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# Connector Tooling Guide



**DANIELS  
MANUFACTURING  
CORPORATION** ®

*an ISO9001 Registered Company*

# PREFACE & TABLE OF CONTENTS



*Daniels tools have been utilized in military aircraft and aerospace programs for over 50 years.*

*By continuously planning and adding to our product lines, we are now fulfilling the demands of other high technology fields such as computers, lasers, communications, and many other areas of electronic packaging.*

*The people behind the DMC name are pleased to present our Connector Assembly Tools and Accessories on the pages that follow. We believe the application data which accompanies each section will answer your specific questions concerning tooling; however, we encourage you to contact us by telephone or fax for the personal services of our knowledgeable staff of application experts.*

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# IMPORTANT FACTS ABOUT CRIMPING

## CRIMPING: THEN AND NOW

The first multi-pin connectors were terminated by soldering the conductor to non-removable contacts. However, high temperature applications and the need for simple and reliable field service led to the introduction of connectors with removable contacts. These were crimped onto the conductor rather than being soldered.

The first standard crimp tool developed to crimp these new contacts was introduced in the early sixties. MS3191-1, a military drawing, defined this tool and its accessories. The MS3191-1 utilized a four indent crimp pattern together with a positive stop locator which controlled the travel of the indenters (crimp depth).

The MS3191-1 design was a compromise between simplicity of operation and crimp performance since the crimp depth for any given contact was not adjustable to accommodate the differing diameters of the conductors to which it would be crimped. It was, however, suitable for the crimp connectors of that era.

An improved tool design featuring independently adjustable crimp depths was soon introduced as MS3191-4. The MS3191-4 had an internal adjustment, totally independent of the locator, which permitted the selection of seven separate crimp depths, allowing optimal crimping of conductors ranging from AWG 12 to 26 regardless of the wire barrel size of the contact.

MS3191-4 also introduced the use of the double tipped indenter to produce an eight indent crimp pattern which has consistently achieved superior tensile pull off values.

MS3191-4 introduced the concept of a turret head containing three locators which could be used without separating any of them from the basic crimp tool.

In 1969 two military specifications for crimp tools were developed to replace the existing military drawings. They were MIL-T-22520C (Navy) and MIL-T-83724 (USAF) which defined a standard size crimp tool similar to the MS3191-4, but with an expanded eight step crimp depth range. These specifications also defined a miniature crimp tool to crimp conductors as

small as AWG 32.

Both documents were combined in 1971 into MIL-C-22520D. *All previous military standards for crimp tools were then cancelled including the MS3191.*

MIL-C-22520 has since replaced many other crimp tool documents including: MS3198, MS22910, MS17776, MS28731, MS90388, MS14037, MS27437, MS27828, MS27832, MS55619, MS27426 and others. This list includes specifications for indent crimp tools, terminal lug crimp tools, pneumatic tools, coaxial cable crimp tools and connectors service kits.

The establishment of MIL-C-22520 was a milestone on the road to crimp tool standardization. Its development has eliminated the waste and confusion which accompanied the overlapping applications of many different "standard" crimp tools called out by a deluge of unrelated military drawings.

MIL-C-22520D for the first time established a single specification which set forth performance requirements for all crimp tools to be used on military standard electrical connectors.

## THE CRIMPING CONCEPT

Crimping is a method of firmly attaching a terminal or contact end to an electrical conductor by pressure forming or reshaping a metal barrel together with the conductor. The forming of a satisfactory crimp depends on the correct combination of conductor, crimp barrel and tool.

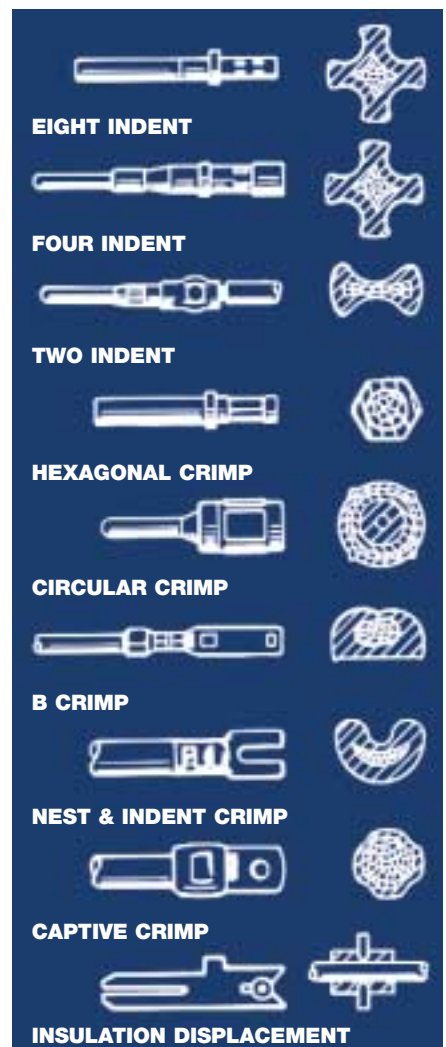
When applied with a properly matched tool a union would be established which has both good electrical and mechanical characteristics. The tool will provide these requirements consistently and reliably with repeatability assured by quality cycle controlled tooling. There are several common configurations of crimped joint; several examples are shown below.

The electrical resistance of a properly designed and controlled crimped joint should be equal to, or less than, the resistance of an equal section of wire. Specifications state the requirements in terms of millivolt drop at a designated current.

The mechanical strength of a

crimped joint and hence its pull-out force (tensile strength), varies with the deformation applied. Therefore, by properly shaping the deformation a high pull-out force can be achieved, i.e. the crimp die of the tool determines the crimp configuration and deformation.

The dies in the tool determine the completed crimp configuration which is generally an element of contact and/or connector design. Some of the design considerations are: a) The type of contact, its size, shape material and function, b) The type and size of wires to be accommodated, c) The type of tooling into which the configuration must be built.





# STANDARD ADJUSTABLE CRIMP TOOL



## UPPER RANGE CRIMP TOOL AF8 M22520/1-01

The DMC AF8 qualified to MIL-DTL-22520/1, has virtually limitless application within the specified wire range of 12 through 26 AWG. Over a thousand turret heads or positioners are available to adapt the tool frame to your specific military or proprietary contact/wire combination. The 8 impression crimp, which is standard in the AF8, assures absolute maximum tensile strength with almost every closed barrel contact. In addition, special indent configurations are available upon request.

The precision ratchet controls cycling of the tool in both directions of handle movement. This assures the same accurate crimp every time. It's like having a quality control inspector at every work station.

Positive crimp depth is controlled by an 8 position selector knob conveniently located on the tool frame. The

operator simply dials the desired step for the wire being used. This setting can be secured by use of a locking pin or safety wire. The carefully engineered design achieves the absolute maximum mechanical advantage; along with the tool's light weight, operator fatigue is minimized.

The AF8 measures 9 $\frac{3}{4}$ " x 2 $\frac{1}{2}$ " x 1 $\frac{1}{4}$ " approximately and weighs 15 oz.

For proper operation the tool frame must be mated with one of the following optional accessories: a military head (TH-XXX Part No. Series) a turret head (TM-XXX series), a positioner (TP-XXX series), or a universal head (part No. UH2-5). This is done simply by orienting the head in the keyed position, and by tightening the hex socket screws provided as part of the head.

A permanent dataplate is affixed to all turret heads and positioners. This plate lists specific contact part numbers, the corresponding position color code (for 3 position turret heads), and

suggested selector depth settings for the wire size being used.

The universal head is ideally suited for lab work and prototype production applications. This head is attached in the same manner as explained above. The selected contact is inserted through the entry hole on the opposite side of the tool frame from the head. The height adjusting screw is then rotated until the contact is in the proper position for crimping. The screw can be secured with the locknut provided. The wire sizes listed on the tool frame selector knob can be used as a reference starting point; however, some testing will be necessary to determine the optimum selector setting for your contact/wire combination.

Periodic gaging is recommended to insure accurate calibration. This can be done easily by setting the tool selector knob to position #4, and checking indenter closure with M22520/3-1 "GO/NO-GO" gage (DMC part no. G125).



Other than keeping the unit clean and properly stored when not in service, no operator maintenance is required. DMC offers complete factory service by knowledgeable technicians within a reasonable turnaround time. Complete instructions concerning the use, care and warranty are supplied with each tool. Additional copies are available on request.

MILITARY P/N	DMC P/N	DESCRIPTION	NSN
M22520/1-01	AF8	TOOL FRAME	5120-01-335-8571
M22520/1-02	TH1A	TURRET	5120-01-335-8834
M22520/1-03	TH4	TURRET	5120-01-335-8835
M22520/1-04	TH163	TURRET	5120-01-335-8836
M22520/1-05	UH2-5	UNIVERSAL POSITIONER	5120-01-335-8583
M22520/1-06	TP45	POSITIONER	5120-01-335-8584
M22520/1-07	TP85	POSITIONER	5120-01-335-8585
M22520/1-08	TH199S	TURRET	5120-01-335-8837
M22520/1-09	TP360	POSITIONER	5120-01-335-8586
M22520/1-10	TP365	POSITIONER	5120-01-335-8587
M22520/1-11	TP465	POSITIONER	5120-01-335-8588
M22520/1-12	TH270	TURRET	5120-01-335-8838
M22520/1-13	TH285	TURRET	5120-01-335-8839
M22520/1-14	TH286	TURRET	5120-01-335-8840
M22520/1-15	TP485	POSITIONER	5120-01-335-8589
M22520/1-16	TP513	POSITIONER	5120-01-335-8590
M22520/1-17	TP651	POSITIONER	5120-01-335-8591
M22520/3-1	G125	GAGE	5220-00-165-7604



# MINIATURE ADJUSTABLE CRIMP TOOLS



## LOWER RANGE CRIMP TOOL AFM8 M22520/2-01

Qualified to MIL-DTL-22520/2, the DMC AFM8 is designed for most of the miniature and sub-miniature connector types that are so widely used in all types of electronic systems. Originally developed for the Air Force, the AFM8 meets the need for a miniature tool accommodating wire sizes 20 through 32 AWG.

The AFM8 gives a Mil-Standard 8 impression crimp, which assures maximum tensile strength. The cycle controlled precision ratchet assures consistently accurate crimps every time. The tool frame has a built-in 8 step selector knob for ease in dialing the correct crimp depth setting for the wire being used.

Positioners adapt the tool frame to a particular application. The data plate on each positioner designates which contacts the positioner accommodates for its wire size and indicates selector position. Crimp depth is dialed on the

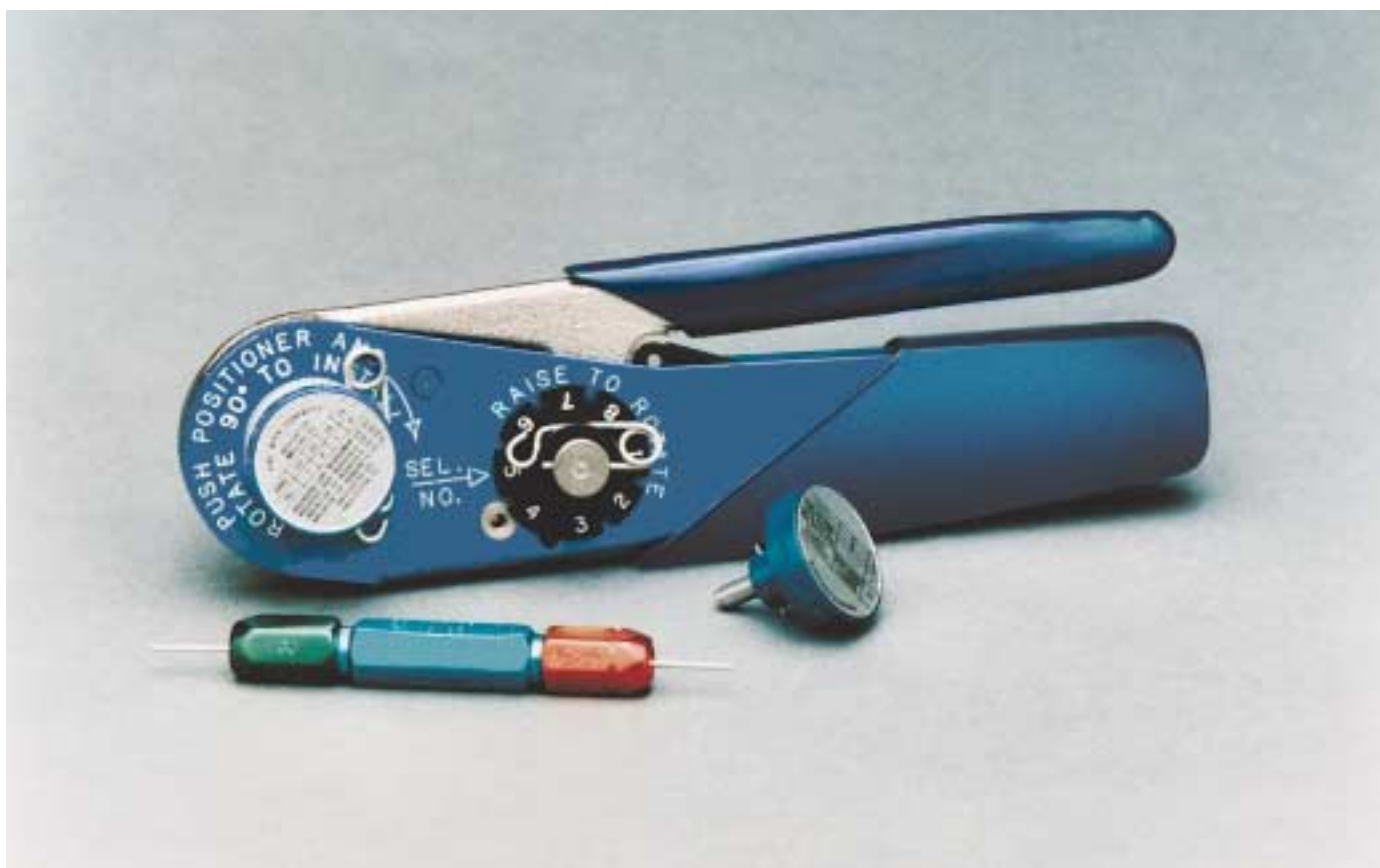
8 step selector knob by merely raising the knob and rotating it to the proper position. The positioner is easily removed and changed.

Periodic gaging is recommended to insure accurate calibration. This is easily accomplished with the M22520/3-1 "GO/NO-GO" gage (DMC part no. G125). The AFM8 is 6 3/4" in length and weighs approximately 10 oz.

Other than keeping the tool clean and properly stored when not in use, no operator maintenance is required. DMC's complete factory service is available. Complete instructions concerning the use, care and warranty are supplied with each tool. Additional copies are available from the factory.

MILITARY P/N	DMC P/N	DESCRIPTION	NSN
M22520/2-01	AFM8	TOOL FRAME	5120-01-335-8572
M22520/2-02	K1S	POSITIONER	5120-01-335-8592
M22520/2-03	K60S	POSITIONER	5120-01-335-8593
M22520/2-04	K151	POSITIONER	5120-01-335-8594
M22520/2-05	K3	POSITIONER	5120-01-335-8595
M22520/2-06	K41	POSITIONER	5120-01-335-8624
M22520/2-07	K40	POSITIONER	5120-01-335-8625

MILITARY P/N	DMC P/N	DESCRIPTION	NSN
M22520/2-08	K13-1	POSITIONER	5120-01-335-8626
M22520/2-09	K42	POSITIONER	5120-01-335-8627
M22520/2-10	K43	POSITIONER	5120-01-335-8628
M22520/2-11	K287	POSITIONER	5120-01-335-8629
M22520/2-12	K286	POSITIONER	5120-01-335-8630
M22520/2-13	K338	POSITIONER	5120-01-335-8631
M22520/2-14	K340	POSITIONER	5120-01-335-8632
M22520/2-15	K341	POSITIONER	5120-01-335-8633
M22520/2-16	K339	POSITIONER	5120-01-335-8634
M22520/2-17	K342	POSITIONER	5120-01-335-8635
M22520/2-18	K343	POSITIONER	5120-01-335-8636
M22520/2-19	K330-2	POSITIONER	5120-01-335-8637
M22520/2-20	K331-2	POSITIONER	5120-01-335-8638
M22520/2-21	K332-2	POSITIONER	5120-01-335-8609
M22520/2-22	K212	POSITIONER	5120-01-335-8610
M22520/2-23	K267-1	POSITIONER	5120-01-335-8611
M22520/2-24	K75S-1	POSITIONER	5120-01-335-8612
M22520/2-25	K261-1	POSITIONER	5120-01-335-8613
M22520/2-26	K262-1	POSITIONER	5120-01-335-8614
M22520/2-27	K269-1	POSITIONER	5120-01-335-8615
M22520/2-28	K373-1	POSITIONER	5120-01-335-8616
M22520/2-29	K372-1	POSITIONER	5120-01-335-8617
M22520/2-30	K404	POSITIONER	5120-01-335-8618
M22520/2-31	K406	POSITIONER	5120-01-335-8619
M22520/2-32	K496	POSITIONER	5120-01-335-8620
M22520/2-33	K74S	POSITIONER	5120-01-335-8621
M22520/2-34	K323	POSITIONER	5120-01-335-8622
M22520/2-35	K532-1	POSITIONER	5120-01-335-8623
M22520/2-36	K473	POSITIONER	5120-01-335-8596
M22520/3-1	G125	GAGE	5220-00-165-7604



## ULTRA PRECISION CRIMP TOOL (MODEL MH800)

All DMC tools are designed and built to the highest standards of precision and quality, but some applications call for more. One such case is miniature and subminiature contacts which have extremely thin wire barrel dimensions. The answer to this demand is the model MH800 Ultra Precision Crimp Tool which utilizes the same basic components as the Model AFM8 (M22520/2-01) Crimp Tool with tighter gaging tolerances and a special indenter tip configuration that assures a uniform flow of metal during the crimping operation.

The model MH800 accommodates wire sizes 20 thru 32 AWG (the miniature to sub-miniature range). It accommodates the K series or M22520/2-XX positioners and is easily identified by a distinctive orange handle grip. It is the same size and weight as model AFM8. Gaging is accomplished with the G100 "GO/NO-GO" gage.

## MIDDLE RANGE CRIMP TOOL MH860 M22520/7-01

Qualified to MIL-DTL-22520/7, the DMC MH860 is a recent addition to the military specification. It was developed to meet the demonstrated need for supporting the majority of electrical systems with one versatile crimp tool frame.

The MH860 accepts the entire middle wire range of 16 through 28 AWG, with positioners which adapt it to virtually all applications consistent with others in the MIL-DTL-22520 family.

MILITARY P/N	DMC P/N	DESCRIPTION	NSN
M22520/7-01	MH860	TOOL FRAME	5120-01-335-8573
M22520/7-02	86-1S	POSITIONER	5120-01-335-8597
M22520/7-03	86-2	POSITIONER	5120-01-335-8598
M22520/7-04	86-3	POSITIONER	5120-01-335-8599
M22520/7-05	86-4	POSITIONER	5120-01-335-8600
M22520/7-06	86-5	POSITIONER	5120-01-335-8601
M22520/7-07	86-6	POSITIONER	5120-01-335-8602
M22520/7-08	86-7	POSITIONER	5120-01-335-8603
M22520/7-09	86-11S	POSITIONER	5120-01-335-8604
M22520/7-10	86-12S	POSITIONER	5120-01-335-8605
M22520/7-11	86-19	POSITIONER	5120-01-335-8606
M22520/7-12	86-20	POSITIONER	5120-01-335-8607
M22520/7-13	86-21	POSITIONER	5120-01-335-8608
M22520/3-3	G145	GAGE	5120-00-338-0378

## THE MIL-C-28840 TOOLING

MIL-C-28840 connectors were developed for the Navy, for use with jacketed cable in shipboard applications. They are a high density circular connector series utilizing a high shock threaded coupling system with front release crimped contacts.

For these connectors DMC has added a new crimping tool to its range, the M22520/34-01, and other tools as follows:

MILITARY P/N	DESCRIPTION	DMC P/N
M22520/34-01	BASIC CRIMP TOOL	39-000
M22520/34-02	POSITIONER	39-102
M22520/35	GAGE	G345
M81969/33-01	INST. TOOL (STRAIGHT)	DAK55-22SA
M81969/33-02	INST. TOOL (OFFSET)	DAK55-22JA
M81969-34-01	REMOVAL TOOL	DRK56-22A





# PNEUMATIC CRIMP TOOLS



The DMC Power Crimp tools WA27F, WA22P and WA22 are direct equivalents of their corresponding hand tools. They use the same turret heads or positioners, the gages and other accessories. As production needs grow, all that needs to be added is the tool frame itself. The resulting power capability can in many instances compare with an automated system costing thousands of dollars more.

These pneumatic tools are widely used in both military and proprietary programs. Their popularity has come about in part because of their unequaled reputation for trouble-free, dependable service and their cost saving and adaptability.

Whether upper, middle or lower range, the power tools fulfill the same precise crimp requirements as the hand models. They use the same indenter configuration, the same gaging dimensions and selector settings.

No additional operator training is necessary. Accurate calibration is maintained by a unique 8 step machined steel block that holds gaging tolerances far longer than the usual adjustment screw method. This solid gaging means high output with less downtime.

The compact size and light weight of these tools allows them to be used easily as hand tools, as well as high production bench tools. The hand trigger is designed for equal ease of use by right or left handed operators. Bench mounted, the optional foot valve allows hands-free operation. The bench mount will allow the tool to be secured at virtually any angle for individual comfort, thereby minimizing operator fatigue.

The foot valve, when installed in-line with an air supply, makes a portable system which is adaptable to any work bench. Air supply requirements are 80-120 PSI (5.5 to 8.0

atmospheres) clean dry air. The system uses standard air fittings readily available in most shops.

## **UPPER RANGE WA27F (EQUIVALENT TO AF8)**

accommodates TH-XXXMIL-STD heads. TH-XXX series turret heads or TP-XXX series positioners, length 10", diameter 2 3/4", weight 50 oz.

## **MIDDLE RANGE WA22P (EQUIVALENT TO MH860)**

accommodates 86-XXX series positioners, length 8", diameter 2 1/4", weight 32 oz.

## **LOWER RANGE WA22 (EQUIVALENT TO AFM8)**

accommodates K series positioners, length 8", diameter 2 1/4", weight 32 oz.

## **BENCH MOUNT BM-2**

## **FOOT VALVE WA10**





# MINIATURE HAND-HELD PNEUMATIC CRIMP TOOL

**DMC** DANIELS  
MANUFACTURING  
CORPORATION



**The WA22-LC-X1** is an addition to the family of pneumatic crimp tools offered from DMC. This tool is a direct equivalent to the corresponding hand tool AFM8/M22520/2-01, and accommodates "K" positioners. This light weight pneumatic tool can be used for second-end terminations where size and weight are important considera-

tions. The use of this tool will minimize operator fatigue, and reduce the possibility of carpal tunnel syndrome.

Although miniature in size, the WA22-LC-X1 is powerful enough to crimp size 20 contacts and smaller. The tool includes a built-in cycle control ratchet which assures the same precise crimp performance of the corresponding hand model. The WA22-LC-X1 uses the same indenter configuration, the same gaging dimensions and selector settings. No additional operator training is necessary.

The compact size and diameter allows it to be easily used as a hand-held tool for assembly line applications, and on-site operations in remote, hard to reach places. The trigger has been designed for equal ease of use by right or left handed operators. The bench mount will allow the tool to be secured at virtually any angle for individual comfort.

Accurate calibration is maintained by a unique 8 step machined steel block that holds gaging tolerances far longer than

the usual adjustment screw method. This solid gaging means high output with less downtime. There is virtually no maintenance required other than periodic go/no-go gaging to verify calibration.

Air supply requirements are 80-120 PSI (5.4 to 8.0 atmospheres). An air filter, lubricator and regulator is also recommended. The tool is supplied with a 9 foot air hose, and uses standard air fittings that are readily available in most shops.

## WA22-LC-X1 SPECIFICATIONS

### Crimping Range:

Contacts: size 20 through 28  
Wire: size 20 through 32 AWG

### Accommodations:

Tool will accommodate all "K" Series positioners relating to Daniel's hand-tool part numbers AFM8 (Military M22520/2 series) and MH800.



Size:	Height: 2.12"
Length: 8.5"	Weight: 1.9 lbs.
Width: 2.33"	Handle Diameter: 1.75"

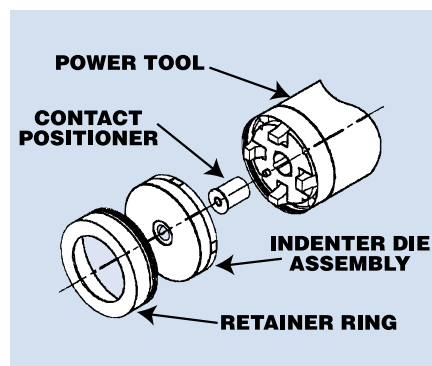
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# LARGE GAGE PNEUMATIC CRIMP TOOLS



## WA23 PNEUMATIC CRIMP TOOL



DMC's heavy pneumatic crimp tool functions with the push of a button for operator ease. This heavy duty crimp tool accommodates large size contacts 8 through 0000 (AWG) and operates on standard 90-125 psi (5.4-8.16 BAR) shop air sources.

It is engineered with the operator's safety in mind and features a full cycle control system. This tool is portable and needs no extra booster for large size contacts.

The standard die assembly and locator are easily interchangeable with no special tool required. Custom dies and locators may be designed to specific requirements. An optional foot valve is available upon request.

## NOW FEATURING...

Die Assemblies  
and Locators for:

- Pre-Installed and Un-Insulated Ring Terminals for Military and Commercial Applications (MS25036, MS20659, MIL-T-7928)

## M22520/23 Tool, Die and Locator List

MIL #	DESCRIPTION	DMC #
M22520/23-01	Crimp Tool	WA23
M22520/23-02	Die Assy. 8	WA23-2
M22520/23-03	Die Assy. 6	WA23-3
M22520/23-04	Die Assy. 4	WA23-4
M22520/23-05	Die Assy. 1/0	WA23-5
M22520/23-06	Die Assy. 2/0	WA23-6
M22520/23-07	Die Assy. 4/0	WA23-7
M22520/23-09	Locator 8	WA23-9
M22520/23-10	Locator 6	WA23-10
M22520/23-11	Locator 4	WA23-11
M22520/23-12	Locator 4, 4N, 4G	WA23-12
M22520/23-13	Locator 1/0	WA23-13
M22520/23-14	Locator 1/0, 1/0N	WA23-14
M22520/23-15	Locator 2/0, 2/0N	WA23-15
M22520/23-16	Locator 4/0, 4/0N	WA23-16

P/N	CONTACT SIZE	"GO"	"NO-GO"	GAGE P/N
M22520/23-02	8	.130	.136	G693
M22520/23-03	6	.171	.178	G694
M22520/23-04	4	.195	.202	G695
M22520/23-05	0	.325	.332	G695
M22520/23-06	00	.351	.358	G697
M22520/23-07	0000	.425	.432	G698



# LARGE GAGE CONTACT APPLICATION INFORMATION



## CONTACT APPLICATION CROSS REFERENCE

### MIL-C-5015 Front Release (3400 Series)

CONTACT PART #	BIN CODE	TYPE P/S	SIZE	DIE ASSEMBLY	LOCATOR
M39029/44	291	P	8	WA23-2	WA23-9
M39029/45	298	S	8	WA23-2	WA23-9
M39029/44	292	P	4	WA23-4	WA23-11
M39029/45	299	S	4	WA23-4	WA23-11
M39029/44	293	P	0	WA23-5	WA23-13
M39029/45	300	S	0	WA23-5	WA23-13

### MIL-C-5015 Rear Release (3450 Series)

M39029/29	214	P	8	WA23-2	WA23-9
M39029/30	220	S	8	WA23-2	WA23-9
M39029/29	215	P	4	WA23-4	WA23-11
M39029/30	221	S	4	WA23-4	WA23-11
M39029/29	216	P	0	WA23-5	WA23-13
M39029/30	222	S	0	WA23-5	WA23-13

### MIL-C-22992 Class L Heavy Duty Cylindrical Connector

M39029/48	317	P	6	WA23-3	WA23-10
M39029/48	318	P	6N	WA23-3	WA23-10
M39029/48	319	P	6G	WA23-3	WA23-10
M39029/49	329	S	6	WA23-3	WA23-10
M39029/49	330	S	6G	WA23-3	WA23-10
M39029/48	320	P	4	WA23-4	WA23-12
M39029/48	321	P	4N	WA23-4	WA23-12
M39029/48	322	P	4G	WA23-4	WA23-12
M39029/49	331	S	4	WA23-4	WA23-12
M39029/49	332	S	4G	WA23-4	WA23-12
M39029/48	323	P	1/0	WA23-5	WA23-14
M39029/48	324	P	1/0N	WA23-5	WA23-14
M39029/49	333	S	1/0	WA23-5	WA23-14
M39029/48	325	P	2/0	WA23-6	WA23-15
M39029/48	326	P	2/0N	WA23-6	WA23-15
M39029/49	334	S	2/0	WA23-6	WA23-15
M39029/48	327	P	4/0	WA23-7	WA23-16
M39029/48	328	P	4/0N	WA23-7	WA23-16
M39029/49	335	S	4/0	WA23-7	WA23-16

### J-Tech

541-220-0808	214	P	8	WA23-2	WA23-9
541-220-0404	215	P	4	WA23-4	WA23-11
542-220-0808	220	S	8	WA23-2	WA23-9
542-220-0404	221	S	4	WA23-4	WA23-11

### Amphenol/Bendix

10-497100-6	317	P	6	WA23-3	WA23-10
10-497102-6	318	P	6N	WA23-3	WA23-10
10-497222-6	319	P	6	WA23-3	WA23-10
10-497100-4	320	P	4	WA23-4	WA23-12
10-497102-4	321	P	4N	WA23-4	WA23-12
10-497222-4	322	P	4G	WA23-4	WA23-12
10-497100-3	323	P	1/0	WA23-5	WA23-14
10-497102-3	324	P	1/0N	WA23-5	WA23-14
10-497100-43	327	P	4/0	WA23-7	WA23-16
10-497102-43	328	P	4/0N	WA23-7	WA23-16
10-497101-6	329	S	6	WA23-3	WA23-10
10-497223-6	330	S	6G	WA23-3	WA23-10
10-497101-4	331	S	4	WA23-4	WA23-12
10-497223-4	332	S	4G	WA23-4	WA23-12
10-497101-3	333	S	1/0	WA23-5	WA23-14
10-497101-43	335	S	4/0	WA23-7	WA23-16

### Burndy Corporation (FCI)

CONTACT PART #	BIN CODE	TYPE P/S	SIZE	DIE ASSEMBLY	LOCATOR
B559-01-3	318	P	6N	WA23-3	WA23-10
B559-01-6	319	P	6	WA23-3	WA23-10
B559-01-1	320	P	4	WA23-4	WA23-12
B559-01-2	321	P	4N	WA23-4	WA23-12
B559-01-10	322	P	4G	WA23-4	WA23-12
B559-01-4	323	P	1/0	WA23-5	WA23-14
B559-01-5	324	P	1/0N	WA23-5	WA23-14
B559-01-8	327	P	4/0	WA23-7	WA23-16
B559-01-9	328	P	4/0N	WA23-7	WA23-16
B560-01-2	329	S	6	WA23-3	WA23-10
B560-01-4	330	S	6G	WA23-3	WA23-10
B560-01-1	331	S	4	WA23-4	WA23-12
B560-01-6	322	S	4G	WA23-5	WA23-14
B560-01-3	333	S	1/0	WA23-5	WA23-14
B560-01-5	335	S	4/0	WA23-7	WA23-16

### ITT Cannon

030-3198-003	214	P	8	WA23-2	WA23-9
030-3199-004	215	P	4	WA23-4	WA23-11
030-3200-003	216	P	0	WA23-5	WA23-13
031-3116-003	220	S	8	WA23-2	WA23-9
031-3117-003	221	S	4	WA23-4	WA23-11
031-3118-003	222	S	0	WA23-5	WA23-13

### Matrix Science/AMP-TYCO

5000-029-0008	214	P	8	WA23-2	WA23-9
5000-029-0004	215	P	4	WA23-4	WA23-11
5000-029-0000	216	P	0	WA23-5	WA23-13
5100-033-0008	220	S	8	WA23-2	WA23-9
5100-033-0004	221	S	4	WA23-4	WA23-11
5100-033-0000	222	S	0	WA23-5	WA23-13

### Tri-Star

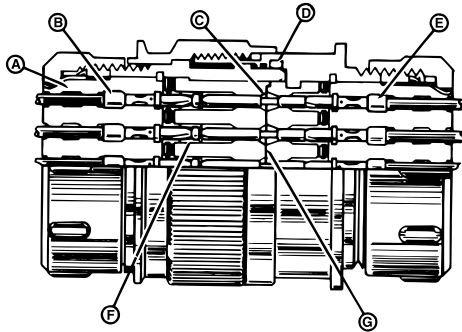
916-0808-093	214	P	8	WA23-2	WA23-9
916-0404-094	215	P	4	WA23-4	WA23-11
916-0000-095	216	P	0	WA23-5	WA23-13
915-0808-093	220	S	8	WA23-2	WA23-9
915-0404-094	221	S	4	WA23-4	WA23-11
915-0000-095	222	S	0	WA23-5	WA23-13
915-0606-595	317	P	6	WA23-3	WA23-10
915-0606-596	318	P	6N	WA23-3	WA23-10
915-0606-597	319	P	6G	WA23-3	WA23-10
915-0404-576	320	P	4	WA23-4	WA23-12
915-0404-577	321	P	4N	WA23-4	WA23-12
915-0404-578	322	P	4G	WA23-4	WA23-12
915-1001-498	323	P	1/0	WA23-5	WA23-14
915-1001-499	324	P	1/0N	WA23-5	WA23-14
915-2020-579	325	P	2/0	WA23-6	WA23-15
915-2020-580	326	P	2/0N	WA23-6	WA23-15
915-4040-598	327	P	4/0	WA23-7	WA23-16
915-4040-599	328	P	4/0N	WA23-7	WA23-16
916-0606-595	329	S	6	WA23-3	WA23-10
916-0606-597	330	S	6G	WA23-3	WA23-10
916-0404-576	331	S	4	WA23-4	WA23-12
916-0404-578	332	S	4G	WA23-4	WA23-12
916-1001-498	333	S	1/0	WA23-5	WA23-14
916-2020-579	334	S	2/0	WA23-6	WA23-15
916-4040-598	335	S	4/0	WA23-7	WA23-16

Cross reference information was compiled from (QPL) Qualified Products Listing. Additional tooling is available for other die, locator and wire size applications.



