transfer Printer

HellermannTyton's TTM430 and TTM460 thermal transfer printers are ideal for medium to large volume users looking for an easy to use and extremely functional thermal transfer printer. The TTM430 is a high quality 300 dpi printer with excellent print resolution for text and barcodes used in general industrial applications. The TTM460 is a 600 dpi printer which produces the highest quality print for very small text or smooth graphics.



### Product Features

- Print speed up to 7.87" per second
- Straight through design allows easy loading of ribbon and labels
- Larger spools or fanfold material can be fed through the back of the printer
- 64mb memory/8mb flash
- Easy to use operations and status panel
- Two adjustable gap and reflex sensors
- Optional cutter face plate allows labels and ShrinkTrak to be cut off after printing
- Printer status screen with date/time/ network status/head temperature/ ribbon amount
- Maximum print width – 4.25" (108mm)
- Minimum print width – .24" (6mm)

### Product Selection

| Article No: | Part No:  | Type:   | Description:          | Pkg Qty: |
|-------------|-----------|---------|-----------------------|----------|
| 556-00430   | 556-00430 | TTM430  | TTM430 Printer        | 1        |
| 556-00431   | 556-00431 | 430CFP  | Cutter face plate     | 1        |
| 556-00432   | 556-00432 | 430WLAN | Wireless Network Card | 1        |
| 556-00433   | 556-00433 | 430RLH  | Label Holder          | 1        |
| 556-00434   | 556-00434 | 430RRH  | Ribbon Holder         | 2        |
| 556-03065   | 556-03065 | 430RPH  | TTM430 Printhead      | 1        |
| 556-00460   | 556-00460 | TTM460  | TTM460 Printer        | 1        |
| 556-00461   | 556-00461 | 460RPH  | TTM460 Printhead      | 1        |

\*Ribbons sold separately

## TTM430/TTM460 Thermal Transfer Ribbons

### Product Selection

| Article No. | Part No.  | Type       | Color       | Label Material |       |       |         |         |       |       |       |       |            | Width (W)     |            | Length (L) |  |
|-------------|-----------|------------|-------------|----------------|-------|-------|---------|---------|-------|-------|-------|-------|------------|---------------|------------|------------|--|
|             |           |            |             | Paper          | 100   | 250   | 795     | 822     | 822C  | 900   | 1500  | DTH   | ShrinkTrak | In. (mm)      | Ft. (M)    |            |  |
| 556-00101   | TT822OUT  | TT822OUT   | Black       | •              | •     | •     | •       | •       | •     | •     | • (5) | •     | ° (4)      | 4.33" (110.0) | 984' (300) |            |  |
| 556-00104   | TT1000OUT | TT1000OUT  | Black       | •              | • (1) | •     | •       | •       | •     | •     | •     | •     | ° (4)      | 4.33" (110)   | 984' (300) |            |  |
| 556-00162   | TTHTSTOUT | TTHTSTOUT  | Black       |                | ° (1) | °     |         |         |       |       |       |       | • (4)      | 4.0" (101.6)  | 984' (300) |            |  |
| 556-00144   | TTDTHOUT  | TTDTHOUT   | Black       |                | (1)   |       |         |         |       |       |       | • (5) | • (5)      | 4.0" (101.6)  | 984' (300) |            |  |
| 556-00106   | TT900OUT  | TT900OUT   | Black       |                | • (5) | • (5) | • (5)   | • (5)   | • (5) | • (5) | • (5) |       |            | 4.0" (101.6)  | 984' (300) |            |  |
| 556-00155** | TT822OUT2 | TT822OUT2  | Red         | •              | •     | •     | •       | •       | •     | •     | • (5) |       |            | 4.33" (110.0) | 984' (300) |            |  |
| 556-00156** | TT822OUT3 | TT822OUT3  | Orange      | •              | •     | •     | •       | •       | •     | •     | • (5) |       |            | 4.33" (110.0) | 984' (300) |            |  |
| 556-00157** | TT822OUT4 | TT822OUT4  | Yellow      | •              | •     | •     | •       | •       | •     | •     | • (5) |       |            | 4.33" (110.0) | 984' (300) |            |  |
| 556-00158** | TT822OUT5 | TT822OUT5  | Green       | •              | •     | •     | •       | •       | •     | •     | • (5) |       |            | 4.33" (110.0) | 984' (300) |            |  |
| 556-00159** | TT822OUT6 | TT822OUT6  | Blue        | •              | •     | •     | •       | •       | •     | •     | • (5) |       |            | 4.33" (110.0) | 984' (300) |            |  |
| 556-00160** | TT822OUT7 | TT822OUT7  | Purple      | •              | •     | •     | •       | •       | •     | •     | • (5) |       |            | 4.33" (110.0) | 984' (300) |            |  |
| 556-00161   | TT822OUT8 | TT822OUT8  | Silver Gray | •              |       | •     | • (1,2) | • (1,2) | •     |       | • (5) |       | •          | 4.33" (110.0) | 984' (300) |            |  |
| 556-00189   | 556-00189 | TTWHITEOUT | White       | •              |       | •     | • (1,2) | • (1,2) | •     |       | • (5) |       |            | 4.33" (110)   | 984' (300) |            |  |

\*Call HellermannTyton for assistance when using this ribbon

\*\* 10 ribbon minimum order

• = Recommended ribbon

(1) UL Recognized material & ribbon combination with HellermannTyton thermal transfer printers

(2) CSA Normal Use approved material & ribbon combination with HellermannTyton thermal transfer printers

(3) CSA Heavy Duty use approved material / ribbon combination with HellermannTyton thermal transfer printers

(4) Meets ASM-DTL-23053/5 Class I & III, SAE-AS81531 for print performance

(5) Outstanding chemical, abrasion, and solvent resistance where UL and CSA requirements are not needed

### Material Shortcut Key

|            |                                             |
|------------|---------------------------------------------|
| 100        | Self-laminating Vinyl                       |
| 250        | Conformable Woven Cloth                     |
| 795        | Metalized Polyester                         |
| 822        | White Polyester                             |
| 822C       | Clear Polyester                             |
| 900        | Polyamide Film                              |
| 1500       | Continuous Vinyl                            |
| DTH        | Durattach                                   |
| ShrinkTrak | Flexible, radiation cross-linked polyolefin |

## Thermal Transfer Label Materials

HellermannTyton provides a wide variety of thermal transfer label stocks to fit most industrial applications. Materials can be used in applications ranging from high heat, wire wrapping and long term indelible marking. A mix of sizes and types allows for stock solutions to most labeling needs. For instance, HellermannTyton provides thermal transfer labels in a high performance white polyester. HellermannTyton 822 material provides a high quality mark when used with the TT822 ribbon and the TT1210 printer, or compatible. If the 822 material is used in combination with the TT822 ribbon, the TT1210 printer or specific recommended printers, a UL Recognized mark can be achieved.\*

| Label Material    | 100 Material  | 100B Material  | 101 Material  | 250 Material  |
|-------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Material Name     | Self-Laminating Vinyl                                                                          | 100 Clear Vinyl                                                                                 | Paper                                                                                            | Conformable Woven Cloth                                                                          |
| Printer(s)        | Spirit Handheld/ Dot Matrix                                                                    | Thermal Transfer Desktop                                                                        | Thermal Transfer Desktop                                                                         | Thermal Transfer Desktop                                                                         |
| Topcoat           | Specially formulated for superb ink anchorage                                                  | Specially formulated for superb ink anchorage                                                   | Specially formulated for superb ink anchorage                                                    | Specially formulated for superb ink anchorage                                                    |
| Liner             | 50#                                                                                            | 50#                                                                                             | 40#                                                                                              | 55#                                                                                              |
| Temperature Range | -50°F to +200°F<br>(-46°C to +93°C)                                                            | -50°F to +200°F<br>(-46°C to +93°C)                                                             | -65°F to +200°F<br>(-40°C to +93°C)                                                              | -40°F to +250°F<br>(-40°C to +121°C)                                                             |
| Adhesive Type     | Permanent pressure sensitive acrylic                                                           | Permanent pressure sensitive acrylic                                                            | Permanent pressure sensitive rubber based                                                        | Permanent pressure sensitive acrylic                                                             |
| Application       | For wires, cable and other conformable surfaces                                                | For wires, cable and other conformable surfaces                                                 | For use on plastic bags                                                                          | For wrapping and flagging on small gauge wires                                                   |
| Certifications    |               |                |                                                                                                  |                                                                                                  |
| Specifications    | N/A                                                                                            | N/A                                                                                             | N/A                                                                                              | N/A                                                                                              |
| Ribbon            | HHHST (recommended)<br>HHIGR                                                                   | TT100OUTSM<br>TT100OUT<br>TT822OUT<br>TT822OUTSM<br>TTHSTOUT<br>TTHSTOUTSM                      | TT100OUTSM<br>TT100OUT                                                                           | TT100OUTSM<br>TT100OUT                                                                           |
| Notes             | N/A                                                                                            | N/A                                                                                             | N/A                                                                                              | N/A                                                                                              |

| Label Material    | 336 Material                                                                           | 518 Material         | 795 Material                                                                                              | 799 Material  |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Material Name     | White Polyester                                                                                                                                                           | Polyethylene Foam and Polyester Laminate                                                                | Metalized Polyester                                                                                                                                                                            | Metalized Polyester                                                                                |
| Printer(s)        | Thermal Transfer Desktop & Spirit Handheld                                                                                                                                | Thermal Transfer Desktop                                                                                | Thermal Transfer Desktop                                                                                                                                                                       | Spirit Handheld                                                                                    |
| Topcoat           | Specially formulated for superb ink anchorage                                                                                                                             | Gloss surface for high contrast thermal transfer printing.                                              | Specially formulated for superb ink anchorage                                                                                                                                                  | Specially formulated for superb ink anchorage                                                      |
| Liner             | 50#                                                                                                                                                                       | 6.7 Mil poly coated paper.                                                                              | 50#                                                                                                                                                                                            | 50#                                                                                                |
| Temperature Range | -40°F to +300°F<br>(-40°C to +149°C)                                                                                                                                      | -40F to +176F (-40F to + 80C)                                                                           | -40°F to +300°F<br>(-40°C to +149°C)                                                                                                                                                           | -40°F to +300°F<br>(-40°C to +149°C)                                                               |
| Adhesive Type     | Permanent pressure sensitive acrylic                                                                                                                                      | Permanent Acrylic                                                                                       | Permanent pressure sensitive acrylic                                                                                                                                                           | Permanent pressure sensitive acrylic                                                               |
| Application       | For flat or slightly curved surfaces                                                                                                                                      | Control panels, push button markers, nameplate identification                                           | For flat or slightly curved surfaces only                                                                                                                                                      | For flat or slightly curved surfaces only                                                          |
| Certifications    |                                                                                        | ASTM D 903, ASTM D 3654, ASTM D 2970                                                                    |                                                                                                            |               |
| Specifications    | N/A                                                                                                                                                                       | Material tested to 10 years outdoor durability with no significant fading.                              | Use with 822OUT for UL and CSA recognition                                                                                                                                                     | Use HHIGR for UL recognition.                                                                      |
| Ribbon            | TT822OUT*<br>TT822OUTSM*<br>HHIGR                                                                                                                                         | TT822OUT, TT822OUTSM, TT100OUT, TT100OUTSM                                                              | TT822OUT**<br>TT822OUTSM**                                                                                                                                                                     | HHIGR                                                                                              |
| Notes             | *Use TT822OUT ribbon for UL Recognition on the TT1000, TT1210, TT300SM, TT10SM, TT210SM, TT310SM, & TT320SM printers. Use HHIGR for UL Recognition on the Spirit Printer. | Foam button and nameplate labels are easy to design and print using Tagprint Pro 3.0 labeling software. | **Use the TT822TYPE ribbon for UL & CSA Recognition on the TT1000, TT1210, TT300SM, TT10SM, TT210SM, TT310SM, & TT320SM - UL file no. MH18396, CSA file no. 106410. 2 Year outdoor durability. | Use HHIGR for UL Recognition on the Spirit Printer.                                                |

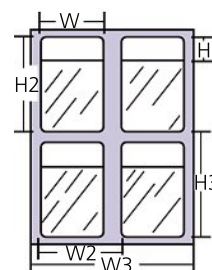
Thermal Transfer Label Materials *continued*

| Label Material           | 822 Material                                                                                                | 822C Material  | 395 Material       | 1500 Material                               |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <b>Material Name</b>     | White Polyester                                                                                                                                                                              | Clear Polyester                                                                                 | White Polyethylene                                                                                    | Vinyl                                                                                                                          |
| <b>Printer(s)</b>        | Thermal Transfer Desktop                                                                                                                                                                     | Thermal Transfer Desktop                                                                        | Thermal Transfer Desktop                                                                              | Thermal Transfer Desktop                                                                                                       |
| <b>Topcoat</b>           | Specially formulated for superb ink anchorage                                                                                                                                                | Specially formulated for superb ink anchorage                                                   | Smooth surface for thermal transfer printing                                                          | Smooth surface for thermal transfer printing                                                                                   |
| <b>Liner</b>             | 50#                                                                                                                                                                                          | 50#                                                                                             | 1.4 mil clear polyester                                                                               | 78#                                                                                                                            |
| <b>Temperature Range</b> | -40°F to +300°F<br>(-40°C to +149°C)                                                                                                                                                         | -40°F to +300°F<br>(-40°C to +149°C)                                                            | -40F to +176F (-40F to + 80C)                                                                         | -40F to +180F (-40F to +82C)                                                                                                   |
| <b>Adhesive Type</b>     | Permanent pressure sensitive acrylic                                                                                                                                                         | Permanent pressure sensitive acrylic                                                            | Rubber Based                                                                                          | Acrylic                                                                                                                        |
| <b>Application</b>       | For flat or slightly curved surfaces only                                                                                                                                                    | For flat or slightly curved surfaces only                                                       | Terminal Blocks                                                                                       | Alternative Energy                                                                                                             |
| <b>Certifications</b>    |                                                                                                             |                                                                                                 | ASTM D 903, ASTM D 3654, ASTM D 2979                                                                  | UL File number MH18396, UL969                                                                                                  |
| <b>Specifications</b>    | Use with TT822TYPE ribbon for UL and CSA recognition                                                                                                                                         | N/A                                                                                             | Use with TT822 Type ribbon. Made for marking terminal blocks and patch panels.                        | Material is extruded in color for maximum UV fade protection. Tested to 10 year outdoor durability with no significant fading. |
| <b>Ribbon</b>            | TT822OUT*<br>TT822OUTSM*                                                                                                                                                                     | TT822OUT<br>TT822OUTSM                                                                          | TT822OUT, TT822OUTSM, TT100OUT, TT100OUTSM                                                            | TT822OUT, TT822OUTSM, TT100OUT, TT100OUTSM                                                                                     |
| <b>Notes</b>             | *Use the TT822TYPE ribbon for UL & CSA Recognition on the TT1000, TT1210, TT300SM, TT10SM, TT210SM, TT310SM, & TT320SM - UL file no.MH18396, CSA file no. 106410. 5 year outdoor durability. | N/A                                                                                             | Tagprint Pro 3.0 can print the terminal to terminal spacing required to print a terminal block label. | Available on continuous rolls for printing and cutting.                                                                        |

| Label Material           | 926 Material  | DTH Material  | ShrinkTrak™ Markers                           |
|--------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>Material Name</b>     | White Polyester                                                                                  | Durattach - High Density Polyolefin                                                              | Flexible, radiation cross-linked polyolefin                                                                                        |
| <b>Printer(s)</b>        | Thermal Transfer Desktop                                                                         | TT320SM & TT1210 Desktop and Spirit Portable Printer                                             | TT320SM & TT1210 Desktop                                                                                                           |
| <b>Topcoat</b>           | Smooth surface for thermal transfer printing                                                     | Specially formulated for formulated for indelible ink anchorage using DTH ribbon specifically    | 3:1 shrink ratio                                                                                                                   |
| <b>Liner</b>             | 3.2 mil SCK                                                                                      | 50#                                                                                              | N/A                                                                                                                                |
| <b>Temperature Range</b> | -40F to +302F (-40C to +150C)                                                                    | -40°F to +140°F<br>(-40°C to +60°C)                                                              | -67°F to +275°F<br>(-55°C to +135°C)                                                                                               |
| <b>Adhesive Type</b>     | Acrylic                                                                                          | Acrylic                                                                                          | N/A                                                                                                                                |
| <b>Application</b>       |                                                                                                  | For flat or slightly curved surfaces only                                                        | For cable, wire, terminals and other components                                                                                    |
| <b>Specifications</b>    | Use for making signage for industrial automation and control panels.                             | N/A                                                                                              | Flammability - U.L. 224 U.L. Recognized SAE-AS81531 for print performance. AMS-DTL-23053/5 Class I & III. Mil STD 202G Method 215K |
| <b>Ribbon</b>            | TT822OUT, TT822OUTSM, TT100OUT, TT100OUTSM                                                       | TTDTHOUT<br>TTDTHOUTSM<br>HHDT                                                                   | TT822OUT, TT822OUTSM<br>TT100OUT, TT100OUTSM<br>TTDTHOUT*,TTDTHOUTSM*<br>TTHSTOUT, TTHSTOUTSM                                      |
| <b>Notes</b>             | Certifications: UL 969 File# MH12627,BS4509: 1986 edition                                        | N/A                                                                                              | *Using the TTDTHOUTSM or TTDTHOUT ribbons will give an almost indelible mark on HellermannTyton's ShrinkTrak™.                     |

## Thermal Transfer Self-Laminating Labels

HellermannTyton's self-laminating labels are used for marking wire and cable. The clear overlap protects printed information. Thermal transfer labels and printers offer crisp, clear marking and a high level of durability.



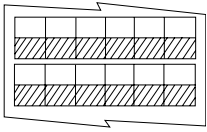
### Product Selection

| Product Selection |              |         | Drawing Reference | Width (W)      | Height of Printable Area (H) | Height of Label (H2) | Vertical Repeat (H3) | Horizontal Repeat (W2) | Width of Liner (W3) | Labels per Row | Pkg. Qty. |
|-------------------|--------------|---------|-------------------|----------------|------------------------------|----------------------|----------------------|------------------------|---------------------|----------------|-----------|
| Article No.       | Part No.     | Type    |                   |                |                              |                      |                      |                        |                     |                |           |
| 100B Material     |              |         |                   |                |                              |                      |                      |                        |                     |                |           |
| 596-00009         | TAG26T6-100B | TAG26T6 | A                 | .5"<br>(12.7)  | .375"<br>(9.52)              | .75"<br>(19.05)      | 1.0"<br>(25.4)       | .5"<br>(12.7)          | 3.35"<br>(85.09)    | 6              | 10000     |
| 596-00010         | TAG2T5-100B  | TAG2T5  | B                 | .5"<br>(12.7)  | .5"<br>(12.7)                | 1.43"<br>(36.5)      | 1.62"<br>(41.28)     | .66"<br>(16.81)        | 3.35"<br>(85.09)    | 5              | 10000     |
| 596-00014         | TAG51T3-100B | TAG51T3 | C                 | 1.0"<br>(25.4) | .35"<br>(8.8)                | .75"<br>(19.05)      | .937"<br>(23.7)      | 1.075"<br>(27.3)       | 3.35"<br>(85.09)    | 3              | 10000     |
| 596-00006         | TAG22T2-100B | TAG22T2 | D                 | 1.0"<br>(25.4) | .5"<br>(12.7)                | 1.43"<br>(36.5)      | 1.62"<br>(41.28)     | 1.075"<br>(27.3)       | 2.25"<br>(57.1)     | 2              | 5000      |
| 596-00007         | TAG22T3-100B | TAG22T3 | E                 | 1.0"<br>(25.4) | .5"<br>(12.7)                | 1.43"<br>(36.5)      | 1.62"<br>(41.28)     | 1.075"<br>(27.3)       | 3.35"<br>(85.09)    | 3              | 5000      |
| 596-00027         | TAG9T3-100B  | TAG9T3  | F                 | 1.0"<br>(25.4) | .75"<br>(19.05)              | 2.25"<br>(57.1)      | 2.5"<br>(63.5)       | 1.0"<br>(25.4)         | 3.35"<br>(85.09)    | 3              | 5000      |
| 596-00013         | TAG3T3-100B  | TAG3T3  | G                 | 1.0"<br>(25.4) | 1.0"<br>(25.4)               | 3.75"<br>(95.25)     | 4.0"<br>(101.6)      | 1.075"<br>(27.3)       | 3.35"<br>(85.09)    | 3              | 3000      |
| 596-00011         | TAG38T4-100B | TAG38T4 | H                 | 1.0"<br>(25.4) | 1.5"<br>(38.1)               | 7.347"<br>(188.89)   | 7.75"<br>(196.80)    | 1.0"<br>(25.4)         | 4.10"<br>(104.14)   | 4              | 1000      |
| 596-00045         | TAG53T2-100B | TAG53T2 | I                 | 1.5"<br>(38.1) | .7"<br>(17.78)               | 1.437"<br>(36.49)    | 1.62"<br>(41.28)     | 1.5"<br>(38.1)         | 3.35"<br>(89.05)    | 2              | 2500      |
| 596-00005         | TAG1T1-100B  | TAG1T1  | J                 | 1.9"<br>(48.2) | .75"<br>(19.05)              | 3.12"<br>(79.2)      | 3.42"<br>(86.8)      | 1.9"<br>(48.2)         | 3.875"<br>(98.42)   | 2              | 2500      |
| 596-00008         | TAG24T1-100B | TAG24T1 | K                 | 2.0"<br>(50.8) | .5"<br>(12.7)                | 1.437"<br>(36.49)    | 1.68"<br>(42.6)      | 2.0"<br>(50.8)         | 2.2"<br>(55.9)      | 1              | 1000      |
| 596-00002         | TAG10T2-100B | TAG10T2 | L                 | 2.0"<br>(50.8) | .75"<br>(19.05)              | 2.25"<br>(57.1)      | 2.5"<br>(63.5)       | 2.0"<br>(50.8)         | 3.875"<br>(98.42)   | 2              | 2500      |
| 596-00021         | TAG7T1-100B  | TAG7T1  | M                 | 2.0"<br>(50.8) | 1.5"<br>(38.1)               | 7.347"<br>(188.89)   | 7.75"<br>(196.80)    | 2.0"<br>(50.8)         | 4.10"<br>(104.14)   | 2              | 1000      |
| 596-00016         | TAG6T1-100B  | TAG6T1  | N                 | 2.0"<br>(50.8) | 1.5"<br>(38.1)               | 3.75"<br>(95.25)     | 4.0"<br>(101.6)      | 2.0"<br>(50.8)         | 2.20"<br>(68.58)    | 1              | 1000      |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

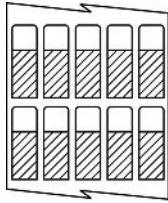
## Thermal Transfer Self-Laminating Labels *continued*

(Not shown to scale)



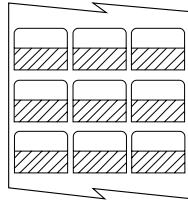
*TAG26T6-100B*

**A**



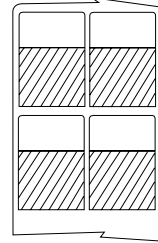
*TAG2T5-100B*

**B**



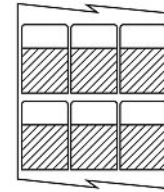
*TAG51T3-100B*

**C**



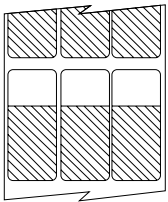
*TAG22T2-100B*

**D**



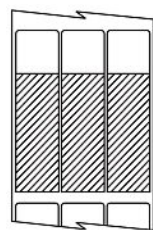
*TAG22T3-100B*

**E**



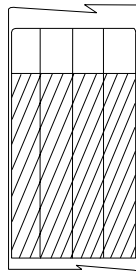
*TAG9T3-100B*

**F**



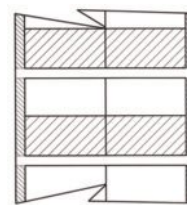
*TAG3T3-100B*

**G**



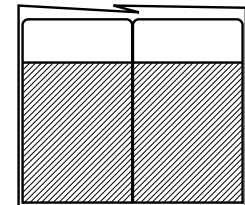
*TAG38T4-100B*

**H**



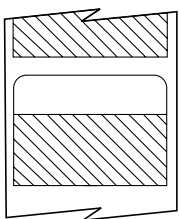
*TAG53T2-100B*

**I**



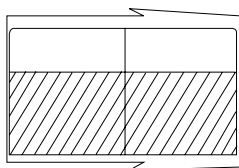
*TAG1T1-100B*

**J**



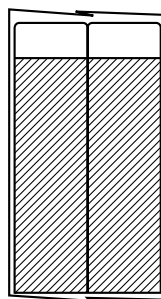
*TAG24T1-100B*

**K**



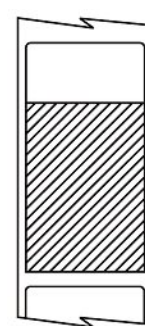
*TAG10T2-100B*

**L**



*TAG7T1-100B*

**M**

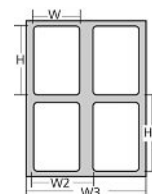


*TAG6T1-100B*

**N**

## Thermal Transfer Labels

HellermannTyton thermal transfer labels provide the best printing quality. These labels are particularly suitable for permanent marking on the flat surfaces of production machines and equipment. The technology used in the printing of thermal transfer labels produces the most accurate barcodes of all existing printing technologies. The large selection of labels makes it easy to find the correct label for almost any application. Thermal transfer labels are designed for high heat and are resistant to chemicals as well as petroleum based oils and solvents.



Turn page for full selection.

| Product Selection |             |         |                   |           |         |            |         |                      |       |                        |       |                     |        |                |           |
|-------------------|-------------|---------|-------------------|-----------|---------|------------|---------|----------------------|-------|------------------------|-------|---------------------|--------|----------------|-----------|
| Article No.       | Part No.    | Type    | Drawing Reference | Width (W) |         | Height (H) |         | Vertical Repeat (H2) |       | Horizontal Repeat (W2) |       | Width of Liner (W3) |        | Labels per Row | Pkg. Qty. |
|                   |             |         | pages (200-201)   | In.       | (mm.)   | In.        | (mm.)   | In.                  | (mm.) | In.                    | (mm.) | In.                 | (mm.)  |                |           |
| 250 Material      |             |         |                   |           |         |            |         |                      |       |                        |       |                     |        |                |           |
| 598-00277         | TYHCT-250   | TYHC    | A                 | .250"     | (6.35)  | 1.50"      | (38.10) | 1.625                | 41.27 | .250"                  | 6.35  | 4.120"              | 104.70 | 16             | 5000      |
| 596-21250         | TAG21T6-250 | TAG21T6 | B                 | .5"       | (12.7)  | .75"       | (19.05) | .875"                | 22.22 | .5"                    | 12.7  | 3.25"               | 82.55  | 6              | 10000     |
| 596-11250         | TAG11T4-250 | TAG11T4 | C                 | .65"      | (16.5)  | .2"        | (5.08)  | .3"                  | 7.62  | .65"                   | 16.5  | 2.6"                | 66.04  | 4              | 5000      |
| 596-28250         | TAG28T4-250 | TAG28T4 | D                 | .80"      | (20.3)  | 1.43"      | (36.3)  | 1.62"                | 41.1  | .80"                   | 20.3  | 3.45"               | 87.6   | 4              | 5000      |
| 596-15250         | TAG15T3-250 | TAG15T3 | E                 | 1.0"      | (25.4)  | .5"        | (12.7)  | .6"                  | 15.24 | 1.0"                   | 25.4  | 3.35"               | 85.09  | 3              | 10000     |
| 596-00044         | TAG35T2-250 | TAG35T2 | F                 | 2.0"      | (50.8)  | .375"      | (9.53)  | .50"                 | 12.7  | 2.0"                   | 50.8  | 4.1"                | 104.14 | 2              | 10000     |
| 336 Material      |             |         |                   |           |         |            |         |                      |       |                        |       |                     |        |                |           |
| 596-00026         | TAG96T1-336 | TAG96T1 | G                 | 1.875"    | (47.6)  | .25"       | (6.35)  | .375"                | 9.35  | 1.875"                 | 47.6  | 2.0"                | 50.8   | 1              | 5000      |
| 596-00041         | TAG69T1-336 | TAG69T1 | H                 | 2.0"      | (50.8)  | .275"      | (6.98)  | .5"                  | 12.7  | 2.0"                   | 50.8  | 2.125"              | 53.97  | 1              | 10000     |
| 596-00040         | TAG68T1-336 | TAG68T1 | J                 | 3.8"      | (96.5)  | .275"      | (6.98)  | .5"                  | 12.7  | 3.8"                   | 96.5  | 4.0"                | 101.6  | 1              | 10000     |
| 795 Material      |             |         |                   |           |         |            |         |                      |       |                        |       |                     |        |                |           |
| 596-15795         | TAG15T3-795 | TAG15T3 | E                 | 1.0"      | (25.4)  | .5"        | (12.7)  | .6"                  | 15.24 | 1.0"                   | 25.4  | 3.35"               | 85.09  | 3              | 10000     |
| 596-27795         | TAG27T1-795 | TAG27T1 | J                 | 1.5"      | (38.11) | .75"       | (19.05) | .875"                | 22.2  | 1.5"                   | 38.11 | 2.20"               | 55.88  | 1              | 3000      |
| 596-75795         | TAG75T1-795 | TAG75T1 | K                 | 2.0"      | (50.8)  | .625"      | (15.87) | .75"                 | 19.05 | 2.0"                   | 50.8  | 2.12"               | 53.8   | 1              | 2000      |
| 596-73795         | TAG73T1-795 | TAG73T1 | AA                | 2.0"      | (50.8)  | 1.0"       | (25.4)  | 1.125"               | 28.57 | 1.0"                   | 25.4  | 2.20"               | 55.83  | 1              | 3000      |
| 596-76795         | TAG76T1-795 | TAG76T1 | L                 | 2.5"      | (63.5)  | 2.0"       | (50.8)  | 2.12"                | 53.8  | 2.5"                   | 63.5  | 2.62"               | 66.5   | 1              | 1000      |
| 596-72795         | TAG72T1-795 | TAG72T1 | M                 | 2.75"     | (69.85) | 1.25"      | (31.75) | 1.375"               | 34.93 | 2.75"                  | 69.85 | 2.95"               | 74.95  | 1              | 5000      |
| 596-78795         | TAG78T1-795 | TAG78T1 | N                 | 3.0"      | (76.2)  | 4.0"       | (101.6) | 4.12"                | 104.7 | 3.0"                   | 76.2  | 3.12"               | 79.2   | 1              | 500       |
| 596-80795         | TAG80T1-795 | TAG80T1 | O                 | 3.0"      | (76.2)  | 5.0"       | (127)   | 3.0"                 | 76.2  | 3.0"                   | 76.2  | 3.125"              | 79.37  | 1              | 500       |
| 596-79795         | TAG79T1-795 | TAG79T1 | P                 | 4.0"      | (101.6) | 2.0"       | (50.8)  | 2.12"                | 53.97 | 4.0"                   | 101.6 | 4.25"               | 107.9  | 1              | 500       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

\* TAG17T2-822 not recommended for TT10SM, TT210SM, TT230SM, TT300SM, TT310SM, and TT330SM printers. Use TAG82T2 instead.

## Terminal Block Labels

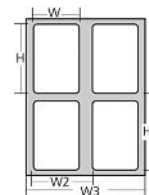
Terminal Block labels can be printed to match the terminal spacing of most terminal blocks using Tagprint Pro 3.0 labeling software.

| Article No. | Part No.  | Type   | Description                        | Pkg. Qty. |
|-------------|-----------|--------|------------------------------------|-----------|
| 596-00380   | 596-00380 | TBL375 | .375" wide continuous polyethylene | 100       |
| 596-00381   | 596-00381 | TBL500 | .5" wide continuous polyethylene   | 100       |

## Phase Labels

Phase labels are micro-perforated between each label so that it can be applied as one strip to the panel or broken into individual labels.

| Article No. | Part No.  | Type  | Description                          | Pkg. Qty. |
|-------------|-----------|-------|--------------------------------------|-----------|
| 596-00382   | 596-00382 | PLW3P | 1" x .5" White polyester phase label | 2500      |
| 596-00383   | 596-00383 | PLB3P | 1" x .5" Black polyester phase label | 2500      |

Thermal Transfer Labels *continued*

## Product Selection

| Product Selection            |                  |          |                   |           |         |            |         |                      |       |                        |       |                     |        |                |           |
|------------------------------|------------------|----------|-------------------|-----------|---------|------------|---------|----------------------|-------|------------------------|-------|---------------------|--------|----------------|-----------|
| Article No.                  | Part No.         | Type     | Drawing Reference | Width (W) |         | Height (H) |         | Vertical Repeat (H2) |       | Horizontal Repeat (W2) |       | Width of Liner (W3) |        | Labels per Row | Pkg. Qty. |
|                              |                  |          | pages (200-201)   | In.       | (mm.)   | In.        | (mm.)   | In.                  | (mm.) | In.                    | (mm.) | In.                 | (mm.)  |                |           |
| 822 Material                 |                  |          |                   |           |         |            |         |                      |       |                        |       |                     |        |                |           |
| 596-27822                    | TAG27T1-822      | TAG27T1  | J                 | 1.5"      | (38.11) | .75"       | (19.05) | .875"                | 22.2  | 1.5"                   | 38.11 | 2.20"               | 55.88  | 1              | 3000      |
| 596-00019                    | TAG75T1-822      | TAG75T1  | K                 | 2.0"      | (50.8)  | .625"      | (15.87) | .75"                 | 19.05 | 2.0"                   | 50.8  | 2.12"               | 53.8   | 1              | 2000      |
| 596-70822                    | TAG70T12-822     | TAG70T12 | Q                 | .25"      | (6.35)  | .25"       | (6.35)  | .5"                  | 12.7  | .25"                   | 6.35  | 3.2"                | 81.2   | 12             | 10000     |
| 596-00028                    | TAGPP1T6-822     | TAGPP1T6 | R                 | .625"     | (15.87) | .333"      | (8.45)  | .75"                 | 19.05 | .625"                  | 15.87 | 3.8"                | 96.52  | 6              | 1000      |
| 596-00082                    | TAGPP1T6-82210M  | TAGPP1T6 | R                 | .625"     | (15.87) | .333"      | (8.45)  | .75"                 | 19.05 | .625"                  | 15.87 | 3.8"                | 96.52  | 6              | 10000     |
| 596-11822                    | TAG11T4-822      | TAG11T4  | C                 | .65"      | (16.5)  | .2"        | (5.08)  | .3"                  | 7.62  | .65"                   | 16.5  | 2.6"                | 66.04  | 4              | 5000      |
| 596-00046                    | TAGPP2T6-822     | TAGPP2T6 | T                 | .66"      | (16.7)  | .33"       | (8.38)  | .75"                 | 19.05 | .66"                   | 16.7  | 4.125"              | 104.7  | 6              | 1000      |
| 596-00083                    | TAGPP3T4-822     | TAGPP3T4 | U                 | .688"     | (17.4)  | .25"       | (6.35)  | .375"                | 9.52  | .688"                  | 17.4  | 2.9"                | 73.66  | 4              | 1000      |
| 596-13822                    | TAG13T4-822      | TAG13T4  | V                 | .75"      | (19.05) | .25"       | (6.35)  | .35"                 | 8.89  | .75"                   | 19.05 | 3.35"               | 85.09  | 4              | 10000     |
| 596-15822                    | TAG15T3-822      | TAG15T3  | E                 | 1.0"      | (25.4)  | .5"        | (12.7)  | .6"                  | 15.24 | 1.0"                   | 25.4  | 3.35"               | 85.09  | 3              | 1000      |
| 596-84822                    | TAG84T3-822      | TAG84T3  | S                 | 1.25"     | (31.75) | .375"      | (9.53)  | .50"                 | 12.7  | 1.25"                  | 31.75 | 4.0"                | 101.6  | 3              | 10000     |
| 596-00023                    | TAG83T1-822      | TAG83T1  | W                 | 4.0"      | (101.6) | .312"      | (7.52)  | .438"                | 11.13 | 4.0"                   | 101.6 | 4.1"                | 104.14 | 1              | 5000      |
| 596-00022                    | TAG81T8-822      | TAG81T8  | X                 | .325"     | (8.25)  | .20"       | (5.08)  | .30"                 | 7.62  | .325"                  | 8.25  | 2.6"                | 66.04  | 8              | 5000      |
| 596-16822                    | TAG16T3-822      | TAG16T3  | Y                 | .9"       | (22.86) | .25"       | (6.35)  | .35"                 | 8.89  | .9"                    | 22.86 | 3.35"               | 85.09  | 3              | 10000     |
| 596-17822                    | TAG17T2-822      | TAG17T2  | Z                 | 1.5"      | (38.11) | .25"       | (6.35)  | .35"                 | 8.89  | 1.65"                  | 41.98 | 3.35"               | 85.09  | 2              | 10000     |
| 596-73822                    | TAG73T1-822      | TAG73T1  | AA                | 2.0"      | (50.8)  | 1.0"       | (25.4)  | 1.125"               | 28.57 | 1.0"                   | 25.4  | 2.20"               | 55.83  | 1              | 3000      |
| 596-42822                    | TAG72T1-822      | TAG72T1  | M                 | 2.75"     | (69.85) | 1.25"      | (31.75) | 1.375"               | 34.93 | 2.75"                  | 69.85 | 2.95"               | 74.95  | 1              | 3000      |
| 596-71822                    | TAG71T5-822      | TAG71T5  | BB                | .5"       | (12.7)  | .43"       | (11.1)  | .662"                | 16.81 | .43"                   | 11.1  | 3.35"               | 85.09  | 5              | 10000     |
| 596-82822                    | TAG82T2-822      | TAG82T2  | CC                | 1.5"      | (38.1)  | .25"       | (6.35)  | .30"                 | 7.62  | 1.5"                   | 38.1  | 3.20"               | 81.28  | 2              | 10000     |
| 822C Material*               |                  |          |                   |           |         |            |         |                      |       |                        |       |                     |        |                |           |
| 596-00029                    | TAGPP1T6-822C    | TAGPP1T6 | R                 | .625"     | (15.87) | .333"      | (8.45)  | .75"                 | 19.05 | .625"                  | 15.87 | 3.8"                | 96.52  | 6              | 1000      |
| 596-00030                    | TAGPP1T6-822C10M | TAGPP1T6 | R                 | .625"     | (15.87) | .333"      | (8.45)  | .75"                 | 19.05 | .625"                  | 15.87 | 3.8"                | 96.52  | 6              | 10000     |
| 596-00003                    | TAG11T4-822C     | TAG11T4  | C                 | .65"      | (16.5)  | .2"        | (5.08)  | .3"                  | 7.62  | .65"                   | 16.5  | 2.6"                | 66.04  | 4              | 5000      |
| 596-00047                    | TAGPP2T6-822C    | TAGPP2T6 | T                 | .66"      | (16.7)  | .33"       | (8.38)  | .75"                 | 19.05 | .66"                   | 16.7  | 4.125"              | 104.7  | 6              | 1000      |
| 596-00084                    | TAGPP3T4-822C    | TAGPP3T4 | U                 | .688"     | (17.4)  | .25"       | (6.35)  | .375"                | 9.52  | .688"                  | 17.4  | 2.9"                | 73.66  | 4              | 1000      |
| 596-00001                    | TAG15T3-822C10M  | TAG15T3  | E                 | 1.0"      | (25.4)  | .5"        | (12.7)  | .6"                  | 15.24 | 1.0"                   | 25.4  | 3.35"               | 85.09  | 3              | 10000     |
| 596-00043                    | TAG27T1-822C     | TAG27T1  | J                 | 1.5"      | (38.11) | .75"       | (19.05) | .875"                | 22.2  | 1.5"                   | 38.11 | 2.20"               | 55.88  | 1              | 3000      |
| DTH Material***              |                  |          |                   |           |         |            |         |                      |       |                        |       |                     |        |                |           |
| 596-00033                    | TAG13T4-DTH      | TAG13T4  | V                 | .75"      | (19.05) | .25"       | (6.35)  | .35"                 | 8.89  | .75"                   | 19.05 | 3.35"               | 85.09  | 4              | 10000     |
| 596-00034                    | TAG16T3-DTH      | TAG16T3  | Y                 | .9"       | (22.86) | .25"       | (6.35)  | .35"                 | 8.89  | .9"                    | 22.86 | 3.35"               | 85.09  | 3              | 10000     |
| 596-00035                    | TAG15T3-DTH      | TAG15T3  | E                 | 1.0"      | (25.4)  | .5"        | (12.7)  | .6"                  | 15.24 | 1.0"                   | 25.4  | 3.35"               | 85.09  | 3              | 10000     |
| 596-00036                    | TAG27T2-DTH      | TAG27T2  | J                 | 1.5"      | (38.11) | .75"       | (19.05) | .875"                | 22.2  | 1.5"                   | 38.11 | 2.20"               | 55.83  | 2              | 10000     |
| 596-00037                    | TAG99T1-DTH      | TAG99T1  | DD                | 2.0"      | (50.8)  | .25"       | (6.35)  | .375"                | 9.52  | 2.0"                   | 50.8  | 2.2"                | 55.8   | 1              | 2500      |
| 596-00038                    | TAG73T1-DTH      | TAG73T1  | AA                | 2.0"      | (50.8)  | 1.0"       | (25.4)  | 1.125"               | 28.57 | 1.0"                   | 25.4  | 2.20"               | 55.83  | 1              | 3000      |
| 596-00039                    | TAG33T1-DTH      | TAG33T1  | EE                | 3.0"      | (76.2)  | 2.0"       | (50.8)  | 2.125"               | 53.97 | 2.0"                   | 50.8  | 3.1"                | 78.74  | 1              | 1000      |
| PAP - Non-Adhesive Cardstock |                  |          |                   |           |         |            |         |                      |       |                        |       |                     |        |                |           |
| 596-00017                    | TAG74T2-PAP      | TAG74T2  | FF                | 1.75"     | (44.45) | .375"      | (9.53)  | .562"                | 14.2  | 1.75"                  | 44.45 | 3.5"                | 88.9   | 2              | 1000      |
| 596-00025                    | TAG82T2-PAP      | TAG82T2  | GG                | 2.0"      | (50.8)  | .396"      | (10.05) | .562"                | 14.2  | 2.0"                   | 50.8  | 4.05"               | 102.0  | 2              | 1000      |
| 596-00024                    | TAG85T1-PAP      | TAG85T1  | HH                | 3.0"      | (76.2)  | .50"       | (12.7)  | .60"                 | 15.24 | 3.0"                   | 76.2  | 3.2"                | 8.28   | 1              | 5000      |

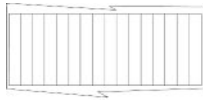
Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

\* Clear

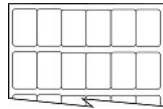
\*\*\* For use with DTH ribbons only!

Thermal Transfer Labels *continued*

(Not shown to scale)



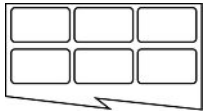
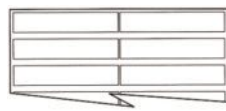
TYHCT-250

**A**

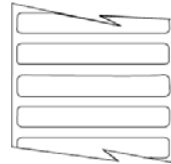
TAG21T6-250

**B**TAG11T4-250,  
TAG11T4-822,  
TAG11T4-822C**C**

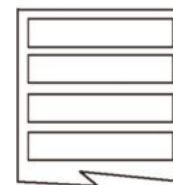
TAG28T4-250

**D**TAG15T3-DTH,  
TAG15T3-795,  
TAG15T3-822,  
TAG15T3-822C10M  
TAG15T3-250**E**

TAG35T2-250

**F**

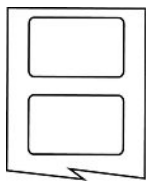
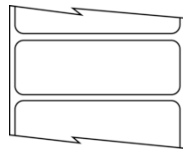
TAG96T1-336

**G**

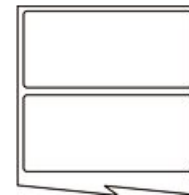
TAG69T1-336

**H**

TAG68T1-336

**I**TAG27T1-822,  
TAG27T1-795,  
TAG27T1-822C,  
TAG27T2-DTH**J**TAG751-822  
TAG75T1-795**K**

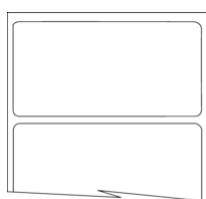
TAG76T1-795

**L**TAG72T1-795,  
TAG72T1-822**M**

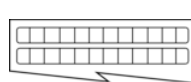
TAG78T1-795

**N**

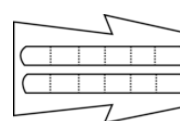
TAG80T1-795

**O**

TAG79T1-795

**P**

TAG70T12-822

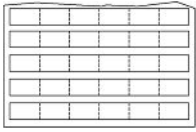
**Q**TAGPP1T6-822,  
TAGPP1T6-822C,  
TAGPP1T6-82210M,  
TAGPP1T6-822C10M**R**

TAG84T3-822

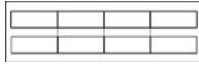
**S**

## Thermal Transfer Labels *continued*

(Not shown to scale)



TAGPP2T6-822,  
TAGPP2T6-822C  
**T**



TAGPP3T4-822,  
TAGPP3T4-822C  
**U**



TAG13T4-822,  
TAG13T4-900,  
TAG13T4-DTH  
**V**



TAG83T1-822  
**W**



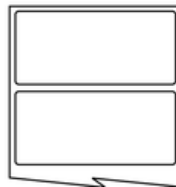
TAG81T8-822  
**X**



TAG16T3-DTH,  
TAG16T3-822,  
TAG16T3-900  
**Y**



TAG17T2-822  
**Z**



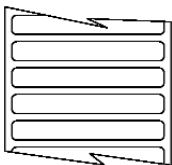
TAG73T1-822,  
TAG73T1-DTH,  
TAG73T1-795  
**AA**



TAG71T5-822  
**BB**



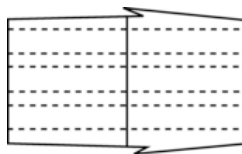
TAG82T2-822  
**CC**



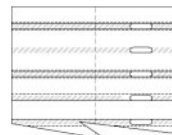
TAG99T1-DTH  
**DD**



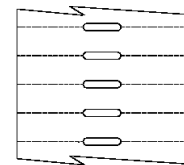
TAG33T1-DTH  
**EE**



TAG74T2-PAP  
**FF**



TAG82T2-PAP  
**GG**



TAG85T1-PAP  
**HH**

## Foam Nameplate Labels

Foam nameplate labels are designed to replace plastic and metal engraved phenolic plates commonly found on control panels in many markets. The labels have a foam base so that they conform to textured surfaces, but still provide a perfectly flat printing surface that is resistant to chemicals, solvents, heat and UV exposure. HellermannTyton's foam nameplate labels include computer printable button labels that fit around the panel hole where the button is inserted. The foam nameplate labels can be printed on demand in any volume needed and any design can be printed on the labels using TagPrint® Pro labeling software and HellermannTyton thermal transfer printers.



### Foam Nameplate Markers

|                         |                                                         |
|-------------------------|---------------------------------------------------------|
| <b>Material Number:</b> | <b>518</b>                                              |
| Material:               | Polyester                                               |
| Foam:                   | Polyethylene                                            |
| Adhesive:               | Acrylic                                                 |
| Temperature Range:      | -40°F (-40°C) to +176°F (+80°C)<br>2 year outdoor rated |



### Product Selection

| Article No.                   | Part No.  | Type            | Width          | Height         | Hole Diameter | Color | Pkg. Qty |
|-------------------------------|-----------|-----------------|----------------|----------------|---------------|-------|----------|
| <b>Foam Nameplates</b>        |           |                 |                |                |               |       |          |
| 596-00500                     | 596-00500 | NPL27X13WH      | 1.06" (26.9mm) | .49" (12.4mm)  | N/A           | White | 500      |
| 596-00503                     | 596-00503 | NPL27X13BK      | 1.06" (26.9mm) | .49" (12.4mm)  | N/A           | Black | 500      |
| 596-00504                     | 596-00504 | NPL51X25WH      | 2" (50.8mm)    | 1" (25.4mm)    | N/A           | White | 500      |
| 596-00507                     | 596-00507 | NPL51X25BK      | 2" (50.8mm)    | 1" (25.4mm)    | N/A           | Black | 500      |
| 596-00417                     | 596-00417 | NPL76X101WH     | 3" (76.2mm)    | 4" (101.6mm)   | N/A           | White | 150      |
| <b>Foam Button Nameplates</b> |           |                 |                |                |               |       |          |
| 596-00412                     | 596-00412 | NPLH31X31WH22.5 | 1.25" (31.7mm) | 1.25" (31.7mm) | .88" (22.3mm) | White | 250      |
| 596-00413                     | 596-00413 | NPLH31X31BK22.5 | 1.25" (31.7mm) | 1.25" (31.7mm) | .88" (22.3mm) | Black | 250      |
| 596-00414                     | 596-00414 | NPLH44X44WH30.5 | 1.75" (44.4mm) | 1.75" (44.4mm) | 1.2" (30.4mm) | White | 250      |
| 596-00415                     | 596-00415 | NPLH44X44BK30.5 | 1.75" (44.4mm) | 1.75" (44.4mm) | 1.2" (30.4mm) | Black | 250      |

Foam Nameplates



Foam Button Nameplates



| Article No.                                 | Part No.  | Type            | Description                                             | Pkg. Qty |
|---------------------------------------------|-----------|-----------------|---------------------------------------------------------|----------|
| <b>Colored Foam Button Nameplate Labels</b> |           |                 |                                                         |          |
| 596-00405                                   | 596-00405 | NPLH31X38YE22.5 | 1.2" x 1.5" Yellow button label with .88" (22.5mm) hole | 500      |
| 596-00406                                   | 596-00406 | NPLH31X38RD22.5 | 1.2" x 1.5" Red button label with .88" (22.5mm) hole    | 500      |
| 596-00407                                   | 596-00407 | NPLH31X38BK22.5 | 1.2" x 1.5" Black button label with .88" (22.5mm) hole  | 500      |
| 596-00404                                   | 596-00404 | NPLH31X38WH22.5 | 1.2" x 1.5" White button label with .88" (22.5mm) hole  | 500      |
| 596-00323                                   | 596-00323 | NPLH31X38GN22.5 | 1.2" x 1.5" Green button label with .88" (22.5mm) hole  | 500      |
| <b>Emergency Stop Foam Nameplate Label</b>  |           |                 |                                                         |          |
| 596-00202                                   | 596-00202 | NPL60X60YE      | 2.375" x 2.375" Yellow emergency stop label             | 100      |

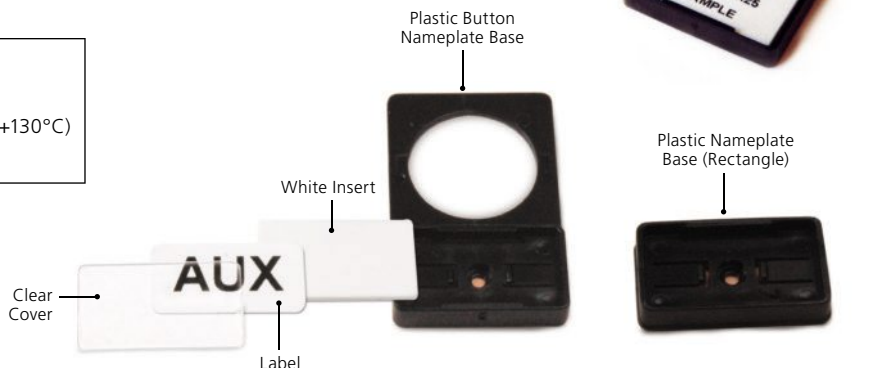
Use Part No. for ordering and Type for specification

## Plastic Nameplate Markers

HellermannTyton plastic nameplate markers are made of polycarbonate that is rated to UL94VO. The plastic nameplate markers can be mechanically mounted and include a clear polycarbonate cover that protects the printed text. Both nameplate and button nameplate designs are available. Designed for long term durability, the plastic nameplate markers still allow individual customization, on demand, while providing the performance of an engraved plate. They are excellent for use on solar control panels, electrical boxes, inverters, or anything requiring long term identification.

