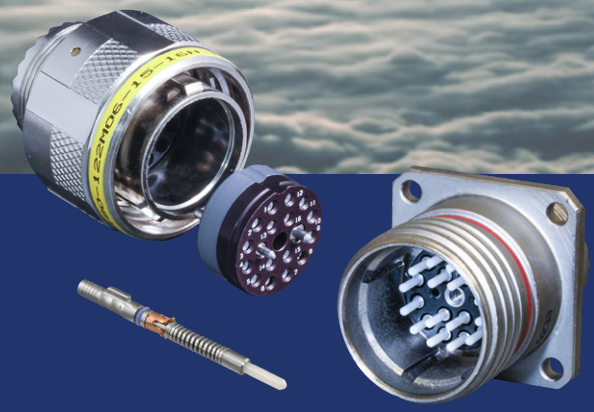
MISSION-CRITICAL
INTERCONNECT SOLUTIONS

Glenair®



RUGGED, MILITARY-GRADE

Fiber Optics

Mil-Qualified and Glenair Signature Connectors, Cables, and Termini

MAY 2024

MILITARY GRADE
FIBER OPTIC
INTERCONNECT
SOLUTIONS

Rugged Fiber Optic CONNECTORS

Product Selection Guide: Mil-qualified and Glenair signature fiber optic connectors, cables, and termini

A complete range of rugged fiber optic interconnect systems optimized for each military service branch and/or harsh environment industrial application. Complete capability includes turnkey F/O cable assemblies, discrete connectors and termini, backshell accessories, testing, and certification. All systems are designed, qualified, and made in the USA.

Glenair signature MT ferrule connectors are the only ruggedized solution certified by US CONEC

Why Glenair Fiber Optics?

Glenair manufactures every popular mission-critical fiber optic interconnect system. Our fiber optic datalink technologies reduce interconnect system weight, expand system bandwidth, and eliminate electromagnetic interference in rugged land, sea, air, and space applications.

Page A-4

Turnkey F/O Cable Assemblies

Fiber Optic cables and harnesses: turnkey environmental and inside-the-box assemblies. Glenair's fiber optic cable assembly team is the largest and most professional in the mil-grade interconnect industry, delivering guaranteed made-in-the-USA quality.

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RUGGED MILITARY-GRADE

Fiber Optic Interconnect Systems

The world's most complete offering of Mil-qualified and Glenair signature butt-joint, MT ferrule, and expanded-beam F/O systems

BENEFITS OF FIBER OPTIC INTERCONNECT SYSTEMS

Five key benefits of fiber optic datalinks in mission-critical land, sea, air, and space applications

Fiber optic datalinks can transmit the equivalent of 24,000 telephone calls simultaneously through media thinner than a human hair–and do so over longer distances than would ever be possible with even the most high-speed copper media and datalink protocol. But the advantages of fiber optics extend far beyond this mind-boggling data transmission rate to include:

1 Reduced Size and Weight

Compared to copper, optical fiber is relatively small in size and light in weight—a major advantage in interconnect systems servicing airborne avionics, sensors, radar, fly-by-light flight controls, and other applications. Optical fiber is easier to install—especially in retrofit programs—since smaller cable diameters fit comfortably within the footprint or layout of existing electrical conduits and harnesses.

This reduction in media size makes it possible to run multiple backup cables for critical electronic systems or devices. The ability to provide complete redundancy for all critical cabling is a major factor driving the use of fiber optics in mission-critical applications.

2 EMI Immunity

Optical fiber is frequently applied in high-reliability applications due to its electromagnetic immunity. Since fiber optic media uses light to transmit signals, it is not subject to electromagnetic interference, radio frequency interference, ESD or voltage surges, and so provides greater transmission reliability—particularly in military / aerospace applications that absolutely depend on error-free data transmission.

General Benefits and Advantages

Compared to electrical interconnect datalinks

3 Unsurpassed Bandwidth Over Long Distances

Fiber can transmit a mind-boggling quantity of data with extremely good transmission quality over long distances: Up to 150 times the data carrying capacity of bulkier copper cable. And since most high-speed data protocols transmit digitally, optical media reduces translation errors and bottlenecks—particularly over longer cable-run distances such as those found in Navy ships and ground-based shelter and vehicle applications.

4 Spark/Arc Immunity

The total electrical isolation of fiber also makes it a safer, spark-free media for use in hazardous environments, such as aircraft fuel cells or other applications where volatile gasses might be present. As only light, not electricity, is being transmitted, there is no risk of a spark or short-circuit from a damaged cable. For this same reason there is no shock hazard or risk to users performing routine maintenance to interconnect cabling. As a result, fiber optic media is routinely specified for use in Class I, Division I (Ex) environments such as are found on Navy ships, commercial tankers and other enclosed environments where the risk of a spark/arc event is considered a severe safety hazard.

5 Enhanced Security

Light pulses, unlike electrical signals, are almost impossible to intercept or monitor. Fiber optic media therefore enjoys total immunity from wiretapping. This characteristic is particularly valuable to military services, banks, and operators of secure networks. In addition to enhanced transmission security, photonic fiber media itself is invisible to metal or electromagnetic flux detection equipment.

Rugged Fiber Optic CONNECTORS

Five key reasons OEMs choose Glenair fiber optics

1 Massive factory capacity and capability

WHY CHOOSE GLENAIR FIBER OPTICS?

Glenair's Southern California facility houses—under one roof—the largest and most professionally staffed mission-critical fiber optic interconnect manufacturing and assembly operation in the world.

Glenair qualified MIL-PRF-28876 fiber optic interconnect system

MASSIVE CNC MACHINING CAPACITY

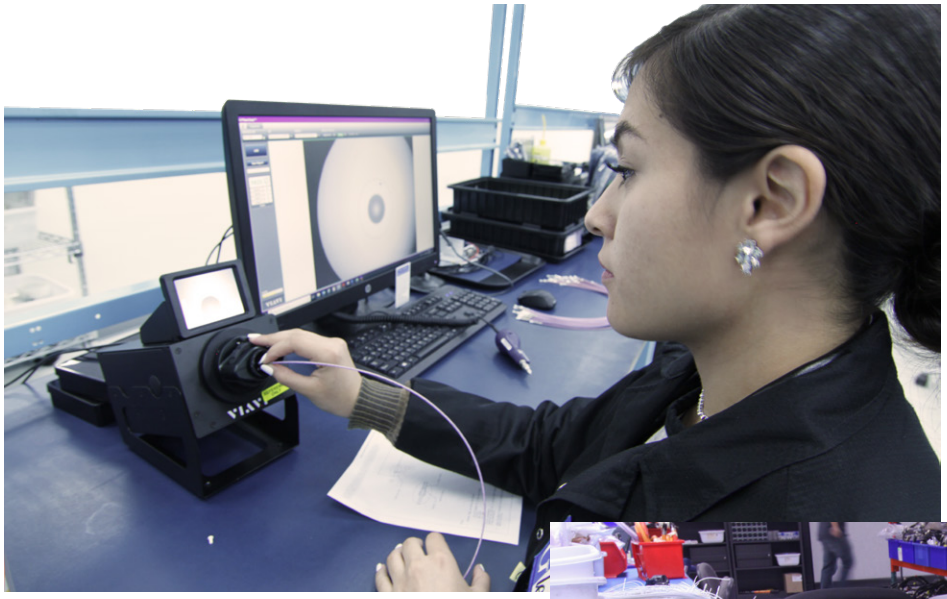
The high-reliability interconnect industry's largest precision metal turning operation.

PRECISION POLISHING, TERMINATION, AND ASSEMBLY

Glenair harsh-environment fiber optic connectors, cables, and termini are precision-polished and terminated by trained and certified professionals.

1. Unmatched Factory Capacity and Capability

Glenair delivers the fastest, highest-quality turnaround on production orders in the high-rel interconnect industry



INSPECTION AND TEST

Each and every fiber optic circuit is 100% tested and inspected prior to shipment.

SMALL-VOLUME, HIGH-TOUCH

Glenair's fiber optic team can accommodate both large volume orders as well as the many small-volume requirements common in mil-aero and harsh-industrial markets.

MASSIVE INVENTORY

Glenair's ability to respond quickly to customer requirements is uniquely met by our massive inventory of both component stock as well as ready-to-ship fiber optic interconnects, termini, and cables.

WHY GLENAIR FIBER OPTICS?

Rugged Fiber Optic CONNECTORS

Five key reasons OEMs choose Glenair fiber optics

2 F/O systems optimized for harsh environments

WHY CHOOSE GLENAIR FIBER OPTICS?

Glenair fiber optic interconnects carrying digitized video, voice, and data are broadly deployed in harsh application environments including aircraft avionics, military ground systems, shipboard weapon platforms, sub-sea sensors, satellite communications, and other mission-critical platforms. Highly engineered fiber optic termini, tight-tolerance connectors, and turnkey cable assemblies are optimized by Glenair to meet each environment's unique requirements and deliver reliable, repeatable, low-data loss performance.

Glenair High Density (GHD) fiber optic connection system

Military AEROSPACE

- **SuperNine MIL-DTL-38999 type with M29504 termini**
- **Glenair High Density (GHD) with keyed genderless termini**

- Low mass
- Dynamic vibration and shock resistance
- Extreme temperature resistance
- Environmentally sealed
- Corrosion resistance
- Flammability, toxicity, low-smoke
- Indirect lightning strike
- Ease-of-maintenance
- Uncompromised reliability

Commercial AEROSPACE

- **Series 806 Mil-Aero micro miniature with size #20HD termini**
- **ARINC 801 series genderless termini for D38999 type and other commercial aerospace grade connectors**

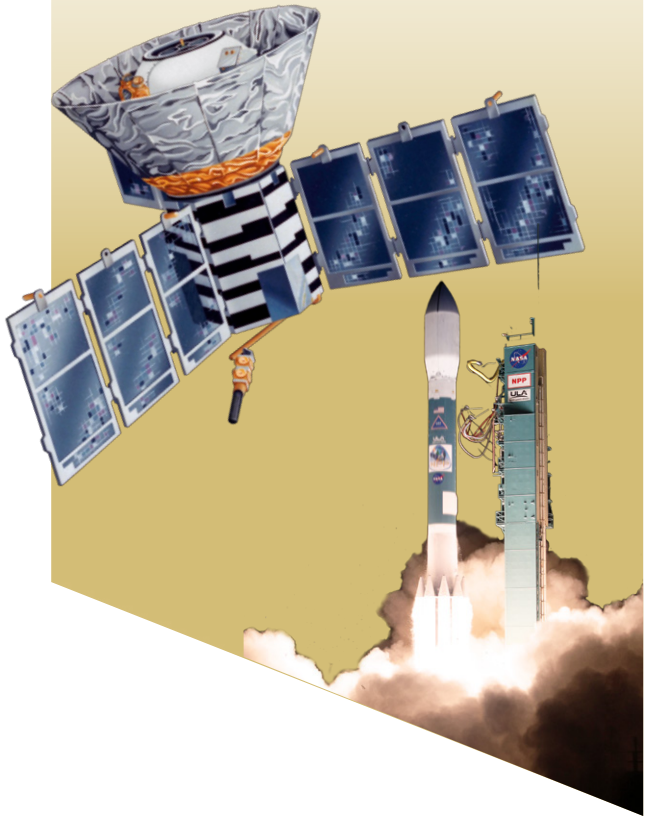
- Dynamic vibration and shock resistance
- Extreme temperature resistance
- Environmentally sealed
- Pressurized and non-pressurized zones
- Corrosion-resistance
- Flammability, toxicity, low-smoke
- Indirect lightning strike
- Ease-of-maintenance
- Uncompromised reliability

2. Land, Sea, Air, and Space Performance

High-performance, low-dB loss F/O interconnects optimized for rugged environmental applications—military and commercial

SPACE and Satellites

- **Glenair signature ruggedized MT ferrule-equipped connectors**
- **Eye-Beam™ POWER expanded-beam for Free Space Optical applications**



- Low mass
- High channel density
- Dynamic vibration and shock resistance
- Temperature Extremes
- Outgassing certifications
- Radiation hardened / tested
- Non-magnetic
- Flight heritage
- Uncompromised reliability

NAVAL, Marine/Subsea

- **MIL-PRF-28876 QPL shipboard fiber optic connectors**
- **SeaKing 700 Fiber high-pressure 10K PSI open-face rated subsea**

- High channel density
- Dynamic vibration and shock resistance
- Environmentally sealed
- Pressure resistance
- Corrosion resistance
- Flammability, toxicity, low-smoke
- Ease-of-maintenance
- Uncompromised reliability

Rugged Fiber Optic CONNECTORS

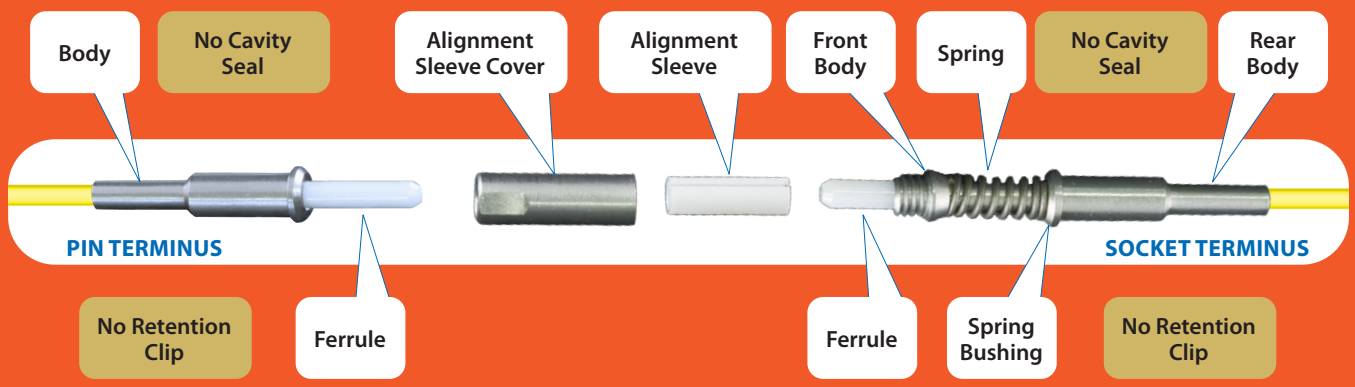
Five key reasons OEMs choose Glenair fiber optics

3 Low-loss and low maintenance termini

Butt-joint fiber optic termini and connector designs can be broken into two major categories. Rear-release termini are typically designed for use with connector housings that were originally conceived as electrical connectors – such as the MIL-DTL-38999 Series III – with contact retention and environmental sealing integral to the connector insert design. Front-release termini, on the other hand, integrate environmental O-ring sealing features and termini retention clips directly into the terminus body itself, allowing for higher density (more termini per connector). Certain Glenair front-release fiber optic connectors (Glenair High Density, GHD) also offer easier keying for APC polish applications in a front-release design.

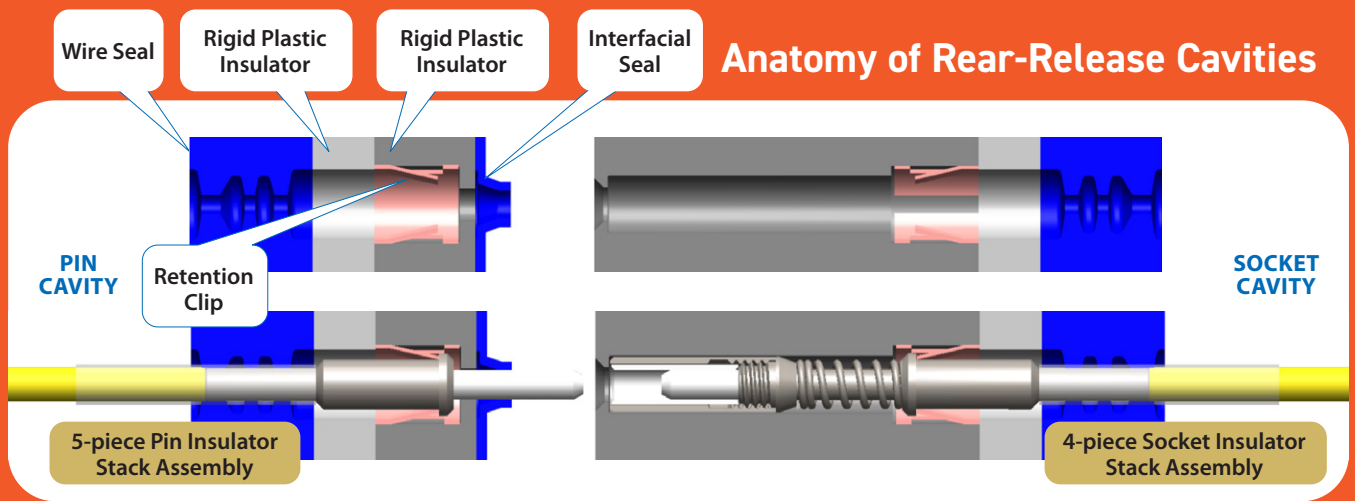
MIL-DTL-38999 type with qualified M29504 fiber optic termini

Anatomy of Rear-Release Optical Termini



M29504/04 Pin and M29504/05 Socket Termini for US Navy Avionics Applications

Anatomy of Rear-Release Cavities

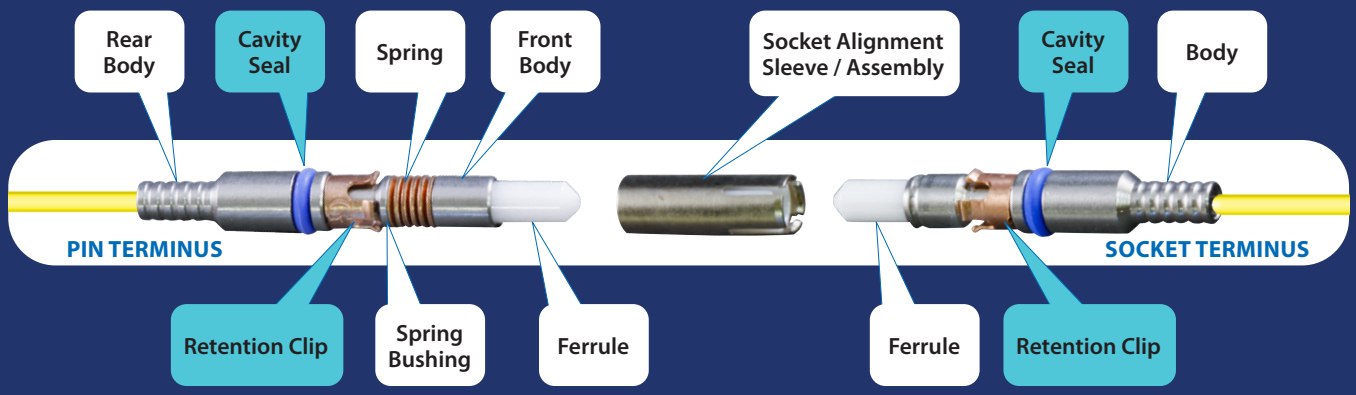


D38999 Series III Size 16 Pin and Socket Cavities for US Navy Avionics Applications

3. Innovative Termini Designs

Low-dB loss front-release, rear-release, and expanded-beam termini deliver reliable, low-maintenance performance

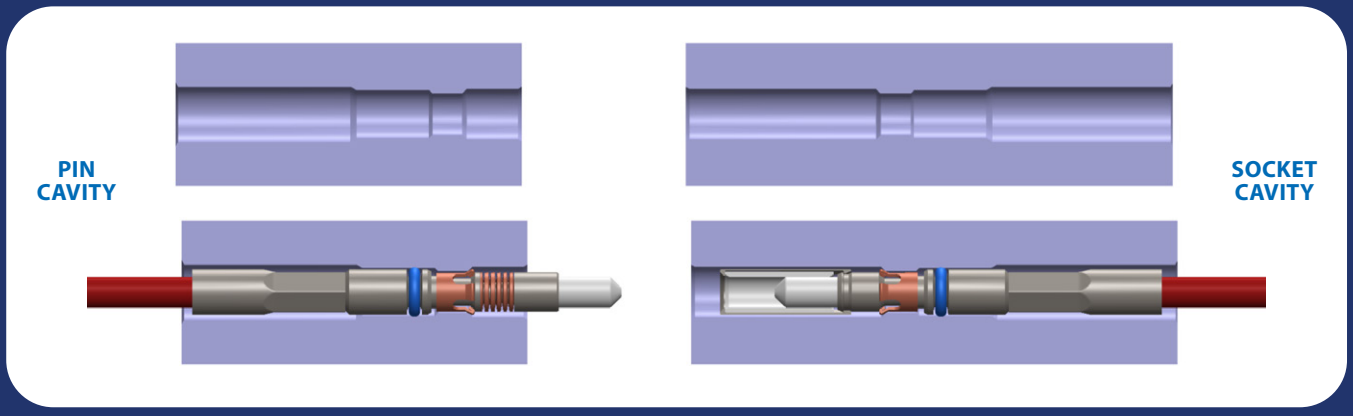
Anatomy of Front-Release Optical Termini



M29504/14 Pin and M29504/15 Socket Termini for US Navy Shipboard Applications

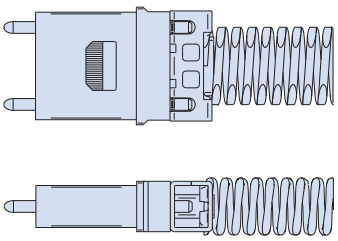
One-Piece Pin and Socket Inserts

Anatomy of Front-Release Cavities

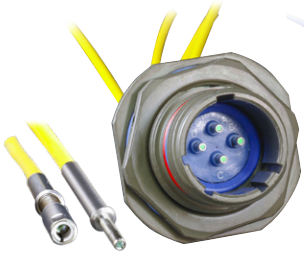


M28876 Pin and Socket Cavities for US Navy Shipboard Applications

OTHER GLENAIR SIGNATURE LOW dB LOSS TERMINI DESIGNS AND APPLICATIONS



Glenair signature ruggedized packaging for MT ferrules



Innovative GRIN-lens expanded beam termini

Eye-Beam Power drop-in size #8 termini for FSO applications

Sr. 806 micro form-factor (size #20HD) optical termini

WHY GLENAIR FIBER OPTICS?

Rugged Fiber Optic CONNECTORS

Five key reasons OEMs choose Glenair fiber optics

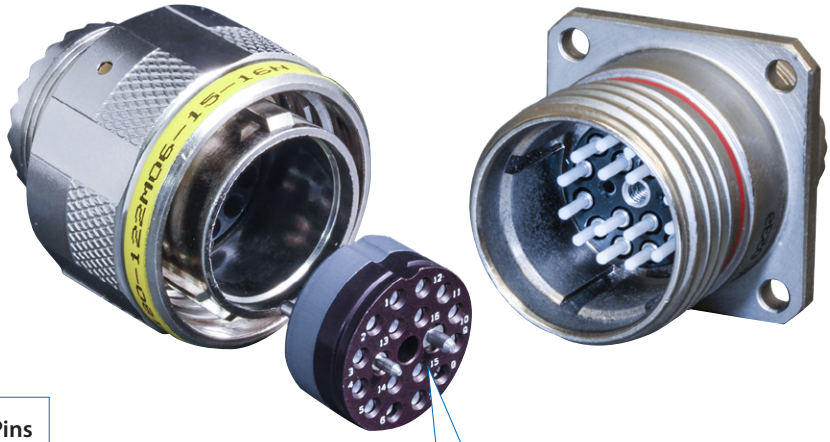
4 Next-gen connector package designs

In addition to standard environmental stress factors (moisture and dust ingress), there are two mechanical stress factors that are particularly important to consider when designing butt-joint (or physical contact) fiber optic connectors: vibration and shock resistance. This is because the weight of vibration and shock is felt exactly where "repeatable and reliable performance" is most readily compromised—at the fiber optic termini mating interface. The effects of vibration in a cable can best be visualized as a wave on a rope, with the highest concentration of stress occurring at the end point or termination. Over the last 40 years of fiber optic interconnect system design and manufacture, Glenair has mastered the art of building both circular and rectangular fiber optic connectors and insert assemblies housing butt-joint termini that are capable of resisting the highest levels of military and aerospace application vibration and shock.


Series 806 Mil-Aero micro miniature with size #20HD termini

SPOTLIGHT ON GLENAIR GHD HIGH VIBRATION AND SHOCK CONNECTOR AND INSERT PACKAGING OPTIMIZED FOR RELIABLE AND REPEATABLE LOW dB LOSS PERFORMANCE

GHD's shell-to-shell bottoming enables mating insert cavities to "square up" to each other in a repeatable manner, ensures consistent spring force at working height, and prevents movement between mating connectors during harsh shock and vibration exposure. The connector interface is sealed with a piston-style O-ring seal for robust environmental protection.



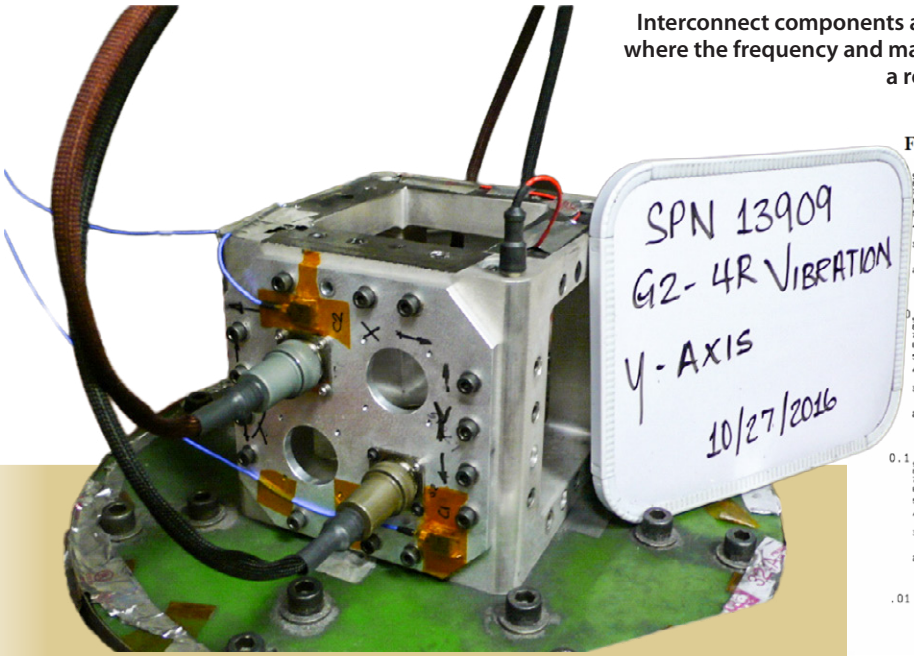
Guide pins facilitate repeatable optical performance by ensuring alignment between mating cavities. Threaded-coupling connectors without guide pins can "sweep" relative to each other when torqued. Misaligned cavities will force the split ceramic alignment sleeve to work harder to bring mating termini into alignment. Stressed alignment sleeves can expand (and possibly break), resulting in high optical loss.

SUMMARY OF GHD SERIES CONNECTOR PACKAGE DESIGN ELEMENTS

- Low mass
- Dynamic vibration and shock resistance
- Extreme temperature resistance
- Environmental sealing
- Corrosion resistance
- Flammability, toxicity, low-smoke rated
- Removable alignment sleeve for ease-of-maintenance
- Uncompromised reliability

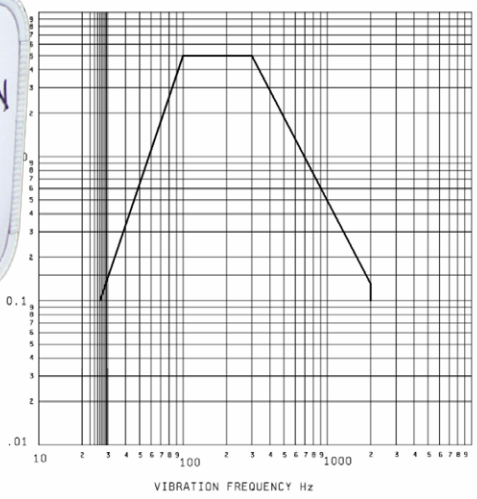
4. Next-Gen Connector Package Designs

Connector shells and coupling mechanisms optimized for resistance to vibration, shock, and environmental stress factors

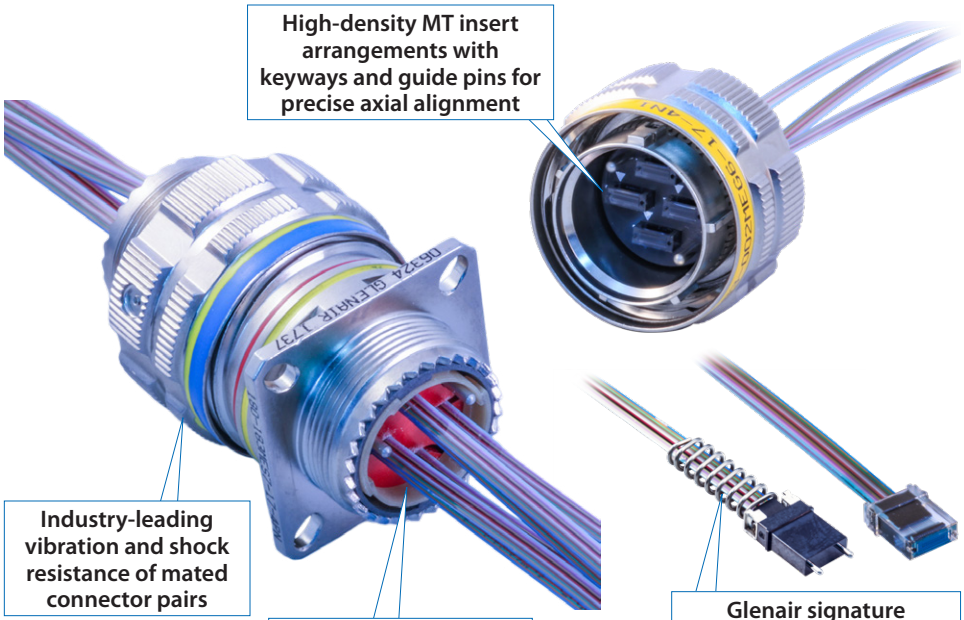


Interconnect components are aggresively tested for *random vibration,* where the frequency and magnitude vary with time—like a car riding on a rough, bumpy road.

Figure 11: Random Vibration (Series I, III and IV)



SPOTLIGHT ON GLENAIR PACKAGING OF BOTH PRIZM® MT AND MT ELITE MCX FERRULES IN RUGGEDIZED MILITARY-GRADE CIRCULAR, RECTANGULAR, AND BACKPLANE CONNECTORS



- **Easy-to-use, harsh environment, super high-density PRIZM® MT expanded-beam fiber optic assemblies in Glenair ruggedized I/O and backplane connector packaging**
- **Glenair is qualified by US Conec to terminate 1 and 2 row PRIZM® MT and MXC® ferrules for ribbon and round cable fiber**
- **Reliable, repeatable optical performance**
- **Outstanding stability under shock and vibration conditions**
- **Outstanding sealing against debris contamination**

WHY GLENAIR FIBER OPTICS?

WHY CHOOSE GLENAIR FIBER OPTICS?

Rugged Fiber Optic CONNECTORS

Five key reasons OEMs choose Glenair fiber optics

5 Turnkey / ruggedized F/O cables and harnesses

Glenair manufactures every popular mission-critical fiber optic interconnect system including MIL-DTL-38999 type, MIL-DTL-64266 NGCON, MIL-PRF-28876, and ARINC 801. Our fiber optic cable assembly team can integrate these ruggedized, military grade fiber optic technologies into turnkey cable and harness assemblies–terminated, tested, and ready for immediate use. Examples shown below range from inside-the-box pigtail assemblies to harsh environmental aerospace cables, junction boxes, and hybrid optical / electrical solutions.

Hybrid environmental overmolded fiber optic / electrical cable assembly, MIL-DTL-38999 type with 29504/4 and /5 QPL termini

Hybrid optical / electrical assembly for weight reduction in a high-speed datalink application

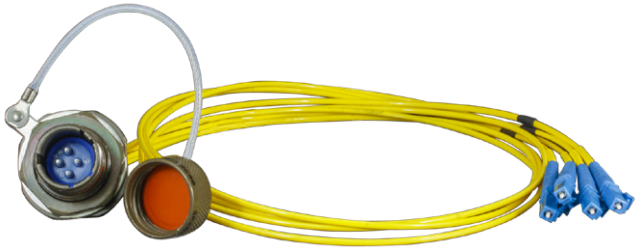
Harsh environment overmolded MIL-DTL-38999 Series III type composite

High-density Next-Generation (NGCON) fiber optic harness assembly

Cable reels and field-deployment technologies for both Glenair GFOCA and Eye-Beam™ GMA fiber optic systems

Specialized MT ribbon fiber low-profile molded breakout capabilities

GFOCA I/O-to-board assembly with overbraiding for mechanical protection



Inside-the-box MIL-DTL-38999 type I/O connector to board cable harness

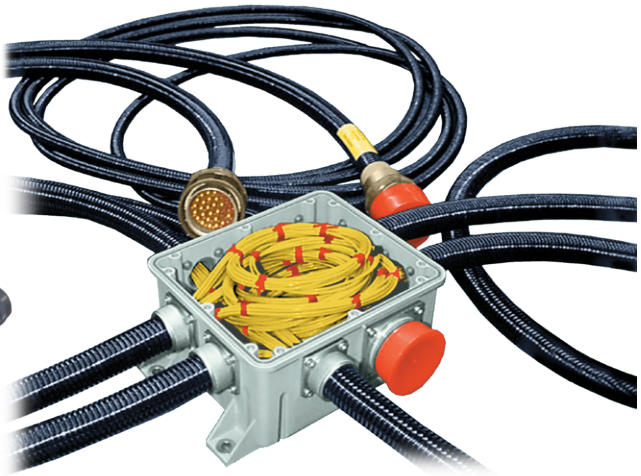
5. Turnkey Fiber Optic Cables and Harnesses

Glenair factory-terminated cable assemblies save time, money, and improve reliability of fiber optic interconnect systems

Hybrid MIL-DTL-38999 Series III type fiber optic / electrical cable junction box

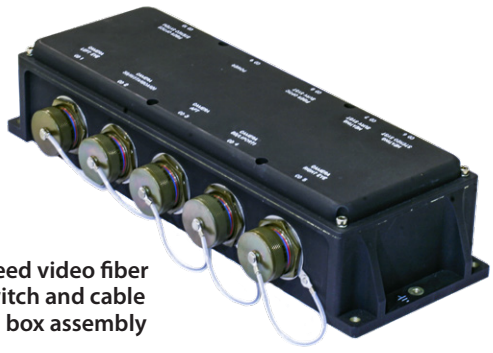
Harsh environment repairable MIL-DTL-38999 Series III type with FiberCon backshell to prevent fiber media damage

Field-deployable hermaphroditic GFOCA fiber optic cable assembly



Fiber optic multibranch assembly with flexible conduit wire protection and integrated cable storage bay

Point-to-point fiber optic cable with integrated strain relief



High-speed video fiber optic switch and cable junction box assembly

Turnkey Optical Flex circuit asembly with rugged MT ferrule terminations

Design Guide

In addition to our wide range of catalog (ASAP) Fiber Optic Cable Assemblies, Glenair offers turnkey, build-to-print fiber optic cable harnesses, breakout, and junction box assemblies. This design guide presents an overview of the key specifications and decision points in fiber optic cable harness design.

Application Specifications

Working Environment

- ☐ Shipboard
- ☐ Airframe
- ☐ Avionics
- ☐ Secure Communications
- ☐ Ground Support/Soldier System
- ☐ Armored Vehicle
- ☐ Rail/Mass Transit
- ☐ Space
- ☐ Missile Defense
- ☐ Telecommunications
- ☐ Industrial
- ☐ Downhole or Surface Use
- ☐ Other

Cable Installation

- ☐ Outdoor
- ☐ Indoor
- ☐ Internal-to-Equipment

Temperature Requirements

Operating: - ℃=_____ +℃=_____

Storage: - ℃=_____ +℃=_____

Optical Fiber Requirements

Singlemode

Number of fibers _____

Fiber Size

- ☐ 9/125 µm
- ☐ Other

Test wavelength

- ☐ 1310 nm
- ☐ 1550 nm

Acceptable optical dB insertion loss

- ☐ Less than .5 dB
- ☐ Less than 1.0 dB

Acceptable optical return loss (backreflection)

- ☐ Not applicable

_____ dB

Multimode

Number of fibers _____

Fiber Size

- ☐ 50/125 µm
- ☐ 62.5/125 µm
- ☐ 100/140 µm
- ☐ Other

Test wavelength

- ☐ 850 nm
- ☐ 1300 nm

Acceptable optical dB insertion loss

- ☐ Less than .5 dB
- ☐ Less than 1.0 dB

Cable Harness Construction

Assembly Length Requirements

- ☐ Less than 10 Meters
- ☐ 10 to 150 Meters
- ☐ More than 150 Meters

Cable Type

- ☐ Buffered
- ☐ Simplex
- ☐ Distribution
- ☐ Breakout

Basic Harness/Assembly Description

- ☐ Open Wire Harness
- ☐ Repairable/Jacketed
- ☐ Overmolded (MIL-M-24041 Materials)
- ☐ Metal/Fabric Overbraided
- ☐ Conduit

Alternative Wire Protection Media

- ☐ High Flexibility Convoluted Tubing
- ☐ EMI/EMP Metal-Core Conduit
- ☐ Molded Shrink Boots
- ☐ Junction Boxes and Cable Bays

Design Guide

Strain relief

- ☐ Not Applicable
- ☐ Light Duty
- ☐ Medium Duty
- ☐ Heavy Duty

Level of Environmental Protection

- ☐ Not Applicable
- ☐ Moisture Resistance
- ☐ Full Water Immersion
- ☐ Chemical/Caustic Fluid Resistance
- ☐ Extreme Corrosion Resistance
- ☐ Intense Atomic Radiation

Special Considerations

- ☐ RoHS Compliant Materials
- ☐ Extreme Temperature Tolerance
- ☐ UL94-VO Flammability
- ☐ UV Resistance
- ☐ Radiation Resistance / Atomic Oxygen
- ☐ Field Repairability
- ☐ Crush/Abrasion Resistance
- ☐ Weight Reduction
- ☐ Size or Shape Restraints as Specified:

_____

_____

_____

_____

List jacket/sheath or other wire/fiber protection materials such as conduit, including material type and series:

_____

_____

_____

_____

Fiber Optic Termination Assembly

Connector

☐ Jam Nut or ☐ Square Flange or ☐ Plug
☐ Pin ☐ Skt ☐ Genderless ☐ Contact Qty____

MIL-DTL-38999 Series III Type _____
SuperNine® MT _____
Series 79® MT _____
ARINC 801 _____
Glenair High Density (GHD) _____
Series 806 Mil-Aero _____
Eye-Beam™ GMA _____
Eye-Beam™ GLT _____
Eye-Beam™ POWER _____
Glenair Front Release (GFR) _____
MIL-PRF-64266 (NGCON) Type _____
GFOCA _____
MIL-PRF-28876 _____
Termini Part No. _____
Dust Cover: ☐ Yes ☐ No

Fiber Optic Breakout Assembly

A Connector

☐ Jam Nut or ☐ Square Flange or ☐ Plug
☐ Pin ☐ Skt ☐ Genderless ☐ Contact Qty____

MIL-DTL-38999 Series III Type _____
SuperNine® MT _____
Series 79® MT _____
VITA 66 MT _____
ARINC 801 _____
Glenair High Density (GHD) _____
Series 806 Mil-Aero _____
Eye-Beam™ GMA _____
Eye-Beam™ GLT _____
Eye-Beam™ POWER _____
Glenair Front Release (GFR) _____
MIL-PRF-64266 (NGCON) Type _____
GFOCA _____
MIL-PRF-28876 _____
Termini Part No. _____
Dust Cover: ☐ Yes ☐ No

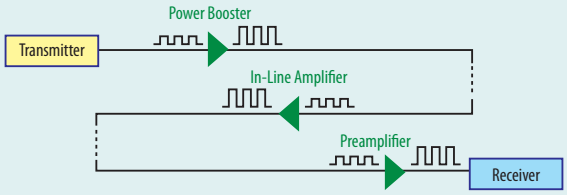
B Connector

MT Connector _____
ST Connector _____
FC Connector _____
SC Connector _____
SMA Connector _____
LC Connector _____
Other _____

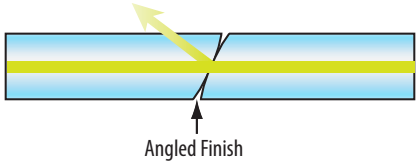
Fiber Optic Illustrated Glossary

GLOSSARY

Amplifier A device inserted within a transmission path that boosts the strength of an optical signal. Amplifiers can be placed just after the transmitter (power booster), between the transmitter and the receiver (in-line amplifier), or just before the receiver (preamplifier).

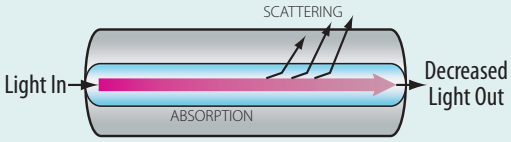


APC Abbreviation for Angled Physical Contact. A style of fiber optic connector with a 5° -15° angle on the connector tip for the minimum possible backreflection.

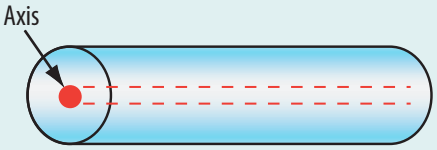


Attenuation Loss or decrease in power from one point to another in a fiber optic cable.

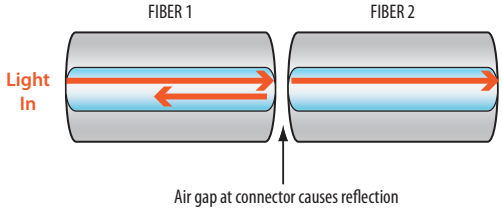
Attenuation Limited Operation The condition in a fiber optic link when operation is limited by the power of the received signal (rather than by bandwidth or by distortion). Attenuation is usually measured in decibels per kilometer (db/km) at a specific wavelength. The lower the number, the better the fiber.



Axis The center of an optical fiber.



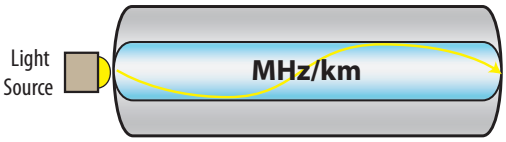
Backreflection (BR) A term applied to any process in the cable plant that causes light to change directions in a fiber and return to the source. Occurs most often at connector interfaces where a glass-air interface causes a reflection.



Backscattering The return of a portion of scattered light to the input end of a fiber; the scattering of light in the direction opposite to its original propagation.

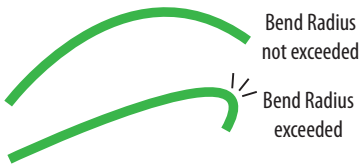
Bandwidth The information carrying capacity of an optical fiber, expressed in MHz/km. The measure is dependent upon wavelength and type of light source.

Bandwidth Limited Operation The condition prevailing when the system bandwidth, rather than the amplitude of the signal, limits performance. The condition is reached when modal dispersion distorts the shape of the waveform beyond specified limits.

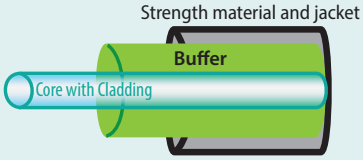


Fiber Optic Illustrated Glossary

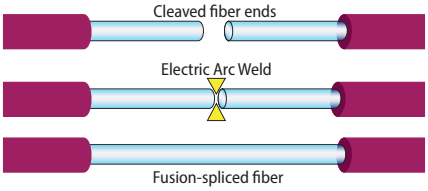
Bend Radius Radius a fiber or fiber optic cable can bend before breaking or suffering increased attenuation.



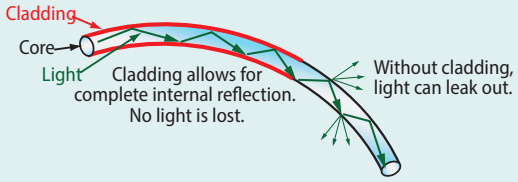
Buffer A protective coating applied directly to the fiber.



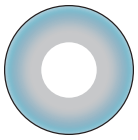
Butt Splice A joining of two fibers without optical connectors arranged end-to-end by means of a coupling. Fusion splicing is an example. Using an electric arc to weld two fiber optic cables together fusion splicing offers sophisticated, computer controlled alignment of fiber optic cables to achieve losses as low as 0.05 dB.



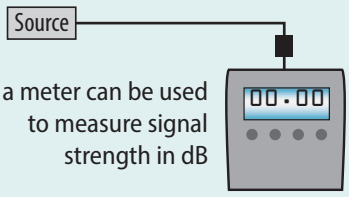
Cladding Material that surrounds the core of an optical fiber. Its lower index of refraction, compared to that of the core, causes the transmitted light to travel down the core.



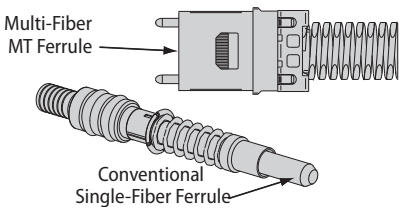
Cleave The process of separating an optical fiber by a controlled fracture of the glass, for the purpose of obtaining a fiber end, which is flat, smooth, and perpendicular to the fiber axis.



Decibel (dB) Unit for measuring the relative strength of a signal.



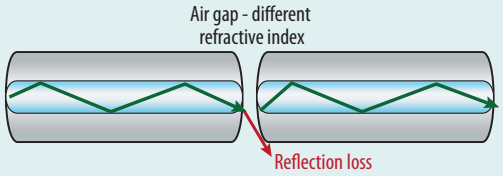
Ferrule A small tube or block designed to house and align optical fibers within the interconnect terminus. Generally made of stainless steel, ceramics, or polymer, the ferrule is used to confine and align the stripped fiber ends for efficient light transmission between connected fibers. MT ferrules are uniquely capable of housing multiple fiber lines in ultra high-density arrangements.



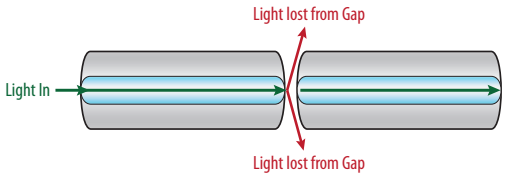
Fiber Optic Illustrated Glossary

GLOSSARY

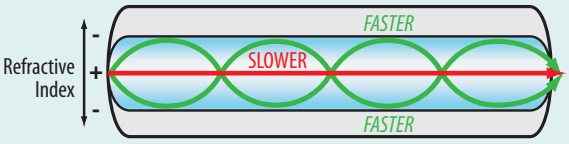
Fresnel Reflection Loss Reflection losses incurred at the input and output points of optical fibers due to the difference in refractive index between core glass and immersion media.



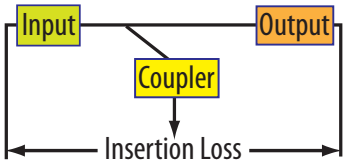
Gap Loss Loss resulting from the end separation of two axially aligned fibers.



GRIN Abbreviation for GRadient INdex. This type of multimode fiber uses a core in which the refractive index gradually decreases from the center of the fiber out toward the cladding. Light rays moving down the center axis advance more slowly than those near the edge, which take a helical curved path, shortening their travel distance. The faster rays at the edge of the fiber arrive closer together with the slower rays from the center, allowing for a signal with less dispersion.

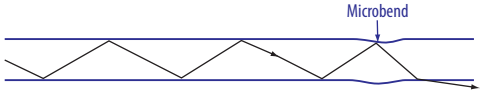


Insertion Loss Attenuation caused by the insertion of an optical component; in other words, a connector terminus or coupler in an optical transmission system.

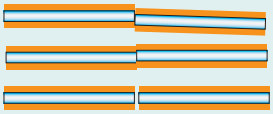


Interferometer An instrument that uses the principle of interference of electromagnetic waves for purposes of measurement. Used to measure a variety of physical variables, such as displacement (distance), temperature, pressure, and strain.

Microbending Mechanical stress on a fiber that introduces local discontinuities, which results in light leaking from the core to the cladding by a process called mode coupling.



Misalignment Loss The loss of power resulting from axial misalignment, lateral displacement, and end separation.

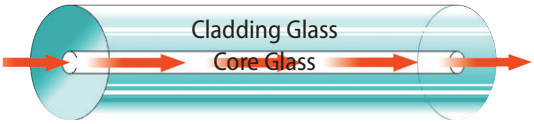


Multimode (MM) Fiber An optical fiber that has a core large enough to propagate more than one mode of light. The typical diameter is 62.5 micrometers.

Fiber Optic Illustrated Glossary

Optical Time Domain Reflectometer (OTDR) Testing system for fiber strands in which an optical pulse is transmitted through the fiber and the resulting backscatter and reflections are used to estimate attenuation and identify defects and the sources of localized losses.

Single-mode (SM) Fiber A small-core optical fiber through which only one mode will propagate. The typical diameter is 8-9 microns.



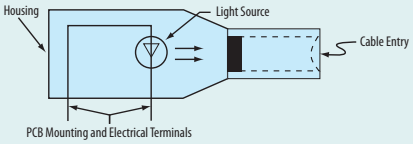
Source The means used to convert an electrical information-carrying signal to a corresponding optical signal for transmission by fiber. The source is usually a Light Emitting Diode (LED) or Laser housed inside an optical-to-electrical **transceiver** device (see Transmitter)

Tools Fiber optic tools or tooling are essential to termination, assembly, inspection, and cleaning. Low-volume operations may use hand polishing, but higher-volumes require the use of automated polishing equipment. Other essential tools (supplied by Glenair) include inspection probes as well as dry and wet cleaning apparatus.

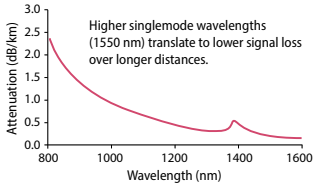
Transducer A device for converting energy from one form to another, such as optical energy to electrical energy.

Transmission Loss Total loss encountered in transmission through a system.

Transmitter An electronic package that converts an electrical signal to an optical signal.



Wavelength The distance between successive peaks (or troughs) of a light wave as it travels through a fiber optic cable. Varying wavelengths are employed for transmitting optical data. Higher wavelengths such as 1550 nm are less susceptible to attenuation and can travel longer distances before experiencing significant signal loss.



GLENAIR
SIGNATURE
FIBER OPTIC
CONNECTION
SYSTEMS

Rugged Fiber Optic CONNECTORS

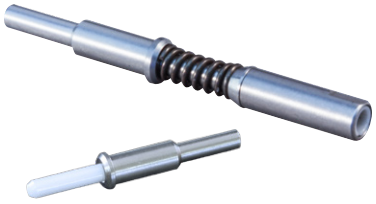
SuperNine® Tight-Tolerance **MIL-DTL-38999 Sr. III** Fiber Optic Connection System

The high-performance MIL-DTL-38999 type fiber optic interconnect system with qualified MIL-PRF-29504/4 and /5 termini, successfully deployed in hundreds of commercial and military aerospace and other rugged 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 /4 and /5 precision ceramic termini**
- **Singlemode and multimode fiber, from 9/125 to 1000 microns**
- **Ultra-low insertion loss, <.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**

Product selection guide



ABOUT MIL-DTL-38999 SERIES III TYPE FIBER OPTIC PRODUCTS

Glenair's complete line of multi-channel MIL-DTL-38999 Series III Type fiber optic products includes qualified size 16 MIL-PRF-29504 /4 and /5 precision ceramic termini, and commercial large-core and jewel size 16 termini, as well as high-density size 20 termini. Tight-tolerance fiber optic provides repeatable, reliable optical performance. Connectors, backshells, and accessories IAW MIL-DTL-38999 Series III (Glenair SuperNine®) are available in metal and composite versions.

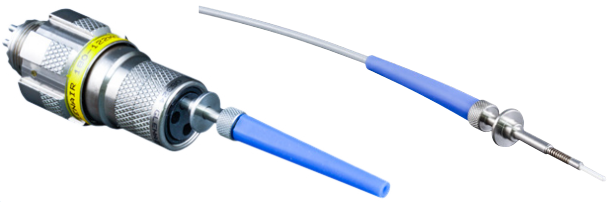
DIMENSIONAL NOTES

- Catalog dimensions are subject to change without notice. Consult Glenair engineering for a controlled-release sales drawing
- Metric dimensions appear in parentheses in diagrams and tables, based on 1 inch = 25.4 mm, for reference only.
- Unless otherwise specified, the following other dimensional tolerances apply:
- .xx = ± .03 (0.8) • .xxx = ± .015 (0.4) • Angles = ± 5°

Tight-Tolerance Fiber Optic Connection System

THE INDUSTRY'S MOST COMPLETE HIGH-PERFORMANCE D38999 SERIES III FIBER OPTIC SYSTEM

MIL-DTL-38999 type fiber optic connection system termination, inspection, test, and cleaning tools—discrete part numbers and complete kits 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 M29504/04 and /05 QPL termini are in stock and ready for immediate, same-day shipment.

Glenair signature FiberCon backshells incorporate a multi-channel grommet to stabilize termini and prevent cracking and micro-bending between the cable and termini. Available purple color-coded protective covers and accessories.

Glenair SuperNine ultra tight-tolerance shell, cavity, and keyway dimensions deliver precise axial alignment for ultra-low multi-channel insertion loss values for both singlemode and multimode fiber

Eye-Beam™ GLT termini and jumpers are easily integrated into Glenair MIL-DTL-38999 type connector packaging

Special small form-factor single-channel simplex fiber optic connectors IAW D38999

Turnkey multichannel environmental cable assemblies with pure fiber or hybrid electrical/optical layouts

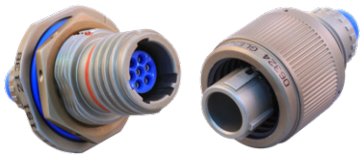
Turnkey PEEK and fluoropolymer conduit fiber optic cable protection systems with color-coded conduit adapters and backshells.

Turnkey breakout assemblies for inside-the-box applications

Tight-Tolerance Fiber Optic Connection System

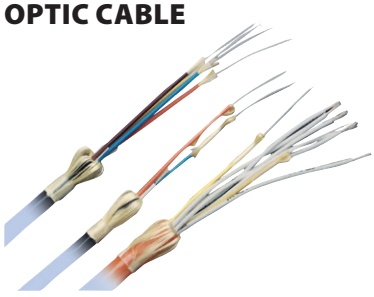
MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
M*	Aluminum Alloy	Electroless Nickel
MA		Electroless Nickel, Matte
ME		Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab
ZNU		Zinc-Nickel, Black
ZR		Zinc-Nickel, Black (RoHS)
XM	Composite	Electroless Nickel
XMT		Nickel - PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
MS	Stainless Steel	Electroless Nickel
ZL		Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	No Plating
*Inactive for new design. Use "ME" finish.		

NEW SACRIFICIAL PLATING CADMIUM REPLACEMENT:



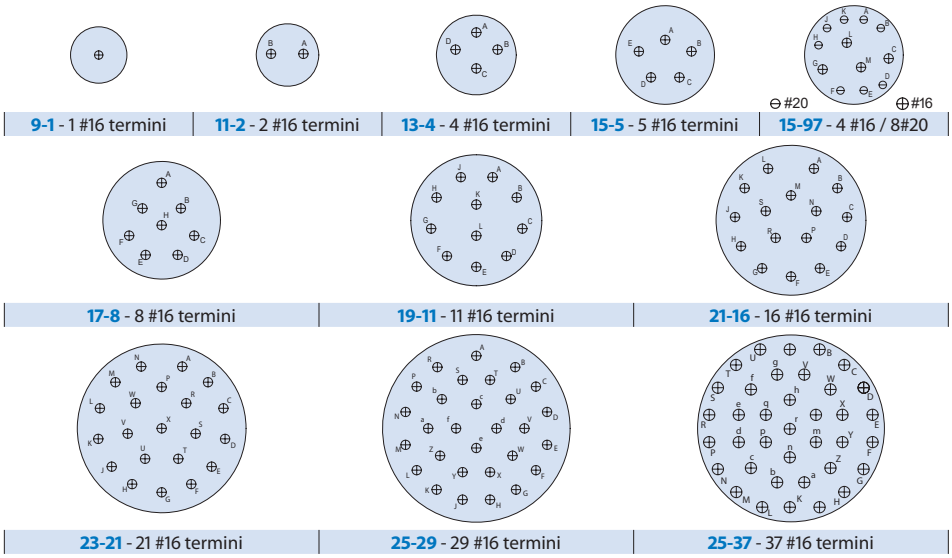
Tin-Zinc 500 (TZ) is the new Glenair gold-standard replacement for Cad over Nickel with excellent conductivity and 500 hours salt-spray resistance.

BULK SIMPLEX FIBER OPTIC CABLE



All Glenair fiber optic connection systems are supported with a complete range of bulk simplex cable choices including stepped and graded-index configurations as well as radiation and atomic oxygen resistant configurations for satellite applications.

INSERT ARRANGEMENTS (mating face, pin insert shown)



9-1 - 1 #16 termini	11-2 - 2 #16 termini	13-4 - 4 #16 termini	15-5 - 5 #16 termini	15-97 - 4 #16 / 8#20
17-8 - 8 #16 termini	19-11 - 11 #16 termini	21-16 - 16 #16 termini		
23-21 - 21 #16 termini	25-29 - 29 #16 termini	25-37 - 37 #16 termini		

- **Glenair SuperNine 180-091 series IAW MIL-DTL-38999 Series III connectors, designed and optimized for use with optical termini**
- **Ultra-tight tolerance shell and cavity dimensions for precise axial alignment**
- **Wider master key dimension on plug connector for improved cavity alignment**
- **Ultra-lightweight composite thermoplastic connector solutions plus lightweight aluminum, rugged stainless steel and marine bronze**
- **Qualified size #16 MIL-PRF-29504 pin-socket precision ceramic termini**
- **Insert arrangements from 2 to 37 ways**
- **Advanced RoHS-compliant finish solutions**
- **IP68 in mated condition (10 meters, two hours)**

MIL-PRF-29504/04 AND /05 FIBER OPTIC TERMINI PERFORMANCE SPECIFICATIONS	
Test Type	**Performance Requirement**
Optical Insertion Loss, Multimode (MM) *	0.35 dB Typical (50/125 and 62.5/125), restricted launch
Optical Insertion Loss, Singlemode (SM) *	0.30 dB Typical (9/125)
Optical Return Loss	Better than -40 dB - PC Polish Better than -50 dB - Enhanced PC Polish
Discontinuity, Vibration	MM: 0.5 dB or more for 50 µs or more SM: 0.5 dB or more for 50 µs or more
Discontinuity, Shock	MM: 0.5 dB or more for 50 µs or more SM: 0.5 dB or more for 100 ms or more
Operating Temperature	-55°C to +165°C (dependent on epoxy and cable)
Temperature (Thermal) Shock	-55°C to +165°C, 5 Cycles
Temperature Life	+165°C, 1000 hours
Mating Durability	500 cycles (cleaning after 100 matings)
Vibration - Sinusoidal	60.0 Grms at ambient temperature. Monitored for Discontinuity.
Vibration - Random at Temperature	41.7 Grms at 125°C. Monitored for Discontinuity.
Vibration - Random at Ambient	49.5 Grms at ambient temperature. Monitored for Discontinuity.
Mechanical Shock (High Impact)	Per MIL-DTL-901, grade A, type B, class I. Monitored for Discontinuity.
Mechanical Shock (Half-Sine Pulse)	300 G Peak over 3ms duration. Monitored for Discontinuity.
Corrosion Resistance (Salt Spray)	48 hours
Cable Pull Out Force, Termini	22.0 lbs (dependent on cable construction)
Terminus Retention	22.0 lbs

* Optical Insertion Loss values when tested in Tight Toleranced Connectors

181-001 • M29504/05 Style 1 fiber optic socket terminus, size 16

Single or multi mode. Ceramic ferrule. 0.3 dB loss. Style 1 Size 16 fiber optic socket termini are IAW MIL-PRF-29504/5 and are compatible for use with MIL-DTL-38999 Series III size 16 contact arrangements. These snap-in, spring-loaded, butt-joint, rear-release termini feature precision ceramic ferrules for accurate fiber alignment. Typical insertion loss 0.3 dB. Fits 9/125 single mode and 50/125 and 62.5/125 multi mode, and other fiber sizes. Popular sizes in-stock for immediate, same-day shipment.

MATERIAL AND FINISH

- Ferrule: Zirconia ceramic
- Alignment Sleeve: Zirconia ceramic (standard) or stainless steel/passivate.
- Terminus Assembly: Stainless steel/passivate
- Spacer, Spring, and Cover: Stainless steel/passivate
- Shrink Tube: Kynar

NOTES

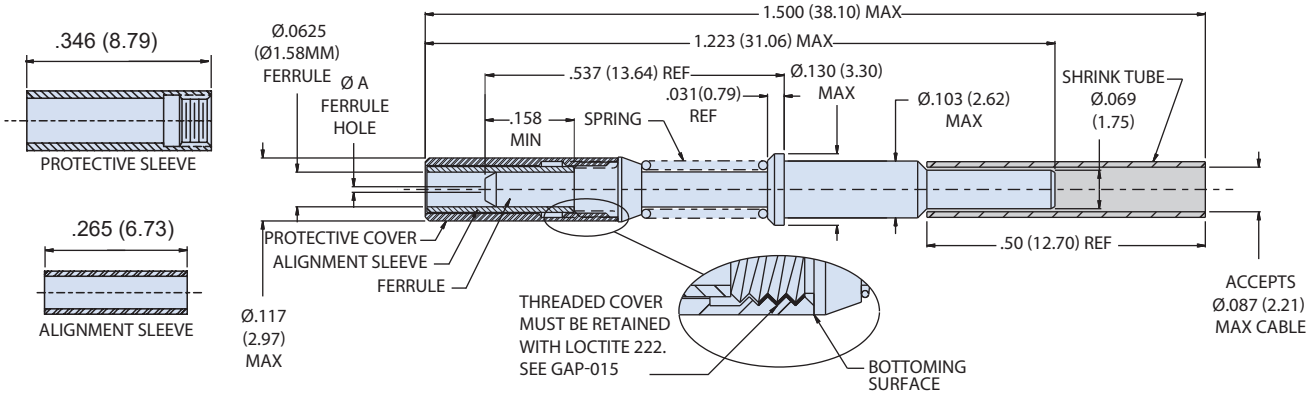
- Alignment Sleeve and Protective Cover can also be ordered separately (See Accessories table).
- See assembly procedure GAP-015 for complete termination instructions.
- Recommended Insertion/ Extraction tool: P/N M81969/14-03 or equivalent

PART NUMBER	FIBER SIZE CORE/CLADDING/COATING (MICRONS)	Ø A (MICRONS)	REF. M29504/05-XXXX
181-001-125	9/125 (Singlemode)	125.5	M29504/05-4237
181-001-126S	9/125 (Singlemode)	126.0	M29504/05-4238
181-001-126	50/125 & 62.5/125	126.0	M29504/05-4239
181-001-127	50/125 & 62.5/125	127.0	M29504/05-4046
181-001-142	100/140	142.0	M29504/05-4049
181-001-144	100/140	144.0	N/A
181-001-145	100/140	145.0	M29504/05-4050
181-001-156	62.5/125/155 (Polyimide)	156.0	M29504/05-4240
181-001-157	62.5/125/155 (Polyimide)	157.0	M29504/05-4241
181-001-173	100/140/172 (Polyimide)	173.0	M29504/05-4088
181-001-175	100/140/172 (Polyimide)	175.0	M29504/05-4242
181-001-231	200/230	231.0	N/A
181-001-236	200/230	236.0	N/A
181-001-286	200/280	286.0	N/A
181-001-448	400/440	448.0	N/A
181-001-533	486/500	533.0	N/A

Consult factory for additional sizes and QPL status.

ACCESSORIES	
Part Number	Description
181-001-S	Ceramic Alignment Sleeve (Standard)
181-001-K	Stainless Steel Alignment Sleeve
181-001-C	Protective cover

ULTRA LOW dB LOSS SOCKET TERMINUS FOR MIL-DTL-38999 SERIES III



181-002 • M29504/04 Style 1 fiber optic pin terminus, size 16

Single or multi mode. Ceramic ferrule. 0.3 dB loss. Style 1 Size 16 fiber optic socket termini are IAW MIL-PRF-29504/5 and are compatible for use with MIL-DTL-38999 Series III size 16 contact arrangements. These snap-in, butt-joint, rear-release termini feature precision ceramic ferrules for accurate fiber alignment. Typical insertion loss 0.3 dB. Fits 9/125 single mode and 50/125 and 62.5/125 multi mode, and other fiber sizes. Popular sizes in-stock for immediate, same-day shipment.

MATERIAL AND FINISH

- Ferrule: Zirconia Ceramic
- Terminus Assembly: Stainless Steel/Passivate
- Shrink Tube: Kynar

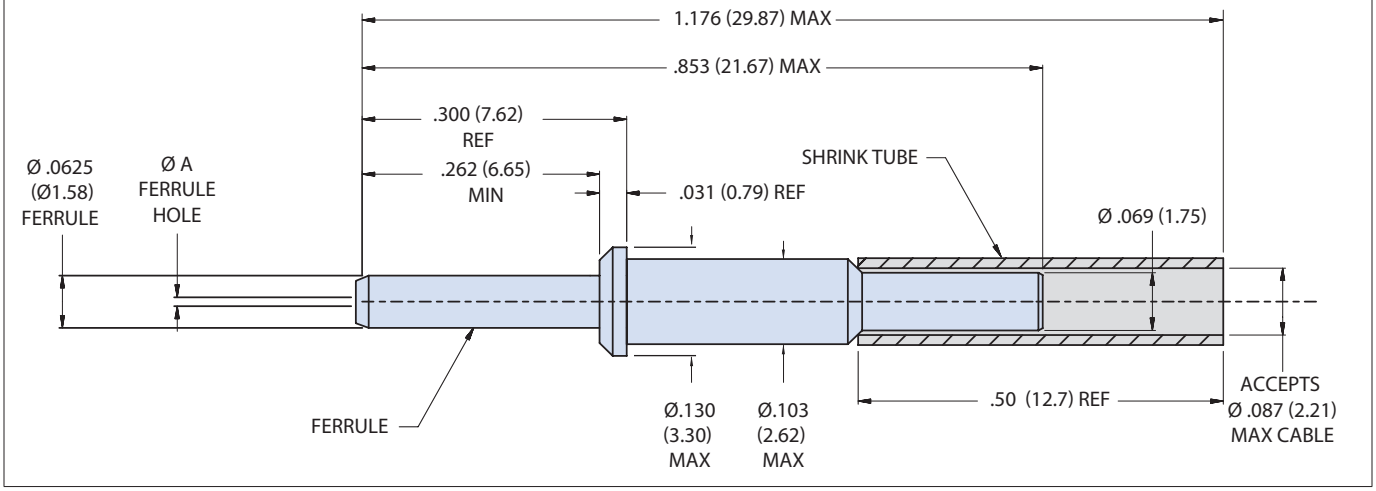
NOTES

- See Glenair assembly procedure GAP-015 for complete termination instructions.
- Recommended Insertion/ Extraction tool: P/N M81969/14-03 or equivalent

PART NUMBER	FIBER SIZE CORE/CLADDING/COATING	Ø A (MICRONS)	REF. M29504/04-XXXX
181-002-125	9/125 (Singlemode)	125.5	M29504/04-4208
181-002-126S	9/125 (Singlemode)	126.0	M29504/04-4209
181-002-126	50/125 & 62.5/125	126.0	M29504/04-4210
181-002-127	50/125 & 62.5/125	127.0	M29504/04-4040
181-002-142	100/140	142.0	M29504/04-4043
181-002-144	100/140	144.0	N/A
181-002-145	100/140	145.0	M29504/04-4044
181-002-156	62.5/125/155 (Polyimide)	156.0	M29504/04-4211
181-002-157	62.5/125/155 (Polyimide)	157.0	M29504/04-4212
181-002-173	100/140/172 (Polyimide)	173.0	M29504/04-4087
181-002-175	100/140/172 (Polyimide)	175.0	M29504/04-4213
181-002-231	200/230	231.0	N/A
181-002-236	200/230	236.0	N/A
181-002-286	200/280	286.0	N/A
181-002-448	400/440	448.0	N/A
181-002-533	486/500	533.0	N/A

Consult factory for additional sizes and QPL status.

ULTRA LOW dB LOSS PIN TERMINUS FOR MIL-DTL-38999 SERIES III



SuperNine® MIL-DTL-38999 Type

181-009 • M29504/05 Style 2 fiber optic socket terminus, size 16

SuperNine® MIL-DTL-38999 Type

Single or multi mode. Ceramic ferrule. 0.3 dB loss. Style 2 Size 16 fiber optic socket termini are IAW MIL-PRF-29504 and are compatible for use with MIL-DTL-38999 Series III size 16 contact arrangements. These snap-in, spring-loaded, butt-joint, rear-release termini feature precision ceramic ferrules for accurate fiber alignment. Typical insertion loss 0.3 dB. Fits 9/125 single mode and 50/125 and 62.5/125 multi mode, and other fiber sizes supported by the mil spec. Popular sizes in-stock for immediate, same-day shipment.

MATERIAL AND FINISH

- Ferrule: Zirconia Ceramic
- Alignment Sleeve: Zirconia Ceramic (Standard) or Stainless Steel/Passivate.
- Terminus Assembly: Stainless Steel/Passivate
- Spacer, Spring, and Cover: Stainless Steel/Passivate

NOTES

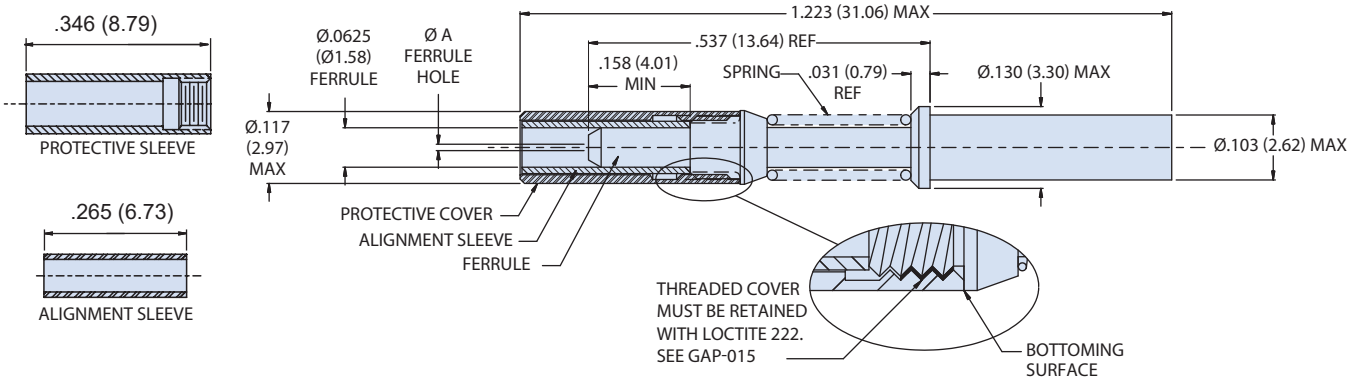
- Alignment Sleeve and Protective Cover can also be ordered separately (See Accessories Table).
- See assembly procedure GAP-019 for complete termination instructions.
- Recommended Insertion/ Extraction tool: P/N M81969/14-03 or equivalent

PART NUMBER	FIBER SIZE CORE/CLADDING/COATING (MICRONS)	Ø A (MICRONS)	REF. M29504/05-XXXX
181-009-125	9/125 (Singlemode)	125.5	M29504/05-4247
181-009-126S	9/125 (Singlemode)	126.0	M29504/05-4248
181-009-126	50/125 & 62.5/125	126.0	M29504/05-4249
181-009-127	50/125 & 62.5/125	127.0	M29504/05-4250
181-009-142	100/140	142.0	M29504/05-4253
181-009-145	100/140	145.0	M29504/05-4254
181-009-156	62.5/125/155 (Polyimide)	156.0	M29504/05-4251
181-009-157	62.5/125/155 (Polyimide)	157.0	M29504/05-4252
181-009-173	100/140/172 (Polyimide)	173.0	M29504/05-4255
181-009-175	100/140/172 (Polyimide)	175.0	M29504/05-4256
181-009-231	200/230	231.0	N/A
181-009-236	200/230	236.0	N/A
181-009-286	200/280	286.0	N/A
181-009-448	400/440	448.0	N/A

Consult factory for additional sizes and QPL status.

ACCESSORIES	
Part Number	**Description**
181-001-S	Ceramic Alignment Sleeve (Standard)
181-001-K	Stainless Steel Alignment Sleeve
181-001-C	Protective cover

ULTRA LOW dB LOSS SOCKET TERMINUS FOR MIL-DTL-38999 SERIES III



181-010 • M29504/04 Style 2 fiber optic pin terminus, size 16

Single or multi mode. Ceramic ferrule. 0.3 dB loss. Style 2 Size 16 fiber optic pin termini are IAW MIL-PRF-29504 and are compatible for use with MIL-DTL-38999 Series III size 16 contact arrangements. These snap-in, butt-joint, rear-release termini feature precision ceramic ferrules for accurate fiber alignment. Typical insertion loss 0.3 dB. Fits 9/125 single mode and 50/125 and 62.5/125 multi mode, as well as other fiber sizes supported by the mil spec. Popular sizes are in-stock and ready for immediate, same-day shipment.

MATERIAL AND FINISH

- Ferrule: Zirconia Ceramic
- Terminus Assembly: Stainless Steel/Passivate

NOTES

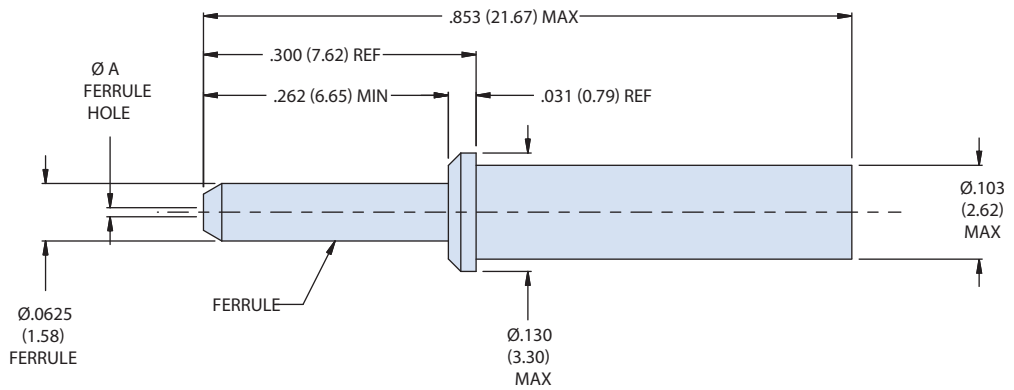
- See Glenair assembly procedure GAP-019 for complete termination instructions.
- Recommended Insertion/ Extraction tool: P/N M81969/14-03 or equivalent

PART NUMBER	FIBER SIZE CORE/CLADDING/COATING	Ø A (MICRONS)	REF. M29504/04-XXXX
181-010-125	9/125 (Singlemode)	125.5	M29504/04-4218
181-010-126S	9/125 (Singlemode)	126.0	M29504/04-4219
181-010-126	50/125 & 62.5/125	126.0	M29504/04-4220
181-010-127	50/125 & 62.5/125	127.0	M29504/04-4221
181-010-142	100/140	142.0	M29504/04-4224
181-010-145	100/140	145.0	M29504/04-4225
181-010-156	62.5/125/155 (Polyimide)	156.0	M29504/04-4222
181-010-157	62.5/125/155 (Polyimide)	157.0	M29504/04-4223
181-010-173	100/140/172 (Polyimide)	173.0	M29504/04-4226
181-010-175	100/140/172 (Polyimide)	175.0	M29504/04-4227
181-010-231	200/230	231.0	N/A
181-010-233	200/230	233.0	N/A
181-010-236	200/230	236.0	N/A
181-010-286	200/280	286.0	N/A
181-010-448	400/440	448.0	N/A

Consult factory for additional sizes and QPL status.

SuperNine® MIL-DTL-38999 Type

ULTRA LOW dB LOSS PIN TERMINUS FOR MIL-DTL-38999 SERIES III



181-035 Size 16 Large-core fiber optic socket terminus

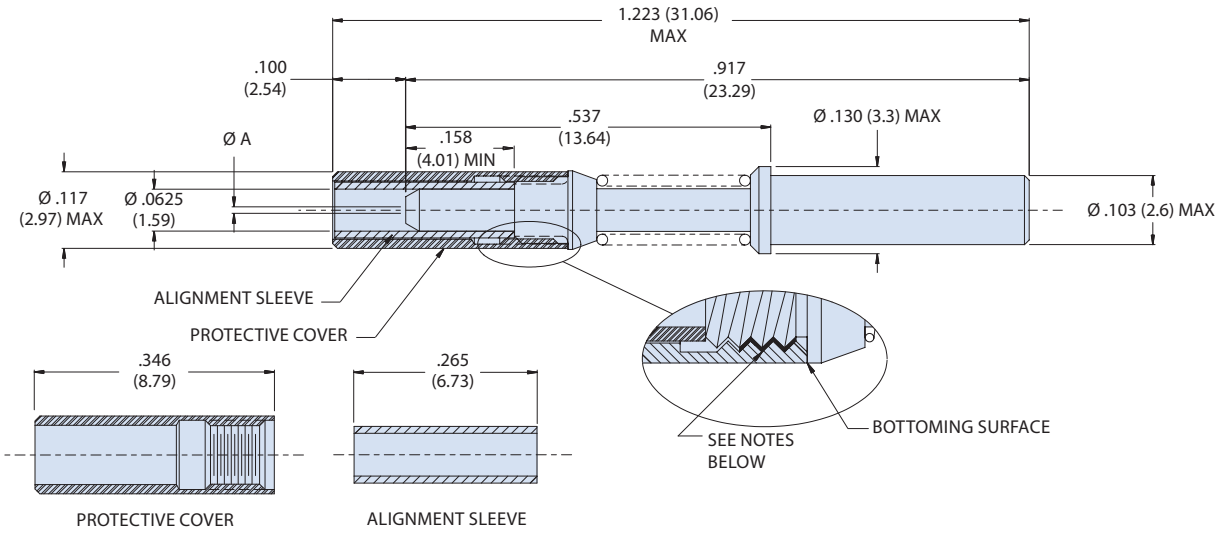
SuperNine® MIL-DTL-38999 Type

PART NUMBER	FIBER SIZE CORE/CLADDING (MICRONS)	ØA (MICRONS)
181-035-600	600 Micron	610.0
181-035-1000	1000 Micron (Plastic)	1117.0

Ceramic alignment sleeve supplied with terminus. Add **K** to the end of part number development to supply with optional stainless steel alignment sleeve *e.g. 181-035-1000**K***.

ACCESSORIES	
Part Number	Terminus Accessory
181-001-S	Ceramic Alignment Sleeve
181-001-K	Stainless Steel Alignment Sleeve
181-001-C	Protective Cover

LARGE-CORE FIBER OPTIC MIL-DTL-38999 TYPE SIZE 16 SOCKET TERMINUS



MATERIAL AND FINISH

- Ferrule: Stainless Steel/Passivate
- Alignment Sleeve: Zirconia Ceramic (Standard) or Stainless Steel/Passivate
- Terminus Assembly: Stainless Steel/Passivate
- Spacer, Spring, and Cover: Stainless Steel/Passivate

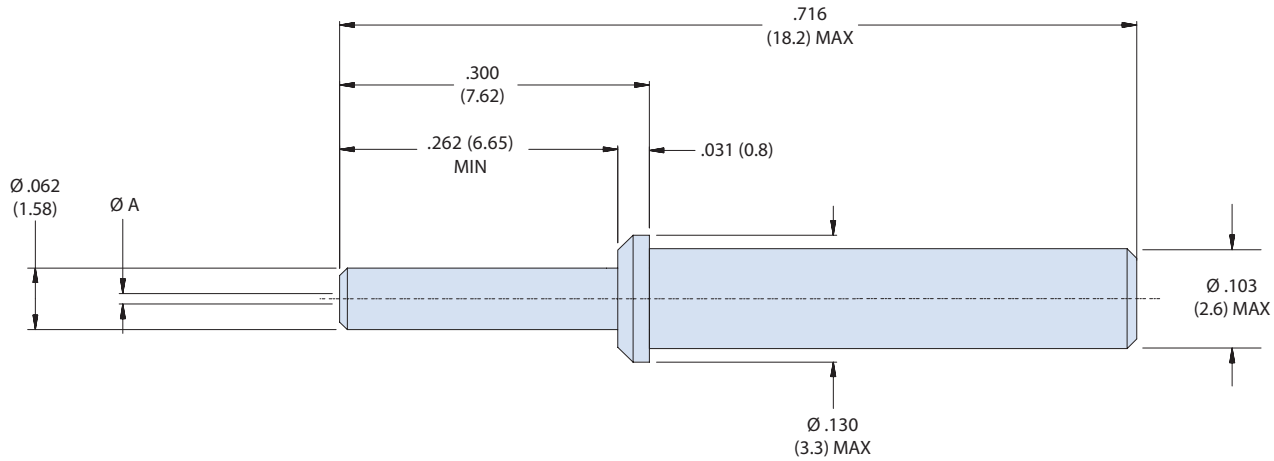
NOTES

- Alignment sleeve and protective cover can also be ordered separately (see Accessories table)
- Threaded Protective cover must be retained using Threadlocker "Loctite 222" prior to insertion and fully seated against terminus body as shown.
- Contact Glenair for termination/ assembly procedures.
- Recommended Insertion/ Extraction Tool: P/N M81969/14-03 or equivalent

181-036 Large-core optical fiber pin terminus, size 16

PART NUMBER	FIBER SIZE CORE/ CLADDING	Ø A (MICRONS)
181-036-600	600 Micron	610.0
181-036-1000	1000 Micron (Plastic)	1117.0

LARGE-CORE FIBER OPTIC MIL-DTL-38999 TYPE SIZE 16 PIN TERMINUS



MATERIAL AND FINISH

- Ferrule and Terminus Body: Stainless Steel/Passivate

NOTES

- Contact Glenair for termination/ assembly procedures.
- Recommended Insertion/ Extraction Tool: P/N M81969/14-03 or equivalent

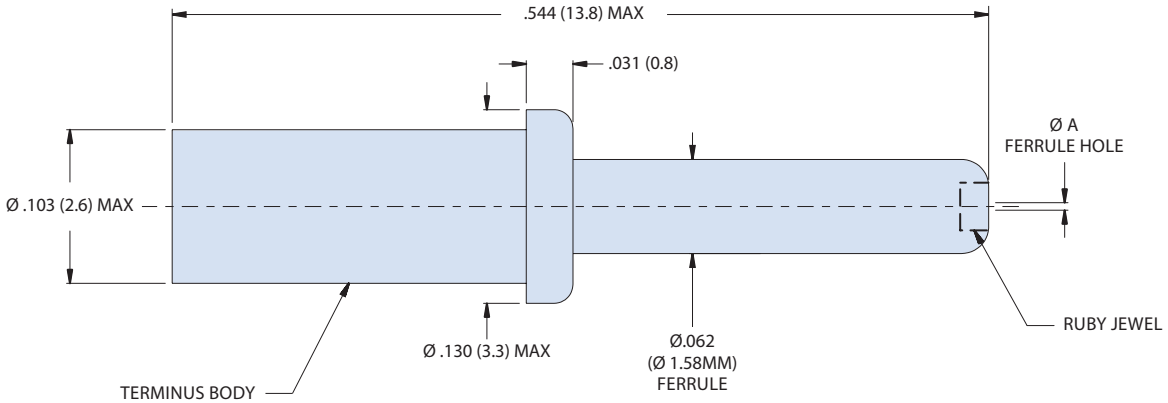
181-052 Fiber optic jewel pin terminus, size 16

PART NUMBER	Ø A (MICRONS)	TYPICAL FIBER SIZE CORE/CLADDING/COATING (MICRONS)
181-052-125	125.0	9/125 (Singlemode)
181-052-127	127.0	50/125, 62.5/125
181-052-142	142.0	100/140
181-052-157	157.0	62.5/125/155 (Polyimide)
181-052-175	175.0	100/140/172 (Polyimide)
181-052-236	236.0	200/230

Add ***L*** to the end of part number development to supply less epoxy preforms *e.g. 181-052-127**L***. Omit to include preforms.