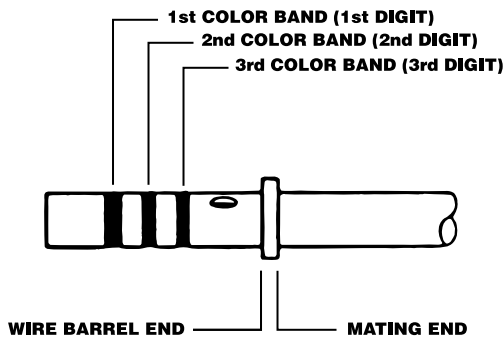
# TECHNICAL APPLICATION GUIDE

## TYPICAL COMPLEX CABLE CONNECTOR



- |                             |                           |
|-----------------------------|---------------------------|
| A. Wire Seal                | E. Pin Contact            |
| B. Socket Contact           | F. Contact Retention Clip |
| C. Chamfered Socket Lead-In | G. Interfacial Seal       |
| D. Peripheral O-Ring Seal   |                           |

## CONTACT COLOR CODE AND BIN\*

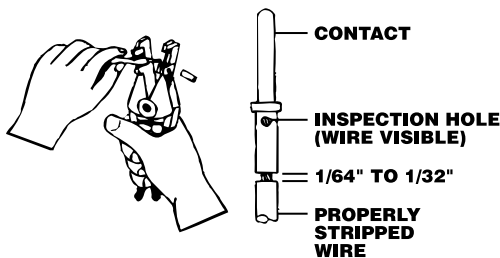


- |            |            |
|------------|------------|
| 0 – Black  | 5 – Green  |
| 1 – Brown  | 6 – Blue   |
| 2 – Red    | 7 – Violet |
| 3 – Orange | 8 – Gray   |
| 4 – Yellow | 9 – White  |

\*BASIC IDENTIFICATION NUMBER

Manufacturers have the option of identifying contacts by stamping the bin code on the shoulder or the wire barrel.

## WIRE STRIPPING TECHNIQUE



1. Determine the proper length of insulation to be removed. Wire must be visible in inspection hole. Insulation must be 1/64" – 1/32" from end of contact or inside of insulation cup.
2. Insert wire into exact center of correct cutting slot for wire size to be stripped. Each slot is marked with wire size.
3. Close handles together as close as possible.
4. Release handles, allowing wire holder to return to open position.
5. Remove stripped wire.
6. After stripping, strands of wire should be twisted firmly together in the same direction as the normal lay of the wire.
7. Stripped wire with nicked or cut strands is not acceptable.

**IMPORTANT NOTICE** – The tooling listed in the technical application guides of this catalog and other DMC publications represents data which has been compiled over many years of product use and application. Some tooling suggested herein may or may not cover a user's specific contract or manufacturing requirements. It is the user's responsibility to carry out sufficient testing to verify suitability of the specific DMC product selected for the specific requirements of each particular application.

# TECHNICAL APPLICATION GUIDE

## M39029 CONTACT QUICK LOCATION CHART

CONTACT PART NUMBER	PAGE NUMBER	CONTACT PART NUMBER	PAGE NUMBER	CONTACT PART NUMBER	PAGE NUMBER	CONTACT PART NUMBER	PAGE NUMBER
M39029/1	41	M39029/27	40	M39029/56	23, 24, 25	M39029/87	Call DMC
M39029/2	33	M39029/28	40	M39029/57	15, 24, 26	M39029/88	Call DMC
M39029/3	33	M39029/29	28, 37	M39029/58	15, 23, 24, 25	M39029/89	Call DMC
M39029/4	17, 36, 38, 39	M39029/30	28, 37	M39029/59	40	M39029/90	Call DMC
M39029/5	17, 36, 38, 39	M39029/31	16, 18, 19, 21, 35	M39029/60	40	M39029/91	Call DMC
M39029/6	39	M39029/32	16, 18, 19, 21, 35	M39029/63	15	M39029/92	Call DMC
M39029/7	39	M39029/33	29	M39029/64	15	M39029/93	Call DMC
M39029/8	39	M39029/34	20	M39029/65	Call DMC	M39029/94	Call DMC
M39029/9	Call DMC	M39029/35	20	M39029/66	Call DMC	M39029/95	Call DMC
M39029/10	Call DMC	M39029/36	20	M39029/68	Call DMC	M39029/96	Call DMC
M39029/11	34	M39029/37	20	M39029/69	40	M39029/97	Call DMC
M39029/12	34	M39029/38	Call DMC	M39029/70	40	M39029/98	Call DMC
M39029/13	39	M39029/40	Call DMC	M39029/71	Call DMC	M39029/99	Call DMC
M39029/14	39	M39029/41	Call DMC	M39029/72	Call DMC	M39029/100	Call DMC
M39029/15	Call DMC	M39029/42	Call DMC	M39029/73	Call DMC	M39029/101	Call DMC
M39029/16	32	M39029/43	Call DMC	M39029/74	Call DMC	M39029/102	Call DMC
M39029/17	31	M39029/44	27	M39029/75	40	M39029/103	Call DMC
M39029/18	31	M39029/45	27	M39029/76	40	M39029/104	Call DMC
M39029/19	39	M39029/46	30	M39029/77	40	M39029/105	Call DMC
M39029/20	39	M39029/47	29, 30	M39029/78	40	M39029/106	Call DMC
M39029/21	39	M39029/48	14	M39029/79	Call DMC	M39029/107	Call DMC
M39029/22	31, 32, 42	M39029/49	14	M39029/80	Call DMC	M39029/108	Call DMC
M39029/23	Call DMC	M39029/50	40	M39029/83	22	M39029/109	Call DMC
M39029/24	Call DMC	M39029/51	40	M39029/84	22		
M39029/25	40	M39029/54	40	M39029/85	Call DMC		
M39029/26	40	M39029/55	40	M39029/86	Call DMC		


Refer to Technical Application Guide (Pages 14–42)



# MIL-C-22992 CLASS L

## CIRCULAR HEAVY DUTY FRONT RELEASE CONTACTS

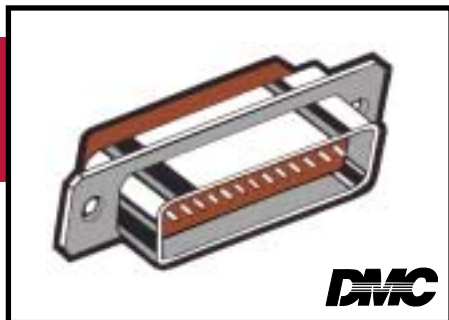
CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
MS90555	WALL MOUNT RECEPTACLE	AMPHENOL CORP. ITT CANNON
MS90556	STRAIGHT PLUG	
MS90557	IN-LINE RECEPTACLE	
MS90558	WALL MOUNT PLUG	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 <p><b>TYPICAL CONTACT CONFIGURATION</b></p>	6	6	P	M39029/48-317	MS90559-11	6
	6N	6	P	M39029/48-318	MS90559-12	6
	6G	6	P	M39029/48-319	MS90559-14	6
	6	6	S	M39029/49-329	MS90560-7	6
	6G	6	S	M39029/49-330	MS90560-8	6
	4	4	P	M39029/48-320	MS90559-8	4
	4N	4	P	M39029/48-321	MS90559-9	4
	4G	4	P	M39029/48-322	MS90559-13	4
	4	4	S	M39029/49-331	MS90560-5	4
	4G	4	S	M39029/49-332	MS90560-9	4
	0	0	P	M39029/48-323	MS90559-5	0
	0N	0	P	M39029/48-324	MS90559-6	0
	0	0	S	M39029/49-333	MS90560-3	0
	2/0	2/0	P	M39029/48-325	MS90559-3	2/0
	2/0N	2/0	P	M39029/48-326	MS90559-3	2/0
	2/0	2/0	S	M39029/49-334	MS90560-2	2/0
	4/0	4/0	P	M39029/48-327	MS90559-1	4/0
	4/0N	4/0	P	M39029/48-328	MS90559-2	4/0
	4/0	4/0	S	M39029/49-335	MS90560-1	4/0

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
317	ORANGE-BROWN-VIOLET				WA23-10	WA23-3	—	DRK178-6A
318	ORANGE-BROWN-GRAY				WA23-10	WA23-3		DRK178-6A
319	ORANGE-BROWN-WHITE				WA23-10	WA23-3		DRK178-6A
329	ORANGE-RED-WHITE				WA23-10	WA23-3	—	DRK178-6A
330	ORANGE-ORANGE-BLACK				WA23-10	WA23-3		DRK178-6A
320	ORANGE-RED-BLACK				WA23-12	WA23-4		DRK178-5A
321	ORANGE-RED-BROWN				WA23-12	WA23-4	—	DRK178-5A
322	ORANGE-RED-RED				WA23-12	WA23-4		DRK178-5A
331	ORANGE-ORANGE-BROWN				WA23-12	WA23-4		DRK178-5A
332	ORANGE-ORANGE-RED				WA23-12	WA23-4	—	DRK178-5A
323	ORANGE-RED-ORANGE				WA23-14	WA23-5		DRK178-3A
324	ORANGE-RED-YELLOW				WA23-14	WA23-5		DRK178-3A
333	ORANGE-ORANGE-ORANGE				WA23-14	WA23-5	—	DRK178-3A
325	ORANGE-RED-GREEN				WA23-15	WA23-6		DRK178-2A
326	ORANGE-RED-BLUE				WA23-15	WA23-6		DRK178-2A
334	ORANGE-ORANGE-YELLOW				WA23-15	WA23-6	—	DRK178-2A
327	ORANGE-RED-VIOLET				WA23-16	WA23-7		DRK178-1A
328	ORANGE-RED-GRAY				WA23-16	WA23-7		DRK178-1A
335	ORANGE-ORANGE-GREEN				WA23-16	WA23-7		DRK178-1A

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.






# MIL-C-24308

## MINIATURE RECTANGULAR RACK & PANEL REAR RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
		ADI ELECTRONICS INC. AMPHENOL CORP. CW INDUSTRIES CINCH CONNECTOR CRISTEK INTERCONNECTS INC. FCI FRAMATONE GROUP GENERAL CONNECTOR CORP. GLASSEAL PRODUCTS INC. ITT CANNON POSITRONIC INDUSTRIES INC. TYCO ELECTRONICS
M24308/2	POLARIZED SHELL SOCKET CONTACTS	
M24308/4	POLARIZED SHELL PIN CONTACTS	
M24308/6	POLARIZED SHELL SOCKET CONTACTS NON-MAGNETIC	
M24038/8	POLARIZED SHELL PIN CONTACTS NON-MAGNETIC	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 TYPICAL CONTACT CONFIGURATION	20	20	P	M39029/64-369	M24308/11-1	20-24
	20	20	S	M39029/63-368	M24308/10-1	20-24
	22	22D	P	M39029/58-360	M24308/13-1	22-28
	22	22D	S	M39029/57-354	M24308/12-1	22-28

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
369	ORANGE-BLUE-WHITE	TP585	K13-1	86-30-1			DAK145 or MS1969/1-02	DRK145 or MS1969/1-02
368	ORANGE-BLUE-GRAY	TP585	K13-1	86-30-1			DAK145 or MS1969/1-02	DRK145 or MS1969/1-02
360	ORANGE-BLUE-BLACK		K42	86-6			DAK95-22MB or MS1969/1-04	DRK95-22MB or MS1969/1-04
354	ORANGE-GREEN-YELLOW		K41	86-5			DAK95-22MB or MS1969/1-04	DRK95-22MB or MS1969/1-04

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.



# MIL-C-26482 SERIES 1

## CIRCULAR BAYONET COUPLING FRONT RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
MS3120	WALL MOUNT FLANGE RECEPTACLE	AMPHENOL CONNECTORS ARRAY CONNECTORS CORP. FCI FRAMATONE GROUP ITT CANNON – ITT CANNON MEXICO VEAM
MS3121	CABLE CONNECTING PLUG	
MS3122	BOX MOUNT FLANGE RECEPTACLE	
MS3124	JAM NUT REAR MOUNT RECEPTACLE	
MS3126	STRAIGHT PLUG	
MS3127	BOX MOUNT FLANGE RECEPTACLE	
MS3128	WALL MOUNT FLANGE RECEPTACLE	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 <b>TYPICAL CONTACT CONFIGURATION</b>	12	12	P	M39029/31-234	MS3192-12-12A	12-14
	12	12	S	M39029/32-253	MS3193-12-12A	12-14
	16	16	P	M39029/31-228	MS3192-16-16A	16-20
	16	16	S	M39029/32-247	MS3193-16-16A	16-20
	20	20	P	M39029/31-240	MS3192-20A-20A	20-24
	20	20	S	M39029/32-259	MS3193-20A-20A	20-24

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
234	RED-ORANGE-YELLOW	TH1A					DAK12B	DRK12B
253	RED-GREEN-ORANGE	TH1A					DAK12B	DRK12B
228	RED-RED-GRAY	TH1A		86-2			DAK16B	DRK16B
247	RED-YELLOW-VIOLET	TH1A		86-2			DAK16B	DRK16B
240	RED-YELLOW-BLACK	TH1A	K1S	86-1S			DAK20B	DRK20B
259	RED-GREEN-WHITE	TH1A	K1S	86-1S			DAK20B	DRK20B

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.



# MIL-C-26482 SERIES 2

## CIRCULAR BAYONET COUPLING REAR RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
MS3470	WALL MOUNT FLANGE RECEPTACLE	AERO ELECTRONIC CONNECTOR, INC. AMPHENOL CONNECTORS DEUTSCH FCI FRAMATONE GROUP ITT CANNON HERMETIC SEAL CORPORATION
MS3471	CABLE CONNECTING RECEPTACLE	
MS3472	WIDE FLANGE WALL MOUNT RECEPTACLE	
MS3474	JAM NUT RECEPTACLE	
MS3475	PLUG RFI	
MS3476	STRAIGHT PLUG	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 TYPICAL CONTACT CONFIGURATION	12	12	P	M39029/4-113	M39029/4-12-12	12-14
	12	12	S	M39029/5-118	M39029/5-12-12	12-14
	12	16	P	M39029/4-114	M39029/4-12-16	16-20
	12	16	S	M39029/5-119	M39029/5-12-16	16-20
	16	16	P	M39029/4-111	M39029/4-16-16	16-20
	16	16	S	M39029/5-116	M39029/5-16-16	16-20
	16	20	P	M39029/4-112	M39029/4-16-20	20-24
	16	20	S	M39029/5-117	M39029/5-16-20	20-24
	20	20	P	M39029/4-110	M39029/4-20-20	20-24
	20	20	S	M39029/5-115	M39029/5-20-20	20-24

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
113	BROWN-BROWN-ORANGE	TH1A					DAK83-12B	DRK83-12B
118	BROWN-BROWN-GRAY	TH1A					DAK83-12B	DRK83-12B
114	BROWN-BROWN-YELLOW	TH1A		86-2			DAK83-12B	DRK83-12B
119	BROWN-BROWN-WHITE	TH1A		86-2			DAK83-12B	DRK83-12B
111	BROWN-BROWN-BROWN	TH1A		86-2			DAK83-16B	DRK83-16B
116	BROWN-BROWN-BLUE	TH1A		86-2			DAK83-16B	DRK83-16B
112	BROWN-BROWN-RED	TH1A	K1S	86-2			DAK83-16B	DRK83-16B
117	BROWN-BROWN-VIOLET	TH1A	K1S	86-2			DAK83-16B	DRK83-16B
110	BROWN-BROWN-BLACK	TH1A	K1S	86-1S			DAK83-20B	DRK83-20B
115	BROWN-BROWN-GREEN	TH1A	K1S	86-1S			DAK83-20B	DRK83-20B

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.






# MIL-C-26500

## CIRCULAR THREADED OR BAYONET COUPLING FRONT RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
MS24264	FLANGE MOUNT RECEPTACLE	PLYE-NATIONAL CONNECTORS AERO ELECTRIC CONNECTOR, INC. RMS COMPANY CINCH CONNECTOR DIVISION AMPHENOL CONNECTORS HERMETIC SEAL CORPORATION AMERICAN MICRO PRODUCTS, INC.
MS24265	SINGLE HOLE MOUNT RECEPTACLE	
MS24266	STRAIGHT PLUG	
MS27613	WALL MOUNT RECEPTACLE	
MS27614	JAM NUT	
MS27615	PLUG	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 TYPICAL CONTACT CONFIGURATION	12	12	P	M39029/31-235	MS24254-12P	12-14
	12	12	S	M39029/32-254	MS24255-12S	12-14
	16	16	P	M39029/31-229	MS24254-16P	16-20
	16	16	S	M39029/32-248	MS24255-16S	16-20
	20	20	P	M39029/31-241	MS24254-20P	20-24
	20	20	S	M39029/32-260	MS24255-20S	20-24

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
235	RED-ORANGE-GREEN	TH1A					DAK12B	DRK12B
254	RED-GREEN-YELLOW	TH1A					DAK12B	DRK12B
229	RED-RED-WHITE	TH1A		86-2			DAK16B	DRK16B
248	RED-YELLOW-GRAY	TH1A		86-2			DAK16B	DRK16B
241	RED-YELLOW-BROWN	TH1A	K1S	86-1S			DAK20B	DRK20B
260	RED-BLUE-BLACK	TH1A	K1S	86-1S			DAK20B	DRK20B

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.



# MIL-C-26518 CLASS R

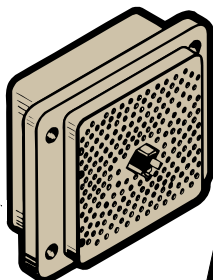
## MINIATURE RECTANGULAR RACK AND PANEL FRONT RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
M24285	RECEPTACLE	AMPHENOL CONNECTORS
M24286	PLUG	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 <b>TYPICAL CONTACT CONFIGURATION</b>	12	12	P	M39029/31-235	MS24254-12P	12-14
	12	12	S	M39029/32-254	MS24255-12S	12-14
	16	16	P	M39029/31-229	MS24254-16P	16-20
	16	16	S	M39029/32-248	MS24255-16S	16-20
	20	20	P	M39029/31-241	MS24254-20P	20-24
	20	20	S	M39029/32-260	MS24255-20S	20-24

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
235	RED-ORANGE-GREEN	TH1A					DAK12B	DRK12B
254	RED-GREEN-YELLOW	TH1A					DAK12B	DRK12B
229	RED-RED-WHITE	TH1A		86-2			DAK16B	DRK16B
248	RED-YELLOW-GRAY	TH1A		86-2			DAK16B	DRK16B
241	RED-YELLOW-BROWN	TH1A	K1S	86-1S			DAK20B	DRK20B
260	RED-BLUE-BLACK	TH1A	K1S	86-1S			DAK20B	DRK20B

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.



# MIL-C-28748

## RECTANGULAR RACK AND PANEL

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
M28748/3	PIN CONTACTS SIZE 16 & 20	CONTINENTAL CONNECTOR CO. POSITRONIC INDUSTRIES, INC. WINCHESTER ELECTRONICS DELPHI CONNECTION SYSTEMS J-TECH, INC.
M28748/4	SKT CONTACTS SIZE 16 & 20	
M28748/9	PIN CONTACTS 16 POLARIZED CENTER SCREW LOCK	
M28748/10	SKT CONTACTS 16 POLARIZED CENTER SCREW LOCK	
M28748/13	PIN CONTACTS 22	
M28748/14	SKT CONTACTS 22	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 <b>TYPICAL CONTACT CONFIGURATION</b>	16	16	P	M39029/36-278	MS17807-16-16	16-20
	16	16	S	M39029/37-280	MS17808-16-16	16-20
	16	20	P	M39029/36-277	MS17807-16-20	20-24
	16	20	S	M39029/37-279	MS17808-16-20	20-24
	16	16	P	M39029/34-273	MS17803-16-16	16-20
	16	16	S	M39029/35-276	MS17804-16-16	16-20
	16	20	P	M39029/34-272	MS17803-16-20	20-24
	16	20	S	M39029/35-275	MS17804-16-20	20-24
	20	20	P	M39029/34-271	MS17803-20-20	20-24
	20	20	S	M39029/35-274	MS17804-20-20	20-24
	22	22	P	M39029/34-440	M39029/34-22-22	22-26
	22	22	S	M39029/35-441	M39029/35-22-22	22-26

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
278	RED-VIOLET-GRAY	TH4					DAK123A	DRK124A
280	RED-GRAY-BLACK	TH4					DAK123A	DRK124A
277	RED-VIOLET-VIOLET	TH4					DAK123A	DRK124A
279	RED-VIOLET-WHITE	TH4					DAK123A	DRK124A
273	RED-VIOLET-ORANGE	TH4		86-146			DAK123A	DRK124A
276	RED-VIOLET-BLUE	TH4		86-146			DAK123A	DRK124A
272	RED-VIOLET-RED	TH4		86-146			DAK123A	DRK124A
275	RED-VIOLET-GREEN	TH4		86-146			DAK123A	DRK124A
271	RED-VIOLET-BROWN	TH4		86-146			DAK123A	DRK124A
274	RED-VIOLET-YELLOW	TH4		86-146			DAK123A	DRK124A
440	YELLOW-YELLOW-BLACK		K280				DAK123A-22A	DAK124A-22A
441	YELLOW-YELLOW-BROWN		K280				DAK123A-22A	DAK124A-22A


\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.



# MIL-C-38300

## CIRCULAR THREADED OR BAYONET COUPLING FRONT RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
MS24264	FLANGE MOUNT RECEPTACLE	NO QPL SOURCES
MS24265	SINGLE HOLE MOUNT RECEPTACLE	
MS24266	STRAIGHT PLUG	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 <b>TYPICAL CONTACT CONFIGURATION</b>	16	16	P	M39029/31-229	MS24254-16P	16-20
	16	16	S	M39029/32-248	MS24255-16S	16-20
	20	20	P	M39029/31-241	MS24254-20P	20-24
	20	20	S	M39029/32-260	MS24255-20S	20-24

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
229	RED-RED-WHITE	TH1A		86-2			DAK16B	DHK16
248	RED-YELLOW-GRAY	TH1A		86-2			DAK16B	DHK16
241	RED-YELLOW-BROWN	TH1A	K1S	86-1S			DAK20B	DHK20
260	RED-BLUE-BLACK	TH1A	K1S	86-1S			DAK20B	DHK20

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.



# MIL-C-28840

**CIRCULAR – THREADED COUPLING  
FRONT RELEASE CONTACTS  
HIGH DENSITY – HIGH SHOCK**

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
M28840/10	WALL MOUNT RECEPTACLE	GLENAIR, INC. ITT CANNON DELPHI CONNECTION SYSTEMS
M28840/11	CABLE CONNECTING RECEPTACLE	
M28840/12	BOX MOUNT RECEPTACLE	
M28840/14	JAM NUT MOUNT RECEPTACLE	
M28840/16	STRAIGHT PLUG	
M28840/17	PLUG OPEN WIRE ASSEMBLY	
M28840/18	PLUG OPEN WIRE ASSEMBLY 90° ELBOW	
M28840/19	PLUG OPEN WIRE ASSEMBLY 45° ELBOW	
M28840/20	WALL MOUNT ASSEMBLY STRAIGHT	
M28840/21	CABLE CONVERTING ASSEMBLY STRAIGHT	
M28840/26	PLUG ASSEMBLY STRAIGHT	
M28840/28	PLUG ASSEMBLY 90° ELBOW	
M28840/29	PLUG ASSEMBLY 45° ELBOW	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 <b>TYPICAL CONTACT CONFIGURATION</b>	20	20	P	M39029/83-508	M39029/83-20-20	20-24
	20	20	S	M39029/84-509	M39029/84-20-20	20-24
	20	22	P	M39029/83-450	M39029/83-20-22	22-26
	20	22	S	M39029/84-452	M39029/84-20-22	22-26
	20	28	P	M39029/83-451	M39029/83-20-28	28-32
	20	28	S	M39029/84-453	M39029/84-20-28	28-32

TOOL SELECTION		CRIMP TOOL AND ACCESSORY				ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	39-000	INSTALLING	REMOVAL
508	GREEN-BLACK-GRAY		K534		39-102	DAK55-22SA (STRAIGHT)	DRK56-22A
509	GREEN-BLACK-WHITE		K534		39-102	DAK55-22JA (OFFSET)	DRK56-22A
450	YELLOW-GREEN-BLACK		K534		39-102	DAK55-22SA (STRAIGHT)	DRK56-22A
452	YELLOW-GREEN-RED		K534		39-102	DAK55-22JA (OFFSET)	DRK56-22A
451	YELLOW-GREEN-BROWN		K534		39-102	DAK55-22SA (STRAIGHT)	DRK56-22A
453	YELLOW-GREEN-ORANGE		K534		39-102	DAK55-22JA (OFFSET)	DRK56-22A

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.





# MIL-C-38999

## SERIES 1

### SCOOP PROOF – CIRCULAR BAYONET COUPLING REAR RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
		AMPHENOL CONNECTORS AERO ELECTRIC CONNECTOR INC. PYLE-NATIONAL CONNECTORS SOCAPEX DEUTSCH FCI FRAMATONE GROUP ITT CANNON VEAM/TEC AMERICAN MICRO PRODUCTS, INC. GLENAIR INC. HERMETIC SEAL CORPORATION HI REL CONNECTORS INC. SEALTRON INC.
MS27466	WALL MOUNT FLANGE RECEPTACLE	
MS27467	STRAIGHT PLUG	
MS27468	JAM NUT MOUNT RECEPTACLE	
MS27496	RECEPTACLE	
MS27505	BOX MOUNT FLANGE RECEPTACLE	
MS27656	BACK PANEL WALL MOUNT RECEPTACLE	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 <b>TYPICAL CONTACT CONFIGURATION</b>	12	12	P	M39029/58-365	MS27493-12	12-14
	12	12	S	M39029/56-353	MS27490-12	12-14
	16	16	P	M39029/58-364	MS27493-16	16-20
	16	16	S	M39029/56-352	MS27490-16	16-20
	20	20	P	M39029/58-363	MS27493-20	20-24
	20	20	S	M39029/56-351	MS27490-20	20-24
	22	22	P	M39029/58-362	MS27493-22	22-26
	22	22	S	M39029/56-350	MS27490-22	22-26
	22	22M	P	M39029/58-361	MS27493-22M	24-28
	22	22M	S	M39029/56-349	MS27490-22M	24-28
	22	22D	P	M39029/58-360	MS27493-22D	22-28
	22	22D	S	M39029/56-348	MS27490-22D	22-28
	10	10	P	M39029/58-528	—	10
	10	10	S	M39029/56-527	—	10

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
365	ORANGE-BLUE-GREEN	TH163					DAK95-12B	DRK95-12B
353	ORANGE-GREEN-ORANGE	TH163					DAK95-12B	DRK95-12B
364	ORANGE-BLUE-YELLOW	TH163		86-3			DAK95-16B	DRK95-16B
352	ORANGE-GREEN-RED	TH163		86-3			DAK95-16B	DRK95-16B
363	ORANGE-BLUE-ORANGE	TH163	K43	86-7			DAK95-20B	DRK95-20B
351	ORANGE-GREEN-BROWN	TH163	K43	86-7			DAK95-20B	DRK95-20B
362	ORANGE-BLUE-RED		K42	86-6			DAK95-22B	DRK95-22B
350	ORANGE-GREEN-BLACK		K40	86-4			DAK95-22B	DRK95-22B
361	ORANGE-BLUE-BROWN		K42	86-6			DAK95-22MB	DRK95-22MB
349	ORANGE-YELLOW-WHITE		K40	86-4			DAK95-22MB	DRK95-22MB
360	ORANGE-BLUE-BLACK		K42	86-6			DAK95-22MB	DRK95-22MB
348	ORANGE-YELLOW-GRAY		K40	86-4			DAK95-22MB	DRK95-22MB
528	GREEN-RED-GRAY	1716P-1					DAK95-10B	DRK95-10B
527	GREEN-RED-VIOLET	1716P-1					DAK95-10B	DRK95-10B


\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.