### Plastic Nameplates

|                    |                                 |
|--------------------|---------------------------------|
| Material:          | Polycarbonate                   |
| Adhesive:          | Acrylic                         |
| Temperature Range: | -22°F (30°C) to +266°F (+130°C) |
| Flammability:      | UL94VO                          |



### Product Selection

| Article No.                                | Part No.  | Type     | Width           | Length         | Description                                                 | Hole Diameter | Color | Pkg. Type | Pkg. Qty |
|--------------------------------------------|-----------|----------|-----------------|----------------|-------------------------------------------------------------|---------------|-------|-----------|----------|
| <b>Plastic Button Nameplate Bases</b>      |           |          |                 |                |                                                             |               |       |           |          |
| 596-00189                                  | 596-00189 | PTSA-22  | 1.12" (28.4mm)  | 1.87" (47.4mm) | Button legend base WITH LOCATORS                            | .88" (22.3mm) | Black | Flat PKG  | 100      |
| 596-00190                                  | 596-00190 | PTOA-22  | 1.12" (28.4mm)  | 1.87" (47.4mm) | Button legend base W/O LOCATORS                             | .88" (22.3mm) | Black | Flat PKG  | 100      |
| <b>White Inserts</b>                       |           |          |                 |                |                                                             |               |       |           |          |
| 596-00418                                  | 596-00418 | WPL15X27 | 1.06" (26.92mm) | .59" (14.9mm)  | White insert for use in 596-00189, 596-00190 and 596-00191  | N/A           | White | Flat PKG  | 360      |
| 596-00419                                  | 596-00419 | WPL15X49 | 1.92" (48.7mm)  | .59" (14.9mm)  | White insert for use in 596-00192                           | N/A           | White | Flat PKG  | 180      |
| 596-00420                                  | 596-00420 | WPL15X67 | 2.63" (66.8mm)  | .59" (14.9mm)  | White insert for use in 596-00193                           | N/A           | Black | Flat PKG  | 90       |
| <b>Labels For Use On Inserts</b>           |           |          |                 |                |                                                             |               |       |           |          |
| 596-00184                                  | 596-00184 | NPL25X13 | 1" (25.4mm)     | .5" (12.7mm)   | Label for use in 596-00418 insert                           | N/A           | White | RL        | 500      |
| 596-00185                                  | 596-00185 | NPL47X13 | 1.85" (46.9mm)  | .5" (12.7mm)   | Label for use in 596-00419 insert                           | N/A           | White | RL        | 500      |
| 596-00183                                  | 596-00183 | NPL63X13 | 2.5" (63.5mm)   | .5" (12.7mm)   | Label for use in 596-00420 insert                           | N/A           | White | RL        | 500      |
| <b>Clear Covers</b>                        |           |          |                 |                |                                                             |               |       |           |          |
| 596-00194                                  | 596-00194 | TC15X27  | 1.06" (26.92mm) | .59" (14.9mm)  | Clear cover for use with 596-00189, 596-00190 and 596-00191 | N/A           | Clear | Flat PKG  | 360      |
| 596-00195                                  | 596-00195 | TC15X49  | 1.92" (48.7mm)  | .59" (14.9mm)  | Clear cover for use in 596-00192                            | N/A           | Clear | Flat PKG  | 180      |
| 596-00196                                  | 596-00196 | TC15X67  | 2.63" (66.8mm)  | .59" (14.9mm)  | Clear cover for use in 596-00193                            | N/A           | Clear | Flat PKG  | 90       |
| <b>Plastic Nameplate Bases (Rectangle)</b> |           |          |                 |                |                                                             |               |       |           |          |
| 596-00191                                  | 596-00191 | LB15X27  | 1.06" (26.92mm) | .59" (14.9mm)  | Black rectangle legend base                                 | N/A           | Black | Flat PKG  | 100      |
| 596-00192                                  | 596-00192 | LB15X49  | 1.92" (48.7mm)  | .59" (14.9mm)  | Black rectangle legend base                                 | N/A           | Black | Flat PKG  | 100      |
| 596-00193                                  | 596-00193 | LB15X67  | 2.63" (66.8mm)  | .59" (14.9mm)  | Black rectangle legend base                                 | N/A           | Black | Flat PKG  | 100      |

Use Part No. for ordering and Type for specification

Plastic nameplates are made to be assembled as kits. The black base should also include the white insert, a label for the insert and a clear cover to protect the printing. Each is sold separately. Please see descriptions of which parts are recommended to go with the basic Plastic button nameplate bases and or Plastic rectangular nameplate bases.

BASE + WHITE INSERT + LABEL (OPTIONAL\*) + CLEAR COVER

\*White inserts can also be directly printed using an ink jet plotter.

## Continuous Vinyl Labels

HellermannTyton's continuous vinyl labels come in a variety of colors and printing widths. Designed to optimize unique and custom printing designs on demand, vinyl labels allow the maximum flexibility for printing unique sizes of labels. The vinyl has been tested for UV resistance up to ten years in outdoor applications and can be used to print warning labels, voltage markers, switch identifiers, and even pipe markers using TagPrint® Pro 3.0 labeling software and any HellermannTyton thermal transfer printing system.



### Material Data

|                    |                                  |
|--------------------|----------------------------------|
| Material:          | Vinyl                            |
| Adhesive:          | Acrylic                          |
| Temperature Range: | -40°F to +180°F (-40°C to +82°C) |
| Liner:             | 10 Year Outdoor Rated            |

### Product Selection

| Article No. | Part No.  | Type     | Width     | Length   | Description                     | Color  | Pkg. Type | Pkg. Qty |
|-------------|-----------|----------|-----------|----------|---------------------------------|--------|-----------|----------|
| 558-00309   | 558-00309 | HT1WH250 | 1 (25.4)  | 250 (76) | 1" White Vinyl Continuous Roll  | White  | RL        | 1        |
| 558-00313   | 558-00313 | HT2WH250 | 2 (50.8)  | 250 (76) | 2" White Vinyl Continuous Roll  | White  | RL        | 1        |
| 558-00345   | 558-00345 | HT3WH250 | 3 (76.2)  | 250 (76) | 3" White Vinyl Continuous Roll  | White  | RL        | 1        |
| 558-00350   | 558-00350 | HT4WH250 | 4 (101.6) | 250 (76) | 4" White Vinyl Continuous Roll  | White  | RL        | 1        |
| 558-00310   | 558-00310 | HT1YE250 | 1 (25.4)  | 250 (76) | 1" Yellow Vinyl Continuous Roll | Yellow | RL        | 1        |
| 558-00314   | 558-00314 | HT2YE250 | 2 (50.8)  | 250 (76) | 2" Yellow Vinyl Continuous Roll | Yellow | RL        | 1        |
| 558-00346   | 558-00346 | HT3YE250 | 3 (76.2)  | 250 (76) | 3" Yellow Vinyl Continuous Roll | Yellow | RL        | 1        |
| 558-00308   | 558-00308 | HT1RD250 | 1 (25.4)  | 250 (76) | 1" Red Vinyl Continuous Roll    | Red    | RL        | 1        |
| 558-00312   | 558-00312 | HT2RD250 | 2 (50.8)  | 250 (76) | 2" Red Vinyl Continuous Roll    | Red    | RL        | 1        |
| 558-00006   | 558-00006 | HT3RD250 | 3 (76.2)  | 250 (76) | 3" Red Vinyl Continuous Roll    | Red    | RL        | 1        |
| 558-00370   | 558-00370 | HT4RD250 | 4 (101.6) | 250 (76) | 4" Red Vinyl Continuous Roll    | Red    | RL        | 1        |
| 558-00307   | 558-00307 | HT1BK250 | 1 (25.4)  | 250 (76) | 1" Black Vinyl Continuous Roll  | Black  | RL        | 1        |
| 558-00311   | 558-00311 | HT2BK250 | 2 (50.8)  | 250 (76) | 2" Black Vinyl Continuous Roll  | Black  | RL        | 1        |
| 558-00374   | 558-00374 | HT3BK250 | 3 (76.2)  | 250 (76) | 3" Black Vinyl Continuous Roll  | Black  | RL        | 1        |
| 558-00336   | 558-00336 | HT1OE250 | 1 (25.4)  | 250 (76) | 1" Orange Vinyl Continuous Roll | Orange | RL        | 1        |
| 558-00337   | 558-00337 | HT2OE250 | 2 (50.8)  | 250 (76) | 2" Orange Vinyl Continuous Roll | Orange | RL        | 1        |
| 558-00338   | 558-00338 | HT3OE250 | 3 (76.2)  | 250 (76) | 3" Orange Vinyl Continuous Roll | Orange | RL        | 1        |
| 558-00339   | 558-00339 | HT1BU250 | 1 (25.4)  | 250 (76) | 1" Blue Vinyl Continuous Roll   | Blue   | RL        | 1        |
| 558-00341   | 558-00341 | HT2BU250 | 2 (50.8)  | 250 (76) | 2" Blue Vinyl Continuous Roll   | Blue   | RL        | 1        |
| 558-00343   | 558-00343 | HT3BU250 | 3 (76.2)  | 250 (76) | 3" Blue Vinyl Continuous Roll   | Blue   | RL        | 1        |
| 558-00340   | 558-00340 | HT1GN250 | 1 (25.4)  | 250 (76) | 1" Green Vinyl Continuous Roll  | Green  | RL        | 1        |
| 558-00342   | 558-00342 | HT2GN250 | 2 (50.8)  | 250 (76) | 2" Green Vinyl Continuous Roll  | Green  | RL        | 1        |
| 558-00344   | 558-00344 | HT3GN250 | 3 (76.2)  | 250 (76) | 3" Green Vinyl Continuous Roll  | Green  | RL        | 1        |
| 558-00351   | 558-00351 | HT4GN250 | 4 (101.6) | 250 (76) | 4" Green Vinyl Continuous Roll  | Green  | RL        | 1        |

Use Part No. for ordering and Type for specification.

## ShrinkTrak™ Heat Shrinkable Markers

HellermannTyton's ShrinkTrak™ heat shrinkable markers make it easy to mark wire, cable, and other components. These ladder-style markers are designed with side slits for easier application. All ShrinkTrak® markers are military specified. They also reduce printer jams with their efficient and high performance design. For seamless labeling, ShrinkTrak™ can be printed using HellermannTyton's TagPrint® Pro professional label creation software, thermal transfer printers and ribbons to create a permanent and solvent resistant print when shrunk and applied.

### Versatile

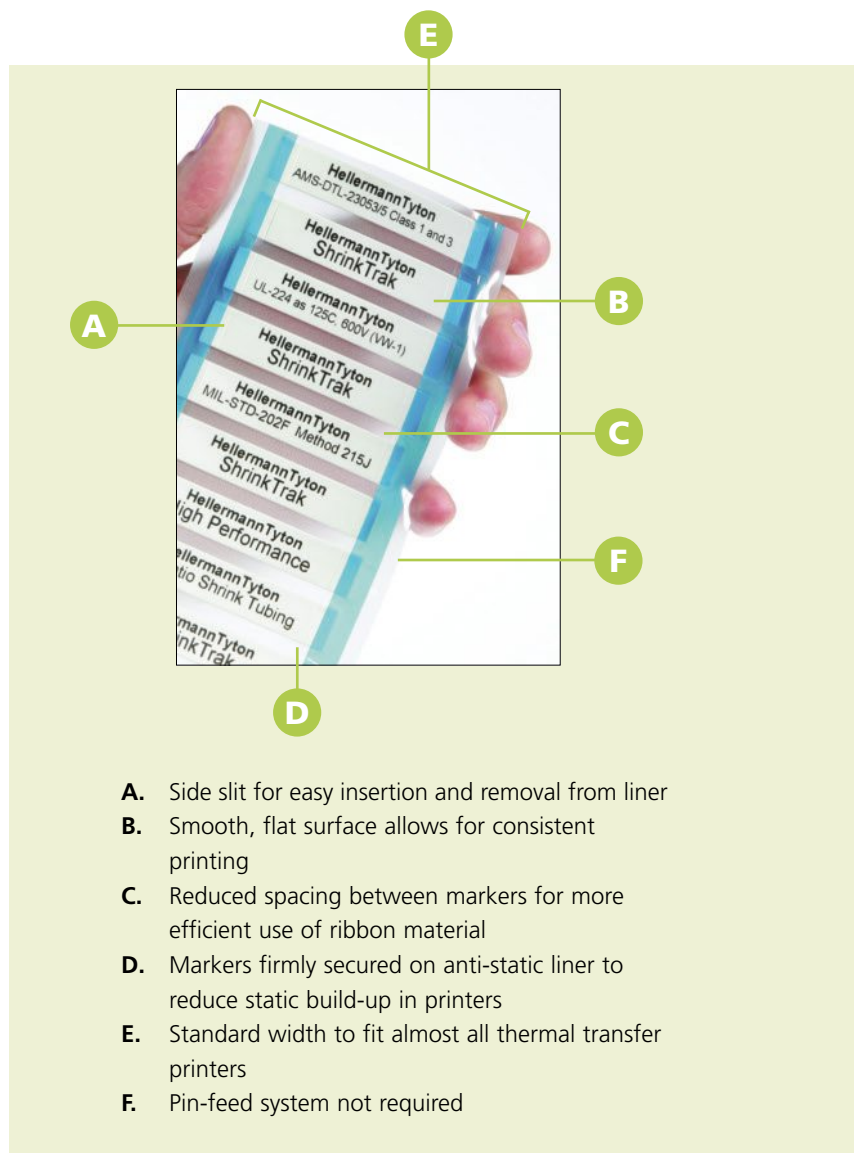
- Flexible, flame retardant, heat shrinkable polyolefin tubing meets all military specifications
- 3:1 shrink ratio
- Standard colors - yellow, white and black
- Larger packaging options result in less box changes

### High Performance Design

- Center slit versions reduce or eliminate hand cutting
- Non-slip, printable liner allows additional marker data to be printed on the reverse side for records and placement instructions
- Utilize HellermannTyton's Durattach ribbon system for the highest print performance on the market

### Reduce Printer Jams

- Markers dispense directly into HellermannTyton thermal transfer printers with custom box opening
- Dispense markers faster and easier with waxed core dispenser



- A. Side slit for easy insertion and removal from liner
- B. Smooth, flat surface allows for consistent printing
- C. Reduced spacing between markers for more efficient use of ribbon material
- D. Markers firmly secured on anti-static liner to reduce static build-up in printers
- E. Standard width to fit almost all thermal transfer printers
- F. Pin-feed system not required

### Ease of Use - Step by Step Guide



**Step 1**  
Print with thermal transfer printer



**Step 2**  
Bend liner at side slit



**Step 3**  
Insert wire into marker



**Step 4**  
Pull-up on wire - the marker will pull away from liner



**ShrinkTrak Applied!**

ShrinkTrak™ Heat Shrinkable Markers *continued*

| Material Data                              |                                                                             |
|--------------------------------------------|-----------------------------------------------------------------------------|
| Material                                   | <b>Polyolefin, cross-linked (POX)</b>                                       |
| Product Thickness                          | <b>3 mil total thickness</b>                                                |
| Shrink Temperature (nominal)               | <b>+194 °F (+90 °C)</b>                                                     |
| Operating Temperature                      | <b>-67 °F to +275 °F (-55 °C to +135 °C)</b>                                |
| Flame Retardant                            | <b>Yes</b>                                                                  |
| Flammability                               | <b>UL224 VW1</b>                                                            |
| Flexibility                                | <b>flexible</b>                                                             |
| Abrasion Resistance                        | <b>Good</b>                                                                 |
| Solvent Resistance                         | <b>Good</b>                                                                 |
| Standard Colors                            | <b>White, Yellow &amp; Black</b>                                            |
| *For other colors, contact HellermannTyton |                                                                             |
| UL Rating                                  | <b>Meets UL-224 as +257 °F (+125 °C), 600V (VW-1)</b>                       |
| Certification                              | <b>AMS-DTL-23053/5 Class 1 and 3, SAE-AS81531, MIL-STD-202G Method 215K</b> |



## Recommended Thermal Transfer Ribbons

## TT230SM Printer

TTDTHOUTSM

T822OUTSM

TTHSTOUTSM

TT900OUTSM

## TTM430/TTM460

**or other thermal transfer printers**

TTDTHOUT

TT822OUT

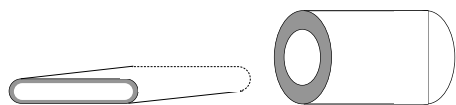
TTHSTOUT

TT900OUT



## ShrinkTrak Specifications

| Diameter Size                                                                  | 0.125"                             | 0.187"                            | 0.25"                             | 0.375"                             | 0.50"                              | 0.75"                              | 1.0"                              |
|--------------------------------------------------------------------------------|------------------------------------|-----------------------------------|-----------------------------------|------------------------------------|------------------------------------|------------------------------------|-----------------------------------|
| Wire Size Range (AWG/MCM)                                                      | 18-22<br>(.044 - 1)                | 12-18<br>(.063 - .17)             | 10-16<br>(.083 - .230)            | 8-14<br>(.122 - .340)              | 2-10<br>(.166 - .470)              | 6-0000<br>(.25 - .725)             | 1-400<br>(.330 - .876)            |
| Inside Diameter as Supplied In. (mm)*                                          | 0.118 +/- 0.024<br>(3.0 +/- 0.6)   | 0.177 +/- 0.032<br>(4.5 +/- 0.8)  | 0.236 +/- 0.040<br>(6.0 +/- 1.0)  | 0.354 +/- 0.040<br>(9.0 +/- 1.0)   | 0.470 +/- 0.024<br>(12.0 +/- 1.0)  | 0.732 +/- 0.040<br>(18.6 +/- 1.0)  | 1.024 +/- 0.040<br>(26.0 +/- 1.0) |
| Inside Diameter After Recovery In. (mm)                                        | 0.043<br>(1.0)                     | 0.063<br>(1.6)                    | 0.083<br>(2.1)                    | 0.122<br>(3.1)                     | 0.166<br>(4.2)                     | 0.25<br>(6.35)                     | 0.33<br>(8.3)                     |
| Wall Thickness After Recovery In. (mm)                                         | 0.0209 +/- 0.004<br>(.53 +/- 0.10) | 0.026 +/- 0.004<br>(.65 +/- 0.10) | 0.028 +/- 0.004<br>(.71 +/- 0.10) | 0.031 +/- 0.006<br>(0.78 +/- 0.15) | 0.033 +/- 0.006<br>(0.83 +/- 0.15) | 0.036 +/- 0.006<br>(0.91 +/- 0.15) | 0.039 +/- 0.006<br>(.99 +/- 1.6)  |
| Overall Width In. (mm)                                                         | 0.209 +/- 0.040<br>(5.3 +/- 1.0)   | 0.303 +/- 0.052<br>(7.7 +/- 1.3)  | 0.398 +/- 0.063<br>(10.1 +/- 1.6) | 0.587 +/- 0.063<br>(14.9 +/- 1.6)  | 0.776 +/- 0.063<br>(19.7 +/- 1.6)  | 1.21 +/- 0.063<br>(30.8 +/- 1.6)   | 1.63 +/- 0.063<br>(41.38 +/- 1.6) |
| Overall Height In. (mm)                                                        | 0.020<br>(0.508)                   | 0.020<br>(0.508)                  | 0.020<br>(0.508)                  | 0.022<br>(0.558)                   | 0.023<br>(0.582)                   | 0.025<br>(0.63)                    | 0.03<br>(0.76)                    |
| Dimensional Reference (if the wire or cable diameter is less than or equal to) |                                    |                                   |                                   |                                    |                                    |                                    |                                   |

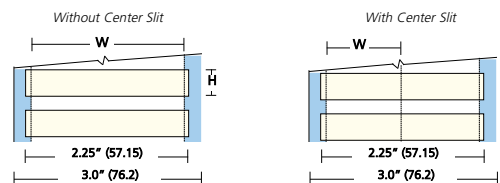


\*As supplied

\*\*Recovered

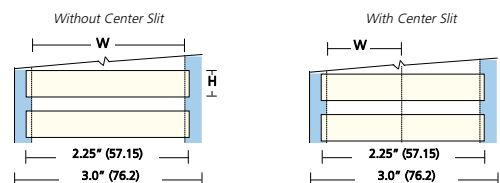
\* Contact HellermannTyton for custom color options.

\*\* Meets printer performance requirements of SAE-AS81531 using the ribbons listed above in any thermal transfer printer, including HellermannTyton's TT320SM and TT1210

ShrinkTrak Heat Shrinkable Markers *continued*

| Product Selection                   |           |                 |                              |        |             |           |         |            |         |          |
|-------------------------------------|-----------|-----------------|------------------------------|--------|-------------|-----------|---------|------------|---------|----------|
| Article No.                         | Part No.  | Type            | Cross Ref to Former Part No. | Color  | Center Slit | Width (W) |         | Height (H) |         | Pkg. Qty |
|                                     |           |                 |                              |        |             | In.       | (mm.)   | In.        | (mm.)   |          |
| 0.125" (3.17mm) - Outside Diameter  |           |                 |                              |        |             |           |         |            |         |          |
| 553-50001                           | 553-50001 | HST3-1BK        | THS-610BM                    | Black  | -           | 1.9"      | (48.26) | .235"      | (5.97)  | 250      |
| 553-50002                           | 553-50002 | HST3-1WH        | THS-610W                     | White  | -           | 1.9"      | (48.26) | 1.90"      | (48)    | 250      |
| 553-50003                           | 553-50003 | HST3-1WH        | THS-610W10C                  | White  | -           | 1.9"      | (48.26) | 1.90"      | (48)    | 1000     |
| 553-50078                           | 553-50078 | HST3-1WH        | THS-610W25C                  | White  | -           | 1.9"      | (48.26) | .235"      | (5.97)  | 2500     |
| 553-50004                           | 553-50004 | HST3-1WH-S      | THS-610WP                    | White  | Single      | .95"      | (24.1)  | .235"      | (5.97)  | 500      |
| 553-50074                           | 553-50074 | HST3-1WH-S      | THS-610WP10C                 | White  | Single      | .95"      | (24.1)  | .235"      | (5.97)  | 2000     |
| 553-50067                           | 553-50067 | HST3-1WH-S      | THS-610WP25C                 | White  | Single      | .95"      | (24.1)  | .235"      | (5.97)  | 5000     |
| 553-50070                           | 553-50070 | HST3-1WH-2S     | THS-610W2P                   | White  | Double      | .63"      | (16.08) | .235"      | (5.97)  | 750      |
| 553-50075                           | 553-50075 | HST3-1WH-2S     | THS-610W2P10C                | White  | Double      | .63"      | (16.08) | .235"      | (5.97)  | 3000     |
| 553-50063                           | 553-50063 | HST3-1WH-3S     | THS-610W3P                   | White  | Triple      | .475"     | (12.07) | .235"      | (5.97)  | 1000     |
| 553-50088                           | 553-50088 | HST3-1WH-3S     | THS-610W3P10C                | White  | Triple      | .475"     | (12.07) | .475"      | (12)    | 4000     |
| 553-50006                           | 553-50006 | HST3-1YE        | THS-610Y10C                  | Yellow | -           | 1.9"      | (48.26) | .235"      | (5.97)  | 1000     |
| 553-50005                           | 553-50005 | HST3-1YE        | THS-610Y                     | Yellow | -           | 1.9"      | (48.26) | .235"      | (5.97)  | 250      |
| 553-50007                           | 553-50007 | HST3-1YE-S      | THS-610YP                    | Yellow | Single      | .95"      | (24.1)  | .235"      | (5.97)  | 500      |
| 553-50076                           | 553-50076 | HST3-1YE-S      | THS-610YP10C                 | Yellow | Single      | .95"      | (24.1)  | .235"      | (5.97)  | 2000     |
| 553-50071                           | 553-50071 | HST3-1YE-2S     | THS-610Y2P                   | Yellow | Double      | .63"      | (16.08) | .235"      | (5.97)  | 750      |
| 553-50077                           | 553-50077 | HST3-1YE-2S     | THS-610Y2P10C                | Yellow | Double      | .63"      | (16.08) | .235"      | (5.97)  | 3000     |
| 0.187" (4.74 mm) - Outside Diameter |           |                 |                              |        |             |           |         |            |         |          |
| 553-50008                           | 553-50008 | HST4.8-1.6BK    | THS-615BM                    | Black  | -           | 1.9"      | (48.26) | .312"      | (7.92)  | 250      |
| 553-50009                           | 553-50009 | HST4.8-1.6WH    | THS-615W                     | White  | -           | 1.9"      | (48.26) | .312"      | (7.92)  | 250      |
| 553-50010                           | 553-50010 | HST4.8-1.6WH    | THS-615W10C                  | White  | -           | 1.9"      | (48.26) | .312"      | (7.92)  | 1000     |
| 553-50177                           | 553-50177 | HST4.8-1.6WH    | THS-615W30C                  | White  | -           | 1.9"      | (48.26) | .312"      | (7.92)  | 3000     |
| 553-50079                           | 553-50079 | HST4.8-1.6WH    | THS-615W50C                  | White  | -           | 1.9"      | (48.26) | .312"      | (7.92)  | 5000     |
| 553-50011                           | 553-50011 | HST4.8-1.6WH-S  | THS-615WP                    | White  | Single      | .95"      | (24.1)  | .312"      | (7.92)  | 500      |
| 553-50080                           | 553-50080 | HST4.8-1.6WH-S  | THS-615WP10C                 | White  | Single      | .95"      | (24.1)  | .312"      | (7.92)  | 2000     |
| 553-50068                           | 553-50068 | HST4.8-1.6WH-2S | THS-615W2P                   | White  | Double      | .633"     | (16.08) | .312"      | (7.92)  | 750      |
| 553-50072                           | 553-50072 | HST4.8-1.6WH-2S | THS-615W2P10C                | White  | Double      | .633"     | (16.08) | .312"      | (7.92)  | 3000     |
| 553-50064                           | 553-50064 | HST4.8-1.6WH-3S | THS-615W3P                   | White  | Triple      | .475"     | (12.07) | .312"      | (7.92)  | 1000     |
| 553-50081                           | 553-50081 | HST4.8-1.6WH-3S | THS-615W3P10C                | White  | Triple      | .475"     | (12.07) | .312"      | (7.92)  | 4000     |
| 553-50013                           | 553-50013 | HST4.8-1.6YE    | THS-615Y10C                  | Yellow | -           | 1.9"      | (48.26) | .312"      | (7.92)  | 1000     |
| 553-50012                           | 553-50012 | HST4.8-1.6YE    | THS-615Y                     | Yellow | -           | 1.9"      | (48.26) | .312"      | (7.92)  | 250      |
| 553-50014                           | 553-50014 | HST4.8-1.6YE-S  | THS-615YP                    | Yellow | Single      | .95"      | (24.1)  | .312"      | (7.92)  | 500      |
| 553-50069                           | 553-50069 | HST4.8-1.6YE-2S | THS-615Y2P                   | Yellow | Double      | .633"     | (16.08) | .312"      | (7.92)  | 750      |
| 553-50073                           | 553-50073 | HST4.8-1.6YE-2S | THS-615Y2P10C                | Yellow | Double      | .633"     | (16.08) | .312"      | (7.92)  | 3000     |
| 553-50176                           | 553-50176 | HST4.8-1.6WH-S  | THS-615Y2P10C                | White  | Double      | .633"     | (16.08) | .312"      | (7.92)  | 3000     |
| 0.25" (6.35mm) - Outside Diameter   |           |                 |                              |        |             |           |         |            |         |          |
| 553-50015                           | 553-50015 | HST6-2BK        | THS-620BM                    | Black  | -           | 1.9"      | (48.26) | .420"      | (10.67) | 250      |
| 553-50016                           | 553-50016 | HST6-2WH        | THS-620W                     | White  | -           | 1.9"      | (48.26) | .420"      | (10.67) | 250      |
| 553-50017                           | 553-50017 | HST6-2WH        | THS-620W10C                  | White  | -           | 1.9"      | (48.26) | .420"      | (10.67) | 1000     |
| 553-50018                           | 553-50018 | HST6-2WH        | THS-620W50C                  | White  | -           | 1.9"      | (48.26) | .420"      | (10.67) | 5000     |
| 553-50019                           | 553-50019 | HST6-2WHC       | THS-620WP                    | White  | Single      | .95"      | (24.1)  | .420"      | (10.67) | 500      |
| 553-50020                           | 553-50020 | HST6-2YE-S      | THS-620YP10C                 | Yellow | -           | 1.9"      | (48.26) | .420"      | (10.67) | 2000     |
| 553-50021                           | 553-50021 | HTS6-2YE-2S     | THS-620Y2P                   | Yellow | -           | 1.9"      | (48.26) | .420"      | (10.67) | 1000     |
| 553-50022                           | 553-50022 | HST6-2YE-S      | THS-620Y3P                   | Yellow | Single      | .95"      | (24.1)  | .420"      | (10.67) | 1000     |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

ShrinkTrak Heat Shrinkable Markers *continued*

| Product Selection                             |                  |               |                              |        |             |                        |                         |           |
|-----------------------------------------------|------------------|---------------|------------------------------|--------|-------------|------------------------|-------------------------|-----------|
| Article No.                                   | Part No.         | Type          | Cross Ref to Former Part No. | Color  | Center Slit | Width (W)<br>In. (mm.) | Height (H)<br>In. (mm.) | Pkg. Qty. |
| 0.25" (6.35mm) - Outside Diameter (continued) |                  |               |                              |        |             |                        |                         |           |
| 553-50082                                     | <b>553-50082</b> | HST6-2WH-2S   | THS-620W2P                   | White  | Double      | .633" (16.08)          | .420" (10.67)           | 750       |
| 553-50083                                     | <b>553-50083</b> | HST6-2YE-2S   | THS-620Y2P                   | Yellow | Double      | .633" (16.08)          | .420" (10.67)           | 750       |
| 553-50084                                     | <b>553-50084</b> | HST6-2WH-S    | THS-620WP10C                 | White  | Single      | .95" (24.1)            | .420" (10.67)           | 2000      |
| 553-50085                                     | <b>553-50085</b> | HST6-2YE-S    | THS-620YP10C                 | Yellow | Single      | .95" (24.1)            | .420" (10.67)           | 2000      |
| 553-50089                                     | <b>553-50089</b> | HST6-2WH-3S   | THS-620W3P10C                | White  | Triple      | .475" (12.07)          | .420" (10.67)           | 4000      |
| 0.375" (9.52 mm) - Outside Diameter           |                  |               |                              |        |             |                        |                         |           |
| 553-50023                                     | <b>553-50023</b> | HST9-3BK      | THS-625BM                    | Black  | -           | 1.9" (48.26)           | .597" (15.16)           | 250       |
| 553-50024                                     | <b>553-50024</b> | HST9-3WH      | THS-625W                     | White  | -           | 1.9" (48.26)           | .597" (15.16)           | 250       |
| 553-50025                                     | <b>553-50025</b> | HST9-3WH-S    | THS-625WP                    | White  | Single      | .95" (24.1)            | .597" (15.16)           | 500       |
| 553-50066                                     | <b>553-50066</b> | HST9-3WH-3S   | THS-625W3P                   | White  | Triple      | .475" (12.07)          | .597" (15.16)           | 1000      |
| 553-50026                                     | <b>553-50026</b> | HST9-3YE      | THS-625Y                     | Yellow | -           | 1.9" (48.26)           | .597" (15.16)           | 250       |
| 553-50027                                     | <b>553-50027</b> | HST9-3YE-S    | THS-625YP                    | Yellow | Single      | .95" (24.1)            | .597" (15.16)           | 500       |
| 553-50192                                     | <b>553-50192</b> | HST9-3WH      | THS-625W10C                  | White  | -           | 1.9" (48.26)           | .597" (15.16)           | 1000      |
| 0.50" (12.7 mm) - Outside Diameter            |                  |               |                              |        |             |                        |                         |           |
| 553-50028                                     | <b>553-50028</b> | HST12-4BK     | THS-630BM                    | Black  | -           | 1.9" (48.26)           | .77" (19.55)            | 250       |
| 553-50029                                     | <b>553-50029</b> | HST12-4WH     | THS-630W                     | White  | -           | 1.9" (48.26)           | .77" (19.55)            | 250       |
| 553-50030                                     | <b>553-50030</b> | HST12-4WH-S   | THS-630WP                    | White  | Single      | .95" (24.1)            | .77" (19.55)            | 500       |
| 553-50086                                     | <b>553-50086</b> | HST12-4WH-3S  | THS-630W3P                   | White  | Triple      | .475" (12.07)          | .77" (19.55)            | 1000      |
| 553-50031                                     | <b>553-50031</b> | HST12-4YE     | THS-630Y                     | Yellow | -           | 1.9" (48.26)           | .77" (19.55)            | 250       |
| 553-50032                                     | <b>553-50032</b> | HST12-4YE-S   | THS-630YP                    | Yellow | Single      | .95" (24.1)            | .77" (19.55)            | 500       |
| 553-50087                                     | <b>553-50087</b> | HST12-4YE-3S  | THS-630Y3P                   | Yellow | Triple      | .475" (12.07)          | .77" (19.55)            | 1000      |
| 553-50231                                     | <b>553-50231</b> | HST12-4WH     | THS-630W10C                  | White  | -           | 1.9" (48.26)           | .77" (19.55)            | 1000      |
| 553-50232                                     | <b>553-50232</b> | HST12-4WH-S   | THS-630WP10C                 | White  | Single      | .95" (24.1)            | .77" (19.55)            | 2000      |
| 0.75" (19.05 mm) - Outside Diameter           |                  |               |                              |        |             |                        |                         |           |
| 553-50033                                     | <b>553-50033</b> | HST18-6BK     | THS-635BM                    | Black  | -           | 1.9" (48.26)           | 1.2" (30.48)            | 250       |
| 553-50034                                     | <b>553-50034</b> | HST18-6WH     | THS-635W                     | White  | -           | 1.9" (48.26)           | 1.2" (30.48)            | 250       |
| 553-50035                                     | <b>553-50035</b> | HST18-6WH-S   | THS-635WP                    | White  | Single      | .95" (24.1)            | 1.2" (30.48)            | 500       |
| 553-50036                                     | <b>553-50036</b> | HST18-6YE     | THS-635Y                     | Yellow | -           | 1.9" (48.26)           | 1.2" (30.48)            | 250       |
| 553-50037                                     | <b>553-50037</b> | HST18-6YE-S   | THS-635YP                    | Yellow | Single      | .95" (24.1)            | 1.2" (30.48)            | 500       |
| 553-50233                                     | <b>553-50233</b> | HST18-6WH     | THS-635W10C                  | White  | -           | 1.9" (48.26)           | 1.2" (30.48)            | 1000      |
| 553-50234                                     | <b>553-50234</b> | HST18-6WH-S   | THS-635WP10C                 | White  | Single      | .95" (24.1)            | 1.2" (30.48)            | 2000      |
| 1.0" (25.4mm) - Outside Diameter              |                  |               |                              |        |             |                        |                         |           |
| 553-50038                                     | <b>553-50038</b> | HST24-8BK     | THS-640BM                    | Black  | -           | 1.9" (48.26)           | 1.69" (42.93)           | 250       |
| 553-50039                                     | <b>553-50039</b> | HST24-8WH     | THS-640W                     | White  | -           | 1.9" (48.26)           | 1.69" (42.93)           | 250       |
| 553-50040                                     | <b>553-50040</b> | HST24-8WH-S   | THS-640WP                    | White  | Single      | .95" (24.1)            | 1.69" (42.93)           | 500       |
| 553-50041                                     | <b>553-50041</b> | HST24-8YE     | THS-640Y                     | Yellow | -           | 1.9" (48.26)           | 1.69" (42.93)           | 250       |
| 553-50042                                     | <b>553-50042</b> | HST24-8YE-S   | THS-640YP                    | Yellow | Single      | .95" (24.1)            | 1.69" (42.93)           | 500       |
| 1.5" (38.1mm) - Outside Diameter              |                  |               |                              |        |             |                        |                         |           |
| 553-50226                                     | <b>553-50226</b> | HFST39-13WH-S | THS-645WP                    | White  | Single      | .95" (24.13)           | 2.26" (57.40)           | 300       |
| 553-50209                                     | <b>553-50209</b> | HST39-13WH    | THS-645W                     | White  | -           | 1.9" (48.26)           | 2.26" (57.40)           | 150       |
| 553-50225                                     | <b>553-50225</b> | HFST39-13YE   | THS-645Y                     | Yellow | -           | 1.9" (48.26)           | 2.26" (57.40)           | 150       |
| 553-50227                                     | <b>553-50227</b> | HFST39-13YE-S | THS-645YP                    | Yellow | Single      | .95" (24.13)           | 2.26" (57.40)           | 300       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## TipTags Cable Markers

HellermannTyton's TipTags are non-adhesive, cross laminated polyolefin tags with die cut cable tie slots for mechanical fastening. These cable markers are designed to mark wire bundles or large cables. TipTags are ideal for applications where exceptional print performance and long term service life are critical. TipTags consist of a thin, strong material which allows the tags to be lightweight, very strong, tear resistant, and work well in thermal transfer printers.



- Thermal transfer printable for high print contrast
- Halogen free for low smoke and low fire hazard applications
- White front and yellow back for versatility
- Superior strength and tear resistance for long lasting identification
- Pre-cut slots to secure the TipTag using HellermannTyton cable ties
- Printable on both sides
- Printable with Durattach ribbon on white side for the most durable mark in the industry
- Pre-cut sensor slot which ensures the markers will work in any thermal transfer printer
- Perforated in a bandolier for easy knitting and access to individual markers
- Thin profile to take up less space and eliminate any chance of the marker damaging wire insulation
- Lightweight design for applications that require long-term fuel and weight considerations

Material: Polyolefin cross laminated with clear polyester laminate  
 Polyolefin base: 6.5 mil  
 Clear polyester laminate: 1.0 mil

Properties: Halogen-free (low smoke and low fire hazard)  
 Superior print performance, especially with Durattach ribbons  
 Unaffected by most chemicals  
 Wide service temperature range  
 Non-toxic, odorless, and can be recycled or incinerated

Service Temperature Range: -58°F to +221°F (-50°F to +105°C)  
 Can withstand spikes up to 135°C (275°F) for short periods of time

Approvals: SAE-AS81531 and Mil-Std 202G, Method 215J



TipTags Cable Markers *continued*

| Material Data         |                                                                        |
|-----------------------|------------------------------------------------------------------------|
| Material              | Polyolefin, cross laminated                                            |
| Operating Temperature | -58 °F to +221 °F (-50 °C to +105 °C) continuous                       |
| Certification         | Meets SAE-AS81531, Mil-Std 202G Method 215J, and BS 4G 198-3, Type 11a |



| Product Selection |           |                  |              |             |                |           |           |
|-------------------|-----------|------------------|--------------|-------------|----------------|-----------|-----------|
| Article No.       | Part No.  | Type             | Marker Size  |             | Printable Area |           | Pkg. Qty. |
|                   |           |                  | in.          | (mm)        | in.            | (mm)      |           |
| 556-26008         | 556-26008 | TIPTAGVA15X65YEW | 2.59" X .68" | (65 X 17.4) | 2.58" X .59"   | (65 X 15) | 500       |
| 556-26006         | 556-26006 | TIPTAGVA10X65YEW | 2.59" X .50" | (65 X 12.7) | 2.58" X .39"   | (65 X 10) | 500       |
| 556-26007         | 556-26007 | TIPTAGVA10X90YEW | 3.54" X .50" | (90 X 12.7) | 3.54" X .40"   | (90 X 10) | 500       |
| 556-26009         | 556-26009 | TIPTAGVA15X90YEW | 3.54" X .68" | (90 X 17.4) | 3.54" X .59"   | (90 X 15) | 500       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## T18 - T30 Series Cable Ties Natural and Black

Most popular cable ties for use with TipTags.

| Material Data         |                                                 |
|-----------------------|-------------------------------------------------|
| Material              | Polyamide 6.6 (PA66)                            |
| Operating Temperature | -40 °F to +185 °F (-40 °C to +85 °C) continuous |



File# E64139

File# E64139

| Product Selection |          |       |                     | File# E64139          |       |            |       |               |       |           | File# E64139 |         |           |
|-------------------|----------|-------|---------------------|-----------------------|-------|------------|-------|---------------|-------|-----------|--------------|---------|-----------|
| Article No.       | Part No. | Type  | US Gov. Designation | Min. Tensile Strength |       | Length (L) |       | Max. Ø Bundle |       | Width (W) |              | Color   | Pkg. Qty. |
|                   |          |       |                     | lbs.                  | (N)   | in.        | (mm)  | in.           | (mm)  | in.       | (mm)         |         |           |
| 111-02809         | T18S9M4  | T18S  | -                   | 18 lbs                | (80)  | 3.27"      | (83)  | .63"          | (16)  | .09"      | (2.3)        | Natural | 1000      |
| 111-02811         | T18S0M4  | T18S  | -                   | 18 lbs                | (80)  | 3.27"      | (83)  | .63"          | (16)  | .09"      | (2.3)        | Black   | 1000      |
| 111-01872         | T18R9M4  | T18R  | MS3367-4-9          | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22)  | .10"      | (2.5)        | Natural | 1000      |
| 111-01841         | T18R0M4  | T18R  | *                   | 18 lbs                | (80)  | 4"         | (100) | .87"          | (22)  | .10"      | (2.5)        | Black   | 1000      |
| 111-02322         | T18I9M4  | T18I  | —                   | 18 lbs                | (80)  | 5.51"      | (140) | 1.38"         | (35)  | .10"      | (2.5)        | Natural | 1000      |
| 111-02315         | T18I0M4  | T18I  | —                   | 18 lbs                | (80)  | 5.51"      | (140) | 1.38"         | (35)  | .10"      | (2.5)        | Black   | 1000      |
| 111-02026         | T18L9M4  | T18L  | —                   | 18 lbs                | (80)  | 8.0"       | (205) | 2.17"         | (55)  | .10"      | (2.5)        | Natural | 1000      |
| 111-02015         | T18L0M4  | T18L  | —                   | 18 lbs                | (80)  | 8.0"       | (205) | 2.17"         | (55)  | .10"      | (2.5)        | Black   | 1000      |
| 111-03047         | T30R9M4  | T30R  | MS3367-5-9          | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35)  | .14"      | (3.5)        | Natural | 1000      |
| 111-03034         | T30R0M4  | T30R  | *                   | 30 lbs                | (135) | 5.9"       | (150) | 1.38"         | (35)  | .14"      | (3.5)        | Black   | 1000      |
| 111-03327         | T30L9M4  | T30L  | —                   | 30 lbs                | (135) | 7.48"      | (190) | 1.97"         | (50)  | .14"      | (3.5)        | Natural | 1000      |
| 111-03315         | T30L0M4  | T30L  | —                   | 30 lbs                | (135) | 7.48"      | (190) | 1.97"         | (50)  | .14"      | (3.5)        | Black   | 1000      |
| 111-03517         | T30LL9M4 | T30LL | —                   | 30 lbs                | (135) | 11.42"     | (290) | 3.15"         | (80)  | .14"      | (3.5)        | Natural | 1000      |
| 111-03511         | T30LL0M4 | T30LL | —                   | 30 lbs                | (135) | 11.42"     | (290) | 3.15"         | (80)  | .14"      | (3.5)        | Black   | 1000      |
| 111-02907         | T30XL9M4 | T30XL | -                   | 30 lbs                | (135) | 14.37"     | (365) | 4.13"         | (105) | .14"      | (3.5)        | Natural | 1000      |
| 111-02903         | T30XL0M4 | T30XL | -                   | 30 lbs                | (135) | 14.37"     | (365) | 4.13"         | (105) | .14"      | (3.5)        | Black   | 1000      |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

\* Military black available. Contact HellermannTyton for more information.

## Laser Tag Label Materials

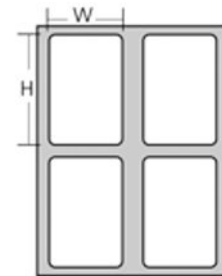
Laser Tags are durable, laser printable labels for applications requiring clear, crisp legibility. The labels come on 8.5" x 11" sheets and are printable using HellermannTyton TagPrint® Pro software and a standard laser printer. Specially designed adhesives and materials are used for the Laser Tags, ensuring that the labels will not curl, change color, or jam laser printers. Laser Tags are available in die-cut on 8-1/2" x 11" polyester sheets.



| Label Material             | 105 Material                                        | 788 Material                                                                                           | 788C Material                                                                                        | 789 Material                                                                                        |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Material Name</b>       | Self-Laminating Laser Polyester                                                                                                      | White Laser Polyester                                                                                                                                                                   | Clear Laser Polyester                                                                                                                                                                   | White Laser Polyester                                                                                                                                                                  |
| <b>Printer</b>             | Laser                                                                                                                                | Laser                                                                                                                                                                                   | Laser                                                                                                                                                                                   | Laser                                                                                                                                                                                  |
| <b>Topcoat</b>             | Specially formulated for superb ink anchorage                                                                                        | Specially formulated for superb toner anchorage for most laser printers                                                                                                                 | Specially formulated for superb toner anchorage for most laser printers                                                                                                                 | Specially formulated for superb ink anchorage                                                                                                                                          |
| <b>Liner</b>               | 82#                                                                                                                                  | 68#                                                                                                                                                                                     | 68#                                                                                                                                                                                     | 90#                                                                                                                                                                                    |
| <b>Temperature Range</b>   | -40°F to +300°F<br>(-40°C to +149°C)                                                                                                 | -40°F to +194°F<br>(-40°C to +92°C)                                                                                                                                                     | -40°F to +194°F<br>(-40°C to +92°C)                                                                                                                                                     | -40°F to +300°F<br>(-40°C to +149°C)                                                                                                                                                   |
| <b>Adhesive Type</b>       | Permanent pressure-sensitive acrylic                                                                                                 | Permanent pressure-sensitive acrylic                                                                                                                                                    | Permanent pressure-sensitive acrylic                                                                                                                                                    | Permanent pressure-sensitive acrylic                                                                                                                                                   |
| <b>Application</b>         | Excellent for on-the-job wire marking. Ideal for flat ribbon cable, machine tool, and underground wiring. Smallest diameter is 0.15" | Excellent for general purpose component or panel marking. Bar code printable.                                                                                                           | Excellent for general purpose component or panel marking. Bar code printable.                                                                                                           | For flat labeling applications that require solvent or high temperature resistance. Bar code printable. Can be used to mark electronics and printed circuit boards.                    |
| <b>Certifications</b>      |                                                                                                                                      |                                                                                                                                                                                         |                                                                                                                                                                                         |                                                                                                   |
| <b>Outdoor Durability</b>  | N/A                                                                                                                                  | 1 year                                                                                                                                                                                  | 1 year                                                                                                                                                                                  | 2 years                                                                                                                                                                                |
| <b>Chemical Resistance</b> | Good for most petroleum based solvents and lower aliphatic alcohols. Not good for most esters and ketones. Water resistant.          | Applied labels will be resistant to water, mild acids, alkalis, salts and most petroleum-based solvents, oils, greases, aliphatic solvents such as kerosene, keptane and reference fuel | Applied labels will be resistant to water, mild acids, alkalis, salts and most petroleum-based solvents, oils, greases, aliphatic solvents such as kerosene, keptane and reference fuel | Applied labels will be resistant to water, mild acids, alkalis, salts and most petroleum based solvents, oils, greases, aliphatic solvent such as kerosene, keptane and reference fuel |

## Laser Tag Labels

HellermannTyton's Laser Tag labels are used for component marking.



### Product Selection

| Product Selection  |             |          |                   |           |          |            |          |                |                   |                  |           |
|--------------------|-------------|----------|-------------------|-----------|----------|------------|----------|----------------|-------------------|------------------|-----------|
| Article No.        | Part No.    | Type     | Drawing Reference | Width (W) |          | Height (H) |          | Labels per Row | Labels per Column | Labels per Sheet | Pkg. Qty. |
|                    |             |          | (pages 213-214)   | In.       | (mm.)    | In.        | (mm.)    |                |                   |                  |           |
| 788 Material       |             |          |                   |           |          |            |          |                |                   |                  |           |
| 594-01788          | TAGPP1-788  | TAGPP1   | A                 | 1.5"      | (15.87)  | .37"       | (7.87)   | 12             | 30                | 360              | 1000      |
| 594-00001          | TAGPP2-788  | TAGPP2   | B                 | .66"      | (16.7)   | .33"       | (8.38)   | 12             | 30                | 360              | 1000      |
| 594-62788          | TAG62L-788  | TAG62L   | C                 | 1.50"     | (31.75)  | .37"       | (9.52)   | 5              | 25                | 125              | 1000      |
| 594-61788          | TAG61L-788  | TAG61L   | D                 | 2.62"     | (66.67)  | 1.0"       | (25.4)   | 3              | 10                | 30               | 7500      |
| 594-60788          | TAG60L-788  | TAG60L   | E                 | 2.83"     | (71.88)  | 1.5"       | (38.1)   | 3              | 7                 | 21               | 5250      |
| 594-59788          | TAG59L-788  | TAG59L   | F                 | 4.0"      | (101.60) | 1.5"       | (38.1)   | 2              | 7                 | 14               | 3500      |
| 594-58788          | TAG58L-788  | TAG58L   | G                 | 4.0"      | (101.60) | 2.0"       | (50.8)   | 2              | 5                 | 10               | 2500      |
| 594-56788          | TAG56L-788  | TAG56L   | H                 | 4.0"      | (101.60) | 3.33"      | (84.5)   | 2              | 3                 | 6                | 1500      |
| 594-57788          | TAG57L-788  | TAG57L   | I                 | 4.25"     | (107.90) | 2.75"      | (69.8)   | 2              | 4                 | 8                | 2000      |
| 594-55788          | TAG55L-788  | TAG55L   | J                 | 4.25"     | (107.90) | 5.5"       | (139.70) | 2              | 2                 | 4                | 1000      |
| 594-54788          | TAG54L-788  | TAG54L   | K                 | 8.5"      | (215.90) | 5.5"       | (139.70) | 1              | 2                 | 2                | 500       |
| 594-53788          | TAG53L-788  | TAG53L   | L                 | 8.5"      | (215.90) | 10.81"     | (274.6)  | 1              | 1                 | 1                | 250       |
| 788C Material      |             |          |                   |           |          |            |          |                |                   |                  |           |
| 594-02788          | TAGPP1-788C | TAGPP1   | A                 | .625"     | (15.87)  | .333"      | (7.87)   | 12             | 30                | 360              | 1000      |
| 594-00002          | TAGPP2-788C | TAGPP2   | B                 | .66"      | (16.7)   | .33"       | (8.38)   | 12             | 30                | 360              | 1000      |
| 789 Material       |             |          |                   |           |          |            |          |                |                   |                  |           |
| 594-11789          | TAG11L-789  | TAG11L   | M                 | .65"      | (16.50)  | .20"       | (5.08)   | 10             | 48                | 480              | 5000      |
| 594-13789          | TAG13L-789  | TAG13L   | N                 | .75"      | (19.00)  | .25"       | (6.35)   | 8              | 39                | 312              | 5000      |
| 594-14789          | TAG14L-789  | TAG14L   | O                 | 1.0"      | (25.40)  | .375"      | (9.52)   | 7              | 25                | 175              | 5000      |
| 594-15789          | TAG15L-789  | TAG15L   | P                 | 1.0"      | (25.40)  | .5"        | (12.70)  | 7              | 19                | 133              | 5000      |
| 594-96789          | TAG96L-789  | TAG96L   | Q                 | 1.875"    | (47.62)  | .25"       | (6.35)   | 4              | 36                | 144              | 1000      |
| 594-69789          | TAG69L-789  | TAG69L   | R                 | 2.0"      | (50.8)   | .275"      | (6.98)   | 4              | 35                | 140              | 5000      |
| 594-67789          | TAG67L-789  | TAG67L   | S                 | 2.87"     | (73)     | .375"      | (9.52)   | 2              | 25                | 50               | 1000      |
| 594-66789          | TAG66L-789  | TAG66L   | T                 | 3.59"     | (91.4)   | .375"      | (9.52)   | 2              | 25                | 50               | 1000      |
| 594-68789          | TAG68L-789  | TAG68L   | U                 | 3.8"      | (96.5)   | .275"      | (6.98)   | 2              | 35                | 70               | 2500      |
| 594-45789          | TAG45L-789  | TAG45L   | V                 | 4.0"      | (101.60) | .80"       | (20.32)  | 2              | 12                | 24               | 5000      |
| Cardstock Material |             |          |                   |           |          |            |          |                |                   |                  |           |
| 593-00001          | TAGPHONE    | TAGPHONE | W                 | 1.75"     | (44.45)  | .375"      | (9.52)   | 4              | 21                | 84               | 1000      |

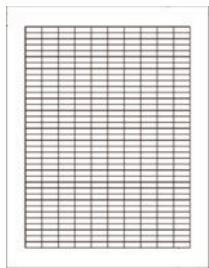
Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Laser Tag Labels *continued*

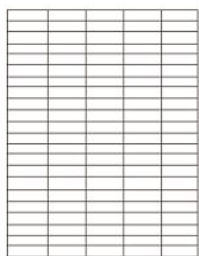
(Not shown to scale)



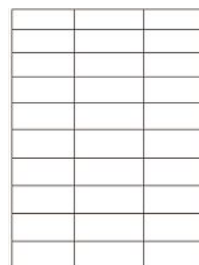
*TAGPP1-788,  
TAGPP1-788C*  
**A**



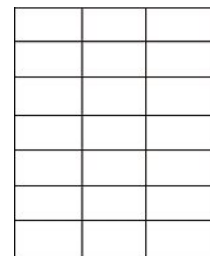
*TAGPP2-788,  
TAGPP2-788C*  
**B**



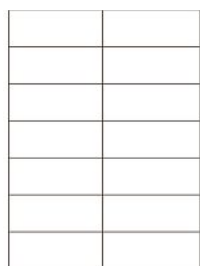
*TAG62L-788*  
**C**



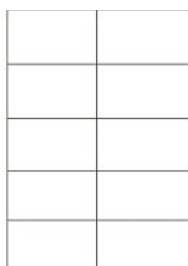
*TAG61L-788*  
**D**



*TAG60L-788*  
**E**



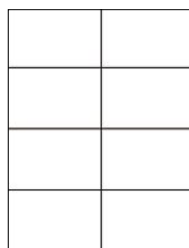
*TAG59L-799*  
**F**



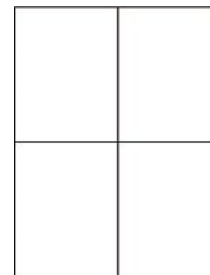
*TAG58L-788*  
**G**



*TAG56L-788*  
**H**



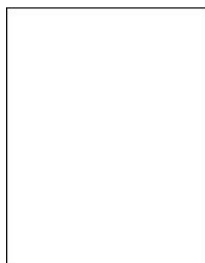
*TAG57L-788*  
**I**



*TAG55L-788*  
**J**



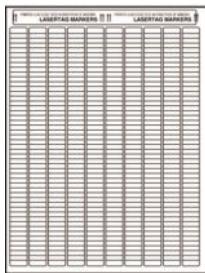
*TAG54L-788*  
**K**



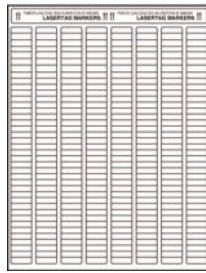
*TAG53L-788*  
**L**

## Laser Tag Labels *continued*

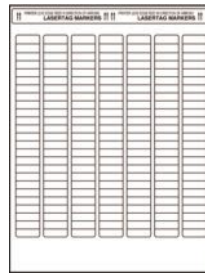
(Not shown to scale)



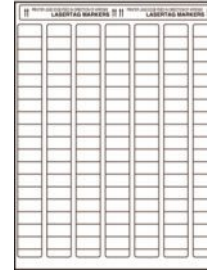
TAG11L-789  
**M**



TAG13L-789  
**N**



TAG14L-789  
**O**



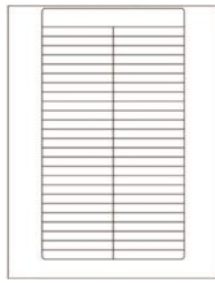
TAG15L-789  
**P**



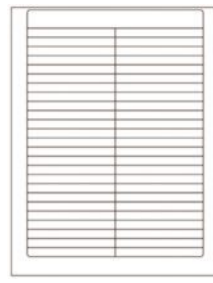
TAG96L-789  
**Q**



TAG69L-789  
**R**



TAG67L-789  
**S**



TAG66L-789  
**T**



TAG68L-789  
**U**



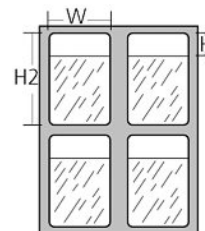
TAG45L-789  
**V**



TAGPHONE  
**W**

## Self-Laminating Laser Tags

HellermannTyton self-laminating Laser Tags are durable, yet conformable to compound surfaces like wires and cables. These labels can be wrapped onto wires without fear of flagging or popping off the wires. The clear overlap protects printed information. Self-laminating Laser Tags are made of 1.0 MIL polyester (105 material).



