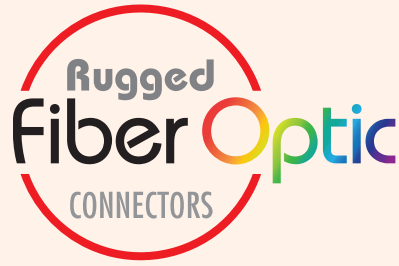


GLENAIR  
SIGNATURE  
FIBER OPTIC  
CONNECTION  
SYSTEMS



SuperNine®  
Tight-Tolerance  
MIL-DTL-38999 Sr. III  
Fiber Optic Connection  
System



The high-performance fiber optic interconnect system successfully deployed in hundreds of commercial and military aerospace and other applications—from F-16 upgrade systems to the revolutionary F-35 Joint Strike Fighter



Terminated and tested point-to-point and multibranch D38999 type fiber optic cable assemblies

- Composite, aluminum and stainless steel shells available
- Qualified size #16 MIL-PRF-29504 precision ceramic termini
- Singlemode and multimode fiber, from 9/125 to 1000 microns
- Ultra-low insertion loss values, <.50dB typical
- From 2 to 37 Termini
- Plug and In-Line, Jam Nut and Square Flange Receptacles
- Patented MIL-DTL-38999 fiber optic test probes and adapters

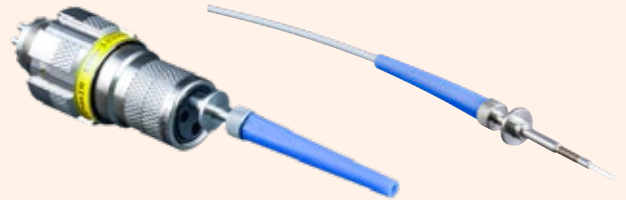
# SuperNine® MIL-DTL-38999 Series III Type



## Advanced fiber optic connection system

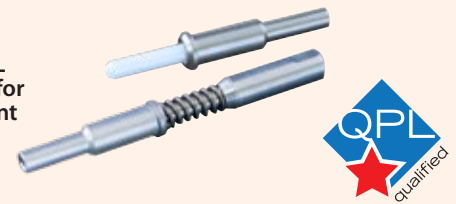


MIL-DTL-38999 type fiber optic connection system termination, inspection, test, and cleaning tools are available now from Glenair. We also offer comprehensive F/O training services for assembly and maintenance technicians.



Glenair optical fiber test probes and connector adapters provide accurate and repeatable testing of MIL-DTL-38999 F/O assemblies

Glenair M29504/4 and /5 QPL termini are in stock and ready for immediate, same-day shipment



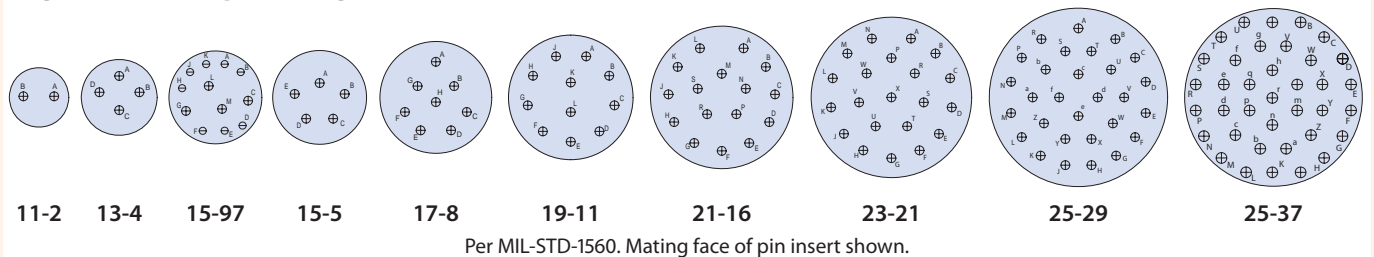
A complete range of metal and composite backshells and protective covers is available

MIL-PRF-29504/04 and /05 Fiber Optic Termini Performance Data	
Test Type	Performance Requirement
Operating Temperature	-55°C to +165°C (dependent on epoxy and cable)
Temperature Cycling	-65°C to +175°C
Thermal Shock	-55°C to +150°C, 5 cycles
Temperature Life	+150°C for 1,000 hours
Random Vibration	20-2,000 Hz, 42.2 g's
Shock (Half-sine Pulse)	300 g Peak Load
Mechanical Shock	MIL-S-901, Grade A, Type B, Class I
Mating Durability	500 cycles (cleaning after 100 matings)
Salt Spray	48 hours (Terminus only)
Cable Retention Force	22.0 lbs (dependent on cable construction)

Select SuperNine Fiber Optic Connector Part Numbers	
Glenair Dwg. Number*	Product Description
181-001	#16 Socket Terminus
181-002	#16 Pin Terminus
181-048	#16 Dummy Terminus
180-091 (05)	In-Line Receptacle Connector
180-091 (06)	Plug Connector
180-091 (08)	Jam Nut Mount Receptacle Connector
180-091 (H7)	Square Flange Wall Mount Receptacle with Round Holes
180-091 (S7)	Square Flange Wall Mount Receptacle with Slotted Holes
180-091 (T7)	Square Flange Wall Mount Receptacle with Tapped Holes

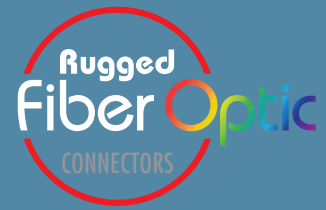
\* See fiber optic catalog for complete part number information

### INSERT ARRANGEMENTS



# SuperNine® MIL-DTL-38999 Series III Type

## How to order Termini and Connectors



### M29504/04 TYPE, STYLE 1 PIN AND SOCKET TERMINI FOR MIL-DTL-38999 SERIES III



**181-002-XXX**

Pin Terminus



**181-001-XXX**

Socket Terminus



**181-048-16**

Size 16 Dummy Terminus reduces weight and eliminates cost of using expensive contacts

Part Number	Fiber Size Core/Cladding/Coating (Microns)	Ø A (Microns)	Ref. M29504/04-XXXX
<b>181-00X-125</b>	9/125 (Singlemode)	125.5	M29504/04-4208
<b>181-00X-126S</b>	9/125 (Singlemode)	126.0	M29504/04-4209
<b>181-00X-126</b>	50/125 & 62.5/125	126.0	M29504/04-4210
<b>181-00X-127</b>	50/125 & 62.5/125	127.0	M29504/04-4040
<b>181-00X-142</b>	100/140	142.0	M29504/04-4043
<b>181-00X-144</b>	100/140	144.0	N/A
<b>181-00X-145</b>	100/140	145.0	M29504/04-4044
<b>181-00X-156</b>	62.5/125/155 (Polyimide)	156.0	M29504/04-4211
<b>181-00X-157</b>	62.5/125/155 (Polyimide)	157.0	M29504/04-4212
<b>181-00X-173</b>	100/140/172 (Polyimide)	173.0	M29504/04-4087
<b>181-00X-175</b>	100/140/172 (Polyimide)	175.0	M29504/04-4213
<b>181-00X-231</b>	200/230	231.0	N/A
<b>181-00X-236</b>	200/230	236.0	N/A
<b>181-00X-286</b>	200/280	286.0	N/A
<b>181-00X-448</b>	400/440	448.0	N/A
<b>181-00X-533</b>	486/500	533.0	N/A

### SUPERNINE FIBER OPTIC CONNECTORS



Part Number Development						
Sample Part Number	<b>180-091</b>	<b>XW</b>	<b>06</b>	<b>-17-8</b>	<b>P</b>	<b>N</b>
Series / Basic Part No.	D38999 Series III Type					
Material/Finish	See Material/Finish Table					
Connector Style	<b>06</b> = Plug Connector					
Shell Size/Insert Arr.*	IAW MIL-DTL-38999 Series III, Per MIL-STD-1560					
Insert Designation	<b>P</b> = Pin <b>S</b> = Socket					
Alternate Key Position*	<b>A, B, C, D, E, N</b> = Normal; Per MIL-DTL-38999					

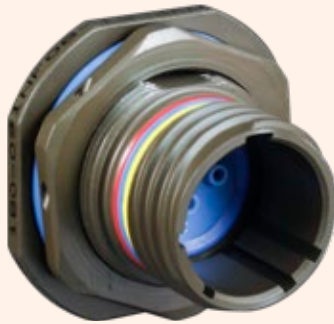


Part Number Development						
Sample Part Number	<b>180-091</b>	<b>XW</b>	<b>05</b>	<b>-17-8</b>	<b>P</b>	<b>N</b>
Series / Basic Part No.	D38999 Series III Type					
Finish	See Material/Finish Table					
Connector Style*	<b>05</b> = In-Line Receptacle					
Shell Size/Insert Arr.*	IAW MIL-DTL-38999 Series III, Per MIL-STD-1560					
Insert Designation	<b>P</b> = Pin <b>S</b> = Socket					
Alternate Key Position*	<b>A, B, C, D, E, N</b> = Normal; Per MIL-DTL-38999					