# MIL-C-38999 SERIES 2

## LOW SILHOUETTE – CIRCULAR BAYONET COUPLING REAR RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
MS27472	WALL MOUNT FLANGE RECEPTACLE	AERO ELECTRIC CONNECTOR INC. AMPHENOL CONNECTOR HI REL CONNECTORS INC. ITT CANNON FCI FRAMATONE GROUP AMERICAN MICRO PRODUCTS, INC. GLENAIR INC. HERMETIC SEAL CORPORATION SEALTRON INC. VEAM/TEC
MS27473	STRAIGHT PLUG	
MS27474	JAM NUT MOUNT RECEPTACLE	
MS27499	BOX MOUNT RECEPTACLE	
MS27508	BOX MOUNT FLANGE RECEPTACLE	
MS27497	BACK PANEL WALL MOUNT RECEPTACLE	
MS27484	RFI PLUG	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 TYPICAL CONTACT CONFIGURATION	12	12	P	M39029/58-365	MS27493-12	12-14
	12	12	S	M39029/57-359	MS27491-12	12-14
	16	16	P	M39029/58-364	MS27493-16	16-20
	16	16	S	M39029/57-358	MS27491-16	16-20
	20	20	P	M39029/58-363	MS27493-10	20-24
	20	20	S	M39029/57-357	MS27491-20	20-24
	22	22	P	M39029/58-362	MS27493-22	22-26
	22	22	S	M39029/57-356	MS27491-22	22-26
	22	22M	P	M39029/58-361	MS27493-22M	24-28
	22	22M	S	M39029/57-355	MS27491-22M	24-28
	22	22D	P	M39029/58-360	MS27493-22D	22-28
	22	22D	S	M39029/57-354	MS27491-22D	22-28

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
365	ORANGE-BLUE-GREEN	TH163					DAK95-12B	DRK95-12B
359	ORANGE-GREEN-WHITE	TH163					DAK95-12B	DRK95-12B
364	ORANGE-BLUE-YELLOW	TH163		86-3			DAK95-16B	DRK95-16B
358	ORANGE-GREEN-GRAY	TH163		86-3			DAK95-16B	DRK95-16B
363	ORANGE-BLUE-ORANGE	TH163	K43	86-7			DAK95-20B	DRK95-20B
357	ORANGE-GREEN-VIOLET	TH163	K43	86-7			DAK95-20B	DRK95-20B
362	ORANGE-BLUE-RED		K42	86-6			DAK95-22B	DRK95-22B
356	ORANGE-GREEN-BLUE		K41	86-5			DAK95-22B	DRK95-22B
361	ORANGE-BLUE-BROWN		K42	86-6			DAK95-22MB	DRK95-22MB
355	ORANGE-GREEN-GREEN		K41	86-5			DAK95-22MB	DRK95-22MB
360	ORANGE-BLUE-BLACK		K42	86-6			DAK95-22MB	DRK95-22MB
354	ORANGE-GREEN-YELLOW		K41	86-5			DAK95-22MB	DRK95-22MB

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.



# MIL-C-38999 SERIES 3

## TRI-START COUPLING CIRCULAR REAR RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
		AERO ELECTRIC CONNECTOR INC. AMPHENOL CONNECTORS PYLE-NATIONAL CONNECTORS DEUTSCH FCI FRAMATONE GROUP HI REL CONNECTORS INC. ITT CANNON VEAM/TEC G&H TECHNOLOGY INC. AMERICAN MICRO PRODUCTS, INC. HERMETIC SEAL CORPORATION SEALTRON INC.
D38999/20	WALL MOUNT FLANGE RECEPTACLE	
D38999/24	JAM NUT MOUNT RECEPTACLE	
D38999/26	STRAIGHT PLUG	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 <b>TYPICAL CONTACT CONFIGURATION</b>	12	12	P	M39029/58-365	MS27493-12	12-14
	12	12	S	M39029/56-353	MS27490-12	12-14
	16	16	P	M39029/58-364	MS27493-16	16-20
	16	16	S	M39029/56-352	MS27490-16	16-20
	20	20	P	M39029/58-363	MS27493-20	20-24
	20	20	S	M39029/56-351	MS27490-20	20-24
	22	22	P	M39029/58-362	MS27493-22	22-26
	22	22	S	M39029/56-350	MS27490-22	22-26
	22	22M	P	M39029/58-361	MS27493-22M	24-28
	22	22M	S	M39029/56-349	MS27490-22M	24-28
	22	22D	P	M39029/58-360	MS27493-22D	22-28
	22	22D	S	M39029/56-348	MS27490-22D	22-28
	10	10	P	M39029/58-528	—	10
	10	10	S	M39029/56-527	—	10

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
365	ORANGE-BLUE-GREEN	TH163					DAK95-12B	DRK95-12B
353	ORANGE-GREEN-ORANGE	TH163					DAK95-12B	DRK95-12B
364	ORANGE-BLUE-YELLOW	TH163		86-3			DAK95-16B	DRK95-16B
352	ORANGE-GREEN-RED	TH163		86-3			DAK95-16B	DRK95-16B
363	ORANGE-BLUE-ORANGE	TH163	K43	86-7			DAK95-20B	DRK95-20B
351	ORANGE-GREEN-BROWN	TH163	K43	86-7			DAK95-20B	DRK95-20B
362	ORANGE-BLUE-RED		K42	86-6			DAK95-22B	DRK95-22B
350	ORANGE-GREEN-BLACK		K40	86-4			DAK95-22B	DRK95-22B
361	ORANGE-BLUE-BROWN		K42	86-6			DAK95-22MB	DRK95-22MB
349	ORANGE-YELLOW-WHITE		K40	86-4			DAK95-22MB	DRK95-22MB
360	ORANGE-BLUE-BLACK		K42	86-6			DAK95-22MB	DRK95-22MB
348	ORANGE-YELLOW-GRAY		K40	86-4			DAK95-22MB	DRK95-22MB
528	GREEN-RED-GRAY	1716P-1					DAK95-10B	DRK95-10B
527	GREEN-RED-VIOLET	1716P-1					DAK95-10B	DRK95-10B

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.




# MIL-C-38999

## SERIES 4

### BREECH LOK COUPLING CIRCULAR REAR RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
D38999/40	WALL MOUNT FLANGE RECEPTACLE	DEUTSCH G&H TECHNOLOGY INC.
D38999/42	BOX MOUNT FLANGE RECEPTACLE	
D38999/44	JAM NUT MOUNT RECEPTACLE	
D38999/46	STRAIGHT PLUG	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 TYPICAL CONTACT CONFIGURATION	12	12	P	M39029/58-365	MS27493-12	12-14
	12	12	S	M39029/56-353	MS27490-12	12-14
	16	16	P	M39029/58-364	MS27493-16	16-20
	16	16	S	M39029/56-352	MS27490-16	16-20
	20	20	P	M39029/58-363	MS27493-20	20-24
	20	20	S	M39029/56-351	MS27490-20	20-24
	22	22	P	M39029/58-362	MS27493-22	22-26
	22	22	S	M39029/56-350	MS27490-22	22-26
	22	22M	P	M39029/58-361	MS27493-22M	24-28
	22	22M	S	M39029/56-349	MS27490-22M	24-28
	22	22D	P	M39029/58-360	MS27493-22D	22-28
	22	22D	S	M39029/56-348	MS27490-22D	22-28

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
365	ORANGE-BLUE-GREEN	TH163					DAK95-12B	DRK95-12B
353	ORANGE-GREEN-ORANGE	TH163					DAK95-12B	DRK95-12B
364	ORANGE-BLUE-YELLOW	TH163		86-3			DAK95-16B	DRK95-16B
352	ORANGE-GREEN-RED	TH163		86-3			DAK95-16B	DRK95-16B
363	ORANGE-BLUE-ORANGE	TH163	K43	86-7			DAK95-20B	DRK95-20B
351	ORANGE-GREEN-BROWN	TH163	K43	86-7			DAK95-20B	DRK95-20B
362	ORANGE-BLUE-RED		K42	86-6			DAK95-22B	DRK95-22B
350	ORANGE-GREEN-BLACK		K40	86-4			DAK95-22B	DRK95-22B
361	ORANGE-BLUE-BROWN		K42	86-6			DAK95-22MB	DRK95-22MB
349	ORANGE-YELLOW-WHITE		K40	86-4			DAK95-22MB	DRK95-22MB
360	ORANGE-BLUE-BLACK		K42	86-6			DAK95-22MB	DRK95-22MB
348	ORANGE-YELLOW-GRAY		K40	86-4			DAK95-22MB	DRK95-22MB

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.




# MIL-C-5015

## SERIES 3400

### CIRCULAR THREADED COUPLING FRONT RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
MS3400	WALL MOUNT RECEPTACLE	AERO-ELECTRIC CONNECTORS J-TECH, INC. ELEC SYS INC.
MS3401	CABLE CONNECTING RECEPTACLE	
MS3402	BOX MOUNT RECEPTACLE	
MS3404	JAM NUT MOUNT RECEPTACLE	
MS3406	STRAIGHT PLUG	
MS3408	PLUG 90°	
MS3409	PLUG 45°	
MS3412	WALL MOUNT RECEPTACLE (AN TYPE)	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 TYPICAL CONTACT CONFIGURATION	0	0	P	M39029/44-293	MS90453-0-0	0-2
	0	0	S	M39029/45-300	MS90454-0-0	0-2
	4	4	P	M39029/44-292	MS90453-4-0	4-6
	4	4	S	M39029/45-299	MS90454-4-0	4-6
	8	8	P	M39029/44-291	MS90453-8-0	8-10
	8	8	S	M39029/45-298	MS90454-8-0	8-10
	12	12	P	M39029/44-290	MS90453-12-12	12-14
	12	12	S	M39029/45-297	MS90454-12-12	12-14
	12	16	P	M39029/44-289	MS90453-12-16	16-20
	12	16	S	M39029/45-296	MS90454-12-16	16-20
	16	16	P	M39029/44-288	MS90453-16-16	16-20
	16	16	S	M39029/45-295	MS90454-16-16	16-20
	16	22	P	M39029/44-287	MS90453-16-22	22-26
	16	22	S	M39029/45-294	MS90454-16-22	22-26

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
293	RED-WHITE-ORANGE				WA23-5	WA23-13	DAK55-0B	DRK56-0B
300	ORANGE-BLACK-BLACK				WA23-5	WA23-13	DAK55-0B	DRK56-0B
292	RED-WHITE-RED				WA23-4	WA23-11	DAK55-4B	DRK56-4B
299	RED-WHITE-WHITE				WA23-4	WA23-11	DAK55-4B	DRK56-4B
291	RED-WHITE-BROWN				WA23-2	WA23-9	DAK55-8B	DRK56-8B
298	RED-WHITE-GRAY	TH1A			WA23-2	WA23-9	DAK55-8B	DRK56-8B
290	RED-WHITE-BLACK	TH1A					DAK55-12A	DRK56-12A
297	RED-WHITE-VIOLET	TH1A					DAK55-12A	DRK56-12A
289	RED-GRAY-WHITE	TH1A					DAK55-12A	DRK56-12A
296	RED-WHITE-BLUE	TH1A					DAK55-12A	DRK56-12A
288	RED-GRAY-GRAY	TH1A		86-2			DAK55-16A	DRK56-16A
295	RED-WHITE-GREEN	TH1A		86-2			DAK55-16A	DRK56-16A
287	RED-GRAY-VIOLET	TH1A		86-2			DAK55-16A	DRK56-16A
294	RED-WHITE-YELLOW	TH1A		86-2			DAK55-16A	DRK56-16A

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.






# MIL-C-5015G

## SERIES 3450

### CIRCULAR THREADED COUPLING REAR RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
MS3450	WALL MOUNT RECEPTACLE	AERO-ELECTRIC CONNECTORS ITT CANNON J-TECH, INC. AMPHENOL CONNECTORS ELEC SYS, INC.
MS3451	CABLE CONNECTING RECEPTACLE	
MS3452	BOX MOUNT RECEPTACLE	
MS3454	JAM NUT MOUNT RECEPTACLE	
MS3456	STRAIGHT PLUG	
MS3459	SELF-LOCK COUPLING PLUG	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 <b>TYPICAL CONTACT CONFIGURATION</b>	12	12	P	M39029/29-213	M39029/29-12-12	12-14
	12	12	P	—	OR MS3162-12-12	12-14
	12	12	S	M39029/30-219	M39029/30-12-12	12-14
	12	12	S	—	OR MS3163-12-12	12-14
	16	16	P	M39029/29-212	M39029/29-16-16	16-20
	16	16	P	—	OR MS3162-16-16	16-20
	16	16	S	M39029/30-218	M39029/30-16-16	16-20
	16	16	S	—	OR MS3163-16-16	16-20
	8	8	P	M39029/29-214	M39029/29-8-8	8
	8	8	S	M39029/30-220	M39029/30-8-8	8
	4	4	P	M39029/29-215	M39029/29-4-4	4
	4	4	S	M39029/30-221	M39029/30-4-4	4
	0	0	P	M39029/29-216	M39029/29-0-0	0
	0	0	S	M39029/30-222	M39029/30-0-0	0

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
213	RED-BROWN-ORANGE	TH1A TH1A					DAK83-12B DAK83-12B	DRK83-12B DRK83-12B
219	RED-BROWN-WHITE	TH1A TH1A					DAK83-12B DAK83-12B	DRK83-12B DRK83-12B
212 —	RED-BROWN-RED	TH1A TH1A		86-2 86-2			DAK83-16B DAK83-16B	DRK83-16B DRK83-16B
218 —	RED-BROWN-GRAY	TH1A TH1A		86-2 86-2			DAK83-16B DAK83-16B	DRK83-16B DRK83-16B
214 220	RED-BROWN-YELLOW RED-RED-BLACK				WA23-9 WA23-9	WA23-2 WA23-2	— —	DRK250-8 OR M81969/1406 DRK250-8 OR M81969/1406
215 221	RED-BROWN-GREEN RED-RED-BROWN				WA23-11 WA23-11	WA23-4 WA23-4	— —	DRK250-4 OR M81969/1407 DRK250-4 OR M81969/1407
216 222	RED-BROWN-BLUE RED-RED-RED				WA23-13 WA23-13	WA23-5 WA23-5	— —	DRK250-0 OR M81969/1408 DRK250-0 OR M81969/1408


\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.



# MIL-C-81511 SERIES 1

## SCOOP PROOF – CIRCULAR BAYONET COUPLING FRONT RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
M81511/21	FLANGE MOUNT RECEPTACLE	AMPHENOL CONNECTORS
M81511/35	FLANGE MOUNT RECEPTACLE	
M81511/23	JAM NUT RECEPTACLE	
M81511/36	JAM NUT RECEPTACLE	
M81511/25	CABLE CONNECTING RECEPTACLE	
M81511/37	CABLE CONNECTING RECEPTACLE	
M81511/26	STRAIGHT PLUG	
M81511/38	STRAIGHT PLUG	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 <b>TYPICAL CONTACT CONFIGURATION</b>	12	12	P	M39029/47-338	MS90461A12-12	12-14
	12	12	P	M39029/47-339	OR MS90461B12-12	12-14
	12	12	S	M39029/33-269	MS3343A12-12	12-14
	12	12	S	M39029/33-270	OR MS3343B12-12	12-14
	16	16	P	M39029/47-336	MS90461A16-16	16-20
	16	16	P	M39029/47-337	OR MS90461B16-16	16-20
	16	16	S	M39029/33-267	MS3343A16-16	16-20
	16	16	S	M39029/33-268	OR MS3343B16-16	16-20
	20	20	P	M39029/47-315	MS90461A20-20	20-24
	20	20	P	M39029/47-316	OR MS90461B20-20	20-24
	20	20	S	M39029/33-265	MS3343A20-20	20-24
	20	20	S	M39029/33-266	OR MS3343B20-20	20-24
	23	22	P	M39029/47-313	MS90461A23-22	22-26
	23	22	P	M39029/47-314	OR MS90461B23-22	22-26
	23	22	S	M39029/33-263	MS3343A23-22	22-26
	23	22	S	M39029/33-264	OR MS3343B23-22	22-26
	23	28	P	M39029/47-311	MS90461A23-28	28-32
	23	28	P	M39029/47-312	OR MS90461B23-28	28-32
	23	28	S	M39029/33-261	MS3343A23-28	28-32
	23	28	S	M39029/33-262	OR MS3343B23-28	28-32

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
338	ORANGE-ORANGE-GRAY	TH199S					DAK126-12A	DRK125-12A
339	ORANGE-ORANGE-WHITE	TH199S					DAK126-12A	DRK125-12A
269	RED-BLUE-WHITE	TH199S					DAK126-12A	DRK129-12A
270	RED-VIOLET-BLACK	TH199S					DAK126-12A	DRK129-12A
336	ORANGE-ORANGE-BLUE	TH199S		86-12S			DAK126-16A	DRK125-16A
337	ORANGE-ORANGE-VIOLET	TH199S		86-12S			DAK126-16A	DRK125-16A
267	RED-BLUE-VIOLET	TH199S		86-12S			DAK126-16A	DRK129-16A
268	RED-BLUE-GRAY	TH199S		86-12S			DAK126-16A	DRK129-16A
315	ORANGE-BROWN-GREEN	TH199S		86-11S			DAK126-20A	DRK125-20A
316	ORANGE-BROWN-BLUE	TH199S		86-11S			DAK126-20A	DRK125-20A
265	RED-BLUE-GREEN	TH199S		86-11S			DAK126-20A	DRK129-20A
266	RED-BLUE-BLUE	TH199S		86-11S			DAK126-20A	DRK129-20A
313	ORANGE-BROWN-ORANGE		K60S				DAK126-23A	DRK125-23A
314	ORANGE-BROWN-YELLOW		K60S				DAK126-23A	DRK125-23A
263	RED-BLUE-ORANGE		K60S				DAK126-23A	DRK129-23A
264	RED-BLUE-YELLOW		K60S				DAK126-23A	DRK129-23A
311	ORANGE-BROWN-BROWN		K60S				DAK126-23A	DRK125-23A
312	ORANGE-BROWN-RED		K60S				DAK126-23A	DRK125-23A
261	RED-BLUE-BROWN		K60S				DAK126-23A	DRK129-23A
262	RED-BLUE-RED		K60S				DAK126-23A	DRK129-23A

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.



# MIL-C-81511 SERIES 2

**50% SCOOP PROOF – CIRCULAR  
BAYONET COUPLING  
FRONT RELEASE CONTACTS**

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
M81511/1	FLANGE MOUNT RECEPTACLE	AMPHENOL CONNECTORS
M81511/31	FLANGE MOUNT RECEPTACLE	
M81511/3	JAM NUT MOUNT RECEPTACLE	
M81511/32	JAM NUT MOUNT RECEPTACLE	
M81511/5	CABLE CONNECTING RECEPTACLE	
M81511/33	CABLE CONNECTING RECEPTACLE	
M81511/6	STRAIGHT PLUG	
M81511/34	STRAIGHT PLUG	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 <b>TYPICAL CONTACT CONFIGURATION</b>	12	12	P	M39029/47-338	MS90461A12-12	12-14
	12	12	P	M39029/47-339	OR MS90461A12-12	12-14
	12	12	S	M39029/46-309	MS90460A12-12	12-14
	12	12	S	M39029/46-310	OR MS90460B12-12	12-14
	16	16	P	M39029/47-336	MS90461A16-16	16-20
	16	16	P	M39029/47-337	OR MS90461B16-16	16-20
	16	16	S	M39029/46-307	MS90460A16-16	16-20
	16	16	S	M39029/46-308	OR MS90460B16-16	16-20
	20	20	P	M39029/47-315	MS90461A20-20	20-24
	20	20	P	M39029/47-316	OR MS90461B20-20	20-24
	20	20	S	M39029/46-305	MS90460A20-20	20-24
	20	20	S	M39029/46-306	OR MS90460B20-20	20-24
	23	22	P	M39029/47-313	MS90461A23-22	22-26
	23	22	P	M39029/47-314	OR MS90461B23-22	22-26
	23	22	S	M39029/46-303	MS90460A23-22	22-26
	23	22	S	M39029/46-304	OR MS90460B23-22	22-26
	23	28	P	M39029/47-311	MS90461A23-28	28-32
	23	28	P	M39029/47-312	OR MS90461B23-28	28-32
	23	28	S	M39029/46-301	MS90460A23-28	28-32
	23	28	S	M39029/46-302	OR MS90460B23-28	28-32

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
338	ORANGE-ORANGE-GRAY	TH199S					DAK126-12A	DRK125-12A
339	ORANGE-ORANGE-WHITE	TH199S					DAK126-12A	DRK125-12A
309	ORANGE-BLACK-WHITE	TH199S					DAK126-12A	DRK129-12A
310	ORANGE-BROWN-BLACK	TH199S					DAK126-12A	DRK129-12A
336	ORANGE-ORANGE-BLUE	TH199S		86-12S			DAK126-16A	DRK125-16A
337	ORANGE-ORANGE-VIOLET	TH199S		86-12S			DAK126-16A	DRK125-16A
307	ORANGE-BLACK-VIOLET	TH199S		86-12S			DAK126-16A	DRK129-16A
308	ORANGE-BLACK-GRAY	TH199S		86-12S			DAK126-16A	DRK129-16A
315	ORANGE-BROWN-GREEN	TH199S		86-11S			DAK126-20A	DRK125-20A
316	ORANGE-BROWN-BLUE	TH199S		86-11S			DAK126-20A	DRK125-20A
305	ORANGE-BLACK-GREEN	TH199S		86-11S			DAK126-20A	DRK129-20A
306	ORANGE-BLACK-BLUE	TH199S		86-11S			DAK126-20A	DRK129-20A
313	ORANGE-BROWN-ORANGE		K60S				DAK126-23A	DRK125-23A
314	ORANGE-BROWN-YELLOW		K60S				DAK126-23A	DRK125-23A
302	ORANGE-BLACK-RED		K60S				DAK126-23A	DRK129-23A
304	ORANGE-BLACK-YELLOW		K60S				DAK126-23A	DRK129-23A
311	ORANGE-BROWN-BROWN		K60S				DAK126-23A	DRK125-23A
312	ORANGE-BROWN-RED		K60S				DAK126-23A	DRK125-23A
301	ORANGE-BLACK-BROWN		K60S				DAK126-23A	DRK129-23A
302	ORANGE-BLACK-RED		K60S				DAK126-23A	DRK129-23A


\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.



# MIL-C-81511 SERIES 3

## SCOOP PROOF – CIRCULAR BAYONET COUPLING REAR RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
M81511/41	FLANGE MOUNT RECEPTACLE	DEUTSCH
M81511/45	CABLE CONNECTING RECEPTACLE	
M81511/46	STRAIGHT PLUG	
M81511/49	JAM NUT MOUNT RECEPTACLE	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 <b>TYPICAL CONTACT CONFIGURATION</b>	12	12	P	M39029/18-180	M39029/18-12-12	12-14
	12	12	S	M39029/17-175	M39029/17-12-12	12-14
	16	16	P	M39029/18-179	M39029/18-16-16	16-20
	16	16	S	M39029/17-174	M39029/17-16-16	16-20
	16	16	S	M39029/22-193	M39029/22-16-16	16-20
	20	20	P	M39029/18-178	M39029/18-20-20	16-20
	20	20	S	M39029/17-173	M39029/17-20-20	20-24
	20	20	S	M39029/22-192	M39029/22-20-20	20-24
	22	22	S	M39029/22-191	M39029/22-22-22	22-28
	22	28	S	M39029/22-190	M39029/22-22-28	28-32
	23	22	P	M39029/18-177	M39029/18-23-22	22-28
	23	22	S	M39029/17-172	M39029/17-23-22	22-28
	23	28	P	M39029/18-176	M39029/18-23-28	28-32
	23	28	S	M39029/17-171	M39029/17-23-28	28-32

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
180	BROWN-GRAY-BLACK	TP360					M81969/16-03	M81969/16-03
175	BROWN-VIOLET-GREEN	TP365					M81969/16-03	M81969/16-03
179	BROWN-VIOLET-WHITE		K341	86-2			M81969/16-02	M81969/16-02
174	BROWN-VIOLET-YELLOW		K343	86-2			M81969/16-02	M81969/16-02
193	BROWN-WHITE-ORANGE	TH343		86-21			M81969/16-02	M81969/16-02
178	BROWN-VIOLET-GRAY		K340	86-1S			M81969/16-01	M81969/16-01
173	BROWN-VIOLET-ORANGE		K342	86-1S			M81969/16-01	M81969/16-01
192	BROWN-WHITE-RED	TH343	K503	86-20			M81969/16-01	M81969/16-01
191	BROWN-WHITE-BROWN		K330-3	86-19			M81969/16-04	M81969/16-04
190	BROWN-WHITE-BLACK		K330-3	86-19			M81969/16-04	M81969/16-04
177	BROWN-VIOLET-VIOLET		K338				M81969/16-04	M81969/16-04
172	BROWN-VIOLET-RED		K339				M81969/16-04	M81969/16-04
176	BROWN-VIOLET-BLUE		K338					
171	BROWN-VIOLET-BROWN		K339					

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.



# MIL-C-81511 SERIES 4

**50% SCOOP PROOF  
CIRCULAR  
REAR RELEASE CONTACTS**

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
M81511/51	FLANGE MOUNT RECEPTACLE	DEUTSCH
M81511/53	JAM NUT MOUNT RECEPTACLE	
M81511/55	CABLE CONNECTING RECEPTACLE	
M81511/56	STRAIGHT PLUG	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 <b>TYPICAL CONTACT CONFIGURATION</b>	12	12	P	M39029/18-180	M39029/18-12-12	12-14
	12	12	S	M39029/16-170	M39029/16-12-12	12-14
	16	16	P	M39029/18-179	M39029/18-16-16	16-20
	16	16	S	M39029/16-169	M39029/16-16-16	16-20
	16	16	S	M39029/22-193	M39029/22-16-16	16-20
	20	20	P	M39029/18-178	M39029/18-20-20	20-24
	20	20	S	M39029/16-168	M39029/16-20-20	20-24
	20	20	S	M39029/22-192	M39029/22-20-20	20-24
	22	22	S	M39029/22-191	M39029/22-22-22	22-28
	22	28	S	M39029/22-190	M39029/22-22-28	28-32
	23	22	P	M39029/18-177	M39029/18-23-22	22-28
	23	22	S	M39029/16-167	M39029/16-23-22	22-28
	23	28	P	M39029/18-176	M39029/18-23-28	28-32
	23	28	S	M39029/16-166	M39029/16-23-28	28-32

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
180	BROWN-GRAY-BLACK	TP360					M81969/16-03	M81969/16-03
170	BROWN-VIOLET-BLACK	TP360					M81969/16-03	M81969/16-03
179	BROWN-VIOLET-WHITE		K341	86-2			M81969/16-02	M81969/16-02
169	BROWN-BLUE-WHITE		K341	86-2			M81969/16-02	M81969/16-02
193	BROWN-WHITE-ORANGE			86-21			M81969/16-02	M81969/16-02
178	BROWN-VIOLET-GRAY		K340				M81969/16-01	M81969/16-01
168	BROWN-BLUE-GRAY		K340				M81969/16-01	M81969/16-01
192	BROWN-WHITE-RED	TH343	K503	86-20			M81969/16-01	M81969/16-01
191	BROWN-WHITE-BROWN		K330-3	86-19			M81969/16-04	M81969/16-04
190	BROWN-WHITE-BLACK		K330-3	86-19			M81969/16-04	M81969/16-04
177	BROWN-VIOLET-VIOLET		K338				M81969/16-04	M81969/16-04
167	BROWN-BLUE-VIOLET		K338				M81969/16-04	M81969/16-04
176	BROWN-VIOLET-BLUE		K338					
166	BROWN-BLUE-BLUE		K338					

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.






# MIL-C-81659 SERIES 1

## RECTANGULAR FRONT RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
M81659/1 THRU M81659/27	RECEPTACLE OR PLUG, TYPE 1 AND 2 CLASS 1 AND 2 SHELL DESIGNATOR A OR B	NO QPL SOURCES

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 <b>TYPICAL CONTACT CONFIGURATION</b>	16	16	P	M39029/2-106	M39029/2-16-16	16-20
	16	16	S	M39029/3-109	M39029/3-16-16	16-20
	20	20	P	M39029/2-105	M39029/2-20-20	20-24
	20	20	S	M39029/3-108	M39029/3-20-20	20-24
	22	22	P	M39029/2-104	M39029/2-22-22	22-26
	22	22	S	M39029/3-107	M39029/3-22-22	22-26

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
106	BROWN-BLACK-BLUE	TH1A		86-2			DAK55-16A	DRK56-16A
109	BROWN-BLACK-WHITE	TH1A		86-2			DAK55-16A	DRK56-16A
105	BROWN-BLACK-GREEN	TH1A	K287					CONSULT FACTORY
108	BROWN-BLACK-GRAY	TH1A	K287					CONSULT FACTORY
104	BROWN-BLACK-YELLOW		K287				CONSULT FACTORY	CONSULT FACTORY
107	BROWN-BLACK-VIOLET		K287				CONSULT FACTORY	CONSULT FACTORY


\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.



# MIL-C-81659 SERIES 2 (ARINC 404)

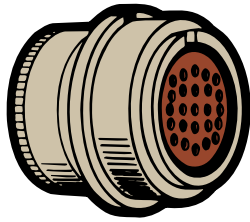
## RECTANGULAR REAR RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
M81659 THRU M81659/72	RECEPTACLE OR PLUG, TYPE 2, 3 AND 4 CLASS 1 AND 2 SHELL DESIGNATOR A OR B	AMP ITT CANNON RADIALL, S.A.

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 <b>TYPICAL CONTACT CONFIGURATION</b>	12	12	P	M39029/11-147	M39029/11-12-12	12-14
	12	12	S	M39029/12-151	M39029/12-12-12	12-14
	16	16	P	M39029/11-146	M39029/11-16-16	16-20
	16	16	S	M39029/12-150	M39029/12-16-16	16-20
	20	20	P	M39029/11-145	M39029/11-20-20	20-24
	20	20	S	M39029/12-149	M39029/12-20-20	20-24
	22	22	P	M39029/11-144	M39029/11-22-22	22-26
	22	22	S	M39029/12-148	M39029/12-22-22	22-26

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
147	BROWN-YELLOW-VIOLET	TP465					—	DRK337
151	BROWN-GREEN-BROWN	TP465					—	DRK337
146	BROWN-YELLOW-BLUE	TH1A		86-2			M81969/1-03	M81969/1-03
150	BROWN-GREEN-BLACK	TH1A		86-2			M81969/1-03	M81969/1-03
145	BROWN-YELLOW-GREEN		K13-1	86-30-1			M81969/1-02	M81969/1-02
149	BROWN-YELLOW-WHITE		K13-1	86-30-1			M81969/1-02	M81969/1-02
144	BROWN-YELLOW-YELLOW		K267-1				M81969/1-01	M81969/1-01
148	BROWN-YELLOW-GRAY		K267-1				M81969/1-01	M81969/1-01

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.



# MIL-C-81703 SERIES 2

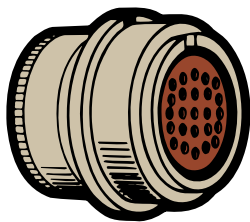
## CIRCULAR RACK & PANEL OR PUSH PULL COUPLING FRONT RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
MS3140	WALL MOUNT FLANGE RECEPTACLE	DEUTSCH
MS3144	JAM NUT MOUNT RECEPTACLE	
MS3147	STRAIGHT PLUG	
MS3148	PLUG LANYARD COUPLING	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 <b>TYPICAL CONTACT CONFIGURATION</b>	12	12	P	M39029/31-234	MS3192-12-12A	12-14
	12	12	S	M39029/32-253	MS3193-12-12A	12-14
	16	16	P	M39029/31-228	MS3192-16-16A	16-20
	16	16	S	M39029/32-247	MS3193-16-16A	16-20
	20	20	P	M39029/31-223	MS3192-20-20A	20-24
	20	20	S	M39029/32-242	MS3193-20-20A	20-24

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
234	RED-ORANGE-YELLOW	TH1A					DAK12B	DRK12B
253	RED-GREEN-ORANGE	TH1A					DAK12B	DRK12B
228	RED-RED-GRAY	TH1A		86-2			DAK16B	DRK16B
247	RED-YELLOW-VIOLET	TH1A		86-2			DAK16B	DRK16B
223	RED-RED-ORANGE	TH1A	K1S	86-1S			DAK20B	DRK20B
242	RED-YELLOW-RED	TH1A	K1S	86-1S			DAK20B	DRK20B

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.



