Circular Plastic Connector Sealing Accessories

Sealing Caps
for Receptacles only

Sealing caps are used to protect exposed contacts of unmated receptacles.

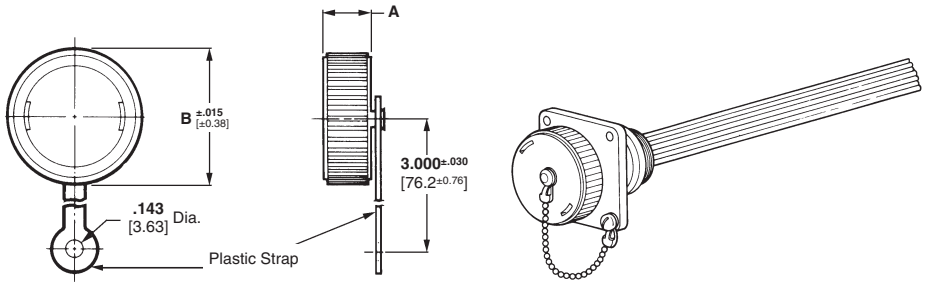
Material and Finish

Cap—Thermoplastic, heat stabilized, fire resistant, self-extinguishing, 94V-1 rated, black

Sealing Gasket—Neoprene, black

Bead Chain—Steel, nickel plated

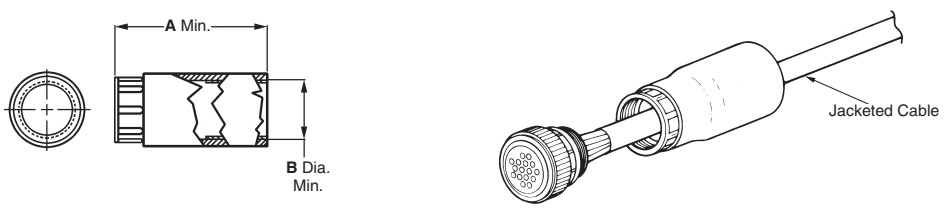
Bead Chain Coupling—Brass, plated nickel



Shell Size	Series	Dimensions A	Dimensions B	Plastic Strap Part No.	Metal Bead Chain Part No.
11	1 & 2	**.360** 9.14	**.927** 23.55	206903-1	208800-1
13	1	**.360** 9.14	**1.055** 26.80	211870-1	213485-1
17	1,2,& 3	**.360** 9.14	**1.295** 32.89	207445-1	208652-1
23	1, 3, & 4	**.460** 11.68	**1.728** 43.89	207446-1	208680-1
	2			207446-2	208680-2

Cable Entry Seals
Heat Shrinkable Sealing Boots

Cable entry seals are used with jacketed cable to provide an environmentally sealed wire-to-connector system. They can be used with either plugs or receptacles.



Thick Wall Boots

Material

Internal Sleeve—Nylon

Outer Tubing—Polyolefin, black

Shell Size	Dimensions A	Dimensions B	Expanded Wall Thickness	Sealing Range (Dia.)	Max. Recovered Inside Diameter	Part No.
11	**2.500** 63.50	**.625** 15.88	**.050** 1.27 Ref.	**.250 - .600** 6.35 - 15.24	**.160** 4.06	54010-4
					.250 6.35	54010-1
13	**2.500** 63.50	**.775** 19.68	**.060** 1.52 Ref.	**.250 - .375** 6.35 - 9.53	**.220** 5.59	54123-2
				.375 - .725 9.53- 18.42	**.300** 7.62	54123-1
17	**2.500** 63.50	**.975** 24.76	**.060** 1.52 Ref.	**.400 - .875** 10.16 - 22.22	**.375** 9.52	54011-1
	3.000 76.20					54011-3
23	**3.000** 76.20	**1.250** 31.75	**.070** 1.78 Ref.	**.550 - 1.250** 13.97 - 31.75	**.500** 12.70	54012-1

Thin Wall Boot

Material

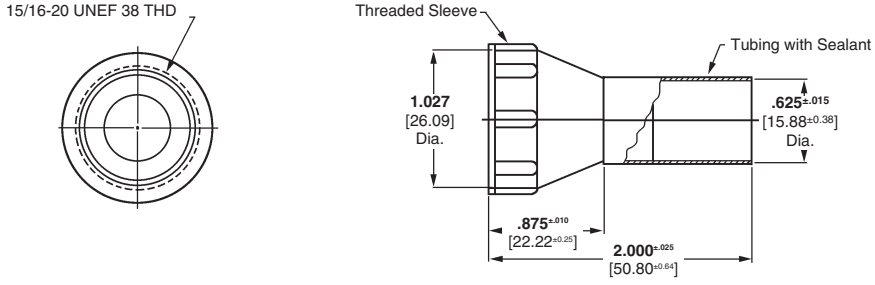
Inter Sleeve—Nylon

Outer Tubing—Polyolefin

Expanded Wall Thickness—.020 [0.51]

Max. Recovered Wall Thickness—.040 [10.16]

Sealing Range—.250 [6.35]-.500 [12.70] Dia.



Shell Size 17
Part No. 213933-1

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C. America: 57-1-254-4444

South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-208-420-8341

Note: All part numbers are RoHS Compliant.

Circular Plastic Connector Sealing Accesories (Continued)

Jacketed Cable Seals (for Shell Size 23)

A jacketed cable seal kit provides an environmentally sealed connection for jacketed cable.

Material

Peripheral Seal—Grey elastomer

Collar—Aluminum

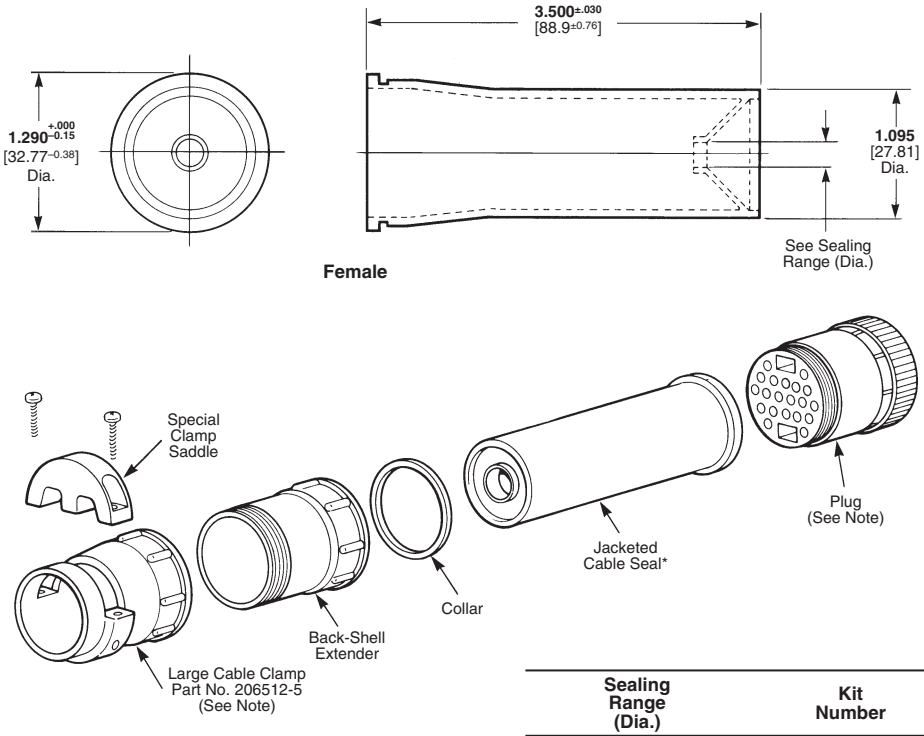
Jacketed Cable Seal—Black rubber

Back-Shell Extender—Black glass-filled thermoplastic

Special Clamp Saddle—Black thermoplastic

Note: Jacketed cable seals must be used with large cable clamps and can be used on plugs or receptacles. Large cable clamps are to be ordered separately (see page 38). Each jacketed cable seal kit includes:

- Peripheral Seal—to be discarded if kit is used on plug. Additional seals may be purchased (see page 51)
- Collar—provides bearing surface for back-shell extender
- Jacketed Cable Seal
- Back-Shell Extender
- Special Clamp Saddle—to be used in lieu of clamping insert supplied with large cable clamp



*Jacketed cable seal is pressed flush against rear connector face when back-shell extender is threaded onto rear of connector.

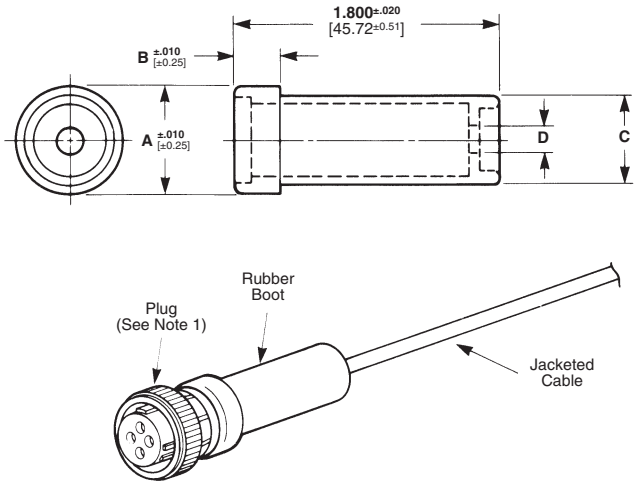
Sealing Range (Dia.)	Kit Number
.300-.450 7.62-11.43	207052-1
.450-.600 11.43-15.24	207052-2
.600-.875 15.24-22.22	207052-3

Rubber Boot

Rubber boots are used with jacketed cable to provide splash-proof connections for Series 1 and Series 3 connectors. (Not for Metal Shell Connectors.)

Material

Black neoprene



Shell Size	Cable Dia. Sealing Range	Dimensions A	B	C	D	Part No.
11	**.219-.438** 5.56-11.13	**.750** 19.05	**.300** 7.62	**.600** 15.24	**.170** 4.32	206304-1

Notes: 1. Rubber boots are recommended for use with jacketed cable and can be used on plugs or receptacles, except Series 2 connectors.
2. For detailed performance data on rubber boots, refer to Product Specification No. 108-10024.

Catalog 82021
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Japan: 81-44-844-8013
UK: 44-208-420-8341

Note: All part numbers are RoHS Compliant.

Circular Plastic Connector Sealing Accesories (Continued)

Flexible Cable Protection System

Product Facts

- **For cables that require better protection**
- **Fittings allow more reliable connections to be made**
- **Sealed fittings enhance reliability of machinery operating under many extreme environmental conditions encountered in manufacturing and construction industries**
- **High-quality, complete systems are available combining innovative technology with rapid in-stock availability**
- **Conforms with the latest industry standards**
- **Recognized under the Component Program of Underwriters Laboratories Inc. on applied products as marked.**
- **Certified by Canadian Standards Association on applied products as marked.**
- **Certified by VDE on applied products as marked.**

Related Product Data

Catalog 1654227
Identification Products

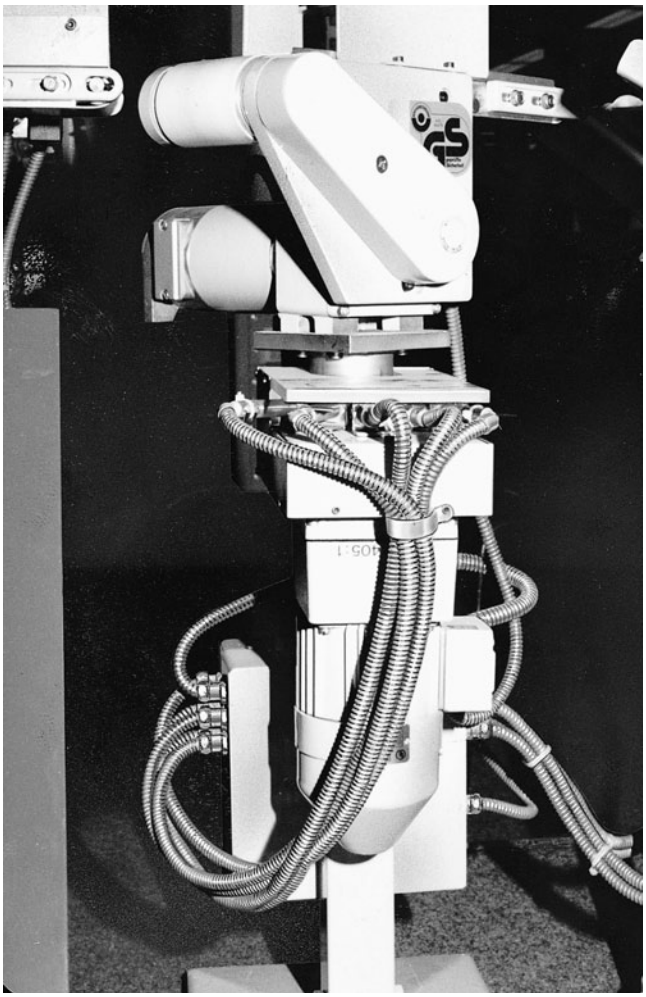
Technical Documents

Product Specifications

108-1696 FLEXAgraff Metal Conduits
108-1696-1 ROHRflex Plastic Tubing
108-1696-2 AIRflex Plastic Conduits

Application Specifications

114-18274 FLEXAgraff-**AS**, **-PU-AS**, **-ME-ASF** Metal Conduits
114-18275 FLEXAgraff-**CU** Metal Conduits
114-18276 AIRflex-**KUW-PU** Plastic Conduits
114-18277 ROHRflex-**PA 6**, ROHRflex-**PA 6 S**, ROHRflex-**PA 12** Plastic Tubing



Typical Industrial Application

Circular Plastic Connectors (CPC) / FLEXAquick-System Selection Aid

CPC Shell Size	Female ROHRflex quick Connector	ROHRflex-PA 6 Plastic Tubing	Male ROHRflex quick Connector	Male ROHRflex quick Elbow Connector	Counternut	Flat Sealing Washer
11	1-969807-2	969789-2	969803-2	969817-2	796260-2	796257-2
13	1-969809-3	969789-3	969803-3	969817-3	796260-3	796257-7
17	1-969811-4	969789-4	969803-4	969817-4	796260-5	796257-8
23	2-969813-5	969789-5	969803-5	969817-5	796260-6	796257-9

NOTE:
Request Flexible Cable Protection System Catalog 1307244.

