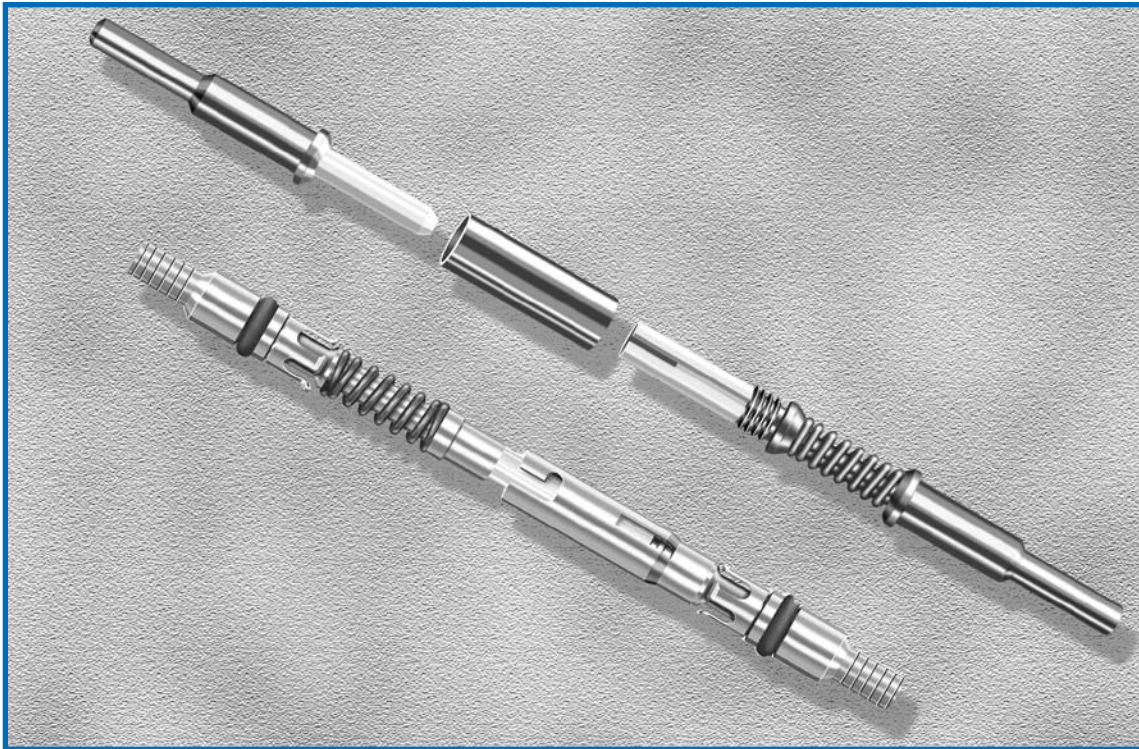


Tired of Waiting an Eternity for a Fiber Optic Terminus



Then Glenair's "Same Day Delivery" Program is the Answer.

Tired of long lead times for connectors and contacts? Then consider the Glenair difference: We've placed our products in stock, in quantity, and ready for immediate shipment—including both our MIL-PRF-29504 qualified pin and socket contacts as well as our

Front Release 181-011 and 181-012 designs. Consider as well Glenair's "no minimum order" policy and our lightning fast turnaround on quotes for price and delivery. At Glenair, we're making unprecedented investments in inventory to keep current with your every need.



1211 Air Way
Glendale, California 91201-2497

Telephone: 818-247-6000 ■ Facsimilie: 818-500-9912 ■ EMail: sales@glenair.com

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**MIL-PRF-28876 Style
Fiber Optic Connection System
General Information**



PRODUCT FEATURES

- **Designed to Meet the General Requirements of MIL-PRF-28876**
- **Plugs, Wall-Mount Receptacles, and Jam-Nut Mount Receptacles Available**
- **Multiple Shell Sizes and Insert Arrangements, Including 2, 4, 6, 8, 18 and 31 Configurations**
- **Various Materials and Finishes Available**
- **Singlemode and Multimode Capable**
- **Corrosion-Resistant**
- **Environmentally Sealed**
- **Same Day Availability**

Glenair MIL-PRF-28876 Style Connectors are the Standard Fiber Optic Interconnect for Shipboard Use—from Sea to Shining Sea

The Glenair MIL-PRF-28876 Style Fiber Optic Connector

The use of fiber optics in shipboard and ship-to-shore data transmissions is growing rapidly, and the tight-tolerance MIL-PRF-28876 interconnect has become the universal standard for Navy shipboard applications. Glenair's offering delivers all the necessary performance—from precise optical alignment, to environmental protection, corrosion resistance and weight reduction. The Glenair MIL-PRF-28876 is specifically geared for upgrade and retrofit applications where extending system life-cycles and reducing cost of ownership are principle requirements. This connector uses MIL-PRF-29504/14 and /15 style contacts, also available from Glenair. For more information, or for product samples, please consult the factory or visit us at www.glenair.com.



181-040
M29504/15 Style Front Release Socket Terminus
Size 16

181-040-1260 C N

Product Series ————
Basic Number ————
Dash Number (Table I) ————

N = Alignment Sleeve Assembly Not required
(Omit to receive Alignment Sleeve)
Crimp Sleeve Designator
Omit if None (See Table II)

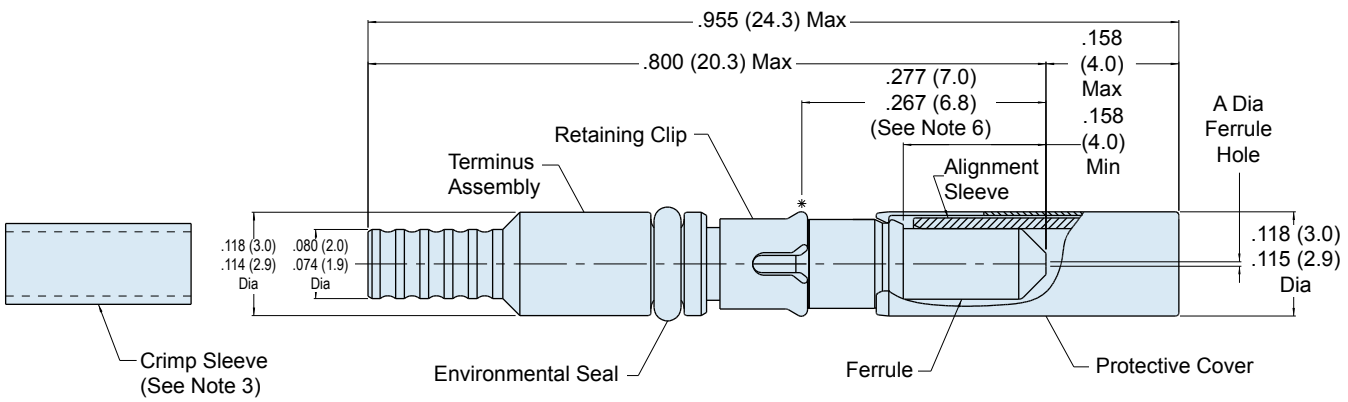


TABLE I: DASH NUMBER

Assembly Dash Number	A Dia (Microns)
1250	126.0 125.0
1255	126.5 125.5
1260	127.0 126.0
1270	128.0 127.0
1420	143.0 142.0

Consult Factory for Additional Sizes

TABLE II: CRIMP SLEEVE DESIGNATOR

Designator	Cable Diameter	Part Number
C	2.0-2.4 mm (MIL-Spec)	265-008

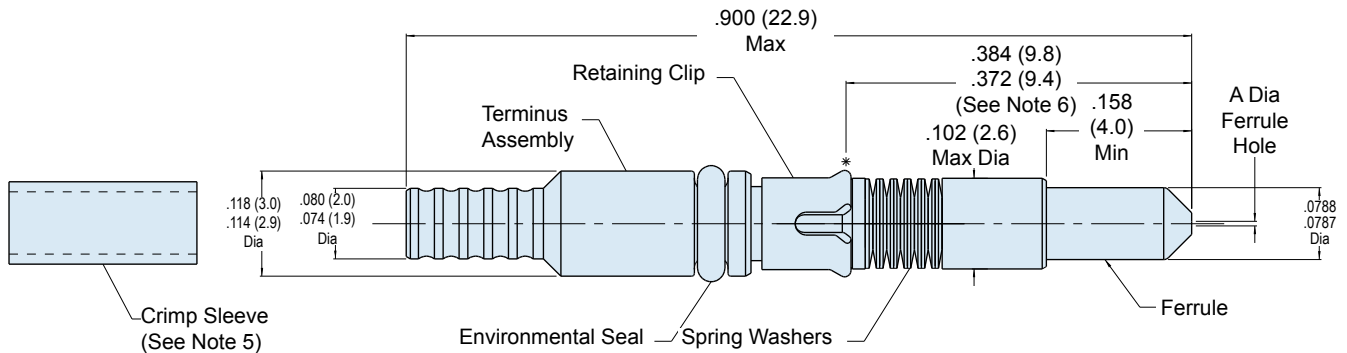
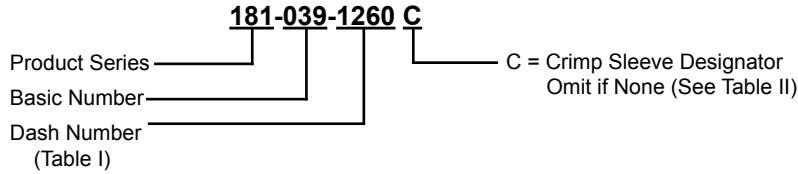
TABLE III: TERMINUS ACCESSORIES

Part Number	Accessory
265-010	Alignment Sleeve Assembly
182-012	Crimp Tool
182-013	Insertion Tool, Straight
182-014	Insertion Tool, 90°
182-015	Removal Tool
182-016	Alignment Sleeve Assembly Insertion/Removal Tool
182-017	Hand Polishing Tool

APPLICATION NOTES

1. Assembly packaged in plastic bag and tag identified with manufacturer's name and part number
2. Material/ Finish:
Alignment Sleeve, Ferrule: Zirconia Ceramic/ N.A.
Protective cover: Spring Alloy / Nickel
Terminus Assembly: Stainless Steel / Passivate
Retaining Clip: Spring Alloy / N.A.
Seal: Fluorosilicone
3. Crimp Sleeve: Brass Alloy / Nickel
Alignment Sleeve Assembly and Crimp Sleeve may be ordered separately (Tables II and III)
4. Metric dimensions (mm) are in parentheses.
5. Dummy Terminus: Part Number 181-051
6. Dimension to be measured when installed into insert equivalent fixture per MIL-PRF-29504/15

181-039 M29504/14 Style Front Release Pin Terminus Size 16



Assembly Dash Number	A Dia (Microns)
1250	126.0 125.0
1255	126.5 125.5
1260	127.0 126.0
1270	128.0 127.0
1420	143.0 142.0

Consult Factory for Additional Sizes

Designator	Cable Diameter (MIL-Spec)	Part Number
C	2.0-2.4 mm	265-008

Part Number	Accessory
182-012	Crimp Tool
182-013	Insertion Tool, Straight
182-014	Insertion Tool, 90°
182-015	Removal Tool
182-017	Hand Polishing Tool

APPLICATION NOTES

1. Assembly packaged in plastic bag and tag identified with manufacturer's name and part number.
2. Material/ Finish:
Ferrule: Zirconia Ceramic/ N.A.
Terminus Assembly: Stainless Steel/ Passivate
Retaining Clip, Spring Washers: Spring Alloy / N.A.
Seal: Fluorosilicone
Crimp Sleeve: Brass Alloy/Nickel
3. Crimp Sleeve may be ordered separately (Table II).
4. Metric dimensions (mm) are in parentheses
5. Dummy Terminus: Part Number 181-051
6. Dimension to be measured when installed into insert equivalent fixture per MIL-PRF-29504/14



MIL-PRF-28876 Style Fiber Optic Connection System How to Order

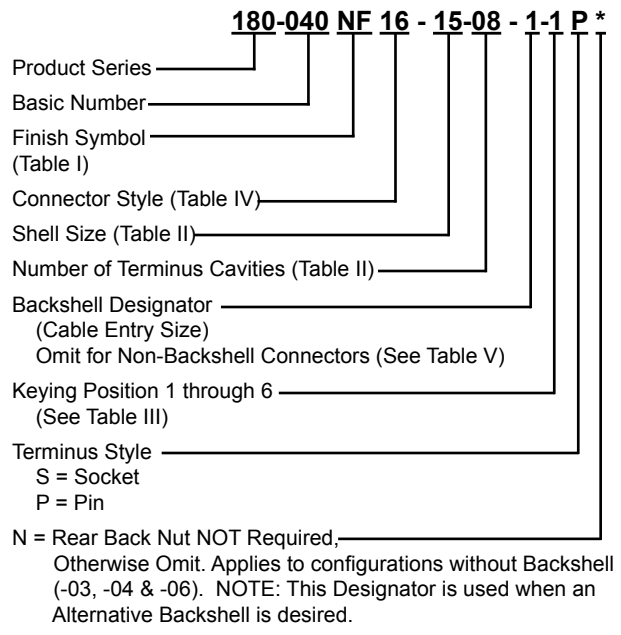


TABLE V: BACKSHELL DESIGNATOR

Backshell Designator	Max Allowable Cable Diameter by Shell Size			
	11	13	15	23
1	.250 (6.4)	.285 (7.2)	.500 (12.7)	.866 (22.0)
2	.348 (8.8)	.346 (8.8)	.250 (6.4)	1.000 (25.4)
3		.453 (11.5)	.375 (9.5)	.600 (15.2)

TABLE I: FINISH

SYM	MATERIAL	FINISH DESCRIPTION
NF	Aluminum	Olive Drab Chromate over Cadmium, over Electroless Nickel (500 Hrs Salt Spray)

APPLICATION NOTES

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Assembly packaged in plastic bag and tag identified with manufacturer's name and part number. 2. Material/ Finish: <ul style="list-style-type: none"> A. External Hardware: See Table I B. Internal Hardware: Aluminum Alloy/Chem Film, Stainless Steel/Passivate C. Misc. Hardware: Stainless Steel/Passivate D. Insert: Aluminum Alloy/Anodize or High-Grade Thermoplastic, Mfr's Option E. Seals: Fluorosilicone F. Consult factory for alternate materials and finishes. 3. Backnut retained using thread-locking compound. | <ol style="list-style-type: none"> 4. Termini (Not Supplied with Connector): <ul style="list-style-type: none"> M29504/14 - Pin terminus, MIL-Spec M29504/15 - Socket Terminus, MIL-Spec 181-039 - Pin Terminus, MIL-Spec Style 181-040 - Socket terminus, MIL-Spec Style 181-051 - Dummy Terminus MIL-Spec Style 5. Consult factory for appropriate termination and assembly tools/procedures. 6. Operating Temperature Range: -55° to +125°C. 7. Metric dimensions (mm) are indicated in parentheses. |
|---|---|

MIL-PRF-28876 Style Fiber Optic Connection System How to Order



Shell Size	Keying Position	A°	B°	C°	D°
11 and 13	1	95	141	208	236
	2	113	156	182	292
	3	90	145	195	252
	4	53	156	220	255
	5	119	146	176	298
	6	51	141	184	242
15 and 23	1	80	142	196	293
	2	135	170	200	310
	3	49	169	200	244
	4	66	140	200	257
	5	62	145	180	280
	6	79	153	197	272

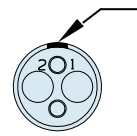
Shell Size	Number of Terminus Cavities
11	02
13	04
15	06 or 08
23	18 or 31

Connector Type	Backshell Type	Connector Style	MIL-Spec Style Slash Number
Wall Mount Receptacle	None	03	M28876/1
	Straight	13	M28876/2
	45°	23	M28876/3
	90°	33	M28876/4
In-Line Receptacle	Straight	15	M28876/5
Plug	None	06	M28876/6
	Straight	16	M28876/7
	45°	26	M28876/8
	90°	36	M28876/9
Jam Nut Receptacle	None	04	M28876/11
	Straight	14	M28876/12
	45°	24	M28876/13
	90°	34	M28876/14

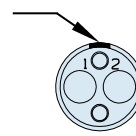
Pin Face

Socket Face

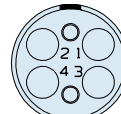
Insert Key



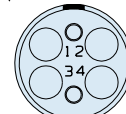
Size 11-02



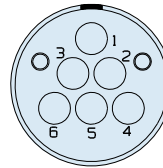
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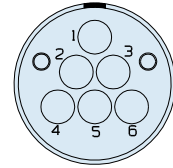
Size 13-04



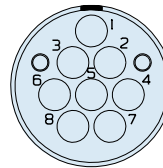
Size 13-04



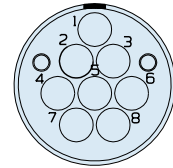
Size 15-06



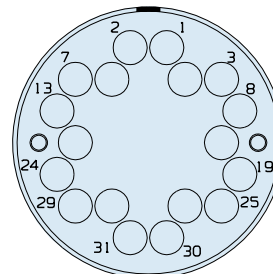
Size 15-06



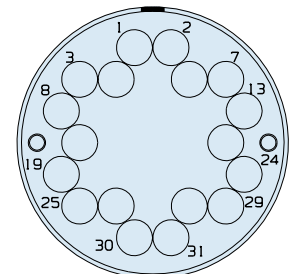
Size 15-08



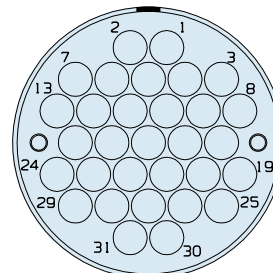
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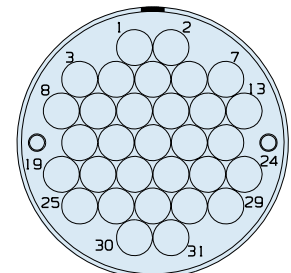
Size 23-18



Shell Size 23-18



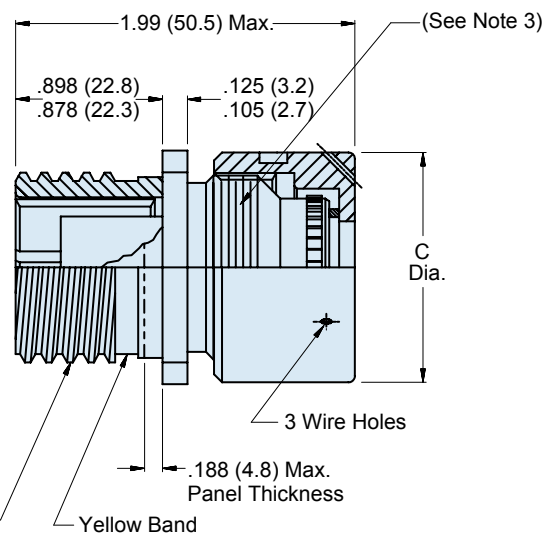
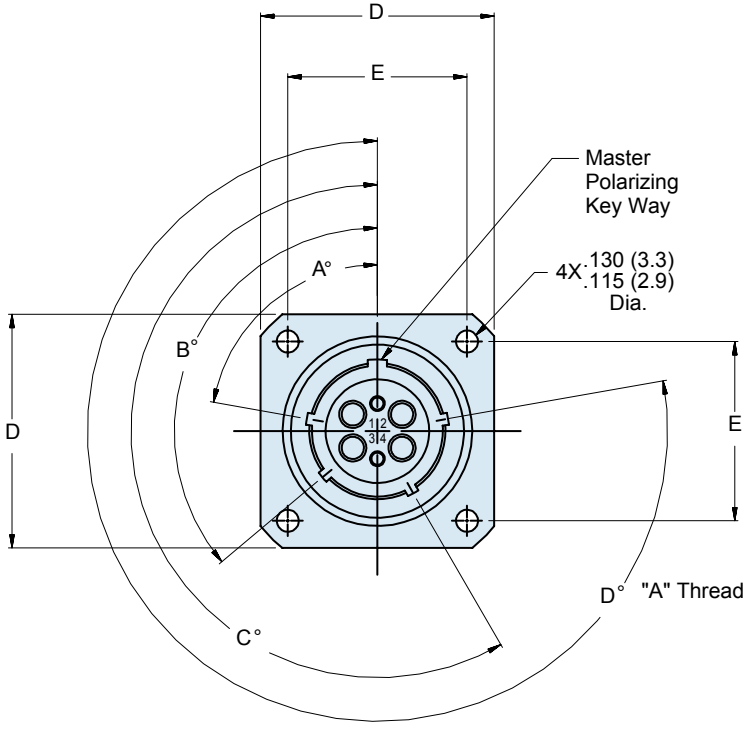
Size 23-31



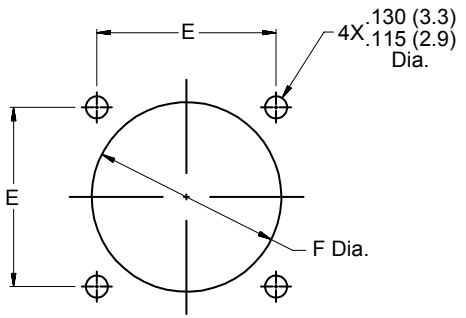
Size 23-31



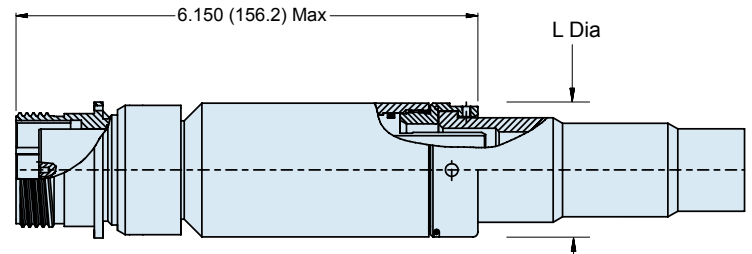
180-040 (-03, -13, -23, -33)
MIL-PRF-28876 Style Wall Mount Receptacle Connector
 for use with MIL-PRF-29504/14 and /15 Termini



03 - WALL MOUNT RECEPTACLE WITHOUT BACKSHELL



RECOMMENDED PANEL CUT-OUT



13 - WALL MOUNT RECEPTACLE WITH STRAIGHT BACKSHELL

TABLE VI: SHELL SIZE						
Shell Size	D ± .020 (0.5)	E	F Dia ± .005 (0.1)	C Dia Max	L Dia Max	"A" Thread Size .1P-.2L-DS
11	1.022 (26.0)	.750 (19.1)	.812 (20.6)	.960 (24.4)	.960 (24.4)	.750 (19.05)
13	1.137 (28.9)	.843 (21.4)	.937 (23.8)	1.085 (27.6)	1.085 (27.6)	.875 (22.2)
15	1.257 (31.9)	.968 (24.6)	1.124 (28.5)	1.255 (31.9)	1.255 (31.9)	1.062 (26.9)
23	1.718 (43.6)	1.281 (32.5)	1.562 (39.7)	1.695 (43.1)	1.763 (44.8)	1.500 (38.1)

180-040 (-06, -16, -26, -36)
MIL-PRF-28876 Style Plug Connector
 for use with MIL-PRF-29504/14 and /15 Termini

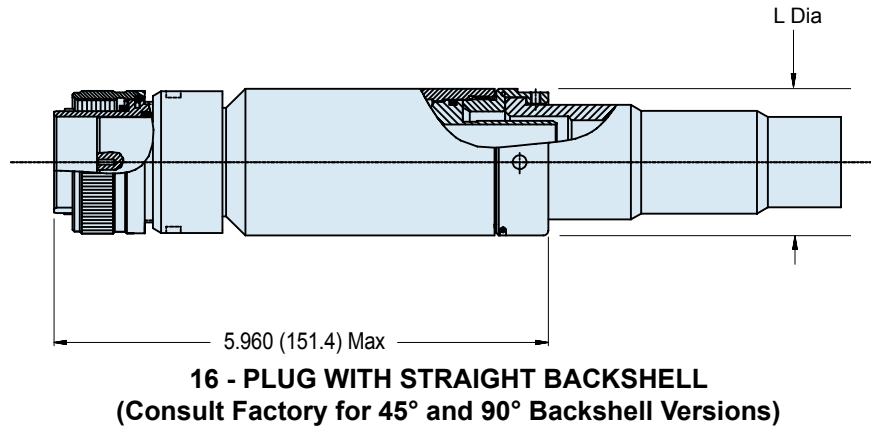
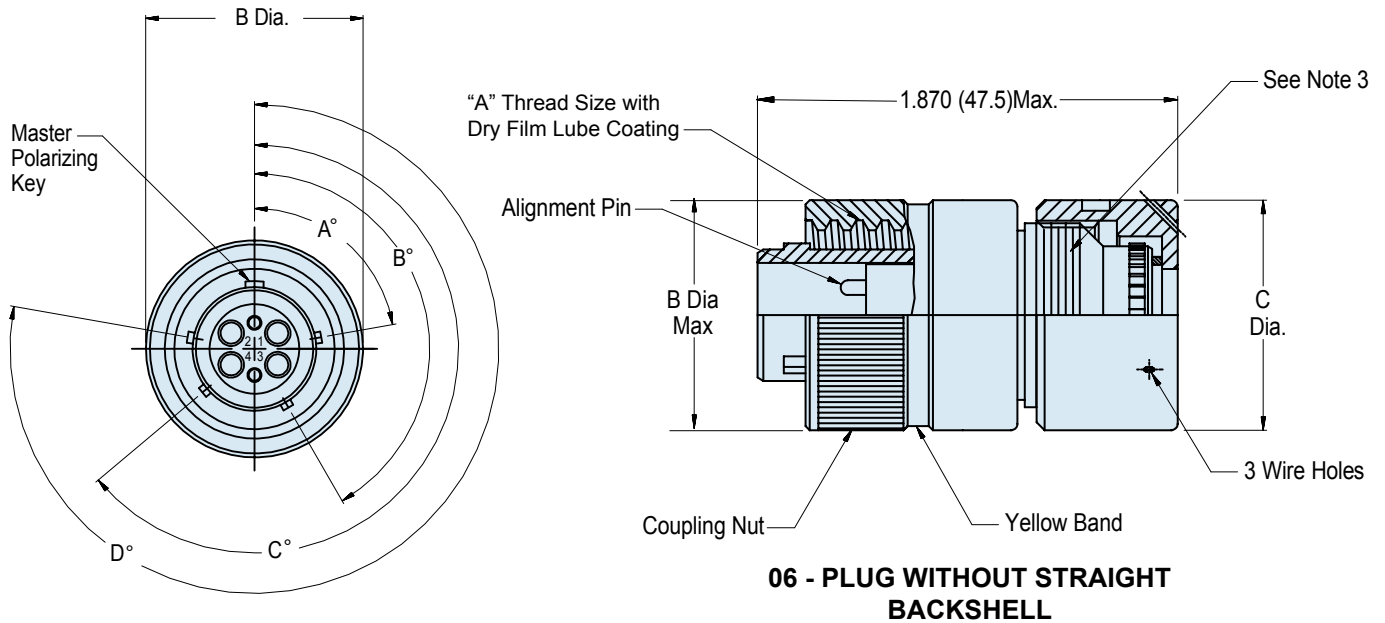
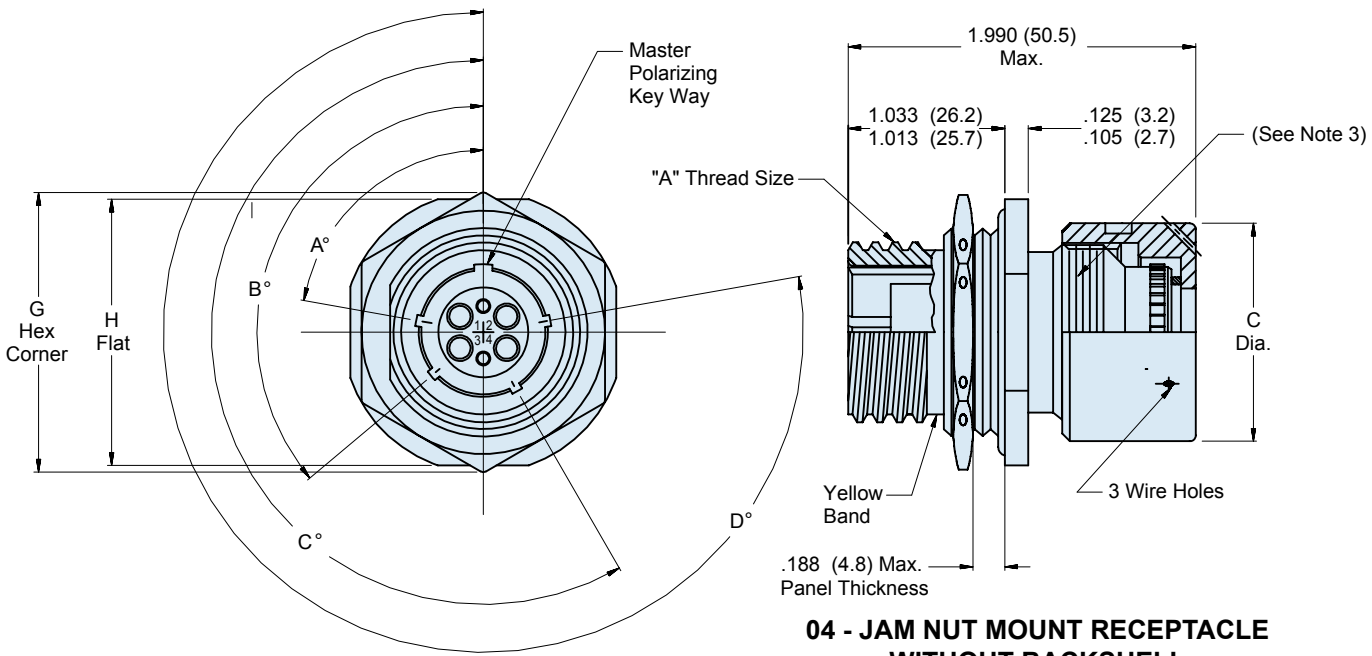


