Fully Automatic Cable Tie Installation Systems

Fully automatic cable tie installation systems offer a complete single-source solution for high volume harnessing, assembly, fastening, and packaging applications. With cycle times of less than one second, the systems are up to six times faster than conventional manual cable tie installations. The microprocessor based controller monitors system performance for improved production and reliability. Physical connection of Panduit cable tie installation systems to Ethernet networks is available via an RJ45 connection to facilitate data analysis and troubleshooting. For harnessing applications that also require mounting capability, the system also features innovative push barb cable tie mounts and harness board fixtures. This bundling and mounting system saves time by automatically feeding the cable tie through the mount, tensioning and cutting flush, all in one easy step for consistent results. For robotic applications, Panduit offers an integration kit for optimal cable tie installation in a completely automated manufacturing process. These innovative solutions, along with our full line of wiring and communication products, allow Panduit to offer its customers the ideal automated bundling and mounting solution for their applications.

Bundling Systems

Bundling and Mounting System

NEW!

PAT/Robot Integration Kit

Key Features   *Benefits*

4 separate tool heads available for various bundle diameters	Allows user to apply cable ties to a maximum bundle diameter of .82", 1.31", 1.94", and 2.75", in 3 tensile strengths for application flexibility and versatility
Ergonomic, lightweight tool head	Reduces operator fatigue and repetitive motion injuries to increase productivity
Multiple cable tie styles and sizes	Continuously molded cable ties in reels containing up to 5,000 ties per reel provide continuous feeding and quick reel changes to reduce downtime and maximize efficiency
Microprocessor based controller	Monitors system performance through user-friendly LCD display; provides production data and reporting, including error detection and cycle count for improved reliability
Data interface accessory	System monitoring and asset tracking option to maximize system performance
NEW! *PAT/Robot integration kit*	Utilizes the PAT system electronic interface option (PDM-EI) to optimally integrate the PAT system to a robot for a completely automated manufacturing process
Integrated cable tie mounts	Push barb cable tie mounts provide a unique range of options for automated bundling and mounting in harnessing applications to speed assembly and enhance reliability
Patented harness board fixtures	Provide alignment of tool and guide cable tie through mount to enable reliable installations; easily accommodates a switch to detect the mount's presence for integration into existing quality control systems

Selection Guide for Bundling

Maximum Bundle Dia.		Tooling			Reel-Fed Cable Ties**
In.	mm	Tool Head	Dispenser	Transfer Hose	
.82	21	PAT1M	PDM	PHM1, PHM2, PHM3, PHM4	BT1M-XMR, PLT1M-XMR
1.31	33	PAT1.5M	PDM		BT1.5M-XMR, PLT1.5M-XMR
1.94*	49	PAT2S	PDS	PHS2, PHS3	PLT2S-VMR
2.75*	70	PAT3S	PD3S		PLT3S-VMR

Selection Guide for Bundling and Mounting

Maximum Bundle Dia.		Tooling			Reel-Fed Cable Ties**	Cable Tie Mounts***	Harness Board Fixture Insert***	Harness Board Fixture Base***
In.	mm	Tool Head	Dispenser	Transfer Hose				
1.31	33	PAT1.5M-ATM	PDM	PHM1, PHM2, PHM3, PHM4	BT1.5M-XMR PLT1.5M-XMR	ATM-W187	ATMI-W187	ATMB
						ATM-W250	ATMI-W250	

*Maximum Bundle Dia. will be less for solid round bundles.
**See Page 5 for cable tie material options.
***See Pages 6-7 for cable tie mount and harness board fixture options.

Tool Heads – Four Sizes Accommodate a Wide Variety of Applications

For Bundling and Mounting Applications

For Bundling Applications

PAT1M

PAT1.5M

PAT2S

PAT3S

PAT1.5M-ATM

Part Number	Maximum Bundle Diameter		Used with Cable Ties	Std. Pkg. Qty.
	In.	mm		
PAT1M	.82	21	BT1M-XMR, PLT1M-XMR	1
PAT1.5M	1.31	33	BT1.5M-XMR, PLT1.5M-XMR	1
PAT2S	1.94*	49	PLT2S-VMR	1
PAT3S	2.75*	70	PLT3S-VMR	1
PAT1.5M-ATM	1.31	33	BT1.5M-XMR, PLT1.5M-XMR	1

NEW!

Order number of pieces required, in multiples of Standard Package Quantity.