### Product Selection

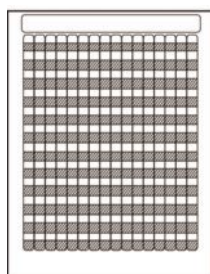
Product Selection

| Article No.  | Part No.   | Type   | Drawing<br>References | Width (W) |         | Height of<br>Printable Area (H) |         | Height of Label<br>(H2) |         | Labels<br>per<br>Row | Labels<br>per<br>Column | Labels<br>per<br>Sheet | Pkg. Qty. |
|--------------|------------|--------|-----------------------|-----------|---------|---------------------------------|---------|-------------------------|---------|----------------------|-------------------------|------------------------|-----------|
|              |            |        | (page 216)            | In.       | (mm.)   | In.                             | (mm.)   | In.                     | (mm.)   |                      |                         |                        |           |
|              |            |        |                       |           |         |                                 |         |                         |         |                      |                         |                        |           |
| 105 Material |            |        |                       |           |         |                                 |         |                         |         |                      |                         |                        |           |
| 594-26105    | TAG26L-105 | TAG26L | A                     | .5"       | (12.70) | .375"                           | (9.5)   | .75"                    | (19.0)  | 16                   | 16                      | 156                    | 5000      |
| 594-02105    | TAG2L-105  | TAG2L  | B                     | .5"       | (12.70) | .5"                             | (12.7)  | 1.43"                   | (36.5)  | 16                   | 7                       | 112                    | 5000      |
| 594-05105    | TAG5L-105  | TAG5L  | C                     | .8"       | (20.30) | .5"                             | (12.7)  | 1.43"                   | (36.4)  | 8                    | 7                       | 56                     | 5000      |
| 594-65105    | TAG65L-105 | TAG65L | D                     | .81"      | (20.70) | .81"                            | (20.7)  | 2.13"                   | (53.9)  | 9                    | 4                       | 36                     | 1000      |
| 594-51105    | TAG51L-105 | TAG51L | E                     | 1.0"      | (25.40) | .35"                            | (8.89)  | .75"                    | (19.0)  | 8                    | 12                      | 84                     | 5000      |
| 594-49105    | TAG49L-105 | TAG49L | F                     | 1.0"      | (25.40) | .35"                            | (8.8)   | 1.0"                    | (25.5)  | 8                    | 8                       | 70                     | 2500      |
| 594-63105    | TAG63L-105 | TAG63L | G                     | 1.0"      | (25.40) | .5"                             | (12.7)  | 1.33"                   | (33.78) | 8                    | 7                       | 49                     | 2500      |
| 594-09105    | TAG9L-105  | TAG9L  | H                     | 1.0"      | (25.40) | .75"                            | (19.00) | 2.25"                   | (57.1)  | 7                    | 4                       | 28                     | 1000      |
| 594-50105    | TAG50L-105 | TAG50L | I                     | 1.0"      | (25.40) | 1.0"                            | (25.4)  | 3.16"                   | (80.4)  | 8                    | 3                       | 21                     | 1000      |
| 594-64105    | TAG64L-105 | TAG64L | J                     | 1.17"     | (29.6)  | .83"                            | (21.08) | 3.33"                   | (84.6)  | 6                    | 3                       | 18                     | 1000      |
| 594-01105    | TAG1L-105  | TAG1L  | K                     | 1.9"      | (48.20) | .75"                            | (19.0)  | 3.25"                   | (82.5)  | 4                    | 3                       | 12                     | 1000      |
| 594-52105    | TAG52L-105 | TAG52L | L                     | 2.0"      | (50.80) | .47"                            | (33.70) | 1.33"                   | (33.7)  | 3                    | 7                       | 21                     | 1000      |
| 594-10105    | TAG10L-105 | TAG10L | M                     | 2.0"      | (50.8)  | .75"                            | (19.1)  | 2.25"                   | (57.2)  | 4                    | 4                       | 16                     | 1000      |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

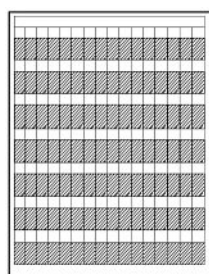
## Self-Laminating Laser Tags *continued*

(Not shown to scale)



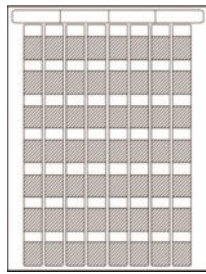
*TAG26L-105*

**A**



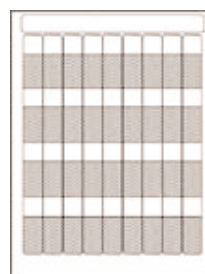
*TAG2L-105*

**B**



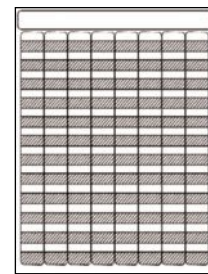
*TAG5L-105*

**C**



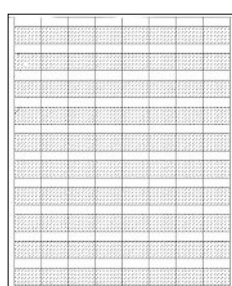
*TAG65L-105*

**D**



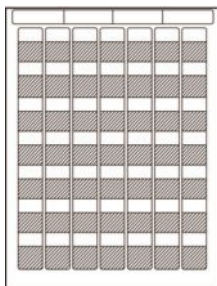
*TAG51L-105*

**E**



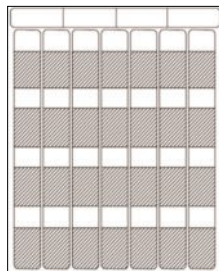
*TAG49L-105*

**F**



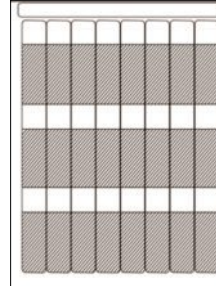
*TAG63L-105*

**G**



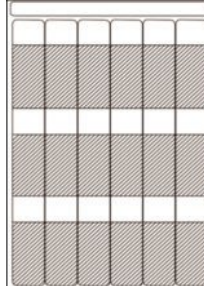
*TAG9L-105*

**H**



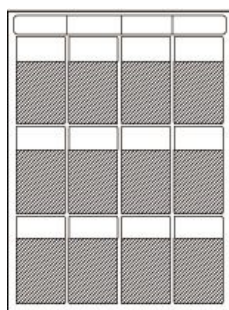
*TAG50L-105*

**I**



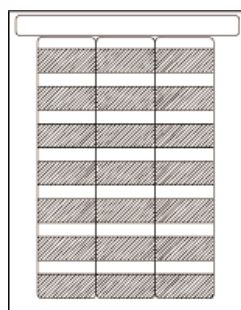
*TAG64L-105*

**J**



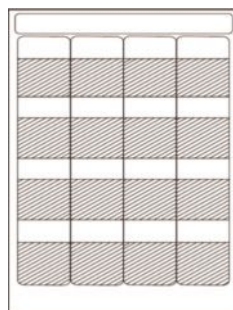
*TAG1L-105*

**K**



*TAG52L-105*

**L**



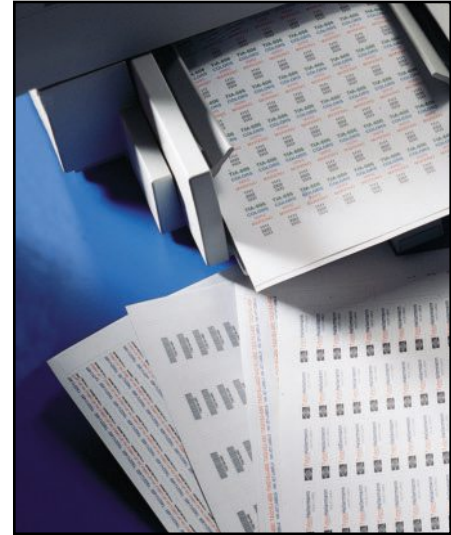
*TAG10L-105*

**M**

## Ink Jet Label Materials

HellermannTyton offers a series of technologically advanced labels for use on standard ink jet printers. The labels come on 8.5" x 11" sheets and are printable using HellermannTyton's TagPrint® Pro software.

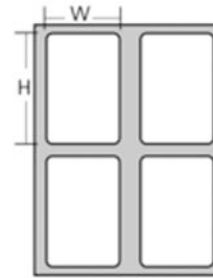
A wide range of materials and sizes is available for wire and component marking. When used with pigment based inks, HellermannTyton ink jet labels offer superior non-smear marks that are chemical and solvent resistant. Colors can be printed when used on a color ink jet printer. Ink jet labels are available in polyester or paper.



| Label Material      | 108 Material  | 450 Material                                                  | 994 Material                                                |
|---------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Material Name       | Paper                                                                                          | White Polyester                                                                                                                                 | Clear Self-Laminating Polyester                                                                                                                |
| Printer(s)          | Ink Jet                                                                                        | Ink Jet                                                                                                                                         | Ink Jet                                                                                                                                        |
| Topcoat             | Uncoated Paper                                                                                 | Specially formulated for superb toner anchorage and fast-drying printing                                                                        | Formulated for superb anchorage for ink jet printing                                                                                           |
| Liner               | 50#                                                                                            | 50#                                                                                                                                             | 82#                                                                                                                                            |
| Temperature Range   | -20°F to +200°F (-20°C to +93°C)                                                               | -40°F to +300°F (-40°C to +149°C)                                                                                                               | -40°F to +300°F (-40°C to +149°C)                                                                                                              |
| Adhesive Type       | Pressure sensitive acrylic                                                                     | Pressure sensitive acrylic                                                                                                                      | Permanent pressure sensitive acrylic                                                                                                           |
| Application         | General purpose flat label applications where the environment is not critical                  | Flat surface marking using ink jet labels                                                                                                       | Excellent for on-the-job wire marking. Ideal for flat ribbon cable, machine tool and underground wiring. For use in ink jet or laser printers. |
| Chemical Resistance | General purpose paper permanent marking                                                        | Excellent chemical resistance to chemicals, solvents, and abrasion when using pigment based ink. Moderate resistance when using dye based inks. | Good for most petroleum based solvents and lower aliphatic alcohols. Not good for most esters and ketones. Water resistant                     |

## Ink Jet Labels

HellermannTyton's inkjet labels are used for component marking.



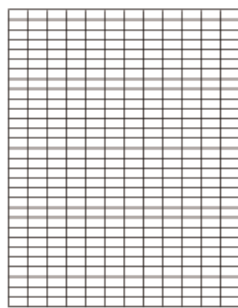
### Product Selection

| Product Selection  |             |          |                   |           |         |            |         |                |                   |                  |           |
|--------------------|-------------|----------|-------------------|-----------|---------|------------|---------|----------------|-------------------|------------------|-----------|
| Article No.        | Part No.    | Type     | Drawing Reference | Width (W) |         | Height (H) |         | Labels per Row | Labels per Column | Labels per Sheet | Pkg. Qty. |
|                    |             |          | (page 219)        | In.       | (mm.)   | In.        | (mm.)   |                |                   |                  |           |
| 108 Material       |             |          |                   |           |         |            |         |                |                   |                  |           |
| 593-01108          | TAGPP1J-108 | TAGPP1J  | A                 | .625"     | (15.87) | .31"       | (7.87)  | 12             | 30                | 360              | 1000      |
| 593-65108          | TAG65J-108  | TAG65J   | B                 | 1.0"      | (25.4)  | 1.50"      | (31.75) | 12             | 10                | 50               | 12500     |
| 593-59108          | TAG59J-108  | TAG59J   | C                 | 4.0"      | (101.6) | 1.5"       | (38.1)  | 2              | 7                 | 14               | 3500      |
| 593-57108          | TAG57J-108  | TAG57J   | D                 | 4.25"     | (107.9) | 2.75"      | (69.80) | 2              | 4                 | 8                | 2000      |
| 593-56108          | TAG56J-108  | TAG56J   | E                 | 3.33"     | (84.5)  | 4.0"       | (101.6) | 2              | 3                 | 6                | 1500      |
| 450 Material       |             |          |                   |           |         |            |         |                |                   |                  |           |
| 593-11450          | TAG11J-450  | TAG11J   | F                 | .20"      | (5.08)  | .65"       | (16.05) | 21             | 12                | 252              | 5000      |
| 593-13450          | TAG13J-450  | TAG13J   | G                 | .25"      | (6.35)  | .75"       | (19.00) | 26             | 12                | 312              | 5000      |
| 593-14450          | TAG14J-450  | TAG14J   | H                 | .375"     | (9.52)  | 1.0"       | (25.4)  | 16             | 9                 | 144              | 5000      |
| 593-19450          | TAG19J-450  | TAG19J   | I                 | .375"     | (9.52)  | 2.0"       | (50.8)  | 15             | 4                 | 60               | 1000      |
| 593-15450          | TAG15J-450  | TAG15J   | J                 | .5"       | (12.7)  | 1.0"       | (25.4)  | 13             | 9                 | 117              | 5000      |
| 593-21450          | TAG21J-450  | TAG21J   | K                 | .5"       | (12.7)  | .75"       | (19.00) | 13             | 12                | 156              | 5000      |
| 593-28450          | TAG28J-450  | TAG28J   | L                 | .80"      | (20.3)  | 1.437"     | (36.49) | 8              | 6                 | 48               | 1000      |
| Cardstock Material |             |          |                   |           |         |            |         |                |                   |                  |           |
| 593-00001          | TAGPHONE    | TAGPHONE | M                 | 1.75"     | (44.45) | .375"      | (9.52)  | 4              | 21                | 84               | 1000      |

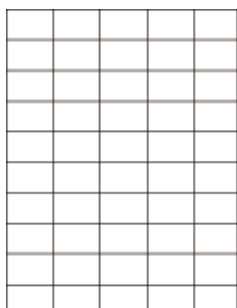
Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

**Ink Jet Labels *continued***

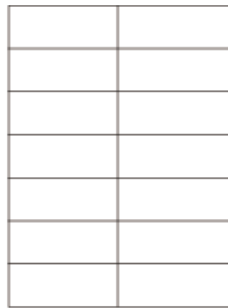
(Not shown to scale)



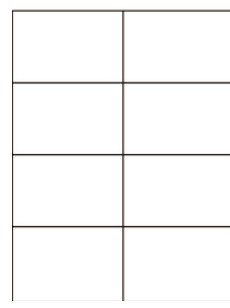
TAGPP1J-788

**A**

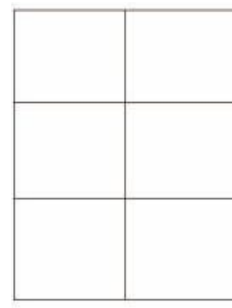
TAG65J-108

**B**

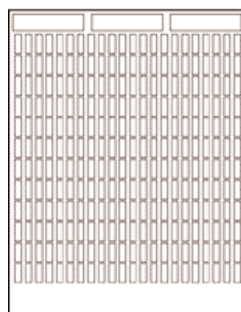
TAG59J-108

**C**

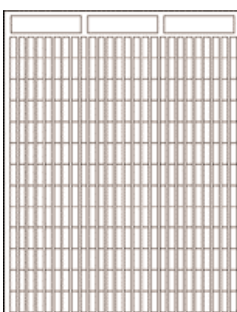
TAG57L-788

**D**

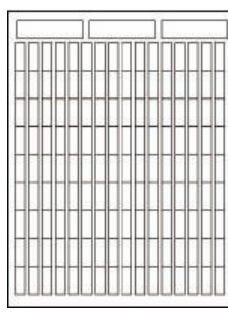
TAG56L-788

**E**

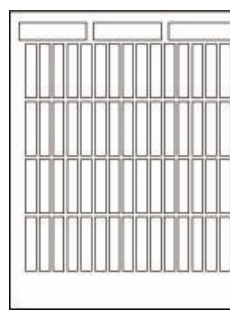
TAG11J-450

**F**

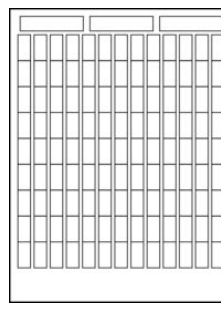
TAG13J-450

**G**

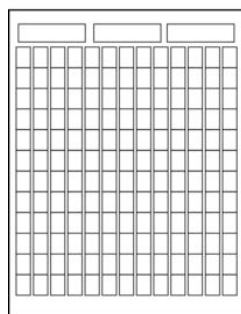
TAG14J-450

**H**

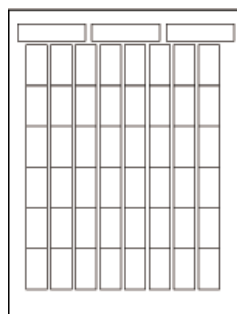
TAG19J-450

**I**

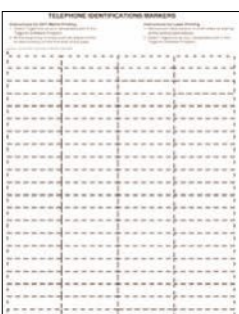
TAG15J-450

**J**

TAG21J-450

**K**

TAG28J-450

**L**

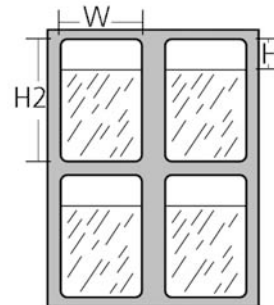
TAGPHONE

**M**

## Ink Jet Self-Laminating Labels

HellermannTyton's ink jet self-laminating labels are smear resistant, allowing them to be handled immediately. The labels are made of a heat resistant 1mm polyester film with a strong acrylic-based adhesive. The printable area is a special ink-receptive film that absorbs the ink as it is printed on an ink jet printer. This same material, 994 clear polyester, can also be used in any standard laser printer.

Each sheet is smaller than the standard letter size (8.5"x11"). Less waste results from the smaller sheet size because the user can print smaller quantities at one time. HellermannTyton's ink jet self-laminating labels are also more convenient to store.



### Product Selection

| Product Selection |            |        |                    |           |        |                              |         |                      |         |                |                   |                  |           |
|-------------------|------------|--------|--------------------|-----------|--------|------------------------------|---------|----------------------|---------|----------------|-------------------|------------------|-----------|
| Article No.       | Part No.   | Type   | Drawing References | Width (W) |        | Height of Printable Area (H) |         | Height of Label (H2) |         | Labels per Row | Labels per Column | Labels per Sheet | Pkg. Qty. |
|                   |            |        | (page 221)         | In.       | (mm.)  | In.                          | (mm.)   | In.                  | (mm.)   |                |                   |                  |           |
| 994 Material      |            |        |                    |           |        |                              |         |                      |         |                |                   |                  |           |
| 593-26994         | TAG26J-994 | TAG26J | A                  | .5"       | (12.7) | .35"                         | (8.89)  | .75"                 | (19.05) | 16             | 8                 | 128              | 2500      |
| 593-05994         | TAG5J-994  | TAG5J  | B                  | .8"       | (20.3) | .5"                          | (12.7)  | 1.43"                | (36.32) | 10             | 4                 | 40               | 1000      |
| 593-51994         | TAG51J-994 | TAG51J | C                  | 1.0"      | (25.4) | .35"                         | (8.89)  | .75"                 | (19.05) | 8              | 8                 | 64               | 1000      |
| 593-22994         | TAG22J-994 | TAG22J | D                  | 1.0"      | (25.4) | .5"                          | (12.7)  | 1.43"                | (36.32) | 8              | 4                 | 32               | 1000      |
| 593-09994         | TAG9J-994  | TAG9J  | E                  | 1.0"      | (25.4) | .75"                         | (19.05) | 2.25"                | (57.15) | 8              | 3                 | 24               | 1000      |
| 593-64994         | TAG64J-994 | TAG64J | F                  | 1.16"     | (29.6) | .86"                         | (21.8)  | 3.25"                | (82.6)  | 7              | 2                 | 14               | 1000      |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Ink Jet Self-Laminating Labels *continued*

(Not shown to scale)



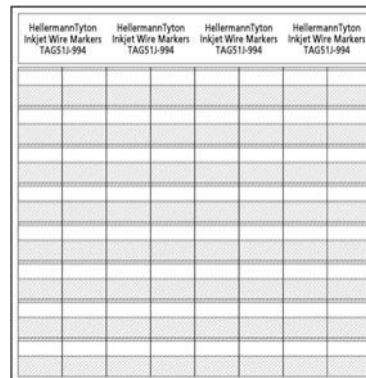
TAG26J-994

**A**



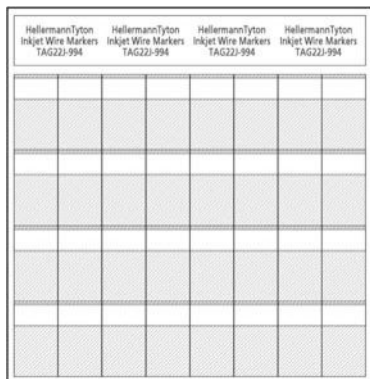
TAG5J-994

**B**



TAG51J-994

**C**



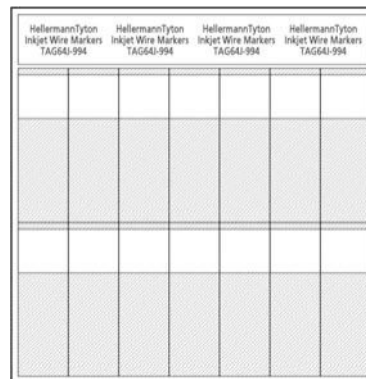
TAG22J-994

**D**



TAG9J-994

**E**



TAG64J-994

**F**

## Spirit® 2100 Portable Printing System



The Spirit 2100 provides fast, high quality, thermal transfer printing for permanent and highly legible label printing. The Spirit 2100 prints on many different types of label materials for wire, cable, and component marking. Self-laminating, white and metalized polyester, and tamper evident materials for calibration and security labeling are available for use with the Spirit system.

### Product Features

- "What You See Is What You Get" label design and creation
- Choose from normal or bold fonts to complete the label design
- Easily change text sizes: tiny, normal or large text
- And much more! Contact HellermannTyton for more details

| Product Selection |          |        | Description                                                                                                                                                                                                                                                                       | Pkg. Qty. |
|-------------------|----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Article No.       | Part No. | Type   |                                                                                                                                                                                                                                                                                   |           |
| 557-00085         | HT2100   | HT2100 | Portable Printing System includes: Spirit 2100 printer, HT2100 rechargeable battery and charger, ribbon cartridge, TAGH73-336, printer manual, hard shell case, cleaning card, cleaning pen and Spiritlink computer interface software (interface software cable sold separately) | 1         |

Use **Part No.** for ordering and **Type** for specification purposes.

## Spirit 2100 Accessories

| Product Selection |           |           |                             |           |
|-------------------|-----------|-----------|-----------------------------|-----------|
| Article No.       | Part No.  | Type      | Description                 | Pkg. Qty. |
| 591-00076         | BC10      | BC10      | Battery Charger             | 1         |
| 557-00002         | 557-00002 | 2100CASE  | Spirit Carrying Case        | 1         |
| 557-00004         | 2100CABLE | 2100CABLE | SpiritLink interface cable. | 1         |
| 557-00003         | 557-00003 | RBP1      | Battery Pack                | 1         |
| 557-00005         | 2100PEN   | 2100PEN   | Cleaning Pen                | 1         |
| 557-00006         | TS3003039 | TS3003039 | Spirit label Spindle Roll   | 1         |
| 557-00007         | TS3003040 | TS3003040 | Spirit label Spindle cap    | 1         |
| 557-00008         | 2100CARD  | 2100CARD  | Printhead cleaning card     | 1         |

Use **Part No.** for ordering and **Type** for specification purposes.

## Ribbon

The ribbon is supplied in a self-contained cartridge for easy loading. *One ribbon per package.*

| Product Selection |          |       |                              |           |        |            |        |               |
|-------------------|----------|-------|------------------------------|-----------|--------|------------|--------|---------------|
| Article No.       | Part No. | Type  | Description                  | Width (W) |        | Height (H) |        | Pkg. Qty.     |
|                   |          |       |                              | In.       | (mm)   | In.        | (mm)   |               |
| 557-00009*        | HHIGR    | HHIGR | Replacement ribbon cartridge | 2.0       | (50.8) | 2.50       | (63.5) | 131 ft (40 m) |
| 557-00092         | HHHST    | HHHST | Ribbon cartridge             | 2.0       | (50.8) | 2.50       | (63.5) | 131 ft (40 m) |
| 557-00075**       | HHDTH    | HHDTH | Replacement Durattach ribbon | 2.0       | (50.8) | 2.50       | (63.5) | 131 ft (40 m) |

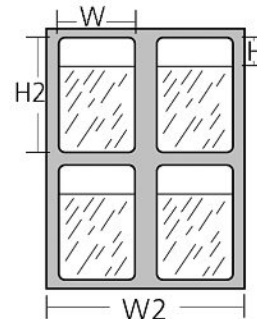
Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

\* HHIGR works on all materials

\*\* HHDTTH can only be used with label materials that have the DTH extension. This provides superior performance to most chemicals and solvents.

## Spirit 2100 Self-Laminating Labels

Self-laminating labels are used for marking wire and cable. The clear overlap protects printed information.

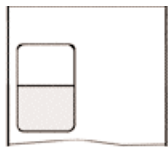


| Product Selection |            |        |                   |       |           |         |                              |         |                      |         |                     |         |           |
|-------------------|------------|--------|-------------------|-------|-----------|---------|------------------------------|---------|----------------------|---------|---------------------|---------|-----------|
| Article No.       | Part No.   | Type   | Drawing Reference | Color | Width (W) |         | Height of Printable Area (H) |         | Height of Label (H2) |         | Width of Liner (W2) |         | Pkg. Qty. |
|                   |            |        | (page 101)        |       | In.       | (mm.)   | In.                          | (mm.)   | In.                  | (mm.)   | In.                 | (mm.)   |           |
|                   |            |        |                   |       |           |         |                              |         |                      |         |                     |         |           |
| 100 Material      |            |        |                   |       |           |         |                              |         |                      |         |                     |         |           |
| 557-00026         | TAGH26-100 | TAGH26 | A                 | White | .5"       | (12.7)  | .35"                         | (8.8)   | .75"                 | (19.05) | .875"               | (22.22) | 500       |
| 557-00011         | TAGH2-100  | TAGH2  | B                 | White | .5"       | (12.7)  | .5"                          | (12.7)  | 1.435"               | (36.5)  | .875"               | (22.22) | 250       |
| 557-00025         | TAGH25-100 | TAGH25 | C                 | White | .75"      | (19.05) | .5"                          | (12.7)  | 1.75"                | (44.45) | .875"               | (22.22) | 175       |
| 557-00027         | TAGH51-100 | TAGH51 | D                 | White | 1.0"      | (25.4)  | .35"                         | (8.8)   | .75"                 | (19.05) | 1.125"              | (28.57) | 500       |
| 557-00021         | TAGH22-100 | TAGH22 | E                 | White | 1.0"      | (25.4)  | .5"                          | (12.7)  | 1.435"               | (36.5)  | 1.125"              | (28.57) | 250       |
| 557-00018         | TAGH9-100  | TAGH9  | F                 | White | 1.0"      | (25.4)  | .75"                         | (19.05) | 2.25"                | (57.1)  | 1.125"              | (53.97) | 100       |
| 557-00013         | TAGH3-100  | TAGH3  | G                 | White | 1.0"      | (25.4)  | 1.0"                         | (25.4)  | 3.75"                | (95.25) | 1.125"              | (28.57) | 100       |
| 557-00028         | TAGH95-100 | TAGH95 | H                 | White | 1.5"      | (38.1)  | 1.0"                         | (25.4)  | 3.75"                | (95.25) | 1.625"              | (41.25) | 100       |
| 557-00010         | TAGH1-100  | TAGH1  | I                 | White | 1.9"      | (48.26) | .75"                         | (19.05) | 3.19"                | (81.02) | 2.025"              | (51.43) | 100       |
| 557-00024         | TAGH24-100 | TAGH24 | J                 | White | 2.0"      | (50.8)  | .5"                          | (12.7)  | 1.435"               | (36.5)  | 2.125"              | (53.97) | 250       |
| 557-00020         | TAGH10-100 | TAGH10 | K                 | White | 2.0"      | (50.8)  | .75"                         | (19.05) | 2.25"                | (57.1)  | 2.125"              | (53.97) | 100       |
| 557-00015         | TAGH6-100  | TAGH6  | L                 | White | 2.0"      | (50.8)  | 1.0"                         | (25.4)  | 3.75"                | (95.25) | 2.125"              | (53.97) | 100       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

**Spirit 2100 Self-Laminating Labels *continued***

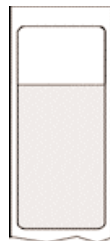
(Not shown to scale)



TAG26-100

**A**

TAGH2-100

**B**

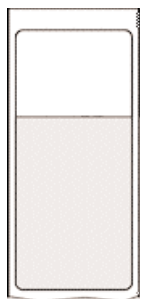
TAGH25-100

**C**

TAGH51-100

**D**

TAGH22-100

**E**

TAGH9-100

**F**

TAGH3-100

**G**

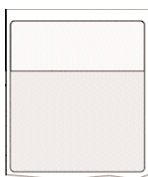
TAGH95-100

**H**

TAGH1-100

**I**

TAGH24-100

**J**

TAGH10-100

**K**

TAGH6-100

**L**

## Sport Handheld Printing System

### High-Quality Labels

- Prints on 1/2", 1" and 2" vinyl widths
- 203 dpi print resolution

### Precision Cutter

- Manual cutter lever for clean, crisp label edges

### Large LCD Screen

- 2.62" x 1.31" (256 x 128 pixels)
- LCD screen displays five lines of text in high resolution

### Intuitive Capabilities

- Soft key menu for easy navigation
- ABC key layout

### Rechargeable Battery

- Print for 120 minutes on a single charge
- Low self-discharge rate for long-term use

### Rugged Design

- Industrial-strength nylon strap with metal loop
- Exterior casing stands up to industrial use

### Lightweight Design

- Fits in the palm of your hand
- Weight: 2.7 lbs. (1.22 kg)



HellermannTyton introduces the newest innovation in portable labeling – The Sport hand-held thermal transfer printer allows for on-the-job label creation to ensure that applied labels meet all the current National Electrical Codes (NEC) and International Fire Codes (IFC). In addition, the portability of the Sport makes it ideal for getting off the job faster, and passing inspection the first time. The Sport can print labels on demand, even while the inspector is still present, allowing the installer to print any missing labels or correct any labels that the inspector rejects. This saves time and money by not having to re-schedule the inspection while waiting for replacement labels to be ordered, delivered and installed.

The Sport comes pre-loaded with all the label designs mandated by the NEC and IFC. The existing templates stored in the Sport can be modified to meet specific local code requirements which may be required by the Authority Having Jurisdiction (AHJ).

Standard and reflective label materials (and the printing ribbons) are available with the Sport printer in white and red. HellermannTyton's vinyl labels are manufactured based on the parameters outlined in Section 690 of the NEC using ultraviolet (UV) resistant permanent acrylic adhesive and a base material intended to endure harsh environmental elements. These pre-saved label designs, when pre-printed on the vinyl label stock, meet the governing requirements for durability, color, text height and visibility and can be applied to most surfaces.

## Features

- 2.62" x 1.31" viewable LCD screen shows five lines and offers high resolution (256 x 128 pixels)
- Text/image auto-size eliminates time-consuming "guess-and-check" label design process
- Intuitive soft key menu system for easy navigation and label design
- Lightweight design with convenient hand strap for optimal portability
- 250 pre-installed safety symbols updated to the most-current ANSI standards
- Print 100' of labels before recharging battery
- Truly rugged printer body and internal components meet industrial expectations
- Manual precision cutter provides clean, sharp label edges
- 203 dpi print resolution gives clarity and visibility to label messages and images
- Indoor/Outdoor Premium Vinyl Tape sizes ½", 1" and 2" in width
- Industrial-grade ribbon and tape is resistant to chemicals, moisture, abrasion and fading
- Save up to 32 label designs for future print jobs
- Prints Bar Codes
- Print Preview to actual size

Designing a label is as easy as typing out the text and then selecting a font size.



Step 1) Turn on unit, press the FILE button and select one of the many pre-saved templates.



Step 2) Press the print button to start the printing process.



Step 3) Remove and apply your printed label.

## PV Systems Label Material for Sport Printer

HellermannTyton offers all the labels required to pass an on-site inspection for a photovoltaic panel installation. The continuous vinyl rolls are available both in red and white. Reflective labels, also available in red and white, meet the latest IFC 2012 and NEC 2011 codes for marking a PV installation. Additionally, the white label stock is an option for PV and other types of installations per ANSI Z535.4 Article 7.3 in which black lettering can be used on a white background. Solid colors of red and white are supported by ANSI Z535.4 – Article 7.6.2; a benefit in that a minimum of label widths and colors as well as only two ribbon ink cartridges of black and white need be on hand to meet labeling code requirements. All materials are made of UV resistant adhesives and vinyl for long-lasting outdoor durability.



### Sport Printer and Labels

#### Product Selection

| Article No.                    | Part No.  | Type         | Pkg. Qty | Description                                                                                                 |
|--------------------------------|-----------|--------------|----------|-------------------------------------------------------------------------------------------------------------|
| <b>Reflective Solar Labels</b> |           |              |          |                                                                                                             |
| 557-00112                      | 557-00112 | OSPLP        | 1        | Sport Printer, White Ribbon, 2" Red Vinyl Roll, Charger, Battery, Instructions                              |
| 557-00113                      | 557-00113 | OSPLPKIT     | 1        | Sport Printer Kit, White Ribbon, 1" & 2" Red Vinyl Roll, 1" Reflective Roll, Charger, Battery, Instructions |
| 591-00231                      | 591-00231 | SpindleKit   | 1        | Replacement Spindle Slide and Spindle Cover                                                                 |
| 591-00076                      | 591-00076 | BC10         | 1        | Replacement Battery Charger 120V 60Hz                                                                       |
| 557-00003                      | 557-00003 | RBP1         | 1        | Replacement Battery                                                                                         |
| 557-00002                      | 557-00002 | 2100CASE     | 1        | Optional Hard Shell Carrying Case                                                                           |
| 591-00263                      | 591-00263 | HT2-Softcase | 1        | Optional Soft Shell Carrying Case                                                                           |
| 591-00232                      | 591-00232 | HHIGRBG      | 1        | Black Ribbon                                                                                                |
| 591-00233                      | 591-00233 | HHIGRWG      | 1        | White Ribbon                                                                                                |
| 591-00243                      | 591-00243 | HT1RD30      | 1        | 1" Red Vinyl 30 Feet Per Roll                                                                               |
| 591-00264                      | 591-00264 | HT1RDRF20    | 1        | 1" Red Reflective Vinyl 20 Feet Per Roll                                                                    |
| 591-00244                      | 591-00244 | HT1WH30      | 1        | 1" White Vinyl 30 Feet Per Roll                                                                             |
| 591-00251                      | 591-00251 | HT.5RD30     | 1        | 1/2" Red Vinyl 30 Feet Per Roll                                                                             |
| 591-00252                      | 591-00252 | HT.5WH30     | 1        | 1/2" White Vinyl 30 Feet Per Roll                                                                           |
| 591-00259                      | 591-00259 | HT2RD30      | 1        | 2" Red Vinyl 30 Feet Per Roll                                                                               |
| 591-00265                      | 591-00265 | HT2RDRF20    | 1        | 2" Red Reflective Vinyl 20 Feet Per Roll                                                                    |
| 591-00261                      | 591-00261 | HT2WH20      | 1        | 2" White Vinyl 30 Feet Per Roll                                                                             |
| 591-00260                      | 591-00260 | HT2WHRF20    | 1        | 2" White Reflective Vinyl 20 Feet Per Roll                                                                  |
| 591-00278                      | 591-00278 | HT2AF30      | 1        | 2" White/Orange Vinyl 30 Feet Per Roll For Arc Flash Labeling                                               |

Use Part No. for ordering and Type for specification.

## Pre-printed Labels

HellermannTyton pre-printed and thermal transfer printable labels have a special high-bond adhesive for use on both enamel and powder coat painted surfaces. Labels are a laminated construction for maximum UV stability. Where required, labels are reflective per NEC and IFC standards. Labels meet the requirements of UL969.



| Material Data          |                                                            |
|------------------------|------------------------------------------------------------|
| Material               | 443/552 UV Stable Flexible White Vinyl w/ Acrylic Laminate |
| Operating Temperature  | -40 °F (-40 °C) to 175 °F (79 °C)                          |
| Min. Application Temp. | 50 °F (10 °C)                                              |
| Liner                  | 78# White Bleached Paper                                   |
| Certifications         | UL969                                                      |



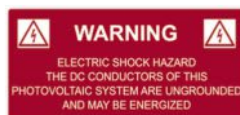
596-00233



596-00232



596-00234



596-00258



596-00235



596-00231



596-00236

| Product Selection |           |           |           |                                                                                      |
|-------------------|-----------|-----------|-----------|--------------------------------------------------------------------------------------|
| Article No.       | Part No.  | Type      | Roll Qty. | Description                                                                          |
| 596-00233         | 596-00233 | WESHLBL   | 50        | WARNING - ELECTRICAL SHOCK HAZARD 3.75" (95.25mm) X 2.0" (50.8mm)                    |
| 596-00232         | 596-00232 | WESHLBLDC | 50        | WARNING - ELECTRICAL SHOCK HAZARD W/DC 3.75" (95.25mm) X 2.5" (63.5mm)               |
| 596-00234         | 596-00234 | WGCME     | 50        | WARNING - GROUNDED CONDUCTORS MAY BE ENERGIZED 4.12" (104.6mm) X 2" (50.8mm)         |
| 596-00258         | 596-00258 | WDCCU     | 50        | WARNING - DC CONDUCTORS MAY BE ENERGIZED 4.12" (104.6mm) X 2" (50.8mm)               |
| 596-00235         | 596-00235 | WTOPVLBL  | 50        | WARNING - TURN OFF PV AC PRIOR TO WORKING INSIDE PANEL 4.12" (104.6mm) X 2" (50.8mm) |
| 596-00231         | 596-00231 | WDPSLBL   | 50        | WARNING - DUAL POWER SOURCE 4.12" (104.6mm) X .75" (19.05mm)                         |
| 596-00236         | 596-00236 | CBACKFED  | 50        | CAUTION - PV SYSTEM CIRCUIT BREAKER IS BACKFED 4.12" (104.6mm) X .75" (19.05mm)      |

Use Part No. for ordering and Type for specification.

## Reflective Rooftop Label

Designed to meet NEC2011 Section 690.4(F) as interpreted by the International Association of Electrical Inspectors (IAEI), HellermannTyton offers an aluminum and vinyl label designed for use on almost any type of roof shingle. Mount via a pre-cut aluminum plate with aluminum clips (both supplied with label) to standard tar shingles, or bend, shape and fasten with construction adhesive or grommet screws on composite or wooden roofing. Label text is reflective to meet IFC requirements.



| Material Data          |                                                                    |
|------------------------|--------------------------------------------------------------------|
| Material               | 242/552 UV Stable Reflective Vinyl w/ Acrylic Laminate on Aluminum |
| Operating Temperature  | -40 °F (-40 °C) to 175 °F (79 °C)                                  |
| Min. Application Temp. | 50 °F (10 °C)                                                      |
| Liner                  | Polyethylene Coated Paper                                          |
| Certifications         | UL969                                                              |

| Product Selection |           |         |           |                                                              |
|-------------------|-----------|---------|-----------|--------------------------------------------------------------|
| Article No.       | Part No.  | Type    | Pkg. Qty. | Description                                                  |
| 596-00257         | 596-00257 | PVPSRTM | 1         | PHOTOVOLTAIC POWER SOURCE 6.75" (171.45mm) X 2.75" (69.85mm) |

Use Part No. for ordering and Type for specification.

## Pre-printed Reflective Labels

Reflective labels are easier to read at night and are used to ensure fire safety and NEC regulations.

| Material Data          |                                                        |
|------------------------|--------------------------------------------------------|
| Material               | 242/552 UV Stable Reflective Vinyl w/ Acrylic Laminate |
| Operating Temperature  | -40 °F (-40 °C) to 175 °F (79 °C)                      |
| Min. Application Temp. | 50 °F (10 °C)                                          |
| Liner                  | Polyethylene Coated Paper                              |
| Certifications         | UL969                                                  |



| Product Selection |           |          |           |                                                                        |
|-------------------|-----------|----------|-----------|------------------------------------------------------------------------|
| Article No.       | Part No.  | Type     | Pkg. Qty. | Description                                                            |
| 596-00244         | 596-00244 | DNDUL    | 50        | DO NOT DISCONNECT UNDER LOAD 6.5" (165.1mm) X 1" (25.4mm)              |
| 596-00245         | 596-00245 | CSESC    | 50        | CAUTION – SOLAR ELECTRIC SYSTEM CONNECTED 6.5" (165.1mm) X 1" (25.4mm) |
| 596-00247         | 596-00247 | CSCIRLBL | 50        | CAUTION - SOLAR CIRCUIT 6.5" (165.1mm) X 1" (25.4mm)                   |
| 596-00246         | 596-00246 | SOLARD   | 50        | SOLAR DISCONNECT 6.5" (165.1mm) X 1" (25.4mm)                          |
| 596-00243         | 596-00243 | MPVSD    | 50        | MAIN PV SYSTEM DISCONNECT 5.5" (139.7mm) X 1.75" (44.45mm)             |
| 596-00255         | 596-00255 | MPVACDIS | 50        | MAIN PV SYSTEM AC DISCONNECT 5.5" (139.7mm) X 1.75" (44.45mm)          |
| 596-00206         | 596-00206 | PVPSR    | 50        | PHOTOVOLTAIC POWER SOURCE 6.5" (165.1mm) X 1" (25.4mm)                 |

Use Part No. for ordering and Type for specification.

## Caution Circuit Markers

The Photovoltaic Power Source markers are a pre-printed, non-adhesive, coiled marker that can be opened and snapped over the cable for long-term, reflective, permanent identification. Designed with a UV stable vinyl, the coiled markers come 25 per bag and will fit on all standard PV cables or EMT conduits.

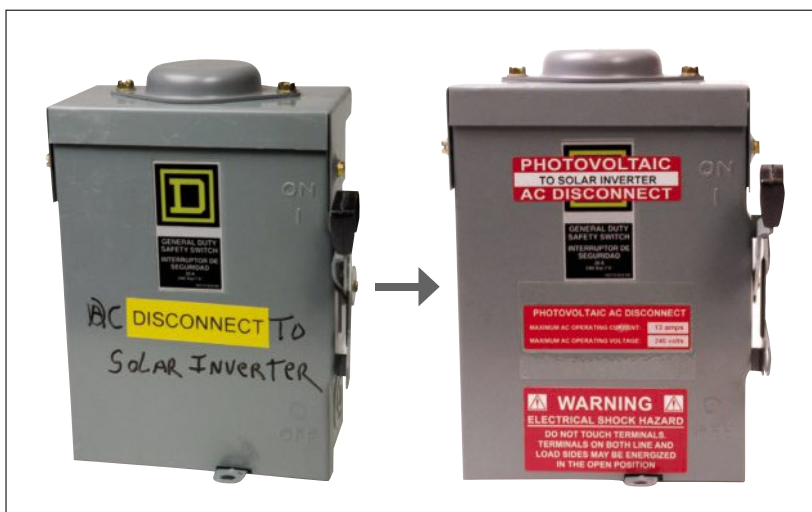


| Product Selection |           |             |           |                                                                                        |
|-------------------|-----------|-------------|-----------|----------------------------------------------------------------------------------------|
| Article No.       | Part No.  | Type        | Pkg. Qty. | Description                                                                            |
| 596-00249         | 596-00249 | CSCSNAP4    | 25        | CAUTION - SOLAR CIRCUIT 4" (101.6mm) X 2" (50.8mm) Use on .25" OD PV cables            |
| 596-00251         | 596-00251 | CSCSNAP72   | 25        | CAUTION - SOLAR CIRCUIT 7.2" (182.88mm) X 5" (127mm) For EMT conduits up to 1" in OD   |
| 596-00207         | 596-00207 | PVPSSNAP4R  | 25        | PHOTOVOLTAIC POWER SOURCE 4" (101.6mm) X 2" (50.8mm) Use on .25" OD PV cables          |
| 596-00208         | 596-00208 | PVPSSNAP72R | 25        | PHOTOVOLTAIC POWER SOURCE 7.2" (182.88mm) X 5" (127mm) For EMT conduits up to 1" in OD |

Use Part No. for ordering and Type for specification.

## Thermal Transfer Printable Solar Installation Labels\*

Designed with cross-laminated UV stable materials, the variable imprintable solar installation labels are designed to accept printing from any standard thermal transfer printer using a resin-based ink ribbon for the best durability. Print your voltage information directly on the label and then laminate with an optional clear polyester laminate material for added protection. Even print your disconnecting means and breaker series directly on the labels for a more professional result, ensuring a smooth inspection process.



\*Requires TT2305M printer or equivalent to print data for the rating labels.

| Material Data          |                                                               |
|------------------------|---------------------------------------------------------------|
| Material               | 840/926 UV Stable White Polyester w/ Clear Polyester Laminate |
| Operating Temperature  | -40 °F (-40 °C) to 300 °F (150 °C)                            |
| Min. Application Temp. | 50 °F (10 °C)                                                 |
| Liner                  | 55# Paper                                                     |
| Certifications         | UL969                                                         |



Designed to fit the common types of AC and DC breaker boxes, print the breaker series or disconnecting means directly on the labels.



596-00253



596-00240



596-00241



596-00239



596-00237



596-00238



596-00242



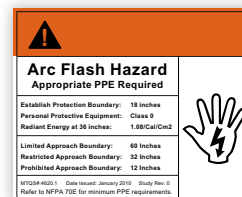
596-00252

| Product Selection |           |          |           |                                                                  |
|-------------------|-----------|----------|-----------|------------------------------------------------------------------|
| Article No.       | Part No.  | Type     | Roll Qty. | Description                                                      |
| 596-00253         | 596-00253 | DC2011   | 50        | DC MODULE LABEL 4" (101.6mm) X 2" (50.8mm)                       |
| 596-00240         | 596-00240 | ACRATING | 50        | DC BACKUP SYSTEM LABEL 4" (101.6mm) X 2" (50.8mm)                |
| 596-00241         | 596-00241 | DCRATING | 50        | DC RATING LABEL 3.75" (95.25mm) X 2" (50.8mm)                    |
| 596-00239         | 596-00239 | PVACDIS  | 50        | PV AC DISCONNECT RATING 3.75" (95.25mm) X 1" (25.4mm)            |
| 596-00237         | 596-00237 | ACDISCT  | 50        | PHOTOVOLTAIC - AC DISCONNECT 3.75" (95.25mm) X 1" (25.4mm)       |
| 596-00238         | 596-00238 | DCDISCT  | 50        | PHOTOVOLTAIC - DC DISCONNECT 3.75" (95.25mm) X 1" (25.4mm)       |
| 596-00242         | 596-00242 | LAM1     | 50        | LAMINATE FOR AC/DC RATING LABEL 4.2" (106.6mm) X 2.25" (57.15mm) |
| 596-00252         | 596-00252 | AC2011   | 50        | AC MODULE LABEL 4" (101.6mm) X 2" (50.8mm)                       |

Use Part No. for ordering and Type for specification.

## Pre-Printed Continuous Colored Signal Labels

Pre-printed continuous colored signal panel labels come in two colors of yellow and white or orange and white for the creation of Caution or Warning signs to meet the various NEC and ANSI requirements for common safety signage. Using TagPrint Pro 3.0 software, almost any size and length marker can be printed and cut-to-size using pre-saved templates found in the labeling software. Simply open the loaded Caution or Warning design, set the desired length in the program, and print the required text in and below the pre-printed colored header. The orange pre-printed continuous colored signal panel labels are great for making custom ARC FLASH labels on demand.



### Product Selection

| Article No. | Part No.         | Type       | Description                                               | Pkg. Qty. |
|-------------|------------------|------------|-----------------------------------------------------------|-----------|
| 558-00327   | <b>558-00327</b> | HT2OE50250 | 2" White vinyl with .5" orange stripe on continuous roll  | 250       |
| 558-00328   | <b>558-00328</b> | HT2YE50250 | 2" White vinyl with .5" yellow stripe on continuous roll  | 250       |
| 558-00330   | <b>558-00330</b> | HT3OE75250 | 3" White vinyl with .75" orange stripe on continuous roll | 250       |
| 558-00331   | <b>558-00331</b> | HT3YE75250 | 3" White vinyl with .75" yellow stripe on continuous roll | 250       |
| 558-00333   | <b>558-00333</b> | HT4OE10250 | 4" White vinyl with 1" orange stripe on continuous roll   | 250       |
| 558-00334   | <b>558-00334</b> | HT4YE10250 | 4" White vinyl with 1" yellow stripe on continuous roll   | 250       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification.

## Pre-Printed Signal Word Labels

The most common signal word signs are DANGER, WARNING, CAUTION, NOTICE and SAFETY as defined by ANSI Z535.4. Each pre-printed Signal Word Label comes with the colored signal panel, signal word, and Safety Alert Symbol (if required). Using TagPrint Pro 3.0 software, the balance of information can easily be designed and printed using pre-saved templates in the labeling software and any HellermannTyton thermal transfer printer. This solution allows almost unlimited capabilities to create practically any conceivable sign on demand with no minimums.



### Material Data

|                       |                                   |
|-----------------------|-----------------------------------|
| Material              | Polyester and Clear Laminate      |
| Material Number       | 690                               |
| Operating Temperature | -40°F to +302°F (-40°C to +150°C) |
| Adhesive              | Acrylic                           |

### Product Selection

| Article No. | Part No.         | Type       | Description                                                   | Pkg. Qty. |
|-------------|------------------|------------|---------------------------------------------------------------|-----------|
| 596-00203   | <b>596-00203</b> | 4X6DANGER  | 4" X 6" White with red DANGER header                          | 250       |
| 596-00424   | <b>596-00424</b> | 3X2DANGER  | 3" X 2" White with red DANGER header                          | 250       |
| 596-00204   | <b>596-00204</b> | 4X6NOTICE  | 4" X 6" White with blue NOTICE header                         | 250       |
| 596-00426   | <b>596-00426</b> | 3X2NOTICE  | 3" X 2" White with blue NOTICE header                         | 250       |
| 596-00427   | <b>596-00427</b> | 4X6CAUTION | 4" X 6" White with yellow CAUTION header                      | 250       |
| 596-00425   | <b>596-00425</b> | 3X2CAUTION | 3" X 2" White with yellow CAUTION header                      | 250       |
| 596-00371   | <b>596-00371</b> | 4X6SAFETY  | 4" X 6" White with green SAFETY header                        | 250       |
| 596-00375   | <b>596-00375</b> | 3X2SAFETY  | 3" X 2" White with green SAFETY header                        | 250       |
| 596-00378   | <b>596-00378</b> | WV275X135  | 1.35" X 2.75" Orange WARNING header, blank yellow triangle    | 250       |
| 596-00379   | <b>596-00379</b> | DV275X135  | 1.35" X 2.75" Red DANGER header, blank yellow triangle        | 250       |
| 596-00376   | <b>596-00376</b> | WV55X275   | 2.75" X 5.5" Orange WARNING header, blank yellow triangle     | 250       |
| 596-00377   | <b>596-00377</b> | DV55X275   | 2.75" X 5.5" Red DANGER header, blank yellow triangle         | 250       |
| 596-00386   | <b>596-00386</b> | WS275X135  | 1.35" X 2.75" Orange WARNING header, blank white symbol panel | 250       |
| 596-00387   | <b>596-00387</b> | DS275X135  | 1.35" X 2.75" Red DANGER header, blank white symbol panel     | 250       |
| 596-00388   | <b>596-00388</b> | WS55X275   | 2.75" X 5.5" Orange WARNING header, blank white symbol panel  | 250       |
| 596-00389   | <b>596-00389</b> | DS55X275   | 2.75" X 5.5" Red DANGER header, blank white symbol panel      | 250       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification.