TABLE VI: SHELL SIZE

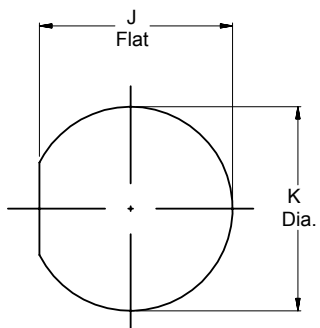
Shell Size	B Dia Max	C Dia Max	L Dia Max	"A" Thread Size .1P-.2L-DS
11	1.028 (26.1)	.960 (24.4)	.960 (24.4)	.750 (19.05)
13	1.141 (29.0)	1.085 (27.6)	1.085 (27.6)	.875 (22.2)
15	1.263 (32.1)	1.255 (31.9)	1.255 (31.9)	1.062 (26.9)
23	1.705 (43.3)	1.695 (43.1)	1.763 (44.8)	1.500 (38.1)



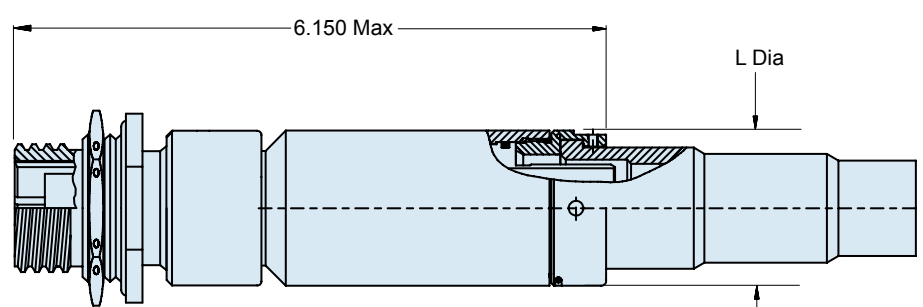
180-040 (-04, -14, -24, -34)
MIL-PRF-28876 Style Jam Nut Receptacle Connector
for use with MIL-PRF-29504/14 and /15 Termini



**04 - JAM NUT MOUNT RECEPTACLE
WITHOUT BACKSHELL**



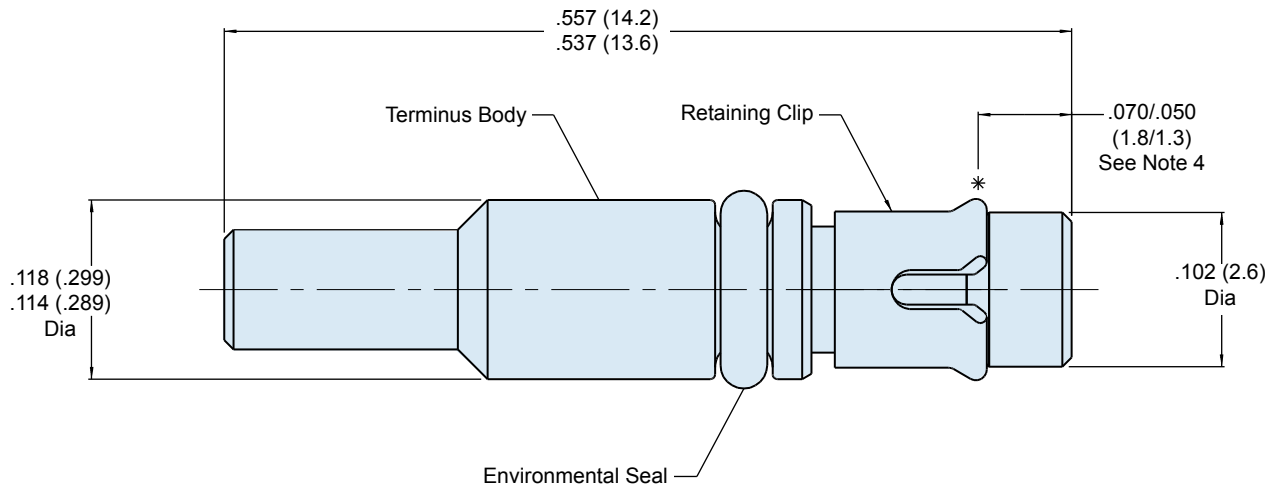
**RECOMMENDED
PANEL CUTOUT**



**14 - JAM NUT MOUNT RECEPTACLE
WITH STRAIGHT BACKSHELL
(Consult Factory for 45° and 90° Backshell Versions)**

TABLE VI: SHELL SIZE							
Shell Size	G Max	H ± .010 (0.3)	J ± .005 (0.1)	K Dia ± .005 (0.1)	C Dia Max	L Dia Max	"A" Thread Size .1P-.2L-DS
11	1.290 (32.8)	1.262 (32.1)	.848 (21.5)	.885 (22.5)	.960 (24.4)	.960 (24.4)	.750 (19.05)
13	1.435 (35.9)	1.387 (35.2)	.937 (24.7)	1.010 (25.7)	1.085 (27.6)	1.085 (27.6)	.875 (22.2)
15	1.650 (41.9)	1.575 (40.0)	1.160 (29.5)	1.198 (30.4)	1.255 (31.9)	1.255 (31.9)	1.062 (26.9)
23	2.093 (53.2)	2.014 (51.2)	1.598 (40.6)	1.635 (41.5)	1.695 (43.1)	1.763 (44.8)	1.500 (38.1)

181-051
M29504/03 Style Dummy Terminus
Size 16



APPLICATION NOTES

1. Assembly packaged in plastic bag and tag identified with manufacturer's name and part number and date code.
2. Material/ Finish:
 Terminus Body: Stainless Steel/Passivate
 Retaining Clip: Spring Alloy/Nickel
 Seal: Fluorosilicone
3. Dummy terminus is designed to meet the general requirements of MIL-PRF-29504/03.
4. Dimension to be measured when installed into insert equivalent fixture per MIL-PRF-29504/03.

TABLE III: TERMINUS ACCESSORIES

Part Number	Accessory
182-013	Insertion Tool, Straight
182-014	Insertion Tool, 90°
182-015	Removal Tool

Q: What's the Difference Between Glenair and Other F/O Interconnect Suppliers?



A: Superior Technology *and* Superior Service

Technologies such as Front Release COTS termini and MIL-PRF-29504 approved versions; Composite MIL-DTL-38999 style connectors; Short lead time F/O cable sets; Short-run extruded cables; Special backshells, junction boxes and other unique packaging solutions; FiberCon conduit systems and fittings; Overmolded cable harnesses; Termination toolkits, and more...

Services such as live telephone operators and friendly inside sales staff; Fast turnaround on quotes and custom orders; Same-day shipment on popular part numbers; No minimums; Easy to understand product manuals; Free application engineering and project support in every major market; QwikConnect: Our quarterly technical journal; Free product samples, and more...



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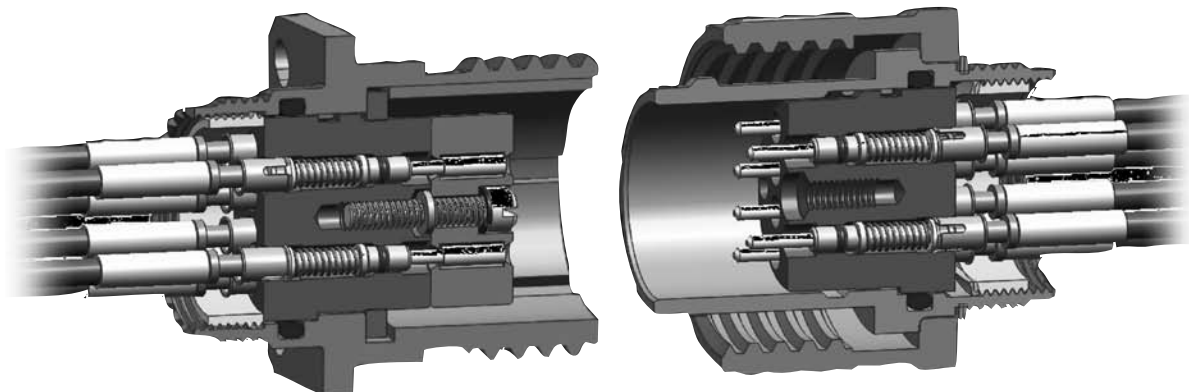
PRODUCT FEATURES

- Aluminum Alloy or Stainless Steel Shells
- High-Density Insert Arrangements Available
- Plug and Wall-Mounted Receptacle Configurations
- Rear Release Precision Genderless Termini
- 1.25 mm Diameter Ceramic Ferrule
- Environmental O-Ring Sealing on Terminus
- Next Generation Choice for Naval Applications
- Conforms to Emerging NGCON Military Standard

Genderless Contacts, Precision Optics, and High-Density Packaging: The Next-Generation in Tactical Fiber Optics is Just Around the Corner

Emerging NGCON Connector is Designed to Become the New Standard for Military Fiber Optic Interconnect Applications

The Glenair Next Generation (NGCON) Connector System combines proven technology from standard M28876 and D38999 designs with new innovations including rear-release genderless contacts and high-density packaging. Glenair is an active member of the NGCON design consortium which is developing high-performance fiber optic interconnect solutions for air, sea and space military applications. The Glenair NGCON Connector System will be qualified to the yet to be released NGCON military specification.



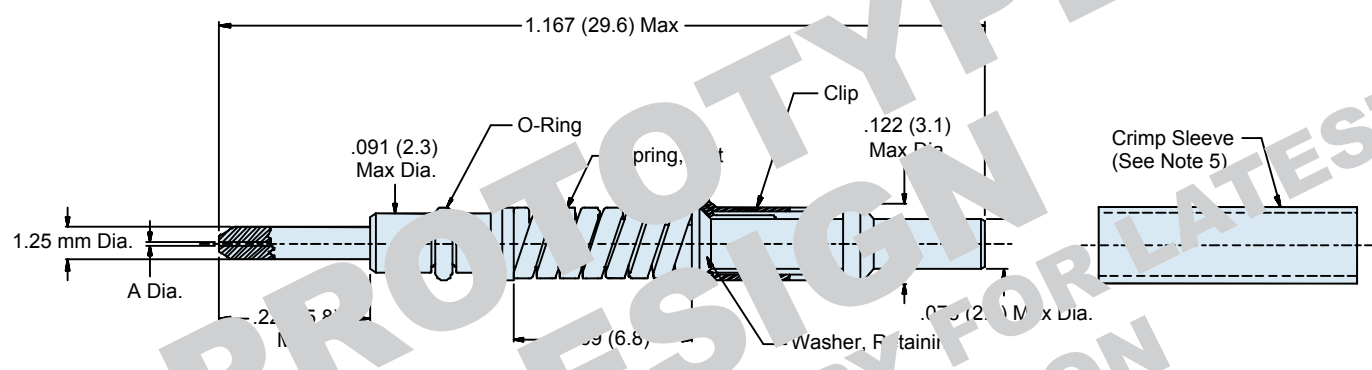
Artwork courtesy NGCON Consortium



181-043
Rear Release Genderless Terminus
for Next Generation (NGCON) Fiber Optic Connectors

181-043-126 M

Product Series ———
 Basic Number ———
 Dash Number
 (Table I)
 M - Multimode
 S - Singlemode



APPLICATION NOTES

1. Assembly packaged in plastic bag and tag for reference with manufacturer's name and part number.
2. Material/Finish:
 Fiber Optic: Zirconia Ceramic/N.A.
 Terminus Assembly: Stainless Steel/Passivate
 Retaining Clip: Spring Alloy/N.A.
 Spring: High Tensile Stainless Steel/Passivate
 O-Ring: Fluorosilicone
 Crimp Sleeve: Brass Alloy/Nickel.
3. Recommended Removal Tool: NAVSEA DWG TBD.
4. See 182-XXXX for Pin Terminus Polishing Tool.
5. Crimp Sleeve may be ordered separately (Table II).
6. Metric dimensions (mm) are indicated in parentheses.

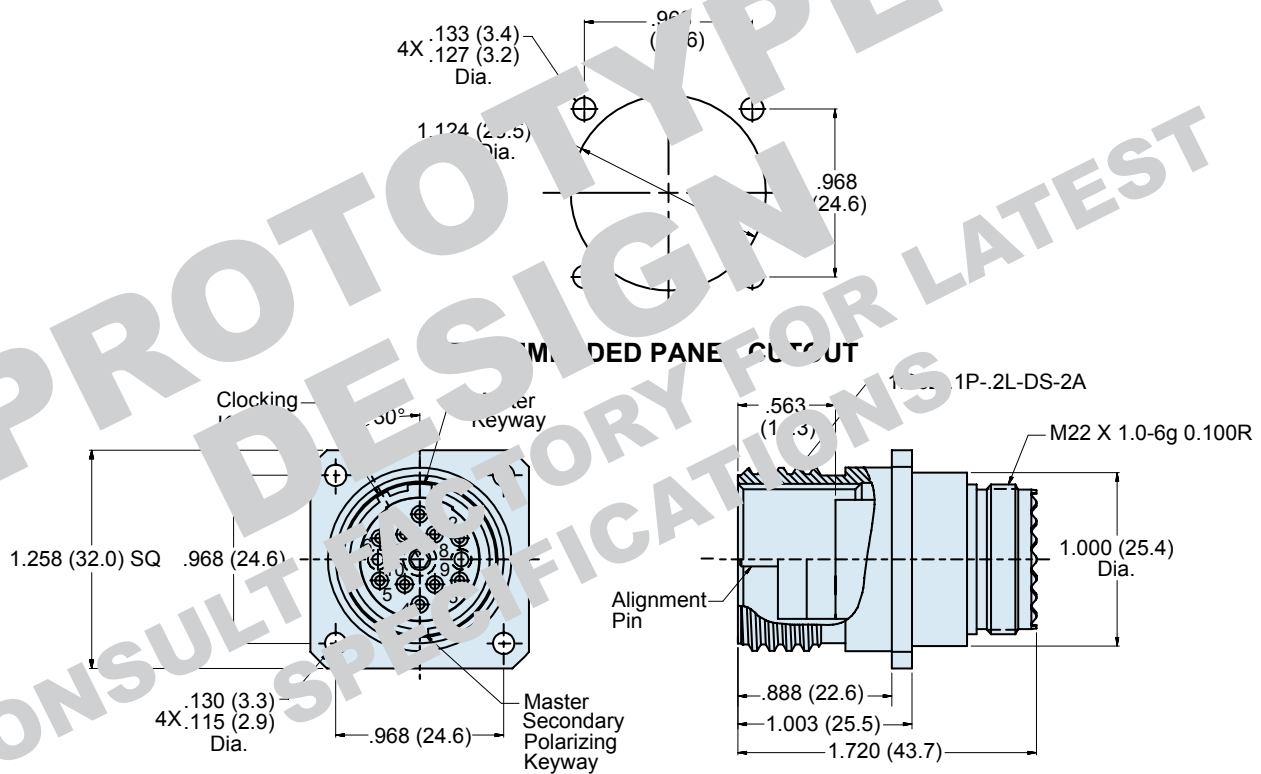
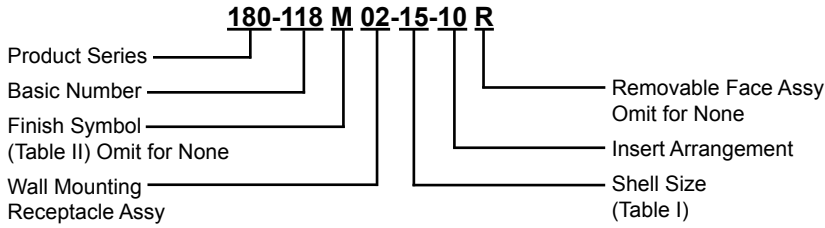
TABLE I: DASH NUMBER

ASSEMBLY DASH NUMBER	A DIA.
181-043-125	125
181-043-1255	125.5
181-043-126	126
181-043-127	127
181-043-142	142
181-043-145	145
181-043-156	156
181-043-157	157
181-043-173	173
181-043-175	175
181-043-236	236
181-043-285	285
181-043-448	448

180-118 (02 Wall-Mounting) Next Generation (NGCON) Fiber Optic SS15 Receptacle Connector



Next Generation
(NGCON)



02- WALL MOUNTING RECEPTACLE ASSY

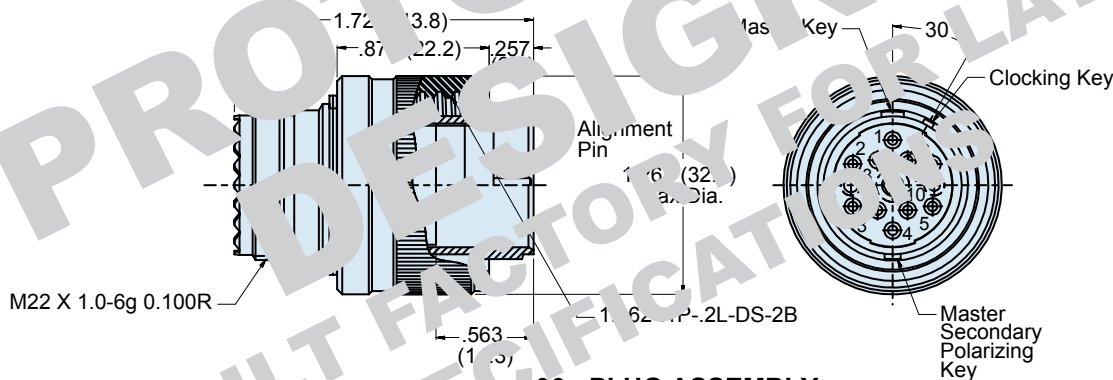
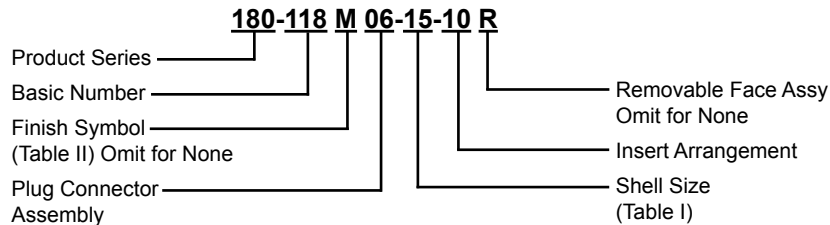
APPLICATION NOTES

- Assembly identified with Glenair, Inc and P/N, Space Permitting.
- Glenair 180-118 Connector Features:
 - Plug Barrel, Shell, Coupling Nut & Retainer- Al Alloy 6061- T6
 - Insert- Al Alloy/ Anodize, Black or High Grade Engineering Plastic
 - Seal, Gasket & O-Ring - Fluorosilicone/ Silicone Blend
 - Alignment Pins, Screw, Thrust Washer & Retaining Ring - Stainless Steel
 - Termini: Not Supplied
 - Operating Temperature Range: -55°C to +200°C.
- See AP 18-098 & -099 for Plug Assy.
AP 18-100 & -101 for Receptacle Assy.
- Metric dimensions (mm) are in parentheses.

TABLE II - FINISH

SYM	FINISH DESCRIPTION
C	Anodize, Black
M	Electroless Nickel Plate
Z1	Stainless Steel, Passivated
NF	Zinc-Nickel/Olive Drab Over Electroless Nickel

180-118 (06 Plug Assembly) Next Generation (NGCON) Fiber Optic SS15 Plug Connector



PROTOTYPE DESIGN FOR LATEST SPECIFICATION

APPLICATION NOTES
<ol style="list-style-type: none"> 1. Assembly identified with Glenair, Inc and P/N, Space Permitting. 2. Glenair 180-118 Connector Features: <ul style="list-style-type: none"> A. Plug Barrel, Shell, Coupling Nut & Retainer- Al Alloy 6061- T6 B. Insert- Al Alloy/ Anodize, Black or High Grade Engineering Plastic C. Seal, Gasket & O-Ring - Fluorosilicone/ Silicone Blend D. Alignment Pins, Screw, Thrust Washer & Retaining Ring - Stainless Steel E. Termini: Not Supplied F. Operating Temperature Range: -55°C to +200°C. 3. See AP 18-098 & -099 for Plug Assy. AP 18-100 & -101 for Receptacle Assy. 4. Metric dimensions (mm) are in parentheses.

TABLE II - FINISH	
SYM	FINISH DESCRIPTION
C	Anodize, Black
M	Electroless Nickel Plate
Z1	Stainless Steel, Passivated
NF	Zinc-Nickel/Olive Drab Over Electroless Nickel

PRODUCT FEATURES

- Hermaphroditic Field Deployable Connection System
- Designed to Meet Requirements of MIL-PRF-29504/16 and MIL-DTL-83526/16/ and 17 Specifications
- 4 Channel Singlemode and Multimode Configurations
- Low Insertion Loss 2.5 mm dia. Genderless Termini
- Ceramic Alignment Sleeve Housed in Connector Body
- Corrosion-Resistant and Environmentally Sealed
- Designed for Both Low Speed Analog and High-Speed Digital Data
- Available As Discrete Connectors and Termini or As Spooled Cable Assembly



Glenair GFOCA: The Ultimate Harsh Environment, Field Deployable Fiber Optic Connection System

MIL-DTL-83526 Compliant Fiber Optic Connector System

Most commonly used by the army for long-run battlefield communications, the GFOCA Connection System is also well suited to dockside naval communications, down-hole drilling and other harsh environment applications. The hermaphroditic system utilizes low insertion loss butt-joint termini and a ruggedized coupling mechanism for reliable, repeatable mating. The genderless mating system is rated to 1000-2000 cycles depending on fiber media selection.



Field Deployable Tactical GFOCA Fiber Optic Spool

Ergonomic, lightweight reel stand with up to two kilometers of cable and your choice of hermaphroditic connectors. Consult factory for ordering information.

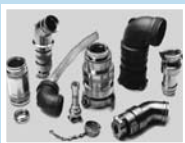
Need something unusual in a multi-contact connector?



Then consider Glenair's expertise in high reliability connector design and development.

Glenair's line of innovative, specialty connectors has grown, year after year, to become one of the most diverse in the industry. Our application engineers have worked directly with commercial, industrial and military customers worldwide to design and build such products as quick disconnects for missile launchers, high temperature

connectors for jet engines, shorting plugs to prevent accidental weapon firing, ultra-miniaturized cylindrical connectors for military applications, explosion-proof bulkhead feed-throughs for marine use, and hermetically-sealed MIL-DTL-38999 connectors for space applications. So, for extraordinary applications, consider an extraordinary partner: Glenair.



Commercial and Mil Spec connector accessories



Convuluted tubing and metal-core conduit



Electrical and fiber optic cable assemblies



Composite thermoplastic components



Microminiature connectors and accessories



Backshell assembly and termination tools



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181-050
M29504/16 Style GFOCA Genderless Terminus
for Use with M83526/16/17 Style
Hermaphroditic Connectors



181-050-1260 C

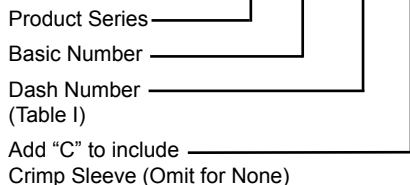
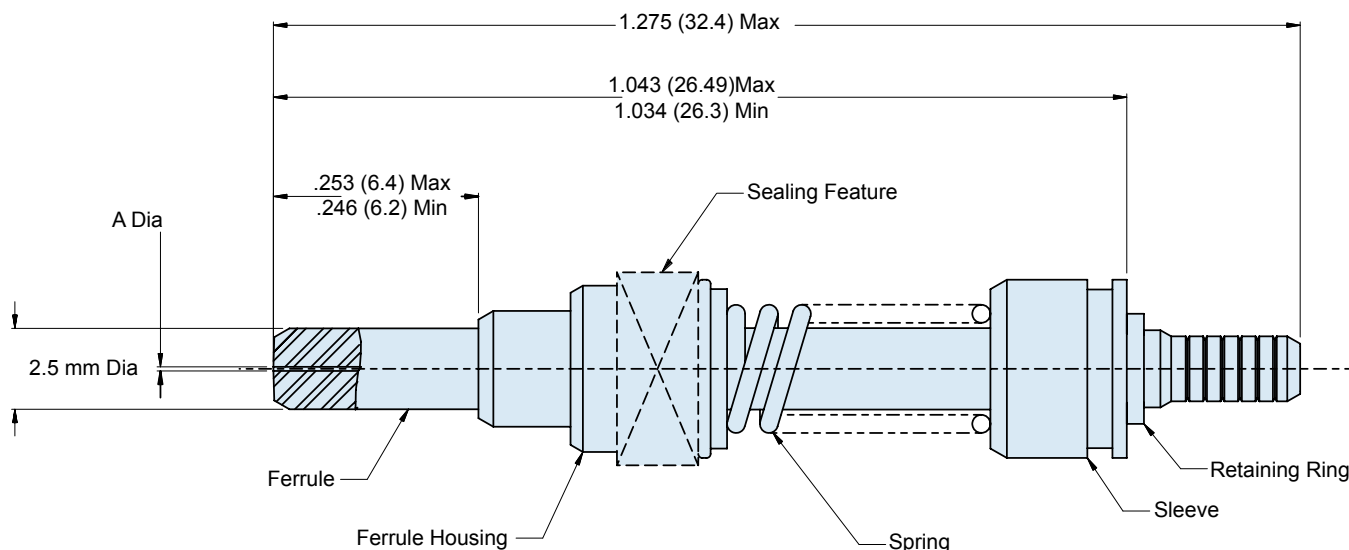


TABLE I: DASH NUMBER			
Assembly Dash No.	A Dia (mm)		Fiber Type (Typical)
	Max	Min	
181-050-1250	.1260	.1250	SM
181-050-1255	.1265	.1255	SM
181-050-1260	.1270	.1260	SM & MM
181-050-1270	.1280	.1270	MM
181-050-1420	.1430	.1420	MM
181-050-2300	.2340	.2300	MM

SM = Singlemode
 MM = Multimode



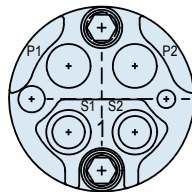
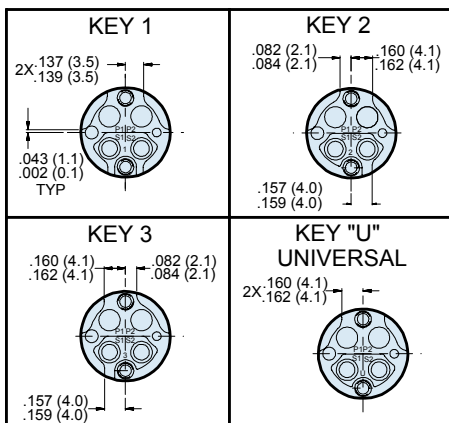
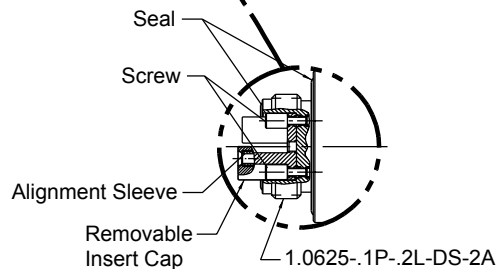
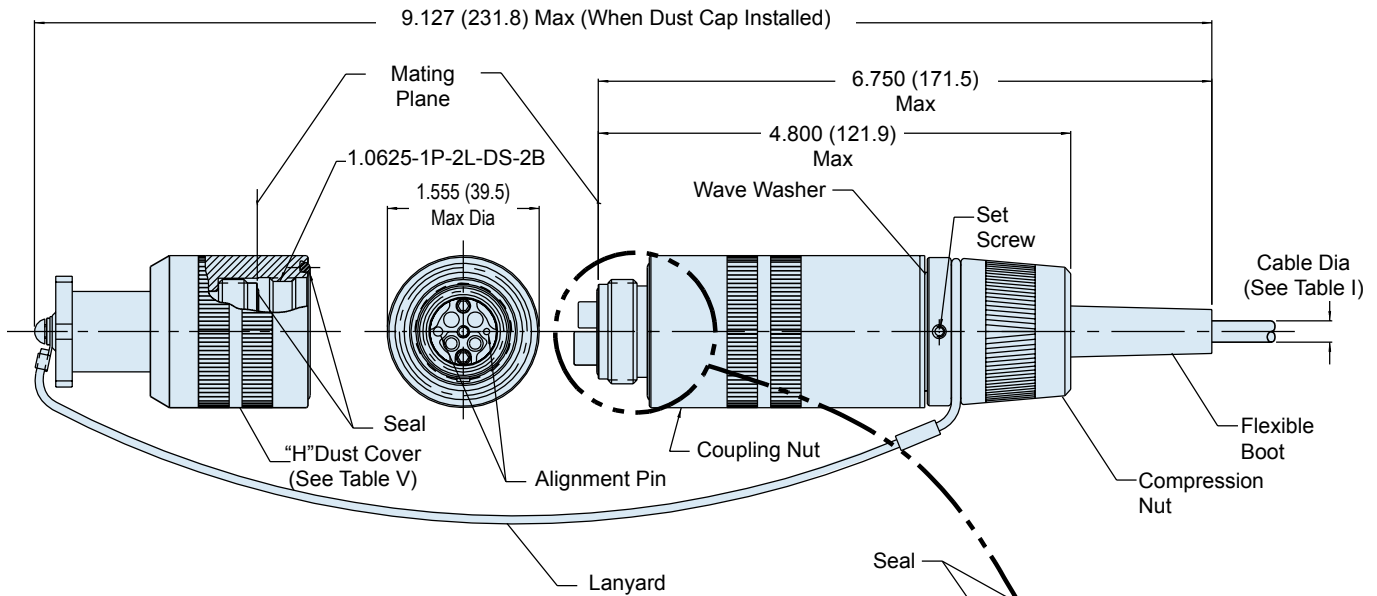
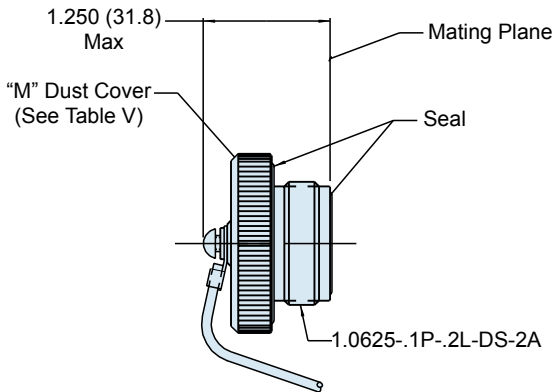
APPLICATION NOTES

1. Assembly packaged in plastic bag and tag identified with manufacturer's name and part number.
2. Material/ Finish:
 Ferrule: Zirconia Ceramic/ N.A.
 Terminus Assembly: Stainless Steel/ Passivate
 Spring: High Tensile Stainless Steel/ Passivate
 Sliding Sleeve: Stainless Steel/ Passivate
 Retaining Ring: Stainless Steel/ Passivate
3. Insertion/Removal Tool: Consult factory
4. Consult factory for assembly and termination tools.
5. For Glenair GFOCA connector product, refer to Glenair 180-116 and 180-117 drawings (Pages F-4 and F-6).
6. Metric dimensions (mm) are indicated in parentheses.
7. Crimp sleeve: See 265-008.