Dispenser

PDM

PDS

PD3S

Part Number	Used with Tool Head	Description	Std. Pkg. Qty.
PDM	PAT1M, PAT1.5M, PAT1.5M-ATM	Stationary dispenser with electronic display. Online help menu. System operates on 65 psig (minimum) non-lubricated filtered air and 100 – 24 FAC/TP or 60 MHz.	1
PDS	PAT2S		1
PD3S	PAT3S		1

NEW!

Order number of pieces required, in multiples of Standard Package Quantity.

Transfer Hose

PHM3

Part Number	Used with Tool Head	Description	Length Ft.	Length m	Std. Pkg. Qty.
PHM1	PAT1M, PAT1.5M, PAT1.5M-ATM	Transfers cable tie and signal from dispenser to tool head; electrical connectors designed for easy attachment provide a reliable, secure connection.	3.2	1	1
PHM2			6.5	2	1
PHM3			10.0	3	1
PHM4			13.1	4	1
PHS2	PAT2S, PAT3S		6.5	2	1
PHS3			10.0	3	1

Filter/Regulator and Air Supply Hose

PL283N1   PDH10-37

Part Number	Used with Dispenser	Description	Std. Pkg. Qty.
PL283N1	PDM, PDS	Regulates air flow to dispenser. Filter/regulator 25 micron (maximum) element. Includes a male connector and a 3/8" port.	1
PDH10-37	PDM, PDS, PD3S	Air hose from filter/regulator to dispenser; 10' (3m) – includes standard air fittings.	1

Dispenser Frame
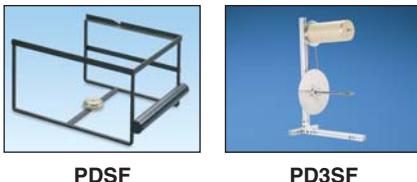
PDSF   PD3SF

NEW!

Part Number	Used with Dispenser	Part Description	Std. Pkg. Qty.
PDSF	PDS	Metal frame supports the PDS dispenser for PAT2S above the cable tie reel as ties are loaded into the dispenser; can be used as a freestanding unit or permanently mounted to a bench or cart.	1
PD3SF	PD3S	Assembly holds cable tie reel and rewinds the packaging paper liner as cable ties are being loaded into the dispenser.	1

Bench Mount

PATMBM

Part Number	Used with Tool Head	Part Description	Std. Pkg. Qty.
PATMBM	PAT1M, PAT1.5M	Allows hands-free operation for high volume usage. Includes bench mount fixture and foot pedal assembly.	1
PAT2SBM	PAT2S		1

Data Interface Software and Ethernet Enabled Dispenser Option

Panduit exclusive Ethernet enabled dispenser and customized data interface software allow production personnel to monitor real-time data in a shop floor environment.

- The Ethernet enabled dispenser provides a physical connection between the cable tie installation system and an industrial Ethernet network via an RJ45 connection and internal Ethernet card
- Allows the capability to measure and track production performance such as job tracking, cycle counts, tool and dispenser serial numbers, and routine maintenance
- Provides the ability to send email notifications for specific system messages

Part Number	Part Description	Std. Pkg. Qty.
PDM-DI	Ethernet enabled PDM dispenser and data interface software with PAT1M, PAT1.5M, and PAT1.5M-ATM systems.	1
PDS-DI	Ethernet enabled PDS dispenser and data interface software with PAT2S system.	1
PD-DIA	Data interface accessory for existing PDM and PDS dispensers; includes software and network interface card.	1

Order number of pieces required, in multiples of Standard Package Quantity.

Electronic Interface Option

- This option provides the capability to remotely control the PAT System electronically
- Applications include robot control of the PAT System

Part Number	Used with Tool Head	Part Description	Std. Pkg. Qty.
PDM-EI	PAT1M, PAT1.5M	Electronic interface PDM using an input female port added to the unit; this port is a 15 pin D-Sub and is located on the back side of the unit.	1
PDS-EI	PAT2S, PAT3S	Electronic interface PDS using an input female port added to the unit; this port is a 15 pin D-Sub and is located on the back side of the unit.	1

Dispenser Remote Control Option

- Enables Remote Control of the PDM and PDS dispensers to accommodate locating the dispenser in hard to reach areas as needed by the manufacturing layout
- Provides the same options and functionality as the PDM and PDS unit displays
- Offered in 25' (7.62m) and 9.84' (3m) cord lengths

Part Number	Part Description	Std. Pkg. Qty.
PDM-RC	PDM dispenser with remote control using a 25 pin, D-Sub Connector on the back side of the unit.	1
PDS-RC	PDS dispenser with remote control using a 25 pin, D-Sub Connector on the back side of the unit.	1