## Rite-On® Markers

HellermannTyton's Rite-On Markers are made from a flexible vinyl film and are used to mark wire and cable. The self-laminating labels have a clear tail which seals the legend under clear vinyl, maintaining the quality of the labels. The Rite-On Markers® are packaged in a reusable dispenser made from high impact plastic which is resistant to oils and grease.



### Product Features

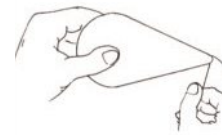
- Easily and conveniently fits in a pants of shirt pocket.
- Once loaded, unit allows minimal label exposure to dust and moisture.
- Can be used with standard ballpoint pens or HellermannTyton nylon making pens.
- Excess liner is easily cut-off by tearing it over the edge guide at the front of the unit.
- The dispenser can be reloaded over and over again, making it a cost-effective and efficient method of labeling.



A special label window holds the label firm for easy marking.



Can be held easily in the palm of the hand to provide a flat writing surface.



Label dispenses automatically when the liner is pulled from the front of the unit.

## Self-Laminating Labels and Dispenser

| Product Selection |          |         |                   |                                        |                             |                          |                                      |                     |              |
|-------------------|----------|---------|-------------------|----------------------------------------|-----------------------------|--------------------------|--------------------------------------|---------------------|--------------|
| Article No.       | Part No. | Type    | Width<br>in. (mm) | Height of Write-On<br>Area<br>in. (mm) | Height of Label<br>in. (mm) | Wire Size<br>Range (AWG) | Min. Wire<br>Size (in <sup>2</sup> ) | Markers<br>per Roll | Pkg.<br>Qty. |
| 590-01750         | RO175    | RO175   | .75 " (19.05)     | .75 " (19.05)                          | 3.0 " (76.2)                | 4 to 4/0                 | .330                                 | 90                  | 1 roll       |
| 590-05120         | RO512    | RO512   | .75 " (19.05)     | .50 " (12.7)                           | 1.875 " (47.62)             | 8 to 4 AWG               | .263                                 | 150                 | 1 roll       |
| 590-05140         | RO514    | RO514   | .75 " (19.05)     | .375 " (9.52)                          | 1.25 " (31.75)              | 14 to 8 AWG              | .053                                 | 200                 | 1 roll       |
| 590-10000         | RO175WP  | RO175WP | .75 " (19.05)     | .75 " (19.05)                          | 3.0 " (76.2)                | 4 to 4/0                 | .330                                 | 90                  | 1 roll       |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Refill Rolls

| Product Selection |          |        |               |                         |  |                 |                     |           |
|-------------------|----------|--------|---------------|-------------------------|--|-----------------|---------------------|-----------|
| Article No.       | Part No. | Type   | Width         | Height of Write-On Area |  | Height of Label | Markers<br>per Roll | Pkg. Qty. |
|                   |          |        | in. (mm)      | in. (mm)                |  | in. (mm)        |                     |           |
| 590-01751         | 175REF   | 175REF | .75 " (19.05) | .75 " (19.05)           |  | 3.0 " (76.2)    | 40                  | 1 roll    |
| 590-05121         | 512REF   | 512REF | .75 " (19.05) | .50 " (12.7)            |  | 1.875 " (47.62) | 40                  | 1 roll    |
| 590-05141         | 514REF   | 514REF | .75 " (19.05) | .375 " (9.52)           |  | 1.25 " (31.75)  | 40                  | 1 roll    |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification purposes.

## Nylon Marking Pens

When used with a non-smear FTP nylon marking pen, marking is fast and economical.

| Product Selection |          |         |       |           |
|-------------------|----------|---------|-------|-----------|
| Article No.       | Part No. | Type    | Color | Pkg. Qty. |
| 500-50822         | T82-R    | T82R-RD | Red   | 2 pens    |
| 500-50820         | T82-S    | T82S-BK | Black | 2 pens    |

Use **Part No.** for ordering and **Type** for specification purposes.



## Wire Marker Tape

The wire marker tape dispenser provides a convenient, economical system for wire marking. HellermannTyton's white marker tape features sharp, crisp legends which are coated to resist smearing and abrasion. It is provided on a carrier strip to prevent contamination of the adhesive prior to installation, assuring permanent, non-flagging marker ends.



| Material Data    |                                                                 | RoHS |
|------------------|-----------------------------------------------------------------|------|
| Material         | Tyvek - a polyolefin material that resists tearing and abrasion |      |
| Dimensions       | .25" W x 1.25" L                                                |      |
| Markers per Roll | 76 each legend                                                  |      |
| Adhesive         | Aggressive Acrylic Base                                         |      |

| Product Selection |                |         |                                                                                                                                      |             |
|-------------------|----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------|-------------|
| Article No.       | Part No.       | Type    | Description                                                                                                                          | Pkg. Qty.   |
| 598-00256         | <b>WMTD0-9</b> | WMTD0-9 | Single box of wire marker tape refill. Each box contains 76 markers of each legend 0-9 and is use to refill the empty tape dispenser | 1 Dispenser |
| 598-00259         | <b>WMT0-9</b>  | WMT0-9  | One wire marker tape dispenser with 10 rolls of 76 markers per roll, of each legend 0-9.                                             | 1 Refill    |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification.

## Handi-Paks

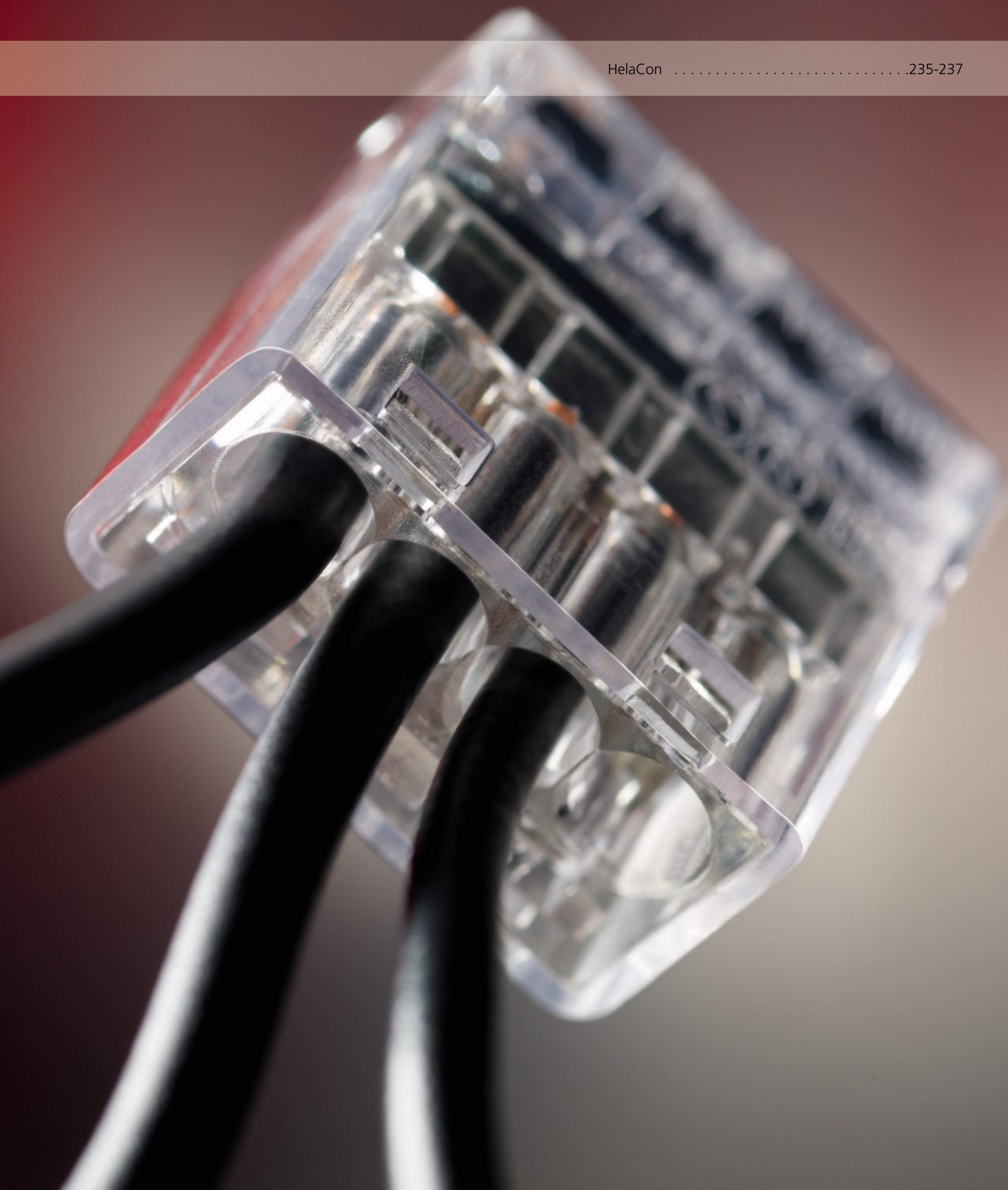
Pre-printed wire labels in a convenient pocket-size booklet. Labels are black with non-smear legends on a white background. The labels are made of a plastic-coated cloth that remains flexible, along with a strong adhesive that assures a firm bond on wires.

| Material Data         |                                   |
|-----------------------|-----------------------------------|
| Material              | Vinyl Cloth (TYHC)                |
| Operating Temperature | -40°F to +248°F (-40°C to +120°C) |
| Adhesion to Steel     | 40 oz./in. of width               |



| Product Selection |               |        |                                                                                                                                  |           |
|-------------------|---------------|--------|----------------------------------------------------------------------------------------------------------------------------------|-----------|
| Article No.       | Part No.      | Type   | Description                                                                                                                      | Pkg. Qty. |
| 598-00260         | <b>TCWM1</b>  | TCWM1  | 45 Markers each of legend 0-9                                                                                                    | 1 Booklet |
| 598-00261         | <b>TCWM2</b>  | TCWM2  | 10 Markers each of A-Z, 1-15, +, -, /                                                                                            | 1 Booklet |
| 598-00262         | <b>TCWM3</b>  | TCWM3  | 10 Markers each of 1-45                                                                                                          | 1 Booklet |
| 598-00263         | <b>TCWM4</b>  | TCWM4  | 150 Markers each of 1, 2, and 3                                                                                                  | 1 Booklet |
| 598-00264         | <b>TCWM5</b>  | TCWM5  | 150 Markers each of A, B, and C                                                                                                  | 1 Booklet |
| 598-00265         | <b>TCWM6</b>  | TCWM6  | 150 Markers each of T1, T2, and T3                                                                                               | 1 Booklet |
| 598-00266         | <b>TCWM7</b>  | TCWM7  | 150 Markers each of L1, L2, and L3                                                                                               | 1 Booklet |
| 598-00267         | <b>TCWM8</b>  | TCWM8  | 6 Markers each 1-15, 4 Markers each 16-90, and 2 Markers each of A-Z, +, -, /                                                    | 1 Booklet |
| 598-00268         | <b>TCWM9</b>  | TCWM9  | 45 Markers each of 1, 2, 3, A, B, C, 30 Markers each of L1, L2, L3 and 30 Markers each of T1, T2, and T3                         | 1 Booklet |
| 598-00269         | <b>TCWM10</b> | TCWM10 | 45 Markers each of 10 NEMA colors                                                                                                | 1 Booklet |
| 598-00270         | <b>TCWM11</b> | TCWM11 | 15 Markers each of 1-30                                                                                                          | 1 Booklet |
| 598-00271         | <b>TCWM12</b> | TCWM12 | 15 Markers each of A-Z, 21 Markers blank, 8 Markers +, and 7 Markers -                                                           | 1 Booklet |
| 598-00272         | <b>TCWM13</b> | TCWM13 | 45 Markers each of +, -, AC, DC, 33 Markers each of POS, NEG, and GND, 27 Markers each of NEUT and 21 Markers of SPARE and BLANK | 1 Booklet |
| 598-00273         | <b>TCWM14</b> | TCWM14 | 45 Markers each of 0-9, 15 Markers each of L1, L2, L3, and 15 Markers each of T1, T2, and T3                                     | 1 Booklet |
| 598-00274         | <b>TCWM15</b> | TCWM15 | 10 Markers each of 46-90                                                                                                         | 1 Booklet |
| 598-00275         | <b>TCWM16</b> | TCWM16 | 10 Markers each of 1-33, A, B, C, +, -, T1, T2, T3, L1, L2, and L3                                                               | 1 Booklet |

Dimensions are approximate and subject to technical changes. Use **Part No.** for ordering and **Type** for specification.



### The HelaCon Plus series of push-in wire connectors for both solid and stranded wire.



As a global manufacturer and supplier of solutions which help connect, manage and identify wire and cable components, HellermannTyton is known worldwide for its technological innovation, quality and value. Designed for wire-to-wire electrical connections, the HelaCon line of push-in wire connectors from HellermannTyton is the better alternative to the traditional wire connectors that involve the time-consuming twisting of wire. And, with the introduction of the double-spring HelaCon Plus push-in connectors, HellermannTyton has once again coupled safety and efficiency in a distinct solution that offers options to twist-on wire connectors for electrical and original equipment manufacturer applications.

HelaCon Plus is unique in that it is the only push-in style wire connector with a DOUBLE-SPRING DESIGN that delivers a safe, secure, and reliable wire connection. The DOUBLE-SPRING DESIGN requires a low insertion force, thus reducing wiring time and operator hand strain while providing a significantly higher retention value. With HelaCon Plus, HellermannTyton offers an affordable and ergonomically-friendly alternative for completing routine wire termination tasks.

### Market Applications

#### Home & Light Commercial Construction

- Junction Boxes
- Dimmer Switches
- Home Automation
- Lighting Fixtures



#### OEM Lighting & Manufacturing

- Garbage Disposals
- Low-Voltage Lighting Systems
- Ceiling Fans
- Garage Door Openers
- Exhaust Units



#### Maintenance, Repair & Replacement

- Repair Kits
- Power Cord Kits
- Lighting Retrofits
- Security and Alarm Systems



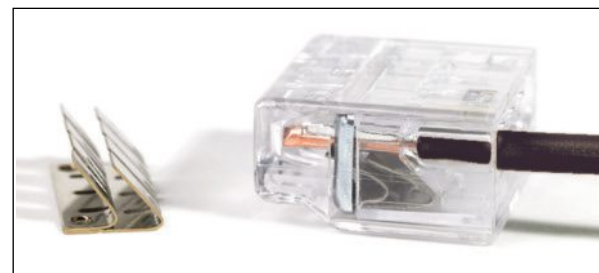
## HelaCon Plus Wire Connector

- Transparent Housing** Clear material for simple identification and quick visual inspection; meets flammability standard of UL94V2.
- Multiple Ports** Individual pole slots for each distinctive wire, regardless of size and style, allowing for flexibility and versatility within the same connector unit.
- Accessible Test Port** Large test port for easy confirmation.

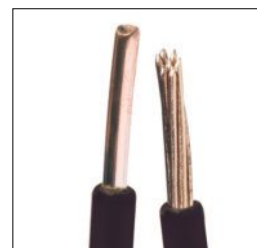


### Material Data

|                       |                                                                  |
|-----------------------|------------------------------------------------------------------|
| Material Housing      | Polycarbonate (PC)                                               |
| Material Plated Brass | Brass Tinned                                                     |
| Material Spring Plate | Stainless Steel (SS)                                             |
| Max Current           | 24 A                                                             |
| Max Voltage           | 600 V (cULus), 450 V (VDE)                                       |
| Wire Range (cULus)    | 12 - 22 AWG solid/stranded                                       |
| Wire Range (VDE)      | 0.5 - 2.5mm <sup>2</sup> solid/stranded<br>(max 7 cores)         |
| Stripping Length      | 0.43 inches (11 mm)                                              |
| Flammability          | UL94 V2                                                          |
| Operating Temperature | -22°F (-30°C) to 221°F (+105°C) (cULus)<br>-30°C to +110°C (VDE) |
| Certification         | cULus, VDE, NEMKO, FIMKO,<br>DEMKO, KEMA-KEUR                    |



Double-spring technology provides for low insertion force while delivering a safe, secure connection.



Accommodates both solid and stranded wire (12-22 AWG)

### Product Selection

| Article No. | Part No.  | Type    | Color               | Number of Conductors | UPC          | Width |         | Height |         | Depth |         | Pkg. Qty. |
|-------------|-----------|---------|---------------------|----------------------|--------------|-------|---------|--------|---------|-------|---------|-----------|
|             |           |         |                     |                      |              | in.   | (mm)    | in.    | (mm)    | in.   | (mm)    |           |
| 148-90000   | 148-90000 | HECP-2  | Transparent, Yellow | 2                    | 089306277217 | .46"  | (11.75) | .41"   | (10.45) | .75"  | (19.00) | 100       |
| 148-90001   | 148-90001 | HECP-3  | Transparent, Orange | 3                    | 089306277224 | .63"  | (15.90) | .41"   | (10.45) | .75"  | (19.00) | 100       |
| 148-90002   | 148-90002 | HECP-4  | Transparent         | 4                    | 089306277231 | .79"  | (20.05) | .41"   | (10.45) | .75"  | (19.00) | 75        |
| 148-90003   | 148-90003 | HECP-5  | Transparent, Blue   | 5                    | 089306277248 | .95"  | (24.20) | .41"   | (10.45) | .75"  | (19.00) | 50        |
| 148-90004   | 148-90004 | HECP-6  | Transparent, Violet | 6                    | 089306277255 | 1.12" | (28.35) | .41"   | (10.45) | .75"  | (19.00) | 50        |
| 148-90005   | 148-90005 | HECP-8  | Transparent, Gray   | 8                    | 089306277262 | 1.44" | (36.65) | .41"   | (10.45) | .75"  | (19.00) | 40        |
| 148-90024   | 148-90024 | HECP-2B | Transparent, Yellow | 2                    | 089306326878 | .46"  | (11.75) | .41"   | (10.45) | .75"  | (19.00) | 500       |
| 148-90025   | 148-90025 | HECP-3B | Transparent, Orange | 3                    | 089306326861 | .63"  | (15.90) | .41"   | (10.45) | .75"  | (19.00) | 400       |
| 148-90026   | 148-90026 | HECP-4B | Transparent         | 4                    | 089306326908 | .79"  | (20.05) | .41"   | (10.45) | .75"  | (19.00) | 300       |
| 148-90027   | 148-90027 | HECP-5B | Transparent, Blue   | 5                    | 089306326915 | .95"  | (24.20) | .41"   | (10.45) | .75"  | (19.00) | 300       |
| 148-90028   | 148-90028 | HECP-6B | Transparent, Violet | 6                    | 089306326892 | 1.12" | (28.35) | .41"   | (10.45) | .75"  | (19.00) | 250       |
| 148-90029   | 148-90029 | HECP-8B | Transparent, Gray   | 8                    | 089306326885 | 1.44" | (36.65) | .41"   | (10.45) | .75"  | (19.00) | 200       |

Use **Part No.** for ordering and **Type** for specification purposes.

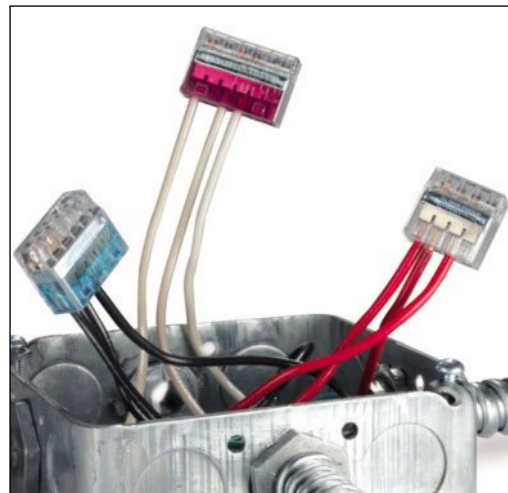
## HelaCon Plus - The Unique Wire Termination Solution

### 1.) Double-Spring Technology

The HelaCon Plus line of wire connectors from HellermannTyton is the only push-in wire connector with a double-spring design: the first spring allows for low insertion force, and the second secures a firm connection with a significantly stronger retention value.

### 2.) For Both Stranded and Solid Wire

The “peace of mind” wire connector from HellermannTyton holds solid wire firmly in place, reduces buckling when connecting stranded wire, accepts a wider range of wire sizes (12 to 22 AWG wire), and houses both solid and stranded wire cores in one unit.



### 3.) The Ergonomically-Friendly Alternative to Twist-On Wire Connectors

No more twisting and taping. No repetitive motion fatigue. No contact stress from tools. Simply strip the wire and insert it into the connector. At HellermannTyton, we recognize the importance of reduced wiring time, lower labor costs and project expenses, easier installations in difficult spots, and the need to minimize hand strain.

### 4.) Color Coded with Multiple Ports

The “clear benefit” of the HelaCon Plus connector from HellermannTyton is its transparent housing with color-coded sides that allows for easy identification and visual verification. And, this connector has multiple in-line port options (2, 3, 4, 5, 6 and 8 pole selection) for future expansion.

### 5.) Testing Simplified

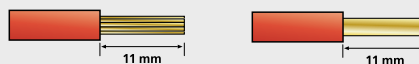
Featuring a separate test slot, the HellermannTyton HelaCon Plus product includes a larger, more accessible test port that is positioned in the center of the connector.

### 6.) Safer, More Dependable

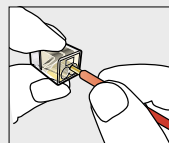
With a 24 A max current rating, the HellermannTyton HelaCon Plus connector easily exceeds even the most rigid building and construction standards with a UL listed approval up to 600 volts for building wire and 1000 volts

### 3 Easy Steps to using HelaCon Plus

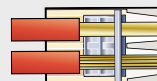
- 1 Strip cable to 0.43 in (11 mm)



- 2 Push cable into HelaCon Plus connector



- 3 Visibly check cable connection through transparent shell



| Part No.  | Article No. | Page | Part No.  | Article No. | Page   | Part No.  | Article No. | Page | Part No.  | Article No. | Page |
|-----------|-------------|------|-----------|-------------|--------|-----------|-------------|------|-----------|-------------|------|
| 102-69067 | 102-69067   | 68   | 148-00092 | 148-00092   | 64     | 151-00903 | 151-00903   | 69   | 156-00444 | 156-00444   | 57   |
| 102-69068 | 102-69068   | 68   | 148-00093 | 148-00093   | 64     | 151-00925 | 151-00925   | 70   | 156-00455 | 156-00455   | 18   |
| 110-70083 | 110-70083   | 76   | 148-00095 | 148-00095   | 64     | 151-00927 | 151-00927   | 72   | 156-00456 | 156-00456   | 18   |
| 110-70084 | 110-70084   | 76   | 148-00096 | 148-00096   | 64     | 151-00932 | 151-00932   | 69   | 156-00457 | 156-00457   | 48   |
| 110-70089 | 110-70089   | 76   | 148-00200 | 148-00200   | 41     | 151-00982 | 151-00982   | 44   | 156-00468 | 156-00468   | 42   |
| 110-70091 | 110-70091   | 76   | 148-90000 | 148-90000   | 236    | 151-01108 | 151-01108   | 70   | 156-00507 | 156-00507   | 71   |
| 110-70106 | 110-70106   | 76   | 148-90001 | 148-90001   | 236    | 151-01109 | 151-01109   | 68   | 156-00521 | 156-00521   | 71   |
| 110-99000 | 110-99000   | 76   | 148-90002 | 148-90002   | 236    | 151-01113 | 151-01113   | 71   | 156-00538 | 156-00538   | 39   |
| 111-00659 | 111-00659   | 22   | 148-90003 | 148-90003   | 236    | 151-01125 | 151-01125   | 68   | 156-00539 | 156-00539   | 39   |
| 111-00698 | 111-00698   | 22   | 148-90004 | 148-90004   | 236    | 151-01126 | 151-01126   | 68   | 156-00540 | 156-00540   | 39   |
| 111-00718 | 111-00718   | 22   | 148-90005 | 148-90005   | 236    | 151-01136 | 151-01136   | 71   | 156-00541 | 156-00541   | 39   |
| 111-00732 | 111-00732   | 22   | 148-90024 | 148-90024   | 236    | 151-02600 | 151-02600   | 69   | 156-00588 | 156-00588   | 42   |
| 111-00829 | 111-00829   | 24   | 148-90025 | 148-90025   | 236    | 151-02901 | 151-02901   | 68   | 156-00589 | 156-00589   | 42   |
| 111-00830 | 111-00830   | 24   | 148-90026 | 148-90026   | 236    | 151-03401 | 151-03401   | 43   | 156-00590 | 156-00590   | 42   |
| 111-00831 | 111-00831   | 24   | 148-90027 | 148-90027   | 236    | 151-03402 | 151-03402   | 43   | 156-00591 | 156-00591   | 42   |
| 111-01125 | 111-01125   | 22   | 148-90028 | 148-90028   | 236    | 151-03403 | 151-03403   | 43   | 156-00592 | 156-00592   | 42   |
| 111-01128 | 111-01128   | 19   | 148-90029 | 148-90029   | 236    | 151-03404 | 151-03404   | 43   | 156-00593 | 156-00593   | 42   |
| 111-01235 | 111-01235   | 18   | 150-08110 | 150-08110   | 68     | 151-06500 | 151-06500   | 106  | 156-00635 | 156-00635   | 42   |
| 111-01264 | 111-01264   | 20   | 150-09201 | 150-09201   | 69     | 151-14313 | 151-14313   | 142  | 156-00791 | 156-00791   | 62   |
| 111-01265 | 111-01265   | 20   | 150-31090 | 150-31090   | 47     | 151-14314 | 151-14314   | 142  | 156-00856 | 156-00856   | 39   |
| 111-01266 | 111-01266   | 20   | 150-31091 | 150-31091   | 47     | 151-26101 | 151-26101   | 69   | 156-00858 | 156-00858   | 39   |
| 111-01332 | 111-01332   | 23   | 150-31093 | 150-31093   | 47     | 151-27010 | 151-27010   | 100  | 156-00859 | 156-00859   | 39   |
| 111-01560 | 111-01560   | 20   | 150-31098 | 150-31098   | 48     | 151-27019 | 151-27019   | 100  | 156-00860 | 156-00860   | 39   |
| 111-01562 | 111-01562   | 20   | 150-45397 | 150-45397   | 69     | 151-27202 | 151-27202   | 100  | 156-00861 | 156-00861   | 39   |
| 111-01563 | 111-01563   | 20   | 150-55850 | 150-55850   | 46     | 151-27219 | 151-27219   | 100  | 156-00862 | 156-00862   | 39   |
| 111-05350 | 111-05350   | 47   | 150-55948 | 150-55948   | 48     | 151-32602 | 151-32602   | 70   | 156-00863 | 156-00863   | 39   |
| 111-12300 | 111-12300   | 14   | 150-76090 | 150-76090   | 39     | 155-01600 | 155-01600   | 69   | 156-00864 | 156-00864   | 39   |
| 111-12301 | 111-12301   | 14   | 150-77938 | 150-77938   | 48     | 155-03800 | 155-03800   | 71   | 156-00865 | 156-00865   | 39   |
| 111-12302 | 111-12302   | 14   | 150-77940 | 150-77940   | 46     | 155-11601 | 155-11601   | 68   | 156-00866 | 156-00866   | 40   |
| 111-85350 | 111-85350   | 54   | 150-95500 | 150-95500   | 68     | 155-12300 | 155-12300   | 60   | 156-00867 | 156-00867   | 40   |
| 111-85850 | 111-85850   | 54   | 151-00010 | 151-00010   | 142    | 155-23601 | 155-23601   | 61   | 156-00868 | 156-00868   | 40   |
| 111-85871 | 111-85871   | 47   | 151-00016 | 151-00016   | 69     | 155-30602 | 155-30602   | 59   | 156-00871 | 156-00871   | 40   |
| 115-00042 | 115-00042   | 34   | 151-00017 | 151-00017   | 69     | 155-30702 | 155-30702   | 71   | 156-00872 | 156-00872   | 41   |
| 116-03019 | 116-03019   | 11   | 151-00018 | 151-00018   | 142    | 155-30802 | 155-30802   | 68   | 156-00873 | 156-00873   | 41   |
| 117-00012 | 117-00012   | 38   | 151-00019 | 151-00019   | 142    | 155-30902 | 155-30902   | 69   | 156-00874 | 156-00874   | 40   |
| 117-00016 | 117-00016   | 35   | 151-00029 | 151-00029   | 68     | 155-31102 | 155-31102   | 71   | 156-00875 | 156-00875   | 40   |
| 117-00017 | 117-00017   | 35   | 151-00074 | 151-00074   | 69     | 155-31202 | 155-31202   | 62   | 156-00876 | 156-00876   | 40   |
| 117-00018 | 117-00018   | 35   | 151-00080 | 151-00080   | 69     | 155-36002 | 155-36002   | 71   | 156-00877 | 156-00877   | 41   |
| 117-00019 | 117-00019   | 35   | 151-00281 | 151-00281   | 69     | 155-37104 | 155-37104   | 40   | 156-00878 | 156-00878   | 41   |
| 118-00032 | 118-00032   | 18   | 151-00282 | 151-00282   | 69     | 156-00016 | 156-00016   | 41   | 156-00953 | 156-00953   | 46   |
| 118-00110 | 118-00110   | 27   | 151-00429 | 151-00429   | 71     | 156-00017 | 156-00017   | 40   | 156-01007 | 156-01007   | 39   |
| 118-00111 | 118-00111   | 27   | 151-00430 | 151-00430   | 71     | 156-00025 | 156-00025   | 46   | 156-01601 | 156-01601   | 40   |
| 118-04700 | 118-04700   | 27   | 151-00432 | 151-00432   | 92     | 156-00036 | 156-00036   | 63   | 156-04600 | 156-04600   | 41   |
| 118-04800 | 118-04800   | 27   | 151-00433 | 151-00433   | 92     | 156-00054 | 156-00054   | 47   | 156-04601 | 156-04601   | 41   |
| 118-04900 | 118-04900   | 27   | 151-00492 | 151-00492   | 49, 85 | 156-00055 | 156-00055   | 47   | 157-00034 | 157-00034   | 58   |
| 118-05900 | 118-05900   | 27   | 151-00513 | 151-00513   | 71     | 156-00056 | 156-00056   | 47   | 157-00035 | 157-00035   | 58   |
| 120-00021 | 120-00021   | 87   | 151-00605 | 151-00605   | 68     | 156-00057 | 156-00057   | 47   | 157-00036 | 157-00036   | 58   |
| 120-00031 | 120-00031   | 87   | 151-00623 | 151-00623   | 69     | 156-00066 | 156-00066   | 46   | 157-00060 | 157-00060   | 38   |
| 120-00060 | 120-00060   | 83   | 151-00629 | 151-00629   | 69     | 156-00067 | 156-00067   | 50   | 157-00072 | 157-00072   | 51   |
| 121-63560 | 121-63560   | 34   | 151-00644 | 151-00644   | 106    | 156-00068 | 156-00068   | 50   | 157-00083 | 157-00083   | 59   |
| 121-82160 | 121-82160   | 34   | 151-00650 | 151-00650   | 69     | 156-00069 | 156-00069   | 50   | 157-00097 | 157-00097   | 51   |
| 121-83360 | 121-83360   | 34   | 151-00651 | 151-00651   | 68     | 156-00070 | 156-00070   | 50   | 157-00105 | 157-00105   | 60   |
| 126-00000 | 126-00000   | 41   | 151-00663 | 151-00663   | 68     | 156-00071 | 156-00071   | 50   | 157-00106 | 157-00106   | 60   |
| 126-00015 | 126-00015   | 54   | 151-00664 | 151-00664   | 69     | 156-00072 | 156-00072   | 50   | 157-00108 | 157-00108   | 51   |
| 126-00036 | 126-00036   | 41   | 151-00665 | 151-00665   | 69     | 156-00074 | 156-00074   | 50   | 157-00112 | 157-00112   | 53   |
| 126-00041 | 126-00041   | 56   | 151-00667 | 151-00667   | 178    | 156-00085 | 156-00085   | 48   | 157-00118 | 157-00118   | 52   |
| 126-00042 | 126-00042   | 56   | 151-00668 | 151-00668   | 178    | 156-00089 | 156-00089   | 47   | 157-00119 | 157-00119   | 52   |
| 126-00043 | 126-00043   | 55   | 151-00675 | 151-00675   | 71     | 156-00090 | 156-00090   | 47   | 157-00120 | 157-00120   | 52   |
| 126-00044 | 126-00044   | 55   | 151-00677 | 151-00677   | 70     | 156-00091 | 156-00091   | 47   | 157-00130 | 157-00130   | 52   |
| 126-00045 | 126-00045   | 55   | 151-00700 | 151-00700   | 142    | 156-00092 | 156-00092   | 47   | 157-00140 | 157-00140   | 51   |
| 126-00046 | 126-00046   | 55   | 151-00701 | 151-00701   | 142    | 156-00093 | 156-00093   | 47   | 157-00142 | 157-00142   | 53   |
| 126-00049 | 126-00049   | 56   | 151-00702 | 151-00702   | 142    | 156-00134 | 156-00134   | 63   | 157-00143 | 157-00143   | 53   |
| 126-00065 | 126-00065   | 57   | 151-00703 | 151-00703   | 142    | 156-00135 | 156-00135   | 63   | 157-00144 | 157-00144   | 53   |
| 126-00069 | 126-00069   | 56   | 151-00704 | 151-00704   | 71     | 156-00136 | 156-00136   | 63   | 157-00157 | 157-00157   | 53   |
| 126-00075 | 126-00075   | 54   | 151-00756 | 151-00756   | 99     | 156-00137 | 156-00137   | 63   | 157-00400 | 157-00400   | 58   |
| 126-00081 | 126-00081   | 54   | 151-00757 | 151-00757   | 18     | 156-00155 | 156-00155   | 62   | 157-00401 | 157-00401   | 58   |
| 126-00086 | 126-00086   | 54   | 151-00758 | 151-00758   | 18     | 156-00156 | 156-00156   | 46   | 157-00402 | 157-00402   | 58   |
| 126-00099 | 126-00099   | 54   | 151-00765 | 151-00765   | 71     | 156-00157 | 156-00157   | 46   | 157-00403 | 157-00403   | 58   |
| 126-02300 | 126-02300   | 54   | 151-00775 | 151-00775   | 70     | 156-00235 | 156-00235   | 48   | 157-00404 | 157-00404   | 58   |
| 126-03100 | 126-03100   | 57   | 151-00785 | 151-00785   | 70     | 156-00264 | 156-00264   | 57   | 157-00405 | 157-00405   | 58   |
| 132-00006 | 132-00006   | 65   | 151-00786 | 151-00786   | 70     | 156-00272 | 156-00272   | 63   | 161-60001 | 161-60001   | 136  |
| 132-00007 | 132-00007   | 65   | 151-00790 | 151-00790   | 68     | 156-00273 | 156-00273   | 63   | 161-60002 | 161-60002   | 136  |
| 132-00008 | 132-00008   | 65   | 151-00792 | 151-00792   | 71     | 156-00282 | 156-00282   | 49   | 161-60003 | 161-60003   | 136  |
| 132-00009 | 132-00009   | 65   | 151-00812 | 151-00812   | 103    | 156-00306 | 156-00306   | 63   | 161-60004 | 161-60004   | 136  |
| 132-00010 | 132-00010   | 65   | 151-00813 | 151-00813   | 103    | 156-00318 | 156-00318   | 62   | 161-60005 | 161-60005   | 136  |
| 132-00011 | 132-00011   | 65   | 151-00814 | 151-00814   | 103    | 156-00329 | 156-00329   | 49   | 161-63103 | 161-63103   | 134  |
| 148-00088 | 148-00088   | 64   | 151-00833 | 151-00833   | 71     | 156-00375 | 156-00375   | 47   | 161-63203 | 161-63203   | 134  |
| 148-00089 | 148-00089   | 64   | 151-00834 | 151-00834   | 71     | 156-00376 | 156-00376   | 47   | 161-63303 | 161-63303   | 134  |
| 148-00090 | 148-00090   | 64   | 151-00835 | 151-00835   | 71     | 156-00377 | 156-00377   | 47   | 161-63403 | 161-63403   | 134  |
| 148-00091 | 148-00091   | 64   | 151-00836 | 151-00836   | 71     | 156-00378 | 156-00378   | 47   | 161-63503 | 161-63503   | 134  |

| Part No.  | Article No. | Page     | Part No.  | Article No. | Page     | Part No.  | Article No. | Page | Part No.  | Article No. | Page |
|-----------|-------------|----------|-----------|-------------|----------|-----------|-------------|------|-----------|-------------|------|
| 161-64002 | 161-64002   | 135      | 170-03066 | 170-03066   | 149      | 170-03148 | 170-03148   | 159  | 181-00224 | 181-00224   | 119  |
| 161-64004 | 161-64004   | 135      | 170-03067 | 170-03067   | 136, 164 | 170-03149 | 170-03149   | 159  | 181-00226 | 181-00226   | 119  |
| 161-64006 | 161-64006   | 135      | 170-03068 | 170-03068   | 136, 164 | 170-03150 | 170-03150   | 159  | 181-00228 | 181-00228   | 129  |
| 161-64008 | 161-64008   | 135      | 170-03069 | 170-03069   | 155      | 170-03151 | 170-03151   | 159  | 181-00230 | 181-00230   | 129  |
| 161-64010 | 161-64010   | 135      | 170-03070 | 170-03070   | 155      | 170-03152 | 170-03152   | 159  | 181-00232 | 181-00232   | 129  |
| 161-64012 | 161-64012   | 135      | 170-03071 | 170-03071   | 149      | 170-03153 | 170-03153   | 151  | 181-00234 | 181-00234   | 129  |
| 161-64014 | 161-64014   | 135      | 170-03072 | 170-03072   | 149      | 170-03154 | 170-03154   | 151  | 181-00236 | 181-00236   | 124  |
| 161-64112 | 161-64112   | 134      | 170-03073 | 170-03073   | 149      | 170-03155 | 170-03155   | 151  | 181-00238 | 181-00238   | 124  |
| 161-64213 | 161-64213   | 134      | 170-03074 | 170-03074   | 149      | 170-03156 | 170-03156   | 151  | 181-00240 | 181-00240   | 124  |
| 161-64310 | 161-64310   | 134      | 170-03076 | 170-03076   | 147      | 170-03157 | 170-03157   | 151  | 181-00242 | 181-00242   | 124  |
| 161-64414 | 161-64414   | 134      | 170-03077 | 170-03077   | 147      | 170-03158 | 170-03158   | 162  | 181-00244 | 181-00244   | 119  |
| 161-64507 | 161-64507   | 134      | 170-03078 | 170-03078   | 147      | 170-03159 | 170-03159   | 162  | 181-00246 | 181-00246   | 119  |
| 169-60018 | 169-60018   | 140      | 170-03079 | 170-03079   | 147      | 170-03160 | 170-03160   | 162  | 181-00248 | 181-00248   | 119  |
| 169-60019 | 169-60019   | 140      | 170-03080 | 170-03080   | 147      | 170-03161 | 170-03161   | 162  | 181-00250 | 181-00250   | 119  |
| 169-60020 | 169-60020   | 140      | 170-03081 | 170-03081   | 147      | 170-03162 | 170-03162   | 162  | 181-00252 | 181-00252   | 129  |
| 169-60021 | 169-60021   | 140      | 170-03082 | 170-03082   | 158      | 170-03163 | 170-03163   | 162  | 181-00254 | 181-00254   | 129  |
| 169-60022 | 169-60022   | 140      | 170-03083 | 170-03083   | 158      | 170-03164 | 170-03164   | 162  | 181-00259 | 181-00259   | 129  |
| 170-03000 | 170-03000   | 145      | 170-03084 | 170-03084   | 158      | 170-03165 | 170-03165   | 162  | 181-00260 | 181-00260   | 115  |
| 170-03001 | 170-03001   | 145      | 170-03085 | 170-03085   | 158      | 170-03166 | 170-03166   | 162  | 181-00262 | 181-00262   | 115  |
| 170-03002 | 170-03002   | 145      | 170-03086 | 170-03086   | 158      | 170-03174 | 170-03174   | 145  | 181-00265 | 181-00265   | 129  |
| 170-03003 | 170-03003   | 145      | 170-03087 | 170-03087   | 158      | 170-03175 | 170-03175   | 163  | 181-00300 | 181-00300   | 114  |
| 170-03004 | 170-03004   | 145      | 170-03088 | 170-03088   | 158      | 170-03177 | 170-03177   | 145  | 181-00301 | 181-00301   | 114  |
| 170-03005 | 170-03005   | 145      | 170-03089 | 170-03089   | 149      | 170-20400 | 170-20400   | 156  | 181-00302 | 181-00302   | 114  |
| 170-03006 | 170-03006   | 149      | 170-03090 | 170-03090   | 149      | 170-20600 | 170-20600   | 156  | 181-00303 | 181-00303   | 114  |
| 170-03007 | 170-03007   | 149      | 170-03091 | 170-03091   | 149      | 170-20800 | 170-20800   | 156  | 181-00304 | 181-00304   | 114  |
| 170-03008 | 170-03008   | 149      | 170-03092 | 170-03092   | 149      | 170-21000 | 170-21000   | 156  | 181-00305 | 181-00305   | 114  |
| 170-03010 | 170-03010   | 149      | 170-03093 | 170-03093   | 149      | 170-21200 | 170-21200   | 156  | 181-00306 | 181-00306   | 114  |
| 170-03011 | 170-03011   | 149      | 170-03094 | 170-03094   | 149      | 170-21500 | 170-21500   | 156  | 181-00307 | 181-00307   | 114  |
| 170-03012 | 170-03012   | 148      | 170-03095 | 170-03095   | 149      | 170-22000 | 170-22000   | 156  | 181-00308 | 181-00308   | 114  |
| 170-03013 | 170-03013   | 148      | 170-03097 | 170-03097   | 163      | 170-22500 | 170-22500   | 156  | 181-00309 | 181-00309   | 114  |
| 170-03014 | 170-03014   | 148      | 170-03098 | 170-03098   | 160      | 170-23000 | 170-23000   | 156  | 181-00311 | 181-00311   | 115  |
| 170-03015 | 170-03015   | 148      | 170-03099 | 170-03099   | 160      | 170-25000 | 170-25000   | 156  | 181-00312 | 181-00312   | 119  |
| 170-03016 | 170-03016   | 148      | 170-03100 | 170-03100   | 160      | 170-80150 | 170-80150   | 146  | 181-00313 | 181-00313   | 119  |
| 170-03017 | 170-03017   | 150      | 170-03101 | 170-03101   | 160      | 170-80250 | 170-80250   | 146  | 181-00314 | 181-00314   | 119  |
| 170-03018 | 170-03018   | 150      | 170-03102 | 170-03102   | 160      | 170-80350 | 170-80350   | 146  | 181-00315 | 181-00315   | 119  |
| 170-03019 | 170-03019   | 150      | 170-03103 | 170-03103   | 160      | 173-00400 | 173-00400   | 154  | 181-00316 | 181-00316   | 124  |
| 170-03020 | 170-03020   | 150      | 170-03104 | 170-03104   | 160      | 173-00600 | 173-00600   | 154  | 181-00317 | 181-00317   | 124  |
| 170-03021 | 170-03021   | 150      | 170-03105 | 170-03105   | 160      | 173-00800 | 173-00800   | 154  | 181-00318 | 181-00318   | 124  |
| 170-03024 | 170-03024   | 157      | 170-03106 | 170-03106   | 160      | 173-01000 | 173-01000   | 154  | 181-00319 | 181-00319   | 124  |
| 170-03025 | 170-03025   | 157      | 170-03107 | 170-03107   | 160      | 173-01200 | 173-01200   | 154  | 181-00320 | 181-00320   | 129  |
| 170-03026 | 170-03026   | 157      | 170-03108 | 170-03108   | 160      | 173-01400 | 173-01400   | 154  | 181-00321 | 181-00321   | 129  |
| 170-03027 | 170-03027   | 155      | 170-03109 | 170-03109   | 160      | 173-01600 | 173-01600   | 154  | 181-00322 | 181-00322   | 129  |
| 170-03028 | 170-03028   | 155      | 170-03110 | 170-03110   | 160      | 173-01800 | 173-01800   | 154  | 181-00323 | 181-00323   | 129  |
| 170-03029 | 170-03029   | 155      | 170-03111 | 170-03111   | 160      | 173-02000 | 173-02000   | 154  | 181-00442 | 181-00442   | 115  |
| 170-03030 | 170-03030   | 155      | 170-03112 | 170-03112   | 160      | 173-60400 | 173-60400   | 153  | 181-00443 | 181-00443   | 115  |
| 170-03031 | 170-03031   | 164      | 170-03113 | 170-03113   | 160      | 173-60600 | 173-60600   | 153  | 181-00445 | 181-00445   | 115  |
| 170-03032 | 170-03032   | 136, 164 | 170-03114 | 170-03114   | 160      | 173-60800 | 173-60800   | 153  | 181-00446 | 181-00446   | 115  |
| 170-03033 | 170-03033   | 136, 164 | 170-03115 | 170-03115   | 160      | 173-61000 | 173-61000   | 153  | 181-00447 | 181-00447   | 115  |
| 170-03034 | 170-03034   | 136, 164 | 170-03116 | 170-03116   | 150      | 173-61200 | 173-61200   | 153  | 181-00448 | 181-00448   | 115  |
| 170-03035 | 170-03035   | 148      | 170-03117 | 170-03117   | 150      | 173-61400 | 173-61400   | 153  | 181-00449 | 181-00449   | 115  |
| 170-03036 | 170-03036   | 150      | 170-03118 | 170-03118   | 150      | 173-61600 | 173-61600   | 153  | 181-00450 | 181-00450   | 115  |
| 170-03037 | 170-03037   | 157      | 170-03119 | 170-03119   | 150      | 173-61800 | 173-61800   | 153  | 181-00451 | 181-00451   | 115  |
| 170-03038 | 170-03038   | 157      | 170-03120 | 170-03120   | 150      | 173-62000 | 173-62000   | 153  | 181-00452 | 181-00452   | 116  |
| 170-03039 | 170-03039   | 164      | 170-03121 | 170-03121   | 150      | 175REF    | 590-01751   | 232  | 181-00453 | 181-00453   | 116  |
| 170-03040 | 170-03040   | 164      | 170-03122 | 170-03122   | 150      | 181-00024 | 181-00024   | 122  | 181-00454 | 181-00454   | 116  |
| 170-03041 | 170-03041   | 145      | 170-03123 | 170-03123   | 148      | 181-00025 | 181-00025   | 117  | 181-00455 | 181-00455   | 116  |
| 170-03042 | 170-03042   | 145      | 170-03124 | 170-03124   | 157      | 181-00027 | 181-00027   | 123  | 181-00456 | 181-00456   | 116  |
| 170-03043 | 170-03043   | 145      | 170-03125 | 170-03125   | 157      | 181-00136 | 181-00136   | 117  | 181-00457 | 181-00457   | 116  |
| 170-03044 | 170-03044   | 145      | 170-03126 | 170-03126   | 157      | 181-00137 | 181-00137   | 121  | 181-00458 | 181-00458   | 117  |
| 170-03045 | 170-03045   | 145      | 170-03127 | 170-03127   | 157      | 181-00140 | 181-00140   | 116  | 181-00459 | 181-00459   | 117  |
| 170-03046 | 170-03046   | 155      | 170-03128 | 170-03128   | 157      | 181-00141 | 181-00141   | 116  | 181-00460 | 181-00460   | 117  |
| 170-03047 | 170-03047   | 155      | 170-03129 | 170-03129   | 157      | 181-00142 | 181-00142   | 116  | 181-00461 | 181-00461   | 117  |
| 170-03048 | 170-03048   | 155      | 170-03130 | 170-03130   | 157      | 181-00143 | 181-00143   | 116  | 181-00462 | 181-00462   | 118  |
| 170-03049 | 170-03049   | 155      | 170-03131 | 170-03131   | 157      | 181-00144 | 181-00144   | 116  | 181-00463 | 181-00463   | 118  |
| 170-03050 | 170-03050   | 161      | 170-03132 | 170-03132   | 157      | 181-00145 | 181-00145   | 116  | 181-00464 | 181-00464   | 118  |
| 170-03051 | 170-03051   | 161      | 170-03133 | 170-03133   | 157      | 181-00147 | 181-00147   | 120  | 181-00465 | 181-00465   | 118  |
| 170-03052 | 170-03052   | 161      | 170-03134 | 170-03134   | 157      | 181-00148 | 181-00148   | 121  | 181-00467 | 181-00467   | 118  |
| 170-03053 | 170-03053   | 161      | 170-03135 | 170-03135   | 157      | 181-00152 | 181-00152   | 131  | 181-00468 | 181-00468   | 119  |
| 170-03054 | 170-03054   | 163      | 170-03136 | 170-03136   | 157      | 181-00153 | 181-00153   | 131  | 181-00469 | 181-00469   | 119  |
| 170-03055 | 170-03055   | 163      | 170-03137 | 170-03137   | 157      | 181-00154 | 181-00154   | 131  | 181-00470 | 181-00470   | 120  |
| 170-03056 | 170-03056   | 163      | 170-03138 | 170-03138   | 157      | 181-00155 | 181-00155   | 126  | 181-00471 | 181-00471   | 120  |
| 170-03057 | 170-03057   | 163      | 170-03139 | 170-03139   | 157      | 181-00156 | 181-00156   | 126  | 181-00472 | 181-00472   | 120  |
| 170-03058 | 170-03058   | 161      | 170-03140 | 170-03140   | 152      | 181-00157 | 181-00157   | 126  | 181-00473 | 181-00473   | 121  |
| 170-03059 | 170-03059   | 161      | 170-03141 | 170-03141   | 152      | 181-00159 | 181-00159   | 125  | 181-00474 | 181-00474   | 121  |
| 170-03060 | 170-03060   | 161      | 170-03142 | 170-03142   | 152      | 181-00212 | 181-00212   | 124  | 181-00475 | 181-00475   | 121  |
| 170-03061 | 170-03061   | 161      | 170-03143 | 170-03143   | 152      | 181-00214 | 181-00214   | 124  | 181-00476 | 181-00476   | 121  |
| 170-03062 | 170-03062   | 163      | 170-03144 | 170-03144   | 152      | 181-00216 | 181-00216   | 124  | 181-00477 | 181-00477   | 121  |
| 170-03063 | 170-03063   | 163      | 170-03145 | 170-03145   | 152      | 181-00218 | 181-00218   | 124  | 181-00479 | 181-00479   | 121  |
| 170-03064 | 170-03064   | 163      | 170-03146 | 170-03146   | 152      | 181-00220 | 181-00220   | 119  | 181-00480 | 181-00480   | 121  |
| 170-03065 | 170-03065   | 163      | 170-03147 | 170-03147   | 152      | 181-00222 | 181-00222   | 119  | 181-00481 | 181-00481   | 116  |