TERMINUS ACCESSORIES	
Part Number	Terminus Accessory
189-070-6	Reducing Sleeve, Ø1.90mm Max Cable Jacket
181-052-E	Epoxy Preforms

MIL-DTL-38999 TYPE FIBER OPTIC JEWEL PIN TERMINUS



MATERIAL AND FINISH

- Terminus Body: Stainless steel/ passivate
- Jewel, Ruby: Synthetic ruby or sapphire

NOTES

- See assembly procedure GAP-057 for complete termination instructions.
- Recommended insertion/ extraction tool: M81969/14-03 or equivalent

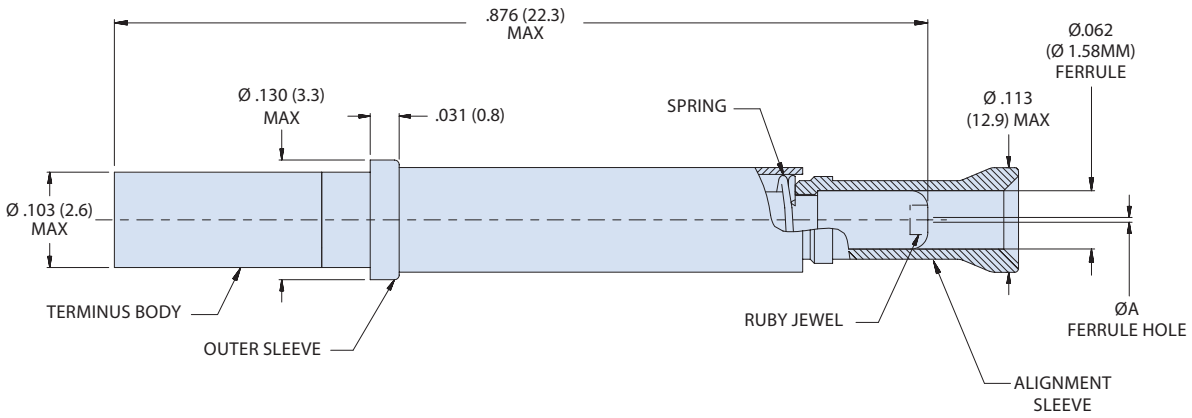
181-053 Fiber optic jewel socket terminus, size 16

PART NUMBER	Ø A (MICRONS)	TYPICAL FIBER SIZE CORE/CLADDING/ COATING (MICRONS)
181-053-125	125.0	9/125 (Singlemode)
181-053-127	127.0	50/125, 62.5/125
181-053-142	142.0	100/140
181-053-157	157.0	62.5/125/155 (Polyimide)
181-053-175	175.0	100/140/172 (Polyimide)
181-053-236	236.0	200/230

Add **L** to the end of part number development to supply less epoxy preforms *e.g. 181-053-127**L***. Omit to include preforms.

TERMINUS ACCESSORIES	
Part Number	Terminus Accessory
189-070-6	Reducing Sleeve Ø1.90mm Max Cable Jacket
189-075	Alignment Sleeve
182-031	Alignment Sleeve Installation Tool
182-032	Alignment Sleeve Extraction Tool
181-053-E	Epoxy Preforms

FIBER OPTIC JEWEL SOCKET TERMINUS FOR MIL-DTL-38999 TYPE CONNECTORS



MATERIAL AND FINISH

- Terminus Body: Stainless Steel/ Passivate
- Jewel/Ruby: Synthetic Ruby or Sapphire
- Alignment Sleeve: Stainless Steel/Passivate
- Outer Sleeve: Stainless Steel/ Passivate
- Spring: Stainless Steel/Passivate.

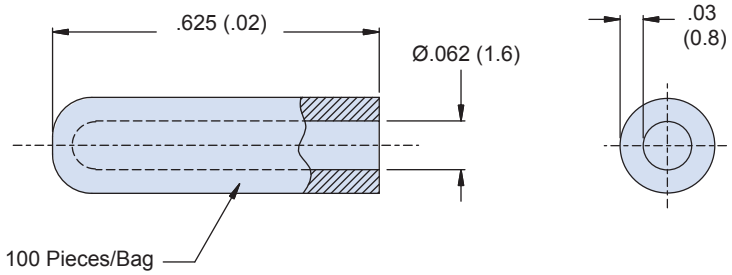
NOTES

- See assembly procedure GAP-057 for complete termination instructions.
- Alignment Sleeve, Outer Sleeve, and Spring packaged loose with assembly.
- Recommended insertion/ extraction tool: M81969/14-03 or equivalent.

187-019/187-029 Size 16 termini pin and socket dust caps
187-266 Size 20 pin and socket terminus vinyl dust caps

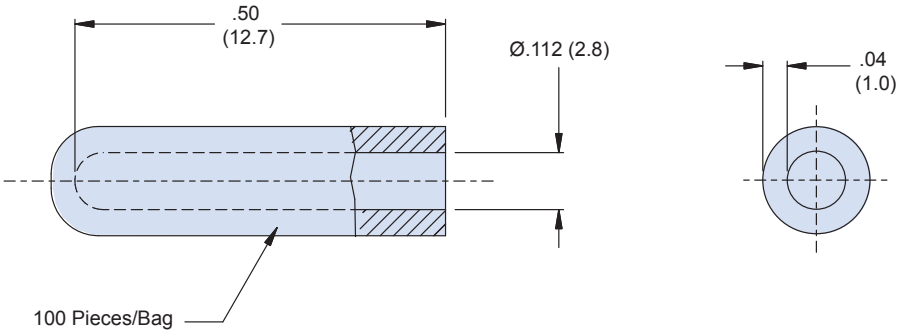
SIZE 16 PIN AND SOCKET TERMINUS VINYL DUST CAPS

187-019 **Vinyl dust cap for size 16 termini with ø .0625 Ferrules**
Installs directly onto ferrule of 181-001, 181-002, 181-009, 181-010, 181-035, 181-036, 181-052 and 181-053 Termini



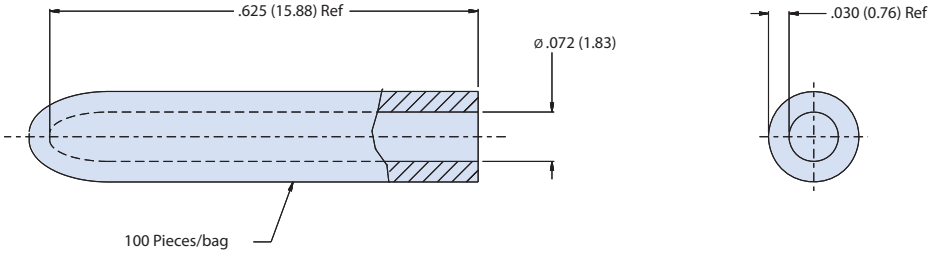
SIZE 16 SOCKET TERMINUS VINYL DUST CAPS

187-029 **Vinyl dust cap for socket termini. Installs over the protective cover of 181-001, 181-009, 181-035, and over the alignment sleeve of 181-053 termini.**



SIZE 20 PIN AND SOCKET TERMINUS VINYL DUST CAPS

187-266 **Vinyl dust cap for size 20 termini fits over metal terminus body of 181-065 pin or 181-066 socket termini**



181-048-16 Dummy Terminus
180-076 Fiber Optic Splice

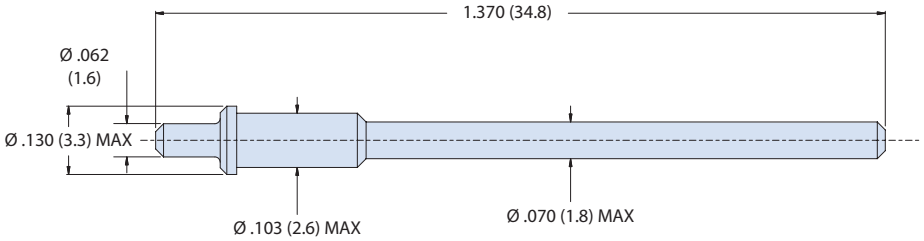
SIZE 16 DUMMY TERMINUS/SEALING PLUG FOR MIL-DTL-38999 CONNECTORS

PART NUMBER	DESCRIPTION
181-048-16	Dummy Terminus, size 16

MATERIAL AND FINISH

- Terminus: High Grade Engineering Thermoplastic
- Recommended insertion/ extraction tool: P/N: M81969/14-03 or equivalent

DUMMY TERMINUS FOR MIL-DTL-38999 CONNECTORS



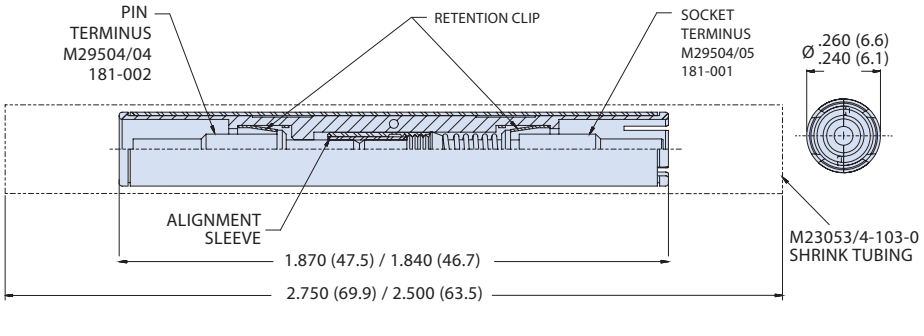
FIBER OPTIC SPLICE FOR USE WITH 181-001 AND 181-002 REAR-RELEASE TERMINI

PART NUMBER	DESCRIPTION
180-076	Fiber Optic Splice

MATERIAL AND FINISH

- Insert: High-Grade Engineering Thermoplastic
- Retention Clip: BeCu Alloy
- Splice Housing: Stainless Steel/ Passivate
- Shrink Tubing: Polyolefin

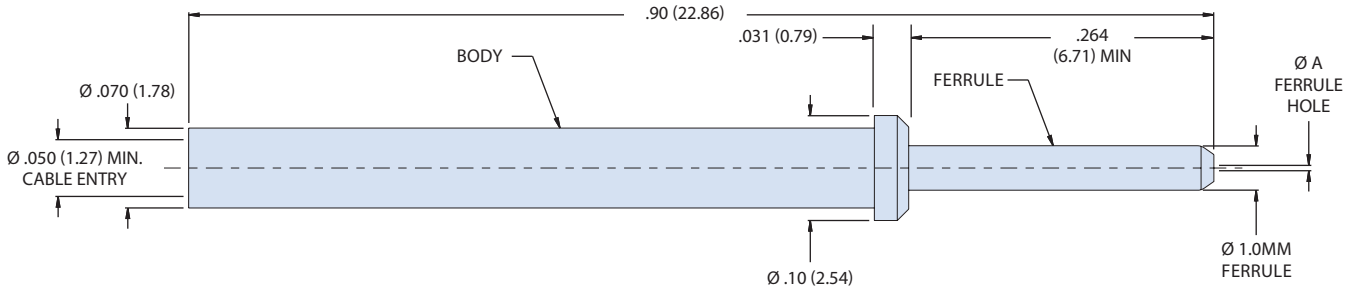
FIBER OPTIC SPLICE



181-065 Fiber optic pin terminus, size 20

PART NUMBER	FIBER SIZE CORE/CLADDING (MICRONS)	ØA (MICRONS)	TYP. FIBER TYPE
181-065-1255	9/125	125.5	Singlemode
181-065-126	50/125 62.5/125	126.0	Multimode

MIL-DTL-38999 SERIES III TYPE SIZE 20 PIN TERMINUS



MATERIAL AND FINISH

- Ferrule: Zirconia Ceramic
- Body: Copper-Nickel-Zinc Alloy

NOTES

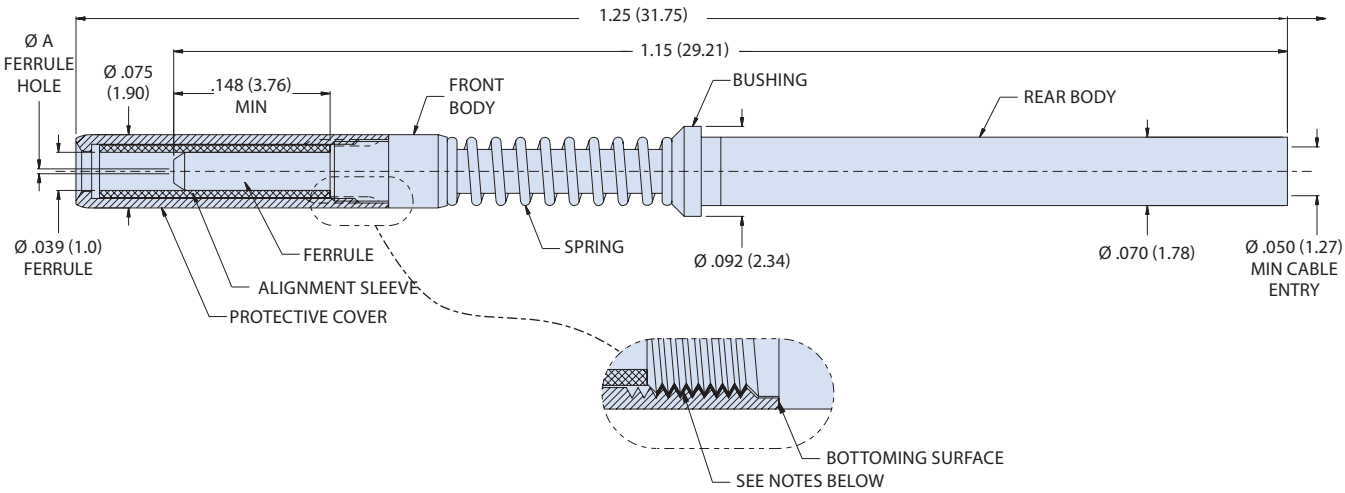
- See assembly procedure GAP-056 for complete termination instructions.
- Recommended insertion/ extraction tool: M81969/14-10 or equivalent.
- Consult factory for appropriate termination and assembly tools/ procedures.

181-066 Fiber optic socket terminus, size 20

PART NUMBER	FIBER SIZE CORE/CLADDING	Ø A (MICRONS)	TYP. FIBER TYPE
181-066-1255	9/125	125.5	Singlemode
181-066-126	50/125 & 62.5/125	126.0	Multimode

TERMINUS ACCESSORIES	
Part Number	Terminus Accessory
181-066-S	Ceramic Alignment Sleeve
181-066-C	Protective Cover

MIL-DTL-38999 TYPE SIZE 20 SOCKET TERMINUS



MATERIAL AND FINISH

- Ferrule: Zirconia Ceramic
- Alignment Sleeve: Zirconia Ceramic
- Body (Front and Rear): Copper-Nickel-Zinc Alloy
- Protective Cover: Copper-Nickel-Zinc Alloy
- Bushing: Copper-Nickel-Zinc Alloy
- Spring: Stainless Steel/Passivate

NOTES

- See assembly procedure GAP-056 for complete termination instructions.
- Protective cover must be retained using Threadlocker "Loctite 222" prior to insertion and fully seated against terminus body as shown.
- Recommended insertion/extraction tool: M81969/14-10 or equivalent.
- Consult factory for appropriate termination and assembly tools/procedures

180-071 (-6) Plug Single Channel Fiber Optic Connector Environmental Resistant for 181-001 Rear-Release Socket Termini

SuperNine® MIL-DTL-38999 Type

MATERIAL AND FINISH

- O-Ring, Rear Grommet: Fluorosilicone
- Retention Clip: BeCu Alloy

NOTES

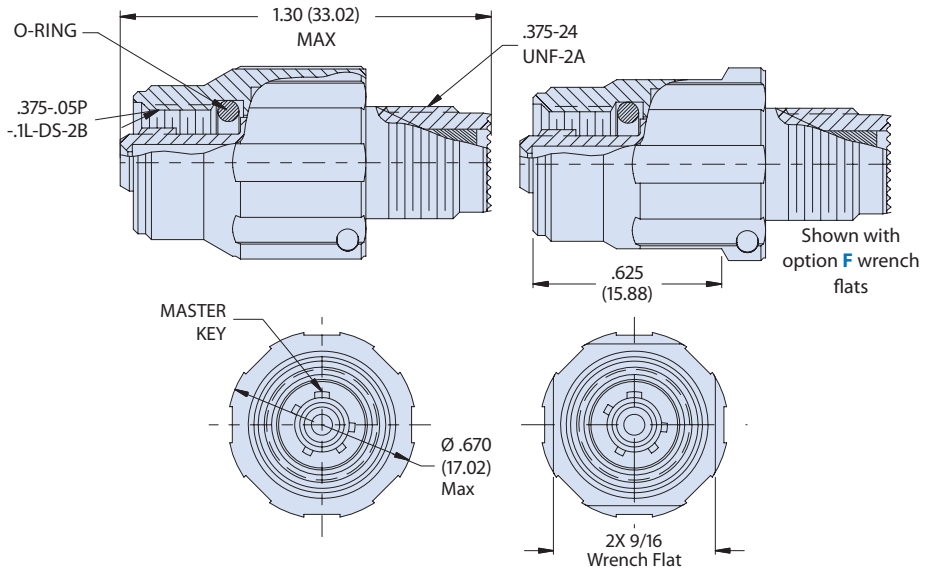
- Operating temperature range -55°C to +125°C.
- See Glenair drawing 181-001 for fiber optic socket terminus.
- Recommended Insertion/ Extraction tool: P/N M81969/14-03 or equivalent

Tight-tolerance 180-071 single-channel fiber optic plug connectors are compatible with Size 16 snap-in, rear-release MIL-PRF-29504 socket termini (Glenair Series 181-001). Ultra miniature shell is precision-machined for optimum optical fiber alignment and low dB data loss performance. Backshell accessory threads support the wide range of Glenair fiber optic cable and conduit adapters. Keyed mating interface with five alternate polarizations protects against mis-mating.

HOW TO ORDER

Sample Part Number	180-071	-C	6	1	-F
Basic Number	Single channel fiber optic connector				
Material/Finish	See Material and Finish table				
Plug	**6**				
Alternate Key Position	**1**, **2**, **3**, **4** & **5** (See Keyway Polarizations table)				
Coupling Nut with Wrench Flats	Omit for None (Standard)				

- 6 PLUG ASSEMBLY

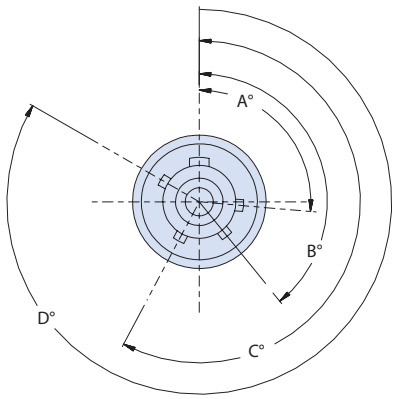


MATERIAL AND FINISH

Code	Material	Finish
C	Aluminum Alloy	Anodize, Black
M*		Electroless Nickel
ME		Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab, over Electroless Nickel
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab, over Electroless Nickel
ZR		Zinc-Nickel, Black
ZN		Zinc-Nickel, Olive Drab
Z1	Stainless Steel	Passivate
ZL		Electro-Deposited Nickel

*Inactive for new design. Use "ME" finish.

KEY POLARIZATIONS



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

180-071 (-3) Wall Mount Receptacle Single Channel Connector Environmental Resistant for 181-002 Rear-Release Pin Termini

Tight-tolerance 180-071 single-channel fiber optic wall-mount receptacle connectors are compatible with Size 16 snap-in, rear-release MIL-PRF-29504 pin termini (Glenair Series 181-002). Ultra miniature shell is precision-machined for optimum optical fiber alignment and low dB data loss performance. Backshell accessory threads support the wide range of Glenair fiber optic cable and conduit adapters. Keyed mating interface with five alternate polarizations protects against mis-mating.

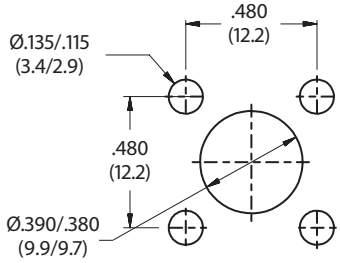
MATERIAL AND FINISH

- Interfacial Seal, Rear Grommet: Fluorosilicone.
- Retention Clip: BeCu Alloy

NOTES

- Operating Temperature Range: -55°C to +125°C.
- See Glenair drawing 181-002 for fiber optic pin terminus.
- Recommended Insertion/ Extraction tool: P/N M81969/14-03 or equivalent

RECOMMENDED PANEL CUT WALL MOUNT RECEPTACLE



MATERIAL AND FINISH

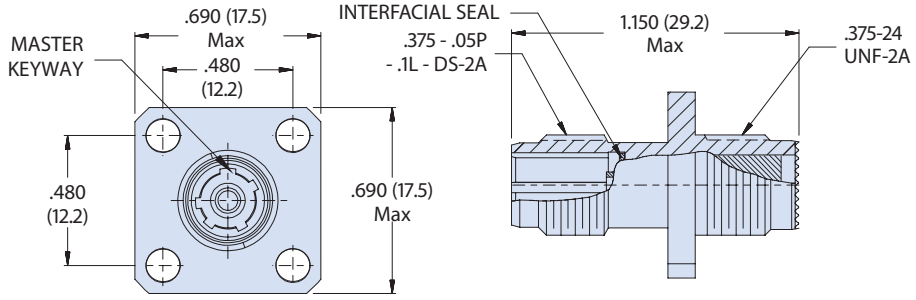
Code	Material	Finish
C	Aluminum Alloy	Anodize, Black
M*		Electroless Nickel
ME		Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab, over Electroless Nickel
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab, over Electroless Nickel
ZR		Zinc-Nickel, Black
ZN		Zinc-Nickel, Olive Drab
Z1	Stainless Steel	Passivate
ZL		Electro-Deposited Nickel

*Inactive for new design. Use "ME" finish.

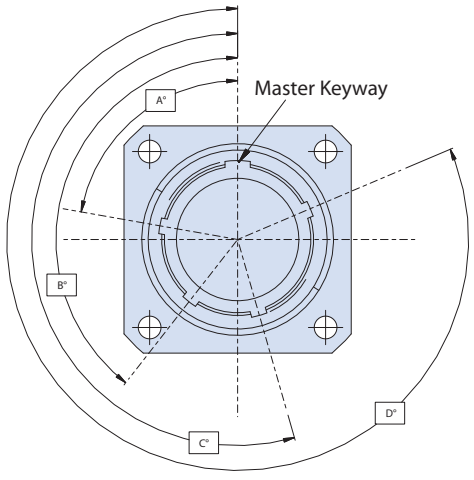
HOW TO ORDER

Sample Part Number	180-071	-C	3	1
Basic Number	Single-channel fiber optic connector			
Material/Finish	See Material and Finish table			
Wall Mount Receptacle	3			
Alternate Key Position	1, 2, 3, 4, & 5 (See Keyway Polarizations table)			

-3 WALL MOUNT RECEPTACLE ASSEMBLY



KEY POLARIZATIONS



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

180-071 (-4) Jam Nut Mount Receptacle Single Channel Connector Environmental Resistant for 181-002 Rear-Release Pin Termini

SuperNine® MIL-DTL-38999 Type

Tight-tolerance 180-071 single-channel fiber optic jam nut mount receptacle connectors are compatible with Size 16 snap-in, rear-release MIL-PRF-29504 pin termini (Glenair Series 181-002). Ultra miniature shell is precision-machined for optimum optical fiber alignment and low dB data loss performance. Backshell accessory threads support the wide range of Glenair fiber optic cable and conduit adapters. Keyed mating interface with five alternate polarizations protects against mis-mating.

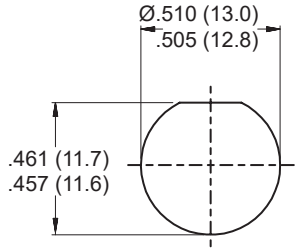
MATERIAL AND FINISH

- Panel Seal, Interfacial Seal, Rear Gromet: Fluorosilicone
- Retention Clip: BeCu Alloy

NOTES

- Operating Temperature Range: -55°C to +125°C
- See Glenair drawing 181-002 for fiber optic pin terminus.
- Recommended Insertion/ Extraction tool: P/N M81969/14-03 or equivalent

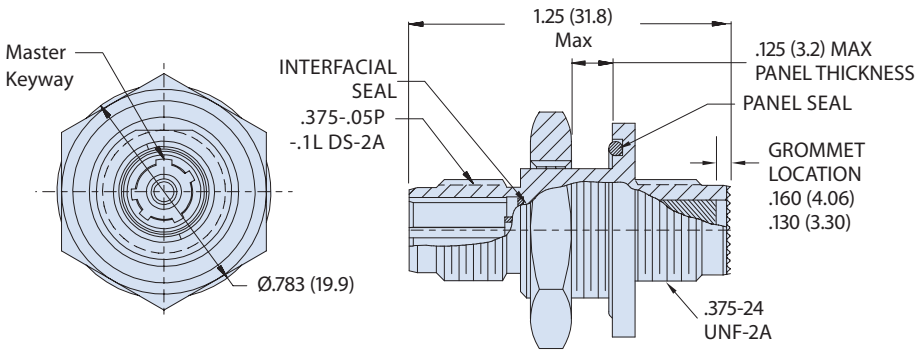
RECOMMENDED PANEL CUTOUT JAM NUT MOUNT RECEPTACLE



HOW TO ORDER

Sample Part Number	180-071	-C	4	1
Basic Number	Single channel fiber optic connector			
Material/Finish	See Material and Finish table			
Jam Nut Receptacle	**4**			
Alternate Key Position	**1**, **2**, **3**, **4**, & **5** (See Keyway Polarizations table)			

- 4 JAM NUT MOUNT RECEPTACLE ASSEMBLY

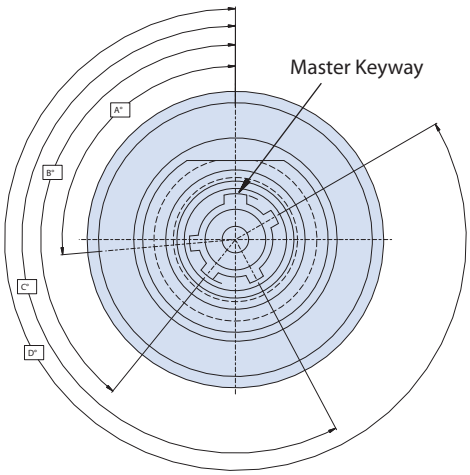


MATERIAL AND FINISH

Code	Material	Finish
C	Aluminum Alloy	Anodize, Black
M*		Electroless Nickel
ME		Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab, over Electroless Nickel
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab, over Electroless Nickel
ZR		Zinc-Nickel, Black
ZN		Zinc-Nickel, Olive Drab
Z1	Stainless Steel	Passivate
ZL		Electro-Deposited Nickel

*Inactive for new design. Use "ME" finish.

KEY POLARIZATIONS

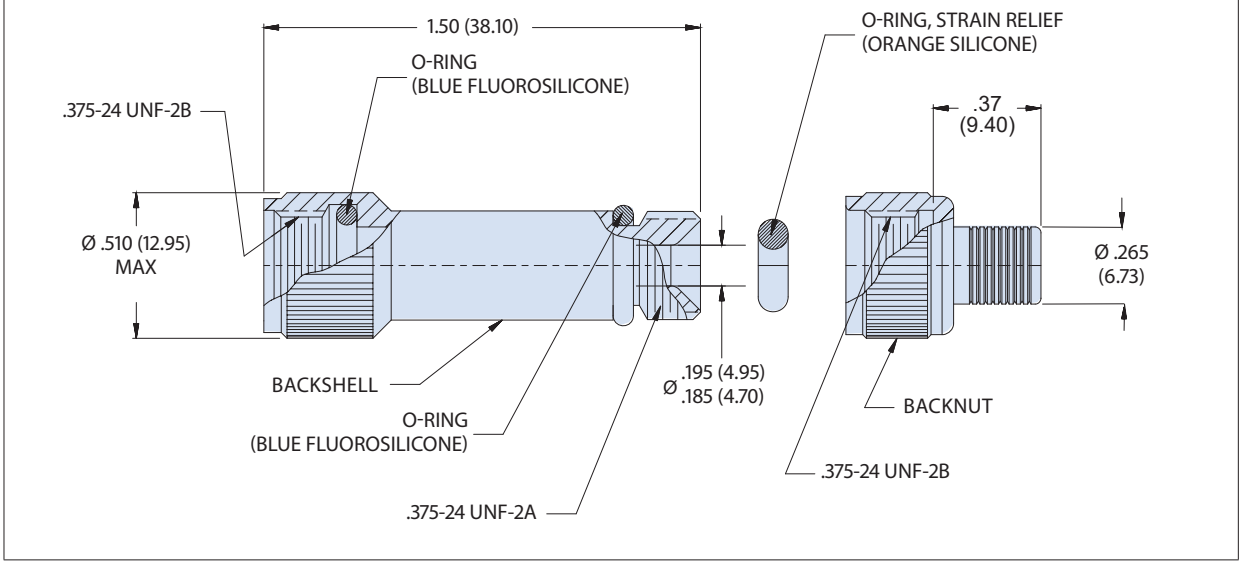


Pos	A°	B°	C°	D°
1	95	141	208	300
2	80	141	208	300
3	95	141	223	300
4	80	141	223	300
5	95	141	208	275

189-055 Single Channel Fiber Optic Connector Backshell Environmental Resistant for 180-071 Series Single Channel Fiber Optic Connectors

HOW TO ORDER			
Sample Part Number		**189-055**	**C**
Basic Number	Single channel fiber optic connector backshell with direct coupling		
Material/Finish	See Material and Finish table		

189-055



MATERIAL AND FINISH

- Backshell and Back Nut: See Material and Finish table
- O-Ring: Fluorosilicone
- Strain Relief O-Ring: Silicone

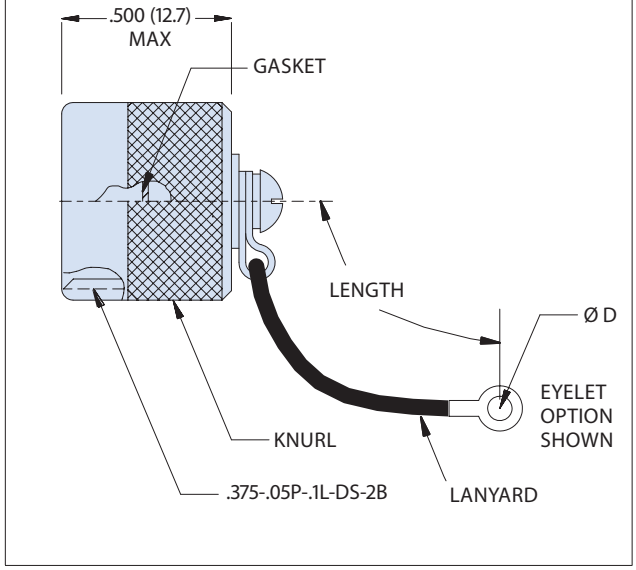
MATERIAL AND FINISH		
Code	**Material**	**Finish**
C	Aluminum Alloy	Anodize, Black
M*		Electroless Nickel
ME		Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab, over Electroless Nickel
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab, over Electroless Nickel
ZR		Zinc-Nickel, Black
ZN		Zinc-Nickel, Olive Drab
Z1	Stainless Steel	Passivate
ZL		Electro-Deposited Nickel
*Inactive for new design. Use "ME" finish.		

189-047 Plug and Receptacle Protective Covers for Single Channel 180-071 Series Fiber Optic Connectors

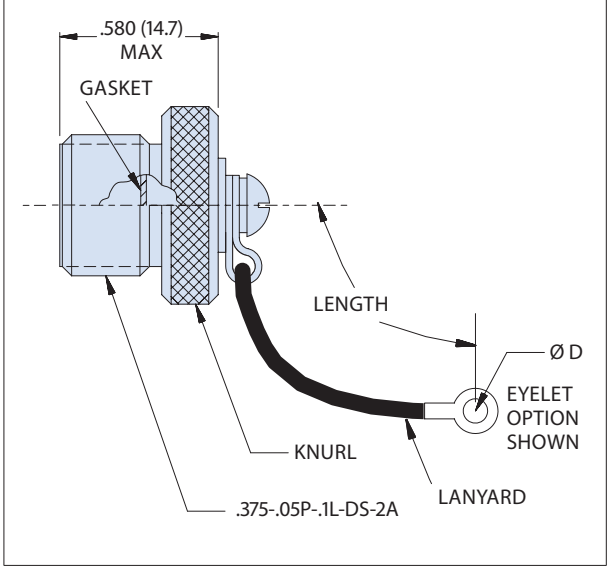
SuperNine® MIL-DTL-38999 Type

HOW TO ORDER							
Sample Part Number	**189-047**	**-M**	**-H**	**6**	**03**	**-4**	**1**
Basic Number	Plug and receptacle protective covers for single channel fiber optic connectors						
Material/Finish	See Material and Finish table						
Lanyard Type	See Lanyard Codes table						
Connector Style	**6** = Plug **3** = Receptacle						
Attachment Type	See Attachment Type table						
Attachment Length	Inches						
Polarization	(Key Polarization Table - Applies to Plug only)						

3 - RECEPTACLE COVER



6 - PLUG COVER



MATERIAL AND FINISH

- Cover: See Material and Finish table
- Gasket: Fluorosilicone

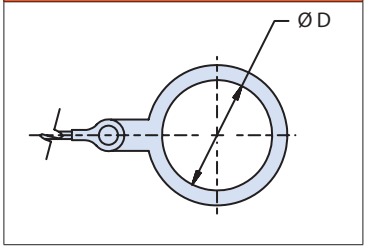
MATERIAL AND FINISH		
Code	**Material**	**Finish**
C	Aluminum Alloy	Anodize, Black
M*		Electroless Nickel
ME		Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab, over Electroless Nickel
TZ		
ZN		Zinc-Nickel, Olive Drab, over Electroless Nickel
ZR		Zinc-Nickel, Black
Z1	Stainless Steel	Passivate
ZL		Electro-Deposited Nickel

*Inactive for new design. Use "ME" finish.

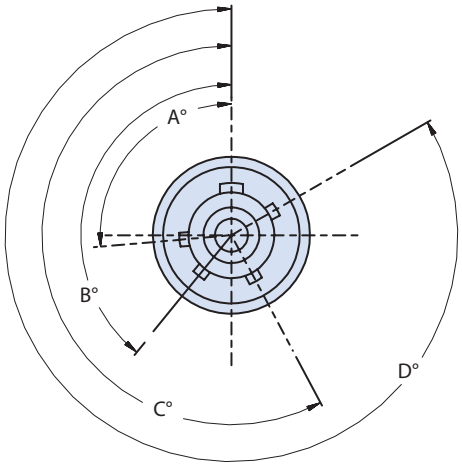
189-047 Plug and Receptacle Protective Covers for Single Channel 180-071 Series Fiber Optic Connectors

LANYARD CODES	
Code	**Description**
D	Bead Chain, CRES, Passivated
F	Wire Rope, Nylon Jacket
G	Nylon Rope, Black
H	Wire Rope, Fluoropolymer Jacket
N	No Lanyard
R	Wire Rope, PVC Jacket
S	#8 Sash Chain, CRES, Passivated
T	Wire Rope, No Jacket
U	Wire Rope, Polyurethane Jacket

SOLID RING DASH NO. 07 THRU 12



KEY POLARIZATIONS (PLUG COVER ONLY



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

ATTACHMENT TYPE		
Dash No.	**Ø D**	
01	.125 (3.2)	Eyelet
02	.140 (3.6)	
03	.167 (4.2)	
04	.182 (4.6)	
05	.191 (4.9)	
06	.197 (5.0)	
07	.391 (9.9)	Solid Ring
08	.516 (13.1)	
09	.583 (14.8)	
10	.766 (19.5)	
11	.896 (22.2)	
12	1.016 (25.8)	

180-091 (06) Plug • Multi-channel

SuperNine® MIL-DTL-38999 Type

MATERIAL AND FINISH

- Coupling Nut (for Composite): High Grade Engineering Thermoplastic/Unplated
- Insulator: High Grade Rigid Dielectric
- Seals: Fluorosilicone
- Retention Clips" BeCu Alloy
- EMI/RFI Ground Spring: BeCu Alloy/Nickel

NOTES

- Blue color band indicates rear-release retention system. Yellow color band indicates fiber optic connector. Bands located approximately as shown, sequencing optional.
- See pages B-4 to B-15 for compatible Glenair terminus part numbers.
- Recommended Insertion/ Extraction tool: P/N M81969/14-03 or equivalent

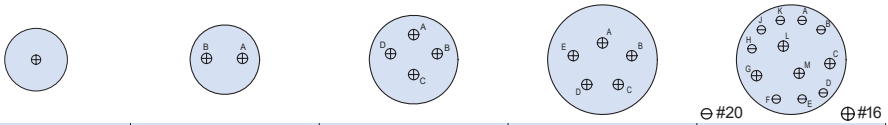
MATERIAL AND FINISH		
Code	Material	Finish Description
M*	Aluminum Alloy	Electroless Nickel
MA		Electroless Nickel, Matte
ME		Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab
ZNU		Zinc-Nickel, Black
ZR		Zinc-Nickel, Black (RoHS)
XM	Composite	Electroless Nickel
XMT		Nickel - PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
MS	Stainless Steel	Electroless Nickel
ZL		Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	No Plating

*Inactive for new design. Use "ME" finish.

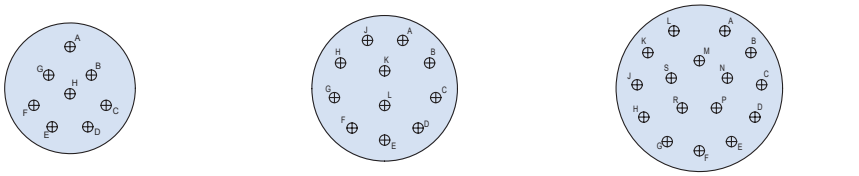
Tight-tolerance MIL-DTL-38999 Series III type Cable Plug. Compatible with Size 16 snap-in, rear-release MIL-PRF-29504 pin and socket termini (Glenair Series 181-001 and 181-002). Integral EMI/RFI ground spring for hybrid electrical/fiber contact applications. Precision-manufactured for optimum optical fiber alignment and low dB data loss performance. Robust anti-decoupling mechanism and environmental sealing for use in high vibration, shock, and high altitude aerospace and military/ defense applications. Coupling nut and connector body materials include Aluminum alloy, composite thermoplastic, stainless steel, and marine bronze. Keyed polarization for mis-mate protection. Available insert arrangements support from two to thirty-seven singlemode and multimode termini.

HOW TO ORDER							
Sample Part Number	180-091	XW	06	-17	-8	P	N
Basic Number	D38999 Series III Type						
Material/Finish	See Material and Finish table						
Connector Style	**06** = Plug connector						
Shell Size	See Dimensions table						
Insert Arrangement	See Contact Arrangements images						
Insert Designation	**P** = Pin **S** = Socket						
Alternate Key Position	**A**, **B**, **C**, **D**, **E**; **N** = Normal (Per MIL-DTL-38999)						

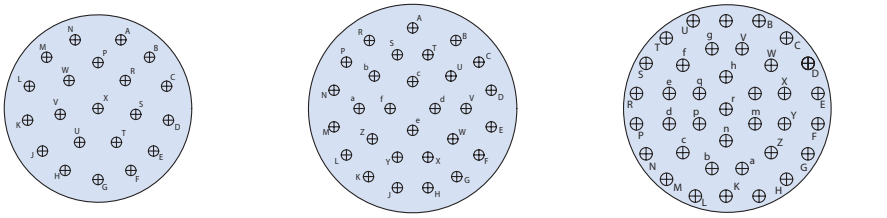
INSERT ARRANGEMENTS (mating face, pin insert shown)



9-1 - 1 #16 termini | **11-2** - 2 #16 termini | **13-4** - 4 #16 termini | **15-5** - 5 #16 termini | **15-97** - 4 #16 / 8#20



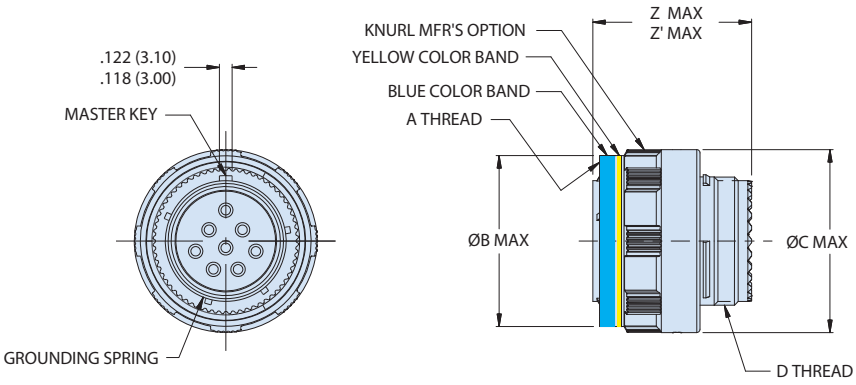
17-8 - 8 #16 termini | **19-11** - 11 #16 termini | **21-16** - 16 #16 termini



23-21 - 21 #16 termini | **25-29** - 29 #16 termini | **25-37** - 37 #16 termini

180-091 (06) Plug • Multi-channel

06 - PLUG



Shell Size Code	Shell Size	A Thread	øB	øC	D Thread	Z Max	Z' Max
A	9	.6250-.1P-.3L-TS-2B	0.811 (20.60)	0.858 (21.79)	M12 X 1.0-6g 0.100R	1.220 (30.99)	1.240 (31.50)
B	11	.7500-.1P-.3L-TS-2B	0.929 (23.60)	0.984 (24.99)	M15 X 1.0-6g 0.100R		
C	13	.8750-.1P-.3L-TS-2B	1.110 (28.19)	1.157 (29.39)	M18 X 1.0-6g 0.100R		
D	15	1.0000-.1P-.3L-TS-2B	1.232 (31.29)	1.280 (32.51)	M22 X 1.0-6g 0.100R		
E	17	1.1875-.1P-.3L-TS-2B	1.358 (34.49)	1.406 (35.71)	M25 X 1.0-6g 0.100R		
F	19	1.2500-.1P-.3L-TS-2B	1.469 (37.31)	1.516 (38.51)	M28 X 1.0-6g 0.100R		
G	21	1.3750-.1P-.3L-TS-2B	1.594 (40.49)	1.642 (41.71)	M31 X 1.0-6g 0.100R		
H	23	1.5000-.1P-.3L-TS-2B	1.720 (43.69)	1.768 (44.91)	M34 X 1.0-6g 0.100R		
J	25	1.6250-.1P-.3L-TS-2B	1.843 (46.81)	1.890 (48.01)	M37 X 1.0-6g 0.100R		

180-091 (05) In-line receptacle • Multi-channel

SuperNine® MIL-DTL-38999 Type

Tight-tolerance MIL-DTL-38999 Series III type In-Line Receptacle. Compatible with Size 16 snap-in, rear-release MIL-PRF-29504 pin and socket termini (Glenair Series 181-001 and 181-002). Features support hybrid electrical/fiber contact applications. Precision-manufactured for optimum optical fiber alignment and low dB data loss performance. Robust anti-decoupling and environmental sealing for use in high vibration, shock, and high altitude aerospace and military/defense applications. Shell materials include Aluminum alloy, composite thermoplastic, stainless steel, and marine bronze. Keyed polarization for mis-mate protection. Available insert arrangements support from two to thirty-seven singlemode and multimode termini.

MATERIAL AND FINISH

- Insulator: High Grade Rigid Dielectric
- Seals: Fluorosilicone
- Retention Clips: BeCu Alloy

NOTES

- Blue color band indicates rear-release retention system. Yellow color band indicates fiber optic connector. Bands located approximately as shown, sequencing optional.
- See pages B-4 to B-15 for compatible Glenair terminus part numbers.
- Recommended Insertion/ Extraction tool: P/N M81969/14-03 or equivalent

HOW TO ORDER

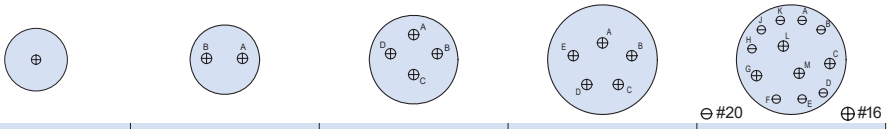
Sample Part Number	180-091	XW	05	-17	-8	P	N
Basic Number	D38999 Series III Type						
Material/Finish	See Material and Finish table						
Connector Style	**05** = In-Line Receptacle						
Shell Size	See Dimensions table						
Insert Arrangement	See Contact Arrangements table						
Insert Designation	**P** = Pin **S** = Socket						
Alternate Key Position	**A**, **B**, **C**, **D**, **E**; **N** = Normal (Per MIL-DTL-38999)						

MATERIAL AND FINISH

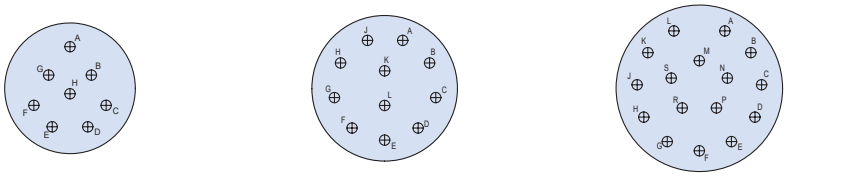
Code	Material	Finish Description
M*	Aluminum Alloy	Electroless Nickel
MA		Electroless Nickel, Matte
ME		Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab
ZNU		Zinc-Nickel, Black
ZR		Zinc-Nickel, Black (RoHS)
XM	Composite	Electroless Nickel
XMT		Nickel - PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
MS	Stainless Steel	Electroless Nickel
ZL		Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	No Plating

*Inactive for new design. Use "ME" finish.

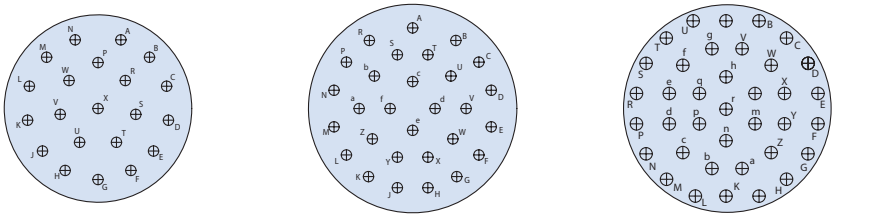
INSERT ARRANGEMENTS (mating face, pin insert shown)



9-1 - 1 #16 termini | **11-2** - 2 #16 termini | **13-4** - 4 #16 termini | **15-5** - 5 #16 termini | **15-97** - 4 #16 / 8#20



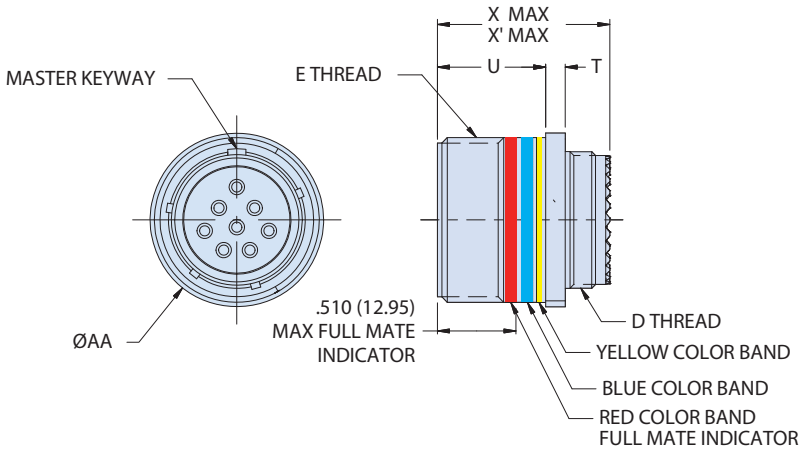
17-8 - 8 #16 termini | **19-11** - 11 #16 termini | **21-16** - 16 #16 termini



23-21 - 21 #16 termini | **25-29** - 29 #16 termini | **25-37** - 37 #16 termini

180-091 (05) In-line receptacle • Multi-channel

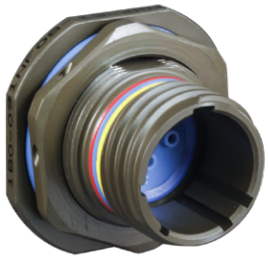
05 - IN-LINE RECEPTACLE



Shell Size Code	Shell Size	E Thread	T	U	Ø AA	D Thread	X Max	X' Max
A	9	.6250-.1P-.3L-TS-2A	.144 (3.7) .083 (2.1)	.823 (20.9) .768 (19.5)	.715 (18.16)	M12 x 1.0-6g 0.100R	1.240 (31.50)	1.260 (32.00)
B	11	.7500-.1P-.3L-TS-2A			.840 (21.3)	M15 x 1.0-6g 0.100R		
C	13	.8750-.1P-.3L-TS-2A			.963 (24.5)	M18 x 1.0-6g 0.100R		
D	15	1.0000-.1P-.3L-TS-2A			1.090 (27.7)	M22 x 1.0-6g 0.100R		
E	17	1.1875-.1P-.3L-TS-2A			1.275 (32.4)	M25 x 1.0-6g 0.100R		
F	19	1.2500-.1P-.3L-TS-2A			1.337 (34.0)	M28 x 1.0-6g 0.100R		
G	21	1.3750-.1P-.3L-TS-2A	.171 (65.2) .083 (39.8)	.791 (20.0) .736 (18.7)	1.463 (37.2)	M31 x 1.0-6g 0.100R		
H	23	1.5000-.1P-.3L-TS-2A			1.587 (40.3)	M34 x 1.0-6g 0.100R		
J	25	1.6250-.1P-.3L-TS-2A			1.713 (43.5)	M37 x 1.0-6g 0.100R		

180-091 (08) Jam nut receptacle • Multi-channel

SuperNine® MIL-DTL-38999 Type



Tight-tolerance MIL-DTL-38999 Series III type Jam-Nut Receptacle. Compatible with Size 16 snap-in, rear-release MIL-PRF-29504 pin and socket termini (Glenair Series 181-001 and 181-002). Features support hybrid electrical/fiber contact applications. Precision-manufactured for optimum optical fiber alignment and low dB data loss performance. Robust anti-decoupling and environmental sealing for use in high vibration, shock, and high altitude aerospace and military/defense applications. Shell materials include Aluminum alloy, composite thermoplastic, stainless steel, and marine bronze. Keyed polarization for mis-mate protection. Available insert arrangements support from two to thirty-seven singlemode and multimode termini.

MATERIAL AND FINISH

- Jam Nut (for Composite): Al Alloy, plated same as shell
- Insulator: High Grade Rigid Dielectric
- Seals: Fluorosilicone
- Retention Clips: BeCu Alloy

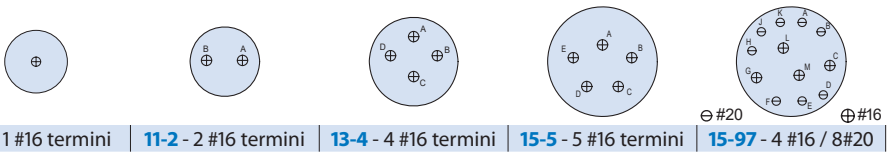
NOTES

- Blue color band indicates rear-release retention system. Yellow color band indicates fiber optic connector. Bands located approximately as shown, sequencing optional.
- See pages B-4 to B-15 for compatible Glenair terminus part numbers.
- Recommended Insertion/ Extraction tool: P/N M81969/14-03 or equivalent

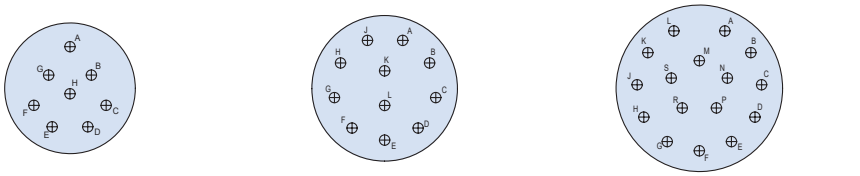
MATERIAL AND FINISH		
Code	Material	Finish Description
M*	Aluminum Alloy	Electroless Nickel
MA		Electroless Nickel, Matte
ME		Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab
ZNU		Zinc-Nickel, Black
ZR		Zinc-Nickel, Black (RoHS)
XM	Composite	Electroless Nickel
XMT		Nickel - PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
MS	Stainless Steel	Electroless Nickel
ZL		Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	No Plating
*Inactive for new design. Use "ME" finish.		

HOW TO ORDER							
Sample Part Number	180-091	XW	08	-17	-8	P	N
Basic Number	D38999 Series III Type						
Material/Finish	See Material and Finish table						
Connector Style	**08** = Jam Nut Receptacle						
Shell Size	See Dimensions table						
Insert Arrangement	See Contact Arrangements images						
Insert Designation	**P** = Pin **S** = Socket						
Alternate Key Position	**A**, **B**, **C**, **D**, **E**; **N** = Normal (Per MIL-DTL-38999)						

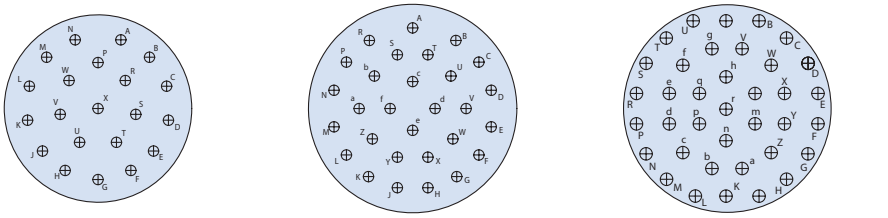
INSERT ARRANGEMENTS (mating face, pin insert shown)



9-1 - 1 #16 termini | **11-2** - 2 #16 termini | **13-4** - 4 #16 termini | **15-5** - 5 #16 termini | **15-97** - 4 #16 / 8#20



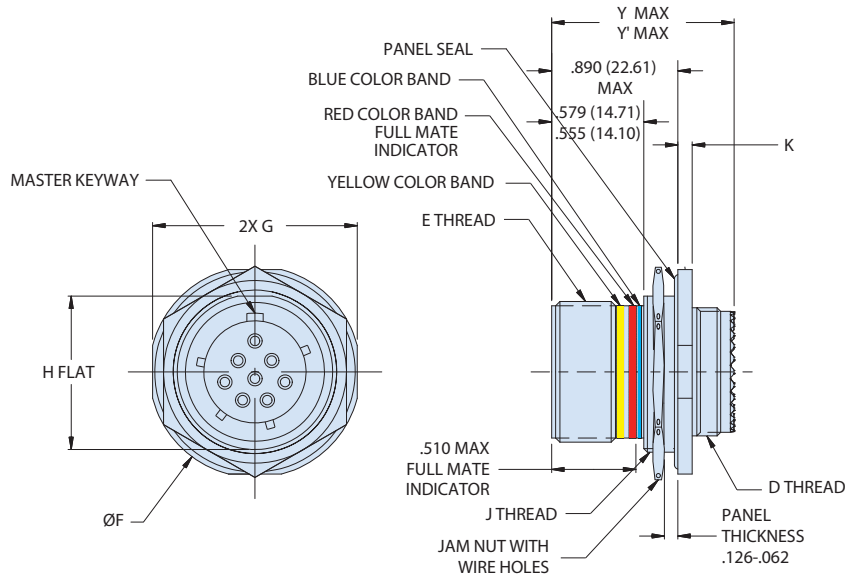
17-8 - 8 #16 termini | **19-11** - 11 #16 termini | **21-16** - 16 #16 termini



23-21 - 21 #16 termini | **25-29** - 29 #16 termini | **25-37** - 37 #16 termini

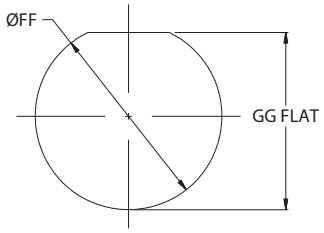
180-091 (08) Jam nut receptacle • Multi-channel

08 - JAM NUT MOUNT RECEPTACLE



Shell Size Code	Shell Size	E Thread	Ø F	G	H	J Thread	D Thread	K	Y Max	Y' Max
A	9	.6250-.1P-.3L-TS-2A	1.200 (30.5) 1.777 (45.1)	1.079 (27.4) 1.047 (26.6)	.655 (16.6) .645 (16.4)	M17 x 1.0-6g 0.100R	M12 x 1.0-6g 0.100R	.121 (3.1) .083 (2.1)	1.280 (32.51)	1.300 (33.02)
B	11	.7500-.1P-.3L-TS-2A	1.386 (25.4) 1.362 (34.6)	1.268 (32.2) 1.236 (31.4)	.755 (19.2) .745 (18.9)	M20 x 1.0-6g 0.100R	M15 x 1.0-6g 0.100R			
C	13	.8750-.1P-.3L-TS-2A	1.512 (38.4) 1.488 (37.8)	1.390 (35.3) 1.358 (34.5)	.942 (23.9) .932 (23.7)	M25 x 1.0-6g 0.100R	M18 x 1.0-6g 0.100R			
D	15	1.0000-.1P-.3L-TS-2A	1.638 (41.6) 1.614 (41.0)	1.516 (38.5) 1.484 (37.7)	1.066 (27.1) 1.056 (26.8)	M28 x 1.0-6g 0.100R	M22 x 1.0-6g 0.100R			
E	17	1.1875-.1P-.3L-TS-2A	1.764 (44.8) 1.740 (44.2)	1.642 (41.7) 1.610 (40.9)	1.191 (30.3) 1.181 (30.0)	M32 x 1.0-6g 0.100R	M25 x 1.0-6g 0.100R			
F	19	1.2500-.1P-.3L-TS-2A	1.949 (49.5) 1.925 (48.9)	1.827 (46.4) 1.795 (45.6)	1.316 (33.4) 1.306 (33.2)	M35 x 1.0-6g 0.100R	M28 x 1.0-6g 0.100R	.154 (3.9) .114 (2.9)		
G	21	1.3750-.1P-.3L-TS-2A	2.075 (52.7) 2.051 (52.1)	1.953 (49.6) 1.921 (48.8)	1.441 (36.6) 1.431 (36.3)	M38 x 1.0-6g 0.100R	M31 x 1.0-6g 0.100R			
H	23	1.5000-.1P-.3L-TS-2A	2.201 (55.9) 2.177 (55.3)	2.079 (52.8) 2.047 (52.0)	1.566 (39.8) 1.556 (39.5)	M41 x 1.0-6g 0.100R	M34 x 1.0-6g 0.100R			
J	25	1.6250-.1P-.3L-TS-2A	2.323 (59.0) 2.299 (58.4)	2.205 (56.0) 2.173 (55.2)	1.691 (43.0) 1.681 (42.7)	M44 x 1.0-6g 0.100R	M37 x 1.0-6g 0.100R			

RECOMMENDED PANEL CUTOUT DIMENSIONS



Shell Size Code	Shell Size	Jam Nut Mount	
		Ø FF	GG Flat
A	9	.710 (18.0); .700 (17.8)	.670 (17.0); .660 (16.8)
B	11	.835 (21.2); .825 (21.0)	.771 (19.6); .761 (19.3)
C	13	1.020 (25.9); 1.010 (25.7)	.955 (24.3); .945 (24.0)
D	15	1.145 (29.1); 1.135 (28.8)	1.085 (27.6); 1.075 (27.3)
E	17	1.270 (32.3); 1.260 (32.0)	1.210 (30.7); 1.200 (30.5)
F	19	1.395 (35.4); 1.385 (35.2)	1.335 (33.9); 1.325 (33.7)
G	21	1.520 (38.6); 1.510 (38.4)	1.460 (37.1); 1.450 (36.8)
H	23	1.645 (41.8); 1.635 (41.5)	1.585 (40.3); 1.575 (40.0)
J	25	1.770 (45.0); 1.760 (44.7)	1.710 (43.4); 1.700 (43.2)

180-091 (H7) Wall mount receptacle, round holes • Multi-channel

SuperNine® MIL-DTL-38999 Type

Tight-tolerance MIL-DTL-38999 Series III type Wall-Mount Receptacle, round holes. Compatible with Size 16 snap-in, rear-release MIL-PRF-29504 pin and socket termini (Glenair Series 181-001 and 181-002). Features support hybrid electrical/fiber contact applications. Precision-manufactured for optimum optical fiber alignment and low dB data loss performance. Robust anti-decoupling and environmental sealing for use in high vibration, shock, and high altitude aerospace and military/defense applications. Shell materials include Aluminum alloy, composite thermoplastic, stainless steel, and marine bronze. Keyed polarization for mis-mate protection. Available insert arrangements support from two to thirty-seven singlemode and multimode termini.

MATERIAL AND FINISH

- Insulator: High Grade Rigid Dielectric
- Seals: Fluorosilicone
- Retention Clips: BeCu Alloy

NOTES

- Blue color band indicates rear-release retention system. Yellow color band indicates fiber optic connector. Bands located approximately as shown, sequencing optional.
- See pages B-4 to B-15 for compatible Glenair terminus part numbers.
- Recommended Insertion/ Extraction tool: P/N M81969/14-03 or equivalent

HOW TO ORDER

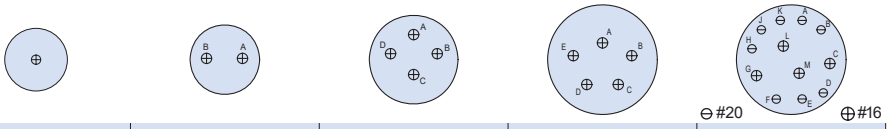
Sample Part Number	180-091	XW	H7	-17	-8	P	N
Basic Number	D38999 Series III Type						
Material/Finish	See Material and Finish table						
Connector Style	**H7** = Wall Mount Receptacle with Round Holes (Standard)						
Shell Size	See Dimensions table						
Insert Arrangement	See Contact Arrangements images						
Insert Designation	**P** = Pin **S** = Socket						
Alternate Key Position	**A**, **B**, **C**, **D**, **E**; **N** = Normal (Per MIL-DTL-38999)						

MATERIAL AND FINISH

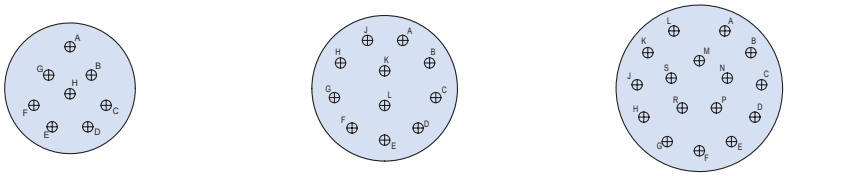
Code	Material	Finish Description
M*	Aluminum Alloy	Electroless Nickel
MA		Electroless Nickel, Matte
ME		Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab
ZNU		Zinc-Nickel, Black
ZR		Zinc-Nickel, Black (RoHS)
XM	Composite	Electroless Nickel
XMT		Nickel - PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
MS	Stainless Steel	Electroless Nickel
ZL		Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	No Plating

*Inactive for new design. Use "ME" finish.

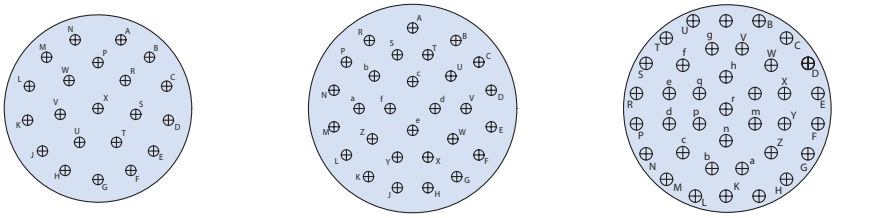
INSERT ARRANGEMENTS (mating face, pin insert shown)



9-1 - 1 #16 termini | **11-2** - 2 #16 termini | **13-4** - 4 #16 termini | **15-5** - 5 #16 termini | **15-97** - 4 #16 / 8#20



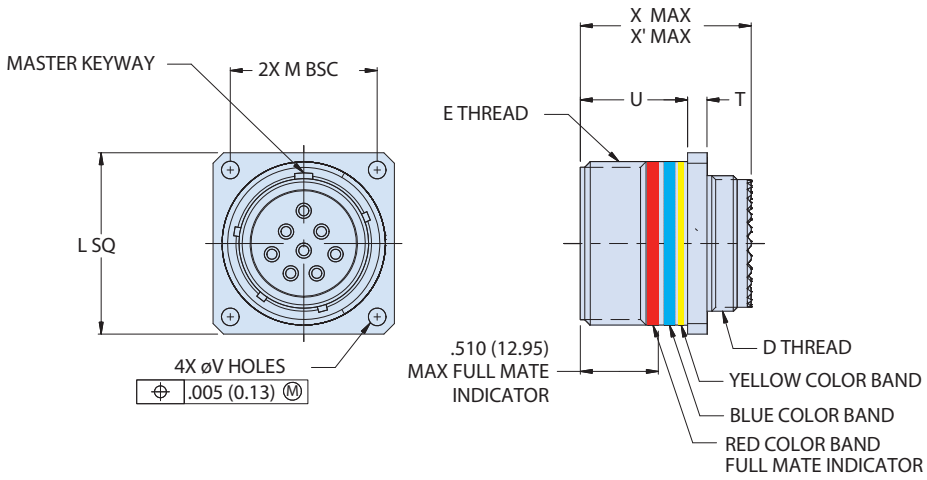
17-8 - 8 #16 termini | **19-11** - 11 #16 termini | **21-16** - 16 #16 termini



23-21 - 21 #16 termini | **25-29** - 29 #16 termini | **25-37** - 37 #16 termini

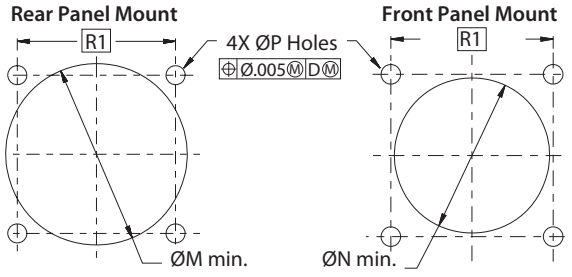
180-091 (H7) Wall mount receptacle, round holes • Multi-channel

H7 - SQUARE FLANGE WALL MOUNT RECEPTACLE WITH ROUND HOLES (STANDARD)



Shell Size Code	Shell Size	E Thread	L SQ	M BSC	T	U	D Thread	Ø V Holes	X Max	X' Max
A	9	.6250 -.1P-.3L-TS-2A	.949 (24.10) .925 (23.50)	.719 (18.26)	.144 (3.7) .083 (2.1)	.823 (20.9) .768 (19.5)	M12 x 1.0-6g 0.100R	.136 (3.5) .120 (3.0)	1.240 (31.50)	1.260 (32.00)
B	11	.7500-.1P-.3L-TS-2A	1.043 (26.5) 1.019 (25.9)	.812 (20.6)			M15 x 1.0-6g 0.100R			
C	13	.8750-.1P-.3L-TS-2A	1.138 (28.9) 1.114 (28.3)	.906 (23.0)			M18 x 1.0-6g 0.100R			
D	15	1.0000-.1P-.3L-TS-2A	1.232 (31.3) 1.208 (30.7)	.969 (24.6)			M22 x 1.0-6g 0.100R			
E	17	1.1875-.1P-.3L-TS-2A	1.323 (33.6) 1.299 (33.0)	1.062 (27.0)			M25 x 1.0-6g 0.100R			
F	19	1.2500-.1P-.3L-TS-2A	1.449 (36.8) 1.425 (36.2)	1.156 (29.4)			M28 x 1.0-6g 0.100R			
G	21	1.3750-.1P-.3L-TS-2A	1.575 (40.0) 1.551 (39.4)	1.250 (31.8)	.171 (65.2) .083 (39.8)	.791 (20.0) .736 (18.7)	M31 x 1.0-6g 0.100R			
H	23	1.5000-.1P-.3L-TS-2A	1.701 (43.2) 1.677 (42.6)	1.375 (34.9)			M34 x 1.0-6g 0.100R	.162 (4.1) .146 (3.7)		
J	25	1.6250-.1P-.3L-TS-2A	1.823 (46.3) 1.799 (45.7)	1.500 (38.1)			M37 x 1.0-6g 0.100R	.162 (4.1) .146 (3.7)		

RECOMMENDED PANEL CUTOUT DIMENSIONS



Shell Size Code	Shell Size	Wall Mount			
		Ø M Min	ØN Min	Ø P Holes	R1 BSC
A	9	.656 (16.7)	.516 (13.11)	.133 (3.4) .123 (3.1)	.719 (18.3)
B	11	.796 (20.2)	.625 (15.9)		.812 (20.6)
C	13	.922 (23.4)	750 (19.1)		.906 (23.0)
D	15	1.047 (26.6)	.906 (23.0)		.969 (24.6)
E	17	1.219 (31.0)	1.016 (25.8)		1.062 (27.0)
F	19	1.297 (32.9)	1.141 (29.0)		1.156 (29.4)
G	21	1.422 (36.1)	1.266 (32.2)		1.250 (31.8)
H	23	1.547 (39.3)	1.375 (34.9)	.159 (4.0) .149 (3.8)	1.375 (34.9)
J	25	1.672 (42.5)	1.484 (37.7)	.155 (3.9) .145 (3.7)	1.500 (38.1)

180-091 (S7) Wall mount receptacle, slotted holes • Multi-channel

SuperNine® MIL-DTL-38999 Type

Tight-tolerance MIL-DTL-38999 Series III type Wall-Mount Receptacle, slotted holes. Compatible with Size 16 snap-in, rear-release MIL-PRF-29504 pin and socket termini (Glenair Series 181-001 and 181-002). Fully shielded for hybrid electrical contact applications. Precision-manufactured for optimum optical fiber alignment and low dB data loss performance. Robust anti-decoupling and environmental sealing for use in high vibration, shock, and high altitude aerospace and military/defense applications. Shell materials include Aluminum alloy, composite thermoplastic, stainless steel, and marine bronze. Keyed polarization for mis-mate protection. Available insert arrangements support from two to thirty-seven singlemode and multimode termini.

MATERIAL AND FINISH

- Insulator: High Grade Rigid Dielectric
- Seals: Fluorosilicone
- Retention Clips: BeCu Alloy

NOTES

- Blue color band indicates rear-release retention system. Yellow color band indicates fiber optic connector. Bands located approximately as shown, sequencing optional.
- See pages B-4 to B-15 for compatible Glenair terminus part numbers.
- Recommended Insertion/ Extraction tool: P/N M81969/14-03 or equivalent

HOW TO ORDER

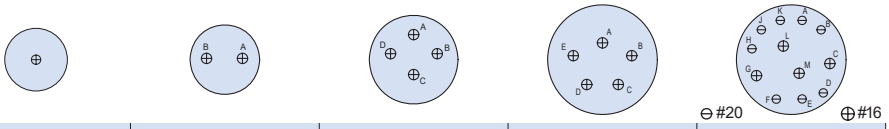
Sample Part Number	180-091	XW	S7	-17	-8	P	N
Basic Number	D38999 Series III Type						
Material/Finish	See Material and Finish table						
Connector Style	**S7** = Wall Mount Receptacle with Slotted Holes						
Shell Size	See Dimensions table						
Insert Arrangement	See Contact Arrangements images						
Insert Designation	**P** = Pin **S** = Socket						
Alternate Key Position	**A**, **B**, **C**, **D**, **E**; **N** = Normal (Per MIL-DTL-38999)						

MATERIAL AND FINISH

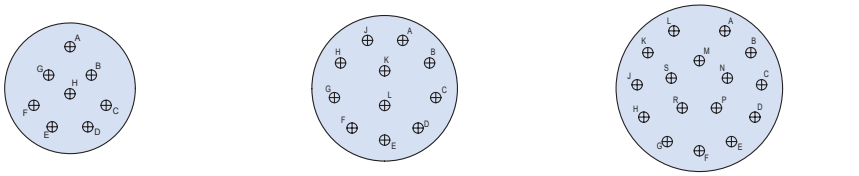
Code	Material	Finish Description
M*	Aluminum Alloy	Electroless Nickel
MA		Electroless Nickel, Matte
ME		Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab
ZNU		Zinc-Nickel, Black
ZR		Zinc-Nickel, Black (RoHS)
XM	Composite	Electroless Nickel
XMT		Nickel - PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
MS	Stainless Steel	Electroless Nickel
ZL		Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	No Plating

*Inactive for new design. Use "ME" finish.

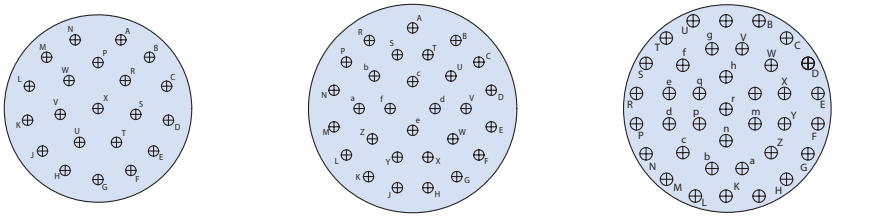
INSERT ARRANGEMENTS (mating face, pin insert shown)



9-1 - 1 #16 termini | **11-2** - 2 #16 termini | **13-4** - 4 #16 termini | **15-5** - 5 #16 termini | **15-97** - 4 #16 / 8#20



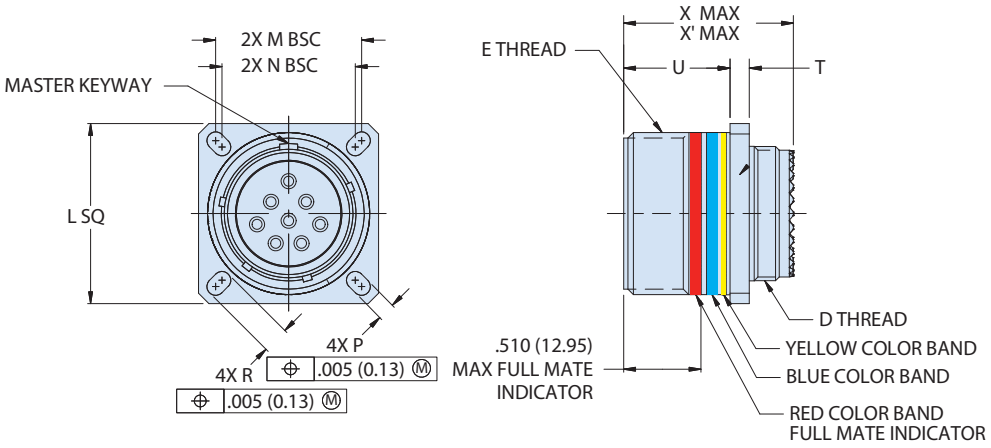
17-8 - 8 #16 termini | **19-11** - 11 #16 termini | **21-16** - 16 #16 termini



23-21 - 21 #16 termini | **25-29** - 29 #16 termini | **25-37** - 37 #16 termini

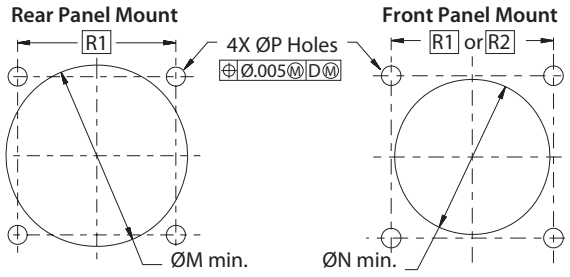
180-091 (S7) Wall mount receptacle, slotted holes • Multi-channel

S7 - WALL MOUNT RECEPTACLE WITH SQUARE FLANGE AND SLOTTED HOLES



Shell Size Code	Shell Size	E Thread	L SQ	M BSC	N BSC	P	R	T	U	D Thread	X Max	X' Max
A	9	.6250-.1P-.3L-TS-2A	.949 (24.1) .929 (23.6)	.719 (18.3)	.594 (15.1)	.136 (3.5) .120 (3.0)	.216 (5.5)	.144 (3.7) .083 (2.1)	.823 (20.9) .768 (19.5)	M12 x 1.0-6g 0.100R	1.240 (31.50)	1.260 (32.00)
B	11	.7500-.1P-.3L-TS-2A	1.043 (26.5) 1.019 (25.9)	.812 (20.6)	.719 (18.3)		.202 (5.1) .186 (4.7)			M15 x 1.0-6g 0.100R		
C	13	.8750-.1P-.3L-TS-2A	1.138 (28.9) 1.114 (28.3)	.906 (23.0)	.812 (20.6)					M18 x 1.0-6g 0.100R		
D	15	1.0000-.1P-.3L-TS-2A	1.232 (31.3) 1.208 (30.7)	.969 (24.6)	.906 (23.0)		.181 (4.6) .165 (4.2)			M22 x 1.0-6g 0.100R		
E	17	1.1875-.1P-.3L-TS-2A	1.323 (33.6) 1.299 (33.0)	1.062 (27.0)	.969 (24.6)		.202 (5.1) .186 (4.7)			M25 x 1.0-6g 0.100R		
F	19	1.2500-.1P-.3L-TS-2A	1.449 (36.8) 1.425 (36.2)	1.156 (29.4)	1.062 (27.0)					M28 x 1.0-6g 0.100R		
G	21	1.3750-.1P-.3L-TS-2A	1.575 (40.0) 1.551 (39.4)	1.250 (31.8)	1.156 (29.4)			.171 (65.2) .083 (39.8)	.791 (20.0) .736 (18.7)	M31 x 1.0-6g 0.100R		
H	23	1.5000-.1P-.3L-TS-2A	1.701 (43.2) 1.677 (42.6)	1.375 (34.9)	1.250 (31.8)	.162 (4.1) .146 (3.7)	.250 (6.4) .234 (5.9)			M34 x 1.0-6g 0.100R		
J	25	1.6250-.1P-.3L-TS-2A	1.823 (46.3) 1.799 (45.7)	1.500 (38.1)	1.375 (34.9)					M37 x 1.0-6g 0.100R		

RECOMMENDED PANEL CUTOUT DIMENSIONS



S7 wall mount receptacle with slotted holes can be front panel mounted using cut out dimensions R1 or R2. Dimension R2 is for use with S7 slotted-hole wall mount receptacle only.

Shell Size Code	Shell Size	Wall Mount				
		Ø M Min	ØN Min	Ø P Holes	R1 BSC	R2 BSC
A	9	.656 (16.7)	.516 (13.11)	.133 (3.4) .123 (3.1)	.719 (18.3)	.594 (15.1)
B	11	.796 (20.2)	.625 (15.9)		.812 (20.6)	.719 (18.3)
C	13	.922 (23.4)	750 (19.1)		.906 (23.0)	.812 (20.6)
D	15	1.047 (26.6)	.906 (23.0)		.969 (24.6)	.906 (23.0)
E	17	1.219 (31.0)	1.016 (25.8)		1.062 (27.0)	.969 (24.6)
F	19	1.297 (32.9)	1.141 (29.0)		1.156 (29.4)	1.062 (27.0)
G	21	1.422 (36.1)	1.266 (32.2)		1.250 (31.8)	1.156 (29.4)
H	23	1.547 (39.3)	1.375 (34.9)	.159 (4.0) .149 (3.8)	1.375 (34.9)	1.250 (31.8)
J	25	1.672 (42.5)	1.484 (37.7)	.155 (3.9) .145 (3.7)	1.500 (38.1)	1.375 (34.9)

180-091 (T7) (TM) Wall mount receptacle, threaded holes • Multi-channel

Tight-tolerance MIL-DTL-38999 Series III type Wall-Mount Receptacle, threaded holes. Compatible with Size 16 snap-in, rear-release MIL-PRF-29504 pin and socket termini (Glenair Series 181-001 and 181-002). Fully shielded for hybrid electrical contact applications. Precision-manufactured for optimum optical fiber alignment and low dB data loss performance. Robust anti-decoupling and environmental sealing for use in high vibration, shock, and high altitude aerospace and military/defense applications. Shell materials include Aluminum alloy, composite thermoplastic, stainless steel, and marine bronze. Keyed polarization for mis-mate protection. Available insert arrangements support from two to thirty-seven singlemode and multimode termini.

MATERIAL AND FINISH

- Insulator: High Grade Rigid Dielectric
- Seals: Fluorosilicone
- Retention Clips: BeCu Alloy

NOTES

- Blue color band indicates rear-release retention system. Yellow color band indicates fiber optic connector. Bands located approximately as shown, sequencing optional.
- See pages B-4 to B-15 for compatible Glenair terminus part numbers.
- Recommended Insertion/ Extraction tool: P/N M81969/14-03 or equivalent

HOW TO ORDER

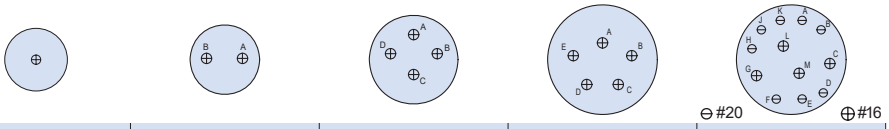
Sample Part Number	180-091	XW	T7	-17	-8	P	N
Basic Number	D38999 Series III Type						
Material/Finish	See Material and Finish table						
Connector Style	**T7** = Wall Mount Receptacle with Threaded insert holes						
Shell Size	See Dimensions table						
Insert Arrangement	See Contact Arrangements images						
Insert Designation	**P** = Pin **S** = Socket						
Alternate Key Position	**A**, **B**, **C**, **D**, **E**; **N** = Normal (Per MIL-DTL-38999)						

MATERIAL AND FINISH

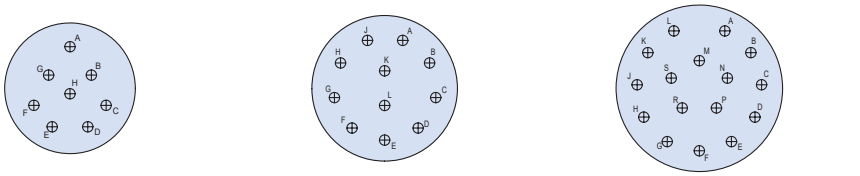
Code	Material	Finish Description
M*	Aluminum Alloy	Electroless Nickel
MA		Electroless Nickel, Matte
ME		Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab
ZNU		Zinc-Nickel, Black
ZR		Zinc-Nickel, Black (RoHS)
XM	Composite	Electroless Nickel
XMT		Nickel - PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
MS	Stainless Steel	Electroless Nickel
ZL		Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	No Plating

*Inactive for new design. Use "ME" finish.