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UK: 44-208-420-8341

Note: All part numbers are RoHS Compliant.

Engineering Notes

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UK: 44-208-420-8341

Note: All part numbers are RoHS Compliant.

MIL-C-5015 Style Circular Plastic Connectors (CPC)

Product Facts

- **Intermateable with other manufacturers' Metal-Shell Sizes 20-14 and 18-10, MIL-C-5015 Style Connectors**
- **High impact resistant plastic housing**
- **Lighter weight**
- **Lower cost**
- **Industry accepted, Type III+ pin and socket contacts, available on reels in strip-form for high volume, low cost, automatic machine terminations**
- **Contacts also available in loose piece form for low volume, prototype or maintenance and repair**
- **Housing designed to prevent mismating with other insert arrangements**
- **Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476**
- **Certified by Canadian Standards Association, File No. LR 7189**

This new addition to the AMP Circular Plastic Connector Line is specifically designed to be intermateable with other manufacturers' Metal-Shell sizes 20-14 and 18-10, MIL-C-5015 Style Connector Systems. The high impact resistant plastic housing offers the advantages of lighter weight and lower cost than existing metal shell connectors. In addition, the connector design prevents mismating when used with other insert arrangements. As part of the AMP Multimate Family of Connectors, the MIL-C-5015 style connector offers the additional economies of crimp Type III+ Pin and Socket contacts in reel-mounted, strip-form for high volume automatic machine termination, as well as in loose piece form for low volume, prototype or maintenance and repair.

Technical Documents

Application Specification
114-10004 Contacts, Type III+

Product Specifications
108-10024 CPC Connectors
108-10042 Contacts, Type III+

Instruction Sheets

408-7582	Accessories for CPC Connectors
408-7592-A	Improved Strain Relief Clamps for CPC Connectors
408-7593	CPC Connectors

Note: All part numbers are RoHS Compliant.

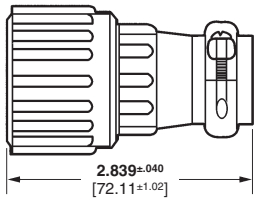
MIL-C-5015 Style Circular Plastic Connectors (CPC), Shell Size 20-14

Plug Kit, Unassembled

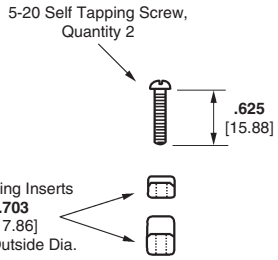
Reverse Sex (Accepts pins)
Part Number 213571-2
without Cable Clamp

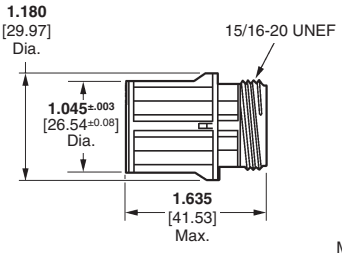
Standard Sex (Accepts sockets)
Part Number 213652-1
without Cable Clamp

Cable Clamps		O.D.
Part No.	Type	Max.
206070-8	standard	.453 [11.51]
206322-9	large	.703 [17.86]

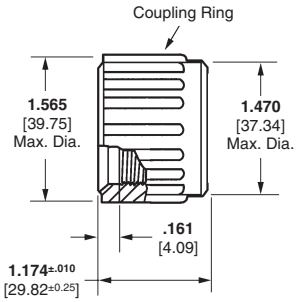


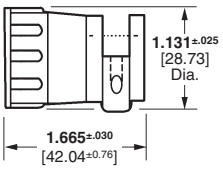
Assembled with Cable Clamp

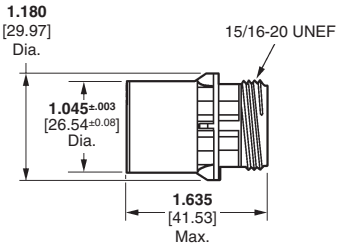




Standard Sex





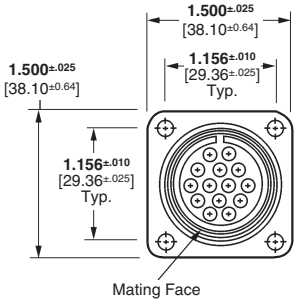


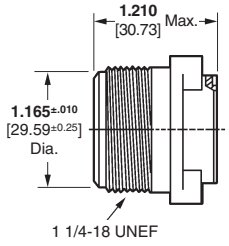
Reverse Sex

Receptacle, Square Flange

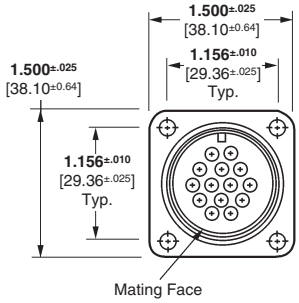
Reverse Sex (Accepts sockets)
Part Number 213570-1

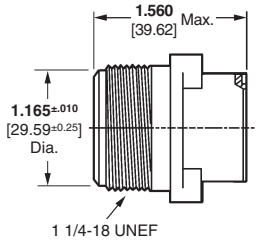
Standard Sex (Accepts pins)
Part Number 213651-1



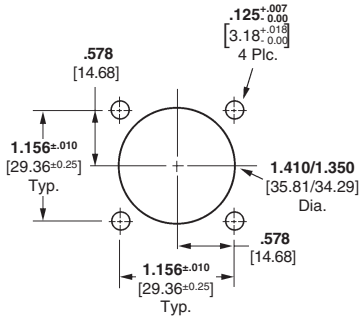


Reverse Sex





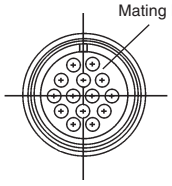
Standard Sex

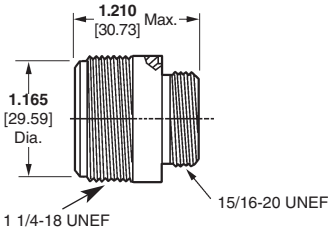


Panel Cutout

Receptacle, Free-Hanging

Reverse Sex (Accepts sockets)
Part Number 213650-1





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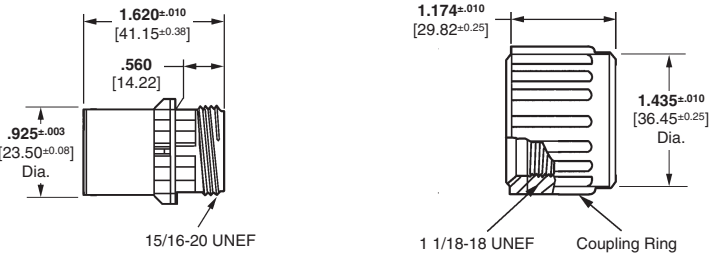
UK: 44-208-420-8341

Note: All part numbers are RoHS Compliant.

MIL-C-5015 Style Circular Plastic Connectors (CPC), Shell Size 18-10

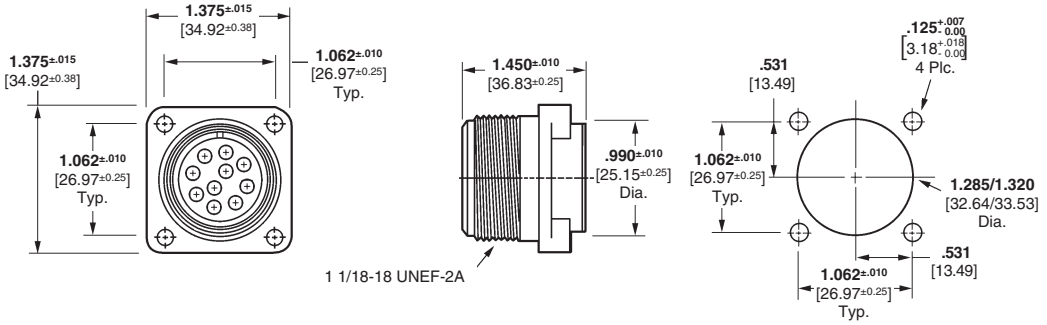
Plug Kit, Unassembled

Reverse Sex (Accepts pins)
Part Number 213671-1
without Cable Clamp



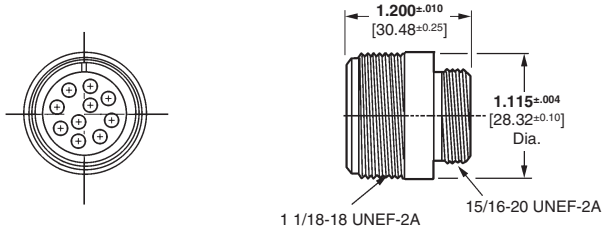
Receptacle, Square Flange

Reverse Sex (Accepts sockets)
Part Number 213667-1



Receptacle, Free-Hanging

Reverse Sex (Accepts sockets)
Part Number 213668-1



Type III+ Contacts

Material

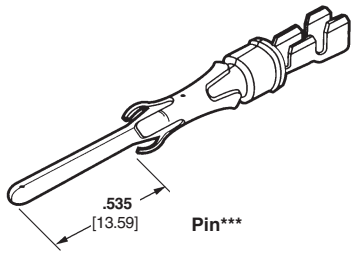
Contact—Brass
Spring—Stainless Steel

Contact Finish

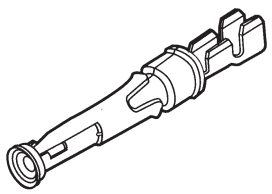
A—.000030 [0.00076] gold on the electrical engagement area over .000030 [0.00076] min. nickel
B—Tin

Related Product Data

Application Tooling—Pages 76-79



Pin***



Socket

Wire Size Range AWG	Wire Size Range mm²	Ins. Dia. Range	Contact Finish Code	Strip Form Contact No. Pin	Strip Form Contact No. Socket	Loose Piece Contact No. Pin	Loose Piece Contact No. Socket	Strip Form Applicator	Hand Tool Part No.
24-20	0.2-0.6	**.060-.135** 1.52-3.43	B	213605-7	1-66563-1	—	66565-7	567363-□††	91542-1[5]
			A	—	66563-8	—	66565-4		
18-14	0.8-2	**.110-.150** 2.79-3.81	B	213603-5	66598-9	213603-6	66601-9	466958-1†† (for Sockets) or 567364-□†† or 567834-1†† (for Sockets)	91521-1[5]
			A	213603-3	66598-2	213603-4	66601-2		

††**Note:** Applicators for AMP semiautomatic or fully-automatic termination equipment are available. Contact Technical Support.
***MIL-C-5015 style connectors require a longer Multimate pin contact. This contact is .145 [3.68] longer than the standard Multimate pin contacts. It is **not** for use in other Multimate connectors, socket contacts are standard Multimate Type III+ contacts.
Extraction Tool Part No. 305183
Note: Gold-plated contacts should not be mated with tin or silver plated contacts.
[5]To use with the 626 Pneumatic Tool System: remove the crimping head from the Straight Action Hand Tool (SAHT) Assembly, order SAHT Adapter **Part No 217201-1**, Adapter Holder **Part No. 356304-1** (with ratchet) or **189928-1** (without), and Power Unit **Part No. 189721-1** (hand actuated) or **189722-1** (foot actuated).

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Note: All part numbers are RoHS Compliant.

Engineering Notes

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Note: All part numbers are RoHS Compliant.

Metal-Shell Circular Plastic Connectors

Product Facts

- **Economical combination of thermoplastic UL 94V-0 rated connector housings and metal shells**
- **Available in three sizes:**
  - **Series 1–Accepts Multimate contacts, shell sizes 14-5, 14-7, 22-16, 28-24, and 28-37 standard sex; 14-5, 14-7, 22-14, and 28-37 reverse sex**
  - **Series 2–Accepts 20 DF and 20 DM contacts, shell sizes 22-28 and 28-63 standard sex; 22-28 and 28-57 reverse sex**
  - **Series 3–Accepts Type XII power contacts, shell sizes 22-3 and 28-7 standard and reverse sex**
- **Series 4–Accepts Multimate contacts, and Type XII power contacts, shell size 28-16M and 28-22M standard sex**
- **Compatible with MIL Spec metal housing type connectors**
- **Choice of application tooling to meet all production requirements**

AMP Metal-Shell Circular Plastic Connectors offer the reliability of higher priced all metal connectors at a fraction of the cost, and are offered in the more popular contact configurations.

Connector housings are made of lightweight, sturdy, thermoplastic material that are UL 94V-0 rated, with zinc alloy, nickel plated shells for added strength and protection. These connectors are available in a variety of configurations to meet your signal, low current and high current requirements. Operating temperatures range from -55°C to +125°C [-67˚F to +257˚F].

Signal and low current is provided by a choice of AMP Multimate contacts: .062 [1.57] pin diameter and 20 DF and 20 DM contacts, .040 [1.02] pin diameter. High current requirements are met by the Type XII capable of carrying up to 35 amperes of current.

These quick connect/ disconnect circular connectors feature polarized housings to prevent mismating with other insert arrangements.

AMP Metal-Shell Circular Plastic Connectors are available in square flange receptacles and free-hanging plug connectors.

For additional economy, industry accepted AMP Type III+ pin and socket contacts are available on reels in strip-form for high volume, low cost, automatic machine terminations. For low volume, prototype or maintenance and repair Type III+ contacts are also available in loose piece form.