| Part No.  | Article No. | Page | Part No.  | Article No. | Page | Part No.  | Article No. | Page | Part No.  | Article No. | Page |
|-----------|-------------|------|-----------|-------------|------|-----------|-------------|------|-----------|-------------|------|
| 181-00482 | 181-00482   | 117  | 181-00572 | 181-00572   | 122  | 181-00653 | 181-00653   | 130  | 181-21005 | 181-21005   | 123  |
| 181-00483 | 181-00483   | 117  | 181-00573 | 181-00573   | 123  | 181-00654 | 181-00654   | 130  | 181-21007 | 181-21007   | 123  |
| 181-00485 | 181-00485   | 117  | 181-00574 | 181-00574   | 118  | 181-00655 | 181-00655   | 130  | 181-21009 | 181-21009   | 123  |
| 181-00486 | 181-00486   | 117  | 181-00575 | 181-00575   | 123  | 181-00656 | 181-00656   | 130  | 181-22005 | 181-22005   | 118  |
| 181-00487 | 181-00487   | 118  | 181-00576 | 181-00576   | 123  | 181-00657 | 181-00657   | 130  | 181-22008 | 181-22008   | 118  |
| 181-00488 | 181-00488   | 118  | 181-00577 | 181-00577   | 123  | 181-00658 | 181-00658   | 130  | 181-22013 | 181-22013   | 118  |
| 181-00489 | 181-00489   | 118  | 181-00578 | 181-00578   | 123  | 181-00659 | 181-00659   | 130  | 181-22016 | 181-22016   | 118  |
| 181-00490 | 181-00490   | 116  | 181-00579 | 181-00579   | 123  | 181-00663 | 181-00663   | 131  | 181-22018 | 181-22018   | 118  |
| 181-00491 | 181-00491   | 116  | 181-00580 | 181-00580   | 123  | 181-00664 | 181-00664   | 131  | 181-22020 | 181-22020   | 123  |
| 181-00492 | 181-00492   | 116  | 181-00581 | 181-00581   | 124  | 181-00665 | 181-00665   | 131  | 181-22024 | 181-22024   | 123  |
| 181-00493 | 181-00493   | 116  | 181-00582 | 181-00582   | 124  | 181-00666 | 181-00666   | 131  | 181-22028 | 181-22028   | 123  |
| 181-00494 | 181-00494   | 117  | 181-00583 | 181-00583   | 124  | 181-00667 | 181-00667   | 131  | 181-22030 | 181-22030   | 123  |
| 181-00495 | 181-00495   | 117  | 181-00584 | 181-00584   | 125  | 181-00671 | 181-00671   | 117  | 181-22032 | 181-22032   | 123  |
| 181-00496 | 181-00496   | 117  | 181-00585 | 181-00585   | 125  | 181-00672 | 181-00672   | 120  | 181-22034 | 181-22034   | 123  |
| 181-00497 | 181-00497   | 117  | 181-00586 | 181-00586   | 125  | 181-00684 | 181-00684   | 114  | 181-23001 | 181-23001   | 119  |
| 181-00498 | 181-00498   | 118  | 181-00587 | 181-00587   | 125  | 181-05500 | 181-05500   | 116  | 181-23002 | 181-23002   | 119  |
| 181-00499 | 181-00499   | 118  | 181-00588 | 181-00588   | 125  | 181-11000 | 181-11000   | 116  | 181-23003 | 181-23003   | 124  |
| 181-00500 | 181-00500   | 118  | 181-00589 | 181-00589   | 125  | 181-11002 | 181-11002   | 116  | 181-23007 | 181-23007   | 124  |
| 181-00501 | 181-00501   | 118  | 181-00590 | 181-00590   | 125  | 181-11005 | 181-11005   | 116  | 181-23009 | 181-23009   | 124  |
| 181-00503 | 181-00503   | 119  | 181-00591 | 181-00591   | 126  | 181-11008 | 181-11008   | 116  | 181-23012 | 181-23012   | 124  |
| 181-00504 | 181-00504   | 119  | 181-00592 | 181-00592   | 126  | 181-11009 | 181-11009   | 122  | 181-24000 | 181-24000   | 119  |
| 181-00505 | 181-00505   | 119  | 181-00593 | 181-00593   | 126  | 181-11013 | 181-11013   | 122  | 181-24002 | 181-24002   | 119  |
| 181-00506 | 181-00506   | 119  | 181-00594 | 181-00594   | 126  | 181-11015 | 181-11015   | 122  | 181-24003 | 181-24003   | 124  |
| 181-00507 | 181-00507   | 120  | 181-00595 | 181-00595   | 126  | 181-11016 | 181-11016   | 122  | 181-24008 | 181-24008   | 124  |
| 181-00508 | 181-00508   | 120  | 181-00596 | 181-00596   | 126  | 181-11019 | 181-11019   | 122  | 181-24011 | 181-24011   | 124  |
| 181-00509 | 181-00509   | 120  | 181-00597 | 181-00597   | 127  | 181-11021 | 181-11021   | 122  | 181-24013 | 181-24013   | 124  |
| 181-00510 | 181-00510   | 120  | 181-00598 | 181-00598   | 127  | 181-11501 | 181-11501   | 116  | 181-24014 | 181-24014   | 124  |
| 181-00511 | 181-00511   | 120  | 181-00599 | 181-00599   | 127  | 181-11502 | 181-11502   | 116  | 181-31001 | 181-31001   | 120  |
| 181-00512 | 181-00512   | 120  | 181-00600 | 181-00600   | 127  | 181-11505 | 181-11505   | 122  | 181-31002 | 181-31002   | 120  |
| 181-00513 | 181-00513   | 120  | 181-00601 | 181-00601   | 127  | 181-11507 | 181-11507   | 122  | 181-31007 | 181-31007   | 125  |
| 181-00514 | 181-00514   | 120  | 181-00602 | 181-00602   | 127  | 181-11509 | 181-11509   | 122  | 181-32002 | 181-32002   | 120  |
| 181-00515 | 181-00515   | 120  | 181-00603 | 181-00603   | 128  | 181-11511 | 181-11511   | 122  | 181-32003 | 181-32003   | 120  |
| 181-00516 | 181-00516   | 121  | 181-00604 | 181-00604   | 128  | 181-12001 | 181-12001   | 117  | 181-32004 | 181-32004   | 125  |
| 181-00517 | 181-00517   | 121  | 181-00605 | 181-00605   | 128  | 181-12002 | 181-12002   | 117  | 181-32005 | 181-32005   | 125  |
| 181-00518 | 181-00518   | 121  | 181-00606 | 181-00606   | 128  | 181-12005 | 181-12005   | 122  | 181-32009 | 181-32009   | 125  |
| 181-00519 | 181-00519   | 121  | 181-00607 | 181-00607   | 128  | 181-12008 | 181-12008   | 122  | 181-32012 | 181-32012   | 125  |
| 181-00520 | 181-00520   | 121  | 181-00608 | 181-00608   | 128  | 181-12011 | 181-12011   | 122  | 181-32015 | 181-32015   | 125  |
| 181-00521 | 181-00521   | 121  | 181-00609 | 181-00609   | 129  | 181-12013 | 181-12013   | 122  | 181-33000 | 181-33000   | 120  |
| 181-00522 | 181-00522   | 121  | 181-00610 | 181-00610   | 129  | 181-13001 | 181-13001   | 117  | 181-33004 | 181-33004   | 120  |
| 181-00523 | 181-00523   | 121  | 181-00611 | 181-00611   | 130  | 181-13003 | 181-13003   | 122  | 181-33006 | 181-33006   | 120  |
| 181-00524 | 181-00524   | 116  | 181-00612 | 181-00612   | 130  | 181-13006 | 181-13006   | 122  | 181-33009 | 181-33009   | 125  |
| 181-00525 | 181-00525   | 116  | 181-00613 | 181-00613   | 130  | 181-13008 | 181-13008   | 122  | 181-33015 | 181-33015   | 125  |
| 181-00526 | 181-00526   | 116  | 181-00614 | 181-00614   | 130  | 181-13010 | 181-13010   | 122  | 181-33018 | 181-33018   | 125  |
| 181-00527 | 181-00527   | 116  | 181-00615 | 181-00615   | 130  | 181-13012 | 181-13012   | 122  | 181-33021 | 181-33021   | 125  |
| 181-00528 | 181-00528   | 116  | 181-00616 | 181-00616   | 130  | 181-14000 | 181-14000   | 117  | 181-33022 | 181-33022   | 125  |
| 181-00529 | 181-00529   | 116  | 181-00617 | 181-00617   | 131  | 181-14001 | 181-14001   | 122  | 181-34000 | 181-34000   | 120  |
| 181-00530 | 181-00530   | 117  | 181-00618 | 181-00618   | 131  | 181-14003 | 181-14003   | 122  | 181-34001 | 181-34001   | 120  |
| 181-00531 | 181-00531   | 117  | 181-00619 | 181-00619   | 131  | 181-14006 | 181-14006   | 122  | 181-34002 | 181-34002   | 125  |
| 181-00532 | 181-00532   | 117  | 181-00620 | 181-00620   | 128  | 181-15100 | 181-15100   | 117  | 181-34004 | 181-34004   | 125  |
| 181-00533 | 181-00533   | 117  | 181-00621 | 181-00621   | 127  | 181-15101 | 181-15101   | 117  | 181-34007 | 181-34007   | 125  |
| 181-00534 | 181-00534   | 118  | 181-00622 | 181-00622   | 127  | 181-15102 | 181-15102   | 117  | 181-35002 | 181-35002   | 126  |
| 181-00535 | 181-00535   | 118  | 181-00623 | 181-00623   | 127  | 181-15105 | 181-15105   | 122  | 181-35005 | 181-35005   | 126  |
| 181-00536 | 181-00536   | 118  | 181-00624 | 181-00624   | 127  | 181-15107 | 181-15107   | 122  | 181-42002 | 181-42002   | 121  |
| 181-00537 | 181-00537   | 118  | 181-00625 | 181-00625   | 127  | 181-15201 | 181-15201   | 118  | 181-42004 | 181-42004   | 121  |
| 181-00538 | 181-00538   | 118  | 181-00626 | 181-00626   | 127  | 181-15202 | 181-15202   | 118  | 181-42005 | 181-42005   | 126  |
| 181-00539 | 181-00539   | 118  | 181-00627 | 181-00627   | 127  | 181-15203 | 181-15203   | 123  | 181-42008 | 181-42008   | 126  |
| 181-00540 | 181-00540   | 119  | 181-00628 | 181-00628   | 127  | 181-15207 | 181-15207   | 123  | 181-42010 | 181-42010   | 126  |
| 181-00541 | 181-00541   | 119  | 181-00629 | 181-00629   | 127  | 181-15209 | 181-15209   | 123  | 181-42014 | 181-42014   | 126  |
| 181-00542 | 181-00542   | 120  | 181-00630 | 181-00630   | 127  | 181-15211 | 181-15211   | 123  | 181-43001 | 181-43001   | 121  |
| 181-00543 | 181-00543   | 121  | 181-00631 | 181-00631   | 127  | 181-15213 | 181-15213   | 123  | 181-43002 | 181-43002   | 121  |
| 181-00544 | 181-00544   | 121  | 181-00632 | 181-00632   | 127  | 181-15300 | 181-15300   | 118  | 181-43004 | 181-43004   | 126  |
| 181-00545 | 181-00545   | 121  | 181-00633 | 181-00633   | 128  | 181-15304 | 181-15304   | 123  | 181-43006 | 181-43006   | 126  |
| 181-00546 | 181-00546   | 121  | 181-00634 | 181-00634   | 128  | 181-15306 | 181-15306   | 123  | 181-43008 | 181-43008   | 126  |
| 181-00547 | 181-00547   | 121  | 181-00635 | 181-00635   | 128  | 181-15307 | 181-15307   | 123  | 181-44006 | 181-44006   | 121  |
| 181-00548 | 181-00548   | 122  | 181-00636 | 181-00636   | 128  | 181-15308 | 181-15308   | 123  | 181-44009 | 181-44009   | 121  |
| 181-00550 | 181-00550   | 123  | 181-00637 | 181-00637   | 127  | 181-15400 | 181-15400   | 123  | 181-44015 | 181-44015   | 121  |
| 181-00552 | 181-00552   | 122  | 181-00638 | 181-00638   | 128  | 181-15404 | 181-15404   | 123  | 181-44018 | 181-44018   | 121  |
| 181-00554 | 181-00554   | 123  | 181-00639 | 181-00639   | 128  | 181-15406 | 181-15406   | 123  | 181-44020 | 181-44020   | 126  |
| 181-00557 | 181-00557   | 125  | 181-00640 | 181-00640   | 128  | 181-15500 | 181-15500   | 117  | 181-44027 | 181-44027   | 126  |
| 181-00558 | 181-00558   | 125  | 181-00641 | 181-00641   | 128  | 181-15502 | 181-15502   | 117  | 181-44031 | 181-44031   | 126  |
| 181-00560 | 181-00560   | 126  | 181-00642 | 181-00642   | 128  | 181-15503 | 181-15503   | 117  | 181-44033 | 181-44033   | 126  |
| 181-00562 | 181-00562   | 126  | 181-00643 | 181-00643   | 128  | 181-15504 | 181-15504   | 117  | 181-44035 | 181-44035   | 126  |
| 181-00564 | 181-00564   | 122  | 181-00644 | 181-00644   | 128  | 181-15505 | 181-15505   | 123  | 181-45000 | 181-45000   | 121  |
| 181-00565 | 181-00565   | 122  | 181-00645 | 181-00645   | 129  | 181-15509 | 181-15509   | 123  | 181-45001 | 181-45001   | 121  |
| 181-00566 | 181-00566   | 122  | 181-00646 | 181-00646   | 129  | 181-15511 | 181-15511   | 123  | 181-45002 | 181-45002   | 126  |
| 181-00567 | 181-00567   | 122  | 181-00647 | 181-00647   | 129  | 181-15513 | 181-15513   | 123  | 181-45010 | 181-45010   | 126  |
| 181-00568 | 181-00568   | 122  | 181-00648 | 181-00648   | 129  | 181-15515 | 181-15515   | 123  | 181-45011 | 181-45011   | 126  |
| 181-00569 | 181-00569   | 122  | 181-00649 | 181-00649   | 130  | 181-21000 | 181-21000   | 118  | 181-45012 | 181-45012   | 126  |
| 181-00570 | 181-00570   | 122  | 181-00651 | 181-00651   | 130  | 181-21001 | 181-21001   | 118  | 181-45013 | 181-45013   | 126  |
| 181-00571 | 181-00571   | 122  | 181-00652 | 181-00652   | 130  | 181-21003 | 181-21003   | 118  | 181-64000 | 181-64000   | 121  |

| Part No.  | Article No. | Page | Part No.  | Article No. | Page | Part No.  | Article No. | Page     | Part No.  | Article No. | Page |
|-----------|-------------|------|-----------|-------------|------|-----------|-------------|----------|-----------|-------------|------|
| 181-64001 | 181-64001   | 121  | 1N9C      | 161-05003   | 138  | 553-50024 | 553-50024   | 208      | 557-00113 | 557-00113   | 227  |
| 181-84004 | 181-84004   | 121  | 1NFP0C    | 161-05004   | 138  | 553-50025 | 553-50025   | 208      | 558-00006 | 558-00006   | 204  |
| 181-84007 | 181-84007   | 121  | 1NFP9C    | 161-05013   | 138  | 553-50026 | 553-50026   | 208      | 558-00045 | 558-00045   | 190  |
| 181-90050 | 181-90050   | 115  | 1P9C      | 161-05015   | 138  | 553-50027 | 553-50027   | 208      | 558-00046 | 558-00046   | 190  |
| 181-91000 | 181-91000   | 115  | 2.5FRP0C  | 161-05016   | 138  | 553-50028 | 553-50028   | 208      | 558-00047 | 558-00047   | 190  |
| 181-91004 | 181-91004   | 115  | 2.5FRP9C  | 161-05017   | 138  | 553-50029 | 553-50029   | 208      | 558-00052 | 558-00052   | 190  |
| 181-91008 | 181-91008   | 115  | 2.5NOC    | 161-05018   | 138  | 553-50030 | 553-50030   | 208      | 558-00053 | 558-00053   | 190  |
| 181-91503 | 181-91503   | 115  | 2.5N9C    | 161-05019   | 138  | 553-50031 | 553-50031   | 208      | 558-00056 | 558-00056   | 190  |
| 181-91507 | 181-91507   | 115  | 2.5NFP0C  | 161-05024   | 138  | 553-50032 | 553-50032   | 208      | 558-00057 | 558-00057   | 190  |
| 181-91510 | 181-91510   | 115  | 2.5NFP9C  | 161-05027   | 138  | 553-50033 | 553-50033   | 208      | 558-00058 | 558-00058   | 190  |
| 181-92001 | 181-92001   | 115  | 2.5P9C    | 161-05028   | 138  | 553-50034 | 553-50034   | 208      | 558-00059 | 558-00059   | 190  |
| 181-92005 | 181-92005   | 115  | 201-20010 | 201-20010   | 135  | 553-50035 | 553-50035   | 208      | 558-00060 | 558-00060   | 188  |
| 181-92011 | 181-92011   | 115  | 2100CABLE | 557-00004   | 222  | 553-50036 | 553-50036   | 208      | 558-00061 | 558-00061   | 190  |
| 181-93003 | 181-93003   | 115  | 2100CARD  | 557-00008   | 222  | 553-50037 | 553-50037   | 208      | 558-00063 | 558-00063   | 190  |
| 181-93008 | 181-93008   | 115  | 2100OPEN  | 557-00005   | 222  | 553-50038 | 553-50038   | 208      | 558-00065 | 558-00065   | 188  |
| 181-93011 | 181-93011   | 115  | 211-60000 | 211-60000   | 175  | 553-50039 | 553-50039   | 208      | 558-00066 | 558-00066   | 188  |
| 181-94003 | 181-94003   | 115  | 211-60001 | 211-60001   | 175  | 553-50040 | 553-50040   | 208      | 558-00069 | 558-00069   | 190  |
| 181-94009 | 181-94009   | 115  | 211-60002 | 211-60002   | 175  | 553-50041 | 553-50041   | 208      | 558-00071 | 558-00071   | 190  |
| 181-94014 | 181-94014   | 115  | 211-60003 | 211-60003   | 175  | 553-50042 | 553-50042   | 208      | 558-00179 | 558-00179   | 190  |
| 181-96000 | 181-96000   | 115  | 211-60005 | 211-60005   | 175  | 553-50063 | 553-50063   | 207      | 558-00307 | 558-00307   | 204  |
| 181-96002 | 181-96002   | 115  | 211-60006 | 211-60006   | 175  | 553-50064 | 553-50064   | 207      | 558-00308 | 558-00308   | 204  |
| 184-11004 | 184-11004   | 127  | 211-60007 | 211-60007   | 175  | 553-50066 | 553-50066   | 208      | 558-00309 | 558-00309   | 204  |
| 184-11006 | 184-11006   | 127  | 211-60008 | 211-60008   | 175  | 553-50067 | 553-50067   | 207      | 558-00310 | 558-00310   | 204  |
| 184-11008 | 184-11008   | 127  | 211-60009 | 211-60009   | 175  | 553-50068 | 553-50068   | 207      | 558-00311 | 558-00311   | 204  |
| 184-11009 | 184-11009   | 127  | 211-60010 | 211-60010   | 175  | 553-50069 | 553-50069   | 207      | 558-00312 | 558-00312   | 204  |
| 184-11010 | 184-11010   | 127  | 211-60020 | 211-60020   | 175  | 553-50070 | 553-50070   | 207      | 558-00313 | 558-00313   | 204  |
| 184-11012 | 184-11012   | 127  | 211-60040 | 211-60040   | 175  | 553-50071 | 553-50071   | 207      | 558-00314 | 558-00314   | 204  |
| 184-12002 | 184-12002   | 127  | 211-60050 | 211-60050   | 175  | 553-50072 | 553-50072   | 207      | 558-00327 | 558-00327   | 231  |
| 184-12004 | 184-12004   | 127  | 211-60061 | 211-60061   | 175  | 553-50073 | 553-50073   | 207      | 558-00328 | 558-00328   | 231  |
| 184-12005 | 184-12005   | 127  | 211-60078 | 211-60078   | 175  | 553-50074 | 553-50074   | 207      | 558-00330 | 558-00330   | 231  |
| 184-12007 | 184-12007   | 127  | 211-60090 | 211-60090   | 175  | 553-50075 | 553-50075   | 207      | 558-00331 | 558-00331   | 231  |
| 184-13003 | 184-13003   | 127  | 211-60120 | 211-60120   | 175  | 553-50076 | 553-50076   | 207      | 558-00333 | 558-00333   | 231  |
| 184-13005 | 184-13005   | 127  | 211-60140 | 211-60140   | 175  | 553-50077 | 553-50077   | 207      | 558-00334 | 558-00334   | 231  |
| 184-13007 | 184-13007   | 127  | 211-60160 | 211-60160   | 175  | 553-50078 | 553-50078   | 207      | 558-00336 | 558-00336   | 204  |
| 184-14002 | 184-14002   | 127  | 2FRP0C    | 161-05029   | 138  | 553-50079 | 553-50079   | 207      | 558-00337 | 558-00337   | 204  |
| 184-14004 | 184-14004   | 127  | 2FRP9C    | 161-05030   | 138  | 553-50080 | 553-50080   | 207      | 558-00338 | 558-00338   | 204  |
| 184-15101 | 184-15101   | 127  | 2NOC      | 161-05032   | 138  | 553-50081 | 553-50081   | 207      | 558-00339 | 558-00339   | 204  |
| 184-15102 | 184-15102   | 127  | 2N9C      | 161-05034   | 138  | 553-50082 | 553-50082   | 208      | 558-00340 | 558-00340   | 204  |
| 184-15151 | 184-15151   | 128  | 2NFP0C    | 161-05036   | 138  | 553-50083 | 553-50083   | 208      | 558-00341 | 558-00341   | 204  |
| 184-15152 | 184-15152   | 128  | 2NFP9C    | 161-05043   | 138  | 553-50084 | 553-50084   | 208      | 558-00342 | 558-00342   | 204  |
| 184-15153 | 184-15153   | 128  | 2P9C      | 161-05047   | 138  | 553-50085 | 553-50085   | 208      | 558-00343 | 558-00343   | 204  |
| 184-15155 | 184-15155   | 128  | 3FRP0C    | 161-05048   | 138  | 553-50086 | 553-50086   | 208      | 558-00344 | 558-00344   | 204  |
| 184-15201 | 184-15201   | 128  | 3FRP9C    | 161-05049   | 138  | 553-50087 | 553-50087   | 208      | 558-00345 | 558-00345   | 204  |
| 184-15202 | 184-15202   | 128  | 3NOC      | 161-05050   | 138  | 553-50088 | 553-50088   | 207      | 558-00346 | 558-00346   | 204  |
| 184-15205 | 184-15205   | 128  | 3N9C      | 161-05051   | 138  | 553-50089 | 553-50089   | 208      | 558-00350 | 558-00350   | 204  |
| 184-15206 | 184-15206   | 128  | 3NFP0C    | 161-05052   | 138  | 553-50176 | 553-50176   | 207      | 558-00351 | 558-00351   | 204  |
| 184-15301 | 184-15301   | 128  | 3NFP9C    | 161-05055   | 138  | 553-50177 | 553-50177   | 207      | 558-00370 | 558-00370   | 204  |
| 184-15302 | 184-15302   | 128  | 3P9C      | 161-05056   | 138  | 553-50192 | 553-50192   | 208      | 558-00374 | 558-00374   | 204  |
| 184-15304 | 184-15304   | 128  | 4FRP0C    | 161-05057   | 138  | 553-50209 | 553-50209   | 208      | 591-00076 | 591-00076   | 227  |
| 184-15401 | 184-15401   | 128  | 4FRP9C    | 161-05058   | 138  | 553-50225 | 553-50225   | 208      | 591-00231 | 591-00231   | 227  |
| 184-15403 | 184-15403   | 128  | 4NOC      | 161-05071   | 138  | 553-50226 | 553-50226   | 208      | 591-00232 | 591-00232   | 227  |
| 184-21002 | 184-21002   | 128  | 4N9C      | 161-05072   | 138  | 553-50227 | 553-50227   | 208      | 591-00233 | 591-00233   | 227  |
| 184-21003 | 184-21003   | 128  | 4NFP0C    | 161-05074   | 138  | 553-50231 | 553-50231   | 208      | 591-00243 | 591-00243   | 227  |
| 184-22003 | 184-22003   | 128  | 4NFP9C    | 161-05075   | 138  | 553-50232 | 553-50232   | 208      | 591-00244 | 591-00244   | 227  |
| 184-22005 | 184-22005   | 128  | 4P9C      | 161-05076   | 138  | 556-00035 | 556-00035   | 187      | 591-00251 | 591-00251   | 227  |
| 184-22008 | 184-22008   | 128  | 512REF    | 590-05121   | 232  | 556-00036 | 556-00036   | 187      | 591-00252 | 591-00252   | 227  |
| 184-23003 | 184-23003   | 129  | 514REF    | 590-05141   | 232  | 556-00037 | 556-00037   | 187      | 591-00259 | 591-00259   | 227  |
| 184-23004 | 184-23004   | 129  | 553-50001 | 553-50001   | 207  | 556-00038 | 556-00038   | 187      | 591-00260 | 591-00260   | 227  |
| 184-23006 | 184-23006   | 129  | 553-50002 | 553-50002   | 207  | 556-00039 | 556-00039   | 187      | 591-00261 | 591-00261   | 227  |
| 184-24003 | 184-24003   | 129  | 553-50003 | 553-50003   | 207  | 556-00042 | 556-00042   | 187      | 591-00263 | 591-00263   | 227  |
| 184-24004 | 184-24004   | 129  | 553-50004 | 553-50004   | 207  | 556-00189 | 556-00189   | 193      | 591-00264 | 591-00264   | 227  |
| 184-24007 | 184-24007   | 129  | 553-50005 | 553-50005   | 207  | 556-00190 | 556-00190   | 192      | 591-00265 | 591-00265   | 227  |
| 184-32001 | 184-32001   | 130  | 553-50006 | 553-50006   | 207  | 556-00230 | 556-00230   | 192      | 591-00278 | 591-00278   | 227  |
| 184-32004 | 184-32004   | 130  | 553-50007 | 553-50007   | 207  | 556-00231 | 556-00231   | 192      | 596-00183 | 596-00183   | 203  |
| 184-33001 | 184-33001   | 130  | 553-50008 | 553-50008   | 207  | 556-00236 | 556-00236   | 192      | 596-00184 | 596-00184   | 203  |
| 184-33002 | 184-33002   | 130  | 553-50009 | 553-50009   | 207  | 556-00430 | 556-00430   | 193      | 596-00185 | 596-00185   | 203  |
| 184-33004 | 184-33004   | 130  | 553-50010 | 553-50010   | 207  | 556-00431 | 556-00431   | 193      | 596-00189 | 596-00189   | 203  |
| 184-34001 | 184-34001   | 130  | 553-50011 | 553-50011   | 207  | 556-00432 | 556-00432   | 193      | 596-00190 | 596-00190   | 203  |
| 184-34003 | 184-34003   | 130  | 553-50012 | 553-50012   | 207  | 556-00433 | 556-00433   | 193      | 596-00191 | 596-00191   | 203  |
| 184-34005 | 184-34005   | 130  | 553-50013 | 553-50013   | 207  | 556-00434 | 556-00434   | 193      | 596-00192 | 596-00192   | 203  |
| 184-42001 | 184-42001   | 131  | 553-50014 | 553-50014   | 207  | 556-00460 | 556-00460   | 193      | 596-00193 | 596-00193   | 203  |
| 184-42003 | 184-42003   | 131  | 553-50015 | 553-50015   | 207  | 556-00461 | 556-00461   | 193      | 596-00194 | 596-00194   | 203  |
| 184-43001 | 184-43001   | 131  | 553-50016 | 553-50016   | 207  | 556-03065 | 556-03065   | 193      | 596-00195 | 596-00195   | 203  |
| 184-43003 | 184-43003   | 131  | 553-50017 | 553-50017   | 207  | 556-26006 | 556-26006   | 210      | 596-00196 | 596-00196   | 203  |
| 184-44001 | 184-44001   | 131  | 553-50018 | 553-50018   | 207  | 556-26007 | 556-26007   | 210      | 596-00202 | 596-00202   | 202  |
| 184-44002 | 184-44002   | 131  | 553-50019 | 553-50019   | 207  | 556-26008 | 556-26008   | 210      | 596-00203 | 596-00203   | 231  |
| 184-44004 | 184-44004   | 131  | 553-50020 | 553-50020   | 207  | 556-26009 | 556-26009   | 210      | 596-00204 | 596-00204   | 231  |
| 1FRP0C    | 161-05000   | 138  | 553-50021 | 553-50021   | 207  | 557-00002 | 557-00002   | 222, 227 | 596-00206 | 596-00206   | 229  |
| 1FRP9C    | 161-05001   | 138  | 553-50022 | 553-50022   | 207  | 557-00003 | 557-00003   | 222, 227 | 596-00207 | 596-00207   | 229  |
| 1NOC      | 161-05002   | 138  | 553-50023 | 553-50023   | 208  | 557-00112 | 557-00112   | 227      | 596-00208 | 596-00208   | 229  |

| Part No.      | Article No. | Page   | Part No.    | Article No. | Page | Part No.      | Article No. | Page | Part No.       | Article No. | Page |
|---------------|-------------|--------|-------------|-------------|------|---------------|-------------|------|----------------|-------------|------|
| 596-00231     | 596-00231   | 228    | ATS10266110 | 102-66110   | 89   | CTT20R9M4     | 112-51904   | 36   | GT.50X62P2     | 854-44342   | 73   |
| 596-00232     | 596-00232   | 228    | ATS10266209 | 102-66209   | 89   | CTT60R0HSC2   | 112-52112   | 36   | GT.50X63C2     | 854-44343   | 73   |
| 596-00233     | 596-00233   | 228    | ATS10266210 | 102-66210   | 89   | CTT60R0HSM4   | 112-52114   | 36   | GT.50X63P2     | 854-44344   | 73   |
| 596-00234     | 596-00234   | 228    | ATSTROLLEY  | 102-00030   | 89   | CTT60R9C2     | 112-52104   | 36   | GT.50X64C2     | 854-44345   | 73   |
| 596-00235     | 596-00235   | 228    | BC10        | 591-00076   | 222  | CTT60R9M4     | 112-52106   | 36   | GT.50X64P2     | 854-44346   | 73   |
| 596-00236     | 596-00236   | 228    | CSG         | 181-00001   | 112  | DCT110HIRC2   | 115-00033   | 37   | GT.50X65C2     | 854-44347   | 73   |
| 596-00237     | 596-00237   | 230    | CSW         | 181-00002   | 112  | DCT110HIRK2   | 115-31100   | 37   | GT.50X65P2     | 854-44348   | 73   |
| 596-00238     | 596-00238   | 230    | CTAM10C2    | 151-31101   | 95   | DCT90HIRC2    | 115-00034   | 37   | GT.50X66C2     | 854-44349   | 73   |
| 596-00239     | 596-00239   | 230    | CTAM10M4    | 151-00287   | 95   | DCT90HIRK2    | 115-30900   | 37   | GT.50X66P2     | 854-44350   | 73   |
| 596-00240     | 596-00240   | 230    | CTAM110C2   | 151-31103   | 95   | DSWS50HSH1    | 151-06501   | 107  | GT.50X6MP2V2   | 854-44352   | 75   |
| 596-00241     | 596-00241   | 230    | CTAM110M4   | 151-31106   | 95   | DSWS50HSH2    | 151-06502   | 107  | GT.50X80C2     | 854-44353   | 73   |
| 596-00242     | 596-00242   | 230    | CTAM20C2    | 151-31201   | 95   | ET330         | 904-00007   | 167  | GT.50X80C2W    | 854-44354   | 75   |
| 596-00243     | 596-00243   | 229    | CTAM20M4    | 151-31202   | 95   | ET660         | 904-00008   | 167  | GT.50X80P2     | 854-44355   | 73   |
| 596-00244     | 596-00244   | 229    | CTAM210C2   | 151-31203   | 95   | ETCW660       | 904-00010   | 167  | GT.50X80P2W    | 854-44356   | 75   |
| 596-00245     | 596-00245   | 229    | CTAM210M4   | 151-31205   | 95   | ETS210        | 904-00006   | 167  | GT.50X82C2     | 854-44357   | 73   |
| 596-00246     | 596-00246   | 229    | CTAP10C2    | 151-00289   | 95   | ETST661       | 904-00011   | 167  | GT.50X82P2     | 854-44358   | 73   |
| 596-00247     | 596-00247   | 229    | CTAP10M4    | 151-00290   | 95   | ETST6610      | 904-00012   | 167  | GT.50X83C2     | 854-44359   | 73   |
| 596-00249     | 596-00249   | 229    | CTAP110C2   | 151-30100   | 95   | ETST662       | 904-00014   | 167  | GT.50X83P2     | 854-44360   | 73   |
| 596-00251     | 596-00251   | 229    | CTAP110M4   | 151-00288   | 95   | ETST663       | 904-00016   | 167  | GT.50X84C2     | 854-44361   | 73   |
| 596-00252     | 596-00252   | 230    | CTAP20C2    | 151-00291   | 95   | ETST664       | 904-00018   | 167  | GT.50X84P2     | 854-44362   | 73   |
| 596-00253     | 596-00253   | 230    | CTAP20M4    | 151-00292   | 95   | ETST665       | 904-00020   | 167  | GT.50X85C2     | 854-44363   | 73   |
| 596-00255     | 596-00255   | 229    | CTAP210C2   | 151-30200   | 95   | ETST666       | 904-00022   | 167  | GT.50X85P2     | 854-44364   | 73   |
| 596-00257     | 596-00257   | 228    | CTAP210M4   | 151-00308   | 95   | ETST667       | 904-00024   | 167  | GT.50X86C2     | 854-44365   | 73   |
| 596-00258     | 596-00258   | 228    | CTM00C2     | 151-30300   | 104  | ETST668       | 904-00026   | 167  | GT.50X86P2     | 854-44366   | 73   |
| 596-00323     | 596-00323   | 202    | CTM00M4     | 151-30301   | 104  | FC1.2AH4      | 154-00012   | 180  | GT.50X8MP2V2   | 854-44368   | 75   |
| 596-00371     | 596-00371   | 231    | CTM010C2    | 151-30303   | 104  | FC1.2AK2      | 154-00013   | 180  | GT.75X150C2    | 854-44369   | 74   |
| 596-00375     | 596-00375   | 231    | CTM010M4    | 151-30305   | 104  | FC1.2H4       | 154-00010   | 180  | GT.75X150P2    | 854-44371   | 74   |
| 596-00376     | 596-00376   | 231    | CTM10C2     | 151-30400   | 104  | FC1.2K2       | 154-00011   | 180  | GT.75X152C2    | 854-44373   | 74   |
| 596-00377     | 596-00377   | 231    | CTM10M4     | 151-30402   | 104  | FC140         | 148-00017   | 181  | GT.75X152P2    | 854-44374   | 74   |
| 596-00378     | 596-00378   | 231    | CTM110C2    | 151-30404   | 104  | FC1410        | 148-00018   | 181  | GT.75X153C2    | 854-44375   | 74   |
| 596-00379     | 596-00379   | 231    | CTM110M4    | 151-30406   | 104  | FC2.2AH4      | 154-00016   | 180  | GT.75X153P2    | 854-44376   | 74   |
| 596-00380     | 596-00380   | 198    | CTM20C2     | 151-30500   | 104  | FC2.2AK2      | 154-00017   | 180  | GT.75X154C2    | 854-44378   | 74   |
| 596-00381     | 596-00381   | 198    | CTM20M4     | 151-30501   | 104  | FC2.2H4       | 154-00014   | 180  | GT.75X154P2    | 854-44377   | 74   |
| 596-00382     | 596-00382   | 198    | CTM210C2    | 151-30504   | 104  | FC2.2K2       | 154-00015   | 180  | GT.75X155C2    | 854-44379   | 74   |
| 596-00383     | 596-00383   | 198    | CTM210M4    | 151-30506   | 104  | FHA           | 251-21109   | 165  | GT.75X155P2    | 854-44380   | 74   |
| 596-00386     | 596-00386   | 231    | CTM30C2     | 151-30600   | 104  | FHB           | 251-21209   | 165  | GT.75X156C2    | 854-44381   | 74   |
| 596-00387     | 596-00387   | 231    | CTM30M4     | 151-30603   | 104  | FHC           | 251-21309   | 165  | GT.75X156P2    | 854-44382   | 74   |
| 596-00388     | 596-00388   | 231    | CTM310C2    | 151-30605   | 104  | FHD           | 251-21409   | 165  | GT.75X1800     | 854-44384   | 74   |
| 596-00389     | 596-00389   | 231    | CTM310M4    | 151-30607   | 104  | FHE           | 251-21509   | 165  | GT.75X1800V    | 854-44386   | 75   |
| 596-00404     | 596-00404   | 202    | CTM40C2     | 151-30700   | 104  | FHF           | 251-21609   | 165  | GT.75X1802     | 854-44388   | 74   |
| 596-00405     | 596-00405   | 202    | CTM40M4     | 151-30702   | 104  | FHG           | 251-21709   | 165  | GT.75X1803     | 854-44389   | 74   |
| 596-00406     | 596-00406   | 202    | CTM410C2    | 151-30703   | 104  | FHH           | 251-21809   | 165  | GT.75X1804     | 854-44390   | 74   |
| 596-00407     | 596-00407   | 202    | CTM410M4    | 151-30705   | 104  | FPA           | 251-10109   | 165  | GT.75X1805     | 854-44391   | 74   |
| 596-00412     | 596-00412   | 202    | CTN10       | 169-60000   | 141  | FPA4          | 251-10009   | 165  | GT.75X1806     | 854-44392   | 74   |
| 596-00413     | 596-00413   | 202    | CTN10STD    | 169-60001   | 141  | FPB           | 251-10209   | 165  | GT.75X180MV2   | 854-44394   | 75   |
| 596-00414     | 596-00414   | 202    | CTN1120     | 169-60002   | 141  | FPC           | 251-10309   | 165  | GT.75X6000     | 854-44395   | 74   |
| 596-00415     | 596-00415   | 202    | CTN1120STD  | 169-60003   | 141  | FPD           | 251-10409   | 165  | GT.75X9000     | 854-44396   | 74   |
| 596-00417     | 596-00417   | 202    | CTN1140     | 169-60004   | 141  | FPE           | 251-10509   | 165  | GT.75X9004     | 854-44397   | 74   |
| 596-00418     | 596-00418   | 203    | CTN1140STD  | 169-60005   | 141  | FPF           | 251-10609   | 165  | HDM190HIRC2    | 151-00134   | 98   |
| 596-00419     | 596-00419   | 203    | CTN120      | 169-60006   | 141  | FPG           | 251-10709   | 165  | HDM190HIRH4    | 151-00436   | 98   |
| 596-00420     | 596-00420   | 203    | CTN120STD   | 169-60007   | 141  | FPH           | 251-10809   | 165  | HDM250HIRC2    | 151-00437   | 98   |
| 596-00424     | 596-00424   | 231    | CTN140      | 169-60008   | 141  | FTA           | 251-30109   | 166  | HDM250HIRH4    | 151-00438   | 98   |
| 596-00425     | 596-00425   | 231    | CTN140STD   | 169-60009   | 141  | FTB           | 251-30209   | 166  | HDM3120HIRC2   | 151-00439   | 98   |
| 596-00426     | 596-00426   | 231    | CTN20STD    | 169-60011   | 141  | FTC           | 251-30309   | 166  | HDM3120HIRH4   | 151-00440   | 98   |
| 596-00427     | 596-00427   | 231    | CTN340      | 169-60012   | 141  | FTD           | 251-30409   | 166  | HDM320BHHSUVC2 | 151-00444   | 99   |
| 596-00500     | 596-00500   | 202    | CTN340STD   | 169-60013   | 141  | FTE           | 251-30509   | 166  | HDM320BHHSUVH4 | 151-07000   | 99   |
| 596-00503     | 596-00503   | 202    | CTN380      | 169-60014   | 141  | FTF           | 251-30609   | 166  | HDM321HHHSUVC2 | 151-00441   | 98   |
| 596-00504     | 596-00504   | 202    | CTN380STD   | 169-60015   | 141  | FTG           | 251-30709   | 166  | HDM321HHHSUVH4 | 151-07100   | 98   |
| 596-00507     | 596-00507   | 202    | CTN580      | 169-60016   | 141  | FTH           | 251-30809   | 166  | HDM400BHHSUVC2 | 151-00445   | 99   |
| 5FRP0C        | 161-05084   | 138    | CTN580STD   | 169-60017   | 141  | GT.375X60C2   | 854-44316   | 73   | HDM400BHHSUVH4 | 151-07200   | 99   |
| 5FRP9C        | 161-05077   | 138    | CTP10       | 169-60500   | 141  | GT.50X110C2   | 854-44317   | 74   | HDM401HHHSUVC2 | 151-00442   | 98   |
| 5NOC          | 161-05078   | 138    | CTP10STD    | 169-60501   | 141  | GT.50X110C2W  | 854-44319   | 75   | HDM401HHHSUVH4 | 151-07300   | 98   |
| 5N9C          | 161-05085   | 138    | CTP1120     | 169-60502   | 141  | GT.50X110P2   | 854-44320   | 74   | HDM500BHHSUVC2 | 151-00446   | 99   |
| 5NFP0C        | 161-05079   | 138    | CTP1120STD  | 169-60503   | 141  | GT.50X110P2W  | 854-44321   | 75   | HDM500BHHSUVH4 | 151-07400   | 99   |
| 5NFP9C        | 161-05080   | 138    | CTP1140     | 169-60504   | 141  | GT.50X112C2   | 854-44322   | 74   | HDM501HHHSUVC2 | 151-00443   | 98   |
| 5P9C          | 161-05081   | 138    | CTP1140STD  | 169-60505   | 141  | GT.50X112P2   | 854-44323   | 74   | HDM501HHHSUVH4 | 151-07500   | 98   |
| 904-00284     | 904-00284   | 103    | CTP120      | 169-60506   | 141  | GT.50X113C2   | 854-44324   | 74   | HH-20          | 120-00080   | 87   |
| 904-00295     | 904-00295   | 113    | CTP120STD   | 169-60507   | 141  | GT.50X113P2   | 854-44325   | 74   | HH-DTH         | 557-00075   | 222  |
| 904-00296     | 904-00296   | 113    | CTP140      | 169-60508   | 141  | GT.50X114C2   | 854-44326   | 74   | HH-ST          | 557-00092   | 222  |
| 904-00297     | 904-00297   | 113    | CTP140STD   | 169-60509   | 141  | GT.50X114P2   | 854-44327   | 74   | HHIGR          | 557-00009   | 222  |
| ASNP2-22      | 191-02220   | 170    | CTP20STD    | 169-60511   | 141  | GT.50X115C2   | 854-44328   | 74   | HT2100         | 557-00085   | 222  |
| ASNP24-70     | 191-24700   | 170    | CTP340      | 169-60512   | 141  | GT.50X115P2   | 854-44329   | 74   | IT18FLOC2      | 111-81910   | 33   |
| AT2000        | 120-00000   | 82, 83 | CTP340STD   | 169-60513   | 141  | GT.50X116C2   | 854-44330   | 74   | IT18FLOL4      | 111-81903   | 33   |
| AT2060        | 130-00000   | 82, 84 | CTP380      | 169-60514   | 141  | GT.50X116P2   | 854-44331   | 74   | IT18FL9C2      | 111-81919   | 33   |
| AT2BENCHMOUNT | 120-00040   | 85     | CTP380STD   | 169-60515   | 141  | GT.50X12MP2V2 | 854-44334   | 75   | IT18FL9L4      | 111-81907   | 33   |
| ATS10200000   | 102-00000   | 82, 89 | CTP580      | 169-60516   | 141  | GT.50X60C2    | 854-44336   | 73   | IT18ROC2       | 111-81801   | 33   |
| ATS10200010   | 102-00010   | 89     | CTP580STD   | 169-60517   | 141  | GT.50X60C2W   | 854-44338   | 75   | IT18ROL4       | 111-81803   | 33   |
| ATS10200040   | 102-00040   | 89     | CTT20R0HSC2 | 112-51905   | 36   | GT.50X60P2    | 854-44339   | 73   | IT18R9C2       | 111-81819   | 33   |
| ATS10200050   | 102-00050   | 89     | CTT20R0HSM4 | 112-51960   | 36   | GT.50X60P2W   | 854-44340   | 75   | IT18R9L4       | 111-81808   | 33   |
| ATS10266109   | 102-66109   | 89     | CTT20R9C2   | 112-51919   | 36   | GT.50X62C2    | 854-44341   | 73   | IT50L9C2       | 111-85319   | 33   |

| Part No.   | Article No. | Page | Part No.       | Article No. | Page   | Part No.       | Article No. | Page | Part No.      | Article No. | Page |
|------------|-------------|------|----------------|-------------|--------|----------------|-------------|------|---------------|-------------|------|
| IT50L9M4   | 111-85306   | 33   | MBT20H         | 111-94209   | 26     | PBM0C2         | 151-00228   | 94   | SNP1.25GHS0C2 | 190-00029   | 171  |
| IT50R0C2   | 111-85011   | 33   | MBT20H-S       | 111-94208   | 25     | PBM0M4         | 151-00229   | 94   | SNP1.25GHS0M4 | 190-00030   | 171  |
| IT50R0M4   | 111-85013   | 33   | MBT20S         | 111-93209   | 26     | PBM10C2        | 151-00230   | 94   | SNP1.510C2    | 190-00033   | 173  |
| IT50R9C2   | 111-85019   | 33   | MBT20S-S       | 111-93208   | 25     | PBM10M4        | 151-00231   | 94   | SNP1.510M4    | 190-00034   | 173  |
| IT50R9M4   | 111-85020   | 33   | MBT20UH        | 111-01302   | 26     | PC15FT7        | 151-14303   | 72   | SNP1.5GHS0C2  | 190-00251   | 171  |
| IT50RD0K2  | 111-85201   | 33   | MBT20XH        | 111-95209   | 26     | PHSNP2-36      | 191-00010   | 170  | SNP1.5GHS0M4  | 190-00035   | 171  |
| IT50RD9K2  | 111-85219   | 33   | MBT20XHS       | 111-95208   | 26     | PHSNP38-100    | 191-00012   | 170  | SNP10010X2    | 190-00052   | 174  |
| IT50RT0K2  | 111-85100   | 33   | MBT27H         | 111-94279   | 26     | PR1            | 181-00139   | 112  | SNP100GHS0X2  | 192-11000   | 172  |
| IT50RT9K2  | 111-85119   | 33   | MBT27H-S       | 111-94278   | 25     | PRT1           | 182-00001   | 112  | SNP1010C2     | 190-00045   | 173  |
| LKCRF19C2  | 151-27000   | 93   | MBT27S         | 111-93279   | 26     | PSNP2-22       | 191-00014   | 170  | SNP1010M4     | 190-00046   | 173  |
| LKCRF19H4  | 151-27009   | 93   | MBT27S-S       | 111-93278   | 25     | PSNP24-70      | 191-00019   | 170  | SNP10110X2    | 190-00250   | 174  |
| LPM25      | 151-01122   | 100  | MBT27UH        | 111-01303   | 26     | QS101          | 105-00000   | 90   | SNP101GHS0X2  | 190-00053   | 172  |
| LTM2500C2  | 151-00358   | 97   | MBT27XH        | 111-95279   | 26     | QTIE9          | 105-00006   | 90   | SNP10GHS0C2   | 192-10100   | 171  |
| LTM2500H4  | 151-00293   | 97   | MBT27XHS       | 111-95278   | 26     | QTIE0HS        | 105-00001   | 90   | SNP10GHS0M4   | 190-00043   | 171  |
| MB10C2     | 151-00295   | 93   | MBT33H         | 111-94339   | 26     | RB14L4         | 151-00506   | 178  | SNP110C2      | 190-00022   | 173  |
| MB10M4     | 151-00296   | 93   | MBT33H-S       | 111-94338   | 25     | RB5H4          | 151-14005   | 178  | SNP110M4      | 190-00023   | 173  |
| MB19C2     | 151-28119   | 93   | MBT33S         | 111-93339   | 26     | RB8L4          | 151-13608   | 178  | SNP12A10C2    | 190-00252   | 173  |
| MB19M4     | 151-28101   | 93   | MBT33S-S       | 111-93338   | 25     | REL50L0C2      | 115-00600   | 29   | SNP12A10M4    | 190-00253   | 173  |
| MB2.50C2   | 151-00285   | 91   | MBT33UH        | 111-01304   | 26     | REL50L0L4      | 115-00602   | 29   | SNP12AGHS0C2  | 190-00254   | 171  |
| MB2.50M4   | 151-00286   | 91   | MBT33XH        | 111-95339   | 26     | REL50L9C2      | 115-00605   | 29   | SNP12AGHS0M4  | 190-00255   | 171  |
| MB2.510C2  | 151-28901   | 91   | MBT33XHS       | 111-95338   | 26     | REL50L9L4      | 115-00607   | 29   | SNP14A10C2    | 190-00302   | 173  |
| MB2.510M4  | 151-28902   | 91   | MBT43UH        | 111-01305   | 26     | REL50R0C2      | 115-00500   | 29   | SNP14A10M4    | 190-00303   | 173  |
| MB2.5A0C2  | 151-29000   | 92   | MBT49UH        | 111-01306   | 26     | REL50R0L4      | 115-00502   | 29   | SNP14AGHS0C2  | 190-00300   | 171  |
| MB2.5A0M4  | 151-29001   | 92   | MBT5S          | 111-93059   | 26     | REL50R9C2      | 115-00503   | 29   | SNP14AGHS0M4  | 190-00301   | 171  |
| MB2.5A10C2 | 151-29002   | 92   | MBT5S-S        | 111-93058   | 25     | REL50R9L4      | 115-00505   | 29   | SNP1610C2     | 190-00077   | 173  |
| MB2.5A10M4 | 151-00298   | 92   | MBT8H          | 111-94089   | 26     | REZ200.NB3P    | 115-40200   | 29   | SNP1610M4     | 190-00079   | 173  |
| MB20C2     | 151-28210   | 93   | MBT8H-S        | 111-94088   | 25     | REZ300.NB3P    | 115-40300   | 29   | SNP16GHS0C2   | 192-10160   | 171  |
| MB20M4     | 151-28202   | 93   | MBT8S          | 111-93089   | 26     | RO175          | 590-01750   | 232  | SNP16GHS0M4   | 190-00076   | 171  |
| MB29C2     | 151-00227   | 93   | MBT8S-S        | 111-93088   | 25     | RO175WP        | 590-10000   | 232  | SNP18A10C2    | 181-00256   | 173  |
| MB29M4     | 151-00297   | 93   | MK7HT          | 110-07000   | 77, 78 | RO512          | 590-05120   | 232  | SNP18A10M4    | 190-00257   | 173  |
| MB30C2     | 151-00136   | 91   | MK7P           | 110-07101   | 80     | RO514          | 590-05140   | 232  | SNP18AGHS0C2  | 190-00258   | 171  |
| MB30M4     | 151-28301   | 91   | MK7P-342       | 110-07111   | 80     | RT150LEPOX2    | 115-00038   | 30   | SNP18AGHS0M4  | 190-00259   | 171  |
| MB310C2    | 151-28302   | 91   | MK9            | 110-09500   | 77     | RT150MEPOX2    | 115-00037   | 30   | SNP1910C2     | 190-00094   | 174  |
| MB310M4    | 151-28305   | 91   | MK9-221        | 110-00221   | 77     | RT150REPOX2    | 115-00036   | 30   | SNP1910M4     | 190-00095   | 174  |
| MB3A0AC2   | 151-28711   | 92   | MK9BLADEKIT    | 110-00220   | 77     | RT250I0X2      | 115-41401   | 30   | SNP19GHS0C2   | 190-00090   | 172  |
| MB3A0AH4   | 151-28709   | 92   | MK9HT          | 110-09000   | 77     | RT250I9X2      | 131-75219   | 30   | SNP19GHS0M4   | 190-00093   | 172  |
| MB3A0C2    | 151-28710   | 92   | MK9P           | 110-09101   | 81     | RT250L0X2      | 115-41500   | 30   | SNP1GHS0C2    | 192-10010   | 171  |
| MB3A0M4    | 151-28713   | 92   | MK9P-109       | 110-09111   | 81     | RT250L9X2      | 131-75419   | 30   | SNP1GHS0M4    | 190-00019   | 171  |
| MB3A10A2C2 | 151-00331   | 92   | MK9PUA         | 110-09112   | 81     | RT250M0X2      | 131-75610   | 30   | SNP210C2      | 190-00101   | 173  |
| MB3A10A2H4 | 151-28717   | 92   | MK9RE          | 110-09800   | 77     | RT250M9X2      | 131-75619   | 30   | SNP210M4      | 190-00102   | 173  |
| MB3A10C2   | 151-28718   | 92   | MK9REF         | 110-09600   | 77     | RT250R0X2      | 115-41300   | 30   | SNP2210C2     | 190-00113   | 174  |
| MB3A10M4   | 151-28721   | 92   | MK9SS-114      | 110-05114   | 77     | RT250R9X2      | 131-75019   | 30   | SNP2210M4     | 190-00114   | 174  |
| MB40C2     | 151-00320   | 91   | MK9SST         | 110-95000   | 77     | RT250S0X2      | 115-48100   | 30   | SNP22GHS0C2   | 192-10220   | 172  |
| MB40H4     | 151-28801   | 91   | MKPCOHOSE      | 110-09005   | 81     | RT250S9X2      | 131-75819   | 30   | SNP22GHS0M4   | 190-00111   | 172  |
| MB410C2    | 151-28802   | 91   | MMB.50C2       | 151-00116   | 97     | RT250L0X2      | 131-75510   | 30   | SNP2410C2     | 190-00121   | 174  |
| MB410H4    | 151-00319   | 91   | MMB.50M4       | 151-30001   | 97     | RT250X19X2     | 131-75519   | 30   | SNP2410H4     | 190-00122   | 174  |
| MB4A0A2C2  | 151-28402   | 92   | MMB00C2        | 151-29800   | 97     | RT255M0HIRX2   | 115-01400   | 32   | SNP24GHS0C2   | 192-10240   | 172  |
| MB4A0A2H4  | 151-28405   | 92   | MMB00M4        | 151-00325   | 97     | RT255R0HIRX2   | 115-01300   | 32   | SNP24GHS0H4   | 190-00119   | 172  |
| MB4A0C2    | 151-28403   | 92   | MMB10C2        | 151-00326   | 97     | RT255S0HIRX2   | 115-01200   | 32   | SNP2810C2     | 190-00124   | 174  |
| MB4A0H4    | 151-28406   | 92   | MMB10H4        | 151-00327   | 97     | RT40R0C2       | 115-06200   | 28   | SNP2810H4     | 190-00125   | 174  |
| MB4A10A2C2 | 151-28420   | 92   | MP1M3.NN3P     | 154-00000   | 96     | RT40R0M4       | 115-06202   | 28   | SNP28GHS0C2   | 190-00127   | 172  |
| MB4A10A2H4 | 151-00322   | 92   | MP1M5.NN3P     | 154-00100   | 96     | RT40R9C2       | 115-06219   | 28   | SNP28GHS0H4   | 190-00128   | 172  |
| MB4A10C2   | 151-28421   | 92   | MP2M3.NN3P     | 151-24219   | 96     | RT40R9M4       | 115-06204   | 28   | SNP2GHS0C2    | 192-10020   | 171  |
| MB4A10H4   | 151-00321   | 92   | MP2M5.NN3P     | 154-00300   | 96     | RT50L0C2       | 115-00039   | 28   | SNP2GHS0M4    | 190-00098   | 171  |
| MB4SH0C2   | 151-29100   | 91   | MP3M3.NN3P     | 151-24319   | 96     | RT50L0M4       | 115-06101   | 28   | SNP310C2      | 190-00135   | 173  |
| MB4SH0H4   | 151-29101   | 91   | MP3M5.NN3P     | 154-00500   | 96     | RT50L9C2       | 115-06102   | 28   | SNP310M4      | 190-00136   | 173  |
| MB4SH10C2  | 151-29104   | 91   | MP4M3.NN3P     | 151-24419   | 96     | RT50L9M4       | 115-06104   | 28   | SNP3210H4     | 190-00143   | 174  |
| MB4SH10H4  | 151-00323   | 91   | MP4M5.NN3P     | 154-00700   | 96     | RT50S0C2       | 115-06300   | 28   | SNP3210K2     | 190-00142   | 174  |
| MB4SHA0C2  | 151-29200   | 92   | MP5M3.NN3P     | 151-24519   | 96     | RT50S0M4       | 115-00035   | 28   | SNP32GHS0H4   | 190-00140   | 172  |
| MB4SHA10C2 | 151-29203   | 92   | MP5M5.NN3P     | 154-00900   | 96     | RT50S9C2       | 115-06319   | 28   | SNP32GHS0K2   | 192-10320   | 172  |
| MB4SHA10H4 | 151-29206   | 92   | MSBT1200HIRHS1 | 151-29301   | 102    | RT50S9M4       | 115-06304   | 28   | SNP3310H4     | 190-00147   | 174  |
| MB50C2     | 151-28500   | 91   | MSMP5/109C2    | 154-01200   | 96     | RTT750HR.NX1P  | 115-00000   | 31   | SNP3310K2     | 190-00146   | 174  |
| MB50F4     | 151-28501   | 91   | MSMP5/69C2     | 154-00018   | 96     | RTT750HR.NX900 | 115-00001   | 31   | SNP33GHS0H4   | 190-00148   | 172  |
| MB510C2    | 151-00324   | 91   | MSMP6/109C2    | 154-01300   | 96     | S2CM258HIRHS1  | 151-29400   | 101  | SNP33GHS0K2   | 190-00244   | 172  |
| MB510F4    | 151-28504   | 91   | MSMP6/69C2     | 154-01302   | 96     | S2HM250HIRHS1  | 151-29403   | 101  | SNP3410H4     | 190-00152   | 174  |
| MB5A0A2C2  | 151-28600   | 92   | MSNP1-70       | 191-01700   | 170    | SAM83HIRHS1    | 151-29600   | 105  | SNP3410K2     | 190-00151   | 174  |
| MB5A0A2F4  | 151-28604   | 92   | NC110          | 148-00003   | 181    | SAOM820HIRHS1  | 151-29701   | 105  | SNP34GHS0H4   | 190-00150   | 172  |
| MB5A0C2    | 151-28602   | 92   | NC1110         | 148-00004   | 181    | SCG            | 181-00003   | 112  | SNP34GHS0K2   | 190-00149   | 172  |
| MB5A0F4    | 151-28605   | 92   | NC3.50         | 148-00005   | 181    | SCW            | 181-00004   | 112  | SNP3610H4     | 190-00156   | 174  |
| MB5A10A2C2 | 151-28607   | 92   | NC3.510        | 148-00006   | 181    | SDWR2X20K2     | 181-20201   | 111  | SNP3610K2     | 190-00157   | 174  |
| MB5A10A2F4 | 151-28610   | 92   | NC50           | 148-00007   | 181    | SDWR4X20K2     | 181-00158   | 111  | SNP36GHS0H4   | 190-00158   | 172  |
| MB5A10C2   | 151-28529   | 92   | NC510          | 148-00008   | 181    | SDWR4X40P2     | 181-00441   | 111  | SNP36GHS0K2   | 192-10360   | 172  |
| MB5A10F4   | 151-00427   | 92   | NC60           | 148-00009   | 181    | SLWR20C2       | 181-20021   | 111  | SNP3810H4     | 190-00245   | 174  |
| MBT14H     | 111-94149   | 26   | NC610          | 148-00010   | 181    | SLWR30C2       | 181-30031   | 111  | SNP3810K2     | 190-00162   | 174  |
| MBT14H-S   | 111-94148   | 25   | NC70           | 148-00011   | 181    | SLWR40C2       | 181-40041   | 111  | SNP38GHS0H4   | 190-00163   | 172  |
| MBT14S     | 111-93149   | 26   | NC710          | 148-00012   | 181    | SM100OUT       | 556-00165   | 190  | SNP38GHS0K2   | 192-10380   | 172  |
| MBT14S-S   | 111-93148   | 25   | NC80           | 148-00013   | 181    | SM1BK75MT      | 800-00004   | 166  | SNP3GHS0C2    | 190-00132   | 171  |
| MBT14UH    | 111-01301   | 26   | NC810          | 148-00014   | 181    | SMWWAXOUT      | 558-00227   | 190  | SNP3GHS0M4    | 190-00134   | 171  |
| MBT14XH    | 111-95149   | 26   | NC90           | 148-00015   | 181    | SNP1.2510C2    | 190-00027   | 173  | SNP410C2      | 190-00165   | 173  |
| MBT14XHS   | 111-95148   | 26   | NC910          | 148-00016   | 181    | SNP1.2510M4    | 190-00028   | 173  | SNP410M4      | 190-00170   | 173  |