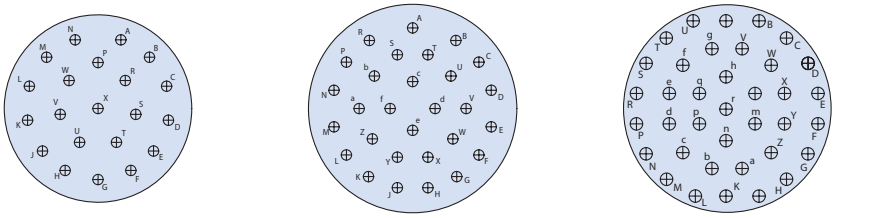
INSERT ARRANGEMENTS (mating face, pin insert shown)



9-1 - 1 #16 termini | **11-2** - 2 #16 termini | **13-4** - 4 #16 termini | **15-5** - 5 #16 termini | **15-97** - 4 #16 / 8#20



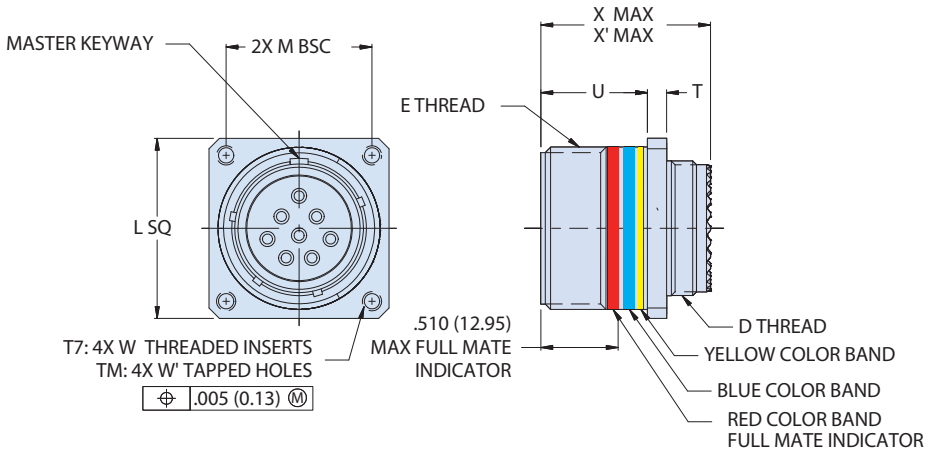
17-8 - 8 #16 termini | **19-11** - 11 #16 termini | **21-16** - 16 #16 termini



23-21 - 21 #16 termini | **25-29** - 29 #16 termini | **25-37** - 37 #16 termini

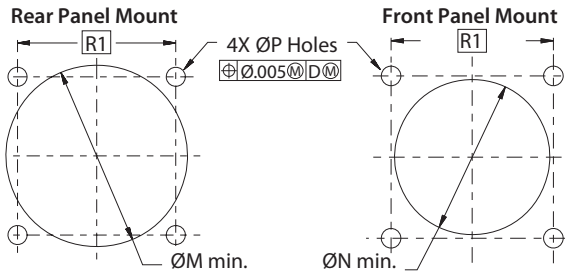
180-091 (T7) (TM) Wall mount receptacle, threaded holes • Multi-channel

T7 - WALL MOUNT RECEPTACLE SQUARE FLANGE WITH THREADED INSERT HOLES



Shell Size Code	Shell Size	A Thread	B SQ	C BSC	G	H	J Thread	L Threaded Insert Holes
A	9	.6250-.1P-.3L-TS-2A	.949 (24.1) .929 (23.6)	.719 (18.3)	.144 (3.7) .083 (2.1)	.823 (20.9) .768 (19.5)	M12 x 1.0-6g 0.100R	.112-40 UNC-2B
B	11	.7500-.1P-.3L-TS-2A	1.043 (26.5) 1.019 (25.9)	.812 (20.6)			M15 x 1.0-6g 0.100R	
C	13	.8750-.1P-.3L-TS-2A	1.138 (28.9) 1.114 (28.3)	.906 (23.0)			M18 x 1.0-6g 0.100R	
D	15	1.0000-.1P-.3L-TS-2A	1.232 (31.3) 1.208 (30.7)	.969 (24.6)			M22 x 1.0-6g 0.100R	
E	17	1.1875-.1P-.3L-TS-2A	1.323 (33.6) 1.299 (33.0)	1.062 (27.0)			M25 x 1.0-6g 0.100R	
F	19	1.2500-.1P-.3L-TS-2A	1.449 (36.8) 1.425 (36.2)	1.156 (29.4)			M28 x 1.0-6g 0.100R	
G	21	1.3750-.1P-.3L-TS-2A	1.575 (40.0) 1.551 (39.4)	1.250 (31.8)	.171 (65.2) .083 (39.8)	.791 (20.0) .736 (18.7)	M31 x 1.0-6g 0.100R	
H	23	1.5000-.1P-.3L-TS-2A	1.701 (43.2) 1.677 (42.6)	1.375 (34.9)			M34 x 1.0-6g 0.100R	.138-32 UNC-2B
J	25	1.6250-.1P-.3L-TS-2A	1.823 (46.3) 1.799 (45.7)	1.500 (38.1)			M37 x 1.0-6g 0.100R	

RECOMMENDED PANEL CUTOUT DIMENSIONS



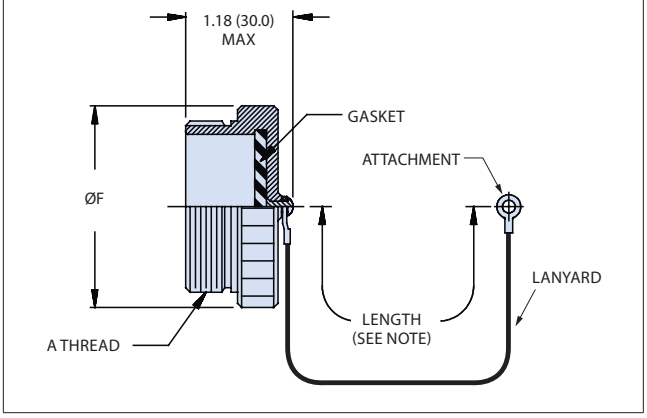
Shell Size Code	Shell Size	Wall Mount Ø M Min	Wall Mount ØN Min	Wall Mount Ø P Holes	Wall Mount R1 BSC
A	9	.656 (16.7)	.516 (13.11)	.133 (3.4) .123 (3.1)	.719 (18.3)
B	11	.796 (20.2)	.625 (15.9)		.812 (20.6)
C	13	.922 (23.4)	750 (19.1)		.906 (23.0)
D	15	1.047 (26.6)	.906 (23.0)		.969 (24.6)
E	17	1.219 (31.0)	1.016 (25.8)		1.062 (27.0)
F	19	1.297 (32.9)	1.141 (29.0)		1.156 (29.4)
G	21	1.422 (36.1)	1.266 (32.2)		1.250 (31.8)
H	23	1.547 (39.3)	1.375 (34.9)	.159 (4.0) .149 (3.8)	1.375 (34.9)
J	25	1.672 (42.5)	1.484 (37.7)	.155 (3.9) .145 (3.7)	1.500 (38.1)

660-023, -024 • 660-049, -050 Protective Covers

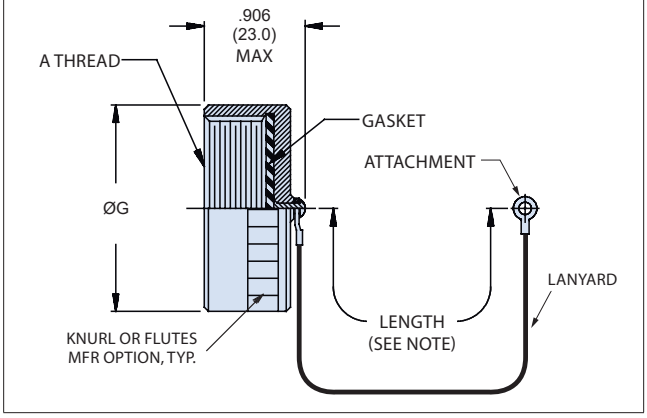
SuperNine® MIL-DTL-38999 Type

HOW TO ORDER							
Sample Part Number		**660-023**	**M**	**17**	**H**	**5**	**-01**
Basic Number	**660-023** = Metal Plug Cover **660-024** = Metal Receptacle Cover **660-049** = Composite Plug Cover **660-050** = Composite Receptacle Cover						
Material/Finish	See Material and Finish table						
Shell Size	See Dimensions table						
Lanyard	See Lanyard Codes table						
Attachment Length	In inches						
Attachment Dash No.	(Ring and Eyelet Style tables) omit for "SK" slip knot attachment						

-023 AND -049 PLUG COVER MIL-DTL-38999/32 TYPE



-024 AND -050 RECEPTACLE COVER MIL-DTL-38999/33 TYPE



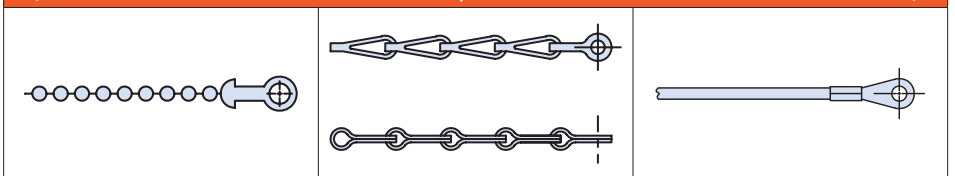
MATERIAL AND FINISH

- Gasket: Silicone
- Hardware, Rivet: Stainless Steel/Passivate

NOTES

- Length tolerance for Sash Chain (S) is ± 1 link, for all other attachments ± .25.

AVAILABLE LANYARD TYPES
(SHOWN WITH OPTIONAL EYELET ATTACHMENT, SEE LANYARD CODES TABLE FOR LANYARD STYLE)



Bead Chain (Type D)	Sash Chain (Type S)	Rope (Types F, G, H, K, R, T, U)

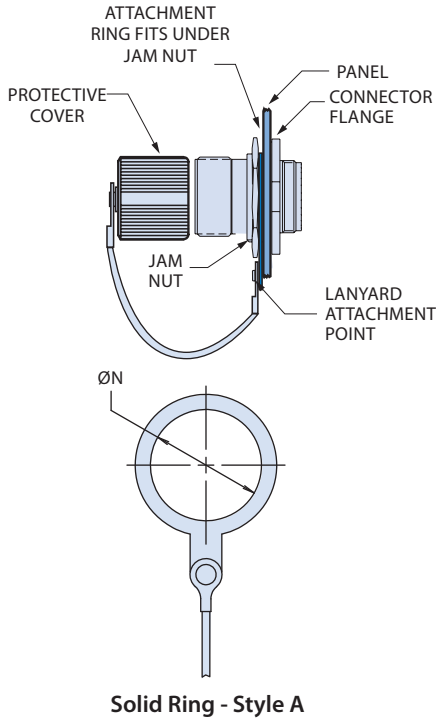
LANYARD CODES	
Code	**Description**
D	Bead Chain, CRES, Passivated
F	Wire Rope, Nylon Jacket
G	Nylon Rope, Black
H	Wire Rope, Fluoropolymer Jacket
K	Nylon Rope, Olive Drab
N	No Lanyard
R	Wire Rope, PVC Jacket
S	#8 Sash Chain, CRES, Passivated
SK	Nylon Rope (Black) w/Slip Knot
T	Wire Rope, No Jacket
U	Wire Rope, Polyurethane Jacket

DIMENSIONS			
Shell Size	**A Thread**	**Ø F Max**	**Ø G Max**
09	.6250 - 0.1P-0.3L-TS	0.906 (23.0)	.906 (23.0)
11	.7500 - 0.1P-0.3L-TS	1.024 (26.0)	1.102 (28.0)
13	.8750 - 0.1P-0.3L-TS	1.220 (31.0)	1.220 (31.0)
15	1.0000 - 0.1P-0.3L-TS	1.300 (33.0)	1.260 (32.0)
17	1.1875 - 0.1P-0.3L-TS	1.457 (37.0)	1.457 (37.0)
19	1.2500 - 0.1P-0.3L-TS	1.575 (40.0)	1.535 (39.0)
21	1.3750 - 0.1P-0.3L-TS	1.732 (44.0)	1.654 (42.0)
23	1.5000 - 0.1P-0.3L-TS	1.811 (46.0)	1.772 (45.0)
25	1.6250 - 0.1P-0.3L-TS	1.969 (50.0)	1.929 (49.0)

MATERIAL AND FINISH		
Code	**Material**	**Finish**
C	Aluminum Alloy	Anodize, Black
M*		Electroless Nickel
ME		Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab, over Electroless Nickel
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab, over Electroless Nickel
ZR		Zinc-Nickel, Black
ZN		Zinc-Nickel, Olive Drab
Z1	Stainless Steel	Passivate
ZL		Electro-Deposited Nickel
*Inactive for new design. Use "ME" finish.		

660-023, -024 • 660-049, -050 Protective Covers

ATTACHING A COVER TO A JAM NUT RECEPTACLE WITH A SOLID RING (STYLE A)



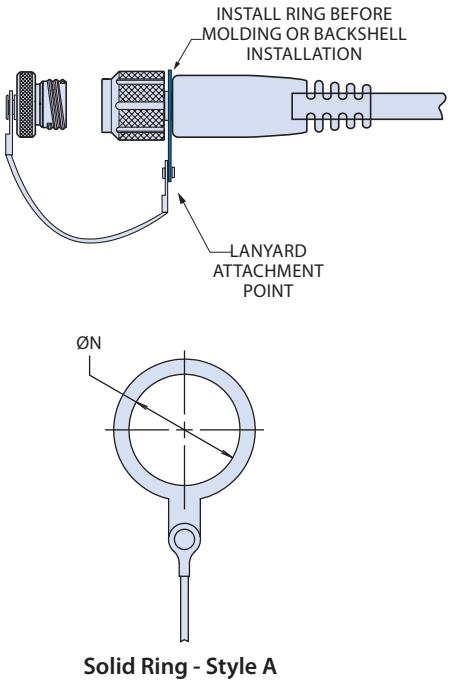
Solid Ring - Style A

SOLID RING STYLE A		
Dash No.	Ø N ± .015	180-091 Shell Size
106	.896 (22.8)	11
107	1.016 (25.9)	13
108	1.141 (29.0)	15
109	1.266 (32.3)	17
110	1.391 (35.3)	19
111	1.521 (38.6)	21
112	1.641 (41.7)	23
113	1.766 (45.0)	25

NOTES

- Solid ring style A dash numbers and shell sizes shown are for Glenair 180-091 fiber optic connectors only. Consult factory for additional sizes.

ATTACHING A COVER TO A CABLE ASSEMBLY WITH A SOLID RING (STYLE B)



Solid Ring - Style A

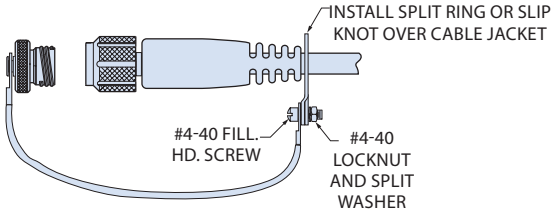
SOLID RING STYLE B		
Dash No.	Ø N ± .015	180-091 Shell Size
-104	.713 (18.11)	11
-205	.793 (20.14)	13
-206	.912 (23.16)	15
-207	1.030 (26.16)	17
-108	1.146 (29.11)	19
-109	1.271 (32.28)	21
-110	1.396 (35.46)	23
-211	1.541 (39.14)	25

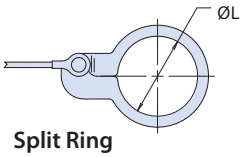
NOTES

- Solid ring style A dash numbers and shell sizes shown are for Glenair 180-091 fiber optic connectors only.
- Consult factory for additional sizes.

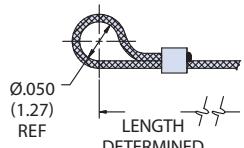
660-023, -024 • 660-049, -050 Protective Covers

ATTACHING A COVER TO A CABLE USING A SPLIT RING OR SLIP KNOT





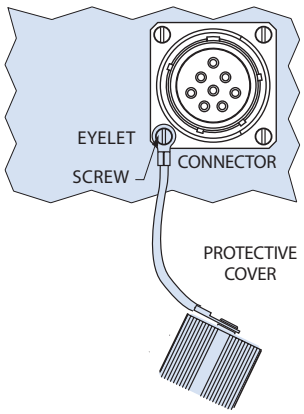
Split Ring Style C

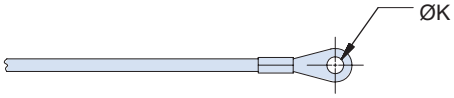


Slip Knot (Type SK)

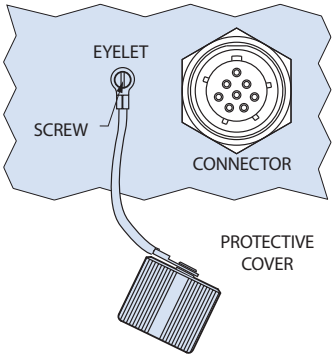
SPLIT RING STYLE C			
Dash No.	Ø L ± .015	Dash No.	Ø L ± .015
50	.425 (10.8)	74	1.625 (41.4)
52	.485 (12.3)	76	1.750 (44.5)
54	.640 (16.3)	78	1.875 (47.8)
56	.750 (19.1)	80	1.980 (50.3)
58	.890 (22.6)	82	2.060 (52.3)
60	1.015 (25.9)	84	2.235 (56.9)
62	1.095 (27.9)	86	2.310 (58.7)
64	1.130 (28.7)	88	2.475 (63.0)
66	1.250 (31.8)	90	2.655 (67.6)
68	1.350 (34.3)	92	2.810 (71.4)
70	1.375 (35.1)	94	3.045 (77.5)
72	1.485 (37.8)		

ATTACHING A RECEPTACLE COVER TO A PANEL WITH A SCREW



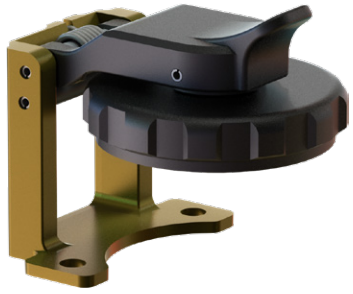


Eyelet - Style D



EYELET STYLE D		
Dash No.	Ø K ± .015	180-091 Shell Size
01	.140 (3.56)	
02	.182 (4.62)	
03	.191 (4.85)	
04	.197 (5.00)	
05	.167 (4.24)	
06	.125 (3.18)	11 thru 21
07	.218 (5.53)	
09	.156 (3.96)	23 thru 25
00	No Eyelet	

667-448 ProSeal™ Threaded-Closure Seal, Full Environmental

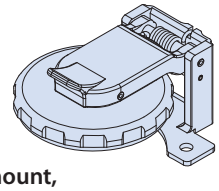


FEATURES

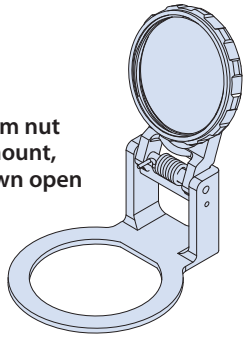
- Threaded closure
- Full environmental protection
- Self-aligning
- Positive spring-action in closed position. Locks open at approximately 105° from receptacle face.

MATERIAL / FINISH

- Cover, Lever Arm, Gimbal - Thermoplastic / Black
- Spring / Pin / Rivet - 300 Series SST / Passivate
- Sleeve - Delrin
- Gasket - Silicone



Wall mount, shown closed



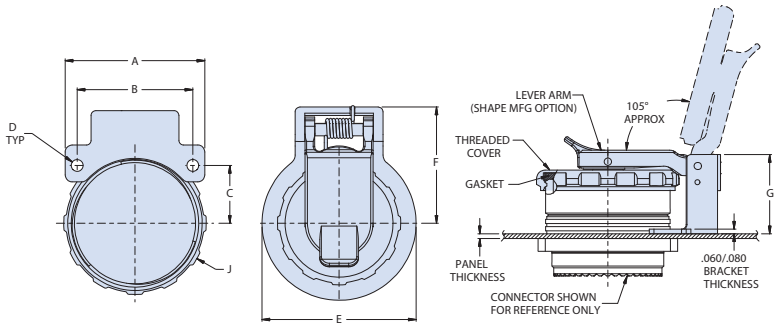
Jam nut mount, shown open

HOW TO ORDER

Sample Part Number	667-448	NF	17	T1	J

Series	ProSeal protective cover for D38999 Series III connectors
Material / Finish	See Material and Finish Table
Shell Size	See Dimensions table
Panel Thickness	See Panel Thickness table
Type of Mounting	J = Jam Nut Mount Receptacle W = Wall Mount Receptacle

DIMENSIONS



Shell Size	A Dim max		B Dim		C Dim		D ±.008 (.20)		E ±.031 (.79)		F Dim max		J Dia max	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
09	0.937	23.80	0.719	18.26	0.360	9.14	0.128	3.25	1.031	26.19	.841	21.36	.872	22.15
11	1.031	26.19	0.812	20.62	0.406	10.31	0.128	3.25	1.125	28.58	.903	22.94	.988	25.10
13	1.126	28.60	0.906	23.01	0.453	11.51	0.128	3.25	1.375	34.93	1.028	26.11	1.129	28.68
15	1.220	30.99	0.969	24.61	0.485	12.32	0.128	3.25	1.560	39.62	1.113	28.27	1.280	32.51
17	1.311	33.30	1.062	26.97	0.531	13.49	0.128	3.25	1.625	41.28	1.149	28.18	1.441	36.60
19	1.437	36.50	1.156	29.36	0.578	14.68	0.128	3.25	1.750	44.45	1.365	34.67	1.499	38.07
21	1.563	39.70	1.250	31.75	0.625	15.88	0.128	3.25	2.000	50.80	1.429	36.30	1.630	41.40
23	1.689	42.90	1.375	34.93	0.688	17.48	0.154	3.91	2.150	54.61	1.491	37.87	1.755	44.58
25	1.841	46.76	1.500	38.10	0.750	19.05	0.154	3.91	2.218	56.34	1.656	42.06	1.880	47.75

MATERIAL AND FINISH

Code	Material	Finish Description
M*	Aluminum Alloy	Electroless Nickel
MA		Electroless Nickel, Matte
ME		Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab
ZNU		Zinc-Nickel, Black
ZR		Zinc-Nickel, Black (RoHS)
XM	Composite	Electroless Nickel
XMT		Nickel - PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
MS	Stainless Steel	Electroless Nickel
ZL		Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	No Plating

*Inactive for new design. Use "ME" finish.

PANEL THICKNESS

Dash No.	Panel Thickness* ±.030 (.76)		Shell Size	G ± .06			
				Jam Nut Mount		Wall Mount	
	in	mm		in	mm	in	mm
T0	.000	.00	09-19	N/A	N/A	1.039	26.39
			21-25	N/A	N/A	1.094	27.79
T1	.062	1.57	09-19	1.041	26.44	0.977	24.82
			21-25	1.126	28.60	1.032	26.21
T2	.125	3.18	09-19	0.979	24.87	0.915	23.24
			21-25	1.064	27.03	0.970	24.64

*Jam nut mount is not available with panel thickness T0

189-016 Self-Locking Banding Backshell with Strain Relief

SuperNine® MIL-DTL-38999 Type

Band-in-a-Can type backshell ideally suited for hybrid fiber optic and electrical applications which require a cable shield termination as well as light-duty cable strain relief.

HOW TO ORDER

Sample Part Number	189	H	S	016	M	17	07	-3	B

Series	Backshell
Connector Designator	**H** = MIL-DTL-38999, Series III
Angle Code	**S** = Straight **M** = 45° **N** = 90°
Basic No.	Self-locking banding backshell with strain relief
Material/Finish	See Material and Finish table
Shell Size	See Dimensions tables
Clamp-Size Dash Number	See Dash Numbers table
Length	In 1/2 inch increments (Example: 3 = 1.5 Inches). Minimum 1.5" For code S Straight backshell only, omit for 45° or 90°
Band Strap	**B** = Supplied with band strap **Omit** = No band strap

MATERIAL AND FINISH

- Adapter, Coupling Nut: See Material and Finish table
- Clamp Components: Ryton R4XT-Black, Ultem 1000-Natural
- Anti-Rotation Device: Torlon 42031-Natural

NOTES

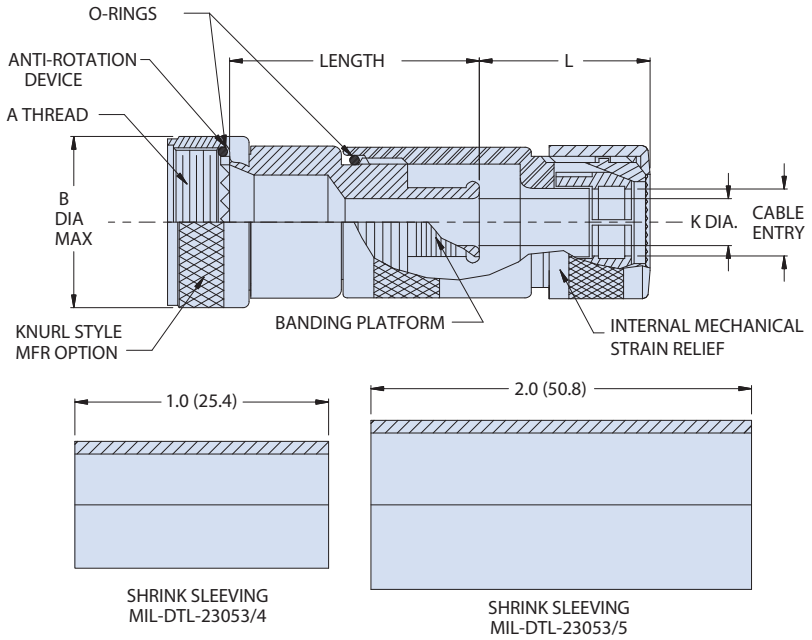
- Glenair 600 Series Backshell assembly tools are recommended for assembly and installation.
- Standard minimum length: 1.5 inches, for shorter length consult factory.
- For Shield termination see Glenair drawings 600-050 & 600-052.
- Consult factory for larger cable size.
- MIL-I-23053/4 & /5 Shrink Sleeving packaged loose in a plastic bag.
- MIL-I-23053/4 Shrink Sleeving to be heat shrunk over rear of Adapter before MIL-I-23053/5 Shrink Sleeving.
- For assembly instruction, see GAP-064

MATERIAL AND FINISH

Code	Material	Finish Description
M*	Aluminum Alloy	Electroless Nickel
MA		Electroless Nickel, Matte
ME		Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab
ZNU		Zinc-Nickel, Black
ZR		Zinc-Nickel, Black (RoHS)
XM	Composite	Electroless Nickel
XMT		Nickel - PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
MS	Stainless Steel	Electroless Nickel
ZL		Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	No Plating

*Inactive for new design. Use "ME" finish.

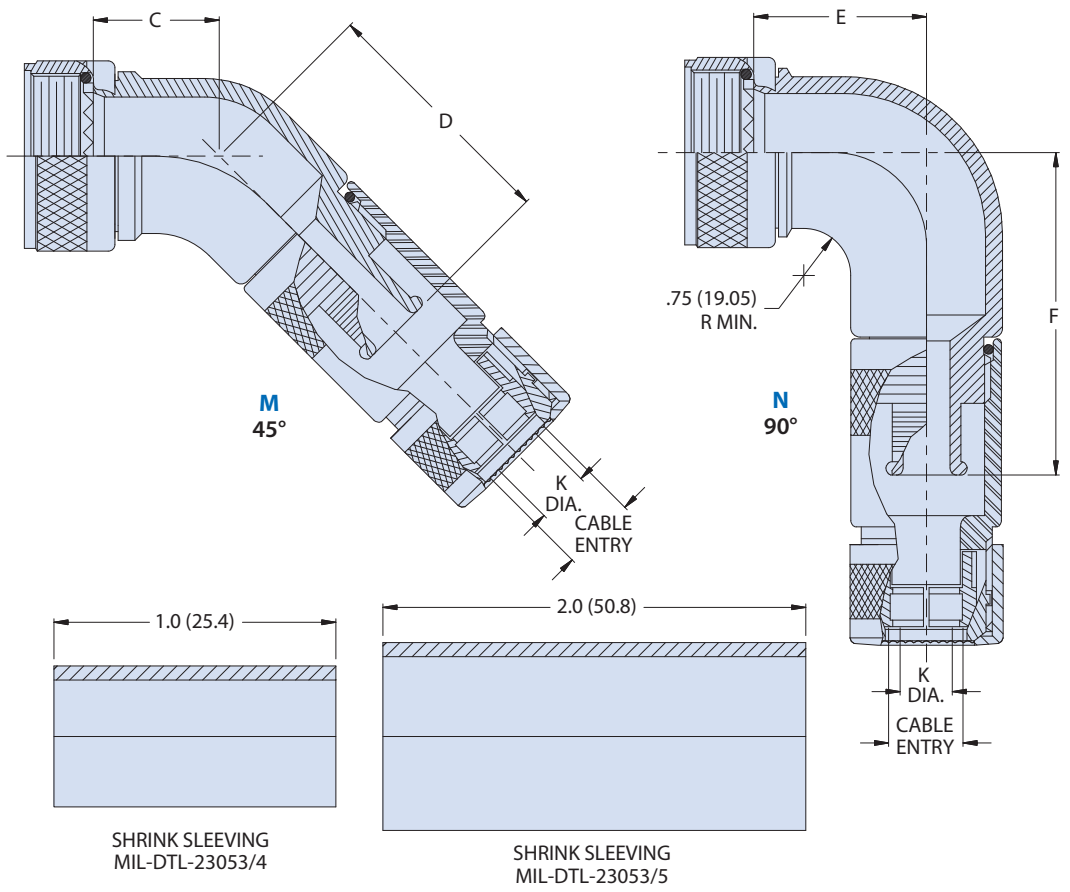
DIMENSIONS - CODE S STRAIGHT



Shell Size	A Thread ISO Metric	ØB Max	Max Dash No.	DASH NUMBERS Dash No.	Clamp Size	Ø K ±005	L Max	MIL-I-23053 Shrink Sleeve	MIL-I-23053 Shrink Sleeve	Cable Entry Dia Min	Cable Entry Dia Max
11	M15 x 1 - 6H	0.890 (22.6)	05								
13	M18 x 1 - 6H	1.020 (25.9)	05	05	12	.312 (7.92)	1.110 (28.2)	/4-203-0	/5-107-0	.233 (5.92)	.375 (9.53)
15	M22 x 1 - 6H	1.150 (29.2)	07	07	16	.438 (11.1)	1.210 (30.7)	/4-204-0	/5-108-0	.358 (9.10)	.500 (12.7)
17	M25 x 1 - 6H	1.230 (31.2)	07	09	20	.562 (14.3)	1.210 (30.7)	/4-204-0	/5-109-0	.482 (12.2)	.625 (15.9)
19	M28 x 1 - 6H	1.360 (34.5)	09	11	24	.688 (17.5)	1.210 (30.7)	/4-205-0	/5-109-0	.545 (13.8)	.750 (19.1)
21	M31 x 1 - 6H	1.480 (37.6)	11	13	28	.812 (20.6)	1.360 (34.5)	/4-205-0	/5-110-0	.670 (17.0)	.875 (22.2)
23	M34 x 1 - 6H	1.600 (40.6)	11	15	32	.938 (23.8)	1.510 (38.4)	/4-206-0	/5-110-0	.795 (20.2)	1.000 (25.4)
				17	36	1.062 (27.0)	1.510 (38.4)	/4-206-0	/5-111-0	.889 (22.6)	1.125 (28.6)
25	M37 x 1 - 6H	1.730 (43.9)	13	19	40	1.188 (30.2)	1.510 (38.4)	/4-206-0	/5-111-0	1.014 (25.8)	1.250 (31.8)

189-016 Self-Locking Banding Backshell with Strain Relief

DIMENSIONS - CODE N 90° AND CODE M 45°



Shell Size	A Thread ISO Metric	C Max	D Max	E Max	F Max	Max Dash No.	Dash No.	Clamp Size	Ø K ±005	L Max	MIL-I-23053 Shrink Sleeve	MIL-I-23053 Shrink Sleeve	Cable Entry Dia	
													Min	Max
11	M15 x 1 - 6H	.861 (21.9)	1.111 (28.2)	1.563 (39.7)	1.875 (47.6)	05	05	12	.312 (7.92)	1.110 (28.2)	/4-203-0	/5-107-0	.233 (5.92)	.375 (9.53)
13	M18 x 1 - 6H	.911 (23.1)	1.161 (29.5)	1.938 (49.2)	2.250 (57.2)	05	07	16	.438 (11.1)	1.210 (30.7)	/4-204-0	/5-108-0	.358 (9.10)	.500 (12.7)
15	M22 x 1 - 6H	.965 (24.5)	1.215 (30.9)	1.938 (49.2)	2.250 (57.2)	07	09	20	.562 (14.3)	1.210 (30.7)	/4-204-0	/5-109-0	.482 (12.2)	.625 (15.9)
17	M25 x 1 - 6H	1.014 (25.8)	1.264 (32.1)	2.063 (52.4)	2.375 (60.3)	07	11	24	.688 (17.5)	1.210 (30.7)	/4-205-0	/5-109-0	.545 (13.8)	.750 (19.1)
19	M28 x 1 - 6H	1.064 (27.0)	1.314 (33.4)	2.063 (52.4)	2.375 (60.3)	09	13	28	.812 (20.6)	1.360 (34.5)	/4-205-0	/5-110-0	.670 (17.0)	.875 (22.2)
21	M31 x 1 - 6H	1.118 (28.4)	1.368 (34.7)	2.563 (65.1)	2.875 (73.0)	11	15	32	.938 (23.8)	1.510 (38.4)	/4-206-0	/5-110-0	.795 (20.2)	1.000 (25.4)
23	M34 x 1 - 6H	1.172 (29.8)	1.422 (36.1)	2.313 (58.8)	2.688 (68.3)	11	17	36	1.062 (27.0)	1.510 (38.4)	/4-206-0	/5-111-0	.889 (22.6)	1.125 (28.6)
25	M37 x 1 - 6H	1.221 (31.0)	1.471 (37.4)	2.250 (57.2)	2.563 (65.1)	13	19	40	1.188 (30.2)	1.510 (38.4)	/4-206-0	/5-111-0	1.014 (25.8)	1.250 (31.8)

189-037 Self-Locking Banding Backshell with Strain Relief and Bend Restrictor

SuperNine® MIL-DTL-38999 Type

Band-in-a-Can type backshell ideally suited for hybrid fiber optic and electrical applications which require a cable shield termination as well as a bend-restricting strain relief. Band porch may also be used for termination of F/O cable Kevlar strength member.

MATERIAL AND FINISH

- Adapter, Coupling Nut: See Material and Finish table
- Strain Relief Components: Nylon 6/6 (Flame-resistant/zero Halogen)
- Anti-Rotation Device: Torlon 42031-Natural
- O-Rings: Fluorosilicone

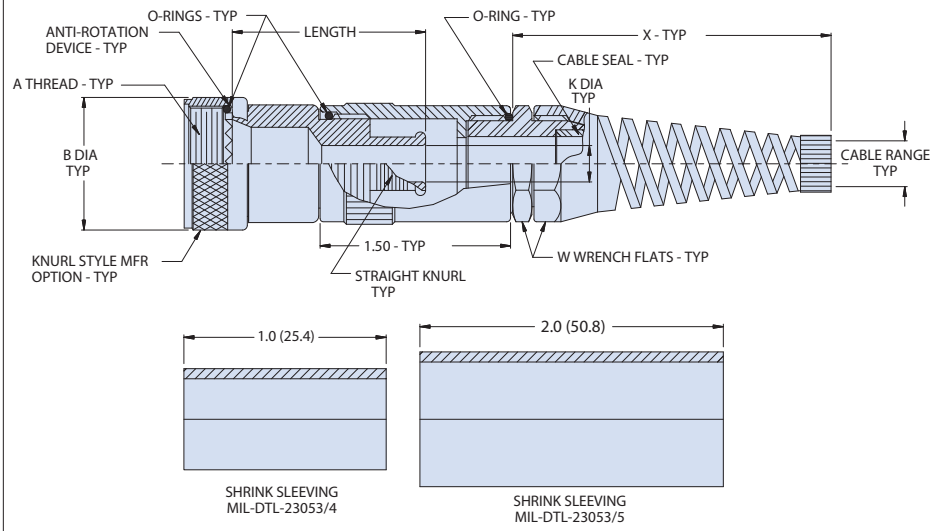
NOTES

- Glenair 600 Series Backshell assembly tools are recommended for assembly and installation.
- Band may be ordered separately. See Glenair drawing 600-052.
- Standard minimum length: 1.5 inches, for shorter length consult factory.
- MIL-I-23053/4 & /5 Shrink Sleeving packaged loose in a plastic bag.
- MIL-I-23053/4 Shrink Sleeving to be heat shrunk over rear of Adapter before MIL-I-23053/5 Shrink Sleeving.
- For assembly instruction see GAP-065

MATERIAL AND FINISH		
Code	Material	Finish Description
M*	Aluminum Alloy	Electroless Nickel
MA		Electroless Nickel, Matte
ME		Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab
ZNU		Zinc-Nickel, Black
ZR		Zinc-Nickel, Black (RoHS)
MS	Stainless Steel	Electroless Nickel
ZL		Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	No Plating
*Inactive for new design. Use "ME" finish.		

HOW TO ORDER									
Sample Part Number		189	H	S	037	M	17	07	-3
Basic Number	Backshell								
Connector Designator	H = MIL-DTL-38999, Series III								
Angle	S = Straight M = 45° N = 90°								
Basic Number	Self locking, banding backshell with flexible bend restrictor								
Material/Finish	See Material and Finish table								
Shell Size	See Dimensions table								
Dash Number	See Dash No. for Cable Accommodation and Shrink Sleeves tables								
Length for code S Straight Backshell	In 1/2 inch increments (Example: 3 = 1.5 Inches). Minimum 1.5" For code S Straight backshell only, omit for 45° or 90°								

DIMENSIONS - CODE S STRAIGHT

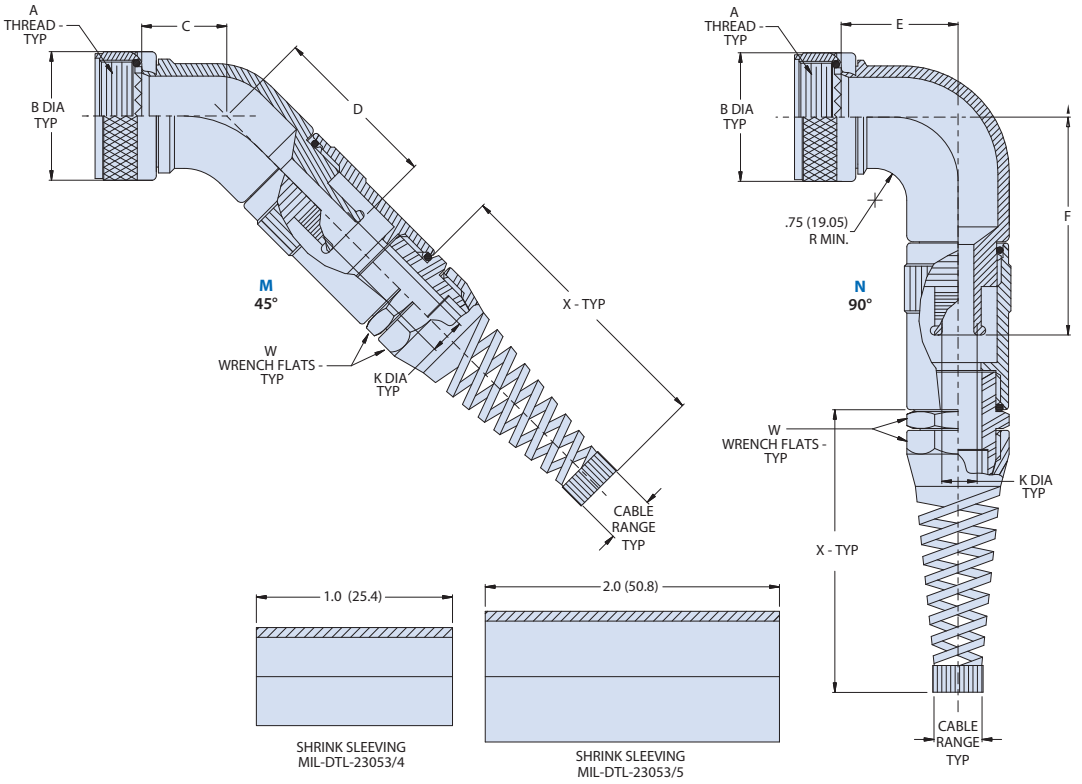


Shell Size	A Thread ISO Metric	B Max
11	M15 X 1 - 6H	1.06 (26.9)
13	M18 X 1 - 6H	1.17 (29.7)
15	M22 X 1 - 6H	1.29 (32.8)
17	M25 X 1 - 6H	1.42 (36.1)
19	M28 X 1 - 6H	1.54 (39.1)
21	M31X 1 - 6H	1.67 (42.4)
23	M34 X 1 - 6H	2.01 (51.1)
25	M37 X 1 - 6H	2.12 (53.8)

DASH NO. FOR CABLE ACCOMMODATION AND SHRINK SLEEVES						
Dash No.	Cable Dia Range	Ø K ±005	W Hex	X	MIL-I-23053 Shrink Sleeve	MIL-I-23053 Shrink Sleeve
04	.125/.200	.250 (6.35)	.590 (15.0)	1.97 (50.0)	/4-203-0	/5-106-0
05	.200/.285	.312 (8.0)	.750 (19.1)	2.32 (58.9)	/4-203-0	/5-107-0
07	.285/.390	.438 (11.1)	.870 (22.1)	2.80 (71.1)	/4-204-0	/5-108-0
09	.390/.550	.562 (14.3)	1.06 (26.9)	3.66 (93.0)	/4-204-0	/5-109-0
11	.550/.670	.688 (17.5)	1.30 (33.0)	4.37 (111.0)	/4-205-0	/5-109-0

189-037 Self-Locking Banding Backshell with Strain Relief and Bend Restrictor

DIMENSIONS - CODE N 90° AND CODE M 45°



Shell Size	A Thread ISO Metric	B Max		C Max (45° config.)		D Max (45° config.)		E Max (90° config.)		F Max (90° config.)	
11	M15 X 1 - 6H	1.06	(26.9)	.861	(21.9)	1.155	(29.3)	1.563	(39.7)	1.895	(48.1)
13	M18 X 1 - 6H	1.17	(29.7)	.911	(23.1)	1.161	(29.5)	1.938	(49.2)	2.250	(57.2)
15	M22 X 1 - 6H	1.29	(32.8)	.965	(24.5)	1.215	(30.9)	1.965	(49.9)	2.305	(58.5)
17	M25 X 1 - 6H	1.42	(36.1)	1.014	(25.8)	1.264	(32.1)	2.063	(52.4)	2.375	(60.3)
19	M28 X 1 - 6H	1.54	(39.1)	1.064	(27.0)	1.345	(34.2)	2.063	(52.4)	2.375	(60.3)
21	M31X 1 - 6H	1.67	(42.4)	1.118	(28.4)	1.395	(35.4)	2.563	(65.1)	2.875	(73.0)
23	M34 X 1 - 6H	2.01	(51.1)	1.172	(29.8)	1.422	(36.1)	2.313	(58.8)	2.688	(68.3)
25	M37 X 1 - 6H	2.12	(53.8)	1.221	(31.0)	1.525	(38.7)	2.250	(57.2)	2.563	(65.1)

DASH NO. FOR CABLE ACCOMMODATION AND SHRINK SLEEVES

Dash No.	Cable Dia Range	Ø K ±005	W Hex	X	MIL-I-23053 Shrink Sleeve	MIL-I-23053 Shrink Sleeve
04	.125/.200	.250 (6.35)	.590 (14.99)	1.97 (50.04)	/4-203-0	/5-106-0
05	.200/.285	.312 (8.0)	.750 (19.1)	2.32 (58.9)	/4-203-0	/5-107-0
07	.285/.390	.438 (11.1)	.870 (22.1)	2.80 (71.1)	/4-204-0	/5-108-0
09	.390/.550	.562 (14.3)	1.06 (26.9)	3.66 (93.0)	/4-204-0	/5-109-0
11	.550/.670	.688 (17.5)	1.30 (33.0)	4.37 (111.0)	/4-205-0	/5-109-0

377-014 Composite Thermoplastic Backshell, FiberCon

SuperNine® MIL-DTL-38999 Type

Series 377-014 supports both PEEK as well as Glenair Series 74 Teflon type convoluted tubing with either band attachment or lamp-thread (nut) attachment. All styles equipped with fiber alignment grommet matched to shell size.

MATERIAL AND FINISH

- Adapters, elbows, ferrules, coupling nut, nut: high-grade engineering thermoplastic
- Grommet, O-ring: fluorosilicone
- Anti-decoupling device: corrosion resistant material/N.A.

NOTES:

- Glenair 600 Series backshell assembly tools are recommended for assembly and installation.
- Standard Min. Order Length 1.5 inch, consult factory for shorter lengths.

Series 377-014 FiberCon environmental composite backshell with swept 45° and 90° profiles are ideal for damage-free fiber media routing. Backshells offer a full range of connector-to-conduit adapters. Anti-decoupling device for improved vibration resistance, and detents to allow for axial positioning (clocking) of backshell adapter. Special wire grommet ensures axial alignment of fiber media. Optional purple color readily identifies fiber runs (purple conduit also available).

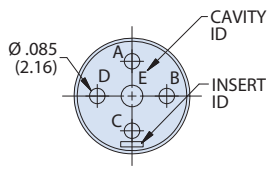
HOW TO ORDER

Sample Part Number	377	H	S	014	XM	11	06	4	G
Basic Number	D38999 Series III Type								
Connector Designator	MIL-DTL-38999, Series III								
Angular Function	**S** = Straight; **W** = 90° Solid Elbow; **T** = 45° Solid Elbow								
Basic No.	**-014** = FiberCon backshell composite tubing adapter								
Material/Finish	See Material and Finish table								
Shell Size	See Dimensions table								
Optional Entry Size	See Entry Size table; Omit for Std. Dimensions table								
Length	In 1/2 inch increments (Example: 3 = 1.5 Inches). Minimum 1.5" For code S Straight backshell only, omit for 45° or 90°								
Adapter	**Code G** - Gland Nut **Code T** - Band Termination Convoluted Tubing Adapter, Series 74 **Code TB** - Band Termination, Sr. 74 Convoluted Tubing Adapter, with Band **Code K** - Nut Termination Convoluted Tubing Adapter, PEEK **Code TN** - Nut Termination Convoluted Tubing Adapter, Series 74 **Omit** - Standard Shrink Boot Adapter								

MATERIAL AND FINISH

Code	Material	Finish Description
-	Composite	Dash (-) For No Plating, Amber Color
XB		No Plating - Black Color
XM		Electroless Nickel
XW		Cadmium Olive Drab Over Electroless Nickel
XMT		Nickel-PTFE, Grey
XV		No plating - Purple

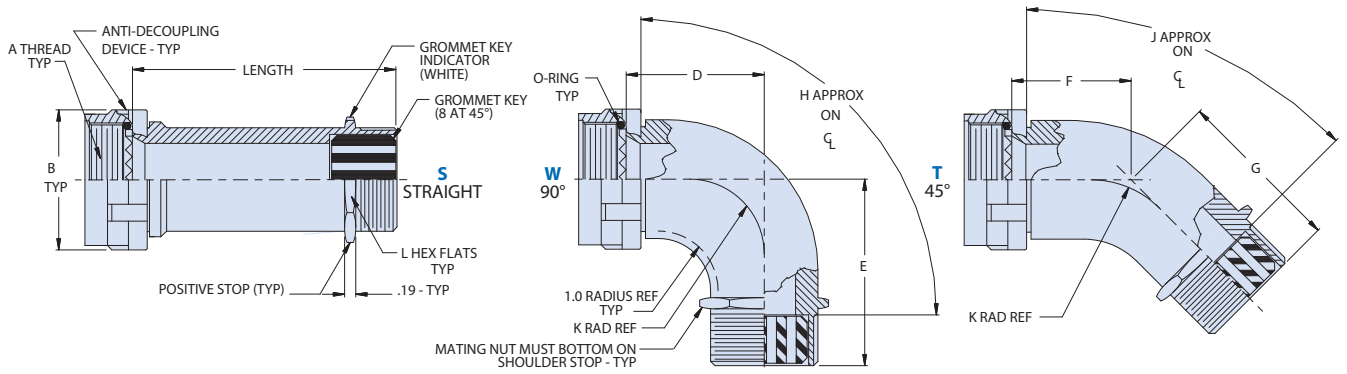
HOLE PATTERN



HOLE PATTERN

377-014 Composite Thermoplastic Backshell, FiberCon

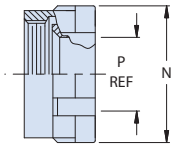
DIMENSIONS



Shell Size	A Thread	ØB Max	Std. Conduit Size Ref.	D Max	E Max	F Max	G Max	H Approx	J Approx	K Ref	L Hex	Insert Arrangement	No. Of Holes
11	M15 X 1 - 6H	1.00 (25.40)	3/8	1.78 (45.21)	1.93 (49.02)	1.33 (33.78)	1.56 (39.62)	2.23 (56.64)	2.09 (53.09)	1.20 (30.48)	.938 (23.83)	11-2	2
13	M18 X 1 - 6H	1.12 (28.45)	7/16	1.84 (46.74)	1.98 (50.29)	1.39 (35.31)	1.62 (41.15)	2.28 (57.91)	2.21 (56.13)	1.26 (32.00)	.938 (23.83)	13-4	4
15	M22 X 1 - 6H	1.25 (31.75)	1/2	1.90 (48.26)	2.08 (52.83)	1.45 (36.83)	1.68 (42.67)	2.45 (62.23)	2.33 (59.18)	1.32 (33.53)	.938 (23.83)	15-5	5
17	M25 X 1 - 6H	1.38 (35.05)	5/8	1.97 (50.04)	2.14 (54.36)	1.51 (38.35)	1.74 (44.20)	2.47 (62.74)	2.44 (61.98)	1.38 (35.05)	1.250 (31.75)	17-8	8
19	M28 X 1 - 6H	1.50 (38.10)	3/4	2.11 (53.59)	2.18 (55.37)	1.54 (39.12)	1.77 (44.96)	2.54 (64.52)	2.50 (63.50)	1.43 (36.32)	1.250 (31.75)	19-11	11
21	M31 X 1 - 6H	1.62 (41.15)	7/8	2.07 (52.58)	2.25 (57.15)	1.61 (40.89)	1.84 (46.74)	2.64 (67.06)	2.64 (67.06)	1.49 (37.85)	1.500 (38.10)	21-16	16
23	M34 X 1 - 6H	1.75 (44.45)	1	2.14 (54.36)	2.31 (58.67)	1.67 (42.42)	1.89 (48.01)	2.76 (70.10)	2.75 (69.85)	1.55 (39.37)	1.500 (38.10)	23-21	21
25-37	M37 X 1 - 6H	1.88 (47.75)	1 1/4	2.19 (55.63)	2.19 (55.63)	1.73 (43.94)	1.96 (49.78)	2.84 (72.14)	2.87 (72.90)	1.62 (41.15)	1.812 (46.02)	25-37	37

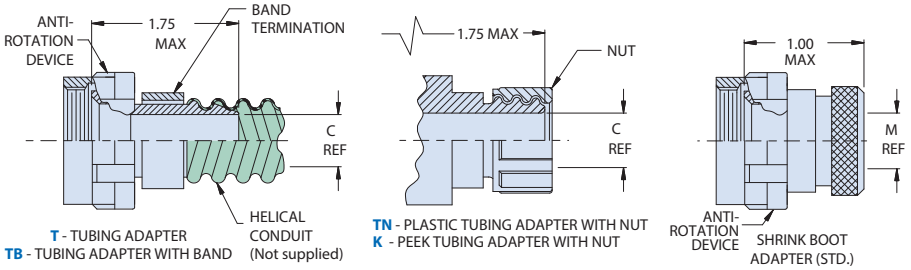
ADAPTER TYPES

GLAND NUT DIMENSIONS



Shell Size	P Ref	N Max
11	.53 (13.46)	1.38 (35.05)
13		
15		
17	.77 (19.56)	1.56 (39.62)
19		
21	1.00 (25.40)	1.81 (45.97)
23		
25-37	1.27 (32.26)	2.16 (54.86)

OPTIONAL ENTRY SIZE CODES AND DIMENSIONS - TYPES T, TB, TN, K, AND STANDARD BOOT ADAPTER



Entry Size	ØC Ref - Code T & TN	ØC Ref Code K	Optional Conduit Size Ref.
03	.188	.188	9/32
04	.236	-	5/32
05	.250	.265	3/8
06	.338	.330	7/16
07	.398	.390	1/2
08	.523	.515	5/8
10	.648	.640	3/4
11	.648	.640	3/4
13	.778	.765	7/8
15	.875	.089	1
17	1.078	1.125	1 1/4

377-040 Composite Backshell with Optional Strain Relief Adapter, FiberCon

SuperNine® MIL-DTL-38999 Type

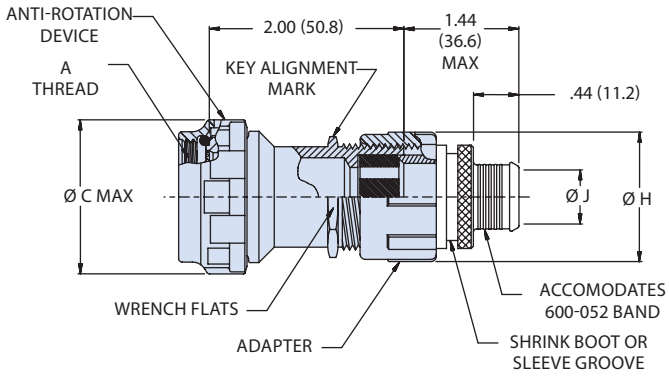
Shown with Gland Nut.
Series 377-040 supports both light-duty strain relief as well as optional cable shield termination banding.

Series 377-040 FiberCon environmental composite backshell with straight or swept 90° profiles are designed for damage-free fiber media routing. Series is supplied with a strain relief nut and fiber axial alignment grommet. Optional shrink boot and banding adapter available for hybrid electrical/FO applications that require support for cable shield termination. Anti-decoupling device for improved vibration resistance, and detents to allow for axial positioning (clocking) of 90° backshell adapter.

HOW TO ORDER

Sample Part Number	377	H	S	040	XO	19	A
Basic Number	D38999 Series III Type						
Connector Designator	**H** = MIL-DTL-38999 Series III						
Angular Function	**S** = Straight **W** = 90° Elbow						
Basic Number	**040** = FiberCon environmental composite backshell						
Material/Finish	See Material and Finish table						
Shell Size	See Dimensions table						
Strain Relief Style	**A** = Banding Adapter **N** = Nut						

DIMENSIONS



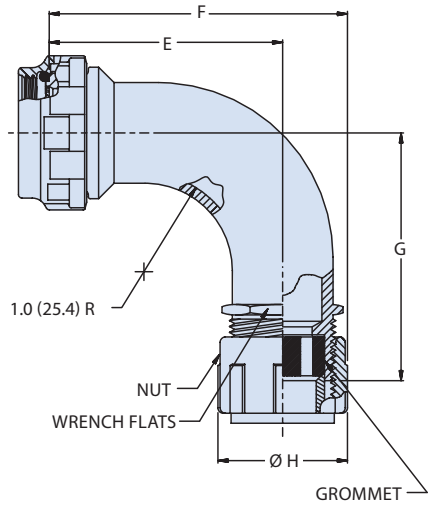
Connector Designator H				Connector Designator U				E ±.06 (1.5)	F ±.09 (2.3)	G ±.06 (1.5)	Ø H Max	Ø J Ref
Shell Size	A Thread	Ø C	K (# of Holes) *	Shell Size	A Thread	Ø C	K (# Of Holes) *					
11	M15 X 1 - 6H	.98 (24.9)	2	-	-	-	-	1.70 (43.2)	2.39 (60.7)	1.90 (48.3)	1.41 (35.8)	.25 (6.4)
13	M18 X 1 - 6H	1.16 (29.4)	4	11	5/8-28 UN	1.16 (29.4)	2	1.78 (45.2)	2.47 (62.7)	1.96 (49.8)	1.41 (35.8)	.31 (7.9)
15	M22 X 1 - 6H	1.28 (32.5)	5	13	3/4-28 UNS	1.28 (32.5)	4	1.82 (46.2)	2.51 (63.8)	2.02 (51.3)	1.41 (35.8)	.38 (9.7)
17	M25 X 1 - 6H	1.41 (35.7)	8	15	7/8-28 UN	1.41 (35.7)	5	1.89 (48.0)	2.70 (68.6)	2.09 (53.1)	1.64 (41.7)	.50 (12.7)
19	M28 X 1 - 6H	1.52 (38.5)	11	17	1-28 UN	1.52 (38.5)	8	1.93 (49.0)	2.74 (69.6)	2.13 (54.1)	1.64 (41.7)	.63 (16.0)
21	M31 X 1 - 6H	1.64 (41.7)	16	19	1-1/8-28 UN	1.64 (41.7)	11	2.00 (50.8)	2.94 (74.7)	2.19 (55.6)	1.89 (48.0)	.75 (19.1)
23	M34 X 1 - 6H	1.77 (44.9)	21	21	1-1/4-28 UN	1.77 (44.9)	16	2.08 (52.8)	3.02 (76.7)	2.25 (57.2)	1.89 (48.0)	.81 (20.6)
25	M37 X 1 - 6H	1.89 (48.0)	29	23	1-3/8-28 UN	1.89 (48.0)	21	2.14 (54.4)	3.20 (81.3)	2.32 (58.9)	2.16 (54.9)	.81 (20.6)
-	-	-	-	25	1-1/2-28 UN	2.02 (51.2)	29	2.22 (56.4)	3.28 (83.3)	2.39 (60.7)	2.16 (54.9)	.88 (22.4)

*Use Glenair 687-142 seal plug in vacant holes

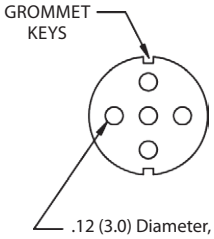
377-040 Composite Backshell with Optional Strain Relief Adapter, FiberCon

MATERIAL AND FINISH		
Code	Material	Finish Description
XB	Composite	No Plating - Black Color
XO		No Plating - Amber Color
XM		Electroless Nickel
XW		Cadmium Olive Drab over Electroless Nickel

CODE W - 90°



GROMMET



.12 (3.0) Diameter, Accomodates 16 Gage Contacts With .07 (1.8) to .11 (2.8) Diameter Fiber Cable (For Number of Holes See K in Dimensions Table)

MATERIAL AND FINISH

- Adapters, Elbow: High-grade engineering thermoplastic/see Material and Finish table
- Coupling Nut & Gland Nut: Thermoplastic/unplated
- Grommet, O-Ring: Silicone
- Anti-Rotation Device: Corrosion resistant material

NOTES

- Glenair 600 Series Backshell assembly tools are recommended for assembly and installation.
- Bandstrap may be ordered separately. See Glenair 600-052.

377-041 Composite Backshell with Helical Conduit Adapter, FiberCon

SuperNine® MIL-DTL-38999 Type

Series 377-041 FiberCon environmental composite backshell with straight or swept 90° profiles are designed for damage-free fiber media routing. Series is supplied with a strain relief nut and fiber axial alignment grommet. Optional shrink boot and banding adapter available for hybrid electrical/FO applications that require support for cable shield termination. Anti-decoupling device for improved vibration resistance, and detents to allow for axial positioning (clocking) of 90° backshell adapter.

MATERIAL AND FINISH

- Adapters, Elbow, Ferrules: Hi-grade engineering thermoplastic/see Material and Finish table
- Coupling Nut & Gland Nut: Hi-grade engineering thermoplastic/unplated
- Grommet, O-Ring: Fluorosilicone
- Anti-Rotation Device: Corrosion resistant material

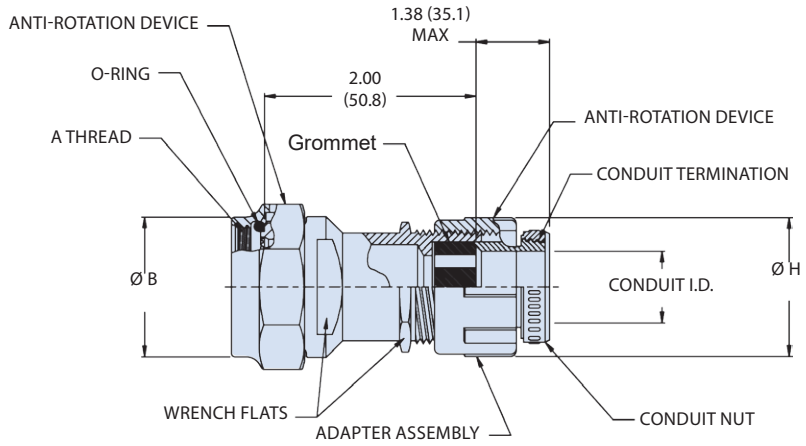
NOTES

- Glenair 600 Series Backshell assembly tools are recommended for assembly and installation.
- Conduit I.D. accommodates Glenair Series 74, Type A Convoluted Tubing, in accordance with MIL-T-81914.
- For Sealing Plugs, see Glenair drawing 687-142.

HOW TO ORDER

Sample Part Number	377-041	H	S	XM	19	K
Basic Number	D38999 Series III Type					
Connector Designator	**H** = MIL-DTL-38999, Series III					
Angular Function	**S** = Straight **W** = 90° Elbow					
Material/Finish	See Material and Finish table					
Shell Size	See Dimensions table					
Add Letter K for Transition to Accommodate Peek Conduit Material.	(Omit for Standard Fluoropolymer Conduit Material)					

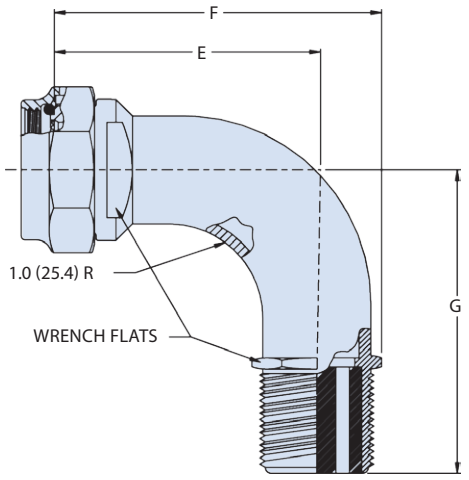
DIMENSIONS



Shell Size	A Thread	Ø B Max	E ±.06 (1.5)	F ±.09 (2.3)	G ±.06 (1.5)	Ø H Max	Ø J Ref	K (# Of Holes)
11	M15 X 1 - 6H	.770 (19.6)	1.70 (43.2)	2.39 (60.7)	1.90 (48.3)	1.41 (35.8)	.25 (6.4)	2
13	M18 X 1 - 6H	.890 (22.6)	1.78 (45.2)	2.47 (62.7)	1.96 (49.8)	1.41 (35.8)	.31 (7.9)	4
15	M22 X 1 - 6H	1.03 (26.2)	1.82 (46.2)	2.51 (63.8)	2.02 (51.3)	1.41 (35.8)	.31 (7.9)	5
17	M25 X 1 - 6H	1.15 (29.2)	1.89 (48.0)	2.70 (68.6)	2.09 (53.1)	1.64 (41.7)	.44 (11.2)	8
19	M28 X 1 - 6H	1.28 (32.5)	1.93 (49.0)	2.74 (69.6)	2.13 (54.1)	1.64 (41.7)	.50 (12.7)	11
21	M31 X 1 - 6H	1.41 (35.8)	2.00 (50.8)	2.94 (74.7)	2.19 (55.6)	1.89 (48.0)	.50 (12.7)	16
23	M34 X 1 - 6H	1.53 (38.9)	2.08 (52.8)	3.02 (76.7)	2.25 (57.2)	1.89 (48.0)	.63 (16.0)	21
25	M37 X 1 - 6H	1.66 (42.2)	2.14 (54.4)	3.20 (81.3)	2.32 (58.9)	2.16 (54.9)	.75 (19.1)	29

377-041 Composite Backshell with Helical Conduit Adapter, FiberCon

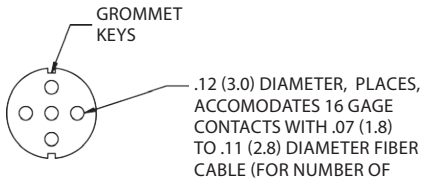
CODE W - 90°



MATERIAL AND FINISH			
Code	Material	Finish Description	Components
XB	Composite	No Plating - Black Color	Elbow, Adapter, Coupling Nut and RFI Nut
XM		1000 Hr. Corrosion-Resistant Electroless Nickel	Adapter and RFI Nut
XW		1000 Hr. Corrosion-Resistant Cadmium Olive Drab over Electroless Nickel	Adapter and RFI Nut
XV		No Plating - Purple or Black Color (mfg. option)	Straight Body and Rear Adapter
		No Plating - Purple Color	Elbow Body, Coupling Nut, and Rear Nut

Refer to Appendix for material/finish details

GROMMET



189-038 Composite Backshell with Helical Conduit Adapter

SuperNine® MIL-DTL-38999 Type

MATERIAL AND FINISH

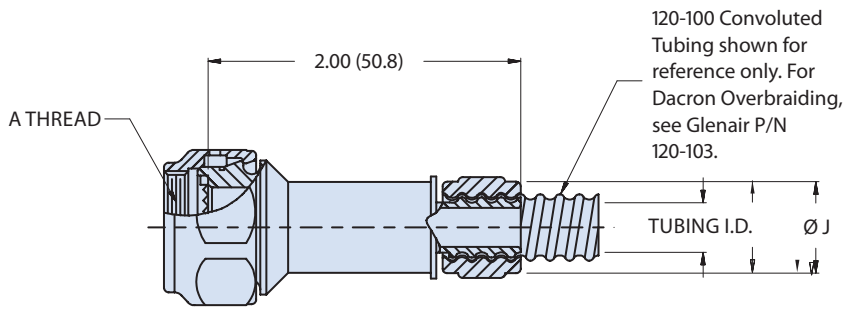
- Adapter, Elbow: High Grade Engineering Thermoplastic/ Material and Finish table
- Coupling and Compression Nuts: High Grade Engineering Thermoplastic
- O-Ring: Fluorosilicone or Silicone
- Anti-rotation Device: Corrosion resistant material

Series 189-038 composite backshell with straight, 45°, or 90° profiles are designed for non-environmental convoluted tubing attachment without strain relief or fiber media axial alignment grommet. Supports standard Series 74 Teflon-type convoluted tubing and PEEK conduit tubing attachment with integral lamp thread type nut. Anti-decoupling device for improved vibration resistance. Optional black Dacron overbraiding available.

HOW TO ORDER

Sample Part Number	189-038	H	S	XW	17	16	K	-D
Basic Number	D38999 Series III and IV Type							
Connector Designator	**H** = MIL-DTL-38999 Series III & IV							
Angular Function	**S** = Straight **T** = 45° Elbow **W** = 90° Elbow							
Material/Finish	See Material and Finish table							
Shell Size	See S - Straight table							
Tubing Size Dash. No.	See Tubing Size table							
Tubing Option	**K** = PEEK Omit for PFA, ETFE, or FEP							
Conduit Materials Package	**D** = With Black Dacron Overbraid (Omit for None)							

S - STRAIGHT



Shell Size	A Thread ISO Metric	E ±.060 (1.5)	F ±.090 (2.3)	G ±.060 (1.5)	H +090 (2.3)	Max Entry Max Tubing Size
11	M15 x 1 - 6H	.750 (19.1)	.950 (24.1)	.750 (19.1)	1.160 (29.5)	12
13	M18 x 1 - 6H	.750 (19.1)	1.020 (25.9)	.810 (20.6)	1.220 (31.0)	16
15	M22 x 1 - 6H	.760 (19.3)	1.050 (26.7)	.880 (22.4)	1.290 (32.8)	20
17	M25 x 1 - 6H	.780 (19.8)	1.070 (27.2)	.940 (23.9)	1.350 (34.3)	24
19	M28 x 1 - 6H	.790 (20.1)	1.080 (27.4)	.970 (24.6)	1.380 (35.1)	28
21	M31 x 1 - 6H	.820 (20.8)	1.110 (28.2)	1.060 (26.9)	1.470 (37.3)	32
23	M34 x 1 - 6H	.860 (21.8)	1.150 (29.2)	1.130 (28.7)	1.540 (39.1)	32
25	M37 x 1 - 6H	.890 (22.6)	1.180 (30.0)	1.190 (30.2)	1.730 (43.9)	40

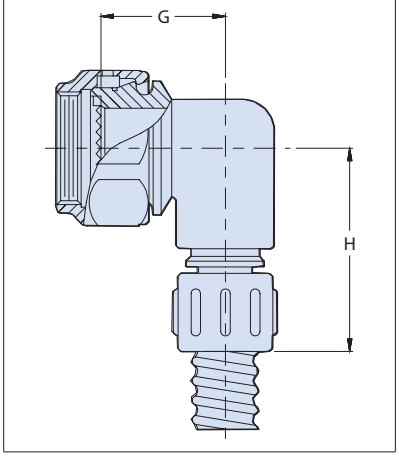
MATERIAL AND FINISH

Code	Material	Finish Description
XM	Composite	Electroless Nickel
XW		Cadmium Plate/Olive Drab over Electroless Nickel
XO		No Plating–Amber Color
XV		No plating -Purple, black, or natural (MFG option)

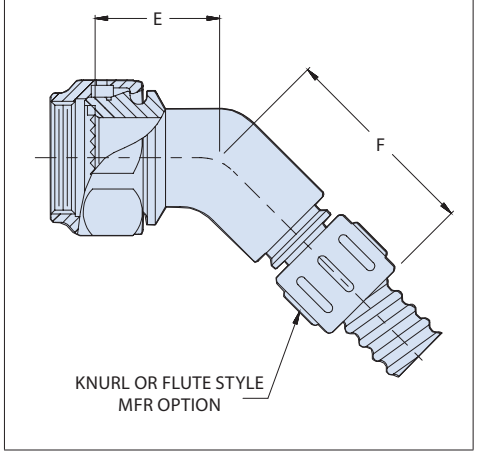
Refer to Appendix for material/finish details

189-038 Composite Backshell with Helical Conduit Adapter

W - 90°



T - 45°



TUBING SIZE			
Dash No.	Conduit I.D.	Ø J Max	K DIA Entry ±.03 (.76)
06	.188 (4.8)	.790 (20.1)	.12, (3.0)
09	.281 (7.1)	.985 (25.0)	.22, (5.6)
10	.312 (7.9)	.985 (25.0)	.24, (6.1)
12	.375 (9.5)	1.035 (26.3)	.29, (7.4)
14	.437 (11.1)	1.100 (27.9)	.34, (8.6)
16	.500 (12.7)	1.160 (29.5)	.40, (10.2)
20	.625 (15.9)	1.285 (32.6)	.52, (13.2)
24	.750 (19.1)	1.480 (37.6)	.65, (16.5)
28	.875 (22.2)	1.670 (42.4)	.78, (19.8)
32	1.000 (25.4)	1.720 (43.7)	.90, (22.9)
40	1.250 (31.8)	2.100 (53.3)	1.08, (27.4)
48	1.500 (38.1)	2.420 (61.5)	1.32, (33.5)

712-416 Composite Backshell with Helical Conduit Adapter for PEEK Only

SuperNine® MIL-DTL-38999 Type

Series 712-416 composite backshell, straight only, designed for PEEK convoluted tubing attachment without strain relief or fiber media axial alignment grommet. Conduit terminated with integral lamp thread type nut. Anti-decoupling device for improved vibration resistance. Optional drain hole for aerospace SWAMP-zone applications.

MATERIAL AND FINISH

- Adapter and Compression Nut: High-Grade Engineering Thermoplastic
- Coupling Nut: High Grade Engineering Thermoplastic/ Unplated
- O-Ring: Fluorosilicone or Silicone
- Anti-Rotation Device: Corrosion Resistant Material

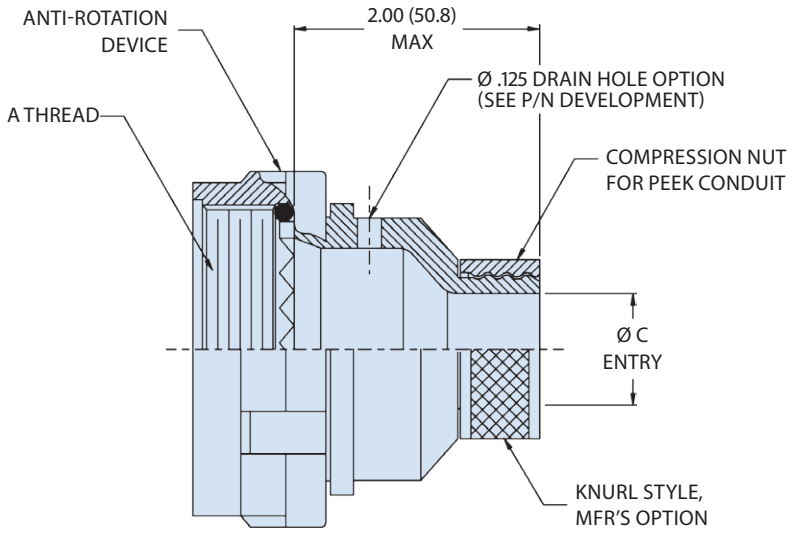
NOTES

- Glenair 600 Series Backshell Assembly Tools are recommended for assembly and installation.
- Unless otherwise specified, the Backshell Body to be supplied finished per Table I - all other components to be supplied without plating.

HOW TO ORDER

Sample Part Number	712-416	H	S	XO	17	16	D
Basic Number	D38999 Series III Type						
Conn. Designator	**H** = MIL-DTL-38999 Series III and IV						
Configuration	**S**						
Material/Finish	See Material and Finish table						
Shell Size	See Dimensions table						
Conduit Size	See "PEEK" Conduit Size table						
D = Drain Hole	(Omit for None)						

DIMENSIONS



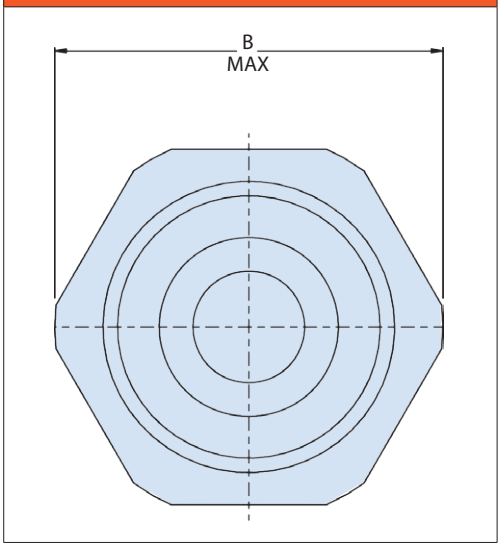
Shell Size	A Thread	B Max
11	M15 x 1 - 6H	.980 (24.0)
13	M18 x 1 - 6H	1.16 (28.4)
15	M22 x 1 - 6H	1.28 (32.5)
17	M25 x 1 - 6H	1.41 (35.8)
19	M28 x 1 - 6H	1.52 (38.6)
21	M31 x 1 - 6H	1.64 (41.7)
23	M34 x 1 - 6H	1.77 (43.4)
25	M37 x 1 - 6H	1.89 (48.0)

712-416 Composite Backshell with Helical Conduit Adapter for PEEK Only

MATERIAL AND FINISH		
Code	Material	Finish Description
XM	Composite	Electroless Nickel
XW		Cadmium Plate/Olive Drab over Electroless Nickel
XO		No Plating–Amber Color

Refer to Appendix for material/finish details

AS VIEWED FROM FRONT OF CONNECTOR



"PEEK" CONDUIT SIZE		
Dash No.	Fractional Size	Ø C Dim. Entry
06	3/16	.100 (2.5)
09	9/32	.171 (4.2)
10	5/16	.200 (5.8)
12	3/8	.265 (6.7)
14	7/16	.327 (8.3)
16	1/2	.390 (9.6)
20	5/8	.515 (12.6)
24	3/4	.640 (15.7)
28	7/8	.765 (18.7)
32	1	.890 (21.8)

630-015 Cable Bulkhead Adapter with Strain Relief and Braid Sock

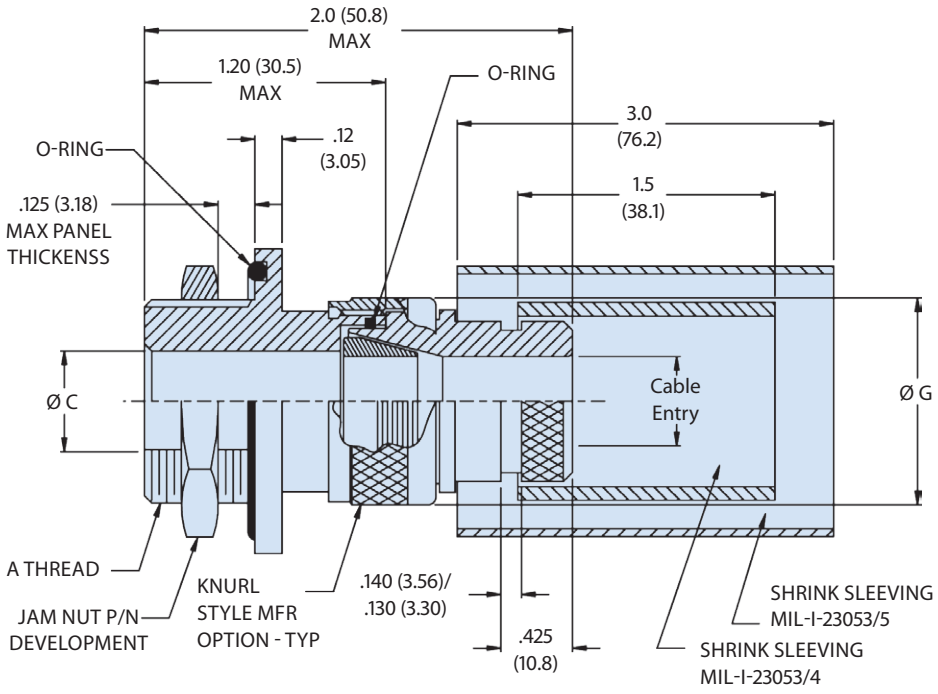
SuperNine® MIL-DTL-38999 Type

Series 630-015 fiber optic cable bulkhead adapter may be ordered with optional shrink sleeving and/or shielded jam nut assembly for use with Kevlar-equipped fiber optic cable applications. Available in aluminum, composite, or stainless steel.

HOW TO ORDER

Sample Part Number	630-015	NF	01	T	L
Basic Number	Cable bulkhead adapter				
Material/Finish	See Material and Finish table				
Dash Number	See Dimensions table				
Connector Type	Supplied with 447-822*** Shield Nut Instead of Jam Nut (Omit Letter **T** for Part with Jam Nut)				
Shrink Sleeve	**L** = Less shrink sleeve **Omit** for standard (with shrink sleeve)				

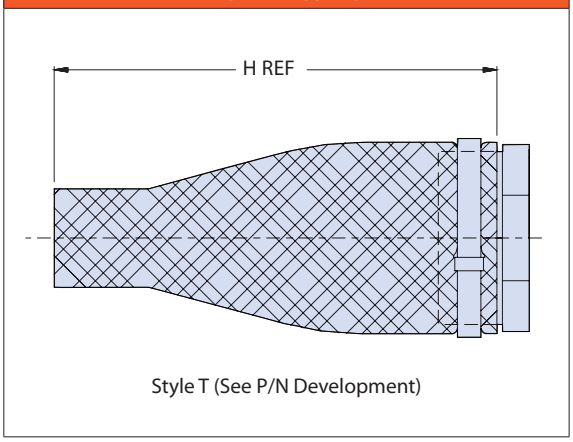
DIMENSIONS



Shell Size	A Thread Class 2A	ØB Max	ØC +.010 -.000	ØD +.010 -.000	E +.010 -.000	F	ØG Max	H Ref	Max. Cable Entry	MIL-I-23053 Shrink Sleeve	MIL-I-23053 Shrink Sleeve	Braid Sock 103-005-005 Ref
01	3/4-20 UNEF	1.140 (29.0)	.340 (8.64)	.755 (19.2)	.691 (17.6)	.938 (23.8)	1.004 (25.5)	6.0	.335	/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)	6.0	.455	/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)	6.0	.625	/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)	6.0	.750	/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 (35.0)	1.593 (40.5)	6.0	.875	/4-206-0	/5-111-0	A16
06	1 5/16-18 UNEF	1.930 (49.0)	1.005 (25.7)	1.317 (33.5)	1.254 (31.9)	1.625 (41.3)	1.656 (42.1)	6.0	1.000	/4-305-0	/5-111-0	A18

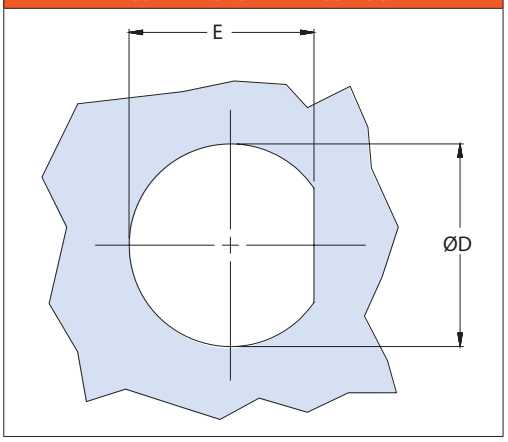
630-015 Cable Bulkhead Adapter with Strain Relief and Braid Sock

447-822* ASSEMBLY**



Style T (See P/N Development)

RECOMMENDED PANEL CUT-OUT



MATERIAL AND FINISH

- Adapters, Jam Nut, Ferrule, Coupling Nut: Al Alloy/see Material and Finish table
- O-Rings: Silicone
- Shrink Sleeving: Polyolefin

NOTES

- Glenair 600 Series Backshell Assembly Tools are recommended for assembly and installation.
- MIL-I-23053/4 & /5 Shrink Sleeving to be packaged loose in a plastic bag.

MATERIAL AND FINISH

Code	Material	Finish Description
M	Aluminum Alloy	Electroless Nickel
NF		Cad/O.D. over Electroless Nickel (1000 Hr. Salt Spray)
B		Cadmium Plate/Olive Drab
N		Cadmium Plate/Olive Drab over Nickel
XMT	Composite	Nickel PTFE, Grey
Z1	Stainless Steel	Passivate

Refer to Appendix for material/finish details

FO1000 Glenair ASAP Overmolded Fiber Optic Cable Sets

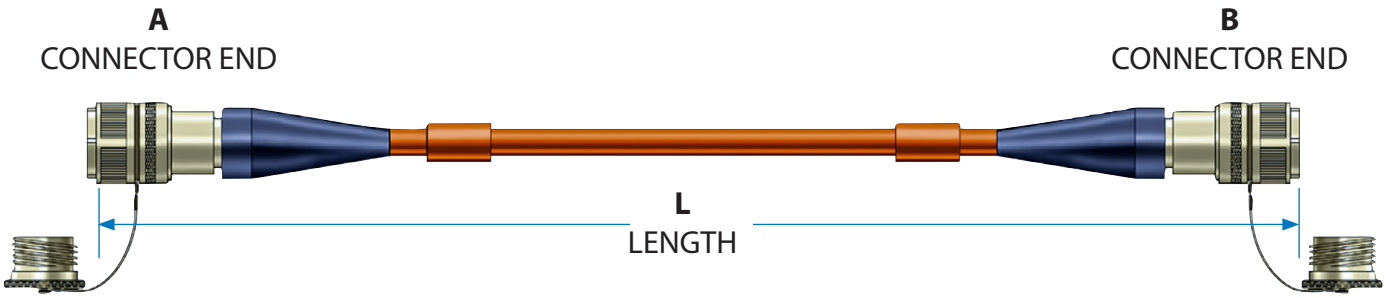
The World's Only Short Lead-Time Source for Harsh Environment Overmolded F/O Cable Assemblies

Glenair's overmolded cable assemblies are specifically designed to protect fiber optic and hybrid fiber/copper cables from the effects of moisture, heat, caustic chemicals and mechanical stress conditions. Overmolding (as opposed to shrink boots or other sealing materials) brings added strength and environmental protection to critical interconnect systems. The overmolding process effectively isolates the transmission media from contaminating elements and protects the media from abrasion damage.