# SuperNine® MIL-DTL-38999 Series III Type



## How to order Connectors



Part number development						
<b>Sample Part Number</b>	<b>180-091</b>	<b>XW</b>	<b>08</b>	<b>-17-8</b>	<b>P</b>	<b>N</b>
<b>Series / Basic Part No.</b>	D38999 Series III Type					
<b>Material/Finish</b>	See Material/Finish Table					
<b>Connector Style</b>	08 = Jam Nut Receptacle					
<b>Shell Size/Insert Arr.*</b>	IAW MIL-DTL-38999 Series III, Per MIL-STD-1560					
<b>Insert Designation</b>	P = Pin    S = Socket					
<b>Alternate Key Position*</b>	A, B, C, D, E, N = Normal; Per MIL-DTL-38999					



Part number development						
<b>Sample Part Number</b>	<b>180-091</b>	<b>XW</b>	<b>H7</b>	<b>-17-8</b>	<b>P</b>	<b>N</b>
<b>Series / Basic Part No.</b>	D38999 Series III Type					
<b>Material/Finish</b>	See Material/Finish Table					
<b>Connector Style</b>	H7 = Wall Mount Receptacle with Round Holes (Std)					
<b>Shell Size/Insert Arr.*</b>	IAW MIL-DTL-38999 Series III, Per MIL-STD-1560					
<b>Insert Designation</b>	P = Pin    S = Socket					
<b>Alternate Key Position*</b>	A, B, C, D, E, N = Normal; Per MIL-DTL-38999					

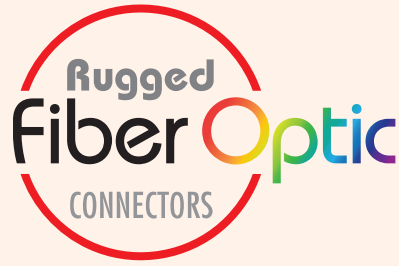


Part number development						
<b>Sample Part Number</b>	<b>180-091</b>	<b>XW</b>	<b>S7</b>	<b>-17-8</b>	<b>P</b>	<b>N</b>
<b>Series / Basic Part No.</b>	D38999 Series III Type					
<b>Material/Finish</b>	See Material/Finish Table					
<b>Connector Style</b>	S7 = Wall Mount Receptacle with Slotted Holes					
<b>Shell Size/Insert Arr.*</b>	IAW MIL-DTL-38999 Series III, Per MIL-STD-1560					
<b>Insert Designation</b>	P = Pin    S = Socket					
<b>Alternate Key Position*</b>	A, B, C, D, E, N = Normal; Per MIL-DTL-38999					

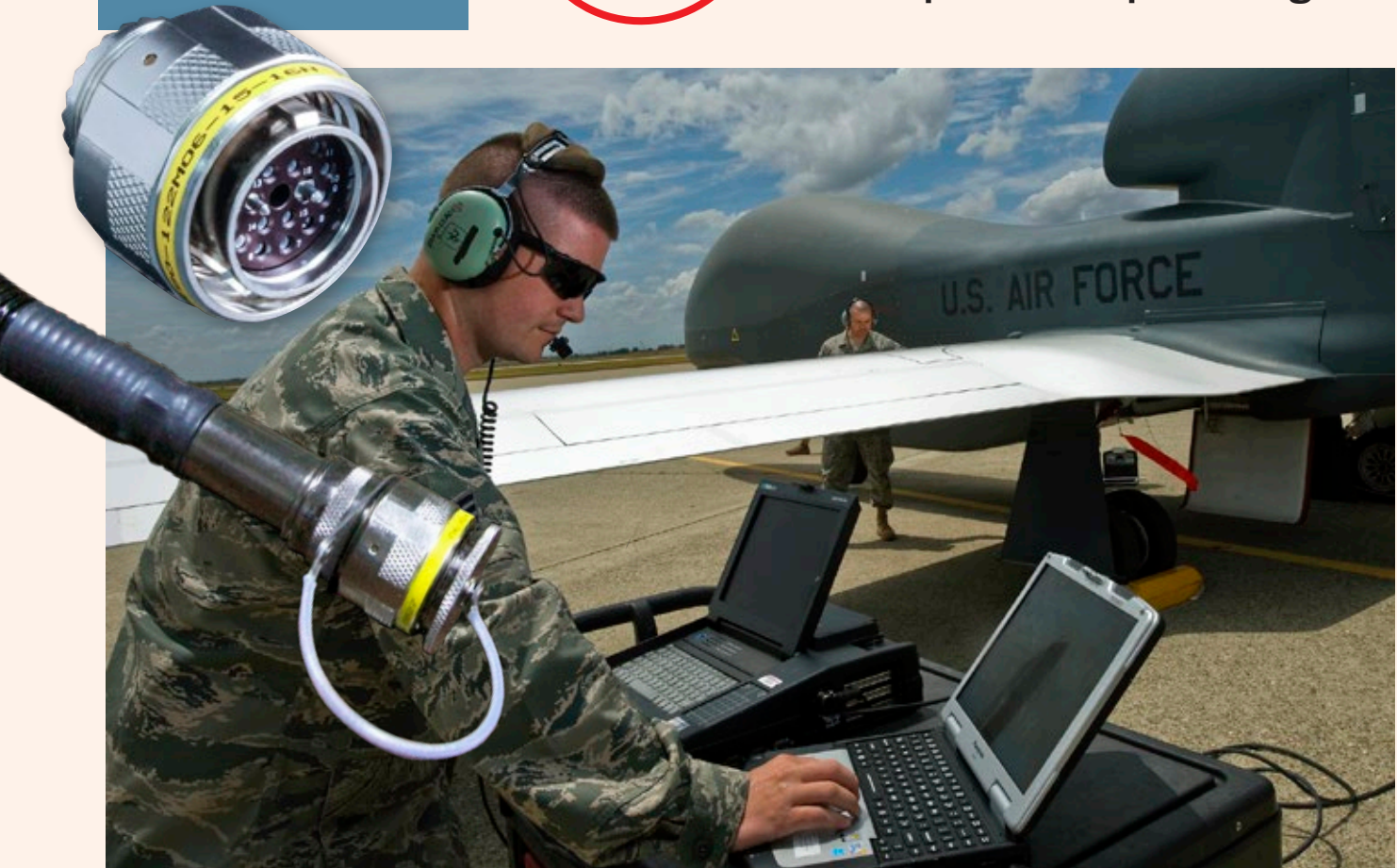


Part number development						
<b>Sample Part Number</b>	<b>180-091</b>	<b>XW</b>	<b>T7</b>	<b>-17-8</b>	<b>P</b>	<b>N</b>
<b>Series / Basic Part No.</b>	D38999 Series III Type					
<b>Material/Finish</b>	See Material/Finish Table					
<b>Connector Style</b>	T7 = Wall Mount Receptacle with Threaded Insert Holes					
<b>Shell Size/Insert Arr.*</b>	IAW MIL-DTL-38999 Series III, Per MIL-STD-1560					
<b>Insert Designation</b>	P = Pin    S = Socket					
<b>Alternate Key Position*</b>	A, B, C, D, E, N = Normal; Per MIL-DTL-38999					

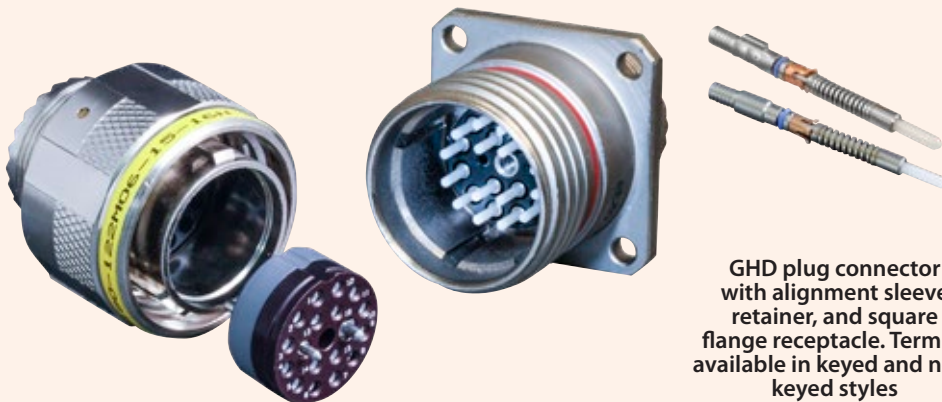
GLENAIR  
SIGNATURE  
FIBER OPTIC  
CONNECTION  
SYSTEMS



Glenair High Density (GHD): nearly double the density of standard mil-spec fiber optic designs



The system of choice for military and commercial air, space and other applications: Outstanding optical and environmental performance with nearly double the density of standard mil-spec solutions