180-116 M83526/16 Style GFOCA Plug Connector 4 Channel Hermaphroditic with Optional Dust Cover

180-116-01-W-1-N-H

- Product Series
- Basic Number
- Cable Diameter Configuration (Table I)
- Termini Ferrule I.D. (Table II)
- Insert Cap Key Configuration (Table III)
- Alignment Sleeve Style (Table IV)
- Dust Cover Configuration (Table V)



**REMOVABLE INSERT CAP
KEY 1 SHOWN**

180-116
M83526/16 Style GFOCA Plug Connector
4 Channel Hermaphroditic with Optional Dust Cover



TABLE I: CABLE DIAMETER		
Dash No.	Cable Dia	
	Inch	Millimeter
01	.190 - .315	4.83 - 8.00
04	.316 - .379	8.03 - 9.63

TABLE II: TERMINI FERRULE I.D.		
Dash Sym	Ferrule I.D.	
	Max (mm)	Min (mm)
A	.1270	.1260
B	.1280	.1270
C	.1430	.1420
D	.2340	.2300
W	No Termini Supplied	

TABLE III: INSERT CAP KEY CONFIGURATION	
Dash No.	Configuration
1	1
2	2
3	3
4	U

TABLE IV: ALIGNMENT SLEEVE CONFIGURATION	
Dash Sym	Configuration
S	Split
N	None

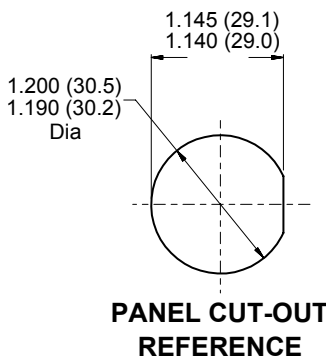
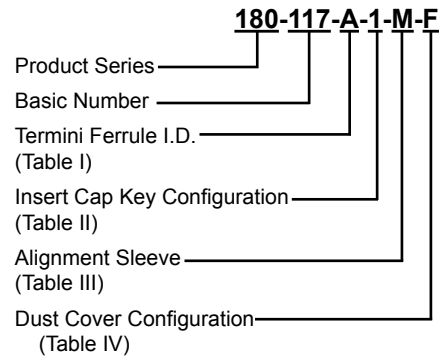
TABLE V: DUST COVER CONFIGURATION	
Dash Sym	Configuration
H	Hermaphroditic
M	Male
N	None

APPLICATION NOTES

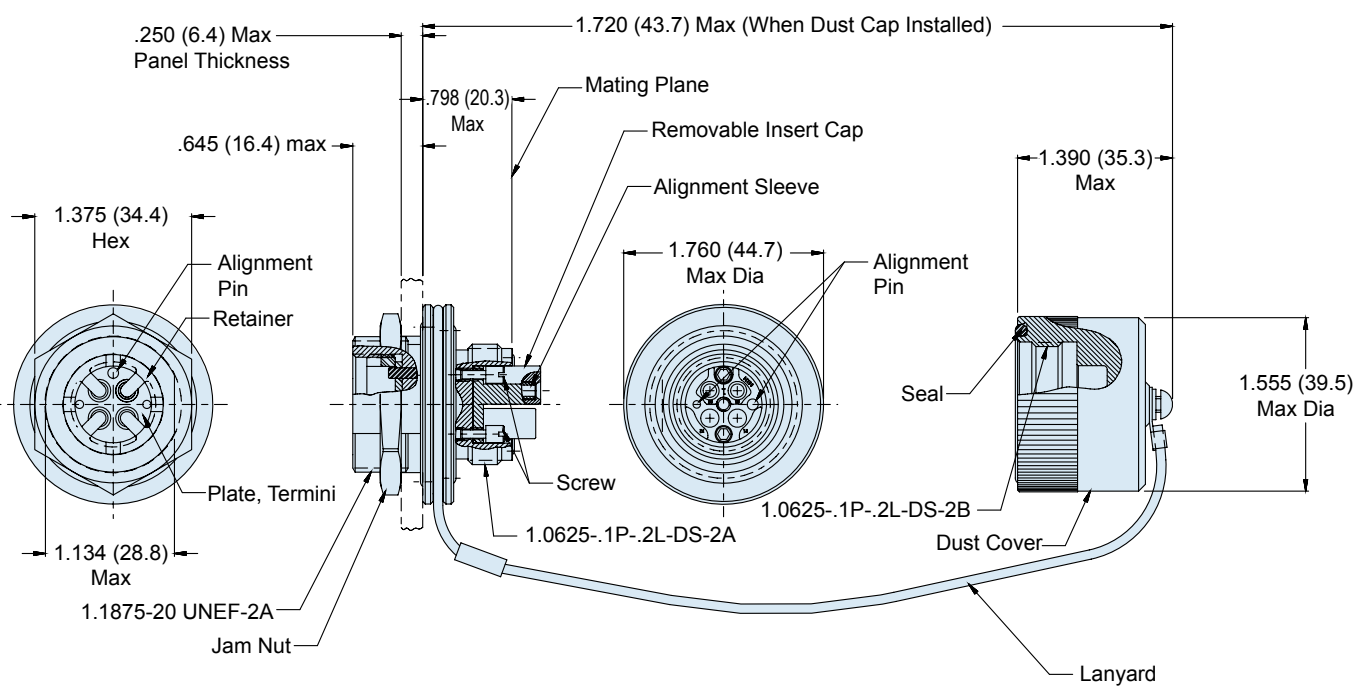
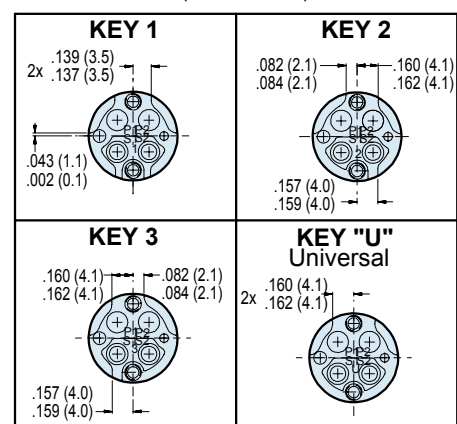
- | | |
|--|---|
| <p>1. Assembly identified with manufacturer's name and P/N, space permitting.</p> <p>2. Glenair 180-116 Connector Features:</p> <p style="margin-left: 20px;">A. Plug Barrel, Shell, Coupling Nut, Backshell, Removable Insert Cap - Al Alloy</p> <p style="margin-left: 20px;">B. Lanyard: Coated Stainless Steel Cable</p> | <p>C. Misc. Hardware: Stainless Steel/Passivated</p> <p>D. Termini: See 181-050 (Page F-3)</p> <p>E. Operating & Transit Temperature range: -65°C to +160°C
storage temperature range: -70°C to +185°C</p> <p>3. Metric dimensions (mm) are indicated in parentheses.</p> |
|--|---|



180-117 M83526/17 Style GFOCA Hermaphroditic Fiber Optic Jam Nut Mount Receptacle Connector 4 Channel with Optional Dust Cover



**INSERT CAP
KEY CONFIGURATION**
(See Table II)



180-117
M83526/17 Style GFOCA Hermaphroditic
Fiber Optic Jam Nut Mount Receptacle Connector
4 Channel with Optional Dust Cover



**TABLE I:
TERMINI FERRULE I.D.**

Dash Sym	Ferrule I.D.	
	Max (mm)	Min (mm)
A	.1270	.1260
B	.1280	.1270
C	.1430	.1420
D	.2340	.2300
W	No Termini Supplied	

**TABLE II:
INSERT CAP KEY
CONFIGURATION**

Dash No.	Configuration
1	1
2	2
3	3
4	U

**TABLE III:
ALIGNMENT SLEEVE
CONFIGURATION**

Dash Sym	Configuration
N	None
S	Split

**TABLE IV:
DUST COVER
CONFIGURATION**

Dash Sym	Configuration
F	Female
N	None

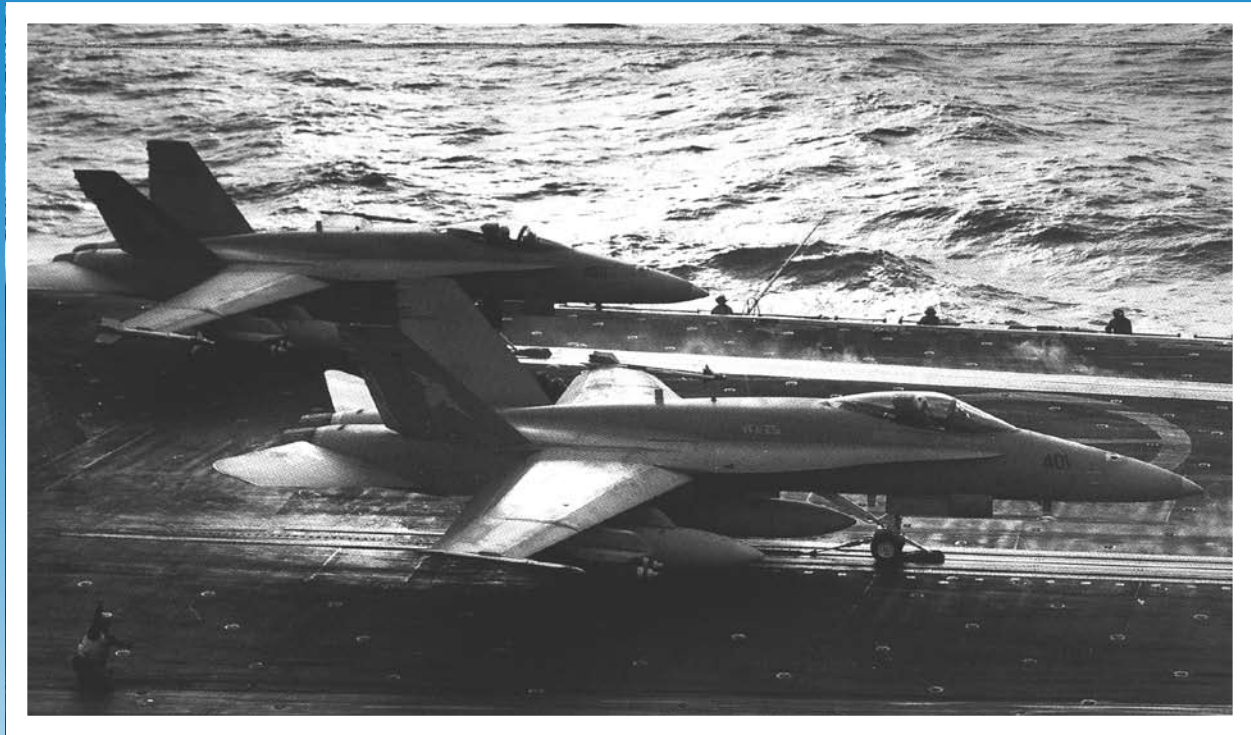
**TABLE V:
PANEL SEAL TYPE**

Dash No.	Configuration
1	Conductive (EMI)
Omit	Non-Conductive

APPLICATION NOTES

- | | |
|---|--|
| <p>1. Assembly identified with manufacturer's name and P/N, Space Permitting.</p> <p>2. Glenair 180-117 Connector Features:
 A. Receptacle Shell, Removable Insert Cap, Jam Nut, Retainer, Dust Cover- Al Alloy
 B. Lanyard: Coated Stainless Steel Cable</p> | <p>C. Termini: See 181-050 (Page F-3)</p> <p>D. Operating & Transit Temperature Range: -65°C to +160°C
 Storage Temperature Range: -70°C to + 185°C</p> <p>E. Misc. Hardware: Stainless Steel/Passivate</p> <p>3. Metric dimensions (mm) are indicated in parentheses.</p> |
|---|--|

Corrosion resistance and weight reduction high on your list?



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For most applications, backshells and accessories made from aluminum, stainless and carbon steel are recommended. But for applications where additional weight savings and corrosion resistance are required, many customers are now specifying composite thermoplastic materials.

Glenair is the recognized leader in composite thermoplastic research and development for the interconnect accessory industry. In fact, no one else has tooled even a small fraction of the composite products available today from Glenair—in stock and ready for same-day shipment.



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Backshell assembly and termination tools



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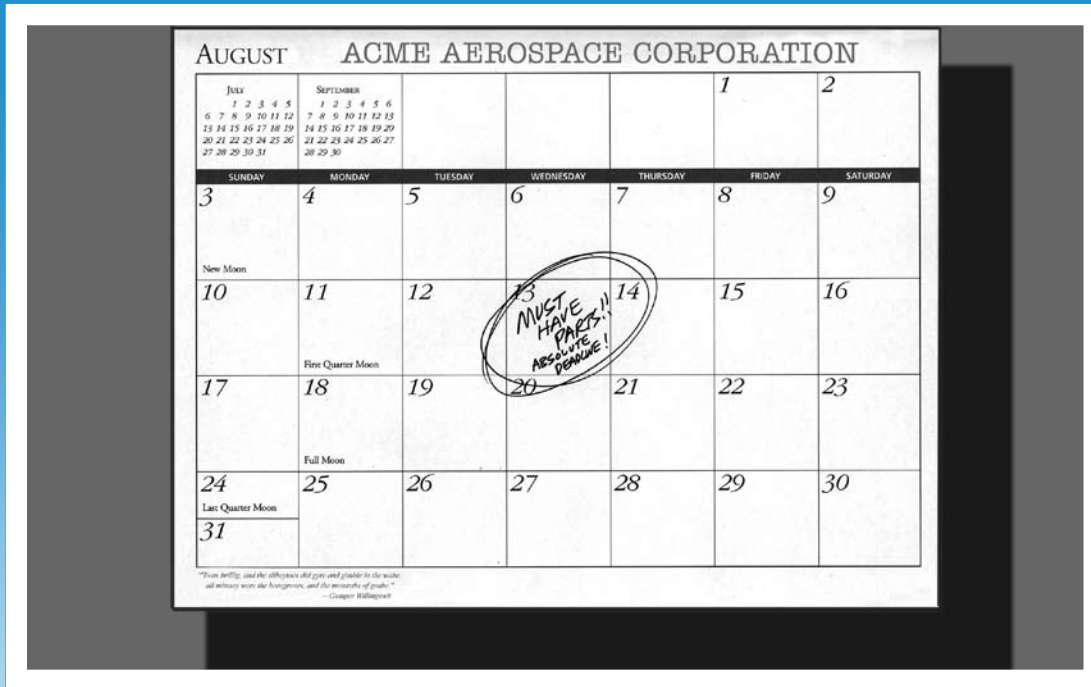
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Most interconnect accessory suppliers quote several months or more to make a backshell. At Glenair, we not only quote the shortest lead times in our industry—generally 2-3 weeks—we also do the best job by far of getting the work out when we say we will. While it's true

we can't promise we'll always make our dates, we're confident we'll be way ahead of whoever's in second place when it comes to on-time delivery. And for those jobs which can't wait even 2-3 weeks, we offer over 35,000 part numbers in stock and ready for same-day shipment.



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Convuluted tubing and metal-core conduit



Electrical and fiber optic cable assemblies



Composite thermoplastic components



Microminiature connectors and accessories



Backshell assembly and termination tools



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PRODUCT FEATURES

- Precision Front Release Contact System with Integrated Retention Clip and Environmental Sealing
- All Popular Fiber Sizes From 9/125 Singlemode to 400/440 Multimode
- Ceramic Alignment Sleeve Coupled with Stainless Steel Contact Components
- Broad Range of Existing Custom Interconnects Including Cylindrical and Rectangular Designs
- Typical Insertion Loss Less Than 0.5 db
- Machined Connector Shells in All Standard Materials and Finishes Including Stainless Steel and Titanium
- No Upper Limit on Number of Fiber Cavities

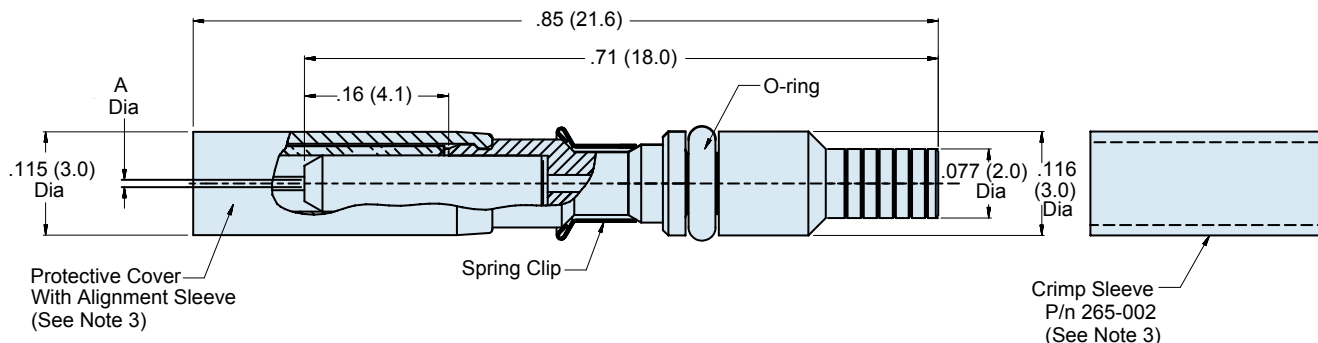
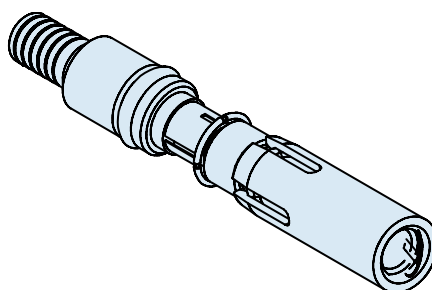
Rapid Prototyping and Production of Fiber Optic Connectors in a Wide Range of Custom Packages

Unique Front Release Termini Facilitates Custom Connector Design

The unique design of the Glenair 181-011 and 181-012 series fiber optic contact allows for rapid integration of optical media in a broad range of cylindrical and rectangular connector packages and systems. By placing the retention and environmental sealing components directly on the termini, Glenair is able to fabricate unique fiber optic connector shell packages without costly tooling and engineering. The secret is the integrated retention clip and environmental O-ring located directly on the contact. Glenair's in-house expertise and capacity for machining connector shells to the precise tolerances required in optical connection systems is the other half of the story. Finished connector systems perform at insertion-loss levels equivalent to other high-performance, tactical fiber optic systems such as MIL-DTL-38999 and MIL-PRF-28876. The Glenair Front Release Custom Fiber Optic Connection System has enabled Glenair to integrate optical media in Micro-D and D-Subminiature shells as well as in cylindrical bodies such as the 180-070 composite connector presented in this section. Please feel free to contact the factory for available and free application engineering assistance for both standard and custom fiber optic connection systems.

181-011-126

Product Series
Basic Number
Dash Number
(Table I)



APPLICATION NOTES

1. Assembly packaged in plastic bag and tag identified with manufacturer's name and part number.
2. Material/Finish:
 Ferrule: Zirconia Ceramic/N.A.
 Protective Cover: Spring Alloy
 Terminus Assembly: Stainless Steel/Passivate
 Spring Material: Stainless Steel Passivate
 Spring Clip: Spring Alloy
 O-Ring: Fluorosilicone
 Crimp Sleeve: Brass Alloy/Nickel
3. Alignment Sleeve with Protective Cover and Crimp Sleeve may be ordered separately (Table II).
4. Consult factory for termination and assembly tools/procedures.
5. Metric dimensions (mm) are in parentheses.

181-011
Fiber Optic Socket Terminus
Size 16 Front Release
with Protective Cover Alignment Sleeve



Custom
 Connector
 System

TABLE I: DASH NUMBER

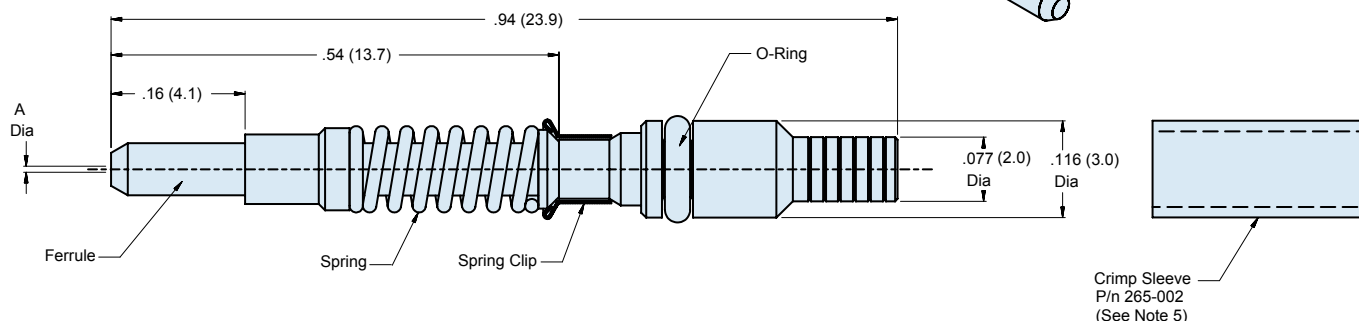
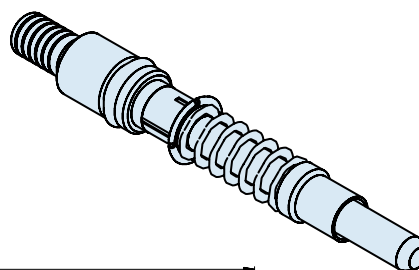
Assembly Dash No.	Fiber Size Core/Cladding	A Dia (mm)
125	9/125 (Singlemode)	.125
126	50/125	.126
126	62.5/125	.126
142	100/140	.142
156	62.5/125/155 (Polyimide)	.156
175	100/140/172 (Polyimide)	.175
233	200/225	.233
236	200/230	.236
280	200/280	.286
440	400/440	.448

TABLE II: TERMINUS ACCESSORIES

Assembly Dash No.	Terminus Accessories
181-011-S	Protective Cover with Ceramic Alignment Sleeve
181-011-K	Protective Cover with Stainless Steel Alignment Sleeve
182-005S	Socket Terminus Polishing Tool
265-002	Crimp Sleeve
182-015	Removal Tool
182-016	Alignment Sleeve Insertion/Removal Tool
182-014	Insertion Tool, 90°
182-013	Insertion Tool, Straight
182-012	Crimp Tool

181-012-126

Product Series
Basic Number
Dash Number
(Table I)



APPLICATION NOTES

1. Assembly packaged in plastic bag and tag identified with manufacturer's name and part number.
2. Material/Finish:
 Ferrule: Zirconia Ceramic/N.A.
 Protective Cover: Spring Alloy/Nickel
 Terminus Assembly: Stainless Steel/Passivate
 Spring Material: Stainless Steel Passivate
 Spring Clip: Spring Alloy/N.A.
 O-Ring: Fluorosilicone
 Crimp Sleeve: Brass Alloy/Nickel
3. Alignment Sleeve with Protective Cover and Crimp Sleeve may be ordered separately (Table II).
4. Consult factory for termination and assembly tools/procedures.
5. Metric dimensions (mm) are in parentheses.

181-012
Fiber Optic Pin Terminus
Size 16 Front Release



Custom
 Connector
 System

TABLE I: DASH NUMBER

Assembly Dash No.	Fiber Size Core/Cladding	A Dia (mm)
125	9/125 (Singlemode)	.125
126	50/125	.126
126	62.5/125	.126
142	100/140	.142
156	62.5/125/155 (Polyimide)	.156
175	100/140/172 (Polyimide)	.175
233	200/225	.233
236	200/230	.236
280	200/280	.286
440	400/440	.448

TABLE II: TERMINUS ACCESSORIES

Assembly Dash No.	Terminus Accessories
265-002	Crimp Sleeve
182-015	Removal Tool
182-005P	Pin terminus Polishing Tool
182-014	Insertion Tool, 90°
182-013	Insertion Tool, Straight
182-012	Crimp Tool

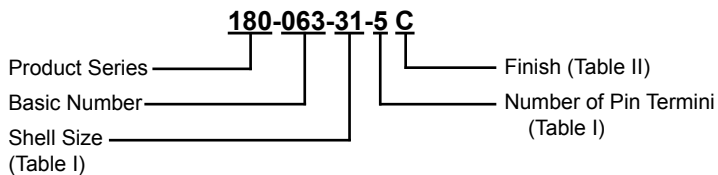


TABLE II: FINISH		
SYM	MATERIAL	FINISH
C	Aluminum	Black Anodize
M	Aluminum	Electroless Nickel (Coupling Nut Electrodeposited)
NF	Aluminum	Cadmium, Olive Drab over Electroless Nickel
ZN	Aluminum	Zinc-Nickel, Olive Drab over Electroless Nickel
Z1	Stainless Steel	Passivate

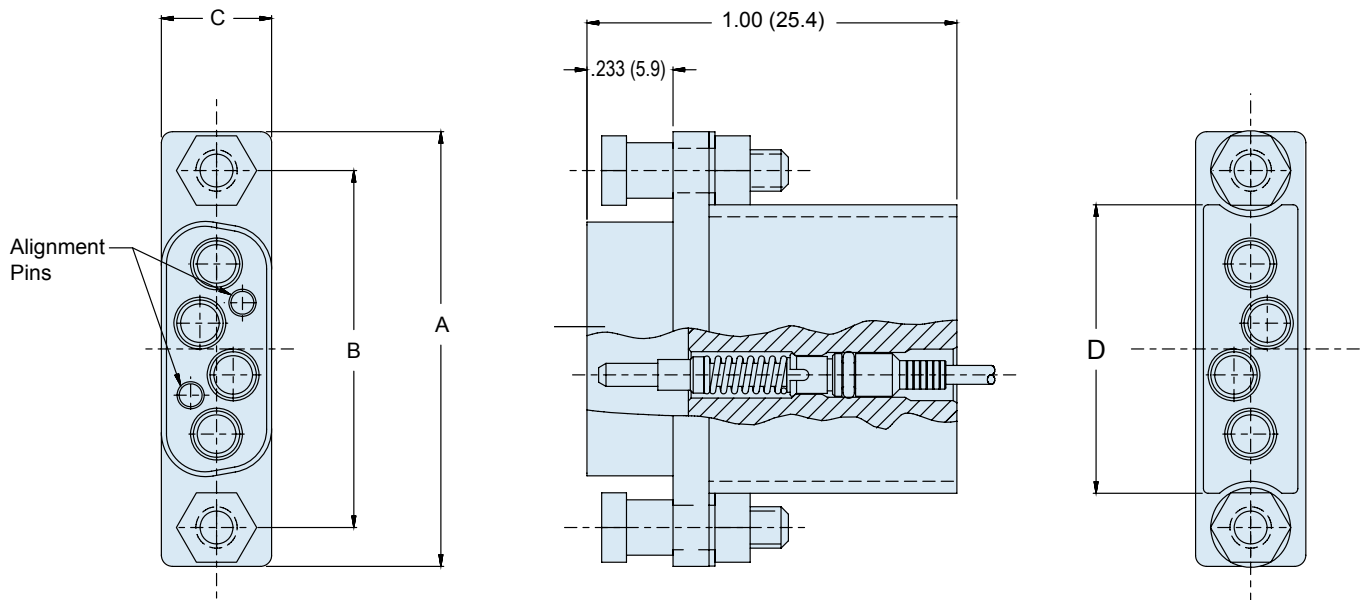


TABLE I: SHELL SIZE					
Shell Size	A ±.010 (0.3)	B ±.003 (0.1)	C ±.010 (0.3)	D ±.010 (0.3)	Max F.O. Pin
9	.775 (19.7)	.565 (14.4)	.298 (7.6)	.380 (9.7)	1
15	.925 (23.5)	.715 (18.2)	.298 (7.6)	.530 (13.5)	2
21	1.075 (27.3)	.865 (22.0)	.298 (7.6)	.680 (17.3)	3
25	1.175 (29.8)	.965 (24.5)	.298 (7.6)	.780 (19.8)	4
31	1.325 (33.7)	1.115 (28.3)	.298 (7.6)	.930 (23.6)	5
100	2.160 (54.9)	1.800 (45.7)	.384 (9.8)	1.425 (36.2)	8

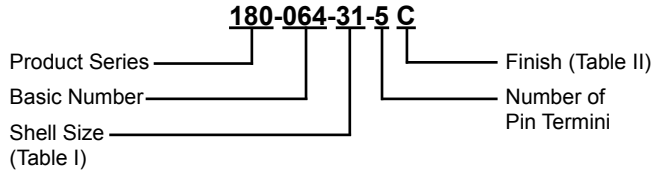
APPLICATION NOTES
1. Assembly packaged in plastic bag and tag identified with manufacturer's name and part number.
2. Material/Finish: Shell: Aluminum Alloy (See Table II).
3. Fiber Optic Terminus to be ordered separately. See Glenair drawing 181-012-XXX.
4. Backshell to be ordered separately (Consult factory).
5. This Receptacle is designed to be used with Glenair P/N 180-064 Plug (See Page H-7).
6. Metric dimensions (mm) are in parentheses.