Glenair's ASAP Overmolded Fiber Optic Assemblies are available with our full line of composite thermoplastic and metal alloy connectors. Polyurethane is the applied standard overmolding. For other overmolding material types such as Viton® or Neoprene, please consult the factory. The turnkey assembly includes Glenair FiberKing™ extruded cable, Glenair Backshell, MIL-DTL-38999 Style Connectors, MIL-PRF-29504 Termini, Mil-Spec Dust-Caps and customer specified marking and labeling. Please specify minor customizations on your purchase order.

- **Flexible, crush-resistant harsh-environment polyurethane overmolding**
- **Singlemode or multimode fiber media**
- **Plug, jam-nut receptacle, in-line and wall-mount D38999 connector configurations**
- **Military standard dust caps and connector accessories**
- **MIL-PRF-29504 approved termini**
- **Multichannel capability: from 2 to 37 channels**
- **Custom lengths available**

FO1000 Glenair ASAP Overmolded Fiber Optic Cable Sets



REFERENCE PART NUMBER DEVELOPMENT:

Sample Part Number	FO1000	P	05	P	06	J	04	-62	-100	L

Basic Number	ASAP overmolded fiber optic cable sets
A Terminus Type	**P** = Pin Terminus **S** = Socket Terminus
A Connector Type	**05** = D38999 Style In-Line Receptacle **06** = D38999/26 Style Plug **08** = D38999/24 Style Jam-Nut Receptacle **H7** = D38999/20 Style Wall Mount Receptacle (Std.) **S7** = D38999/20 Style Wall Mount Receptacle (Slotted) **T7** = D38999/20 Style Wall Mount Receptacle (Tapped)
B Terminus Type	**P** = Pin Terminus **S** = Socket Terminus
B Connector Type	**05** = D38999 Style In-Line Receptacle **06** = D38999/26 Style Plug **08** = D38999/24 Style Jam-Nut Receptacle **H7** = D38999/20 Style Wall Mount Receptacle (Std.) **S7** = D38999/20 Style Wall Mount Receptacle (Slotted) **T7** = D38999/20 Style Wall Mount Receptacle (Tapped)
D38999 Series III Connector Class	**F** = Aluminum, Electroless Nickel Plating **J** = Composite, Olive Drab Cadmium Plating **K** = Stainless Steel, Passivated **M** = Composite, Electroless Nickel Plating **W** = Aluminum, Olive Drab Cadmium Plating
Number of Fibers	**02** = 2 Fibers (Shell Size 11) **16** = 16 Fibers (Shell Size 21) **04** = 4 Fibers (Shell Size 13) **21** = 21 Fibers (Shell Size 23) **05** = 5 Fibers (Shell Size 15) **29** = 29 Fibers (Shell Size 25) **08** = 8 Fibers (Shell Size 17) **37** = 37 Fiber (Shell Size 25) **11** = 11 Fibers (Shell Size 19)
Fiber Size	**09** = 9.3/125 Singlemode **10** = 100/140 Multimode **50** = 50/125 Multimode **20** = 200/230 Multimode **62** = 62.5/125 Multimode
Length in Feet	**-100**
Protective Covers	**L** = Less Covers **Omit** = with Covers

Please consult factory for alternative overmolding materials such as Viton® or Neoprene.
Part numbering is for reference purposes only. A unique Glenair part number will be assigned to your cable order.

NOTES

- Standard overmolded cable make-up:
  2mm jacketed fiber, polyurethane jacketing and overmolding, Kevlar reinforcement, nominal temperature range -40° to +85°c.
  Please reference special marking, labels or other identification specifications on your purchase order

FO1001 Glenair ASAP Wired Polymer and Metal-Core F/O Conduit Assemblies

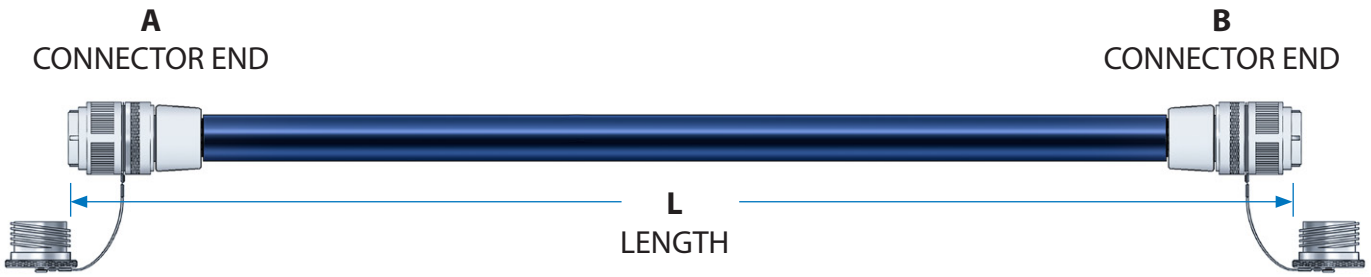
Flexible, Lightweight, Crush Resistant Conduit—The Ultimate Fiber Optic Wire Protection Assembly

Polymer and metal-core conduit are ideal materials for fiber optic wire protection in high flex applications, as they allow the fibers to move freely within the enclosure. Metal core is selected for highest crush resistance. PEEK is the lightweight, crush-resistant choice. Standard fluoropolymer materials are suitable for most general-duty applications. These turnkey wired assemblies are built with tight-tolerance MIL-DTL-38999 Series III type connectors, MIL-PRF-29504 qualified termini, Mil-Spec dust caps, and Glenair FiberCon conduit adapter backshells with fiber alignment grommet. Customer-specified marking and labeling and your exact choice of conduit materials and jacketing are supplied with the fastest and most reliable delivery in the industry.

CONDUIT SYSTEMS

- **FEP (High-Temperature PTFE Fluoropolymer), PEEK (Halogen Free, Lightweight) and Metal-Core (EMI and Crush Proof) Versions**
- **Nine standard material packages**
- **Shielded and un-shielded designs**
- **Single and multimode fiber media**
- **D38999 Series III connectors in aluminum, composite or stainless steel**
- **Plug, jam-nut receptacle, in-line and wall-mount receptacle configurations**
- **MIL-PRF-29504 qualified termini**
- **Multichannel capability: from 2 to 37 channels**

FO1001 Glenair ASAP Wired Polymer and Metal-Core F/O Conduit Assemblies



REFERENCE PART NUMBER DEVELOPMENT												
Sample Part Number	FO1001	P	06	P	06	J	04	-62	-100	G	L	
Basic Number	ASAP wired polymer and metal-core fiber optic conduit assemblies											
A Terminus Type	**P** = Pin Terminus S = Socket Terminus											
A Connector Type	**05** = D38999 Style In-Line Receptacle **06** = D38999/26 Style Plug **08** = D38999/24 Style Jam-Nut Receptacle **H7** = D38999/20 Style Wall Mount Receptacle (Std.) **S7** = D38999/20 Style Wall Mount Receptacle (Slotted) **T7** = D38999/20 Style Wall Mount Receptacle (Tapped)											
B Terminus Type	**P** = Pin Terminus S = Socket Terminus											
B Connector Type	**05** = D38999 Style In-Line Receptacle **06** = D38999/26 Style Plug **08** = D38999/24 Style Jam-Nut Receptacle **H7** = D38999/20 Style Wall Mount Receptacle (Std.) **S7** = D38999/20 Style Wall Mount Receptacle (Slotted) **T7** = D38999/20 Style Wall Mount Receptacle (Tapped)											
D38999 Series III Connector Class	**F** = Aluminum, Electroless Nickel Plating **J** = Composite, Olive Drab Cadmium Plating **K** = Stainless Steel, Passivated **M** = Composite, Electroless Nickel Plating **W** = Aluminum, Olive Drab Cadmium Plating											
Number of Fibers*	**02** = 2 Fibers (Shell Size 11) **16** = 16 Fibers (Shell Size 21) **04** = 4 Fibers (Shell Size 13) **21** = 21 Fibers (Shell Size 23) **05** = 5 Fibers (Shell Size 15) **29** = 29 Fibers (Shell Size 25) **08** = 8 Fibers (Shell Size 17) **37** = 37 Fiber (Shell Size 25) **11** = 11 Fibers (Shell Size 19)											
Fiber Size	**09** = 9.3/125 Singlemode **10** = 100/140 Multimode **50** = 50/125 Multimode **20** = 200/230 Multimode **62** = 62.5/125 Multimode											
Length in Feet	**-100**											
Conduit Materials	See Conduit Materials Packaging table											
Protective Covers	**L** = Less Covers **Omit** = with Covers											

Part numbering is for reference purposes only. A unique Glenair part number will be assigned to your cable order.

NOTES

- See Material and Finish table for standard conduit materials packages. Please reference special marking, labels or otheridentification specifications on your purchase order

CONDUIT MATERIALS PACKAGING	
Code	**Conduit Materials Package Description**
A	FEP Fluoropolymer Convoluted Tubing Only; Standard Wall Thickness, Standard Convolutes
B	PEEK Convoluted Tubing Only; Halogen Free, Light Weight
C	FEP Convoluted Tubing with Black Dacron Outer Braided Covering
D	PEEK Convoluted Tubing with Black Dacron Outer Braided Covering
E	FEP Convoluted Tubing with Neoprene Jacket and Black Dacron Outer Braided Covering
F	PEEK Convoluted Tubing, Neoprene Jacket and Black Dacron Outer Braided Covering
G	FEP Convoluted Tubing, Tin Copper Shielding, Neoprene Jacket, Black Dacron Overbraid
H	PEEK Convoluted Tubing, Tin Copper Shielding, Neoprene Jacket and Black Dacron Overbraid
J	Brass Metal-Core Conduit, Bronze Braid and Neoprene Jacket

FO1002 Field-Repairable Fiber Optic Assembly with Bend Restrictor

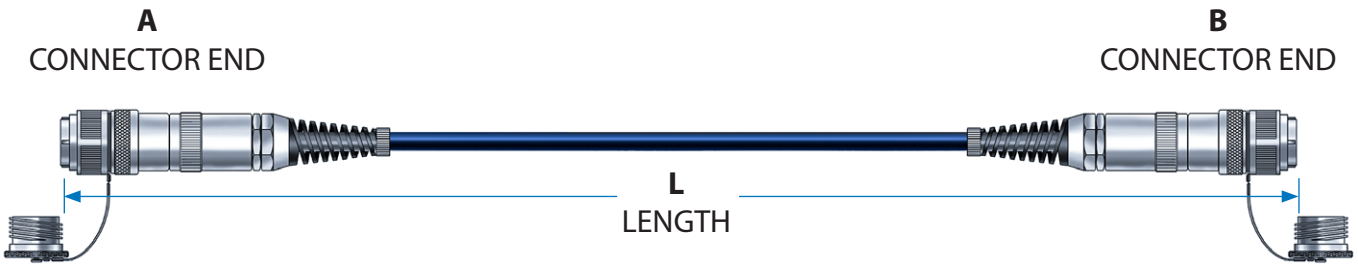
The Ideal Solution for Combined Environmental Resistance, Field Repairability and Kevlar® Termination

Reinforced, extruded cable is an ideal packaging option for rugged application environments, and Glenair can extrude fiber optic cable for most high-performance applications. But while the cable is the backbone of this packaging solution, Glenair's ruggedized backshell is the component which gives the assembly its outstanding functionality. The backshell allows for the convenient termination of cable shielding and/or the Kevlar® strength member. The Glenair assembly uses a simple, easy-to-use banding technology to terminate cable shielding and/or the Kevlar material used in fiber cable extrusions. The Glenair backshell also provides additional strain-relief and environmental protection of the cable-to-connector transition with its unique bend restrictor fitting. And unlike overmolded solutions, the reinforced extruded cable/backshell package for field maintenance of the fiber media.

The terminated, tested assembly includes Glenair FiberKing™ extruded cable, Glenair backshell, MIL-DTL-38999 style connectors, MIL-PRF-29504 termini, Mil-Spec dust-caps, and customer-specified marking and labeling.

- **MIL-DTL-38999 Series III connectors in aluminum, composite or stainless steel**
- **Glenair banding backshells with flex-nut strain-relief in aluminum, composite or stainless steel**
- **Plug, jam-nut receptacle, in-line and wall-mount receptacle configurations**
- **Single and multimode fiber media**
- **Military standard dust caps**
- **MIL-PRF-29504 qualified termini**
- **Multichannel capability: from 2 to 37 channels**

FO1002 Field-Repairable Fiber Optic Assembly with Bend Restrictor



HOW TO ORDER

Sample Part Number	FO1002	P	06	P	06	J	04	-62	-100	L

Basic Number	ASAP field-repairable fiber optic cable sets
A Terminus Type	**P** = Pin Terminus **S** = Socket Terminus
A Connector Type	**05** = D38999 Style In-Line Receptacle **06** = D38999/26 Style Plug **08** = D38999/24 Style Jam-Nut Receptacle **H7** = D38999/20 Style Wall Mount Receptacle (Std.) **S7** = D38999/20 Style Wall Mount Receptacle (Slotted) **T7** = D38999/20 Style Wall Mount Receptacle (Tapped)
B Terminus Type	**P** = Pin Terminus **S** = Socket Terminus
B Connector Type	**05** = D38999 Style In-Line Receptacle **06** = D38999/26 Style Plug **08** = D38999/24 Style Jam-Nut Receptacle **H7** = D38999/20 Style Wall Mount Receptacle (Std.) **S7** = D38999/20 Style Wall Mount Receptacle (Slotted) **T7** = D38999/20 Style Wall Mount Receptacle (Tapped)
D38999 Series III Connector Class	**F** = Aluminum, Electroless Nickel Plating **J** = Composite, Olive Drab Cadmium Plating **K** = Stainless Steel, Passivated **M** = Composite, Electroless Nickel Plating **W** = Aluminum, Olive Drab Cadmium Plating
Number of Fibers	**02** = 2 Fibers (Shell Size 11) **16** = 16 Fibers (Shell Size 21) **04** = 4 Fibers (Shell Size 13) **21** = 21 Fibers (Shell Size 23) **05** = 5 Fibers (Shell Size 15) **29** = 29 Fibers (Shell Size 25) **08** = 8 Fibers (Shell Size 17) **37** = 37 Fiber (Shell Size 25) **11** = 11 Fibers (Shell Size 19)
Fiber Size	**09** = 9.3/125 Singlemode **10** = 100/140 Multimode **50** = 50/125 Multimode **20** = 200/230 Multimode **62** = 62.5/125 Multimode
Length in Feet	**-100**
Protective Covers	**L** = Less Covers **Omit** = with Covers

Part Numbering is for Reference Purposes Only. A Unique Glenair Part Number Will Be Assigned to Your Cable Order.

NOTES

- Please reference special marking, labels or other identification specifications on your purchase order

SuperNine® MIL-DTL-38999 Type

MIL-DTL-38999 SERIES III TYPE

SuperNine® Fiber optics

Glenair®

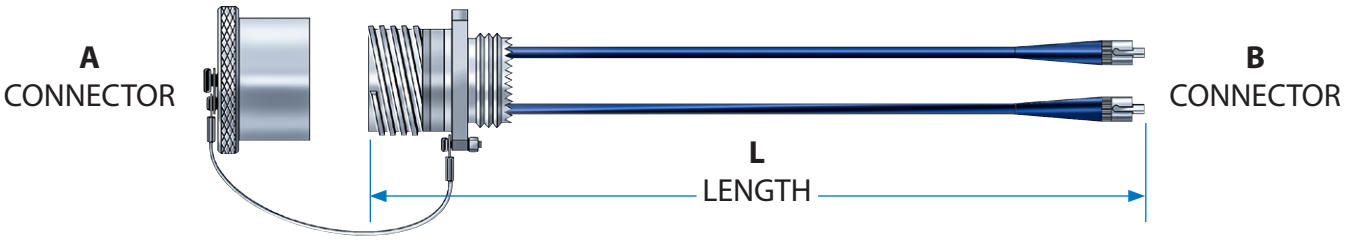
D38999 Series III to ST, FC, SC, LC, and SMA FO1003 Fiber Optic Inside-the-Box Receptacle/Pigtail Assembly

Glenair Terminated and Optically Tested Receptacle/ Pigtail Assemblies Are Ready When You Are

The packaging and layout of a fiber optic interconnect assembly can vary widely depending on the application environment. Fiber optics deployed in military avionics, for example, may take the form of a Mil-Spec receptacle and simplex pigtail connector assembly when fiber is used to interconnect the optical transmitter/receiver inside an equipment enclosure to the outside world. When fiber leads are used within equipment enclosures or other protected environments, the interconnect assembly generally looks something like the assembly featured here: A wall mount or jam nut mount receptacle connector (“A”) with simplex fiber leads ("B"). The receptacle connector is used to penetrate the enclosure and mate to the external environmental plug connector. The simplex leads within the protected enclosure commonly route to the transceiver optical device, and are terminated to common commercial connectors such as ST, FC, SC, LC (or other) connectors at the "B" end. Glenair *ASAP* Receptacle/ Pigtail Fiber Optic Assemblies are ideal for applications of this type, and are available with accelerated lead-times. The turnkey assembly includes fiber optic wiring, MIL-DTL-38999 Style Connector, MIL-PRF-29504 Termini, Mil-Spec Dust-Caps and customer specified marking and labeling.

- **Jam-nut and wall mount D38999 Series III type fiber optic receptacle connectors in aluminum, composite or stainless steel**
- **ST, FC, SC, LC and SMA to D38999 Series III configurations**
- **Single and multimode fiber media**
- **Military standard dust caps**
- **MIL-PRF-29504 approved termini**
- **Multichannel capability: from 2 to 37 channels**
- **Custom lengths available**

D38999 Series III to ST, FC, SC, LC, and SMA
FO1003 Fiber Optic Inside-the-Box Receptacle/Pigtail Assembly



HOW TO ORDER

Sample Part Number	FO1003	P	-08	-1	W	02	62	48	L
Basic Number	ASAP inside-the-box fiber optic receptacle / pigtail assembly								
Terminus Type	**P** = Pin Terminus **S** = Socket Terminus								
A Connector Type	**06** = D38999/26 Style Plug **08** = D38999/24 Style Jam-Nut Receptacle **H7** = D38999/20 Style Wall Mount Receptacle (Std.) **S7** = D38999/20 Style Wall Mount Receptacle (Slotted) **T7** = D38999/20 Style Wall Mount Receptacle (Tapped)								
B Connector Type	**0** = ST M83522 Style **5** = SMA Connector (906 Type) **1** = ST Connector **6** = SMA Connector (905 Type) **2** = FC Connector **7** = LC Connector **3** = SC Connector **8** = LC Duplex **4** = SC Duplex **9** = Customer Specified								
D38999 Series III Connector Class	**F** = Aluminum, Electroless Nickel Plating **J** = Composite, Olive Drab Cadmium Plating **K** = Stainless Steel, Passivated **M** = Composite, Electroless Nickel Plating **W** = Aluminum, Olive Drab Cadmium Plating								
Number of Fibers*	**02** = 2 Fibers (Shell Size 11) **16** = 16 Fibers (Shell Size 21) **04** = 4 Fibers (Shell Size 13) **21** = 21 Fibers (Shell Size 23) **05** = 5 Fibers (Shell Size 15) **29** = 29 Fibers (Shell Size 25) **08** = 8 Fibers (Shell Size 17) **37** = 37 Fiber (Shell Size 25) **11** = 11 Fibers (Shell Size 19)								
Fiber Size	**09** = 9.3/125 Singlemode **10** = 100/140 Multimode **50** = 50/125 Multimode **20** = 200/230 Multimode **62** = 62.5/125 Multimode								
Length in Inches	6 Inch Minimum								
Protective Covers	**L** = Less Covers **Omit** = with Covers								

Part Numbering is for Reference Purposes Only. A Unique Glenair Part Number Will Be Assigned to Your Cable Order.

NOTES

- Please reference special marking, labels or other identification specifications on your purchase order. Unless indicated, "B" connector identification will follow "A" connector pin designations.

SuperNine® MIL-DTL-38999 Type

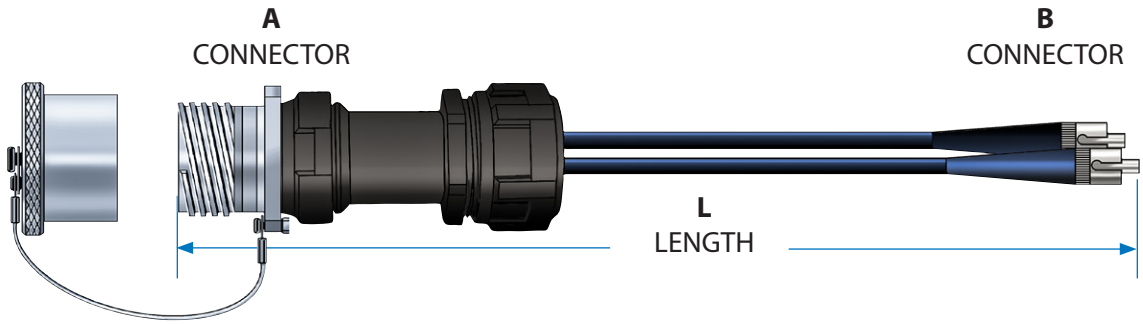
D38999 Series III to ST, FC, SC, LC, and SMA FO1004 Inside-the-Box Pigtail Assembly with FiberCon Backshell

Strain-Relief and Fiber Alignment Pigtail Assembly Ensures Low dB Data Loss Optical Performance

Glenair supplies receptacle/pigtail assemblies for inside-the-box applications that include a Glenair signature FiberCon backshell to protect fiber terminations and ensure exact alignment of the fiber optic termini. The backshell's integral alignment grommet prevents micro-bending of the fibers while providing optimum strain relief to the overall cable. The unique design is available only from Glenair and is available as a component part of this ASAP cable assembly. The turnkey assembly includes fiber optic wiring, Glenair backshell, SuperNine® MIL-DTL-38999 Series III type connector terminated to industry-standard ST, FC, SC, LC, and SMA connectors; MIL-PRF-29504 qualified termini, Mil-Spec standard protective dust-caps and customer specified marking and labeling.

- **Jam-nut and wall mount D38999 Series III type fiber optic receptacle connectors in aluminum, composite or SST**
- **ST, FC, SC, LC and SMA to D38999 Series III Configurations**
- **Grommet sealing and micro-alignment backshells in aluminum, composite and SST**
- **Singlemode and multimode fiber media**
- **Mil-Std dust caps**
- **MIL-PRF-29504 Termini**

D38999 Series III to ST, FC, SC, LC, and SMA
FO1004 Inside-the-Box Pigtail Assembly with FiberCon Backshell



HOW TO ORDER

Sample Part Number	FO1004	P	-08	-1	W	02	62	48	L

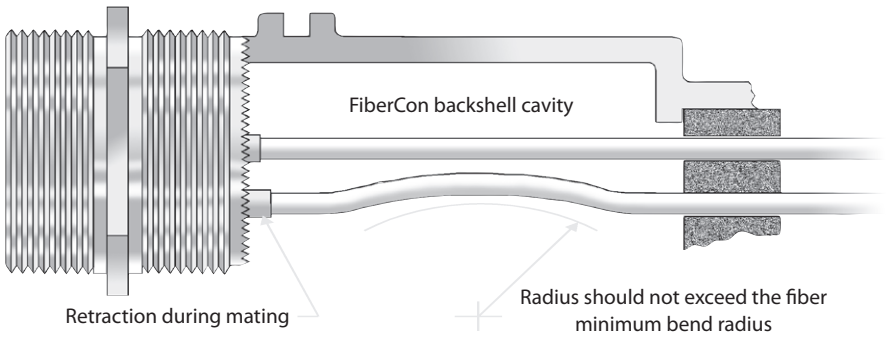
Basic Number	ASAP fiber optic cable sets
Terminus Type	**P** = Pin Terminus **S** = Socket Terminus
A Connector Type	**06** = D38999/26 Style Plug **08** = D38999/24 Style Jam-Nut Receptacle **H7** = D38999/20 Style Wall Mount Receptacle (Std.) **S7** = D38999/20 Style Wall Mount Receptacle (Slotted) **T7** = D38999/20 Style Wall Mount Receptacle (Tapped)
B Connector Type	**0** = ST M83522 Style **5** = SMA Connector (906 Type) **1** = ST Connector **6** = SMA Connector (905 Type) **2** = FC Connector **7** = LC Connector **3** = SC Connector **8** = LC Duplex **4** = SC Duplex **9** = Customer Specified
D38999 Series III Connector Class	**F** = Aluminum, Electroless Nickel Plating **J** = Composite, Olive Drab Cadmium Plating **K** = Stainless Steel, Passivated **M** = Composite, Electroless Nickel Plating **W** = Aluminum, Olive Drab Cadmium Plating
Number of Fibers*	**02** = 2 Fibers (Shell Size 11) **16** = 16 Fibers (Shell Size 21) **04** = 4 Fibers (Shell Size 13) **21** = 21 Fibers (Shell Size 23) **05** = 5 Fibers (Shell Size 15) **29** = 29 Fibers (Shell Size 25) **08** = 8 Fibers (Shell Size 17) **37** = 37 Fiber (Shell Size 25) **11** = 11 Fibers (Shell Size 19)
Fiber Size	**09** = 9.3/125 Singlemode **10** = 100/140 Multimode **50** = 50/125 Multimode **20** = 200/230 Multimode **62** = 62.5/125 Multimode
Length in Inches	6 Inch Minimum
Protective Covers	**L** = Less Covers **Omit** = with Covers

Part Numbering is for Reference Purposes Only. A Unique Glenair Part Number Will Be Assigned to Your Cable Order.

NOTES

- Please reference special marking, labels or other identification specifications on your purchase order.

TERMINI RETRACTION AND ITS EFFECT ON MICRO-BENDING



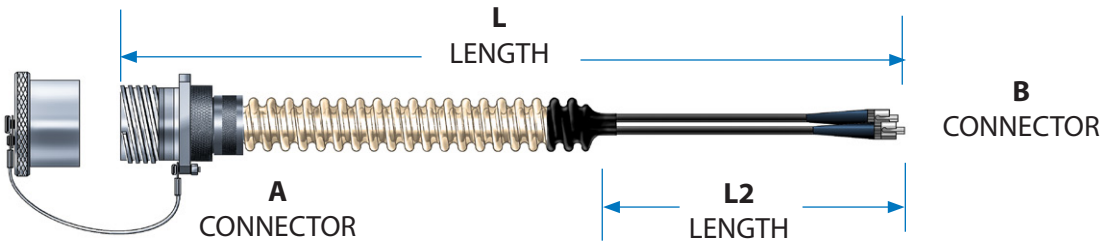
D38999 Series III to ST, FC, SC, LC, and SMA FO1005 Inside-the-Box Pigtail Conduit Assembly

The Perfect Amount of Mechanical Protection for Fiber Media in Non-Environmental Applications

The use of a short length of conduit and a low-profile connector/conduit adapter is recommended in applications where a heat or abrasion source within the box may damage the fiber media. In most cases, analysis of the available space is critical to ensure the additional interconnect hardware does not interfere with the electronics package inside the box. The packaging of a pigtail assembly with a protective length of conduit is appropriate for all types of equipment—such as radar units, cameras, shipboard consoles, antennas and so on—in which the routing of the fiber cable within the equipment enclosure may expose the media to damage. This Glenair *ASAP* Fiber Optic Pigtail Assembly is well suited whenever the prevention of damage to the fiber media inside the box is a design requirement. The turnkey assembly includes fiber optic wiring, Glenair Conduit Adapter, High-Temperature Convoluted Tubing and Shrink Boot, MIL-DTL-38999 Style Connector, MIL-PRF-29504 Termini, Mil-Spec Dust-Caps and customer specified marking and labeling.

- **Jam-nut and wall mount D38999 Series III type fiber optic receptacle connectors in aluminum, composite or SST**
- **ST, FC, SC, LC, and SMA to D38999 Series III configurations**
- **High-temperature and halogen free protective convoluted tubing options**
- **Single and multimode fiber media**
- **Mil-standard dust caps**
- **MIL-PRF-29504 termini**
- **Customer-specified overall and break-out lengths available**

D38999 Series III to ST, FC, SC, LC, and SMA
FO1005 Inside-the-Box Pigtail Conduit Assembly



HOW TO ORDER

Sample Part Number	FO1005	P	-08	-1	W	02	62	6	12	L

Basic Number	ASAP fiber optic inside-the-box pigtail conduit assembly
Terminus Type	**P** = Pin Terminus **S** = Socket Terminus
A Connector Type	**06** = D38999/26 Style Plug **08** = D38999/24 Style Jam-Nut Receptacle **H7** = D38999/20 Style Wall Mount Receptacle (Std.) **S7** = D38999/20 Style Wall Mount Receptacle (Slotted) **T7** = D38999/20 Style Wall Mount Receptacle (Tapped)
B Connector Type	**0** = ST M83522 Style **5** = SMA Connector (906 Type) **1** = ST Connector **6** = SMA Connector (905 Type) **2** = FC Connector **7** = LC Connector **3** = SC Connector **8** = LC Duplex **4** = SC Duplex **9** = Customer Specified
D38999 Series III Connector Class	**F** = Aluminum, Electroless Nickel Plating **J** = Composite, Olive Drab Cadmium Plating **K** = Stainless Steel, Passivated **M** = Composite, Electroless Nickel Plating **W** = Aluminum, Olive Drab Cadmium Plating
Number of Fibers*	**02** = 2 Fibers (Shell Size 11) **16** = 16 Fibers (Shell Size 21) **04** = 4 Fibers (Shell Size 13) **21** = 21 Fibers (Shell Size 23) **05** = 5 Fibers (Shell Size 15) **29** = 29 Fibers (Shell Size 25) **08** = 8 Fibers (Shell Size 17) **37** = 37 Fiber (Shell Size 25) **11** = 11 Fibers (Shell Size 19)
Fiber Size	**09** = 9.3/125 Singlemode **10** = 100/140 Multimode **50** = 50/125 Multimode **20** = 200/230 Multimode **62** = 62.5/125 Multimode
"L" Length in Feet	6 Inch Minimum
"L2" Length in Inches	**12**
Protective Covers	**L** = Less Covers **Omit** = with Covers

Part numbering is for reference purposes only. A unique Glenair part number will be assigned to your cable order.

NOTES

- Please reference special marking, labels or other identification specifications on your purchase order.

SuperNine® MIL-DTL-38999 Type

GLENAIR
SIGNATURE
FIBER OPTIC
CONNECTION
SYSTEMS

Rugged Fiber Optic CONNECTORS

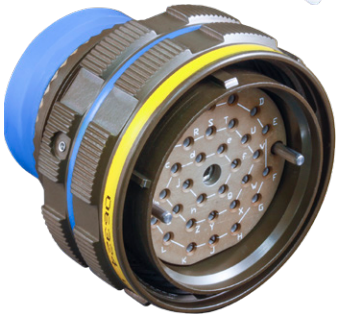
Ultra-Low dB Loss **ARINC 801** Fiber Optic Termini in Glenair Signature High-Performance Packaging

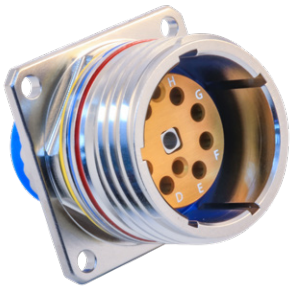
ARINC 801 is a keyed genderless fiber optic terminus used in a broad range of aerospace connector packages including ARINC 801, ARINC 600, and other circular and rectangular series. The Glenair solution includes features from our “Better than QPL” SuperNine® connector with improved axial alignment, vibration and shock resistance, and low dB loss performance. Loose structure and tight structure cable types are supported.

- **Keyed, genderless terminus design eliminates pin and socket complexity and supports both PC and APC applications**
- **Rear-release size #16 termini (1.25mm ferrule)**
- **Singlemode (1310 and 1550 nm) as well as multimode (850 and 1300 nm)**
- **Mechanical and environmental performance in accordance with ARINC 801**

ARINC 801 Optical Termini and Connectors

Product selection guide





ABOUT ARINC 801

ARINC 801 is an industry-standard terminus design for use in various form-factor aerospace connectors. Terminus features include Ø1.25mm precision zirconia ceramic ferrules and alignment sleeves, as well as a keyed body for angle polished (APC) end face termination. Connector features include removable alignment sleeve retainer and guide pins. Glenair offers singlemode (UPC and APC) as well as multimode (PC) options with familiar LC ferrule type termination. Terminus configurations available for use with loose and tight structure cable. A complete range of insert arrangements from 2 to 32 channels are available in accordance with ARINC 801. Glenair can provide connector packaging in virtually any supported format from ARINC 600 to EN4644. Our catalog solution utilizes our "Better than QPL" MIL-DTL-38999 Series III type SuperNine® connector features (i.e. anti-decoupling and key polarization options).

DIMENSIONAL NOTES

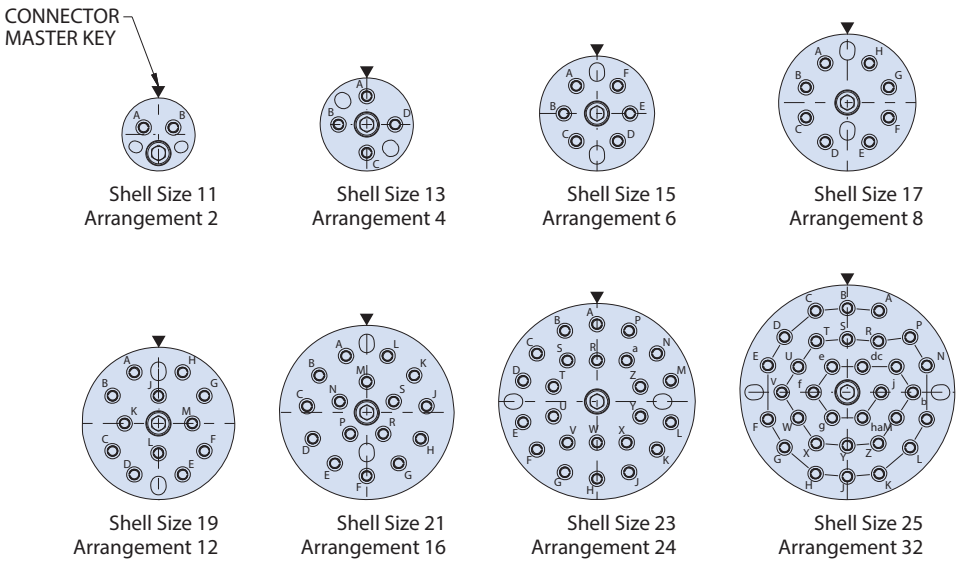
- Catalog dimensions are subject to change without notice. Consult Glenair engineering for a controlled-release sales drawing
- Metric dimensions appear in parentheses in diagrams and tables, based on 1 inch = 25.4 mm, for reference only.
- Unless otherwise specified, the following other dimensional tolerances apply:
- .xx = ± .03 (0.8) • .xxx = ± .015 (0.4) • Angles = ± 5°

Specifications and insert arrangements

MATERIAL AND FINISH		
Code	Material	Finish Description
ME	Aluminum Alloy	Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black (RoHS)
XM	Composite	Electroless Nickel
XMT		Nickel - PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
MS	Stainless Steel	Electroless Nickel
ZL		Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	No Plating

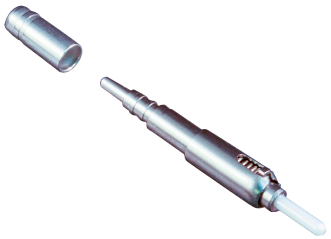
Series 180-159 ARINC 801 Performance Specifications	
Test Description	**Performance Requirements/Specifications**
Insertion Loss	Multimode (PC): 0.30 dB typical at 850/1300nm
	Singlemode (UPC): 0.30 dB typical at 1310/1550nm
Return Loss	Multimode (PC): Better than 20 dB
	Singlemode (UPC): Better than 40 dB
	Singlemode (APC): Better than 65 dB
Operating Temperature	-55°C to +165°C (cable/epoxy dependent)
Storage Temperature	-40°C to +85°C (cable/epoxy dependent)
Mating Durability	500 cycles, per TIA/EIA-455-21
Vibration	23.1g RMS, 8 hrs/axis, per TIA/EIA-455-11, Test Condition VI-G
Mechanical Shock (half-sine pulse)	300g Peak for 3ms, 3 shocks/axis in each direction, per TIA/EIA-455-14, Test Condition D
Thermal Cycling	-55°C to +125°C, 50 cycles, per TIA/EIA-455-3, Test Condition C-4 (cable/epoxy dependent)
Temperature Life	+125°C for 1000 hrs, per TIA/EIA-455-4 (cable/epoxy dependent)
Humidity, Steady State	+40°C for 240 hrs, 90% RH, per TIA/EIA-455-5, Method A, Test Condition B
Humidity, Temperature Cycling	-25°C to +65°C, 10 cycles for 24 hrs, 90% RH, per TIA/EIA-455-5, Method B7a (cable/epoxy dependent)

ARINC 801 INSERT ARRANGEMENTS



ARINC 801 Optical Termini and Connectors

181-076 Genderless Keyed Termini per ARINC 801

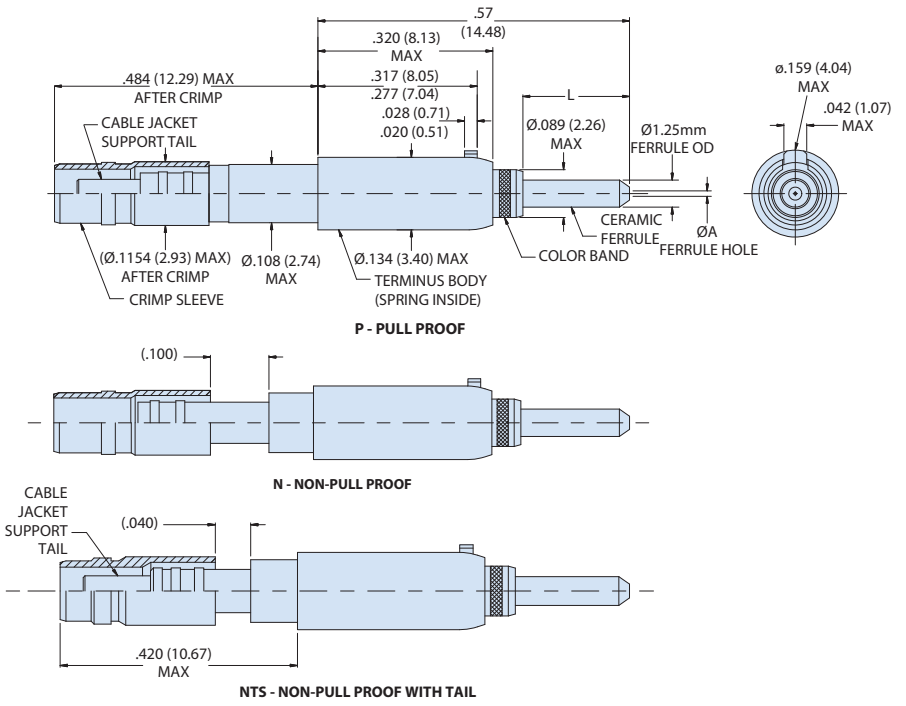


HOW TO ORDER				
Sample Part Number	**181-076**	**–**	**P**	**–126**
Fiber Optic termini	Genderless terminus for ARINC 801 connector			
Cable Jacket Diameter	**A** = 900 micron buffer only (no crimp sleeves) **–** = 2.0 / 1.7mm			
Cable Structure	**P** = Pull-Proof (loose structure cable) **N** = Non-Pull-Proof (tight structure cable or 900 micron buffer)			
Terminus Size / Type / Polish	See table			

MATERIAL/FINISH AND NOTES

- Ferrule: Zirconia Ceramic
- Terminus Bodies: Brass Alloy/ Nickel
- Crimp Sleeve: Brass Alloy/Nickel
- Spring: Stainless Steel/Passivate
- Notes
- Crimp sleeve is packaged loose with terminus assembly. Spares may be ordered separately, consult factory – P/N 181-076K1.
- Insert/extraction tool: 809-131 (M81969/14-03).
- See Glenair assembly procedure GAP-049 for termination and assembly tools/procedures.
- For use with Glenair 180-159 connectors.
- The use of 181-076-N-XXXA termini (non-pull proof, angle polish) with simplex fiber and crimp sleeve is not recommended. Glenair recommends using buffered fiber only with this terminus configuration and omitting the crimp sleeve.
- 181-076-N-XXXA (includes crimp sleeve) may be used as an alternate to 181-076AN-XXXA (no crimp sleeve) by omitting the crimp sleeve supplied with 181-076 -N-XXXA.
- For buffered fiber termination only (no crimp sleeve), Glenair recommends the use of non-pull proof termini (181-076AN style).

TERMINUS SIZE / TYPE / POLISH

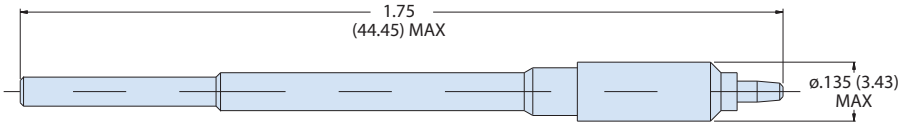


Dash No.	Ø A (microns)	Typical Fiber Type	Typical Fiber Size (microns) Core/Cladding/ Coating	Ferrule Polish Type	L Inches	Color Band
-1255	125.5	Singlemode	9/125	PC	.196/.192	Blue
-1255A	125.5	Singlemode	9/125	APC	.200/.196	Green
-126S	126.0	Singlemode	9/125	PC	.196/.192	Blue
-126SA	126.0	Singlemode	9/125	APC	.200/.196	Green
-126	126.0	Multimode	50/125, 62.5/125	PC	.196/.192	None
-175	175.0	Multimode	100/140/172 (Polymide)	PC	.196/.192	None
-231	231.0	Multimode	200/230	PC	.196/.192	None

Rev. 11.15.24

181-128-1 Dummy Terminus Fiber Optic Sealing Plug
180-159ASR Alignment Sleeve Retainer

HOW TO ORDER	
Part Number	**181-128-1**
Fiber Optic termini	Dummy terminus fiber optic sealing plug



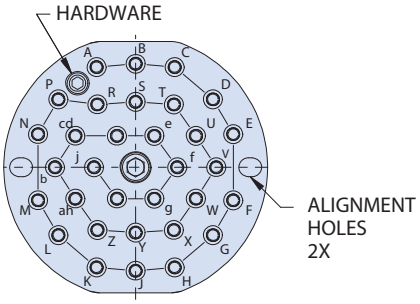
MATERIAL/FINISH

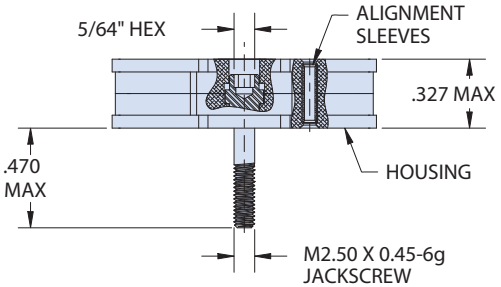
- High grade engineering thermoplastic

NOTES

- Packaging identified with manufacturer's name, cage code, part number and date code.
- Recommended insertion/ removal tool: P/N M81969/14-03 or Glenair P/N 809-131

HOW TO ORDER		
Sample Part Number	**180-159ASR-**	**17–8**
Fiber Optic connector	Alignment Sleeve Retainer for 180-159 plug connector	
Shell Size - Insert Arrangement	**11-2**, **13-4**, **15-6**, **17-8**, **19-12**, **21-16**, **23-24**, **25-32**	





MATERIAL/FINISH

- Housing: Al alloy/anodize
- Hardware: stainless steel/ passivate
- Alignment sleeve: zirconia ceramic

NOTES

- Ceramic alignment sleeve replacements may be purchased separately (P/N 181-056-S).
- Recommended ASR torque value: 3 to 4 in-lb

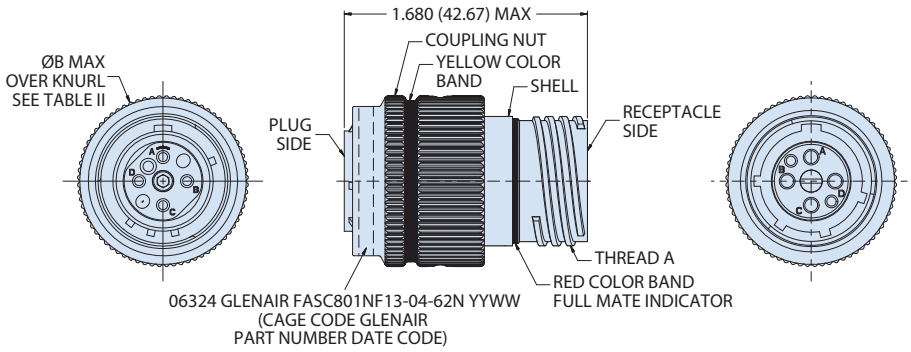
FASC801 "Sav-Con" Connector Saver

HOW TO ORDER					
Sample Part Number	**FASC801**	**NF**	**13-04**	**-62**	**N**
Fiber Optic connector	"Sav-Con" connector saver				
Material/Finish	**ME** = Aluminum alloy, electroless nickel **NF** = Aluminum alloy, cadmium, olive drab **Z1** = Stainless steel, passivate				
Shell Size - Insert Arrangement	See table				
Fiber Size	**09** = Single mode 9/125 **50** = 50/125 **62** = 62.5/125 **10** = 100/140				
Key Position Per MIL-DTL-38999	**A**, **B**, **C**, **D**, **E**, and **N** = Normal				

NOTES

- For appropriate Glenair replacement terminus part numbers, see Glenair drawing FA00862.
- For terminus insertion and removal procedure, see Glenair GAP-123.
- Assembly supplied with plastic dust cap on both mating ends of the Sav-Con.
- Optical performance:
  - Insertion loss shall be 1.0db when measured,
    - @850nm wavelength for multimode
    - @1310nm wavelength for singlemode
- Recommended termini insertion/removal tool part number: 182-011-18 (sold separately)
- Replacement ASR part number: 180-159ASR (sold separetely)

SHELL SIZE AND ARRANGEMENT



Shell Size	Arrangement	Thread A	ØB Max
11	02	.7500-.1P-.3L-TS-2A	0.985 (25.02)
13	04	.8750-.1P-.3L-TS-2A	1.160 (29.46)
15	06	1.0000-.1P-.3L-TS-2A	1.280 (32.51)
17	08	1.1875-.1P-.3L-TS-2A	1.410 (35.81)
19	12	1.2500-.1P-.3L-TS-2A	1.520 (38.61)
21	16	1.3750-.1P-.3L-TS-2A	1.645 (41.78)
23	24	1.5000-.1P-.3L-TS-2A	1.770 (44.96)
25	32	1.6250-.1P-.3L-TS-2A	1.890 (48.01)

ARINC 801

180-159 (06) Plug / (G6) Plug with EMI/RFI/Ground Spring

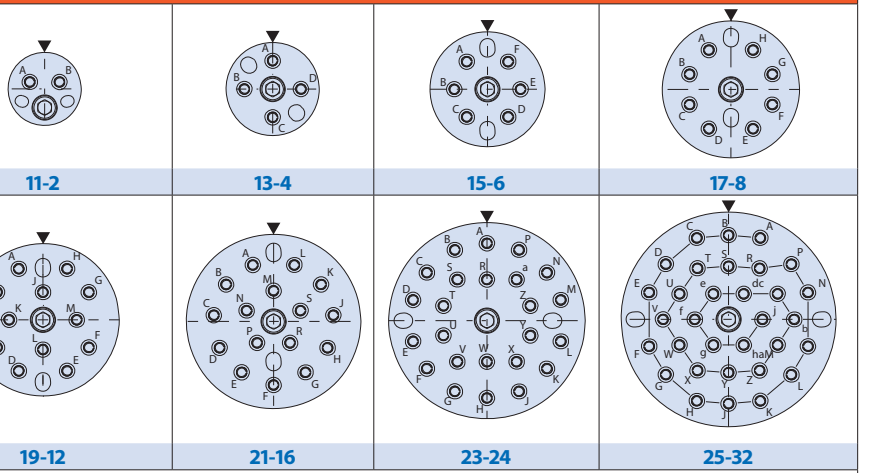
Tight-tolerance MIL-DTL-38999 Series III type Cable Plug. Compatible with Size 16 snap-in, rear-release ARINC 801 genderless termini (Glenair series 181-076). Plug with EMI/RFI/ground spring (G6) is available. Alignment Sleeve Retainer (ASR) facilitates optimum optical fiber alignment, low dB data loss performance, and is removable for easy inspection and maintenance. Robust anti-decoupling mechanism and environmental sealing for use in high vibration, shock, and high altitude aerospace and military/defense applications. Coupling nut and connector body materials include Aluminum alloy, composite thermoplastic, stainless steel, and marine bronze. Keyed polarization for mis-mate protection. Available insert arrangements support from two to 32 singlemode and multimode termini.

MATERIAL/FINISH

- Coupling nut for composite connector: High-grade rigid dielectric
- Inserts and ASR: Al Alloy / Anodize
- Inserts for composite connector: Composite or Al Alloy – MFR's Option
- Alignment Sleeves: Zirconia ceramic
- Seals: Fluorosilicone
- EMI/RFI/Ground Spring (G6 configuration): BeCu Copper Alloy / Nickel
- Hardware: Stainless steel / passivate

HOW TO ORDER					
Sample Part Number	**180-159**	**NF**	**06**	**–17–8**	**N**
Fiber Optic connector	ARINC 801, MIL-DTL-38999 Series III Type				
Material/Finish Code	See table				
Connector Style, Plug	**06** = Plug (standard) **G6** = Plug with EMI/RFI/Ground Spring				
Shell Size - Insert Arrangement	See table				
Alternate Key Position	per MIL-DTL-38999 Series III. **A**, **B**, **C**, **D**, **E**, **N** = Normal, omit for universal key				

SHELL SIZE / CONTACT ARRANGEMENTS (FACE OF RECEPTACLE INSERT)



▼ = Master Key

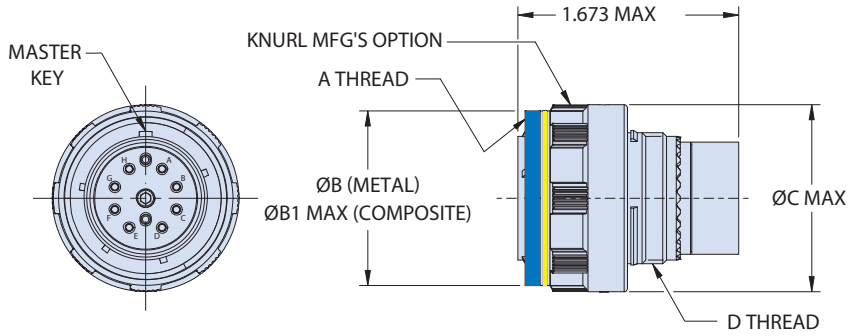
MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
ME	Aluminum Alloy	Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black (RoHS)
XM	Composite	Electroless Nickel
XMT		Nickel - PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
MS	Stainless Steel	Electroless Nickel
ZL		Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	No Plating

NOTES

- Universal connectors are intended for use in testing facilities only and should be highly evaluated before consideration in another environment.
- Universal connectors are intended for use in testing facilities only and should be highly evaluated before consideration in another environment.
- Plug connector with universal polarization contains master key only.
- For dummy terminus, see Glenair 181-128.
- Insert/extraction tool: 809-131 (M81969/14-03).
- Recommended ASR torque value: 3 to 4 in-lb

180-159 (06) Plug / (G6) Plug with EMI/RFI/Ground Spring

PLUG DIMENSIONS



Shell Code	Shell Size	A Thread	Ø B (metal connectors)	Ø B1 Max (composite connectors)	Ø C Max	D Thread
B	11	.7500-.1P-.3L-TS-2B	0.839 (21.31) 0.831 (21.11)	0.929 (23.60)	0.984 (24.99)	M15 X 1.0-6g 0.100R
C	13	.8750-.1P-.3L-TS-2B	1.008 (25.60) 1.000 (25.40)	1.110 (28.19)	1.157 (29.39)	M18 X 1.0-6g 0.100R
D	15	1.0000-.1P-.3L-TS-2B	1.138 (28.91) 1.130 (28.70)	1.232 (31.29)	1.280 (32.51)	M22 X 1.0-6g 0.100R
E	17	1.1875-.1P-.3L-TS-2B	1.276 (32.41) 1.268 (32.21)	1.358 (34.49)	1.406 (35.71)	M25 X 1.0-6g 0.100R
F	19	1.2500-.1P-.3L-TS-2B	1.382 (35.10) 1.374 (34.90)	1.469 (37.31)	1.516 (38.51)	M28 X 1.0-6g 0.100R
G	21	1.3750-.1P-.3L-TS-2B	1.508 (38.30) 1.500 (38.10)	1.594 (40.49)	1.642 (41.71)	M31 X 1.0-6g 0.100R
H	23	1.5000-.1P-.3L-TS-2B	1.626 (41.30) 1.618 (41.10)	1.720 (43.69)	1.768 (44.91)	M34 X 1.0-6g 0.100R
J	25	1.6250-.1P-.3L-TS-2B	1.752 (44.50) 1.744 (44.30)	1.843 (46.81)	1.890 (48.01)	M37 X 1.0-6g 0.100R

180-159 (05) In-Line Receptacle

ARINC 801

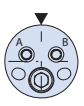
Tight-tolerance MIL-DTL-38999 Series III type In-Line Receptacles. Compatible with Size 16 snap-in, rear-release ARINC 801 genderless termini (Glenair series 181-076). Precision-manufactured insert ensures optimum optical fiber alignment and low dB data loss performance. Triple-start stub ACME threads are for fast mating. The ARINC 801 fiber optic system leverages D38999 mechanical and environmental design elements including mating interface, accessory attachment interface, ratcheting coupling nut, polarization keyways, O-ring seals, panel cutouts, and more. Connector shell materials include aluminum alloy, composite thermoplastic, stainless steel, and marine bronze. Keyed polarization for mis-mate protection. Available insert arrangements support from two to thirty-two singlemode and multimode termini.

MATERIAL/FINISH

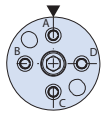
- Inserts: Al Alloy / Anodize
- Inserts for composite connector: Composite or Al Alloy – MFR's Option
- Seals: Fluorosilicone
- Hardware: Stainless steel / passivate

HOW TO ORDER					
Sample Part Number	**180-159**	**NF**	**05**	**–17–8**	**N**
Fiber Optic connector	ARINC 801, MIL-DTL-38999 Series III Type				
Material/Finish Code	See Material and Finish table				
Connector Style, Receptacles	**05** = In-Line Receptacle				
Shell Size - Insert Arrangement	See Shell Size / Contact Arrangements table				
Alternate Key Position	per MIL-DTL-38999 Series III. **A**, **B**, **C**, **D**, **E**, **N** = Normal, omit for universal key				

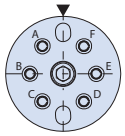
SHELL SIZE / CONTACT ARRANGEMENTS (FACE OF RECEPTACLE INSERT)



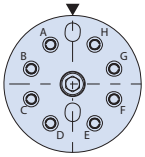
11-2



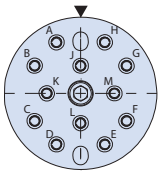
13-4



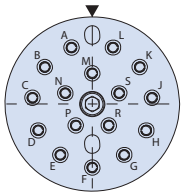
15-6



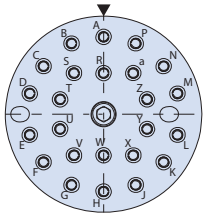
17-8



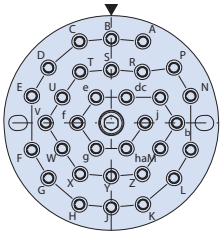
19-12



21-16



23-24



25-32

▼ = Master Key

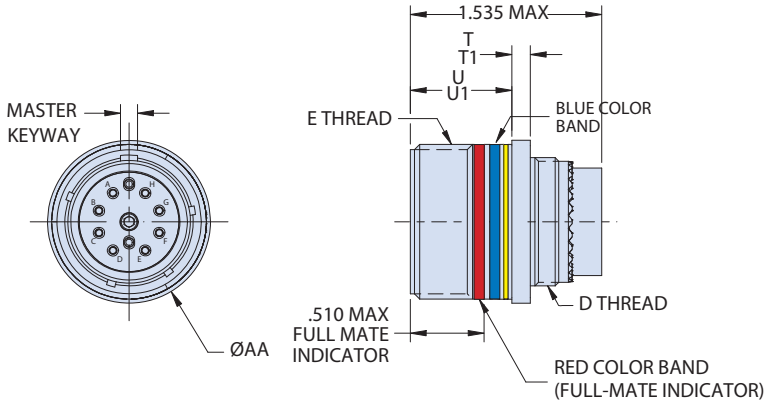
MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
ME	Aluminum Alloy	Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black (RoHS)
XM	Composite	Electroless Nickel
XMT		Nickel - PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
MS	Stainless Steel	Electroless Nickel
ZL		Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	De-Grease / No Plating

NOTES

- Universal connectors are intended for use in testing facilities only and should be highly evaluated before consideration in another environment.
- Receptacle connector with universal key polarization contains all key way polarizations (A, B, C, D, E, N) which may have overlap in adjacent minor key ways.
- Plug connector with universal polarization contains master key only.
- For dummy terminus, see Glenair 181-128.
- Insert/extraction tool: 809-131 (M81969/14-03).

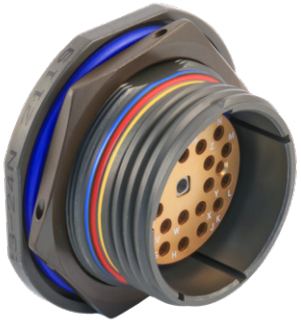
180-159 (05) In-Line Receptacle

IN-LINE RECEPTACLE - DIMENSIONS



Shell Code	Shell Size	E Thread	T	T1 (Composite)	U	U1 (Composite)	D Thread	Ø AA
B	11	.7500-.1P-.3L-TS-2A	.098 (2.49) .083 (2.11)	.144 (3.66) .083 (2.11)	.820 (20.83) .771 (19.58)	.823 (20.90) .768 (19.51)	M15 X 1.0-6g 0.100R	.840 (21.34)
C	13	.8750-.1P-.3L-TS-2A					M18 X 1.0-6g 0.100R	.963 (24.46)
D	15	1.0000-.1P-.3L-TS-2A					M22 X 1.0-6g 0.100R	1.090 (27.69)
E	17	1.1875-.1P-.3L-TS-2A					M25 X 1.0-6g 0.100R	1.275 (32.39)
F	19	1.2500-.1P-.3L-TS-2A					M28 X 1.0-6g 0.100R	1.337 (33.96)
G	21	1.3750-.1P-.3L-TS-2A	.126 (3.20) .083 (2.11)	.171 (4.34) .083 (2.11)	.790 (20.07) .741 (18.82)	.791 (20.09) .736 (18.69)	M31 X 1.0-6g 0.100R	1.463 (37.16)
H	23	1.5000-.1P-.3L-TS-2A					M34 X 1.0-6g 0.100R	1.587 (40.31)
J	25	1.6250-.1P-.3L-TS-2A					M37 X 1.0-6g 0.100R	1.713 (43.51)

180-159 (08) Jam Nut Receptacle



Tight-tolerance MIL-DTL-38999 Series III type Jam Nut Receptacles. Compatible with Size 16 snap-in, rear-release ARINC 801 genderless termini (Glenair series 181-076). Precision-machined insert ensures optimum optical fiber alignment and low dB data loss performance. Triple-start stub ACME threads for fast mating and robust anti-decoupling. The ARINC 801 fiber optic system leverages D38999 mechanical and environmental design elements including mating interface, accessory attachment interface, ratcheting coupling nut, polarization keyways, O-ring seals, panel cutouts, and more. Connector shell materials include aluminum alloy, composite thermoplastic, stainless steel, and marine bronze. Keyed polarization for mis-mate protection. Available insert arrangements support from two to 32 singlemode and multimode termini.

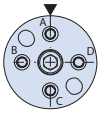
MATERIAL/FINISH NOTES

- Jam nut for composite receptacle: Al Alloy / See table
- Inserts: Al Alloy / Anodize
- Inserts for composite connector: Composite or Al Alloy – MFR's Option
- Seals: Fluorosilicone
- Hardware: Stainless steel / passivate

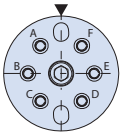
HOW TO ORDER					
Sample Part Number	**180-159**	**NF**	**08**	**–17–8**	**N**
Fiber Optic connector	ARINC 801, MIL-DTL-38999 Series III Type				
Material/Finish Code	See Material and Finish table				
Connector Style, Receptacles	**08** = Jam Nut Receptacle				
Shell Size - Insert Arrangement	See Shell Size / Contact Arrangements table				
Alternate Key Position	per MIL-DTL-38999 Series III. **A**, **B**, **C**, **D**, **E**, **N** = Normal, omit for universal key				

SHELL SIZE / CONTACT ARRANGEMENTS (FACE OF RECEPTACLE INSERT)

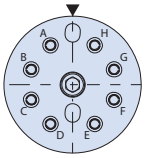
11-2



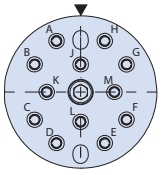
13-4



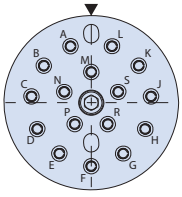
15-6



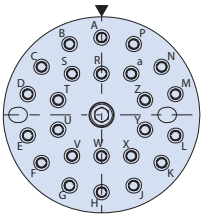
17-8



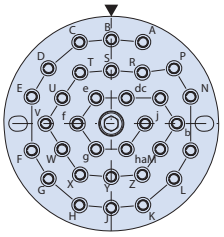
19-12



21-16



23-24



25-32

▼ = Master Key

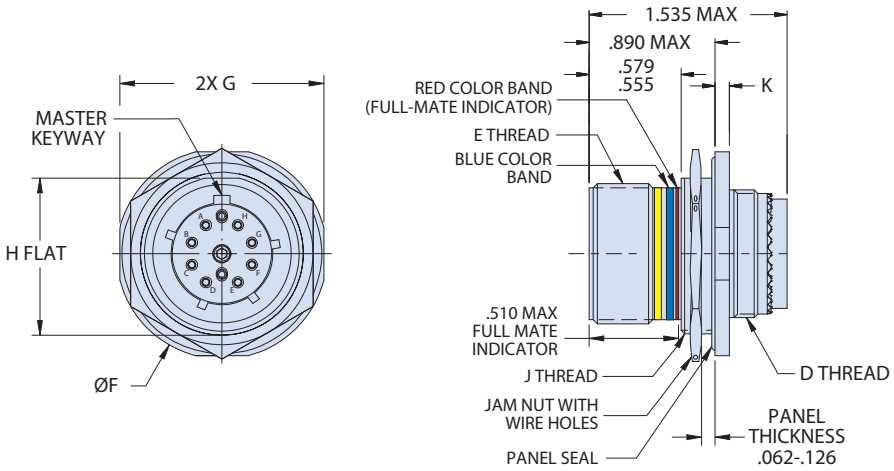
MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
ME	Aluminum Alloy	Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black (RoHS)
XM	Composite	Electroless Nickel
XMT		Nickel - PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
MS	Stainless Steel	Electroless Nickel
ZL		Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	De-Grease / No Plating

NOTES

- Universal connectors are intended for use in testing facilities only and should be highly evaluated before consideration in another environment.
- Receptacle connector with universal key polarization contains all key way polarizations (A, B, C, D, E, N) which may have overlap in adjacent minor key ways.
- Plug connector with universal polarization contains master key only.
- Blue color band indicates rear release retention system.
- For dummy terminus, see Glenair 181-128.
- Insert/extraction tool: 809-131 (M81969/14-03).

180-159 (08) Jam Nut Receptacle

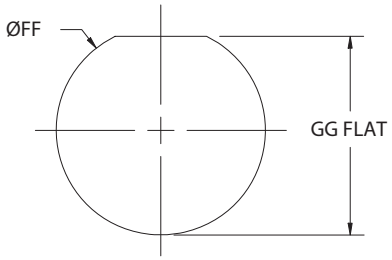
JAM NUT MOUNT RECEPTACLE DIMENSIONS



Shell Code	Shell Size	E Thread	Ø F	G	H	J Thread	D Thread	K
B	11	.7500-.1P-.3L-TS-2A	1.386 (35.20) 1.362 (34.59)	1.268 (32.21) 1.236 (31.39)	.755 (19.18) .745 (18.92)	M20 X 1.0-6g 0.100R	M15 X 1.0-6g 0.100R	.121 (3.07) .083 (2.11)
C	13	.8750-.1P-.3L-TS-2A	1.512 (38.40) 1.488 (37.80)	1.390 (35.31) 1.358 (34.49)	.942 (23.93) .932 (23.67)	M25 X 1.0-6g 0.100R	M18 X 1.0-6g 0.100R	
D	15	1.0000-.1P-.3L-TS-2A	1.638 (41.61) 1.614 (41.00)	1.516 (38.51) 1.484 (37.69)	1.066 (27.08) 1.056 (26.82)	M28 X 1.0-6g 0.100R	M22 X 1.0-6g 0.100R	
E	17	1.1875-.1P-.3L-TS-2A	1.764 (44.81) 1.740 (44.20)	1.642 (41.71) 1.610 (40.89)	1.191 (30.25) 1.181 (30.00)	M32 X 1.0-6g 0.100R*	M25 X 1.0-6g 0.100R	
F	19	1.2500-.1P-.3L-TS-2A	1.949 (49.50) 1.925 (48.90)	1.827 (46.41) 1.795 (45.59)	1.316 (33.43) 1.306 (33.17)	M35 X 1.0-6g 0.100R	M28 X 1.0-6g 0.100R	.154 (3.91) .114 (2.90)
G	21	1.3750-.1P-.3L-TS-2A	2.075 (52.71) 2.051 (52.10)	1.953 (49.61) 1.921 (48.79)	1.441 (36.60) 1.431 (36.35)	M38 X 1.0-6g 0.100R	M31 X 1.0-6g 0.100R	
H	23	1.5000-.1P-.3L-TS-2A	2.201 (55.91) 2.177 (55.30)	2.079 (52.81) 2.047 (51.99)	1.566 (39.78) 1.556 (39.52)	M41 X 1.0-6g 0.100R	M34 X 1.0-6g 0.100R	
J	25	1.6250-.1P-.3L-TS-2A	2.323 (59.00) 2.299 (58.39)	2.205 (56.01) 2.173 (55.19)	1.691 (42.95) 1.681 (42.70)	M44 X 1.0-6g 0.100R	M37 X 1.0-6g 0.100R	

* Modified major diameter 1.252 - 1.257

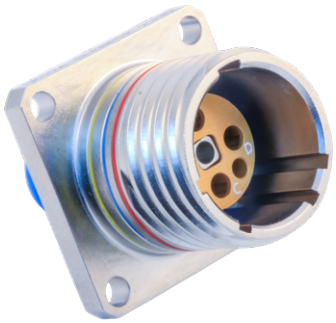
JAM NUT PANEL CUT-OUT



Shell Code	Shell Size	Ø FF	GG Flat
B	11	0.835 (21.21) 0.825 (20.96)	0.771 (19.58) 0.761 (19.33)
C	13	1.020 (25.91) 1.010 (25.65)	0.955 (24.26) 0.945 (24.00)
D	15	1.145 (29.08) 1.135 (28.83)	1.085 (27.56) 1.075 (27.30)
E	17	1.270 (32.26) 1.260 (32.00)	1.210 (30.73) 1.200 (30.48)
F	19	1.395 (35.43) 1.385 (35.18)	1.335 (33.91) 1.325 (33.65)
G	21	1.520 (38.61) 1.510 (38.35)	1.460 (37.08) 1.450 (36.83)
H	23	1.645 (41.78) 1.635 (41.53)	1.585 (40.26) 1.575 (40.00)
J	25	1.770 (44.96) 1.760 (44.70)	1.710 (43.43) 1.700 (43.18)

180-159 (H7) Wall Mount Receptacle, Round Holes

ARINC 801



Tight-tolerance MIL-DTL-38999 Series III type Wall Mount Receptacles, Round Holes. Compatible with Size 16 snap-in, rear-release ARINC 801 genderless termini (Glenair series 181-076). Precision-machined insert ensures optimum optical fiber alignment and low dB data loss performance. Triple-start stub ACME threads for fast mating and robust anti-decoupling. The ARINC 801 fiber optic system leverages D38999 mechanical and environmental design elements including mating interface, accessory attachment interface, ratcheting coupling nut, polarization keyways, O-ring seals, panel cutouts, and more. Connector shell materials include aluminum alloy, composite thermoplastic, stainless steel, and marine bronze. Keyed polarization for mis-mate protection. Available insert arrangements support from two to 32 singlemode and multimode termini.

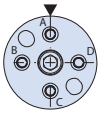
MATERIAL/FINISH NOTES

- Inserts for composite connector: Composite or Al Alloy – MFR's Option
- Seals: Fluorosilicone
- Hardware: Stainless steel / passivate

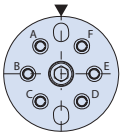
HOW TO ORDER					
Sample Part Number	**180-159**	**NF**	**H7**	**–17–8**	**N**
Fiber Optic connector	ARINC 801, MIL-DTL-38999 Series III Type				
Material/Finish Code	See Material and Finish table				
Connector Style, Receptacles	**H7** = Wall Mount Receptacle with Round Holes				
Shell Size - Insert Arrangement	See Shell Size / Contact Arrangements table				
Alternate Key Position	per MIL-DTL-38999 Series III. **A**, **B**, **C**, **D**, **E**, **N** = Normal, omit for universal key				

SHELL SIZE / CONTACT ARRANGEMENTS (FACE OF RECEPTACLE INSERT)

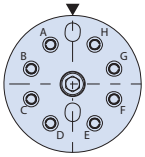
11-2



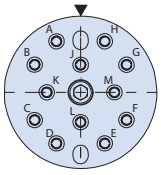
13-4



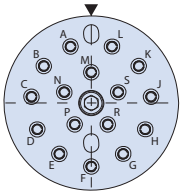
15-6



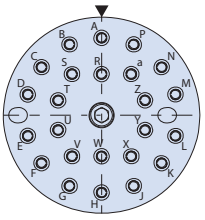
17-8



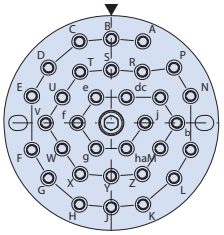
19-12



21-16



23-24



25-32

▼ = Master Key

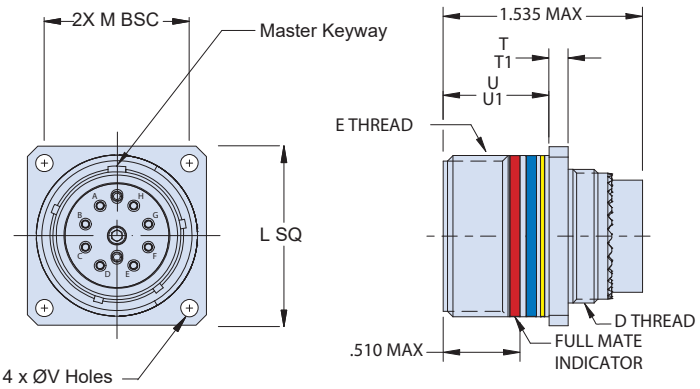
MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
ME	Aluminum Alloy	Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black (RoHS)
XM	Composite	Electroless Nickel
XMT		Nickel - PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
MS	Stainless Steel	Electroless Nickel
ZL		Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	De-Grease / No Plating

NOTES

- Universal connectors are intended for use in testing facilities only and should be highly evaluated before consideration in another environment.
- Receptacle connector with universal key polarization contains all key way polarizations (A, B, C, D, E, N) which may have overlap in adjacent minor key ways.
- Plug connector with universal polarization contains master key only.
- Blue color band indicates rear release retention system.
- For dummy terminus, see Glenair 181-128.
- Insert/extraction tool: 809-131 (M81969/14-03).

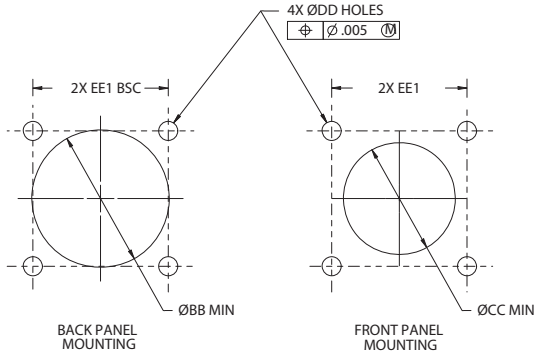
180-159 (H7) Wall Mount Receptacle, Round Holes

WALL MOUNT WITH ROUND HOLES - DIMENSIONS



Shell Code	Shell Size	E Thread	L Sq	M Bsc	T	T1 (Composite)	U	U1 (Composite)	D Thread	Ø V Holes
B	11	.7500-.1P-.3L-TS-2A	1.043 (26.49) 1.019 (25.88)	.812 (20.62)	.098 (2.49) .083 (2.11)	.144 (3.66) .083 (2.11)	.820 (20.83) .771 (19.58)	.823 (20.90) .768 (19.51)	M15 X 1.0-6g 0.100R	.136 (3.45) .120 (3.05)
C	13	.8750-.1P-.3L-TS-2A	1.138 (28.91) 1.114 (28.30)	.906 (23.01)					M18 X 1.0-6g 0.100R	
D	15	1.0000-.1P-.3L-TS-2A	1.232 (31.29) 1.208 (30.68)	.969 (24.61)					M22 X 1.0-6g 0.100R	
E	17	1.1875-.1P-.3L-TS-2A	1.323 (33.60) 1.299 (32.99)	1.062 (26.97)					M25 X 1.0-6g 0.100R	
F	19	1.2500-.1P-.3L-TS-2A	1.449 (36.80) 1.425 (36.20)	1.156 (29.36)					M28 X 1.0-6g 0.100R	
G	21	1.3750-.1P-.3L-TS-2A	1.575 (40.00) 1.551 (39.40)	1.250 (31.75)	.126 (3.20) .083 (2.11)	.171 (4.34) .083 (2.11)	.790 (20.07) .741 (18.82)	.791 (20.09) .736 (18.69)	M31 X 1.0-6g 0.100R	.162 (4.11) .146 (3.71)
H	23	1.5000-.1P-.3L-TS-2A	1.701 (43.21) 1.677 (42.60)	1.375 (34.92)					M34 X 1.0-6g 0.100R	
J	25	1.6250-.1P-.3L-TS-2A	1.823 (46.30) 1.799 (45.69)	1.500 (38.10)					M37 X 1.0-6g 0.100R	

WALL MOUNT RECEPTACLE WITH ROUND HOLES - CUTOUT



Shell Code	Shell Size	Ø BB Min	Ø CC Min	Ø DD Holes	EE1 Bsc
B	11	.796 (20.22)	.625 (15.88)	.133 (3.38) .123 (3.12)	.812 (20.62)
C	13	.922 (23.42)	.750 (19.05)		.906 (23.01)
D	15	1.047 (26.59)	.906 (23.01)		.969 (24.61)
E	17	1.219 (30.96)	1.016 (25.81)		1.062 (26.97)
F	19	1.297 (32.94)	1.141 (28.98)		1.156 (29.36)
G	21	1.422 (36.12)	1.266 (32.16)		1.250 (31.75)
H	23	1.547 (39.29)	1.375 (34.92)	.159 (4.04) .149 (3.78)	1.375 (34.92)
J	25	1.672 (42.47)	1.484 (37.69)	.155 (3.94) .145 (3.68)	1.500 (38.10)

180-159 (S7) Wall Mount Receptacle, Slotted Holes

ARINC 801

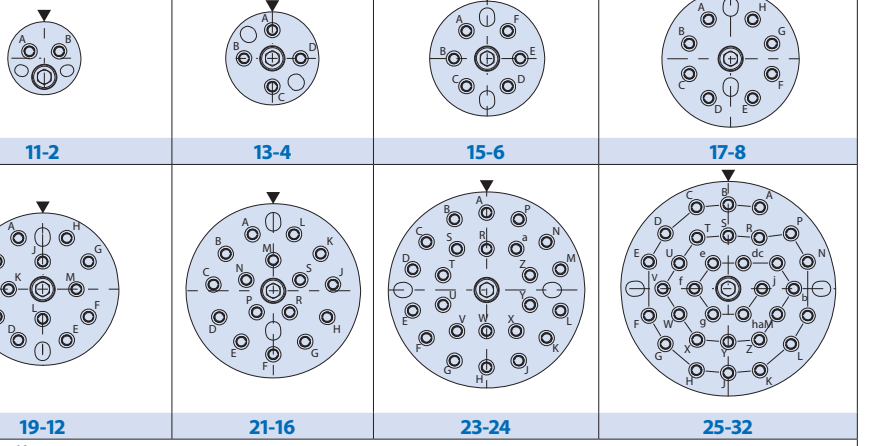
Tight-tolerance MIL-DTL-38999 Series III type Wall Mount Receptacles, Slotted Holes. Compatible with Size 16 snap-in, rear-release ARINC 801 genderless termini (Glenair series 181-076). Precision-machined insert ensures optimum optical fiber alignment and low dB data loss performance. Triple-start stub ACME threads for fast mating and robust anti-decoupling. The ARINC 801 fiber optic system leverages D38999 mechanical and environmental design elements including mating interface, accessory attachment interface, ratcheting coupling nut, polarization keyways, O-ring seals, panel cutouts, and more. Connector shell materials include aluminum alloy, composite thermoplastic, stainless steel, and marine bronze. Keyed polarization for mis-mate protection. Available insert arrangements support from two to 32 singlemode and multimode termini.

MATERIAL/FINISH NOTES

- Inserts for composite connector: Composite or Al Alloy – MFR's Option
- Seals: Fluorosilicone
- Hardware: Stainless steel / passivate

HOW TO ORDER					
Sample Part Number	**180-159**	**NF**	**S7**	**–17–8**	**N**
Fiber Optic connector	ARINC 801, MIL-DTL-38999 Series III Type				
Material/Finish Code	See Material and Finish table				
Connector Style, Receptacles	**S7** = Wall Mount Receptacle with Slotted Holes				
Shell Size - Insert Arrangement	See Shell Size / Contact Arrangements table				
Alternate Key Position	per MIL-DTL-38999 Series III. **A**, **B**, **C**, **D**, **E**, **N** = Normal, omit for universal key				

SHELL SIZE / CONTACT ARRANGEMENTS (FACE OF RECEPTACLE INSERT)



11-2	13-4	15-6	17-8
19-12	**21-16**	**23-24**	**25-32**

▼ = Master Key

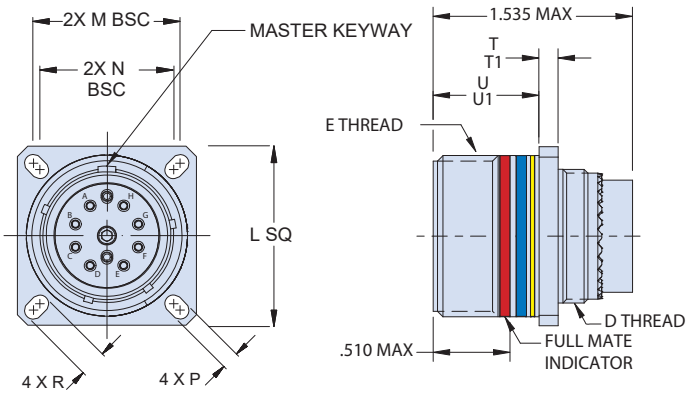
MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
ME	Aluminum	Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black (RoHS)
XM	Composite	Electroless Nickel
XMT		Nickel - PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
MS	Stainless Steel	Electroless Nickel
ZL		Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	De-Grease / No Plating

NOTES

- Universal connectors are intended for use in testing facilities only and should be highly evaluated before consideration in another environment.
- Receptacle connector with universal key polarization contains all key way polarizations (A, B, C, D, E, N) which may have overlap in adjacent minor key ways.
- Plug connector with universal polarization contains master key only.
- Blue color band indicates rear release retention system.
- For dummy terminus, see Glenair 181-128.
- Insert/extraction tool: 809-131 (M81969/14-03).

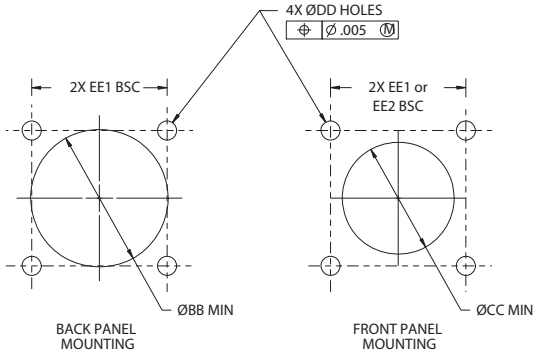
180-159 (S7) Wall Mount Receptacle, Slotted Holes

WALL MOUNT WITH SLOTTED HOLES - DIMENSIONS



Shell Code	Shell Size	E Thread	L Sq	M Bsc	N Bsc	P	R	T	T1 (Composite)	U	U1 (Composite)	D Thread
B	11	.7500-.1P-.3L-TS-2A	1.043 (26.49) 1.019 (25.88)	.812 (20.62)	.719 (18.26)	0.136 (3.45) 0.120 (3.05)	.202 (5.13) .186 (4.72)	.098 (2.49) .083 (2.11)	.144 (3.66) .083 (2.11)	.820 (20.83) .771 (19.58)	.823 (20.90) .768 (19.51)	M15 X 1.0-6g 0.100R
C	13	.8750-.1P-.3L-TS-2A	1.138 (28.91) 1.114 (28.30)	.906 (23.01)	.812 (20.62)							M18 X 1.0-6g 0.100R
D	15	1.0000-.1P-.3L-TS-2A	1.232 (31.29) 1.208 (30.68)	.969 (24.61)	.906 (23.01)		.181 (4.60) .165 (4.19)					M22 X 1.0-6g 0.100R
E	17	1.1875-.1P-.3L-TS-2A	1.323 (33.60) 1.299 (32.99)	1.062 (26.97)	.969 (24.61)		.202 (5.13) .186 (4.72)					M25 X 1.0-6g 0.100R
F	19	1.2500-.1P-.3L-TS-2A	1.449 (36.80) 1.425 (36.20)	1.156 (29.36)	1.062 (26.97)							M28 X 1.0-6g 0.100R
G	21	1.3750-.1P-.3L-TS-2A	1.575 (40.00) 1.551 (39.40)	1.250 (31.75)	1.156 (29.36)			.126 (3.20) .083 (2.11)	.171 (4.34) .083 (2.11)	.790 (20.07) .741 (18.82)	.791 (20.09) .736 (18.69)	M31 X 1.0-6g 0.100R
H	23	1.5000-.1P-.3L-TS-2A	1.701 (43.21) 1.677 (42.60)	1.375 (34.92)	1.250 (31.75)	0.162 (4.11) 0.146 (3.71)	.250 (6.35) .234 (5.94)					M34 X 1.0-6g 0.100R
J	25	1.6250-.1P-.3L-TS-2A	1.823 (46.30) 1.799 (45.69)	1.500 (38.10)	1.375 (34.92)							M37 X 1.0-6g 0.100R

WALL MOUNT RECEPTACLE WITH SLOTTED HOLES - CUTOUT



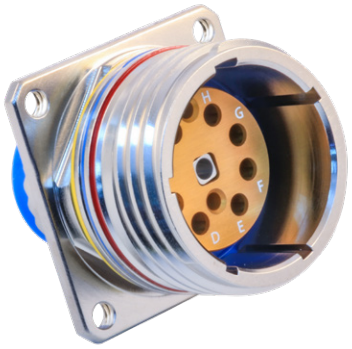
Shell Code	Shell Size	Ø BB Min	Ø CC Min	Ø DD Holes	EE1 Bsc	EE2 Bsc*
B	11	.796 (20.22)	.625 (15.88)	.133 (3.38) .123 (3.12)	.812 (20.62)	.719 (18.26)
C	13	.922 (23.42)	.750 (19.05)		.906 (23.01)	.812 (20.62)
D	15	1.047 (26.59)	.906 (23.01)		.969 (24.61)	.906 (23.01)
E	17	1.219 (30.96)	1.016 (25.81)		1.062 (26.97)	.969 (24.61)
F	19	1.297 (32.94)	1.141 (28.98)		1.156 (29.36)	1.062 (26.97)
G	21	1.422 (36.12)	1.266 (32.16)		1.250 (31.75)	1.156 (29.36)
H	23	1.547 (39.29)	1.375 (34.92)	.159 (4.04) .149 (3.78)	1.375 (34.92)	1.250 (31.75)
J	25	1.672 (42.47)	1.484 (37.69)	.155 (3.94) .145 (3.68)	1.500 (38.10)	1.375 (34.92)

*S7 wall mount receptacle can be front panel mounted using cutout dimension EE1 or EE2.