Catalog 82021
Revised 7-07

www.tycoelectronics.com

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USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 52-55-1106-0800
C. America: 57-1-254-4444

South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-208-420-8341

Note: All part numbers are RoHS Compliant.

Metal-Shell Circular Plastic Connectors, Series 1

Metal-Shell CPC Connectors, Series 1, Standard Sex

Listed part numbers are for connectors only; **contacts must be ordered separately.**

Material and Finish

Square Flange Receptacle—
Housing—Thermoplastic, UL 94V-0 rated, black
Metal-Shell—Zinc alloy, plated nickel
Grooved Pin—Steel alloy, plated nickel

Plug—
Housing—Thermoplastic, UL 94V-0 rated, black
Metal-Shell—Zinc alloy, plated nickel
Tetraseal Seal—Fluorocarbon
Retainer Ring—Stainless steel
Coupling Ring—Zinc alloy, plated nickel

Related Product Data

Contacts—Pages 17-21
Contact Arrangement—Page 61
Component Dimensions—Page 70
Accessories—Page 71
Performance Characteristics—Page 6
Application Tooling—Pages 76-79
Technical Documents—Page 80

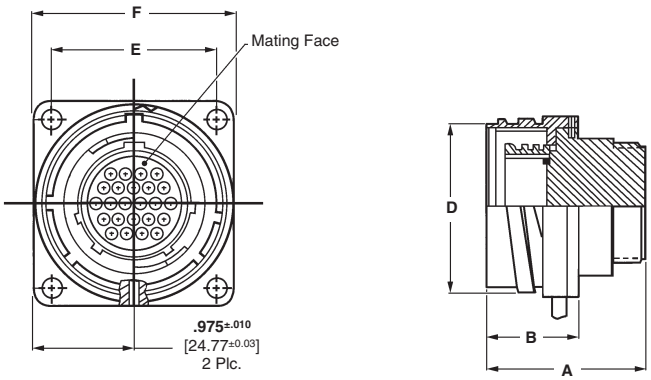
TETRASEALS Ring

(Installed in plugs only.)

The TETRASEALS Ring provides splash-proof sealing between mating metal shells. It is located behind the plug shell external keys (under the coupling ring). When mated with a receptacle, the ring is compressed against the inside diameter of the mating end edge of the receptacle shell.

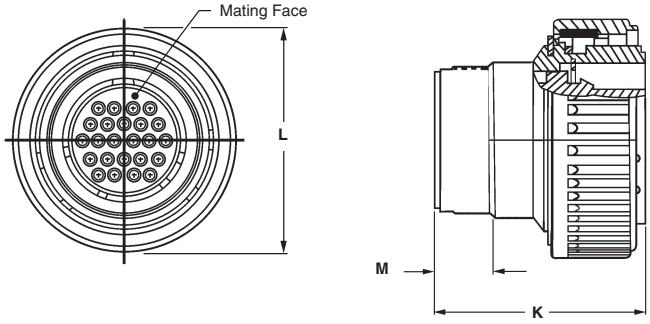
Square Flange Receptacles

(Accepts Multimate Pins)



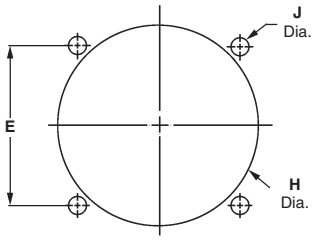
Plugs

(Accepts Multimate Sockets)

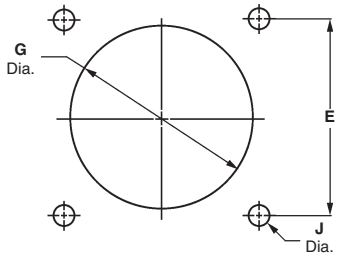


Arrangement	Square Flange Receptacle	Plug Part No.	
		without TETRASEALS Ring	with TETRASEALS Ring
14-5	208719-1	208718-1	208718-2
14-7	208715-1	208714-1	208714-2
22-16	208489-1	208488-1	208488-3
28-24	208459-1	208457-1	208457-3
28-37	208471-1	208470-1	208470-3

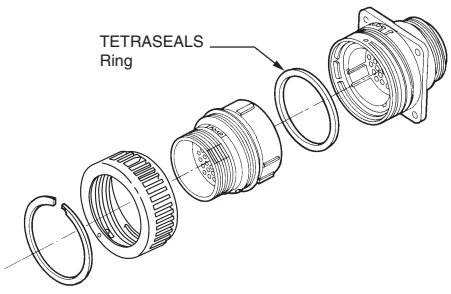
Note: Maximum wire insulation diameter is .100 [2.54], except arrangements 14-5 and 28-24 are .150 [3.81] max.



Rear Mount Panel Cutout



Front Mount Panel Cutout



Catalog 82021
Revised 7-07

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South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-208-420-8341

Note: All part numbers are RoHS Compliant.

Metal-Shell Circular Plastic Connectors, Series 1 (Continued)

Metal-Shell CPC Connectors, Series 1, Reverse Sex

Listed part numbers are for connectors only; **contacts must be ordered separately.**

Material and Finish

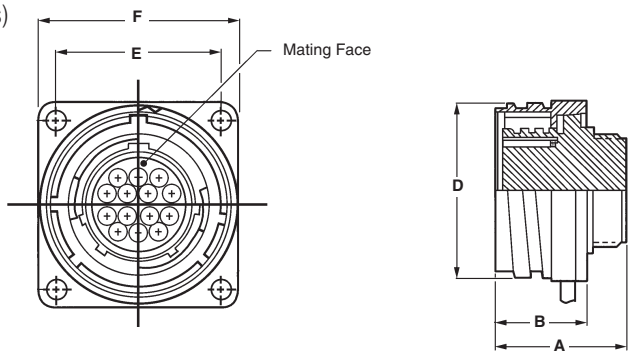
Square Flange Receptacle—
Housing—Thermoplastic, UL 94V-0 rated, black
Metal-Shell—Zinc alloy, plated nickel
Grooved Pin—Steel alloy, plated nickel

Plug—
Housing—Thermoplastic, UL 94V-0 rated, black
Metal-Shell—Zinc alloy, plated nickel
Tetraseal Seal—Fluorocarbon
Retainer Ring—Retainer Ring
Coupling Ring—Zinc alloy, plated nickel

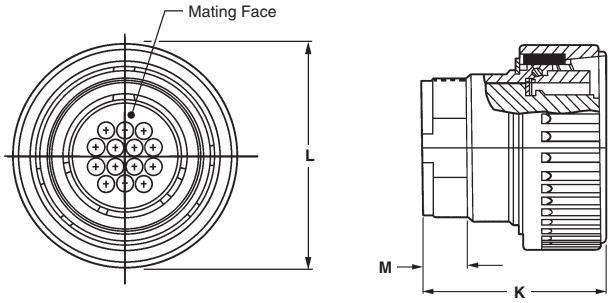
Related Product Data

Contacts—Pages 17-21
Contact Arrangement—Page 61
Component Dimensions—Page 70
Accessories—Page 71
Performance Characteristics—Page 6
Application Tooling—Pages 76-79
Technical Documents—Page 80

Square Flange Receptacles
(Accepts Multimate Sockets)

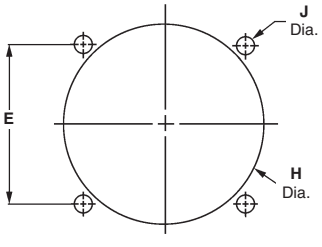


Plugs
(Accepts Multimate Pins)

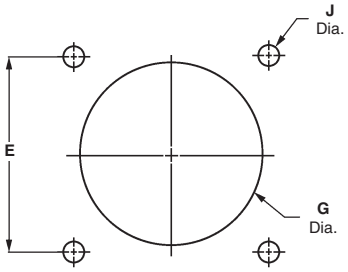


Arrangement	Square Flange Receptacle	Plug Part No.	
		without TETRASEALS Ring	with TETRASEALS Ring
14-5	208721-1	208720-1	—
14-7	208717-1	208716-1	208716-2
22-14	208487-1	208486-1	208486-3
28-37	208473-1	208472-1	208472-3

Note: Maximum wire insulation diameter is .100 [2.54], except arrangements 14-5 and 28-24 are .150 [3.81] max.



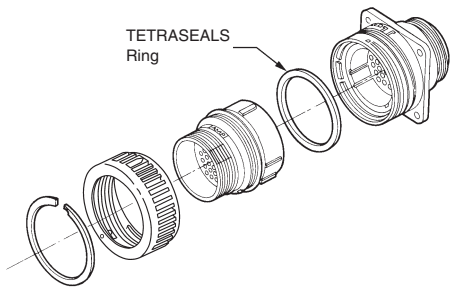
Rear Mount Panel Cutout



Front Mount Panel Cutout

TETRASEALS Ring
(Installed in plugs only.)

The TETRASEALS Ring provides splash-proof sealing between mating metal shells. It is located behind the plug shell external keys (under the coupling ring). When mated with a receptacle, the ring is compressed against the inside diameter of the mating end edge of the receptacle shell.



Catalog 82021
Revised 7-07

www.tycoelectronics.com

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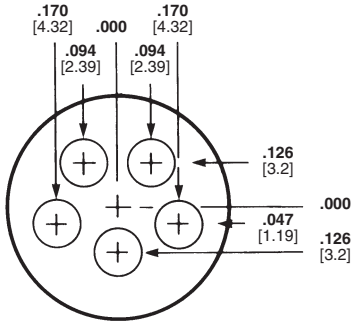
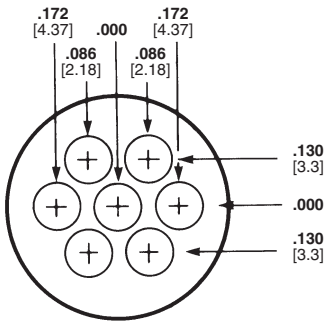
Japan: 81-44-844-8013
UK: 44-208-420-8341

Metal-Shell CPC Connectors, Series 1, Contact Arrangements

Shell Size 14

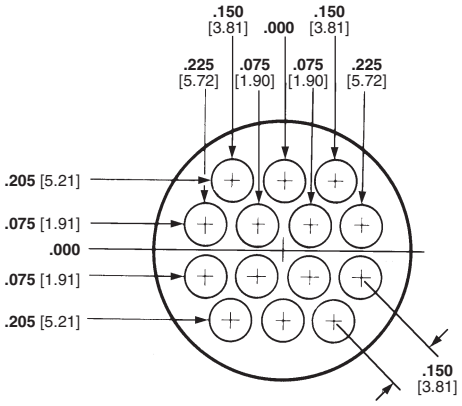


Arrangement 14-5
Max. Wire Ins. Dia. = .150 [3.81]

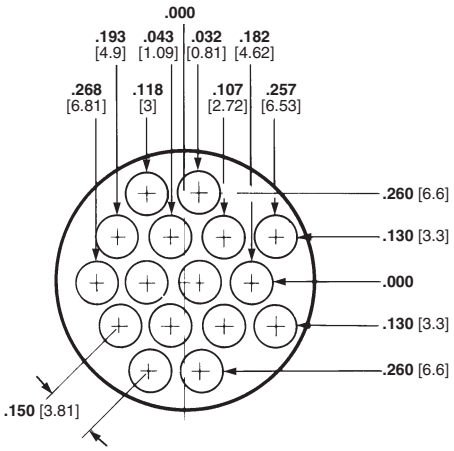


Arrangement 14-7
Max. Wire Ins. Dia. = .100 [2.54]

Shell Size 22



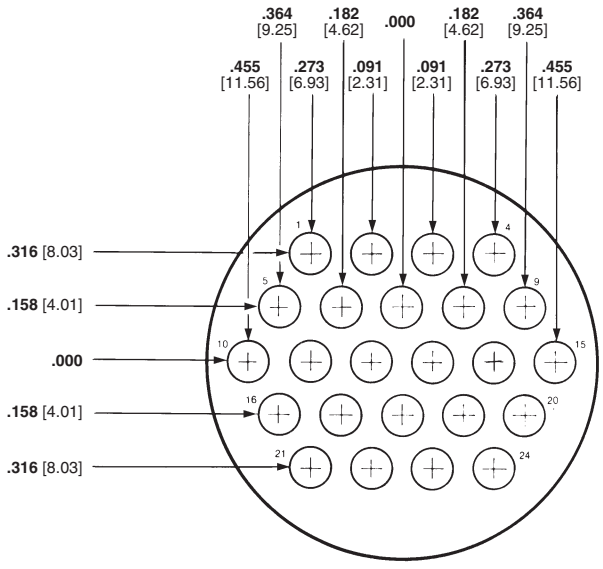
Arrangement 22-14
Max. Wire Ins. Dia. = .100 [2.54]



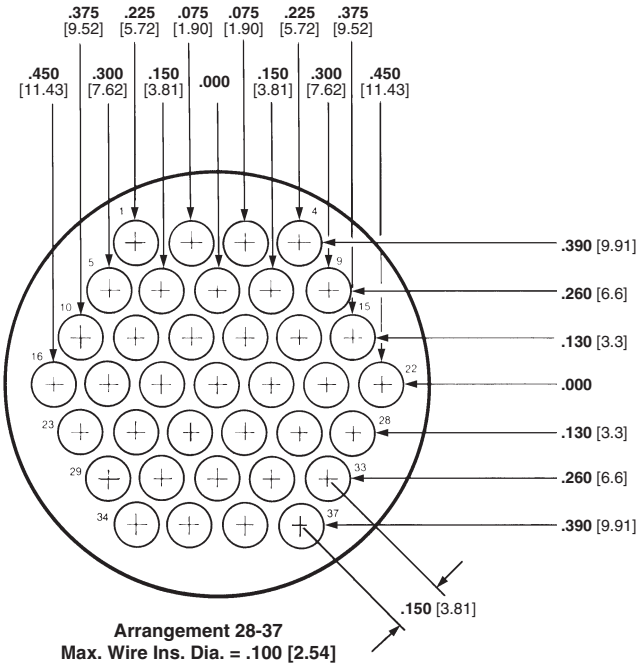
Arrangement 22-16
Max. Wire Ins. Dia. = .100 [2.54]

Note: Contact arrangements shown are of pin mating face (plug or receptacle). Socket mating face is mirror image.