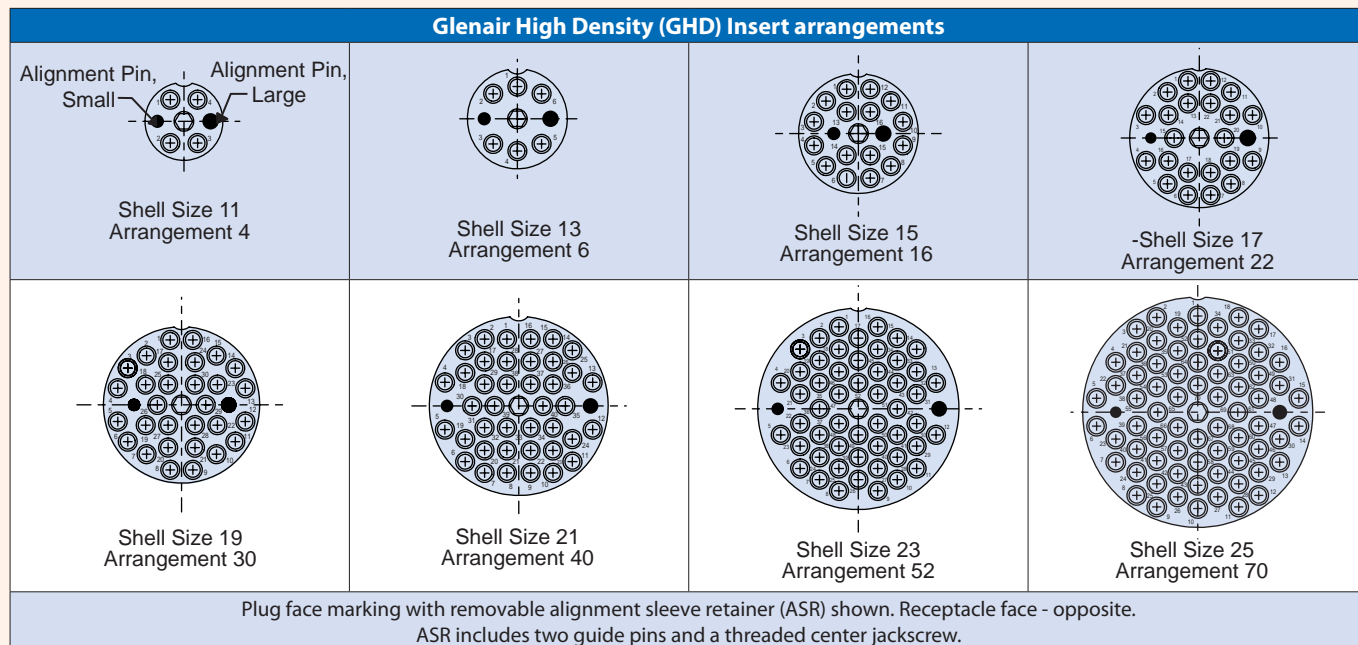
GHD plug connector with alignment sleeve retainer, and square flange receptacle. Termini available in keyed and non-keyed styles

- Innovative #18 (1.25mm ferrule) front-release genderless termini accommodate 900 $\mu$  to 2.0mm jacketed fiber
- M85045/16 cable accommodation
- Composite, aluminum or stainless steel shells
- Single keying for APC polish available
- Better optical performance than D38999 with nearly double the density
- Precision alignment sleeve retainer with integrated guide pins
- Piston o-ring sealing—submersible design

# SIZE- AND WEIGHT- SAVING Glenair High Density (GHD)



## Signature HD fiber optic connection system



Fiber Optic Pin Termini Specifications			
Assembly Dash Number		Fiber Size Core/Cladding	A Dia. [microns]
Keyed	Non-Keyed		
181-047-1255C	181-056-1255C	9/125 (Singlemode)	125.5
181-047-1260C	181-056-1260C	9/125, 50/125, 62.5/125	126.0
181-047-1270C	181-056-1270C	50/125, 62.5/125	127.0
181-047-1420C	181-056-1420C	100/140	142.0
181-047-1450C	181-056-1450C	100/140	145.0
181-047-1560C	181-056-1560C	62.5/125/155 (Polyimide)	156.0
181-047-1570C	181-056-1570C	62.5/125/155 (Polyimide)	157.0
181-047-1730C	181-056-1730C	100/140/172 (Polyimide)	173.0
181-047-1750C	181-056-1750C	100/140/172 (Polyimide)	175.0
181-047-2360C	181-056-2360C	200/233	236.0
181-047-2860C	181-056-2860C	200/280	286.0

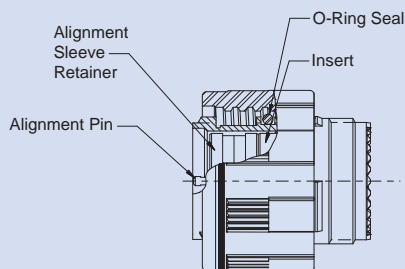
Crimp Sleeve is supplied with Terminus Assembly, and may be ordered separately. For terminus less crimp sleeve, omit **C** from end of part number (e.g. 181-056-1260)

GHD Fiber Optic Part Number Reference	
Glenair Dwg. Number	Product Description
181-047	#18 Pin Terminus, Keyed for APC Polish
181-056	#18 Pin Terminus (non-keyed)
181-058	#18 Dummy Terminus
180-122 (05)	In-Line Receptacle Connector
180-122 (06)	Plug Connector with Alignment Sleeve Retainer
180-122 (08)	Jam Nut Mount Receptacle Connector
180-122 (H7)	Square Flange Receptacle with Round Holes
180-122 (S7)	Square Flange Receptacle with Slotted Holes

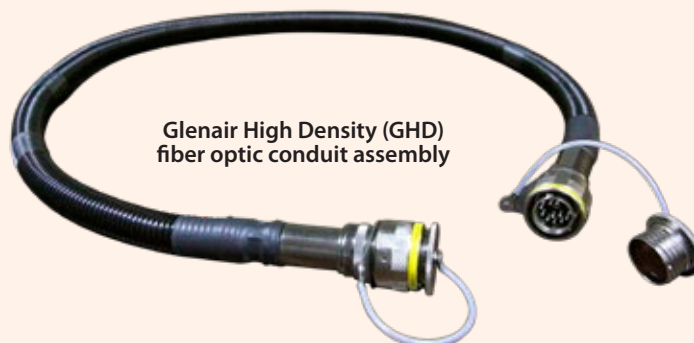
\* See fiber optic catalog for complete part number information

Pin Density Comparison: Glenair High Density Versus D38999 and M28876								
Connector Style / Size	11	13	15	17	19	21	23	25
D38999 Cavity Count	2	4	5	8	11	16	21	29/37
M28876 Cavity Count	2	4	8	N/A	N/A	N/A	31	N/A
GHD Cavity Count	4	6	16	20	30	40	52	70

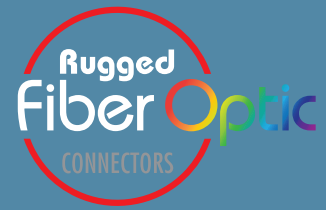
### Glenair High Density (GHD) Features



**D38999 Series III Style Coupling**  
Five Alternate Key Positions: A, B, C, D, E (N = Normal)

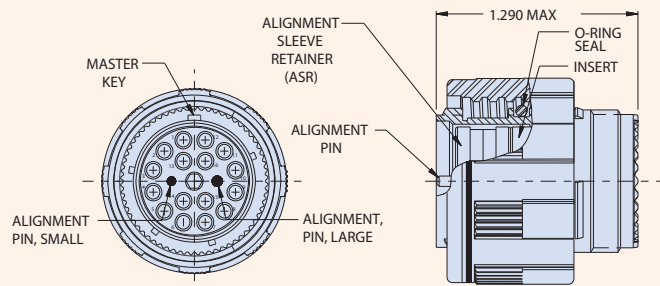


# SIZE- AND WEIGHT- SAVING Glenair High Density (GHD)

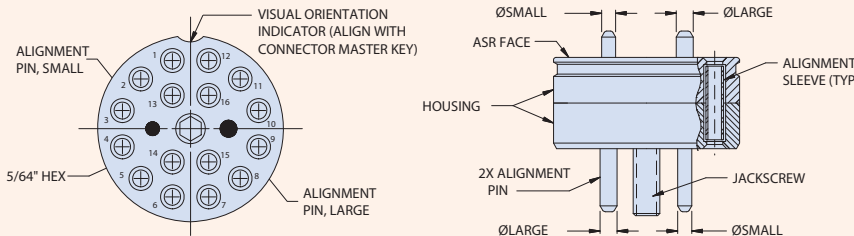


## Signature HD fiber optic connection system How to order connectors

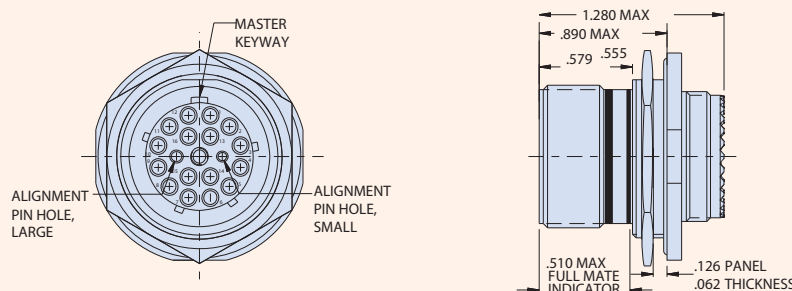
Part Number Development						
<b>Sample Part Number</b>	<b>180-122</b>	<b>NF</b>	<b>06</b>	<b>-15-16</b>	<b>N</b>	<b>C</b>
<b>Series / Basic Part No.</b>	Glenair High Density Fiber Optic Connector					
<b>Material/Finish</b>	See Material/Finish Table					
<b>Connector Style</b>	<b>06</b> = Plug with Alignment Sleeve Retainer					
<b>Shell Size/Insert Arr.</b>	<b>11-4, 13-6, 15-16, 17-22, 19-30, 21-40, 23-52, 25-70</b>					
<b>Alternate Key Position*</b>	<b>A, B, C, D, E, N</b> = Normal					
<b>O-Ring Option</b>	<b>C</b> = Conductive O-Ring <b>Omit</b> = Standard O-Ring					