180-064

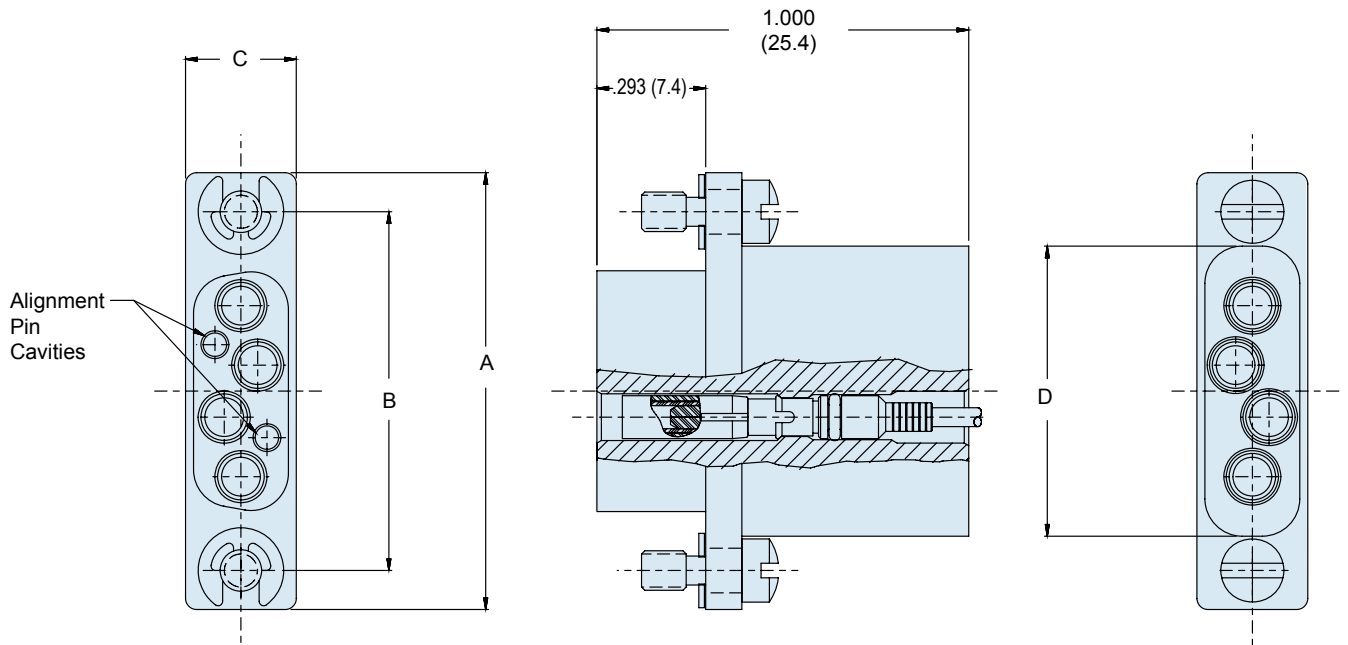
4 Channel Micro-D Fiber Optic Plug Connector for Glenair Front Release Socket Terminus 181-011



Custom Connector System

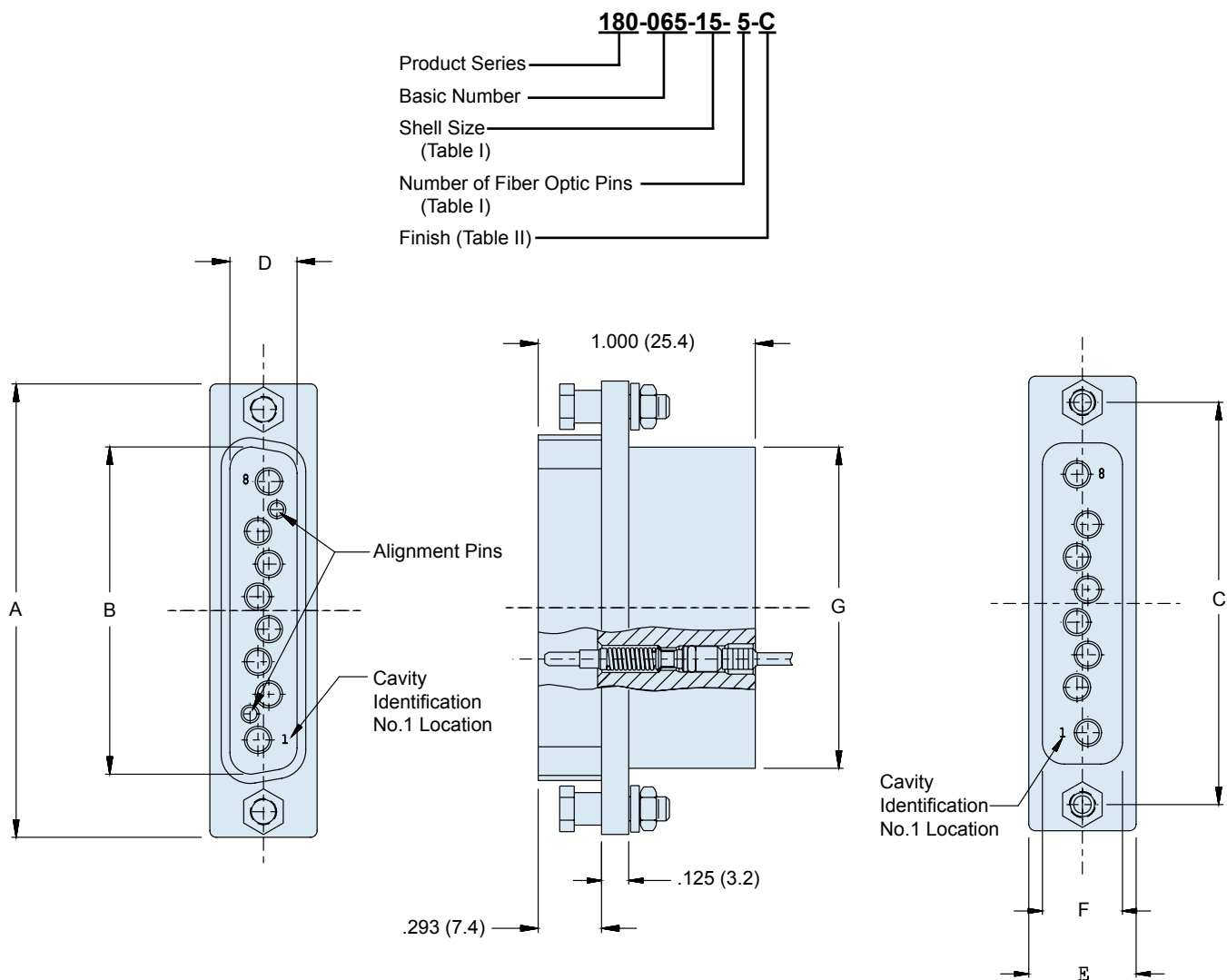


SYM	MATERIAL	FINISH
C	Aluminum	Black Anodize
M	Aluminum	Electroless Nickel (Coupling Nut Electrodeposited)
NF	Aluminum	Cadmium, Olive Drab over Electroless Nickel
ZN	Aluminum	Zinc-Nickel, Olive Drab over Electroless Nickel
Z1	Stainless Steel	Passivate



Shell Size	A ±.010 (0.3)	B ±.003 (0.1)	C ±.010 (0.3)	D ±.010 (0.3)	Max F.O. Skt
9	.775 (19.7)	.565 (14.4)	.298 (7.6)	.380 (9.7)	1
15	.925 (23.5)	.715 (18.2)	.298 (7.6)	.530 (13.5)	2
21	1.075 (27.3)	.865 (22.0)	.298 (7.6)	.680 (17.3)	3
25	1.175 (29.8)	.965 (24.5)	.298 (7.6)	.780 (19.8)	4
31	1.325 (33.7)	1.115 (28.3)	.298 (7.6)	.930 (23.6)	5
100	2.160 (54.9)	1.800 (45.7)	.384 (9.8)	1.425 (36.2)	8

- ### APPLICATION NOTES
1. Assembly packaged in plastic bag and tag identified with manufacturer's name and part number.
 2. Material/Finish:
Shell: Aluminum Alloy (See Table II).
 3. Fiber Optic Terminus to be ordered separately. See Glenair drawing 181-011-XXX.
 4. Backshell to be ordered separately (Consult factory).
 5. This Plug is designed to be used with Glenair P/N 180-063 Receptacle (See Page H-6).
 6. Metric dimensions (mm) are in parentheses.

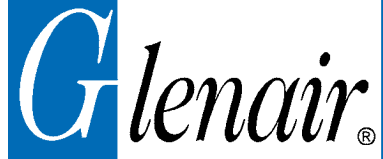


APPLICATION NOTES

- | | |
|---|---|
| <p>1. Assembly to be identified with Glenair's name, Part Number and date Code.</p> <p>2. Material/Finish:
 Shell: Aluminum Alloy/Black Anodized (Standard).
 Guide Pins, Hex Nut and Female Jackscrew:
 Stainless Steel/Passivate
 Washer: Cres.</p> | <p>3. Fiber Optic Terminus to be ordered separately (See Glenair Drawing #181-012-XXX).</p> <p>4. Backshell to be ordered separately (Consult Glenair for available Backshell).</p> <p>5. This Connector Receptacle is designed to be used with Glenair Part Number #180-066 (See Page H-10) Plug Connector.</p> <p>6. Metric dimensions (mm) are in parentheses.</p> |
|---|---|

180-065

8 Channel D-Subminiature Fiber Optic Receptacle
for Glenair Front Release Pin Terminus 181-012



Custom
Connector
System

TABLE I: SHELL SIZE

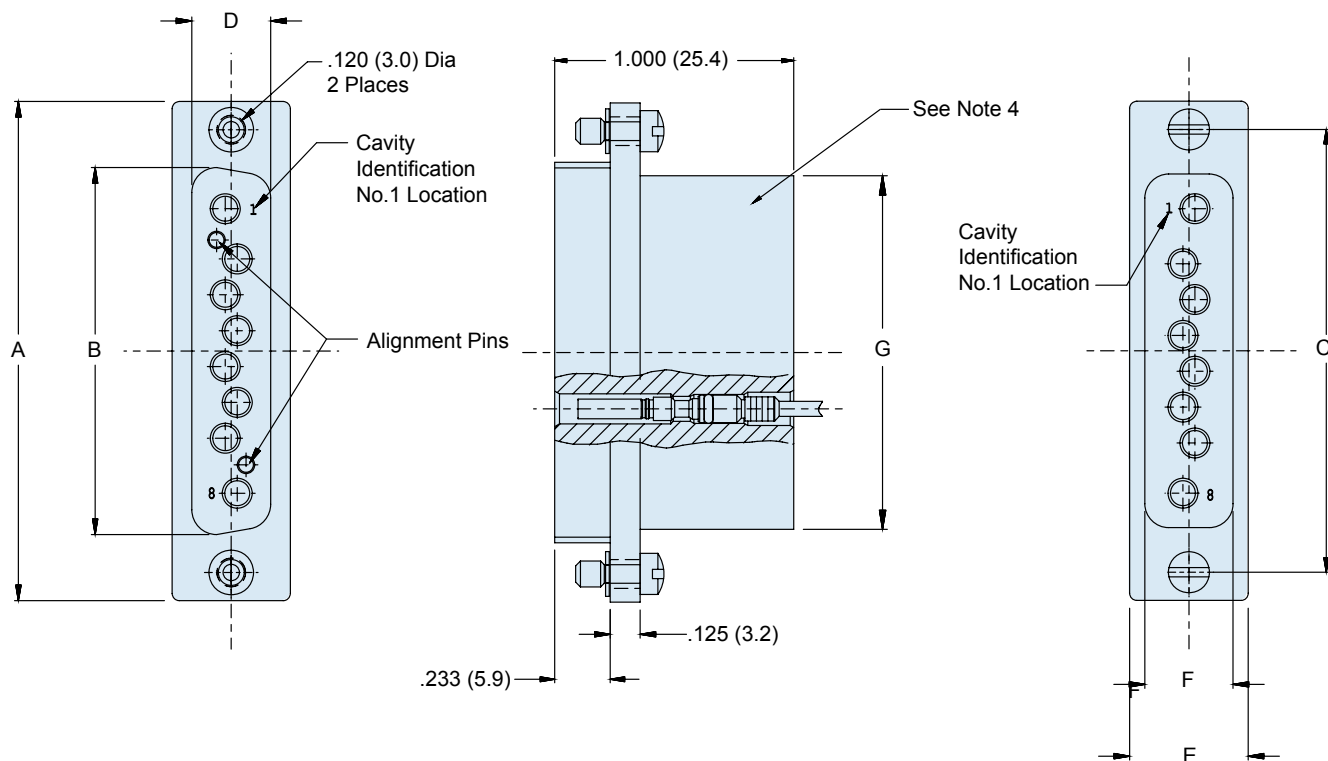
Shell Size	A ±.010 (0.3)	B ±.010 (0.3)	C ±.005 (0.1)	D ±.010 (0.3)	E ±.010 (0.3)	F ±.010 (0.3)	G ±.010 (0.3)	Max F.O. Pins
9	1.208 (30.7)	.640 (16.3)	.984 (25.0)	.308 (7.8)	.498 (12.6)	.369 (9.4)	.725 (18.4)	4
15	1.545 (39.2)	.968 (24.6)	1.312 (33.3)	.308 (7.8)	.498 (12.6)	.369 (9.4)	.932 (23.7)	5
25	2.090 (53.1)	1.508 (38.3)	1.852 (47.0)	.308 (7.8)	.498 (12.6)	.369 (9.4)	1.479 (37.6)	8
50	2.640 (67.1)	2.062 (52.4)	2.406 (61.0)	.490 (12.4)	.610 (15.5)	.500 (12.7)	2.000 (50.8)	12

TABLE II: FINISH

SYM	MATERIAL	FINISH
C	Aluminum	Black Anodize
M	Aluminum	Electroless Nickel
NF	Aluminum	Cadmium, Olive Drab over Electroless Nickel
ZN	Aluminum	Zinc-Nickel, Olive Drab over Electroless Nickel
Z1	Stainless Steel	Passivate

180-066-15-5-C

Product Series
Basic Number
Shell Size
(Table I)
Number of Fiber Optic Sockets
(Table I)
Finish (Table II)



APPLICATION NOTES

1. Assembly to be identified with Glenair's name, Part Number and date Code.
2. Material/Finish:
Shell: Aluminum Alloy/Black Anodized (Standard)
Jackscrew: Stainless Steel/Passivate
Retaining Ring: Cres
3. Fiber Optic Terminus to be ordered separately (See Glenair Drawing #181-011-XXX).
4. Backshell to be ordered separately (Consult Glenair for available Backshell and Jackscrew Hardware).
5. This Connector Plug is designed to be used with Glenair Part Number #180-065 (See Page H-8) Receptacle Connector.
6. Metric dimensions (mm) are in parentheses.

180-066
8 Channel D-Subminiature Fiber Optic Plug Connector
for Glenair Front Release Socket Terminus 181-011



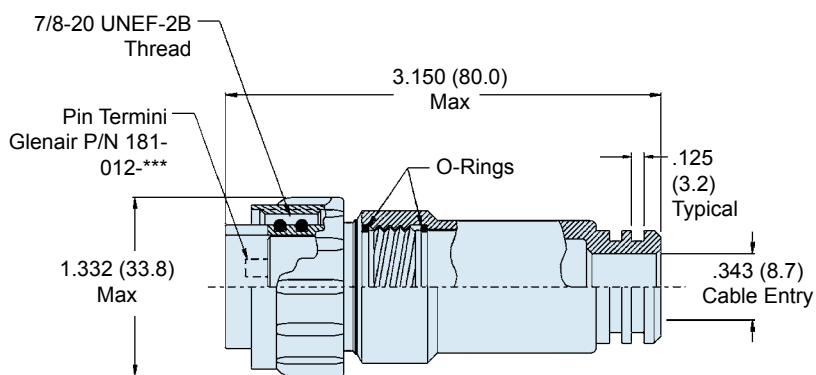
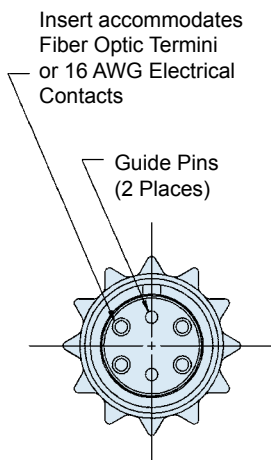
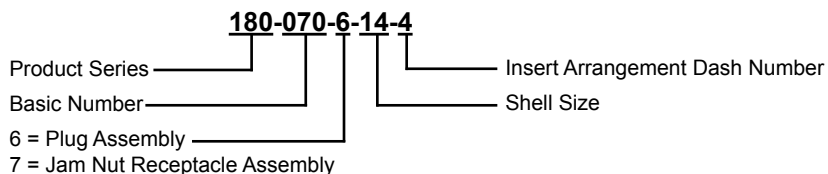
Custom
Connector
System

TABLE I: SHELL SIZE

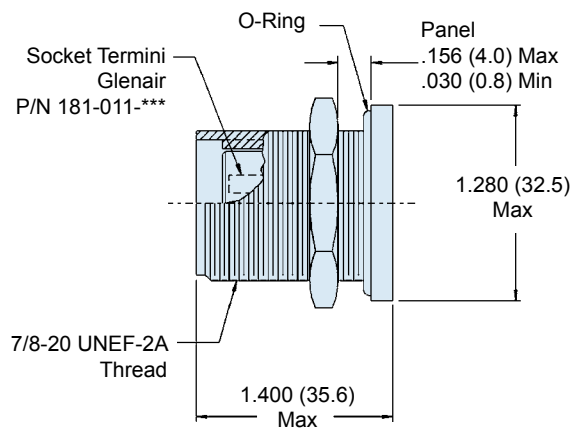
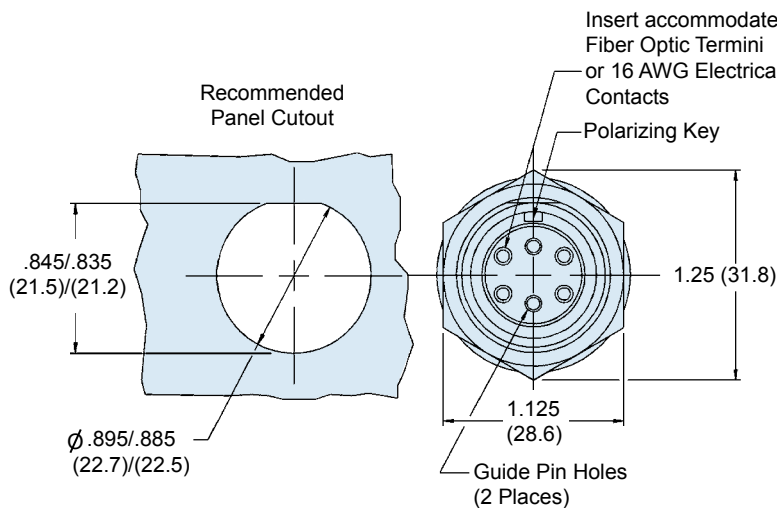
Shell Size	A ±.010 (0.3)	B ±.010 (0.3)	C ±.005 (0.1)	D ±.010 (0.3)	E ±.010 (0.3)	F ±.010 (0.3)	G ±.010 (0.3)	Max F.O. Skts
9	1.208 (30.7)	.640 (16.3)	.984 (25.0)	.308 (7.8)	.498 (12.6)	.369 (9.4)	.725 (18.4)	4
15	1.545 (39.2)	.968 (24.6)	1.312 (33.3)	.308 (7.8)	.498 (12.6)	.369 (9.4)	.932 (23.7)	5
25	2.090 (53.1)	1.508 (38.3)	1.852 (47.0)	.308 (7.8)	.498 (12.6)	.369 (9.4)	1.479 (37.6)	8
50	2.640 (67.1)	2.062 (52.4)	2.406 (61.0)	.420 (10.7)	.610 (15.5)	.500 (12.7)	2.000 (50.8)	12

TABLE II: FINISH

SYM	MATERIAL	FINISH
C	Aluminum	Black Anodize
M	Aluminum	Electroless Nickel
NF	Aluminum	Cadmium, Olive Drab over Electroless Nickel
ZN	Aluminum	Zinc-Nickel, Olive Drab over Electroless Nickel
Z1	Stainless Steel	Passivate



-6 PLUG ASSEMBLY



-7 JAM NUT RECEPTACLE ASSEMBLY

Metric dimensions (mm) are in parentheses.

Yet Another Glenair Advantage: An Extra Pair of Hands On Your Engineering Team



Not only do we offer some of the most innovative fiber optic interconnect technologies in the business, including packaging options you won't find anywhere else, we're also ready to roll up our sleeves to provide you with the

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Glendale, California 91201-2497

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Convolution tubing and metal-core conduit



Electrical and fiber optic cable assemblies



Composite thermoplastic components



Microminiature connectors and accessories



Backshell assembly and termination tools



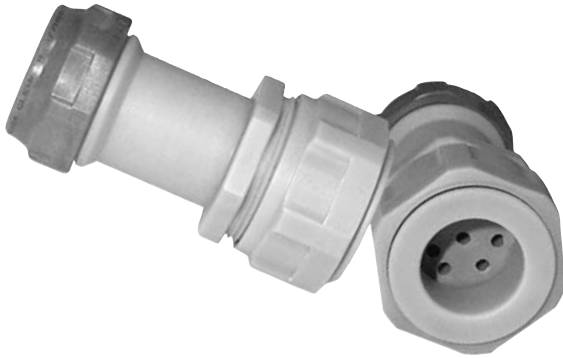
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PRODUCT FEATURES

- Corrosion Free Composite Thermoplastic Materials
- High Temperature Ultem 2300 Material
- Optional Stainless Steel and Aluminum Designs
- Design Eliminates Micro-Bending of Fiber
- Keyed Termini Alignment
- Environmentally Sealed
- Compatible with Glenair and Other Industry Standard Connectors
- Ratcheted Spin Coupling Designs
- Accepts Standard Backshell Assembly Tools

Glenair Fiber Optic Backshells Prevent Damage to Fiber Strands by Eliminating Micro-Bending

Glenair Fiber Optic Backshells

Glenair is the only fiber optic connector and termini manufacturer to also offer a complete line of specialized fiber optic backshells. Designed for use with MIL-PRF-28876 and MIL-DTL-38999 fiber optic connectors, the backshells protect fiber terminations from mechanical and environmental damage.

Full-Spectrum Product Line

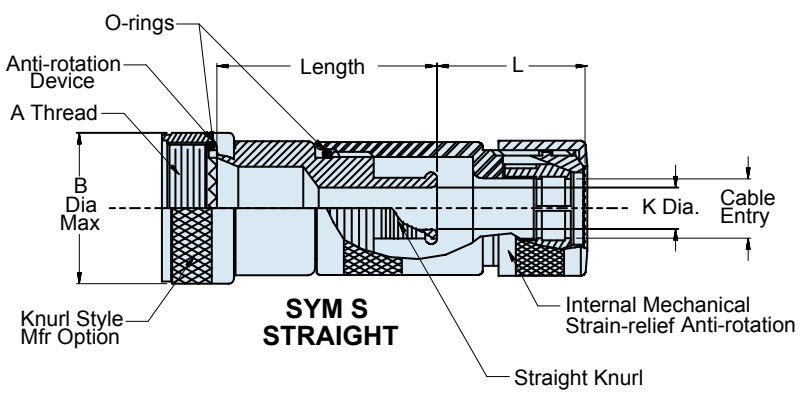
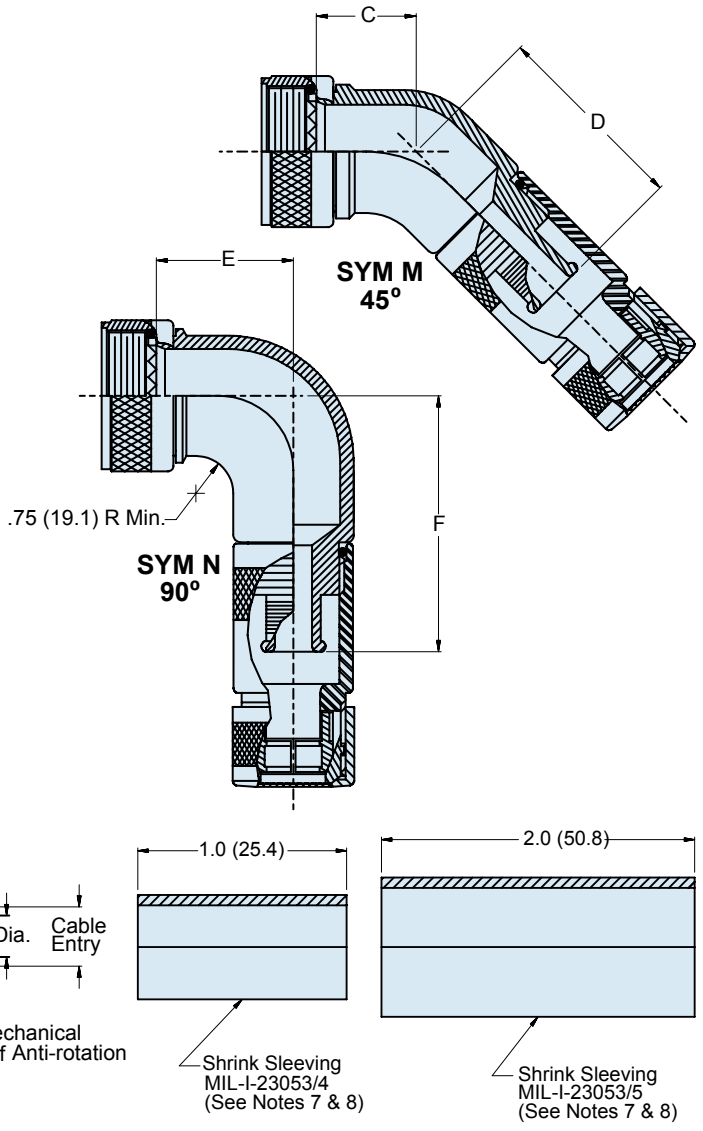
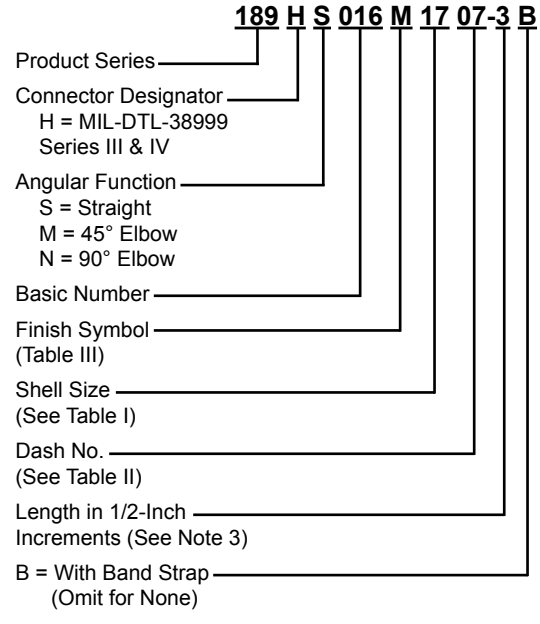
Glenair's line of fiber optic backshells include strain-reliefs, banding adapters, cable seals, and conduit adapters. Available materials include aluminum and composite thermoplastic with a range of plating options. Straight configurations as well as 45° and 90° angled fittings are available for added convenience in cable routing in reduced package size applications. Glenair even makes a unique direct coupling backshell for use with single-channel connectors. This backshell features a flexible strain-relief boot material for combined environmental and mechanical protection.

Part of Glenair's Complete F/O Solution

Glenair's line of fiber optic backshells are an integral part of our comprehensive fiber optic solution which includes connectors, termini, cable assemblies, conduit fittings and tooling. Many of the products are in stock and available for immediate shipment. Please contact the factory, or visit our website at www.glenair.com for more information.



189-016
Backshell with Banding Strain Relief
Environmental Resistant
for MIL-DTL-38999 Series III Fiber Optic Connectors



APPLICATION NOTES

1. Assembly to be identified with manufacturer's name and P/N as space permits.
2. Glenair 600 series Backshell assembly tools are recommended for assembly and installation.
3. Standard minimum length: 1.5 inches, for shorter length consult factory.
4. Material/ Finish:
Adapter, Coupling Nut- Alloy/ See Table III.
Clamp components- Ryton R4XT- Black, Ultem 1000-Natural
Anti- Rotation device Torlon 4203L- Natural.
5. For shield termination see Glenair drawings 600-050 & 600-052.
6. Consult factory for larger cable size.
7. MIL-I-23053/4 Shrink Sleeving to be packaged loose in a plastic bag.
8. MIL-I-23053/4 Shrink Sleeving to be heat shrink over rear of adapter before MIL-I-23053/5 Shrink Sleeving.
9. Metric dimensions (mm) are indicated in parentheses.