Shell Size 28



Arrangement 28-24
Max. Wire Ins. Dia. = .150 [3.81]



Arrangement 28-37
Max. Wire Ins. Dia. = .100 [2.54]

Catalog 82021
Revised 7-07

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Metal-Shell Circular Plastic Connectors, Series 2

Metal-Shell CPC Connectors, Series 2, Standard Sex

Listed part numbers are for connectors only; **contacts must be ordered separately.**

Material and Finish

Square Flange Receptacle—
Housing and Retention Insert—Thermoplastic, UL 94V-0 rated, black
Metal-Shell—Zinc alloy, plated nickel
Grooved Pin—Steel alloy, plated nickel

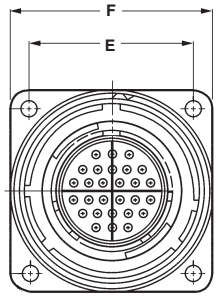
Plug—
Housing—Thermoplastic, UL 94V-0 rated, black
Metal-Shell—Zinc alloy, plated nickel
Tetraseal Seal—Fluorocarbon
Retainer Ring—Stainless steel
Coupling Ring—Zinc alloy, plated nickel

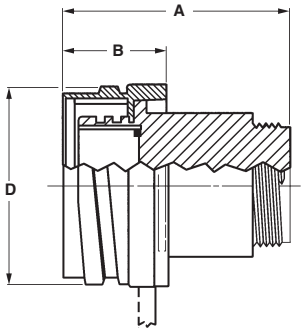
Related Product Data

Contacts—Pages 29-30
Contact Arrangement—Page 64
Component Dimensions—Page 70
Accessories—Pages 38, 39 and 71
Performance Characteristics—Page 6
Application Tooling—Pages 76-79
Technical Documents—Page 80

Square Flange Receptacles

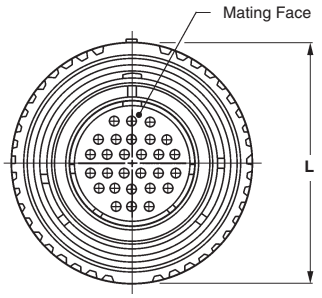
(Accepts 20 DF and 20 DM Pins)

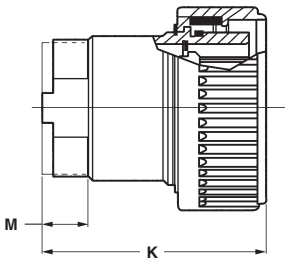




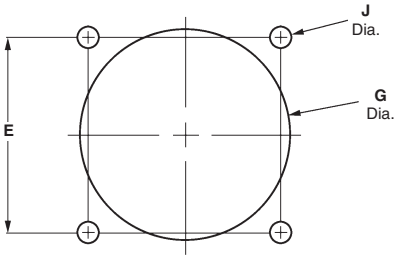
Plugs

(Accepts 20 DF and 20 DM Sockets)





Arrangement	Part No.	
	Square Flange Receptacle	Plug without Tetraseals Ring
22-28	208491-1	208490-1
28-63	208477-1	208476-1



Recommended Panel Cutout

Catalog 82021
Revised 7-07

www.tycoelectronics.com

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UK: 44-208-420-8341

Note: All part numbers are RoHS Compliant.

Metal-Shell Circular Plastic Connectors, Series 2 (Continued)

Metal-Shell CPC Connectors, Series 2, Reverse Sex

Listed part numbers are for connectors only; **contacts must be ordered separately.**

Material and Finish

Square Flange Receptacle—
Housing and Retention Insert—Thermoplastic, UL 94V-0 rated, black
Metal-Shell—Zinc alloy, plated nickel
Grooved Pin—Steel alloy, plated nickel

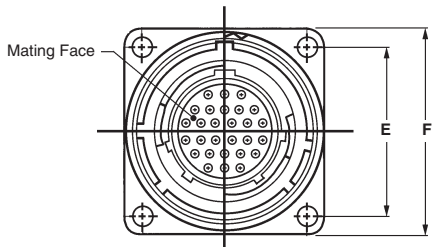
Plug—
Housing—Thermoplastic, UL 94V-0 rated, black
Metal-Shell—Zinc alloy, plated nickel
Tetraseal Seal—Fluorocarbon
Retainer Ring—Stainless steel
Coupling Ring—Zinc alloy, plated nickel

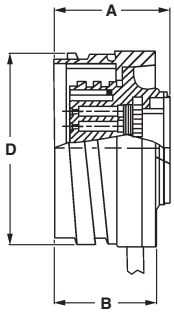
Related Product Data

Contacts—Pages 29-30
Contact Arrangement—Page 64
Component Dimensions—Page 70
Accessories—Pages 38, 39 and 71
Performance Characteristics—Page 6
Application Tooling—Pages 76-79
Technical Documents—Page 80

Square Flange Receptacles

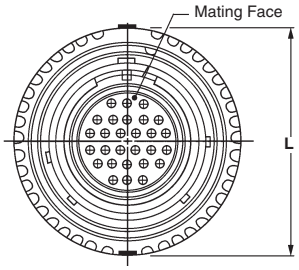
(Accepts 20 DF and 20 DM Sockets)

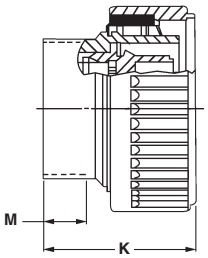




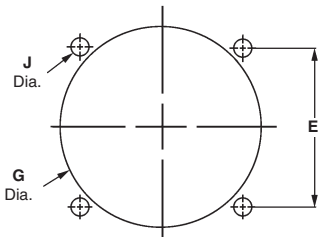
Plugs

(Accepts 20 DF and 20 DM Pins)

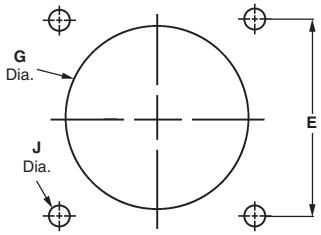




Arrangement	Part No.	
	Square Flange Receptacle	Plug without Tetraseals Ring
22-28	208493-1	208492-1
28-57	208475-1	208474-1



Rear Mount Panel Cutout



Front Mount Panel Cutout

Catalog 82021
Revised 7-07

www.tycoelectronics.com

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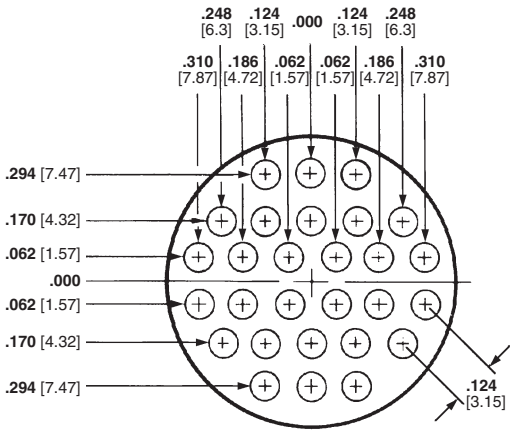
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-208-420-8341

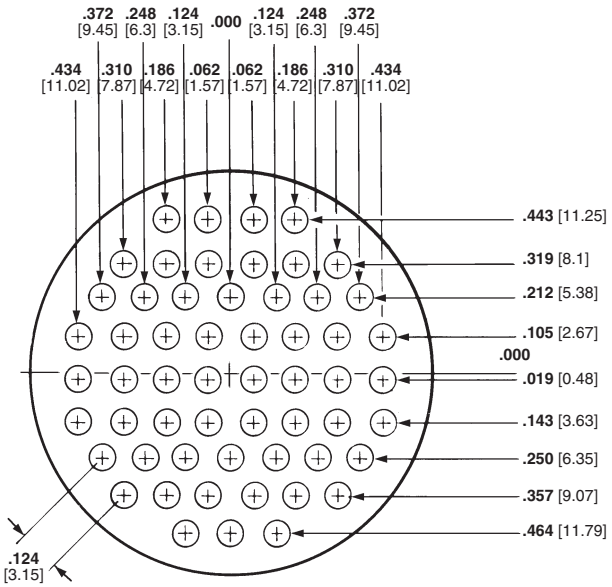
Metal-Shell CPC Connectors, Series 2, Contact Arrangements

Shell Size 22

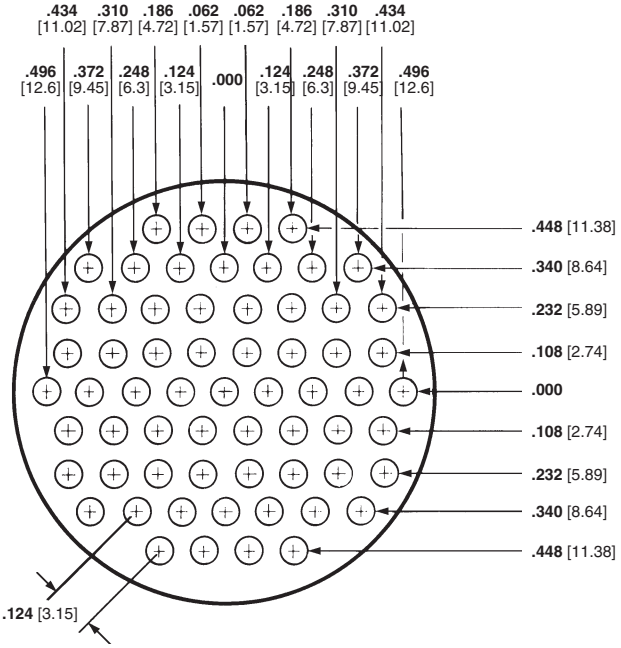


Arrangement 22-28
Max. Wire Ins. Dia. = .068 [1.73]

Shell Size 28



Arrangement 28-57
Max. Wire Ins. Dia. = .068 [1.73]



Arrangement 28-63
Max. Wire Ins. Dia. = .068 [1.73]

Note: Contact arrangements shown are of pin mating face (plug or receptacle). Socket mating face is mirror image.

Catalog 82021
Revised 7-07

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Japan: 81-44-844-8013
UK: 44-208-420-8341

Note: All part numbers are RoHS Compliant.

Metal-Shell Circular Plastic Connectors, Series 3

Metal-Shell CPC Connectors, Series 3, Standard Sex

Listed part numbers are for connectors only; **contacts must be ordered separately.**

Material and Finish

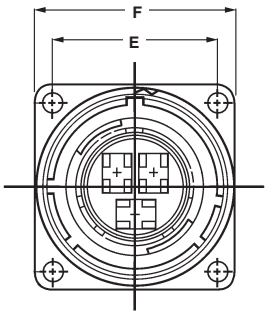
Square Flange Receptacle—
Housing—Thermoplastic, UL 94V-0 rated, black
Metal-Shell—Zinc alloy, plated nickel
Peripheral Seal—Elastomer, grey
Grooved Pin—Stainless steel

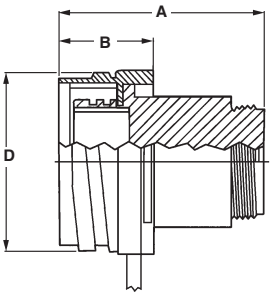
Plug—
Housing—Thermoplastic, UL 94V-0 rated, black
Metal-Shell—Zinc alloy, plated nickel
Tetraseal Seal—Fluorocarbon
Retainer Rings—Stainless Steel
Coupling Ring—Zinc alloy, plated nickel

Related Product Data

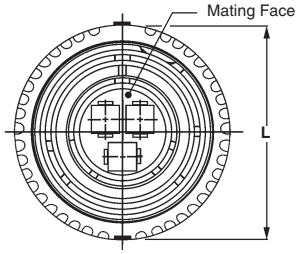
Contacts—Page 34-35
Contact Arrangement—Page 67
Component Dimensions—Page 70
Accessories—Pages 38, 39 and 71
Performance Characteristics—Page 6
Application Tooling—Pages 76-79
Technical Documents—Page 80

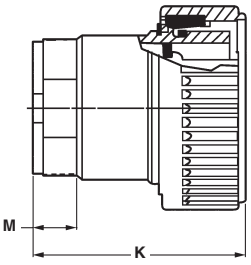
Square Flange Receptacles
(Accepts Type XII Male Pins)



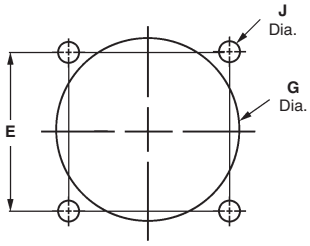


Plugs
(Accepts Type XII Female Sockets)





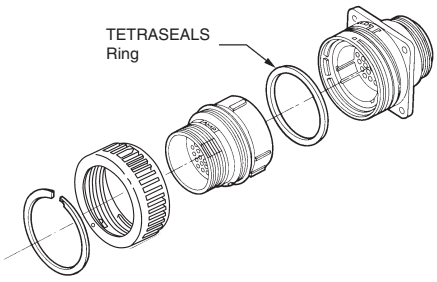
Arrangement	Square Flange Receptacle	Plug Part No.	
		without TETRASEALS Ring	with TETRASEALS Ring
22-3	208495-1	208494-1	208494-3
28-7	208483-1	208482-1	—



Recommended Panel Cutout

TETRASEALS Ring
(Installed in Plugs only)

The TETRASEALS Ring provides splash-proof sealing between connector metal-shells. It is located behind the plug-shell external keys (under the coupling ring). When mated with a receptacle, the ring is compressed against the inside diameter of the mating end edge of the receptacle shell.