Part Number Development			
<b>Sample Part Number</b>	<b>180-122</b>	<b>ASR</b>	<b>-15-16</b>
<b>Series / Basic Part No.</b>	Glenair High Density Fiber Optic Connector		
<b>Connector Style</b>	<b>ASR</b> = Alignment Sleeve Retainer		
<b>Shell Size/Insert Arr.</b>	<b>11-4, 13-6, 15-16, 17-22, 19-30, 21-40, 23-52, 25-70</b>		



Part Number Development					
<b>Sample Part Number</b>	<b>180-122</b>	<b>NF</b>	<b>08</b>	<b>-15-16</b>	<b>N</b>
<b>Series / Basic Part No.</b>	Glenair High Density Fiber Optic Connector				
<b>Material/Finish</b>	See Material/Finish Table				
<b>Connector Style</b>	<b>08</b> = Jam Nut Receptacle				
<b>Shell Size/Insert Arr.</b>	<b>11-4, 13-6, 15-16, 17-22, 19-30, 21-40, 23-52, 25-70</b>				
<b>Alternate Key Position*</b>	<b>A, B, C, D, E, N</b> = Normal				

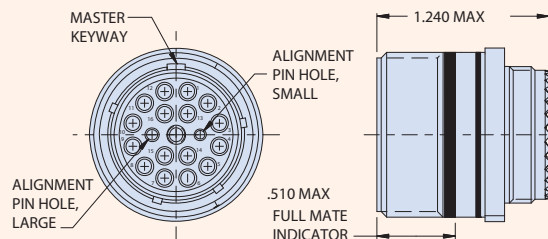


# SIZE- AND WEIGHT- SAVING Glenair High Density (GHD)

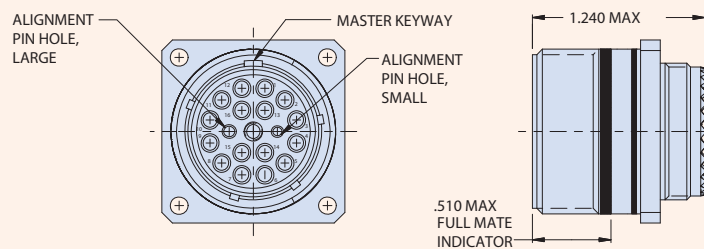


## Signature HD fiber optic connection system How to order connectors

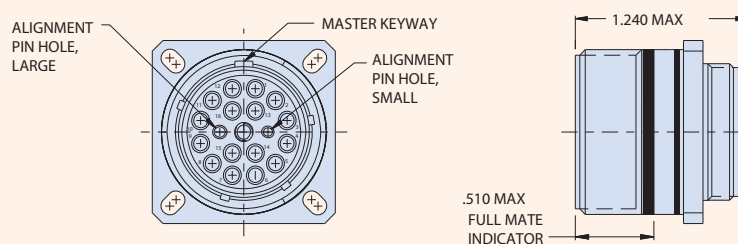
Part Number Development					
Sample Part Number	180-122	NF	05	-15-16	N
Series / Basic Part No.	Glenair High Density Fiber Optic Connector				
Material/Finish	See Material/Finish Table				
Connector Style	05 = In-Line Receptacle				
Shell Size/Insert Arr.	11-4, 13-6, 15-16, 17-22, 19-30, 21-40, 23-52, 25-70				
Alternate Key Position*	A, B, C, D, E, N = Normal				



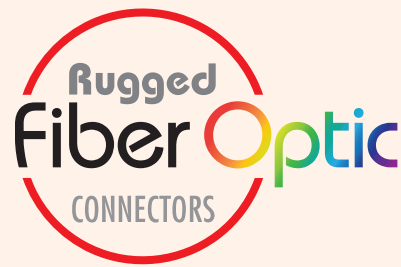
Part Number Development					
Sample Part Number	180-122	NF	H7	-15-16	N
Series / Basic Part No.	Glenair High Density Fiber Optic Connector				
Material/Finish	See Material/Finish Table				
Connector Style	H7 = Wall Mount Receptacle with Round Holes				
Shell Size/Insert Arr.	11-4, 13-6, 15-16, 17-22, 19-30, 21-40, 23-52, 25-70				
Alternate Key Position*	A, B, C, D, E, N = Normal				



Part Number Development					
Sample Part Number	180-122	NF	S7	-15-16	N
Series / Basic Part No.	Glenair High Density Fiber Optic Connector				
Material/Finish	See Material/Finish Table				
Connector Style	S7 = Wall Mount Receptacle with Slotted Holes				
Shell Size/Insert Arr.	11-4, 13-6, 15-16, 17-22, 19-30, 21-40, 23-52, 25-70				
Alternate Key Position*	A, B, C, D, E, N = Normal				







## GFR: Glenair Front Release Fiber Optic Connection System



The unique design of the Glenair Front Release system allows for rapid integration of optical media in a broad range of cylindrical and rectangular connector packages. By placing 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.

- Precision size 16 pin-socket front release termini with integrated retention clip
- Singlemode and multimode for all popular fiber sizes
- Typical insertion loss less than 0.5 dB
- Cylindrical and rectangular connectors
- Connector shells available in aluminum and stainless steel

## Signature fiber optic connection system



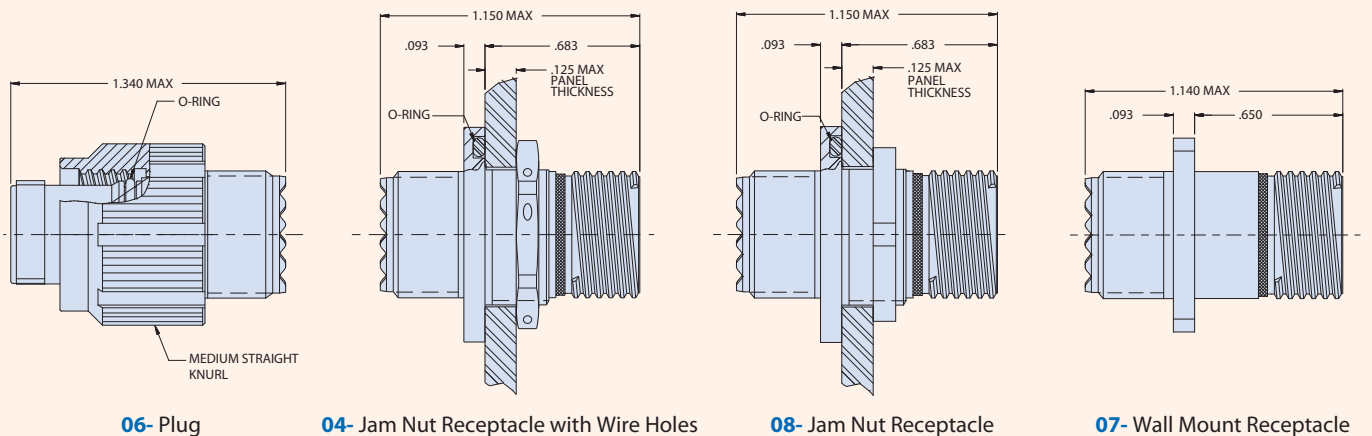
Glenair Front Release (GFR) fiber optic connection systems perform at insertion loss levels equivalent to other high-performance, tactical fiber optic systems such as M29504 termini used in D38999 and M28876 connectors. The GFR system enables Glenair to integrate optical media in Micro-D and D-Subminiature shells as well as micro miniature circular packaging. Contact the factory for availability and application engineering assistance for both standard and custom fiber optic connection systems.