# MIL-C-81703 SERIES 3

## CIRCULAR RACK & PANEL OR PUSH PULL COUPLING REAR RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
MS3445	PLUG RACK & PANEL	DEUTSCH
MS3424	WALL MOUNT FLANGE RECEPTACLE	
MS3446	PLUG RACK & PANEL	
MS3464	JAM NUT MOUNT RECEPTACLE	
MS3467	STRAIGHT PLUG	
MS3468	PLUG LANYARD COUPLING	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 <b>TYPICAL CONTACT CONFIGURATION</b>	12	12	P	M39029/4-113	M39029/4-12-12	12-14
	12	12	S	M39029/5-118	M39029/5-12-12	12-14
	12	16	P	M39029/4-114	M39029/4-12-16	16-20
	12	16	S	M39029/5-119	M39029/5-12-16	16-20
	16	16	P	M39029/4-111	M39029/4-16-16	16-20
	16	16	S	M39029/5-116	M39029/5-16-16	16-20
	16	20	P	M39029/4-112	M39029/4-16-20	20-24
	16	20	S	M39029/5-117	M39029/5-16-20	20-24
	20	20	P	M39029/4-110	M39029/4-20-20	20-24
	20	20	S	M39029/5-115	M39029/5-20-20	20-24

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
113	BROWN-BROWN-ORANGE	TH1A					DAK83-12B	DRK83-12B
118	BROWN-BROWN-GRAY	TH1A					DAK83-12B	DRK83-12B
114	BROWN-BROWN-YELLOW	TH1A					DAK83-12B	DRK83-12B
119	BROWN-BROWN-WHITE	TH1A					DAK83-12B	DRK83-12B
111	BROWN-BROWN-BROWN	TH1A		86-2			DAK83-16B	DRK83-16B
116	BROWN-BROWN-BLUE	TH1A		86-2			DAK83-16B	DRK83-16B
112	BROWN-BROWN-RED	TH1A	K1S	86-2			DAK83-16B	DRK83-16B
117	BROWN-BROWN-VIOLET	TH1A	K1S	86-2			DAK83-16B	DRK83-16B
110	BROWN-BROWN-BLACK	TH1A	K1S	86-1S			DAK83-20B	DRK83-20B
115	BROWN-BROWN-GREEN	TH1A	K1S	86-1S			DAK83-20B	DRK83-20B

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.





# MIL-C-83723

## SERIES 2

### CIRCULAR THREADED COUPLING REAR RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
M83723/17	CABLE CONNECTING RECEPTACLE SKT CONTACTS	ITT CANNON
M83723/18	CABLE CONNECTING RECEPTACLE PIN CONTACTS	
M83723/19	WALL MOUNT RECEPTACLE SKT CONTACTS	
M83723/20	WALL MOUNT RECEPTACLE PIN CONTACTS	
M83723/21	BOX MOUNT RECEPTACLE SKT CONTACTS	
M83723/22	BOX MOUNT RECEPTACLE PIN CONTACTS	
M83723/23	PLUG SKT CONTACTS	
M83723/24	PLUG PIN CONTACTS	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 <b>TYPICAL CONTACT CONFIGURATION</b>	12	12	P	M39029/29-213	M39029/29-12-12	12-14
	12	12	S	M39029/30-219	M39029/30-12-12	12-14
	16	16	P	M39029/29-212	M39029/29-16-16	16-20
	16	16	S	M39029/30-218	M39029/30-16-16	16-20

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
213	RED-BROWN-ORANGE	TH1A					DAK83-12B	DRK83-12B
219	RED-BROWN-WHITE	TH1A					DAK83-12B	DRK83-12B
212	RED-BROWN-RED	TH1A		86-2			DAK83-16B	DRK83-16B
218	RED-BROWN-GRAY	TH1A		86-2			DAK83-16B	DRK83-16B


\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.



# MIL-C-83723 SERIES 3

## CIRCULAR BAYONET OR THREADED COUPLING REAR RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
M83723/71	FLANGE MOUNT RECEPTACLE	AERO ELECTRIC CONNECTOR, INC. AMPHENOL CONNECTORS PYLE NATIONAL CONNECTORS DEUTSCH J-TECH HI-REL CONNECTORS, INC. ITT CANNON
M83723/71	FLANGE MOUNT RECEPTACLE	
M83723/83	FLANGE MOUNT RECEPTACLE	
M83723/82	FLANGE MOUNT RECEPTACLE	
M83723/74	SINGLE HOLE MOUNT RECEPTACLE	
M83723/73	SINGLE HOLE MOUNT RECEPTACLE	
M83723/85	SINGLE HOLE MOUNT RECEPTACLE	
M83723/84	SINGLE HOLE MOUNT RECEPTACLE	
M83723/76	STRAIGHT PLUG	
M83723/75	STRAIGHT PLUG	
M83723/87	STRAIGHT PLUG	
M83723/86	STRAIGHT PLUG	
M83723/78	RFI PLUG	
M83723/77	RFI PLUG	
M83723/96	SELF LOCKING PLUG	
M83723/95	SELF LOCKING PLUG	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 TYPICAL CONTACT CONFIGURATION	12	12	P	M39029/4-113	M39029/4-12-12	12-14
	12	12	P	—	OR M83723-33B12	12-14
	12	12	S	M39029/5-118	M39029/5-12-12	12-14
	12	12	S	—	OR M83723-34B12	12-14
	12	16	P	M39029/4-114	M39029/4-12-16	16-20
	12	16	S	M39029/5-119	OR M39029/5-12-16	16-20
	16	16	P	M39029/4-111	M39029/4-16-16	16-20
	16	16	P	—	OR M83723-33B16	16-20
	16	16	S	M39029/5-116	M39029/5-16-16	16-20
	16	16	S	—	OR M83723-34B16	16-20
	16	20	P	M39029/4-112	M39029/4-16-20	20-24
	16	20	S	M39029/5-117	OR M39029/5-16-20	20-24
	20	20	P	M39029/4-110	M39029/4-20-20	20-24
	20	20	P	—	OR M83723-33B20	20-24
	20	20	S	M39029/5-115	M39029/5-20-20	20-24
	20	20	S	—	OR M83723-34B20	20-24

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
113	BROWN-BROWN-ORANGE	TH1A					DAK83-12B	DRK83-12B
—		TH1A					DAK83-12B	DRK83-12B
118	BROWN-BROWN-GRAY	TH1A					DAK83-12B	DRK83-12B
—		TH1A					DAK83-12B	DRK83-12B
114	BROWN-BROWN-YELLOW	TH1A		86-2			DAK83-16B	DRK83-16B
119	BROWN-BROWN-WHITE	TH1A		86-2			DAK83-16B	DRK83-16B
111	BROWN-BROWN-BROWN	TH1A		86-2			DAK83-16B	DRK83-16B
—		TH1A		86-2			DAK83-16B	DRK83-16B
116	BROWN-BROWN-BLUE	TH1A		86-2			DAK83-16B	DRK83-16B
—		TH1A		86-2			DAK83-16B	DRK83-16B
112	BROWN-BROWN-RED	TH1A	K1S	86-2			DAK83-20B	DRK83-20B
117	BROWN-BROWN-VIOLET	TH1A	K1S	86-2			DAK83-20B	DRK83-16B
110	BROWN-BROWN-BLACK	TH1A	K1S	86-1S			DAK83-20B	DRK83-20B
—		TH1A	K1S	86-1S			DAK83-20B	DRK83-20B
115	BROWN-BROWN-GREEN	TH1A	K1S	86-1S			DAK83-20B	DRK83-20B
—		TH1A	K1S	86-1S			DAK83-20B	DRK83-20B

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.



# MIL-C-83733

## RECTANGULAR MINIATURE RACK TO PANEL REAR RELEASE CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
M83733/1	STANDARD HOLE MOUNT	
M83722/2	GUIDE PINS AND SPRING MOUNT	
M83733/3	GUIDE SOCKETS	
M83733/4	CAPTIVE SPRINGS	
M83733/5	BUSHING MOUNT	
M83733/6	CLINCH NUT MOUNT	
M83733/7	GUIDE SKTS AND SPRING MOUNT	
M83733/8	GUIDE PINS	
M83733/9	STAGGERED STANDARD HOLE MOUNT	
M83733/10	STAGGERED BUSHING MOUNT	
M83733/11	STAGGERED CLINCH NUT MOUNT	
M83733/12	STAGGERED SPRING MOUNT	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 <b>TYPICAL CONTACT CONFIGURATION</b>	12	12	P	M39029/4-113	M39029/4-12-12	12-14
	12	12	S	M39029/5-118	M39029/5-12-12	12-14
	16	16	P	M39029/4-111	M39029/4-16-16	16-20
	16	16	S	M39029/5-116	M39029/5-16-16	16-20
	20	20	P	M39029/4-110	M39029/4-20-20	20-24
	20	20	S	M39029/5-115	M39029/5-20-20	20-24
	22	22D	P	M39029/58-360	MS27494-22D	22-28
	22	22D	S	M39029/57-354	MS27492-22D	22-28

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
113	BROWN-BROWN-ORANGE	TH1A					M81969/14-04	M81969/14-04
118	BROWN-BROWN-GRAY	TH1A					M81969/14-04	M81969/14-04
111	BROWN-BROWN-BROWN	TH1A		86-2			M81969/14-03	M81969/14-03
116	BROWN-BROWN-BLUE	TH1A		86-2			M81969/14-03	M81969/14-03
110	BROWN-BROWN-BLACK	TH1A	K1S	86-1S			M81969/14-02	M81969/14-02
115	BROWN-BROWN-GREEN	TH1A	K1S	86-1S			M81969/14-02	M81969/14-02
360	ORANGE-BLUE-BLACK		K42	86-6			M81969/14-01	M81969/14-01
354	ORANGE-GREEN-YELLOW		K41	86-5			M81969/14-01	M81969/14-01

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.




# MIL-C-85028

## SERIES AS

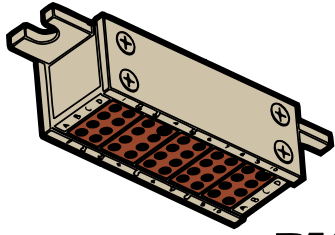
RECTANGULAR – INDIVIDUAL CONTACT SEALING  
POLARIZED CENTER JACK SCREW  
PULL THRU INSERTION CONTACTS

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
M85028/1	CRIMP REMOVABLE PIN CONTACTS	DELPHI CONNECTION SYSTEMS
M85028/2	CRIMP REMOVABLE SKT CONTACTS	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 TYPICAL CONTACT CONFIGURATION	16	16	P	M39029/70-389	M39029/70-3	16-20
	16	16	S	M39029/69-386	M39029/69-3	16-20
	16	20	P	M39029/70-388	M39029/70-2	20-24
	16	20	S	M39029/69-385	M39029/69-2	20-24
	16	24	P	M39029/70-387	M39029/70-1	24-28
	16	24	S	M39029/69-384	M39029/69-1	24-28

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
389	ORANGE-GRAY-WHITE						DAK 1-16P or DAK1-16S	M81969/23
386	ORANGE-GRAY-BLUE						DAK 1-16P or DAK1-16S	M81969/23
388	ORANGE-GRAY-GRAY	TP651					DAK 1-16P or DAK1-16S	M81969/23
385	ORANGE-GRAY-GREEN	TP651					DAK 1-16P or DAK1-16S	M81969/23
387	ORANGE-GRAY-VIOLET						DAK 1-16P or DAK1-16S	M81969/23
384	ORANGE-GRAY-YELLOW						DAK 1-16P or DAK1-16S	M81969/23


\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.



# MIL-T-81714

## TERMINAL JUNCTIONS

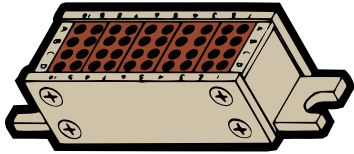
CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
M81714/1	FEEDBACK TYPE SIZE 22	PCD, INC. AMP, INC. DME ELECTRONICS DEUTSCH
M81714/2	FEEDBACK TYPE SIZE 20	
M81714/3	FEEDBACK TYPE SIZE 16	
M81714/4	FEEDBACK TYPE SIZE 12	
M81714/6	FEEDBACK TYPE SIZE 22	
M81714/7	FEEDBACK TYPE SIZE 20	
M81714/8	FEEDBACK TYPE SIZE 16	
M81714/9	FEEDBACK TYPE SIZE 12	
M81714/11	SPLICES	
M81714/12	DOUBLE SPLICES	
M81714/15	TERMINAL GROUNDING	

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 TYPICAL CONTACT CONFIGURATION	12	12	P	M39029/1-103	M39029/1-12-12	12-14
	14	16	P	M39029/1-102	M39029/1-14-16	16-20
	16	20	P	M39029/1-101	M39029/1-16-20	20-24
	16	22	P	M39029/1-100	M39029/1-16-22	22-26
	20	22D	P	M39029/1-507	M39029/1-20-22D	22-28

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
103	BROWN-BLACK-ORANGE	TH1A					DAK83-12B	DRK83-12B
102	BROWN-BLACK-RED	TH1A					DAK83-16B	DRK83-16B
101	BROWN-BLACK-BROWN	TH1A	K287				DAK83-20B	DRK83-20B
100	BROWN-BLACK-BLACK		K287				M81969/14-01	M81969/14-01
507	GREEN-BLACK-VIOLET		K496-1				M81969/14-01	M81969/14-01

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.






# MIL-STD-1549

## COMMON TERMINAL SYSTEM

CONNECTOR PART NUMBER	DESCRIPTION	SOURCES
		NO QPL SOURCES

CONTACTS	SIZE (AWG)		PIN/SOC.	PART NUMBER* (CURRENT)	PART NUMBER (SUPERSEDED)	WIRE RANGE
	MATING END	WIRE BARREL				
 TYPICAL CONTACT CONFIGURATION	12	12	S	M39029/22-605	—	12-14
	16	16	S	M39029/22-193	M39029/22-16-16	16-20
	20	20	S	M39029/22-192	M39029/22-20-20	20-24
	22	22	S	M39029/22-191	M39029/22-22-22	28-32
	22	28	S	M39029/22-190	M39029/22-22-28	28-32

TOOL SELECTION		CRIMP TOOL AND ACCESSORY					ASSEMBLY TOOLS	
BIN*	COLOR	AF8	AFM8	MH860	WA23 (POS)	WA23 (DIE)	INSTALLING	REMOVAL
605	BLUE-BLACK-GREEN	TH343					DAK83-12B	DRK82-12B
193	BROWN-WHITE-ORANGE	TH343		86-21			DAK83-16B	DRK83-16B
192	BROWN-WHITE-RED	TH343	K503	86-20			DAK83-20B	DRK83-20B
191	BROWN-WHITE-BROWN		K330-3	86-19			M81969/14-01	M81969/14-01
190	BROWN-WHITE-BLACK		K330-3	86-19			M81969/14-01	M81969/14-01

\*The three number suffix on M39029 series contacts is referred to as a "BIN" code and contact color stripes to determine the correct tool part numbers.

# VIBRA-FEED AUTOMATIC CRIMP STATION



The DMC **VIBRA-FEED** Automatic Crimp Station (**ACS**) will process various machined pin and socket crimp contacts sizes 12 through 22 (AWG) in bulk form. The **ACS** crimps at the maximum production rates, depending on the operators ability and the applications. The contacts will be presented to the operator properly located in the indenter area of the DMC power crimp tool, requiring the operator to only insert the wire into the wire barrel and press the foot pedal to complete the crimp.

## ACS FEATURES:

- The crimper is attached to the front of the unit mounted at a 45 degree angle to give the operator full view and ease in loading the wire into the contact for crimping.
- A precision funnel directs the wire into the contact barrel (in most models).
- Standard shop air and power are all that is required to operate the **ACS**. This machine remains portable, and can be moved to the required location.
- The machine is equipped with a simple visible contact transfer track system and a purge switch to remove any contacts which remain in the track or feeder.
- A calibration gaging switch is placed on the machine to allow for gaging checks that may be required. This switch activates the tool without feeding a contact.

- Micro processor control of all process functions.
- Compact size and durable construction for ease in shipment by package delivery companies.

## CONTACTS:

In many cases, alike or similar contacts can be processed in the same machine without changing internal parts. Contact DMC for details.

## TYPICAL SPECIFICATIONS

Width	12" Max (305mm)
Length	12" Max (406mm)
Height	12" Max (305mm)
Weight	60 LB Max (27 kg)
Power	110 VAC 60Hz 5 A or 220 VAC 50Hz 2.5 A
Air Supply	80-120 psi (5.5 - 8.3 Bar)

**DMC** DANIELS  
MANUFACTURING  
CORPORATION



526 THORPE ROAD, ORLANDO, FL 32824 USA • 407/855-6161 • FAX 407/855-6884

# CIRCULAR INDENT CRIMP TOOLS

## MODELS: MH801, MH802, MH803, MH804, GS100-1 & GS200-1

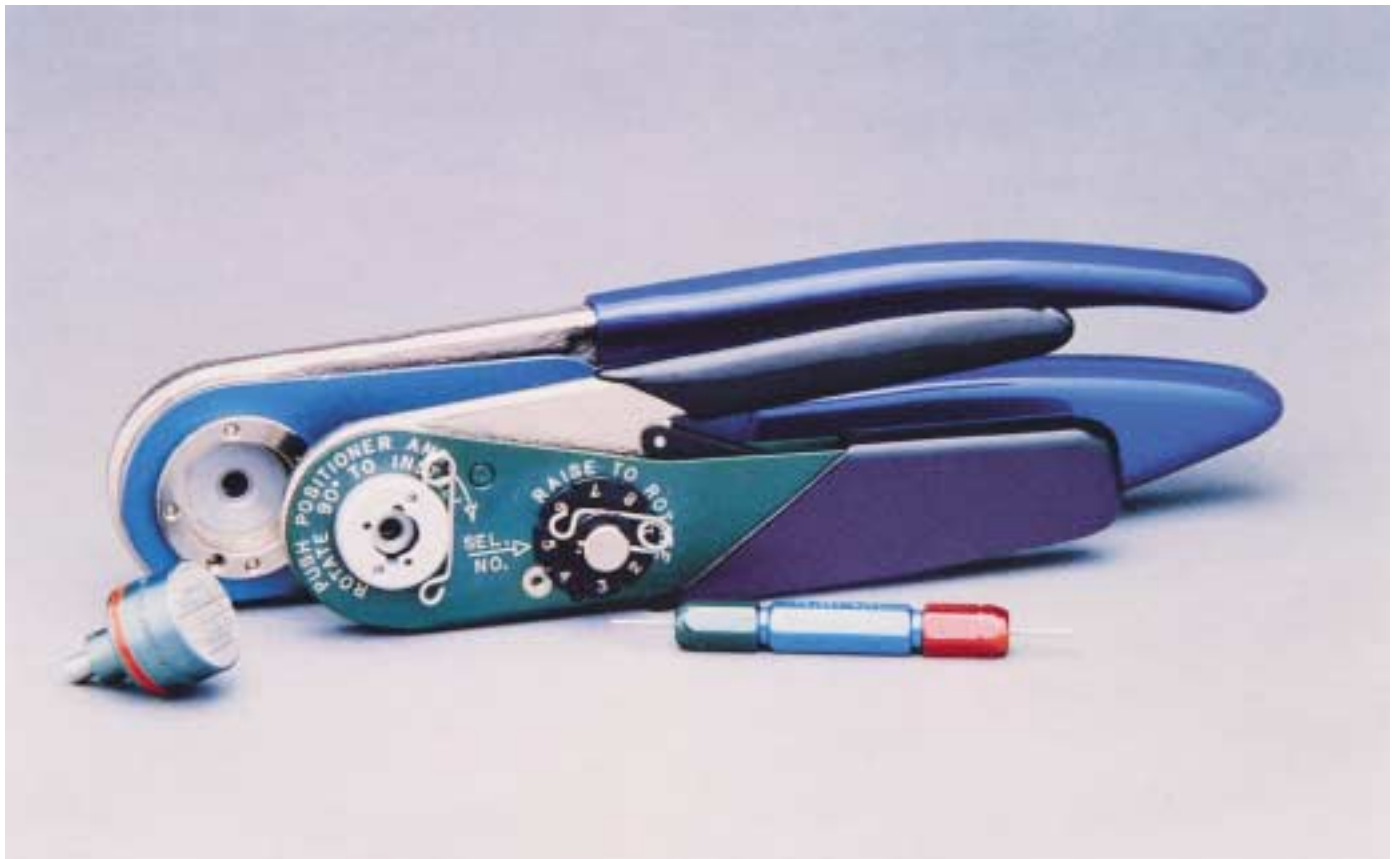
Keeping things simple is a basic philosophy at DMC. When special conditions call for a new tool design, we make every effort to utilize the components of existing tools which have been proven reliable both in field use and controlled test programs. Such is the case with this tool series.

The design of certain shielded contacts require two additional crimping operations. One for the shield crimp sleeve, the other for the outer body. (Note: On the MH801 MH802, MH803, and MH804 tools, in addition to the four opposing indenters these tools also have four retainers which encompass the contact prior to the initiation of the crimping operation thus assuring concentricity.) All of the tools give a concentric circular crimp configuration required by certain shielded contacts to insure compatibility with

connector inserts and installing or removal tools in rear release applications, and/or maintain a consistent electric impedance. Thus an indenter pattern which conforms to the appropriate military drawing (see chart for specific part numbers) was adapted to our familiar standard and miniature tool frames. A full complement of positioners, inspection gages, and other accessories are available for these tool frames.

The technical section on pages 33, 34 lists the part numbers of standard M39029 contacts which require these tools; however, the concept may be adapted to other applications. Consult factory for specific details.

MILITARY P/N	DMC P/N	DESCRIPTION
M22520/4-01	GS100-1	TOOL FRAME
M22520/4-02	GP295	POSITIONER
M22520/3-2	G120	GAGE
M22520/31-01	GS200-1	TOOL FRAME
M22520/31-02	G2P330	POSITIONER
M22520/3-15	G443	GAGE
M22520/19-01	MH801	TOOL FRAME
M22520/19-02	D16P-1M	POSITIONER
M22520/19-03	D16S-1M	POSITIONER
M22520/19-04	D16LS-1M	POSITIONER
M22520/3-4	G256	GAGE (INDENTERS)
M22520/3-5	G257	GAGE (RETAINERS)
M22520/20-01	MH802	TOOL FRAME
M22520/20-02	D16/1-1M	POSITIONER
M22520/20-03	D16/2-1M	POSITIONER
M22520/3-6	G258	GAGE (RETAINERS)
M22520/21-01	MH803	TOOL FRAME
M22520/21-02	D12P-1M	POSITIONER
M22520/21-03	D12S-1M	POSITIONER
M22520/21-04	D12LS-1M	POSITIONER
M22520/3-7	G259	GAGE (RETAINERS)
M22520/22-01	MH804	TOOL FRAME
M22520/22-02	D12/1-1M	POSITIONER
M22520/22-03	D12/2-1M	POSITIONER
M22520/3-8	G260	GAGE (RETAINERS)



# COAXIAL CONTACT TOOL SELECTION GUIDE



SHIELDED CONTACTS AND CONNECTOR SERIES	BIN CODE	CONTACT CAVITY SIZE	INNER CONTACT		SHIELD CRIMP SLEEVE		OUTER CONTACT		INSTALLING TOOL	REMOVAL TOOL
			CRIMPING TOOL	POSITIONER	CRIMPING TOOL	POSITIONER OR DIE	CRIMPING TOOL	POSITIONER OR DIE		
MIL-C-39029/6-PIN CONTACT  MIL-C-81511 SERIES 1 AND 2	120	16	AFM8	K262-1	HX4	Y200	HX4	Y200	DAK126-16A	DRK125-16A
	121	12	AFM8	K261-1	HX4	Y152	HX4 HX3	Y152 X123	DAK126-12A	DRK125-12A
	122	12	AFM8	K261-1	HX4	Y152	HX4 HX3	Y152 X123	DAK126-12A	DRK125-12A
	123	12	AFM8	K261-1	HX4 HX3	Y152 X123	HX3 HX4	X123 Y152	DAK126-12A	DRK125-12A
	124	12	AFM8	K261-1	HX4 HX3	Y152 X123	HX4 HX3	Y152 X123	DAK126-12A	DRK125-12A
	125	12	AFM8	K261-1	HX4	Y152	HX4 HX3	Y152 X123	DAK126-12A	DRK125-12A
MIL-C-39029/7-PIN CONTACT MIL-C-26482 SERIES 2 MIL-C-81703 SERIES 3	126	12	AFM8	K269-1	HX4	Y203			DAK83-12B	DRK83-12B
	127	12	AFM8	K269-1	HX4	Y203			DAK83-12B	DRK83-12B
	128	12	AFM8	K269-1	HX4	Y203			DAK83-12B	DRK83-12B
MIL-C-39029/8-SKT CONTACT MIL-C-26482 SERIES 2 MIL-C-81703 SERIES 3	129	12	AFM8	K269-1	HX4	Y203			DAK83-12B	DRK83-12B
	130	12	AFM8	K269-1	HX4	Y203			DAK83-12B	DRK83-12B
	131	12	AFM8	K269-1	HX4	Y203			DAK83-12B	DRK83-12B
MIL-C-39029/13-SKT CONTACT  MIL-C-81511 SERIES 1	152	16	AFM8	K262-1	HX4	Y200	HX4	Y200	DAK126-16A	DRK129-16A
	153	12	AFM8	K261-1	HX4	Y152	HX4 HX3	Y152 X123	DAK126-12A	DRK129-12A
	154	12	AFM8	K261-1	HX4	Y152	HX4 HX3	Y152 X123	DAK126-12A	DRK129-12A
	155	12	AFM8	K261-1	HX4 HX3	Y152 X123	HX4 HX3	Y152 X123	DAK126-12A	DRK129-12A
	156	12	AFM8	K261-1	HX4 HX3	Y152 X123	HX4 HX3	Y152 X123	DAK126-12A	DRK129-12A
	157	12	AFM8	K261-1	HX4	Y152	HX4 HX3	Y152 X123	DAK126-12A	DRK129-12A
MIL-C-39029/14-SKT CONTACT  MIL-C-81511 SERIES 2	158	16	AFM8	K262-1	HX4	Y200	HX4	Y200	DAK126-16A	DRK129-16A
	159	12	AFM8	K261-1	HX4	Y152	HX4 HX3	Y152 X123	DAK126-12A	DRK129-12A
	160	12	AFM8	K261-1	HX4	Y152	HX4 HX3	Y152 X123	DAK126-12A	DRK129-12A
	161	12	AFM8	K261-1	HX4 HX3	Y152 X123	HX4 HX3	Y152 X123	DAK126-12A	DRK129-12A
	162	12	AFM8	K261-1	HX4 HX3	Y152 X123	HX4 HX3	Y152 X123	DAK126-12A	DRK129-12A
	163	12	AFM8	K261-1	HX4	Y152	HX4 HX3	Y152 X123	DAK126-12A	DRK129-12A
MIL-C-39029/19-PIN CONTACT  MIL-C-81511 SERIES 3 AND 4	181	16	AFM8 AFM8	K373-1 K373-1	MH802 MH802	D16/1-1M D16/1-1M	MH801 MH801	D16P-1M D16P-1M	MS3160-16	MS3160-16
	182	12	AFM8 AFM8	K372-1 K372-1	MH804 MH804	D12/1-1M D12/1-1M	MH803 MH803	D12P-1M D12P-1M	MS3160-12	MS3160-12
	183	12	AFM8	K372-1	MH804	D12/1-1M	MH803	D12P-1M	MS3160-12	MS3160-12
			AFM8	K372-1	MH804	D12/1-1M	MH803	D12P-1M		
			AFM8	K372-1	MH804	D12/1-1M	MH803	D12P-1M		
			AFM8	K372-1	MH804	D12/1-1M	MH803	D12P-1M		
MIL-C-39029/20-SKT CONTACT  MIL-C-81511 SERIES 3	184	16	AFM8 AFM8	K373-1 K373-1	MH802 MH802	D16/2-1M D16/2-1M	MH801 MH801	D12LS-1M D12LS-1M	MS3160-16	MS3160-16
	185	12	AFM8 AFM8	K372-1 K372-1	MH804 MH804	D12/2-1M D12/2-1M	MH803 MH803	D12LS-1M D12LS-1M	MS3160-12	MS3160-12
	186	12	AFM8	K372-1	MH804	D12/2-1M	MH803	D12LS-1M	MS3160-12	MS3160-12
			AFM8	K372-1	MH804	D12/2-1M	MH803	D12LS-1M		
			AFM8	K372-1	MH804	D12/2-1M	MH803	D12LS-1M		
			AFM8	K372-1	MH804	D12/2-1M	MH803	D12LS-1M		
MIL-C-39029/21-SKT CONTACT  MIL-C-81511 SERIES 4	187	16	AFM8 AFM8	K373-1 K373-1	MH802 MH802	D16/2-1M D16/2-1M	MH801 MH801	D16S-1M D16S-1M	MS3160-16	MS3160-16
	188	12	AFM8 AFM8	K372-1 K372-1	MH804 MH804	D12/1-1M D12/1-1M	MH803 MH803	D12S-1M D12S-1M	MS3160-12	MS3160-12
	189	12	AFM8	K372-1	MH804	D12/1-1M	MH803	D12S-1M	MS3160-12	MS3160-12
			AFM8	K372-1	MH804	D12/1-1M	MH803	D12S-1M		
			AFM8	K372-1	MH804	D12/1-1M	MH803	D12S-1M		
			AFM8	K372-1	MH804	D12/1-1M	MH803	D12S-1M		

# COAXIAL CONTACT TOOL SELECTION GUIDE

SHIELDED CONTACTS AND CONNECTOR SERIES	BIN CODE	CONTACT CAVITY SIZE	INNER CONTACT		SHIELD CRIMP SLEEVE		OUTER CONTACT		INSTALLING TOOL	REMOVAL TOOL
			CRIMPING TOOL	POSITIONER	CRIMPING TOOL	POSITIONER OR DIE (CAVITY)	CRIMPING TOOL	POSITIONER OR DIE (CAVITY)		
MIL-C-39029/25-PIN CONTACT MIL-C-26482 SERIES 1	204	12	AFM8	K496	HX4	Y189			DAK12B	DRK12B
	205	12	AFM8	K496						
	206	12	AFM8	K496	HX4	Y189				
MIL-C-39029/26-SKT CONTACT MIL-C-26482 SERIES 1	207	12	AFM8	K496	HX4	Y189			DAK12B	DRK12B
	208	12	AFM8	K496						
	209	12	AFM8	K496	HX4	Y189				
MIL-C-39029/27-SKT CONTACT MIL-C-38999 SERIES 2	210	12	AFM8	K323			GS200-1	G2P330	DAK95-12B	DRK95-12B
	402									
	403									
	404									
	405									
	406									
	407									
MIL-C-39029/28-PIN CONTACT MIL-C-38999 SERIES 1, 2, 3 & 4	408									
	211	12	AFM8	K323			GS200-1	G2P330	DAK95-12B	DRK95-12B
	409									
	410									
	411									
	412									
	413									
MIL-C-39029/50-PIN CONTACT MIL-C-83733	414									
	415									
MIL-C-39029/51-SKT CONTACT MIL-C-83732	340	12	AFM8	K404			HX4	Y215	DAK83-12B	DRK83-12B
							HX3	X101		
MIL-C-39029/54-PIN CONTACT MIL-C-26500	341	12	AFM8	K404			HX4	Y215	DAK83-12B	DRK83-12B
							HX3	X101		
MIL-C-39029/55-SKT CONTACT MIL-C-26500	342	12	AFM8	K74S			HX4	Y215	DAK12B	DRK12B
							HX3	X101		
	343	8	AFM8	K75S-1			HX4	Y215	DAK55-8B	DRK56-8B
							HX3	X105		
MIL-C-39029/59-SKT CONTACT MIL-C-38999 SERIES 1, 3 & 4	344	12	AFM8	K74S			HX4	Y215	DAK12B	DRK12B
							HX3	X101		
	345	8	AFM8	K75S-1			HX4	Y215	DAK55-8B	DRK56-8B
							HX3	X125		
MIL-C-39029/60-PIN CONTACT MIL-C-38999 SERIES 1, 3 & 4	366	8	AFM8	K406			HX4	Y197	BY HAND	DRK95-8B
							HX3	H102		
MIL-C-39029/75-SKT CONTACT MIL-C-38999 SERIES 1, 3 & 4	367	8	AFM8	F406			HX4	Y197	BY HAND	DRK95-8B
							HX3	X102		
	416	12	AFM8	K323			GS200-1	G2P330	DAK95-12B	DRK95-12B
	417									
	418									
	419									
	420									
	421									
	422									
MIL-C-39029/76-PIN CONTACT MIL-C-38999 SERIES 1, 2, 3 & 4	423									
	424	16	AFM8	K532-1			GS100-1	GP295	DAK95-16B	DRK95-16B
	425									
	426									
MIL-C-39029/77-SKT CONTACT MIL-C-38999 SERIES 1, 3 & 4	427									
	428	16	AFM8	K532-1			GS100-1	GP295	DAK95-16B	DRK95-16B
	429									
	430									
MIL-C-39029/78-SKT CONTACT MIL-C-38999 SERIES 2 MIL-C-24308	431									
	432	16	AFM8	K532-1			GS100-1	GP295	DAK95-16B	DRK95-16B
	433									
	434									
	435									



# OPEN FRAME CRIMP TOOLS



## **M22520/5-01 (HX4) M22520/10-01 (HX3)**

The DMC HX4 and HX3 series crimp tools feature a system of interchangeable dies which eliminate the need of separate fixed die crimp tools for each and every different application. Many maintenance and manufacturing concerns have standardized on one of these models, thus eliminating the cost associated with maintaining and calibrating bulky inventories of single purpose tools.