Catalog 82021
Revised 7-07

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Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 52-55-1106-0800
C. America: 57-1-254-4444

South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-208-420-8341

Note: All part numbers are RoHS Compliant.

Metal-Shell Circular Plastic Connectors, Series 3 (Continued)

Metal-Shell CPC Connectors, Series 3, Reverse Sex

Listed part numbers are for connectors only; **contacts must be ordered separately.**

Material and Finish

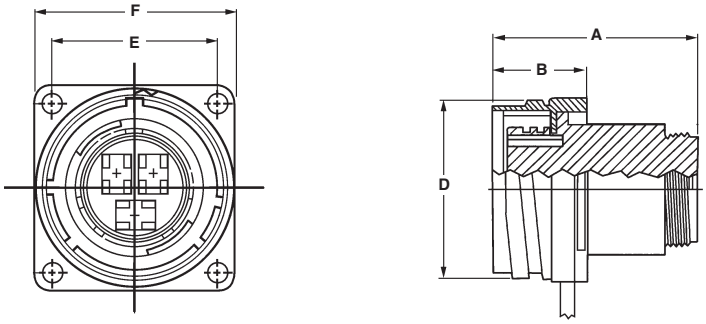
Square Flange Receptacle—
Housing—Thermoplastic, UL 94V-0 rated, black
Metal-Shell—Zinc alloy, plated nickel
Peripheral Seal—Elastomer, grey
Grooved Pin—Stainless steel

Plug—
Housing—Thermoplastic, UL 94V-0 rated, black
Metal-Shell—Zinc alloy, plated nickel
Tetraseal Seal—Fluorocarbon
Retainer Rings—Stainless Steel
Coupling Ring—Zinc alloy, plated nickel

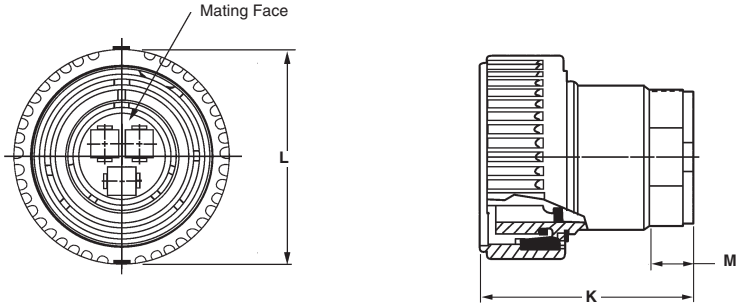
Related Product Data

Contacts—Page 34-35
Contact Arrangement—Page 67
Component Dimensions—Page 70
Accessories—Pages 38, 39 and 71
Performance Characteristics—Page 6
Application Tooling—Pages 76-79
Technical Documents—Page 80

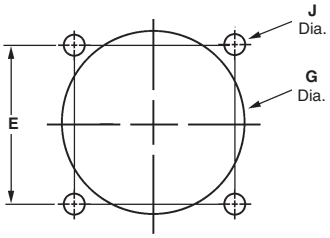
Square Flange Receptacles
(Accepts Type XII Female Sockets)



Plugs
(Accepts Type XII Male Pins)



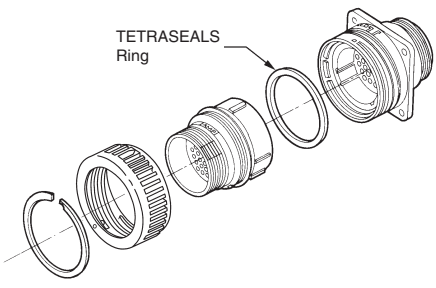
Arrangement	Square Flange Receptacle	Plug Part No.	
		without TETRASEALS Ring	with TETRASEALS Ring
22-3	208497-1	208496-1	—
28-7	208485-1	208484-1	208484-3



Recommended Panel Cutout

TETRASEALS Ring
(Installed in Plugs only)

The TETRASEALS Ring provides splash-proof sealing between connector metal-shells. It is located behind the plug-shell external keys (under the coupling ring). When mated with a receptacle, the ring is compressed against the inside diameter of the mating end edge of the receptacle shell.



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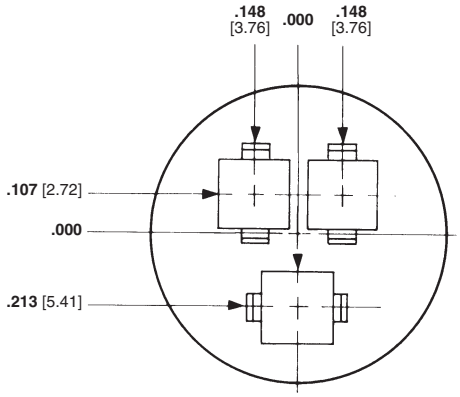
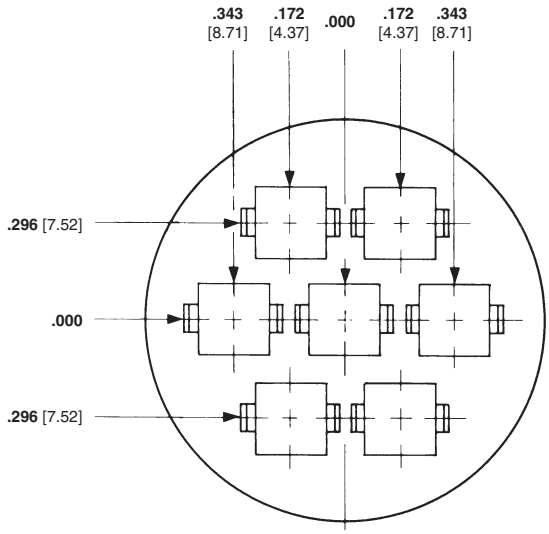
Metal-Shell CPC Connectors, Series 3, Contact Arrangements

Shell Size 22



Arrangement 22-3
Max. Wire Ins. Dia. = .220 [5.59]

Shell Size 28



Arrangement 28-7
Max. Wire Ins. Dia. = .220 [5.59]

Note: Contact arrangements shown are of pin mating face (plug or receptacle). Socket mating face is mirror image.

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UK: 44-208-420-8341

Metal-Shell Circular Plastic Connectors, Series 4

Metal-Shell CPC Connectors, Series 4

Listed part numbers are for connectors only; **contacts must be ordered separately.**

Material and Finish

Square Flange Receptacle—
Housing—Thermoplastic, UL 94V-0 rated, black
Metal-Shell—Zinc alloy, plated nickel
Grooved Pin—Stainless steel

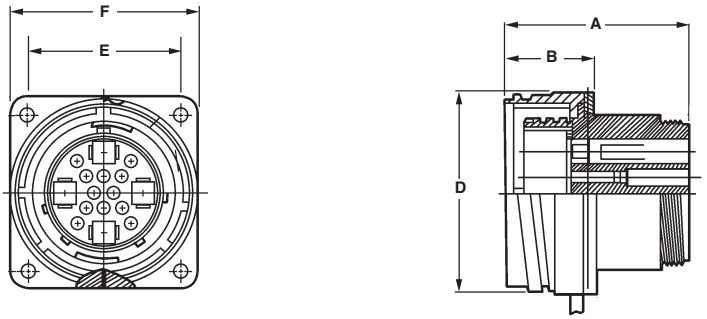
Plug—
Housing—Thermoplastic, UL 94V-0 rated, black
Metal-Shell—Zinc alloy, plated nickel
Tetraseal Seal—Fluorocarbon
Retainer Rings—Stainless Steel
Coupling Ring—Zinc alloy, plated nickel

Related Product Data

Contacts—Pages 17-23 and 34-35
Contact Arrangement—Page 69
Component Dimensions—Page 70
Accessories—Pages 38, 39 and 71
Performance Characteristics—Page 6
Application Tooling—Pages 76-79
Technical Documents—Page 80

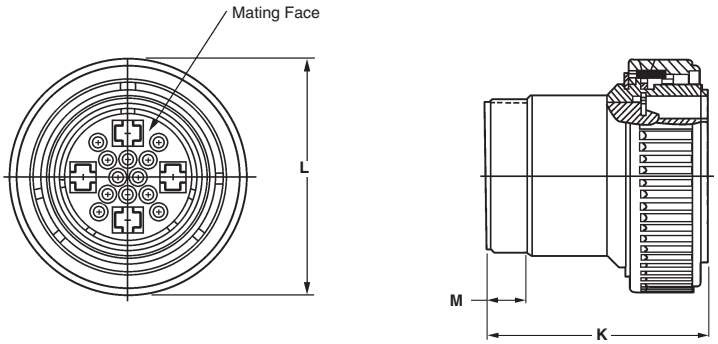
Square Flange Receptacles

(Standard Sex Receptacles accept Type XII Male and Multimate Pins. Reverse Sex Receptacles accept Type XII Female and Multimate Sockets.)

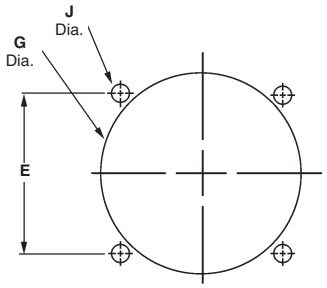


Plugs

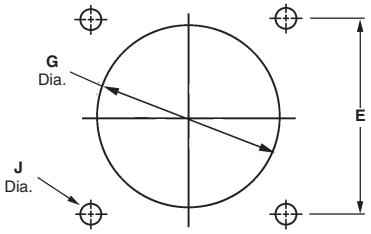
(Standard Sex Plugs accept Type XII Female and Multimate Sockets. Reverse Sex Plugs accept Type XII Male and Multimate Pins.)



Arrangement	Square Flange Receptacle		Plug Part No.		
			without TETRASEALS Ring		with TETRASEALS Ring
	Standard Sex	Reverse Sex	Standard Sex	Reverse Sex	Standard Sex
28-16M	208479-1	1776088-1	208478-1	1776089-1	208478-3
28-22M	208481-1	—	208480-1	—	208480-3



Rear Mount Panel Cutout

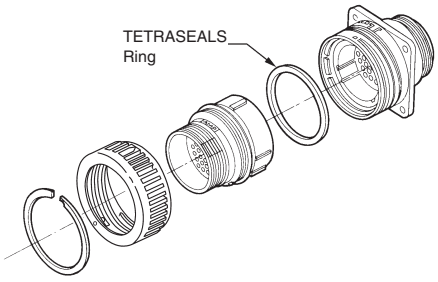


Front Mount Panel Cutout

TETRASEALS Ring

(Installed in Plugs only)

The TETRASEALS Ring provides splash-proof sealing between connector metal-shells. It is located behind the plug-shell external keys (under the coupling ring). When mated with a receptacle, the ring is compressed against the inside diameter of the mating end edge of the receptacle shell.



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Revised 7-07

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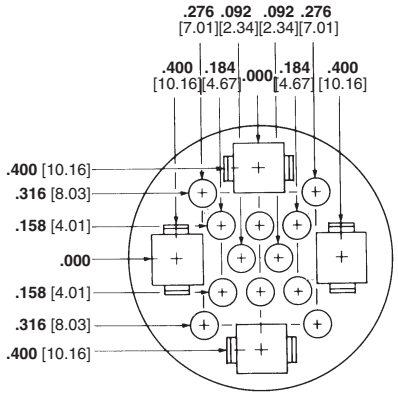
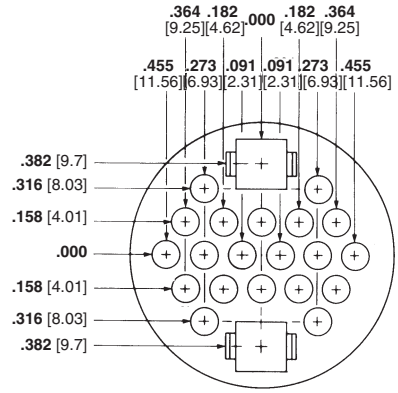
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-208-420-8341

Metal-Shell CPC Connectors, Series 4, Contact Arrangements

Shell Size 28



Arrangement 28-16M
Max. Wire Ins. Dia. =
.150 [3.81] for Multimate Contacts,
.220 [5.59] for Power Contacts



Arrangement 28-22M
Max. Wire Ins. Dia. =
.150 [3.81] for Multimate Contacts,
.220 [5.59] for Power Contacts

Note: Contact arrangements shown are of pin mating face (plug or receptacle). Socket mating face is mirror image.

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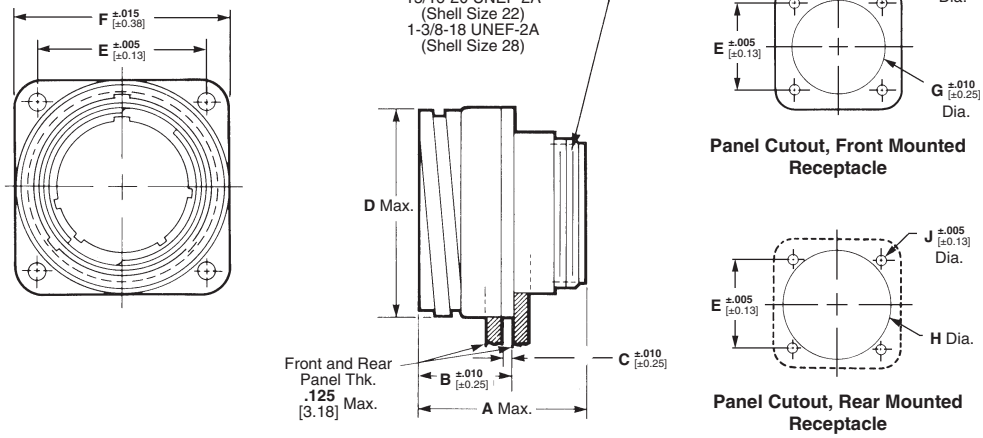
C. America: 57-1-254-4444

South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-208-420-8341

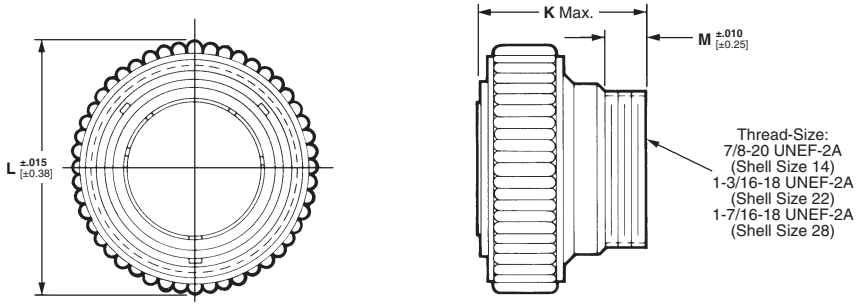
Note: All part numbers are RoHS Compliant.