ARINC 801 Optical Termini and Connectors

180-159 Wall Mount, (T7) Threaded Insert Holes (CM) Metric Clinch Nuts

ARINC 801



Tight-tolerance MIL-DTL-38999 Series III type Wall Mount Receptacles, Threaded Holes or Metric Clinch Nuts. Compatible with Size 16 snap-in, rear-release ARINC 801 genderless termini (Glenair series 181-076). Precision-machined insert ensures optimum optical fiber alignment and low dB data loss performance. Triple-start stub ACME threads for fast mating and robust anti-decoupling. The ARINC 801 fiber optic system leverages D38999 mechanical and environmental design elements including mating interface, accessory attachment interface, ratcheting coupling nut, polarization keyways, O-ring seals, panel cutouts, and more. Connector shell materials include aluminum alloy, composite thermoplastic, stainless steel, and marine bronze. Keyed polarization for mis-mate protection. Available insert arrangements support from two to 32 singlemode and multimode termini.

MATERIAL/FINISH NOTES

- Inserts for composite connector: Composite or Al Alloy – MFR's Option
- Seals: Fluorosilicone
- Hardware: Stainless steel / passivate

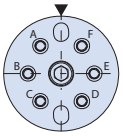
HOW TO ORDER

Sample Part Number	180-159	NF	T7	–17–8	N
Fiber Optic connector	ARINC 801, MIL-DTL-38999 Series III Type				
Material/Finish Code	See Material and Finish table				
Connector Style, Receptacles	**T7** = Wall Mount Receptacle with Threaded Holes **CM** = Wall Mount Receptacle with Metric Clinch Nuts				
Shell Size - Insert Arrangement	See Shell Size / Contact Arrangements table				
Alternate Key Position	per MIL-DTL-38999 Series III. **A**, **B**, **C**, **D**, **E**, **N** = Normal, omit for universal key				

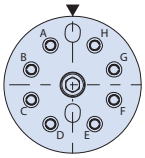
SHELL SIZE / CONTACT ARRANGEMENTS (FACE OF RECEPTACLE INSERT)

11-2

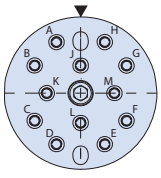
13-4



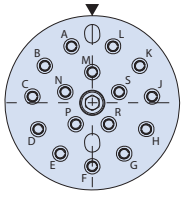
15-6



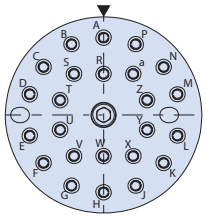
17-8



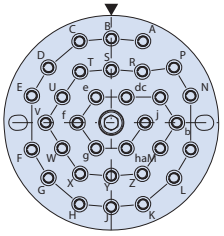
19-12



21-16



23-24



25-32

▼ = Master Key

MATERIAL AND FINISH

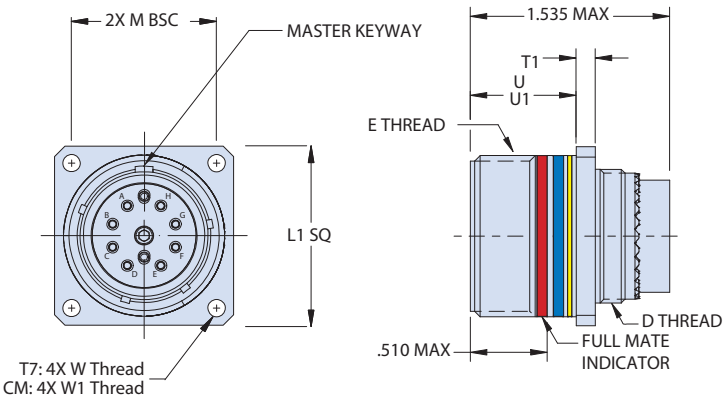
Code	Material	Finish Description
ME	Aluminum	Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black (RoHS)
XM	Composite	Electroless Nickel
XMT		Nickel - PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
MS	Stainless Steel	Electroless Nickel
ZL		Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	De-Grease / No Plating

NOTES

- Universal connectors are intended for use in testing facilities only and should be highly evaluated before consideration in another environment.
- Receptacle connector with universal key polarization contains all key way polarizations (A, B, C, D, E, N) which may have overlap in adjacent minor key ways.
- Plug connector with universal polarization contains master key only.
- Blue color band indicates rear release retention system.
- For dummy terminus, see Glenair 181-128.
- Insert/extraction tool: 809-131 (M81969/14-03).

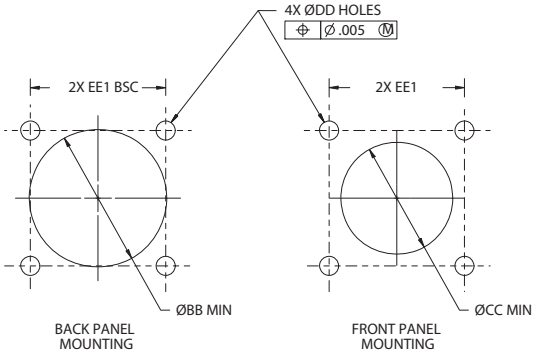
180-159 Wall Mount, (T7) Threaded Insert Holes (CM) Metric Clinch Nuts

WALL MOUNT WITH THREADED HOLES -DIMENSIONS



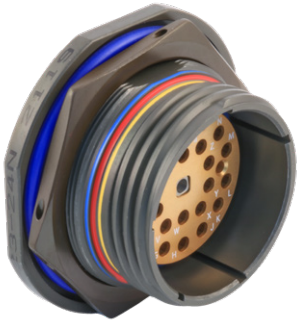
Shell Code	Shell Size	E Thread	L1 SQ	M Bsc	T1	U	U1 (Composite)	D Thread	W Threaded Insert	W1 Clinch Nut
B	11	.7500-.1P-.3L-TS-2A	1.132 (28.75) 1.092 (27.74)	.812 (20.62)	.144 (3.66) .083 (2.11)	.820 (20.83) .771 (19.58)	.823 (20.90) .768 (19.51)	M15 X 1.0-6g 0.100R	.112-40 UNC-2B	M3 X 0.5
C	13	.8750-.1P-.3L-TS-2A	1.226 (31.14) 1.186 (30.12)	.906 (23.01)				M18 X 1.0-6g 0.100R		
D	15	1.0000-.1P-.3L-TS-2A	1.289 (32.74) 1.249 (31.72)	.969 (24.61)				M22 X 1.0-6g 0.100R		
E	17	1.1875-.1P-.3L-TS-2A	1.382 (35.10) 1.342 (34.09)	1.062 (26.97)				M25 X 1.0-6g 0.100R		
F	19	1.2500-.1P-.3L-TS-2A	1.476 (37.49) 1.436 (36.47)	1.156 (29.36)				M28 X 1.0-6g 0.100R		
G	21	1.3750-.1P-.3L-TS-2A	1.582 (40.18) 1.542 (39.17)	1.250 (31.75)	.171 (4.34) .083 (2.11)	.790 (20.07) .741 (18.82)	.791 (20.09) .736 (18.69)	M31 X 1.0-6g 0.100R	.138-32 UNC-2B	M4 X 0.7
H	23	1.5000-.1P-.3L-TS-2A	1.739 (44.17) 1.699 (43.15)	1.375 (34.92)				M34 X 1.0-6g 0.100R		
J	25	1.6250-.1P-.3L-TS-2A	1.884 (47.85) 1.824 (46.33)	1.500 (38.10)				M37 X 1.0-6g 0.100R		

WALL-MOUNT RECEPTACLE CUTOUT



Shell Code	Shell Size	Ø BB Min	Ø CC Min	Ø DD Holes	EE1 Bsc
B	11	.796 (20.22)	.625 (15.88)	.133 (3.38) .123 (3.12)	.812 (20.62)
C	13	.922 (23.42)	.750 (19.05)		.906 (23.01)
D	15	1.047 (26.59)	.906 (23.01)		.969 (24.61)
E	17	1.219 (30.96)	1.016 (25.81)		1.062 (26.97)
F	19	1.297 (32.94)	1.141 (28.98)		1.156 (29.36)
G	21	1.422 (36.12)	1.266 (32.16)		1.250 (31.75)
H	23	1.547 (39.29)	1.375 (34.92)	.159 (4.04) .149 (3.78)	1.375 (34.92)
J	25	1.672 (42.47)	1.484 (37.69)	.155 (3.94) .145 (3.68)	1.500 (38.10)

180-179 Jam Nut Mount Receptacle, .250 Inch Max Panel Thickness



Tight-tolerance MIL-DTL-38999 Series III type Jam Nut Receptacles. Compatible with Size 16 snap-in, rear-release ARINC 801 genderless termini (Glenair series 181-076). Precision-machined insert ensures optimum optical fiber alignment and low dB data loss performance. Triple-start stub ACME threads for fast mating and robust anti-decoupling. The ARINC 801 fiber optic system leverages D38999 mechanical and environmental design elements including mating interface, accessory attachment interface, ratcheting coupling nut, polarization keyways, O-ring seals, panel cutouts, and more. Connector shell materials include aluminum alloy, composite thermoplastic, stainless steel, and marine bronze. Keyed polarization for mis-mate protection. Available insert arrangements support from two to 32 singlemode and multimode termini.

MATERIAL/FINISH NOTES

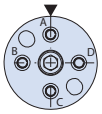
- Jam nut for composite receptacle: Al Alloy / See table
- Inserts: Al Alloy / Anodize
- Inserts for composite connector: Composite or Al Alloy – MFR's Option
- Seals: Fluorosilicone
- Hardware: Stainless steel / passivate

HOW TO ORDER

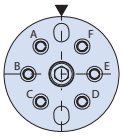
Sample Part Number	180-179	NF	08	17-8	N
Fiber Optic connector	ARINC 801, MIL-DTL-38999 Series III Type				
Material/Finish Code	See Material/Finish table				
Connector Style	**08** = Receptacle, jam nut mount				
Shell Size - Insert Arrangement	See Shell Size / Contact Arrangements table				
Alternate Key Position per MIL-DTL-38999 Series III	**A**, **B**, **C**, **D**, **E**, **N** = Normal, omit for universal key				

SHELL SIZE / CONTACT ARRANGEMENTS (FACE OF RECEPTACLE INSERT)

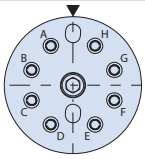
11-2



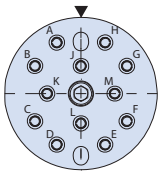
13-4



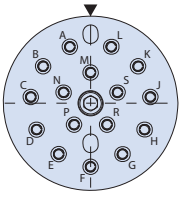
15-6



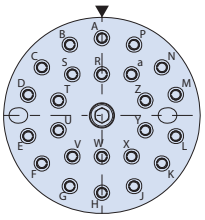
17-8



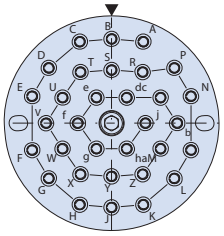
19-12



21-16



23-24



25-32

▼ = Master Key

MATERIAL AND FINISH

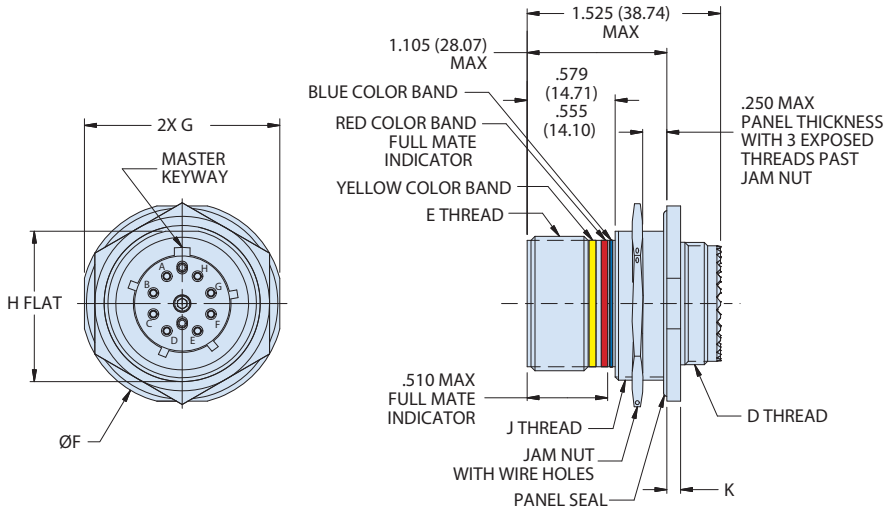
Code	Material	Finish Description
M	Aluminum Alloy	Electroless Nickel
ME		Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black (RoHS)
MS	Stainless Steel	Electroless Nickel
ZL		Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	No Plating

NOTES

- Universal connectors are intended for use in testing facilities only and should be highly evaluated before consideration in another environment.
- Receptacle connector with universal key polarization contains all key way polarizations (A, B, C, D, E, N) which may have overlap in adjacent minor key ways.
- Plug connector with universal polarization contains master key only.
- Blue color band indicates rear release retention system.
- For dummy terminus, see Glenair 181-128.
- Insert/extraction tool: 809-131 (M81969/14-03).

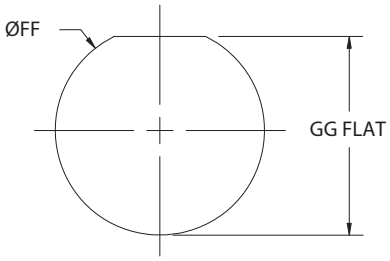
180-179 Jam Nut Mount Receptacle, .250 Inch Max Panel Thickness

JAM NUT MOUNT RECEPTACLE DIMENSIONS



Shell Code	Shell Size	E Thread	Ø F	G	H	J Thread	D Thread	K
B	11	.7500-.1P-.3L-TS-2A	1.386 (35.20) 1.362 (34.59)	1.268 (32.21) 1.236 (31.39)	.755 (19.18) .745 (18.92)	M20 X 1.0-6g 0.100R	M15 X 1.0-6g 0.100R	.123 (3.12) .083 (2.11)
C	13	.8750-.1P-.3L-TS-2A	1.512 (38.40) 1.488 (37.80)	1.390 (35.31) 1.358 (34.49)	.942 (23.93) .932 (23.67)	M25 X 1.0-6g 0.100R	M18 X 1.0-6g 0.100R	
D	15	1.0000-.1P-.3L-TS-2A	1.638 (41.61) 1.614 (41.00)	1.516 (38.51) 1.484 (37.69)	1.066 (27.08) 1.056 (26.82)	M28 X 1.0-6g 0.100R	M22 X 1.0-6g 0.100R	
E	17	1.1875-.1P-.3L-TS-2A	1.764 (44.81) 1.740 (44.20)	1.642 (41.71) 1.610 (40.89)	1.191 (30.25) 1.181 (30.00)	M32 X 1.0-6g 0.100R*	M25 X 1.0-6g 0.100R	
F	19	1.2500-.1P-.3L-TS-2A	1.949 (49.50) 1.925 (48.90)	1.827 (46.41) 1.795 (45.59)	1.316 (33.43) 1.306 (33.17)	M35 X 1.0-6g 0.100R	M28 X 1.0-6g 0.100R	.153 (3.89) .114 (2.90)
G	21	1.3750-.1P-.3L-TS-2A	2.075 (52.71) 2.051 (52.10)	1.953 (49.61) 1.921 (48.79)	1.441 (36.60) 1.431 (36.35)	M38 X 1.0-6g 0.100R	M31 X 1.0-6g 0.100R	
H	23	1.5000-.1P-.3L-TS-2A	2.201 (55.91) 2.177 (55.30)	2.079 (52.81) 2.047 (51.99)	1.566 (39.78) 1.556 (39.52)	M41 X 1.0-6g 0.100R	M34 X 1.0-6g 0.100R	
J	25	1.6250-.1P-.3L-TS-2A	2.323 (59.00) 2.299 (58.39)	2.205 (56.01) 2.173 (55.19)	1.691 (42.95) 1.681 (42.70)	M44 X 1.0-6g 0.100R	M37 X 1.0-6g 0.100R	

JAM NUT MOUNT PANEL CUT-OUT



Shell Code	Shell Size	Ø FF	GG Flat
B	11	0.835 (21.21), 0.825 (20.96)	0.771 (19.58), 0.761 (19.33)
C	13	1.020 (25.91), 1.010 (25.65)	0.955 (24.26), 0.945 (24.00)
D	15	1.145 (29.08), 1.135 (28.83)	1.085 (27.56), 1.075 (27.30)
E	17	1.270 (32.26), 1.260 (32.00)	1.210 (30.73), 1.200 (30.48)
F	19	1.395 (35.43), 1.385 (35.18)	1.335 (33.91), 1.325 (33.65)
G	21	1.520 (38.61), 1.510 (38.35)	1.460 (37.08), 1.450 (36.83)
H	23	1.645 (41.78), 1.635 (41.53)	1.585 (40.26), 1.575 (40.00)
J	25	1.770 (44.96), 1.760 (44.70)	1.710 (43.43), 1.700 (43.18)

GLENAIR
SIGNATURE
FIBER OPTIC CONNECTION SYSTEMS

Rugged Fiber Optic CONNECTORS

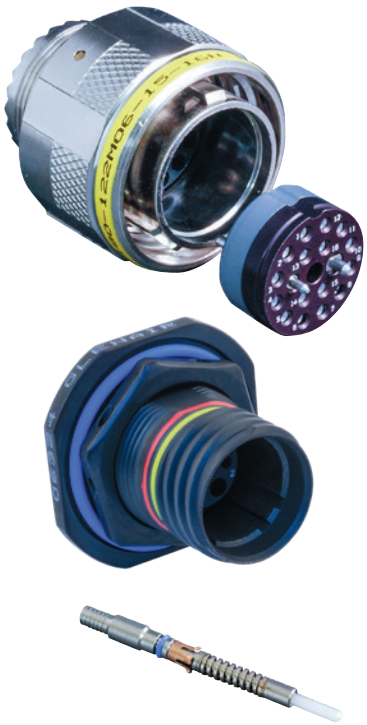
Glenair High Density (GHD): nearly double the density of standard mil-spec fiber optic designs

The system of choice for military and commercial air and space applications with aggressive size and weight requirements. Outstanding optical and environmental performance with nearly double the density of standard mil-spec, butt-joint solutions. Glenair High Density (GHD) is a complete fiber optic system with termini, connectors, cable and conduit assemblies, test probe adapters, tools, and more.

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 900µ to 2.0mm jacketed fiber**
- **M85045/16 cable accommodation**
- **Composite, aluminum, or stainless steel shells with MIL-DTL-38999 mating and accessory threads**
- **Single key termini for APC polish available**
- **Better optical performance than D38999 with nearly double the density**
- **Precision alignment sleeve retainer with integrated guide pins**

Product Selection Guide



GLENAIR HIGH DENSITY (GHD) FIBER OPTIC CONNECTION SYSTEM: SAME OPTICAL, MECHANICAL AND ENVIRONMENTAL PERFORMANCE AS D38999, AT NEARLY DOUBLE THE DENSITY

The GHD fiber optic connection system is a D38999 workalike designed for applications that require higher-density fiber optic insert arrangements with the same outstanding optical and environmental performance as MIL-DTL-38999. The GHD system accommodates a broad range of singlemode and multimode fiber media and offers insertion loss values less than 0.5dB (typical loss for Glenair termini is 0.3 dB). Dense cavity spacing is achieved with an innovative Size 18 genderless front-release terminus design that provides nearly double the density as the standard M28876 and D38999 fiber optic connector series. The GHD system is also available with APC Angle Polish to reduce unwanted back reflection. A removable Alignment Sleeve Retainer (ASR) makes for easy fiber optic cleaning and maintenance in plug connectors. GHD is a complete system that includes keyed and unkeyed termini, a complete range of connector configurations, backshells, accessories, test probe adapters, tools, and more.

DIMENSIONAL NOTES

- Catalog dimensions are subject to change without notice. Consult Glenair engineering for a controlled-release sales drawing.
- Metric dimensions appear in parentheses in diagrams and tables, based on 1 inch = 25.4 mm, for reference only.
- Unless otherwise specified, the following other dimensional tolerances apply:
- .xx = ± .03 (0.8) • .xxx = ± .015 (0.4) • Angles = ± 5°

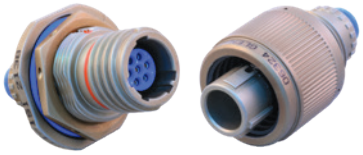
Glenair High Density (GHD) turnkey fiber optic cable and conduit assemblies are supplied by Glenair with the shortest and most reliable lead times in the industry

High-Density Fiber Optic Connection System

For applications requiring optimized size, weight, and fiber density

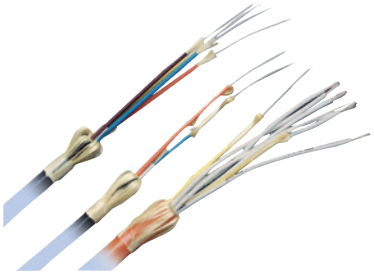
MATERIAL AND FINISH		
Code	Material	Finish Description
M	Aluminum Alloy	Electroless Nickel
MA		Electroless Nickel, Matte
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZNU		Zinc-Nickel, Black
ZR		Zinc-Nickel, Black (RoHS)
XM	Composite	Electroless Nickel
XMT		Nickel - PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
ZL	Stainless Steel	Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	No Plating

NEW SACRIFICIAL PLATING CADMIUM REPLACEMENT:



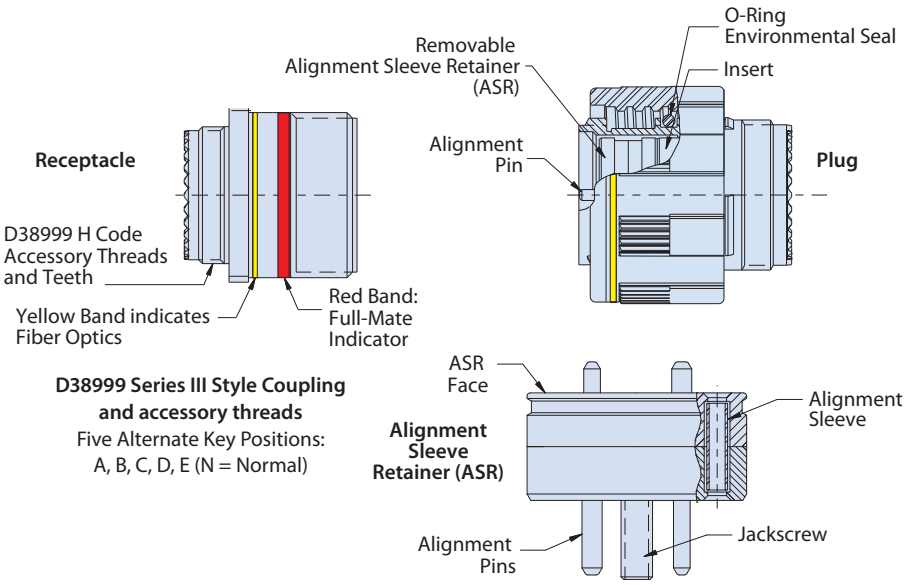
Tin-Zinc 500 (TZ) is the new Glenair gold-standard replacement for Cad over Nickel with excellent conductivity and 500 hours salt-spray resistance.

BULK SIMPLEX FIBER OPTIC CABLE



All Glenair fiber optic connection systems are supported with a complete range of bulk simplex cable choices including stepped and graded-index configurations as well as radiation and atomic oxygen resistant configurations for satellite applications.

GLENAIR HIGH DENSITY (GHD) FEATURES

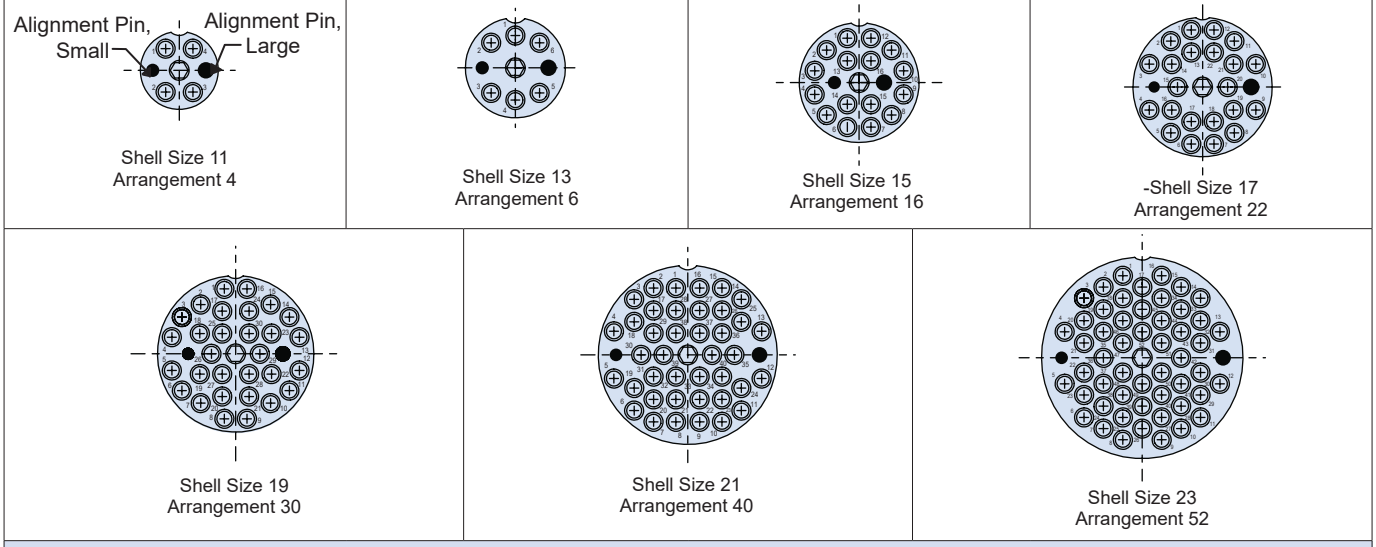


FIBER OPTIC CONNECTOR PERFORMANCE DATA	
Test Description	Performance Specifications
Optical Insertion Loss (MM)	0.35 dB Typical (50/125 and 62.5/125), restricted launch
Optical Insertion Loss (SM)	0.30 dB Typical (9/125)
Optical Return Loss	Better than -40 dB - PC Polish Better than -50 dB - Enhanced PC Polish
Operating Temperature	-55°C to +165°C (cable and epoxy dependent)
Temperature Humidity Cycling	-10°C to +65°C, 5 cycles
Altitude	15,000 ft [4572 m] for 1 hour. Optical assessment only.
Mating Durability	500 Cycles
Vibration - Random	49.5 Grms at ambient temperature. Z and Y axes, 4 hours per axis. Monitored for Discontinuity.
Mechanical Shock (Half-Sine Pulse)	300 G Peak for 3ms duration. 3 shocks in 6 directions. Monitored for Discontinuity.

High-Density Fiber Optic Connection System

For applications requiring optimized size, weight and fiber density

GLENAIR HIGH DENSITY (GHD) INSERT ARRANGEMENTS



Plug face marking with removable alignment sleeve retainer (ASR) shown. Receptacle face - opposite.
ASR includes two guide pins and a threaded center jackscrew.

Fiber Optic Pin Termini Specifications

Assembly Dash Number		Fiber Size Core/Cladding	A Dia. [microns]
Keyed	Non-Keyed		
181-047-1253C	181-056-1253C	9/125 (Singlemode)	125.3
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
181-047-1315C		15/130 (Singlemode)	131.5
181-047-1420C	181-056-1420C	100/140	142.0
181-047-2250C		200/220	225.0
	181-056-2310C	200/230	231.0
	181-056-4350C	400/425	435.0
	181-056-4480C	400/440	448.0

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
181-056	Size #18 Pin Terminus, non-keyed (standard)
181-058	Size #18 Dummy Terminus
181-047	Size #18 Pin Terminus, Keyed for APC Polish
180-122 (06)	Plug Connector with Alignment Sleeve Retainer (standard)
180-122 (G6)	Plug Connector with Alignment Sleeve Retainer and EMI/RFI/Ground Spring
180-122 (05)	In-Line Receptacle Connector
180-122 (08)	Jam Nut Mount Receptacle Connector
180-122 (H7)	Square Flange Receptacle with Round Holes (standard)
180-122 (S7)	Square Flange Receptacle with Slotted Holes

* See fiber optic catalog for complete part number information

PIN DENSITY COMPARISON: GHD VERSUS D38999 AND M28876 AND ARINC 801

Connector Style / Size	11	13	15	17	19	21	23	25
D38999 Cavity Count	2	4	5	8	11	16	21	29/37
ARINC 801 Cavity Count	2	4	6	8	12	16	24	32
M28876 Cavity Count	2	4	8	N/A	N/A	N/A	31	N/A
GHD Cavity Count	4	6	16	22	30	40	52	N/A

COMPATIBLE D38999 SERIES III FIBER OPTIC BACKSHELLS AND ACCESSORIES

440-030 Straight Backshell

189-016 Self-Locking Banding Backshell with Strain Relief

189-037 Self-Locking Banding Backshell with Bend Restrictor

377-014 Self-Locking Convoluted Tubing Adapter, Composite

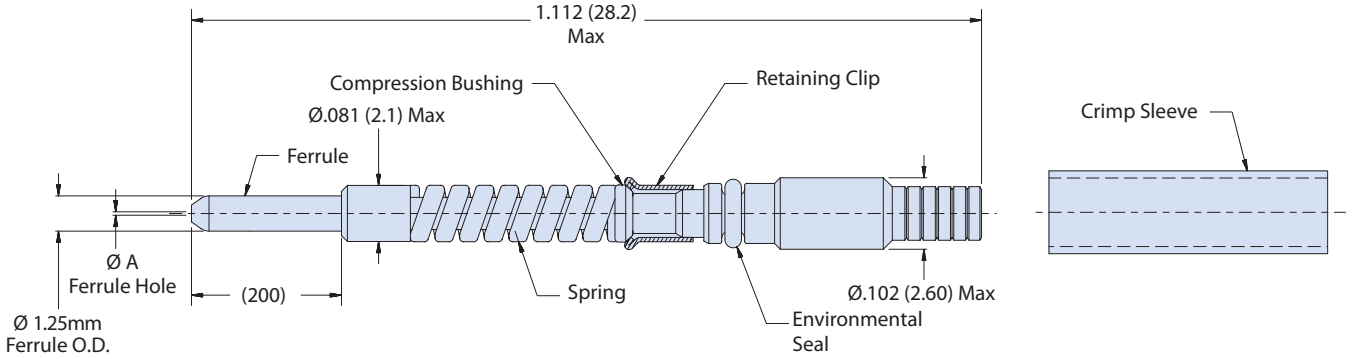
189-038 Composite Adapter for Helical Convoluted Tubing

Rev. 11.1.24

181-056 Size 18 Non-Keyed Terminus
181-058 Dummy Terminus

The Glenair High Density Fiber Optic Connection System is designed for applications that require reduced size and weight as well as outstanding optical and environmental performance. The System offers insertion loss values less than 0.5dB (typical loss for Glenair termini is 0.3 dB). Dense cavity spacing is acheived with an innovative front release terminus design and accomodation for M85045/16 simplex cable. The genderless Size 18 GHD terminus delivers nearly double the density of M28876, D38999, and ARINC 801 with superior optical performance.

181-056 SIZE 18 NON-KEYED TERMINUS



MATERIAL AND FINISH

- Ferrule: Zirconia Ceramic
- Terminus Assembly: Stainless Steel/Passivate
- Retaining Clip: BeCu Alloy
- Spring: Stainless Steel/Passivate
- Seal: Fluorosilicone
- Crimp Sleeve: Brass Alloy/Nickel

NOTES

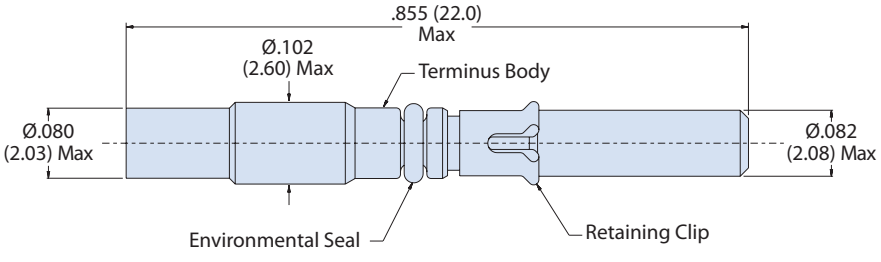
- Crimp Sleeve is supplied with Terminus Assembly, and may be ordered separately (see Table II).
- For terminus less crimp sleeve, omit C from end of part number (e.g. 181-056-1260).
- See Glenair assembly procedure GAP-032 for termination and assembly tools/procedures.
- Recommended extraction tool: 182-011-18
- Recommended insertion tool for simplex fiber: 182-013
- Recommended insertion tool for buffered fiber: 182-019

181-056 HOW TO ORDER

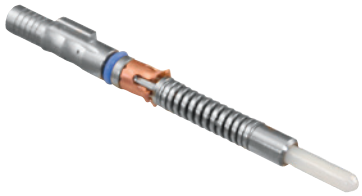
Part Number	Ø A Microns	Fiber Type
181-056-1253C	125.3	Singlemode
181-056-1255C	125.5	Singlemode
181-056-1260C	126.0	Singlemode and Multimode
181-056-1420C	142.0	Multimode
181-056-2310C	231.0	Multimode
181-056-4350C	435.0	Multimode
181-056-4480C	448.0	Multimode
265-002	Crimp Sleeve, Ø2.2mm Max Jacket	

PART NUMBER	DESCRIPTION
181-058	Dummy Terminus, size 18

181-058 SIZE 18 NON-KEYED DUMMY TERMINUS

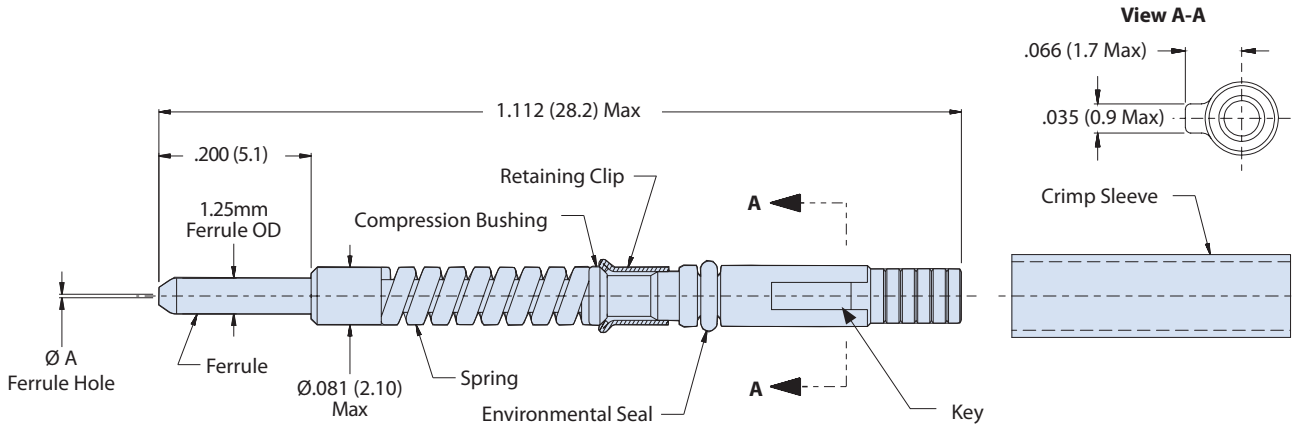


181-047 Size 18 Keyed Terminus for APC Polish



The Glenair High Density Fiber Optic Connection System is designed for applications that require reduced size and weight as well as outstanding optical and environmental performance. The System offers insertion loss values less than 0.5dB (typical loss for Glenair termini is 0.3 dB). Dense cavity spacing is acheived with an innovative front release terminus design and accomodation for M85045/16 cable. The 181-047 version is equipped with a single keying feature for APC polish.

181-047 SIZE 18 KEYED TERMINUS



MATERIAL AND FINISH

- Ferrule: Zirconia Ceramic
- Terminus Assembly: Stainless Steel/Passivate
- Retaining Clip: BeCu Alloy
- Spring: Stainless Steel/Passivate
- Seal: Fluorosilicone
- Crimp Sleeve: Brass Alloy/Nickel

NOTES

- Crimp Sleeve is supplied with Terminus Assembly, and may be ordered separately (see Table II).
- For terminus less crimp sleeve, omit C from end of part number (e.g. 181-047-1255).
- See Glenair assembly procedure GAP-032 for termination and assembly tools/procedures.
- Recommended extraction tool: 182-011-18
- Recommended insertion tool for simplex fiber: 182-013
- Recommended insertion tool for buffered fiber: 182-019

181-056 HOW TO ORDER

Part Number	Ø A Microns	Fiber Type
181-047-1253C	125.3	Singlemode
181-047-1255C	125.5	Singlemode
181-047-1260C	126.0	Singlemode and Multimode
181-047-1315C	131.5	Singlemode
181-047-1420C	142.0	Multimode
181-047-2250C	225.0	Multimode
265-002	Crimp Sleeve, Ø2.2mm Max Jacket	

Rev. 11.1.24

High-Density Fiber Optic Connection System

180-122 (06) Plug Connector with Alignment Sleeve Retainer
180-122 (G6) Plug Connector with ASR and EMI/RFI/Ground Spring

The Series 180-122 Glenair High Density (GHD) fiber optic plug connector is designed for applications that require reduced size and weight as well as outstanding optical and environmental performance. The GHD fiber optic system leverages D38999 mechanical and environmental design elements including mating interface, accessory attachment interface, ratcheting coupling nut, polarization key, panel cutouts, and more. The termini insert, however, has been completely re-engineered with innovative high-density Size 18 genderless front-release terminus design that provides nearly double the density of standard M28876, D38999 and ARINC 801 fiber optic connector series. Keyed GHD system connectors and termini are available with APC Angle Polish to reduce unwanted backreflection. A removable Alignment Sleeve Retainer (ASR) makes for easy termini cleaning and maintenance.

MATERIAL AND FINISH

Code	Material	Finish Description
M*	Aluminum Alloy	Electroless Nickel
MA		Electroless Nickel, Matte Finish
ME		Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
TZ		Tin-Zinc
ZNU		Zinc-Nickel, Black
ZR		Zinc-Nickel, Black(Rohs)
XM	Composite	Electroless Nickel
XMT		Nickel-PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
ZL	Stainless Steel	Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	Unplated

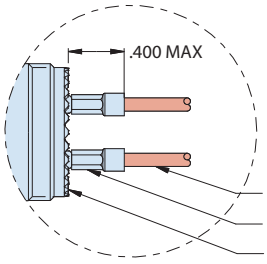
* Inactive for new design. Use "ME" finish.

MATERIAL / FINISH NOTES

- Metal and composite connectors are not designed to be cross mated.
- When selecting a backshell/accessory, ensure adequate clearance around termini with crimp sleeve terminations in order to maintain minimum bend radius and prevent signal loss or damage.
- Coupling nut (for composite plug): high grade rigid dielectric
- Insert: high-grade rigid dielectric or alloy/anodize - mfr's option.
- Alignment sleeve retainer (ASR): al alloy/anodize
- Alignment sleeve: zirconia ceramic
- Seals: fluorosilicone
- Recommended extraction tool: 182-011-18
- Recommended insertion tool for simplex fiber: 182-013
- Recommended insertion tool for buffered fiber: 182-019

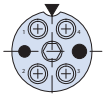
HOW TO ORDER

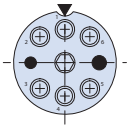
Sample Part Number	180-122	NF	06	-15	-16	N	C
Basic Number	GHD Plug connector with removable alignment sleeve retainer (ASR)						
Material/Finish	See Material and Finish table						
Connector Style	**06** = Plug with Alignment Sleeve Retainer (ASR) **G6** = Plug Connector with Alignment Sleeve Retainer and EMI/RFI/Ground Spring						
Shell Size	See Insert Arrangements table						
Insert Arrangement	See Insert Arrangements table						
Alternate Key Position	**A**, **B**, **C**, **D**, **E**; **N** = Normal (Per MIL-DTL-38999)						
O-Ring Option	**C** = Conductive O-Ring Included (Omit for Standard O-Ring)						

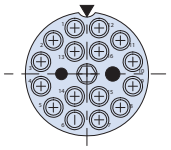


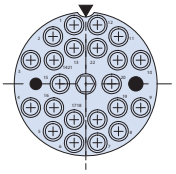
Max crimp sleeve protrusion: Ensure clearance for crimp sleeve terminations when selecting backshell or accessory.

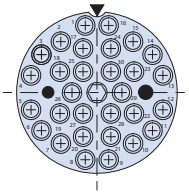
INSERT ARRANGEMENTS

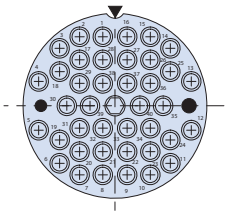

Shell Size **-11**
Arrangement **-4**

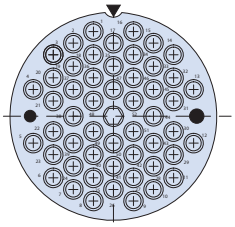

Shell Size **-13**
Arrangement **-6**


Shell Size **-15**
Arrangement **-16**


Shell Size **-17**
Arrangement **-22**


Shell Size **-19**
Arrangement **-30**


Shell Size **-21**
Arrangement **-40**

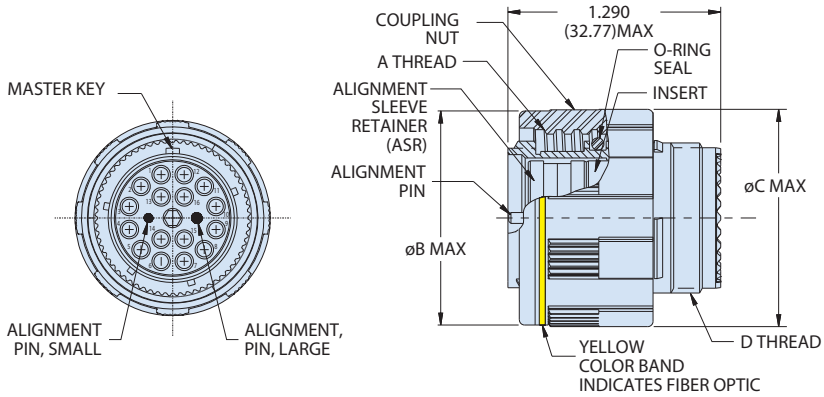

Shell Size **-23**
Arrangement **-52**

Plug face marking with removable alignment sleeve retainer (ASR) shown. Receptacle face - opposite. ASR includes two guide pins and a threaded center jackscrew.
▼= connector master key ● = small alignment pin ● = large alignment pin

Rev. 06.03.25

180-122 (06) Plug Connector with Alignment Sleeve Retainer
180-122ASR Plug Alignment Sleeve Retainer

06 - PLUG WITH ASR



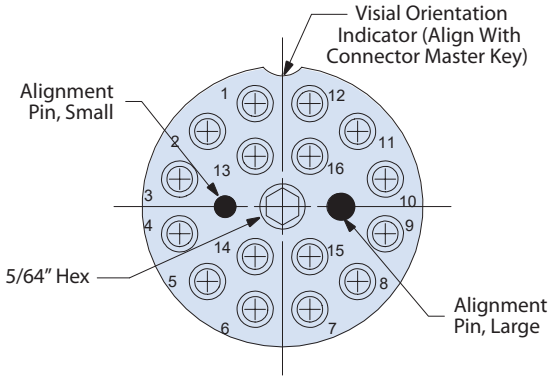
Shell Size	Shell Size Code	A Thread	Ø B Max	Ø C Max	D Thread
-11	B	.7500-.1P-.3L-TS-2B	0.929 (23.60)	0.984 (24.99)	M15 X 1.0-6g 0.100R
-13	C	.8750-.1P-.3L-TS-2B	1.110 (28.19)	1.157 (29.39)	M18 X 1.0-6g 0.100R
-15	D	1.0000-.1P-.3L-TS-2B	1.232 (31.29)	1.280 (32.51)	M22 X 1.0-6g 0.100R
-17	E	1.1875-.1P-.3L-TS-2B	1.358 (34.49)	1.406 (35.71)	M25 X 1.0-6g 0.100R
-19	F	1.2500-.1P-.3L-TS-2B	1.469 (37.31)	1.516 (38.51)	M28 X 1.0-6g 0.100R
-21	G	1.3750-.1P-.3L-TS-2B	1.594 (40.49)	1.642 (41.71)	M31 X 1.0-6g 0.100R
-23	H	1.5000-.1P-.3L-TS-2B	1.720 (43.69)	1.768 (44.91)	M34 X 1.0-6g 0.100R

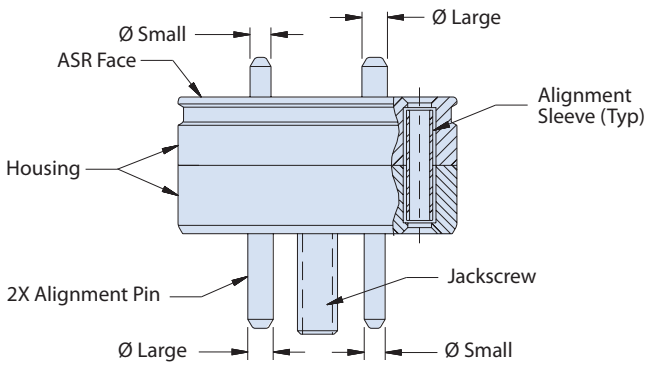
Alignment Sleeve Retainer (ASR)

HOW TO ORDER					
Sample Part Number		**180-122ASR**	**06**	**-15**	**-16**
Basic Number	GHD alignment sleeve retainer (ASR)				
ASR	Alignment Sleeve Retainer				
Shell Size	See Insert Arrangements table				
Insert Arrangement	See Insert Arrangements table				

RECOMMENDED TORQUE ALIGNMENT SLEEVE RETAINER (ASR)		
Shell Size Code	Shell Size	Torque (in-lb)
B	11	3-4
C	13	
D	15	
E	17	
F	19	5-6
G	21	
H	23	

SHELL SIZE 15 ARRANGEMENT 16 SHOWN





Rev. 02.14.25

180-122 (05) In-Line Receptacle Connector

Glenair High Density (GHD)

The Series 180-122 Glenair High Density (GHD) fiber optic in-line receptacle connector is designed for applications that require reduced size and weight as well as outstanding optical and environmental performance. The GHD fiber optic system leverages D38999 mechanical and environmental design elements including mating interface, accessory attachment interface, ratcheting coupling nut, polarization keyways, O-ring seals, panel cutouts, and more. The termini insert, however, has been completely re-engineered with innovative high-density Size 18 genderless front-release terminus design that provides nearly double the density of standard M28876, D38999 and ARINC 801 fiber optic connector series. Keyed GHD system connectors and termini are available with APC Angle Polish to reduce unwanted backreflection.

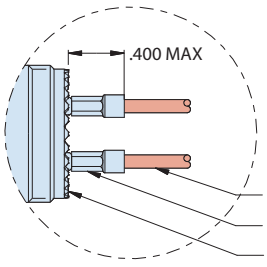
MATERIAL AND FINISH

Code	Material	Finish Description
M*	Aluminum Alloy	Electroless Nickel
MA		Electroless Nickel, Matte Finish
ME		Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
TZ		Tin-Zinc
ZNU		Zinc-Nickel, Black
ZR		Zinc-Nickel, Black(Rohs)
XM	Composite	Electroless Nickel
XMT		Nickel-PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
ZL	Stainless Steel	Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	Unplated

* Inactive for new design. Use "ME" finish.

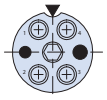
HOW TO ORDER

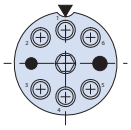
Sample Part Number	180-122	NF	05	-15	-16	N
Basic Number	D38999 Style In-Line Receptacle Connector					
Material/Finish	See Material and Finish table					
Connector Style	**05** = In-Line Receptacle					
Shell Size	See Insert Arrangements table					
Insert Arrangement	See Insert Arrangements table					
Alternate Key Position	**A**, **B**, **C**, **D**, **E**; **N** = Normal (Per MIL-DTL-38999)					

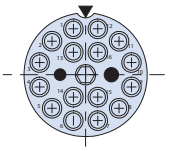


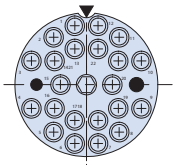
Max crimp sleeve protrusion: Ensure clearance for crimp sleeve terminations when selecting backshell or accessory.

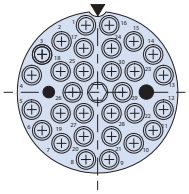
INSERT ARRANGEMENTS

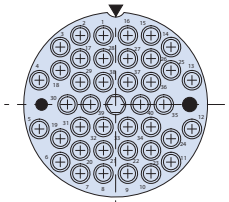

Shell Size **-11**
Arrangement **-4**

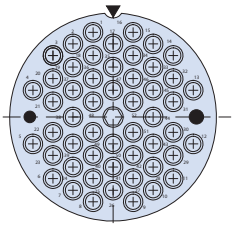

Shell Size **-13**
Arrangement **-6**


Shell Size **-15**
Arrangement **-16**


Shell Size **-17**
Arrangement **-22**


Shell Size **-19**
Arrangement **-30**


Shell Size **-21**
Arrangement **-40**


Shell Size **-23**
Arrangement **-52**

Plug face marking with removable alignment sleeve retainer (ASR) shown. Receptacle face - opposite.
ASR includes two guide pins and a threaded center jackscrew.
▼= connector master key ● = small alignment pin ● = large alignment pin

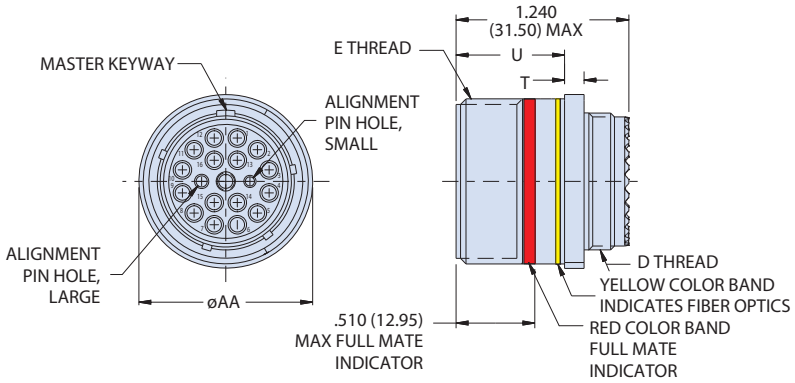
MATERIAL / FINISH NOTES

- Metal and composite connectors are not designed to be cross mated.
- When selecting a backshell/ accessory, ensure adequate clearance around termini with crimp sleeve terminations in order to maintain minimum bend radius and prevent signal loss or damage.
- Insert: high-grade rigid dielectric or alloy/anodize - mfr's option
- Recommended extraction tool: 182-011-18
- Recommended insertion tool for simplex fiber: 182-013
- Recommended insertion tool for buffered fiber: 182-019

Rev. 06.03.25

180-122 (05) In-Line Receptacle Connector

05 - IN-LINE RECEPTACLE



Shell Size	Shell Size Code	E Thread	T	U	D Thread	Ø AA
-11	B	.7500 -.1P -.3L-TS-2A	.144 (3.7) .083 (2.1)	.823 (20.9) .768 (19.5)	M15 X 1.0-6g 0.100R	.840 (21.3)
-13	C	.8750 -.1P - .3L-TS-2A			M18 X 1.0-6g 0.100R	.963 (24.5)
-15	D	1.0000 -.1P -.3L-TS-2A			M22 X 1.0-6g 0.100R	1.090 (27.7)
-17	E	1.1875 -.1P - .3L-TS-2A			M25 X 1.0-6g 0.100R	1.275 (32.4)
-19	F	1.2500 -.1P -.3L-TS-2A			M28 X 1.0-6g 0.100R	1.337 (34.0)
-21	G	1.3750 -.1P - .3L-TS-2A	.171 (4.3) .083 (2.1)	.791 (20.1) .736 (18.7)	M31 X 1.0-6g 0.100R	1.463 (37.2)
-23	H	1.5000 -.1P -.3L-TS-2A			M34 X 1.0-6g 0.100R	1.587 (40.3)

Rev. 10.23.24

180-122 (08) Jam Nut Mount Receptacle Connector

The Series 180-122 Glenair High Density (GHD) fiber optic jam nut mount receptacle connector is designed for applications that require reduced size and weight as well as outstanding optical and environmental performance. The GHD fiber optic system leverages D38999 mechanical and environmental design elements including mating interface, accessory attachment interface, ratcheting coupling nut, polarization keyways, O-ring seals, panel cutouts, and more. The high-density front-release termini insert, however, has been completely re-engineered as an innovative Size 18 genderless front-release terminus design that provides nearly double the density of standard M28876, D38999, and ARINC 801 fiber optic connector series. Keyed GHD system connectors and termini are available with APC Angle Polish to reduce unwanted backreflection.

MATERIAL AND FINISH

Code	Material	Finish Description
M*	Aluminum Alloy	Electroless Nickel
MA		Electroless Nickel, Matte Finish
ME		Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
TZ		Tin-Zinc
ZNU		Zinc-Nickel, Black
ZR		Zinc-Nickel, Black(Rohs)
XM	Composite	Electroless Nickel
XMT		Nickel-PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
ZL	Stainless Steel	Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	Unplated

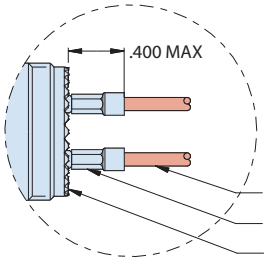
* Inactive for new design. Use "ME" finish.

MATERIAL / FINISH NOTES

- Metal and composite connectors are not designed to be cross mated.
- When selecting a backshell/ accessory, ensure adequate clearance around termini with crimp sleeve terminations in order to maintain minimum bend radius and prevent signal loss or damage.
- Jam nut (for composite receptacle): Aluminum alloy/ same plating as shell
- Insert: high-grade rigid dielectric or alloy/anodize - mfr's option.
- Seals: fluorosilicone
- Recommended extraction tool: 182-011-18
- Recommended insertion tool for simplex fiber: 182-013
- Recommended insertion tool for buffered fiber: 182-019

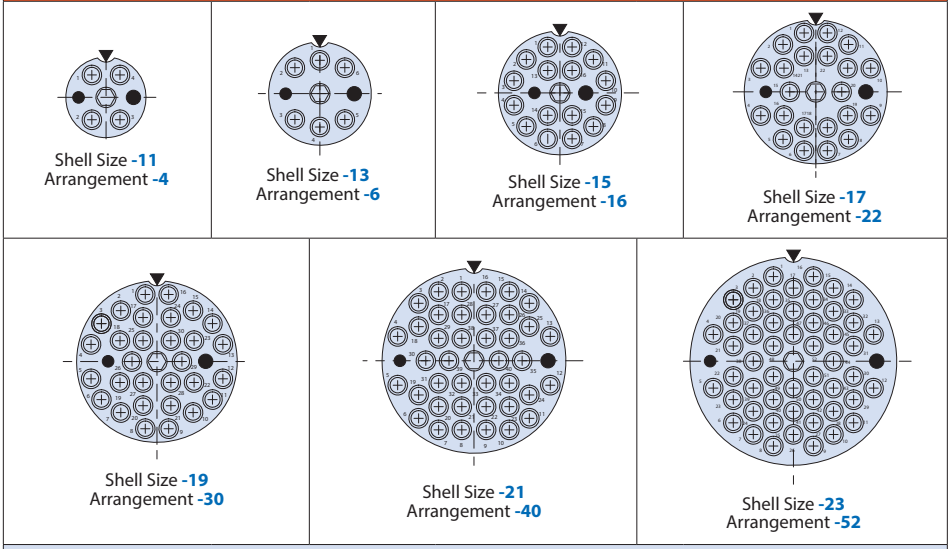
HOW TO ORDER

Sample Part Number	180-122	NF	08	-15	-16	N
Basic Number	GHD Jam nut mount receptacle connector					
Material/Finish	See Material and Finish table					
Connector Style	**08** = Jam Nut Receptacle					
Shell Size	See Insert Arrangements table					
Insert Arrangement	See Insert Arrangements table					
Alternate Key Position	**A**, **B**, **C**, **D**, **E**; **N** = Normal (Per MIL-DTL-38999)					



Max crimp sleeve protrusion: Ensure clearance for crimp sleeve terminations when selecting backshell or accessory.

INSERT ARRANGEMENTS

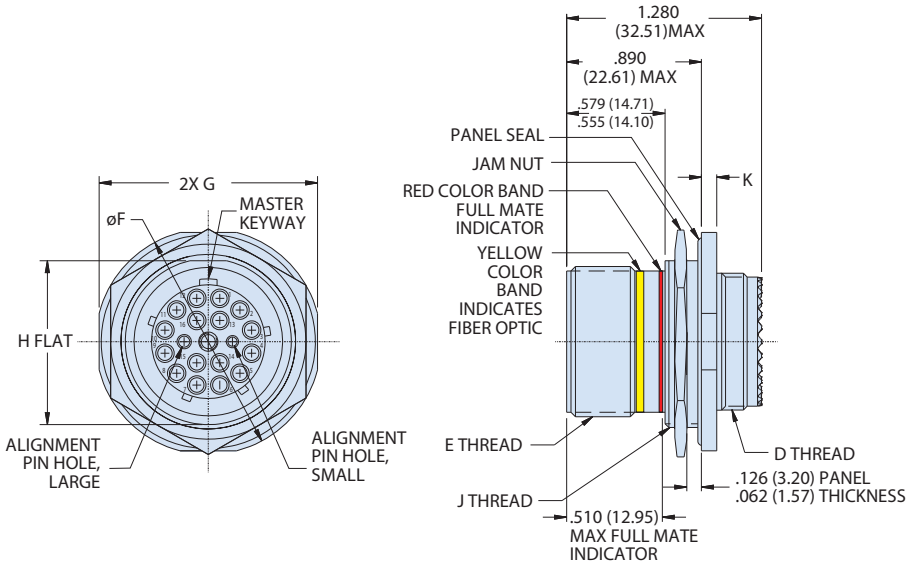


Plug face marking with removable alignment sleeve retainer (ASR) shown. Receptacle face - opposite. ASR includes two guide pins and a threaded center jackscrew.
▼= connector master key ● = small alignment pin ● = large alignment pin

Rev. 06.03.25

180-122 (08) Jam Nut Mount Receptacle Connector

08 - JAM NUT MOUNT RECEPTACLE



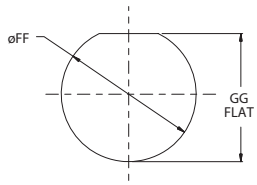
Shell Size	Shell Size Code	E Thread	Ø F	G	H	J Thread	D Thread	K
-11	B	.7500-.1P-.3L-TS-2A	1.386 (35.2) 1.362 (34.6)	1.268 (32.2) 1.236 (31.4)	.755 (19.2) .745 (18.9)	M20 x 1.0-6g 0.100R	M15 x 1.0-6g 0.100R	.121 (3.1) .083 (2.1)
-13	C	.8750-.1P-.3L-TS-2A	1.512 (38.4) 1.488 (37.8)	1.390 (35.3) 1.358 (34.5)	.942 (23.9) .932 (23.7)	M25 x 1.0-6g 0.100R	M18 x 1.0-6g 0.100R	
-15	D	1.0000-.1P-.3L-TS-2A	1.638 (41.6) 1.614 (41.0)	1.516 (38.5) 1.484 (37.7)	1.066 (27.1) 1.056 (26.8)	M28 x 1.0-6g 0.100R	M22 x 1.0-6g 0.100R	
-17	E	1.1875-.1P-.3L-TS-2A	1.764 (44.8) 1.740 (44.2)	1.642 (41.7) 1.610 (40.9)	1.191 (30.3) 1.181 (30.0)	M32 x 1.0-6g 0.100R*	M25 x 1.0-6g 0.100R	
-19	F	1.2500-.1P-.3L-TS-2A	1.949 (49.5) 1.925 (48.9)	1.827 (46.4) 1.795 (45.6)	1.316 (33.4) 1.306 (33.2)	M35 x 1.0-6g 0.100R	M28 x 1.0-6g 0.100R	.154 (3.9) .114 (2.9)
-21	G	1.3750-.1P-.3L-TS-2A	2.075 (52.7) 2.051 (52.1)	1.953 (49.6) 1.921 (48.8)	1.441 (36.6) 1.431 (36.3)	M38 x 1.0-6g 0.100R	M31 x 1.0-6g 0.100R	
-23	H	1.5000-.1P-.3L-TS-2A	2.201 (55.9) 2.177 (55.3)	2.079 (52.8) 2.047 (52.0)	1.566 (39.8) 1.556 (39.5)	M41 x 1.0-6g 0.100R	M34 x 1.0-6g 0.100R	

* Modified major diameter 31.80 - 31.95 (1.252 - 1.257).

JAM NUT RECEPTACLE PANEL CUTOUT

Shell Size	Shell Size Code	Ø FF Min		GG Flat	
11	B	0.835 (21.21)	0.825 (20.96)	0.771 (19.58)	0.761 (19.33)
13	C	1.020 (25.91)	1.010 (25.65)	0.955 (24.26)	0.945 (24.00)
15	D	1.145 (29.08)	1.135 (28.83)	1.085 (27.56)	1.075 (27.30)
17	E	1.270 (32.26)	1.260 (32.00)	1.210 (30.73)	1.200 (30.48)
19	F	1.395 (35.43)	1.385 (35.18)	1.335 (33.91)	1.325 (33.65)
21	G	1.520 (38.61)	1.510 (38.35)	1.460 (37.08)	1.450 (36.83)
23	H	1.645 (41.78)	1.635 (41.53)	1.585 (40.26)	1.575 (40.00)

RECOMMENDED PANEL CUT-OUT JAM NUT MOUNT RECEPTACLE (SEE JAM NUT RECEPTACLE TABLE)



Rev. 10.23.24

180-122 (H7) Square Flange Receptacle with Round Holes

Glenair High Density (GHD)

The Series 180-122 Glenair High Density (GHD) fiber optic square flange receptacle connector with round mounting holes is designed for applications that require reduced size and weight as well as outstanding optical and environmental performance. The GHD fiber optic system leverages D38999 mechanical and environmental design elements including mating interface, accessory attachment interface, ratcheting coupling nut, polarization keyways, panel cutouts, and more. The high-density front-release termini insert, however, has been completely re-engineered as an innovative Size 18 genderless front-release terminus design that provides nearly double the density of standard M28876, D38999, and ARINC 801 fiber optic connector series. Keyed GHD system connectors and termini are available with APC Angle Polish to reduce unwanted backreflection.

HOW TO ORDER

Sample Part Number	180-122	NF	H7	-15	-16	N
Basic Number	GHD Square flange receptacle with standard (round) holes					
Material/Finish	See Material and Finish table					
Connector Style	**H7** = Wall Mount Receptacle with Round Holes (Standard)					
Shell Size	See Insert Arrangements table					
Insert Arrangement	See Insert Arrangements table					
Alternate Key Position	**A**, **B**, **C**, **D**, **E**; **N** = Normal (Per MIL-DTL-38999)					

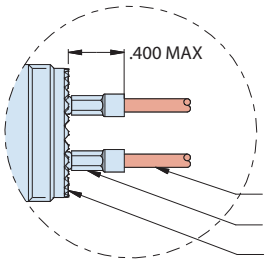
MATERIAL AND FINISH

Code	Material	Finish Description
M*	Aluminum Alloy	Electroless Nickel
MA		Electroless Nickel, Matte Finish
ME		Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
TZ		Tin-Zinc
ZNU		Zinc-Nickel, Black
ZR		Zinc-Nickel, Black(Rohs)
XM	Composite	Electroless Nickel
XMT		Nickel-PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
ZL	Stainless Steel	Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	Unplated

* Inactive for new design. Use "ME" finish.

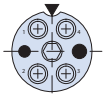
MATERIAL / FINISH NOTES

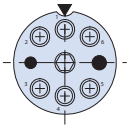
- Metal and composite connectors are not designed to be cross mated.
- When selecting a backshell/accessory, ensure adequate clearance around termini with crimp sleeve terminations in order to maintain minimum bend radius and prevent signal loss or damage.
- Insert: high-grade rigid dielectric or alloy/anodize - mfr's option.
- Recommended extraction tool: 182-011-18
- Recommended insertion tool for simplex fiber: 182-013
- Recommended insertion tool for buffered fiber: 182-019

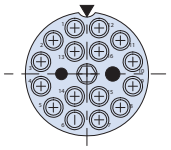


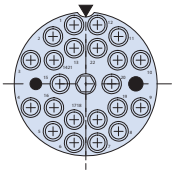
Max crimp sleeve protrusion: Ensure clearance for crimp sleeve terminations when selecting backshell or accessory.

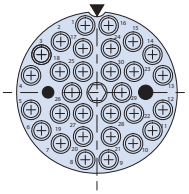
INSERT ARRANGEMENTS

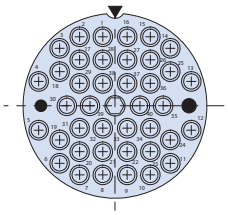

Shell Size **-11**
Arrangement **-4**

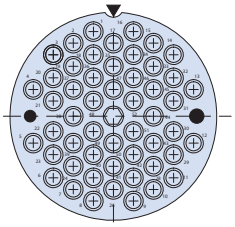

Shell Size **-13**
Arrangement **-6**


Shell Size **-15**
Arrangement **-16**


Shell Size **-17**
Arrangement **-22**


Shell Size **-19**
Arrangement **-30**


Shell Size **-21**
Arrangement **-40**

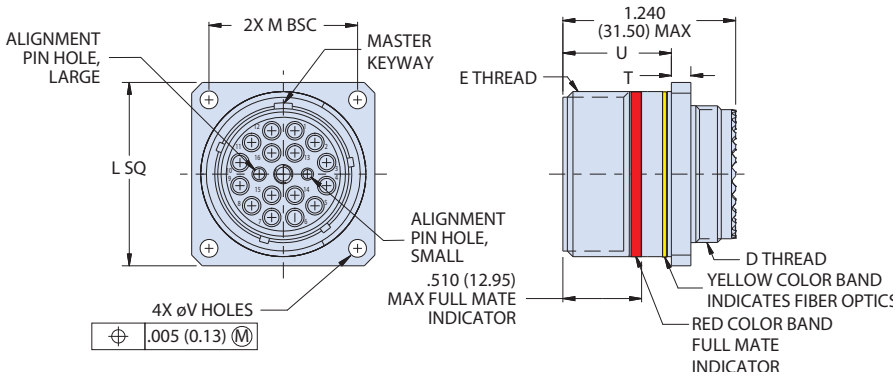

Shell Size **-23**
Arrangement **-52**

Plug face marking with removable alignment sleeve retainer (ASR) shown. Receptacle face - opposite.
ASR includes two guide pins and a threaded center jackscrew.
▼= connector master key ● = small alignment pin ● = large alignment pin

Rev. 06.03.25

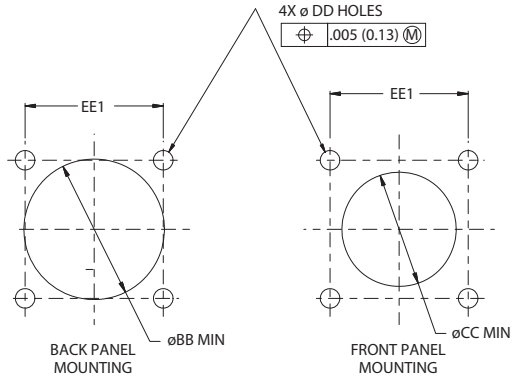
180-122 (H7) Square Flange Receptacle with Round Holes

H7 - WALL MOUNT RECEPTACLE WITH ROUND HOLES (STANDARD)



Shell Size	Shell Size Code	E Thread	L SQ	M BSC	T	U	D Thread	Ø V Holes
-11	B	.7500 -.1P -.3L-TS-2A	1.043 (26.5) 1.019 (25.9)	.812 (20.6)	.144 (3.7) .083 (2.1)	.823 (20.9) .768 (19.5)	M15 X 1.0-6g 0.100R	.136 (3.5) .120 (3.0)
-13	C	.8750 -.1P - .3L-TS-2A	1.138 (28.9) 1.114 (28.3)	.906 (23.0)			M18 X 1.0-6g 0.100R	
-15	D	1.0000 -.1P -.3L-TS-2A	1.232 (31.3) 1.208 (30.7)	.969 (24.6)			M22 X 1.0-6g 0.100R	
-17	E	1.1875 -.1P - .3L-TS-2A	1.323 (33.6) 1.299 (33.0)	1.062 (27.0)			M25 X 1.0-6g 0.100R	
-19	F	1.2500 -.1P -.3L-TS-2A	1.449 (36.8) 1.425 (36.2)	1.156 (29.4)			M28 X 1.0-6g 0.100R	
-21	G	1.3750 -.1P - .3L-TS-2A	1.575 (40.0) 1.551 (39.4)	1.250 (31.8)	.171 (4.3) .083 (2.1)	.791 (20.1) .736 (18.7)	M31 X 1.0-6g 0.100R	
-23	H	1.5000 -.1P -.3L-TS-2A	1.701 (43.2) 1.677 (42.6)	1.375 (34.9)			M34 X 1.0-6g 0.100R	.162 (4.1) .146 (3.7)

RECOMMENDED PANEL CUTOUT WALL MOUNT RECEPTACLES (SEE MOUNTING HOLES TABLE)



MOUNTING HOLES FOR WALL MOUNT RECEPTACLES

Shell Size	Shell Size Code	Ø BB Min	Ø CC Min	Ø DD Holes	EE1 BSC
11	B	.796 (20.2)	.625 (15.9)	.133 (3.4) .123 (3.1)	.812 (20.6)
13	C	.922 (23.4)	.750 (19.1)		.906 (23.0)
15	D	1.047 (26.6)	.906 (23.0)		.969 (24.6)
17	E	1.219 (31.0)	1.016 (25.8)		1.062 (27.0)
19	F	1.297 (32.9)	1.141 (29.0)		1.156 (29.4)
21	G	1.422 (36.1)	1.266 (32.2)		1.250 (31.8)
23	H	1.547 (39.3)	1.375 (34.9)	.159 (4.0) .149 (3.8)	1.375 (34.9)

Rev. 10.23.24

180-122 (S7) Square Flange Receptacle with Slotted Holes

The Series 180-122 Glenair High Density (GHD) fiber optic square flange receptacle connector with slotted mounting holes is designed for applications that require reduced size and weight as well as outstanding optical and environmental performance. The GHD fiber optic system leverages D38999 mechanical and environmental design elements including mating interface, accessory attachment interface, ratcheting coupling nut, polarization keyways, O-ring seals, panel cutouts, and more. The high-density front-release termini insert, however, has been completely re-engineered as an innovative Size 18 genderless front-release terminus design that provides nearly double the density of standard M28876, D38999, and ARINC 801 fiber optic connector series. Keyed GHD system connectors and termini are available with APC Angle Polish to reduce unwanted backreflection.

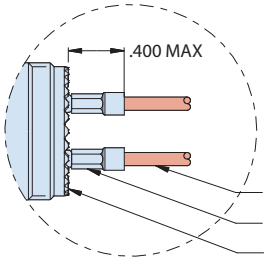
HOW TO ORDER

Sample Part Number	180-122	NF	S7	-15	-16	N
Basic Number	GHD Square flange receptacle with slotted holes					
Material/Finish	See Material and Finish table					
Connector Style	**S7** = Wall Mount Receptacle with Slotted Holes					
Shell Size	See Insert Arrangements table					
Insert Arrangement	See Insert Arrangements table					
Alternate Key Position	**A**, **B**, **C**, **D**, **E**; **N** = Normal (Per MIL-DTL-38999)					

MATERIAL AND FINISH

Code	Material	Finish Description
M*	Aluminum Alloy	Electroless Nickel
MA		Electroless Nickel, Matte Finish
ME		Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
TZ		Tin-Zinc
ZNU		Zinc-Nickel, Black
ZR		Zinc-Nickel, Black(Rohs)
XM	Composite	Electroless Nickel
XMT		Nickel-PTFE, Grey
XW		Cadmium, Olive Drab
XZN		Zinc-Nickel, Black
ZL	Stainless Steel	Electro-Deposited Nickel
Z1		Passivate
AB	Marine Bronze	Unplated

* Inactive for new design. Use "ME" finish.

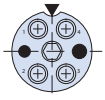


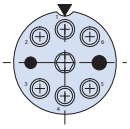
Max crimp sleeve protrusion: Ensure clearance for crimp sleeve terminations when selecting backshell or accessory.

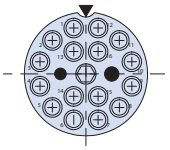
MATERIAL / FINISH NOTES

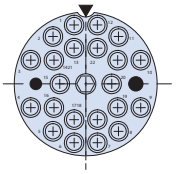
- Metal and composite connectors are not designed to be cross mated.
- When selecting a backshell/ accessory, ensure adequate clearance around termini with crimp sleeve terminations in order to maintain minimum bend radius and prevent signal loss or damage.
- Insert: high-grade rigid dielectric or alloy/anodize - mfr's option.
- Seals: fluorosilicone
- Recommended extraction tool: 182-011-18
- Recommended insertion tool for simplex fiber: 182-013
- Recommended insertion tool for buffered fiber: 182-019

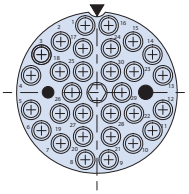
INSERT ARRANGEMENTS

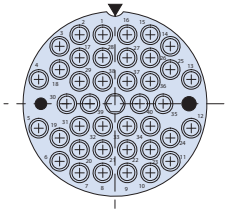

Shell Size **-11**
Arrangement **-4**

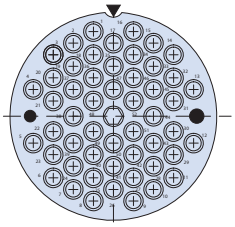

Shell Size **-13**
Arrangement **-6**


Shell Size **-15**
Arrangement **-16**


Shell Size **-17**
Arrangement **-22**


Shell Size **-19**
Arrangement **-30**


Shell Size **-21**
Arrangement **-40**

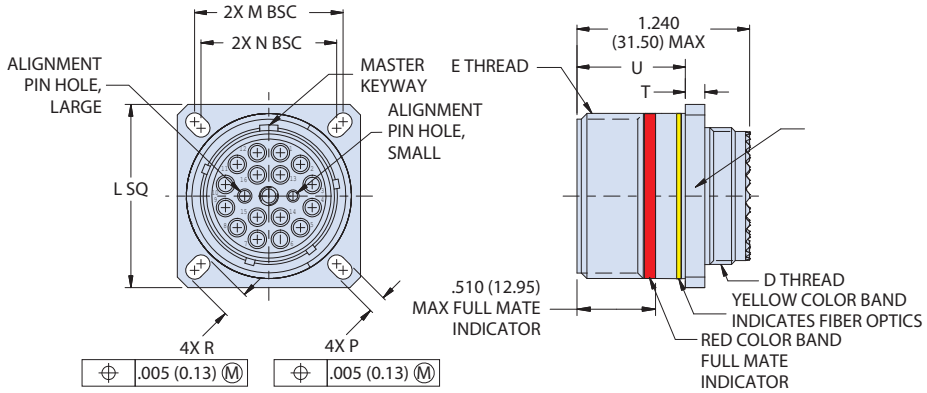

Shell Size **-23**
Arrangement **-52**

Plug face marking with removable alignment sleeve retainer (ASR) shown. Receptacle face - opposite.
ASR includes two guide pins and a threaded center jackscrew.
▼= connector master key ● = small alignment pin ● = large alignment pin

Rev. 06.03.25

180-122 (S7) Square Flange Receptacle with Slotted Holes

S7 - WALL MOUNT RECEPTACLE WITH SLOTTED HOLES



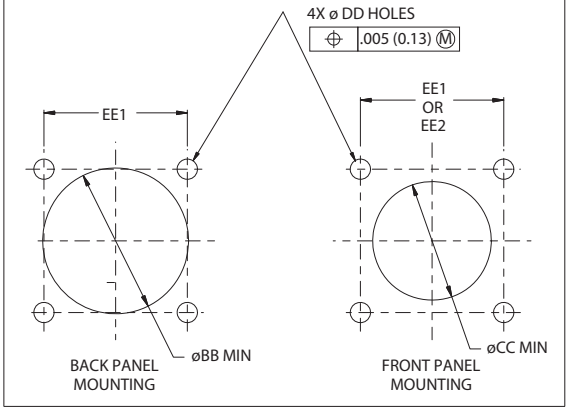
Shell Size	Shell Size Code	E Thread	L SQ	M BSC	N BSC	P	R	T	U	D Thread
11	B	.7500 -.1P -.3L-TS-2A	1.043 (26.5) 1.019 (25.9)	.812 (20.6)	.719 (18.3)	.136 (3.5) .120 (3.0)	.202 (5.1) .186 (4.7)	.144 (3.7) .083 (2.1)	.823 (20.9) .768 (19.5)	M15 X 1.0-6g 0.100R
13	C	.8750 -.1P - .3L-TS-2A	1.138 (28.9) 1.114 (28.3)	.906 (23.0)	.812 (20.6)					M18 X 1.0-6g 0.100R
15	D	1.0000 -.1P -.3L-TS-2A	1.232 (31.3) 1.208 (30.7)	.969 (24.6)	.906 (23.0)					M22 X 1.0-6g 0.100R
17	E	1.1875 -.1P - .3L-TS-2A	1.323 (33.6) 1.299 (33.0)	1.062 (27.0)	.969 (24.6)					M25 X 1.0-6g 0.100R
19	F	1.2500 -.1P -.3L-TS-2A	1.449 (36.8) 1.425 (36.2)	1.156 (29.4)	1.062 (27.0)					M28 X 1.0-6g 0.100R
21	G	1.3750 -.1P - .3L-TS-2A	1.575 (40.0) 1.551 (39.4)	1.250 (31.8)	1.156 (29.4)			.171 (4.3) .083 (2.1)	.791 (20.1) .736 (18.7)	M31 X 1.0-6g 0.100R
23	H	1.5000 -.1P -.3L-TS-2A	1.701 (43.2) 1.677 (42.6)	1.375 (34.9)	1.250 (31.8)	.162 (4.1) .146 (3.7)	.250 (6.4) .234 (5.9)			M34 X 1.0-6g 0.100R

MOUNTING HOLES FOR WALL MOUNT RECEPTACLES

Shell Size	Shell Size Code	Ø BB Min	Ø CC Min	Ø DD Holes	EE1 BSC	EE2 BSC
11	B	.796 (20.2)	.625 (15.9)	.133 (3.4) .123 (3.1)	.812 (20.6)	.719 (18.26)
13	C	.922 (23.4)	.750 (19.1)		.906 (23.0)	.812 (20.62)
15	D	1.047 (26.6)	.906 (23.0)		.969 (24.6)	.906 (23.01)
17	E	1.219 (31.0)	1.016 (25.8)		1.062 (27.0)	.969 (24.61)
19	F	1.297 (32.9)	1.141 (29.0)		1.156 (29.4)	1.062 (26.97)
21	G	1.422 (36.1)	1.266 (32.2)		1.250 (31.8)	1.156 (29.36)
23	H	1.547 (39.3)	1.375 (34.9)	.159 (4.0) .149 (3.8)	1.375 (34.9)	1.250 (31.75)

S7 receptacle with slotted holes may be front-panel mounted using cut out dimension EE1 or EE2.

RECOMMENDED PANEL CUTOUT WALL MOUNT RECEPTACLES (SEE MOUNTING HOLES TABLE)



Rev. 10.23.24

GLENAIR
SIGNATURE
FIBER OPTIC
CONNECTION
SYSTEMS

Rugged Fiber Optic CONNECTORS

Series 806 Mil-Aero: Reduced size and weight Micro D38999 style packaging, ultra high-density Size #20HD PC termini

Innovative fiber optic / electrical connector design meets key performance benchmarks for harsh vibration, shock, and environmental settings in rigid conformance with MIL-DTL-38999 Series III—but at nearly half the size and weight.

SAVE SIZE AND WEIGHT WITH SERIES 806 CONNECTORS

Series 806 Mil-Aero smallest shell (size 8) .500 in. mating threads 3 Size #20HD electrical or optical contacts / termini

MIL-DTL-38999 smallest shell (size 11) .750 in. mating threads 2 Size #16 electrical or optical contacts / termini

- **Next-generation small form factor aerospace-grade circular connector**
- **High density #20HD fiber termini arrangements**
- **Designed for harsh application environments such as military and commercial aircraft**
- **Outstanding environmental, electrical, optical, and mechanical performance**
- **Integrated anti-decoupling technology**
- **High performance ceramic ferrule rear-release termini design**

Product selection guide

ABOUT SERIES 806 MIL-AERO FIBER OPTIC

Glenair is the ruggedized harsh-environment fiber optic connector market leader. We manufacture and supply mil-qualified termini for use in MIL-DTL-38999 Series III type connectors including Glenair SuperNine, ARINC 801, and Glenair High Density (GHD). The Series 806 Mil-Aero is our highest density connector series built IAW D38999 Series III specifications—including vibration, shock, and high-altitude immersion. In fact, the Series 806 conforms to every MIL-DTL-38999 Series III standard requirement, but does so in a micro miniature reduced size and weight format, which now includes fiber optic configurations with sizes 16 and 20HD pin and socket termini. These ultra high density fiber optic termini are snap-in, rear release designs featuring precision ceramic ferrules and alignment sleeves for accurate fiber alignment. Typical insertion loss 0.5 dB. Fits 50/125 and 62.5/125 multimode and 9/125 singlemode fiber. Connectors are available with accessory thread or band shield termination porch for easy termination of optical media Kevlar strength member or EMI shielding (hybrid applications).