| Part No.       | Article No. | Page   | Part No.     | Article No. | Page   | Part No.     | Article No. | Page   | Part No.    | Article No. | Page |
|----------------|-------------|--------|--------------|-------------|--------|--------------|-------------|--------|-------------|-------------|------|
| SNP42N10C2     | 190-00246   | 174    | T18L0C2      | 111-00401   | 9      | T30L9C2      | 111-03325   | 9      | T40R9C2     | 112-04019   | 10   |
| SNP42N10K2     | 190-00247   | 174    | T18LOHSC2    | 111-00403   | 16     | T30L9M4      | 111-03327   | 9, 210 | T40R9M4     | 111-04131   | 10   |
| SNP42NGHSOC2   | 191-00008   | 172    | T18LOHSM4    | 111-00404   | 16     | T30LLOC2     | 111-03501   | 9      | T50I0C2     | 111-00444   | 10   |
| SNP42NGHSOK2   | 191-00005   | 172    | T18LOM4      | 111-02015   | 9, 210 | T30LLOM4     | 111-03511   | 9, 210 | T50IOHSC2   | 111-05248   | 16   |
| SNP4GHSOC2     | 192-10040   | 171    | T18LOVOC2    | 111-02044   | 21     | T30LL9C2     | 111-03515   | 9      | T50IOHSM4   | 111-05251   | 16   |
| SNP4GHSOM4     | 190-00167   | 171    | T18L9C2      | 111-02189   | 9      | T30LL9M4     | 111-03517   | 9, 210 | T50IOM4     | 111-05216   | 10   |
| SNP5010C2      | 190-00248   | 174    | T18L9M4      | 111-02026   | 9, 210 | T30MR0C2     | 113-03010   | 45     | T50I0VOC2   | 111-05258   | 21   |
| SNP50GHSOC2    | 192-10500   | 172    | T18L9VOC2    | 111-02045   | 21     | T30MR0M4     | 113-03011   | 45     | T50I2C2UL   | 111-00518   | 23   |
| SNP6010C2      | 190-00196   | 174    | T18L9VOM4    | 111-02046   | 21     | T30MR9C2     | 113-03019   | 45     | T50I2M4UL   | 111-00519   | 23   |
| SNP60GHSOC2    | 190-00197   | 172    | T18MROC2     | 113-00022   | 45     | T30MR9M4     | 113-00036   | 45     | T50I9C2     | 112-05219   | 10   |
| SNP610C2       | 190-00187   | 173    | T18MR0M4     | 113-00024   | 45     | T30ROC2      | 111-00438   | 9      | T50I9C2UL   | 111-00516   | 23   |
| SNP610M4       | 190-00190   | 173    | T18MR9C2     | 113-00026   | 45     | T30R0HIRM4   | 111-03066   | 19     | T50I9M4     | 111-05230   | 10   |
| SNP6GHSOC2     | 192-10060   | 171    | T18MR9M4     | 113-00028   | 45     | T30R0HSC2    | 111-03067   | 16     | T50I9M4UL   | 111-00517   | 23   |
| SNP6GHSOM4     | 190-00186   | 171    | T18ROC2      | 111-00405   | 9      | T30R0HSM4    | 111-03068   | 16     | T50I9PPM4   | 111-05262   | 22   |
| SNP7010C2      | 190-00212   | 174    | T18ROHSC2    | 111-01905   | 16     | T30R0M4      | 111-03034   | 9, 210 | T50I9VOC2   | 111-05254   | 21   |
| SNP70GHSOC2    | 190-00209   | 172    | T18R0HSM4    | 111-00476   | 16     | T30R0UVC2    | 111-03075   | 19     | T50I9VOM4   | 111-05255   | 21   |
| SNP710C2       | 190-00204   | 173    | T18ROM4      | 111-01841   | 9, 210 | T30ROVOC2    | 111-03072   | 21     | T50IDHOC2   | 117-05362   | 35   |
| SNP710M4       | 190-00206   | 173    | T18R0PPC2    | 111-01917   | 22     | T30R10M4     | 116-03064   | 11     | T50IDHOM4   | 117-05300   | 35   |
| SNP7610C2      | 190-00217   | 174    | T18R0PPM4    | 111-01918   | 22     | T30R1C2      | 116-03011   | 11     | T50IDH9C2   | 117-05302   | 35   |
| SNP76GHSOC2    | 190-00215   | 172    | T18R0VOC2    | 111-01833   | 21     | T30R1M4      | 111-03038   | 11     | T50IDH9M4   | 117-05303   | 35   |
| SNP7GHSOC2     | 192-10070   | 171    | T18R10C2     | 116-01819   | 11     | T30R1STNLM4  | 111-01269   | 17     | T50LOC2     | 111-00445   | 10   |
| SNP7GHSOM4     | 190-00202   | 171    | T18R10M4     | 111-01892   | 11     | T30R2C2      | 116-03012   | 11     | T50LOHSC2   | 111-05470   | 16   |
| SNP8010C2      | 190-00231   | 174    | T18R1C2      | 116-01811   | 11     | T30R2M4      | 111-03056   | 11     | T50LOHSM4   | 111-05471   | 16   |
| SNP80GHSOC2    | 190-00229   | 172    | T18R1M4      | 111-01849   | 11     | T30R3C2      | 116-03013   | 11     | T50L0M4     | 111-00504   | 10   |
| SNP810C2       | 190-00224   | 173    | T18R1STNLM5  | 111-01836   | 17     | T30R3M4      | 111-03052   | 11     | T50L0UVC2   | 111-05477   | 19   |
| SNP810M4       | 190-00226   | 173    | T18R2C2      | 111-01880   | 11     | T30R4C2      | 116-03014   | 11     | T50L0VOC2   | 111-05475   | 21   |
| SNP8GHSOC2     | 192-10080   | 171    | T18R2C2UL    | 111-00510   | 23     | T30R4M4      | 111-03065   | 11     | T50L10C2    | 111-05466   | 12   |
| SNP8GHSOM4     | 190-00222   | 171    | T18R2HALC2   | 111-01900   | 23     | T30R5C2      | 116-03015   | 11     | T50L10M4    | 111-05465   | 12   |
| SNP9010C2      | 190-00233   | 174    | T18R2HALM4   | 111-01902   | 23     | T30R5M4      | 111-03041   | 11     | T50L1C2     | 111-05443   | 12   |
| SNP90GHSOC2    | 190-00249   | 172    | T18R2M4      | 111-01882   | 11     | T30R6C2      | 116-03016   | 11     | T50L1M4     | 111-05444   | 12   |
| SR2550HIHSUVX2 | 115-42002   | 32     | T18R2M4UL    | 111-00511   | 23     | T30R6M4      | 111-03036   | 11     | T50L1STNLM4 | 111-05423   | 17   |
| SR2550HIHSUVX2 | 115-42101   | 32     | T18R3C2      | 116-01813   | 11     | T30R7C2      | 116-03017   | 11     | T50L2C2     | 111-05457   | 12   |
| SRCI0500C2     | 151-00278   | 179    | T18R3M4      | 111-01877   | 11     | T30R7M4      | 111-03062   | 11     | T50L2C2UL   | 111-00522   | 23   |
| SRCI0750C2     | 151-00279   | 179    | T18R4C2      | 111-01896   | 11     | T30R8C2      | 116-03018   | 11     | T50L2M4     | 111-05458   | 12   |
| SRCI1000K2     | 151-00280   | 179    | T18R4M4      | 111-01898   | 11     | T30R8M4      | 111-03061   | 11     | T50L2M4UL   | 111-00523   | 23   |
| T120I0H4       | 111-12206   | 13     | T18R5C2      | 111-01853   | 11     | T30R9C2      | 112-03019   | 9      | T50L3C2     | 111-05451   | 12   |
| T120I0K2       | 111-12201   | 13     | T18R5M4      | 111-01855   | 11     | T30R9M4      | 111-03047   | 9, 210 | T50L3M4     | 111-05454   | 12   |
| T120I9H4       | 111-12213   | 13     | T18R6C2      | 111-01842   | 11     | T30R9PPC2    | 111-03017   | 22     | T50L4C2     | 111-05467   | 12   |
| T120I9K2       | 111-12211   | 13     | T18R6M4      | 111-01845   | 11     | T30R9VOC2    | 111-03073   | 21     | T50L4M4     | 111-05468   | 12   |
| T120L0K2       | 111-12405   | 13     | T18R7C2      | 116-01817   | 11     | T30R9VOM4    | 111-03074   | 21     | T50L5C2     | 111-05445   | 12   |
| T120L9K2       | 111-12419   | 13     | T18R7M4      | 111-01888   | 11     | T30RA30      | 103-00002   | 84     | T50L5M4     | 111-00502   | 12   |
| T120MROH4      | 113-00011   | 45     | T18R8C2      | 111-01857   | 11     | T30RA3000    | 103-00001   | 84     | T50L6C2     | 111-05431   | 12   |
| T120MROK2      | 113-12020   | 45     | T18R8M4      | 111-01859   | 11     | T30RA30000HS | 103-00004   | 84     | T50L6M4     | 111-05434   | 12   |
| T120MR9H4      | 113-00018   | 45     | T18R9C2      | 112-01819   | 9      | T30RA300HS   | 103-00003   | 84     | T50L7C2     | 111-05464   | 12   |
| T120MR9K2      | 113-12029   | 45     | T18R9C2UL    | 111-00508   | 23     | T30RSFOC2    | 126-00700   | 55     | T50L7M4     | 111-00503   | 12   |
| T120ROH4       | 111-12013   | 13     | T18R9M4      | 111-01872   | 9, 210 | T30RSFOM4    | 126-00702   | 55     | T50L8C2     | 111-05461   | 12   |
| T120ROHSH4     | 111-12058   | 16     | T18R9M4UL    | 111-00509   | 23     | T30RSFPC2    | 111-85803   | 55     | T50L8M4     | 111-05462   | 12   |
| T120ROHSK2     | 111-12061   | 16     | T18R9PPC2    | 111-01921   | 22     | T30RSF9M4    | 126-00704   | 55     | T50L9C2     | 112-05419   | 10   |
| T120ROK2       | 112-12060   | 13     | T18R9PPM4    | 111-01922   | 22     | T30XLOC2     | 111-02901   | 9      | T50L9C2UL   | 111-00520   | 23   |
| T120ROP4H4     | 111-12066   | 22     | T18R9VOC2    | 111-01834   | 21     | T30XL0M4     | 111-02903   | 9, 210 | T50L9M4     | 111-05449   | 10   |
| T120ROUVC2     | 111-00400   | 19     | T18R9VOM4    | 111-01835   | 21     | T30XL9C2     | 111-02900   | 9      | T50L9M4UL   | 111-00521   | 23   |
| T120R9H4       | 111-12036   | 13     | T18RA50      | 120-05001   | 83     | T30XL9M4     | 111-02907   | 9, 210 | T50L9VOC2   | 111-05438   | 21   |
| T120R9K2       | 112-12019   | 13     | T18RA5000    | 120-05004   | 83     | T3D01250M4   | 211-00131   | 176    | T50L9VOM4   | 111-05476   | 21   |
| T120R9PPK2     | 111-12067   | 22     | T18RA5000HR  | 120-05015   | 83     | T3D012510M4  | 211-00132   | 176    | T50LDHOC2   | 117-05400   | 35   |
| T120RDH0H4     | 117-05500   | 35     | T18RA5000HSW | 120-05007   | 83     | T3D01870M4   | 211-00133   | 176    | T50LDH0M4   | 117-05401   | 35   |
| T120RDH0K2     | 117-05501   | 35     | T18RA50HSW   | 120-05003   | 83     | T3D018710M4  | 211-00158   | 176    | T50LDH9C2   | 117-05402   | 35   |
| T120RSM0HIRK2  | 157-01300   | 59     | T18RVPM9M4   | 126-00603   | 56     | T3D02500M4   | 211-00134   | 176    | T50LDH9M4   | 117-05461   | 35   |
| T120S0H4       | 111-12808   | 13     | T18SOC2      | 111-02810   | 9      | T3D025010M4  | 211-00135   | 176    | T50MOC2     | 113-00038   | 45   |
| T120S0K2       | 111-12803   | 13     | T18S0HSM4    | 111-02815   | 16     | T3D03120M4   | 211-00136   | 176    | T50MIOM4    | 113-00031   | 45   |
| T120S9H4       | 111-12813   | 13     | T18S0M4      | 111-02811   | 9, 210 | T3D031210M4  | 211-00137   | 176    | T50MI9C2    | 113-00032   | 45   |
| T120S9K2       | 111-12819   | 13     | T18S9C2      | 111-02805   | 9      | T3D03750M4   | 211-00138   | 176    | T50MI9M4    | 113-00033   | 45   |
| T150           | 110-11150   | 78     | T18S9M4      | 111-02809   | 9, 210 | T3D037510M4  | 211-00139   | 176    | T50MLOC2    | 113-00007   | 45   |
| T150L0X2       | 111-15405   | 13     | T250         | 111-11250   | 78     | T3D04370M4   | 211-00146   | 176    | T50MLOM4    | 113-00035   | 45   |
| T150L9X2       | 111-15419   | 13     | T250I0X2     | 111-00507   | 15     | T3D043710M4  | 211-00140   | 176    | T50ML9C2    | 113-05419   | 45   |
| T150LLOX2      | 111-15700   | 13     | T250I9X2     | 111-25219   | 15     | T3D05000M4   | 211-00142   | 176    | T50ML9M4    | 113-05403   | 45   |
| T150LL9X2      | 111-15719   | 13     | T250L0X2     | 111-24601   | 15     | T3D050010M4  | 211-00141   | 176    | T50MROC2    | 113-05000   | 45   |
| T150M0X2       | 111-00124   | 13     | T250L9X2     | 111-00436   | 15     | T3D05620M4   | 211-00159   | 176    | T50MR0M4    | 113-05002   | 45   |
| T150M9X2       | 111-15619   | 13     | T250M0X2     | 111-25001   | 15     | T3D056210M4  | 211-00143   | 176    | T50MR9C2    | 113-05004   | 45   |
| T150R0X2       | 111-15200   | 13     | T250M9X2     | 111-25002   | 15     | T3D06250M4   | 211-00144   | 176    | T50MR9M4    | 113-05007   | 45   |
| T150R9X2       | 111-15203   | 13     | T250R0X2     | 111-24801   | 15     | T3D062510M4  | 211-00145   | 176    | T50ROC2     | 112-04878   | 10   |
| T150XL0X2      | 111-15500   | 13     | T250R9X2     | 111-24803   | 15     | T40I0C2      | 111-04600   | 10     | T50R0HIRM4  | 111-01566   | 19   |
| T150XL9X2      | 111-15519   | 13     | T250S0X2     | 111-24700   | 15     | T40I0M4      | 111-04604   | 10     | T50R0HSC2   | 111-04900   | 16   |
| T150XLLOX2     | 111-15300   | 13     | T250S9X2     | 111-24702   | 15     | T40I9C2      | 111-04609   | 10     | T50R0HSM4   | 111-04901   | 16   |
| T150XLL9X2     | 111-15304   | 13     | T250XL0X2    | 111-25200   | 15     | T40I9M4      | 111-04612   | 10     | T50R0M4     | 111-04846   | 10   |
| T18I0C2        | 111-02308   | 9      | T250XL9X2    | 111-00466   | 15     | T40LOC2      | 111-04301   | 10     | T50R0PPC2   | 111-04928   | 22   |
| T18I0HSM4      | 111-02305   | 16     | T255M0HIRX2  | 111-25300   | 14     | T40L0M4      | 111-04305   | 10     | T50R0PPM4   | 111-04929   | 22   |
| T18I0M4        | 111-02315   | 9, 210 | T255R0HIRX2  | 111-25400   | 14     | T40L9C2      | 111-04300   | 10     | T50R0UVC2   | 111-04192   | 19   |
| T18I9C2        | 111-02311   | 9      | T255S0HIRX2  | 111-25500   | 14     | T40L9M4      | 111-04311   | 10     | T50R0VOC2   | 111-04887   | 21   |
| T18I9M4        | 111-02322   | 9, 210 | T30L0C2      | 111-03313   | 9      | T40R0C2      | 112-04060   | 10     | T50R0VOM4   | 111-04908   | 21   |
| T18I9VOM2      | 111-02304   | 21     | T30L0M4      | 111-03315   | 9, 210 | T40R0M4      | 111-04122   | 10     | T50R10C2    | 116-05019   | 12   |

| Part No.      | Article No. | Page | Part No.        | Article No. | Page | Part No.         | Article No.       | Page | Part No.    | Article No. | Page |
|---------------|-------------|------|-----------------|-------------|------|------------------|-------------------|------|-------------|-------------|------|
| T50R10M4      | 111-04879   | 12   | T82-5           | 500-50820   | 232  | TAG69L-789       | 594-69789         | 212  | TELS-5K     | 111-32111   | 66   |
| T50R1C2       | 116-05011   | 12   | TAG10L-105      | 594-10105   | 215  | TAG69T1-336      | 598-00041         | 198  | TELS-H      | 111-31000   | 66   |
| T50R1M4       | 111-04852   | 12   | TAG10T2-100B    | 596-00002   | 196  | TAG6T1-100B      | 596-00016         | 196  | TELS-SPK2   | 111-32000   | 66   |
| T50R1STNLM5   | 111-04839   | 17   | TAG11J-450      | 593-11450   | 218  | TAG70T12-822     | 596-70822         | 199  | TELS-SPOOL  | 111-32106   | 66   |
| T50R2C2       | 116-05012   | 12   | TAG11L-789      | 594-11789   | 212  | TAG71T5-822      | 596-71822         | 199  | TM1STOC2    | 151-40100   | 94   |
| T50R2C2UL     | 111-00514   | 23   | TAG11T4-250     | 598-11250   | 198  | TAG72T1-795      | 598-72795         | 198  | TM1STOM4    | 151-40101   | 94   |
| T50R2HALC2    | 111-04895   | 23   | TAG11T4-822     | 596-11822   | 199  | TAG72T1-822      | 596-42822         | 199  | TM1ST10C2   | 151-40106   | 94   |
| T50R2HALM4    | 111-04897   | 23   | TAG11T4-822C    | 596-00003   | 199  | TAG73T1-795      | 598-73795         | 198  | TM1ST10M4   | 151-00328   | 94   |
| T50R2M4       | 111-04868   | 12   | TAG13J-450      | 593-13450   | 218  | TAG73T1-822      | 596-73822         | 199  | TS3003039   | 557-00006   | 222  |
| T50R2M4UL     | 111-00515   | 23   | TAG13L-789      | 594-13789   | 212  | TAG73T1-DTH      | 596-00038         | 199  | TS3003040   | 557-00007   | 222  |
| T50R3C2       | 116-05013   | 12   | TAG13T4-822     | 596-13822   | 199  | TAG74T2-PAP      | 596-00017         | 199  | TT100OUT    | 556-00104   | 193  |
| T50R3M4       | 111-04865   | 12   | TAG13T4-DTH     | 596-00033   | 199  | TAG75T1-795      | 598-75795         | 198  | TT100OUTSM  | 556-00169   | 192  |
| T50R4C2       | 116-05014   | 12   | TAG14J-450      | 593-14450   | 218  | TAG75T1-822      | 596-00019         | 199  | TT822OUT    | 556-00101   | 193  |
| T50R4M4       | 111-04892   | 12   | TAG14L-789      | 594-14789   | 212  | TAG76T1-795      | 598-76795         | 198  | TT822OUT2   | 556-00155   | 193  |
| T50R5C2       | 116-05015   | 12   | TAG15J-450      | 593-15450   | 218  | TAG78T1-795      | 598-78795         | 198  | TT822OUT3   | 556-00156   | 193  |
| T50R5M4       | 111-04854   | 12   | TAG15L-789      | 594-15789   | 212  | TAG79T1-795      | 598-79795         | 198  | TT822OUT4   | 556-00157   | 193  |
| T50R6C2       | 116-05016   | 12   | TAG15T3-250     | 598-15250   | 198  | TAG7T1-100B      | 596-00021         | 196  | TT822OUT5   | 556-00158   | 193  |
| T50R6M4       | 111-04849   | 12   | TAG15T3-795     | 598-15795   | 198  | TAG80T1-795      | 598-80795         | 198  | TT822OUT6   | 556-00159   | 193  |
| T50R7C2       | 116-05017   | 12   | TAG15T3-822     | 596-15822   | 199  | TAG81T8-822      | 596-00022         | 199  | TT822OUT7   | 556-00160   | 193  |
| T50R7M4       | 111-04877   | 12   | TAG15T3-822C10M | 596-00001   | 199  | TAG82T1-PAP      | 596-00024         | 199  | TT822OUT8   | 556-00161   | 193  |
| T50R8C2       | 111-04870   | 12   | TAG15T3-DTH     | 596-00035   | 199  | TAG82T2-822      | 596-82822         | 199  | TT822OUTSM  | 556-00145   | 192  |
| T50R8M4       | 111-04872   | 12   | TAG16T3-822     | 596-16822   | 199  | TAG82T2-PAP      | 596-00025         | 199  | TT822OUTSM2 | 556-00147   | 192  |
| T50R9C2       | 112-05019   | 10   | TAG16T3-DTH     | 596-00034   | 199  | TAG83T1-822      | 596-00023         | 199  | TT822OUTSM3 | 556-00148   | 192  |
| T50R9C2UL     | 111-00512   | 23   | TAG17T2-822     | 596-17822   | 199  | TAG84T3-822      | 596-84822         | 199  | TT822OUTSM4 | 556-00149   | 192  |
| T50R9M4       | 111-04862   | 10   | TAG19J-450      | 593-19450   | 218  | TAG96L-789       | 594-96789         | 212  | TT822OUTSM5 | 556-00150   | 192  |
| T50R9M4UL     | 111-00513   | 23   | TAG1L-105       | 594-01105   | 215  | TAG96T1-336      | 598-00026         | 198  | TT822OUTSM6 | 556-00151   | 192  |
| T50R9PPC2     | 111-04931   | 22   | TAG1T1-100B     | 596-00005   | 196  | TAG99T1-DTH      | 596-00037         | 199  | TT822OUTSM7 | 556-00152   | 192  |
| T50R9VOC2     | 111-04909   | 21   | TAG21J-450      | 593-21450   | 218  | TAG9J-994        | 593-09994         | 220  | TT822OUTSM8 | 556-00153   | 192  |
| T50R9VOM4     | 111-04911   | 21   | TAG21T6-250     | 598-21250   | 198  | TAG9L-105        | 594-09105         | 215  | TT900OUT    | 556-00106   | 193  |
| T50RDHOC2     | 117-05004   | 35   | TAG22J-994      | 593-22994   | 220  | TAG9T3-100B      | 596-00027         | 196  | TTDTHOUT    | 556-00144   | 193  |
| T50RDHOM4     | 117-05005   | 35   | TAG22T2-100B    | 596-00006   | 196  | TAGH10-100       | 557-00020         | 223  | TTDTHOUTSM  | 556-00143   | 192  |
| T50RDH9C2     | 117-05006   | 35   | TAG22T3-100B    | 596-00007   | 196  | TAGH1-100        | 557-00010         | 223  | TTHTOUT     | 556-00162   | 193  |
| T50RDH9M4     | 117-05008   | 35   | TAG24T1-100B    | 596-00008   | 196  | TAGH2-100        | 557-00011         | 223  | TTHTOUTSM   | 556-00163   | 192  |
| T50RS5.NB3P   | 111-07110   | 61   | TAG26J-994      | 593-26994   | 220  | TAGH22-100       | 557-00021         | 223  | TWT1        | 110-20003   | 78   |
| T50RSF0C2     | 126-01003   | 55   | TAG26L-105      | 594-26105   | 215  | TAGH24-100       | 557-00024         | 223  | TWT2        | 110-21060   | 78   |
| T50RSF0M4     | 126-01004   | 55   | TAG26T6-100B    | 596-00009   | 196  | TAGH25-100       | 557-00025         | 223  | TYHCT-250   | 598-00277   | 198  |
| T50RSF9C2     | 111-85789   | 55   | TAG27T1-795     | 598-27795   | 198  | TAGH26-100       | 557-00026         | 223  | WMBH        | 854-90272   | 115  |
| T50RSF9M4     | 126-01011   | 55   | TAG27T1-822     | 596-27822   | 199  | TAGH3-100        | 557-00013         | 223  | WMT0-9      | 598-00259   | 233  |
| T50RTM250HSM4 | 126-03501   | 51   | TAG27T1-822C    | 596-00043   | 199  | TAGH51-100       | 557-00027         | 223  | WMTD0-9     | 598-00256   | 233  |
| T50RTM25E8HM4 | 126-03504   | 51   | TAG27T2-DTH     | 596-00036   | 199  | TAGH6-100        | 557-00015         | 223  |             |             |      |
| T50S0C2       | 111-05806   | 10   | TAG28J-450      | 593-28450   | 218  | TAGH9-100        | 557-00018         | 223  |             |             |      |
| T50S0M4       | 111-05808   | 10   | TAG28T4-250     | 598-28250   | 198  | TAGH95-100       | 557-00028         | 223  |             |             |      |
| T50S9C2       | 111-05811   | 10   | TAG2L-105       | 594-02105   | 215  | TAGPHONE         | 593-00001212, 218 |      |             |             |      |
| T50S9M4       | 111-05813   | 10   | TAG2T5-100B     | 596-00010   | 196  | TAGPP1-788       | 594-01788         | 212  |             |             |      |
| T50SL6.NN6P   | 111-85469   | 56   | TAG33T1-DTH     | 596-00039   | 199  | TAGPP1-788C      | 594-02788         | 212  |             |             |      |
| T50SL7.NN6P   | 111-85479   | 56   | TAG35T2-250     | 598-00044   | 198  | TAGPP1J-108      | 593-01108         | 218  |             |             |      |
| T5D01250M4    | 211-00129   | 177  | TAG38T4-100B    | 596-00011   | 196  | TAGPP1T6-822     | 596-00028         | 199  |             |             |      |
| T5D012510M4   | 211-00117   | 177  | TAG3T3-100B     | 596-00013   | 196  | TAGPP1T6-82210M  | 596-00082         | 199  |             |             |      |
| T5D01780M4    | 211-00130   | 177  | TAG45L-789      | 594-45789   | 212  | TAGPP1T6-822C    | 596-00029         | 199  |             |             |      |
| T5D017810M4   | 211-00118   | 177  | TAG49L-105      | 594-49105   | 215  | TAGPP1T6-822C10M | 596-00030         | 199  |             |             |      |
| T5D02500M4    | 211-00123   | 177  | TAG50L-105      | 594-50105   | 215  | TAGPP2-788       | 594-00001         | 212  |             |             |      |
| T5D025010M4   | 211-00109   | 177  | TAG51J-994      | 593-51994   | 220  | TAGPP2-788C      | 594-00002         | 212  |             |             |      |
| T5D03120M4    | 211-00147   | 177  | TAG51L-105      | 594-51105   | 215  | TAGPP2T6-822     | 596-00046         | 199  |             |             |      |
| T5D031210M4   | 211-00110   | 177  | TAG51T3-100B    | 596-00014   | 196  | TAGPP2T6-822C    | 596-00047         | 199  |             |             |      |
| T5D03750M4    | 211-00124   | 177  | TAG52L-105      | 594-52105   | 215  | TAGPP3T4-822     | 596-00083         | 199  |             |             |      |
| T5D037510M4   | 211-00111   | 177  | TAG53L-788      | 594-53788   | 212  | TAGPP3T4-822C    | 596-00084         | 199  |             |             |      |
| T5D04370M4    | 211-00149   | 177  | TAG53T2-100B    | 596-00045   | 196  | TAS100LWS        | 148-00022         | 67   |             |             |      |
| T5D043710M4   | 211-00148   | 177  | TAG54L-788      | 594-54788   | 212  | TAS100MWS        | 111-98500         | 67   |             |             |      |
| T5D05000M4    | 211-00125   | 177  | TAG55L-788      | 594-55788   | 212  | TAS100RWS        | 111-98501         | 67   |             |             |      |
| T5D050010M4   | 211-00112   | 177  | TAG56J-108      | 593-56108   | 218  | TCWM1            | 598-00260         | 233  |             |             |      |
| T5D05620M4    | 211-00150   | 177  | TAG56L-788      | 594-56788   | 212  | TCWM10           | 598-00269         | 233  |             |             |      |
| T5D056210M4   | 211-00113   | 177  | TAG57J-108      | 593-57108   | 218  | TCWM11           | 598-00270         | 233  |             |             |      |
| T5D06250M4    | 211-00126   | 177  | TAG57L-788      | 594-57788   | 212  | TCWM12           | 598-00271         | 233  |             |             |      |
| T5D062510M4   | 211-00114   | 177  | TAG58L-788      | 594-58788   | 212  | TCWM13           | 598-00272         | 233  |             |             |      |
| T5D07500M4    | 211-00127   | 177  | TAG59J-108      | 593-59108   | 218  | TCWM14           | 598-00273         | 233  |             |             |      |
| T5D075010M4   | 211-00115   | 177  | TAG59L-788      | 594-59788   | 212  | TCWM15           | 598-00274         | 233  |             |             |      |
| T5D08750H4    | 211-00128   | 177  | TAG5J-994       | 593-05994   | 220  | TCWM16           | 598-00275         | 233  |             |             |      |
| T5D087510H4   | 211-00116   | 177  | TAG5L-105       | 594-05105   | 215  | TCWM2            | 598-00261         | 233  |             |             |      |
| T5D10000H4    | 211-00151   | 177  | TAG60L-788      | 594-60788   | 212  | TCWM3            | 598-00262         | 233  |             |             |      |
| T5D100010H4   | 211-00119   | 177  | TAG61L-788      | 594-61788   | 212  | TCWM4            | 598-00263         | 233  |             |             |      |
| T5D11250H4    | 211-00152   | 177  | TAG62L-788      | 594-62788   | 212  | TCWM5            | 598-00264         | 233  |             |             |      |
| T5D112510H4   | 211-00120   | 177  | TAG63L-105      | 594-63105   | 215  | TCWM6            | 598-00265         | 233  |             |             |      |
| T5D11870H4    | 211-00154   | 177  | TAG64J-994      | 593-64994   | 220  | TCWM7            | 598-00266         | 233  |             |             |      |
| T5D118710H4   | 211-00153   | 177  | TAG64L-105      | 594-64105   | 215  | TCWM8            | 598-00267         | 233  |             |             |      |
| T5D12500F4    | 211-00155   | 177  | TAG65J-108      | 593-65108   | 218  | TCWM9            | 598-00268         | 233  |             |             |      |
| T5D125010F4   | 211-00121   | 177  | TAG65L-105      | 594-65105   | 215  | TDNT             | 182-00002         | 113  |             |             |      |
| T5D13750F4    | 211-00156   | 177  | TAG66L-789      | 594-66789   | 212  | TELS-1           | 111-30000         | 66   |             |             |      |
| T5D137510F4   | 211-00157   | 177  | TAG67L-789      | 594-67789   | 212  | TELS-10K         | 111-32107         | 66   |             |             |      |
| T5D150010F4   | 211-00122   | 177  | TAG68L-789      | 594-68789   | 212  | TELS-13          | 111-32108         | 66   |             |             |      |
| T82-R         | 500-50822   | 232  | TAG68T1-336     | 598-00040   | 198  | TELS-27          | 111-32110         | 66   |             |             |      |

| Article No. | Part No.     | Page   | Article No. | Part No.    | Page   | Article No. | Part No.    | Page   | Article No. | Part No.    | Page |
|-------------|--------------|--------|-------------|-------------|--------|-------------|-------------|--------|-------------|-------------|------|
| 102-00000   | ATS10200000  | 82, 89 | 111-00831   | 111-00831   | 24     | 111-03068   | T30R0HSM4   | 16     | 111-05476   | T50L9VOM4   | 21   |
| 102-00010   | ATS10200010  | 89     | 111-01125   | 111-01125   | 22     | 111-03072   | T30R0VOC2   | 21     | 111-05477   | T50L0UVC2   | 19   |
| 102-00030   | ATSTROLLEY   | 89     | 111-01128   | 111-01128   | 19     | 111-03073   | T30R9VOC2   | 21     | 111-05806   | T50S0C2     | 10   |
| 102-00040   | ATS10200040  | 89     | 111-01235   | 111-01235   | 18     | 111-03074   | T30R9VOM4   | 21     | 111-05808   | T50S0M4     | 10   |
| 102-00050   | ATS10200050  | 89     | 111-01264   | 111-01264   | 20     | 111-03075   | T30R0UVC2   | 19     | 111-05811   | T50S9C2     | 10   |
| 102-66109   | ATS10266109  | 89     | 111-01265   | 111-01265   | 20     | 111-03313   | T30LOC2     | 9      | 111-05813   | T50S9M4     | 10   |
| 102-66110   | ATS10266110  | 89     | 111-01266   | 111-01266   | 20     | 111-03315   | T30L0M4     | 9, 210 | 111-07110   | T50RS5.NB3P | 61   |
| 102-66209   | ATS10266209  | 89     | 111-01269   | T30R1STNLM4 | 17     | 111-03325   | T30L9C2     | 9      | 111-11250   | T250        | 78   |
| 102-66210   | ATS10266210  | 89     | 111-01301   | MBT14UH     | 26     | 111-03327   | T30L9M4     | 9, 210 | 111-12013   | T120R0H4    | 13   |
| 102-69067   | 102-69067    | 68     | 111-01302   | MBT20UH     | 26     | 111-03501   | T30LLOC2    | 9      | 111-12036   | T120R9H4    | 13   |
| 102-69068   | 102-69068    | 68     | 111-01303   | MBT27UH     | 26     | 111-03511   | T30LL0M4    | 9, 210 | 111-12058   | T120R0HSH4  | 16   |
| 103-00001   | T30RA3000    | 84     | 111-01304   | MBT33UH     | 26     | 111-03515   | T30LL9C2    | 9      | 111-12061   | T120R0H5K2  | 16   |
| 103-00002   | T30RA30      | 84     | 111-01305   | MBT43UH     | 26     | 111-03517   | T30LL9M4    | 9, 210 | 111-12066   | T120R0PPH4  | 22   |
| 103-00003   | T30RA300HS   | 84     | 111-01306   | MBT49UH     | 26     | 111-04122   | T40R0M4     | 10     | 111-12067   | T120R9PPK2  | 22   |
| 103-00004   | T30RA30000HS | 84     | 111-01332   | 111-01332   | 23     | 111-04131   | T40R9M4     | 10     | 111-12201   | T120I0K2    | 13   |
| 105-00000   | QS101        | 90     | 111-01560   | 111-01560   | 20     | 111-04192   | T50R0UVC2   | 19     | 111-12206   | T120I0H4    | 13   |
| 105-00001   | QTTIEOHS     | 90     | 111-01562   | 111-01562   | 20     | 111-04300   | T40L9C2     | 10     | 111-12211   | T120I9K2    | 13   |
| 105-00006   | QTTIE9       | 90     | 111-01563   | 111-01563   | 20     | 111-04301   | T40LOC2     | 10     | 111-12213   | T120I9H4    | 13   |
| 110-00220   | MK9BLADEKIT  | 77     | 111-01566   | T50R0HIRM4  | 19     | 111-04305   | T40L0M4     | 10     | 111-12300   | 111-12300   | 14   |
| 110-00221   | MK9-221      | 77     | 111-01833   | T18R0VOC2   | 21     | 111-04311   | T40L9M4     | 10     | 111-12301   | 111-12301   | 14   |
| 110-05114   | MK9S5-114    | 77     | 111-01834   | T18R9VOC2   | 21     | 111-04600   | T40I0C2     | 10     | 111-12302   | 111-12302   | 14   |
| 110-07000   | MK7HT        | 77, 78 | 111-01835   | T18R9VOM4   | 21     | 111-04604   | T40I0M4     | 10     | 111-12405   | T120L0K2    | 13   |
| 110-07101   | MK7P         | 80     | 111-01836   | T18R1STNLM5 | 17     | 111-04609   | T40I9C2     | 10     | 111-12419   | T120L9K2    | 13   |
| 110-07111   | MK7P-342     | 80     | 111-01841   | T18R0M4     | 9, 210 | 111-04612   | T40I9M4     | 10     | 111-12803   | T120S0K2    | 13   |
| 110-09000   | MK9HT        | 77     | 111-01842   | T18R6C2     | 11     | 111-04839   | T50R1STNLM5 | 17     | 111-12808   | T120S0H4    | 13   |
| 110-09005   | MKPCOHOSE    | 81     | 111-01845   | T18R6M4     | 11     | 111-04846   | T50R0M4     | 10     | 111-12813   | T120S9H4    | 13   |
| 110-09101   | MK9P         | 81     | 111-01849   | T18R1M4     | 11     | 111-04849   | T50R6M4     | 12     | 111-12819   | T120S9K2    | 13   |
| 110-09111   | MK9P-109     | 81     | 111-01853   | T18R5C2     | 11     | 111-04852   | T50R1M4     | 12     | 111-15200   | T150R0X2    | 13   |
| 110-09112   | MK9PUA       | 81     | 111-01855   | T18R5M4     | 11     | 111-04854   | T50R5M4     | 12     | 111-15203   | T150R9X2    | 13   |
| 110-09500   | MK9          | 77     | 111-01857   | T18R8C2     | 11     | 111-04862   | T50R9M4     | 10     | 111-15300   | T150XLLOX2  | 13   |
| 110-09600   | MK9REF       | 77     | 111-01859   | T18R8M4     | 11     | 111-04865   | T50R3M4     | 12     | 111-15304   | T150XL9X2   | 13   |
| 110-09800   | MK9RE        | 77     | 111-01872   | T18R9M4     | 9, 210 | 111-04868   | T50R2M4     | 12     | 111-15405   | T150LOX2    | 13   |
| 110-11150   | T150         | 78     | 111-01877   | T18R3M4     | 11     | 111-04870   | T50R8C2     | 12     | 111-15419   | T150L9X2    | 13   |
| 110-20003   | TWT1         | 78     | 111-01880   | T18R2C2     | 11     | 111-04872   | T50R8M4     | 12     | 111-15500   | T150LLOX2   | 13   |
| 110-21060   | TWT2         | 78     | 111-01882   | T18R2M4     | 11     | 111-04877   | T50R7M4     | 12     | 111-15519   | T150XL9X2   | 13   |
| 110-70083   | 110-70083    | 76     | 111-01888   | T18R7M4     | 11     | 111-04878   | T50R0C2     | 10     | 111-15619   | T150M9X2    | 13   |
| 110-70084   | 110-70084    | 76     | 111-01892   | T18R10M4    | 11     | 111-04879   | T50R10M4    | 12     | 111-15700   | T150LLOX2   | 13   |
| 110-70089   | 110-70089    | 76     | 111-01896   | T18R4C2     | 11     | 111-04887   | T50R0VOC2   | 21     | 111-15719   | T150L9X2    | 13   |
| 110-70091   | 110-70091    | 76     | 111-01898   | T18R4M4     | 11     | 111-04892   | T50R4M4     | 12     | 111-24601   | T250LOX2    | 15   |
| 110-70106   | 110-70106    | 76     | 111-01900   | T18R2HALC2  | 23     | 111-04895   | T50R2HALC2  | 23     | 111-24700   | T250S0X2    | 15   |
| 110-95000   | MK9SST       | 77     | 111-01902   | T18R2HALM4  | 23     | 111-04897   | T50R2HALM4  | 23     | 111-24702   | T250S9X2    | 15   |
| 110-99000   | 110-99000    | 76     | 111-01905   | T18R0H5C2   | 16     | 111-04900   | T50R0H5C2   | 16     | 111-24801   | T250R0X2    | 15   |
| 111-00124   | T150M0X2     | 13     | 111-01917   | T18R0PPC2   | 22     | 111-04901   | T50R0HSM4   | 16     | 111-24803   | T250R9X2    | 15   |
| 111-00400   | T120R0UVC2   | 19     | 111-01918   | T18R0PPM4   | 22     | 111-04908   | T50R0VOM4   | 21     | 111-25001   | T250M0X2    | 15   |
| 111-00401   | T18LOC2      | 9      | 111-01921   | T18R9PPC2   | 22     | 111-04909   | T50R9VOC2   | 21     | 111-25002   | T250M9X2    | 15   |
| 111-00403   | T18LOHSC2    | 16     | 111-01922   | T18R9PPM4   | 22     | 111-04911   | T50R9VOM4   | 21     | 111-25200   | T250XL0X2   | 15   |
| 111-00404   | T18LOHSM4    | 16     | 111-02015   | T18L0M4     | 9, 210 | 111-04928   | T50R0PPC2   | 22     | 111-25219   | T250I9X2    | 15   |
| 111-00405   | T18ROC2      | 9      | 111-02026   | T18L9M4     | 9, 210 | 111-04929   | T50R0PPM4   | 22     | 111-25300   | T255M0HIRX2 | 14   |
| 111-00436   | T250L9X2     | 15     | 111-02044   | T18LOVOC2   | 21     | 111-04931   | T50R9PPC2   | 22     | 111-25400   | T255R0HIRX2 | 14   |
| 111-00438   | T30ROC2      | 9      | 111-02045   | T18L9VOC2   | 21     | 111-05216   | T50I0M4     | 10     | 111-25500   | T255S0HIRX2 | 14   |
| 111-00444   | T50I0C2      | 10     | 111-02046   | T18L9VOM4   | 21     | 111-05230   | T50I9M4     | 10     | 111-30000   | TELS-1      | 66   |
| 111-00445   | T50LOC2      | 10     | 111-02189   | T18L9C2     | 9      | 111-05248   | T50I0HSC2   | 16     | 111-31000   | TELS-H      | 66   |
| 111-00466   | T250XL9X2    | 15     | 111-02304   | T18I9VOM2   | 21     | 111-05251   | T50I0HSM4   | 16     | 111-32000   | TELS-SPK2   | 66   |
| 111-00476   | T18R0HSM4    | 16     | 111-02305   | T18I0HSM4   | 16     | 111-05254   | T50I9VOC2   | 21     | 111-32106   | TELS-SPOOL  | 66   |
| 111-00502   | T50L5M4      | 12     | 111-02308   | T18I0C2     | 9      | 111-05255   | T50I9VOM4   | 21     | 111-32107   | TELS-10K    | 66   |
| 111-00503   | T50L7M4      | 12     | 111-02311   | T18I9C2     | 9      | 111-05258   | T50I0VOC2   | 21     | 111-32108   | TELS-13     | 66   |
| 111-00504   | T50L0M4      | 10     | 111-02315   | T18I0M4     | 9, 210 | 111-05262   | T50I9PPM4   | 22     | 111-32110   | TELS-27     | 66   |
| 111-00507   | T250I0X2     | 15     | 111-02322   | T18I9M4     | 9, 210 | 111-05350   | 111-05350   | 47     | 111-32111   | TELS-5K     | 66   |
| 111-00508   | T18R9C2UL    | 23     | 111-02805   | T18S9C2     | 9      | 111-05423   | T50L1STNLM4 | 17     | 111-81801   | IT18ROC2    | 33   |
| 111-00509   | T18R9M4UL    | 23     | 111-02809   | T18S9M4     | 9, 210 | 111-05431   | T50L6C2     | 12     | 111-81803   | IT18ROL4    | 33   |
| 111-00510   | T18R2C2UL    | 23     | 111-02810   | T18S0C2     | 9      | 111-05434   | T50L6M4     | 12     | 111-81808   | IT18R9L4    | 33   |
| 111-00511   | T18R2M4UL    | 23     | 111-02811   | T18S0M4     | 9, 210 | 111-05438   | T50L9VOC2   | 21     | 111-81819   | IT18R9C2    | 33   |
| 111-00512   | T50R9C2UL    | 23     | 111-02815   | T18S0HSM4   | 16     | 111-05443   | T50L1C2     | 12     | 111-81903   | IT18FLOL4   | 33   |
| 111-00513   | T50R9M4UL    | 23     | 111-02900   | T30XL9C2    | 9      | 111-05444   | T50L1M4     | 12     | 111-81907   | IT18FL9L4   | 33   |
| 111-00514   | T50R2C2UL    | 23     | 111-02901   | T30XLOC2    | 9      | 111-05445   | T50L5C2     | 12     | 111-81910   | IT18FLOC2   | 33   |
| 111-00515   | T50R2M4UL    | 23     | 111-02903   | T30XL0M4    | 9, 210 | 111-05449   | T50L9M4     | 10     | 111-81919   | IT18FL9C2   | 33   |
| 111-00516   | T50I9C2UL    | 23     | 111-02907   | T30XL9M4    | 9, 210 | 111-05451   | T50L3C2     | 12     | 111-85011   | IT50ROC2    | 33   |
| 111-00517   | T50I9M4UL    | 23     | 111-03017   | T30R9PPC2   | 22     | 111-05454   | T50L3M4     | 12     | 111-85013   | IT50R0M4    | 33   |
| 111-00518   | T50I2C2UL    | 23     | 111-03034   | T30R0M4     | 9, 210 | 111-05457   | T50L2C2     | 12     | 111-85019   | IT50R9C2    | 33   |
| 111-00519   | T50I2M4UL    | 23     | 111-03036   | T30R6M4     | 11     | 111-05458   | T50L2M4     | 12     | 111-85020   | IT50R9M4    | 33   |
| 111-00520   | T50L9C2UL    | 23     | 111-03038   | T30R1M4     | 11     | 111-05461   | T50L8C2     | 12     | 111-85100   | IT50R0K2    | 33   |
| 111-00521   | T50L9M4UL    | 23     | 111-03041   | T30R5M4     | 11     | 111-05462   | T50L8M4     | 12     | 111-85119   | IT50R9K2    | 33   |
| 111-00522   | T50L2C2UL    | 23     | 111-03047   | T30R9M4     | 9, 210 | 111-05464   | T50L7C2     | 12     | 111-85201   | IT50R0K2    | 33   |
| 111-00523   | T50L2M4UL    | 23     | 111-03052   | T30R3M4     | 11     | 111-05465   | T50L10M4    | 12     | 111-85219   | IT50R9K2    | 33   |
| 111-00659   | 111-00659    | 22     | 111-03056   | T30R2M4     | 11     | 111-05466   | T50L10C2    | 12     | 111-85306   | IT50L9M4    | 33   |
| 111-00698   | 111-00698    | 22     | 111-03061   | T30R8M4     | 11     | 111-05467   | T50L4C2     | 12     | 111-85319   | IT50L9C2    | 33   |
| 111-00718   | 111-00718    | 22     | 111-03062   | T30R7M4     | 11     | 111-05468   | T50L4M4     | 12     | 111-85350   | 111-85350   | 54   |
| 111-00732   | 111-00732    | 22     | 111-03065   | T30R4M4     | 11     | 111-05470   | T50L0HSC2   | 16     | 111-85469   | T50SL6.NN6P | 56   |
| 111-00829   | 111-00829    | 24     | 111-03066   | T30R0HIRM4  | 19     | 111-05471   | T50L0HSM4   | 16     | 111-85479   | T50SL7.NN6P | 56   |
| 111-00830   | 111-00830    | 24     | 111-03067   | T30R0H5C2   | 16     | 111-05475   | T50L0VOC2   | 21     | 111-85789   | T50RSF9C2   | 55   |