189-016
Backshell with Banding Strain Relief
Environmental Resistant
for MIL-DTL-38999 Series III Fiber Optic Connectors



TABLE I: SHELL SIZE

Shell Size	A Thread ISO Metric	B Max	C Max	D Max	E Max	F Max	Dash No. Max
11	M15 x 1 - 6H	.890 (22.6)	.861 (21.9)	1.111 (28.2)	1.563 (39.7)	1.875 (47.6)	05
13	M18 x 1 - 6H	1.020 (25.9)	.911 (23.1)	1.161 (29.5)	1.938 (49.2)	2.250 (57.2)	05
15	M22 x 1 - 6H	1.150 (29.2)	.965 (24.5)	1.215 (30.9)	1.938 (49.2)	2.250 (57.2)	07
17	M25 x 1 - 6H	1.230 (31.2)	1.014 (25.8)	1.264 (32.1)	2.063 (52.4)	2.375 (60.3)	07
19	M28 x 1 - 6H	1.360 (34.5)	1.064 (27.0)	1.314 (33.4)	2.063 (52.4)	2.375 (60.3)	09
21	M31 x 1 - 6H	1.480 (37.6)	1.118 (28.4)	1.368 (34.7)	2.563 (65.1)	2.875 (73.0)	11
23	M34 x 1 - 6H	1.600 (40.6)	1.172 (29.8)	1.422 (36.1)	2.313 (58.8)	2.688 (68.3)	11
25	M37 x 1 - 6H	1.730 (43.9)	1.221 (31.0)	1.471 (37.4)	2.250 (57.2)	2.563 (65.1)	13

TABLE II: DASH NUMBER AND CABLE ENTRY

Dash No.	Clamp Size	Max Cable Size	K Dia ±.005 (0.1)	L Max	MIL-I-23053/4 Shrink Sleeve	MIL-I-23053/3 Shrink Sleeve	Cable Entry* Min	Max
05	12	.280 (7.1)	.312 (8.0)	1.110 (28.2)	/4-203-0	/5-107-0	.233 (6.0)	.375 (9.5)
07	16	.395 (10.0)	.438 (11.1)	1.210 (30.7)	/4-204-0	/5-108-0	.358 (9.1)	.500 (12.7)
09	20	.510 (13.0)	.562 (14.3)	1.210 (30.7)	/4-204-0	/5-109-0	.482 (12.2)	.625 (15.9)
11	24	.621 (15.8)	.688 (17.5)	1.210 (30.7)	/4-205-0	/5-109-0	.545 (13.8)	.750 (19.1)
13	28	.736 (18.7)	.812 (20.6)	1.360 (34.5)	/4-205-0	/5-110-0	.670 (17.0)	.875 (22.2)
15	32	.851 (21.6)	.938 (23.8)	1.510 (38.4)	/4-206-0	/5-111-0	.795 (20.2)	1.000 (25.4)
17	36	.966 (24.5)	1.062 (27.0)	1.510 (38.4)	/4-206-0	/5-107-0	1.014 (25.8)	1.250 (31.8)
19	40	1.091 (27.7)	1.188 (30.2)	1.510 (38.4)	/4-206-0	/5-111-0	1.014 (25.8)	

*See Note 5

TABLE III: FINISH

SYM	MATERIAL	FINISH
NF	Aluminum	Cadmium/Olive Drab over Electroless Nickel (500 Hr. Salt Spray)
B	Aluminum	Cadmium Plate/Olive Drab
J	Aluminum	Gold Iridite over Cadmium Plate over Nickel
N	Aluminum	Cadmium Plate/Olive Drab over Nickel
M	Aluminum	Electroless Nickel
T	Aluminum	Cadmium Plate/Bright Dip over Nickel

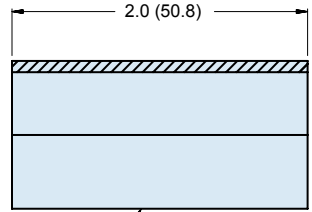


189-037

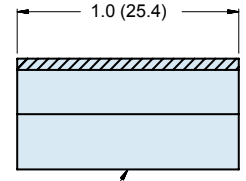
Environmental Backshell with Banding Strain Relief for MIL-DTL-38999 Series III Fiber Optic Connectors

189 H S 037 M 17 07-3

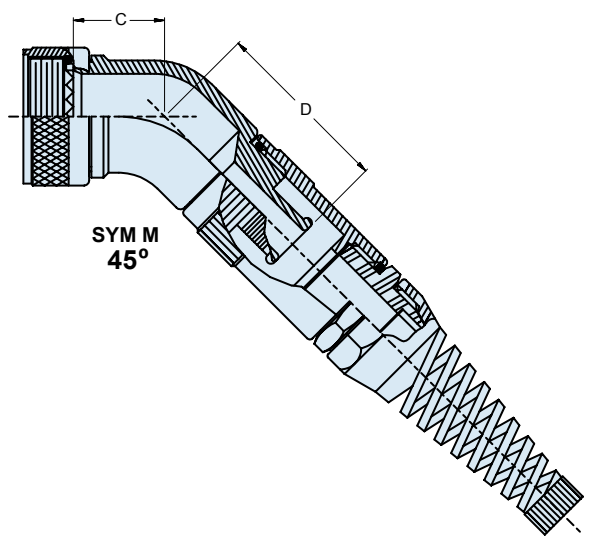
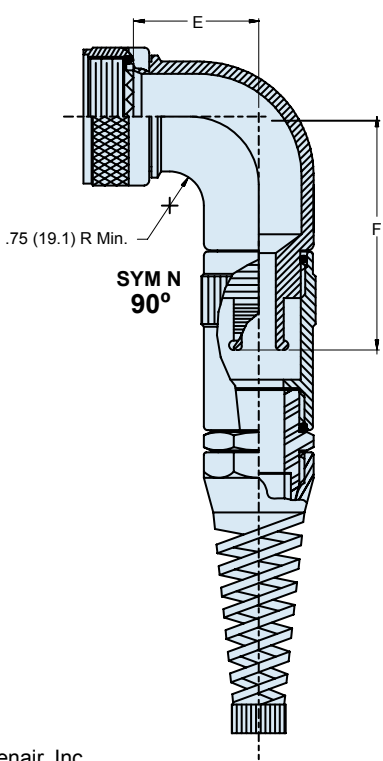
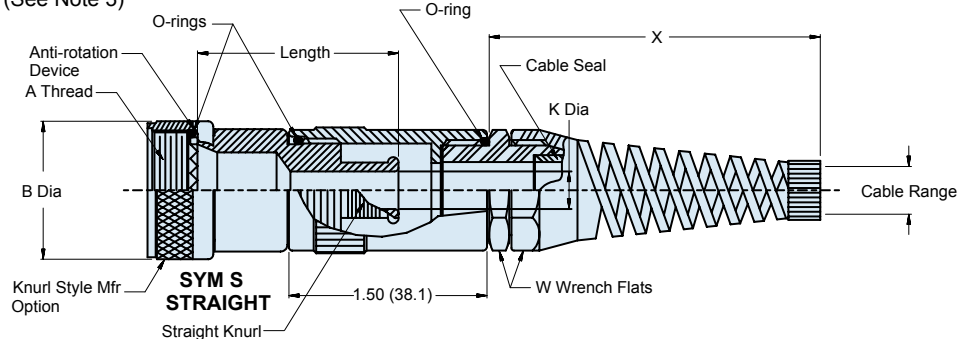
- Product Series _____
- Connector Designator _____
 H = MIL-DTL-38999 Series III
- Angular Function _____
 S = Straight
 M = 45° Elbow
 N = 90° Elbow
- Basic Number _____
- Finish Symbol _____
 (Table III)
- Shell Size _____
 (See Table I)
- Dash No. _____
 (See Table II)
- Length in 1/2-Inch Increments _____
 (See Note 3)



Shrink Sleeve Mil-I-23053/5 (See Note 5)



Shrink Sleeve Mil-I-23053/4 (See Notes 5 & 6)



189-037
Environmental Backshell with Banding Strain Relief
for MIL-DTL-38999 Series III Fiber Optic Connectors



TABLE I: SHELL SIZE						
Shell Size	A Thread ISO Metric	B Max	C Max	D Max	E Max	F Max
11	M15 x 1 - 6H	1.060 (26.9)	.861 (21.9)	1.111 (28.2)	1.563 (39.7)	1.875 (47.6)
13	M18 x 1 - 6H	1.170 (29.7)	.911 (23.1)	1.161 (29.5)	1.938 (49.2)	2.250 (57.2)
15	M22 x 1 - 6H	1.290 (32.8)	.965 (24.5)	1.215 (30.9)	1.938 (49.2)	2.250 (57.2)
17	M25 x 1 - 6H	1.420 (36.1)	1.014 (25.8)	1.264 (32.1)	2.063 (52.4)	2.375 (60.3)
19	M28 x 1 - 6H	1.540 (39.1)	1.064 (27.0)	1.314 (33.4)	2.063 (52.4)	2.375 (60.3)
21	M31 x 1 - 6H	1.670 (42.4)	1.118 (28.4)	1.368 (34.7)	2.563 (65.1)	2.875 (73.0)
23	M34 x 1 - 6H	2.010 (51.1)	1.172 (29.8)	1.422 (36.1)	2.313 (58.8)	2.688 (68.3)
25	M37 x 1 - 6H	2.120 (53.8)	1.221 (31.0)	1.471 (37.4)	2.250 (57.2)	2.563 (65.1)

TABLE II: DASH NUMBER, CABLE RANGE & SHRINK SLEEVE						
Dash No.	Fiber Optic Cable Range	K Dia ±.005 (0.1)	W Hex	X Dim	MIL-I-23053/4 Shrink Sleeve	MIL-I-23053/3 Shrink Sleeve
05	.200 (5.1) / .285 (7.2)	.312 (8.0)	.750 (19.1)	2.320 (58.9)	/4-203-0	/5-107-0
07	.285 (7.2) / .390 (9.9)	.438 (11.1)	.870 (22.1)	2.800 (71.1)	/4-204-0	/5-108-0
09	.390 (9.9) / .550 (14.0)	.562 (14.3)	1.060 (26.9)	3.660 (93.0)	/4-204-0	/5-109-0
11	.550 (14.0) / .670 (17.0)	.688 (17.5)	1.300 (33.0)	4.370 (111.0)	/4-205-0	/5-109-0

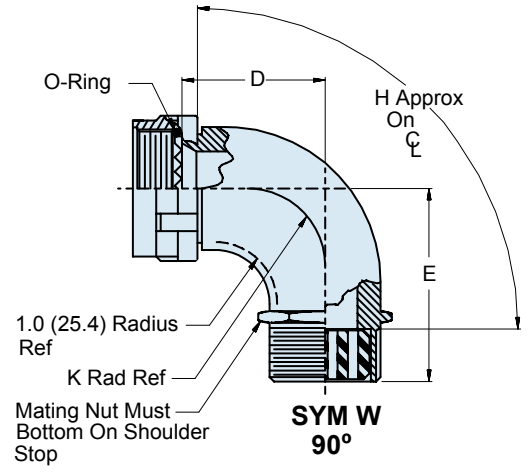
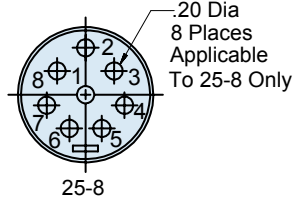
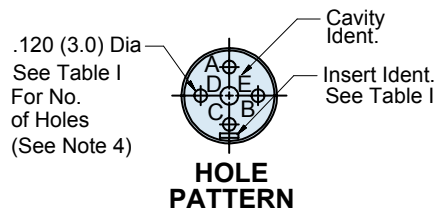
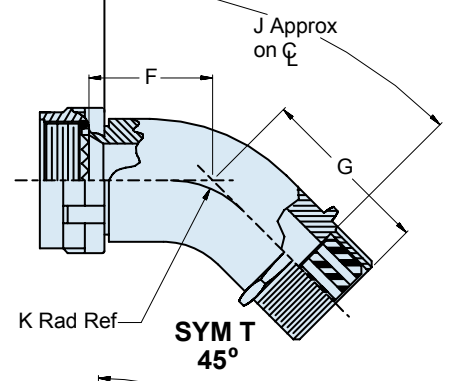
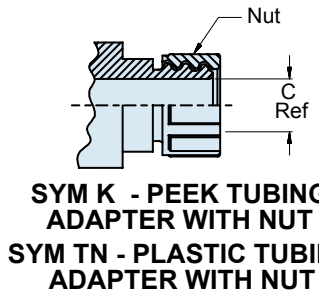
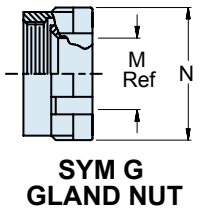
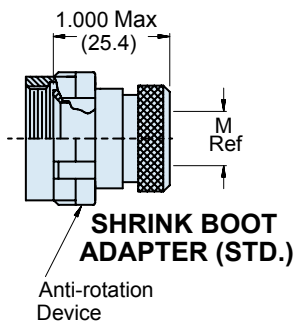
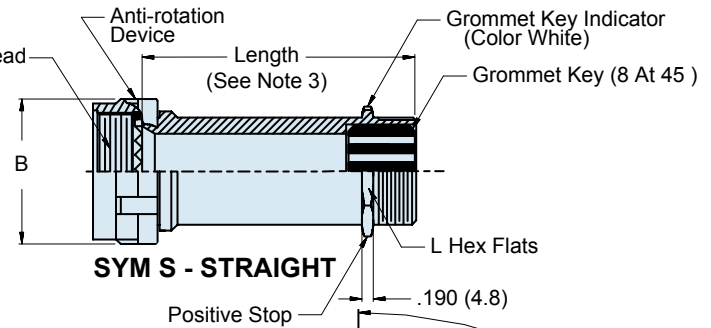
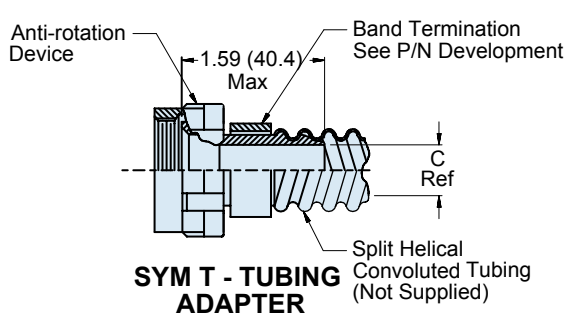
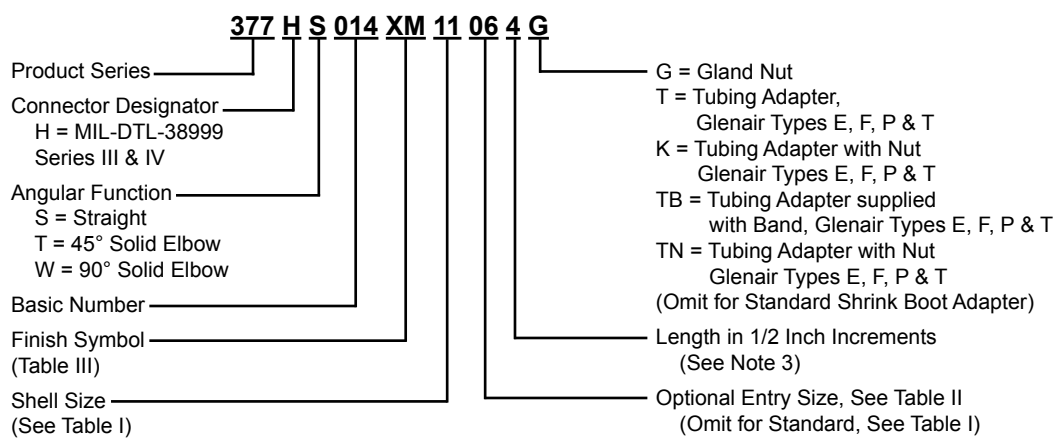
TABLE III: FINISH		
SYM	MATERIAL	FINISH
NF	Aluminum	Cadmium/Olive Drab over Electroless Nickel (500 Hr. Salt Spray)
B	Aluminum	Cadmium Plate/Olive Drab
J	Aluminum	Gold Iridite over Cadmium Plate over Nickel
N	Aluminum	Cadmium Plate/Olive Drab over Nickel
M	Aluminum	Electroless Nickel
T	Aluminum	Cadmium Plate/Bright Dip over Nickel

APPLICATION NOTES

- Assembly to be identified with manufacturer's name and P/N as space permitted.
- Glenair 600 series Backshell assembly tools are recommended for assembly and installation.
- Standard minimum length: 1.5 inches, for shorter length consult factory.
- Material/ Finish:
 Adapter, Coupling Nut- Al Alloy/ See Table III.
 Strain relief components- Nylon 6/6 (Flame resistant/ zero halogen).
 Anti- Rotation device- Torlon 4203L- Natural.
 O-Rings- Fluorosilicone/ N.A.
- MIL-I-23053/4 & /5 Shrink Sleeving to be packaged loose in a plastic bag.
- MIL-I-23054/4 Shrink Sleeving to be heat Shrink over rear of adapter before MIL-I-23053/5 Shrink Sleeving.
- Metric dimensions (mm) are indicated in parentheses.



377-014 Composite Thermoplastic Backshell for Fiber Optic MIL-DTL-38999 Series III & IV Connectors



377-014
Composite Thermoplastic Backshell
for Fiber Optic MIL-DTL-38999 Series III & IV Connectors



TABLE I: SHELL SIZE

Shell Size	A Thread ISO Metric	B Max	Standard Conduit Size	D Max	E Max	F Max	G Max	H Approx.	Insert Ident	No. of Holes
11	M15 x 1 - 6H	1.000 (25.4)	3/8	1.780 (45.2)	1.930 (49.0)	1.330 (33.8)	1.560 (39.6)	2.230 (56.6)	11-2	2
13	M18 x 1 - 6H	1.120 (28.4)	7/16	1.840 (46.7)	1.980 (50.3)	1.390 (35.3)	1.620 (41.1)	2.280 (57.9)	13-4	4
15	M22 x 1 - 6H	1.250 (31.8)	1/2	1.900 (48.3)	2.080 (52.8)	1.450 (36.8)	1.680 (42.7)	2.450 (62.2)	15-5	5
17	M25 x 1 - 6H	1.380 (35.1)	5/8	1.970 (50.0)	2.140 (54.4)	1.510 (38.4)	1.740 (44.2)	2.470 (62.7)	17-8	8
19	M28 x 1 - 6H	1.500 (38.1)	3/4	2.110 (53.6)	2.180 (55.4)	1.540 (39.1)	1.770 (45.0)	2.540 (64.5)	19-11	11
21	M31 x 1 - 6H	1.620 (41.0)	7/8	2.070 (52.6)	2.250 (57.2)	1.160 (40.9)	1.840 (46.7)	2.640 (67.1)	21-16	16
23	M34 x 1 - 6H	1.750 (44.5)	1	2.140 (54.4)	2.310 (58.7)	1.670 (42.4)	1.890 (48.0)	2.760 (70.1)	23-21	21
25	M37 x 1 - 6H	1.880 (47.8)	1	2.190 (55.6)	2.190 (55.6)	1.730 (43.9)	1.960 (49.8)	2.840 (72.1)	25-29	29
25-8	M37 x 1 - 6H	1.880 (47.8)	1 - 1/4	2.190 (55.6)	2.190 (55.6)	1.730 (43.9)	1.960 (49.8)	2.840 (72.1)	25-8	8
25-37	M37 x 1 - 6H	1.880 (47.8)	1 - 1/4	2.190 (55.6)	2.190 (55.6)	1.730 (43.9)	1.960 (49.8)	2.840 (72.1)	25-37	37

TABLE I: SHELL SIZE (CONTINUED)

Shell Size	A Thread ISO Metric	B Max	Standard Conduit Size	J Approx.	K Ref	L Flats	M Ref	N Max	Insert Ident	No. of Holes
11	M15 x 1 - 6H	1.000 (25.4)	3/8	2.090 (53.1)	1.200 (30.5)	.938 (23.8)	.320 (81.3)	1.380 (35.1)	11-2	2
13	M18 x 1 - 6H	1.120 (28.4)	7/16	2.210 (56.1)	1.260 (32.0)	.938 (23.8)	.540 (13.7)	1.380 (35.1)	13-4	4
15	M22 x 1 - 6H	1.250 (31.8)	1/2	2.330 (59.2)	1.320 (33.5)	.938 (23.8)	.540 (13.7)	1.380 (35.1)	15-5	5
17	M25 x 1 - 6H	1.380 (35.1)	5/8	2.440 (62.0)	1.380 (35.1)	1.250 (31.8)	.760 (19.3)	1.560 (39.6)	17-8	8
19	M28 x 1 - 6H	1.500 (38.1)	3/4	2.500 (63.5)	1.430 (36.3)	1.250 (31.8)	.760 (19.3)	1.560 (39.6)	19-11	11
21	M31 x 1 - 6H	1.620 (41.0)	7/8	2.640 (67.1)	1.490 (37.8)	1.500 (38.1)	1.000 (25.4)	1.810 (46.0)	21-16	16
23	M34 x 1 - 6H	1.750 (44.5)	1	2.750 (69.9)	1.550 (39.4)	1.500 (38.1)	1.000 (25.4)	1.810 (46.0)	23-21	21
25	M37 x 1 - 6H	1.880 (47.8)	1	2.870 (72.9)	1.620 (41.1)	1.812 (46.0)	1.270 (32.3)	2.120 (53.8)	25-29	29
25-8	M37 x 1 - 6H	1.880 (47.8)	1 - 1/4	2.870 (72.9)	1.620 (41.1)	1.812 (46.0)	1.270 (32.3)	2.120 (53.8)	25-8	8
25-37	M37 x 1 - 6H	1.880 (47.8)	1 - 1/4	2.870 (72.9)	1.620 (41.1)	1.812 (46.0)	1.270 (32.3)	2.120 (53.8)	25-37	37

TABLE III: FINISH

SYM	MATERIAL	FINISH
-	Composite	No Plating
XB	Composite	No Plating, Black Color
XM	Composite	Electroless Nickel - Backshell, No Plating on Coupling Nut or Rear Entry Components - Amber Color
XW	Composite	Cadmium Plate/Olive Drab over Electroless Nickel Backshell No Plating on Coupling Nut or Rear Components - Amber Color

TABLE II: ENTRY SIZE

Entry Size	C Ref	Optional Conduit Size Ref
03	.219 (5.6)	9/32
04	.236 (6.0)	5/32
05	.250 (6.4)	3/8
06	.338 (8.6)	7/16
07	.394 (10.0)	1/2
08	.519 (13.2)	5/8
10	.644 (16.4)	3/4
11	.644 (16.4)	3/4
13	.772 (19.6)	7/8
15	.894 (22.7)	1
17	1.102 (28.0)	1 - 1/4

APPLICATION NOTES

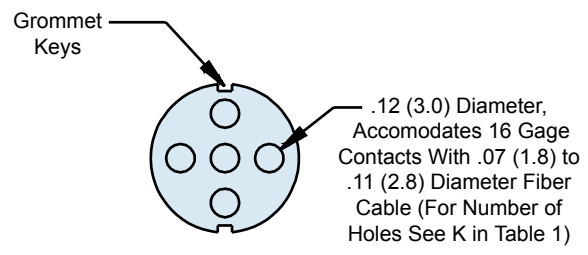
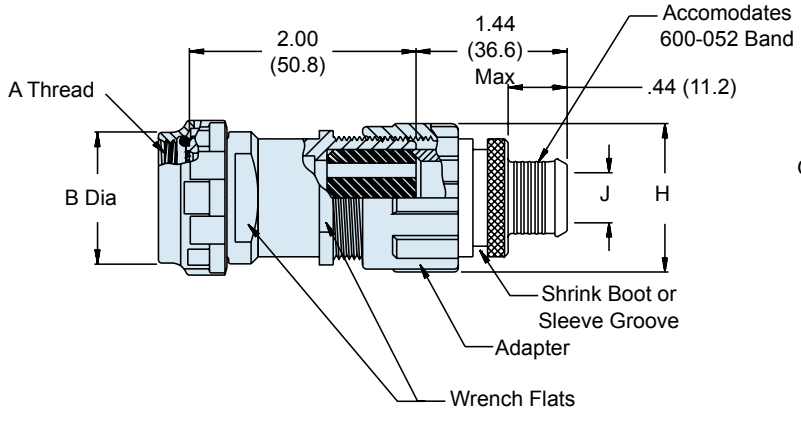
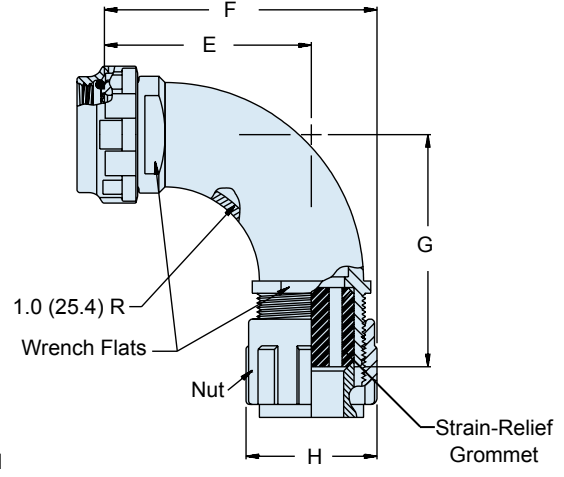
1. Assembly identified with manufacturer's name and P/N, space permitting.
2. Glenair 600 series Backshell assembly tools are recommended for assembly and installation.
3. Standard min. order length 1.5 inch, consult factory for shorter lengths.
4. For sealing plugs see Glenair drawing 687-142.
5. Material:
 Adapters, Elbows, Ferrules, Coupling Nut, Nut: Hi- Grade Engineering thermoplastic/ see Table III
 Grommet, O-Ring: Fluorosilicone/ N.A.
 Anti-Rotation Device: Corrosion Resistant Material/ N.A.
6. Metric dimensions (mm) are indicated in parentheses.



377-040 Composite MIL-DTL-38999 Series III Fiber-Optic Strain-Relief Backshell

377 H S 040 XM 19 A

Product Series ————— 377
 Connector Designator, MIL-DTL-38999, Series III ————— H
 Angular Function ————— S
 S = Straight
 W = 90° Elbow
 Basic Number ————— 040
 Finish Symbol (Table I) ————— XM
 Shell Size Designator (Table I) ————— 19
 Strain Relief Style ————— A
 A = Adapter
 N = Nut



U.S. PATENT NUMBER 6358077

TABLE II: CONNECTOR SHELL SIZE ORDER NUMBER								
Shell Size	A thread ISO Metric	B Max	E ±.060 (1.5)	F ±.090 (2.3)	G ±.060 (1.5)	H Max	J Ref.	K (# of Holes)*
11	M15 x 1 - 6H	.770 (19.6)	1.700 (43.2)	2.390 (60.7)	1.900 (48.3)	1.410 (35.8)	.250 (6.4)	2
13	M18 x 1 - 6H	.890 (22.6)	1.780 (45.2)	2.470 (62.7)	1.960 (49.8)	1.410 (35.8)	.310 (7.9)	4
15	M22 x 1 - 6H	1.030 (26.2)	1.820 (46.2)	2.510 (63.8)	2.020 (51.3)	1.410 (35.8)	.310 (7.9)	5
17	M25 x 1 - 6H	1.150 (29.2)	1.890 (48.0)	2.700 (68.6)	2.090 (53.1)	1.640 (41.7)	.440 (11.2)	8
19	M28 x 1 - 6H	1.280 (32.5)	1.930 (49.0)	2.740 (69.6)	2.130 (54.1)	1.640 (41.7)	.500 (12.7)	11
21	M31 x 1 - 6H	1.410 (35.8)	2.000 (50.8)	2.940 (74.7)	2.190 (55.6)	1.890 (48.0)	.500 (12.7)	16
23	M34 x 1 - 6H	1.530 (38.9)	2.080 (52.8)	3.020 (76.7)	2.250 (57.2)	1.890 (48.0)	.630 (16.0)	21
25	M37 x 1 - 6H	1.660 (42.2)	2.140 (54.4)	3.200 (81.3)	2.320 (58.9)	2.160 (54.9)	.750 (19.1)	29

* Use Glenair 687-142 seal plug in vacant holes

TABLE I: FINISH		
SYM	MATERIAL	FINISH
XB	Black	No Plating
XO	Base Non-Conductive	No Plating

Metric dimensions (mm) are in parenthesis and are for reference only.

377-041 Composite MIL-DTL-38999 Series III FiberCon Conduit Adapter



377 H S 041 XM 19 K

Product Series
Connector Designator,
MIL-DTL-38999, Series III
Angular Function
S = Straight
W = 90° Elbow
Basic Number
Finish Symbol (Table I)
Shell Size Designator (Table II)
Add letter K for transition to accommodate
PEEK® conduit material.
Omit for standard Teflon® conduit material.

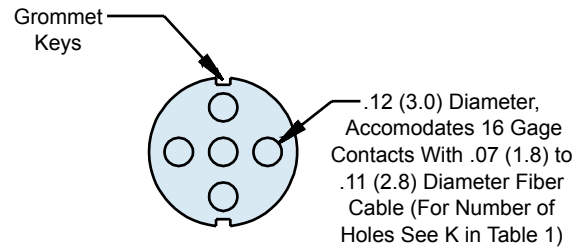
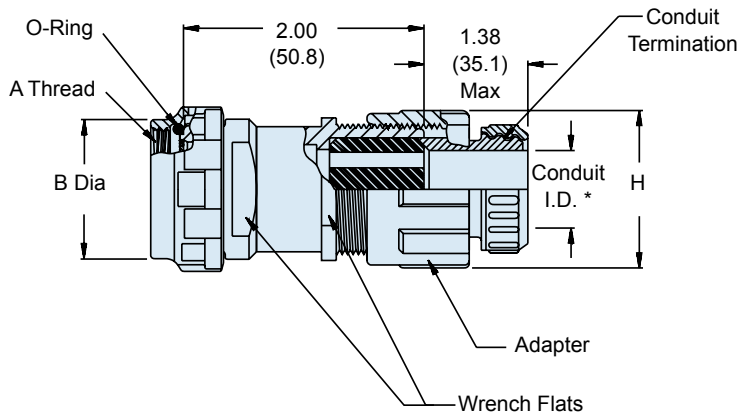
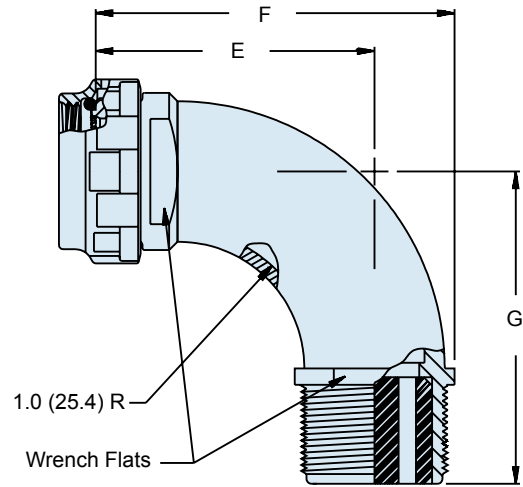


TABLE II: CONNECTOR SHELL SIZE ORDER NUMBER

Shell Size	A thread ISO Metric	B Max	E ±.060 (1.5)	F ±.090 (2.3)	G ±.060 (1.5)	H Max	J Ref.	K (# of Holes)*
11	M15 x 1 - 6H	.770 (19.6)	1.700 (43.2)	2.390 (60.7)	1.900 (48.3)	1.410 (35.8)	.250 (6.4)	2
13	M18 x 1 - 6H	.890 (22.6)	1.780 (45.2)	2.470 (62.7)	1.960 (49.8)	1.410 (35.8)	.310 (7.9)	4
15	M22 x 1 - 6H	1.030 (26.2)	1.820 (46.2)	2.510 (63.8)	2.020 (51.3)	1.410 (35.8)	.310 (7.9)	5
17	M25 x 1 - 6H	1.150 (29.2)	1.890 (48.0)	2.700 (68.6)	2.090 (53.1)	1.640 (41.7)	.440 (11.2)	8
19	M28 x 1 - 6H	1.280 (32.5)	1.930 (49.0)	2.740 (69.6)	2.130 (54.1)	1.640 (41.7)	.500 (12.7)	11
21	M31 x 1 - 6H	1.410 (35.8)	2.000 (50.8)	2.940 (74.7)	2.190 (55.6)	1.890 (48.0)	.500 (12.7)	16
23	M34 x 1 - 6H	1.530 (38.9)	2.080 (52.8)	3.020 (76.7)	2.250 (57.2)	1.890 (48.0)	.630 (16.0)	21
25	M37 x 1 - 6H	1.660 (42.2)	2.140 (54.4)	3.200 (81.3)	2.320 (58.9)	2.160 (54.9)	.750 (19.1)	29

* Use Glenair 687-142 seal plug in vacant holes

TABLE I: FINISH

SYM	MATERIAL	FINISH
XB	Black	No Plating
XO	Base Non-Conductive	No Plating

Metric dimensions (mm) are in parenthesis and are for reference only.