Metal-Shell CPC Connectors Component Dimensions

Square Flange Receptacles



Plugs



For **drawings, technical data** or **samples,** contact your sales engineer or call Technical Support.

Series	Arrangement No.	Sex	Dimensions											
			A	B	C	D	E	F	G	H	J	K	L	M
1	14-5	Std.	**1.415**	**.745**	**.100**	**1.031**	**.906**	**1.185**	**1.070**	**1.070**	**.125**	**1.400**	**1.225**	**.380**
		Rev.	35.94	18.92	2.54	26.19	23.01	30.1	27.18	27.18	3.18	35.56	31.12	9.65
	14-7	Std.	**1.415**	**.745**	**.100**	**1.031**	**.906**	**1.185**	**1.070**	**1.070**	**.125**	**1.400**	**1.225**	**.380**
		Rev.	35.94	18.92	2.54	26.19	23.01	30.1	27.18	27.18	3.18	35.56	31.12	9.65
	22-14	Rev.	**1.190**	**.790**	**.103**	**1.503**	**1.250**	**1.534**	**1.156**	**1.554**	**.120**	**1.560**	**1.750**	**.380**
			30.22	20.07	2.62	38.18	31.75	38.96	29.36	39.47	3.05	39.62	44.45	9.65
	22-16	Std.	**1.470**	**.790**	**.103**	**1.503**	**1.250**	**1.534**	**1.156**	**1.554**	**.120**	**1.265**	**1.750**	**.380**
			37.34	20.07	2.62	38.18	31.75	38.96	29.36	39.47	3.05	32.13	44.45	9.65
	28-24	Std.	**1.555**	**.875**	**.125**	**1.900**	**1.562**	**1.950**	**1.610**	**1.970**	**.145**	**1.560**	**2.170**	**.380**
			39.5	22.23	3.18	48.26	39.67	49.53	40.89	50.04	3.68	39.62	55.12	9.65
	28-37	Std.	**1.540**	**.875**	**.125**	**1.900**	**1.562**	**1.950**	**1.610**	**1.970**	**.145**	**1.560**	**2.170**	**.380**
			39.12	22.23	3.18	48.26	39.67	49.53	40.89	50.04	3.68	39.62	55.12	9.65
		Rev.	**1.260**									**1.840**		
			31.00									46.74		
2	22-28	Std.	**.934**	**.790**	**.103**	**1.503**	**1.250**	**1.534**	**1.156**	**1.554**	**.120**	**1.295**	**1.750**	**.380**
		Rev.	23.72	20.07	2.62	38.18	31.75	38.96	29.36	39.47	3.05	32.89	44.45	9.65
	28-57	Rev.	**1.229**	**.875**	**.125**	**1.900**	**1.562**	**1.950**	**1.610**	**1.970**	**.145**	**1.408**	**2.170**	**.380**
			31.22	22.22	3.18	48.26	39.67	49.53	40.89	50.04	3.68	35.76	55.12	9.65
	28-63	Std.	**1.229**	**.875**	**.125**	**1.900**	**1.562**	**1.950**	**1.610**	**1.970**	**.145**	**1.408**	**2.170**	**.380**
			31.22	22.22	3.18	48.26	39.67	49.53	40.89	50.04	3.68	35.76	55.12	9.65
3	22-3	Std.	**1.755**	**.790**	**.103**	**1.503**	**1.250**	**1.534**	**1.156**	**1.554**	**.120**	**1.805**	**1.750**	**.380**
		Rev.	44.58	20.07	2.62	38.18	31.75	38.96	29.36	39.47	3.05	45.85	44.45	9.65
	28-7	Std.	**1.825**	**.875**	**.125**	**1.900**	**1.562**	**1.950**	**1.610**	**1.970**	**.145**	**2.125**	**2.170**	**.380**
		Rev.	46.36	22.22	3.18	48.26	39.67	49.53	40.89	50.04	3.68	53.98	55.12	9.65
4	28-13M	Std.	**1.825**	**.875**	**.125**	**1.900**	**1.562**	**1.950**	**1.610**	**1.970**	**.145**	**2.125**	**2.170**	**.380**
			46.36	22.22	3.18	48.26	39.67	49.53	40.89	50.04	3.68	53.98	55.12	9.65
	28-16M	Std.	**1.825**	**.875**	**.125**	**1.900**	**1.562**	**1.950**	**1.610**	**1.970**	**.145**	**2.125**	**2.170**	**.380**
			46.36	22.22	3.18	48.26	39.67	49.53	40.89	50.04	3.68	53.98	55.12	9.65
	28-22M	Std.	**1.825**	**.875**	**.125**	**1.900**	**1.562**	**1.950**	**1.610**	**1.970**	**.145**	**2.125**	**2.170**	**.380**
			46.36	22.22	3.18	48.26	39.67	49.53	40.89	50.04	3.68	53.98	55.12	9.65

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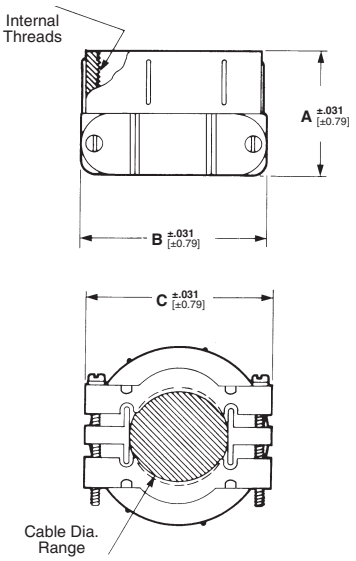
Metal-Shell CPC Connector Accessories

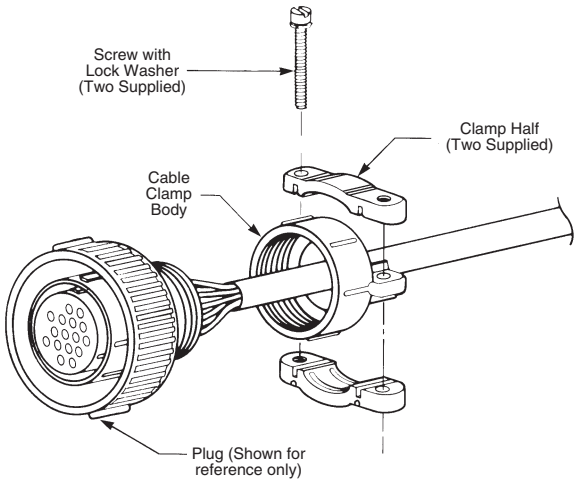
Cable Clamps

Material and Finish

Body and Clamp Halves—Zinc alloy, nickel plated

Screws and Washers—Stainless steel





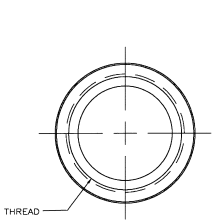
Shell Size	Dimensions A	B	C	Cable O.D. Range	Thread Size	Part No.
14	**.938** 23.83	**1.175** 29.85	**1.165** 29.59	**.225-.562** 5.71-14.27	7/8-20 UNEF-3B	208945-5
22	**.938** 23.83	**1.432** 36.37	**1.469** 37.31	**.325-.750** 8.26-19.05	1-3/16-18 UNEF-3B	208945-7
28	**1.031** 26.19	**1.593** 40.46	**1.688** 42.88	**.450-.938** 11.43-23.83	1-7/16-18 UNEF-3B	208945-8

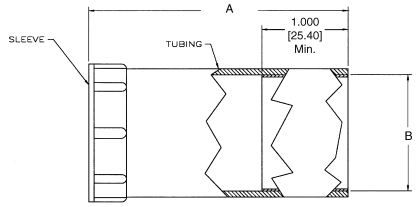
Notes: 1. For Shell Size 22 Receptacle use plastic cable clamp Size 17 (See page 38), for Shell Size 28 Receptacle use plastic cable clamp Size 23 (See pages 38-39). Use Size 14 metal cable clamp for both plug and receptacle Size 14 connectors.
2. Metal cable clamps (Sizes 22 and 28) are for use with Metal-Shell CPC plugs ONLY.

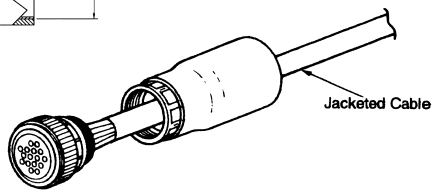
Cable Entry Seals

Heat Shrinkable Sealing Boots

Cable entry seals are used with jacketed cable to provide an environmentally sealed wire-to-connector system. They can be used with plugs.







Thick Wall Boots

Material

Internal Sleeve—Nylon

Outer Tubing—Polyolefin, black

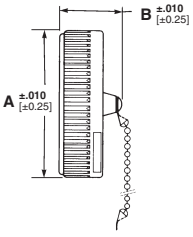
Shell Size	Dimensions A	B	Expanded Wall Thickness	Sealing Range (Dia.)	Max. Recovered Inside Dia.	Part No.
22	**3.000** 76.20	**1.250** 31.75	**.070** 1.78	**.550 - 1.250** 13.97 - 31.75	**.500** 12.70	54012-3
28						54012-4

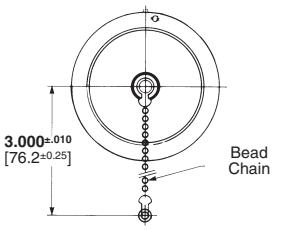
Protective Cap Assemblies (for Metal-Shell CPC Receptacles Only)

Material and Finish

Zinc alloy, nickel plated

Shell Size	Dimensions A	B	Part No.
14	**1.225** 31.11	**.515** 13.08	213823-2
22	**1.750** 44.45	**.635** 16.13	211903-1
28	**2.170** 55.12	**.635** 16.13	211904-1





Catalog 82021
Revised 7-07

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C. America: 57-1-254-4444

South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-208-420-8341

Note: All part numbers are RoHS Compliant.

Engineering Notes

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Note: All part numbers are RoHS Compliant.

Miniature Circular Plastic Connectors (CPC)

Product Facts

- **Two shell sizes: Size 8 (1-4) or Size 11 (5-9) contact positions**
- **Pre-positioned 1/4 turn coupling ring with positive lock and alignment feature**
- **Unique contact pattern for each position size helps prevent accidental mating with other position sizes**
- **Sealed to IP67 (Protected against immersion in water up to 1 meter for 1/2 hour)**
- **Front or rear jam nut panel mounting**
- **No assembly required**
- **Receptacle available in free-hanging or panel mount versions**
- **Alternate keys available**

AMP Miniature Circular Plastic Connectors (CPC) are available in wire-to-wire and wire-to-panel configurations.

Utilizes existing Mini-Universal MATE-N-LOK stamped and formed contacts designed for up to 500 mating cycles when plated with gold or up to 50 cycles with tin plating.

Nylon housings offer good resistance to a wide range of chemical agents while the IP67 sealing helps prevent ingress of dirt or fluids that could have an adverse effect on the contact interface.

Ideal for Industrial, Instrumentation and Transportation applications where size, contact density and environmental exposure are primary concerns.

Technical Documents

Product Specification
108-2079 Miniature CPC Connectors

Material and Finish

Seal, Wire Entry—Elastomer, yellow or white

Seal, Peripheral—Elastomer, gray

Housing—Thermoplastic, black or red

Protector, Seal—Thermoplastic, natural

Ring, Coupling—Thermoplastic, black

Nut, Jam—Brass, nickel plated

Plate, Seal Retention—Thermoplastic, black

Cable Assemblies

- Wide variety of custom discrete type cable assemblies, terminated with Terminals and Splices, Soft Shell, and Circular Plastic Connectors and other crimp and mass-terminated products.
- Capability to produce custom overmolded assemblies and insert and injection molding.
- Jacketed cable assemblies and discrete wire: Subminiature-D, SCSI, Circular Plastic, VHDCI, USB and Shielded Data Link
- For more information on our cable assembly capabilities, see our website at **www.tycoelectronics.com/cables**

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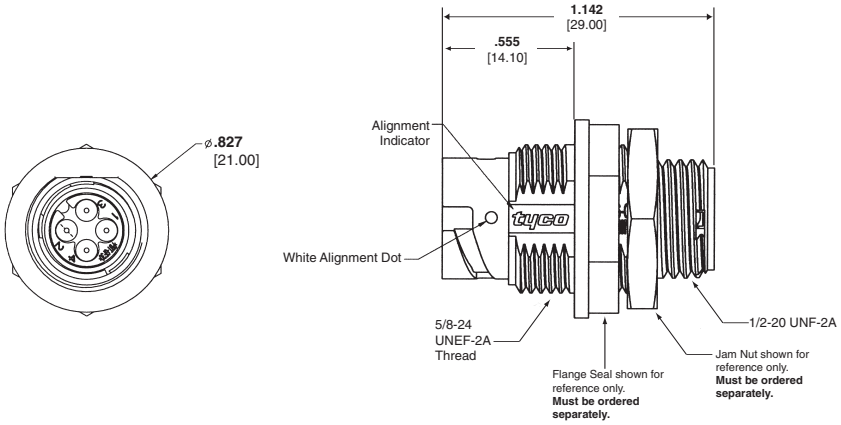
UK: 44-208-420-8341

Note: All part numbers are RoHS Compliant.