### HOW TO ORDER GLENAIR FRONT RELEASE MICRO MINIATURE CIRCULAR CONNECTORS

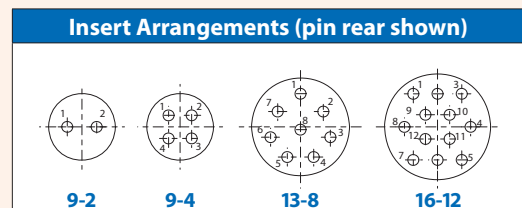


Contact the Factory for circular connectors requiring enhanced vibration and mechanical shock performance

How To Order GFR Micro Miniature Circular Connectors						
<b>Sample Part Number</b>	<b>180-132</b>	<b>M</b>	<b>06-</b>	<b>9-4</b>	<b>P</b>	<b>A</b>
<b>Series</b>	180-132 GFR Micro Miniature Circular					
<b>Shell Size</b>	<b>C</b>	Aluminum Alloy	Anodize, Black			
	<b>M</b>		Electroless Nickel			
	<b>NF</b>		CAD/Olive Drab over Electroless Nickel			
	<b>ZN</b>		Zinc-Nickel/Olive Drab over Electroless Nickel			
	<b>ZNU</b>		Black Zinc-Nickel over Electroless Nickel			
<b>Z1</b>	Stainless Steel	Passivate				
<b>Connector Style</b>	04- Jam Nut w/ Wire Holes    06- Plug 08- Jam Nut Receptacle    07- Wall Mount Receptacle					
<b>Shell Size/Insert Arr.</b>	9-2, 9-4, 13-8, 16-12					
<b>Contact Type</b>	P - Pin Termini    S - Socket Termini					
<b>Key Polarization</b>	A, B, C, D (See Table). Omit for 9-2 Arrangement which has 2 Keys/Keyways only.					

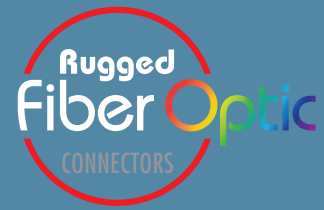


Key Polarization		
Position	A°	B°
A	150°	210°
B	75°	210°
C	95°	230°
D	140°	275°

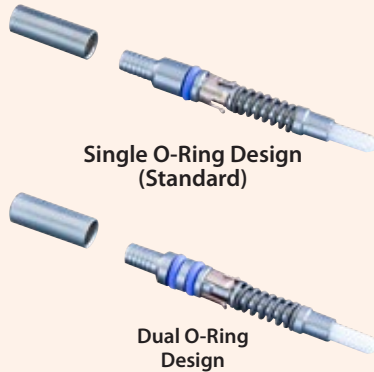


# RAPID INTEGRATION Glenair Front Release (GFR)

## How to order GFR Termini



### PIN TERMINI



### SOCKET TERMINI



### DUMMY TERMINUS



How To Order GFR Fiber Optic Termini				
<b>Sample Part Number</b>	<b>181-011</b>	<b>-126</b>	<b>K</b>	<b>D</b>
<b>Series</b>	<b>181-012</b> GFR front-release pin terminus <b>181-011</b> GFR front-release socket terminus			
<b>Dash No.</b>	<b>Dash No.</b>	<b>Ferrule Hole Ø</b>	<b>Typical Fiber Type</b>	<b>Typical Fiber Size core/cladding/coating</b>
	<b>-125</b>	125.5 µm	Single Mode	9/125 µm
	<b>-126S</b>	126.0 µm	Single Mode	9/125 µm
	<b>-126</b>	126.0 µm	Multi Mode	50/125, 62.5/125 µm
	<b>-142</b>	142.0 µm	Multi Mode	100/140 µm
	<b>-156</b>	156.0 µm	Multi Mode	62.5/125/155 µm (Polyimide)
	<b>-173</b>	173.0 µm	Multi Mode	100/140/172 µm (Polyimide)
	<b>-175</b>	175.0 µm	Multi Mode	100/140/172 µm (Polyimide)
	<b>-231</b>	231.0 µm	Multi Mode	200/225 µm
	<b>-236</b>	236.0 µm	Multi Mode	200/230 µm
<b>-286</b>	286.0 µm	Multi Mode	200/280 µm	
<b>-448</b>	448.0 µm	Multi Mode	400/440 µm	
<b>Alignment Sleeve (socket only)</b>	<b>K</b> = Stainless Steel Sleeve <b>Omit</b> = Ceramic Sleeve (standard) Omit designator for pin terminus			
<b>O-Ring Option</b>	<b>D</b> = Dual O-Rings <b>Omit</b> = Single O-Ring (standard)			

Dummy Terminus	
<b>181-051</b>	Size 16 Dummy Terminus for GFR Connectors

### TERMINI MATERIAL AND FINISH

Ferrule: Zirconia Ceramic  
 Alignment Sleeve (socket): Zirconia Ceramic or Stainless Steel/Passivate  
 Protective Cover (socket): BeCu Alloy/Nickel  
 Body: Stainless Steel/Passivate  
 Spring (pin): Stainless Steel/Passivate  
 Bushing (pin): Stainless Steel/Passivate  
 Retention Clip: BeCu Alloy  
 O-Ring(s): Fluorosilicone  
 Crimp Sleeve: Brass Alloy/Nickel

### NOTES

Crimp sleeves are supplied with terminus assemblies. Spares may be ordered separately. See Glenair GAP-031 and GAP-031B for termination and assembly tools/procedures.

Table II: Tools and Accessories	
<b>182-005S</b>	Polishing Tool, socket
<b>182-005P</b>	Polishing Tool, pin
<b>182-012</b>	Crimp Tool
<b>182-013</b>	Insertion Tool, Straight
<b>182-014</b>	Insertion Tool, 90 Degree
<b>182-015</b>	Removal Tool
<b>182-016</b>	Insertion/Removal Tool, Alignment Sleeve, socket
<b>181-011-S</b>	Protective Cover with Ceramic Sleeve
<b>181-011-K</b>	Protective Cover with Stainless Steel Sleeve
<b>265-002</b>	Crimp Sleeve, Ø 2.2mm Max Jacket

# RAPID INTEGRATION Glenair Front Release (GFR)

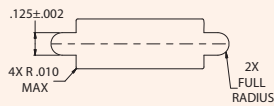


## How to order GFR Micro-D and D-Subminiature connectors

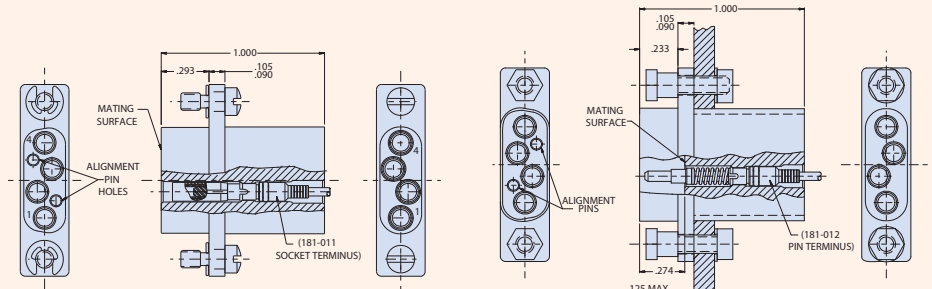


Avoid damage! Consult the factory for mating / unmating instructions

How To Order GFR Micro-D Connectors				
<b>Sample Part Number</b>	<b>180-064</b>	<b>-25</b>	<b>-4</b>	<b>M</b>
<b>Series</b>	<b>180-064</b> GFR Micro-D Plug <b>180-063</b> GFR Micro-D Receptacle			
<b>Shell Size</b>	<b>-9</b> (1 terminus max) <b>-15</b> (2 termini max) <b>-21</b> (3 termini max) <b>-25</b> (4 termini max) <b>-31</b> (5 termini max) <b>-100</b> (8 termini max)			
<b>No. of Termini</b>	<b>1, 2, 3, 4, 5, 8</b>			
<b>Material / Finish</b>	<b>C</b>	Aluminum Alloy	Anodize, Black	
	<b>M</b>		Electroless Nickel	
	<b>NF</b>		CAD/Olive Drab over Electroless Nickel	
	<b>ZN</b>		Zinc-Nickel/Olive Drab over Electroless Nickel	
	<b>Z1</b>	Stainless Steel	Passivate	



Recommended Panel Cutout



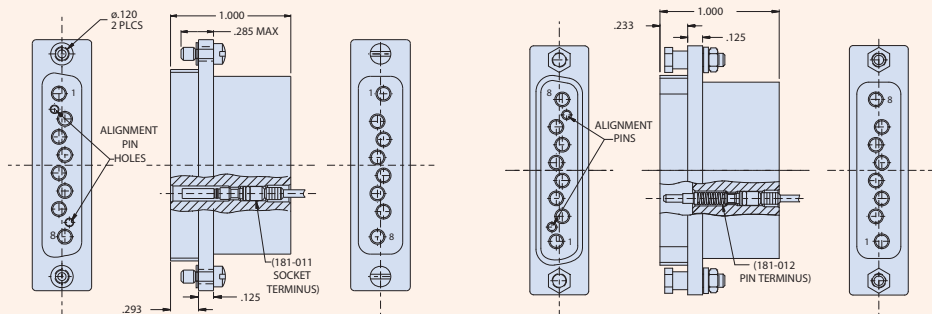
180-064 Plug

180-063 Receptacle



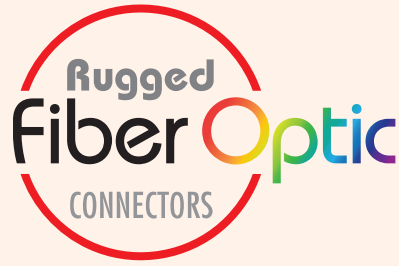
Avoid damage! Consult the factory for mating / unmating instructions