| Article No. | Part No.       | Page | Article No. | Part No.        | Page | Article No. | Part No.      | Page   | Article No. | Part No.    | Page |
|-------------|----------------|------|-------------|-----------------|------|-------------|---------------|--------|-------------|-------------|------|
| 111-85803   | T30RSF9C2      | 55   | 115-00035   | RT50S0M4        | 28   | 118-00111   | 118-00111     | 27     | 148-00090   | 148-00090   | 64   |
| 111-85850   | 111-85850      | 54   | 115-00036   | RT150REPOX2     | 30   | 118-04700   | 118-04700     | 27     | 148-00091   | 148-00091   | 64   |
| 111-85871   | 111-85871      | 47   | 115-00037   | RT150MEPOX2     | 30   | 118-04800   | 118-04800     | 27     | 148-00092   | 148-00092   | 64   |
| 111-93058   | MBT5S-S        | 25   | 115-00038   | RT150LEPOX2     | 30   | 118-04900   | 118-04900     | 27     | 148-00093   | 148-00093   | 64   |
| 111-93059   | MBT5S          | 26   | 115-00039   | RT50LLOC2       | 28   | 118-05900   | 118-05900     | 27     | 148-00095   | 148-00095   | 64   |
| 111-93088   | MBT8S-S        | 25   | 115-00042   | 115-00042       | 34   | 120-00000   | AT2000        | 82, 83 | 148-00096   | 148-00096   | 64   |
| 111-93089   | MBT8S          | 26   | 115-00500   | REL50ROC2       | 29   | 120-00021   | 120-00021     | 87     | 148-00200   | 148-00200   | 41   |
| 111-93148   | MBT14S-S       | 25   | 115-00502   | REL50ROL4       | 29   | 120-00031   | 120-00031     | 87     | 148-90000   | 148-90000   | 236  |
| 111-93149   | MBT14S         | 26   | 115-00503   | REL50R9C2       | 29   | 120-00040   | AT2BENCHMOUNT | 85     | 148-90001   | 148-90001   | 236  |
| 111-93208   | MBT20S-S       | 25   | 115-00505   | REL50R9L4       | 29   | 120-00060   | 120-00060     | 83     | 148-90002   | 148-90002   | 236  |
| 111-93209   | MBT20S         | 26   | 115-00600   | REL50LOC2       | 29   | 120-00080   | HH-20         | 87     | 148-90003   | 148-90003   | 236  |
| 111-93278   | MBT27S-S       | 25   | 115-00602   | REL50L0L4       | 29   | 120-05001   | T18RA50       | 83     | 148-90004   | 148-90004   | 236  |
| 111-93279   | MBT27S         | 26   | 115-00605   | REL50L9C2       | 29   | 120-05003   | T18RASOHSW    | 83     | 148-90005   | 148-90005   | 236  |
| 111-93338   | MBT33S-S       | 25   | 115-00607   | REL50L9L4       | 29   | 120-05004   | T18RA5000     | 83     | 148-90024   | 148-90024   | 236  |
| 111-93339   | MBT33S         | 26   | 115-01200   | RT25550HIRX2    | 32   | 120-05007   | T18RA5000HSW  | 83     | 148-90025   | 148-90025   | 236  |
| 111-94088   | MBT8H-S        | 25   | 115-01300   | RT25550HIRX2    | 32   | 120-05015   | T18RA5000HR   | 83     | 148-90026   | 148-90026   | 236  |
| 111-94089   | MBT8H          | 26   | 115-01400   | RT25550HIRX2    | 32   | 121-63560   | 121-63560     | 34     | 148-90027   | 148-90027   | 236  |
| 111-94148   | MBT14H-S       | 25   | 115-06101   | RT50LLOM4       | 28   | 121-82160   | 121-82160     | 34     | 148-90028   | 148-90028   | 236  |
| 111-94149   | MBT14H         | 26   | 115-06102   | RT50LL9C2       | 28   | 121-83360   | 121-83360     | 34     | 148-90029   | 148-90029   | 236  |
| 111-94208   | MBT20H-S       | 25   | 115-06104   | RT50LL9M4       | 28   | 126-00000   | 126-00000     | 41     | 150-08110   | 150-08110   | 68   |
| 111-94209   | MBT20H         | 26   | 115-06200   | RT40ROC2        | 28   | 126-00015   | 126-00015     | 54     | 150-09201   | 150-09201   | 69   |
| 111-94278   | MBT27H-S       | 25   | 115-06202   | RT40ROM4        | 28   | 126-00036   | 126-00036     | 41     | 150-31090   | 150-31090   | 47   |
| 111-94279   | MBT27H         | 26   | 115-06204   | RT40R9M4        | 28   | 126-00041   | 126-00041     | 56     | 150-31091   | 150-31091   | 47   |
| 111-94338   | MBT33H-S       | 25   | 115-06219   | RT40R9C2        | 28   | 126-00042   | 126-00042     | 56     | 150-31093   | 150-31093   | 47   |
| 111-94339   | MBT33H         | 26   | 115-06300   | RT50S0C2        | 28   | 126-00043   | 126-00043     | 55     | 150-31098   | 150-31098   | 48   |
| 111-95148   | MBT14XH-S      | 26   | 115-06304   | RT50S9M4        | 28   | 126-00044   | 126-00044     | 55     | 150-45397   | 150-45397   | 69   |
| 111-95149   | MBT14XH        | 26   | 115-06319   | RT50S9C2        | 28   | 126-00045   | 126-00045     | 55     | 150-55850   | 150-55850   | 46   |
| 111-95208   | MBT20XH-S      | 26   | 115-30900   | DCT90HIRK2      | 37   | 126-00046   | 126-00046     | 55     | 150-55948   | 150-55948   | 48   |
| 111-95209   | MBT20XH        | 26   | 115-31100   | DCT110HIRK2     | 37   | 126-00049   | 126-00049     | 56     | 150-76090   | 150-76090   | 48   |
| 111-95278   | MBT27XH-S      | 26   | 115-40200   | REZ200.NB3P     | 29   | 126-00065   | 126-00065     | 57     | 150-77938   | 150-77938   | 48   |
| 111-95279   | MBT27XH        | 26   | 115-40300   | REZ300.NB3P     | 29   | 126-00069   | 126-00069     | 56     | 150-77940   | 150-77940   | 46   |
| 111-95338   | MBT33XH-S      | 26   | 115-41300   | RT250R0X2       | 30   | 126-00075   | 126-00075     | 54     | 150-95500   | 150-95500   | 68   |
| 111-95339   | MBT33XH        | 26   | 115-41401   | RT250I0X2       | 30   | 126-00081   | 126-00081     | 54     | 151-00010   | 151-00010   | 142  |
| 111-98500   | TAS100MWS      | 67   | 115-41500   | RT250L0X2       | 30   | 126-00086   | 126-00086     | 54     | 151-00016   | 151-00016   | 69   |
| 111-98501   | TAS100RWS      | 67   | 115-42002   | SR25550HIHSUVX2 | 32   | 126-00099   | 126-00099     | 54     | 151-00017   | 151-00017   | 69   |
| 112-01819   | T18R9C2        | 9    | 115-42101   | SR25550HIHSUVX2 | 32   | 126-00603   | T18RWPM9M4    | 56     | 151-00018   | 151-00018   | 142  |
| 112-03019   | T30R9C2        | 9    | 115-48100   | RT250S0X2       | 30   | 126-00700   | T30RSFOC2     | 55     | 151-00019   | 151-00019   | 142  |
| 112-04019   | T40R9C2        | 10   | 116-01811   | T18R1C2         | 11   | 126-00702   | T30RSFOM4     | 55     | 151-00029   | 151-00029   | 68   |
| 112-04060   | T40ROC2        | 10   | 116-01813   | T18R3C2         | 11   | 126-00704   | T30RSF9M4     | 55     | 151-00074   | 151-00074   | 69   |
| 112-05019   | T50R9C2        | 10   | 116-01817   | T18R7C2         | 11   | 126-01003   | T50RSFOC2     | 55     | 151-00080   | 151-00080   | 69   |
| 112-05219   | T50I9C2        | 10   | 116-01819   | T18R10C2        | 11   | 126-01004   | T50RSFOM4     | 55     | 151-00116   | MMB.50C2    | 97   |
| 112-05419   | T50L9C2        | 10   | 116-03011   | T30R1C2         | 11   | 126-01011   | T50RSF9M4     | 55     | 151-00134   | HDM190HIRC2 | 98   |
| 112-12019   | T120R9K2       | 13   | 116-03012   | T30R2C2         | 11   | 126-02300   | 126-02300     | 54     | 151-00136   | MB30C2      | 91   |
| 112-12060   | T120R0K2       | 13   | 116-03013   | T30R3C2         | 11   | 126-03100   | 126-03100     | 57     | 151-00227   | MB29C2      | 93   |
| 112-51904   | CTT20R9M4      | 36   | 116-03014   | T30R4C2         | 11   | 126-03501   | T50RTM250HSM4 | 51     | 151-00228   | PBMOC2      | 94   |
| 112-51905   | CTT20ROHSC2    | 36   | 116-03015   | T30R5C2         | 11   | 126-03504   | T50RTM25E8HM4 | 51     | 151-00229   | PBMOM4      | 94   |
| 112-51919   | CTT20R9C2      | 36   | 116-03016   | T30R6C2         | 11   | 130-00000   | AT2060        | 82, 84 | 151-00230   | PBM10C2     | 94   |
| 112-51960   | CTT20ROHSM4    | 36   | 116-03017   | T30R7C2         | 11   | 131-75019   | RT250R9X2     | 30     | 151-00231   | PBM10M4     | 94   |
| 112-52104   | CTT60R9C2      | 36   | 116-03018   | T30R8C2         | 11   | 131-75219   | RT250I9X2     | 30     | 151-00278   | SRCI0500C2  | 179  |
| 112-52106   | CTT60R9M4      | 36   | 116-03019   | 116-03019       | 11   | 131-75419   | RT250L9X2     | 30     | 151-00279   | SRCI0750C2  | 179  |
| 112-52112   | CTT60ROHSC2    | 36   | 116-03064   | T30R10M4        | 11   | 131-75510   | RT250XL0X2    | 30     | 151-00280   | SRCI1000K2  | 179  |
| 112-52114   | CTT60ROHSM4    | 36   | 116-05011   | T50R1C2         | 12   | 131-75519   | RT250XL9X2    | 30     | 151-00281   | 151-00281   | 69   |
| 113-00007   | T50MLOC2       | 45   | 116-05012   | T50R2C2         | 12   | 131-75610   | RT250M0X2     | 30     | 151-00282   | 151-00282   | 69   |
| 113-00011   | T120MR0H4      | 45   | 116-05013   | T50R3C2         | 12   | 131-75619   | RT250M9X2     | 30     | 151-00285   | MB2.50C2    | 91   |
| 113-00018   | T120MR9H4      | 45   | 116-05014   | T50R4C2         | 12   | 131-75819   | RT250S9X2     | 30     | 151-00286   | MB2.50M4    | 91   |
| 113-00022   | T18MR0C2       | 45   | 116-05015   | T50R5C2         | 12   | 132-00006   | 132-00006     | 65     | 151-00287   | CTAM10M4    | 95   |
| 113-00024   | T18MR0M4       | 45   | 116-05016   | T50R6C2         | 12   | 132-00007   | 132-00007     | 65     | 151-00288   | CTAP110M4   | 95   |
| 113-00026   | T18MR9C2       | 45   | 116-05017   | T50R7C2         | 12   | 132-00008   | 132-00008     | 65     | 151-00289   | CTAP10C2    | 95   |
| 113-00028   | T18MR9M4       | 45   | 116-05019   | T50R10C2        | 12   | 132-00009   | 132-00009     | 65     | 151-00290   | CTAP10M4    | 95   |
| 113-00031   | T50M10M4       | 45   | 117-00012   | 117-00012       | 38   | 132-00010   | 132-00010     | 65     | 151-00291   | CTAP20C2    | 95   |
| 113-00032   | T50M19C2       | 45   | 117-00016   | 117-00016       | 35   | 132-00011   | 132-00011     | 65     | 151-00292   | CTAP20M4    | 95   |
| 113-00033   | T50M19M4       | 45   | 117-00017   | 117-00017       | 35   | 148-00003   | NC110         | 181    | 151-00293   | LTM2500H4   | 97   |
| 113-00035   | T50M10M4       | 45   | 117-00018   | 117-00018       | 35   | 148-00004   | NC1110        | 181    | 151-00295   | MB10C2      | 93   |
| 113-00036   | T30MR9M4       | 45   | 117-00019   | 117-00019       | 35   | 148-00005   | NC3.50        | 181    | 151-00296   | MB10M4      | 93   |
| 113-00038   | T50M10C2       | 45   | 117-05004   | T50RDH0C2       | 35   | 148-00006   | NC3.510       | 181    | 151-00297   | MB29M4      | 93   |
| 113-03010   | T30MR0C2       | 45   | 117-05005   | T50RDH0M4       | 35   | 148-00007   | NC50          | 181    | 151-00298   | MB2.5A10M4  | 92   |
| 113-03011   | T30MR0M4       | 45   | 117-05006   | T50RDH9C2       | 35   | 148-00008   | NC510         | 181    | 151-00308   | CTAP210M4   | 95   |
| 113-03019   | T30MR9C2       | 45   | 117-05008   | T50RDH9M4       | 35   | 148-00009   | NC60          | 181    | 151-00319   | MB410H4     | 91   |
| 113-05000   | T50MR0C2       | 45   | 117-05300   | T50IDH0M4       | 35   | 148-00010   | NC610         | 181    | 151-00320   | MB40C2      | 91   |
| 113-05002   | T50MR0M4       | 45   | 117-05302   | T50IDH9C2       | 35   | 148-00011   | NC70          | 181    | 151-00321   | MB4A10H4    | 92   |
| 113-05004   | T50MR9C2       | 45   | 117-05303   | T50IDH9M4       | 35   | 148-00012   | NC710         | 181    | 151-00322   | MB4A10A2H4  | 92   |
| 113-05007   | T50MR9M4       | 45   | 117-05362   | T50IDH0C2       | 35   | 148-00013   | NC80          | 181    | 151-00323   | MB45H10H4   | 91   |
| 113-05403   | T50ML9M4       | 45   | 117-05400   | T50LDH0C2       | 35   | 148-00014   | NC810         | 181    | 151-00324   | MB510C2     | 91   |
| 113-05419   | T50ML9C2       | 45   | 117-05401   | T50LDH0M4       | 35   | 148-00015   | NC90          | 181    | 151-00325   | MMB00M4     | 97   |
| 113-12020   | T120MR0K2      | 45   | 117-05402   | T50LDH9C2       | 35   | 148-00016   | NC910         | 181    | 151-00326   | MMB10C2     | 97   |
| 113-12029   | T120MR9K2      | 45   | 117-05461   | T50LDH9M4       | 35   | 148-00017   | FC140         | 181    | 151-00327   | MMB10H4     | 97   |
| 115-00000   | RTT750HR.NX1P  | 31   | 117-05500   | T120RDH0H4      | 35   | 148-00018   | FC1410        | 181    | 151-00328   | TM15T10M4   | 94   |
| 115-00001   | RTT750HR.NX900 | 31   | 117-05501   | T120RDH0K2      | 35   | 148-00022   | TAS100LWS     | 67     | 151-00331   | MB3A10A2C2  | 92   |
| 115-00033   | DCT110HIRC2    | 37   | 118-00032   | 118-00032       | 18   | 148-00088   | 148-00088     | 64     | 151-00358   | LTM2500C2   | 97   |
| 115-00034   | DCT90HIRC2     | 37   | 118-00110   | 118-00110       | 27   | 148-00089   | 148-00089     | 64     | 151-00427   | MB5A10F4    | 92   |

| Article No. | Part No.        | Page   | Article No. | Part No.       | Page | Article No. | Part No.    | Page | Article No. | Part No.  | Page |
|-------------|-----------------|--------|-------------|----------------|------|-------------|-------------|------|-------------|-----------|------|
| 151-00429   | 151-00429       | 71     | 151-14005   | RB5H4          | 178  | 151-30603   | CTM30M4     | 104  | 156-00272   | 156-00272 | 63   |
| 151-00430   | 151-00430       | 71     | 151-14303   | PC15FT7        | 72   | 151-30605   | CTM310C2    | 104  | 156-00273   | 156-00273 | 63   |
| 151-00432   | 151-00432       | 92     | 151-14313   | 151-14313      | 142  | 151-30607   | CTM310M4    | 104  | 156-00282   | 156-00282 | 49   |
| 151-00433   | 151-00433       | 92     | 151-14314   | 151-14314      | 142  | 151-30700   | CTM40C2     | 104  | 156-00306   | 156-00306 | 63   |
| 151-00436   | HDM190HIRH4     | 98     | 151-24219   | MP2M3.NN3P     | 96   | 151-30702   | CTM40M4     | 104  | 156-00318   | 156-00318 | 62   |
| 151-00437   | HDM250HIRC2     | 98     | 151-24319   | MP3M3.NN3P     | 96   | 151-30703   | CTM410C2    | 104  | 156-00329   | 156-00329 | 49   |
| 151-00438   | HDM250HIRH4     | 98     | 151-24419   | MP4M3.NN3P     | 96   | 151-30705   | CTM410M4    | 104  | 156-00375   | 156-00375 | 47   |
| 151-00439   | HDM3120HIRC2    | 98     | 151-24519   | MP5M3.NN3P     | 96   | 151-31101   | CTAM10C2    | 95   | 156-00376   | 156-00376 | 47   |
| 151-00440   | HDM3120HIRH4    | 98     | 151-26101   | 151-26101      | 69   | 151-31103   | CTAM110C2   | 95   | 156-00377   | 156-00377 | 47   |
| 151-00441   | HDM321HIHSUVC2  | 98     | 151-27000   | LKCRF19C2      | 93   | 151-31106   | CTAM110M4   | 95   | 156-00378   | 156-00378 | 47   |
| 151-00442   | HDM401HIHSUVC2  | 98     | 151-27009   | LKCRF19H4      | 93   | 151-31201   | CTAM20C2    | 95   | 156-00444   | 156-00444 | 57   |
| 151-00443   | HDM501HIHSUVC2  | 98     | 151-27010   | 151-27010      | 100  | 151-31202   | CTAM20M4    | 95   | 156-00455   | 156-00455 | 18   |
| 151-00444   | HDM320BHIHSUVC2 | 99     | 151-27019   | 151-27019      | 100  | 151-31203   | CTAM210C2   | 95   | 156-00456   | 156-00456 | 18   |
| 151-00445   | HDM400BHIHSUVC2 | 99     | 151-27202   | 151-27202      | 100  | 151-31205   | CTAM210M4   | 95   | 156-00457   | 156-00457 | 48   |
| 151-00446   | HDM500BHIHSUVC2 | 99     | 151-27219   | 151-27219      | 100  | 151-32602   | 151-32602   | 70   | 156-00468   | 156-00468 | 42   |
| 151-00492   | 151-00492       | 49, 85 | 151-28101   | MB19M4         | 93   | 151-40100   | TM1ST0C2    | 94   | 156-00507   | 156-00507 | 71   |
| 151-00506   | RB14L4          | 178    | 151-28119   | MB19C2         | 93   | 151-40101   | TM1ST0M4    | 94   | 156-00521   | 156-00521 | 71   |
| 151-00513   | 151-00513       | 71     | 151-28202   | MB20M4         | 93   | 151-40106   | TM1ST10C2   | 94   | 156-00538   | 156-00538 | 39   |
| 151-00605   | 151-00605       | 68     | 151-28210   | MB20C2         | 93   | 154-00000   | MP1M3.NN3P  | 96   | 156-00539   | 156-00539 | 39   |
| 151-00623   | 151-00623       | 69     | 151-28301   | MB30M4         | 91   | 154-00010   | FC1.2H4     | 180  | 156-00540   | 156-00540 | 39   |
| 151-00629   | 151-00629       | 69     | 151-28302   | MB310C2        | 91   | 154-00011   | FC1.2K2     | 180  | 156-00541   | 156-00541 | 39   |
| 151-00644   | 151-00644       | 106    | 151-28305   | MB310M4        | 91   | 154-00012   | FC1.2AH4    | 180  | 156-00588   | 156-00588 | 42   |
| 151-00650   | 151-00650       | 69     | 151-28402   | MB4A0A2C2      | 92   | 154-00013   | FC1.2AK2    | 180  | 156-00589   | 156-00589 | 42   |
| 151-00651   | 151-00651       | 68     | 151-28403   | MB4A0C2        | 92   | 154-00014   | FC2.2H4     | 180  | 156-00590   | 156-00590 | 42   |
| 151-00663   | 151-00663       | 68     | 151-28405   | MB4A0A2H4      | 92   | 154-00015   | FC2.2K2     | 180  | 156-00591   | 156-00591 | 42   |
| 151-00664   | 151-00664       | 69     | 151-28406   | MB4A0H4        | 92   | 154-00016   | FC2.2AH4    | 180  | 156-00592   | 156-00592 | 42   |
| 151-00665   | 151-00665       | 69     | 151-28420   | MB4A10A2C2     | 92   | 154-00017   | FC2.2AK2    | 180  | 156-00593   | 156-00593 | 42   |
| 151-00667   | 151-00667       | 178    | 151-28421   | MB4A10C2       | 92   | 154-00018   | MSMP5/69C2  | 96   | 156-00635   | 156-00635 | 42   |
| 151-00668   | 151-00668       | 178    | 151-28500   | MB50C2         | 91   | 154-00100   | MP1M5.NN3P  | 96   | 156-00791   | 156-00791 | 62   |
| 151-00675   | 151-00675       | 71     | 151-28501   | MB50F4         | 91   | 154-00300   | MP2M5.NN3P  | 96   | 156-00856   | 156-00856 | 39   |
| 151-00677   | 151-00677       | 70     | 151-28504   | MB510F4        | 91   | 154-00500   | MP3M5.NN3P  | 96   | 156-00858   | 156-00858 | 39   |
| 151-00700   | 151-00700       | 142    | 151-28529   | MB5A10C2       | 92   | 154-00700   | MP4M5.NN3P  | 96   | 156-00859   | 156-00859 | 39   |
| 151-00701   | 151-00701       | 142    | 151-28600   | MB5A0A2C2      | 92   | 154-00900   | MP5M5.NN3P  | 96   | 156-00860   | 156-00860 | 39   |
| 151-00702   | 151-00702       | 142    | 151-28602   | MB5A0C2        | 92   | 154-01200   | MSMP5/109C2 | 96   | 156-00861   | 156-00861 | 39   |
| 151-00703   | 151-00703       | 142    | 151-28604   | MB5A0A2F4      | 92   | 154-01300   | MSMP6/109C2 | 96   | 156-00862   | 156-00862 | 39   |
| 151-00704   | 151-00704       | 71     | 151-28605   | MB5A0F4        | 92   | 154-01302   | MSMP6/69C2  | 96   | 156-00863   | 156-00863 | 39   |
| 151-00756   | 151-00756       | 99     | 151-28607   | MB5A10A2C2     | 92   | 155-01600   | 155-01600   | 69   | 156-00864   | 156-00864 | 39   |
| 151-00757   | 151-00757       | 18     | 151-28610   | MB5A10A2F4     | 92   | 155-03800   | 155-03800   | 71   | 156-00865   | 156-00865 | 39   |
| 151-00758   | 151-00758       | 18     | 151-28709   | MB3A0AH4       | 92   | 155-11601   | 155-11601   | 68   | 156-00866   | 156-00866 | 40   |
| 151-00765   | 151-00765       | 71     | 151-28710   | MB3A0C2        | 92   | 155-12300   | 155-12300   | 60   | 156-00867   | 156-00867 | 40   |
| 151-00775   | 151-00775       | 70     | 151-28711   | MB3A0AC2       | 92   | 155-23601   | 155-23601   | 61   | 156-00868   | 156-00868 | 40   |
| 151-00785   | 151-00785       | 70     | 151-28713   | MB3A0M4        | 92   | 155-30602   | 155-30602   | 59   | 156-00871   | 156-00871 | 40   |
| 151-00786   | 151-00786       | 70     | 151-28717   | MB3A10A2H4     | 92   | 155-30702   | 155-30702   | 71   | 156-00872   | 156-00872 | 41   |
| 151-00790   | 151-00790       | 68     | 151-28718   | MB3A10C2       | 92   | 155-30802   | 155-30802   | 68   | 156-00873   | 156-00873 | 41   |
| 151-00792   | 151-00792       | 71     | 151-28721   | MB3A10M4       | 92   | 155-30902   | 155-30902   | 69   | 156-00874   | 156-00874 | 40   |
| 151-00812   | 151-00812       | 103    | 151-28801   | MB40H4         | 91   | 155-31102   | 155-31102   | 71   | 156-00875   | 156-00875 | 40   |
| 151-00813   | 151-00813       | 103    | 151-28802   | MB410C2        | 91   | 155-31202   | 155-31202   | 62   | 156-00876   | 156-00876 | 40   |
| 151-00814   | 151-00814       | 103    | 151-28901   | MB2.510C2      | 91   | 155-36002   | 155-36002   | 71   | 156-00877   | 156-00877 | 41   |
| 151-00833   | 151-00833       | 71     | 151-28902   | MB2.510M4      | 91   | 155-37104   | 155-37104   | 40   | 156-00878   | 156-00878 | 41   |
| 151-00834   | 151-00834       | 71     | 151-29000   | MB2.5A0C2      | 92   | 156-00016   | 156-00016   | 41   | 156-00953   | 156-00953 | 46   |
| 151-00835   | 151-00835       | 71     | 151-29001   | MB2.5A0M4      | 92   | 156-00017   | 156-00017   | 40   | 156-01007   | 156-01007 | 39   |
| 151-00836   | 151-00836       | 71     | 151-29002   | MB2.5A10C2     | 92   | 156-00025   | 156-00025   | 46   | 156-01601   | 156-01601 | 40   |
| 151-00903   | 151-00903       | 69     | 151-29100   | MB4SH0C2       | 91   | 156-00036   | 156-00036   | 63   | 156-04600   | 156-04600 | 41   |
| 151-00925   | 151-00925       | 70     | 151-29101   | MB4SH0H4       | 91   | 156-00054   | 156-00054   | 47   | 156-04601   | 156-04601 | 41   |
| 151-00927   | 151-00927       | 72     | 151-29104   | MB4SH10C2      | 91   | 156-00055   | 156-00055   | 47   | 157-00034   | 157-00034 | 58   |
| 151-00932   | 151-00932       | 69     | 151-29200   | MB4SHA0C2      | 92   | 156-00056   | 156-00056   | 47   | 157-00035   | 157-00035 | 58   |
| 151-00982   | 151-00982       | 44     | 151-29203   | MB4SHA10C2     | 92   | 156-00057   | 156-00057   | 47   | 157-00036   | 157-00036 | 58   |
| 151-01108   | 151-01108       | 70     | 151-29206   | MB4SHA10H4     | 92   | 156-00066   | 156-00066   | 46   | 157-00060   | 157-00060 | 38   |
| 151-01109   | 151-01109       | 68     | 151-29301   | MSBT1200HIRHS1 | 102  | 156-00067   | 156-00067   | 50   | 157-00072   | 157-00072 | 51   |
| 151-01113   | 151-01113       | 71     | 151-29400   | S2CM258HIRHS1  | 101  | 156-00068   | 156-00068   | 50   | 157-00083   | 157-00083 | 59   |
| 151-01122   | LPM25           | 100    | 151-29403   | S2HM250HIRHS1  | 101  | 156-00069   | 156-00069   | 50   | 157-00097   | 157-00097 | 51   |
| 151-01125   | 151-01125       | 68     | 151-29600   | SAM83HIRHS1    | 105  | 156-00070   | 156-00070   | 50   | 157-00105   | 157-00105 | 60   |
| 151-01126   | 151-01126       | 68     | 151-29701   | SAOM820HIRHS1  | 105  | 156-00071   | 156-00071   | 50   | 157-00106   | 157-00106 | 60   |
| 151-01136   | 151-01136       | 71     | 151-29800   | MMB00C2        | 97   | 156-00072   | 156-00072   | 50   | 157-00108   | 157-00108 | 51   |
| 151-02600   | 151-02600       | 69     | 151-30001   | MMB.50M4       | 97   | 156-00074   | 156-00074   | 50   | 157-00112   | 157-00112 | 53   |
| 151-02901   | 151-02901       | 68     | 151-30100   | CTAP110C2      | 95   | 156-00085   | 156-00085   | 48   | 157-00118   | 157-00118 | 52   |
| 151-03401   | 151-03401       | 43     | 151-30200   | CTAP210C2      | 95   | 156-00089   | 156-00089   | 47   | 157-00119   | 157-00119 | 52   |
| 151-03402   | 151-03402       | 43     | 151-30300   | CTM00C2        | 104  | 156-00090   | 156-00090   | 47   | 157-00120   | 157-00120 | 52   |
| 151-03403   | 151-03403       | 43     | 151-30301   | CTM00M4        | 104  | 156-00091   | 156-00091   | 47   | 157-00130   | 157-00130 | 52   |
| 151-03404   | 151-03404       | 43     | 151-30303   | CTM010C2       | 104  | 156-00092   | 156-00092   | 47   | 157-00140   | 157-00140 | 51   |
| 151-06500   | 151-06500       | 106    | 151-30305   | CTM010M4       | 104  | 156-00093   | 156-00093   | 47   | 157-00142   | 157-00142 | 53   |
| 151-06501   | DSWS50HS1       | 107    | 151-30400   | CTM10C2        | 104  | 156-00134   | 156-00134   | 63   | 157-00143   | 157-00143 | 53   |
| 151-06502   | DSWS50HSK2      | 107    | 151-30402   | CTM10M4        | 104  | 156-00135   | 156-00135   | 63   | 157-00144   | 157-00144 | 53   |
| 151-07000   | HDM320BHIHSUVH4 | 99     | 151-30404   | CTM110C2       | 104  | 156-00136   | 156-00136   | 63   | 157-00157   | 157-00157 | 53   |
| 151-07100   | HDM321HIHSUVH4  | 98     | 151-30406   | CTM110M4       | 104  | 156-00137   | 156-00137   | 63   | 157-00400   | 157-00400 | 58   |
| 151-07200   | HDM400BHIHSUVH4 | 99     | 151-30500   | CTM20C2        | 104  | 156-00155   | 156-00155   | 62   | 157-00401   | 157-00401 | 58   |
| 151-07300   | HDM401HIHSUVH4  | 98     | 151-30501   | CTM20M4        | 104  | 156-00156   | 156-00156   | 46   | 157-00402   | 157-00402 | 58   |
| 151-07400   | HDM500BHIHSUVH4 | 99     | 151-30504   | CTM210C2       | 104  | 156-00157   | 156-00157   | 46   | 157-00403   | 157-00403 | 58   |
| 151-07500   | HDM501HIHSUVH4  | 98     | 151-30506   | CTM210M4       | 104  | 156-00235   | 156-00235   | 48   | 157-00404   | 157-00404 | 58   |
| 151-13608   | RB8L4           | 178    | 151-30600   | CTM30C2        | 104  | 156-00264   | 156-00264   | 57   | 157-00405   | 157-00405 | 58   |

| Article No. | Part No.      | Page | Article No. | Part No.   | Page     | Article No. | Part No.  | Page     | Article No. | Part No.  | Page |
|-------------|---------------|------|-------------|------------|----------|-------------|-----------|----------|-------------|-----------|------|
| 157-01300   | T120RSMOHIRK2 | 59   | 169-60016   | CTN580     | 141      | 170-03059   | 170-03059 | 161      | 170-03141   | 170-03141 | 152  |
| 161-05000   | 1FRPOC        | 138  | 169-60017   | CTN580STD  | 141      | 170-03060   | 170-03060 | 161      | 170-03142   | 170-03142 | 152  |
| 161-05001   | 1FRP9C        | 138  | 169-60018   | 169-60018  | 140      | 170-03061   | 170-03061 | 161      | 170-03143   | 170-03143 | 152  |
| 161-05002   | 1NOC          | 138  | 169-60019   | 169-60019  | 140      | 170-03062   | 170-03062 | 163      | 170-03144   | 170-03144 | 152  |
| 161-05003   | 1N9C          | 138  | 169-60020   | 169-60020  | 140      | 170-03063   | 170-03063 | 163      | 170-03145   | 170-03145 | 152  |
| 161-05004   | 1NFP9C        | 138  | 169-60021   | 169-60021  | 140      | 170-03064   | 170-03064 | 163      | 170-03146   | 170-03146 | 152  |
| 161-05013   | 1NFP9C        | 138  | 169-60022   | 169-60022  | 140      | 170-03065   | 170-03065 | 163      | 170-03147   | 170-03147 | 152  |
| 161-05015   | 1P9C          | 138  | 169-60500   | CTP10      | 141      | 170-03066   | 170-03066 | 149      | 170-03148   | 170-03148 | 159  |
| 161-05016   | 2.5FRPOC      | 138  | 169-60501   | CTP10STD   | 141      | 170-03067   | 170-03067 | 136, 164 | 170-03149   | 170-03149 | 159  |
| 161-05017   | 2.5FRP9C      | 138  | 169-60502   | CTP1120    | 141      | 170-03068   | 170-03068 | 136, 164 | 170-03150   | 170-03150 | 159  |
| 161-05018   | 2.5NOC        | 138  | 169-60503   | CTP1120STD | 141      | 170-03069   | 170-03069 | 155      | 170-03151   | 170-03151 | 159  |
| 161-05019   | 2.5N9C        | 138  | 169-60504   | CTP1140    | 141      | 170-03070   | 170-03070 | 155      | 170-03152   | 170-03152 | 159  |
| 161-05024   | 2.5NFP9C      | 138  | 169-60505   | CTP1140STD | 141      | 170-03071   | 170-03071 | 149      | 170-03153   | 170-03153 | 151  |
| 161-05027   | 2.5NFP9C      | 138  | 169-60506   | CTP120     | 141      | 170-03072   | 170-03072 | 149      | 170-03154   | 170-03154 | 151  |
| 161-05028   | 2.5P9C        | 138  | 169-60507   | CTP120STD  | 141      | 170-03073   | 170-03073 | 149      | 170-03155   | 170-03155 | 151  |
| 161-05029   | 2FRPOC        | 138  | 169-60508   | CTP140     | 141      | 170-03074   | 170-03074 | 149      | 170-03156   | 170-03156 | 151  |
| 161-05030   | 2FRP9C        | 138  | 169-60509   | CTP140STD  | 141      | 170-03076   | 170-03076 | 147      | 170-03157   | 170-03157 | 151  |
| 161-05032   | 2NOC          | 138  | 169-60511   | CTP20STD   | 141      | 170-03077   | 170-03077 | 147      | 170-03158   | 170-03158 | 162  |
| 161-05034   | 2N9C          | 138  | 169-60512   | CTP340     | 141      | 170-03078   | 170-03078 | 147      | 170-03159   | 170-03159 | 162  |
| 161-05036   | 2NFP9C        | 138  | 169-60513   | CTP340STD  | 141      | 170-03079   | 170-03079 | 147      | 170-03160   | 170-03160 | 162  |
| 161-05043   | 2NFP9C        | 138  | 169-60514   | CTP380     | 141      | 170-03080   | 170-03080 | 147      | 170-03161   | 170-03161 | 162  |
| 161-05047   | 2P9C          | 138  | 169-60515   | CTP380STD  | 141      | 170-03081   | 170-03081 | 147      | 170-03162   | 170-03162 | 162  |
| 161-05048   | 3FRPOC        | 138  | 169-60516   | CTP580     | 141      | 170-03082   | 170-03082 | 158      | 170-03163   | 170-03163 | 162  |
| 161-05049   | 3FRP9C        | 138  | 169-60517   | CTP580STD  | 141      | 170-03083   | 170-03083 | 158      | 170-03164   | 170-03164 | 162  |
| 161-05050   | 3NOC          | 138  | 170-03000   | 170-03000  | 145      | 170-03084   | 170-03084 | 158      | 170-03165   | 170-03165 | 162  |
| 161-05051   | 3N9C          | 138  | 170-03001   | 170-03001  | 145      | 170-03085   | 170-03085 | 158      | 170-03166   | 170-03166 | 162  |
| 161-05052   | 3NFP9C        | 138  | 170-03002   | 170-03002  | 145      | 170-03086   | 170-03086 | 158      | 170-03174   | 170-03174 | 145  |
| 161-05055   | 3NFP9C        | 138  | 170-03003   | 170-03003  | 145      | 170-03087   | 170-03087 | 158      | 170-03175   | 170-03175 | 163  |
| 161-05056   | 3P9C          | 138  | 170-03004   | 170-03004  | 145      | 170-03088   | 170-03088 | 158      | 170-03177   | 170-03177 | 145  |
| 161-05057   | 4FRPOC        | 138  | 170-03005   | 170-03005  | 145      | 170-03089   | 170-03089 | 149      | 170-20400   | 170-20400 | 156  |
| 161-05058   | 4FRP9C        | 138  | 170-03006   | 170-03006  | 149      | 170-03090   | 170-03090 | 149      | 170-20600   | 170-20600 | 156  |
| 161-05071   | 4NOC          | 138  | 170-03007   | 170-03007  | 149      | 170-03091   | 170-03091 | 149      | 170-20800   | 170-20800 | 156  |
| 161-05072   | 4N9C          | 138  | 170-03008   | 170-03008  | 149      | 170-03092   | 170-03092 | 149      | 170-21000   | 170-21000 | 156  |
| 161-05074   | 4NFP9C        | 138  | 170-03010   | 170-03010  | 149      | 170-03093   | 170-03093 | 149      | 170-21200   | 170-21200 | 156  |
| 161-05075   | 4NFP9C        | 138  | 170-03011   | 170-03011  | 149      | 170-03094   | 170-03094 | 149      | 170-21500   | 170-21500 | 156  |
| 161-05076   | 4P9C          | 138  | 170-03012   | 170-03012  | 148      | 170-03095   | 170-03095 | 149      | 170-22000   | 170-22000 | 156  |
| 161-05077   | 5FRP9C        | 138  | 170-03013   | 170-03013  | 148      | 170-03097   | 170-03097 | 163      | 170-22500   | 170-22500 | 156  |
| 161-05078   | 5NOC          | 138  | 170-03014   | 170-03014  | 148      | 170-03098   | 170-03098 | 160      | 170-23000   | 170-23000 | 156  |
| 161-05079   | 5NFP9C        | 138  | 170-03015   | 170-03015  | 148      | 170-03099   | 170-03099 | 160      | 170-25000   | 170-25000 | 156  |
| 161-05080   | 5NFP9C        | 138  | 170-03016   | 170-03016  | 148      | 170-03100   | 170-03100 | 160      | 170-80150   | 170-80150 | 146  |
| 161-05081   | 5P9C          | 138  | 170-03017   | 170-03017  | 150      | 170-03101   | 170-03101 | 160      | 170-80250   | 170-80250 | 146  |
| 161-05084   | 5FRPOC        | 138  | 170-03018   | 170-03018  | 150      | 170-03102   | 170-03102 | 160      | 170-80350   | 170-80350 | 146  |
| 161-05085   | 5N9C          | 138  | 170-03019   | 170-03019  | 150      | 170-03103   | 170-03103 | 160      | 173-00400   | 173-00400 | 154  |
| 161-60001   | 161-60001     | 136  | 170-03020   | 170-03020  | 150      | 170-03104   | 170-03104 | 160      | 173-00600   | 173-00600 | 154  |
| 161-60002   | 161-60002     | 136  | 170-03021   | 170-03021  | 150      | 170-03105   | 170-03105 | 160      | 173-00800   | 173-00800 | 154  |
| 161-60003   | 161-60003     | 136  | 170-03024   | 170-03024  | 157      | 170-03106   | 170-03106 | 160      | 173-01000   | 173-01000 | 154  |
| 161-60004   | 161-60004     | 136  | 170-03025   | 170-03025  | 157      | 170-03107   | 170-03107 | 160      | 173-01200   | 173-01200 | 154  |
| 161-60005   | 161-60005     | 136  | 170-03026   | 170-03026  | 157      | 170-03108   | 170-03108 | 160      | 173-01400   | 173-01400 | 154  |
| 161-63103   | 161-63103     | 134  | 170-03027   | 170-03027  | 155      | 170-03109   | 170-03109 | 160      | 173-01600   | 173-01600 | 154  |
| 161-63203   | 161-63203     | 134  | 170-03028   | 170-03028  | 155      | 170-03110   | 170-03110 | 160      | 173-01800   | 173-01800 | 154  |
| 161-63303   | 161-63303     | 134  | 170-03029   | 170-03029  | 155      | 170-03111   | 170-03111 | 160      | 173-02000   | 173-02000 | 154  |
| 161-63403   | 161-63403     | 134  | 170-03030   | 170-03030  | 155      | 170-03112   | 170-03112 | 160      | 173-60400   | 173-60400 | 153  |
| 161-63503   | 161-63503     | 134  | 170-03031   | 170-03031  | 164      | 170-03113   | 170-03113 | 160      | 173-60600   | 173-60600 | 153  |
| 161-64002   | 161-64002     | 135  | 170-03032   | 170-03032  | 136, 164 | 170-03114   | 170-03114 | 160      | 173-60800   | 173-60800 | 153  |
| 161-64004   | 161-64004     | 135  | 170-03033   | 170-03033  | 136, 164 | 170-03115   | 170-03115 | 160      | 173-61000   | 173-61000 | 153  |
| 161-64006   | 161-64006     | 135  | 170-03034   | 170-03034  | 136, 164 | 170-03116   | 170-03116 | 150      | 173-61200   | 173-61200 | 153  |
| 161-64008   | 161-64008     | 135  | 170-03035   | 170-03035  | 148      | 170-03117   | 170-03117 | 150      | 173-61400   | 173-61400 | 153  |
| 161-64010   | 161-64010     | 135  | 170-03036   | 170-03036  | 150      | 170-03118   | 170-03118 | 150      | 173-61600   | 173-61600 | 153  |
| 161-64012   | 161-64012     | 135  | 170-03037   | 170-03037  | 157      | 170-03119   | 170-03119 | 150      | 173-61800   | 173-61800 | 153  |
| 161-64014   | 161-64014     | 135  | 170-03038   | 170-03038  | 157      | 170-03120   | 170-03120 | 150      | 173-62000   | 173-62000 | 153  |
| 161-64112   | 161-64112     | 134  | 170-03039   | 170-03039  | 164      | 170-03121   | 170-03121 | 150      | 181-00001   | CSG       | 112  |
| 161-64213   | 161-64213     | 134  | 170-03040   | 170-03040  | 164      | 170-03122   | 170-03122 | 150      | 181-00002   | CSW       | 112  |
| 161-64310   | 161-64310     | 134  | 170-03041   | 170-03041  | 145      | 170-03123   | 170-03123 | 148      | 181-00003   | SCG       | 112  |
| 161-64414   | 161-64414     | 134  | 170-03042   | 170-03042  | 145      | 170-03124   | 170-03124 | 157      | 181-00004   | SCW       | 112  |
| 161-64507   | 161-64507     | 134  | 170-03043   | 170-03043  | 145      | 170-03125   | 170-03125 | 157      | 181-00024   | 181-00024 | 122  |
| 169-60000   | CTN10         | 141  | 170-03044   | 170-03044  | 145      | 170-03126   | 170-03126 | 157      | 181-00025   | 181-00025 | 117  |
| 169-60001   | CTN10STD      | 141  | 170-03045   | 170-03045  | 145      | 170-03127   | 170-03127 | 157      | 181-00027   | 181-00027 | 123  |
| 169-60002   | CTN1120       | 141  | 170-03046   | 170-03046  | 155      | 170-03128   | 170-03128 | 157      | 181-00136   | 181-00136 | 117  |
| 169-60003   | CTN1120STD    | 141  | 170-03047   | 170-03047  | 155      | 170-03129   | 170-03129 | 157      | 181-00137   | 181-00137 | 121  |
| 169-60004   | CTN1140       | 141  | 170-03048   | 170-03048  | 155      | 170-03130   | 170-03130 | 157      | 181-00139   | PR1       | 112  |
| 169-60005   | CTN1140STD    | 141  | 170-03049   | 170-03049  | 155      | 170-03131   | 170-03131 | 157      | 181-00140   | 181-00140 | 116  |
| 169-60006   | CTN120        | 141  | 170-03050   | 170-03050  | 161      | 170-03132   | 170-03132 | 157      | 181-00141   | 181-00141 | 116  |
| 169-60007   | CTN120STD     | 141  | 170-03051   | 170-03051  | 161      | 170-03133   | 170-03133 | 157      | 181-00142   | 181-00142 | 116  |
| 169-60008   | CTN140        | 141  | 170-03052   | 170-03052  | 161      | 170-03134   | 170-03134 | 157      | 181-00143   | 181-00143 | 116  |
| 169-60009   | CTN140STD     | 141  | 170-03053   | 170-03053  | 161      | 170-03135   | 170-03135 | 157      | 181-00144   | 181-00144 | 116  |
| 169-60011   | CTN20STD      | 141  | 170-03054   | 170-03054  | 163      | 170-03136   | 170-03136 | 157      | 181-00145   | 181-00145 | 116  |
| 169-60012   | CTN340        | 141  | 170-03055   | 170-03055  | 163      | 170-03137   | 170-03137 | 157      | 181-00147   | 181-00147 | 120  |
| 169-60013   | CTN340STD     | 141  | 170-03056   | 170-03056  | 163      | 170-03138   | 170-03138 | 157      | 181-00148   | 181-00148 | 121  |
| 169-60014   | CTN380        | 141  | 170-03057   | 170-03057  | 163      | 170-03139   | 170-03139 | 157      | 181-00152   | 181-00152 | 131  |
| 169-60015   | CTN380STD     | 141  | 170-03058   | 170-03058  | 161      | 170-03140   | 170-03140 | 152      | 181-00153   | 181-00153 | 131  |

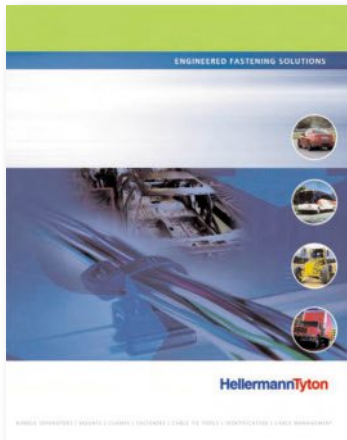
| Article No. | Part No.   | Page | Article No. | Part No.  | Page | Article No. | Part No.  | Page | Article No. | Part No.  | Page |
|-------------|------------|------|-------------|-----------|------|-------------|-----------|------|-------------|-----------|------|
| 181-00154   | 181-00154  | 131  | 181-00467   | 181-00467 | 118  | 181-00552   | 181-00552 | 122  | 181-00638   | 181-00638 | 128  |
| 181-00155   | 181-00155  | 126  | 181-00468   | 181-00468 | 119  | 181-00554   | 181-00554 | 123  | 181-00639   | 181-00639 | 128  |
| 181-00156   | 181-00156  | 126  | 181-00469   | 181-00469 | 119  | 181-00557   | 181-00557 | 125  | 181-00640   | 181-00640 | 128  |
| 181-00157   | 181-00157  | 126  | 181-00470   | 181-00470 | 120  | 181-00558   | 181-00558 | 125  | 181-00641   | 181-00641 | 128  |
| 181-00158   | SDWR4X20K2 | 111  | 181-00471   | 181-00471 | 120  | 181-00560   | 181-00560 | 126  | 181-00642   | 181-00642 | 128  |
| 181-00159   | 181-00159  | 125  | 181-00472   | 181-00472 | 120  | 181-00562   | 181-00562 | 126  | 181-00643   | 181-00643 | 128  |
| 181-00212   | 181-00212  | 124  | 181-00473   | 181-00473 | 121  | 181-00564   | 181-00564 | 122  | 181-00644   | 181-00644 | 128  |
| 181-00214   | 181-00214  | 124  | 181-00474   | 181-00474 | 121  | 181-00565   | 181-00565 | 122  | 181-00645   | 181-00645 | 129  |
| 181-00216   | 181-00216  | 124  | 181-00475   | 181-00475 | 121  | 181-00566   | 181-00566 | 122  | 181-00646   | 181-00646 | 129  |
| 181-00218   | 181-00218  | 124  | 181-00476   | 181-00476 | 121  | 181-00567   | 181-00567 | 122  | 181-00647   | 181-00647 | 129  |
| 181-00220   | 181-00220  | 119  | 181-00477   | 181-00477 | 121  | 181-00568   | 181-00568 | 122  | 181-00648   | 181-00648 | 129  |
| 181-00222   | 181-00222  | 119  | 181-00479   | 181-00479 | 121  | 181-00569   | 181-00569 | 122  | 181-00649   | 181-00649 | 130  |
| 181-00224   | 181-00224  | 119  | 181-00480   | 181-00480 | 121  | 181-00570   | 181-00570 | 122  | 181-00651   | 181-00651 | 130  |
| 181-00226   | 181-00226  | 119  | 181-00481   | 181-00481 | 116  | 181-00571   | 181-00571 | 122  | 181-00652   | 181-00652 | 130  |
| 181-00228   | 181-00228  | 129  | 181-00482   | 181-00482 | 117  | 181-00572   | 181-00572 | 122  | 181-00653   | 181-00653 | 130  |
| 181-00230   | 181-00230  | 129  | 181-00483   | 181-00483 | 117  | 181-00573   | 181-00573 | 123  | 181-00654   | 181-00654 | 130  |
| 181-00232   | 181-00232  | 129  | 181-00485   | 181-00485 | 117  | 181-00574   | 181-00574 | 118  | 181-00655   | 181-00655 | 130  |
| 181-00234   | 181-00234  | 129  | 181-00486   | 181-00486 | 117  | 181-00575   | 181-00575 | 123  | 181-00656   | 181-00656 | 130  |
| 181-00236   | 181-00236  | 124  | 181-00487   | 181-00487 | 118  | 181-00576   | 181-00576 | 123  | 181-00657   | 181-00657 | 130  |
| 181-00238   | 181-00238  | 124  | 181-00488   | 181-00488 | 118  | 181-00577   | 181-00577 | 123  | 181-00658   | 181-00658 | 130  |
| 181-00240   | 181-00240  | 124  | 181-00489   | 181-00489 | 118  | 181-00578   | 181-00578 | 123  | 181-00659   | 181-00659 | 130  |
| 181-00242   | 181-00242  | 124  | 181-00490   | 181-00490 | 116  | 181-00579   | 181-00579 | 123  | 181-00663   | 181-00663 | 131  |
| 181-00244   | 181-00244  | 119  | 181-00491   | 181-00491 | 116  | 181-00580   | 181-00580 | 123  | 181-00664   | 181-00664 | 131  |
| 181-00246   | 181-00246  | 119  | 181-00492   | 181-00492 | 116  | 181-00581   | 181-00581 | 124  | 181-00665   | 181-00665 | 131  |
| 181-00248   | 181-00248  | 119  | 181-00493   | 181-00493 | 116  | 181-00582   | 181-00582 | 124  | 181-00666   | 181-00666 | 131  |
| 181-00250   | 181-00250  | 119  | 181-00494   | 181-00494 | 117  | 181-00583   | 181-00583 | 124  | 181-00667   | 181-00667 | 131  |
| 181-00252   | 181-00252  | 129  | 181-00495   | 181-00495 | 117  | 181-00584   | 181-00584 | 125  | 181-00671   | 181-00671 | 117  |
| 181-00254   | 181-00254  | 129  | 181-00496   | 181-00496 | 117  | 181-00585   | 181-00585 | 125  | 181-00672   | 181-00672 | 120  |
| 181-00256   | SNP18A10C2 | 173  | 181-00497   | 181-00497 | 117  | 181-00586   | 181-00586 | 125  | 181-00684   | 181-00684 | 114  |
| 181-00259   | 181-00259  | 129  | 181-00498   | 181-00498 | 118  | 181-00587   | 181-00587 | 125  | 181-05500   | 181-05500 | 116  |
| 181-00260   | 181-00260  | 115  | 181-00499   | 181-00499 | 118  | 181-00588   | 181-00588 | 125  | 181-11000   | 181-11000 | 116  |
| 181-00262   | 181-00262  | 115  | 181-00500   | 181-00500 | 118  | 181-00589   | 181-00589 | 125  | 181-11002   | 181-11002 | 116  |
| 181-00265   | 181-00265  | 129  | 181-00501   | 181-00501 | 118  | 181-00590   | 181-00590 | 125  | 181-11005   | 181-11005 | 116  |
| 181-00300   | 181-00300  | 114  | 181-00503   | 181-00503 | 119  | 181-00591   | 181-00591 | 126  | 181-11008   | 181-11008 | 116  |
| 181-00301   | 181-00301  | 114  | 181-00504   | 181-00504 | 119  | 181-00592   | 181-00592 | 126  | 181-11009   | 181-11009 | 122  |
| 181-00302   | 181-00302  | 114  | 181-00505   | 181-00505 | 119  | 181-00593   | 181-00593 | 126  | 181-11013   | 181-11013 | 122  |
| 181-00303   | 181-00303  | 114  | 181-00506   | 181-00506 | 119  | 181-00594   | 181-00594 | 126  | 181-11015   | 181-11015 | 122  |
| 181-00304   | 181-00304  | 114  | 181-00507   | 181-00507 | 120  | 181-00595   | 181-00595 | 126  | 181-11016   | 181-11016 | 122  |
| 181-00305   | 181-00305  | 114  | 181-00508   | 181-00508 | 120  | 181-00596   | 181-00596 | 126  | 181-11019   | 181-11019 | 122  |
| 181-00306   | 181-00306  | 114  | 181-00509   | 181-00509 | 120  | 181-00597   | 181-00597 | 127  | 181-11021   | 181-11021 | 122  |
| 181-00307   | 181-00307  | 114  | 181-00510   | 181-00510 | 120  | 181-00598   | 181-00598 | 127  | 181-11501   | 181-11501 | 116  |
| 181-00308   | 181-00308  | 114  | 181-00511   | 181-00511 | 120  | 181-00599   | 181-00599 | 127  | 181-11502   | 181-11502 | 116  |
| 181-00309   | 181-00309  | 114  | 181-00512   | 181-00512 | 120  | 181-00600   | 181-00600 | 127  | 181-11505   | 181-11505 | 122  |
| 181-00311   | 181-00311  | 115  | 181-00513   | 181-00513 | 120  | 181-00601   | 181-00601 | 127  | 181-11507   | 181-11507 | 122  |
| 181-00312   | 181-00312  | 119  | 181-00514   | 181-00514 | 120  | 181-00602   | 181-00602 | 127  | 181-11509   | 181-11509 | 122  |
| 181-00313   | 181-00313  | 119  | 181-00515   | 181-00515 | 120  | 181-00603   | 181-00603 | 128  | 181-11511   | 181-11511 | 122  |
| 181-00314   | 181-00314  | 119  | 181-00516   | 181-00516 | 121  | 181-00604   | 181-00604 | 128  | 181-12001   | 181-12001 | 117  |
| 181-00315   | 181-00315  | 119  | 181-00517   | 181-00517 | 121  | 181-00605   | 181-00605 | 128  | 181-12002   | 181-12002 | 117  |
| 181-00316   | 181-00316  | 124  | 181-00518   | 181-00518 | 121  | 181-00606   | 181-00606 | 128  | 181-12005   | 181-12005 | 122  |
| 181-00317   | 181-00317  | 124  | 181-00519   | 181-00519 | 121  | 181-00607   | 181-00607 | 128  | 181-12008   | 181-12008 | 122  |
| 181-00318   | 181-00318  | 124  | 181-00520   | 181-00520 | 121  | 181-00608   | 181-00608 | 128  | 181-12011   | 181-12011 | 122  |
| 181-00319   | 181-00319  | 124  | 181-00521   | 181-00521 | 121  | 181-00609   | 181-00609 | 129  | 181-12013   | 181-12013 | 122  |
| 181-00320   | 181-00320  | 129  | 181-00522   | 181-00522 | 121  | 181-00610   | 181-00610 | 129  | 181-13001   | 181-13001 | 117  |
| 181-00321   | 181-00321  | 129  | 181-00523   | 181-00523 | 121  | 181-00611   | 181-00611 | 130  | 181-13003   | 181-13003 | 122  |
| 181-00322   | 181-00322  | 129  | 181-00524   | 181-00524 | 116  | 181-00612   | 181-00612 | 130  | 181-13006   | 181-13006 | 122  |
| 181-00323   | 181-00323  | 129  | 181-00525   | 181-00525 | 116  | 181-00613   | 181-00613 | 130  | 181-13008   | 181-13008 | 122  |
| 181-00441   | SDWR4X40P2 | 111  | 181-00526   | 181-00526 | 116  | 181-00614   | 181-00614 | 130  | 181-13010   | 181-13010 | 122  |
| 181-00442   | 181-00442  | 115  | 181-00527   | 181-00527 | 116  | 181-00615   | 181-00615 | 130  | 181-13012   | 181-13012 | 122  |
| 181-00443   | 181-00443  | 115  | 181-00528   | 181-00528 | 116  | 181-00616   | 181-00616 | 130  | 181-14000   | 181-14000 | 117  |
| 181-00445   | 181-00445  | 115  | 181-00529   | 181-00529 | 116  | 181-00617   | 181-00617 | 131  | 181-14001   | 181-14001 | 122  |
| 181-00446   | 181-00446  | 115  | 181-00530   | 181-00530 | 117  | 181-00618   | 181-00618 | 131  | 181-14003   | 181-14003 | 122  |
| 181-00447   | 181-00447  | 115  | 181-00531   | 181-00531 | 117  | 181-00619   | 181-00619 | 131  | 181-14006   | 181-14006 | 122  |
| 181-00448   | 181-00448  | 115  | 181-00532   | 181-00532 | 117  | 181-00620   | 181-00620 | 128  | 181-15100   | 181-15100 | 117  |
| 181-00449   | 181-00449  | 115  | 181-00533   | 181-00533 | 117  | 181-00621   | 181-00621 | 127  | 181-15101   | 181-15101 | 117  |
| 181-00450   | 181-00450  | 115  | 181-00534   | 181-00534 | 118  | 181-00622   | 181-00622 | 127  | 181-15102   | 181-15102 | 117  |
| 181-00451   | 181-00451  | 115  | 181-00535   | 181-00535 | 118  | 181-00623   | 181-00623 | 127  | 181-15105   | 181-15105 | 122  |
| 181-00452   | 181-00452  | 116  | 181-00536   | 181-00536 | 118  | 181-00624   | 181-00624 | 127  | 181-15107   | 181-15107 | 122  |
| 181-00453   | 181-00453  | 116  | 181-00537   | 181-00537 | 118  | 181-00625   | 181-00625 | 127  | 181-15201   | 181-15201 | 118  |
| 181-00454   | 181-00454  | 116  | 181-00538   | 181-00538 | 118  | 181-00626   | 181-00626 | 127  | 181-15202   | 181-15202 | 118  |
| 181-00455   | 181-00455  | 116  | 181-00539   | 181-00539 | 118  | 181-00627   | 181-00627 | 127  | 181-15203   | 181-15203 | 123  |
| 181-00456   | 181-00456  | 116  | 181-00540   | 181-00540 | 119  | 181-00628   | 181-00628 | 127  | 181-15207   | 181-15207 | 123  |
| 181-00457   | 181-00457  | 116  | 181-00541   | 181-00541 | 119  | 181-00629   | 181-00629 | 127  | 181-15209   | 181-15209 | 123  |
| 181-00458   | 181-00458  | 117  | 181-00542   | 181-00542 | 120  | 181-00630   | 181-00630 | 127  | 181-15211   | 181-15211 | 123  |
| 181-00459   | 181-00459  | 117  | 181-00543   | 181-00543 | 121  | 181-00631   | 181-00631 | 127  | 181-15213   | 181-15213 | 123  |
| 181-00460   | 181-00460  | 117  | 181-00544   | 181-00544 | 121  | 181-00632   | 181-00632 | 127  | 181-15300   | 181-15300 | 118  |
| 181-00461   | 181-00461  | 117  | 181-00545   | 181-00545 | 121  | 181-00633   | 181-00633 | 128  | 181-15304   | 181-15304 | 123  |
| 181-00462   | 181-00462  | 118  | 181-00546   | 181-00546 | 121  | 181-00634   | 181-00634 | 128  | 181-15306   | 181-15306 | 123  |
| 181-00463   | 181-00463  | 118  | 181-00547   | 181-00547 | 121  | 181-00635   | 181-00635 | 128  | 181-15307   | 181-15307 | 123  |
| 181-00464   | 181-00464  | 118  | 181-00548   | 181-00548 | 122  | 181-00636   | 181-00636 | 128  | 181-15308   | 181-15308 | 123  |
| 181-00465   | 181-00465  | 118  | 181-00550   | 181-00550 | 123  | 181-00637   | 181-00637 | 127  | 181-15400   | 181-15400 | 123  |