Tremendous flexibility and cost advantages exist with this crimping system due to the wide variety of interchangeable dies which are available for these tool frames. As new requirements evolve, a new set of dies is all that's required to meet the demand. A truly modern concept which will not require major change with time...only simple additions.

Crimping dies are snapped into the tool frame and retained in place by internal spring clips. They may be

permanently secured, if desired, by driving a roll pin into the holes provided.

The tool frames are equipped with a positive ratchet assembly which controls complete handle movement in both directions.

Hexagonal crimp dies are available in a variety of combinations having single, double, and even triple cavity design. These dies accommodate most coaxial and biaxial connectors and contacts conforming to MIL-C-39012, MIL-C-39029, and numerous proprietary configurations. Other designs are available for coaxial connections requiring different termination techniques.

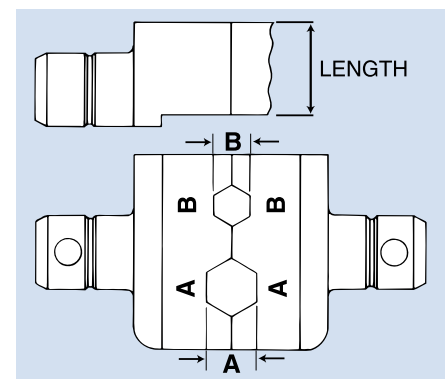
Dies in various crimp patterns are also available for insulated and uninsulated terminal lugs, wire splices and end caps relating to M7928, MS17143, MS25036, MS25181, MS27429, MS25274, MS20659, M81824, MS21003 through MS21015, and commercial part numbers. Several power contacts too large for conventional hand tools are also covered by

interchangeable dies for the standard tool frame (HX4).

If your application requirement is not already covered by one of our standard dies our engineering department will be pleased to discuss a design to suit your needs.

The HX4 is 11" in length and weighs approximately 21 oz. The HX3 is 9" in length and weighs 11 oz.

## **TYPICAL DIE SET**





DIE P/N			DIE CLOSURE DIMENSIONS			
DMC P/N	MILITARY P/N	NATIONAL STOCK NO. N.S.N.	A HEX.	LENGTH	B HEX.	LENGTH
HX4	M22520/5-01	5120-01-335-8575	Crimp Tool Frame			
Y200P	M22520/5-02	5120-01-335-8244	.091	.090	.068	.270
Y196	M22520/5-03	5120-01-335-8245	.128	.325	.105	.325
Y152	M22520/5-04	5120-01-335-8246	.138	.090	.118	.270
Y197	M22520/5-05	5120-01-335-8247	.213	.325	.178	.325
Y203	M22520/5-06	5120-01-335-8248	.128	.094		
Y195	M22520/5-07	5120-01-335-8249	.255	.325		
Y215	M22520/5-08	5120-01-335-8250	.128	.375		
Y204P	M22520/5-09	5120-01-335-8251	.178	.400	.068	.093
Y189	M22520/5-10	5120-01-335-8252	.160	.400		
Y205P	M22520/5-11	5120-01-335-8253	.213	.400	.068	.093
Y206P	M22520/5-13	5120-01-335-8254	.255	.400	.068	.093
Y207P	M22520/5-15	5120-01-335-8255	.263	.400	.068	.093
Y193	M22520/5-17	5120-01-335-8256	.118	.375		
Y142	M22520/5-19	5120-01-335-8257	.255	.400	.213	.400
Y149	M22520/5-21	5120-01-335-8258	.475	.400		
Y145	M22520/5-23	5120-01-335-8259	.384	.400		
Y110P	M22520/5-25	5120-01-335-8260	.429	.400	.100	.120
Y151	M22520/5-27	5120-01-335-8261	.532	.400		
Y109P	M22520/5-29	5120-01-335-8262	.324	.400	.100	.120
Y150	M22520/5-31	5120-01-335-8263	.501	.400		
Y136	M22520/5-33	5120-01-335-8264	.343	.400	.105	.400
Y137	M22520/5-35	5120-01-335-8265	.324	.400	.128	.400
Y138	M22520/5-37	5120-01-335-8266	.314	.400	.151	.400
Y139	M22520/5-39	5120-01-335-8267	.309	.400	.160	.400
Y140	M22520/5-41	5120-01-335-8268	.290	.400	.178	.400
Y141	M22520/5-43	5120-01-335-8269	.268	.400	.197	.400
Y143	M22520/5-45	5120-01-335-8270	.231	.400	.218	.400
Y144	M22520/5-47	5120-01-335-8271	.359	.400		
Y146	M22520/5-49	5120-01-335-8292	.401	.400		
Y147	M22520/5-51	5120-01-335-8293	.431	.400		
Y148	M22520/5-53	5120-01-335-8294	.454	.400		
Y102	M22520/5-55	5120-01-335-8295	.324	.400		
Y209P	M22520/5-57	5120-01-335-8296	.213	.400	.100	.120

DIE P/N			DIE CLOSURE DIMENSIONS			
DMC P/N	MILITARY P/N	NATIONAL STOCK NO. N.S.N.	A HEX.	LENGTH	B HEX.	LENGTH
Y208P	M22520/5-59	5120-01-335-8297	.255	.400	.100	.120
Y178	M22520/5-61	5120-01-335-8298	.429	.400		
Y314P	M22520/5-63	5120-01-335-8299	.263	.400	.091	.090
Y501	M22520/5-100	5120-01-335-8300	Pre-Insulated Terminal Crimp 26-10 AWG			
Y527	M22520/5-101	5120-01-335-8301	Pre-Insulated Splice Crimp 26-20 AWG			
Y539	M22520/5-102	5120-01-335-8302	Splice Crimp 12-16 AWG			
Y540	M22520/5-103	5120-01-335-8303	Splice Crimp 16-26 AWG			

DIE P/N			DIE CLOSURE DIMENSIONS			
DMC P/N	MILITARY P/N	NATIONAL STOCK NO. N.S.N.	A HEX.	LENGTH	B HEX.	LENGTH
HX3	M22520/10-01	5120-01-335-8582	Crimp Tool Frame			
X115S	M22520/10-02	5120-01-335-8304	.091	.090	.068	.270
X103	M22520/10-03	5120-01-335-8305	.255	.325		
X123	M22520/10-04	5120-01-335-8277	.138	.090	.118	.270
X101	M22520/10-05	5120-01-335-8278	.128	.325	.105	.325
X125	M22520/10-06	5120-01-335-8279	.160	.400		
X102	M22520/10-07	5120-01-335-8280	.213	.325	.178	.325
X140	M22520/10-08	5120-01-335-8281	.128	.093		
X129	M22520/10-09	5120-01-335-8282	.118	.327		
X136	M22520/10-10	5120-01-335-8283	.128	.375		
X225	M22520/10-11	5120-01-335-8284	.105	.400		
X118	M22520/10-13	5120-01-335-8285	.128	.400		
X226	M22520/10-15	5120-01-335-8286	.151	.400		
X149	M22520/10-17	5120-01-335-8287	.178	.400		
X147	M22520/10-19	5120-01-335-8288	.197	.400		
X144	M22520/10-21	5120-01-335-8289	.213	.400		
X155	M22520/10-23	5120-01-335-8290	.218	.400		
X156	M22520/10-25		.231	.400		
X187	M22520/10-27	5120-01-335-8291	.255	.400		
X515	M22520/10-100	5120-01-335-8272	Terminal/Splice Crimp 12-10 AWG			
X511	M22520/10-101	5120-01-335-8273	Terminal/Splice Crimp 26-14 AWG			
X525	M22520/10-102	5120-01-335-8274	Terminal/Splice Crimp 26-24 AWG			
X527	M22520/10-103	5120-01-335-8275	Splice Crimp 16-12 AWG			
X528	M22520/10-104	5120-01-335-8276	Splice Crimp 26-16 AWG			

# PNEUMATIC OPEN FRAME TOOL



## HX23 BENCH CRIMP PRESS

### Compatibility with Existing Crimp Dies

The HX23 accommodates all M22520/5-XX military and Daniels "Y" series crimp dies.

This affords total utilization of existing dies and total interchangeability with M22520/5-01 (Daniels HX4) hand tool frames.

### Full Cycle Control

Full die closure is assured on every crimp. The internal cycle control network will not allow the tool to open until complete closure is attained. A simple procedure is available to open the tool in cases where a complete cycle cannot be effected. A secure method is provided to prevent unauthorized personnel from defeating the cycle control system.

### Hands Free Operation

There are no awkward levers or mechanisms used to open or close the crimp dies. These operations waste time and distract the operator's attention.

When the tool is in the normal condition, the crimp dies are fully open where contact assemblies can easily be inserted. A touch of the foot valve releases the dies to a gripping position (spring pressure only). When the operator is satisfied that the contact assembly is positioned correctly, another actuation of the same foot valve completes the crimp and quickly returns the die to open position.

### Operator Safety Features

The HX23 is equipped with a transparent guard which affords the protection, but does not restrict vision.

The Hands Free Operation system allows the operator to position the contact assembly while the die is under spring pressure only.

The operator is then free to let the

tool hold the contact assembly during the crimp cycle while the operator's hands and fingers are a safe distance from the crimping die.

The HX23 foot valve assembly is constructed with a protective shroud to prevent accidental actuation. For operation the operator places their foot under the shroud to depress the pedal.

### Full Pneumatic Operation

Standard clean, dry shop air at the recommended pressure is all that is required to operate the HX23 tool. There are no electrical or hydraulic requirements.

#### SPECIFICATIONS

COMPONENTS	SIZE	WEIGHT
TOOL FRAME (LESS BENCH MOUNT)	(in) 4" x 6 x 16 (cm) 11.4 x 15.2 x 40.6	11" LBS 5.2 KG
FOOT VALVE	(in) 4 x 5 x 13" (cm) 10.2 x 12.7 x 34.3	6 LBS 2.7 KG
CABLE	9 Feet - 2.7 Meters	N/A
AIR REQUIREMENTS 80-95 PSI (5.4-6.4 BAR)		

### SAFETY FEATURES:

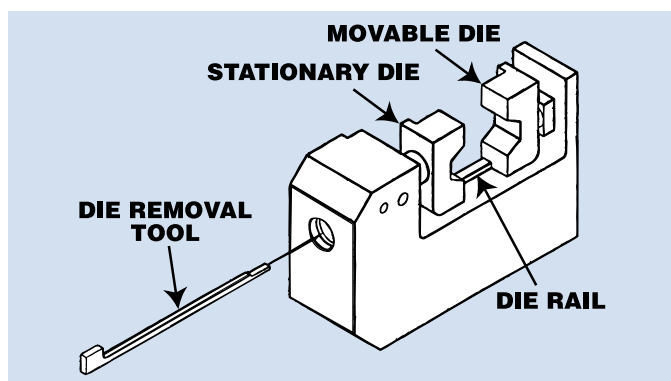
- 2 Step Crimping Process
- Emergency Stop Switch



**BENCH MOUNT AND FOOT PRESS INCLUDED**

# HX23 OPERATION/DIES

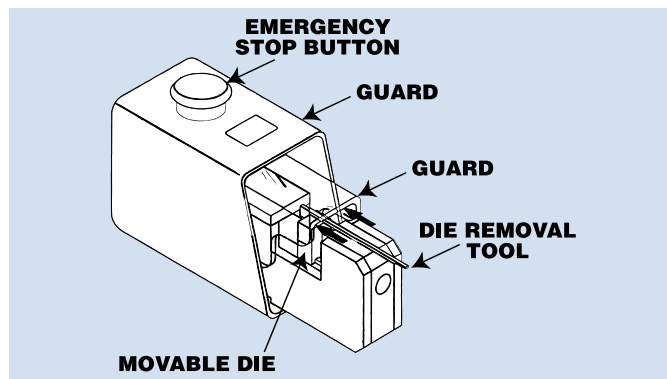
The HX23 crimp tool features a system of interchangeable dies which eliminates the need for separate fixed die crimp tools for each and every different application. Dies in various crimp patterns are available for MIL-C-39029 shielded contacts, MIL-C-39012 coaxial connectors, MIL-T-7928 terminals and splices, and other commercial and military terminating components.



1. The die sets snap in and out of the crimp tool for interchangeability. A die removal tool is included with the HX23 for operator convenience.

**CAUTION:** Always disconnect the air supply when changing the die sets.

**COMMON HEX DIES ARE LISTED ON PAGE 29.**  
**For Other Applications Consult Factory.**



2. The first pulse of the foot valve will close the HX23 under light spring pressure. This grips the crimp termination device in the proper location for crimping. The second pulse completes the crimp, and returns the tool to the fully open position.

## ADJUSTABLE DIES FOR TERMINALS & SPLICES

Adjustable Crimping Dies accept terminations which conform to MIL-T-7928, MS25036 (class 1 and 2) and other military or commercial specifications.

COLOR	SIZE	P/N
YELLOW	12-10	Y670
BLUE	16-14	Y671
RED	22-18	Y672
YELLOW	26-24	Y678



## ASSEMBLY INSTRUCTIONS FOR COAXIAL CONNECTORS

Strip cable jacket, braid, and dielectric to "a" "b" "c" dimensions specified by connector manufacturer, FIG. 1. Avoid nicks on braid, dielectric, and center conductor.

Slide outer ferrule over cable as shown in FIG. 2.

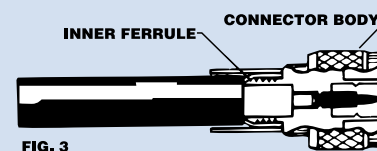
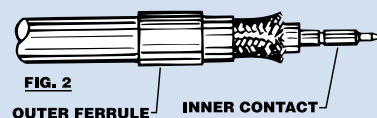
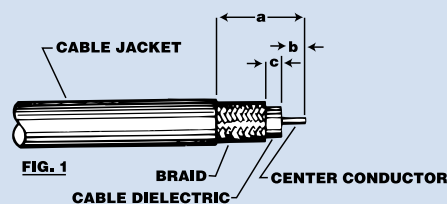
Place inner contact on cable center conductor so it butts against cable dielectric. FIG. 2. Center conductor should be visible through inspection hole in contact. Crimp or solder contact in place according to specifications of connector manufacturer. Avoid excessive heat if solder

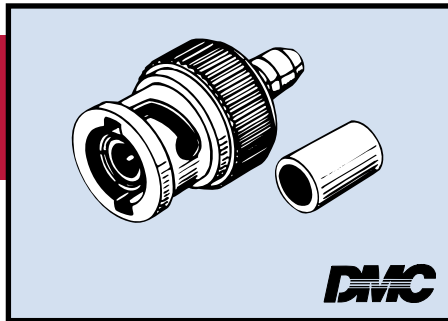
method is used.

Flare slightly end of cable braid as shown. Install cable assembly into body assembly so inner ferrule portion slides under braid. Push cable assembly forward until contact snaps into place in insulator. FIG. 3.

Slide outer ferrule over braid and up against connector body. Crimp outer ferrule with specified hex size die.

**NOTE:** Instructions given above are intended to be only general guidelines for the assembly of coaxial connectors. Specific directives of connector manufacturer should take precedence.

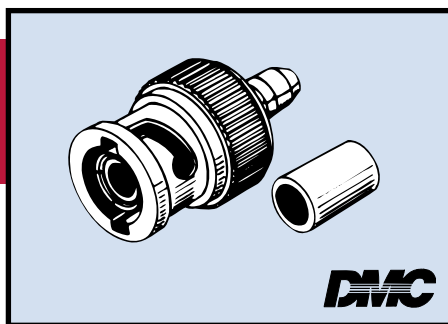




## MIL-C-39012/16 SERIES BNC

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
PLUG PIN CONTACT	M39012/16-0501
	M39012/16-0502
	M39012/16-0503
	M39012/16-0504

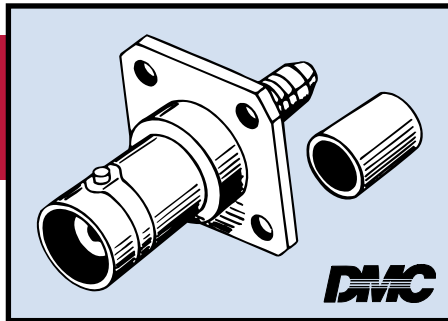
CONTACT GUIDE				APPLICABLE CABLE RG-/U				
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND			CRIMP TOOL		POSITIONER OR DIE	
		□	○					
I.C./M39012/16-12	P	ORA	YEL	122	AF8		TH270	
O.F./M39012/16-50	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/16-11	P	BLU	YEL	180	AF8		TH270	
O.F./M39012/16-50	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/16-10	P	RED	YEL	142 400	AF8		TH270	
O.F./M39012/16-51	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/16-10	P	RED	YEL	58	AF8		TH270	
O.F./M39012/16-52	—	—	—		HX4	HX3	Y197	X102



## MIL-C-39012/17 SERIES BNC

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
PLUG SOCKET CONTACT	M39012/17-0501
	M39012/17-0502
	M39012/17-0503
	M39012/17-0504

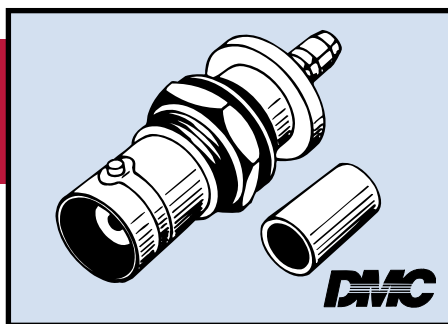
CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/17-12	S	ORA	GRE	122	AF8		TH270	
O.F./M39012/17-50	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/17-11	S	BLU	GRE	180	AF8		TH270	
O.F./M39012/17-50	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/17-10	S	RED	GRE	142 400	AF8		TH270	
O.F./M39012/17-51	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/17-10	S	RED	GRE	58	AF8		TH270	
O.F./M39012/17-52	—	—	—		HX4	HX3	Y197	X102



## MIL-C-39012/18 SERIES BNC

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
RECEPTACLE, FLANGE MOUNTED	M39012/18-0501
	M39012/18-0502
	M39012/18-0503
	M39012/18-0504

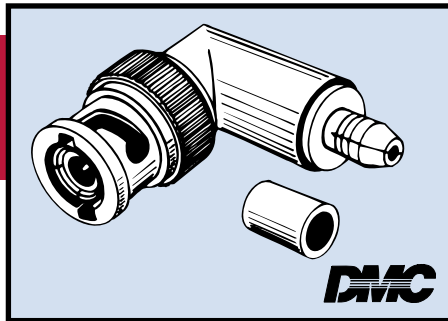
CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/18-12	S	ORA	GRE	122	AF8		TH270	
O.F./M39012/18-50	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/18-11	S	BLU	GRE	180	AF8		TH270	
O.F./M39012/18-50	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/18-10	S	RED	GRE	142 400	AF8		TH270	
O.F./M39012/18-51	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/18-10	S	RED	GRE	58	AF8		TH270	
O.F./M39012/18-52	—	—	—		HX4	HX3	Y197	X102



## MIL-C-39012/19 SERIES BNC

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
JAM NUT MOUNT	M39012/19-0501
	M39012/19-0502
	M39012/19-0503
	M39012/19-0504

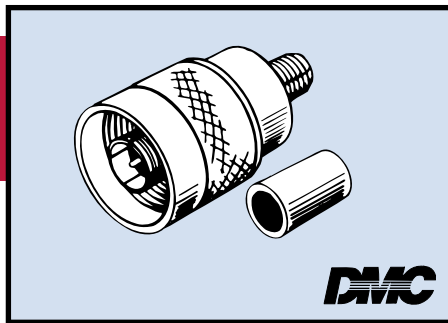
CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/19-12	S	ORA	BLU	122	AF8		TH270	
O.F./M39012/19-50	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/19-11	S	BLU	BLU	180	AF8		TH270	
O.F./M39012/19-50	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/19-10	S	RED	BLU	142 400	AF8		TH270	
O.F./M39012/19-51	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/19-10	S	RED	BLU	58	AF8		TH270	
O.F./M39012/19-52	—	—	—		HX4	HX3	Y197	X102



## MIL-C-39012/20 SERIES BNC

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
PLUG RIGHT ANGLE	M39012/20-0501
	M39012/20-0502
	M39012/20-0503
	M39012/20-0504

CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/20-12 O.F./M39012/20-50	P —	ORA —	VIO —	122	AF8		TH270	
					HX4	HX3	Y197	X102
I.C./M39012/20-11 O.F./M39012/20-50	P —	BLU —	VIO —	180	AF8		TH270	
					HX4	HX3	Y197	X102
I.C./M39012/20-10 O.F./M39012/20-51	P —	RED —	VIO —	142 400	AF8		TH270	
					HX4	HX3	Y197	X102
I.C./M39012/20-10 O.F./M39012/20-52	P —	RED —	VIO —	58	AF8		TH270	
					HX4	HX3	Y197	X102

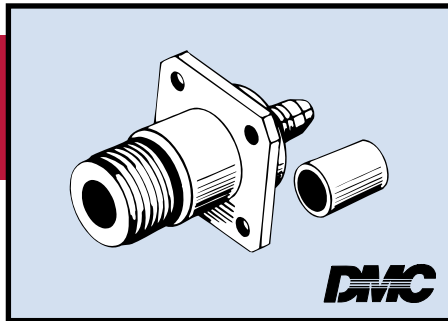


## MIL-C-39012/1 SERIES N

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
PLUG	M39012/01-0501
	M39012/01-0502
	M39012/01-0503

CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/1-10	P	RED	BLA	214 225 393	AF8		TH285	
O.F./M39012/1-50	—	—	—		HX4		Y178	
I.C./M39012/1-10	P	RED	BLA	213	AF8		TH285	
O.F./M39012/1-51	—	—	—		HX4		Y178	
I.C./M39012/1-11	P	BLU	BLA	142 400	AF8		TH285	
O.F./M39012/1-52	—	—	—		HX4		HX3	Y142

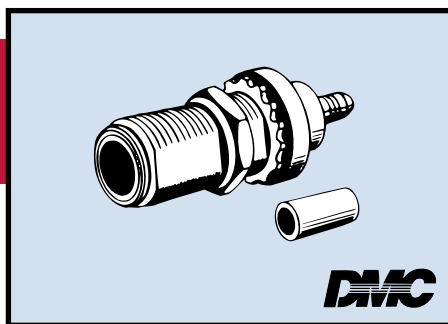




## MIL-C-39012/2 SERIES N

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
PLUG AND RECEPTACLE FLANGE MOUNTED	M39012/02-0501
	M39012/02-0511
	M39012/02-0502
	M39012/02-0512
	M39012/02-0503
	M39012/02-0513

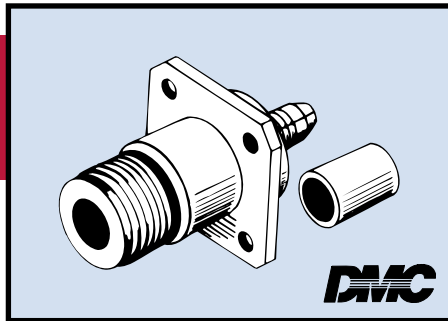
CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/2-10	S	RED	BRO	214	AF8		TH285	
O.F./M39012/2-50	—	—	—	225 393	HX4	HX3	Y178	
I.C./M39012/2-10	S	RED	BRO	213	AF8		TH285	
O.F./M39012/2-51	—	—	—		HX4		Y178	
I.C./M39012/2-11	S	BLU	BRO	142	AF8		TH285	
O.F./M39012/2-52	—	—	—	400	HX4	HX3	Y142	X144



## MIL-C-39012/3 SERIES N

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
JAM NUT MOUNTED	M39012/03-0501
	M39012/03-0502
	M39012/03-0503

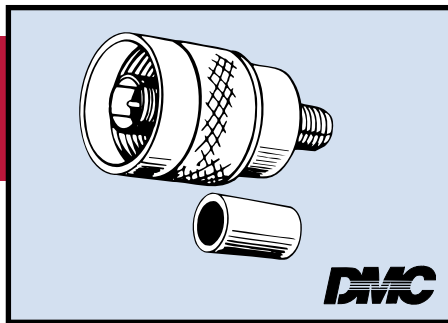
CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/3-10	S	RED	RED	214	AF8		TH286	
O.F./M39012/3-50	—	—	—	225 393				
I.C./M39012/3-10	S	RED	RED	213	AF8		TH286	
O.F./M39012/3-51	—	—	—		HX4		Y178	
I.C./M39012/3-11	S	BLU	RED	142	AF8		TH286	
O.F./M39012/3-52	—	—	—	400	HX4	HX3	Y142	X144



## MIL-C-39012/5 SERIES N

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
PLUG RIGHT ANGLE	M39012/05-0501
	M39012/05-0502
	M39012/05-0503

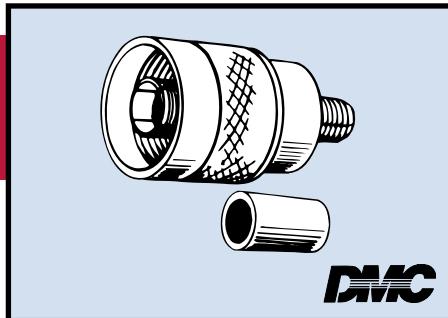
CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/5-10	P	RED	ORA	214	AF8		TH285	
O.F./M39012/5-50	—	—	—	225 393	HX4		Y178	
I.C./M39012/5-10	P	RED	ORA	213	AF8		TH285	
O.F./M39012/5-51	—	—	—		HX4		Y178	
I.C./M39012/5-11	P	BLU	ORA	142	AF8		TH285	
O.F./M39012/5-52	—	—	—	400	HX4	HX3	Y142	X144



## MIL-C-39012/26 SERIES TNC

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
PLUG PIN CONTACT	M39012/26-0501
	M39012/26-0502
	M39012/26-0503
	M39012/26-0504

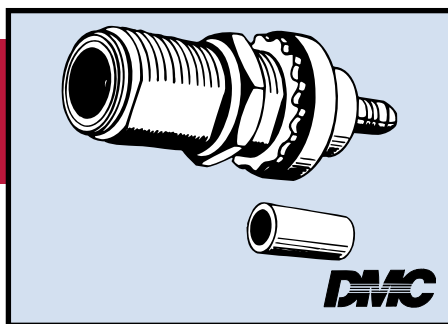
CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/20-12	P	CRA	YEL	122	AF8		TH270	
O.F./M39012/26-50	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/26-11	P	BLU	YEL	180	AF8		TH270	
O.F./M39012/26-50	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/26-10	P	RED	YEL	142 400	AF8		TH270	
O.F./M39012/26-51	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/26-10	P	RED	YEL	58	AF8		TH270	
O.F./M39012/26-52	—	—	—		HX4	HX3	Y197	X102



## MIL-C-39012/27 SERIES TNC

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
PLUG SOCKET CONTACT	M39012/27-0501
	M39012/27-0502
	M39012/27-0503
	M39012/27-0504

CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/27-12 O.F./M39012/27-50	S —	ORA —	GRE —	122	AF8		TH270	
					HX4	HX3	Y197	X102
I.C./M39012/27-11 O.F./M39012/27-50	S —	BLU —	GRE —	180	AF8		TH270	
					HX4	HX3	Y197	X102
I.C./M39012/27-10 O.F./M39012/27-51	S —	RED —	GRE —	142 400	AF8		TH270	
					HX4	HX3	Y197	X102
I.C./M39012/27-10 O.F./M39012/27-52	S —	RED —	GRE —	58	AF8		TH270	
					HX4	HX3	Y197	X102

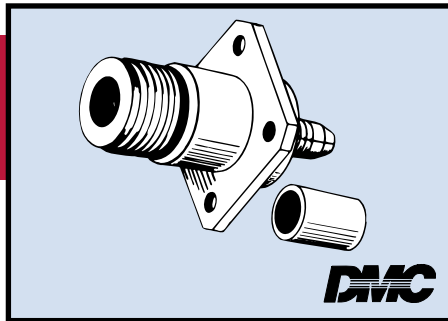


## MIL-C-39012/28 SERIES TNC

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
JAM NUT MOUNT	M39012/28-0501
	M39012/28-0502
	M39012/28-0503
	M39012/28-0504

CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/28-12	S	ORA	BLU	122	AF8		TH270	
O.F./M39012/28-50	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/28-11	S	BLU	BLU	180	AF8		TH270	
O.F./M39012/28-50	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/28-10	S	RED	BLU	142 400	AF8		TH270	
O.F./M39012/28-51	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/28-10	S	RED	BLU	58	AF8		TH270	
O.F./M39012/28-52	—	—	—		HX4	HX3	Y197	X102