How To Order GFR D-Subminiature Connectors				
<b>Sample Part Number</b>	<b>180-066</b>	<b>-15</b>	<b>-5</b>	<b>-M</b>
<b>Series</b>	<b>180-066</b> GFR D-Sub Plug <b>180-065</b> GFR D-Sub Receptacle			
<b>Shell Size</b>	<b>-9</b> (4 termini max) <b>-15</b> (5 termini max) <b>-25</b> (8 termini max) <b>-50</b> (12 termini max)			
<b>No. of Termini</b>	<b>4, 5, 8, 12</b>			
<b>Material / Finish</b>	<b>C</b>	Aluminum Alloy	Anodize, Black	
	<b>M</b>		Electroless Nickel	
	<b>NF</b>		CAD/Olive Drab over Electroless Nickel	
	<b>ZN</b>		Zinc-Nickel/Olive Drab over Electroless Nickel	
	<b>Z1</b>	Stainless Steel	Passivate	



180-066 Plug

180-065 Receptacle


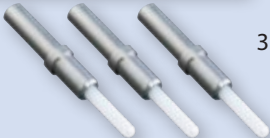


Rugged high-density  
MT Ferrule fiber optic  
connection system—with  
mil-grade SuperNine® or  
Series 791 packaging



Rugged performance MT ferrules  
in MIL-DTL-38999 advanced-  
performance connectors or in  
precision-machined Series 791  
rectangulars—only from Glenair

- SuperNine with MT
- Ruggedized “better than QPL” SuperNine® MIL-DTL-38999 Series III type interconnect packaging
- Singlemode and multimode fiber
- Low insertion loss
- Environmental sealing: IP67 mated, IP68 available at interface
- RoHS-compliant finishes available
- MT ferrules sold separately
- MT assembly tool, P/N 182-062 also available and sold separately

The MT Ferrule High-Density Advantage	
 <p>24 fibers</p>  <p>3 fibers</p>	<p>Up to 24 fibers in a single compact, lightweight ferrule (7mm x 3mm / .276" x .118") —same real estate as three size #16 termini side by side</p>

Signature fiber optic connection system:  
SuperNine D38999 and Series 791 Rectangular

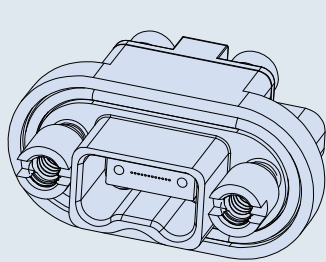
**SUPERNINE® MT CONNECTOR SIZES AND INSERT ARRANGEMENTS**

SuperNine® MT MIL-DTL-38999 Series III type connectors with plug-and-play MT ferrule accommodation			
<p>CONNECTOR MASTER KEY 2X GUIDE PIN</p>			
<p>Shell Size 11 Insert Arrangement -1 Up to 24 fibers (1 MT ferrule)</p>	<p>Shell Size 13 Insert Arrangement -2 Up to 48 fibers (2 MT ferrules)</p>	<p>Shell Size 15 Insert Arrangement -3 Up to 72 fibers (3 MT ferrules)</p>	<p>Shell Size 17 Insert Arrangement -4 Up to 96 fibers (4 MT ferrules)</p>

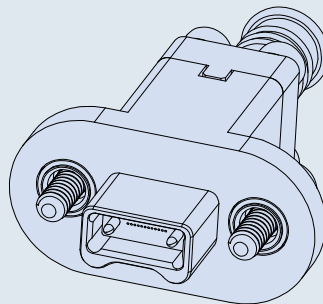
**SERIES 791 WITH MT**

Series 791 MT fiber optic connector is the world's smallest ruggedized MT connector solution with robust resistance to vibration and shock. Series 79 MT delivers superior low insertion-loss performance (up to 500 mating cycles) compared to commercial solutions. Connectors are supplied in single (consult factory for dual and quad) MT configurations with retaining plate and optional banding porch on plugs, and ultra low-profile retaining plate on receptacles.

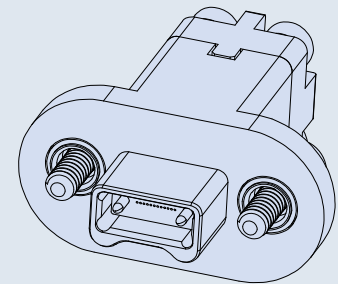
**SERIES 791 PRECISION-MACHINED SPACE-GRADE MT FERRULE-EQUIPPED CONNECTORS**



Receptacle with female MT ferrule available with or without EMI gasket

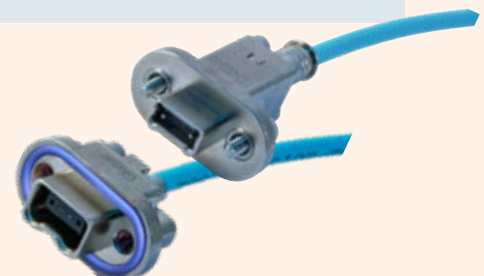


Plug with male MT ferrule with retaining plate and banding porch



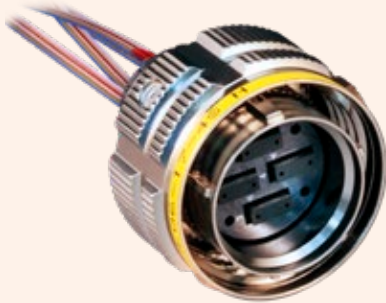
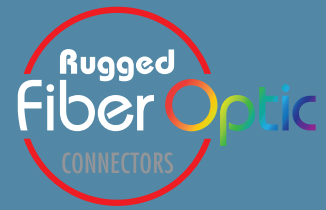
Plug with male MT ferrule and retaining plate

- Ruggedized small form-factor, high-density MT fiber optic solution
- Temperature tolerance from -40°C to +85°C
- Optimized for use with parallel optic transceivers in ribbon or round cable applications
- Low insertion loss performance in high vibration and shock environments

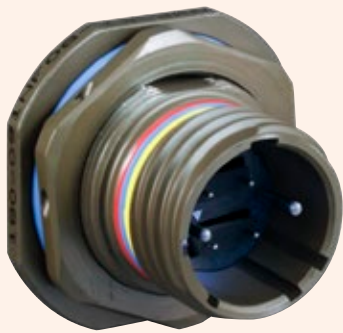


# SERIES 183-001 SuperNine MT Fiber Optic Connectors

## How to order connectors



SuperNine MT Cable Plug						
Sample Part Number	183-001	ME	G6	-17-4	S	N
Basic Part Number	MT Ferrule Fiber Optic Connector					
Material/Finish Code	See Table I					
Connector Style	G6 = Plug with EMI/RFI ground spring					
Shell Size / Insert Arrangement	11-1, 13-2, 15-3, 17-4					
Insert Designator	S = Socket insert (plug only)					
Alternate Key Position	A, B, C, D, E, N = Normal (per MIL-DTL-38999)					



SuperNine MT Jam Nut Mount Receptacle						
Sample Part Number	183-001	ME	08	-17-4	P	N
Basic Part Number	MT Ferrule Fiber Optic Connector					
Material/Finish Code	See Table I					
Connector Style	08 = Jam nut receptacle					
Shell Size / Insert Arrangement	11-1, 13-2, 15-3, 17-4					
Insert Designator	P = Pin insert (receptacle only)					
Alternate Key Position	A, B, C, D, E, N = Normal (per MIL-DTL-38999)					



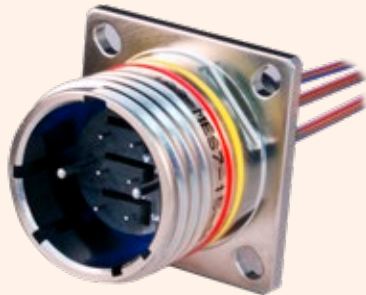
SuperNine MT In-Line Receptacle						
Sample Part Number	183-001	ME	05	-17-4	P	N
Basic Part Number	MT Ferrule Fiber Optic Connector					
Material/Finish Code	See Table I					
Connector Style	05 = In-line receptacle					
Shell Size / Insert Arrangement	11-1, 13-2, 15-3, 17-4					
Insert Designator	P = Pin insert (receptacle only)					
Alternate Key Position	A, B, C, D, E, N = Normal (per MIL-DTL-38999)					

Table I - Material and Finish		
Code	Material	Finish Description
ME	Aluminum Alloy	Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
ZR		Zinc-Nickel, Black
XM	Composite	Electroless Nickel
XW		Cadmium, Olive Drab
Z1	Stainless Steel	Passivate
ZL		Electro-Deposited Nickel

## How to order connectors



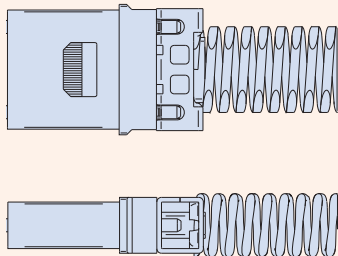
SuperNine MT Wall-Mount Receptacle, Standard Holes						
Sample Part Number	183-001	ME	H7	-17-4	P	N
Basic Part Number	MT Ferrule Fiber Optic Connector					
Material/Finish Code	See Table I					
Connector Style	H7 = Wall-mount receptacle with round holes					
Shell Size / Insert Arrangement	11-1, 13-2, 15-3, 17-4					
Insert Designator	P = Pin insert (receptacle only)					
Alternate Key Position	A, B, C, D, E, N = Normal (per MIL-DTL-38999)					