DIMENSIONAL NOTES

- Catalog dimensions are subject to change without notice. Consult Glenair engineering for a controlled-release drawing.
- Metric dimensions appear in parentheses in diagrams and tables, based on 1 inch = 25.4 mm, for reference only.
- Unless otherwise specified, the following other dimensional tolerances apply:
- .xx = ± .03 (0.8) • .xxx = ± .015 (0.4) • Angles = ± 5°

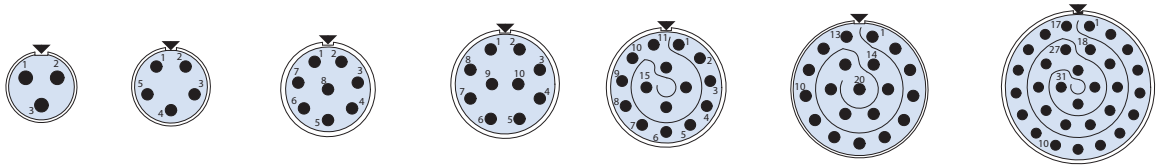
Glenair®

Series overview

SERIES 806 ARRANGEMENTS COMPATIBLE WITH #20HD FIBER OPTIC TERMINI

Mating face of pin connector. Socket numbering is reversed.

Symbol ▼ indicates master key location.

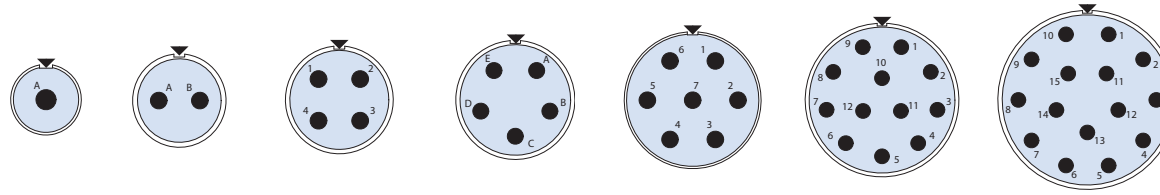


Arrangement No.	8-3	9-5	10-8	11-10	12-15	14-20	16-31
No. of Termini	3	5	8	10	15	20	31

SERIES 806 ARRANGEMENTS COMPATIBLE WITH #16 FIBER OPTIC TERMINI

Mating face of pin connector. Socket numbering is reversed.

Symbol ▼ indicates master key location.



Arrangement No.	8-1	10-2	11-4	12-5	14-7	16-12	18-15
No. of Contacts	1	2	4	5	7	12	15

Higher density arrangements available. Consult factory for additional sizes.

SIZES 16 AND 20HD FIBER OPTIC TERMINI FOR SERIES 806 MIL-AERO CONNECTORS

Single or multimode. Ceramic ferrule. 0.5 dB loss. Sizes 16 and 20HD fiber optic termini are compatible with Series 806 connectors with sizes 16 and 20HD contact arrangements. These snap-in, rear release termini feature precision ceramic ferrules and alignment sleeves for accurate fiber alignment. Typical insertion loss 0.5 dB. Fits 50/125 and 62.5/125 multimode and 9/125 singlemode fiber.

HOW-TO-ORDER 20HD FIBER OPTIC TERMINI FOR SERIES 806 CONNECTORS

Termini Type	Optical Fiber Type	Part Number	ØA Ferrule Hole	Fiber Size Core/Cladding
Pin	Singlemode	181-134-1255	125.5 microns	9/125
Pin	Multimode	181-134-126	126.0 microns	50/125, 62.5/125
Socket	Singlemode	181-135-1255	125.5 microns	9/125
Socket	Multimode	181-135-126	126.0 microns	50/125, 62.5/125

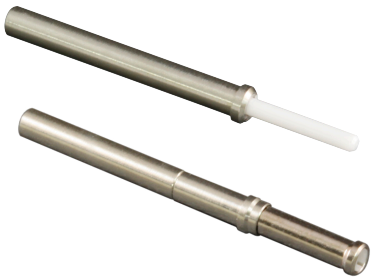
HOW-TO-ORDER 16 FIBER OPTIC TERMINI FOR SERIES 806 CONNECTORS

Termini Type	Optical Fiber Type	Part Number	ØA Ferrule Hole	Fiber Size Core/Cladding
Pin	Single Mode	181-145-125	125.5 microns	9/125
Pin	Multi Mode	181-145-126	126.0 microns	50/125, 62.5/125
Pin	Multi Mode	181-145-144	144.0 microns	100/140
Socket	Single Mode	181-146-125	125.5 microns	9/125
Socket	Multi Mode	181-146-126	126.0 microns	50/125, 62.5/125
Socket	Multi Mode	181-146-144	144.0 microns	100/140

MATERIAL/FINISH

- Ferrule, alignment sleeve: zirconia ceramic
- Body, shroud: copper/nickel/zinc alloy
- Spring (socket, not shown): SST/passivated
- Protective cover (socket): BeCu alloy/nickel plated

181-134 / 181-135 Size 20HD Fiber Optic Termini



Single or multi mode. Ceramic ferrule. 0.5 dB loss. Size 20HD fiber optic termini are compatible with Series 806 connectors with size 20HD contact arrangements. These snap-in, rear release termini feature precision ceramic ferrules for accurate fiber alignment. Typical insertion loss 0.5 dB. Fits 50/125 and 62.5/125 multi mode and 9/125 single mode fiber.

SPECIFICATIONS

- Operating temperature: -55°C to +125°C Temperature rating depends on the cable and epoxy used.
- Termination method: epoxy/polish
- Mating durability: 500 cycles
- Random vibration: 49.5 Grms, EIA-364-28 Test Condition V. Maximum optical discontinuity 0.5 dB, 50 microseconds.
- Mechanical shock: 300 G, TIA-455-14 Test Condition D. Maximum optical discontinuity 0.5 dB, 50 microseconds.

MATERIAL/FINISH

- Ferrule, alignment sleeve: zirconia ceramic
- Body, shroud: copper/nickel/zinc alloy
- Spring (socket, not shown): stainless steel, passivated
- Protective cover (socket): BeCu alloy, nickel plated

TERMINATION TOOLS

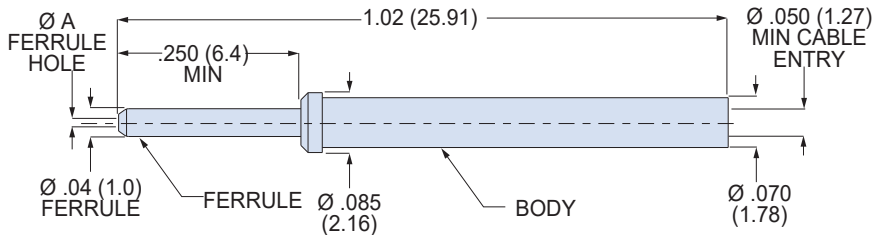
- Polishing pucks

Puck Style	Type	Tool PN
Pin	dry polish	182-056P
	wet polish	182-056PW
Socket	dry polish	182-056S
	wet polish	182-056SW

ASSEMBLY TOOLS

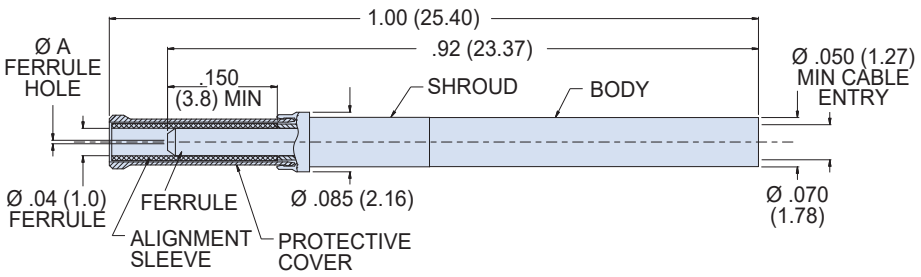
- Plastic insertion/extraction tool: 809-203D
- Metal insertion/extraction tool: 809-203

#20HD PIN TERMINUS 181-134



Termini Type	Optical Fiber Type	Part Number	ØA Ferrule Hole	Fiber Size Core/Cladding
Pin	Single Mode	181-134-1255	125.5 microns	9/125
Pin	Multi Mode	181-134-126	126.0 microns	50/125, 62.5/125

#20HD SOCKET TERMINUS 181-135



Termini Type	Optical Fiber Type	Part Number	ØA Ferrule Hole	Fiber Size Core/Cladding
Socket	Single Mode	181-135-1255	125.5 microns	9/125
Socket	Multi Mode	181-135-126	126.0 microns	50/125, 62.5/125

Rev. 12.12.24

181-145 / 181-146 Size 16 Fiber Optic Termini

Single or multi mode. Ceramic ferrule. 0.5 dB loss. Size 16 fiber optic termini are compatible with Series 806 connectors with size 16 contact arrangements. These snap-in, rear release termini feature precision ceramic ferrules for accurate fiber alignment. Typical insertion loss 0.5 dB. Fits 50/125 and 62.5/125 multi mode and 9/125 single mode fiber.

NOTES

- For use with Glenair Series 806 Mighty Mouse threaded coupling connectors.
- Ceramic alignment sleeve and protective cover are supplied with terminus assembly. Spares may be ordered separately (see tools section).

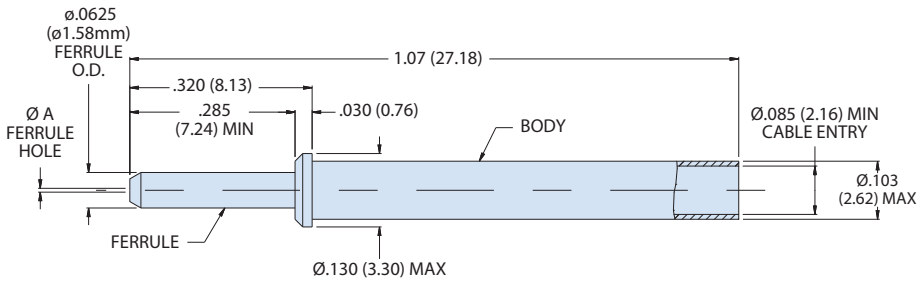
MATERIAL/FINISH

- Ferrule and sleeve: zirconia ceramic
- Body: copper-nickel-zinc alloy
- Terminus assembly: copper-nickel-zinc alloy
- Spring: stainless steel/passivate
- Protective cover: becu alloy/nickel

TOOLS/ACCESSORIES

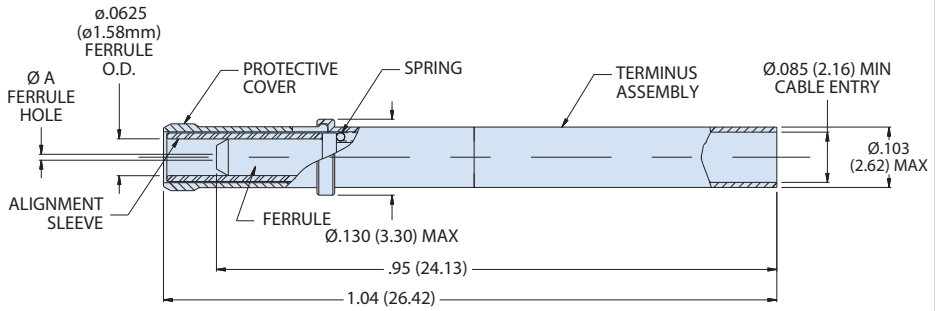
- For termination tools/procedures contact Glenair.
- For insertion/removal tool, see 809-131 (M81969/14-03).
- For ceramic alignment sleeve, see 181-001-S.
- For protective cover, see 181-146-C.

#16HD PIN TERMINUS 181-145



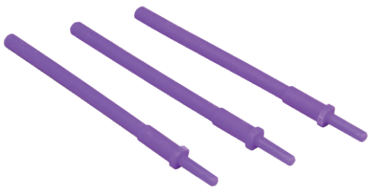
Termini Type	Optical Fiber Type	Part Number	ØA Ferrule Hole	Fiber Size Core/Cladding
Pin	Single Mode	181-145-125	125.5 microns	9/125
Pin	Multi Mode	181-145-126	126.0 microns	50/125, 62.5/125
Pin	Multi Mode	181-145-144	144.0 microns	100/140

#16HD PIN TERMINUS 181-146



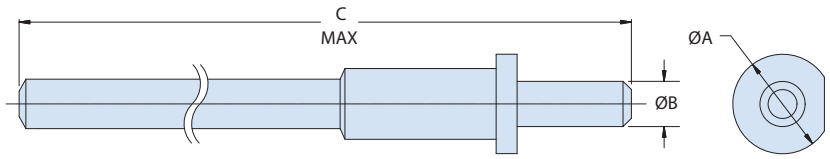
Termini Type	Optical Fiber Type	Part Number	ØA Ferrule Hole	Fiber Size Core/Cladding
Socket	Single Mode	181-146-125	125.5 microns	9/125
Socket	Multi Mode	181-146-126	126.0 microns	50/125, 62.5/125
Socket	Multi Mode	181-146-144	144.0 microns	100/140

680-120 #20HD Dummy Sealing Plug
680-116 #16 Dummy Sealing Plug



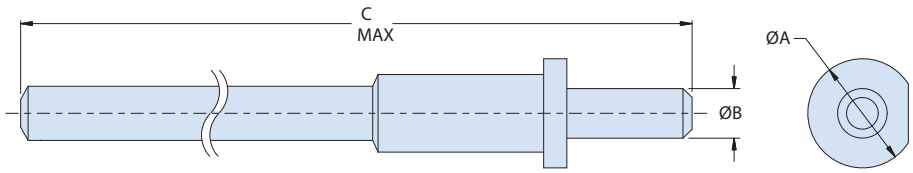
Dummy sealing plugs maintain environmental sealing in empty rear-release crimp connector cavities. Made of chemical-resistant thermoplastic, these dummy contacts are available in sizes 16 and 20HD. Sealing plug tail protrudes from grommet to facilitate removal with standard extraction tools. Rated for +200 °C continuous operating temperature, these sealing plugs save weight compared to installing both an unused contact and a grommet sealing plug.

#20HD DUMMY SEALING PLUG 680-120-20HD



Color Code	ØA	ØB	C Max	Extraction Tool	Standard Order Quantity
Brown	.084 (2.13)	.040 (1.02)	1.18 (29.97)	809-203	1000

#16 DUMMY SEALING PLUG 680-116-16



Color Code	ØA	ØB	C Max	Extraction Tool	Standard Order Quantity
Violet	.128 (3.25)	.062 (1.57)	1.18 (29.97)	M81969/14-03	500

FACTORY-TERMINATED SERIES 806 FIBER OPTIC CABLE ASSEMBLIES

Glenair is able to supply turnkey fiber optic cable assemblies for both environmental applications as well as non-jacketed harnesses for use inside the box. Rugged Series 806 Mil-Aero with size 20 HD fiber optic termini are a significant size and weight savings compared to conventional D38999 or other standards. Please consult the factory for design assistance and quoting.

806-012 Cable Plug

Tight-tolerance MIL-DTL-38999 Type Micro Miniature Cable Plug. Made for use with high-density sizes 16 and 20HD snap-in, rear-release termini. Robust anti-decoupling mechanism and environmental sealing for use in high vibration, shock, and high-altitude aerospace and military/defense applications. Available with accessory threads or shield termination banding porch. Coupling nut and connector body materials include Aluminum alloy and stainless steel. Keyed polarization for mis-mate protection. Available insert arrangements support from three to thirty-one singlemode and multimode termini. Tight contact pitch and reduced connector dimensions results in up to 50% size and weight savings compared to conventional aerospace-grade fiber optic connectors.

SPECIFICATIONS

- Operating temperature: connector capable of -55°C to +200°C. Temperature rating for fiber applications limited by cable and epoxy used.
- Termination method: epoxy/ polish
- Mating durability: 500 cycles
- Random vibration: 49.5 Grms, EIA-364-28 Test Condition V. Maximum optical discontinuity 0.5 dB, 50 microseconds.
- Mechanical shock: 300 G, TIA-455-14 Test Condition D. Maximum optical discontinuity 0.5 dB, 50 microseconds.

CONNECTOR CONSTRUCTION

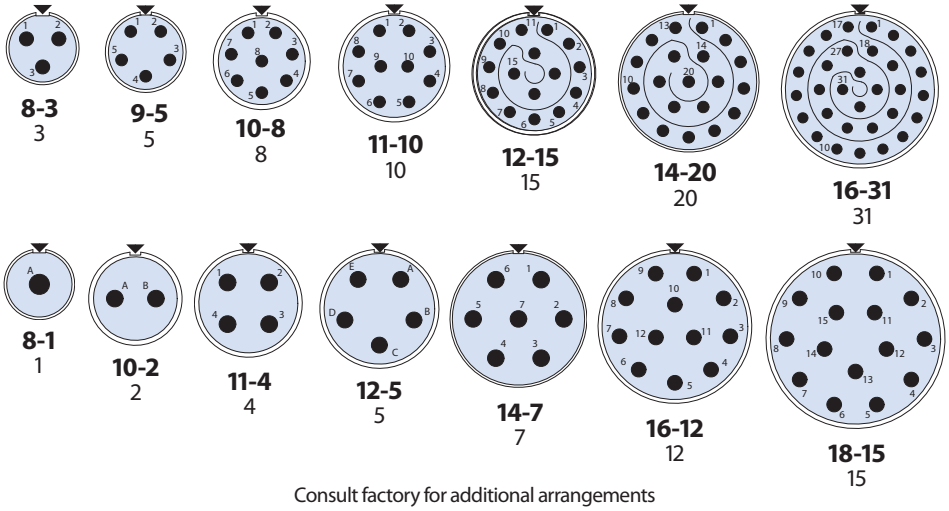
- Shell and coupling nut: aluminum or stainless steel
- Contacts: copper alloy, gold plating
- Wire grommet: fluorosilicone
- Dielectric inserts: high grade rigid dielectric
- Ground spring: copper alloy, nickel plating
- Contact retention clips: copper alloy
- Ratchet springs: stainless steel, passivated
- Retainer rings: stainless steel, passivated

HOW TO ORDER

Sample Part Number	806-012	-ME	10-8	B	M	A
Product	**806-012** = Cable Plug					
Shell Material and Finish	**ME** = Aluminum, Electroless Nickel **MT** = Aluminum, Ni/PTFE **ZR** = Aluminum, Black Zinc-Nickel **NF** = Aluminum, Olive Drab Cadmium **Z1** = Stainless Steel, Passivated **ZL** = Stainless Steel, Electro-Deposited Nickel					
Arrangement Number (Shell Size - Insert Arr.)	See Arrangements table					
Contact Type	**Connector supplied without termini** **A** = Pin **B** = Socket order fiber optic termini separately					
Shell Style	**M** = Metric accessory threads **B** = Nano Band platform					
Polarizing Position	**A B C D E F**					

SERIES 806 ARRANGEMENTS COMPATIBLE WITH 20HD FIBER OPTIC TERMINI

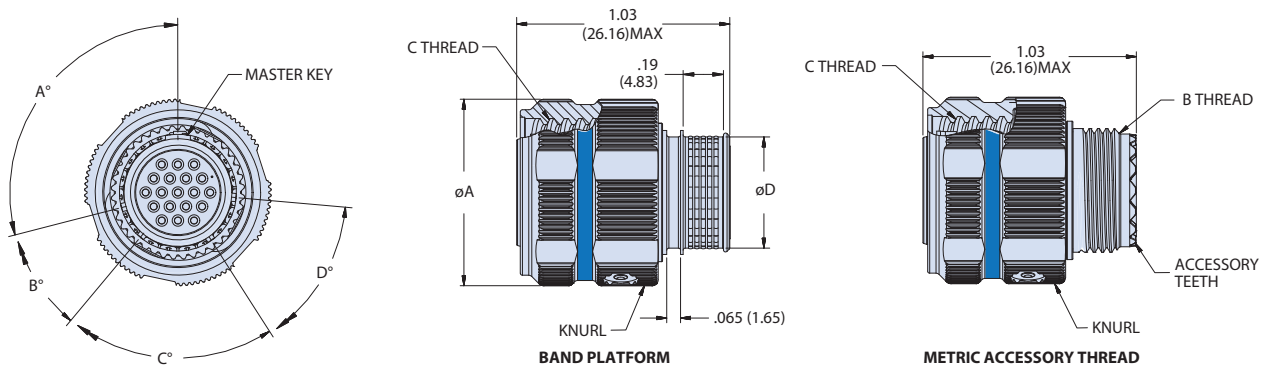
Mating face of pin connector. Socket numbering is reversed.
Symbol ▼ indicates master key location.



Consult factory for additional arrangements

806-012 Cable Plug

806-012 CABLE PLUG DIMENSIONS



Shell Size	øA Max	B Accessory Thread	C Mating Thread	øD
8	.676 (17.17)	M10x1.0-6g-0.100R	.5000-.067P-.2L-TS-2B	.327 (8.31)
9	.771 (19.58)	M12x1.0-6g-0.100R	.5625-.067P-.2L-TS-2B	.406 (10.31)
10	.832 (21.13)	M14x1.0-6g-0.100R	.6250-.067P-.2L-TS-2B	.484 (12.29)
11	.890 (22.61)	M15x1.0-6g-0.100R	.6875-.067P-.2L-TS-2B	.524 (13.31)
12	.950 (24.13)	M17x1.0-6g-0.100R	.7500-.067P-.2L-TS-2B	.603 (15.32)
14	1.110 (28.19)	M19x1.0-6g-0.100R	.8750-.067P-.2L-TS-2B	.681 (17.30)
16	1.170 (29.72)	M22x1.0-6g-0.100R	1.0000-.067P-.2L-TS-2B	.782 (19.86)
18	1.350 (34.29)	M25x1.0-6g-0.100R	1.1250-.067P-.2L-TS-2B	.899 (22.83)

Higher density arrangements available. Consult factory for additional sizes.

HOW-TO-ORDER 20HD FIBER OPTIC TERMINI FOR SERIES 806 CONNECTORS

Termini Type	Optical Fiber Type	Part Number	ØA Ferrule Hole	Fiber Size Core/Cladding
Pin	Singlemode	181-134-1255	125.5 microns	9/125
Pin	Multimode	181-134-126	126.0 microns	50/125, 62.5/125
Socket	Singlemode	181-135-1255	125.5 microns	9/125
Socket	Multimode	181-135-126	126.0 microns	50/125, 62.5/125

HOW-TO-ORDER 16 FIBER OPTIC TERMINI FOR SERIES 806 CONNECTORS

Termini Type	Optical Fiber Type	Part Number	ØA Ferrule Hole	Fiber Size Core/Cladding
Pin	Single Mode	181-145-125	125.5 microns	9/125
Pin	Multi Mode	181-145-126	126.0 microns	50/125, 62.5/125
Pin	Multi Mode	181-145-144	144.0 microns	100/140
Socket	Single Mode	181-146-125	125.5 microns	9/125
Socket	Multi Mode	181-146-126	126.0 microns	50/125, 62.5/125
Socket	Multi Mode	181-146-144	144.0 microns	100/140

806-019 In-Line Receptacle

Tight-tolerance MIL-DTL-38999 Type Micro Miniature In-Line Receptacle. Made for use with high-density sizes 16 and 20HD snap-in, rear-release termini. Shallow-angle triple-start stub ACME threads prevent decoupling in high vibration, shock, and high-altitude aerospace and military/defense applications. Available with accessory threads or shield termination banding porch. Shell materials include Aluminum alloy and stainless steel. Keyed polarization for mis-mate protection. Available insert arrangements support from three to thirty-one singlemode and multimode termini. Tight contact pitch and reduced connector dimensions results in up to 50% size and weight savings compared to conventional aerospace-grade fiber optic connectors.

SPECIFICATIONS

- Operating temperature: connector capable of -55°C to +200°C. Temperature rating for fiber applications limited by cable and epoxy used.
- Termination method: epoxy/polish
- Mating durability: 500 cycles
- Random vibration: 49.5 Grms, EIA-364-28 Test Condition V. Maximum optical discontinuity 0.5 dB, 50 microseconds.
- Mechanical shock: 300 G, TIA-455-14 Test Condition D. Maximum optical discontinuity 0.5 dB, 50 microseconds.

CONNECTOR CONSTRUCTION

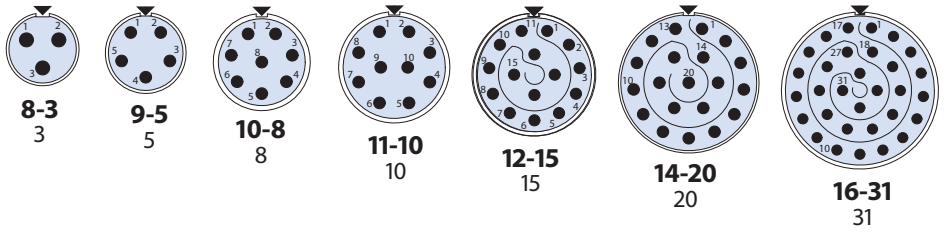
- Shell: aluminum or stainless steel
- Contacts: copper alloy, gold plating
- Wire grommet: fluorosilicone
- Dielectric inserts: high grade rigid dielectric
- Peripheral seal: fluorosilicone
- Contact retention clips: copper alloy
- Retainer rings: stainless steel, passivated

HOW TO ORDER

Sample Part Number	806-019	-ME	10-8	A	M	A
Product	**806-019** = In-Line Receptacle					
Shell Material and Finish	**ME** = Aluminum, Electroless Nickel **MT** = Aluminum, Ni/PTFE **ZR** = Aluminum, Black Zinc-Nickel **NF** = Aluminum, Olive Drab Cadmium **Z1** = Stainless Steel, Passivated **ZL** = Stainless Steel, Electro-Deposited Nickel					
Arrangement Number (Shell Size - Insert Arr.)	See Arrangements table					
Contact Type	**Connector supplied without termini** **A** = Pin **B** = Socket order fiber optic termini separately					
Shell Style	**M** = Metric accessory threads **B** = Nano Band platform					
Polarizing Position	**A B C D E F**					

SERIES 806 ARRANGEMENTS COMPATIBLE WITH 20HD FIBER OPTIC TERMINI

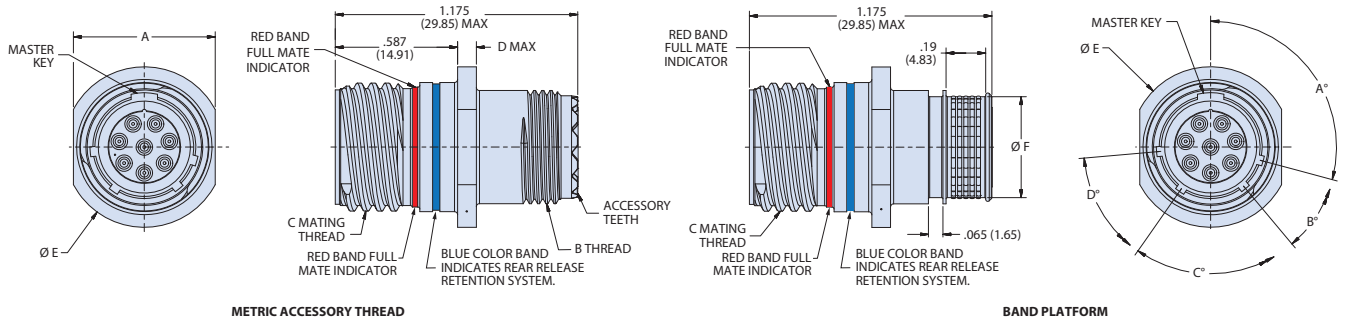
Mating face of pin connector. Socket numbering is reversed.
Symbol ▼ indicates master key location.



Consult factory for additional arrangements

806-019 In-Line Receptacle

806-019 IN-LINE RECEPTACLE DIMENSIONS



Shell Size	A ±.010 (0.25)	B Accessory Thread	C Mating Thread	D Max	øE	øF
8	.545 (13.84)	M10x1.0-6g-0.100R	.5000-.067P-.2L-TS-2A	.100 (25.4)	.635 (16.13)	.327 (8.31)
9	.612 (15.54)	M12x1.0-6g-0.100R	.5625-.067P-.2L-TS-2A		.702 (17.83)	.406 (10.31)
10	.680 (17.27)	M14x1.0-6g-0.100R	.6250-.067P-.2L-TS-2A		.770 (19.56)	.484 (12.29)
11	.747 (18.97)	M15x1.0-6g-0.100R	.6875-.067P-.2L-TS-2A		.837 (21.26)	.524 (13.31)
12	.803 (20.40)	M17x1.0-6g-0.100R	.7500-.067P-.2L-TS-2A		.893 (22.68)	.603 (15.32)
14	.925 (23.50)	M19x1.0-6g-0.100R	.8750-.067P-.2L-TS-2A		1.015 (25.78)	.681 (17.30)
16	1.050 (26.67)	M22x1.0-6g-0.100R	1.0000-.067P-.2L-TS-2A		1.140 (28.96)	.782 (19.86)
18	1.160 (29.46)	M25x1.0-6g-0.100R	1.1250-.067P-.2L-TS-2A		1.650 (41.91)	1.273 (32.33)

Higher density arrangements available. Consult factory for additional sizes.

HOW-TO-ORDER 20HD FIBER OPTIC TERMINI FOR SERIES 806 CONNECTORS

Termini Type	Optical Fiber Type	Part Number	ØA Ferrule Hole	Fiber Size Core/Cladding
Pin	Singlemode	**181-134-1255**	125.5 microns	9/125
Pin	Multimode	**181-134-126**	126.0 microns	50/125, 62.5/125
Socket	Singlemode	**181-135-1255**	125.5 microns	9/125
Socket	Multimode	**181-135-126**	126.0 microns	50/125, 62.5/125

HOW-TO-ORDER 16 FIBER OPTIC TERMINI FOR SERIES 806 CONNECTORS

Termini Type	Optical Fiber Type	Part Number	ØA Ferrule Hole	Fiber Size Core/Cladding
Pin	Single Mode	**181-145-125**	125.5 microns	9/125
Pin	Multi Mode	**181-145-126**	126.0 microns	50/125, 62.5/125
Pin	Multi Mode	**181-145-144**	144.0 microns	100/140
Socket	Single Mode	**181-146-125**	125.5 microns	9/125
Socket	Multi Mode	**181-146-126**	126.0 microns	50/125, 62.5/125
Socket	Multi Mode	**181-146-144**	144.0 microns	100/140

806-020 Jam Nut Receptacle

Tight-tolerance MIL-DTL-38999 Type Micro Miniature Jam Nut Receptacle. Made for use with high-density sizes 16 and 20HD snap-in, rear-release termini. Shallow-angle triple-start stub ACME threads prevent decoupling in high vibration, shock, and high-altitude aerospace and military/defense applications. Available with accessory threads or shield termination banding porch. Shell materials include Aluminum alloy and stainless steel. Keyed polarization for mis-mate protection. Available insert arrangements support from three to thirty-one singlemode and multimode termini. Tight contact pitch and reduced connector dimensions results in up to 50% size and weight savings compared to conventional aerospace-grade fiber optic connectors.

SPECIFICATIONS

- Operating temperature: connector capable of -55°C to +200°C. Temperature rating for fiber applications limited by cable and epoxy used.
- Termination method: epoxy/ polish
- Mating durability: 500 cycles
- Random vibration: 49.5 Grms, EIA-364-28 Test Condition V. Maximum optical discontinuity 0.5 dB, 50 microseconds.
- Mechanical shock: 300 G, TIA-455-14 Test Condition D. Maximum optical discontinuity 0.5 dB, 50 microseconds.

CONNECTOR CONSTRUCTION

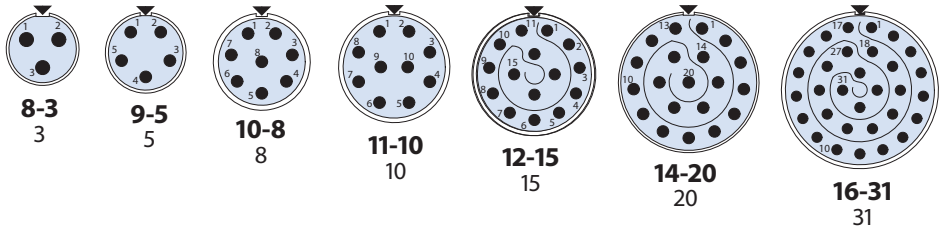
- Shell and jam-nut: aluminum or stainless steel
- Contacts: copper alloy, gold plating
- Wire grommet: fluorosilicone
- Dielectric inserts: high grade rigid dielectric
- Panel O-ring: fluorosilicone
- Contact retention clips: copper alloy
- Retainer rings: stainless steel, passivated

HOW TO ORDER

Sample Part Number	806-020	-ME	10-8	A	M	A
Product	**806-020** = Jam-nut Receptacle					
Shell Material and Finish	**ME** = Aluminum, Electroless Nickel **MT** = Aluminum, Ni/PTFE **ZR** = Aluminum, Black Zinc-Nickel **NF** = Aluminum, Olive Drab Cadmium **Z1** = Stainless Steel, Passivated **ZL** = Stainless Steel, Electro-Deposited Nickel					
Arrangement Number (Shell Size - Insert Arr.)	See Arrangements table					
Contact Type	**Connector supplied without termini** **A** = Pin **B** = Socket order fiber optic termini separately					
Shell Style	**M** = Metric accessory threads **B** = Nano Band platform					
Polarizing Position	**A B C D E F**					

SERIES 806 ARRANGEMENTS COMPATIBLE WITH 20HD FIBER OPTIC TERMINI

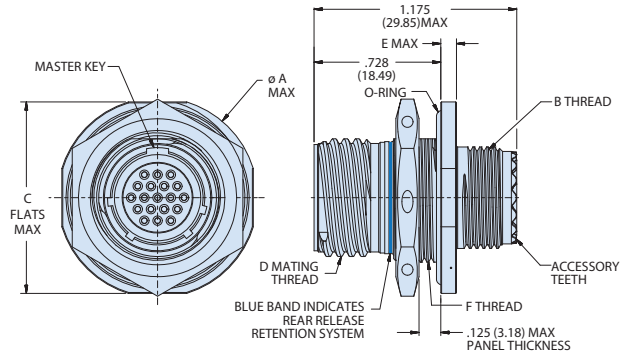
Mating face of pin connector. Socket numbering is reversed.
Symbol ▼ indicates master key location.



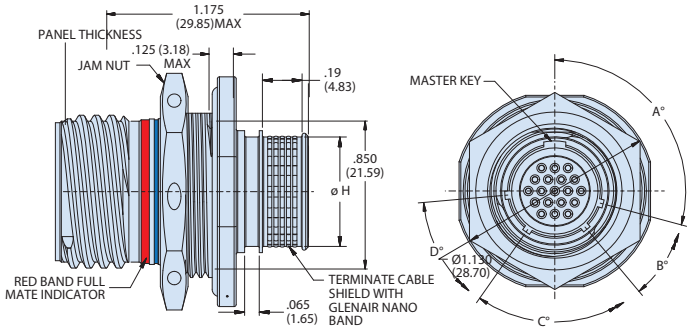
Consult factory for additional arrangements

806-020 Jam Nut Receptacle

806-020 JAM NUT RECEPTACLE DIMENSIONS



METRIC ACCESSORY THREAD

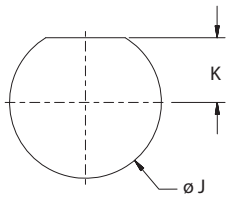


BAND PLATFORM

Shell Size	øA Max	B Thread	C Max	D Mating Thread	E Max	F Thread	øH
8	.980 (24.89)	M10x1.0-6g-0.100R	.920 (23.37)	.5000-.067P-.2L-TS-2A	.100 (2.54)	M15x1.0-6g-0.100R	.327 (8.31)
9	1.040 (26.42)	M12x1.0-6g-0.100R	.980 (24.89)	.5625-.067P-.2L-TS-2A		M16x1.0-6g-0.100R	.406 (10.31)
10	1.110 (28.19)	M14x1.0-6g-0.100R	1.050 (26.67)	.6250-.067P-.2L-TS-2A		M18x1.0-6g-0.100R	.484 (12.29)
11	1.160 (29.46)	M15x1.0-6g-0.100R	1.110 (28.19)	.6875-.067P-.2L-TS-2A		M19x1.0-6g-0.100R	.524 (13.31)
12	1.230 (31.24)	M17x1.0-6g-0.100R	1.170 (29.72)	.7500-.067P-.2L-TS-2A		M21x1.0-6g-0.100R	.603 (15.32)
14	1.360 (34.54)	M19x1.0-6g-0.100R	1.320 (33.53)	.8750-.067P-.2L-TS-2A		M24x1.0-6g-0.100R	.681 (17.30)
16	1.515 (38.48)	M22x1.0-6g-0.100R	1.444 (36.68)	1.0000-.067P-.2L-TS-2A		M27x1.0-6g-0.100R	.782 (19.86)
18	1.610 (40.89)	M25x1.0-6g-0.100R	1.570 (39.88)	1.1250-.067P-.2L-TS-2A		M30x1.0-6g-0.100R	.899 (22.83)

Higher density arrangements available. Consult factory for additional sizes.

806-020 JAM-NUT D-HOLE DIMENSIONS



Shell Size	K +.005/-.00 (+0.13/-.00)	øJ +.005/-.00 (+0.13/-.00)
8	.256 (6.50)	.601 (15.27)
9	.287 (7.29)	.640 (16.26)
10	.318 (8.08)	.719 (18.26)
11	.350 (8.89)	.759 (19.28)
12	.381 (9.68)	.837 (21.26)
14	.443 (11.25)	.955 (24.26)
16	.505 (12.83)	1.073 (27.25)
18	.568 (14.43)	1.192 (30.28)

HOW-TO-ORDER 20HD FIBER OPTIC TERMINI FOR SERIES 806 CONNECTORS

Termini Type	Optical Fiber Type	Part Number	ØA Ferrule Hole	Fiber Size Core/Cladding
Pin	Singlemode	**181-134-1255**	125.5 microns	9/125
Pin	Multimode	**181-134-126**	126.0 microns	50/125, 62.5/125
Socket	Singlemode	**181-135-1255**	125.5 microns	9/125
Socket	Multimode	**181-135-126**	126.0 microns	50/125, 62.5/125

HOW-TO-ORDER 16 FIBER OPTIC TERMINI FOR SERIES 806 CONNECTORS

Termini Type	Optical Fiber Type	Part Number	ØA Ferrule Hole	Fiber Size Core/Cladding
Pin	Single Mode	**181-145-125**	125.5 microns	9/125
Pin	Multi Mode	**181-145-126**	126.0 microns	50/125, 62.5/125
Pin	Multi Mode	**181-145-144**	144.0 microns	100/140
Socket	Single Mode	**181-146-125**	125.5 microns	9/125
Socket	Multi Mode	**181-146-126**	126.0 microns	50/125, 62.5/125
Socket	Multi Mode	**181-146-144**	144.0 microns	100/140

806-013 Square Flange Receptacle

Tight-tolerance MIL-DTL-38999 Type Micro Miniature Square Flange Receptacle. Made for use with high-density sizes 16 and 20HD snap-in, rear-release termini. Shallow-angle triple-start stub ACME threads prevent decoupling in high vibration, shock, and high-altitude aerospace and military/defense applications. Available with accessory threads or shield termination banding porch. Shell materials include Aluminum alloy and stainless steel. Keyed polarization for mis-mate protection. Available insert arrangements support from three to thirty-one singlemode and multimode termini. Tight contact pitch and reduced connector dimensions results in up to 50% size and weight savings compared to conventional aerospace-grade fiber optic connectors.

SPECIFICATIONS

- Operating temperature: connector capable of -55°C to +200°C. Temperature rating for fiber applications limited by cable and epoxy used.
- Termination method: epoxy/polish
- Mating durability: 500 cycles
- Random vibration: 49.5 Grms, EIA-364-28 Test Condition V. Maximum optical discontinuity 0.5 dB, 50 microseconds.
- Mechanical shock: 300 G, TIA-455-14 Test Condition D. Maximum optical discontinuity 0.5 dB, 50 microseconds.

CONNECTOR CONSTRUCTION

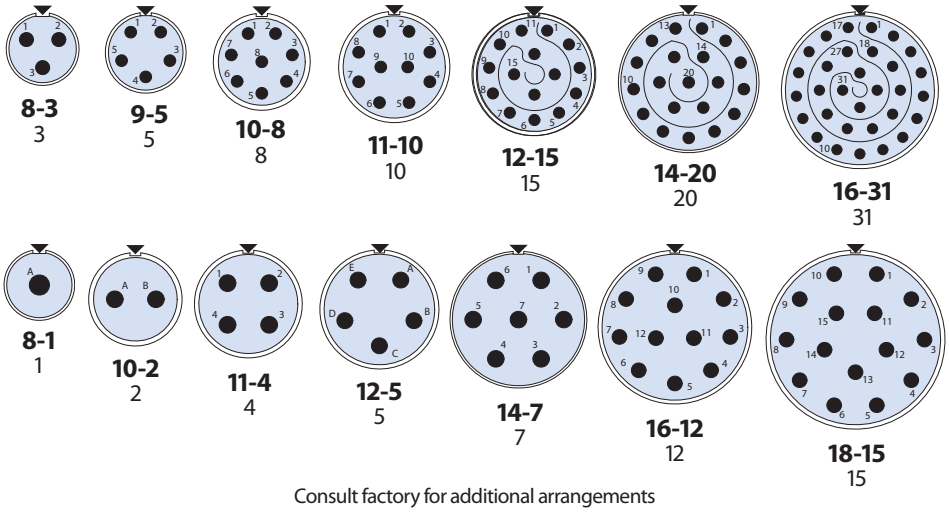
- Shell: aluminum or stainless steel
- Contacts: copper alloy, gold plating
- Wire grommet: blue fluorosilicone
- Dielectric inserts: high grade rigid dielectric
- Peripheral seal: blue fluorosilicone
- Contact retention clips: copper alloy
- Clinch nuts: stainless steel, passivated
- Retainer rings: stainless steel, passivated

HOW TO ORDER

Sample Part Number	806-013	-ME	10-8	A	B	T	A
Product	**806-013** = Panel Receptacle, Square Flange						
Shell Material and Finish	**ME** = Aluminum, Electroless Nickel **MT** = Aluminum, Ni/PTFE **ZR** = Aluminum, Black Zinc-Nickel **NF** = Aluminum, Olive Drab Cadmium **Z1** = Stainless Steel, Passivated **ZL** = Stainless Steel, Electro-Deposited Nickel						
Arrangement Number (Shell Size - Insert Arr.)	See Arrangements table						
Contact Type	**Connector supplied without termini** **A** = Pin **B** = Socket order fiber optic termini separately						
Shell Style	**M** = Metric accessory threads **B** = Nano Band platform						
Mounting Hole Style	**T** = Thru holes **C** = Clinch nut, #4-40 (rear panel mounting)						
Polarizing Position	**A B C D E F**						

SERIES 806 ARRANGEMENTS COMPATIBLE WITH 20HD FIBER OPTIC TERMINI

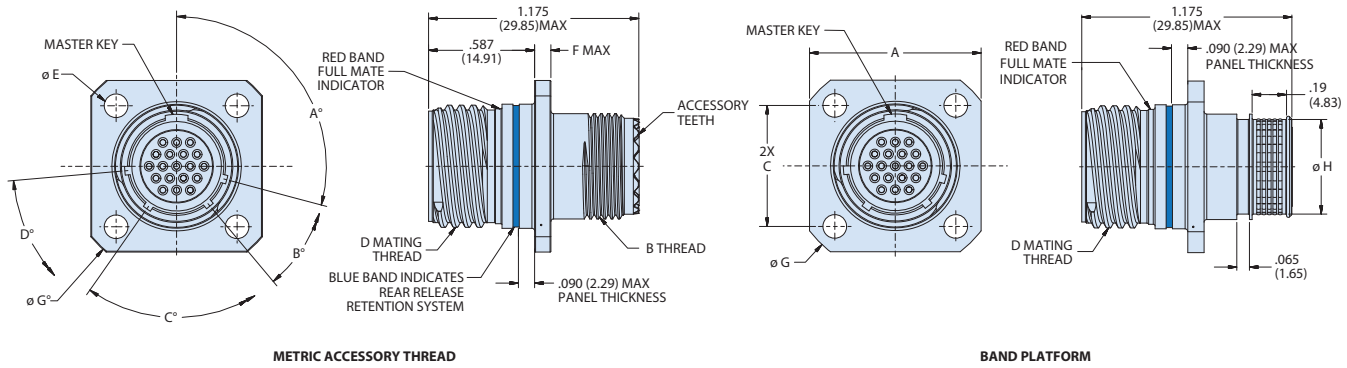
Mating face of pin connector. Socket numbering is reversed.
Symbol ▼ indicates master key location.



Consult factory for additional arrangements

806-013 Square Flange Receptacle

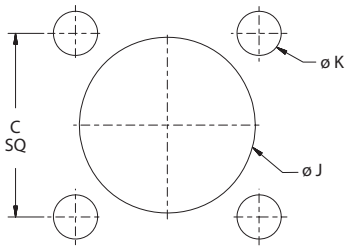
806-013 SQUARE FLANGE RECEPTACLE DIMENSIONS



Shell Size	A Max	B Thread	C	D Mating Thread	øE	F Max	G Max	øH
8	.822 (20.88)	M10x1.0-6g-0.100R	.531 (13.49)	.5000-.067P-.2L-TS-2A	.128 (3.25)	.100 (2.54)	1.040 (26.42)	.327 (8.31)
9	.885 (22.48)	M12x1.0-6g-0.100R	.594 (15.09)	.5625-.067P-.2L-TS-2A			1.130 (28.70)	.406 (10.31)
10	.913 (23.19)	M14x1.0-6g-0.100R	.625 (15.88)	.6250-.067P-.2L-TS-2A			1.174 (29.82)	.484 (12.29)
11	.944 (23.98)	M15 x1.0-6g-0.100R	.670 (17.02)	.6875-.067P-.2L-TS-2A			1.200 (30.48)	.524 (13.31)
12	1.040 (26.42)	M17x1.0-6g-0.100R	.765 (19.43)	.7500-.067P-.2L-TS-2A			1.354 (34.39)	.603 (15.32)
14	1.133 (28.78)	M19x1.0-6g-0.100R	.859 (21.82)	.8750-.067P-.2L-TS-2A			1.510 (38.35)	.681 (17.30)
16	1.227 (31.17)	M22x1.0-6g-0.100R	.938 (23.83)	1.0000-.067P-.2L-TS-2A			1.620 (41.15)	.782 (19.86)
18	1.320 (33.53)	M25x1.0-6g-0.100R	1.016 (25.81)	1.1250-.067P-.2L-TS-2A			1.784 (45.31)	.899 (22.83)

Higher density arrangements available. Consult factory for additional sizes.

806-013 PANEL CUTOUT DIMENSIONS



Shel Size	ø J	ø K With or Without Cinch Nut	
8	.505 (12.83)	.128 (3.25)	.128 (3.25)
9	.572 (14.53)		
10	.640 (16.26)		
11	.707 (17.96)		
12	.762 (19.35)		
14	.885 (22.48)		
16	1.010 (25.65)		
18	1.12		

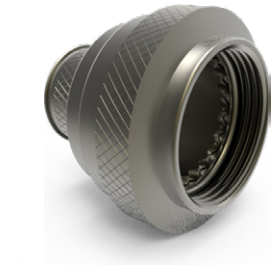
HOW-TO-ORDER 20HD FIBER OPTIC TERMINI FOR SERIES 806 CONNECTORS

Termini Type	Optical Fiber Type	Part Number	ØA Ferrule Hole	Fiber Size Core/Cladding
Pin	Singlemode	**181-134-1255**	125.5 microns	9/125
Pin	Multimode	**181-134-126**	126.0 microns	50/125, 62.5/125
Socket	Singlemode	**181-135-1255**	125.5 microns	9/125
Socket	Multimode	**181-135-126**	126.0 microns	50/125, 62.5/125

HOW-TO-ORDER 16 FIBER OPTIC TERMINI FOR SERIES 806 CONNECTORS

Termini Type	Optical Fiber Type	Part Number	ØA Ferrule Hole	Fiber Size Core/Cladding
Pin	Single Mode	**181-145-125**	125.5 microns	9/125
Pin	Multi Mode	**181-145-126**	126.0 microns	50/125, 62.5/125
Pin	Multi Mode	**181-145-144**	144.0 microns	100/140
Socket	Single Mode	**181-146-125**	125.5 microns	9/125
Socket	Multi Mode	**181-146-126**	126.0 microns	50/125, 62.5/125
Socket	Multi Mode	**181-146-144**	144.0 microns	100/140

440V*213 F/O Banding Backshell for Hybrid Copper/Fiber Applications



Series 44 environmental backshells with straight, swept 45° and 90° profiles are ideal for combo copper /fiber insert arrangements where EMI/RFI shielding and environmental sealing are needed. Anti-decoupling device for improved vibration resistance and detents to allow for axial positioning of backshell for improved cable routing.

HOW TO ORDER

Sample Part Number	440V	S	213	MT	20	12	-8	B	P	T
Product	**440V** = Series 806 Backshell									
Angular Function	**S** = Straight **N** = 90° **M** = 45°									
Basic No.	213									
Finish Code	**ME** = Aluminum Alloy; Electroless Nickel **NF** = Aluminum Alloy; Cadmium/O.D. over Electroless Nickel (500 hr salt spray) **MT** = Aluminum Alloy; Electroless Nickel-PTFE **ZL** = Stainless Steel, Electro-deposited Nickel **ZR** = Aluminum Alloy; Zinc Nickel, Black over Electroless Nickel **Z1** = Stainless Steel; Passivate									
Shell Size	See Dimensions table									
Dash Number	See Cable Entry / Back End / Boot P/N table									
Length	Length in 1/8 Inch Increments (**8** = 1 inch); See Notes									
Band Option	**B** = Band **K** = Precoiled; omit if not required									
Shield Termination Finish	**P** = Polysulfide Plating Shield; See Notes									
Shrink Boot Material Options	See Shrink Boot Options table; See Notes									

NOTES

- For effective grounding, connector with conductive finish should be used.
- When Cable entry exceeds max. in Table I, Style II will be supplied. Dimensions F, G, H, J, K, L, M & N will not apply.
- Standard minimum length for style I is 0.75, for style II is 1.5 inches, for shorter length, consult factory, applies to SYM S, straight only.
- When polysulfide barrier is selected for plating shield termination, surface shall be free of cadmium.
- See 809-060 for additional shrink boot options.

MATERIAL / FINISH:

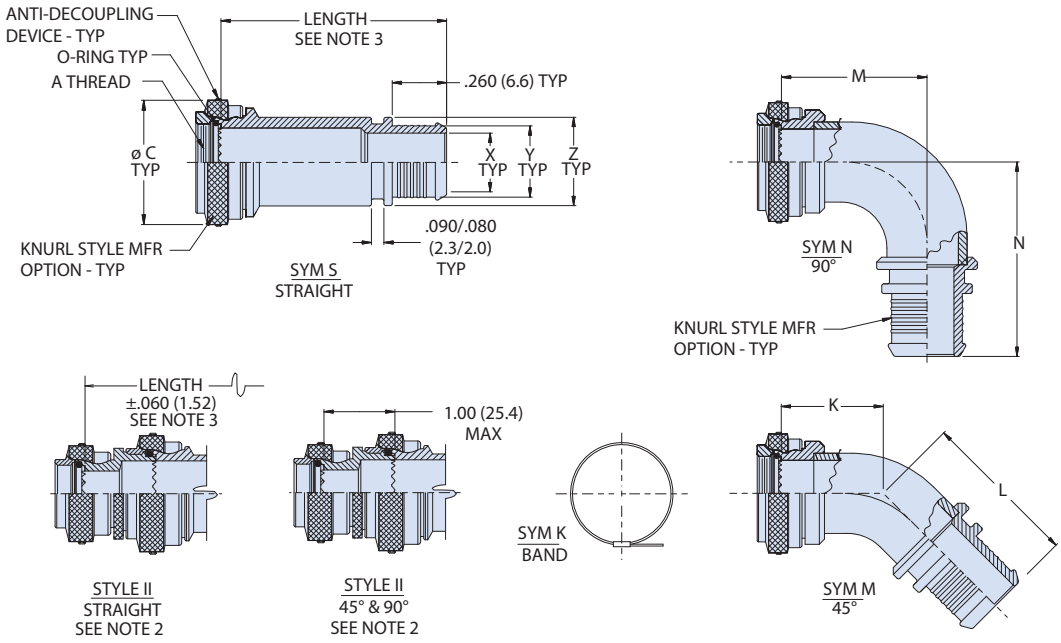
- Anti-decoupling device: corrosion resistant material
- O-rings: silicone/N.A.
- Shrink boot: see individual drawings
- Band: CRES/passivated

CABLE ENTRY / BACK END / BOOT P/N

Dash No	X Dia	Y Dia	Z Dia	Shrink Boot T or H Ref	Shrink Boot w/Adhesive
02	0.125 (3.18)	0.165 (4.19)	0.266 (6.76)	809S060-1*U	809S060-1*
03	0.188 (4.78)	0.228 (5.79)	0.329 (8.36)	809S060-1*U	809S060-1*
04	0.250 (6.35)	0.290 (7.37)	0.391 (9.93)	809S060-2*U	809S060-2*
05	0.312 (7.92)	0.353 (8.97)	0.453 (11.51)	809S060-2*U	809S060-2*
06	0.375 (9.52)	0.415 (10.54)	0.516 (13.11)	809S060-2*U	809S060-2*
07	0.438 (11.13)	0.478 (12.14)	0.579 (14.71)	809S060-2*U	809S060-2*
08	0.500 (12.70)	0.540 (13.72)	0.641 (16.28)	809S060-3*U	809S060-3*
09	0.562 (14.27)	0.603 (15.32)	0.703 (17.86)	809S060-3*U	809S060-3*
10	0.625 (15.88)	0.665 (16.89)	0.766 (19.46)	809S060-3*U	809S060-3*
11	0.688 (17.48)	0.728 (18.49)	0.829 (21.06)	809S060-4*U	809S060-4*
12	0.750 (19.05)	0.800 (20.32)	0.891 (22.63)	809S060-4*U	809S060-4*
13	0.812 (20.62)	0.863 (21.92)	0.953 (24.21)	809S060-4*U	809S060-4*
14	0.875 (22.23)	0.925 (23.50)	1.016 (25.81)	809S060-5*U	809S060-5*
15	0.938 (23.83)	0.988 (25.10)	1.079 (27.41)	809S060-5*U	809S060-5*
16	1.000 (25.40)	1.050 (26.67)	1.141 (28.98)	809S060-5*U	809S060-5*
17	1.062 (26.97)	1.113 (28.27)	1.203 (30.56)	809S060-6*U	809S060-6*
18	1.125 (28.58)	1.175 (29.85)	1.266 (32.16)	809S060-6*U	809S060-6*
20	1.250 (31.75)	1.310 (33.27)	1.391 (35.33)	809S060-6*U	809S060-6*

440V*213 F/O Banding Backshell for Hybrid Copper/Fiber Applications

DIMENSIONS



Shell Size	A Thread	Ø C Max	K Max	L Max	M Max	N Max	Max Dash No.
08	M10 x 1-6H	.692(17.58)	.790(20.07)	.965(24.51)	.940(23.88)	1.125(28.58)	04
09	M12 x 1-6H	.786(19.96)	.790(20.07)	.965(24.51)	.940(23.88)	1.125(28.58)	05
10	M14 x 1-6H	.883(22.43)	.790(20.07)	1.035(26.29)	.970(24.64)	1.225(31.12)	06
11	M15 x 1-6H	.911(23.14)	.790(20.07)	1.035(26.29)	.970(24.64)	1.225(31.12)	07
12	M17 x 1-6H	1.002(25.45)	.830(21.08)	1.115(28.32)	1.040(26.42)	1.325(33.66)	08
14	M19 x 1-6H	1.066(27.08)	.830(21.08)	1.115(28.32)	1.040(26.42)	1.325(33.66)	09
16	M22 x 1-6H	1.196(30.38)	.840(21.34)	1.185(30.10)	1.080(27.43)	1.425(36.20)	11

SHRINK BOOT OPTIONS	
Code	Description
T	Standard Fluid Resistant Elastomer With Adhesive Pre-Applied
TU	Standard Fluid Resistant Elastomer
N	Radiation Resistant Polyolefin, -50°C To 150°C (No Adhesive Option)
S	Low Outgassing Fluoropolymer; Use 779-001 As Adhesive Option (Not Included)
SU	Low-Outgassing Fluoropolymer, See Cable Entry / Back End / Boot P/N table; Omit For None

337V*014 Self-Locking Convoluted Tubing Adapter, Composite

Series 377-014 supports both PEEK as well as Glenair Series 74 Teflon type convoluted tubing with either band attachment or lamp-thread (nut) attachment. All styles equipped with fiber alignment grommet matched to shell size.

MATERIAL AND FINISH

- Adapters, elbows, ferules, coupling nut, nut: high-grade engineering thermoplastic
- Grommet, O-ring: fluorosilicone
- Anti-decoupling device: corrosion resistant material/N.A.

NOTES:

- Glenair 600 Series backshell assembly tools are recommended for assembly and installation.
- Standard Min. Order Length 1.5 inch, consult factory for shorter lengths.

Series 37 Fiber-Con environmental composite backshells with straight, swept 45° and 90° profiles are ideal for fiber media routing. Backshells offer a full range of connector-to-conduit adapters. Anti-decoupling device for improved vibration resistance, and detents to allow for axial positioning of backshell for improved cable routing. Special wire grommet ensures axial alignment of fiber media. Optional purple color readily identifies fiber runs (purple conduit also available).

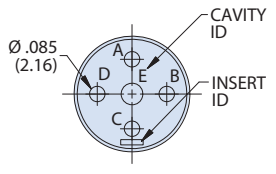
HOW TO ORDER

Sample Part Number	377	V	S	014	XM	11-10	06	4	G
Basic Number	Composite Backshell								
Connector Designator	Series 806 Mil-Aero								
Angular Function	**S** = Straight; **W** = 90° Solid Elbow; **T** = 45° Solid Elbow								
Basic No.	**-014** = FiberCon backshell composite tubing adapter								
Material/Finish	See Material and Finish table								
Shell Size	See Dimensions table								
Optional Entry Size	See Entry Size table; Omit for Std. Dimensions table								
Length	In 1/2 inch increments (Example: 3 = 1.5 Inches). Minimum 1.5" For code S Straight backshell only, omit for 45° or 90°								
Adapter	**Code G** - Gland Nut **Code T** - Band Termination Convoluted Tubing Adapter, Series 74 **Code TB** - Band Termination, Sr. 74 Convoluted Tubing Adapter, with Band **Code K** - Nut Termination Convoluted Tubing Adapter, PEEK **Code TN** - Nut Termination Convoluted Tubing Adapter, Series 74 **Omit** - Standard Shrink Boot Adapter								

MATERIAL AND FINISH

Code	Material	Finish Description
-	Composite	Dash (-) For No Plating, Amber Color
XB		No Plating - Black Color
XM		Electroless Nickel
XW		Cadmium Olive Drab Over Electroless Nickel
XMT		Nickel-PTFE, Grey
XV		No plating - Purple

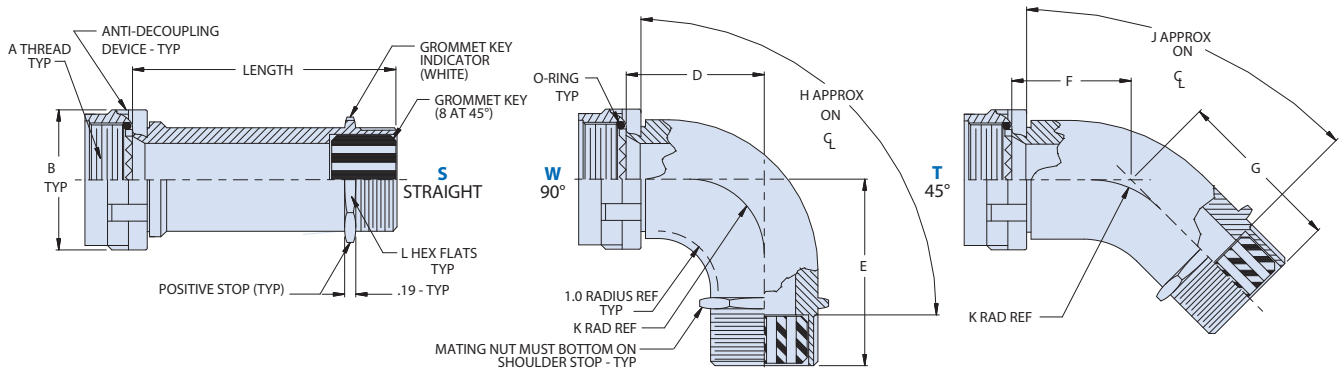
HOLE PATTERN



HOLE PATTERN

337V*014 Self-Locking Convoluted Tubing Adapter, Composite

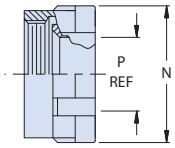
DIMENSIONS



Shell Size	A Thread	ØB Max	Std. Conduit Size Ref.	D Max	E Max	F Max	G Max	H Approx	J Approx	K Ref	L Flats	No. Of Holes	Max Alt. Std. Entry
11-10	M15 X 1 - 6H	1.00 (25.40)	3/8	1.78 (45.21)	1.93 (49.02)	1.33 (33.78)	1.56 (39.62)	2.23 (56.64)	2.09 (53.09)	1.20 (30.48)	.938 (23.83)	10	08
16-31	M22 X 1 - 6H	1.25 (31.75)	1/2	1.90 (48.26)	2.08 (52.83)	1.45 (36.83)	1.68 (42.67)	2.45 (62.23)	2.33 (59.18)	1.32 (33.53)	.938 (23.83)	31	08
18-41	M25 X 1 - 6H	1.38 (35.05)	5/8	1.97 (50.04)	2.14 (54.36)	1.51 (38.35)	1.74 (44.20)	2.47 (62.74)	2.44 (61.98)	1.38 (35.05)	1.250 (31.75)	41	11
20-55	M28 X 1 - 6H	1.50 (38.10)	3/4	2.11 (53.59)	2.18 (55.37)	1.54 (39.12)	1.77 (44.96)	2.54 (64.52)	2.50 (63.50)	1.43 (36.32)	1.250 (31.75)	55	11
22-69	M31 X 1 - 6H	1.62 (41.15)	7/8	2.07 (52.58)	2.25 (57.15)	1.61 (40.89)	1.84 (46.74)	2.64 (67.06)	2.64 (67.06)	1.49 (37.85)	1.500 (38.10)	69	15
24-92	M34 X 1 - 6H	1.75 (44.45)	1	2.14 (54.36)	2.31 (58.67)	1.67 (42.42)	1.89 (48.01)	2.76 (70.10)	2.75 (69.85)	1.55 (39.37)	1.500 (38.10)	92	15

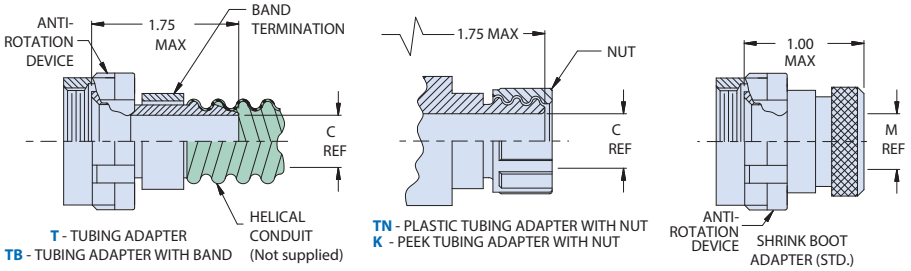
ADAPTER TYPES

GLAND NUT DIMENSIONS



Shell Size	P Ref	N Max
11-10	.53 (13.46)	1.38 (35.05)
16-31		
18-41	.77 (19.56)	1.56 (39.62)
20-55		
22-69	1.00 (25.40)	1.81 (45.97)
24-92		

OPTIONAL ENTRY SIZE CODES AND DIMENSIONS - TYPES T, TB, TN, K, AND STANDARD BOOT ADAPTER



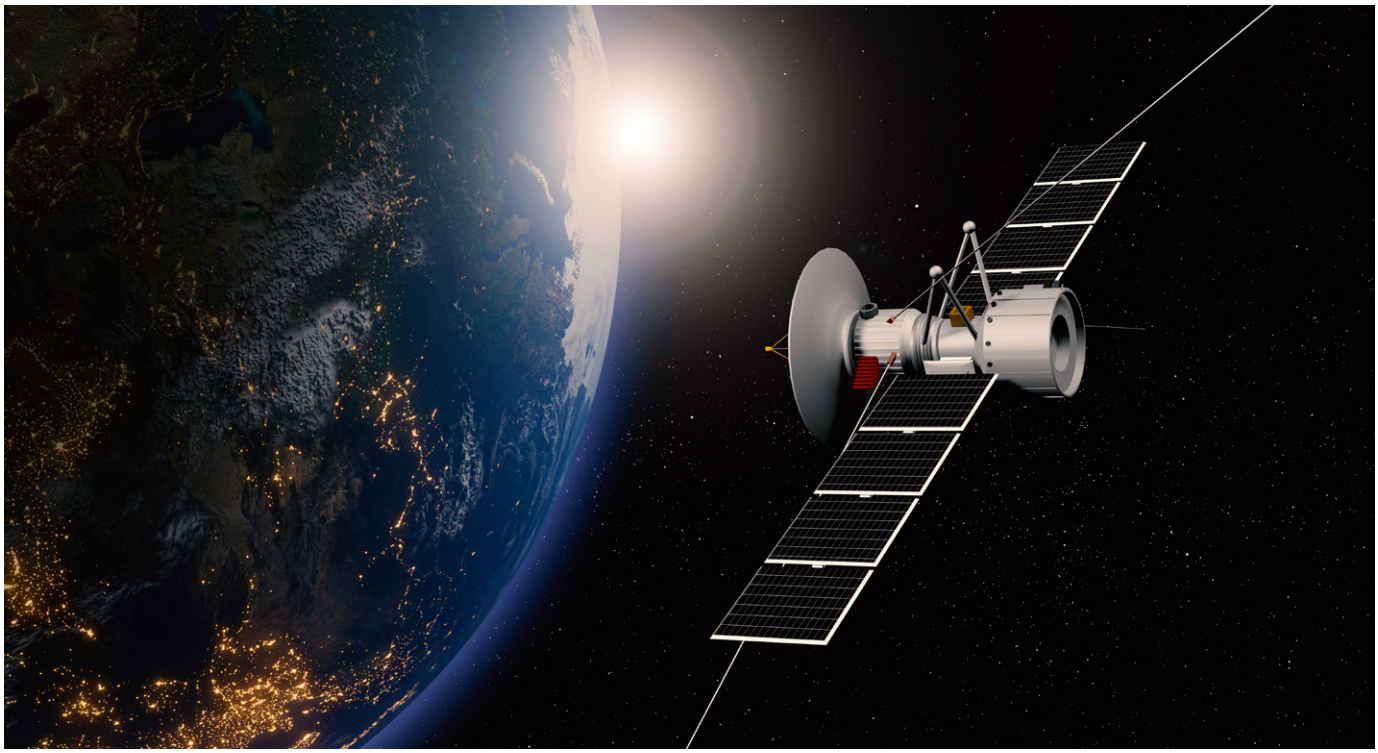
Entry Size	ØC Ref - Code T & TN	ØC Ref Code K	Optional Conduit Size Ref.
03	.188 (4.78)	.188 (4.78)	9/32
04	.236 (5.99)	-	5/32
05	.250 (6.35)	.265 (6.73)	3/8
06	.338 (8.59)	.330 (8.38)	7/16
07	.398 (10.11)	.390 (9.91)	1/2
08	.523 (13.28)	.515 (13.08)	5/8
10	.648 (16.46)	.640 (16.26)	3/4
11	.648 (16.46)	.640 (16.26)	3/4
13	.778 (19.76)	.765 (19.43)	7/8
15	.875 (22.23)	.089 (2.26)	1
17	1.078 (27.38)	1.125 (28.58)	1 1/4

GLENAIR
SIGNATURE
FIBER OPTIC
CONNECTION
SYSTEMS

Rugged Fiber Optic CONNECTORS

Rugged High-Density PRIZM® MT **Expanded Beam** and MT Elite **PC** Fiber Optic Systems

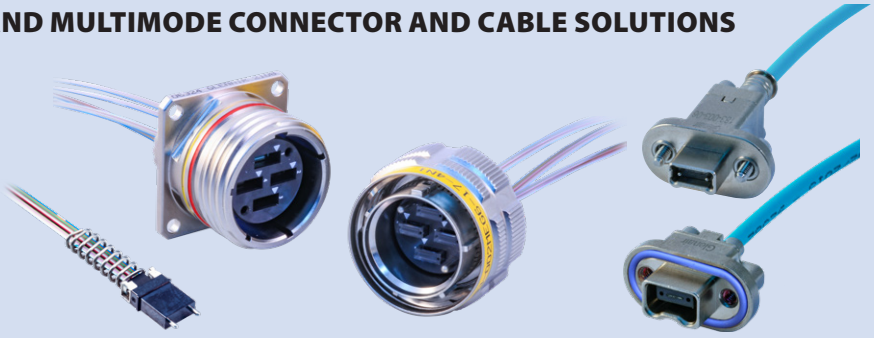
RUGGED EXPANDED BEAM PRIZM® MT CABLE ASSEMBLIES FOR EVERY APPLICATION REQUIREMENT: FROM INSIDE-THE-BOX TO HARSH-ENVIRONMENTAL POINT-TO-POINT



Easy-to-use, harsh environment, super high-density PRIZM® MT expanded-beam fiber optic assemblies in Glenair ruggedized I/O and backplane connector packaging

- **Glenair is qualified by US Conec to terminate 1 and 2 row PRIZM® MT ferrules for ribbon and round cable fiber**
- **Turnkey, factory-terminated PRIZM® MT expanded beam assemblies—fully ruggedized for harsh air and space applications**
- **Reliable, repeatable optical performance**
- **Outstanding stability under shock and vibration conditions**
- **PRIZM® MT provides outstanding tolerance to debris contamination**

ALSO AVAILABLE: MT ELITE® PHYSICAL CONTACT SINGLEMODE AND MULTIMODE CONNECTOR AND CABLE SOLUTIONS



Ruggedized, expanded beam and PC MT ferrules in Glenair signature harsh-environment cable assemblies and connectors

ABOUT MT FERRULE FIBER OPTICS

PRIZM® MT is a monolithic optical fiber ferrule that integrates microlenses and mechanical alignment features into a single component. The design provides low insertion loss and return loss for up to 32 fibers and is optimally resistant to debris contamination. Glenair supplies the PRIZM MT ferrule in factory-terminated cable assemblies for both inside-the-box as well as environmental point-to-point applications. Ruggedized aerospace-grade I/O and backplane connectors are also available for use with standard MT Elite® physical contact (PC) ferrules. MT Elite compatible connectors and ferrule kits are ordered separately for complete convenience in the implementation of both singlemode and multimode fiber optic datalinks.

DIMENSIONAL NOTES

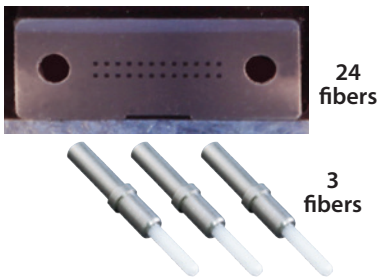
- Catalog dimensions are subject to change without notice. Consult Glenair engineering for a controlled-release sales drawing.
- Metric dimensions appear in parentheses in diagrams and tables, based on 1 inch = 25.4 mm, for reference only.
- Unless otherwise specified, the following other dimensional tolerances apply:
- .xx = ± .03 (0.8) • .xxx = ± .015 (0.4) • Angles = ± 5°

About PRIZM MT® and MT Elite® high-density fiber optic ferrule technology

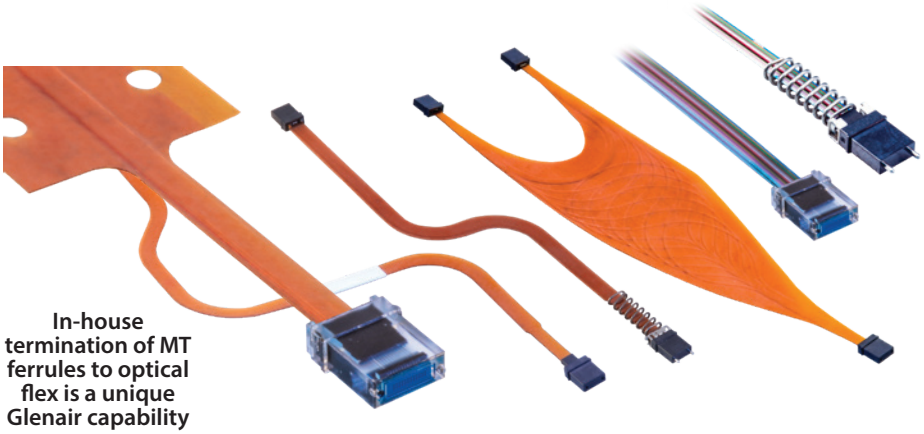
Glenair US and UK are qualified by US Conec to terminate 1 and 2 row PRIZM MT ferrules for ribbon and round cable fiber

PRIZM MT and MT Elite are ultra-high-density multi-line fiber optic ferrule designs that far surpass standard butt-joint ST type systems for both optical performance and package size in high-speed data transmission applications.

MT FERRULE AND CONVENTIONAL FIBER TERMINI SIZE COMPARISON



MT Elite supports up to 24 fibers in a single compact, lightweight ferrule. PRIZM MT supports up to 32 channels in the same package.



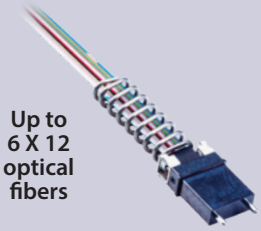
In-house termination of MT ferrules to optical flex is a unique Glenair capability

OPTICAL FLEX

Glenair's unique implementation of the MT ferrule—in both ribbonized cables as well as optical flex—delivers precise, rugged alignment and optical performance of these otherwise commercial-grade fiber optic solutions, bringing outstanding size and weight reduction to mil-aero fiber optic systems.

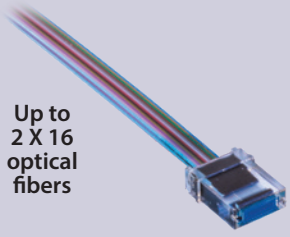
MT ELITE VS. PRIZM MT

Physical contact or butt-joint MT ferrules are branded by US Conec as their MT Elite product. PRIZM MT is the company's expanded beam solution. Both designs provide precise alignment of optical fibers for low insertion and return loss performance. MT Elite supports a higher total fiber line density, while PRIZM MT is designed for optimal performance in harsh application environments.



MT ELITE

- Stainless steel guide pins
- Singlemode and multimode
- 12-fiber arrays (up to 6 X 12)



PRIZM MT

- Molded "hole and post" alignment
- Multimode only
- 16-fiber arrays (up to 2 X 16)

Ruggedized, expanded beam and PC MT ferrules in Glenair signature harsh-environment cable assemblies and connectors

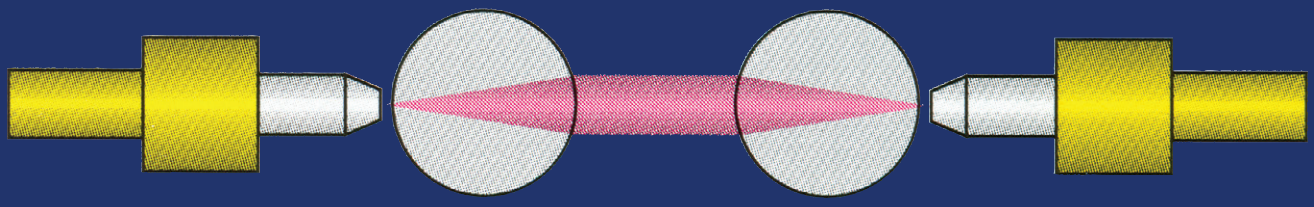
PRIZM MT FEATURES AND BENEFITS

- Fits interchangably with MT Elite in all Glenair connectors
- Supports 850 nm and 1310 nm applications
- Consistent end-face geometry
- Reliable, repeatable optical performance
- Outstanding stability under shock and vibration conditions
- High mating cycle durability
- Higher tolerance to debris contamination
- Low insertion loss and return loss vs. conventional expanded beam systems (typically 2X butt joint)
- PRIZM insertion loss ~0.3 dB increase vs. butt joint

EXECUTIVE SUMMARY

PRIZM MT is an easy-to-use fiber optic interconnection technology with a consistent end-face geometry for reliable, repeatable optical performance and improved stability under shock and vibration conditions. The expanded beam design delivers higher mating cycle durability and improved tolerance to debris contamination. Compared to conventional expanded-beam fiber optics with loss values 2X those of butt-joint fiber systems, PRIZM MT delivers a performance penalty on the order of just 0.2 dB insertion loss (typically) over butt-joint fiber optics. PRIZM MT is supplied by Glenair in factory-terminated cables assemblies only.

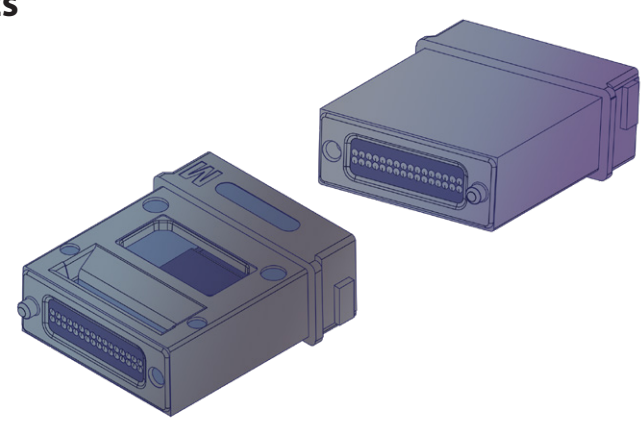
EXPANDED BEAM TECHNOLOGY



Expanded Beam connectors utilize a sealed lens to expand the emitting beam of light from the fiber media making connections less sensitive to alignment and contaminants. The expanded beam enters an air gap between connectors and is then refocused back into the fiber of the mating half. Sealed expanded beam assemblies are ideally suited for environmental applications where optical connectors are subject to repeated mating and unmating cycles. Easy to clean, terminate, and insensitive to contamination.

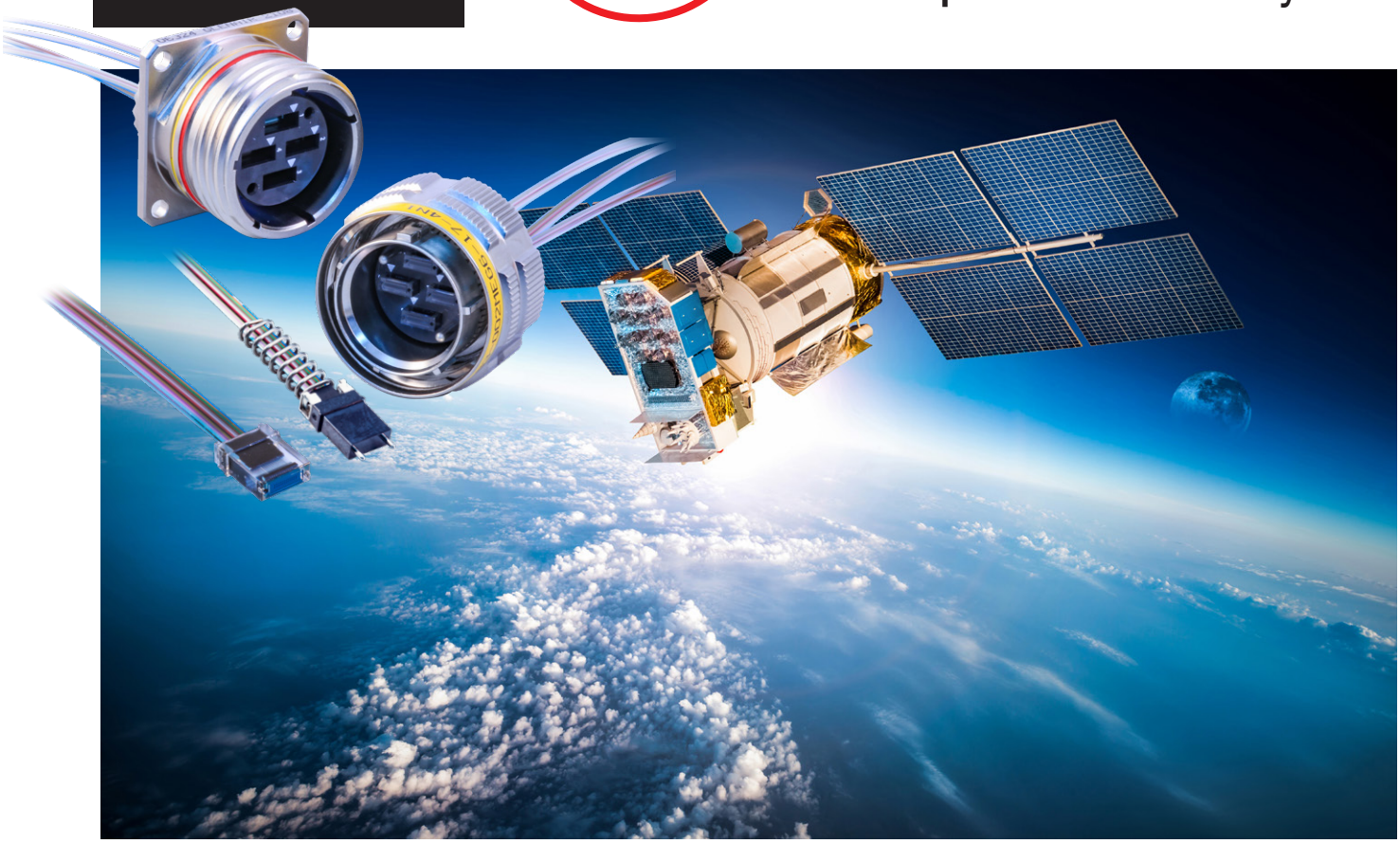
US CONEC PRIZM MT LENSED MULTI-FIBER FERRULES

From the maker: "…the novel, molded-in, hermaphroditic post and hole alignment feature eliminates the need for costly stainless steel guide pins. Complex, costly end face geometry and polishing associated with physical contact array connectors are eliminated with the no-polish, free-space, expanded beam PRIZM® MT ferrule—all while greatly reducing sensitivity to debris. Reduction in the necessary ferrule spring force makes this optical component ideal for applications requiring mass mating of multiple ferrules in high density trunk cables and optical backplanes."