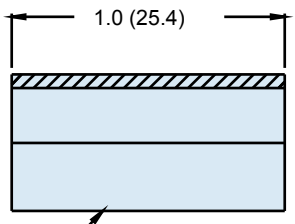
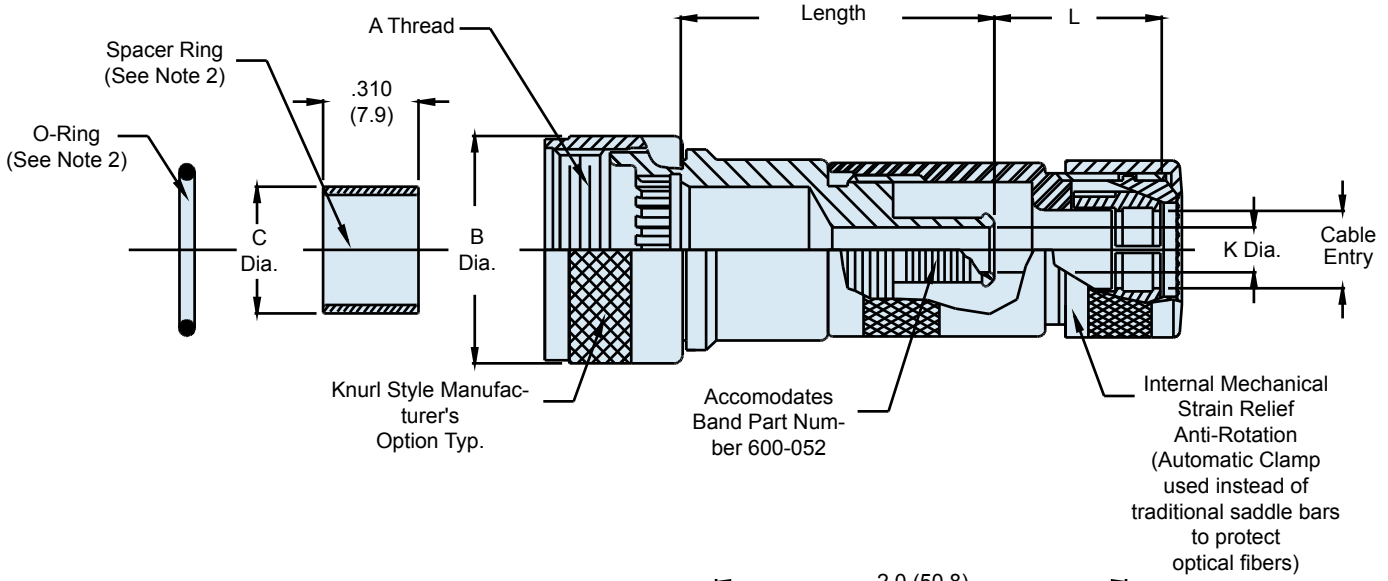
* Conduit I.D. Accommodates Glenair Series 74 Type A Convuluted Tubing, In Accordance With MIL-T-81914.



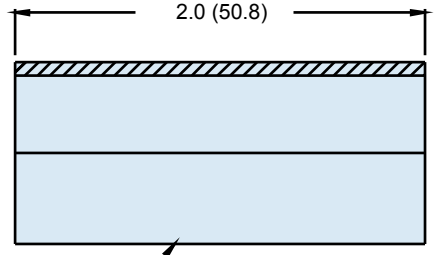
189-015
Environmental Banding Backshell
 for Multichannel M85045 Shipboard Fiber Optic Cable
 for Use with MIL-PRF-28876 or Glenair 180-040 Connectors

189-015 NF 13 05-3 B

Product Series	Band 600-052 Supplied (Omit if not required)
Basic Number	Length in 1/2-inch increments (e.g. 3 = 1.5 inches)
Finish Symbol (Table II)	Dash Number (Table III)
Shell Size (Table I)	



Shrink Sleeving MIL-I-23053/4
(See Note 3)



Shrink Sleeving MIL-I-23053/5
(See Note 3)

**See Section J for
 the *Band-It*® Shield
 Termination Tooling
 used with this
 Banding Adapter**

189-015

Environmental Banding Backshell
for Multichannel M85045 Shipboard Fiber Optic Cable
for Use with MIL-PRF-28876 or Glenair 180-040 Connectors



TABLE I: SHELL SIZE					
Shell Size	Designator (Ref)	A Thread Class 2B	B Dia Max	C Dia Max	Max Dash Number
11	A	3/4 -20 UNEF	1.028 (26.1)	.410 (10.4)	05
13	B	7/8 -20 UNEF	1.141 (29.0)	.532 (13.5)	05
15	C	1 -20 UNEF	1.263 (32.1)	.710 (18.0)	07
23	F	1-7/16 -18 UNEF	1.703 (43.3)	1.116 (28.3)	13

TABLE I: CABLE ENTRY AND SHRINK SLEEVE DASH NUMBER								
Dash No.	Clamp Size	Cable Size Maximum	K Diameter ±.005 (0.1)	L Max	Dash No. MIL-I-2305/4 Shrink Sleeve	Dash No. MIL-I-23053/5 Shrink Sleeve	Cable Entry	
							Minimum	Maximum
05	12	.280 (7.1)	.312 (7.9)	1.110 (28.2)	-203-0	-107-0	.203 (5.2)	.375 (9.5)
07	16	.395 (10.0)	.438 (11.1)	1.210 (30.7)	-204-0	-108-0	.328 (8.3)	.500 (12.7)
09	20	.510 (13.0)	.562 (14.3)	1.210 (30.7)	-204-0	-109-0	.452 (11.5)	.625 (15.9)
11	24	.621 (15.8)	.688 (17.5)	1.210 (30.7)	-205-0	-106-0	.515 (13.1)	.750 (19.1)
13	28	.736 (18.7)	.812 (20.6)	1.360 (34.5)	-205-0	-110-0	.640 (16.3)	.875 (22.2)

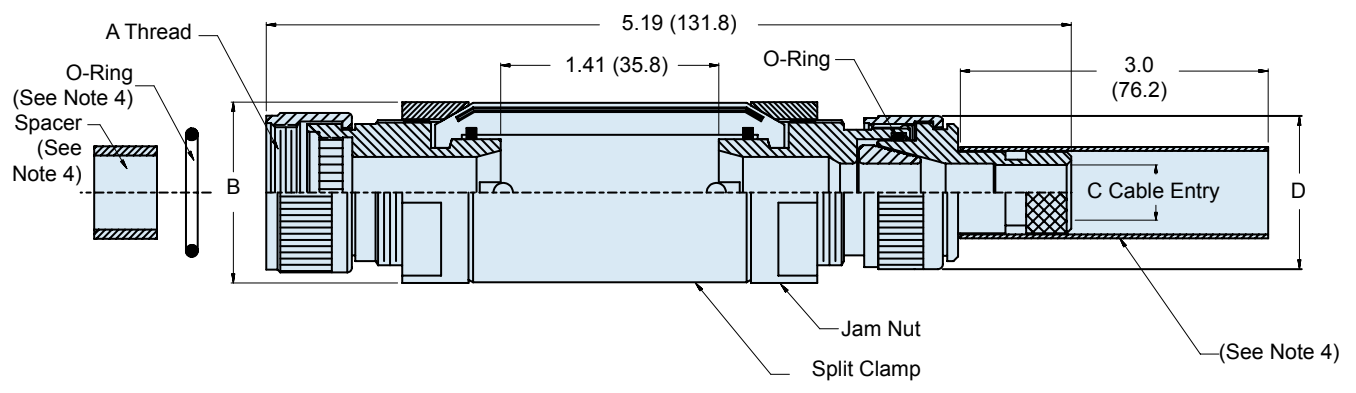
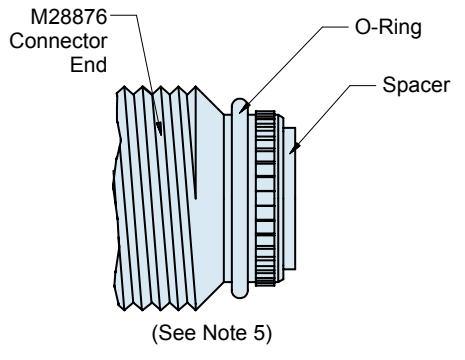
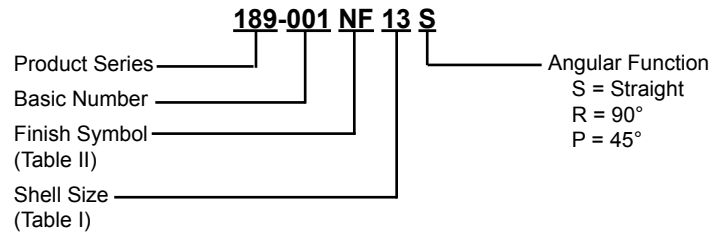
TABLE II: FINISH		
SYM	MATERIAL	FINISH
M	Aluminum	Electroless Nickel
NF	Aluminum	Cadmium O.D. Over Electroless Nickel (500-Hr. Salt Spray)

APPLICATION NOTES

- Material/ Finishes:
Adapter, Coupling Nut – Aluminum Alloy/See Table II
Clamp Components – Ryton R4XT-Black; Ultem 1000-Natural
Anti-Rotation Device – Torlon 4203L-Natural
O-Ring – Fluorosilicone/ N.A.
- Spacer Ring and O-Ring are packed loose and must be installed with connector at time of assembly. The Spacer is utilized to retain the Terminus Insert.
- MIL-I-23053/4 & 5 Shrink Sleeving are packed loose in a plastic bag. MIL-I-2305/4 Shrink Sleeving to be heat shrunk over rear of Adapter before MIL-I-23053/5 Shrink Sleeving.
- See Section J for the *Band-It*® Shield Termination tooling used with this banding procedure.
- Metric Dimensions (mm) are indicated in parentheses.



189-001
Fiber Optic Backshell With Split Clamp
MIL-PRF-28876 Environmental



- APPLICATION NOTES**
1. Assembly identified with manufacturer's name and P/N, space permitting.
 2. Glenair 600 series Backshell assembly tools are recommended for assembly and installation; assembly procedure see GAP014.
 3. Material/ Finish:
 Adapters, Jam Nut, Ferrule, Coupling Nut, Split Elbows & Spacer- Al Alloy/ See Table I.
 O-Rings- Floursilicone/ N.A.
 Shrink Sleeving- Polyolefin/ N.A.
 Spacer- Al Alloy/ See Table I.
 4. MIL-I-23053/4 Shrink Sleeving, O-Ring and Spacer to be packaged loose in a plastic bag.
 5. Assemble O-Rings and Spacer onto connector as shown.
 6. Metric dimensions (mm) are indicated in parentheses.

189-001
Fiber Optic Backshell With Split Clamp
MIL-PRF-28876 Environmental



TABLE I: SHELL SIZE

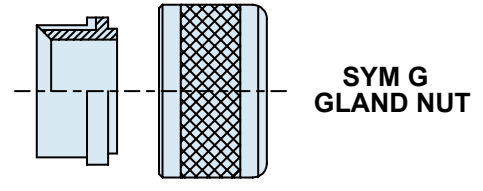
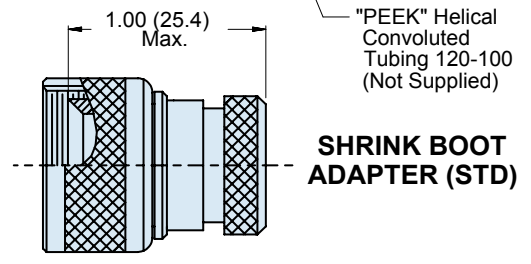
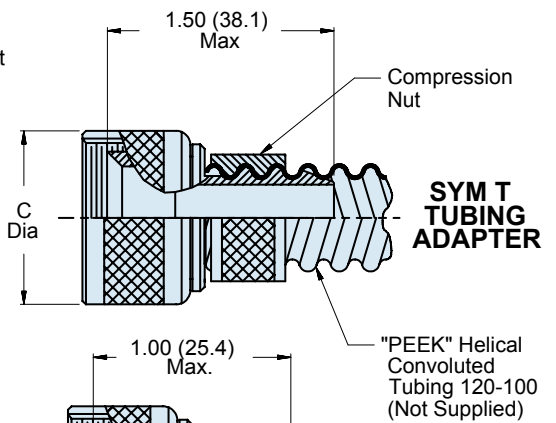
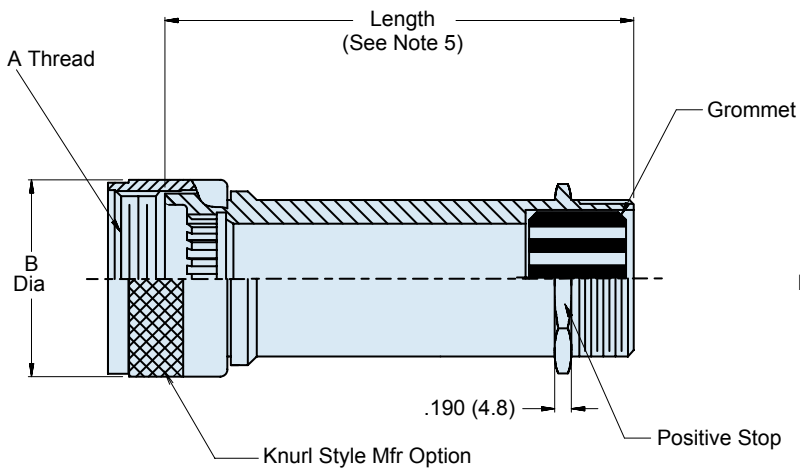
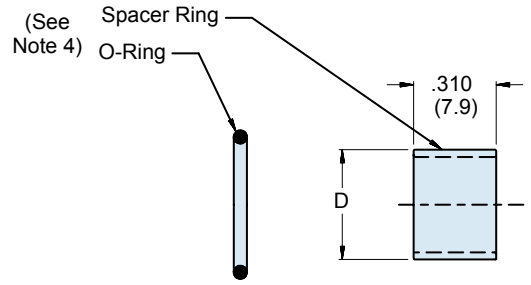
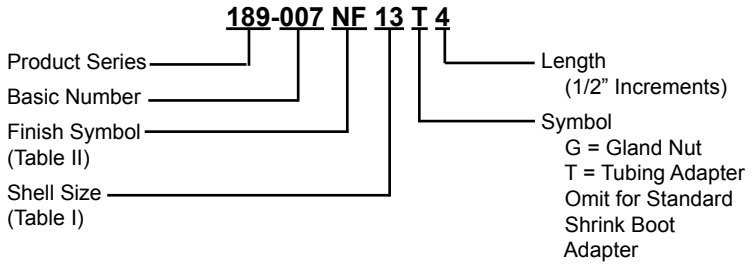
Shell Size	A Thread	B Max	C Max	D Max
11	.750 - 20 UNEF	1.166 (29.6)	.335 (8.5)	1.004 (25.5)
13	.875 - 20 UNEF	1.166 (29.6)	.335 (8.5)	1.004 (25.5)
15	1.000 - 20 UNEF	1.418 (36.0)	.455 (11.6)	1.132 (28.8)

TABLE II: FINISH

SYM	MATERIAL	FINISH
NF	Aluminum	Cadmium/Olive Drab over Electroless Nickel (500 Hr. Salt Spray)
B	Aluminum	Cadmium Plate/Olive Drab
M	Aluminum	Electroless Nickel
N	Aluminum	Cadmium Plate/Olive Drab over Nickel



189-007 Fiber-Con Backshell for MIL-PRF-28876 Connectors



- ### APPLICATION NOTES
1. Assembly identified with manufacturer's name and P/N, space permitting.
 2. Glenair 600 series Backshell assembly tools are recommended for assembly and installation.
 3. Material/ Finish:
Adapters, Coupling Nuts, Ferrule, Compression Nut, Spacer Ring- Al Alloy
Grommet- Fluorosilicone/ N.A.
O-Ring- Fluorosilicone/ N.A.
 4. Spacer Ring and O-Ring are packaged loose and must be installed with connector at the time of assembly. The spacer is utilized to retain the Terminus Insert
 5. Standard minimum order is 1.5 inch consult factory for shorter length.
 6. Metric dimensions (mm) are indicated in parentheses.

189-007
Fiber-Con Backshell
for MIL-PRF-28876 Connectors



TABLE I: SHELL SIZE

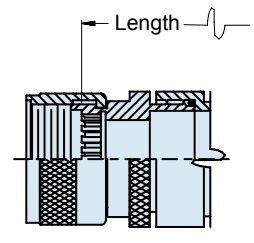
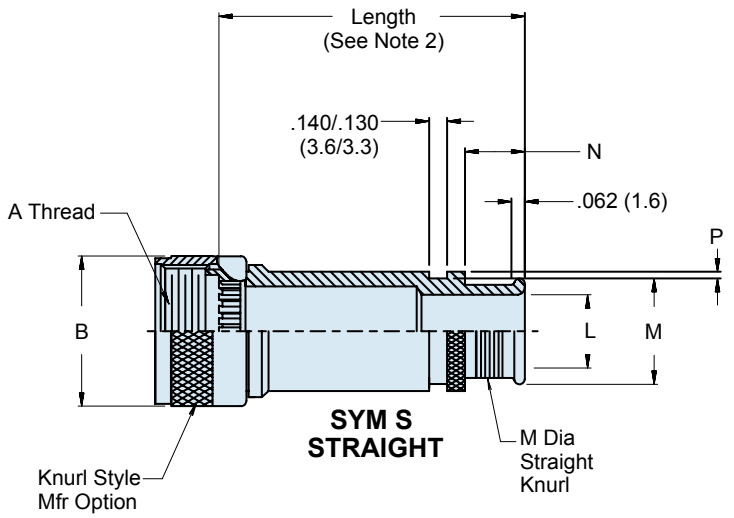
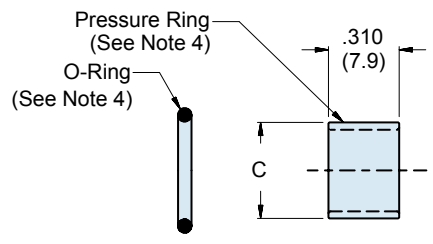
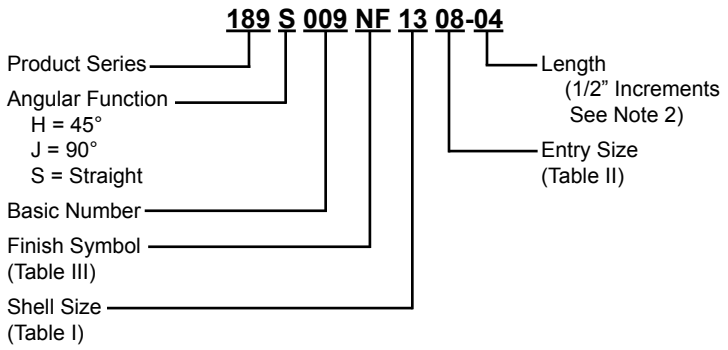
Shell Size	Designator (Ref)	A Thread Class 2B	B Max	C Max	D Max	Conduit Size	No. of Holes
11	A	3/4 - 20 UNEF	1.028 (26.1)		.410 (10.4)	12	2
13	B	7/8 - 20 UNEF	1.141 (29.0)	1.120 (28.4)	.532 (13.5)	16	4
15	C	1 - 20 UNEF	1.263 (32.1)	1.340 (34.0)	.710 (18.0)	24	8

TABLE II: FINISH

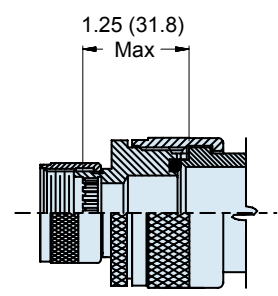
SYM	MATERIAL	FINISH
NF	Aluminum	Cadmium/Olive Drab over Electroless Nickel (500 Hr. Salt Spray)
B	Aluminum	Cadmium Plate/Olive Drab
J	Aluminum	Gold Iridite over Cadmium Plate over Nickel
N	Aluminum	Cadmium Plate/Olive Drab over Nickel
M	Aluminum	Electroless Nickel
T	Aluminum	Cadmium Plate/Bright Dip over Nickel



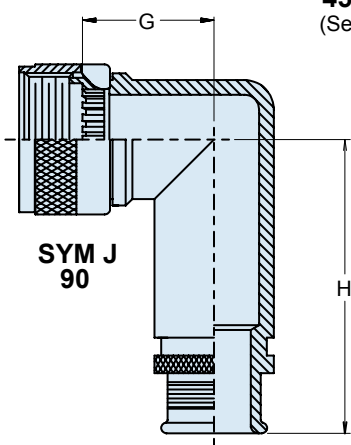
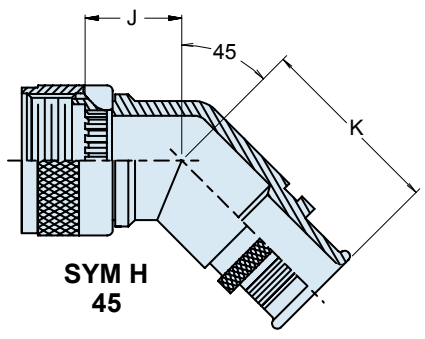
189-009 Banding Backshell / Molding Adapter For MIL-PRF-28876 Connectors



STYLE 2, SYM S
(See Note 3)



**STYLE 2
45 & 90**
(See Note 3)



189-009
Banding Backshell / Molding Adapter
For MIL-PRF-28876 Connectors



TABLE I: SHELL SIZE

Shell Size	Connector Designator	A Thread UNEF	B Max	C Max	G Max	H Max	J Max	K Max	Max Entry
11	A	.750 - 20 UNEF	.960 (10.4)	.410 (10.4)	1.280 (32.5)	1.330 (3.8)	1.140 (29.0)	1.190 (30.2)	07
13	B	.875 - 20 UNEF	1.085 (27.6)	.532 (13.5)	1.350 (34.3)	1.400 (29.0)	1.170 (29.7)	1.220 (31.0)	08
15	C	1.000 - 20 UNEF	1.255 (31.9)	.710 (18.0)	1.430 (36.3)	1.470 (37.3)	1.200 (30.5)	1.250 (31.8)	10
23	F	1.437 - 18 UNEF	1.695 (43.1)	1.116 (28.3)	1.640 (41.7)	1.680 (42.7)	1.290 (32.8)	1.330 (33.8)	13

TABLE II: BACKSHELL DIMENSIONS

Dash No.	P Dim	L Dia	M Dia	N Dim
04	.044 (1.1)	.205 (5.2)	.325 (8.3)	.525 (13.3)
05	.044 (1.1)	.235 (6.0)	.355 (9.0)	.525 (13.3)
06	.044 (1.1)	.255 (6.5)	.375 (9.5)	.525 (13.3)
07	.044 (1.1)	.330 (8.4)	.450 (11.4)	.525 (13.3)
08	.044 (1.1)	.450 (11.4)	.580 (14.7)	.600 (15.2)
09	.044 (1.1)	.540 (13.7)	.660 (16.8)	.600 (15.2)
10	.044 (1.1)	.670 (17.0)	.790 (20.1)	.600 (15.2)
11	.044 (1.1)	.840 (21.3)	.960 (24.4)	.600 (15.2)
12	.069 (1.8)	.960 (24.4)	1.080 (27.4)	.600 (15.2)
13	.069 (1.8)	1.080 (27.4)	1.200 (30.5)	.600 (15.2)

TABLE III: FINISH

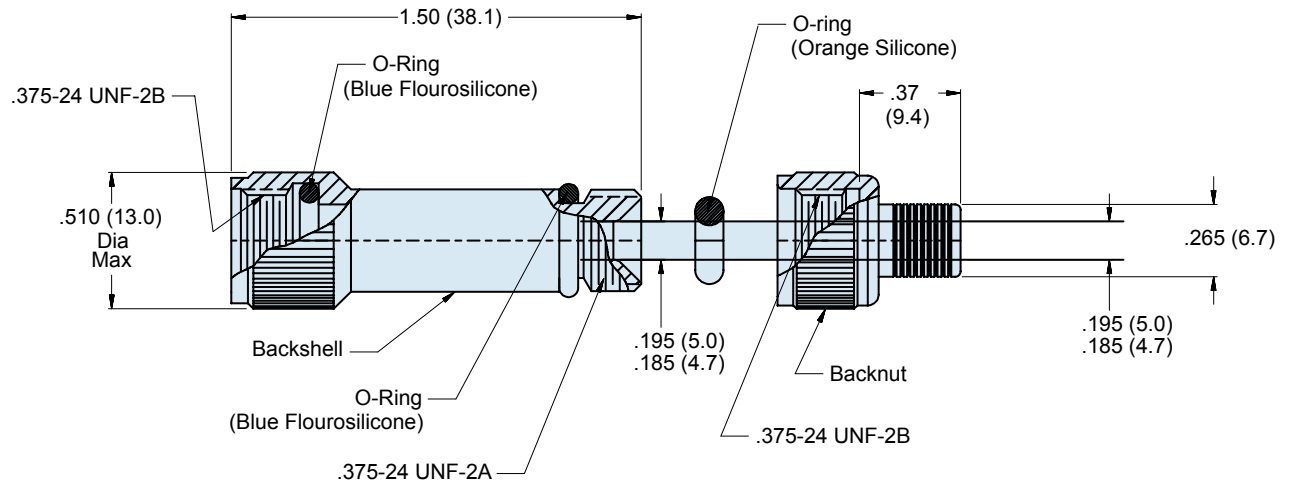
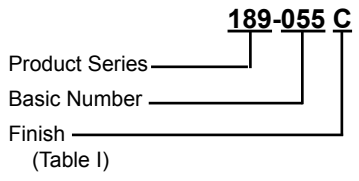
SYM	MATERIAL	FINISH
NF	Aluminum	Cadmium/Olive Drab over Electroless Nickel (500 Hr. Salt Spray)
B	Aluminum	Cadmium Plate/Olive Drab
J	Aluminum	Gold Iridite over Cadmium Plate over Nickel
N	Aluminum	Cadmium Plate/Olive Drab over Nickel
M	Aluminum	Electroless Nickel
T	Aluminum	Cadmium Plate/Bright Dip over Nickel

APPLICATION NOTES

1. Assembly identified with manufacturer's and P/N, space permitting.
2. Standard minimum length for style 1:1.5 inches, for style 2:2.0 inches. Note: Length applies to SYMS, straight, only.
3. When cable diameter exceeds inside diameter of connector shell, style 2 will be supplied.
4. Glenair 600 series Backshell Assy. tools are recommended for assembly and installation.
5. Material/ Finish: Adapters, Elbows, Coupling Nut, Pressure Ring—See Table III. O-Ring—Silicone/ N.A.
6. O-Ring & Pressure Ring to be packaged loose and must be installed with connector backend at time of assembly.
7. Metric dimensions (mm) are indicated in parentheses.



189-055
Special Backshell with Direct Coupling
Environmental Resistant
for 180-071 Single Channel Fiber Optic Connector



- APPLICATION NOTES**
1. Assembly to be identified with manufacturer's name and P/N, space permitting.
 2. Material/ Finish:
 Backshell and Backnut: Al Alloy/ see Table 1
 O-Ring: Fluorosilicone
 Strain relief boot & O-Ring Silicone.
 3. Metric dimensions (mm) are indicated in parentheses.

189-055
Special Backshell with Direct Coupling
Environmental Resistant
for 180-071 Single Channel Fiber Optic Connector



TABLE I: FINISH

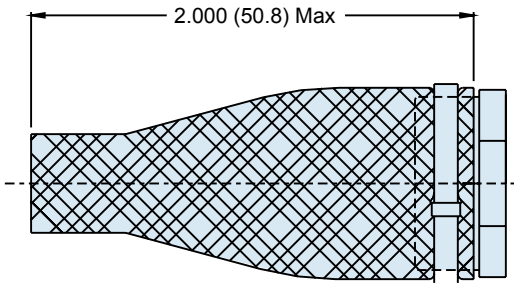
SYM	MATERIAL	FINISH
C	Aluminum	Black Anodize
M	Aluminum	Electroless Nickel
NF	Aluminum	Olive Drab Cadmium over Electroless Nickel
ZN	Aluminum	Cadmium Plate/Olive Drab over Nickel
Z1	Stainless Steel	Passivate



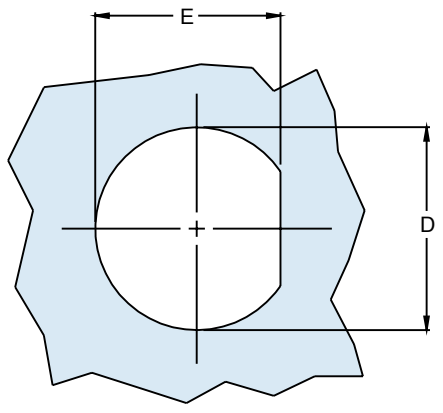
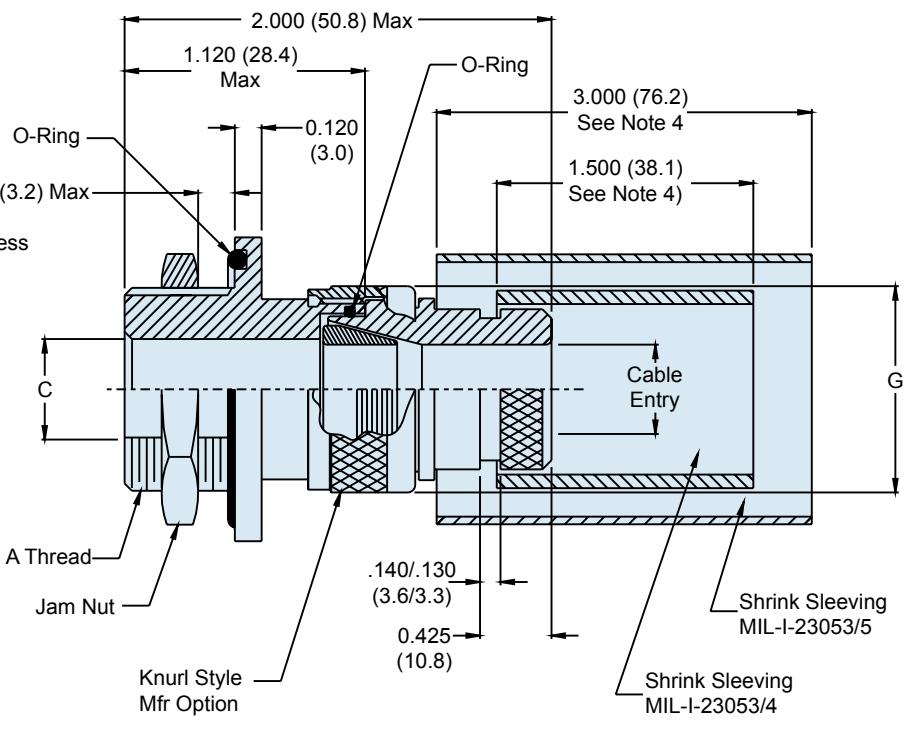
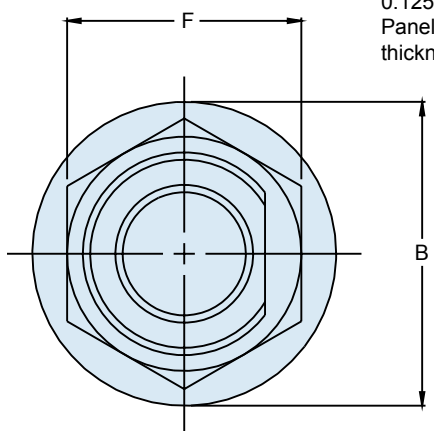
630-015 Fiber Optic Cable Bulkhead Adapter with Kevlar Braid Sock

630-015 NF 01 T

Product Series
Basic Number
Finish Symbol
(Table II)
Dash No.
(Table I)
Supplied with
477-822*** Shield Nut
instead of Jam Nut
(Omit "T" for Jam Nut)



477-822* ASSEMBLY
STYLE T**



**RECOMMENDED
PANEL CUT-OUT**

- ### APPLICATION NOTES
1. Assembly identified with manufacturer's and P/N, space permitting.
 2. Glenair Series 600 backshell assembly tools are recommended for assembly and installation.
 3. Material/Finish:
Adapters, Jam Nut, Ferrule, Coupling Nut - Aluminum Alloy/Table II
O-Rings - Silicone/N.A.
Shrink Sleeving - Polyolefin/N.A.
 4. MIL-I-23053/4 & /5 shrink sleeving to be packaged loose in a plastic bag.