SuperNine MT Wall-Mount Receptacle, Slotted Holes						
Sample Part Number	183-001	ME	S7	-17-4	P	N
Basic Part Number	MT Ferrule Fiber Optic Connector					
Material/Finish Code	See Table I					
Connector Style	S7 = Wall-mount receptacle with slotted holes					
Shell Size / Insert Arrangement	11-1, 13-2, 15-3, 17-4					
Insert Designator	P = Pin insert (receptacle only)					
Alternate Key Position	A, B, C, D, E, N = Normal (per MIL-DTL-38999)					

Table I - Material and Finish		
Code	Material	Finish Description
ME	Aluminum Alloy	Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
ZR		Zinc-Nickel, Black
XM	Composite	Electroless Nickel
XW		Cadmium, Olive Drab
Z1	Stainless Steel	Passivate
ZL		Electro-Deposited Nickel

### MT FERRULE KIT



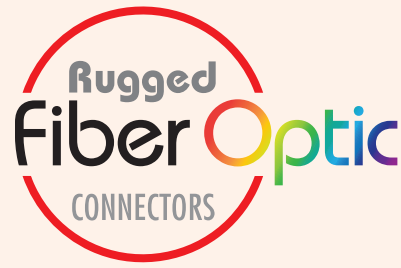
How To Order MT Ferrules				
Sample Part Number	181-108	-1253	-12	S
Basic Part Number	MT Ferrule kit			
Fiber type	-1253 = Singlemode -126 = Multimode			
Number of Fibers	-12 (12 fibers, available in singlemode and multimode) -24 (24 fibers, available in multimode only)			
Ferrule Style	S = Female (Plug Only) P = Male (Recp Only)			

Material/Finish

- Ferrule: Polyphenylene Sulfide Resin
- Spacer, Female: High-grade engineering plastic
- Spring: Stainless Steel
- Boot: TPE



GLENAIR  
SIGNATURE  
FIBER OPTIC  
CONNECTION  
SYSTEMS



Rugged High-Density  
**MT Ferrule** Fiber Optic  
Connection System—  
With Mil-Grade Miniature  
Series 79 Packaging



Single-ferrule high-density  
MT datalinks in Glenair  
Signature Series  
79 rectangular  
packaging  
optimize SWaP in  
mission-critical  
mil-aero  
applications



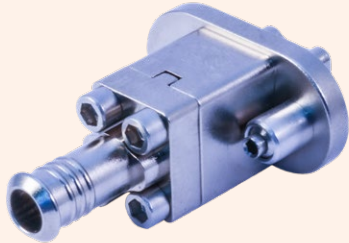
Connector series supports  
both ribbon and round  
cable, as well as standard  
and expanded-beam  
MT ferrules

- Small form-factor, high-density fiber optic solution for rugged mil-aero applications
- Temperature tolerance from -40°C to +85°C
- Optimized for use with parallel optical transceivers in ribbon or round cable applications
- Designed for optimal low insertion loss performance in high vibration and shock environments

# ULTRA HIGH-DENSITY Rugged MT Fiber Optic Connectors



## Signature fiber optic connection system: miniature Series 79 packaging



-06 plug, with retaining plate for EMI shield termination and strain relief of ribbon or round fiber cable



-S7 receptacle with standard retaining plate

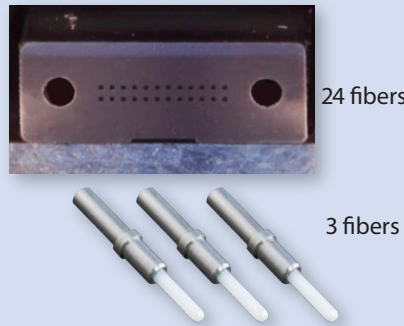


-S7 receptacle with conductive EMI gasket

### ABOUT SERIES 79 MT FIBER OPTIC CONNECTORS

Designed in accordance with rugged mil-aero industry specifications, the Glenair Series 79 MT fiber optic connector is the world's smallest ruggedized MT connector solution. High-density MT ferrules are packaged in precision-machined rectangular aluminum shells with electroless nickel finish, or passivated stainless steel shells for higher temperature applications. Receptacles may be equipped with optional EMI gaskets, and mate bottom-to-bottom with plug assemblies for robust resistance to vibration and shock. Designed for harsh-environment, inside-the-box use in parallel optics, fiber optic backplanes, missile systems, spacecraft and satellites, heads-up displays, and other ribbonized or flex-circuit fiber optic datalinks, the Series 79 MT delivers superior low insertion-loss performance (up to 500 mating cycles). Connectors are supplied in single (consult factory for dual and quad) MT configurations with banding platform or ultra low-profile retaining plate options.

#### The MT Ferrule High-Density Advantage



Up to 24 fibers in a single compact, lightweight ferrule (7mm x 3mm / .276" x .118")—same real estate as three size #16 termini side by side

### PARALLEL OPTICAL TRANSCEIVERS



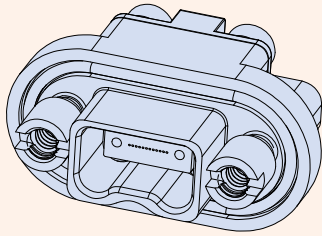
Glenair's rugged, small form-factor parallel optical transceivers are the ideal solution for board-level optical-to-electrical conversion utilizing MT fiber optic ferrules.

Series 79 MT Ferrule Fiber Optic Connector Performance Specifications per QTP-773 and Test Report GT-19-111

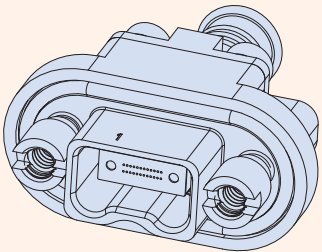
Test Description	Test Results
Optical Insertion Loss, multimode (consult factory for singlemode)	50/125 μm fiber @ 850 nm: ≤0.15 dB average; 0.31 dB typical 50/125 μm fiber @ 1300 nm: ≤0.21 dB average; 0.38 dB typical
Temperature Cycling: per TIA/EIA-455-3, Test Condition C-2	-40°C to +85°C, 5 Cycles, 56 hours Max. CIT = .25 dB; Max. IL post-test = .30 dB
Mating Durability	First 100 cycles with CIT measured every 10 cycles Max. CIT = 0.12 dB; Max. IL post-test = 0.20 dB
Mating Durability, Extended	From 101st cycle to 500th cycle with CIT measured every 25 cycles Max. CIT = 0.21 dB; Max. IL post-test = 0.30 dB
Physical Shock 1: 50g Peak, 11 ms duration, per TIA/EIA-455-14, Test Condition E	Max. CIT = 0.14 dB; Max. IL post-test = 0.42 dB; discontinuity ≤0.5 dB @ <1 us.
Physical Shock 2: 160g Peak, 4 ms duration, per MIL-STD-202, Method 213	Max. CIT = 0.04 dB; Max. IL post-test = 0.40 dB; discontinuity ≤0.5 dB @ <1 us.
Additional Physical Shock: 300g Peak, 0.5 ms duration, per MIL-STD-883E, Method 2002.4 (30 shocks total)	Max. CIT = .15 dB; Max. IL post-test = 0.20 dB; discontinuity ≤0.5 dB @ <1 us.
Vibration 1: 5-15 Hz, .12" double amplitude, 2 hours/axis (6 hours total) per MIL-STD-202, test condition 201, Sinusoidal	Max. CIT = 0.06 dB; Max. IL post-test = 0.37 dB
Vibration 2 : 20g Peak, 10-2,000 Hz, 4 hours/axis (12 hours total) per TIA-455-11, Test Condition IV, Sinusoidal	Max. CIT = 0.08 dB; Max. IL post-test = 0.43 dB
Weight	Plug with Ferrule kit 5.5 grams · Receptacle with Ferrule kit 7.5 grams

# SERIES 79 MINIATURE MT Fiber Optic Connectors

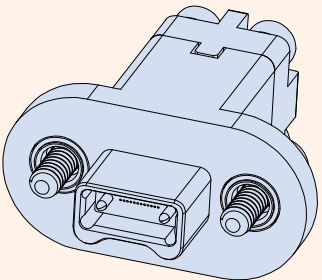
## How To Order Series 791 MT Ferrule Fiber Optic connectors



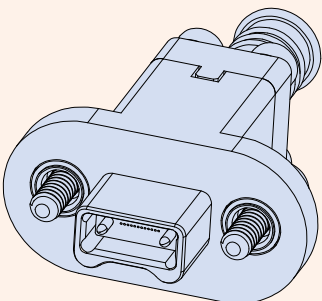
Receptacle with female MT ferrule,  
available with or without EMI gasket