Rugged Fiber Optic CONNECTORS

SuperNine®: Aerospace-Grade High-Density **MT Ferrule** Fiber Optic Connection System



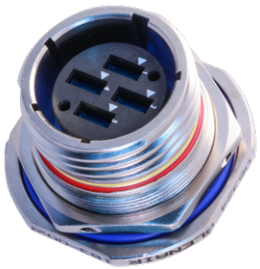
PRIZM MT expanded beam cable assemblies and PC MT Elite connectors and ferrule kits for use with Glenair Signature SuperNine® connectors

- **Singlemode and multimode fiber**
- **Low insertion loss**
- **Environmental sealing: IP68 in the mated condition**
- **Physical contact and expanded beam**
- **Available in composite**

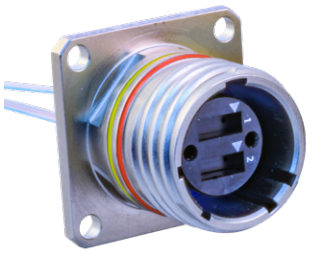
SUPERNINE MT CONNECTOR CONFIGURATIONS

Cable Plug

In-Line Receptacle

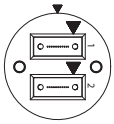
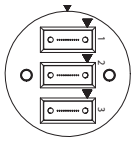
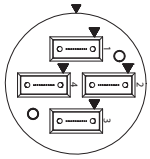


Jam-Nut Receptacle



Panel-Mount Receptacles

SuperNine® "Better than QPL" MIL-DTL-38999 Series III 183-002 MT Series overview

SUPERNINE® CONNECTORS WITH PLUG-AND-PLAY MT FERRULE ACCOMMODATION - SHELL SIZE / INSERT ARRANGEMENTS*			
			
Shell Size-Insert Arrangement **11-1** Up to 24 fibers (1 MT ferrule)	Shell Size-Insert Arrangement **13-2** Up to 48 fibers (2 MT ferrules)	Shell Size-Insert Arrangement **15-3** Up to 72 fibers (3 MT ferrules)	Shell Size-Insert Arrangement **17-4** Up to 96 fibers (4 MT ferrules)
*Depending on ferrule type. MT Elite = 12 or 24 fibers per ferrule; PRIZM MT= 16 or 32 fibers per ferrule			

SUPERNINE® MT PERFORMANCE SPECIFICATIONS	
Test Description	**Performance Requirements/Specifications**
Optical Insertion Loss, Multimode Expanded Beam	0.65dB (50/125 µm) typical
Optical Insertion Loss, Multimode PC	0.35dB (50/125 µm) typical
Optical Insertion Loss, Singlemode APC	0.45dB (9/125 µm) typical
Optical Back Reflection, Singlemode APC	Better than -60 dB
Mechanical Shock	300 G Half-sine Pulse, 3 ms Duration, 3 Times Both Direction Each Axis per TIA-455-14A
Vibration, Random	49.5 Grms at Ambient Temperature per MIL-STD-1678-3, Measurement 3201, Test Condition C, 5.3c, 8 hours exposure each axis
Mating Durability	500 Mating Cycles per TIA-455-21A
Humidity *	90%-95% RH, 96 hour Exposure per TIA-455-5C, Method A, Test Condition A
Thermal Cycle *	5 Cycles, -40°C to 85°C with 1 hour Exposure per EIA-364-32F, Condition VIII, Method A
Temperature Life *	85°C for 1,000 hours per TIA-455-4C

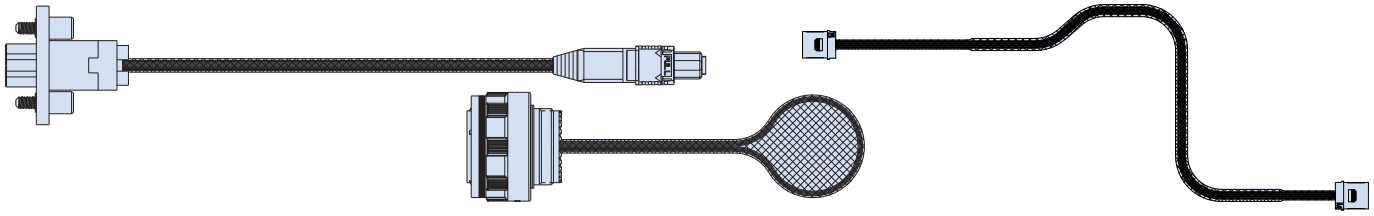
*cable and epoxy dependent
- Optical Insertion Loss test setup per TIA-455-171, Method A1
- All optical measurements for singlemode tests conducted using launch conditions as defined in TIA-455-78, paragraph A.1.2.
- All optical measurements for multimode tests conducted using restricted launch conditions.
- The restricted launch condition for multimode is defined in MIL-STD-1678 Part 2 Measurement Support Process 2203 produces a launch that is more conservative than 70/70 and encircled flux.

CUSTOM SUPERNINE® MT FIBER OPTIC CABLE SETS

Glenair can design, terminate, and test complex multibranch and point-to-point assemblies incorporating SuperNine® MT connectors. Panel mount PRIZM MT-equipped receptacles may be terminated to standard fiber optic interconnects for termination to board-level transceivers. PRIZM MT plug and in-line receptacle assemblies are available with environmental media protection including conduit, jacketed cable, and overmolding. Low-profile cable overmolds provide fiber media organization and ribbon-to-wire strain relief. Consult factory for design assistance.

CATALOG FAST-TURNAROUND "ASAP" MT OPTICAL FLEX JUMPERS AND CABLE ASSEMBLIES

Glenair supplies—as a commercial off-the-shelf product—point-to-point optical flex jumpers with MT Elite and PRIZM MT optical ferrules. Available configurations include simple MT-to-MTP jumpers in straight or curved profiles, circular and rectangular I/O connectors with MT optical fiber pigtails, as well as special optical loop assemblies. A complete range of multimode and singlemode fiber in popular sizes, plus radiation-hardened fiber for earth orbit applications. Series 79- and SuperNine-to-MT ribbon fiber breakout cable assemblies are also available.



Rugged Fiber Optic CONNECTORS

PRIZM® MT Rugged High-Density Turnkey Assemblies

PRIZM MT expanded beam catalog assemblies with Glenair Signature SuperNine® connectors are available in environmental point-to-point or inside-the-box breakout configurations, with ribbon fiber terminated to MT ferrules or to commercial fiber optic connectors.

- **Connector to ribbon fiber with MT ferrule breakouts for inside-the-box applications**
- **Connector with adapter backshell and strain-relief conduit with commercial F/O connector breakout**
- **Connector to ribbon fiber with commercial F/O breakouts for inside-the-box applications**
- **Connector-to-connector jumper with environmentaly-protective strain relief conduit**

FA09947 Turnkey Breakout and Point-To-Point Assemblies

HOW TO ORDER

Sample Part Number	FA09947	-G6	1111	N	12	ME	B12	62	0036	L	-K

Basic Number	PRIZM® MT cable assembly
A Connector Type	**G6** = Plug, With EMI/RFI/Ground Spring **H7** = Receptacle, Wall Mount With Round Holes (Standard) **S7** = Receptacle, Wall Mount With Slotted Holes **CM** = Receptacle, Wall Mount With Metric Clinch Nuts **CS** = Receptacle, Wall Mount With Standard Clinch Nuts **HM** = Receptacle, Wall Mount With Metric Helicoil **HS** = Receptacle, Wall Mount With Standard Helicoil **05** = Receptacle, In-Line **08** = Receptacle, Jam Nut Mount
Shell Size/Insert Arrangement	**111C** = Size 11 Arrangement 1 Code C (C = 1, 2, 3 Per Table II) **132C** = Size 13 Arrangement 2 Code C (C = 1, 2, 3 Per Table II) **153C** = Size 15 Arrangement 3 Code C (C = 1, 2, 3 Per Table II) **174C** = Size 17 Arrangement 4 Code C (C = 1, 2, 3 Per Table II) (See Insert Cavity Clocking Orientation table)
Key Position	**A**, **B**, **C**, **D**, **E**, **N** = Normal, **U** = Universal
B Connector Type	**G6** = Plug, With EMI/RFI/Ground Spring **H7** = Receptacle, Wall Mount With Round Holes (Standard) **S7** = Receptacle, Wall Mount With Slotted Holes **CM** = Receptacle, Wall Mount With Metric Clinch Nuts **CS** = Receptacle, Wall Mount With Standard Clinch Nuts **HM** = Receptacle, Wall Mount With Metric Helicoil **HS** = Receptacle, Wall Mount With Standard Helicoil **05** = Receptacle, In-Line **08** = Receptacle, Jam Nut Mount **12** = ST Connector **13** = FC Connector **14** = SC Connector **15** = GC Connector **16** = LC Connector **17** = MT Prizm Ferrule
Material/Finish Code	See Material and Finish table
Number of Fibers per Prizm	**B12** = 12 Bare Ribbon Fiber **B16** = 16 Bare Ribbon Fiber **B24** = 24 Bare Ribbon Fiber **B32** = 32 Bare Ribbon Fiber **R12** = 12 Round Ribbon Fiber **R16** = 16 Round Ribbon Fiber **R24** = 24 Round Ribbon Fiber **R32** = 32 Round Ribbon Fiber
Fiber Size	**OM3** = 50/125um OM3 **OM4** = 50/125um OM4 **62** = 62.5/125um
Length in Inches	See Standard Tolerance table
Protective Covers	**L** = Less Covers **Omit** = with Covers
Conduit Material	**E** = ETFE, Tefzel **F** = FEP, Teflon **P** = PFA, Teflon **T** = PTFE **K** = PEEK **R** = High Temperature Thermarex, 300°C (Omit For Less Conduit)

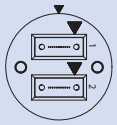
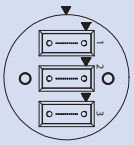
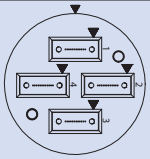
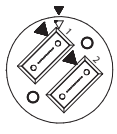
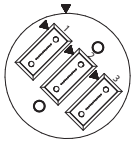
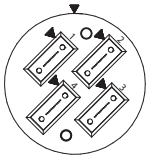
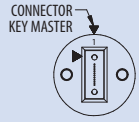
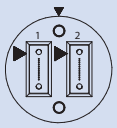
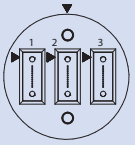
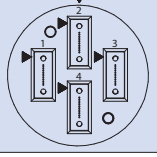
MATERIAL AND FINISH

Code	Material	Finish Description
ME	Aluminum Alloy	Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Green/Gold
ZR		Zinc-Nickel, Black
XM	Composite	Electroless Nickel
XW		Cadmium, Olive Drab
Z1	Stainless Steel	Passivate
ZL		Electro-Deposited Nickel

STANDARD-TOLERANCE

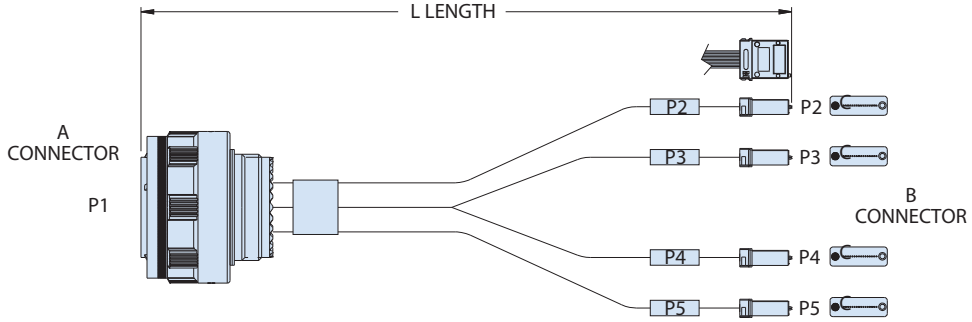
Length	Tolerance
Up to 24 In	+1 In -0
24 Up to 120 In	+3 In -0
120 Up to 600 In	+6 In -0
600 Up to 1200 In	+12 In -0
1200 In and Up	+24 In -0

INSERT CAVITY CLOCKING ORIENTATION

Code	Shell Size-Arrangement 11-1	Shell Size-Arrangement 13-2	Shell Size-Arrangement 15-3	Shell Size-Arrangement 17-4
1				
2				
3				

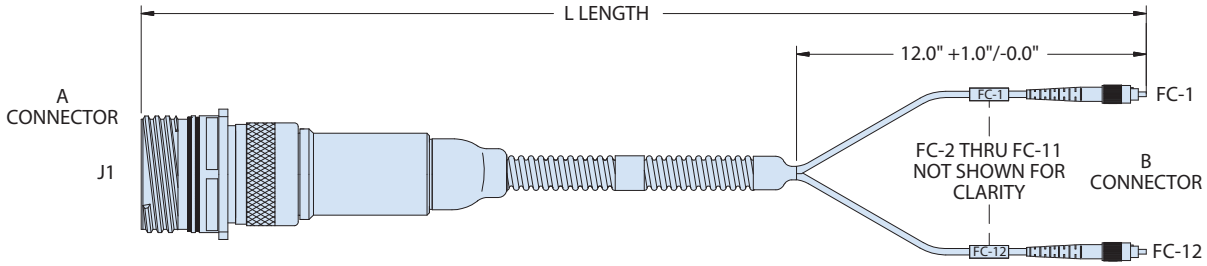
FA09947 Turnkey Breakout and Point-To-Point Assemblies

FA09947 CONNECTOR TO MT'S WITH FLAT RIBBON CABLE



SAMPLE P/N: FA09947-G6-1741N-17ME-B12OM3-0060L
(SHOWN ABOVE)

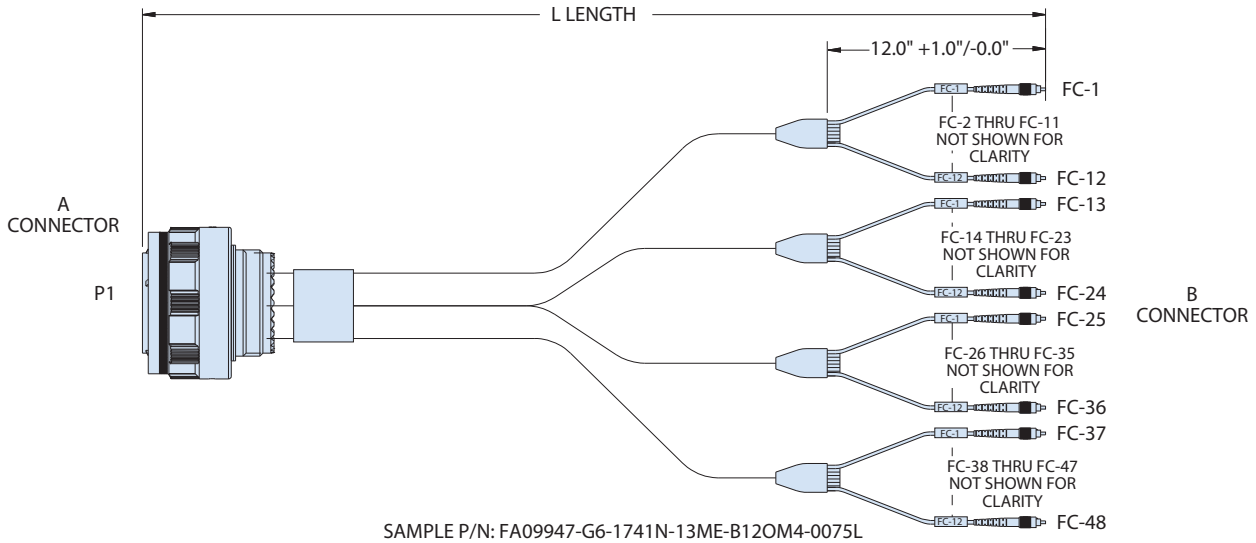
FA09947 CONNECTOR/BACKSHELL CONDUIT ASSEMBLY TO BREAKOUT FC'S



SAMPLE P/N: FA09947-H7-1111N-13ME-B12OM4-0070L-K
(SHOWN ABOVE)

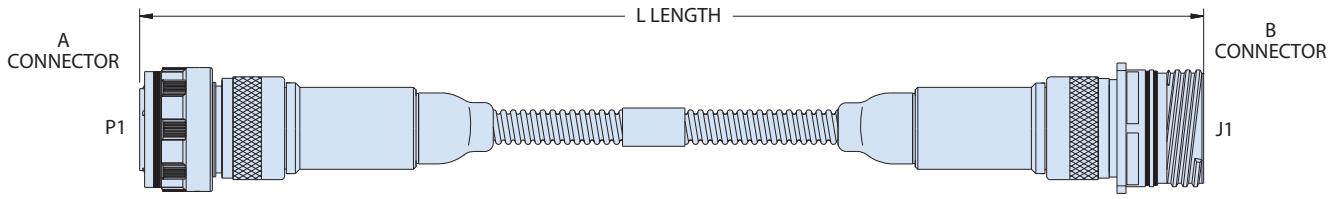
FA09947 Turnkey Breakout and Point-To-Point Assemblies

FA09947 CONNECTOR TO BREAKOUT FC'S WITH FLAT RIBBON CABLE



SAMPLE P/N: FA09947-G6-1741N-13ME-B12OM4-0075L
(SHOWN ABOVE)

FA09947 CONNECTOR TO CONNECTOR CONDUIT ASSEMBLY



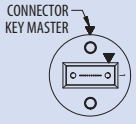
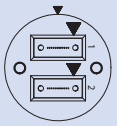
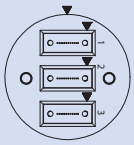
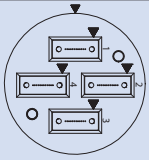
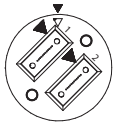
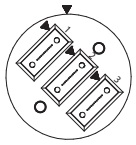
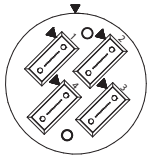
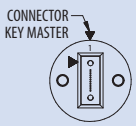
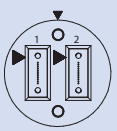
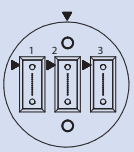
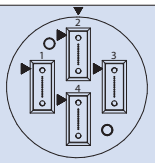
SAMPLE P/N: FA09947-G6-1321A-H7ME-B1262-0050L-K
(SHOWN ABOVE)

SuperNine® "Better than QPL" MIL-DTL-38999 Series III 183-002 (G6) Plug with EMI/RFI ground spring

Tight-tolerance MIL-DTL-38999 Series III type Cable Plug. Supports from one to four PRIZM MT and/or MT Elite high-density ferrules (Glenair series 181-149 / 181-133) with industry-leading insertion loss performance. Precision-machined and molded with integral guide pins for optimum optical fiber alignment and low dB data loss performance. Robust anti-decoupling mechanism outperforms standard D38999 solutions in severe vibration, shock, and high altitude testing. Coupling nut and connector body materials include Aluminum alloy, composite thermoplastic, stainless steel, and marine bronze. Keyed polarization for mis-mate protection.

SUPERNINE MT CABLE PLUG						
Sample Part Number	**183-002**	**ME**	**G6**	**-17-4**	**N**	**1**
Basic Part Number	SuperNine MT Fiber Optic Connector					
Material/Finish Code	See Material and Finish table					
Connector Style	**G6** = Plug with EMI/RFI ground spring					
Shell Size / Insert Arrangement	**11-1**, **13-2**, **15-3**, **17-4** Order MT ferrule kit P/N **181-139**					
Alternate Key Position	**A**, **B**, **C**, **D**, **E**, **N** = Normal **U** = Universal (per MIL-DTL-38999)					
Insert Cavity Clocking Orientation (see Table II)	**1** = Standard position **2** = Cavity position rotated 45° to master key/keyway **3** = Cavity position rotated 90° to master key/keyway					

MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
ME	Aluminum Alloy	Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
ZR		Zinc-Nickel, Black
TZ		Tin-Zinc, Green/Gold
XM	Composite	Electroless Nickel
XW		Cadmium, Olive Drab
Z1	Stainless Steel	Passivate
ZL		Electro-Deposited Nickel

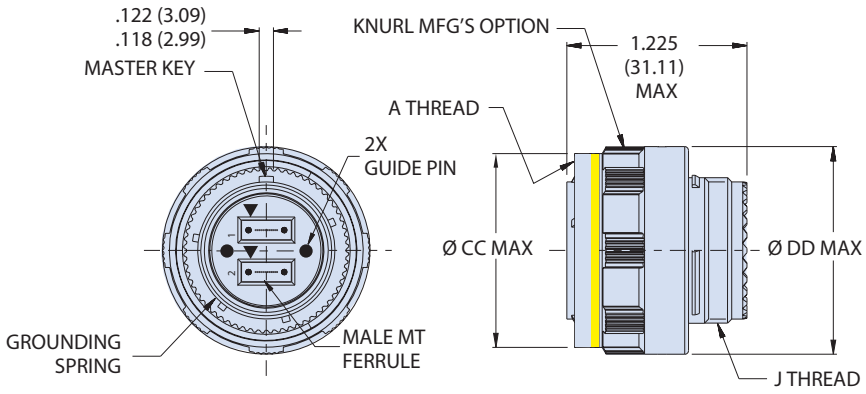
INSERT CAVITY CLOCKING ORIENTATION				
Code	**Shell Size-Arrangement 11-1**	**Shell Size-Arrangement 13-2**	**Shell Size-Arrangement 15-3**	**Shell Size-Arrangement 17-4**
1				
2				
3				

NOTES

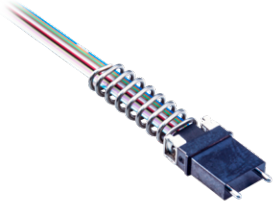
- Pin (male) and socket (female) ferrule kits can be used in either plug or receptacle connectors. Preferred configuration is female ferrule in receptacle connector.

SuperNine® "Better than QPL" MIL-DTL-38999 Series III 183-002 (G6) Plug with EMI/RFI ground spring

06 - PLUG



Shell Size / Insert Arr.	A Thread	Ø CC Max	Ø DD Max	J Thread
11-1	.7500-.1P-.3L-TS-2B	.929 (23.6)	.984 (25.0)	M15 x 1.0-6g 0.100R
13-2	.8750-.1P-.3L-TS-2B	1.110 (28.2)	1.157 (29.4)	M18 x 1.0-6g 0.100R
15-3	1.0000-.1P-.3L-TS-2B	1.232 (31.3)	1.280 (32.5)	M22 x 1.0-6g 0.100R
17-4	1.1875-.1P-.3L-TS-2B	1.358 (34.5)	1.406 (35.7)	M25 x 1.0-6g 0.100R



MATERIAL/FINISH NOTES

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

HOW TO ORDER ELITE MT FERRULE KIT

Sample Part Number	181-139	-126	-12	M
Basic Part Number	Elite MT Ferrule kit			
Fiber type	-126, -1253, -1253A (See Table I)			
Number of Fibers	-12, -24 (See Fiber Type and Number table)			
Ferrule Style	M = Male (use with Plug) F = Female (use with Receptacle)			

FIBER TYPE AND NUMBER

Dash No.	Fiber Type	End Face	Fiber Size Core/ Cladding	No. of Fibers	Spring Force	Ferrule Identification	Pin Clamp Identification (Male Kit only)
-1253A	SM	APC	9/125	12	L	M-ME12	2 Triangles
				24	H	M-ME24	2 Triangles
-1253	SM	PC	9/125	12	H	E-E12	2 Triangles
-126	MM	PC	50/125	12	H	M-ME12	1 Triangle
			62.5/125	24	H	M-ME24	1 Triangle

SuperNine® "Better than QPL" MIL-DTL-38999 Series III 183-002 (05) In-line receptacle

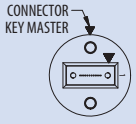
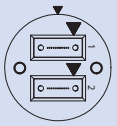
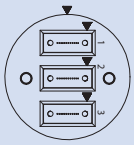
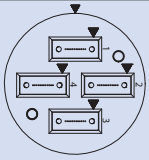
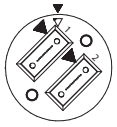
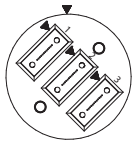
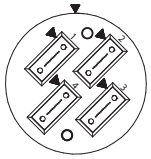
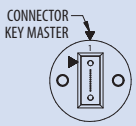
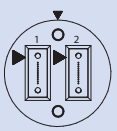
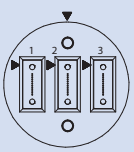
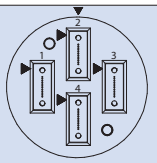
PRIZM® MT and MT Elite®

Tight-tolerance MIL-DTL-38999 Series III type In-Line Receptacle. Supports from one to four PRIZM MT and/or MT Elite high-density ferrules (Glenair series 181-149 / 181-133) with industry-leading insertion loss performance. Precision-machined and molded with integral guide holes for optimum optical fiber alignment and low dB data loss performance. Robust anti-decoupling outperforms standard D38999 solutions in severe vibration, shock, and high altitude testing. Connector body materials include aluminum alloy, composite thermoplastic, stainless steel, and marine bronze. Keyed polarization for mis-mate protection.

SUPERNINE MT IN-LINE RECEPTACLE						
Sample Part Number	**183-002**	**ME**	**05**	**-17-4**	**N**	**1**

Basic Part Number	SuperNine MT Fiber Optic Connector
Material/Finish Code	See Material and Finish table
Connector Style	**05** = In-line receptacle
Shell Size / Insert Arrangement	**11-1**, **13-2**, **15-3**, **17-4** Order MT ferrule kit P/N **181-139**
Alternate Key Position	**A**, **B**, **C**, **D**, **E**, **N** = Normal **U** = Universal (per MIL-DTL-38999)
Insert Cavity Clocking Orientation (see Table II)	**1** = Standard position **2** = Cavity position rotated 45° to master key/keyway **3** = Cavity position rotated 90° to master key/keyway

MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
ME	Aluminum Alloy	Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
ZR		Zinc-Nickel, Black
TZ		Tin-Zinc, Green/Gold
XM	Composite	Electroless Nickel
XW		Cadmium, Olive Drab
Z1	Stainless Steel	Passivate
ZL		Electro-Deposited Nickel

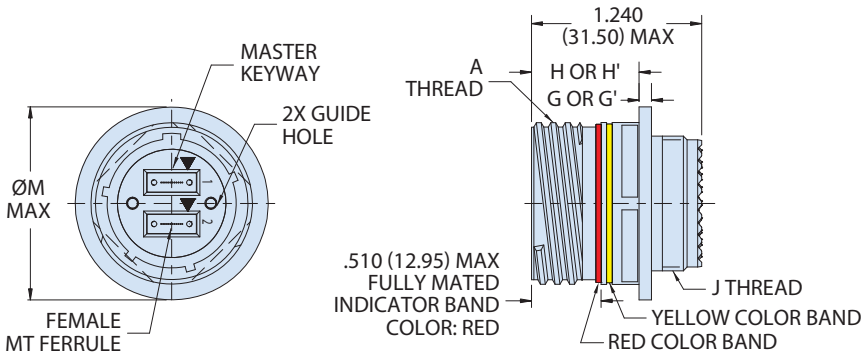
INSERT CAVITY CLOCKING ORIENTATION				
Code	**Shell Size-Arrangement 11-1**	**Shell Size-Arrangement 13-2**	**Shell Size-Arrangement 15-3**	**Shell Size-Arrangement 17-4**
1				
2				
3				

NOTES

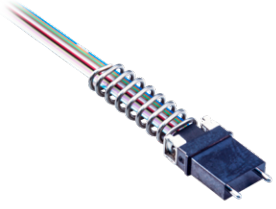
- Pin (male) and socket (female) ferrule kits can be used in either plug or receptacle connectors. Preferred configuration is female ferrule in receptacle connector.

SuperNine® "Better than QPL" MIL-DTL-38999 Series III
183-002 (05) In-line receptacle

05- IN-LINE RECEPTACLE



Shell Size / Insert Arr.	A Thread	G	G′	H	H′	J Thread	ØM Max
11-1	.7500-.1P-.3L-TS-2A	0.098 (2.49) 0.083 (2.11)	0.144 (3.66) 0.083 (2.11)	0.820 (20.83) 0.771 (19.58)	0.823 (20.90) 0.768 (19.51)	M15 X 1.0-6g 0.100R	0.984
13-2	.8750-.1P-.3L-TS-2A					M18 X 1.0-6g 0.100R	1.157
15-3	1.0000-.1P-.3L-TS-2A					M22 X 1.0-6g 0.100R	1.280
17-4	1.1875-.1P-.3L-TS-2A					M25 X 1.0-6g 0.100R	1.406



MATERIAL/FINISH NOTES

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

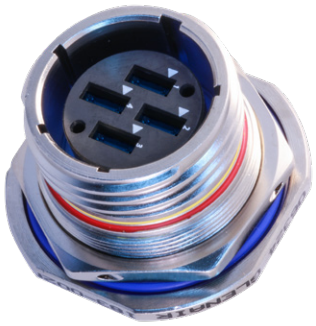
HOW TO ORDER ELITE MT FERRULE KIT

Sample Part Number	181-139	-126	-12	M
Basic Part Number	Elite MT Ferrule kit			
Fiber type	**-126**, **-1253**, **-1253A** (See Fiber Type and Number table)			
Number of Fibers	**-12**, **-24** (See Fiber Type and Number table)			
Ferrule Style	**M** = Male (use with Plug) **F** = Female (use with Receptacle)			

FIBER TYPE AND NUMBER

Dash No.	Fiber Type	End Face	Fiber Size Core/ Cladding	No. of Fibers	Spring Force	Ferrule Identification	Pin Clamp Identification (Male Kit only)
-1253A	SM	APC	9/125	12	L	M-ME12	2 Triangles
				24	H	M-ME24	2 Triangles
-1253	SM	PC	9/125	12	H	E-E12	2 Triangles
-126	MM	PC	50/125	12	H	M-ME12	1 Triangle
			62.5/125	24	H	M-ME24	1 Triangle

SuperNine® "Better than QPL" MIL-DTL-38999 Series III 183-002 (08) Jam nut receptacle



Tight-tolerance MIL-DTL-38999 Series III type Jam Nut Receptacle. Supports from one to four PRIZM MT and/or MT Elite high-density ferrules (Glenair series 181-149 / 181-133) with industry-leading insertion loss performance. Precision-machined and molded with integral guide holes for optimum optical fiber alignment and low dB data loss performance. Robust anti-decoupling outperforms standard D38999 solutions in severe vibration, shock, and high altitude testing. Coupling nut and connector body materials include Aluminum alloy, composite thermoplastic, stainless steel, and marine bronze. Keyed polarization for mis-mate protection.

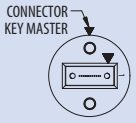
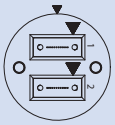
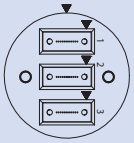
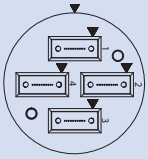
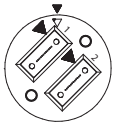
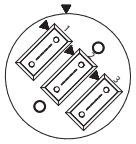
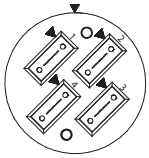
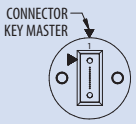
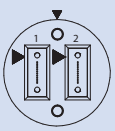
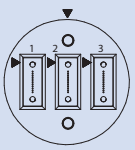
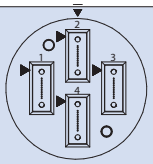
SUPERNINE MT JAM NUT MOUNT RECEPTACLE						
Sample Part Number	**183-002**	**ME**	**08**	**-17-4**	**N**	**1**

Basic Part Number	SuperNine MT Fiber Optic Connector
Material/Finish Code	See Material and Finish table
Connector Style	**08** = Jam nut receptacle
Shell Size / Insert Arrangement	**11-1**, **13-2**, **15-3**, **17-4** Order MT ferrule kit P/N **181-139**
Alternate Key Position	**A**, **B**, **C**, **D**, **E**, **N** = Normal **U** = Universal (per MIL-DTL-38999)
Insert Cavity Clocking Orientation (see table)	**1** = Standard position **2** = Cavity position rotated 45° to master key/keyway **3** = Cavity position rotated 90° to master key/keyway

MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
ME	Aluminum Alloy	Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
ZR		Zinc-Nickel, Black
TZ		Tin-Zinc, Green/Gold
XM	Composite	Electroless Nickel
XW		Cadmium, Olive Drab
Z1	Stainless Steel	Passivate
ZL		Electro-Deposited Nickel

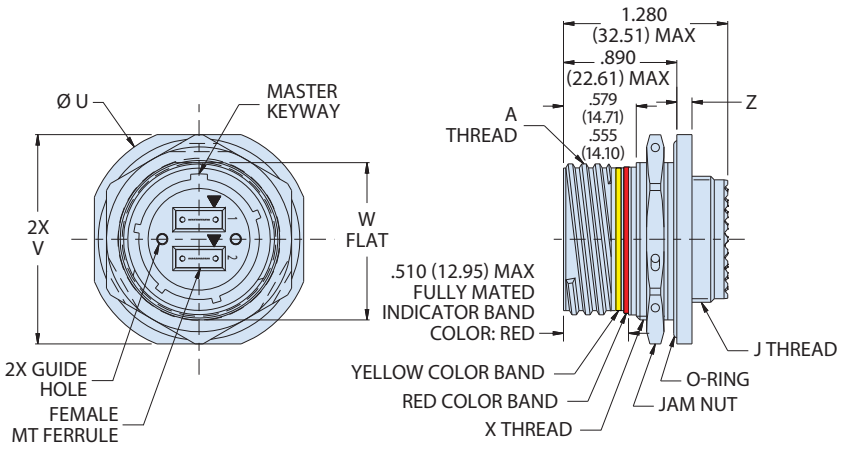
NOTES

- Pin (male) and socket (female) ferrule kits can be used in either plug or receptacle connectors. Preferred configuration is female ferrule in receptacle connector.

INSERT CAVITY CLOCKING ORIENTATION				
Code	**Shell Size-Arrangement 11-1**	**Shell Size-Arrangement 13-2**	**Shell Size-Arrangement 15-3**	**Shell Size-Arrangement 17-4**
1				
2				
3				

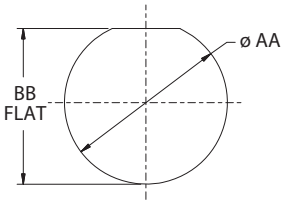
SuperNine® "Better than QPL" MIL-DTL-38999 Series III 183-002 (08) Jam nut receptacle

08- JAM NUT RECEPTACLE

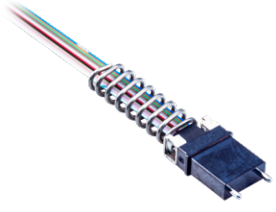


Shell Size / Insert Arr.	A Thread	ØU	V	W Flat	X Thread	J Thread	Z
11-1	.7500-.1P-.3L-TS-2A	1.386 (35.20) 1.362 (34.59)	1.268 (32.21) 1.236 (31.39)	0.755 (19.18) 0.745 (18.92)	M20 X 1.0-6g 0.100R	M15 X 1.0-6g 0.100R	0.122 (3.10) 0.083 (2.11)
13-2	.8750-.1P-.3L-TS-2A	1.512 (38.40) 1.488 (37.80)	1.390 (35.31) 1.358 (34.49)	0.942 (23.93) 0.932 (23.67)	M25 X 1.0-6g 0.100R	M18 X 1.0-6g 0.100R	
15-3	1.0000-.1P-.3L-TS-2A	1.638 (41.61) 1.614 (41.00)	1.516 (38.51) 1.484 (37.69)	1.066 (27.08) 1.056 (26.82)	M28 X 1.0-6g 0.100R	M22 X 1.0-6g 0.100R	
17-4	1.1875-.1P-.3L-TS-2A	1.764 (44.81) 1.740 (44.20)	1.642 (41.71) 1.610 (40.89)	1.191 (30.25) 1.181 (30.00)	M32 X 1.0-6g 0.100R	M25 X 1.0-6g 0.100R	

RECOMMENDED PANEL CUTOUT DIMENSIONS



Jam Nut	
ØAA	BB Flat
0.835 (21.21); 0.825 (20.96)	0.771 (19.58); 0.761 (19.33)
1.020 (25.91); 1.010 (25.65)	0.955 (24.26); 0.945 (24.00)
1.145 (29.08); 1.135 (28.83)	1.085 (27.56); 1.075 (27.30)
1.270 (32.26); 1.260 (32.00)	1.210 (30.73); 1.200 (30.48)



HOW TO ORDER ELITE MT FERRULE KIT

Sample Part Number	181-139	-126	-12	M
Basic Part Number	Elite MT Ferrule kit			
Fiber type	**-126**, **-1253**, **-1253A** (See Fiber Type and Number table)			
Number of Fibers	**-12**, **-24** (See Fiber Type and Number table)			
Ferrule Style	**M** = Male (use with Plug) **F** = Female (use with Receptacle)			

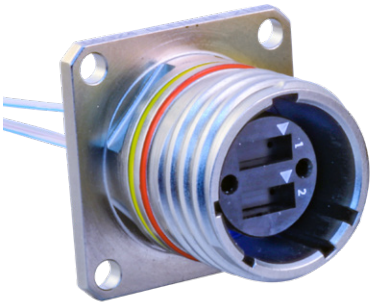
FIBER TYPE AND NUMBER

Dash No.	Fiber Type	End Face	Fiber Size Core/ Cladding	No. of Fibers	Spring Force	Ferrule Identification	Pin Clamp Identification (Male Kit only)
-1253A	SM	APC	9/125	12	L	M-ME12	2 Triangles
				24	H	M-ME24	2 Triangles
-1253	SM	PC	9/125	12	H	E-E12	2 Triangles
-126	MM	PC	50/125	12	H	M-ME12	1 Triangle
			62.5/125	24	H	M-ME24	1 Triangle

MATERIAL/FINISH NOTES

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

SuperNine® "Better than QPL" MIL-DTL-38999 Series III 183-002 (H7) Wall mount receptacle with round holes



Tight-tolerance MIL-DTL-38999 Series III type Wall Mount Receptacle with round holes. Supports from one to four PRIZM MT and/or MT Elite high-density ferrules (Glenair series 181-149 / 181-133) with industry-leading insertion loss performance. Precision-machined and molded with integral guide holes for optimum optical fiber alignment and low dB data loss performance. Robust anti-decoupling outperforms standard D38999 solutions in severe vibration, shock, and high altitude testing. Coupling nut and connector body materials include Aluminum alloy, composite thermoplastic, stainless steel, and marine bronze. Keyed polarization for mis-mate protection.

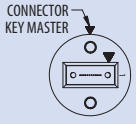
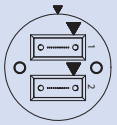
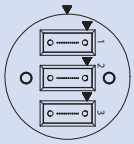
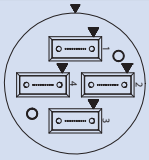
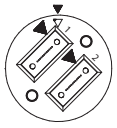
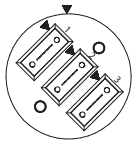
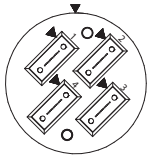
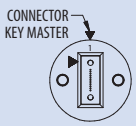
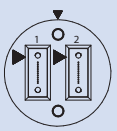
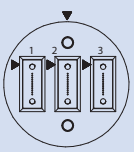
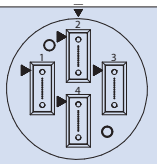
SUPERNINE MT WALL-MOUNT RECEPTACLE, STANDARD HOLES						
Sample Part Number	**183-002**	**ME**	**H7**	**-17-4**	**N**	**1**

Basic Part Number	SuperNine MT Fiber Optic Connector
Material/Finish Code	See Material and Finish table
Connector Style	**H7** = Wall-mount receptacle with round holes
Shell Size / Insert Arrangement	**11-1**, **13-2**, **15-3**, **17-4** Order MT ferrule kit P/N **181-139**
Alternate Key Position	**A**, **B**, **C**, **D**, **E**, **N** = Normal **U** = Universal (per MIL-DTL-38999)
Insert Cavity Clocking Orientation (see Table II)	**1** = Standard position **2** = Cavity position rotated 45° to master key/keyway **3** = Cavity position rotated 90° to master key/keyway

MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
ME	Aluminum Alloy	Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
ZR		Zinc-Nickel, Black
TZ		Tin-Zinc, Green/Gold
XM	Composite	Electroless Nickel
XW		Cadmium, Olive Drab
Z1	Stainless Steel	Passivate
ZL		Electro-Deposited Nickel

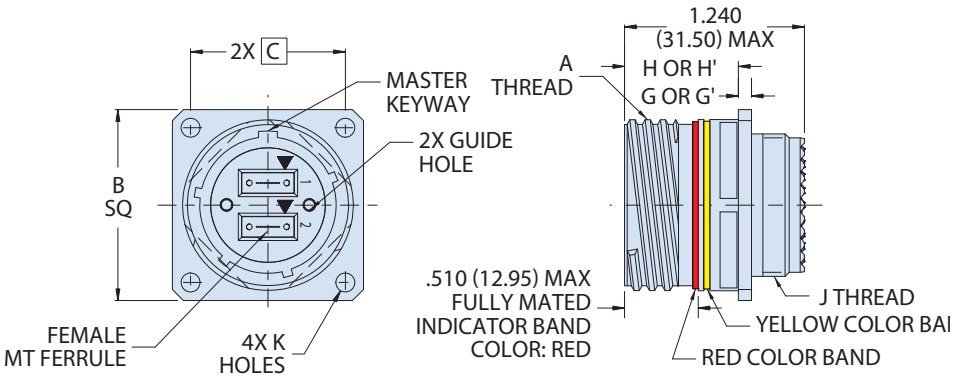
NOTES

- Pin (male) and socket (female) ferrule kits can be used in either plug or receptacle connectors. Preferred configuration is female ferrule in receptacle connector.

INSERT CAVITY CLOCKING ORIENTATION				
Code	**Shell Size-Arrangement 11-1**	**Shell Size-Arrangement 13-2**	**Shell Size-Arrangement 15-3**	**Shell Size-Arrangement 17-4**
1				
2				
3				

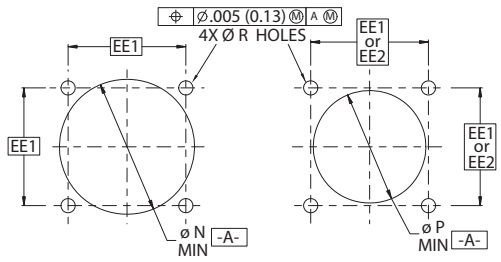
SuperNine® "Better than QPL" MIL-DTL-38999 Series III 183-002 (H7) Wall mount receptacle with round holes

H7-WALL MOUNT RECEPTACLE

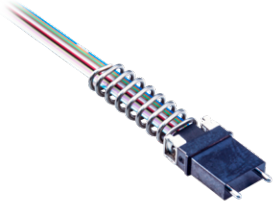


Shell Size / Insert Arr.	A Thread	B SQ	C BSC	G	G'	H	H'	J Thread	Ø K Holes
11-1	.7500-.1P-.3L-TS-2A	1.043 (26.49) 1.019 (25.88)	0.812 (20.62)	0.098 (2.49) 0.083 (2.11)	0.144 (3.66) 0.083 (2.11)	0.820 (20.83) 0.771 (19.58)	0.823 (20.90) 0.768 (19.51)	M15 X 1.0-6g 0.100R	0.136 (3.45) 0.120 (3.05)
13-2	.8750-.1P-.3L-TS-2A	1.138 (28.91) 1.114 (28.30)	0.906 (23.01)					M18 X 1.0-6g 0.100R	
15-3	1.0000-.1P-.3L-TS-2A	1.232 (31.29) 1.208 (30.68)	0.969 (24.61)					M22 X 1.0-6g 0.100R	
17-4	1.1875-.1P-.3L-TS-2A	1.323 (33.60) 1.299 (32.99)	1.062 (26.97)					M25 X 1.0-6g 0.100R	

RECOMMENDED PANEL CUTOUT DIMENSIONS



Shell Size / Insert Arr.	Wall Mount				
	Ø N MIN	Ø P MIN	Ø R Holes	EE1 BSC	EE2 BSC
11-1	.796 (20.22)	.625 (15.88)	.133 (3.38) .123 (3.12)	.812 (20.62)	.719 (18.26)
13-2	.922 (23.42)	.750 (19.05)		.906 (23.01)	.812 (20.62)
15-3	1.047 (26.59)	.906 (23.01)		.969 (24.61)	.906 (23.01)
17-4	1.219 (30.96)	1.016 (25.81)		1.062 (26.97)	.969 (24.61)



MATERIAL/FINISH NOTES

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

HOW TO ORDER ELITE MT FERRULE KIT

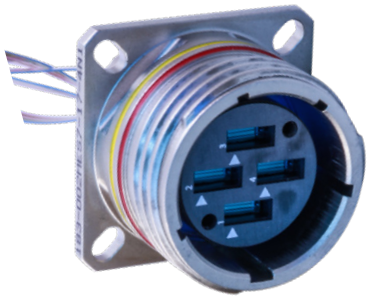
Sample Part Number	181-139	-126	-12	M
Basic Part Number	Elite MT Ferrule kit			
Fiber type	**-126**, **-1253**, **-1253A** (See Fiber Type and Number table)			
Number of Fibers	**-12**, **-24** (See Fiber Type and Number table)			
Ferrule Style	**M** = Male (use with Plug) **F** = Female (use with Receptacle)			

FIBER TYPE AND NUMBER

Dash No.	Fiber Type	End Face	Fiber Size Core/ Cladding	No. of Fibers	Spring Force	Ferrule Identification	Pin Clamp Identification (Male Kit only)
-1253A	SM	APC	9/125	12	L	M-ME12	2 Triangles
				24	H	M-ME24	2 Triangles
-1253	SM	PC	9/125	12	H	E-E12	2 Triangles
-126	MM	PC	50/125	12	H	M-ME12	1 Triangle
			62.5/125	24	H	M-ME24	1 Triangle

SuperNine® "Better than QPL" MIL-DTL-38999 Series III
183-002 (S7) Wall mount receptacles: slotted holes, clinch nuts, or helicoils

PRIZM® MT and MT Elite®

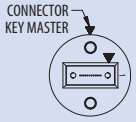
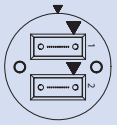
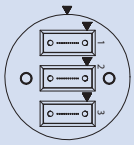
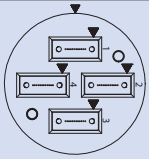
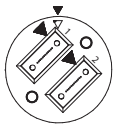
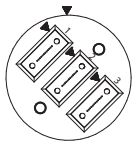
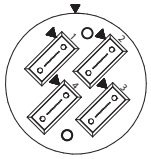
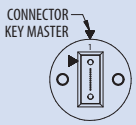
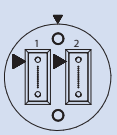
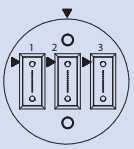
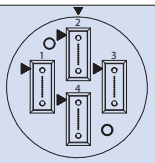


Tight-tolerance MIL-DTL-38999 Series III type Wall Mount Receptacle with slotted holes, clinch nuts, or helicoils. Supports from one to four PRIZM MT and/or MT Elite high-density ferrules (Glenair series 181-149 / 181-133) with industry-leading insertion loss performance. Precision-machined and molded with integral guide holes for optimum optical fiber alignment and low dB data loss performance. Robust anti-decoupling outperforms standard D38999 solutions in severe vibration, shock, and high altitude testing. Coupling nut and connector body materials include Aluminum alloy, composite thermoplastic, stainless steel, and marine bronze. Keyed polarization for mis-mate protection.

SUPERNINE MT WALL-MOUNT RECEPTACLE, SLOTTED HOLES, CLINCH NUTS, HELICOILS						
Sample Part Number	**183-002**	**ME**	**S7**	**-17-4**	**N**	**1**
Basic Part Number	SuperNine MT Fiber Optic Connector					
Material/Finish Code	See Material and Finish Table					
Connector Style	**S7** = Wall-mount receptacle with slotted holes **CM** = Wall-mount receptacle with metric clinch nuts **CS** = Wall-mount receptacle with standard clinch nuts **HM** = Wall-mount receptacle with metric helicoils **HS** = Wall-mount receptacle with standard helicoils					
Shell Size / Insert Arrangement	**11-1**, **13-2**, **15-3**, **17-4** Order MT ferrule kit P/N **181-139**					
Alternate Key Position	**A**, **B**, **C**, **D**, **E**, **N** = Normal **U** = Universal (per MIL-DTL-38999)					
Insert Cavity Clocking Orientation (see Table II)	**1** = Standard position **2** = Cavity position rotated 45° to master key/keyway **3** = Cavity position rotated 90° to master key/keyway					

MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
ME	Aluminum Alloy	Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
ZR		Zinc-Nickel, Black
TZ		Tin-Zinc, Green/Gold
XM	Composite	Electroless Nickel
XW		Cadmium, Olive Drab
Z1	Stainless Steel	Passivate
ZL		Electro-Deposited Nickel

INSERT CAVITY CLOCKING ORIENTATION

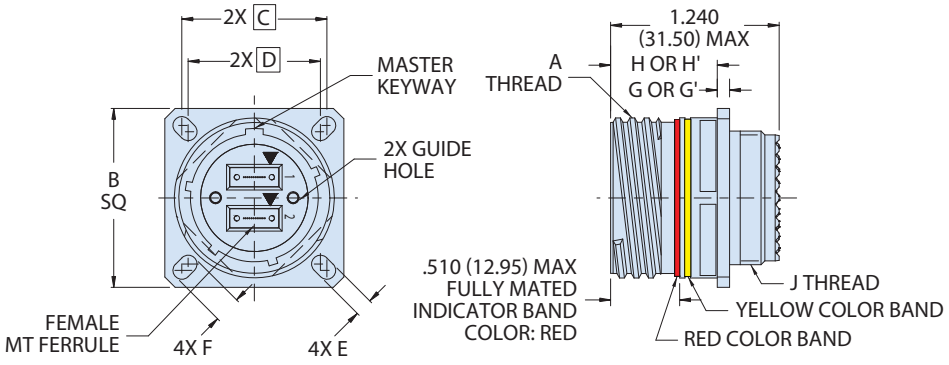
Code	Shell Size-Arrangement 11-1	Shell Size-Arrangement 13-2	Shell Size-Arrangement 15-3	Shell Size-Arrangement 17-4
1				
2				
3				

NOTES

- Pin (male) and socket (female) ferrule kits can be used in either plug or receptacle connectors. Preferred configuration is female ferrule in receptacle connector.
- Wall mount receptacle with clinch nuts not available for stainless steel material finish codes.

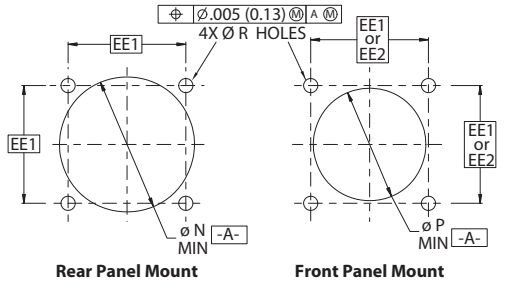
SuperNine® "Better than QPL" MIL-DTL-38999 Series III
183-002 (S7) Wall mount receptacles: slotted holes, clinch nuts, or helicoils

S7- WALL MOUNT RECEPTACLE

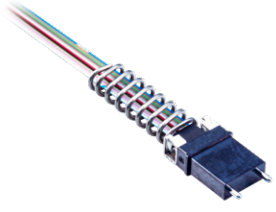


Shell Size / Insert Arr.	A Thread	B SQ	C BSC	D BSC	E	F	G	G'	H	H'	J Thread
11-1	.7500-.1P-.3L-TS-2A	1.043 (26.49) 1.019 (25.88)	0.812 (20.62)	.719 (18.26)	.136 (3.45) .120 (3.05)	.202 (5.13) .186 (4.72)	0.098 (2.49) 0.083 (2.11)	0.144 (3.66) 0.083 (2.11)	0.820 (20.83) 0.771 (19.58)	0.823 (20.90) 0.768 (19.51)	M15 X 1.0-6g 0.100R
13-2	.8750-.1P-.3L-TS-2A	1.138 (28.91) 1.114 (28.30)	0.906 (23.01)	.812 (20.62)							M18 X 1.0-6g 0.100R
15-3	1.0000-.1P-.3L-TS-2A	1.232 (31.29) 1.208 (30.68)	0.969 (24.61)	.906 (23.01)		.181 (4.60) .165 (4.19)					M22 X 1.0-6g 0.100R
17-4	1.1875-.1P-.3L-TS-2A	1.323 (33.60) 1.299 (32.99)	1.062 (26.97)	.969 (24.61)		.202 (5.13) .186 (4.72)					M25 X 1.0-6g 0.100R

RECOMMENDED PANEL CUTOUT DIMENSIONS



Shell Size / Insert Arr.	Wall Mount				
	Ø N MIN	Ø P MIN	Ø R Holes	EE1 BSC	EE2 BSC
11-1	.796 (20.22)	.625 (15.88)	.133 (3.38) .123 (3.12)	.812 (20.62)	.719 (18.26)
13-2	.922 (23.42)	.750 (19.05)		.906 (23.01)	.812 (20.62)
15-3	1.047 (26.59)	.906 (23.01)		.969 (24.61)	.906 (23.01)
17-4	1.219 (30.96)	1.016 (25.81)		1.062 (26.97)	.969 (24.61)



MATERIAL/FINISH NOTES

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

HOW TO ORDER ELITE MT FERRULE KIT

Sample Part Number	181-139	-126	-12	M
Basic Part Number	Elite MT Ferrule kit			
Fiber type	**-126**, **-1253**, **-1253A** (See Fiber Type and Number table)			
Number of Fibers	**-12**, **-24** (See Fiber Type and Number table)			
Ferrule Style	**M** = Male (use with Plug) **F** = Female (use with Receptacle)			

FIBER TYPE AND NUMBER

Dash No.	Fiber Type	End Face	Fiber Size Core/ Cladding	No. of Fibers	Spring Force	Ferrule Identification	Pin Clamp Identification (Male Kit only)
-1253A	SM	APC	9/125	12	L	M-ME12	2 Triangles
				24	H	M-ME24	2 Triangles
-1253	SM	PC	9/125	12	H	E-E12	2 Triangles
-126	MM	PC	50/125	12	H	M-ME12	1 Triangle
			62.5/125	24	H	M-ME24	1 Triangle

VITA 87.0 Fiber optic connector, MIL-DTL-38999 Series III Style 183-033

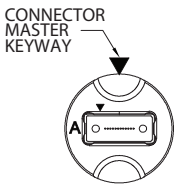
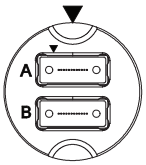
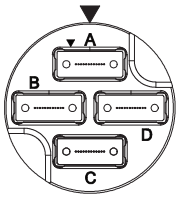
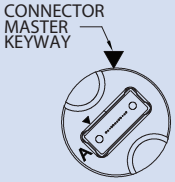
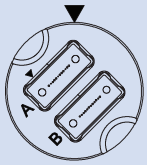
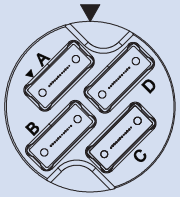
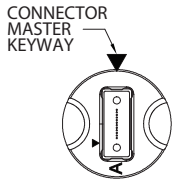
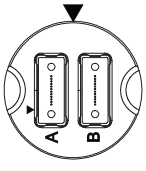
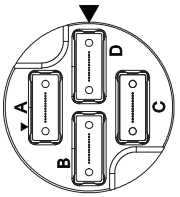
Glenair SOSA-Compliant VITA 87 is a High-Density Mil-Aero Grade MT Fiber Optic Connector. Utilizes the tried and true MIL-DTL-38999 Series III connector packaging for use with Standard and Prizm MT Ferrules. Available in 3 shell sizes, starting as small as a Shell Size 11 with 1 MT to a Shell Size 15 with 4 MT's.

HOW TO ORDER						
Sample Part Number	**183-033**	**ME**	**G6**	**-15-4**	**N**	**1**
Basic Part Number	VITA 87.0 Fiber Optic Connector					
Material/Finish Code	See Material and Finish table					
Connector Style	**G6** = Plug, with EMI/RFI/Ground Spring **H7** = Receptacle, Wall Mount with Round Holes (Standard) **S7** = Receptacle, Wall Mount with Slotted Holes **CM** = Receptacle, Wall Mount with Metric Clinch Nuts **CS** = Receptacle, Wall Mount with Standard Clinch Nuts **HM** = Receptacle, Wall Mount with Metric Helicoils **HS** = Receptacle, Wall Mount with Standard Helicoils **05** = Receptacle, In-Line **08** = Receptacle, Jam Nut Mount					
Shell Size / Insert Arrangement	**11-1**, **13-2**, **15-4**					
Alternate Key Position	**A**, **B**, **C**, **D**, **E**, **N** = Normal **U** = Universal (per MIL-DTL-38999)					
Insert Cavity Clocking Orientation	**1** = Standard position **2** = Cavity position rotated 45° to master key/keyway **3** = Cavity position rotated 90° to master key/keyway					

MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
ME	Aluminum Alloy	Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze/Gold
ZR		Zinc-Nickel, Black
XM	Composite	Electroless Nickel
XW		Cadmium, Olive Drab
Z1	Stainless Steel	Passivate
ZL		Electro-Deposited Nickel

NOTES

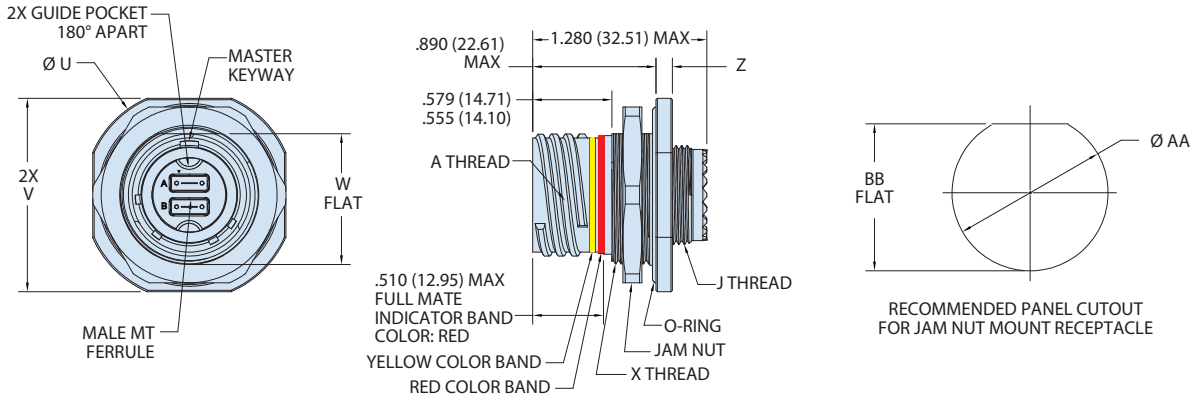
- Per ANSI/VITA 87.0-2024: Pin (male) ferrule kits shall be used in the receptacle connectors. Socket (female) ferrule kits shall be used in the plug connectors.
- Cavity id marking for plug connector (pin insert) is opposite receptacle marking. Triangle above cavity indicates channel 1 within MT Ferrule. Number above cavity indicates sequence and location of cavity.

INSERT CAVITY CLOCKING ORIENTATION			
Code	**Shell Size-Arrangement 11-1**	**Shell Size-Arrangement 13-2**	**Shell Size-Arrangement 15-4**
1			
2			
3			

Mating face of receptacle (socket insert) is shown. (Plug insert rotates symetrically in opposite direction.)

VITA 87.0 Fiber optic connector, MIL-DTL-38999 Series III Style 183-033

JAM NUT MOUNT RECEPTACLE

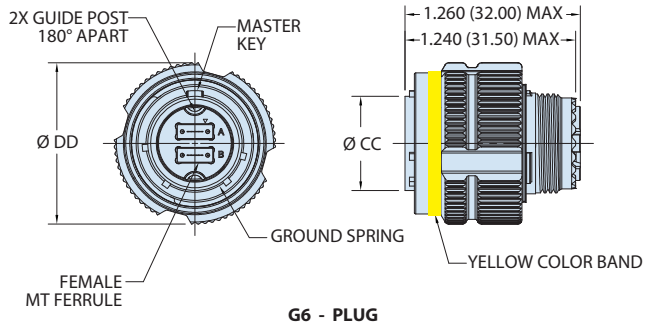


08 - JAM NUT MOUNT RECEPTACLE

Shell Size	Shell Size Code	A Thread	Ø U	V	W Flat	X Thread	J Thread	Z	Ø AA	BB Flat
11	B	.7500-.1P-.3L-TS-28	1.386 (35.20) 1.362 (34.59)	1.268 (32.21) 1.236 (31.39)	0.755 (19.18) 0.745 (18.92)	M20X1.0-6g 0.100R	M15X1.0-6g 0.100R	0.122 (3.10) 0.083 (2.11)	0.835 (21.21) 0.825 (20.96)	0.771 (19.58) 0.761 (19.33)
13	C	.8750-.1P-.3L-TS-28	1.512 (38.40) 1.488 (37.80)	1.390 (35.31) 1.358 (34.49)	0.942 (23.93) 0.932 (23.67)	M25X1.0-6g 0.100R	M18X1.0-6g 0.100R		1.020 (25.91) 1.010 (25.65)	0.955 (24.26) 0.945 (24.00)
15	D	1.000-.1P-.3L-TS-28	1.638 (41.61) 1.614 (41.00)	1.516 (38.51) 1.484 (37.69)	1.066 (27.08) 1.056 (26.82)	M28X1.0-6g 0.100R	M22X1.0-6g 0.100R		1.145 (29.08) 1.135 (28.83)	1.085 (27.56) 1.075 (27.31)

Panel Thickness Per MIL-DTL-38999/24: .062" Min - .126" Max

PLUG

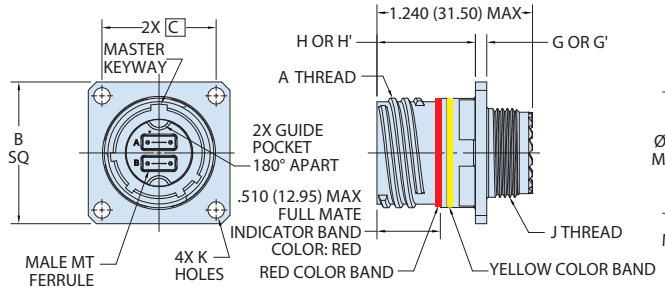


G6 - PLUG

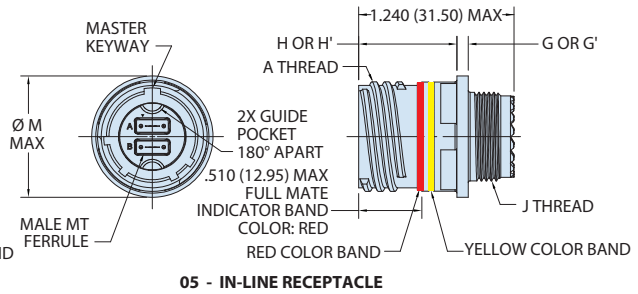
Shell Size	Shell Size Code	A Thread	Ø CC Max	Ø DD Max	J Thread
11	B	.7500-.1P-.3L-TS-2B	0.929 (23.60)	0.984 (24.99)	M15X1.0-6g 0.100R
13	C	.8750-.1P-.3L-TS-2B	1.110 (28.19)	1.157 (29.39)	M18X1.0-6g 0.100R
15	D	1.000-.1P-.3L-TS-2B	1.232 (31.29)	1.280 (32.51)	M22X1.0-6g 0.100R

VITA 87.0 Fiber optic connector, MIL-DTL-38999 Series III Style 183-033

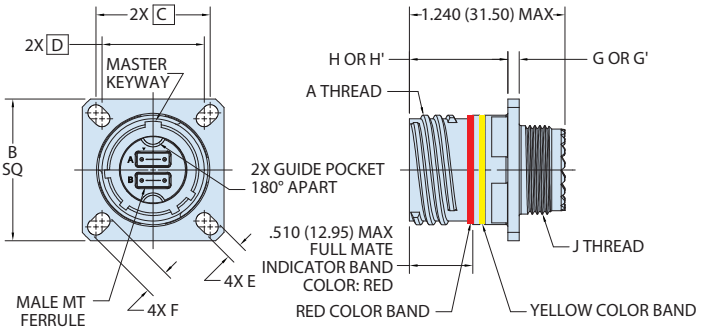
WALL MOUNT AND IN-LINE RECEPTACLE



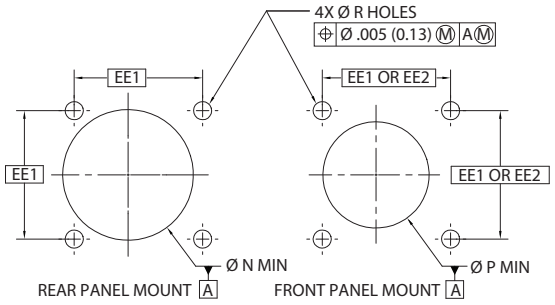
H7 - WALL MOUNT RECEPTACLE WITH ROUND HOLES (STANDARD)



05 - IN-LINE RECEPTACLE



S7 - WALL MOUNT RECEPTACLE WITH SLOTTED HOLES



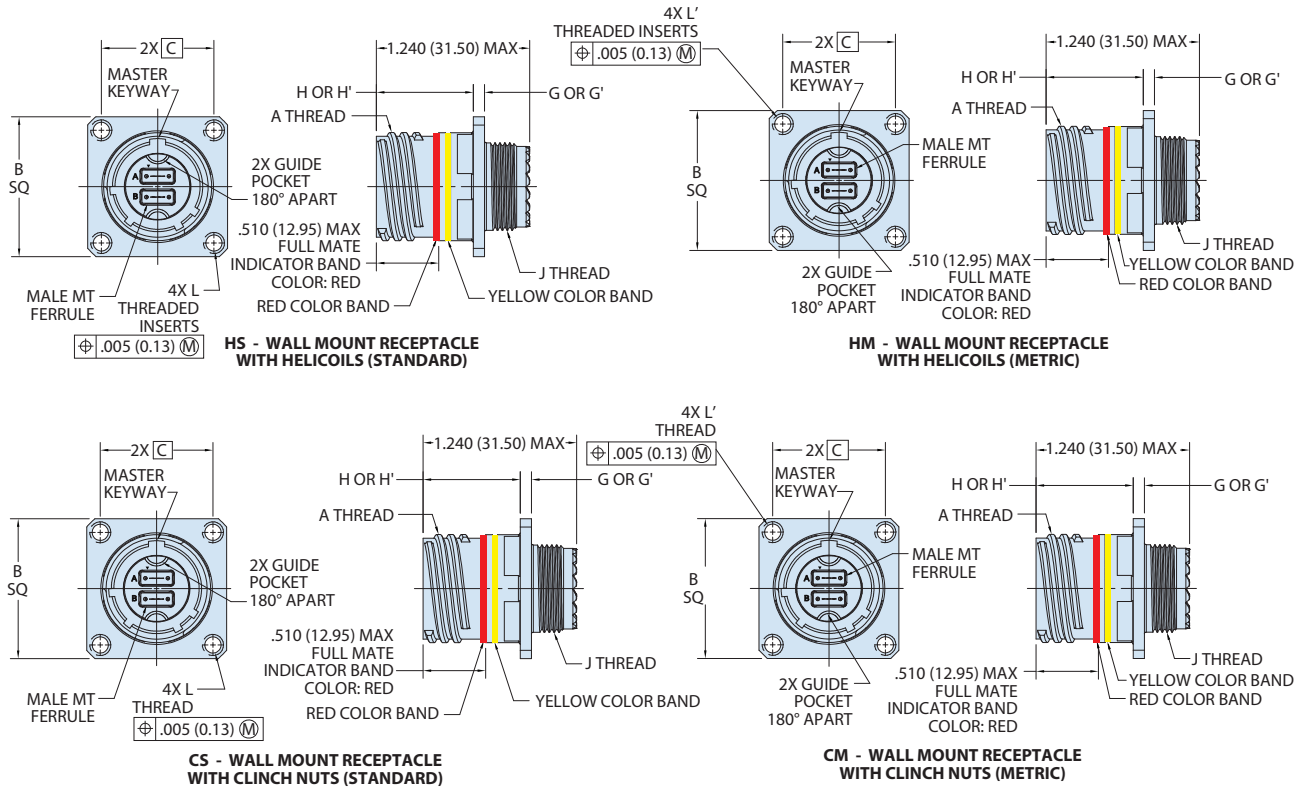
RECOMMENDED PANEL CUTOUT FOR WALL MOUNT RECEPTACLES

Shell Size	Shell Size Code	A Thread	B Sq	B' Sq	C Bsc	D Bsc	E	F	G	G'	H	H'	J Thread	Ø K	L Thread	L' Thread	Ø M Max	Ø N Min	Ø P Min	Ø R Holes	EE1 Bsc	EE2 Bsc
11	B	.7500-.1P-.3L-TS-2A	1.043 (26.49) 1.019 (25.88)	1.187 (30.15) 1.147 (29.13)	0.812 (20.62)	0.719 (18.26)		0.202 (5.13)					M15X1.0-6g 0.100R				0.984 (24.99)	0.796 (20.22)	0.625 (15.88)		0.812 (20.62)	0.719 (18.26)
13	C	.8750-.1P-.3L-TS-2A	1.138 (28.91) 1.114 (28.30)	1.281 (32.54) 1.241 (31.52)	0.906 (23.01)	0.812 (20.62)	0.136 (3.45) 0.120 (3.05)	0.186 (4.72)	0.098 (2.49) 0.083 (2.11)	0.144 (3.66) 0.083 (2.11)	0.820 (20.83) 0.771 (19.58)	0.823 (20.90) 0.768 (19.51)	M18X1.0-6g 0.100R	0.136 (3.45) 0.120 (3.05)	.112-40 UNC-3B	M3 X 0.5	1.157 (29.39)	0.922 (23.42)	0.750 (19.05)	0.133 (3.38) 0.123 (3.12)	0.906 (23.01)	0.812 (20.62)
15	D	1.000-.1P-.3L-TS-2A	1.232 (31.29) 1.208 (30.68)	1.344 (34.14) 1.304 (33.12)	0.969 (24.61)	0.906 (23.01)		0.181 (4.60) 0.165 (4.19)					M22X1.0-6g 0.100R				1.280 (32.51)	1.047 (26.59)	0.906 (23.01)		0.969 (24.61)	0.906 (23.01)

Max Panel Thickness Per MIL-DTL-38999/20: .228 Inches. Composite connectors use dimensions G' and H'. For wall mount receptacles with clinch nuts or helicoils installed, see L and L' for thread size in Table V. Helicoil connector styles use dimension G' for flange thickness

VITA 87.0 Fiber optic connector, MIL-DTL-38999 Series III Style 183-033

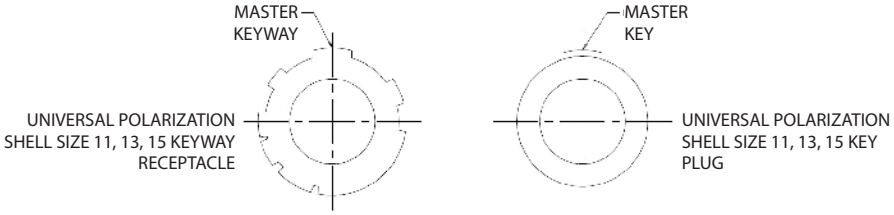
WALL MOUNT AND IN-LINE RECEPTACLE



Shell Size	Shell Size Code	A Thread	B Sq	B' Sq	C Bsc	D Bsc	E	F	G	G'	H	H'	J Thread	Ø K	L Thread	L' Thread	Ø M Max	Ø N Min	Ø P Min	Ø R Holes	EE1 Bsc	EE2 Bsc
11	B	.7500-.1P-.3L-TS-2A	1.043 (26.49) 1.019 (25.88)	1.187 (30.15) 1.147 (29.13)	0.812 (20.62)	0.719 (18.26)		0.202 (5.13)					M15X1.0-6g 0.100R				0.984 (24.99)	0.796 (20.22)	0.625 (15.88)		0.812 (20.62)	0.719 (18.26)
13	C	.8750-.1P-.3L-TS-2A	1.138 (28.91) 1.114 (28.30)	1.281 (32.54) 1.241 (31.52)	0.906 (23.01)	0.812 (20.62)	0.136 (3.45) 0.120 (3.05)	0.186 (4.72)	0.098 (2.49) 0.083 (2.11)	0.144 (3.66) 0.083 (2.11)	0.820 (20.83) 0.771 (19.58)	0.823 (20.90) 0.768 (19.51)	M18X1.0-6g 0.100R	0.136 (3.45) 0.120 (3.05)	.112-40 UNC-3B	M3 X 0.5	1.157 (29.39)	0.922 (23.42)	0.750 (19.05)	0.133 (3.38) 0.123 (3.12)	0.906 (23.01)	0.812 (20.62)
15	D	1.000-.1P-.3L-TS-2A	1.232 (31.29) 1.208 (30.68)	1.344 (34.14) 1.304 (33.12)	0.969 (24.61)	0.906 (23.01)		0.181 (4.60) 0.165 (4.19)					M22X1.0-6g 0.100R				1.280 (32.51)	1.047 (26.59)	0.906 (23.01)		0.969 (24.61)	0.906 (23.01)

Max Panel Thickness Per MIL-DTL-38999/20: .228 Inches. Composite connectors use dimensions G' and H'. For wall mount receptacles with clinch nuts or helicoils installed, see L and L' for thread size in Table V. Helicoil connector styles use dimension G' for flange thickness

UNIVERSAL POLARIZATION CONFIGURATIONS



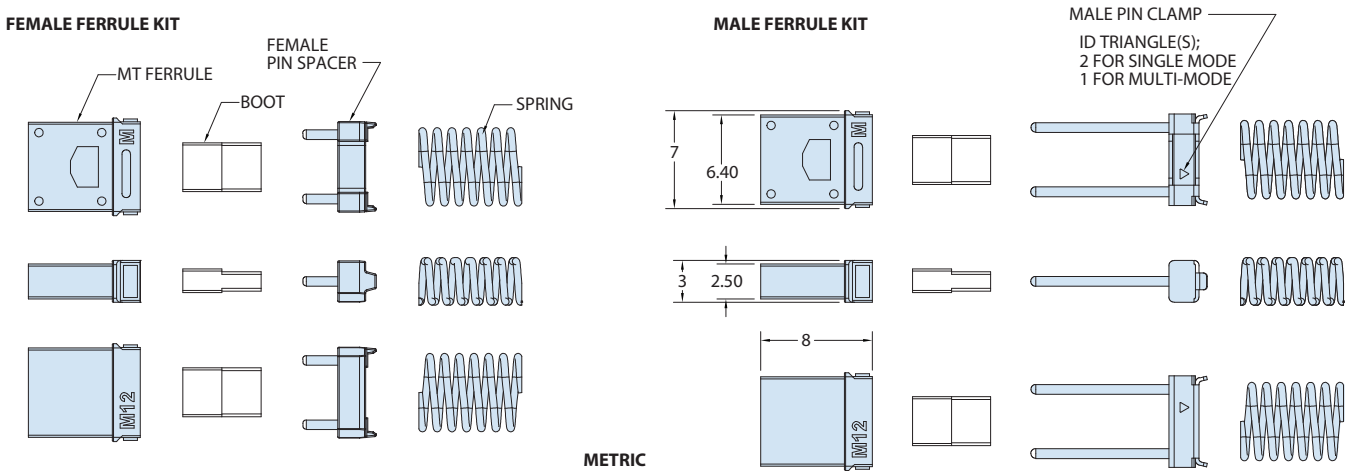
Universal connectors are intended for use in testing facilities only and should be highly evaluated before consideration in another environment.

VITA 87.0 Fiber optic connector, MIL-DTL-38999 Series III Style 181-183 MT Ferrule Kit

HOW TO ORDER

Sample Part Number	181-183	-126	-12	P
Basic Part Number	MT Ferrule Kit			
Dash Number	See table I			
Number of Fibers	See table I			
Ferrule Style	**P** = Male Ferrule Kit **S** = Female Ferrule Kit			

FERRULE KITS



MATERIAL/FINISH

- Ferrule: Polyphenylene Sulfide Resin
- Pin Clamp, Male: Stainless Steel
- Female Pin Spacer: PBT
- Boot: TPE
- Spring: Stainless Steel
- Dust Cap: ABS (Not Shown)

TABLE I

Dash No.	Typical Fiber Type	End Face Config.	Typ Fiber Size (Core/Cladding)	No. Of Fibers	Spring Force	Ferrule Ident.	Pin Clamp Ident. (Male)
-1253A	SM	APC	9/125	12	L	E-E12	2 Triangles
				24	H	E-E24	2 Triangles
-126	MM	PC	50/125,62.5/125	12	L	M-ME12	1 Triangle
				24	H	M-ME24	1 Triangle

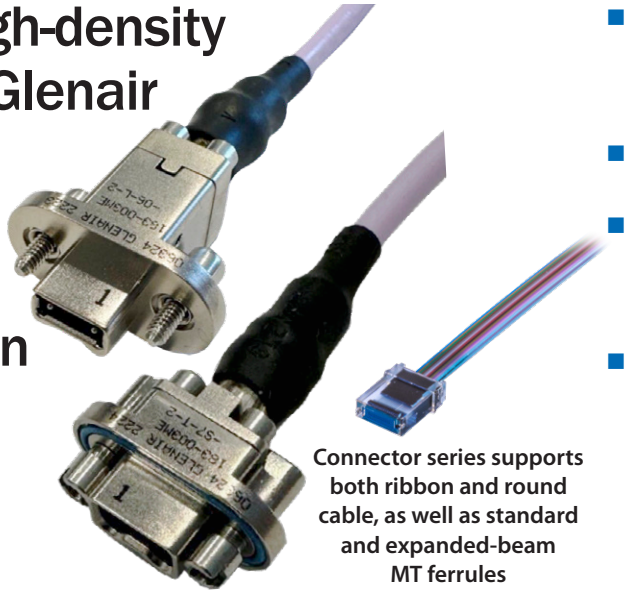
GLENAIR
SIGNATURE
FIBER OPTIC
CONNECTION
SYSTEMS

Rugged Fiber Optic CONNECTORS

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

Glenair is qualified by US Conec to terminate 1 and 2 row PRIZM® MT ferrules for ribbon and round cable fiber.

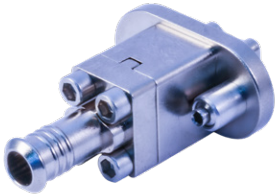
Single-ferrule high-density MT datalinks in Glenair Signature Series 79 rectangular packaging optimize SWaP in mission-critical mil-aero applications



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 optic transceivers in ribbon or round cable applications**
- **Designed for optimal low insertion loss performance in high vibration and shock environments**

Series 79 Mil-Grade Miniature Rectangular Connectors
Series Overview and Performance



-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 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**

SERIES 79 MT FERRULE FIBER OPTIC CONNECTOR PERFORMANCE SPECIFICATIONS SEE TEST REPORT GT-19 -111, GT-20 -812, GT-21 -255 (SM/APC), GT -21 -043, AND GT-21 -216 FOR MORE DETAILS	
Test Description	**Test Results**
Optical Insertion Loss for multimode, singlemode, and expanded beam	0.3 dB typical - for multimode (50/125 um fiber) and singlemode (9/125 nm fiber) 0.5 dB typical - for expanded beam (5 50/125 um fiber)
Temperature Cycling: per TIA/EIA-455-3, Test Condition C-2	Max. CIT during test = 0.3 dB Max. IL post-test = 0.45 dB Min. RL post-test >60 dB (singlemode only)
Mating Durability (500 cycles per TIA-455-21 with exception to how often CIT was measured)	First 100 cycles - CIT measured every 10 cycles. Next 400 cycles – CIT measured every 25 cycles. • Max. CIT during test = 0.48 dB • Max. IL post-test = 0.47 dB • Min. RL post-test >60 dB (singlemode only) Note: *Mating hardware torqued to spec. only when taking measurements*
Physical Shock 1: 50g Peak, 11 ms duration, per TIA/EIA-455-14, Test Condition E Physical Shock 2: 160g Peak, 4 ms duration, per MIL-STD-202, Method 213 Additional Physical Shock: 300g Peak, 0.5 ms duration, per MIL-STD-833E, Method 2002.4 (30 shocks total)	• Max. IL post-test = .50 dB • Min. RL post-test > 60 dB (singlemode only) • Discontinuity: none detected when monitored at 1 us max. and ±0.5 dB max.
Vibration, Random 27 Grms , 1 hr./axis, 3 hrs. total, per TIA-455-11, condition G	• Max. IL post-test = .44 dB ; Min. RL post-test > 60 dB (singlemode only) • No discontinuity detected when monitored at 1 us max. and ±0.5 dB max.
Vibration, Sine 20g Peak, 10-2,000 Hz., 4 hrs./axis (12 hours total), per TIA-455 -11, condition IV	Max. IL post-test = .44 dB.; Min. RL post-test > 60 dB (singlemode only) No discontinuity detected when monitored at 1 us max. and ±0.5 dB max.
Weight (approx.)	Plug: 7.5 grams with male MT ferrule kit - Receptacle: 5.5 grams with female MT ferrule kit)
Water Immersion per IP67 (Applicable to p/n 183-014 only)	No water present inside connector, and no optical degradation post-test
Hermeticity (Applicable to p/n 183-014 receptacle on ribbon cable only)	Max. Helium leak rate = 1 x 10^{-6} cc/sec

Series 79 Mil-Grade Miniature Rectangular Connectors
183-003 Non-Environmental Series 79 MT

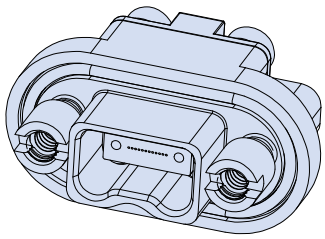
MATERIAL/FINISH NOTES

- Mounting hardware: stainless steel / passivated
- EMI gasket (optional): conductive fluorosilicone
- Additional materials, finishes, connector configurations (dual and quad layouts), and hardware options are available, consult factory.

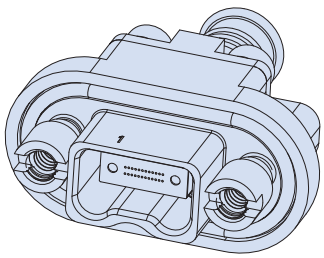
HOW TO ORDER

Sample Part Number	183-003	ME	-06	-L	-1	A

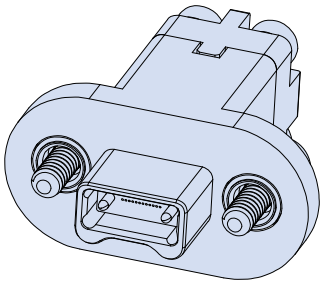
Basic Number	Series 79 Single MT Fiber Optic Connector
Material / Finish	**ME** = Al Alloy / Electroless Nickel **MT** = Al Alloy / Nickel PTFE **ZR** = Al Alloy / Zinc Nickel, Black **NF** = Al Alloy / Cadmium, O.D. **Z1** = Stainless Steel / Passivate
Connector Type	**-06** = Plug (used with male MT ferrule) **-07** = Receptacle (used with female MT ferrule) **-S7** = Receptacle with EMI gasket (used with female MT ferrule)
Mounting Hardware	Hardware for PLUGS **-L** = Hex Head Jackscrew, non-removable **-K** = Slotted 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 **-R** = for .080" panel thickness
Retaining Plate / Banding Platform	**-1** = 12 or 24 channel without banding platform **-2** = 12 or 24 channel with banding platform for EMI shield termination and strain relief **N** = No Retaining Plate (For use with standalone retaining plate) See Dwg. 189-168 for various retaining plate designs See Dwg. 189-177 for retaining plate used with PRIZM-MT on Jacketed Cable
Polarization Key Position	**A** or **B** position for Plug; **A**, **B**, or **U** position for Receptacle **Omit** for no Polarization Key. See table.