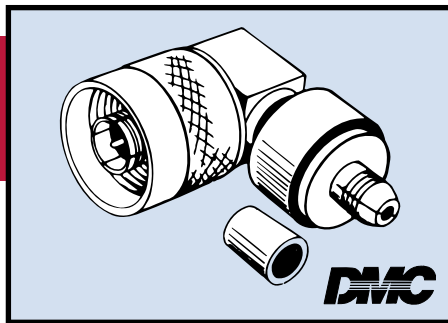
# R.F. CONNECTORS TOOL SELECTION GUIDE



## MIL-C-39012/29 SERIES TNC

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
RECEPTACLE FLANGE MOUNTING	M39012/29-0501
	M39012/29-0502
	M39012/29-0503
	M39012/29-0504

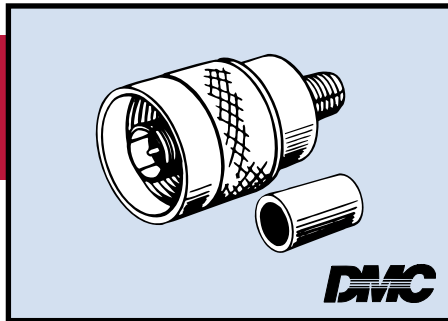
CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/29-12	S	ORA	GRE	122	AF8		TH270	
O.F./M39012/29-50	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/29-11	S	BLU	GRE	180	AF8		TH270	
O.F./M39012/29-50	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/29-10	S	RED	GRE	142 400	AF8		TH270	
O.F./M39012/29-51	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/29-10	S	RED	GRE	58	AF8		TH270	
O.F./M39012/29-52	—	—	—		HX4	HX3	Y197	X102



## MIL-C-39012/30 SERIES TNC

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
PLUG RIGHT ANGLE	M39012/30-0501
	M39012/30-0502
	M39012/30-0503
	M39012/30-0504

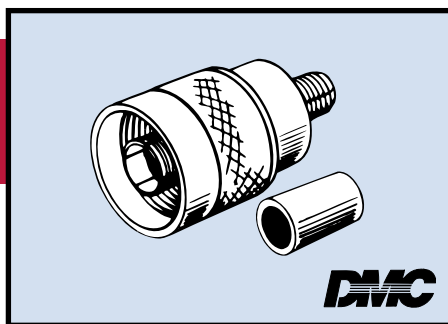
CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/30-12	P	ORA	VIO	122	AF8		TH270	
O.F./M39012/30-50	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/30-11	P	BLU	VIO	180	AF8		TH270	
O.F./M39012/30-50	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/30-10	P	RED	VIO	142 400	AF8		TH270	
O.F./M39012/30-51	—	—	—		HX4	HX3	Y197	X102
I.C./M39012/30-10	P	RED	VIO	58	AF8		TH270	
O.F./M39012/30-52	—	—	—		HX4	HX3	Y197	X102



## MIL-C-39012/35 SERIES SC

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
PLUG PIN CONTACT	M39012/35-0501
	M39012/35-0502
	M39012/35-0503

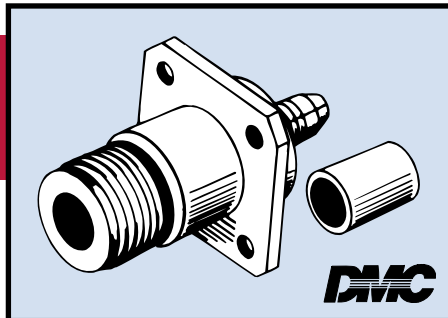
CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/35-10	P	RED	GRA	214	AF8		TH286	
O.F./M39012/35-50	—	—	—	225 393	HX4		Y178	
I.C./M39012/35-10	P	RED	GRA	213	AF8		TH286	
O.F./M39012/35-51	—	—	—		HX4		Y178	
I.C./M39012/35-11	P	BLU	GRA	142	AF8		TH286	
O.F./M39012/35-52	—	—	—	400	HX4	HX3	Y142	X144



## MIL-C-39012/36 SERIES SC

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
PLUG SOCKET CONTACT	M39012/36-0501
	M39012/36-0502
	M39012/36-0503

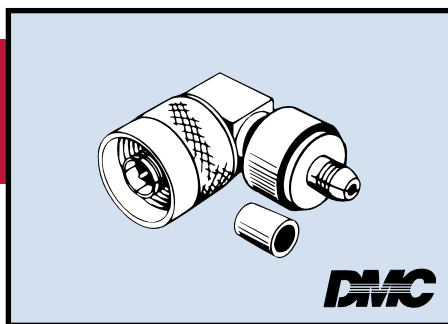
CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/36-10	S	RED	WHI	214	AF8		TH286	
O.F./M39012/36-50	—	—	—	225 393	HX4		Y178	
I.C./M39012/36-10	S	RED	WHI	213	AF8		TH286	
O.F./M39012/36-51	—	—	—		HX4		Y178	
I.C./M39012/36-11	S	BLU	WHI	142	AF8		TH286	
O.F./M39012/36-52	—	—	—	400	HX4	HX3	Y142	X144



## MIL-C-39012/38 SERIES SC

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
RECEPTACLE FLANGE MOUNTED	M39012/38-0501
	M39012/38-0502
	M39012/38-0503

CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/38-10	S	RED	WHI	214	AF8		TH286	
O.F./M39012/38-50	—	—	—	225 393	HX4		Y178	
I.C./M39012/38-10	S	RED	WHI	213	AF8		TH286	
O.F./M39012/38-51	—	—	—		HX4		Y178	
I.C./M39012/38-11	S	BLU	WHI	142	AF8		TH286	
O.F./M39012/38-52	—	—	—	400	HX4	HX3	Y142	X144

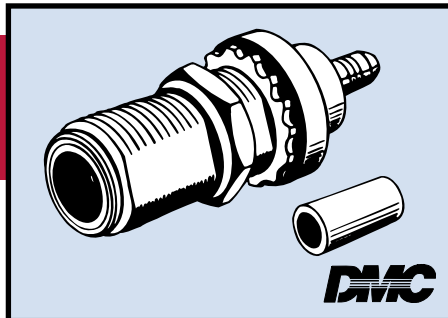


## MIL-C-39012/39 SERIES SC

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
PLUG RIGHT ANGLE	M39012/39-0501
	M39012/39-0502
	M39012/39-0503

CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/39-10	S	RED	ORA	214	AF8		TH285	
O.F./M39012/39-50	—	—	—	225 393	HX4		Y178	
I.C./M39012/39-10	S	RED	ORA	213	AF8		TH285	
O.F./M39012/39-51	—	—	—		HX4		Y178	
I.C./M39012/39-11	S	BLU	ORA	142	AF8		TH285	
O.F./M39012/39-52	—	—	—	400	HX4	HX3	Y142	X144

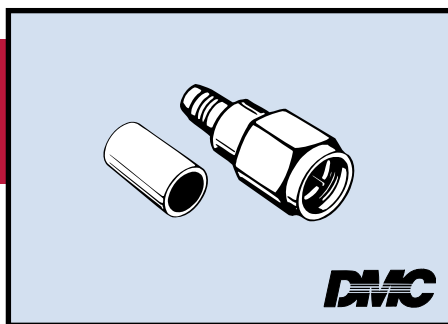




## MIL-C-39012/40 SERIES SC

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
JAM NUT MOUNT	M39012/40-0501
	M39012/40-0502
	M39012/40-0503

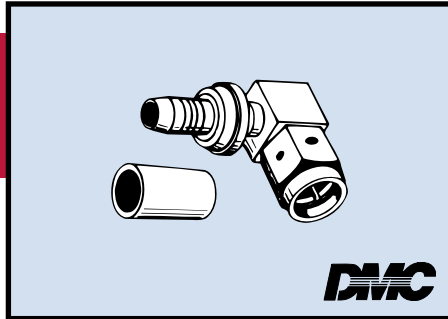
CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/40-10	S	RED	GOL	214	AF8		TH286	
O.F./M39012/40-50	—	—	—	225 393	HX4		Y178	
I.C./M39012/40-10	S	RED	GOL	213	AF8		TH286	
O.F./M39012/40-51	—	—	—		HX4		Y178	
I.C./M39012/40-11	S	BLU	GOL	142	AF8		TH286	
O.F./M39012/40-52	—	—	—	400	HX4	HX3	Y142	X144



## MIL-C-39012/55 SERIES SMA

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
PLUG	M39012/55-3502
PIN CONTACT	M39012/55-4502

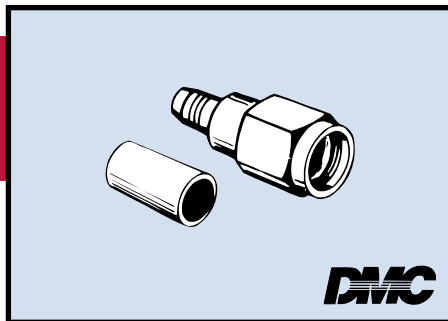
CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/55-10	P	RED	SIL	142	AF8		TP485	
O.F./M39012/55-50	—	—	—		HX4	HX3	Y142	X144
I.C./M39012/55-10	P	RED	SIL	400	AF8		TP485	
O.F./M39012/55-50	—	—	—		HX4	HX3	Y142	X144



## MIL-C-39012/56 SERIES SMA

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
PLUG RIGHT ANGLE	M39012/56-3502
	M39012/56-4502

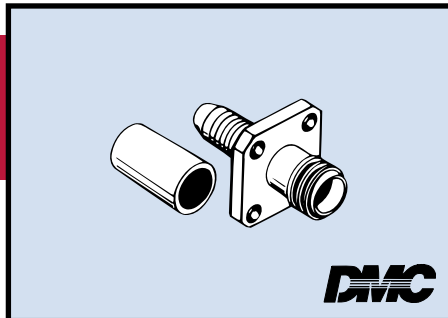
CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/56-10	P	RED	MAR	142	AF8		TP485	
O.F./M39012/56-50	—	—	—		HX4	HX3	Y142	X144
I.C./M39012/56-10	P	RED	MAR	400	AF8		TP485	
O.F./M39012/56-50	—	—	—		HX4	HX3	Y142	X144



## MIL-C-39012/57 SERIES SMA

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
PLUG	M39012/57-3502
SOCKET CONTACT	M39012/57-4502

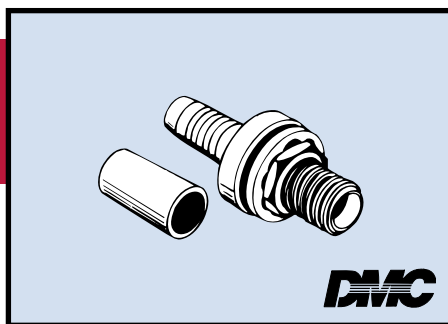
CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/57-10	S	RED	MAR	142	AF8		TP485	
O.F./M39012/57-50	—	—	—		HX4	HX3	Y142	X144
I.C./M39012/57-50	S	RED	MAR	400	AF8		TP485	
O.F./M39012/57-50	—	—	—		HX4	HX3	Y142	X144



## MIL-C-39012/58 SERIES SMA

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
RECEPTACLE FLANGE	M39012/58-3502
MOUNTED	M39012/58-4502

CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/58-10	S	RED	MAR	142	AF8		TP485	
O.F./M39012/58-50	—	—	—		HX4	HX3	Y142	X144
I.C./M39012/58-10	S	RED	MAR	400	AF8		TP485	
O.F./M39012/58-50	—	—	—		HX4	HX3	Y142	X144

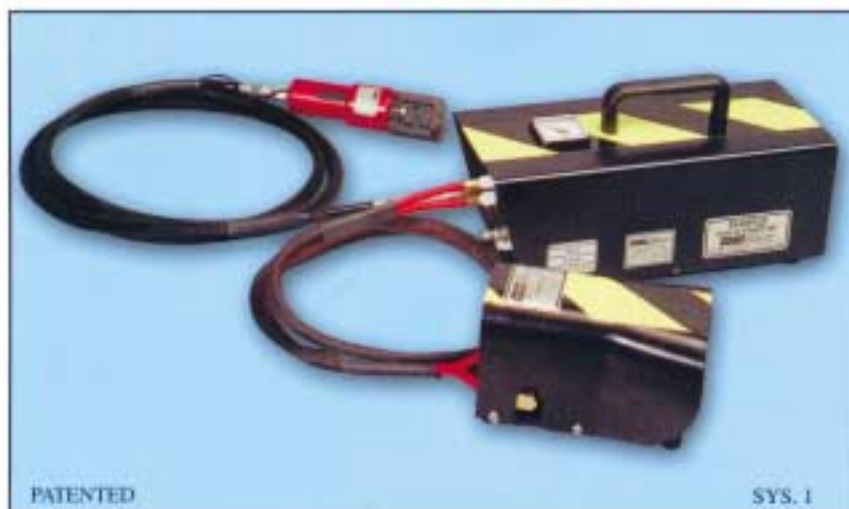


## MIL-C-39012/59 SERIES SMA

CONNECTOR TYPE	CONNECTOR MILITARY PART NO.
JAM NUT MOUNTED	M39012/59-3502
	M39012/59-4502

CONTACT GUIDE				APPLICABLE CABLE RG-/U	CRIMP TOOL		POSITIONER OR DIE	
CONTACT MILITARY PART CO.*	PIN OR SKT	COLORBAND						
		□	○					
I.C./M39012/59-10	S	RED	MAR	142	AF8		TP485	
O.F./M39012/59-50	—	—	—		HX4	HX3	Y142	X144
I.C./M39012/59-10	S	RED	MAR	400	AF8		TP485	
O.F./M39012/59-50	—	—	—		HX4	HX3	Y142	X144

# PNEUMATIC & HYDRAULIC CRIMP TOOL SYSTEMS



DMC presents the ultimate Power Tool System Package for Crimping, Cutting, Forming, Compression, or other functions which require high force and absolute cycle control...

Through the use of DMC Advanced Air Logic Technology, standard shop air pressure is converted to an extremely versatile (and portable) power application system. Couple that with a variety of hand-held applicators with standard Crimp Dies, wire/cutting Blades, or Fixed Jaw Assemblies that can be converted to a new application by a simple disconnection\*, and re-attachment of the new hose/tool assembly.

This system provides the user with a compact hand-held or bench mounted tool that weighs little more than the comparable hand tool. The power converter (with the air logic network) is housed in a separate rugged metal case. The two units are connected with a 9 foot hose assembly. The models pictured here are a few examples of the tools which are available from DMC. Other configurations can also be supplied.



1. The PH4001 tool system accommodates all the crimp dies which are used in the M22520/5-01 (HX4) hand tool frame.
2. The PH3001 tool system accommodates all the crimp dies which are used in the M22520/10-01 (HX3) hand tool frame.
3. The PH1003 tool system is equivalent to the GMT232 hand tool, and crimps M81824 environmental splices.
4. The PH2003 tool system accommodates all M22520/1-XX heads, and crimps high pressure materials such as thermocouple contacts.
5. The PH2004 tool system has specially configured blades which cut wire up to 4/0, and leaves the end undistorted.
6. The PH2006 tool system utilizes the frame and dies of a popular hand tool which is mounted to the DMC power unit.

\* Some cutter blade tool set-ups are not cycle controlled and detachable as part of the operator safety system.



## ACCESSORIES

**A.1 BENCH MOUNT** - The BM-2 Bench Mount is adjustable for a comfortable position.

**A.2 FOOT PRESS** - The PHFV-3 Foot Press can be easily attached to all PH series tools for hands-free actuation.

**A.3 VACUUM GENERATOR** - The PHVG Vacuum Generator is used to remove air from Hydraulic cables and cylinders. It is a recommended maintenance practice to occasionally connect the Vacuum Generator to the system, apply air pressure, and remove any air which is trapped in the fluid. This will assure correct operation of the Hydraulic System.





## APPLICATION/TECHNICAL INFORMATION

The following is a partial list of PH Series Tool Systems available from DMC. Please consult DMC for additional applications.

PART NUMBER	EQUIVALENT TO:	MEANS OF ACTIVATION**	WEIGHT*** ± (lbs)	CONFIG.	APPLICATION
PH1001	AMP 48447	COVER HOLE	2.4 ±	3	22-10 AWG AMP BUTT/PARALLEL SPLICE
PH1002	GMT281, AMP 69324	COVER HOLE	2.4 ±	3	22-10 AWG AMP SOLISTRAND/TERMINALS & SPLICES
PH1003	AD1377 (RAYCHEM) GMT232	COVER HOLE	2.4 ±	3	ML-5-81824/1 SPLICES
PH1004	MOLEX HTR-2262-A GMT205	COVER HOLE	2.4 ±	3	MOLEX HTR-2262-A EQUIVALENT
PH1005	AMP 49235	COVER HOLE	2.4 ±	3	22-10 AWG AMP SOUSTRAND/TERMINALS & SPLICE
PH1006	COLLINS 359-0697-010 GMT221	COVER HOLE	2.4 ±	3	AMP 47052/48658 COLLINS 359-0697-010
PH1007	MOLEX HTR-1031 GMT201	COVER HOLE	2.4 ±	3	MOLEX HTR-1031 EQUIVALENT
PH1008	CANNON CCT-DL GMT206	COVER HOLE	2.4 ±	3	CANNON CCT-DL
PH2001	AMP 59451	FINGER PRESS	3.4 ±	6	12-10 AWG AMP STRATOTHERM
PH2002	BURNDY M105-1	FINGER PRESS	3 ±	N/A	CONTACTS CRIMPED BY BURNDY M105-1
PH2003	AFB, WA27	COVER HOLE	2.8 ±	4	8 INDENT FOR CLOSED BARREL CONTACTS TO AWG SIZE 10
PH2004	WIRE CUTTER	FOOT PRESS ONLY	2.5 ±	5	WIRE CUTTING TO 4/6 AWG
PH2005	AMP 30382-2	FINGER PRESS	3.4 ±	6	AMP MULTIMATE CONTACTS 16-12 AWG TYPE X3
PH2006	AMP 576781	FINGER PRESS	3.4 ±	6	16 AWG AMP STRATOTHERM TERMINALS (UK)
PH2007	AMP 576776	FINGER PRESS	3.4 ±	6	22-24 AWG AMP STRATOTHERM TERMINALS (UK)
PH3001	HX3	FINGER PRESS	2.8 ±	2	DMC "X" DIES GENERAL FERRULE & TERMINALS CRIMPING
PH3002*	HX3	FOOT PRESS	2.8 ±	2	DMC "X" DIES GENERAL FERRULE & TERMINALS CRIMPING
PH4001	HX4	FINGER PRESS	2.8 ±	1	DMC "Y" DIES GENERAL FERRULE & TERMINALS CRIMPING
PH4002*	HX4	FOOT PRESS	2.8 ±	1	DMC "Y" DIES GENERAL FERRULE & TERMINALS CRIMPING
PHRPJ4	N/A	N/A	13.2 ±	SYS. 1	PNEUMATIC/HYDRAULIC POWER CONVERSION UNIT
PHVG	N/A	N/A	1.8 ±	A.3	VACUUM GENERATOR
4-1558	ISO 48 AW (DRYDEN)	N/A	8 OZ	N/A	HYDRAULIC FLUID

Contact DMC for additional applications of Pneumatic/Hydraulic crimp tool systems.

\* Includes PHFV-3 Foot Press.

\*\* Means of activation (initiate crimp or cut cycle) is done in one of three ways either by a (1) **Cover Hole** where the operator blocks an air escapement, (2) **Finger Press** which is a bar mounted on the tool, and/or (3) **Foot Press** which is a separate activator controlled by the operator.

\*\*\* Tool and Hose only.

CERTAIN PRODUCTS ARE COVERED BY US PATENT NO. 5,394,693



526 THORPE ROAD, ORLANDO, FL 32824-8133, USA  
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## HEAVY DUTY CRIMP TOOLS FROM DMC...

Daniels Manufacturing Corporation (DMC) is proud of its reputation as the leader in the research and production of tooling to support the Electrical Connector Industry.

DMC has a line of Hydraulic crimp tools to crimp the larger range of contacts and terminal lugs.

The family of Hydraulic tools will generate sufficient force to crimp from size 8 AWG to size 750 MCM.

A wide range of dies have been designed to crimp insulated and non-insulated terminations.

All tools have an automatic relief valve to prevent over compression.

Engineering staff is available to design dies for new applications and offer product support.



### HD51

**Force:** 5.5 tons  
**Capacity:** up to 150 mm<sup>2</sup>  
**Weight:** 4.6 lbs.  
**Length:** 14 inches

- 180° rotating head.
- Interchangeable crimp dies.
- Hexagonal and single indent insulated and non-insulated dies available.
- Automatic relief valve to prevent over-compression.
- Ram retract mechanism actuated by a release trigger
- Special handle design operates with one hand.



### HD36

**Force:** 3.5 tons  
**Capacity:** 4-150 mm<sup>2</sup>  
**Weight:** 3.3 lbs.  
**Length:** 8.5 inches

- Operates with one hand.
- Crimps aluminum and copper cables.
- Interchangeable die-sets (circular, single indent or hexagonal)
- Automatic relief valve to prevent over-compression.
- Release trigger for retracting die-sets.
- 360° rotating head for ease in confined work areas.



### HH80C

**Force:** 7 tons  
**Weight:** 13 lbs.  
**Length:** 24 inches

- Accepts MS23002-xx dies.
- Automatic relief valve to prevent over-compression.
- Two-stage hydraulic system.
- Ram retract mechanism actuated by handle rotation.
- Interchangeable crimp dies.



### HD37

**Force:** 3.5 tons  
**Capacity:** conductors 4-150 mm<sup>2</sup>  
**Weight:** 3.3 lbs.  
**Length:** 8.5 inches

- Operates with one hand.
- Accepts entire family of M22520/5-xx "Y" dies.
- Automatic relief valve to prevent over-compression.
- 360° rotating head for ease in confined work areas.
- Release trigger for retracting die-sets.



### HC134

**Force:** 7 tons  
**Weight:** 13 lbs.  
**Length:** 24 inches

- (4) Indent dieless crimp tool.
- Crimps entire range of terminals and sleeves from (6) AWG to 750 MCM.
- Automatic relief valve to prevent over-compression.
- Hinged head for ease of connector placement.
- 360° Rotating Head.

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# UNIVERSAL POWER FEEDER CRIMP SYSTEM

FOR LARGE GAGE CONTACTS, SPLICES, AND TERMINALS

Crimp Tools which are supplied by the manufacturers of large gage interconnect components (size 8 AWG to 4/0) are often heavy, and cumbersome to use in tight areas, such as wing leading edges.

Some hydraulic pumps may not be usable in remote maintenance operations due to the physical size or power requirements.

DMC, in conjunction with The BOEING COMPANY, has developed a UNIVERSAL POWER FEEDER CRIMP SYSTEM which is compact in size and weight, driven by hand or power actuated pumps, and used in a variety of applications and conditions. This allows the user to perform maintenance and modifications to wiring installed in the aircraft, rather than removing the wiring from the engine or airframe section.

The DMC UNIVERSAL POWER FEEDER CRIMP SYSTEM accommodates crimp die sets which are approved for maintenance use by the Engine, Component, or Airframe manufacturer. It is no longer necessary for the user to buy individual pumps, cable assemblies and crimp heads for each brand of crimp dies necessary to maintain the aircraft. The DMC UNIVERSAL POWER FEEDER CRIMP SYSTEM can eliminate significant cost in the overall maintenance tool budget, and increase efficiency by consolidating the pumps, hoses, and other accessories to one type.

Consult DMC for details on Tool Kits or individual Components of the UNIVERSAL POWER FEEDER CRIMP SYSTEM.



One Hydraulic  
Crimp System  
Accommodates  
Crimp Die Sets  
manufactured by:

**AMP  
BURNDY  
T & B**

and others.

**DMC** DANIELS  
MANUFACTURING  
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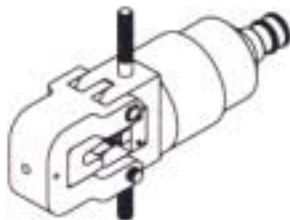
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SL00116



# UNIVERSAL POWER FEEDER CRIMP SYSTEM

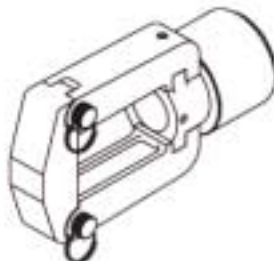
FOR LARGE GAGE CONTACTS, SPLICES, AND TERMINALS



**1**  
**PPFC-1H® AMP COPALUM™ HEAD  
AND CYLINDER ASSEMBLY**  
(no additional Cylinder required)



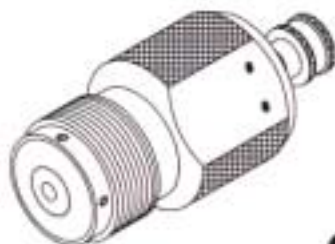
**3**  
**MHP-1 HAND OPERATED  
HYDRAULIC PUMP**



**4**  
**TBHD1® THOMAS & BETTS HEAD  
ASSEMBLY**  
(use with PPC-1.5 Cylinder)



**5**  
**BDHD1® BURNDY HEAD ASSEMBLY**  
(use with PPC-1.5 Cylinder)



**6**  
**PPC-1.5 CYLINDER FOR BDHD1  
AND TBHD1 HEAD ASSEMBLIES**

## **1 PPFC-1H AMP COPALUM™ HEAD ASSEMBLY**

Lightweight, portable cylinder and head assembly which accepts the standard AMP Copalum die sets up to size 2/0.

### **PPFC-1H Specifications**

weight without Die and Hose  
16 Lbs.

Force @ 9K PSI 26.7 Tons

## **2 HPU10 PUMP**

Pneumatic Pump with Interconnecting hoses to be used with PPFC-1H AMP Copalum Head Assembly.  
BDHD1 BURNDY HEAD ASSEMBLY  
TBHD1 THOMAS & BETTS HEAD ASSEMBLY

**NOT AVAILABLE**

### **Specifications:**

Operating Pressure: 80-120 PSI

Caution: Do not exceed 150 PSI

Output: 10,000 PSI Hydraulic at 80 PSI compressed air.

Consumption: 322 cu/ft free air per wire termination (average).

Size: 10" x 11" x 17"

Weight 43 Lbs. (without Hose).

## **3 MHP-1 PUMP**

The MHP-1 features a 2-way valve; carrying handle; 0.662 cu. in. of oil per stroke in the low pressure mode; automatic switching to high pressure mode to deliver 0.160 cu. in. of oil per stroke; handle effort under 140 lbs. at 10,000 PSI, a 6" 10K PSI hose and fittings are included.

\*Includes tool head only, hoses, dies, pumps and other accessories must be ordered separately.

## **4 TBHD1 THOMAS & BETTS HEAD ASSEMBLY**

Lightweight portable head assembly which accepts Thomas & Betts dies. TBHD1 attaches to PPC-1.5 power cylinder.

### **TBHD1 Specifications**

Weight with Cylinder 8.8 Lbs

## **5 BDHD1 BURNDY HEAD ASSEMBLY**

Lightweight, portable head assembly which accepts Burndy dies. BDHD1 attaches to PPC-1.5 power cylinder.

### **BDHD1 Specifications**

Weight with Cylinder 5.9 Lbs

## **6 PPC-1.5 CYLINDER**

This one power cylinder will accommodate both the BDHD1 and TBHD1 head assemblies.

### **PPC-1.5 Specifications**

1.5" Dia. Cylinder

Force @ 9K PSI. 7.9 Tons.

## **HH6 OR HH10 HOSE ASSEMBLY**

10,000 PSI rated hose with 3/8" NPT fitting on the supply end and mating disconnect fitting on the tool head end.  
HH6 - 6 ft length HH10 - 10 ft length

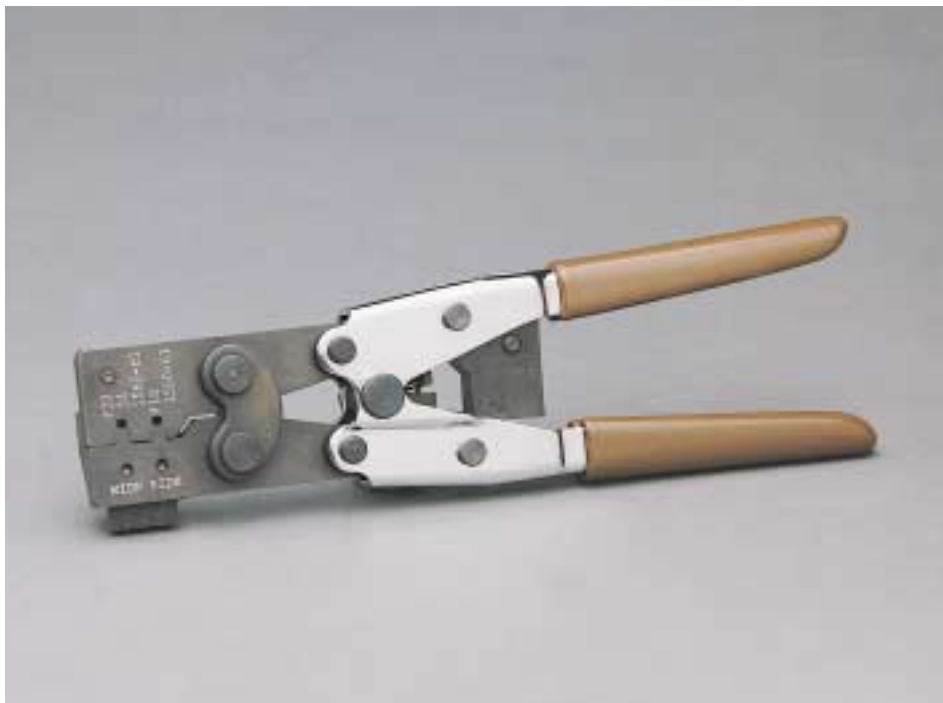
Consult DMC for further details.

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# CUSTOM APPLICATION & CONTACT RETENTION TEST TOOLS

**DMC** DANIELS  
MANUFACTURING  
CORPORATION



## CUSTOM APPLICATION CRIMP TOOLS (GMT SERIES)

DMC supplies Custom application crimp tools for numerous applications; particularly open barrel, stamped and formed contacts. Usually they are supplied complete with a locator, a positive wire stop and contoured crimp cavities. These elements are permanently affixed to a reliable handle assembly which incorporates a precision cycle controlled ratchet and automatic opening spring assist handles. A positive stop precludes the possibility of overcrimping.

We encourage connector/contact suppliers as well as users to consult DMC concerning standard or custom versions of the GMT Series Crimp Tools.



## CONTACT RETENTION TEST TOOLS

The quality assurance test most often overlooked is retention (proper seating of contacts). This important test can now be performed simply and in a matter of seconds with the DMC retention testing tool in the following manner:

1. With the connector held stationary, the tester's tip is mated with each contact individually.
2. A pushing force is applied in-line with the contact.
3. When the indicator band reaches the body of the tool, the test force has been obtained.

TOOL PIN	RANGE LBS.
HT250-1	1.5 THRU 3.0
HT250-2	3.2 THRU 5.5
HT250-3	4.0 THRU 8.0
HT250-4	7.0 THRU 18.0
HT250-5	17.0 THRU 25.0
HT250-6	24.0 THRU 40.0

**Notice:** The above part numbers apply to retention tools only (less tips). All tips must be purchased under separate part no.

# INSTALLING AND REMOVAL TOOLS

DMC is dedicated to serving the connector tooling needs of the electronics industry. We, therefore, top off our product package with a wide variety of installing and removal tools.

Although we supply both plastic and metal tools, we recommend the use of the metal tools because of their durability.

When used properly they are more cost effective in that they withstand thousands of contact insertion and removal cycles. The trend to all metal tools is being actively encouraged by most departments of the government.