Receptacle with female MT ferrule,  
retaining plate, and banding  
platform

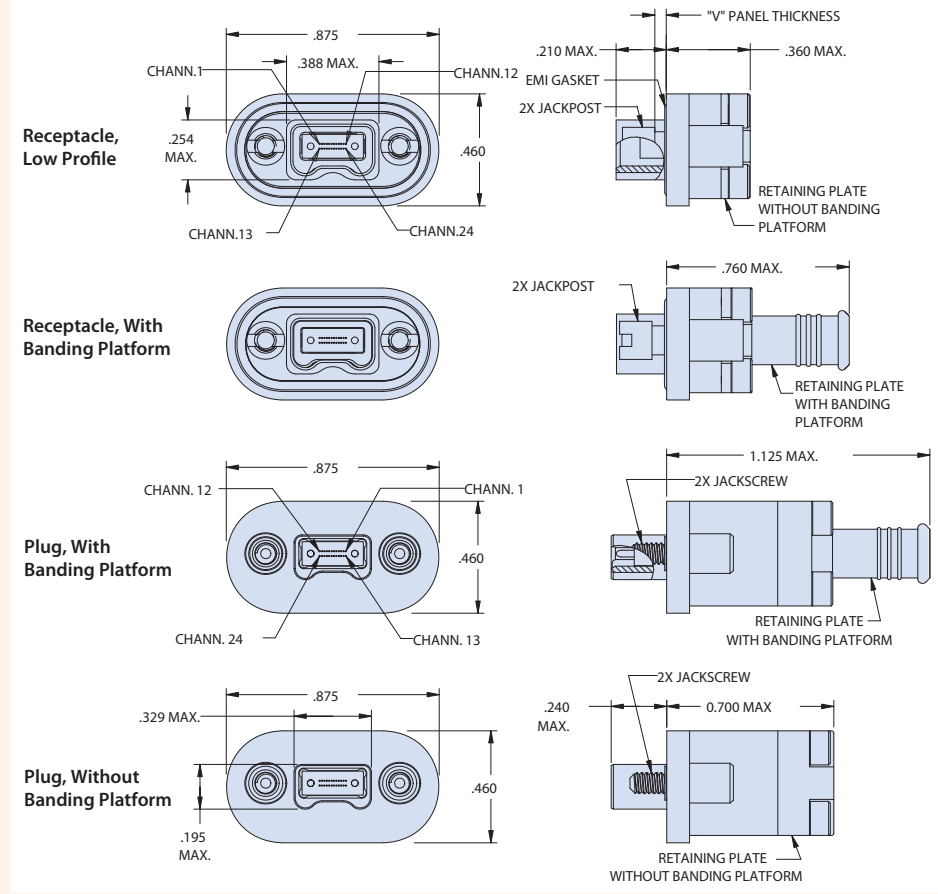


Plug with male MT ferrule and  
retaining plate



Plug with male MT ferrule with  
retaining plate and banding  
platform

How To Order Glenair 183-003 Series 79 MT Fiber Optic Connectors				
<b>Sample Part Number</b>	183-003	ME	-06	-L -1
<b>Basic Number</b>	Series 79 Single MT Fiber Optic Connector			
<b>Material / Finish</b>	ME = Al Alloy / Electroless Nickel    ZR = Al Alloy / Zinc Nickel, Black NF = Al Alloy / Cadmium, O.D.    Z1 = Stainless Steel / Passivate			
<b>Connector Type</b>	-06 = Plug (used with male MT ferrule) -07 = Receptacle (used with female MT ferrule) -S7 = Receptacle with EMI gasket (used with female MT ferrule)			
<b>Mounting Hardware</b>	Hardware for PLUGS -L = Hex Head Jackscrew, non-removable -B = Thru-Hole		Rear Panel Mount Jackposts for RECEPTACLES: -X = for .031" panel thickness -W = for .047" panel thickness -V = for .062" panel thickness -T = for .094" panel thickness	
<b>Retaining Plate / Banding Platform</b>	-1 = 12 or 24 channel without banding platform -2 = 12 or 24 channel with banding platform for EMI shield termination and strain relief			



### MATERIAL/FINISH/NOTES

Mounting hardware: stainless steel / passivated

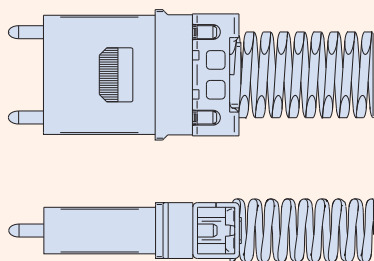
EMI gasket (optional): conductive silicone

Additional materials, finishes, connector configurations (dual and quad layouts), and hardware options are available, consult factory

# SERIES 79 MINIATURE MT Fiber Optic Connectors



## How To Order MT Ferrule Kits and Series 79 MT to MT Ferrule Cable Assembly



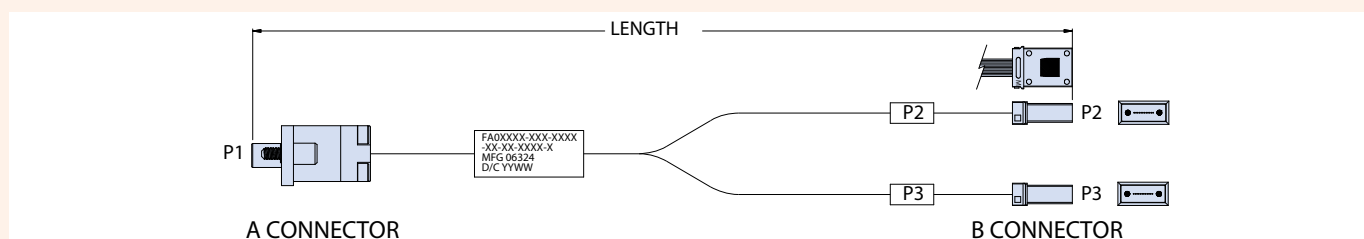
### MATERIAL/FINISH

- Ferrule: Polyphenylene Sulfide Resin
- Pin Clamp, Spring: Stainless Steel
- Boot: TPE

How To Order MT Ferrule Kits					
Sample Part Number		181-133	-126	-12	P
Basic Part Number	MT Ferrule kit				
Fiber type	-126, -1253, -1253A (See Table I)				
Number of Fibers	-12, -24 (See Table I)				
Ferrule Style	P = Male (use with Plug) S = Female (use with Receptacle)				

Table I						
Dash No.	Fiber Type	End Face	Fiber Size Core/Cladding	No. of Fibers	Ferrule Identification	Pin Clamp Identification (Male Kit only)
-126	MM	PC	50/125 62.5/125	12	M-ME12	1 Through Hole
				24	M-ME24	
-1253	SM	PC	9/125	12	E-E12	2 Through Holes
-1253A	SM	APC	9/125	12	E-E12	2 Through Holes

How To Order Series 79 MT Ferrule Fiber Optic Cable Assemblies											
Sample Part Number		FA07364	-06	-17	ME	-B4	-50	-L	-1	-0036	-L
Basic Number	Series 79 MT Ferrule Fiber Optic Cable Assembly										
A Connector Type	-06 = Sr. 79 Plug (used with male MT ferrule) -07 = Sr. 79 Receptacle (used with female MT ferrule) -S7 = Sr. 79 Receptacle with EMI gasket (used with female MT ferrule)										
B Connector Type	-06 = Sr. 79 Plug (used with male MT ferrule) -07 = Sr. 79 Receptacle (used with female MT ferrule) -S7 = Sr. 79 Receptacle with EMI gasket (used with female MT ferrule) -12 = ST Connector   -13 = FC Connector   -14 = SC Connector -15 = GC Connector   -16 = LC Connector -17 = MT Connector (male)   -18 = MT Connector (female) -19 = MTP Connector (male)   -20 = MTP Connector (female)										
Material / Finish (-06, -07, -S7)	ME = Al Alloy, Electroless Nickel   NF = Al Alloy, Cad/Olive Drab ZR = Al Alloy, Zinc-Nickel, Black   Z1 = Stainless Steel, Passivate										
Fiber Qty. / Type	-B2 = 12 bare ribbon fibers   -B4 = 24 bare ribbon fibers (Multimode only) -R2 = 12 round ribbon fibers   -R4 = 24 round ribbon fibers (Multimode only)										
Fiber Size	-09 = 9.3/125 Singlemode   -50 = 50/125 Multimode   -62 = 62.5/125 Multimode										
Mounting Hardware	Plug -L = Hex head jack screw, non-removable -B = Thru-hole Receptacle -X = Rear-panel jackpost, .031" thickness -W = Rear-panel jackpost, .041" thickness -V = Rear-panel jackpost, .062" thickness -T = Rear-panel jackpost, .094" thickness										
Banding Platform (-06, -07, -S7)	-1 = without banding platform   -2 = with banding platform										
Length	In inches (e.g. -0036 = 36 inches)										
Protective Cover	L = supplied less covers   Omit = supplied with covers										



Optical performance note: Insertion loss to be less than 1.5 dB when measured at 1310 nm wavelength for singlemode, or when measured at 850 nm for multimode