630-015 Fiber Optic Cable Bulkhead Adapter with Kevlar Braid Sock

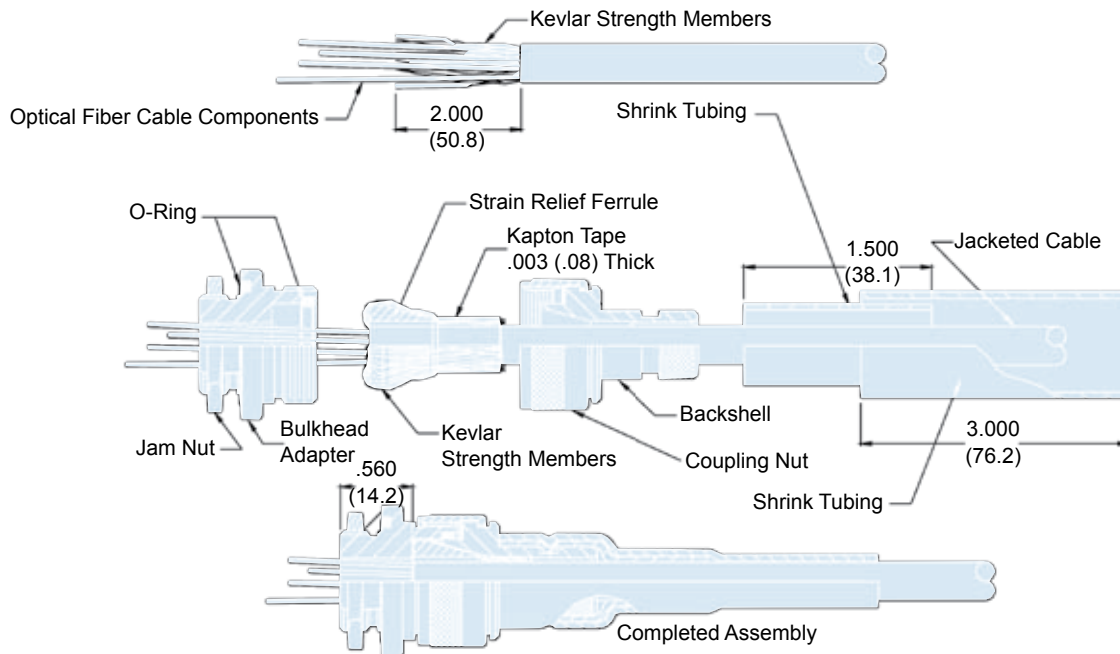


TABLE I: DASH NUMBER

Dash No.	A Thread Cass 2A	B Max	C +.010 -.000	D +.010 -.000	E +.010 -.000	F	G Max	H Min	Max Entry	MIL-I-23053 Shrink Sleeve	MIL-I-23053 Shrink Sleeve	Braid Sock 103-005-005
01	3/4-20 UNEF	1.140 (29.0)	.340 (8.6)	.755 (19.2)	.691 (17.6)	.938 (23.8)	1.004 (25.5)	6.000 (152.4)	.355 (9.0)	/4-204-0	/5-109-0	A10
02	3/4-20 UNEF	1.140 (29.0)	.460 (11.7)	.755 (19.2)	.691 (17.6)	.938 (23.8)	1.132 (28.8)	6.000 (152.4)	.455 (11.6)	/4-204-0	/5-109-0	A10
03	7/8-20 UNEF	1.280 (32.5)	.630 (16.0)	.880 (22.4)	.816 (20.7)	1.062 (27.0)	1.343 (34.1)	6.000 (152.4)	.625 (15.9)	/4-205-0	/5-110-0	A10
04	1 1/16-18 UNEF	1.490 (37.8)	.755 (19.2)	1.067 (27.1)	1.004 (25.5)	1.250 (31.8)	1.468 (37.3)	6.000 (152.4)	.750 (19.1)	/4-206-0	/5-110-0	A14
05	1 3/16-18 UNEF	1.640 (41.7)	.880 (22.4)	1.192 (30.3)	1.130 (28.7)	1.375 (34.9)	1.593 (40.5)	6.000 (152.4)	.875 (22.2)	/4-206-0	/5-111-0	A16
06	1 5/16-18 UNEF	1.930 (49.0)	1.005 (25.5)	1.317 (33.5)	1.254 (31.9)	1.625 (41.3)	1.656 (42.1)	6.000 (152.4)	1.000 (25.4)	/4-305-0	/5-111-0	A18

TABLE II: FINISH

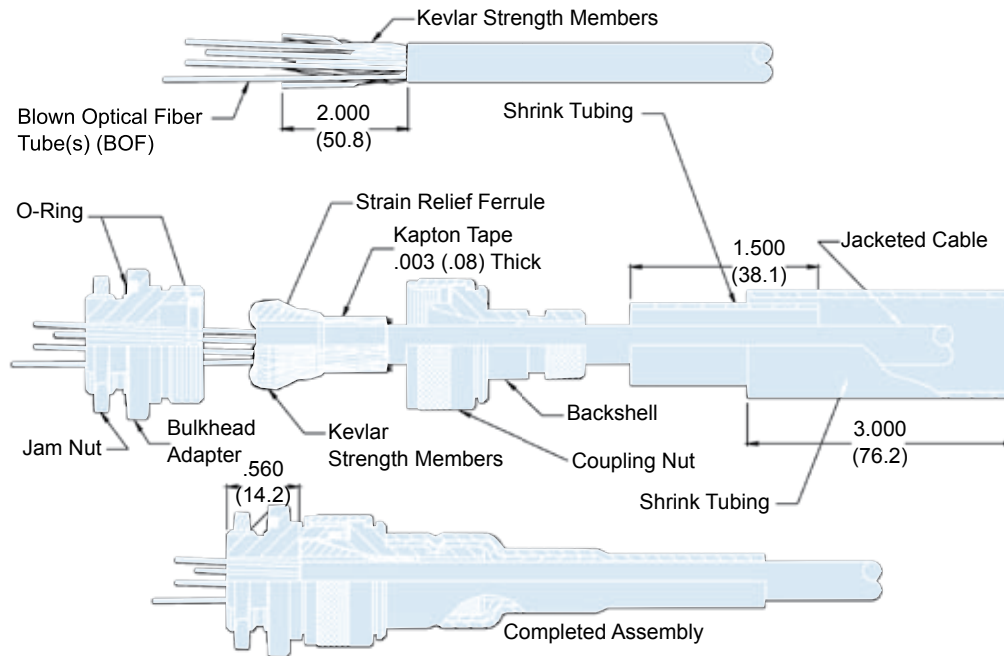
SYM	MATERIAL	FINISH
NF	Aluminum	Cadmium/Olive Drab over Electroless Nickel (500 Hr. Salt Spray)
B	Aluminum	Cadmium Plate/Olive Drab
N	Aluminum	Cadmium Plate/Olive Drab over Nickel
M	Aluminum	Electroless Nickel



The following suggested procedure serves as a guide for proper assembly and installation of Glenair Part Number 630-015 (GAP-017A) on Conventional Fiber Optic Cables:

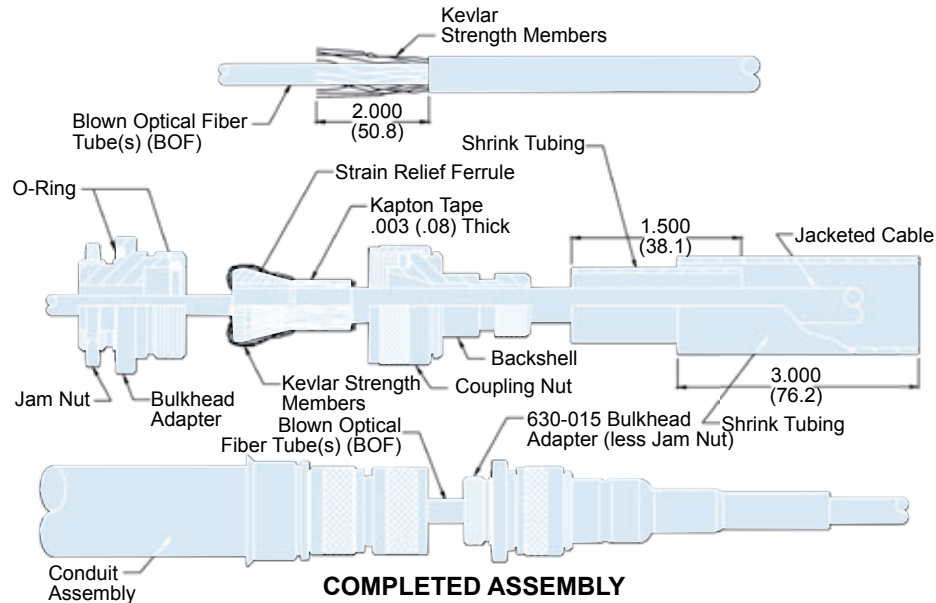
- A. Install two O-Rings and a Jam Nut onto the Bulkhead Adapter.
- B. Determine the required distance from the Strain-Relief Ferrule to where the Optical Fiber cable Components (OFCCs) end (Note that the distance from the Strain-Relief Ferrule to the end of the Bulkhead Adapter is .56 inch). Next, strip back the Cable Jacket (or jackets) to the Ferrule location.
- C. Cut off the Kevlar Strength Members so that they are about 2.0" from the end of the Jacket(s).
- D. Place items (1) Shrink Tubing, (2) Backshell, and (3) Strain-Relief Ferrule on the Cable(s) in sequence shown. Keep these components at a convenient distance from the end(s) of the Cable(s) so they will not interfere with the subsequent assembly steps.
- E. Line up the Strain-Relief Ferrule to the end of the Jacket(s) and fold back the Kevlar around the Ferrule. Be sure the Kevlar from all the Cables is spread evenly around the Ferrule.
- F. Use Kapton Tape (Permacel P/N P224) or equivalent to tape around the Kevlar right at the end of the Ferrule. Trim off the excess Kevlar extending from rear of tape.
- G. Couple the Backshell to the Bulkhead Adapter and tighten the Coupling Nut securely by using Glenair Series 600 Backshell assembly Tools. Recommended Torque Value is 50 to 60 in-lbs.
- H. Slide each Shrink Tubing over the Adapter as shown and shrink them with a Heat Gun (Ref: MIL-STD-2042). CAUTION: Do not overheat.
- I. Prepare and terminate the OFCCs in accordance with established practices (Ref: MIL-STD-2042).

630-015
Glenair Assembly Procedure GAP-017B
for Fiber Optic Feedthrough Adapter
When Using Blown Fiber Optic Cable



The following suggested procedure serves as a guide for proper assembly and installation of Glenair Part Number 630-015 (GAP-017B) on One, Two or three Single-Tube BOF Cables:

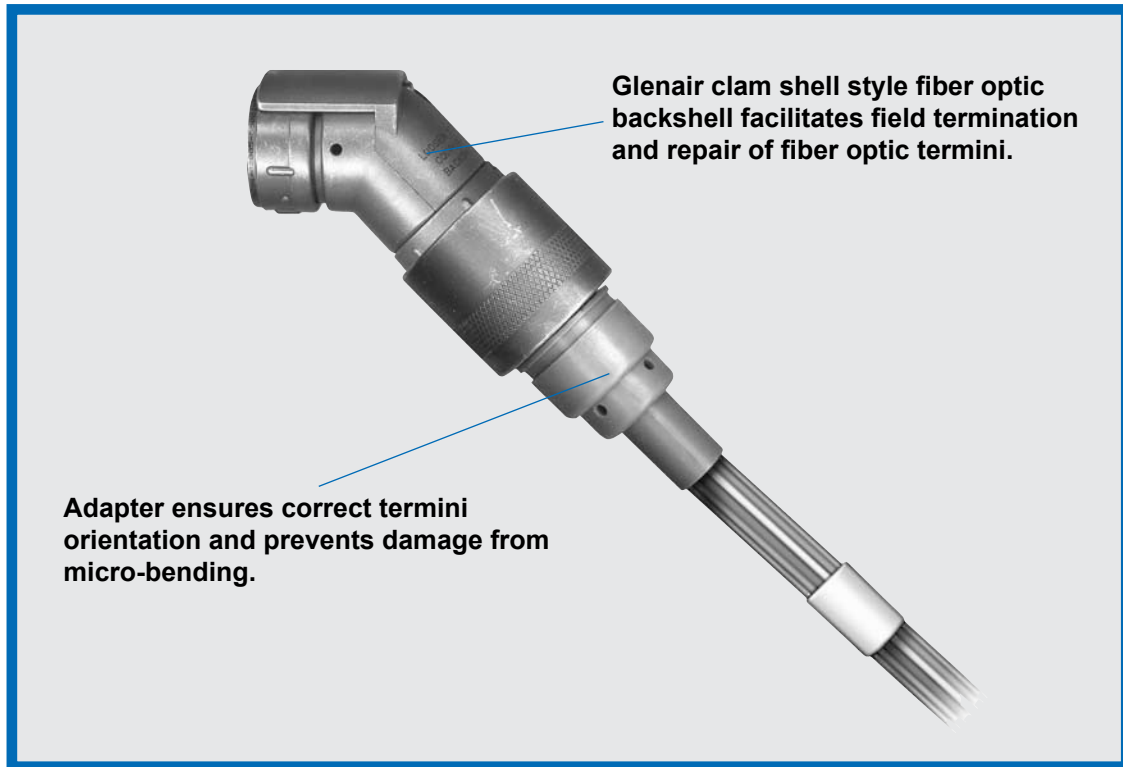
- A. Install two O-Rings and a Jam Nut onto the Bulkhead Adapter.
- B. Determine the required distance from the Strain-Relief Ferrule to where the Blown Optical Fiber (BOF) Cable(s) end (Note that the distance from the Strain-Relief Ferrule to the end of the Bulkhead Adapter is .56 inch). Next, strip back the Cable Jacket (or jackets) to the Ferrule location.
- C. Cut off the Kevlar Strength Members so that they are about 2.0" from the end of the Jacket(s).
- D. Place items (1) Shrink Tubing, (2) Backshell, and (3) Strain-Relief Ferrule on the Cable(s) in sequence shown. Keep these components at a convenient distance from the end(s) of the Cable(s) so they will not interfere with the subsequent assembly steps.
- E. Line up the Strain-Relief Ferrule to the end of the Jacket(s) and fold back the Kevlar around the Ferrule. Be sure the Kevlar from all the Cables is spread evenly around the Ferrule.
- F. Use Kapton Tape (Permacel P/N P224) or equivalent to tape around the Kevlar right at the end of the Ferrule. Trim off the excess Kevlar extending from rear of tape.
- G. Couple the Backshell to the Bulkhead Adapter and tighten the Coupling Nut securely by using Glenair Series 600 Backshell assembly Tools. Recommended Torque Value is 50 to 60 in-lbs.
- H. Slide each Shrink Tubing over the Adapter as shown and shrink them with a Heat Gun (Ref: MIL-STD-2042). CAUTION: Do not overheat.
- I. Prepare and terminate the BOF Cables in accordance with established practices (Ref: MIL-STD-2042 and NAVSEA DWG #7650121).



The following suggested procedure serves as a guide for proper assembly and installation of Glenair Part Number 630-015 (GAP-017C) on One, Two or Three Single-Tube BOF Cables and a Glenair Part Number 749-720 Conduit Assembly:

- A.** Install two O-Rings and a Jam Nut onto the Bulkhead Adapter.
- B.** Determine the required distance from the Strain-Relief Ferrule to where the Blown Optical Fiber (BOF) Cable(s) end (Note that the distance from the Strain-Relief Ferrule to the end of the Bulkhead Adapter is .56 inch). Next, strip back the Cable Jacket (or jackets) to the Ferrule location.
- C.** Cut off the Kevlar Strength Members so that they are about 2.0" from the end of the Jacket(s).
- D.** Place items (1) Shrink Tubing, (2) Backshell, and (3) Strain-Relief Ferrule on the Cable(s) in sequence shown. Keep these components at a convenient distance from the end(s) of the Cable(s) so they will not interfere with the subsequent assembly steps.
- E.** Line up the Strain-Relief Ferrule to the end of the Jacket(s) and fold back the Kevlar around the Ferrule. Be sure the Kevlar from all the Cables is spread evenly around the Ferrule.
- F.** Use Kapton Tape (Permacel P/N P224) or equivalent to tape around the Kevlar right at the end of the Ferrule. Trim off the excess Kevlar extending from rear of tape.
- G.** Couple the Backshell to the Bulkhead Adapter and tighten the Coupling Nut securely by using Glenair Series 600 Backshell assembly Tools. Recommended Torque Value is 50 to 60 in-lbs.
- H.** Slide each Shrink Tubing over the Adapter as shown and shrink them with a Heat Gun (Ref: MIL-STD-2042). CAUTION: Do not overheat.
- I.** Prepare and terminate the BOF Cables in accordance with established practices (Ref: MIL-STD-2042 and NAVSEA DWG #7650121).
- J.** Couple the Feed-Through Adapter Assembly to the Conduit assembly as shown.

Custom Packaging: Another Advantage Glenair Brings to Fiber Optic Cables



Most manufacturers of tactical fiber optic interconnect systems can offer you a multi-channel connector and a qualified terminus. Some may even be able to build you a factory-terminated cable assembly, or put you in touch with a cable shop if you need something custom. At Glenair we're proud to say we're able to offer you a bit more, especially when it comes to custom packaging.

Glenair is the recognized expert when it comes to custom fiber optic connector and backshell assemblies. We can just as easily build you a hybrid optical/electrical harness or extrude a custom length of bulk fiber cable, or fabricate a custom F/O junction box assembly. Proven fiber optic products, reliable service and one-of-a-kind packaging solutions—all from a single supplier: Glenair!



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660-023 and 660-024 MIL-DTL-38999 Series III Metal Protective Covers

660-023 M 15 S 5-04

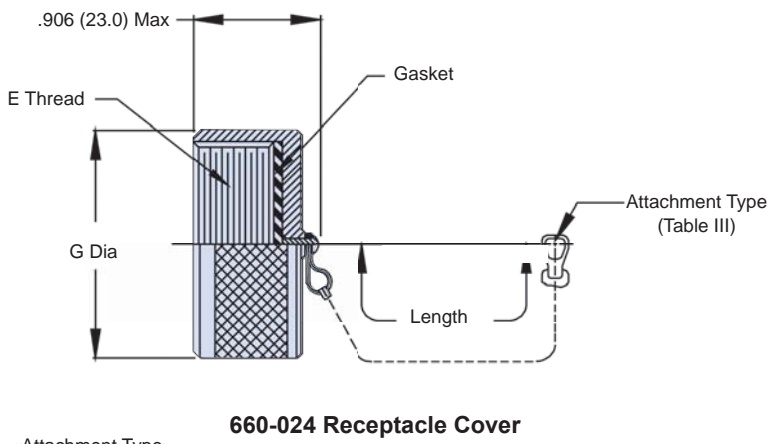
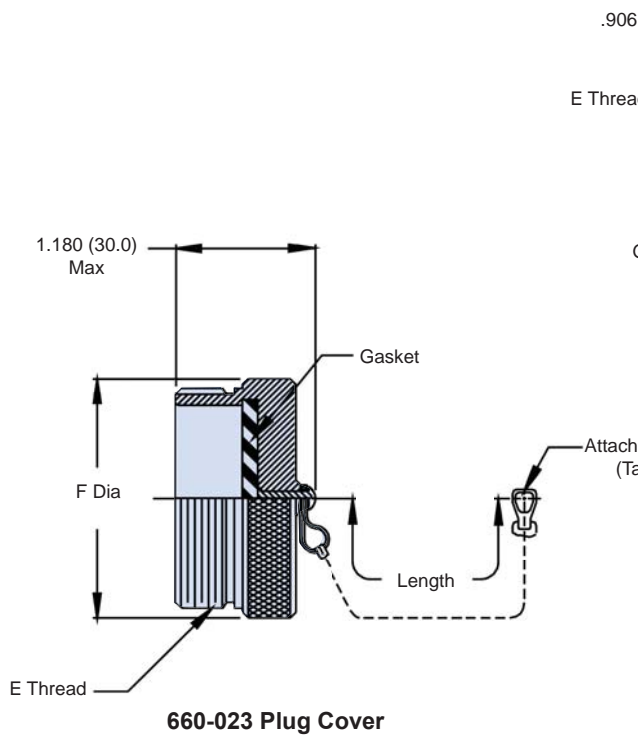
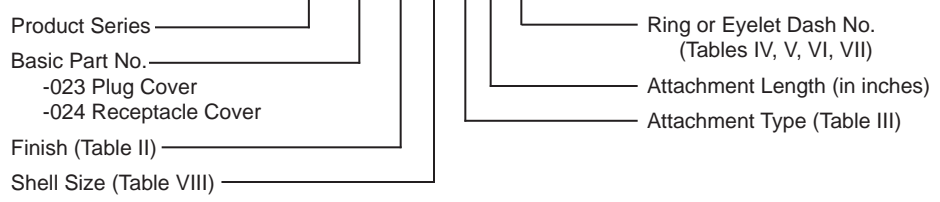


TABLE II: FINISH

SYM	MATERIAL	FINISH
C	Aluminum	Black Anodize
M	Aluminum	Electroless Nickel (Coupling Nut Electrodeposited)
NF	Aluminum	Olive Drab Cadmium over Electroless Nickel
ZN	Aluminum	Zinc-Nickel/Olive Drab over Electroless Nickel
Z1	Stainless Steel	Passivate

TABLE VIII: CONNECTOR SHELL SIZE

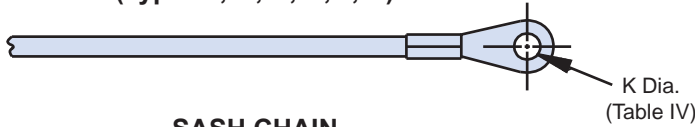
Shell Size	Shell Size Code	E Thread	F Dia Max	G Dia Max
09	A	.6250-0.1P-0.3L-TS	.906 (23.0)	.906 (23.0)
11	B	.7500-0.1P-0.3L-TS	1.024 (26.0)	1.102 (28.0)
13	C	.8750-0.1P-0.3L-TS	1.220 (31.0)	1.220 (31.0)
15	D	1.0000-0.1P-0.3L-TS	1.300 (33.0)	1.260 (32.0)
17	E	1.1875-0.1P-0.3L-TS	1.457 (37.0)	1.457 (37.0)
19	F	1.2500-0.10-0.3L-TS	1.575 (40.0)	1.535 (39.0)
21	G	1.3750-0.1P-0.3L-TS	1.732 (44.0)	1.654 (42.0)
23	H	1.5000-0.1P-0.3L-TS	1.811 (46.0)	1.772 (45.0)
25	J	1.6250-0.1P-0.3L-TS	1.969 (50.0)	1.929 (49.0)

Metric dimensions (mm) are indicated in parentheses.

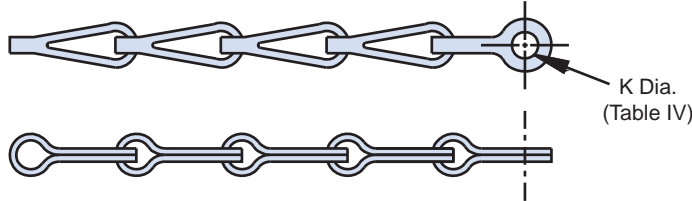
660-023 and 660-024
MIL-DTL-38999 Series III Metal Protective Covers



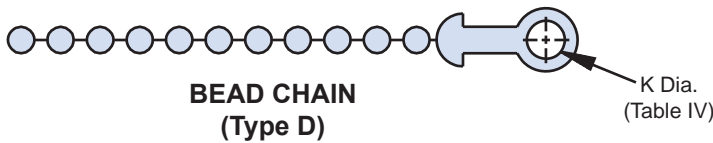
ROPE
(Types F, G, H, R, T, U)



SASH CHAIN
(Type S)



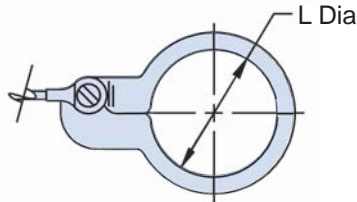
BEAD CHAIN
(Type D)



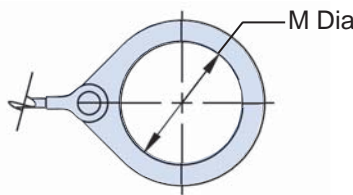
Sym	Attachment Type
D	Bead Chain, Cres., Passivate
F	Wire Rope, Nylon Jacket
G	Nylon Rope
H	Wire Rope, Teflon Jacket
N	No Attachment
R	Wire Rope, PVC Jacket
S	#8 Sash Chain, Cres., Passivate
T	Wire Rope, No Jacket
U	Wire Rope, Polyurethane Jacket with Terminal

Dash No.	K Dia ±.010 (0.3)
01	.140 (3.6)
02	.182 (4.6)
03	.191 (4.9)
04	.197 (5.0)
05	.167 (4.2)
06	.125 (3.2)
07	.218 (5.5)
09	.156 (4.0)
00	No Eyelet

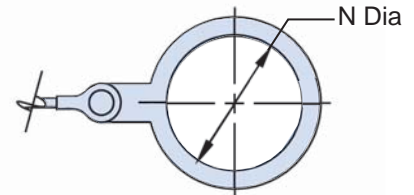
SPLIT RING - Style C



SOLID RING - Style B



SOLID RING - Style A



Dash No.	L Dia ±.015 (4.0)	Dash No.	L Dia ±.015 (4.0)
50	.425 (10.8)	74	1.625 (41.3)
52	.485 (12.3)	76	1.750 (44.5)
54	.640 (16.3)	78	1.220 (31.0)
56	.750 (19.1)	80	1.980 (50.3)
58	.890 (22.6)	82	2.060 (52.3)
60	1.015 (25.8)	84	2.235 (56.8)
62	1.095 (27.8)	86	2.310 (58.7)
64	1.130 (28.7)	88	2.475 (62.9)
66	1.250 (31.8)	90	2.655 (67.4)
68	1.350 (34.3)	92	2.810 (71.4)
70	1.390 (35.3)	94	3.045 (77.3)
72	1.485 (37.7)		

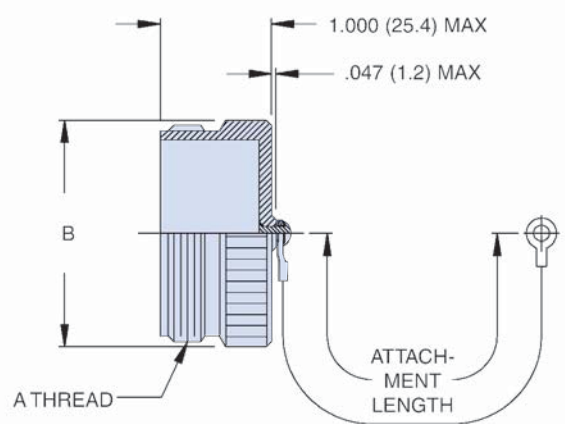
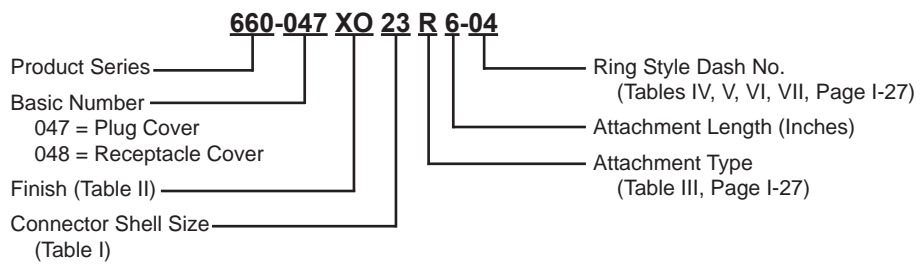
Dash No.	M Dia ±.015 (4.0)	Dash No.	M Dia ±.015 (4.0)
08	.468 (11.9)	24	1.484 (37.7)
10	.593 (15.1)	25	1.577 (40.1)
12	.718 (18.2)	27	1.640 (41.7)
13	.765 (19.4)	28	1.687 (42.8)
14	.844 (21.4)	29	1.765 (44.8)
15	.890 (22.6)	30	1.890 (48.0)
16	.968 (24.6)	31	1.953 (49.6)
17	1.015 (25.8)	32	1.968 (50.0)
18	1.093 (27.8)	33	2.077 (52.8)
19	1.140 (29.0)	35	2.140 (54.4)
20	1.203 (30.6)	36	2.187 (55.5)
21	1.265 (32.1)	40	2.406 (61.1)
22	1.343 (34.1)	44	2.656 (67.5)
23	1.453 (36.9)	48	3.031 (77.0)

Dash No.	N Dia ±.015 (4.0)	Dash No.	N Dia ±.015 (4.0)
095	.312 (7.9)	109	1.266 (32.2)
100	.391 (9.9)	209	1.312 (33.3)
101	.516 (13.1)	110	1.391 (35.3)
102	.583 (14.8)	210	1.391 (35.3)
103	.641 (16.3)	111	1.521 (38.6)
104	.708 (18.0)	211	1.536 (39.0)
105	.766 (19.5)	112	1.641 (41.7)
205	.788 (20.0)	113	1.766 (44.9)
106	.896 (22.8)	213	1.812 (46.0)
206	.907 (23.0)	114	1.891 (48.0)
107	1.016 (25.8)	214	1.938 (49.2)
207	1.025 (26.0)	115	2.078 (52.8)
108	1.141 (29.0)	116	2.406 (61.1)
308	1.188 (30.2)	117	2.510 (63.8)
208	1.203 (30.6)		

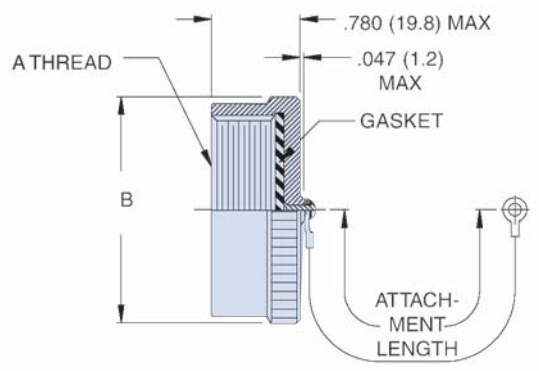
Metric dimensions (mm) are indicated in parentheses.