DMC installing and removal tools are of proven high quality and reliability. In addition to the tools listed in the reference table, we have many more for other connector applications. Consult factory for details.

Illustrated on page 41 are typical rear and front release retention methods found in today's connectors.

## M81969/# REFERENCE CHART

MIL-I-81969/#	SUPERCEDED MILITARY #	MIL-I-81969/#	SUPERCEDED MILITARY #	MIL-I-81969/#	SUPERCEDED MILITARY #
1-01	MS3156-22	11-01	M28731/22-01	19-09	MS24256R12
1-02	MS3156-20	13-01	M28731/21-01	19-10	MS24256RH20
	M24308/18-2	14-01	MS27534-22D	19-11	MS24256RH16
1-03	MS3156-16	14-02	MS27534-20	20-01	MS17806
	M24308/18-3		MS3447-20	27-01	MS90562-1
1-04	M24308/18-1		M83723/31-20	27-02	MS90562-2
2-01	MS3323-22	14-03	MS27534-16	27-03	MS90562-3
2-02	MS3323-20		MS3447-16	27-04	MS90562-4
2-03	MS3323-16		M83723/31-16	27-05	MS90562-5
2-04	MS3323-12	14-04	MS27534-12	27-06	MS90562-6
3-01	MS3344-23		MS3447-12	28-01	MS3178-001
3-02	MS3344-20		M83723/31-12	28-02	MS3178-002
3-03	MS3344-16	15-01	MS3483-1	29-01	MS3165-16
3-04	MS3344-12	15-02	MS3483-2	29-02	MS3165-8
3-05	MS3342-23	15-03	MS3483-3		M83723/32-08
3-06	MS3342-20	16-01	MS3160-20	29-03	MS3165-4
3-07	MS3342-16	16-02	MS3160-16		M83723/32-04
3-08	MS3342-12	16-03	MS3160-12	29-04	MS3165-0
4-01	M55301/106-01	16-04	MS3160-22		M83723/32-00
5-01	M55302/105-01	17-01	MS90455-16	30-01	MS3159-22
6-01	M21097/18-01	17-02	MS90455-12	30-02	MS3159-20
7-01	M21097/12-01	17-03	MS24256A20	30-03	MS3159-16
8-01	M55302/79-01	17-04	MS24256A16	30-04	MS3159-12
	MS27495A22M	17-05	MS24256A12	30-05	MS3448-001A
8-02	M55302/79-02	17-06	MS90455-8	30-06	MS3448-001B
	MS27495R22M	17-07	MS90455-4	30-07	MS3448-001C
8-03	MS27495A22	17-08	MS90455-0	31-01	MS18137-20-1
8-04	MS27495R22	18-01	MS17805	31-02	MS18137-20-2
8-05	MS27495A20	19-01	MS90456-16	31-03	MS18137-20-3
8-06	MS27495R20	19-02	MS90456-12	31-04	MS18137-20-4
8-07	MS27495A16	19-03	MS90456-8	31-05	MS14035-02
8-08	MS27495R16	19-04	MS90456-4	31-06	MS14035-03
8-09	MS27495A12	19-05	MS90456-0	31-07	MS14035-01
8-10	MS27495R12	19-07	MS24256R20	31-08	MS14036-01
9-01	M55302/18-01	19-08	MS24256R16	31-09	MS14036-02
10-01	M55302/86-01			31-10	MS14036-03





# MIL-I-81969 TOOL PART NUMBER GUIDE



## ABBREVIATIONS

I – Installation Tool

R – Removal Tool

I/R – Installation and Removal Tool

N/A – Not Available

R – Rear Release

F – Front Release

R/F – Rear and Front Release

MILITARY P/N	DMC P/N	INSTALLATION OR REMOVAL	SIZE	COLOR CODE
M81969/1-01	M81969/1-01	I/R	22	GRN/WHT
M81969/1-02	M81969/1-02	I/R	20	RED/WHT
M81969/1-03	M81969/1-03	I/R	16	BLU/WHT
M81969/1-04	M81969/1-04	I/R	12	GRN/WHT
M81969/2-01	DAK126-23A	I	22	YEL
M81969/2-02	DAK126-20A	I	20	RED
M81969/2-03	DAK126-16A	I	16	BLU
M81969/2-04	DAK126-12A	I	12	YEL
M81969/3-01	DRK129-23A	R	23	YEL
M81969/3-02	DRK129-20A	R	20	RED
M81969/3-03	DRK129-16A	R	16	BLU
M81969/3-04	DRK129-12A	R	12	YEL
M81969/3-05	DRK125-23A	R	23	YEL/BLK
M81969/3-06	DRK125-20A	R	20	RED/BLK
M81969/3-07	DRK125-16A	R	16	BLU/BLK
M81969/3-08	DRK125-12A	R	12	YEL/BLK
M81969/4-01	WRAP POST			
M81969/4-02	WRAP POST			
M81969/5-01	WRAP POST			
M81969/7-01	DAK52	I	N/A	CLEAR
M81969/8-01	DAK95-22B	R	22D	GRN
M81969/8-02	DRK95-22B	R	22M	GRN/WHT
M81969/8-03	DAK95-22B	I	22	BRN
M81969/8-04	DRK95-22B	R	22	BRN/WHT
M81969/8-05	DAK95-20B	I	20	RED
M81969/8-06	DRK95-20B	R	20	RED/WHT
M81969/8-07	DAK95-16B	I	16	BLU
M81969/8-08	DRK95-16B	R	16	BLU/WHT
M81969/8-09	DAK95-12B	I	12	YEL
M81969/8-10	DRK95-12B	R	12	YEL/WHT
M81969/8-205B	DAK83-20B	I	20	RED/BLK
M81969/8-206B	DRK83-20B	R	20	RED/WHT/BLK
M81969/8-207	DAK83-16B	I	16	BLU/BLK
M81969/8-208	DRK83-16B	R	16	BLU/WHT/BLK
M81969/8-209	DAK83-12B	I	12	YEL/BLK
M81969/8-210	DRK83-12B	R	12	YEL/WHT/BLK
M81969/12-01	DRK248A	I/R	N/A	STRAIGHT

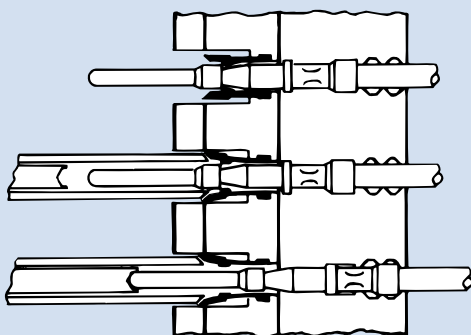
MILITARY P/N	DMC P/N	INSTALLATION OR REMOVAL	SIZE	COLOR CODE
M81969/12-02	DRK246A	I/R	N/A	ANGLED
M81969/14-01	M81969/14-01	I/R	22D	GRN/WHT
M81969/14-02	M81969/14-02	I/R	20	RED/WHT
M81969/14-03	M81969/14-03	I/R	16	BLU/WHT
M81969/14-04	M81969/14-04	I/R	12	YEL/WHT
M81969/14-05	M81969/14-05	I/R	10	GRA/WHT
M81969/14-10	M81969/14-10	I/R	20	RED/ORA
M81969/14-11	M81969/14-11	I/R	20	RED/WHT
M81969/15-01	DRK250-8	R	8	NONE
M81969/15-02	DRK250-4	R	4	NONE
M81969/15-03	DRK250-0	R	1/0	NONE
M81969/16-01	81515-20	I/R	20	RED/WHT
M81969/16-02	81515-16	I/R	16	BLU/WHT
M81969/16-03	81515-12	I/R	12	YEL/WHT
M81969/16-04	81515-23	I/R	23	GRN/WHT
M81969/17-01	DAK55-16A	I	16	BLU
M81969/17-02	DAK55-12A	I	12	YEL
M81969/17-03	DAK20B	I	20	RED
M81969/17-04	DAK16B	I	16	BLU
M81969/17-05	DAK12B	I	12	YEL
M81969/17-06	DAK55-8B	I	8	RED
M81969/17-07	DAK55-4B	I	4	BLU
M81969/17-08	DAK55-0B	I	0	YEL
M81969/17-09	DAK83S-20	I	20	RED
M81969/18-01	DAK123A	I	16/20	GRN
M81969/18-02	DAK123-22A	I	22	GOLD
M81969/19-01	DRK16B	R	16	BLU
M81969/19-02	DRK12B	R	12	YEL
M81969/19-03	DRK56-8B	R	8	RED
M81969/19-04	DRK56-4B	R	4	BLU
M81969/19-05	DRK56-0B	R	0	YEL
M81969/19-06	DRK20B	R	20	RED
M81969/19-07	DRK20A	R	20	RED
M81969/19-08	DRK16A	R	16	BLU
M81969/19-09	DRK12A	R	12	YEL
M81969/19-10	DHK20A	R	20	RED
M81969/19-11	DHK16A	R	16	BLU



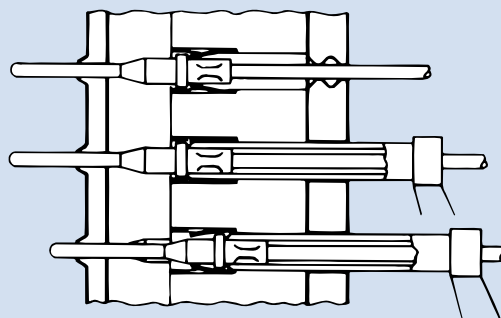
MILITARY P/N	DMC P/N	INSTALLATION OR REMOVAL	SIZE	COLOR CODE
M81969/20-01	DRK124A	R	16	GRN
M81969/20-02	DRK124-22A	R	22	N/A
M81969/21-01	DHK368	I/R	16	N/A
M81969/22-01	DRK222	R	16	N/A
M81969/23-01	DAK1-16P-S	I	16	N/A
M81969/23-02	DAK1-16S-S	I	16	N/A
M81969/27-01	DRK178-1A	R	4/0	N/A
M81969/27-02	DRK178-2A	R	2/0	N/A
M81969/27-03	DRK178-3A	R	1/0	N/A
M81969/27-04	DRK178-4A	R	2	N/A
M81969/27-05	DRK178-5A	R	4	N/A
M81969/27-06	DRK178-6A	R	6	N/A
M81969/28-01	DRK310	R	COAX	N/A
M81969/28-02	DRK337	R	COAX	N/A
M81969/29-01	CIET16-9	R	16	BLU
M81969/29-02	M81969/14-06	R	8	RED
M81969/29-03	M81969/14-07	R	4	BLU
M81969/29-04	M81969/14-08	R	0	YEL
M81969/30A-01	DRK130-22A	R	22	YEL
M81969/30A-02	DRK130-20A	R	20	RED
M81969/30A-03	DRK130-16A	R	16	BLU
M81969/30A-04	DRK130-12A	R	12	YEL
M81969/30A-05	DRK110-20-2	R	20	RED
M81969/30A-06	DRK110-16-2	R	16	BLU
M81969/30A-07	DRK110-12-2	R	12	YEL
M81969/30B-01	DRK501B	R	22	BLK/YEL
M81969/30B-02	DRK502B	R	20	BLK/RED
M81969/30B-03	DRK503B	R	16	BLK/BLU
M81969/30B-04	DRK504B	R	12	BLK/YEL
M81969/30B-05	DRK505B	R	20	SIL/RED

MILITARY P/N	DMC P/N	INSTALLATION OR REMOVAL	SIZE	COLOR CODE
M81969/30B-06	DRK506B	R	16	SIL/BLU
M81969/30B-07	DRK507B	R	12	SIL/YEL
M81969/30B-08	DRK508B	R	22D	BRN/BRN
M81969/30B-09	DRK509B	R	22M	BRN/YEL
M81969/30B-10	DRK510B	R	22	BRN/GRN
M81969/30B-11	DRK511B	R	20	BRN/RED
M81969/30B-12	DRK512B	R	16	BRN/BLU
M81969/30B-13	DRK513B	R	12	BRN/YEL
M81969/30B-19	DRK519B	R	TOOL SET	
M81969/30B-20	DRK520B	R	HANDLE	
M81969/30B-21	DRK521B	R	22	YEL
M81969/30B-22	DRK522B	R	20	RED
M81969/30B-23	DRK523B	R	16	BLU
M81969/30B-24	DRK524B	R	12	YEL
M81969/30B-25	DRK525B	R	20	RED
M81969/30B-26	DRK526B	R	16	BLU
M81969/30B-27	DRK527B	R	12	YEL
M81969/30B-28	DRK528B	R	22D	BRN
M81969/30B-29	DRK529B	R	22M	YEL
M81969/30B-30	DRK530B	R	22	GRN
M81969/30B-31	DRK531B	R	20	RED
M81969/30B-32	DRK532B	R	16	BLU
M81969/30B-33	DRK533B	R	12	YEL
M81969/30B-34	DRK534B	REMOVAL TOOL SET		
M81969/30B-35	DRK535B	REMOVAL TOOL SET		
M81969/30B-36	DRK536B	REMOVAL TOOL SET		
M81969/33-01	DAK55-225A	I/R	22	RED
M81969/33-02	DAK55-22JA	I/R	22	RED
M81969/34-01	DRK56-22A	R	22	RED
M81969/39-01	M81969/39-01	I/R	20	GRN/WHT

## TYPICAL FRONT RELEASE CONTACT



## TYPICAL REAR RELEASE CONTACT



# HAND HELD PNEUMATIC WIRE STRIPPING TOOL

**DMC** DANIELS  
MANUFACTURING  
CORPORATION



**Compact Design** allows hand-held tool to be used in confined areas.

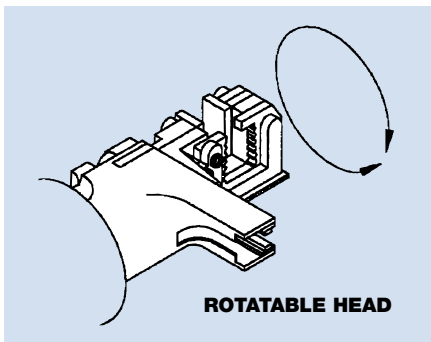
Light Weight construction and pneumatic actuation system minimize operator fatigue and carpal tunnel injuries.

**Fast, smooth stripping** operation results in maximum quality wire preparation at a production rate unattainable with hand operated mechanical strippers.

**Compatibility** with common, commercially available stripper blades, grippers, and other components makes the unit economical, and it assured a wide range of applications with all types of wire.

**Rotatable Head** permits left or right handed operation.

**Wire Stop** may be used for precise, repeatable operations.



**Adjustable Speed Control** allows the operator to regulate the speed of the stripping operation by simply rotating the adjustment collar which is a part of the air hose. This enables greater accuracy and control of the wire stripper.

The WSP-1630 series Pneumatic Wire Stripper is the ultimate combination of performance, reliability, and portability. It was developed in cooperation with major aerospace contractors addressing their needs for a reliable, simple to operate pneumatic wire stripper utilizing the blades and accessories which are certified and inventoried within their existing facilities.

The WSP-1630 part number

applies to the basic pneumatic wire stripper frame with WL5211 blades (less accessories), which accommodates most size 16 AWG and smaller wires. Blades, pads and accessories to cover a variety of wire types and sizes can be ordered and factory installed.

Please contact DMC for specific details about this and other wire stripping products.



# Wire Cutting, Stripping Preparation Equipment

## Cut

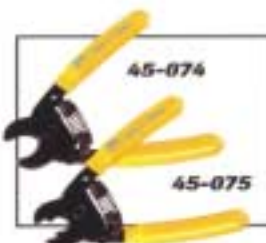


### **T-Cutter Wire Cutters**

Hardened-steel, shear-type blades cut up to 1/2 in. fine stranded cable and #10 AWG solid wire.

Special contoured comfort grips and versatile plier-type nose on model 45-223.

45-123 NSN# 5110-01-377-2270



### **Data T-Cutter**

Cuts round communication cable and maintains cable geometry for better cable performance.

Cuts multi-pair cable up to .500 in. (12.7mm) and coaxial cable up to RG-59.

Suitable for soft cables (not ACSR).



### **Reflex™ Premium T-Cutter Wire Cutters**

Designed for total comfort, total-control wire cutting. Ergonomic handles, designed to fit in an electrician's natural grip, reduces repetitive motion fatigue. Textured, no-slip sleeves cushion thumb and finger.



### **T-Cutter Lite Wire Cutters**

Compact, lightweight wire cutter features knife-type blades for cutting stranded and solid copper and aluminum wire. Features cushioned ESD grips and the ability to use the entire blade area for cutting.

## Strip



### **Custom Stripmaster® Wire Strippers Custom Stripmaster® Lite Wire Strippers**

Strips 30 through 10 AWG solid or stranded wire. Die-type blades assure accuracy and precision stripping.

Counter-bored holes sized to insulation and inner stripping hole sized to conductor. Counter-bored holes precisely center conductor to prevent unwanted conductor contact. Custom Stripmaster® Lite is three-fourths the size of Custom Stripmaster® Wire Stripper. Requires one-third less hand pressure for each strip actuation. Lever action provides stripping and slug removal in one step. Cleanly strips wire up to 7/8 in. (22 mm). (Contact DMC for complete catalog number and listing.)



### **IDEAL Stripmaster® Model 950**

Electrically operated, pneumatic precision production tool. Strips insulation types in the #10 to #30 AWG range.

Accommodates up to six different wire gauge/blade and strip length configurations. Allows operators to strip six different wire diameters, insulations and strip lengths without switching tools or reinstalling blade sets. Special guides and

blades available on request. Meets military and aerospace requirements. Maximum strip length 5/8 in.

45-950 Stripmaster® with individually adjustable strip lengths

45-950-1 Stripmaster® with external adjustment knob for common strip length

45-950-4 Permanent Gripper Assembly



# Strip (continued)



## IDEAL Lite-Strip™ Optical Fiber Stripper

Precisely strips outer cable jacket insulations, tight buffer tube insulations and mechanically strippable coatings. Built-in blade guides ease positioning of optical fiber in the proper stripping hole. Plastic grips offer comfort and handling ease. Optional, adjustable Wire stop.

- 45-350 IDEAL Lite-Strip™ Optical Fiber Stripper (900µ/250µ)  
45-351 IDEAL Lite-Strip™ Optical Fiber Stripper (900µ/500µ)



## IDEAL Swivel-Blade™ Cable Strippers

Used for both end or center stripping of coaxial and power cables from 1/4 in. through 1-1/2 in. O.D. Strips insulation up to 5/32 in. thick including PVC, rubber, Neoprene, Teflon, Polyethylene, Nylon, fiberglass, and fabric.

- 45-128 NSN# 5110-01-377-2274  
45-129 NSN# 5110-01-377-2344



## IDEAL Pow-R-Master™ Pneumatic Wire Stripper

Hand-held pneumatic wire stripper uses same blades as Stripmaster® Wire Stripper, Custom Stripmaster® Wire Stripper, and Power Stripmaster® Wire Stripper. The only hand-held pneumatic wire stripper with enough power to strip #8 to #30 AWG wires. (Meets MIL-spec wire stripping requirements on solid or

stranded wire from #10 to #30 AWG using knife and die-type stripping blades.) Includes coil air line.

- 45-2521 Pow-R-Master® Pneumatic Wire Stripper  
Blades sold separately



## IDEAL Pow-R-Lite™ Pneumatic Wire Stripper

Pneumatic production stripper handles a broad range of requirements for commercial, OEM, communications, aerospace and military. High-strength aluminum/zinc construction for reduced weight and greater operator comfort. One-touch lever actuation triggers stripping cycle to reduce repetitive

motion disorders. (Meets MIL-spec wire stripping requirements on solid or stranded wire from #16 to #30 AWG using die-type stripping blades, and #12 to #30 AWG using knife-type stripping blades.) Includes coil air line.

- 45-850 Pow-R-Lite® Pneumatic Wire Stripper  
Blades sold separately



## STP Stripping System

The programmable Shielded Twisted Pair Cable Stripping System handles a variety of strip lengths and cable diameters. This hot-blade, thermal stripping system stores up to 500 batch programs for frequently run jobs in its non-volatile battery backed-up memory. Strip length is programmable for either inches or millimeters, and can be variably adjusted in pre-set increments from 1 in. (25.4 mm) to 6 in. (152.4 mm). Automatically adjusts to the size of cable being stripped, with a maximum of 0.3125 in. (7.9 mm). Adjustable power supply can easily be switched from 120V to 220V.

- 45-930 STP Stripping System



## Compact Pneumatic Wire Stripper

Compact design for use in confined areas. Lightweight construction and pneumatic actuation system minimizes user fatigue. Fast, smooth stripping operation results in high quality at maximum speed. Head rotates to accommodate both left and right hand operation. Perfect for smaller wire gage sizes (#16-430 AWG).

- WSP-1630 NSN# 5110-01-367-9519



## Coaxial Cable Strippers

Adjustable blades can be set for any depth to help ensure nick-free strips on a variety of coaxial cable. Also used for twisted-pair wire, tightly wrapped stranded cables, CATV cable, CB antenna cable, SO, SJ, SJT, and other types of flexible power cords. Includes three straight and one round blade.

- 45-162 NSN# 5110-01-377-2241  
Coaxial Cable Stripper, up to 1/8 in. (3.2 mm) O.D.  
45-163 NSN# 5110-01-377-2348  
Coaxial Cable Stripper, 1/8 in. (3.2 mm) to 7/32 in. (5.556 mm) O.D.  
45-164 NSN# 5110-01-377-2243  
Coaxial Cable Stripper, 1/4 in. (6.4 mm) to 9/16 in. (14.3 mm) O.D.  
45-165 NSN# 5110-01-377-2350  
Cable Stripper, 3/16 in. (4.8 mm) to 5/16 in. (8 mm) O.D.



## IDEAL Ringer™ Shielded Cable Stripper

For precision stripping of most non-round shielded cable and other outer jackets, including extruded Teflon®, Kapton®, PVC and Kynar® insulations. Spring-loaded head holds cable with consistently accurate tension, removing any need for adjustment. Fixed blades

are sized to insulation to prevent inaccurate cuts. Heat-treated, stainless-steel blades for long life.

- 45-400 Cable diameters up to 0.12 in.  
45-401 5 Mil insulation thickness including Kapton®  
45-402 8-10 Mil insulation thickness including Kynar®  
45-403 Cable diameters from 0.12 in. to 0.22 in.  
45-404 With "deep-V" for larger cable diameters up to 0.30 in.



## Reflex™ Premium T-Stripper Wire Strippers

Ergonomic design for maximum comfort. Curved handles to reduce wrist fatigue. Sleeves that extend to stripping head to cushion thumb and fingers. Textured, no-slip sleeves for a sure, easy grip. (Wire Range: 10-18 AWG)

- 45-415 10-18 AWG solid  
45-416 16-26 AWG stranded  
45-417 22-30 AWG solid  
45-418 8-16 AWG stranded



# EMI/RFI BAND APPLICATION SYSTEM FOR .125 & .250 SHIELD TERMINATION BANDS

**DMC** DANIELS  
MANUFACTURING  
CORPORATION



The termination of EMI/RFI shielding materials is a specialized science in today's aerospace wiring systems. Application tooling is a critical factor in the overall performance of the wiring system components.

DMC has worked closely with the world's leading connector accessory manufacturers to develop the necessary tooling and accessories to meet the stringent demands of aerospace and defense system contractors. The resulting products afford the user many benefits which include:

**COMPATIBILITY** with all currently available termination bands and systems.

**RELIABILITY** through the use of commercially proven components and tool design practice.

**QUALITY and REPEATABILITY** which are assured by a patented tension system.

**SERVICE AND CALIBRATION** - All tools produced by DMC are adjustable and may be easily re-calibrated by the user. Also, expendable components such as cut-off blades are available for simple replacement by the user.

**LONG SERVICE LIFE** - Properly maintained band application tools will produce thousands of reliable terminations.

**AFFORDABILITY** - DMC tools continue to be the most cost effective method to produce reliable wiring system shield terminations.

## THE PNEUMATIC BAND APPLICATION TOOL...

is a cost effective system that speeds production and improves ergonomic conditions which are present when manual tools are used. Band tension is precisely applied by a dependable pneumatic system which is consistent and repeatable.

The calibration system of the pneumatic band tool is adjustable, and

can be checked by use of the calibration devices available from DMC.

The cutter blade and other components of the DMC Pneumatic Band tools are interchangeable with the DBS-1100 and DBS-1200 series hand tools. The rugged design and field replaceable blades make the PBT/PMBT series the best choice for production applications where EMI/RFI bands are used to terminate wire harness shielding.

## THE HAND OPERATED BAND APPLICATION TOOL...

is an excellent choice for many production and maintenance operations. Like the power driven models, they too can be calibrated by the user to provide reliable terminations throughout the service life.

The lightweight construction and small "nose" profile enable the user to apply termination bands in even the tightest of working areas.

Models are available for .250 in. (6.350 mm) and .125 in. (3.175 mm) wide bands from all current suppliers.



*DMC Band Application Tools are compatible with all approved brands of shield termination bands.*



DBS-1100/  
DBS-1200 Series

PBT-1100/  
PMBT-1200 Series

ISO 9001/AS 9000

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# EMI/RFI BAND APPLICATION SYSTEM

## FOR .125 & .250 SHIELD TERMINATION BANDS



### DBS-1100 & DBS-1200 HAND OPERATED BAND APPLICATION TOOLS

The DBS series Hand Application Tools are constructed to survive the demands of production and maintenance use, and remain precisely adjusted to provide a quality band termination.

The patented tension-lock system gives the operator a positive indication when the precise tension has been applied.

#### DBS-1100 .250 Wide Band Application Tool:

- Size and Weight: 5.5" x 7.5", .36 lbs.
- Calibration\* Range: 140 - 160 lbs.
- Cut-off blade: replaceable with DBS-1100-7.

#### DBS-1200 .125 Wide Mini-Band Application Tool:

- Size and Weight: 5.5" x 7.5", .52 lbs.
- Calibration\* Range: 62 - 82 lbs.
- Cut-off blade: replaceable with DBS-1200-7.



### PBT 1100 & PMBT 1200 PNEUMATIC BAND APPLICATION TOOLS

The PBT & PMBT series Pneumatic Band Application Tools are lightweight, dependable, and easy to operate. Many of the components are interchangeable with the corresponding hand tool.

#### PBT 1100 .250 Wide Band Application Tool

- Size and Weight: 8.75"L, 1.52 lbx.
- Calibration\* Range: 140-160 lb.
- Hose Length: 10' Extended
- Cut-off Blade replaceable with DBS-1100-7.

#### PMBT 1200 .125 Wide Band Application Tool

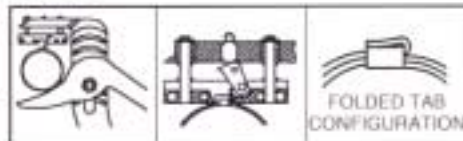
- Size and Weight: 8.75" L x 1.52 lbs.
- Calibration\* Range: 62-82 lb.
- Hose Length: 10' Extended
- Cut-off Blade replaceable with DBS-1200-7.

\*Standard factory settings can be set to customer requirements upon request.



### DBS-RO3 ROLL-OVER FOR .250 WIDE BANDS APPLICATION TOOL

The DMC Roll-Over tool (Part No. DBS-RO3) is used to fold the extended band tab securely over the buckle. Experts agree that the "folded tab" method assures maximum strength and reliability. Like other DMC Band Application Tools, the Roll-Over Tool is compatible with all currently available bands.



DMC also provides the DBS-RO4 Roll-Over Tool for use with .125 wide Mini-Bands. This tool is similar to the DBS-RO3 in size and shape.

## CALIBRATION OF EMI/RFI BAND TOOLS

All the DMC Hand and Pneumatic Band Application Tools may be calibrated to insure correct band tension. This **calibration fixture** will allow the operator to gauge the exact tension produced by the tool.

A short piece of unused band material is fed into the tool far enough to fully engage the gripping mechanism. The other end is then inserted and latched into the calibration fixture. Full tension is then exerted by the tool and read directly on the precision dial indicator portion of the calibration fixture.

Simple adjustments can be made to the tool. A quick release mechanism is provided to allow the operator to easily release the test band.



Field calibration fixtures & **Go/No-Go gauges** were developed to allow the user a quick means of checking calibration of band application tools in the field. A band is placed into the calibration fixture. The band is drawn through the tool until the

nose of the banding tool is firmly against the calibration fixture. Once the full banding pressure has been applied, insert the "GO" side of the Gauge into the verification slot of the calibration fixture. If it does not insert freely, the tool is exerting excessive force. Likewise, if the "NO-GO" probe freely enters the verification slot, the tool is below the minimum force, thus alerting the user that the tool is out of calibration.



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**BANDING TOOL KITS**

**DMC1379** - .250 Banding Tool Kit. This kit includes the tools necessary to install and remove termination bands plus a total of 50, 1/4" terminator bands, packaged in a fiberglass case with pre-cut foam inserts and laminated instruction charts.

**DMC60A** - Complete EMI/RFI Shielding Maintenance Repair System. This kit includes a complete complement of tools to install and remove shield termination material and specialized tapes. Instructions are included to guide the user through all steps of repair from correct tool selection, to set-up and operation of tools and components. It is packaged in a fiberglass case with foam inserts for designated tool storage. Includes calibration fixture and gauge.

## APPLICATION TOOLS, ACCESSORIES AND COMPONENTS

### .250 WIDTH BAND TOOLS

DBS-1100	Hand Operated Band Application Tool
DBS-1101	Hand Operated Band Application Tool Set (includes DBS-1100, DBS-RO3)
DBS-1102	Hand Operated Band Application Tool Set (includes DBS-1100, DBS-RO3, DBS-CG2 & G691)
DBS-1100-32	Calibration Adjustment Key
DBS-1100-7	Replacement Blade for .250 Band Tools
DBS-RO3	Roll-Over Tool for .250 Band Tab

### .125 WIDTH MINI-BAND TOOLS

DBS-1200	Hand Operated Mini Band Tool
DBS-1201	Hand Operated Mini Band Application Tool Set (includes DBS-1200, DBS-RO4)
DBS-1202	Hand Operated Mini Band Application Tool Set (includes DBS-1200, DBS-RO4, DBS-CG3 & G752)
DBS-1100-7	Replacement Blade for .125 Band Tools
DBS-RO4	Roll-Over Tool for .125 Band Tab

### PNEUMATIC BAND TOOLS FOR .250 WIDTH BANDS

PBT 1100	Pneumatic Band Application Tool
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### PNEUMATIC BAND TOOLS FOR .125 WIDTH BANDS

PMBT 1200	Pneumatic Band Application Tool
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### TOOL CALIBRATION INSTRUMENTATION

DBS-CG1	Laboratory Calibration Instrument (all tools)
DBS-CG2	Field Calibration Fixture for DBS-1100
G691	Go/No-Go Gage for DBS-CG2 Fixture
DBS-CG2A	Calibration Set which includes DBS-CG2 & G691
DBS-CG3	Field Calibration Fixture for DBS-1200
G752	Go/No-Go Gage for DBS-CG3 Fixture
DBS-CG3A	Calibration Set which includes DBS-CG3 & G752

### BANDING APPLICATION KIT

DMC1379	.250 Banding Tool Kit
DMC60A	Complete EMI/RFI Shielding Maintenance/Repair System (.250 bands and tools)

### BANDS & RINGS

4-1380	.250 wide x 14.0" long EMI/RFI Band (Flat)*
4-1553	.125 wide x 14.0" long EMI/RFI Band (Flat)*
4-1376	.500 Dia. Split Ring Set
4-1377	.750 Dia. Split Ring Set
4-1378	1.00 Dia. Split Ring Set
4-1379	1.50 Dia. Split Ring Set



Patent information: Tools featured on this data sheet are covered all or in part by the following patents:  
4,934,416 - 5,000,232 - 4,996,868

\* Band can also be supplied curled (contact factory)

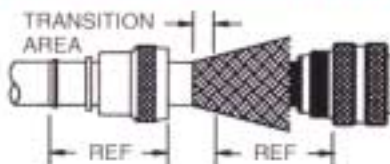
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# EMI/RFI BAND APPLICATION SYSTEM FOR .125 & .250 SHIELD TERMINATION BANDS



Careful measurement should be made prior to installing the backshell. The outer jacket is then uniformly removed at a distance which would allow the braid to make a comfortable transition onto the backshell termination area. This dimension will vary depending upon the differences between cable and backshell diameters or other application dependent factors.