| Article No. | Part No.   | Page | Article No. | Part No.  | Page | Article No. | Part No.      | Page | Article No. | Part No.     | Page |
|-------------|------------|------|-------------|-----------|------|-------------|---------------|------|-------------|--------------|------|
| 181-15404   | 181-15404  | 123  | 181-43008   | 181-43008 | 126  | 184-24004   | 184-24004     | 129  | 190-00204   | SNP710C2     | 173  |
| 181-15406   | 181-15406  | 123  | 181-44006   | 181-44006 | 121  | 184-24007   | 184-24007     | 129  | 190-00206   | SNP710M4     | 173  |
| 181-15500   | 181-15500  | 117  | 181-44009   | 181-44009 | 121  | 184-32001   | 184-32001     | 130  | 190-00209   | SNP70GHSOC2  | 172  |
| 181-15502   | 181-15502  | 117  | 181-44015   | 181-44015 | 121  | 184-32004   | 184-32004     | 130  | 190-00212   | SNP7010C2    | 174  |
| 181-15503   | 181-15503  | 117  | 181-44018   | 181-44018 | 121  | 184-33001   | 184-33001     | 130  | 190-00215   | SNP76GHSOC2  | 172  |
| 181-15504   | 181-15504  | 117  | 181-44020   | 181-44020 | 126  | 184-33002   | 184-33002     | 130  | 190-00217   | SNP7610C2    | 174  |
| 181-15505   | 181-15505  | 123  | 181-44027   | 181-44027 | 126  | 184-33004   | 184-33004     | 130  | 190-00222   | SNP8GHSOM4   | 171  |
| 181-15509   | 181-15509  | 123  | 181-44031   | 181-44031 | 126  | 184-34001   | 184-34001     | 130  | 190-00224   | SNP810C2     | 173  |
| 181-15511   | 181-15511  | 123  | 181-44033   | 181-44033 | 126  | 184-34003   | 184-34003     | 130  | 190-00226   | SNP810M4     | 173  |
| 181-15513   | 181-15513  | 123  | 181-44035   | 181-44035 | 126  | 184-34005   | 184-34005     | 130  | 190-00229   | SNP80GHSOC2  | 172  |
| 181-15515   | 181-15515  | 123  | 181-45000   | 181-45000 | 121  | 184-42001   | 184-42001     | 131  | 190-00231   | SNP8010C2    | 174  |
| 181-20021   | SLWR20C2   | 111  | 181-45001   | 181-45001 | 121  | 184-42003   | 184-42003     | 131  | 190-00233   | SNP9010C2    | 174  |
| 181-20201   | SDWR2X20K2 | 111  | 181-45002   | 181-45002 | 126  | 184-43001   | 184-43001     | 131  | 190-00244   | SNP33GHSOK2  | 172  |
| 181-21000   | 181-21000  | 118  | 181-45010   | 181-45010 | 126  | 184-43003   | 184-43003     | 131  | 190-00245   | SNP3810H4    | 174  |
| 181-21001   | 181-21001  | 118  | 181-45011   | 181-45011 | 126  | 184-44001   | 184-44001     | 131  | 190-00246   | SNP42N10C2   | 174  |
| 181-21003   | 181-21003  | 118  | 181-45012   | 181-45012 | 126  | 184-44002   | 184-44002     | 131  | 190-00247   | SNP42N10K2   | 174  |
| 181-21005   | 181-21005  | 123  | 181-45013   | 181-45013 | 126  | 184-44004   | 184-44004     | 131  | 190-00248   | SNP5010C2    | 174  |
| 181-21007   | 181-21007  | 123  | 181-64000   | 181-64000 | 121  | 190-00019   | SNP1GHSOM4    | 171  | 190-00249   | SNP90GHSOC2  | 172  |
| 181-21009   | 181-21009  | 123  | 181-64001   | 181-64001 | 121  | 190-00022   | SNP110C2      | 173  | 190-00250   | SNP10110X2   | 174  |
| 181-22005   | 181-22005  | 118  | 181-84004   | 181-84004 | 121  | 190-00023   | SNP110M4      | 173  | 190-00251   | SNP1.5GHSOC2 | 171  |
| 181-22008   | 181-22008  | 118  | 181-84007   | 181-84007 | 121  | 190-00027   | SNP1.2510C2   | 173  | 190-00252   | SNP12A10C2   | 173  |
| 181-22013   | 181-22013  | 118  | 181-90050   | 181-90050 | 115  | 190-00028   | SNP1.2510M4   | 173  | 190-00253   | SNP12A10M4   | 173  |
| 181-22016   | 181-22016  | 118  | 181-91000   | 181-91000 | 115  | 190-00029   | SNP1.25GHSOC2 | 171  | 190-00254   | SNP12AGHSOC2 | 171  |
| 181-22018   | 181-22018  | 118  | 181-91004   | 181-91004 | 115  | 190-00030   | SNP1.25GHSOM4 | 171  | 190-00255   | SNP12AGHSOM4 | 171  |
| 181-22020   | 181-22020  | 123  | 181-91008   | 181-91008 | 115  | 190-00033   | SNP1.510C2    | 173  | 190-00257   | SNP18A10M4   | 173  |
| 181-22024   | 181-22024  | 123  | 181-91503   | 181-91503 | 115  | 190-00034   | SNP1.510M4    | 173  | 190-00258   | SNP18AGHSOC2 | 171  |
| 181-22028   | 181-22028  | 123  | 181-91507   | 181-91507 | 115  | 190-00035   | SNP1.5GHSOM4  | 171  | 190-00259   | SNP18AGHSOM4 | 171  |
| 181-22030   | 181-22030  | 123  | 181-91510   | 181-91510 | 115  | 190-00043   | SNP10GHSOM4   | 171  | 190-00300   | SNP14AGHSOC2 | 171  |
| 181-22032   | 181-22032  | 123  | 181-92001   | 181-92001 | 115  | 190-00045   | SNP1010C2     | 173  | 190-00301   | SNP14AGHSOM4 | 171  |
| 181-22034   | 181-22034  | 123  | 181-92005   | 181-92005 | 115  | 190-00046   | SNP1010M4     | 173  | 190-00302   | SNP14A10C2   | 173  |
| 181-23001   | 181-23001  | 119  | 181-92011   | 181-92011 | 115  | 190-00052   | SNP10010X2    | 174  | 190-00303   | SNP14A10M4   | 173  |
| 181-23002   | 181-23002  | 119  | 181-93003   | 181-93003 | 115  | 190-00053   | SNP101GHSOX2  | 172  | 191-00005   | SNP42NGHSOK2 | 172  |
| 181-23003   | 181-23003  | 124  | 181-93008   | 181-93008 | 115  | 190-00076   | SNP16GHSOM4   | 171  | 191-00008   | SNP42NGHSOC2 | 172  |
| 181-23007   | 181-23007  | 124  | 181-93011   | 181-93011 | 115  | 190-00077   | SNP1610C2     | 173  | 191-00010   | PHSNP2-36    | 170  |
| 181-23009   | 181-23009  | 124  | 181-94003   | 181-94003 | 115  | 190-00079   | SNP1610M4     | 173  | 191-00012   | PHSNP38-100  | 170  |
| 181-23012   | 181-23012  | 124  | 181-94009   | 181-94009 | 115  | 190-00090   | SNP19GHSOC2   | 172  | 191-00014   | PSNP2-22     | 170  |
| 181-24000   | 181-24000  | 119  | 181-94014   | 181-94014 | 115  | 190-00093   | SNP19GHSOM4   | 172  | 191-00019   | PSNP24-70    | 170  |
| 181-24002   | 181-24002  | 119  | 181-96000   | 181-96000 | 115  | 190-00094   | SNP1910C2     | 174  | 191-01700   | MSNP1-70     | 170  |
| 181-24003   | 181-24003  | 124  | 181-96002   | 181-96002 | 115  | 190-00095   | SNP1910M4     | 174  | 191-02220   | ASN2-22      | 170  |
| 181-24008   | 181-24008  | 124  | 182-00001   | PRT1      | 112  | 190-00098   | SNP2GHSOM4    | 171  | 191-24700   | ASN2-70      | 170  |
| 181-24011   | 181-24011  | 124  | 182-00002   | TDNT      | 113  | 190-00101   | SNP210C2      | 173  | 192-10010   | SNP1GHSOC2   | 171  |
| 181-24013   | 181-24013  | 124  | 184-11004   | 184-11004 | 127  | 190-00102   | SNP210M4      | 173  | 192-10020   | SNP2GHSOC2   | 171  |
| 181-24014   | 181-24014  | 124  | 184-11006   | 184-11006 | 127  | 190-00111   | SNP22GHSOM4   | 172  | 192-10040   | SNP4GHSOC2   | 171  |
| 181-30031   | SLWR30C2   | 111  | 184-11008   | 184-11008 | 127  | 190-00113   | SNP2210C2     | 174  | 192-10060   | SNP6GHSOC2   | 171  |
| 181-31001   | 181-31001  | 120  | 184-11009   | 184-11009 | 127  | 190-00114   | SNP2210M4     | 174  | 192-10070   | SNP7GHSOC2   | 171  |
| 181-31002   | 181-31002  | 120  | 184-11010   | 184-11010 | 127  | 190-00119   | SNP24GHSOH4   | 172  | 192-10080   | SNP8GHSOC2   | 171  |
| 181-31007   | 181-31007  | 125  | 184-11012   | 184-11012 | 127  | 190-00121   | SNP2410C2     | 174  | 192-10100   | SNP10GHSOC2  | 171  |
| 181-32002   | 181-32002  | 120  | 184-12002   | 184-12002 | 127  | 190-00122   | SNP2410H4     | 174  | 192-10160   | SNP16GHSOC2  | 171  |
| 181-32003   | 181-32003  | 120  | 184-12004   | 184-12004 | 127  | 190-00124   | SNP2810C2     | 174  | 192-10220   | SNP22GHSOC2  | 172  |
| 181-32004   | 181-32004  | 125  | 184-12005   | 184-12005 | 127  | 190-00125   | SNP2810H4     | 174  | 192-10240   | SNP24GHSOC2  | 172  |
| 181-32005   | 181-32005  | 125  | 184-12007   | 184-12007 | 127  | 190-00127   | SNP28GHSOC2   | 172  | 192-10320   | SNP32GHSOK2  | 172  |
| 181-32009   | 181-32009  | 125  | 184-13003   | 184-13003 | 127  | 190-00128   | SNP28GHSOH4   | 172  | 192-10360   | SNP36GHSOK2  | 172  |
| 181-32012   | 181-32012  | 125  | 184-13005   | 184-13005 | 127  | 190-00132   | SNP3GHSOC2    | 171  | 192-10380   | SNP38GHSOK2  | 172  |
| 181-32015   | 181-32015  | 125  | 184-13007   | 184-13007 | 127  | 190-00134   | SNP3GHSOM4    | 171  | 192-10500   | SNP50GHSOC2  | 172  |
| 181-33000   | 181-33000  | 120  | 184-14002   | 184-14002 | 127  | 190-00135   | SNP310C2      | 173  | 192-11000   | SNP100GHSOX2 | 172  |
| 181-33004   | 181-33004  | 120  | 184-14004   | 184-14004 | 127  | 190-00136   | SNP310M4      | 173  | 201-20010   | 201-20010    | 135  |
| 181-33006   | 181-33006  | 120  | 184-15101   | 184-15101 | 127  | 190-00140   | SNP32GHSOH4   | 172  | 211-00109   | TSD025010M4  | 177  |
| 181-33009   | 181-33009  | 125  | 184-15102   | 184-15102 | 127  | 190-00142   | SNP3210K2     | 174  | 211-00110   | TSD031210M4  | 177  |
| 181-33015   | 181-33015  | 125  | 184-15151   | 184-15151 | 128  | 190-00143   | SNP3210H4     | 174  | 211-00111   | TSD037510M4  | 177  |
| 181-33018   | 181-33018  | 125  | 184-15152   | 184-15152 | 128  | 190-00146   | SNP3310K2     | 174  | 211-00112   | TSD050010M4  | 177  |
| 181-33021   | 181-33021  | 125  | 184-15153   | 184-15153 | 128  | 190-00147   | SNP3310H4     | 174  | 211-00113   | TSD056210M4  | 177  |
| 181-33022   | 181-33022  | 125  | 184-15155   | 184-15155 | 128  | 190-00148   | SNP33GHSOH4   | 172  | 211-00114   | TSD062510M4  | 177  |
| 181-34000   | 181-34000  | 120  | 184-15201   | 184-15201 | 128  | 190-00149   | SNP34GHSOK2   | 172  | 211-00115   | TSD075010M4  | 177  |
| 181-34001   | 181-34001  | 120  | 184-15202   | 184-15202 | 128  | 190-00150   | SNP34GHSOH4   | 172  | 211-00116   | TSD087510H4  | 177  |
| 181-34002   | 181-34002  | 125  | 184-15205   | 184-15205 | 128  | 190-00151   | SNP3410K2     | 174  | 211-00117   | TSD012510M4  | 177  |
| 181-34004   | 181-34004  | 125  | 184-15206   | 184-15206 | 128  | 190-00152   | SNP3410H4     | 174  | 211-00118   | TSD017810M4  | 177  |
| 181-34007   | 181-34007  | 125  | 184-15301   | 184-15301 | 128  | 190-00156   | SNP3610H4     | 174  | 211-00119   | TSD100010H4  | 177  |
| 181-35002   | 181-35002  | 126  | 184-15302   | 184-15302 | 128  | 190-00157   | SNP3610K2     | 174  | 211-00120   | TSD112510H4  | 177  |
| 181-35005   | 181-35005  | 126  | 184-15304   | 184-15304 | 128  | 190-00158   | SNP36GHSOH4   | 172  | 211-00121   | TSD125010F4  | 177  |
| 181-40041   | SLWR40C2   | 111  | 184-15401   | 184-15401 | 128  | 190-00162   | SNP3810K2     | 174  | 211-00122   | TSD150010F4  | 177  |
| 181-42002   | 181-42002  | 121  | 184-15403   | 184-15403 | 128  | 190-00163   | SNP38GHSOH4   | 172  | 211-00123   | TSD02500M4   | 177  |
| 181-42004   | 181-42004  | 121  | 184-21002   | 184-21002 | 128  | 190-00165   | SNP410C2      | 173  | 211-00124   | TSD03750M4   | 177  |
| 181-42005   | 181-42005  | 126  | 184-21003   | 184-21003 | 128  | 190-00167   | SNP4GHSOM4    | 171  | 211-00125   | TSD05000M4   | 177  |
| 181-42008   | 181-42008  | 126  | 184-22003   | 184-22003 | 128  | 190-00170   | SNP410M4      | 173  | 211-00126   | TSD06250M4   | 177  |
| 181-42010   | 181-42010  | 126  | 184-22005   | 184-22005 | 128  | 190-00186   | SNP6GHSOM4    | 171  | 211-00127   | TSD07500M4   | 177  |
| 181-42014   | 181-42014  | 126  | 184-22008   | 184-22008 | 128  | 190-00187   | SNP610C2      | 173  | 211-00128   | TSD08750H4   | 177  |
| 181-43001   | 181-43001  | 121  | 184-23003   | 184-23003 | 129  | 190-00190   | SNP610M4      | 173  | 211-00129   | TSD01250M4   | 177  |
| 181-43002   | 181-43002  | 121  | 184-23004   | 184-23004 | 129  | 190-00196   | SNP6010C2     | 174  | 211-00130   | TSD01780M4   | 177  |
| 181-43004   | 181-43004  | 126  | 184-23006   | 184-23006 | 129  | 190-00197   | SNP60GHSOC2   | 172  | 211-00131   | TSD01250M4   | 176  |
| 181-43006   | 181-43006  | 126  | 184-24003   | 184-24003 | 129  | 190-00202   | SNP7GHSOM4    | 171  | 211-00132   | TSD012510M4  | 176  |

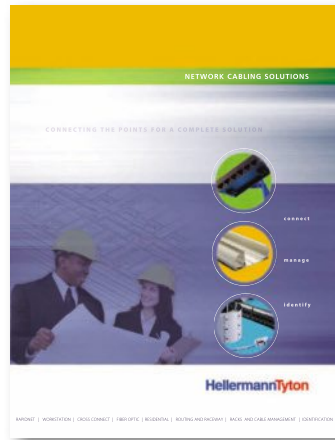
| Article No. | Part No.    | Page | Article No. | Part No.   | Page | Article No. | Part No.    | Page     | Article No. | Part No.    | Page     |
|-------------|-------------|------|-------------|------------|------|-------------|-------------|----------|-------------|-------------|----------|
| 211-00133   | T3D01870M4  | 176  | 553-50008   | 553-50008  | 207  | 556-00144   | TTDTHOUT    | 193      | 558-00227   | SMWWAXOUT   | 190      |
| 211-00134   | T3D02500M4  | 176  | 553-50009   | 553-50009  | 207  | 556-00145   | TT822OUTSM  | 192      | 558-00307   | 558-00307   | 204      |
| 211-00135   | T3D025010M4 | 176  | 553-50010   | 553-50010  | 207  | 556-00147   | TT822OUTSM2 | 192      | 558-00308   | 558-00308   | 204      |
| 211-00136   | T3D03120M4  | 176  | 553-50011   | 553-50011  | 207  | 556-00148   | TT822OUTSM3 | 192      | 558-00309   | 558-00309   | 204      |
| 211-00137   | T3D031210M4 | 176  | 553-50012   | 553-50012  | 207  | 556-00149   | TT822OUTSM4 | 192      | 558-00310   | 558-00310   | 204      |
| 211-00138   | T3D03750M4  | 176  | 553-50013   | 553-50013  | 207  | 556-00150   | TT822OUTSM5 | 192      | 558-00311   | 558-00311   | 204      |
| 211-00139   | T3D037510M4 | 176  | 553-50014   | 553-50014  | 207  | 556-00151   | TT822OUTSM6 | 192      | 558-00312   | 558-00312   | 204      |
| 211-00140   | T3D043710M4 | 176  | 553-50015   | 553-50015  | 207  | 556-00152   | TT822OUTSM7 | 192      | 558-00313   | 558-00313   | 204      |
| 211-00141   | T3D050010M4 | 176  | 553-50016   | 553-50016  | 207  | 556-00153   | TT822OUTSM8 | 192      | 558-00314   | 558-00314   | 204      |
| 211-00142   | T3D05000M4  | 176  | 553-50017   | 553-50017  | 207  | 556-00155   | TT822OUT2   | 193      | 558-00327   | 558-00327   | 231      |
| 211-00143   | T3D056210M4 | 176  | 553-50018   | 553-50018  | 207  | 556-00156   | TT822OUT3   | 193      | 558-00328   | 558-00328   | 231      |
| 211-00144   | T3D06250M4  | 176  | 553-50019   | 553-50019  | 207  | 556-00157   | TT822OUT4   | 193      | 558-00330   | 558-00330   | 231      |
| 211-00145   | T3D062510M4 | 176  | 553-50020   | 553-50020  | 207  | 556-00158   | TT822OUT5   | 193      | 558-00331   | 558-00331   | 231      |
| 211-00146   | T3D04370M4  | 176  | 553-50021   | 553-50021  | 207  | 556-00159   | TT822OUT6   | 193      | 558-00333   | 558-00333   | 231      |
| 211-00147   | T5D03120M4  | 177  | 553-50022   | 553-50022  | 207  | 556-00160   | TT822OUT7   | 193      | 558-00334   | 558-00334   | 231      |
| 211-00148   | T5D043710M4 | 177  | 553-50023   | 553-50023  | 208  | 556-00161   | TT822OUT8   | 193      | 558-00336   | 558-00336   | 204      |
| 211-00149   | T5D04370M4  | 177  | 553-50024   | 553-50024  | 208  | 556-00162   | THSTOUT     | 193      | 558-00337   | 558-00337   | 204      |
| 211-00150   | T5D05620M4  | 177  | 553-50025   | 553-50025  | 208  | 556-00163   | THSTOUTSM   | 192      | 558-00338   | 558-00338   | 204      |
| 211-00151   | T5D10000H4  | 177  | 553-50026   | 553-50026  | 208  | 556-00165   | SM100OUT    | 190      | 558-00339   | 558-00339   | 204      |
| 211-00152   | T5D11250H4  | 177  | 553-50027   | 553-50027  | 208  | 556-00169   | TT100OUTSM  | 192      | 558-00340   | 558-00340   | 204      |
| 211-00153   | T5D118710H4 | 177  | 553-50028   | 553-50028  | 208  | 556-00189   | 556-00189   | 193      | 558-00341   | 558-00341   | 204      |
| 211-00154   | T5D11870H4  | 177  | 553-50029   | 553-50029  | 208  | 556-00190   | 556-00190   | 192      | 558-00342   | 558-00342   | 204      |
| 211-00155   | T5D12500F4  | 177  | 553-50030   | 553-50030  | 208  | 556-00230   | 556-00230   | 192      | 558-00343   | 558-00343   | 204      |
| 211-00156   | T5D13750F4  | 177  | 553-50031   | 553-50031  | 208  | 556-00231   | 556-00231   | 192      | 558-00344   | 558-00344   | 204      |
| 211-00157   | T5D137510F4 | 177  | 553-50032   | 553-50032  | 208  | 556-00236   | 556-00236   | 192      | 558-00345   | 558-00345   | 204      |
| 211-00158   | T3D018710M4 | 176  | 553-50033   | 553-50033  | 208  | 556-00430   | 556-00430   | 193      | 558-00346   | 558-00346   | 204      |
| 211-00159   | T3D05620M4  | 176  | 553-50034   | 553-50034  | 208  | 556-00431   | 556-00431   | 193      | 558-00350   | 558-00350   | 204      |
| 211-60000   | 211-60000   | 175  | 553-50035   | 553-50035  | 208  | 556-00432   | 556-00432   | 193      | 558-00351   | 558-00351   | 204      |
| 211-60001   | 211-60001   | 175  | 553-50036   | 553-50036  | 208  | 556-00433   | 556-00433   | 193      | 558-00370   | 558-00370   | 204      |
| 211-60002   | 211-60002   | 175  | 553-50037   | 553-50037  | 208  | 556-00434   | 556-00434   | 193      | 558-00374   | 558-00374   | 204      |
| 211-60003   | 211-60003   | 175  | 553-50038   | 553-50038  | 208  | 556-00460   | 556-00460   | 193      | 590-01750   | RO175       | 232      |
| 211-60005   | 211-60005   | 175  | 553-50039   | 553-50039  | 208  | 556-00461   | 556-00461   | 193      | 590-01751   | 175REF      | 232      |
| 211-60006   | 211-60006   | 175  | 553-50040   | 553-50040  | 208  | 556-03065   | 556-03065   | 193      | 590-05120   | RO512       | 232      |
| 211-60007   | 211-60007   | 175  | 553-50041   | 553-50041  | 208  | 556-26006   | 556-26006   | 210      | 590-05121   | 512REF      | 232      |
| 211-60008   | 211-60008   | 175  | 553-50042   | 553-50042  | 208  | 556-26007   | 556-26007   | 210      | 590-05140   | RO514       | 232      |
| 211-60009   | 211-60009   | 175  | 553-50063   | 553-50063  | 207  | 556-26008   | 556-26008   | 210      | 590-05141   | 514REF      | 232      |
| 211-60010   | 211-60010   | 175  | 553-50064   | 553-50064  | 207  | 556-26009   | 556-26009   | 210      | 590-10000   | RO175WP     | 232      |
| 211-60020   | 211-60020   | 175  | 553-50066   | 553-50066  | 208  | 557-00002   | 557-00002   | 222, 227 | 591-00076   | BC10        | 222      |
| 211-60040   | 211-60040   | 175  | 553-50067   | 553-50067  | 207  | 557-00003   | 557-00003   | 222, 227 | 591-00076   | 591-00076   | 227      |
| 211-60050   | 211-60050   | 175  | 553-50068   | 553-50068  | 207  | 557-00004   | 2100CABLE   | 222      | 591-00231   | 591-00231   | 227      |
| 211-60061   | 211-60061   | 175  | 553-50069   | 553-50069  | 207  | 557-00005   | 2100OPEN    | 222      | 591-00232   | 591-00232   | 227      |
| 211-60078   | 211-60078   | 175  | 553-50070   | 553-50070  | 207  | 557-00006   | TS3003039   | 222      | 591-00233   | 591-00233   | 227      |
| 211-60090   | 211-60090   | 175  | 553-50071   | 553-50071  | 207  | 557-00007   | TS3003040   | 222      | 591-00243   | 591-00243   | 227      |
| 211-60120   | 211-60120   | 175  | 553-50072   | 553-50072  | 207  | 557-00008   | 2100CARD    | 222      | 591-00244   | 591-00244   | 227      |
| 211-60140   | 211-60140   | 175  | 553-50073   | 553-50073  | 207  | 557-00009   | HHGR        | 222      | 591-00251   | 591-00251   | 227      |
| 211-60160   | 211-60160   | 175  | 553-50074   | 553-50074  | 207  | 557-00010   | TAGH1-100   | 223      | 591-00252   | 591-00252   | 227      |
| 251-10009   | FPAA        | 165  | 553-50075   | 553-50075  | 207  | 557-00011   | TAGH2-100   | 223      | 591-00259   | 591-00259   | 227      |
| 251-10109   | FPA         | 165  | 553-50076   | 553-50076  | 207  | 557-00013   | TAGH3-100   | 223      | 591-00260   | 591-00260   | 227      |
| 251-10209   | FPB         | 165  | 553-50077   | 553-50077  | 207  | 557-00015   | TAGH6-100   | 223      | 591-00261   | 591-00261   | 227      |
| 251-10309   | FPC         | 165  | 553-50078   | 553-50078  | 207  | 557-00018   | TAGH9-100   | 223      | 591-00263   | 591-00263   | 227      |
| 251-10409   | FPD         | 165  | 553-50079   | 553-50079  | 207  | 557-00020   | TAGH10-100  | 223      | 591-00264   | 591-00264   | 227      |
| 251-10509   | FPE         | 165  | 553-50080   | 553-50080  | 207  | 557-00021   | TAGH22-100  | 223      | 591-00265   | 591-00265   | 227      |
| 251-10609   | FPF         | 165  | 553-50081   | 553-50081  | 207  | 557-00024   | TAGH24-100  | 223      | 591-00278   | 591-00278   | 227      |
| 251-10709   | FPG         | 165  | 553-50082   | 553-50082  | 208  | 557-00025   | TAGH25-100  | 223      | 593-00001   | TAGPHONE    | 212, 218 |
| 251-10809   | FPH         | 165  | 553-50083   | 553-50083  | 208  | 557-00026   | TAGH26-100  | 223      | 593-01108   | TAGPP1J-108 | 218      |
| 251-21109   | FHA         | 165  | 553-50084   | 553-50084  | 208  | 557-00027   | TAGH51-100  | 223      | 593-05994   | TAG5J-994   | 220      |
| 251-21209   | FHB         | 165  | 553-50085   | 553-50085  | 208  | 557-00028   | TAGH95-100  | 223      | 593-09994   | TAG9J-994   | 220      |
| 251-21309   | FHC         | 165  | 553-50086   | 553-50086  | 208  | 557-00075   | HHDT        | 222      | 593-11450   | TAG11J-450  | 218      |
| 251-21409   | FHD         | 165  | 553-50087   | 553-50087  | 208  | 557-00085   | HT2100      | 222      | 593-13450   | TAG13J-450  | 218      |
| 251-21509   | FHE         | 165  | 553-50088   | 553-50088  | 207  | 557-00092   | HHST        | 222      | 593-14450   | TAG14J-450  | 218      |
| 251-21609   | FHF         | 165  | 553-50089   | 553-50089  | 208  | 557-00112   | 557-00112   | 227      | 593-15450   | TAG15J-450  | 218      |
| 251-21709   | FHG         | 165  | 553-50176   | 553-50176  | 207  | 557-00113   | 557-00113   | 227      | 593-19450   | TAG19J-450  | 218      |
| 251-21809   | FHH         | 165  | 553-50177   | 553-50177  | 207  | 558-00006   | 558-00006   | 204      | 593-21450   | TAG21J-450  | 218      |
| 251-30109   | FTA         | 166  | 553-50192   | 553-50192  | 208  | 558-00045   | 558-00045   | 190      | 593-22994   | TAG22J-994  | 220      |
| 251-30209   | FTB         | 166  | 553-50209   | 553-50209  | 208  | 558-00046   | 558-00046   | 190      | 593-26994   | TAG26J-994  | 220      |
| 251-30309   | FTC         | 166  | 553-50225   | 553-50225  | 208  | 558-00047   | 558-00047   | 190      | 593-28450   | TAG28J-450  | 218      |
| 251-30409   | FTD         | 166  | 553-50226   | 553-50226  | 208  | 558-00052   | 558-00052   | 190      | 593-51994   | TAG51J-994  | 218      |
| 251-30509   | FTE         | 166  | 553-50227   | 553-50227  | 208  | 558-00053   | 558-00053   | 190      | 593-56108   | TAG56J-108  | 218      |
| 251-30609   | FTF         | 166  | 553-50231   | 553-50231  | 208  | 558-00056   | 558-00056   | 190      | 593-57108   | TAG57J-108  | 218      |
| 251-30709   | FTG         | 166  | 553-50232   | 553-50232  | 208  | 558-00057   | 558-00057   | 190      | 593-59108   | TAG59J-108  | 218      |
| 251-30809   | FTH         | 166  | 556-00035   | 556-00035  | 187  | 558-00058   | 558-00058   | 190      | 593-64994   | TAG64J-994  | 220      |
| 500-50820   | T82-S       | 232  | 556-00036   | 556-00036  | 187  | 558-00059   | 558-00059   | 190      | 593-65108   | TAG65J-108  | 218      |
| 500-50822   | T82-R       | 232  | 556-00037   | 556-00037  | 187  | 558-00060   | 558-00060   | 188      | 594-00001   | TAGPP2-788  | 212      |
| 553-50001   | 553-50001   | 207  | 556-00038   | 556-00038  | 187  | 558-00061   | 558-00061   | 190      | 594-00002   | TAGPP2-788C | 212      |
| 553-50002   | 553-50002   | 207  | 556-00039   | 556-00039  | 187  | 558-00063   | 558-00063   | 190      | 594-01105   | TAG1L-105   | 215      |
| 553-50003   | 553-50003   | 207  | 556-00042   | 556-00042  | 187  | 558-00065   | 558-00065   | 188      | 594-01788   | TAGPP1-788  | 212      |
| 553-50004   | 553-50004   | 207  | 556-00101   | TT822OUT   | 193  | 558-00066   | 558-00066   | 188      | 594-02105   | TAG2L-105   | 215      |
| 553-50005   | 553-50005   | 207  | 556-00104   | TT100OUT   | 193  | 558-00069   | 558-00069   | 190      | 594-02788   | TAGPP1-788C | 212      |
| 553-50006   | 553-50006   | 207  | 556-00106   | TT900OUT   | 193  | 558-00071   | 558-00071   | 190      | 594-05105   | TAG5L-105   | 215      |
| 553-50007   | 553-50007   | 207  | 556-00143   | TTDTHOUTSM | 192  | 558-00179   | 558-00179   | 190      | 594-09105   | TAG9L-105   | 215      |

| Article No. | Part No.         | Page | Article No. | Part No.     | Page | Article No. | Part No.      | Page | Article No. | Part No.     | Page |
|-------------|------------------|------|-------------|--------------|------|-------------|---------------|------|-------------|--------------|------|
| 594-10105   | TAG10L-105       | 215  | 596-00204   | 596-00204    | 231  | 598-00259   | WMT0-9        | 233  | 854-44373   | GT.75X152C2  | 74   |
| 594-11789   | TAG11L-789       | 212  | 596-00206   | 596-00206    | 229  | 598-00260   | TCWM1         | 233  | 854-44374   | GT.75X152P2  | 74   |
| 594-13789   | TAG13L-789       | 212  | 596-00207   | 596-00207    | 229  | 598-00261   | TCWM2         | 233  | 854-44375   | GT.75X153C2  | 74   |
| 594-14789   | TAG14L-789       | 212  | 596-00208   | 596-00208    | 229  | 598-00262   | TCWM3         | 233  | 854-44376   | GT.75X153P2  | 74   |
| 594-15789   | TAG15L-789       | 212  | 596-00231   | 596-00231    | 228  | 598-00263   | TCWM4         | 233  | 854-44377   | GT.75X154P2  | 74   |
| 594-26105   | TAG26L-105       | 215  | 596-00232   | 596-00232    | 228  | 598-00264   | TCWM5         | 233  | 854-44378   | GT.75X154C2  | 74   |
| 594-45789   | TAG45L-789       | 212  | 596-00233   | 596-00233    | 228  | 598-00265   | TCWM6         | 233  | 854-44379   | GT.75X155C2  | 74   |
| 594-49105   | TAG49L-105       | 215  | 596-00234   | 596-00234    | 228  | 598-00266   | TCWM7         | 233  | 854-44380   | GT.75X155P2  | 74   |
| 594-50105   | TAG50L-105       | 215  | 596-00235   | 596-00235    | 228  | 598-00267   | TCWM8         | 233  | 854-44381   | GT.75X156C2  | 74   |
| 594-51105   | TAG51L-105       | 215  | 596-00236   | 596-00236    | 228  | 598-00268   | TCWM9         | 233  | 854-44382   | GT.75X156P2  | 74   |
| 594-52105   | TAG52L-105       | 215  | 596-00237   | 596-00237    | 230  | 598-00269   | TCWM10        | 233  | 854-44384   | GT.75X1800   | 74   |
| 594-53788   | TAG53L-788       | 212  | 596-00238   | 596-00238    | 230  | 598-00270   | TCWM11        | 233  | 854-44386   | GT.75X1800W  | 75   |
| 594-54788   | TAG54L-788       | 212  | 596-00239   | 596-00239    | 230  | 598-00271   | TCWM12        | 233  | 854-44388   | GT.75X1802   | 74   |
| 594-55788   | TAG55L-788       | 212  | 596-00240   | 596-00240    | 230  | 598-00272   | TCWM13        | 233  | 854-44389   | GT.75X1803   | 74   |
| 594-56788   | TAG56L-788       | 212  | 596-00241   | 596-00241    | 230  | 598-00273   | TCWM14        | 233  | 854-44390   | GT.75X1804   | 74   |
| 594-57788   | TAG57L-788       | 212  | 596-00242   | 596-00242    | 230  | 598-00274   | TCWM15        | 233  | 854-44391   | GT.75X1805   | 74   |
| 594-58788   | TAG58L-788       | 212  | 596-00243   | 596-00243    | 229  | 598-00275   | TCWM16        | 233  | 854-44392   | GT.75X1806   | 74   |
| 594-59788   | TAG59L-788       | 212  | 596-00244   | 596-00244    | 229  | 598-00277   | TYHCT-250     | 198  | 854-44394   | GT.75X180MV2 | 75   |
| 594-60788   | TAG60L-788       | 212  | 596-00245   | 596-00245    | 229  | 598-11250   | TAG11T4-250   | 198  | 854-44395   | GT.75X6000   | 74   |
| 594-61788   | TAG61L-788       | 212  | 596-00246   | 596-00246    | 229  | 598-15250   | TAG15T3-250   | 198  | 854-44396   | GT.75X9000   | 74   |
| 594-62788   | TAG62L-788       | 212  | 596-00247   | 596-00247    | 229  | 598-15795   | TAG15T3-795   | 198  | 854-44397   | GT.75X9004   | 74   |
| 594-63105   | TAG63L-105       | 215  | 596-00249   | 596-00249    | 229  | 598-21250   | TAG21T6-250   | 198  | 854-90272   | WMBH         | 115  |
| 594-64105   | TAG64L-105       | 215  | 596-00251   | 596-00251    | 229  | 598-27795   | TAG27T1-795   | 198  | 904-00006   | ETSB210      | 167  |
| 594-65105   | TAG65L-105       | 215  | 596-00252   | 596-00252    | 230  | 598-28250   | TAG28T4-250   | 198  | 904-00007   | ET330        | 167  |
| 594-66789   | TAG66L-789       | 212  | 596-00253   | 596-00253    | 230  | 598-72795   | TAG72T1-795   | 198  | 904-00008   | ET660        | 167  |
| 594-67789   | TAG67L-789       | 212  | 596-00255   | 596-00255    | 229  | 598-73795   | TAG73T1-795   | 198  | 904-00010   | ETCW660      | 167  |
| 594-68789   | TAG68L-789       | 212  | 596-00257   | 596-00257    | 228  | 598-75795   | TAG75T1-795   | 198  | 904-00011   | ETST661      | 167  |
| 594-69789   | TAG69L-789       | 212  | 596-00258   | 596-00258    | 228  | 598-76795   | TAG76T1-795   | 198  | 904-00012   | ETST6610     | 167  |
| 594-96789   | TAG96L-789       | 212  | 596-00323   | 596-00323    | 202  | 598-78795   | TAG78T1-795   | 198  | 904-00014   | ETST662      | 167  |
| 596-00001   | TAG15T3-822C10M  | 199  | 596-00371   | 596-00371    | 231  | 598-79795   | TAG79T1-795   | 198  | 904-00016   | ETST663      | 167  |
| 596-00002   | TAG10T2-100B     | 196  | 596-00375   | 596-00375    | 231  | 598-80795   | TAG80T1-795   | 198  | 904-00018   | ETST664      | 167  |
| 596-00003   | TAG11T4-822C     | 199  | 596-00376   | 596-00376    | 231  | 800-00004   | SM1BK75MT     | 166  | 904-00020   | ETST665      | 167  |
| 596-00005   | TAG1T1-100B      | 196  | 596-00377   | 596-00377    | 231  | 854-44316   | GT.375X60C2   | 73   | 904-00022   | ETST666      | 167  |
| 596-00006   | TAG2T2-100B      | 196  | 596-00378   | 596-00378    | 231  | 854-44317   | GT.50X110C2   | 74   | 904-00024   | ETST667      | 167  |
| 596-00007   | TAG2T3-100B      | 196  | 596-00379   | 596-00379    | 231  | 854-44319   | GT.50X110C2W  | 75   | 904-00026   | ETST668      | 167  |
| 596-00008   | TAG24T1-100B     | 196  | 596-00380   | 596-00380    | 198  | 854-44320   | GT.50X110P2   | 74   | 904-00284   | 904-00284    | 103  |
| 596-00009   | TAG26T6-100B     | 196  | 596-00381   | 596-00381    | 198  | 854-44321   | GT.50X110P2W  | 75   | 904-00295   | 904-00295    | 113  |
| 596-00010   | TAG2T5-100B      | 196  | 596-00382   | 596-00382    | 198  | 854-44322   | GT.50X112C2   | 74   | 904-00296   | 904-00296    | 113  |
| 596-00011   | TAG38T4-100B     | 196  | 596-00383   | 596-00383    | 198  | 854-44323   | GT.50X112P2   | 74   | 904-00297   | 904-00297    | 113  |
| 596-00013   | TAG3T3-100B      | 196  | 596-00386   | 596-00386    | 231  | 854-44324   | GT.50X113C2   | 74   |             |              |      |
| 596-00014   | TAG51T3-100B     | 196  | 596-00387   | 596-00387    | 231  | 854-44325   | GT.50X113P2   | 74   |             |              |      |
| 596-00016   | TAG6T1-100B      | 196  | 596-00388   | 596-00388    | 231  | 854-44326   | GT.50X114C2   | 74   |             |              |      |
| 596-00017   | TAG74T2-PAP      | 199  | 596-00389   | 596-00389    | 231  | 854-44327   | GT.50X114P2   | 74   |             |              |      |
| 596-00019   | TAG75T1-822      | 199  | 596-00404   | 596-00404    | 202  | 854-44328   | GT.50X115C2   | 74   |             |              |      |
| 596-00021   | TAG7T1-100B      | 196  | 596-00405   | 596-00405    | 202  | 854-44329   | GT.50X115P2   | 74   |             |              |      |
| 596-00022   | TAG81T8-822      | 199  | 596-00406   | 596-00406    | 202  | 854-44330   | GT.50X116C2   | 74   |             |              |      |
| 596-00023   | TAG83T1-822      | 199  | 596-00407   | 596-00407    | 202  | 854-44331   | GT.50X116P2   | 74   |             |              |      |
| 596-00024   | TAG82T1-PAP      | 199  | 596-00412   | 596-00412    | 202  | 854-44334   | GT.50X12MP2V2 | 75   |             |              |      |
| 596-00025   | TAG82T2-PAP      | 199  | 596-00413   | 596-00413    | 202  | 854-44336   | GT.50X60C2    | 73   |             |              |      |
| 596-00027   | TAG9T3-100B      | 196  | 596-00414   | 596-00414    | 202  | 854-44338   | GT.50X60C2W   | 75   |             |              |      |
| 596-00028   | TAGPP1T6-822     | 199  | 596-00415   | 596-00415    | 202  | 854-44339   | GT.50X60P2    | 73   |             |              |      |
| 596-00029   | TAGPP1T6-822C    | 199  | 596-00417   | 596-00417    | 202  | 854-44340   | GT.50X60P2W   | 75   |             |              |      |
| 596-00030   | TAGPP1T6-822C10M | 199  | 596-00418   | 596-00418    | 203  | 854-44341   | GT.50X62C2    | 73   |             |              |      |
| 596-00033   | TAG13T4-DTH      | 199  | 596-00419   | 596-00419    | 203  | 854-44342   | GT.50X62P2    | 73   |             |              |      |
| 596-00034   | TAG16T3-DTH      | 199  | 596-00420   | 596-00420    | 203  | 854-44343   | GT.50X63C2    | 73   |             |              |      |
| 596-00035   | TAG15T3-DTH      | 199  | 596-00424   | 596-00424    | 231  | 854-44344   | GT.50X63P2    | 73   |             |              |      |
| 596-00036   | TAG27T2-DTH      | 199  | 596-00425   | 596-00425    | 231  | 854-44345   | GT.50X64C2    | 73   |             |              |      |
| 596-00037   | TAG99T1-DTH      | 199  | 596-00426   | 596-00426    | 231  | 854-44346   | GT.50X64P2    | 73   |             |              |      |
| 596-00038   | TAG73T1-DTH      | 199  | 596-00427   | 596-00427    | 231  | 854-44347   | GT.50X65C2    | 73   |             |              |      |
| 596-00039   | TAG33T1-DTH      | 199  | 596-00500   | 596-00500    | 202  | 854-44348   | GT.50X65P2    | 73   |             |              |      |
| 596-00043   | TAG27T1-822C     | 199  | 596-00503   | 596-00503    | 202  | 854-44349   | GT.50X66C2    | 73   |             |              |      |
| 596-00045   | TAG53T2-100B     | 196  | 596-00504   | 596-00504    | 202  | 854-44350   | GT.50X66P2    | 73   |             |              |      |
| 596-00046   | TAGPP2T6-822     | 199  | 596-00507   | 596-00507    | 202  | 854-44352   | GT.50X6MP2V2  | 75   |             |              |      |
| 596-00047   | TAGPP2T6-822C    | 199  | 596-11822   | TAG11T4-822  | 199  | 854-44353   | GT.50X80C2    | 73   |             |              |      |
| 596-00082   | TAGPP1T6-82210M  | 199  | 596-13822   | TAG13T4-822  | 199  | 854-44354   | GT.50X80C2W   | 75   |             |              |      |
| 596-00083   | TAGPP3T4-822     | 199  | 596-15822   | TAG15T3-822  | 199  | 854-44355   | GT.50X80P2    | 73   |             |              |      |
| 596-00084   | TAGPP3T4-822C    | 199  | 596-16822   | TAG16T3-822  | 199  | 854-44356   | GT.50X80P2W   | 75   |             |              |      |
| 596-00183   | 596-00183        | 203  | 596-17822   | TAG17T2-822  | 199  | 854-44357   | GT.50X82C2    | 73   |             |              |      |
| 596-00184   | 596-00184        | 203  | 596-27822   | TAG27T1-822  | 199  | 854-44358   | GT.50X82P2    | 73   |             |              |      |
| 596-00185   | 596-00185        | 203  | 596-42822   | TAG72T1-822  | 199  | 854-44359   | GT.50X83C2    | 73   |             |              |      |
| 596-00189   | 596-00189        | 203  | 596-70822   | TAG70T12-822 | 199  | 854-44360   | GT.50X83P2    | 73   |             |              |      |
| 596-00190   | 596-00190        | 203  | 596-71822   | TAG71T5-822  | 199  | 854-44361   | GT.50X84C2    | 73   |             |              |      |
| 596-00191   | 596-00191        | 203  | 596-73822   | TAG73T1-822  | 199  | 854-44362   | GT.50X84P2    | 73   |             |              |      |
| 596-00192   | 596-00192        | 203  | 596-82822   | TAG82T2-822  | 199  | 854-44363   | GT.50X85C2    | 73   |             |              |      |
| 596-00193   | 596-00193        | 203  | 596-84822   | TAG84T3-822  | 199  | 854-44364   | GT.50X85P2    | 73   |             |              |      |
| 596-00194   | 596-00194        | 203  | 598-00026   | TAG96T1-336  | 198  | 854-44365   | GT.50X86C2    | 73   |             |              |      |
| 596-00195   | 596-00195        | 203  | 598-00040   | TAG68T1-336  | 198  | 854-44366   | GT.50X86P2    | 73   |             |              |      |
| 596-00196   | 596-00196        | 203  | 598-00041   | TAG69T1-336  | 198  | 854-44368   | GT.50X8MP2V2  | 75   |             |              |      |
| 596-00202   | 596-00202        | 202  | 598-00044   | TAG35T2-250  | 198  | 854-44369   | GT.75X150C2   | 74   |             |              |      |
| 596-00203   | 596-00203        | 231  | 598-00256   | WMTD0-9      | 233  | 854-44371   | GT.75X150P2   | 74   |             |              |      |

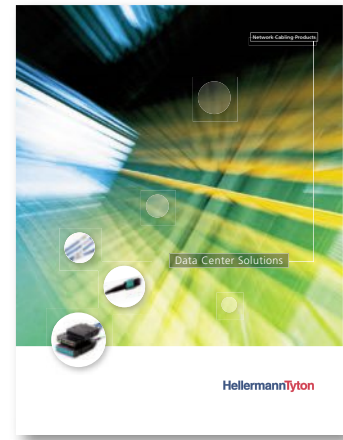
HellermannTyton's product line extends beyond cable management and identification solutions. Visit our website or reference these other catalogs to see our products for transportation and heavy equipment (Engineered Fastening Solutions) or network connectivity applications (Network Connectivity Solutions and Data Center Solutions).



Engineered Fastening Solutions  
*LITPDEFS*



Network Connectivity Solutions  
*LITPDNCS*



Data Center Solutions  
*LITPDDCS*

## HellermannTyton North American Facilities



Corporate Headquarters and Manufacturing  
Faulkner Road, Milwaukee, WI



Manufacturing  
Good Hope Road, Milwaukee, WI



Offices and Manufacturing  
87th Street, Milwaukee, WI



Distribution  
Bolingbrook, IL



Sales, Distribution and Assembly  
Tlaquepaque, Jalisco Mexico



Sales and Distribution  
Aurora, Ontario Canada

Located in 34 countries, HellermannTyton brings the best to its customers through global resources channeled to local implementations. Flexibility, agility, and ability to create value-added, market driven solutions are the hallmarks of every HellermannTyton company across the world.



ARGENTINA | AUSTRALIA | AUSTRIA | BELGIUM | BRAZIL | CANADA | CHINA  
CZECH REPUBLIC | DENMARK | FINLAND | FRANCE | GERMANY | HONG KONG  
HUNGARY | IRELAND | ITALY | JAPAN | KOREA | MEXICO | NETHERLANDS | NORWAY | PHILIPPINES  
POLAND | PORTUGAL | ROMANIA | RUSSIAN FEDERATION | SINGAPORE | SLOVENIA | SOUTH AFRICA |  
SPAIN | SWEDEN | THAILAND | UNITED KINGDOM | UNITED STATES

---

# HellermannTyton

## **HellermannTyton North American Corporate Headquarters**

7930 N. Faulkner Rd, PO Box 245017  
Milwaukee, WI 53224-9517  
Phone: (414) 355-1130, (800) 537-1512  
Fax: (414) 355-7341, (800) 848-9866  
email: corp@htamericas.com  
www.hellermann.tyton.com

**TS16949, ISO 9001, and ISO14001 certified**

## **HellermannTyton Canada**

Unit #4, 205 Industrial Parkway North  
Aurora, Ontario L4G 4C4 Canada  
Phone: (800) 661-2461  
Fax: (800) 390-3904  
email: sales@hellermanntyton.ca

## **HellermannTyton Mexico**

Anillo Periférico Sur 7980 Edificio 6A  
Parque Industrial Tecnológico II  
Santa María Tequepexpan  
Tlaquepaque, Jalisco, Mexico 45601  
Phone: 011-52-33-3-133-9880  
Fax: 011-52-33-3-133-9861  
email: info@htamericas.com.mx

**ISO 9001 certified**

## **Warranty Policy**

HellermannTyton products are warranted to be free from defects in material and workmanship at the time sold by us; but our obligation under this warranty and that of the seller is limited to the replacement of the product, and neither we nor the seller are bound by any other warranty, expressed, implied or statutory. Under no circumstances are we or the seller liable for any loss, damage, expenses or consequential damages of any kind arising out of the use or inability to use these products. All are sold with the understanding that the user will test them in actual use and determine their adaptability for the intended uses.

*The above warranties and remedies are exclusive and in lieu of all other warranties and remedies whatsoever, express or implied, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose which HellermannTyton expresses disclaims.*