660-047 • 660-048
Composite MIL-PRF-28840
Protective Covers



660-047
PLUG COVER
MIL-PRF-28840/15



660-048
RECEPTACLE COVER
MIL-PRF-28840/13

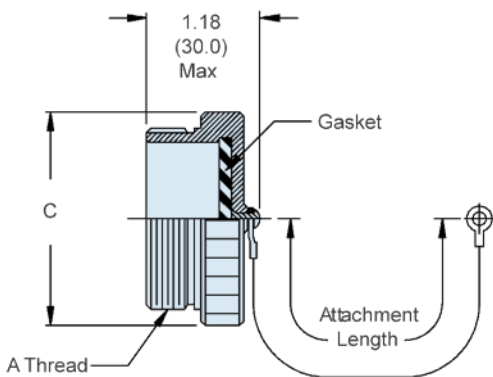
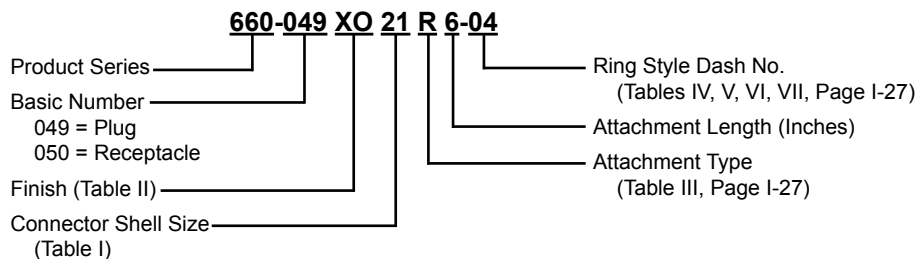
TABLE I: CONNECTOR SHELL SIZE

Designator	Shell Size (Ref)	A Thread	B Dia Max
A	11	.750-.1P-.2L-DS	1.028 (26.1)
B	13	.875-.1P-.2L-DS	1.141 (29.0)
C	15	1.062-.1P-.2L-DS	1.263 (32.1)
D	17	1.125-.1P-.2L-DS	1.387 (35.2)
E	19	1.312-.1P-.2L-DS	1.513 (38.4)
F	23	1.500-.1P-.2L-DS	1.703 (43.5)
G	25	1.625-.1P-.2L-DS	1.825 (46.4)
H	29	1.812-.1P-.2L-DS	2.143 (54.4)
J	33	2.000-.1P-.2L-DS	2.329 (59.2)

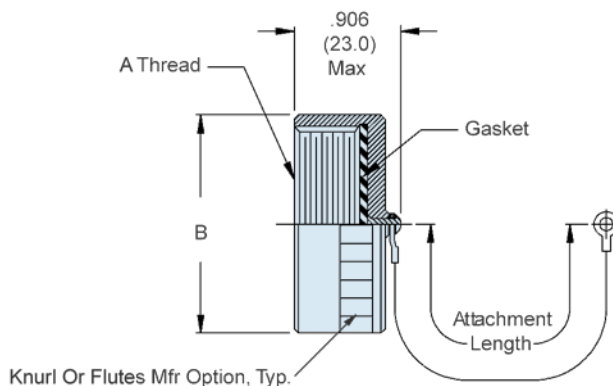
TABLE III: FINISH

SYM	MATERIAL	FINISH
XM	Composite	Electroless Nickel
XW	Composite	Cadmium Olive Drab over Electroless Nickel
XB	Composite	No Plating - Black Material
XO	Composite	No Plating - Base Material Non-Conductive

660-049 • 660-050
Composite MIL-DTL-38999 Series III
Threaded Protective Covers



660-049
MIL-C-38999/32 PLUG COVER



660-050
MIL-C-38999/33 RECEPTACLE COVER

TABLE I: CONNECTOR SHELL SIZE

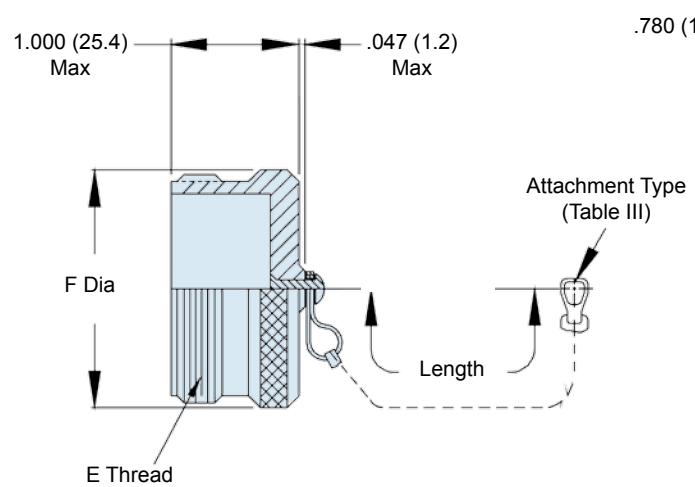
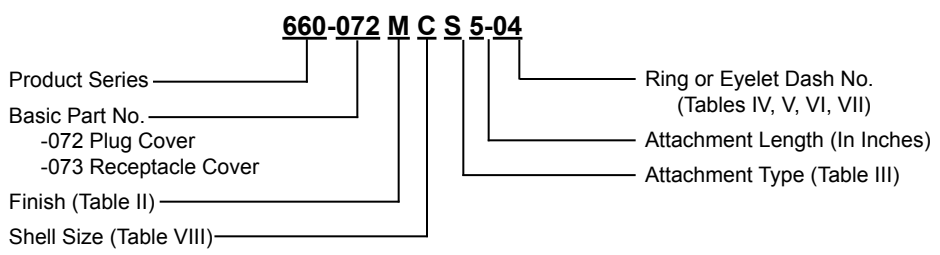
Shell Size	A Thread	B Dia Max	C Dia Max
09	.6250-0.1P-0.3L-TS	.906 (23.0)	.990 (25.1)
11	.7500-0.1P-0.3L-TS	1.024 (26.0)	1.105 (28.1)
13	.8750-0.1P-0.3L-TS	1.220 (31.0)	1.235 (31.4)
15	1.0000-0.1P-0.3L-TS	1.300 (33.0)	1.290 (32.8)
17	1.1875-0.1P-0.3L-TS	1.457 (37.0)	1.460 (37.1)
19	1.2500-0.1P-0.3L-TS	1.575 (40.0)	1.560 (39.6)
21	1.3750-0.1P-0.3L-TS	1.732 (44.0)	1.680 (42.7)
23	1.5000-0.1P-0.3L-TS	1.811 (46.0)	1.810 (46.0)
25	1.6250-0.1P-0.3L-TS	1.969 (50.0)	2.050 (52.1)

TABLE III: FINISH

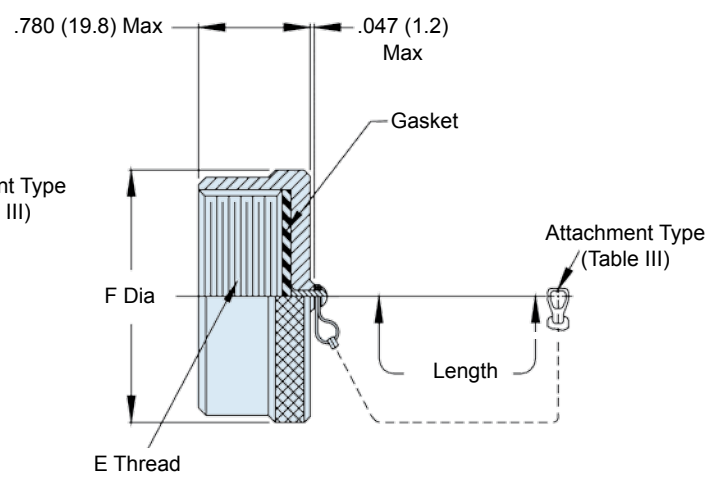
SYM	MATERIAL	FINISH
XM	Composite	Electroless Nickel
XW	Composite	Cadmium Olive Drab over Electroless Nickel
XB	Composite	No Plating - Black Material
XO	Composite	No Plating - Base Material Non-Conductive



660-072 and 660-073 MIL-PRF-28876 Style Threaded Protective Covers



**660-072 Plug Cover
MIL-PRF-28876/10 Style**

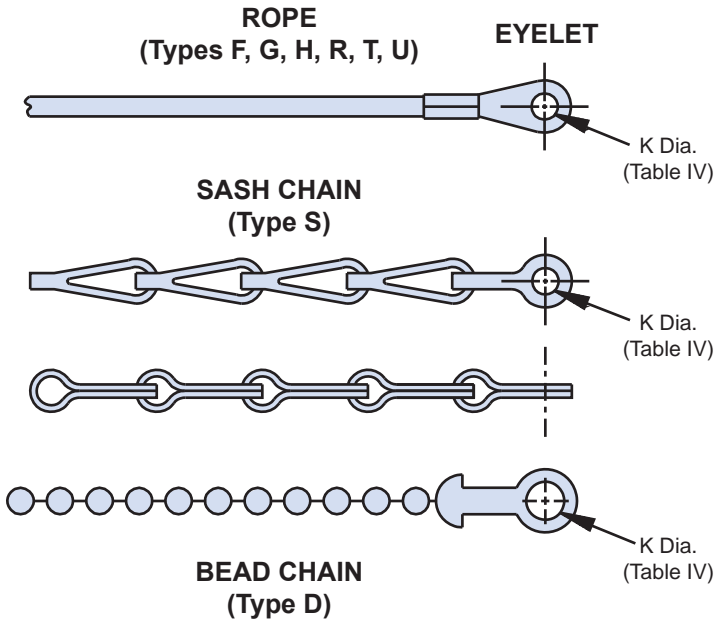
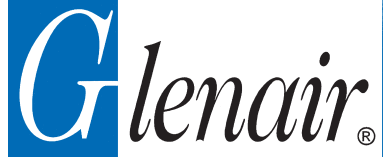


**660-073 Receptacle Cover
MIL-PRF-28876/15 Style**

TABLE I: CONNECTOR SHELL SIZE			
Designator	Shell Size (Ref)	A Thread	B Dia Max
A	11	.750-.1P-.2L-DS	1.028 (26.1)
B	13	.875-.1P-.2L-DS	1.141 (29.0)
C	15	1.062-.1P-.2L-DS	1.263 (32.1)
D	17	1.125-.1P-.2L-DS	1.387 (35.2)
E	19	1.312-.1P-.2L-DS	1.513 (38.4)
F	23	1.500-.1P-.2L-DS	1.703 (43.5)
G	25	1.625-.1P-.2L-DS	1.825 (46.4)
H	29	1.812-.1P-.2L-DS	2.143 (54.4)
J	33	2.000-.1P-.2L-DS	2.329 (59.2)

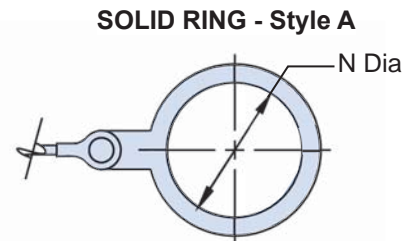
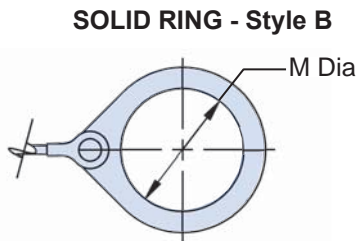
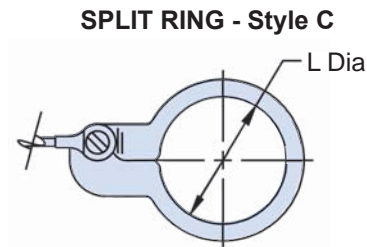
TABLE II: FINISH		
SYM	MATERIAL	FINISH
C	Aluminum	Black Anodize
M	Aluminum	Electroless Nickel (Coupling Nut Electrodeposited)
NF	Aluminum	Olive Drab Cadmium over Electroless Nickel
ZN	Aluminum	Zinc-Nickel/Olive Drab over Electroless Nickel
Z1	Stainless Steel	Passivate
MT	Aluminum	Nickel-PTFE IAW GPS52-MT

660-072 and 660-073
MIL-PRF-28876 Style
Threaded Protective Covers



Sym	Attachment Type
D	Bead Chain, Cres., Passivate
F	Wire Rope, Nylon Jacket
G	Nylon Rope
H	Wire Rope, Teflon Jacket
N	No Attachment
R	Wire Rope, PVC Jacket
S	#8 Sash Chain, Cres., Passivate
T	Wire Rope, No Jacket
U	Wire Rope, Polyurethane Jacket with Terminal

Dash No.	K Dia ±.010 (3.6)
01	.140 (3.6)
02	.182 (4.6)
03	.191 (4.9)
04	.197 (5.0)
05	.167 (4.2)
06	.125 (3.2)
07	.218 (5.5)
09	.156 (4.0)
00	No Eyelet



Dash No.	L Dia ±.015 (4.0)	Dash No.	L Dia ±.015 (4.0)
50	.425 (10.8)	74	1.625 (41.3)
52	.485 (12.3)	76	1.750 (44.5)
54	.640 (16.3)	78	1.220 (31.0)
56	.750 (19.1)	80	1.980 (50.3)
58	.890 (22.6)	82	2.060 (52.3)
60	1.015 (25.8)	84	2.235 (56.8)
62	1.095 (27.8)	86	2.310 (58.7)
64	1.130 (28.7)	88	2.475 (62.9)
66	1.250 (31.8)	90	2.655 (67.4)
68	1.350 (34.3)	92	2.810 (71.4)
70	1.390 (35.3)	94	3.045 (77.3)
72	1.485 (37.7)		

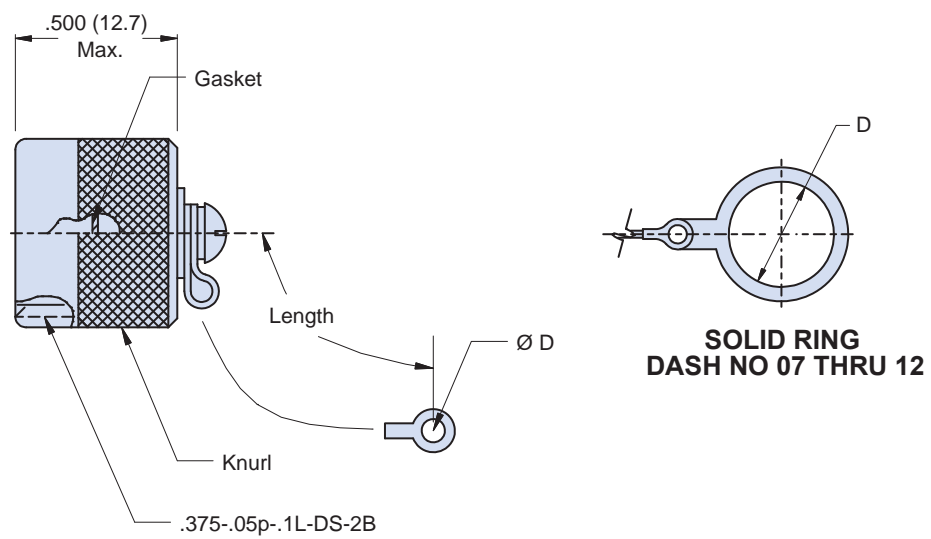
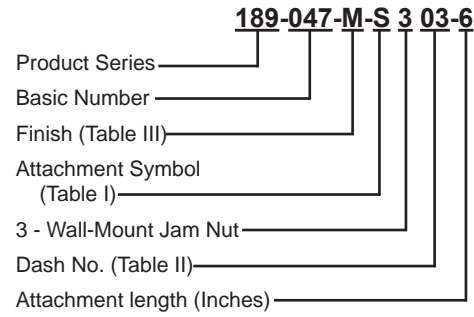
Dash No.	M Dia ±.015 (4.0)	Dash No.	M Dia ±.015 (4.0)
08	.468 (11.9)	24	1.484 (37.7)
10	.593 (15.1)	25	1.577 (40.1)
12	.718 (18.2)	27	1.640 (41.7)
13	.765 (19.4)	28	1.687 (42.8)
14	.844 (21.4)	29	1.765 (44.8)
15	.890 (22.6)	30	1.890 (48.0)
16	.968 (24.6)	31	1.953 (49.6)
17	1.015 (25.8)	32	1.968 (50.0)
18	1.093 (27.8)	33	2.077 (52.8)
19	1.140 (29.0)	35	2.140 (54.4)
20	1.203 (30.6)	36	2.187 (55.5)
21	1.265 (32.1)	40	2.406 (61.1)
22	1.343 (34.1)	44	2.656 (67.5)
23	1.453 (36.9)	48	3.031 (77.0)

Dash No.	N Dia ±.015 (4.0)	Dash No.	N Dia ±.015 (4.0)
095	.312 (7.9)	109	1.266 (32.2)
100	.391 (9.9)	209	1.312 (33.3)
101	.516 (13.1)	110	1.391 (35.3)
102	.583 (14.8)	210	1.391 (35.3)
103	.641 (16.3)	111	1.521 (38.6)
104	.708 (18.0)	211	1.536 (39.0)
105	.766 (19.5)	112	1.641 (41.7)
205	.788 (20.0)	113	1.766 (44.9)
106	.896 (22.8)	213	1.812 (46.0)
206	.907 (23.0)	114	1.891 (48.0)
107	1.016 (25.8)	214	1.938 (49.2)
207	1.025 (26.0)	115	2.078 (52.8)
108	1.141 (29.0)	116	2.406 (61.1)
308	1.188 (30.2)	117	2.510 (63.8)
208	1.203 (30.6)		

Metric dimensions (mm) are indicated in parenthesis.



**189-047 (3) Wall-Mounting/Jam Nut
Receptacle Protective Cover
for Single Channel 180-071 Fiber Optic Connector**



3 - WALL MTG/JAM NUT

APPLICATION NOTES

1. Assembly packaged in plastic bag and tag identified with manufacturer's name and part number.
2. Material/Finish:
Cover: Aluminum Alloy/See Table III.
Gasket: Fluorosilicone.
Attachments: see Table I.
3. Metric dimensions (mm) are in parentheses.

**189-047 (3) Wall-Mounting/Jam Nut
Receptacle Protective Cover
for Single Channel 180-071 Fiber Optic Connector**



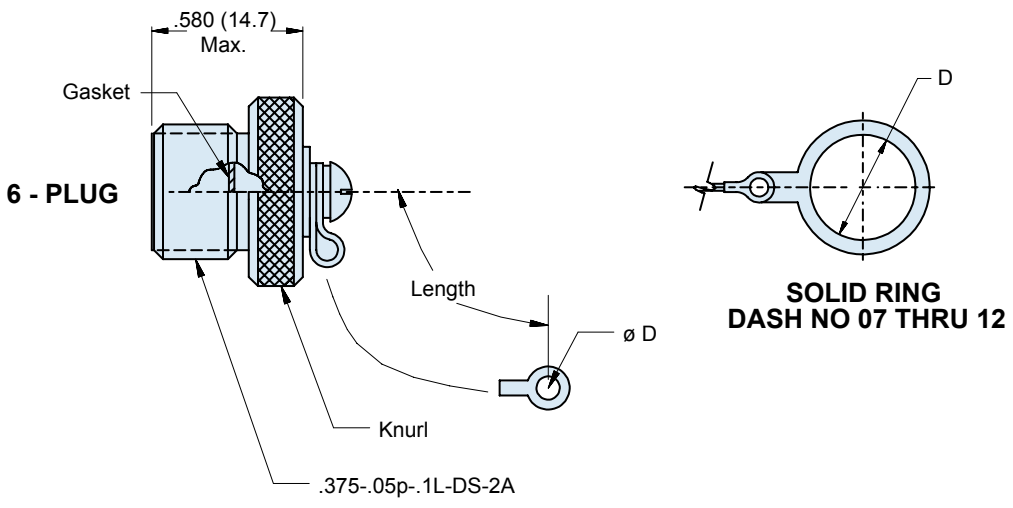
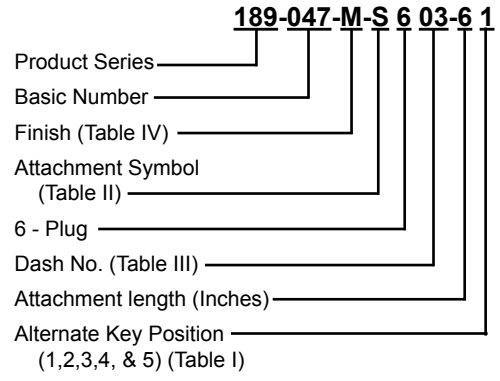
TABLE I: ATTACHMENT	
Sym	Attachment Type
D	Bead Chain, Cres., Passivate
F	Wire Rope with Nylon Jacket
G	Nylon Rope
H	Wire Rope with Teflon Jacket
N	No Attachment
R	Wire Rope with PVC Jacket
S	#8 Sash Chain, Cres., Passivate
T	Wire Rope, No Jacket
U	Wire Rope with Polyurethane Jacket and Terminal

TABLE II: DASH NO.	
Dash No.	D
01	.125 (3.2)
02	.140 (3.6)
03	.167 (4.2)
04	.182 (4.6)
05	.191 (4.9)
06	.197 (5.0)
07	.391 (9.9)
08	.516 (13.1)
09	.583 (14.8)
10	.766 (19.5)
11	.896 (22.8)
12	1.016 (25.8)

TABLE III: FINISH		
SYM	MATERIAL	FINISH
C	Aluminum	Black Anodize
M	Aluminum	Electroless Nickel (Coupling Nut Electrodeposited)
NF	Aluminum	Olive Drab Cadmium over Electroless Nickel
ZN	Aluminum	Zinc-Nickel/Olive Drab over Electroless Nickel
Z1	Stainless Steel	Passivate

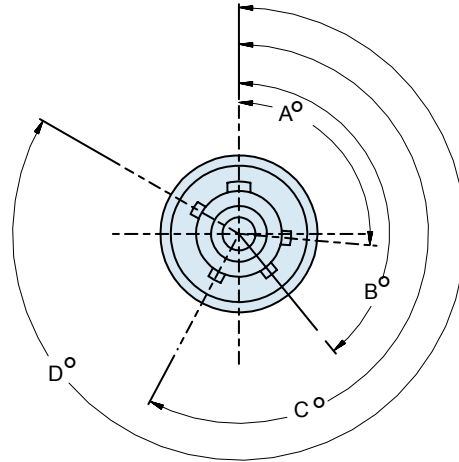


**189-047 (6) Plug
Plug Protective Cover
for Single Channel 180-071 Fiber Optic Connector**



- APPLICATION NOTES**
1. Assembly packaged in plastic bag and tag identified with manufacturer's name and part number.
 2. Material/Finish:
Cover: Aluminum Alloy/See Table III.
Gasket: Fluorosilicone.
Attachments: see Table I.
 3. Metric dimensions (mm) are in parentheses.

**189-047 (6) Plug
Plug Protective Cover
for Single Channel 180-071 Fiber Optic Connector**



As Viewed from Front of Connector

TABLE I: KEY LOCATION				
Pos	A°	B°	C°	D°
1	95	141	208	300
2	80	141	208	300
3	95	141	223	300
4	80	141	223	300
5	95	141	208	275

TABLE II: ATTACHMENT	
Sym	Attachment Type
D	Bead Chain, Cres., Passivate
F	Wire Rope with Nylon Jacket
G	Nylon Rope
H	Wire Rope with Teflon Jacket
N	No Attachment
R	Wire Rope with PVC Jacket
S	#8 Sash Chain, Cres., Passivate
T	Wire Rope, No Jacket
U	Wire Rope with Polyurethane Jacket and Terminal

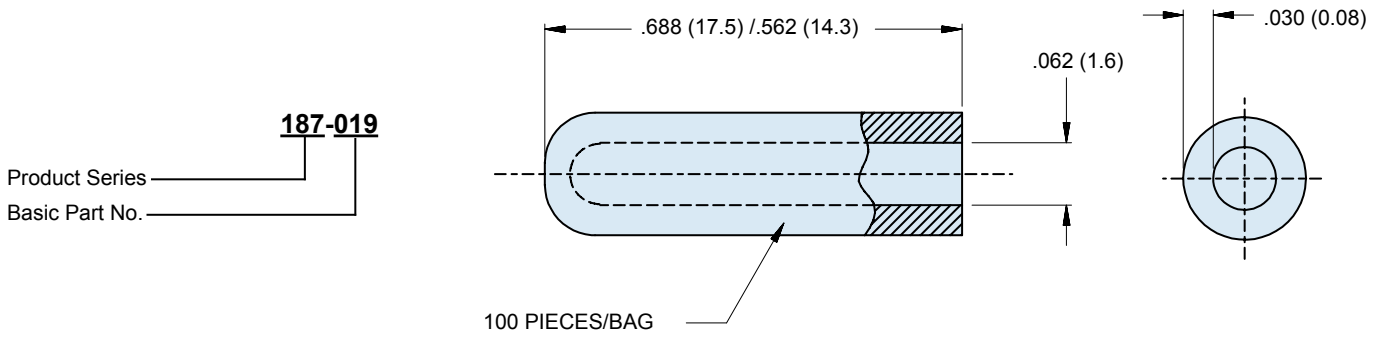
TABLE III: DASH NO.	
Dash No.	D
01	.125 (3.2)
02	.140 (3.6)
03	.167 (4.2)
04	.182 (4.6)
05	.191 (4.9)
06	.197 (5.0)
07	.391 (9.9)
08	.516 (13.1)
09	.583 (14.8)
10	.766 (19.5)
11	.896 (22.8)
12	1.016 (25.8)

TABLE IV: FINISH		
SYM	MATERIAL	FINISH
C	Aluminum	Black Anodize
M	Aluminum	Electroless Nickel (Coupling Nut Electrodeposited)
NF	Aluminum	Olive Drab Cadmium over Electroless Nickel
ZN	Aluminum	Zinc-Nickel/Olive Drab over Electroless Nickel
Z1	Stainless Steel	Passivate

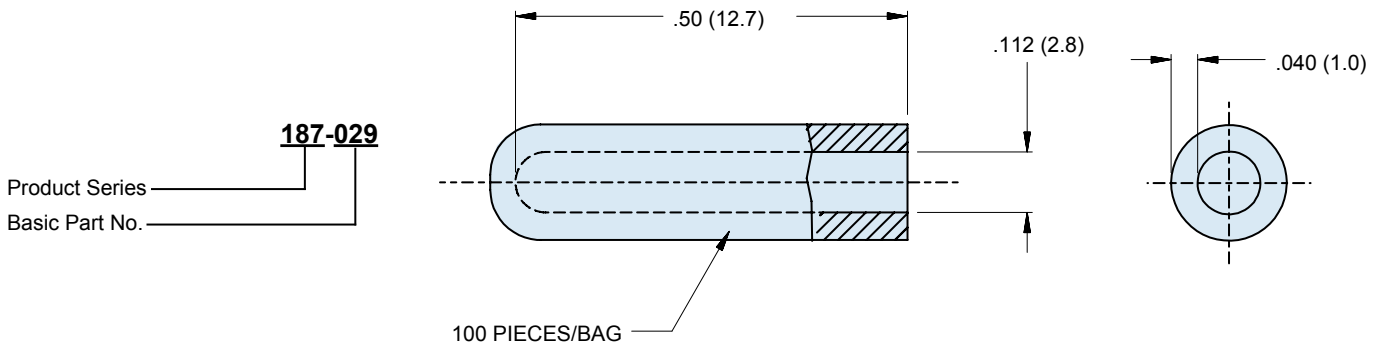


187-019 and 187-029 Vinyl Dust Caps

187-019 Vinyl Dust Cap for Size #16 AWG Terminus with .0625 Ferrules



187-029 Vinyl Dust Cap For Socket Terminus with Cover



APPLICATION NOTES

1. Bag identified with manufacturer's name and P/N space permitting.
2. Metric Dimensions (mm) are indicated in parentheses.