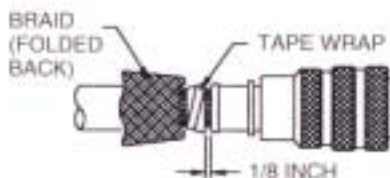
The braid is then trimmed to a length which will allow it to extend 1 inch past the backshell termination platform. Then the braid is carefully folded rearward to expose the wires which will be inside the backshell.



A sufficient number of wraps of self vulcanizing tape (normally red in color) are applied over the wires to buildup a diameter slightly less than the inside diameter of the backshell. Care should be taken not to apply tension to the contacts located in the outer perimeter of the connector.

These layers of tape are followed by a minimum of one layer of Teflon tape which will prevent adhesion with the backshell and other components.

The backshell is then installed onto the connector, using a nonabrasive tool such as a strap wrench. The braid is then carefully moved from under the backshell. It is important to retain the woven characteristics of the braid during this step.



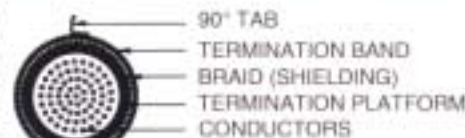
Use self vulcanizing tape or a pre-formed component to build up the area behind the backshell. It is important that the braid is supported in the transition from the backshell rear diameter to the natural diameter of the wire bundle.

Leave approximately 1/8 inch spacing between the tape wrap and the backshell.

The braid is pushed into position over the backshell termination platform. Care must be taken to make sure the weave is uniform and no large "windows" are present. A shield termination band is then loaded into the tool. The band is slid

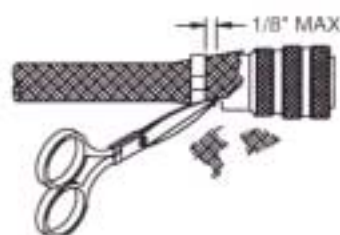


over the connector/backshell assembly into a position of alignment with the termination platform.



The tool is then activated to the pre-set tension. The band is then bent sharply at the buckle approximately 90° then cut-off using the cut-off lever on the tool.

The 90° tab is then curled and folded back over the buckle using the roll-over tool.



For braided, non-jacket cable use fine point shears to trim the excess braid as close to the connector side of the bands as possible. Do not leave any unsecured braid wires longer than 1/8 inch. Do not allow the trimmed wires to fall into any areas where they may present a foreign object damage hazard.

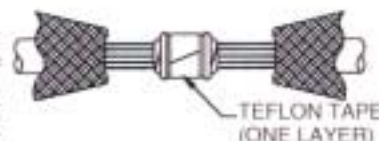
## PROCEDURE FOR SPLICING



The jacket is removed, and the shield is cut and separated to expose the wires requiring service. Care must be taken to avoid damaging the insulation on internal wires. The required

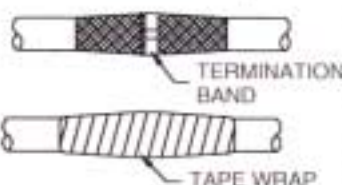
service is then completed.

The wire bundle is then protected by a few wraps of self vulcanizing tape followed by 2-3 layers of teflon tape. An appropriate size split ring set is then selected and installed.



One layer of teflon tape is applied over the split ring set to hold the halves in position while the next steps are being performed.

The braid is then overlapped across the split ring set. Be sure the braid ends protrude completely under the band in both directions.



Heat shrinkable tape is then applied over the splice. Where a jacketed cable is used, be sure the tape extends onto the jacket in both directions.



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# FIBER OPTIC CLEAVING TOOL

**DMC** DANIELS  
MANUFACTURING  
CORPORATION

**PRECISION** Mirror quality finish of cleaved fiber endface with less than 1.0 degree endface angle makes additional polishing unnecessary. Ideally suited for "cleave & crimp" terminations.

**VERSATILITY** Standard tool works on all 125 micron to 140 micron fibers; special tools are available for other fiber diameters.

**ADJUSTABILITY** Can be adjusted for various fiber sizes and bare fiber lengths. Instructions are included.

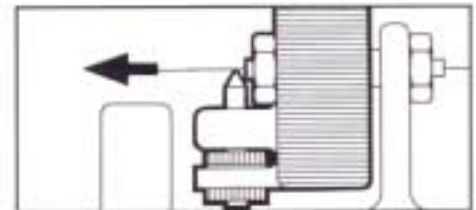
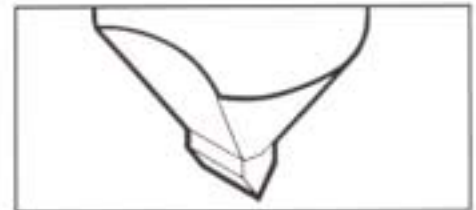
**RELIABILITY** Gem-quality diamond scribe permits thousands of high quality cleaves without replacement.

**SPEED** Fiber cleaving is performed in seconds.

**DURABILITY** Outstanding durability due to rugged metal frame construction.

## MIL-T-83523/10 GHC100-1

The standard cleaving tool is designed to work with all 125 micron or 140 micron optical fibers and most fiber optic connectors and splices. Other versions of the tool are available for different fiber sizes. The rugged carrying case contains the cleave tool assembly plus accessories and instructions to calibrate the tool for exceptionally clean fiber cleaves. A precision lapped, gem-quality (diamond) scribe permits thousands of cleaves without the need for resharpening or replacement. The stylus performs a scribing motion at the circumference of the fiber, while the fiber is under longitudinal tension. A controlled break occurs with a mirror quality surface. This makes additional fiber endface preparations, such as polishing, unnecessary. Endface angles are typically less than 1.0 degree from the perpendicular.

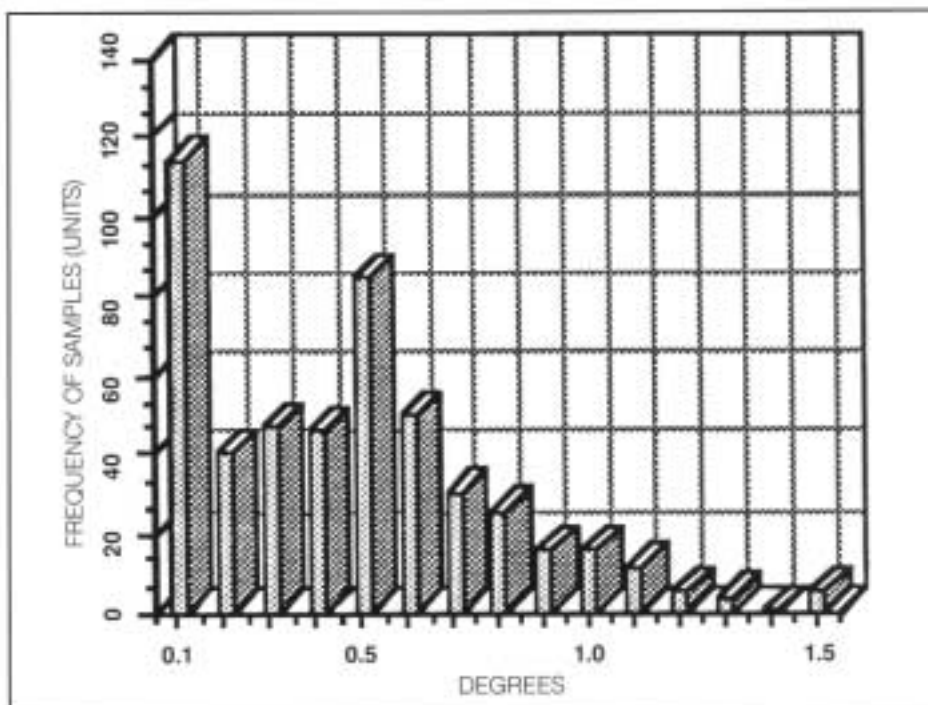


The following patents apply to this tool:  
4,530,452      4,674,566      4,627,561



DANIELS MANUFACTURING CORP., 526 THORPE ROAD, ORLANDO, FL 32824, USA, PHONE 407/855-6161, TELEX 564321, FAX 407/855-6884

END FIBER ANGLE OF 500 TEST SAMPLES



## SPECIFICATIONS

### DIAMOND DURABILITY

3,000 cycles without resharpener (in typical applications).

### BLADE PROTRUSION

1/4 to 1/2 fiber diameter.

### TYPE OF FIBER

Any silica or glass.

### FIBER DIAMETER RANGE

125  $\mu$ m to 140  $\mu$ m (standard); 200  $\mu$ m to 525  $\mu$ m (special).

### FIBER PRE-TENSION

150g to 200g (standard); 200g to 350g (special applications).

### PRE-TENSIONING TIME

3 to 5 seconds.

### RESHARPENING

Diamond scribe may be resharpened up to six (6) times (in typical applications).

### DIAMOND GEOMETRY

Chisel, 60 to 85 degrees cutting edge.

### DIAMOND EDGE PERPENDICULARITY TO THE FIBER AXIS

+ or - 0.5 degrees.

### BARE FIBER LENGTH

.100 to .550 inch (standard); .550 to 4.00 inches (special).

### TYPICAL END FACE ANGLE

0.3 to 0.8 degrees

### TYPICAL DISTRIBUTION

Deviation of end angle in range of + or - 0.2 degrees.

The cleave tool is a precision built tool utilizing a gem quality diamond cleaver. If properly cared for, it will perform thousands of proper cleaves. As with any precision tool, it is recommended that a periodic calibration verification program be followed to assure that the tool is still cleaving properly. Also, the diamond may become damaged, or worn, thereby requiring sharpening which in turn requires replacement and recalibration.

The following options are offered by DMC:

#### A. Diamond Resharpener —

Remove the diamond cleaver from the tool and return it to DMC. A replacement diamond will be sent by mail or regular UPS for a fixed charge including cost of shipping and handling. The cost includes replacement of the diamond cleaver when it no longer can be resharpened (four to six sharpenings). If the cleaver has been abused and the diamond cannot be resharpened, the customer will be advised as to replacement cost. Contact DMC Sales for the details of this program. NOTE: Specialized equipment is necessary to reassemble, calibrate, and verify the accuracy of the tool.

**B. Cleave tool return** — The entire cleave tool may be returned to DMC prepaid for calibration and complete refurbishment. The customer will be advised of the repair/service charge upon completion of an evaluation of the cleave tool. Contact DMC Sales for the details of this program.

### TYPICAL CLEAVED FIBER ENDFACE



This view represents a fiber endface as viewed by an interferometer (50/125 micron coming fiber). The light/dark bands (fringes) indicate end face angle.



### ***"Making The Connection"***

#### **A Video Training System**

The electrical wiring components of today's sophisticated electronic systems have become diverse and often complicated. In order for these components to function to the performance level for which they were designed and specified, they must be assembled correctly. This is where well-planned and organized training is necessary.

DMC has produced a training video which address that need in a basic format. It will give assembly personnel many illustrations of efficient tool use, and visually establish an understanding of the delicate nature of electrical connectors, contacts and other components.

The following is a description of each section of the program:

#### **Connector and Contact Identification**

This section identifies basic connector components, traces the history of military connector development, and presents guidelines to proper connector identification and tool selection through an understanding

of part numbers. Also explained in the presentation is contact identification by color bands and other visual methods. This material will also benefit engineers, specifiers, production supervisors, and procurement personnel.

#### **Wire Cutting, Stripping and Crimping**

This section begins with an understanding of wire and insulation types, and progresses to wire stripping methods. The set-up of various crimping tools and the crimping of contact/wire assemblies are then covered in detail. This includes inspection for a proper crimp joint. This valuable information will prepare production personnel and supervisors in the correct application and utilization of these products. A basic

understanding of tool operation and inspection procedures for tools and completed terminations will equip supervisors and assembly personnel with the knowledge and experience to eliminate mistakes before they happen.

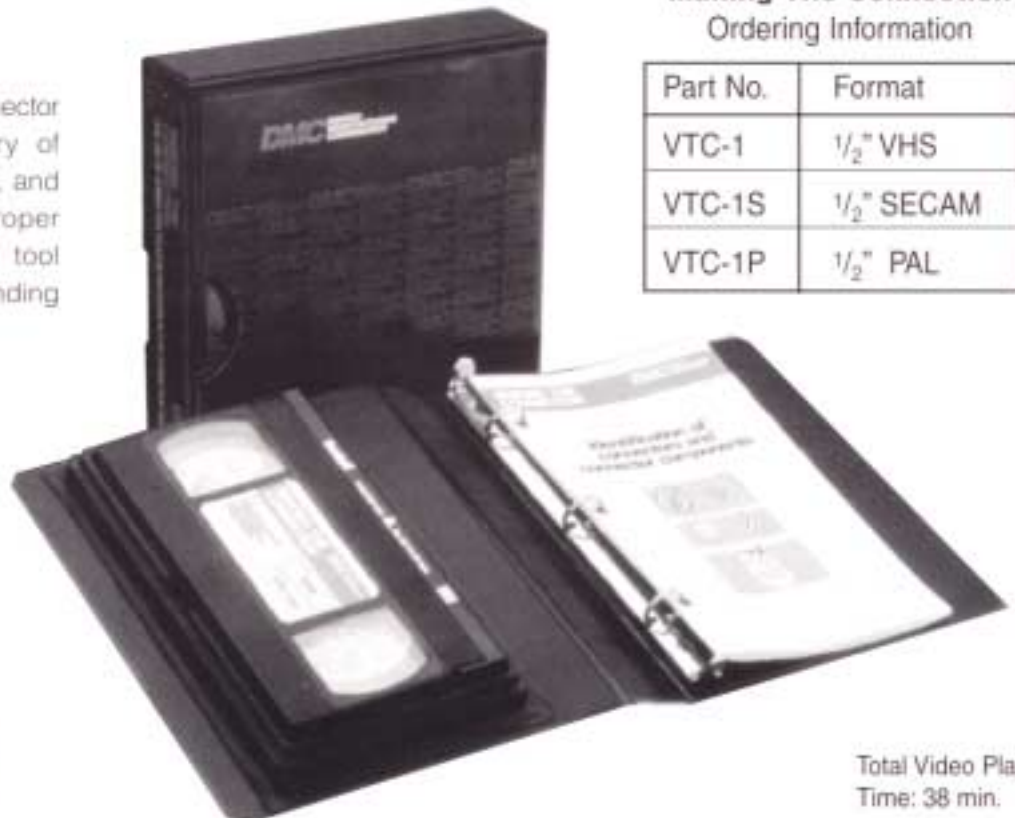
#### **Installing and Removal of Contacts**

This section covers the all-important task of selecting the correct tooling for various connector types. The correct, as well as the incorrect uses of these tools are also explained. Diagrams show the internal configuration of connector retention systems and can be utilized to reinforce the viewer's understanding of the installing and removal process. Both front and rear release systems are covered.

#### **"Making The Connection"**

##### Ordering Information

Part No.	Format
VTC-1	1/2" VHS
VTC-1S	1/2" SECAM
VTC-1P	1/2" PAL



ISO 9001 / AS 9000

Total Video Play  
Time: 38 min.

# GLOSSARY OF TERMS\*

## A

**Accessories** — Mechanical devices such as cable clamps added to connector shells, which are attachable to connectors to make up the total connector assembly.

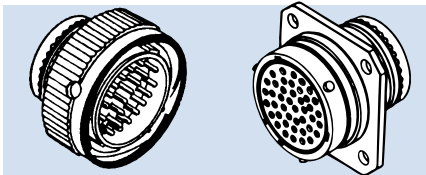
**Adapter** (Adaptor) — An intermediate device to provide for attaching special accessories or to provide special mounting means.

## B

**Back-mounted** — A connector mounted from the inside of a panel or box with its mounting flange inside the equipment.

**Barrel** — (1) **Conductor Barrel** — The section of the terminal splice or contact that accommodates the stripped conductor. (2) **Insulation Barrel** — The section of the terminal splice or contact that accommodates the conductor insulation.

**Bayonet coupling, rotary** — A quick coupling device for mating connectors utilizing pins on a connector and ramps on the mating connector. Mating and unmating is accomplished by rotating the coupling ring.



**BAYONET COUPLING**

**Bin** — Basic identification number. (See explanation elsewhere in technical section of this catalogue.)

**Body, connector** — The main portion of a connector to which contacts and other components are attached. This term is not used with connectors incorporating nonintegral shells in their construction.

**Boot** — A form placed around the wire terminations of a multiple contact connector as a protective housing or as a container for potting compound.

**Braid** — Flexible conductor made of a woven or braided assembly of fine wires.

**Busing** — The joining of two or more circuits.

**Butting dies** — Crimping dies so designed that the nest and indenter touch at the end of the crimping cycle. (Also called bottoming dies.)

## C

**Cable clamp** — A mechanical clamp attached to the cable side of the connector to support the cable or wire bundle, provide strain relief, and absorb vibration and shock otherwise transmitted by the cable to the contact/wire connection.

**Cable shielding clamp** — A device consisting of a sealing member and cable support designed to terminate the screen (shield) of an electrical cable.

**Circumferential crimp** — The type of crimp where the crimping dies completely surround a barrel resulting in symmetrical indentations in the barrel.

**Closed entry** — A contact or contact cavity design in the insert or body of the connector which limits the size or position of the mating contact or printed circuit board to a predetermined dimension.

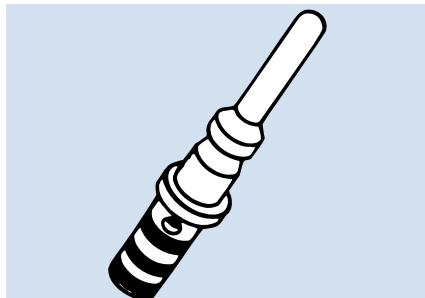
**Coaxial contact** — A contact having two conducting surfaces, a center contact and a coaxially placed sleeve.

**Color coding** — A system of identification of terminals and related devices.

**Conductor stop** — A device on a terminal, splice, contact or tool used to prevent excessive extension of the conductor barrel.

**Connector, electrical** — A device, either a plug or a receptacle, used to terminate or connect the conductors of individual wires or cables and provide a means to continue the conductors to a mating connector or printed circuit board.

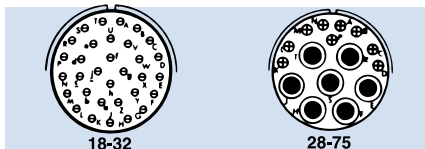
**Contact** — The conductive element in a connector which makes actual contact, for the purpose of transferring electrical energy.



**CONTACT**

**Contact area** — The area in contact between two conductors, two contacts, or a conductor and a contact permitting the flow of electricity.

**Contact arrangement** — The number, spacing and arrangement of contacts in a connector.



**CONTACT ARRANGEMENT**

**Contact engaging and separating force** — Force needed to either engage or separate mating contacts.

**Contact resistance** — Electrical resistance of a pair of engaged contacts. Resistance may be measured in ohms or millivolt drop at a specified current over the engaged contacts.

**Contact retainer** — A device either on the contact or in the insert to retain the contact in an insert or body. (See section on installing/removal tools.)

**Contact retention** — The axial load in either direct on which a contact can withstand without being dislodged from its normal position within an insert or body.

**Contact size** — An assigned number denoting the size of the contact engaging end.

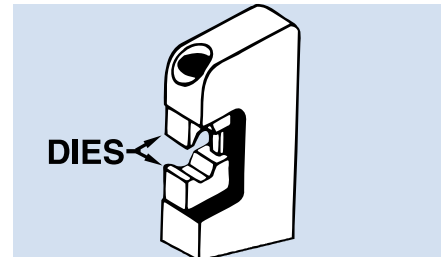
**Contact shoulder** — The flanged portion of a contact which limits its travel into the insert.

**Coupling ring** — That portion of a plug which aids in the mating or unmating of a plug and receptacle and holds the plug to the receptacle.

**Crimp** — The physical compression (deformation) of a contact barrel around a conductor in order to make an electrical connection.

**Crimping** — A pressure method of mechanically securing a terminal splice or contact to a conductor.

**Crimping dies** — Portion of the crimping tool that shapes the crimp.



**CRIMPING DIES**

**Crimping tool** — Mechanism used for crimping.

## D

**Depth of crimp** — The distance the indenter penetrates into the barrel.

**Die Closure** — The gap between indenter dies at full handle closure. Usually defined by Go/No-Go dimensions.

**Dielectric** — A material having electrical insulating properties.

## E

**Environmentally sealed** — A device that is provided with gaskets, seals, grommets, potting or other means to keep out moisture, dirt air or dust which might reduce its performance. Does not include nonphysical environments such as RF and radiation.

**Extraction tool** — See removal tool.

## F

**Ferrule** — A short tube. Used to make connections to shielded or coaxial cables. Also used in connectors to reduce transmission of torque to grommet.



# GLOSSARY OF TERMS\*

**Flange, connector** — A projection extending from or around the periphery of a connector with provisions to permit mounting the connector to a panel.

**Filter contact** — A contact which provides R.F.I. suppression without altering its normal function.

**Front mounted** — A connector mounted on the outside of a panel or box with its mounting flange outside the equipment.

**Full cycle control** — Controls placed on the crimping cycle of crimping tools forcing the tool to be closed to its fullest extent completing the crimping cycle before the tool can be opened.

## G

**Grommet, connector** — An elastomeric seal used on the cable side of a connector to seal the connector against moisture, air and dirt.

**Grounding fingers** — A set of spring fingers provided in the connector to allow shell to shell grounding, before contacts mate and after they separate.

**Guide pin** — A pin or rod extending beyond the mating faces of a connector designed to guide the closing or mating of the connector to ensure proper engagement of contacts.

## H

**Head assembly** — A positioner or turret designed to attach to a crimping tool.

**Hermaphroditic connector** — A connector design which utilizes pin and socket contacts in a balanced arrangement such that both mating connectors are identical. The contacts may also be hermaphroditic, and may be arranged as male and female contacts as for pin and sockets. Hermaphroditic contacts may also be used in a manner such that one half of each contact mating surface protrudes beyond the connector interface and both mating connectors are identical.

**Hermaphroditic contact** — A contact design which is neither pin nor socket and which mates with other contact of the same design.

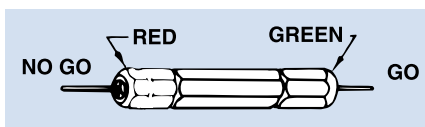
**Housing, connector, electrical** — Connector less insert, but with insert retaining and positioning hardware required by standard construction.

## I

**Indenter** — That part of a crimping die, usually the moving part, which indents or compresses the contact barrel.

**Insert, electrical connector** — An insulating element with or without contact(s), designed to position and support contacts in a connector.

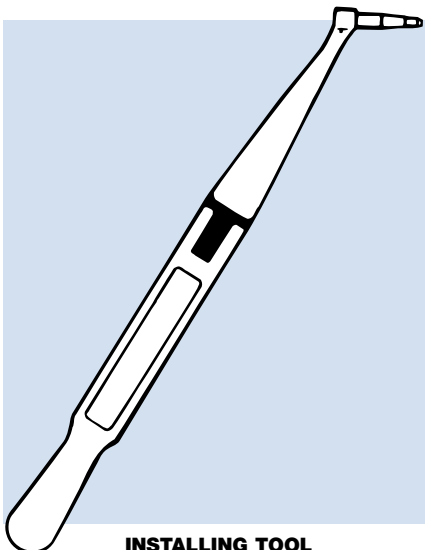
**Inspection gage** — It shall conform to the gaging limits specified on the applicable tool specification sheet.



INSPECTION GAGE

**Inspection hole** — A hole placed at the bottom end of a contact wire barrel to permit visual inspection to see that the conductor has been inserted to the proper depth in the barrel prior to crimping.

**Installing tool** — A device used to install contacts into a connector. A device used to install taper pins into taper pin receptacles.



INSTALLING TOOL

**Insulation displacement connector (IDC)** — An assembly process wherein an insulation piercing edge of the contact is pushed through the insulation and into contact with the wire by the assembly press. Most commonly used in mass termination applications.

**Insulation support** — The portion of a barrel similar to an insulation grip except that it is not compressed around the conductor insulation.

**Interface** — The two surfaces on the contact side of mating connectors or plug-in component and receptacle, which face each other when mated.

**Interfacial seal** — A sealing of mated connectors over the whole area of the interface to provide sealing around each contact.

## J

**Jacket** — The outermost layer of insulating material of a cable or wire.

**Jackscrew (screwlock)** — A screw attached to one half of a two piece multiple contact connector used to draw and hold both halves together and to separate them.

## K

**Key** — A short pin or other projection which slides in a mating slot, hole, groove or keyway to guide two parts being assembled. Generally used in shell-enclosed connectors to obtain polarization.

## L

**Lanyard** — A device attached to certain connectors which permits uncoupling and separation of connector halves by a pull on a wire or cable. Locator-Device for positioning terminals, splices, or contacts into crimping dies, positioner, or turret heads.

## M

**Mate** — The joining of two connectors.

**Millivolt drop test** — A test designed to determine the voltage loss due to resistance of a crimped joint.

## N

**Nest** — The portion of a crimping die which supports the barrel during crimping.

**Nick (notch)** — A cut or notch in conductor strands or insulation.

## P

**Pigtail** — A short wire extending from an electric or electronic device to serve as a jumper or ground connection.

**Pin contact** — A contact having an engagement end that enters the socket contact.

**Plating** — The overlaying of a thin coating of metal on metallic components to improve conductivity provide for easy soldering or prevent rusting or corrosion.

**Plug connector** — An electrical fitting consisting with pin, socket, or pin and socket contacts, constructed to be affixed to the end of a cable conduit, coaxial line, cord or wire for convenience in joining with another electrical connector(s), and not designed to be mounted on a bulkhead, chassis or panel.

**Polarize** — The arrangement of mating connectors such that the connector can be mated in only one way.

**Polarizing pin, key or keyway** — A device incorporated in a connector to accomplish polarization.

**Positioner** — A device when attached to a crimping tool locates the contact in the correct position.



POSITIONER

# GLOSSARY OF TERMS\*

**Potting** — The permanent sealing of the cable end of a connector with a compound or material to exclude moisture and/or to provide a strain relief.

**Power contact** — Type of contact used in multi-contact connectors to support the flow of rated current.

**Pull-out force** — Force necessary to separate a conductor from a contact or terminal or a contact from a connector by exerting a tensile pull.

## R

**Rack and panel** — The type of connector that is attached to a panel or side of equipment so that when these members are brought together, the connector is engaged.

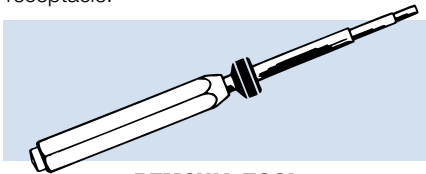
**Radio frequency contact (RF contact)** — An impedance matched shielded contact.

**Range, wire** — The sizes of conductors accommodated by a particular barrel. Also the diameters of wires accommodated by a sealing grommet.

**Ratchet control** — A device to ensure the full crimping cycle of a crimping tool.

**Receptacle, connector** — An electrical fitting with contacts constructed to be electrically connected to a cable, coaxial line, cord, or wire to join with another electrical connector(s) and is designed to be mounted on a bulkhead, wall, chassis, or panel.

**Removal tool** — A device used to remove a contact from a connector. A device used to remove a taper pin from a taper pin receptacle.



REMOVAL TOOL

## S

**Safety wire** — A means of safety wiring a plug and/or receptacle to prevent the loosening or vibrating free of the plug from the receptacle.

**Scoop-proof** — Scoop-proof means that because of the connector long shell design, it is impossible for the mating plug connector to inadvertently be cocked into the mating receptacle and damage the pins or electrically short the contacts.

**Sealing plug** — A plug which is inserted to fill an unoccupied contact aperture in a connector insert. Its function is to seal all unoccupied apertures in the insert, especially in environmental connectors.

**Seamless terminal or splice** — Terminal or splice conductor barrel made without an open seam.

**Selective plating** — The application of plating material to a limited portion of a connector contact, especially those areas susceptible to wear.

**Service rating** — The maximum voltage or current which a connector is designed to carry continuously.

**Shell, electrical connector** — The outside case of a connector into which the dielectric material and contacts are assembled.

**Shielded contact** — A contact which carries alternating current and is shielded from unwanted signals (RFI and EMI). Generally, these contacts are not impedance matched.

**Socket contact** — A contact having an engagement end that will accept entry of a pin contact.

**Solderless connection** — The joining of two metals by pressure means without the use of solder, braze, or any method requiring heat.

**Splice** — Device used to join two or more conductors to each other.

**Stop plate (see locator)** — A device attached to a crimping tool to properly locate a terminal, splice or contact in the tool prior to crimping.

**Strip** — To remove insulation from a conductor. (See details elsewhere in technical section of this cat.)

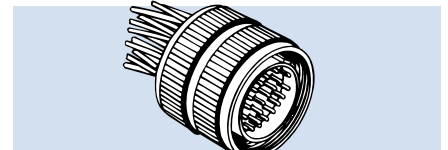
## T

**Taper pin** — A pin type contact having a tapered end designed to be impacted into a taper hole.

**Tensile testing** — A controlled pull test on the crimp joint to determine its mechanical strength.

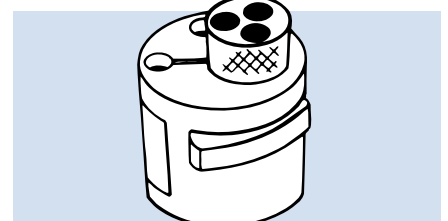
**Thermocouple contact** — Contact of special material used in connectors employed in thermocouple applications. Materials often used are iron, constantan, copper, chrome, alumel and others.

**Threaded coupling** — A means of coupling mating connectors by engaging threads in a coupling ring with threads on a receptacle shell.



THREADED COUPLING

**Turret Head** — A device that contains more than one locator which can be indexed by rotating a circular barrel, and when attached to a crimping tool, positions the contact.



TURRET HEAD

## Z

**Zero-force connector** — A connector in which the contact surfaces do not mechanically touch until it is completely mated thus requiring no insertion force. After mating the contacts are actuated in some fashion to make intimate electrical contact.

## Limited Warranty\*

Daniels Manufacturing Corporation warrants each new unit sold by it to be free from defects in material and workmanship under normal use and service. Its obligation under this warranty is limited to the free correction or, at its option, the refund of the purchase price of any such unit which proves defective within ninety (90) days after delivery to the first user, provided that the unit is returned to it with all transportation charges prepaid and which shall appear to its satisfaction, upon inspection by it, to have been defective in material or workmanship. This warranty shall not cover any damage to such products, which in the opinion of Daniels Manufacturing Corporation, was caused by normal wear, misuse, improper operation or accident.

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\* as defined by PL93-637



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