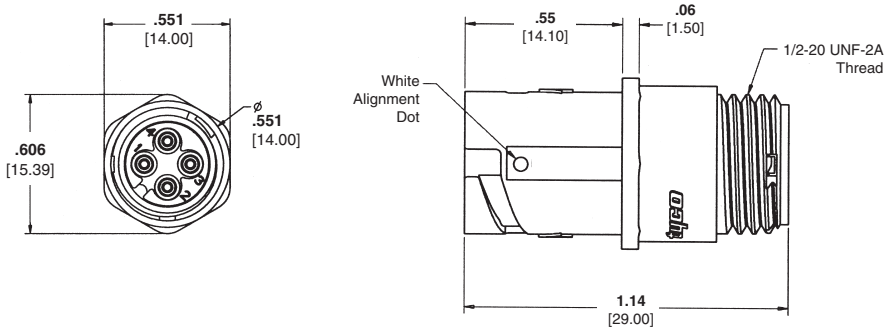
Miniature Circular Plastic Connectors (CPC) (Continued)

Shell Size 8
(4 Position shown)

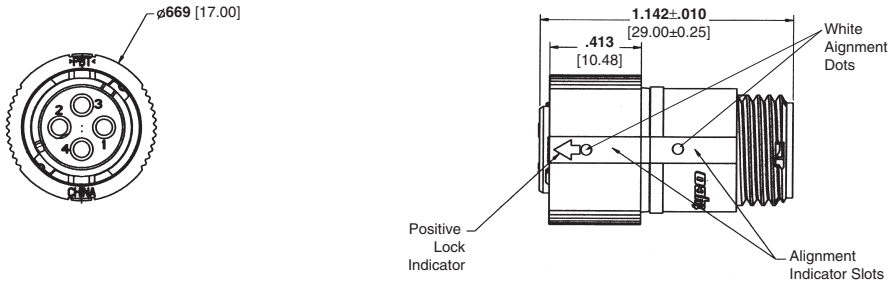
Receptacle Assembly, Panel Mount (Order pin contacts separately — see page 75)



Receptacle Assembly, Free-Hanging (Order pin contacts separately — see page 75)



Plug Assembly (Order socket contacts separately — see page 75)



Related Product Data

Part Numbers—Page 74
Contacts—Page 75
Accessories—Page 75

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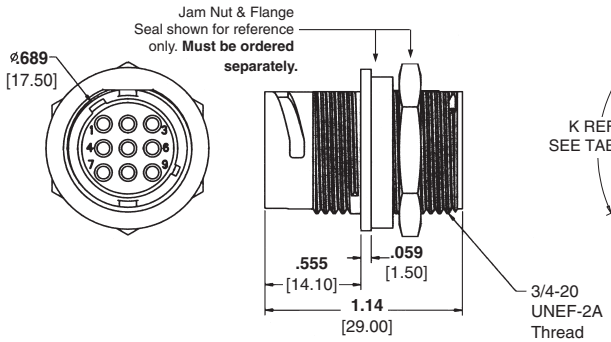
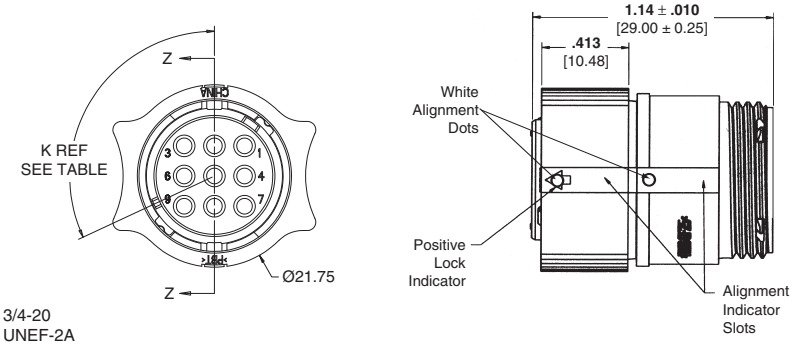
Miniature Circular Plastic Connectors (CPC) (Continued)

Shell Size 11
(9 Position shown)

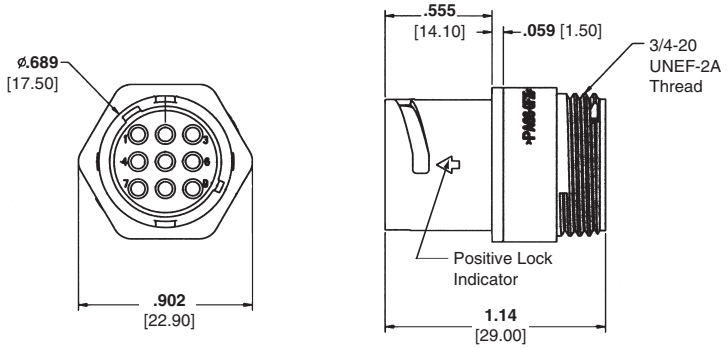
Receptacle Assembly, Panel-Mount (Order pin contacts separately — see page 75)



Plug Assembly (Order socket contacts separately — see page 75)



Receptacle Assembly, Free-Hanging (Order pin contacts separately — see page 75)



Housing Part Numbers

Standard stocked Part Numbers in BOLD type.

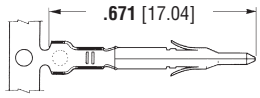
Arrangement		Insulation Diameter Range	Housing Part Numbers		
Shell Size	No. of Pos.		Panel Mount Receptacle	Free-Hanging Receptacle	Plug
8	1	**.035-.059** [.89-1.5]*	1445539-1	1445526-1	1445536-1
		.059-.110 [1.5-2.39]	1445539-3	1445526-3	1445536-3
8	2	**.035-.059** [.89-1.5]*	1445538-1	1445522-1	1445535-1
		.059-.110 [1.5-2.39]	1445538-3	1445522-3	1445535-3
8	3	**.035-.059** [.89-1.5]*	1445537-1	1445510-1	1445534-1
		.059-.110 [1.5-2.39]	1445537-3	1445510-3	1445534-3
8	4	**.035-.059** [.89-1.5]*	**1445421-1**	**1445389-1**	**1445390-1**
		.059-.110 [1.5-2.39]	**1445421-3**	**1445389-3**	**1445390-3**
11	5	**.035-.059** [.89-1.5]*	1445824-1	1445829-1	1445820-1
		.059-.110 [1.5-2.39]	1445824-3	1445829-3	1445820-3
11	6	**.035-.059** [.89-1.5]*	1445823-1	1445828-1	1445819-1
		.059-.110 [1.5-2.39]	1445823-3	1445828-3	1445819-3
11	7	**.035-.059** [.89-1.5]*	1445822-1	1445827-1	1445818-1
		.059-.110 [1.5-2.39]	1445822-3	1445827-3	1445818-3
11	8	**.035-.059** [.89-1.5]*	1445821-1	1445826-1	1445817-1
		.059-.110 [1.5-2.39]	1445821-3	1445826-3	1445817-3
11	9	**.035-.059** [.89-1.5]*	**1445816-1**	**1445825-1**	**1445807-1**
		.059-.110 [1.5-2.39]	**1445816-3**	**1445825-3**	**1445807-3**

Note: Alternate keys available (115° part numbers shown in above chart)
*Insertion Tip (Seal Protector) Part No. 1604816-1 recommended for use when inserting socket contacts within this insulation range.

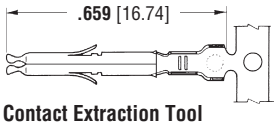
Miniature Circular Plastic Connectors (CPC) (Continued)

Contacts and Application Tooling

Pin (for Receptacles)



Socket (for Plugs)



Contact Extraction Tool
Part No. 189727-1
Instruction Sheet 408-4118

Contact Insertion Tool
Part No. 455830-1
Instruction Sheet 408-7984
(For inserting contacts applied to small diameter wire)

Insertion Tip (Seal Protector)
Part No. 1604816-1
(For inserting socket contacts applied to small diameter wire)

Wire Size Range AWG [mm²]	Ins. Dia. Range	Material and Finish	Contact Part Numbers				HDM Applicator Part No.	Hand Tool Part No.
			Pin		Socket			
			Strip Form	Loose Piece	Strip Form	Loose Piece		
30-26 [.05-.12]	.035-.050 .889-1.27	Brass, Pre-tin	770835-1	794059-1	770834-1	794058-1	567418-1[2] 567418-2[2] 567418-3[2]	90717-2
		Phos. Brz., Pre-tin	—	—	770834-4	—		
		Brass, Duplex[1]	1-770835-0	1-794059-0	1-770834-0	1-794058-0		
		Phos. Brz., Duplex[1]	—	—	1-770834-1	—		
26-22 [.12-.3]	.047-.069 1.19-1.75	Brass, Pre-tin	770901-1	770985-1	770902-1	770986-1	567066-3[3] 567066-4[3] 567066-5[3]	91529-1
		Phos. Brz., Pre-tin	—	—	770902-4	—		
		Brass, Duplex[1]	1-770901-0	1-770985-0	1-770902-0	1-770986-0		
		Phos. Brz., Duplex[1]	—	—	1-770902-1	—		
22-18 [.3-.8] or 22 x (2) [.3]	.059-.094 1.50-2.39 or .067 x (2) 3.38	Brass, Pre-tin	770903-1	770987-1	770904-1	770988-1	567067-1[2] 567067-2[2] 567067-3[2]	91522-1
		Phos. Brz., Pre-tin	—	—	770904-4	—		
		Brass, Duplex[1]	1-770903-0	1-770987-0	1-770904-0	1-770988-0		
		Phos. Brz., Duplex[1]	—	—	1-770904-1	—		

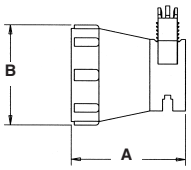
[1]Duplex Finish – Plated with .000030 [.000762] min. gold in mating area and .000100 [.00254] min. tin in crimping area over .000050 [.00127] min. nickel underplate on entire contact.
[2]HDM Applicator part number ending in -1 is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-LECTRIC Model K Machine, -3 is used on AMP-O-LECTRIC Model G Machine. See page 133 for further information.
[3]HDM Applicator part number ending in -3 is used on AMPOMATOR CLS Machine with T or G Terminators, -4 is used on AMP-O-LECTRIC Model K Machine, -5 is used on AMP-O-LECTRIC Model G Machine. See page 133 for further information.
Note: All part numbers are RoHS Compliant.

Accessories (All accessories must be ordered separately.)

Strain Reliefs

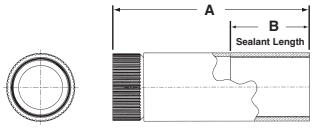
Shell Size	Dimensions A	Dimensions B	Part Number Straight	Part Number Right-Angle
8	.925 [23.5]	.709 [18.0]	1445730-1	1445771-1
11	1.10 [28.0]	.964 [24.5]	1445856-1	1546746-3[1]
				1546746-4[2]

[1] Open Style [2] With Cover



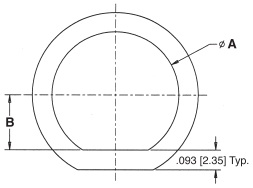
Heat Shrink Boots

Shell Size	Dimensions A	Dimensions B	Part Number
8	2.00 [50.8]	.75 [19.0]	1546997-1
11	2.50 [63.5]	1.00 [25.4]	1546921-1



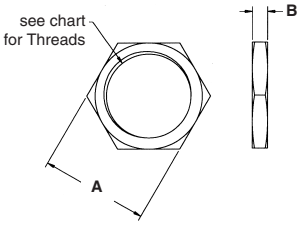
Flange Seals

Shell Size	Dimensions A	Dimensions B	Part Number
8	.60 [15.3]	.26 [6.6]	1445420-1
11	.73 [18.5]	.33 [8.5]	1445420-2



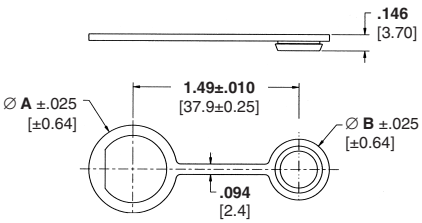
Jam Nuts

Shell Size	Dimensions A	Dimensions B	Thread	Part Number
8	.75 [19.0]	.125 [3.2]	5/8-24 UNEF-2B	1604196-1
11	.875 [22.25]	.125 [3.2]	3/4-20 UNEF-2B	1445904-1



Dust Caps

Shell Size	Dimensions A	Dimensions B	Part Number
8	.795 [20.2]	.551 [14.0]	1604089-1
11	.89 [22.6]	.736 [18.7]	1604089-2



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Note: All part numbers are RoHS Compliant.

Application Tooling

Mechanical Hand Tools for Interchangeable Die Sets

These tools are ideal for small production, prototype and experimental applications. They are used for terminating pin and socket contacts to wire and feature a ratchet device to provide consistently formed crimps.

SDE (Standard Die Envelope) Die Sets

SDE die sets provide cost-effective flexibility, through many options for a common die-set outline. The SDE die sets can be adapted for use with CERTI-CRIMP hand tools, PRO-CRIMPER III hand tools, the SDE Terminator and the 626 Pneumatic Tool System.

For more information, request Catalog **1654003.**

PRO-CRIMPER III Hand Tool, Part No. 58495-1

Commercial grade hand tool for crimping various products. Features ratchet control to provide complete crimp cycle. Accepts both pinned- and shouldered-style die sets. Locators are provided with pinned-style die sets for proper contact and wire positioning, and to help minimize contact rotation and bending during crimping. Approximate weight 1.3 lb [0.60 kg].