NEW! PAT/Robot Integration Kit

- Used with the PAT1M and PAT1.5M tool heads
- Utilizes the PAT system electronic interface option, PDM-EI, to optimally integrate the PAT system to a robot for a completely automated cable tie installation process
- Significantly reduces labor costs while improving installation quality, reliability, and consistency

PATM-RK

PATM-TT

Part Number	Std. Pkg. Qty.	Components	Description
PATM-RK	1	Metallic housing	Includes a pneumatic trigger actuator for remote cable tie installation and a mounting bolt pattern to ease PAT tool integration with a robot end effect or for a robust and accurate grip.
		Transfer hose strain relief kit	Strain relief to maintain transfer hose bend radius reducing tie misfeeds due to sharp hose bend radii during robot motion; also sold separately under part number PATM-RKS (includes two 1-foot strain relief tubes with fastening cable ties).
		Quick start guides	Provides easily understood electrical, network, and mechanical installation instructions minimizing the robot integrator's design time and simplifying the integration process.
		Best practices document	List of best practices when integrating the PAT system to a robot optimizing system performance and productivity.
PATM-TT	1	Test tool with rubber jaws	This test tool is used during robot cable tie installation programming, providing a safe method to debug robot software without damaging actual PAT tools (test tool is not provided with the PAT/robot integration kit).
PATM-RKS	1	Transfer hose strain relief kit	Strain relief to maintain transfer hose bend radius reducing cable tie misfeeds due to sharp hose bend radii during robot motion; kit is also included on the PATM-RK kit or sold separately (includes two 1-foot strain relief tubes with fastening cable ties).

Reel-Fed Cable Ties

- Continuously molded cable ties (up to 5,000 ties/reel) for high productivity and reduced downtime
- Up to 30 lbs. minimum loop tensile strength in miniature cross section; 50 lbs. in standard cross section
- Available in all-nylon and stainless steel locking barb styles
- Available in a variety of materials, colors, and sizes

BT1M-XMR0
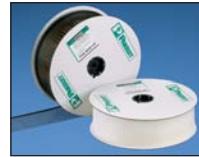
PLT1M-XMR0,
PLT1M-XMR

Part Number	Tie Style	Material	Color	Maximum Bundle Dia.		Length		Width		Min. Loop Tensile Str.		Std. Ctn. Qty.
				In.	mm	In.	mm	In.	mm	Lbs.	N	
Reel-Fed Cable Ties for PAT1M System												
BT1M-XMR	Barbed	Nylon 6.6	Natural	.82	21	4.0	102	.100	2.5	30	133	10,000 Pieces (2 Reels – 5,000 ties per reel)
BT1M-XMR0		Weather Resistant Nylon 6.6	Black									
BT1M-XMR30		Heat Stabilized Nylon 6.6	Black									
PLT1M-XMR	One-Piece, All-Nylon	Nylon 6.6	Natural							18	80	
PLT1M-XMR0		Weather Resistant Nylon 6.6	Black									
PLT1M-XMR30		Heat Stabilized Nylon 6.6	Black									
PLT1M-XMR00		Mil. Spec. Weather Resistant Nylon 6.6	Black									
Reel-Fed Cable Ties for PAT1.5M and PAT1.5M-ATM System												
BT1.5M-XMR	Barbed	Nylon 6.6	Natural	1.31	33	5.6	142	.100	2.5	30	133	10,000 Pieces (2 Reels – 5,000 ties per reel)
BT1.5M-XMR0		Weather Resistant Nylon 6.6	Black									
BT1.5M-XMR30		Heat Stabilized Nylon 6.6	Black									
BT1.5M-XMR69		Flame Retardant Nylon 6.6	Natural							18	80	
PLT1.5M-XMR	One-Piece, All-Nylon	Nylon 6.6	Natural									
PLT1.5M-XMR0		Weather Resistant Nylon 6.6	Black									
PLT1.5M-XMR30		Heat Stabilized Nylon 6.6	Black									
PLT1.5M-XMR00		Mil. Spec. Weather Resistant Nylon 6.6	Black									
Reel-Fed Cable Ties for PAT2S System												
PLT2S-VMR	One-Piece, All-Nylon	Nylon 6.6	Natural	1.94*	49	8.1	206	.190	4.8	50	222	5,000 Pieces (2 Reels – 5,000 ties per reel)
PLT2S-VMR0		Weather Resistant Nylon 6.6	Black									
PLT2S-VMR30		Heat Stabilized Nylon 6.6	Black									
NEW! Reel-Fed Cable Ties for PAT3S System												
PLT3S-VMR	One-Piece, All-Nylon	Nylon 6.6	Natural	2.75*	70	11.3	287	.190	4.8	50	222	2,500 Pieces per reel
PLT3S-VMR30		Heat Stabilized Nylon 6.6	Black									

Order number of pieces required, in multiples of Standard Carton Quantity

*Maximum Bundle Dia. will be less for solid round bundles.

Note: UL Recognized, UL Listed, and CSA Certified except 69 material.

PLT1M-XMR ties are also available in colors. Add the following suffix to the end of the part number to order: (ex. PLT1M-XMR2 = Red).

1 = Brown, 2 = Red, 3 = Orange, 4Y = Yellow, 5 = Green, 6 = Blue, 7 = Purple, 8 = Gray, 10 = White.

Automatic Cable Tie Mounts

- Multiple sizes work with industry standard panel thickness and hole diameters for greater application flexibility
- Low profile design keeps bundle close to mounting surface, saving space where tight assemblies are required, and providing greater protection for bundles in high vibration applications
- Load rating of mounts supports compatible BT1.5M-XMR and PLT1.5M-XMR cable ties
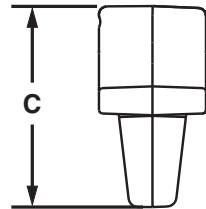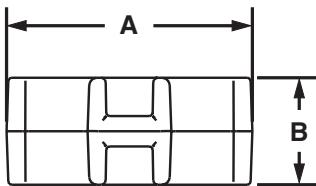
| Part Number	Used with Cable Ties	A Length		B Width		C Height		Maximum Panel Thickness		Panel Hole Diameter Range		Material	Color	Std. Pkg. Qty.	Std. Ctn. Qty.
		In.	mm	In.	mm	In.	mm	In.	mm	In.	mm				
ATM-W187-M	BT1.5M-XMR, PLT1.5M-XMR	.80	20.5	.35	9.0	.58	14.6	.12	3.0	.17 – .20	4.3 – 4.9	Nylon 6.6	Natural	1000	5000
ATM-W187-M20												Nylon 6.6	Black	1000	5000
ATM-W187-M30												Heat Stabilized Nylon 6.6	Black	1000	5000
ATM-W250-M						.66	16.6			.23 – .26	5.7 – 6.6	Nylon 6.6	Natural	1000	5000
ATM-W250-M20												Nylon 6.6	Black	1000	5000
ATM-W250-M30												Heat Stabilized Nylon 6.6	Black	1000	5000

Order number of pieces required, in multiples of Standard Package Quantity.

Harness Board Fixtures

ATMB (Base)

2.38 (60)
5.04 (128)
2.50 (64)
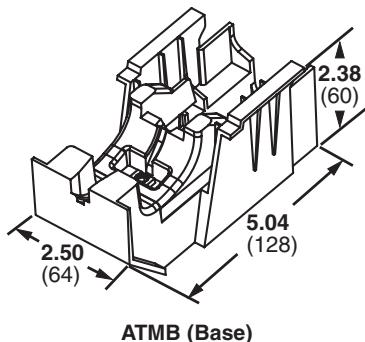
- Automatic alignment orients the tool head with the mount for reliable feeding of the cable tie through the mount to speed installation
- Multiple fixture configurations allow mounting in horizontal, vertical, or 45° orientation to reduce installation time and improve ergonomics
- Color designation ensures inserts and mounts are correctly matched
- Integrated switch^ capability enables placement of a switch to detect the mount's presence providing an input to a quality control system, eliminating the need for additional inspection
- Activation device on harness board fixture prevents tool from operating unless it is properly engaged in the fixture for operator safety

Part Number	Description	Mounting	Color	Material	Std. Pkg. Qty.	Std. Ctn. Qty.
ATMB	Base	Screw base to harness board with 1/4" screws	Black	Acetal	10	10
ATMI-W187-X	Insert for ATM-W187 mount	Snaps into ATMB	Yellow	Acetal	10	50
ATMI-W250-X	Insert for ATM-W250 mount	Snaps into ATMB	Red	Acetal	10	50
ATMI-XMR	Used for cable tie installations where mounts are NOT required	Snaps into ATMB	Black	Acetal	10	50
ATMC	Clamp used to secure the ATMB (base) in a vertical or 45° position	Screw clamp to harness board with 1/4" screws	Black	Steel	10	10

Order number of pieces required, in multiples of Standard Package Quantity.
^The Omron Electronics D2SW-3L1HS switch is compatible with the ATM system. Similar switches from other manufacturers may also be suitable.
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