For use with Type III+ contacts, see pages 17-19.
For more information, request Catalog **1773380**, Instruction Sheet **408-9930**.

CERTI-CRIMP Straight Action Hand Tools (SAHT)

112076

Premium grade hand tools. Feature ratchet control to provide complete crimp cycle. Die sets close in a straight line. Include a contact locator and wire stop, plus an insulation crimp adjustment lever, when applicable. Approximate weight 1.3 lb [0.59 kg]

For Type III+ contacts, see pages 17-19.
For more information, request Catalog **65780**.

CERTI-CRIMP "C" Head Straight Action Hand Tool (SAHT), Part No. 69710-1

92938-8

Premium grade hand tool. Features ratchet control to provide complete crimp cycle. The interchangeable die sets close in a straight line to minimize contact or terminal rotation during crimping. When applicable, user-assist features such as a contact or terminal locator and a wire stop, are built into the die set. Approximate weight 1.9 lb [0.86 kg].

For subminiature coaxial contacts, see pages 22-23.
For more information, request Catalog **65780**, Instruction Sheet **408-2095**.

Electric Machine for Interchangeable Die Sets

SDE Terminator, Part No. 1490076-2

112383

An electric crimp terminator with compact design features a die set holder that is compatible with all AMP SDE (PRO-CRIMPER III Tool) die sets. Hand- or foot-actuated options are available. CE Approved.

For more information, request Catalog **1654714**.

Pneumatic Hand Tool for Interchangeable Die Sets

626 Pneumatic Tool System

Lightweight, air-operated modular tooling system. Accepts a wide variety of interchangeable heads for crimping various types of contacts, terminals and splices onto wires ranging 6-26 AWG [13-0.12 mm^2], plus coaxial and fiber optic cable. Available with either hand- or foot-actuation switch. Optional ratchet control available to provide complete crimp cycle.

For subminiature coaxial contacts, see pages 22-23.
For more information, request Catalog **124208**.

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UK: 44-208-420-8341

Application Tooling (Continued)

Crimp Machines

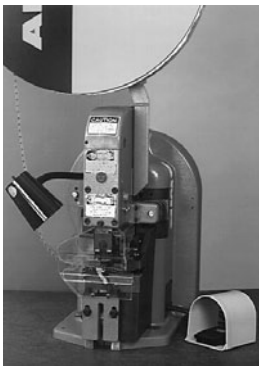
AMP-O-LECTRIC Model "G" Terminating Machines, Part Nos. 354500-1, -9, -11

Semiautomatic bench machines for crimping reeled terminals and contacts, featuring a quiet and reliable direct motor drive, microprocessor controls for ease of setup and operation, and guarding and lighting designed for operator convenience and safety. All models are equipped with either manual or automatic precision adjustment of crimp height. Machine-mounted sensors are available for crimp quality monitoring using conventional miniature-style applicators.

For more information, request Catalog **1654956-2**, Video **198116**, Catalog **82275 [Crimp Quality Monitor (CQM)]**, Video **198094**.

Note: New Stripping Module available, see page 79.

AMP-TAPETRONIC Machine, Part No. 69875



AMP-O-LECTRIC Model "K" Terminating Machine with a permanently-mounted applicator that accepts interchangeable die sets to apply a variety of tape-mounted terminals and splices. Many of the die sets can also be used in AMP-O-LECTRIC Terminating Machines with a tape applicator.

For more information, contact Tyco Electronics.

Crimp Quality Monitor (CQM) Part No. 1320420-2

The unique system provides 100% on-the-fly crimp inspection. It measures the crimp height of each termination, and evaluates the quality of each crimp. If a crimp is questionable, the monitor alerts the operator with both visual and audible alarms. It also provides ports for printing and networking. When used with AMP-O-LECTRIC Model "G" Termination Machines, the monitor is mounted to the machine. When used with AMPOMATOR CLS IV Lead Making Machines, it is integrated into the machine's operating system.

For more information, request Catalog **82275**.

AMP 3K/40 and AMP 5K/40 Terminating Machines

The AMP 3K/40 and AMP 5K/40 Terminators are designed for customers that require the increased output and quality of a semiautomatic machine at a competitive price. By incorporating the most commonly requested features as standard and offering a long list of optional equipment, these terminators offer flexibility to meet the specific needs of various applications at the lowest possible cost.

- **3,000 lb [1361 kg] max. crimp force (AMP 3K/40); 5,000 lb [2268 kg] max. crimp force (AMP 5K/40)**
- **Toolless removal of applicators and guards**
- **Jog capability**
- **Quiet, fast operation — 80/76 dBA and cycle time less than 0.400 seconds**
- **Accepts Heavy Duty Mini stye applicators**
- **Wide range of optional equipment such as toolless precision crimp height adjust, batch counter, CQM capability and work light**

For more information, request Catalog **1654956-2**.

Note: New Stripping Module available, see page 79.

System III Applicator

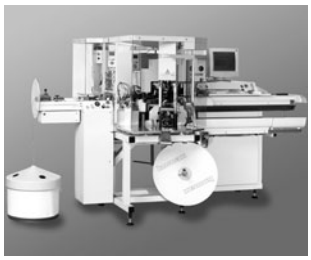
For more information, request Catalog **1654956-8**

The System III Applicator introduces several new technologies into the applicator including a precision servo-electric motorized feeding system, a built-in data module for storing terminal crimp and set-up information, a precision fit round ram, and a newly designed terminal depressor. It still utilizes the proven quality of the HD-M crimper and anvil tooling.

Application Tooling (Continued)

Lead Makers

Komax gamma 333 PC Lead-Making Machine



This fully-automatic, PC-controlled leadmaker can be equipped with up to three processing stations enabling the crimping of both ends of the wire, double-crimp connections with three different contacts, single-ended seal applications, tinning or ink-jet marking. Features include ultra-short conversions times, easy-to-use graphic-based TopWin interface with multiple-language capability, crimp force analyzer with statistical analysis, seal monitoring, and integrated good/bad sorting.

For more information, request Catalog **1307901.**

AMPOMATOR System III Leadmaker

The AMPOMATOR System III Leadmaker is designed for the demands of low-volume/high mix manufacturing and precision quality. This leadmaker combines the best wire processing capabilities with new technologies in terminal feeding and machine set-up found in the System III Applicator to offer significant advantages for higher throughput and efficiencies.

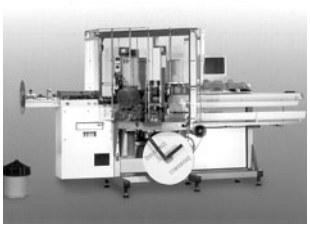
See catalog **1654956-5** for more information.

AMPOMATOR CLS IV+ Lead-Making Machines, Part Nos. 356500-1, -2; 1213400-1, -2

Fully-automatic machines that measure, cut, strip and terminate single leads. Microprocessor-controlled, and programmed and operated using an easy-to-follow, menu-driven touch-screen. Features include direct-drive terminating units with precision crimp height adjustment, fully programmable setups, wire runout and splice detection, and motorized pre-feed with wire straightener. Crimp quality monitoring is also available.

For more information, request Catalog **124324,** Video **198142** (NTSC), **199609** (PAL).

Komax 433-S alpha Lead-Making Machine



The 433-S alpha offers maximum flexibility for applying seals to one or both ends of the wire with the corresponding terminal. When equipped with the mci 711 crimp terminator and mci 761 seal applicator, the fully-automated 433-S alpha forms a highly compact system with optimum accessibility. Dynamic servo-drives provide fine travel settings on all motor axes and the wire straightening unit with quick-release lock and automatic lead-in feature reduces wire changeover time. The TopWin software provides for fast, simple data input.

For more information, request Catalog **1307801**.

Applicators

End-Feed Heavy-Duty Miniature Applicators (coded HDM)

Interchangeable applicators for crimping products reeled end-to-end (primarily open-barrel terminals). Used in bench and lead-making machines; most designs can be used, or adapted for use with minor tooling changes, dial-in settings for different wire sizes and insulation diameters. Mechanical or air-powered feed systems, depending on the product applied.

For more information, request Catalog **296393-2** and Instruction Sheet **408-8039**.

EDGE Applicator Counter

The new EDGE counter tracks wearable tool usage for the most effective maintenance planning. The completely electronic counter, with clear LCD display, indicates cycles since installation. By performing maintenance at measured intervals with pre-set limits, operators avoid breakdowns and rejects caused by tool wear or mis-adjustment. A wireless interface transfers counters to a PC running the optional Edge Counter Software Pack.

The EDGE is standard on all new applicators and can be retrofitted to most existing Tyco Electronics applicators.

See catalog **1773385** for more information.

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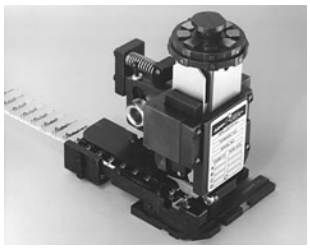
Application Tooling (Continued)

Side-Feed Heavy-Duty Miniature Applicators (coded HDM)

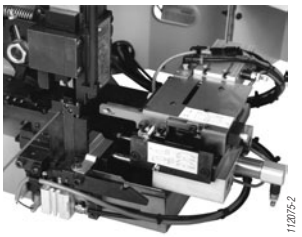


89828

Interchangeable applicators for crimping products reeled side-by-side on single or dual carrier strips (primarily closed-barrel terminals and open-barrel contacts). Similar design as the end-feed version. All side-feed applicators include a wire stop to help correctly position the wire end in the crimping target area.

For more information, request Catalog **296393-2** and Instruction Sheet **408-8040**.

Stripping Module (for the AMP 3K/40 and AMP 5K/40 Terminating Machines and AMP-O-LECTRIC Model "G" Terminator on page 77)



1120752

For more information, request Catalog **1309085**.

The combination of the Stripping Module with the AMP 3K/40 and AMP 5K/40 Terminating Machines or the AMP-O-LECTRIC Model "G" Terminator provides an economic and proficient method of stripping the wire and crimping terminals on the same machine. The module accepts End- and Side-Feed HDM Applicators (32-14 AWG) and operates in three modes: crimp only, strip only, or strip and crimp. It can be installed on existing machines in the field or purchased as one unit from the factory.

Stripper-Crimper Applicators (coded SCA)

89827

Interchangeable applicators for crimping products in AMP-O-MATIC Stripper-Crimper Machines. Consist of separate ram and lower tooling assemblies. Similar dial-in settings for different wire sizes and insulation diameters as HDM applicators. Available with sensors for use with the Crimp Quality Monitor.

For more information, request Catalog **65004 (AMP-O-MATIC Stripper-Crimper Machines)**, Catalog **82275 [Crimp Quality Monitor (CQM)]**.

Komax Delta 60 Wire Stripper

The semiautomatic Delta 60 is designed to strip single- and multiple-pole conductors with pull-off lengths of .984 [25] or 3.78 [96]. Thanks to the electric drive and non-pneumatic design, the device is quick and quiet in operation and can be utilized virtually anywhere. The Delta 60 can desheath or strip stranded conductors and multiple wire cables with external diameters of up to .433 [11].

See catalog **1654956** for more information.

Stripper-Crimper Machines

AMP-O-MATIC Stripper-Crimper Machines, Part Nos. 1320895-1, -2

Semiautomatic bench crimping machines that also strip the wire, and are therefore used for terminating jacketed cable. Feature manual precision adjustment of crimp height, keyed strip blades for faster, more accurate setups, and an efficient scrap removal system. All adjustments can be made from the front of the machines without special tools. Available with crimp quality monitoring.

For more information, request Catalog **65004**, Video **198075**, Catalog **82275 [Crimp Quality Monitor (CQM)]**, Video **198094**.

Cosmic 30M Wire Stripping Machine, 5-528367-0

The Cosmic 30M is a high precision, high speed electrical wire stripper that is very easy to operate. It's equipped with a four blade system and an optional gripper for more difficult wires. There is a digital display for the wire diameter that can be set at 0.01 mm increments.

See catalog **1773385-2** for more information.

Cosmic 927R Micro-Cable Stripper

The compact, lightweight, benchtop Cosmic 927R was designed and developed to reliably strip various insulation materials and micro-cable. From conductor diameter 36 to 10 AWG, the stripping diameter display can be set to within 0.1 mm increments.

See catalog **1773385-4** for more information.

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UK: 44-208-420-8341

Note: All part numbers are RoHS Compliant.

Technical Documents

Various technical documents are available for your use:

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

108-1579 Sealed CPC Connectors with Removable Contacts
108-2079 Miniature CPC Connectors
108-10024 CPC Connectors
108-10024-2 (Series 1)
108-10024-3 (Series 2)
108-10024-4 (Series 3 & 4)
108-10037 Contacts, Type XII
108-10040 Metal-Shell CPC Connectors
108-10042 Contacts, Type III +
108-40005 Contacts, Size 20 DF

Application Specifications describe requirements for using the product in its intended application and/or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person.

114-10000 Contacts, Size 20 DF
114-10004 Contacts, Type III +
114-10005 Contacts, Type XII
114-10038 CPC Connectors

Instruction Sheets provide instructions for assembling or applying the product. They are intended for the Manufacturing Assembler or Operator.

408-4317 Two-Piece Sealed CPC Connectors
408-6641 Metal-Shell CPC Connectors
408-7582 Accessories for CPC Connectors
408-7593 CPC Connectors
408-7901 Application and Maintenance for AMP Hand Crimp Tool
408-8416 CPC Right-Angle Cable Clamp Assembly

Application Tooling/Instruction Sheet Cross Reference

Tool Part No.	Instruction Sheet
58495-1	408-9819
69710-1	408-2095
91019-3	408-7276
91067-2	408-7508

Tool Part No.	Instruction Sheet
91285-1	408-9404
305183	408-1216
318813-1	408-4374

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Note: This part number index lists all cataloged parts by base number only. Complete part numbers (with prefixes and/or suffixes) are shown on the pages indicated.

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