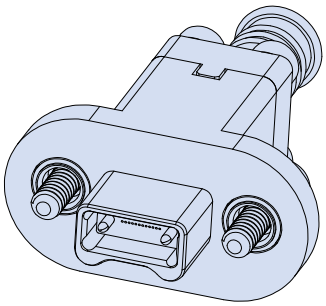
Receptacle with female MT ferrule, available with or without EMI gasket



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



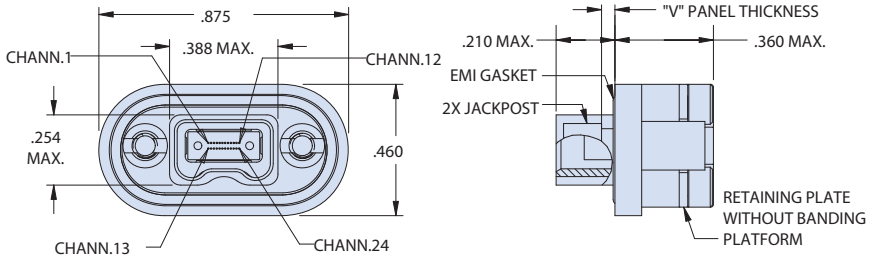
Plug with male MT ferrule and retaining plate



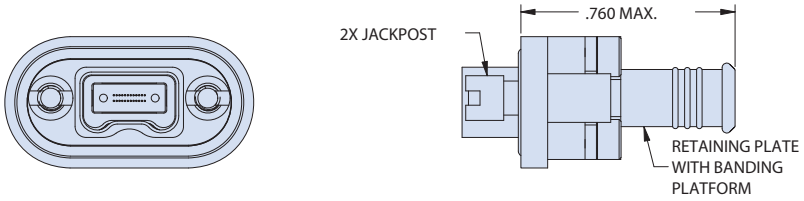
Plug with male MT ferrule with retaining plate and banding platform

Series 79 Mil-Grade Miniature Rectangular Connectors
183-003 Non-Environmental Series 79 MT

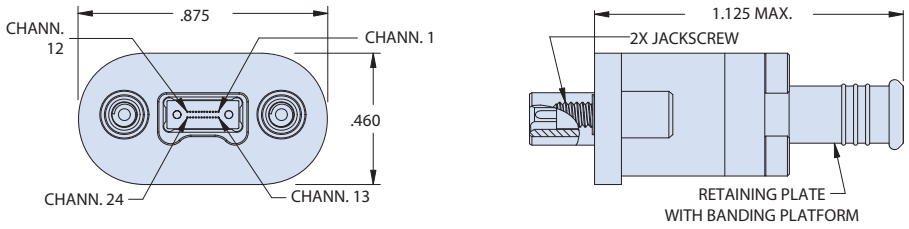
RECEPTACLE, LOW PROFILE



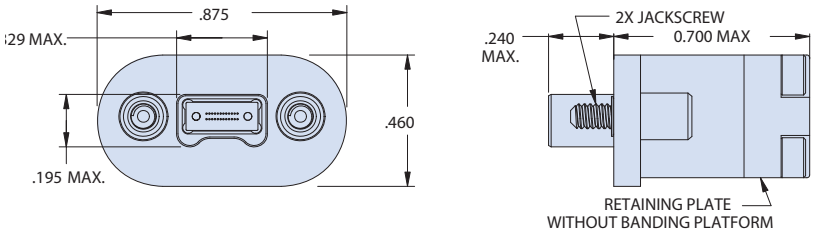
RECEPTACLE, WITH BANDING PLATFORM



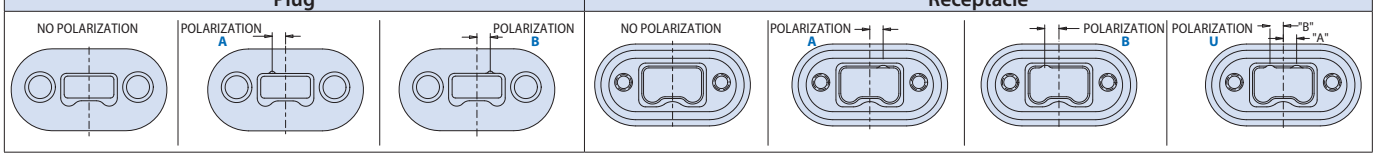
PLUG, WITH BANDING PLATFORM



PLUG, WITHOUT BANDING PLATFORM



POLARIZATION KEY POSITIONS



Series 79 Mil-Grade Miniature Rectangular Connectors
183-014 Environmental Series 79 MT

MATERIAL/FINISH NOTES

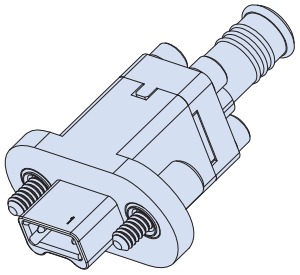
- Mounting hardware: stainless steel / passivated
- Additional materials, finishes, connector configurations (dual and quad layouts), and hardware options are available, consult factory.
- Connectors supplied without MT ferrule kit, purchase separetely per P/N 181-133 or 181-150

HOW TO ORDER

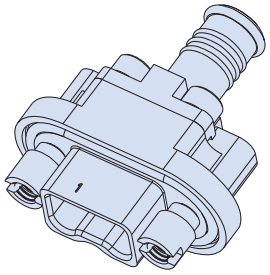
Sample Part Number	183-014	ME	-06	-L	-2	A

Basic Number	Series 79 Single MT Environmental Fiber Optic Connector
Material / Finish	**ME** = Al Alloy / Electroless Nickel **MT** = Al Alloy / Nickel PTFE **ZR** = Al Alloy / Zinc Nickel, Black **NF** = Al Alloy / Cadmium, O.D. **Z1** = Stainless Steel / Passivate
Connector Type	**-06** = Plug (used with male MT ferrule) **-07** = Receptacle (used with female MT ferrule) **-09** = Receptacle with EPDM O-ring (used with female MT ferrule)
Mounting Hardware	Hardware for PLUGS **-L** = Hex Head Jackscrew, non-removable **-K** = Slotted 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 **-R** = for .080" panel thickness (panel thickness dims ±.002")
Retaining Plate / Banding Platform	**-2** = 12 or 24 channel for plug or receptacle with banding porch **-3** = 12 channel for receptacle used on one ribbon calbe (N/A for plug) **-4** = 24 Channel for receptacle used on two ribbon calbe (N/A for plug) **-N** = No Retaining Plate (For use with standalone retaining plate) See Dwg. 189-165 for various retaining plate designs See Dwg. 189-178 for retaining plate used with PRIZM-MT on Jacketed Cable
Polarization Key Position	**A** or **B** position for Plug; **A**, **B**, or **U** position for Receptacle **Omit** for no Polarization Key. See table.

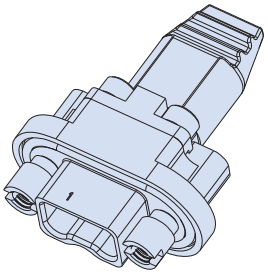
Note: -3 and -4 configurations are also capable of being hermetically sealed using a proprietary sealing compound/process. Also available as a Glenair manufactured cabled assembly).



Plug with Banding Porch



Receptacle with Banding Porch



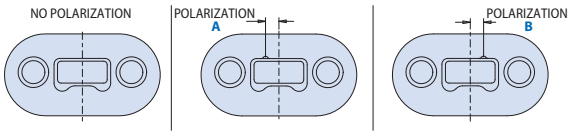
Receptacle without Banding Porch

Additional Components
181-133 or **181-150** MT Ferrule Kit
601-500 or 601-501 Band-Master ATS® Nano Band for shield termination
189-160 Dust Cap

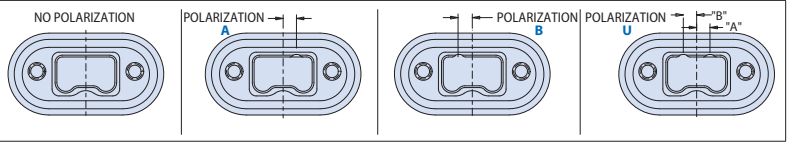
SEAL MATERIALS			
Connector Type	Panel O-Ring	Peripheral Seal	Rear Gasket
-06 Plug	N/A	N/A	Fluorosilicone
-07 Receptacle	Fluorosilicone	Fluorosilicone	Fluorosilicone
-09 Receptacle	EPDM	Fluorosilicone	Fluorosilicone

POLARIZATION KEY POSITIONS

Plug

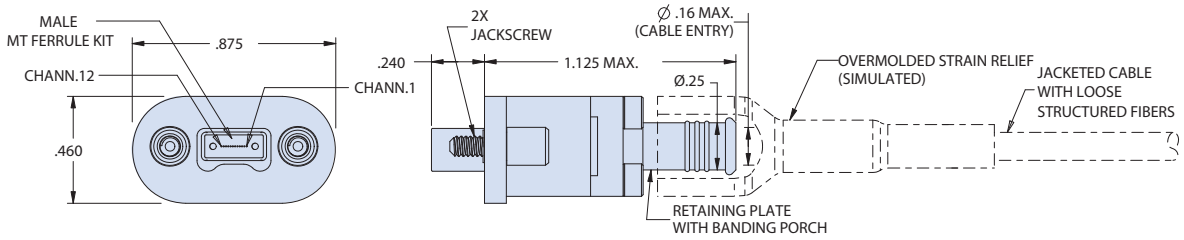


Receptacle

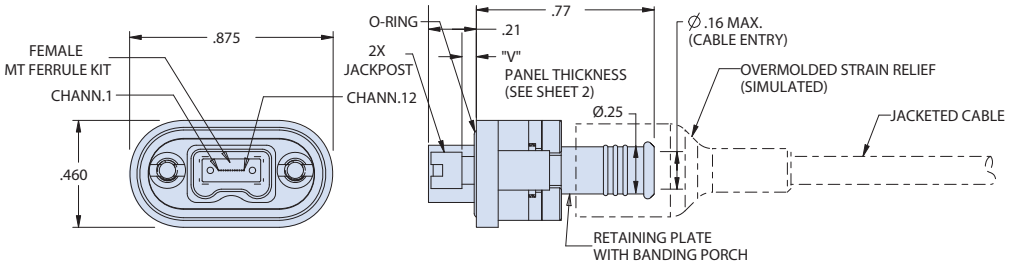


Series 79 Mil-Grade Miniature Rectangular Connectors
183-014 Environmental Series 79 MT

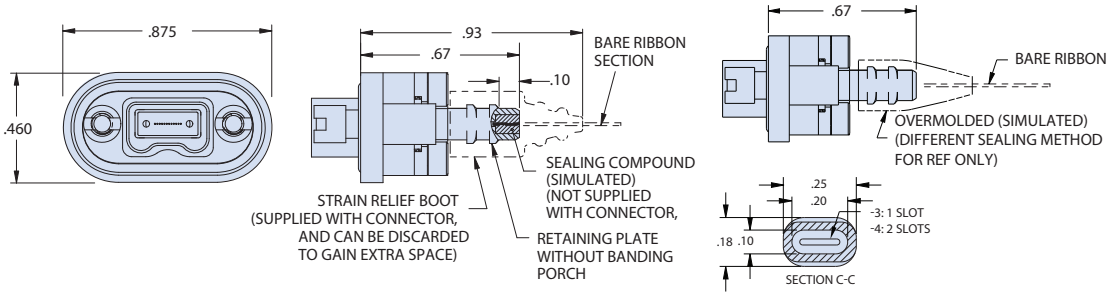
PLUG, WITH BANDING PORCH (-2)



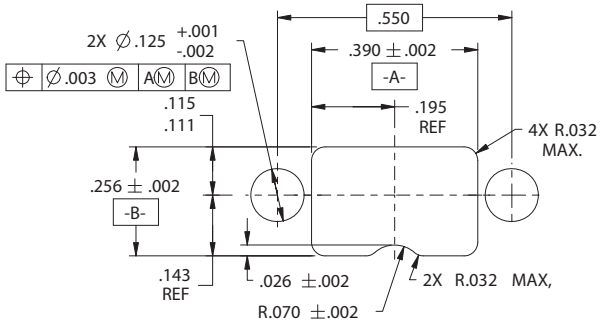
RECEPTACLE, WITH BANDING PORCH (-2)



RECEPTACLE, WITHOUT BANDING PORCH (-3 FOR 1 RIBBON) (-4 FOR 2 RIBBONS)



PANEL CUT-OUT



Series 79 Mil-Grade Miniature Rectangular Connectors
183-021 expanded keying positions and #4-40 UNC jackscrew

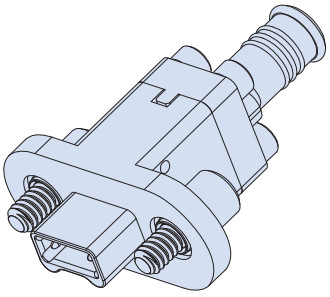
MATERIAL/FINISH NOTES

- Mounting hardware: stainless steel / passivated
- EMI O-ring: conductibe fluorosilicone Standard O-ring: fluorosilicone/silicone blend.
- Additional materials, finishes, connector configurations (**dual** and quad layouts), and hardware options are available, consult factory.
- Connectors supplied without MT ferrule kit, purchase separetely per P/N 181-133 or 181-150

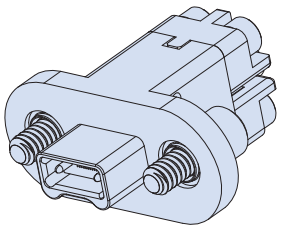
HOW TO ORDER

Sample Part Number	183-021	ME	-06	-L	-1	-A13

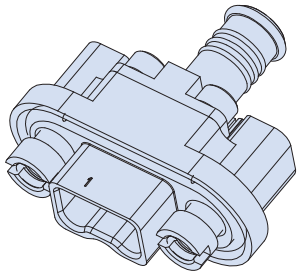
Basic Number	Series 79 Single MT Fiber Optic Connector
Material / Finish	**ME** = Al Alloy / Electroless Nickel **MT** = Al Alloy / Nickel PTFE **ZR** = Al Alloy / Zinc Nickel, Black **NF** = Al Alloy / Cadmium, O.D. **Z1** = Stainless Steel / Passivate
Connector Type	**-06** = Plug (used with male MT ferrule) **-07** = Receptacle (used with female MT ferrule) **-S7** = Receptacle with EMI O-ring (used with female MT ferrule)
Mounting Hardware	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 **-R** = for .080" panel thickness (panel thickness dims ±.002")
Retaining Plate / Banding Platform	**-1** = 12 or 24 channel without banding porch **-2** = 12 or 24 channel with banding porch **-N** = No Retaining Plate (For use with standalone retaining plate) See Dwg. 189-168 for various retaining plate designs See Dwg. 189-177 for retaining plate used with PRIZM-MT on Jacketed Cable
Polarization Key Position	See Polarized Keying Positions table **-U** = Universal position for Receptacle only **Omit** for no Polarization Key. See table.



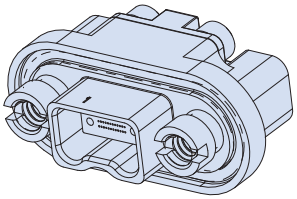
Plug with Banding Porch



Plug without Banding Porch



Receptacle with Banding Porch

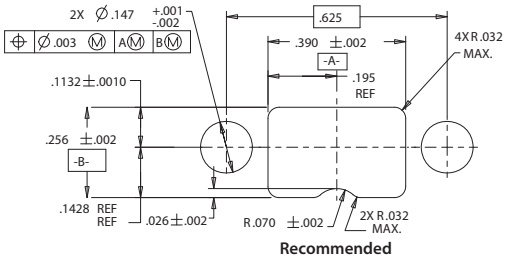


Receptacle without Banding Porch

ADDITIONAL COMPONENTS

181-133 or **181-150** MT Ferrule Kit	**189-172** Dust Cap
601-500 or 601-501 Band-Master ATS® Nano Band for shield termination	**189-168** or **189-177** Various Retaining Plate Designs

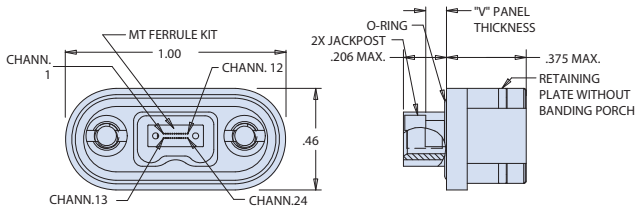
PANEL CUT-OUT



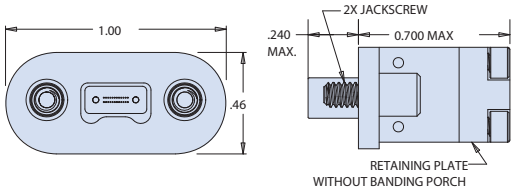
Recommended Panel Cut-out

Series 79 Mil-Grade Miniature Rectangular Connectors
183-021 expanded keying positions and #4-40 UNC jackscrew

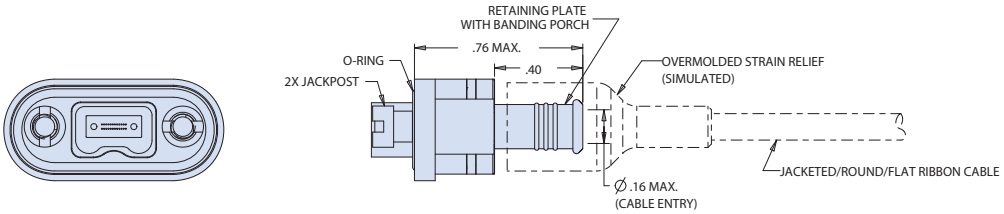
RECEPTACLE, LOW-PROFILE (-1)



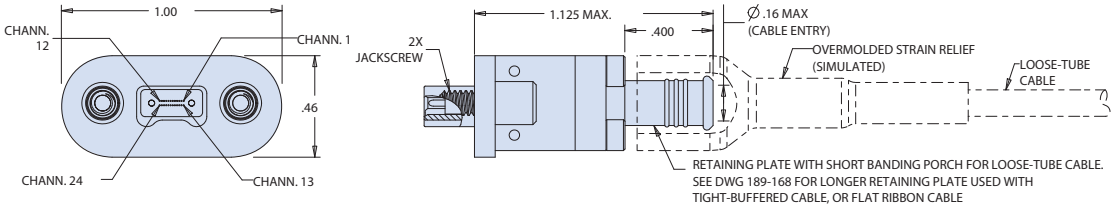
PLUG, WITHOUT BANDING PORCH (-1)



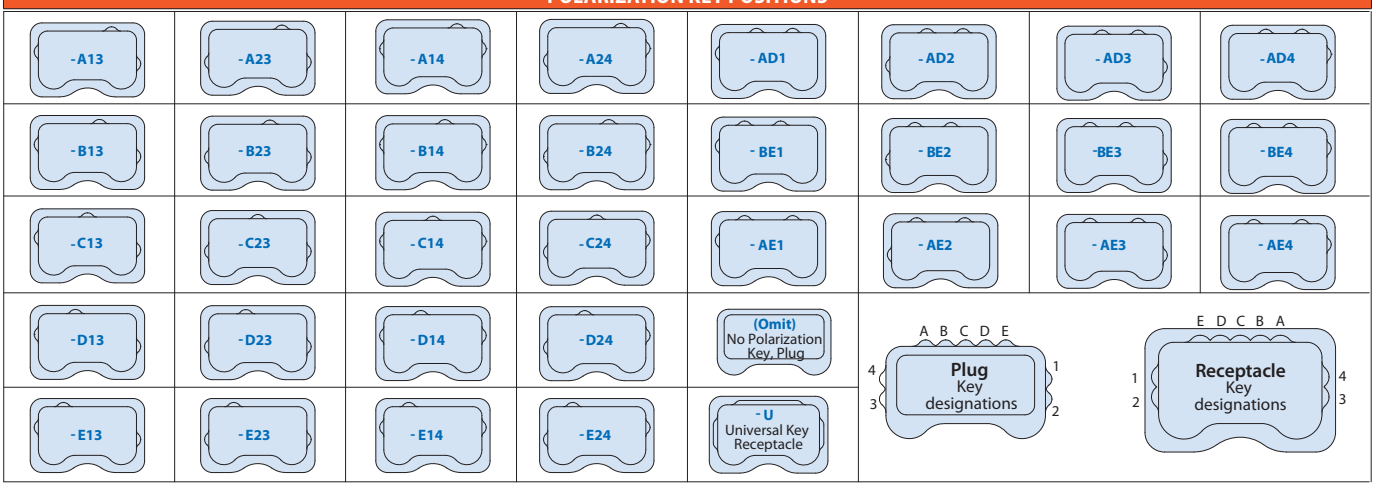
RECEPTACLE, WITH BANDING PORCH (-2)



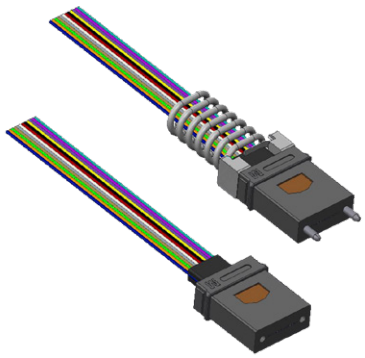
PLUG, WITH BANDING PORCH (-2)



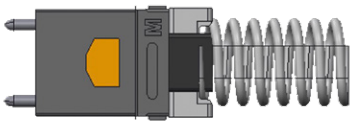
POLARIZATION KEY POSITIONS



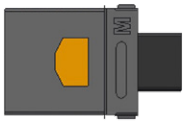
181-133 MT Elite Ferrule Kits



HOW TO ORDER ELITE MT FERRULE KIT				
Sample Part Number	**181-133**	**-126**	**-12**	**P**
Basic Part Number	Elite MT Ferrule kit			
Fiber type	**-126**, **-1253**, **-1253A** (See Fiber Type and Number table)			
Number of Fibers	**-12**, **-24** (See Fiber Type and Number table)			
Ferrule Style	**P** = Male (use with Plug) **S** = Female (use with Receptacle)			



Male Kit



Female Kit

MATERIAL/FINISH NOTES

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

FIBER TYPE AND NUMBER						
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	**12**	M-ME12	1 Through Hole
			62.5/125	**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

Series 79 Mil-Grade Miniature Rectangular Connectors
FA07364 Breakout Assembly

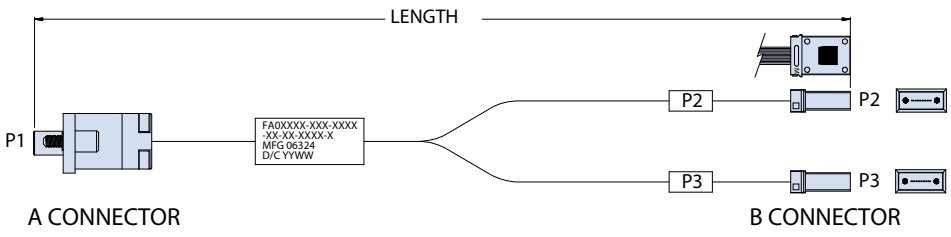
HOW TO ORDER

Sample Part Number	FA07364	-06	-17	ME	-B4	-50	-L		-1		-036	L
Basic Number	Series 79 MT Ferrule Fiber Optic Cable Asembly											
A Connector Type	**-06** = Sr. 79 Plug 183-003 (used with male MT ferrule) **-07** = Sr. 79 Receptacle 183-003 (used with female MT ferrule) **-S7** = Sr. 79 Receptalcle 183-003 with EMI gasket (used with female MT ferrule)											
B Connector Type	**-06** = Sr. 79 Plug 183-003 (used with male MT ferrule) **-07** = Sr. 79 Receptacle 183-003 (used with female MT ferrule) **-S7** = Sr. 79 Receptalcle 183-003 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 **MT** = Al Alloy / Nickel PTFE **ZR** = Al Alloy / Zinc Nickel, Black **NF** = Al Alloy / Cadmium, O.D. **Z1** = Stainless Steel / Passivate											
Fiber Qty. / Type	**-B2** = 12 bare ribbon fibers **-B4** = 24 bare ribbon fibers **-R2** = 12 round ribbon fibers **-R4** = 24 round ribbon fibers											
Fiber Size	**-09** = 9.3/125 Singlemode **-50** = 50/125 Multimode **-62** = 62.5/125 Multimode											
Mounting Hardware (A Connector)	Plug **-L** = Hex head jackscrew, 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 **-R** = for .080" panel thickness											
Mounting Hardware (B Connector, applies to Sr. 79 only)	Series 79 Plug **-L** = Hex head jackscrew, non-removable **-B** = Thru-hole **-K** = Slotted Head Jackscrew, non-removable **Omit** = if not Sr. 79 connector Series 79 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 (A Connector)	**-1** = without banding platform **-2** = with banding platform											
Banding Platform (B Connector, applies to Sr. 79 only)	**-1** = without banding platform **-2** = with banding platform **Omit** if not Sr. 79 connector											
Length	In inches (e.g. -0036 = 36 inches)											
Protective Cover	**L** = supplied less covers **Omit** = supplied with covers											

Unless indicated, no polarization key will be used for plug and receptacle Sr. 79 connectors.

Part numbering is for reference purposes only. A unique Glenair part number will be assigned to your cable order. Please consult factory for additional custom cable offerings.

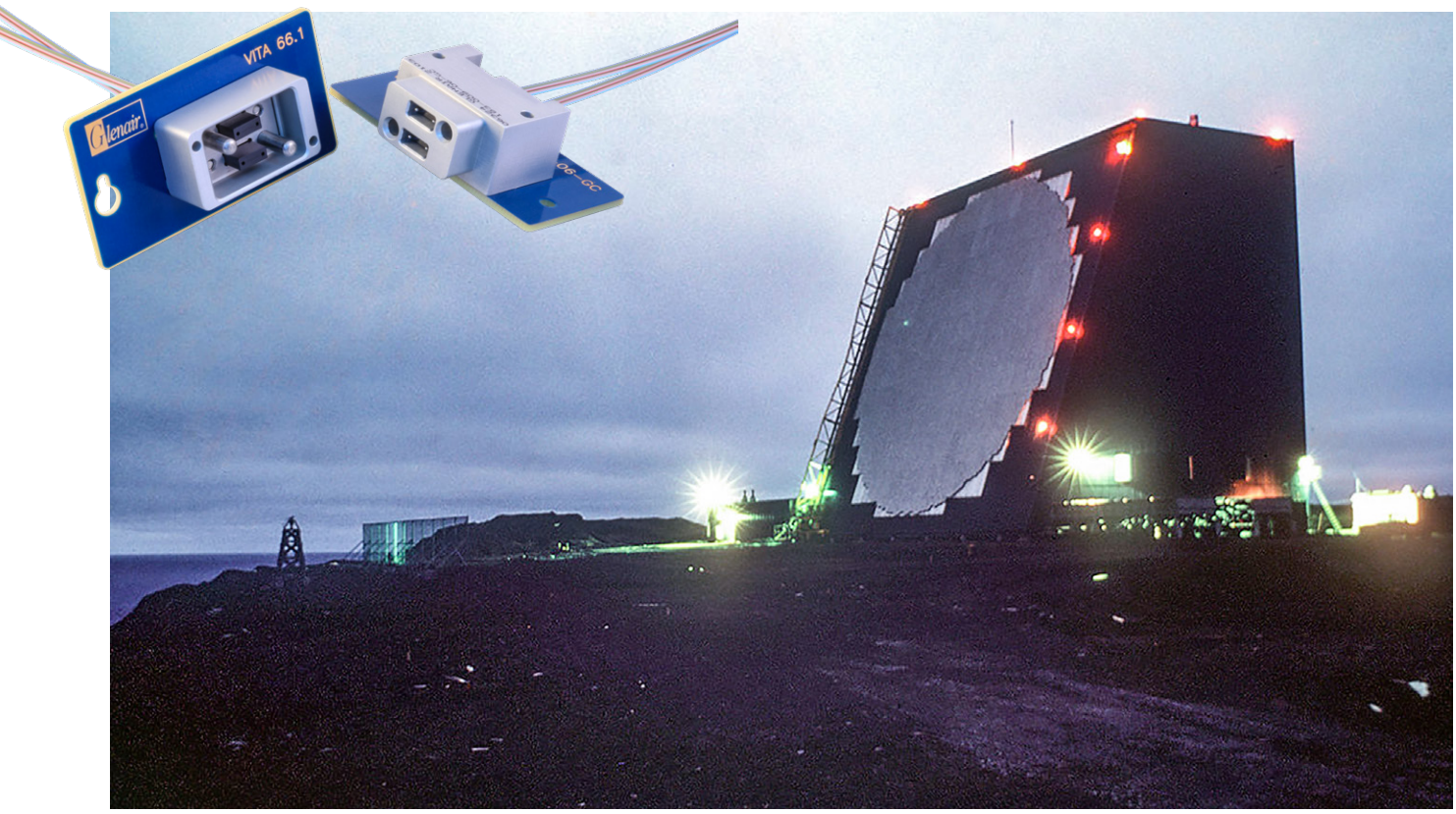
DIMENSIONS / DETAILS



GLENAIR
SIGNATURE
FIBER OPTIC
CONNECTION
SYSTEMS

Rugged Fiber Optic CONNECTORS

VITA 66 Style MT Ferrule Rugged Optical Backplane Connectors



The VITA 66 interconnect series introduces fiber optic connectivity to VPX ruggedized embedded computing systems. Glenair's VITA 66.1 and 66.4 compliant blind-mate, optical MT module/backplane connectors use the open architecture defined in VITA 46. These products are both compatible with VPX systems and available as standalone connector solutions for reliable, high-speed transmission in extreme commercial and military environments.

- **Compliant to VITA 66.1 and 66.4 interface requirement**
- **Integrated alignment pins**
- **Supports industry standard MT ferrules—up to 24 channels per MT**
- **No unique tooling required for assembly**

APPLICATIONS

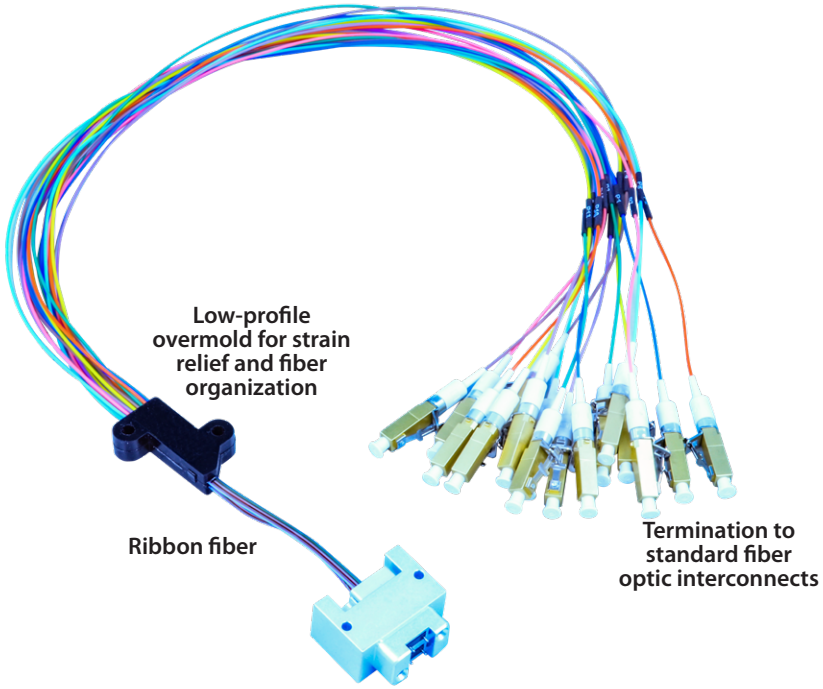
- **VPX compliant backplanes**
- **Embedded computing devices**
- **Mlitary aircraft (Phased Array) Radars**
- **Flight computers and other aircraft LRUs**
- **Command center comms equipment**

VITA 66.1 and VITA 66.4 backplane Series overview

Right-angle configurations for motherboard to daughtercard applications

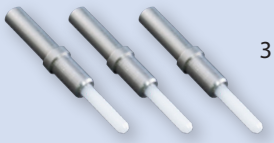
TURNKEY VITA 66.1 CONNECTORS, CABLE ASSEMBLIES, AND FERRULES

Glenair can design, terminate, and test complex multibranch and point-to-point assemblies incorporating VITA 66.1 style backplane connectors with standard commercial fiber optic interconnects for termination to board-level transceivers. Low-profile cable overmolds provide fiber media organization and ribbon-to-wire strain relief. Discrete backplane connectors and MT ferrule assemblies are also available

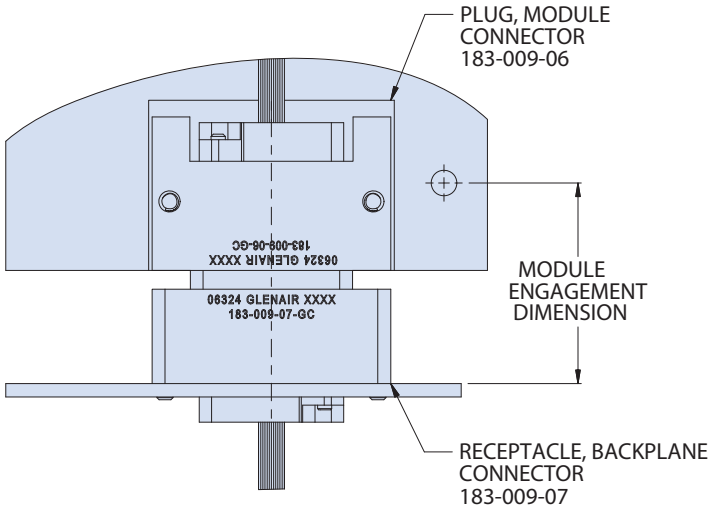


The MT Ferrule High-Density Advantage


24 fibers


3 fibers

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**



RANGE OF ENGAGEMENT REQUIREMENT
(VITA 66.0)

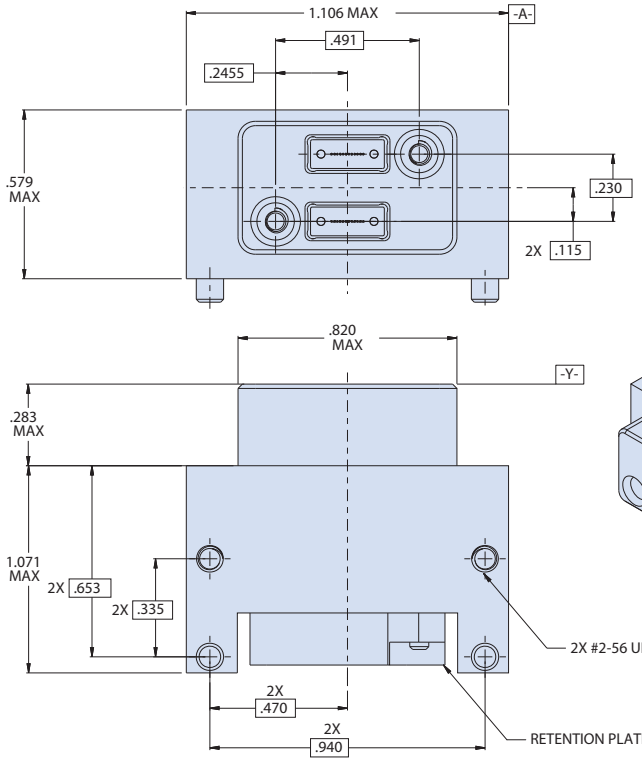
VITA 66.1 Backplane
183-009-06 Plug Module connectors

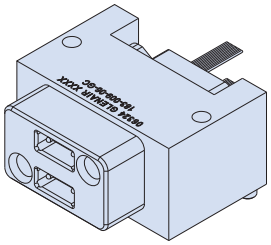
HOW TO ORDER				
Sample Part Number		**183-009**	**-06**	**-GC**
Basic Part Number	MT Fiber Optic Backplane Interconnect, VITA 66.1 Style			
Connector Style	**-06** = Plug Module			
Material / Finish	**M** = Aluminum / Electroless Nickel **GC** = Aluminum / Clear Anodize			

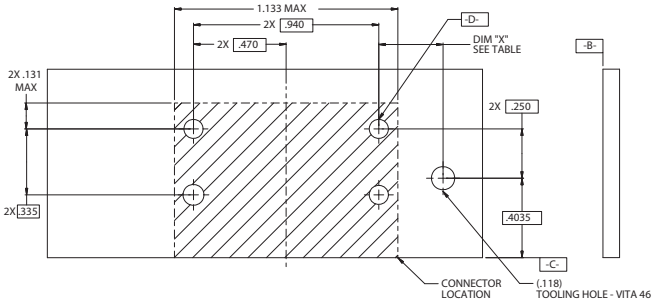
NOTES

- Connectors are designed to meet general requirements of ANSI/VITA 66.1
- See figure 3.25-1 and table 3.25-1 of VITA 66.0 for Module Engagement requirements
- See paragraph 3.2.4 Of VITA 66.1 For dimension "A" vs. Module Insertion range requirements
- For MT ferrule kit part numbers, see Glenair drawing 181-170

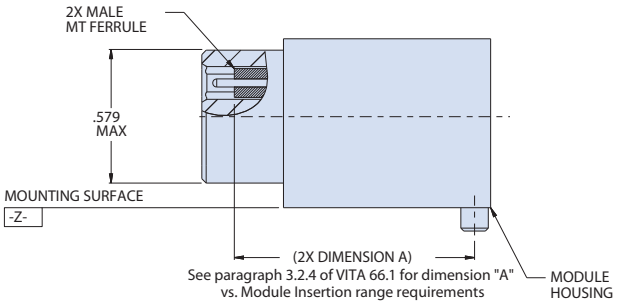
CONNECTOR LOCATION ON MODULE PCB	
Position	**Dim. "X"**
P2	2.1154
P3	3.8012
P4	4.9350
P5	6.0689
P6	7.2028



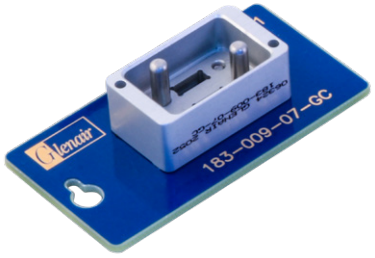




FULL-WIDTH FIBER OPTIC INTERCONNECT
PLUG-IN MODULE INTERFACE (VITA 66.0)



VITA 66.1 Backplane
183-009-07 Receptacle Backplane connectors

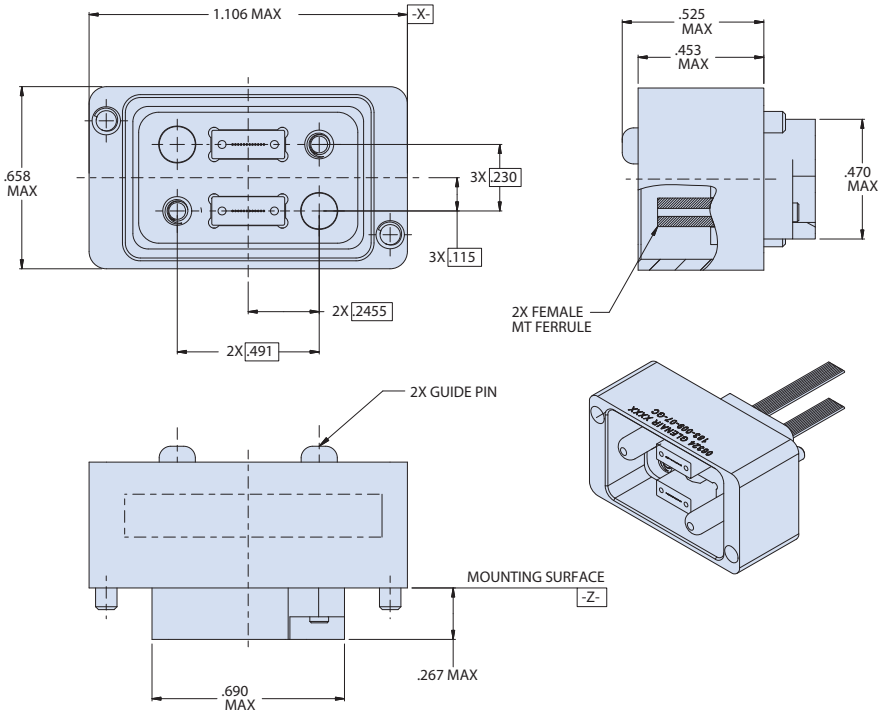


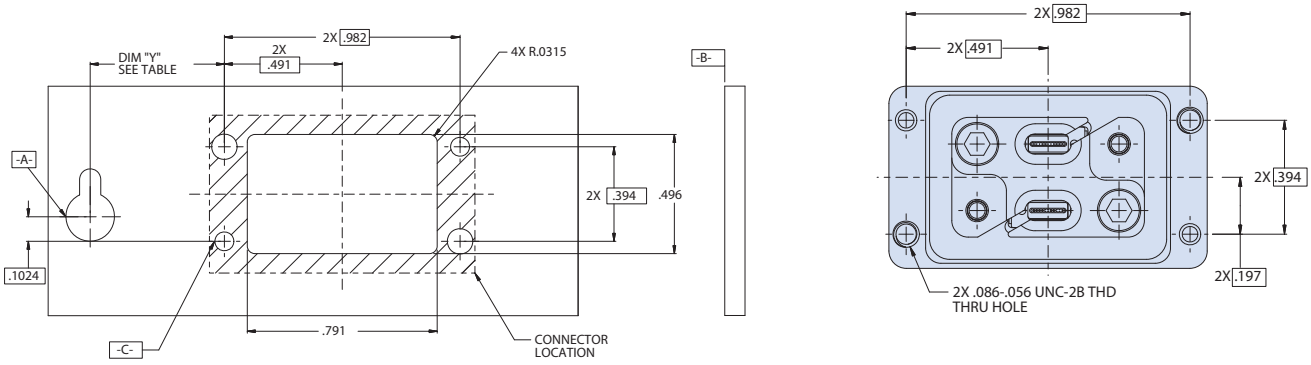
HOW TO ORDER			
Sample Part Number	**183-009**	**-07**	**-GC**
Basic Part Number	MT Fiber Optic Backplane Interconnect, VITA 66.1 Style		
Connector Style	**-07** = Receptacle, Backplane		
Material / Finish	**M** = Aluminum / Electroless Nickel **GC** = Aluminum / Clear Anodize		

NOTES

- Connectors are designed to meet general requirements of ANSI/VITA 66.1
- See figure 3.25-1 and table 3.25-1 of VITA 66.0 for Module Engagement requirements
- See paragraph 3.2.4 Of VITA 66.1 For dimension "A" vs. Module Insertion range requirements
- For MT ferrule kit part numbers, see Glenair drawing 181-170

CONNECTOR LOCATION ON BACKPLANE PCB	
Position	Dim. "X"
J2	2.0945
J3	3.7803
J4	4.9142
J5	6.0480
J6	7.1819





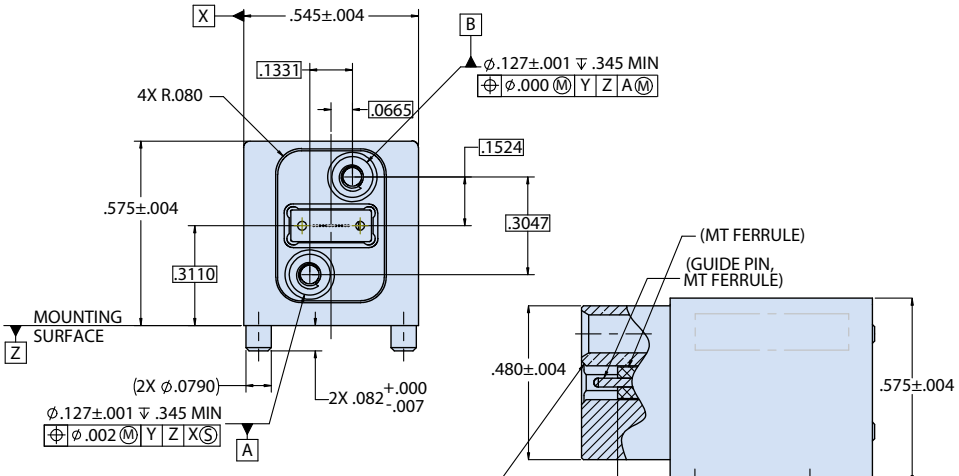
FULL-WIDTH FIBER OPTIC INTERCONNECT
PLUG-IN MODULE INTERFACE (VITA 66.0)

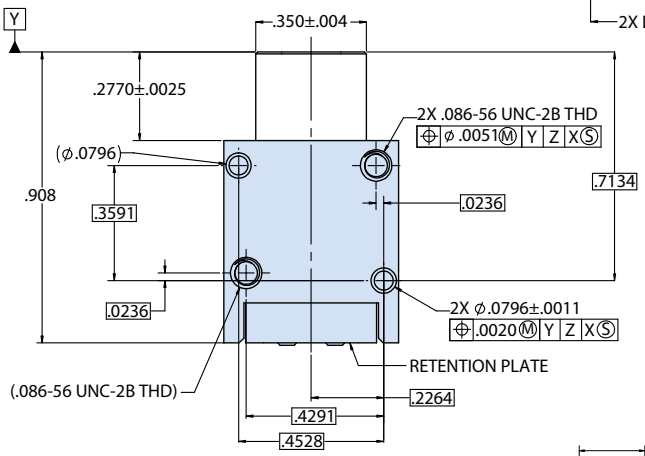
VITA 66.4 Backplane
183-015-06 Plug Module connector

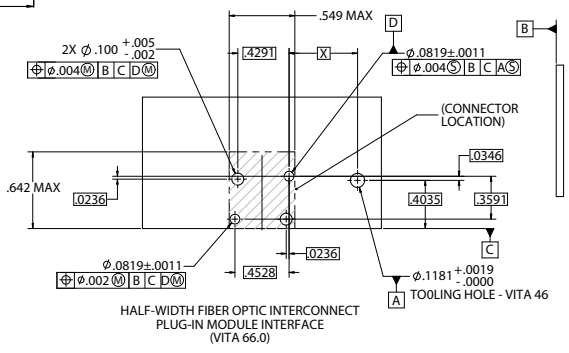
HOW TO ORDER			
Sample Part Number	**183-015**	**-06**	**-GC**
Basic Part Number	MT Fiber Optic Module/Backplane Connector, VITA 66.4 Style		
Connector Style	**-06** = Plug, Module		
Material / Finish	**GC** = Aluminum Alloy / Clear Anodize		

NOTES

- Connector meets the general requirements of ANSI/VITA 66.4
- For appropriate standard (physical contact) mt ferrule kit part numbers, see glenair drawing 181-170.
- See paragraph 3.2.4 Of VITA 66.4 For dimension "A" vs. module insertion range requirements
- See figure 3.2.5-1 and table 3.2.5-1 of VITA 66.0 for requirements







CONNECTOR LOCATION ON BACKPLANE PCB	
Position	**DIM "X**
P2A	2.0858
P2B	2.6417
P3A	3.7736
P3B	4.3295
P4A	4.9075
P4B	5.4634
P5A	6.0413
P5B	6.5972
P6A	7.1752
P6B	7.7311

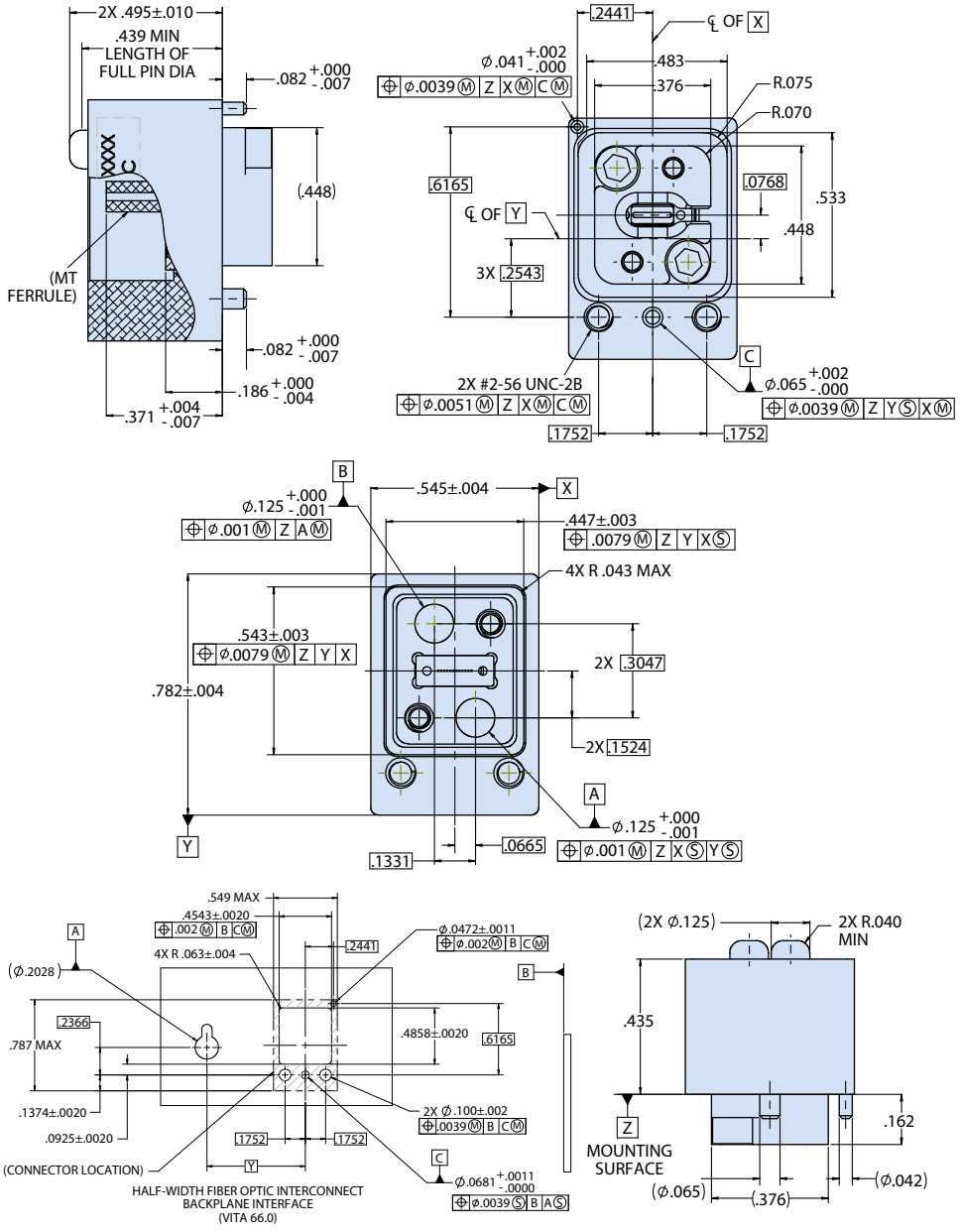
VITA 66.4 Backplane
183-015-07 Receptacle Backplane connector

HOW TO ORDER			
Sample Part Number	**183-015**	**-07**	**-GC**
Basic Part Number	MT Fiber Optic Module/Backplane Connector, VITA 66.4 Style		
Connector Style	**-07** = Receptacle, Backplane		
Material / Finish	**GC** = Aluminium Alloy / Clear Anodize		

NOTES

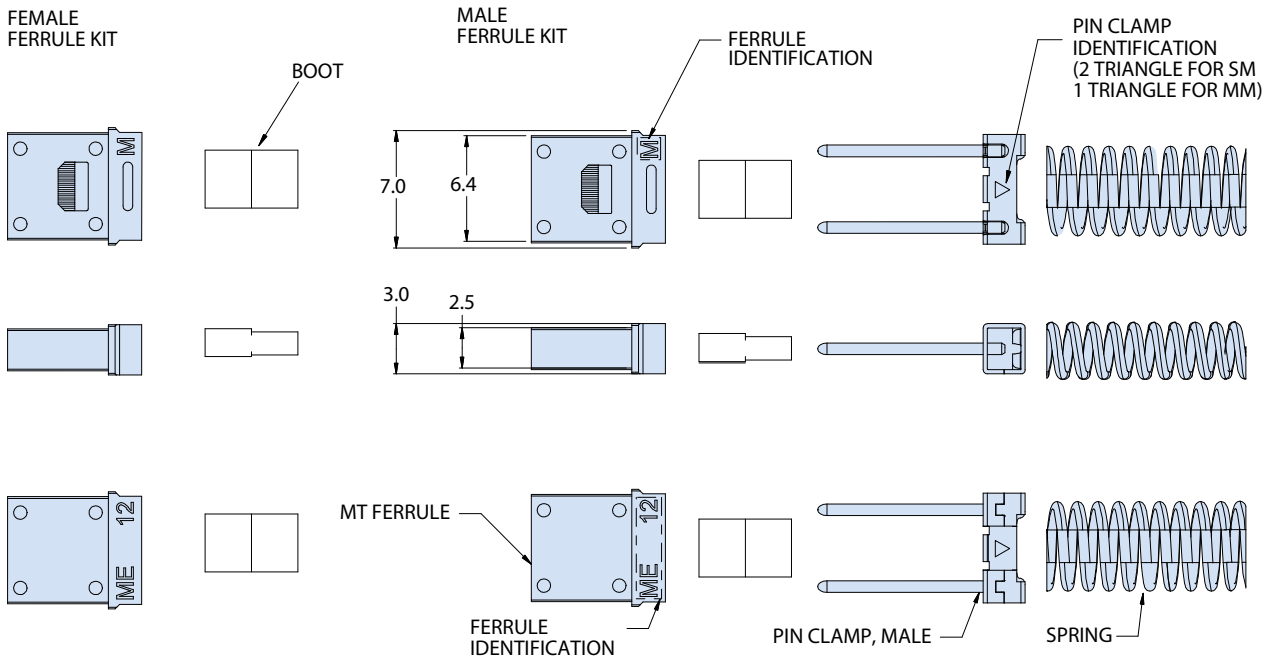
- Connector meets the general requirements of ANSI/VITA 66.4
- For appropriate standard (physical contact) mt ferrule kit part numbers, see glenair drawing 181-170.
- See paragraph 3.2.4 Of VITA 66.4 For dimension "A" vs. module insertion range requirements
- See figure 3.2.5-1 and table 3.2.5-1 of VITA 66.0 for requirements

CONNECTOR LOCATION ON BACKPLANE PCB	
Position	DIM "Y"
J2A	2.3122
J2B	2.8681
J3A	4.0000
J3B	4.5559
J4A	5.1338
J4B	5.6897
J5A	6.2677
J5B	6.8236
J6A	7.4015
J6B	7.9574



VITA 66.1 and 66.4
181-170 MT Ferrule Kit

HOW TO ORDER				
Sample Part Number	**181-170**	**-126**	**-12**	**P**
Basic Part Number	MT Ferrule Kit			
Dash Number	See table I			
Number of Fibers	See table I			
Ferrule Style	**P** = Male Ferrule Kit **S** = Female Ferrule Kit			



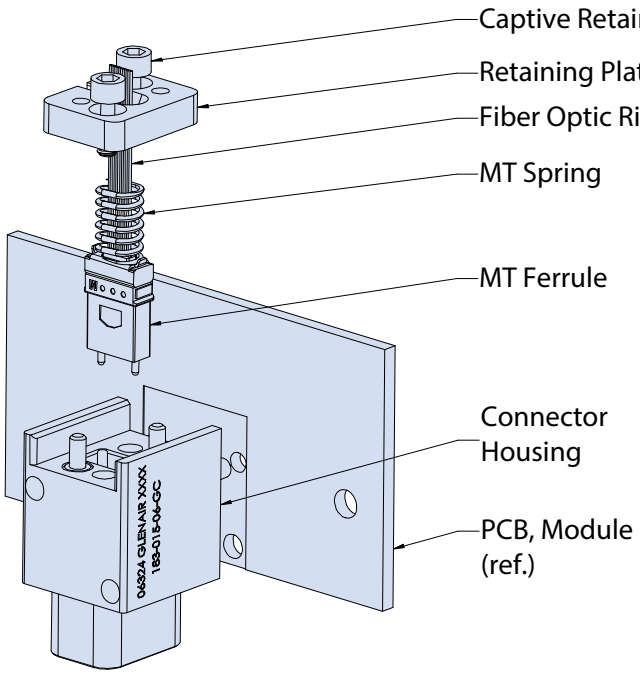
MATERIAL/FINISH

- Ferrule: Polyphenylene Sulfide Resin
- Pin Clamp, Male; Spring: Stainless Steel
- Boot: TPE
- Dust Cap: ABS (Not Shown)

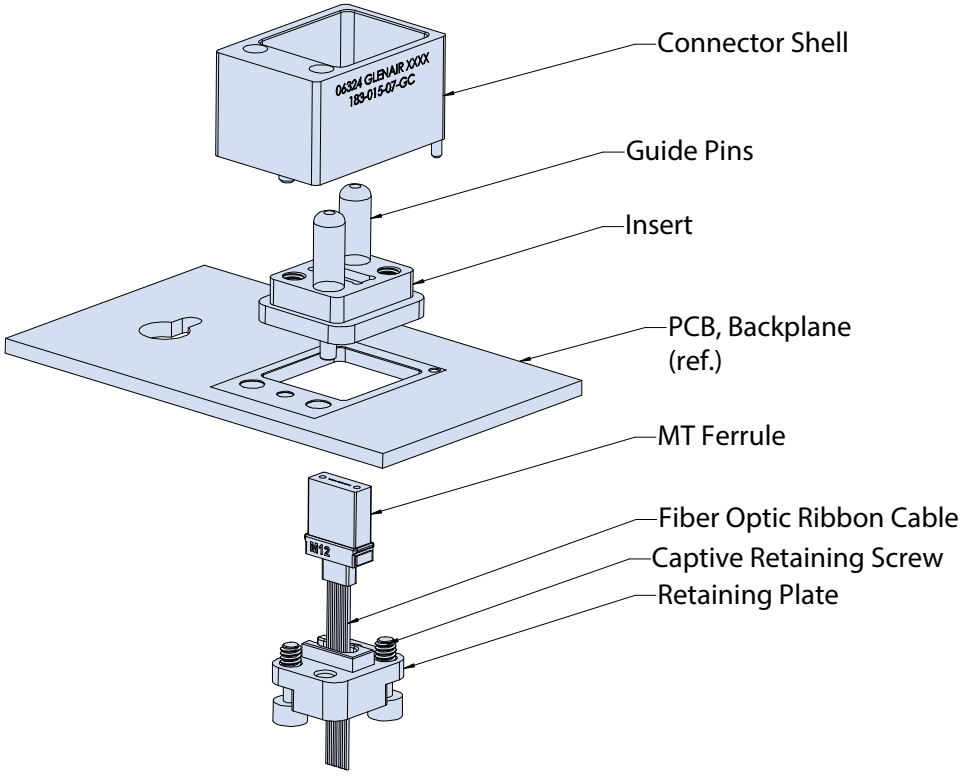
TABLE I

Dash No.	Typical Fiber Type	End Face Config.	Typ Fiber Size (Core/Cladding)	No. Of Fibers	Spring Force	Ferrule Ident.	Pin Clamp Ident. (Male)
-1253A	SM	APC	9/125	**-12**	L	E-E12	2 Triangles
				-24	H	E-E24	2 Triangles
-1253	SM	PC	9/125	**-12**	H	E-E12	2 Triangles
-126	MM	PC	50/125,62.5/125	**-12**	L	M-ME12	1 Triangle
				-24	H	M-ME24	1 Triangle

VITA 66.1 and 66.4
Exploded View



Plug Module Connector



Receptacle Backplane Connector

PF0-0001 Optical flex assembly, straight, loopback, or curve, with I/O connector options

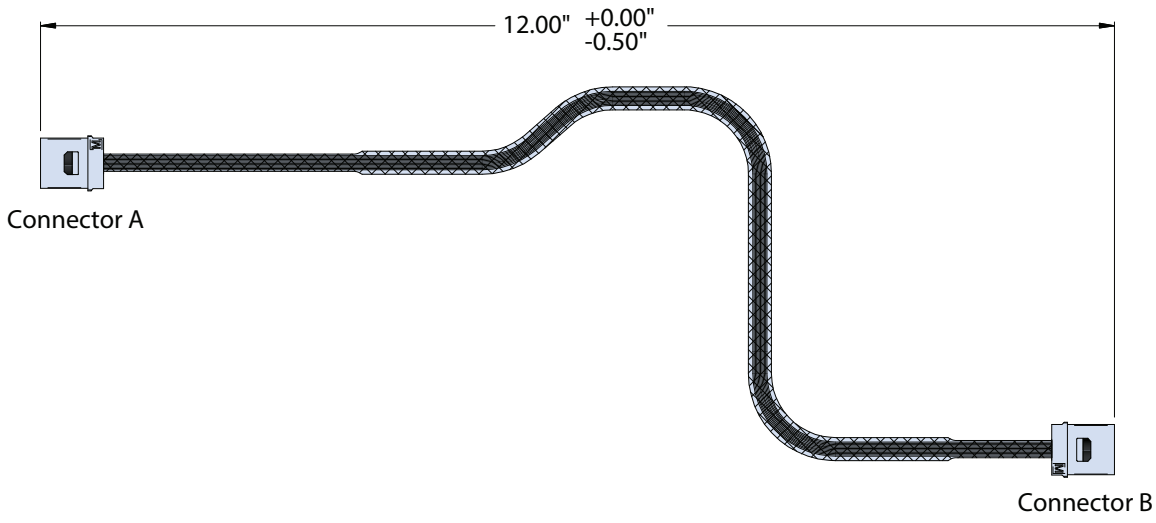
PRIZM® MT and MT Elite®

HOW TO ORDER

Sample Part Number	PF0-0001	-C	-01	-01	-09	-12
Basic Part Number	Optical Flex Jumper Assembly					
Shape	**L** = Loopback **S** = Straight **C** = Curve Must fit in 12" X 12" area. Consult Glenair for custom design					
Connector A	**-01** = MT Ferrule **-04** = MPO **-02** = SuperNine MT **-05** = VITA 66.1 **-03** = Series 79 MT **-06** = VITA 66.4					
Connector B	**-01** = MT Ferrule **-04** = MPO **-02** = SuperNine MT **-05** = VITA 66.1 **-03** = Series 79 MT **-06** = VITA 66.4					
Fiber Size	**-09** = 9.3/12.5µm Singlemode **-09R** = Radhard Singlemode **-50** = 50/125µm Multimode **-50R** = Radhard Multimode **-62** = 62.5/125µm Multimode **-62R** = Radhard Multimode					
Number of Fibers	**-12**					

Part numbering is for reference purposes only. A unique Glenair part number will be assigned.

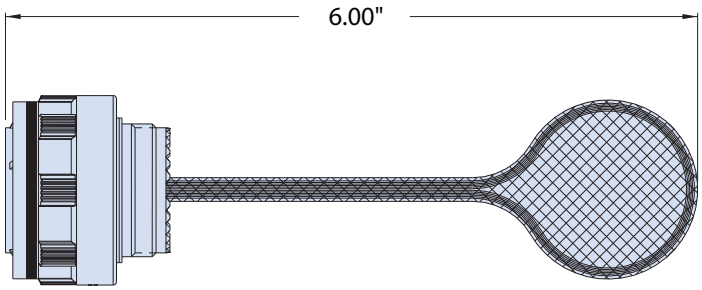
EXAMPLE JUMPER ASSEMBLY, CURVE SHAPE, MT FERRULE CONNECTORS



PF0-00001-C-01-01-50-12 (For Reference)

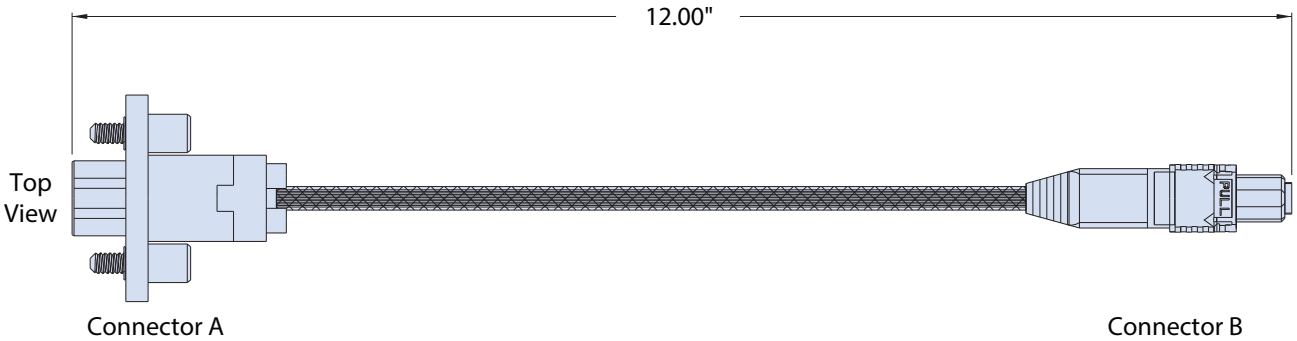
PF0-0001 Optical flex assembly, straight, loopback, or curve, with I/O connector options

EXAMPLE JUMPER ASSEMBLY, LOOPBACK SHAPE, SUPERNINE MT CONNECTOR



PF0-00001-L-02-09-12 (For Reference)

EXAMPLE JUMPER ASSEMBLY, STRAIGHT SHAPE, SERIES 79 MT AND MPO CONNECTORS



GLENAIR
SIGNATURE
FIBER OPTIC CONNECTION SYSTEMS

Rugged Fiber Optic CONNECTORS

NAVSEA and Underwater Oil & Gas Industry Fiber Optic Interconnect Systems

NAVSEA and commercial oil & gas industry qualified topside and subsea connectors. MIL-PRF-28876 and MIL-PRF-29504 /14 and /15 Navy F/O systems. Glenair signature SeaKing high-pressure, open-face subsea fiber optics. NGCON next-generation fiber optic system.

NAVSEA-qualified 28876 connectors and 29504 termini

Emerging NAVSEA next-gen NGCON fiber optics

10K PSI open-face SeaKing underwater fiber optics

- **M28876 connectors qualified to the complete requirements of MIL-PRF-28876**
- **All shell sizes and insert arrangements, including 2, 4, 6, 8, 18 and 31 channel layouts**
- **Qualified MIL-PRF-29504/14 and /15 pin and socket termini and /03 dummy terminus**
- **Glenair signature SeaKing underwater fiber optic connectors for oil & gas applications**
- **MIL-PRF-64266 (NGCON) next-generation shipboard / aerospace fiber optics**

Product selection guide

Qualified MIL-PRF-29504/14 and /15 termini and MIL-PRF-28876 connectors and backshells are ready for deployment in shipboard and submarine applications. NGCON MIL-PRF-62466 is a new rear-release fiber optic system designed for naval and airframe applications. SeaKing is a harsh-environment underwater 10K PSI open-face fiber optic system.

Product No.	Description	Page No.
M29504 QUALIFIED FIBER OPTIC TERMINI FOR MIL-PRF-28876 CONNECTORS		
181-039	M29504/14 Fiber Optic Pin Terminus, Size 16 Long (Standard)	G-4
181-040	M29504/15 Fiber Optic Socket Terminus, Size 16 Long (Standard)	G-5
181-051	M29504/03 Fiber Optic Dummy Terminus, Size 16	G-4
181-054	M29504/14 Short Front Release Pin Terminus, Size 16	G-6
181-055	M29504/15 Short Front Release Socket Terminus, Size 16	G-7

MIL-PRF-28876 QUALIFIED FIBER OPTIC CONNECTORS AND BACKSHELL ASSEMBLIES				
Connector Type	**Backshell Type**	**MIL-Spec**	**Commercial**	**Page No.**
Wall Mount Receptacle	None	M28876/1	180-040-03	G-8
	Straight	M28876/2	180-040-13	G-8
	45°	M28876/3	180-040-23	G-8
	90°	M28876/4	180-040-33	G-8
Jam Nut Receptacle	None	M28876/11	180-040-04	G-12
	Straight	M28876/12	180-040-14	G-12
	45°	M28876/13	180-040-24	G-12
	90°	M28876/14	180-040-34	G-12
Plug	None	M28876/6	180-040-06	G-16
	Straight	M28876/7	180-040-16	G-16
	45°	M28876/8	180-040-26	G-16
	90°	M28876/9	180-040-36	G-16
In-Line Receptacle	None	N/A	180-040-05	G-20
	Straight	M28876/5	180-040-15	G-20

PANEL GASKETS, BACKSHELLS , ADAPTERS AND DUST COVERS FOR M28876 CONNECTORS		
189-179 / -144	O-Ring for Jam Nut Mount Receptacle Connectors	G-24
189-189	Jam Nut for MIL-PRF-28876 Style Receptacle Connectors	G-25
M28840/24	Mounting Gasket for use with MIL-PRF-28876 Connectors	G-26
930-006	Gasket for MIL-DTL-28840 and MIL-PRF-28876 Receptacle Connectors	G-27
189-113	Shrink Tubing and O-Rings for MIL-PRF-28876 Style Connectors	G-28
189-043	MIL-PRF-M28876 Style Banding Insert Retention Nut	G-29
189-032	Backshell Spacer for M28876 Style Connector	G-30
189-122	MIL-PRF-28876 Style Backnut Assembly	G-31
189-015	Environmental Banding Backshell	G-32
189-001	Environmental Backshell with Split Clamp	G-33
189-007	Environmental FiberCon Backshell	G-34
189-009	Environmental Banding / Molding Adapter Backshell	G-35
189-014	PEEK Convoluted Tubing Adapter	G-36
660-072 / -073	M28876/10 and M28876/15 Protective Covers	G-37
MIL-PRF-62466 NGCON FIBER OPTIC TERMINI		
181-043 / -078	Genderless Rear-Release Terminus / Dummy Terminus	G-39
MIL-PRF-62466 NGCON FIBER OPTIC CONNECTORS		
180-118 (06)	Plug Connector	G-40
180-118ASR	Alignment Sleeve Retainer (ASR)	G-41
180-118 (H7)	Wall Mount Receptacle Connector	G-42
180-118 (08)	Jam Nut Mount Receptacle	G-44
PIERSIDE FIBER OPTICS IAW NAVSEA 737971 AND 737972		
180-156ASR	Alignment Sleeve Retainer	G-47
180-156 (16)	Hermaphroditic Plug With Backshell / Strain Relief	G-48
180-157 (08), (13)	Jam nut receptacles	G-50
180-158 (08) (13)	Jam Nut Receptacles	G-52
SEAKING FIBER OPTIC		
FA09648	Overmolded CCP plug-to-plug jumper / breakout assemblies	G-56
FA09649	BCR or FCR Receptacle Breakout Assembly	G-58
FA09650	PBOF Point-To-Point Assembly With Straight, 45°, And 90° Options	G-60
FA09781	PBOF Breakout Plug Assembly With Straight, 45°, And 90° Options	G-62

DIMENSIONAL NOTES

- Catalog dimensions are subject to change without notice. Consult Glenair engineering for a controlled-release sales drawing.
- Metric dimensions appear in parentheses in diagrams and tables, based on 1 inch = 25.4 mm, for reference only.
- Unless otherwise specified, the following other dimensional tolerances apply:
- .xx = ± .03 (0.8) • .xxx = ± .015 (0.4) • Angles = ± 5°

GLENAIR SIGNATURE

FIBER OPTIC CONNECTION SYSTEMS

Rugged Fiber Optic CONNECTORS

NAVSEA-qualified MIL-PRF-28876 connectors and M29504/14 and /15 termini

Terminated and tested MIL-PRF-28876 fiber optic cable assembly

Qualified and Glenair commercial MIL-PRF-28876 fiber optic connectors and MIL-PRF-29504 termini—Navy approved, in stock, and ready for immediate shipment

M28876/11 jam nut receptacle

M28876/7 plug with backshell

M28876/2 receptacle with backshell

- **Connectors qualified to the complete requirements of MIL-PRF-28876**
- **2, 4, 6, 8, 18 and 31 channel layouts**
- **Backshells in straight, 45° and 90° configurations**
- **Corrosion-resistant and environmentally sealed**
- **Qualified mil-prf-29504/14 and /15 pin and socket termini and /03 dummy terminus**
- **Connectors, backshells and protective covers available for immediate, same-day shipment**

Qualified MIL-PRF-28876
Shipboard Fiber Optic Connection System

AVAILABLE CONNECTOR AND BACKSHELL ASSEMBLIES

Connector Type	Backshell Type	MIL-Spec	Commercial
Wall Mount Receptacle	None	M28876/1	180-040 (030
	Straight	M28876/2	180-040 (13)
	45°	M28876/3	180-040 (23)
	90°	M28876/4	180-040 (33)
In-Line Receptacle	None	N/A	180-040 (05)
	Straight	M28876/5	180-040 (15)
Plug	None	M28876/6	180-040 (06)
	Straight	M28876/7	180-040 (16)
	45°	M28876/8	180-040 (26)
	90°	M28876/9	180-040 (36)
Jam Nut Receptacle	None	M28876/11	180-040 (04)
	Straight	M28876/12	180-040 (14)
	45°	M28876/13	180-040 (24)
	90°	M28876/14	180-040 (34)

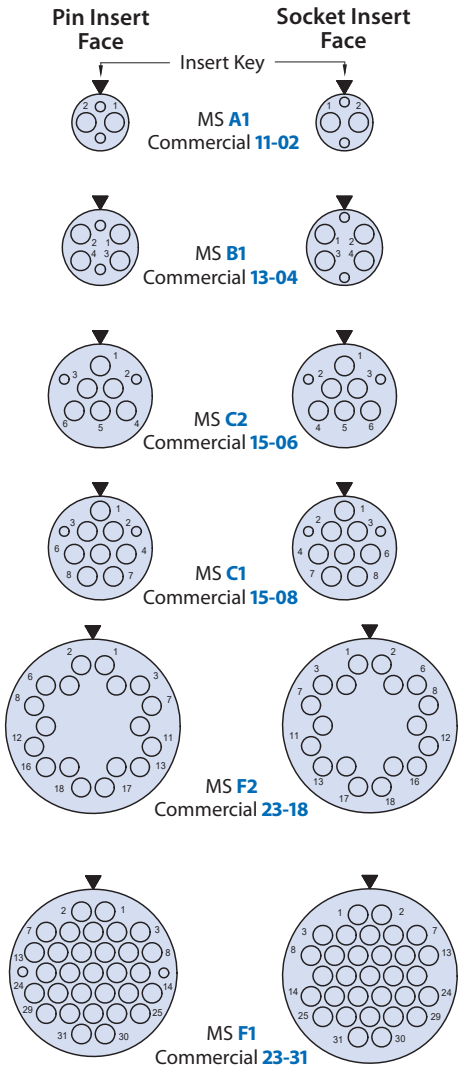
TEST DESCRIPTION	PERFORMANCE REQUIREMENTS/ SPECIFICATIONS
Optical Insertion Loss, Multimode	-0.3 dB Typical (62.5/125)
Optical Insertion Loss, Singlemode	-0.3 dB Typical (9/125)
Optical Back Reflection, Singlemode	Better than -40 dB - PC Polish • Better than -50 dB - Enhanced PC Polish
Operating Temperature	-28°C to +65°C (MIL-Spec Epoxy and Cable) -55°C to +125°C (alternative Epoxy and Cable)
Temperature (Thermal) Shock	-40°C to +70°C, 5 Cycles
Temperature Cycling	-28°C to +65°C, 5 Cycles
Temperature/Humidity Cycling	-10°C to +65°C, 10 Cycles, 240 hours, 98% RH
Temperature Life Aging	+110°C, 240 hours, Dry Air
Mating Durability	500 cycles
Vibration - Sinusoidal	10 g Peak, 5-500 Hz sin./ 10.2 g RMS, 50-2000 Hz random
Impact	8 Drops from 8 feet
Crush Resistance	281 lbs, 7 Cycles
Cable Pull Out Force - Termini	Termini: 22 lbs min for 1 minute Connector: 162 lbs min for 10 minutes
Fluid Immersion	Turbine Fuel, Isopropyl Alcohol, Hydraulic Fluid, Lubricating Oil, Coolant, Tap- and seawater, 24 hrs
Water Pressure	32 feet for 48 hours at +10°C to +35°C
Mechanical Shock (High Impact)	MIL-S-901, Grade A, Type B, Class I
Corrosion Resistance (Salt Spray)	500 hours
Sand and Dust	12 hours
Flammability	0.75 inch flame for 10 sec. mated, 1.50 inch flame for 60 sec. unmated

*Performance Specifications/Requirements based on the use of MIL-PRF-24792 Epoxy and MIL-PRF-85045 Simplex and Breakout Shipboard Optical Fiber.

QUALIFIED FIBER OPTIC TERMINI

Type	Military Part Number	A Dia (Microns)	Typical Fiber Type
Pin Termini	M29504/14-4131C	126.0	Multimode
	M29504/14-4132C	127.0	Multimode
	M29504/14-4135C	142.0	Multimode
Socket Termini	M29504/15-4171C	126.0	Multimode
	M29504/15-4172C	127.0	Multimode
	M29504/15-4175C	142.0	Multimode
Dummy Terminus	M29504/03-4038		

SHELL SIZE / INSERT ARRANGEMENTS



MIL-PRF-28876 Qualified Fiber Optics • 181-039 / M29504/14 pin terminus • 181-051 / M29504/03 dummy terminus

MATERIAL AND FINISH

- Ferrule: Zirconia Ceramic
- Terminus Assembly: Stainless Steel/ Passivate
- Retaining Clip, Spring Washers: BeCu Alloy
- Seal: Fluorosilicone
- Crimp Sleeve: Brass Alloy/Nickel

NOTES

- Crimp sleeve is supplied with terminus and may be ordered separately (see Tools and Accessories table). For terminus less crimp sleeve, omit **C** from end of part number.
- See Glenair GAP-036 for termination procedure and assembly tools.

TOOLS AND ACCESSORIES	
Part Number	**Description**
265-008	Crimp Sleeve Ø2.4mm Max Jacket (Mil-Spec Type)
182-012	Crimp Tool
182-013	Insertion Tool, Straight
182-014	Insertion Tool, 90°
182-015	Removal Tool
182-035	Hand Polishing Tool

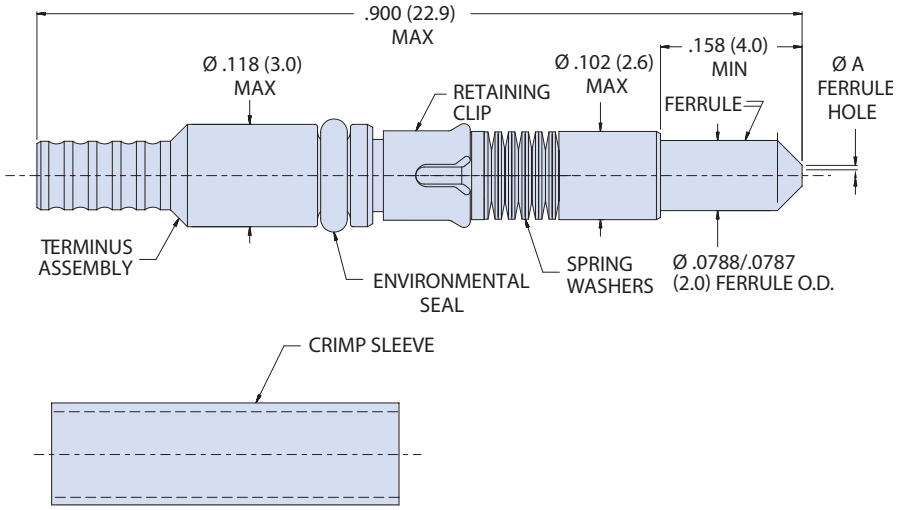
MATERIAL AND FINISH

- Terminus Body: Stainless Steel/ Passivate
- Retaining Clip: BeCu Alloy
- Seal: Fluorosilicone

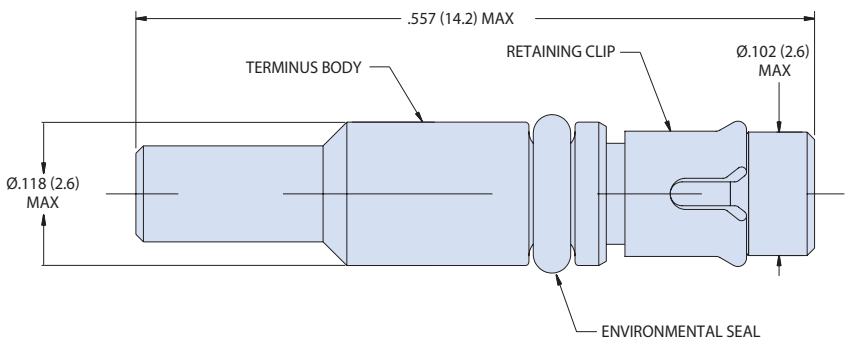
NOTES

- See Glenair GAP-036 for assembly tools and procedures.

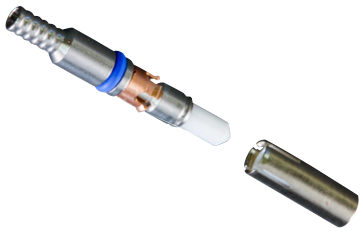
PIN TERMINI - HOW TO ORDER				
Mil-Spec Part Number	**ØA (Microns)**	**Fiber Type**	**Fiber Size Core/Cladding (Microns)**	**Commercial Part Number**
M29504/14-4140C	125.0	Singlemode	9/125	181-039-1250C
Not listed in Mil-Spec	125.5	Singlemode	9/125	181-039-1255C
M29504/14-4141C	126.0	Singlemode	9/125	181-039-1260C
M29504/14-4131C	126.0	Multimode	50/125, 62.5/125	181-039-1260C
M29504/14-4132C	127.0	Multimode	50/125, 62.5/125	181-039-1270C
M29504/14-4135C	142.0	Multimode	100/140	181-039-1420C



DUMMY TERMINUS - HOW TO ORDER	
Mil-Spec Part Number	**Commercial Part Number**
M29504/03-4038	181-051



MIL-PRF-28876 Qualified Fiber Optics
181-040 M29504/15 socket terminus



MATERIAL AND FINISH

- Alignment Sleeve, Ferrule: Zirconia Ceramic
- Protective cover: BeCu Alloy / Nickel
- Terminus Assembly: Stainless Steel / Passivate
- Retaining Clip: BeCu Alloy
- Seal: Fluorosilicone
- Crimp Sleeve: Brass Alloy / Nickel

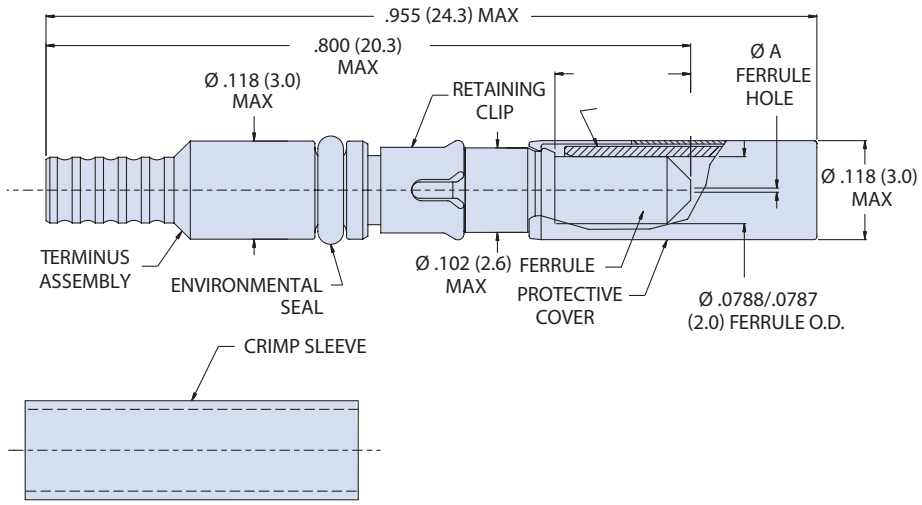
NOTES

- Crimp sleeve is supplied with terminus and may be ordered separately (see table). For terminus less crimp sleeve omit **C** from end of part number.
- Alignment sleeve assembly is supplied with terminus assembly and may be ordered separately (see table). For terminus less alignment sleeve assembly, add **N** to end of part number (e.g. 181-040-1260C**N**).
- See Glenair GAP-036 for termination procedure and assembly tools.

TOOLS AND ACCESSORIES	
Part Number	**Description**
265-008	Crimp Sleeve Ø 2.4mm Max Jacket (Mil-Spec Type)
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
182-035	Hand Polishing Tool

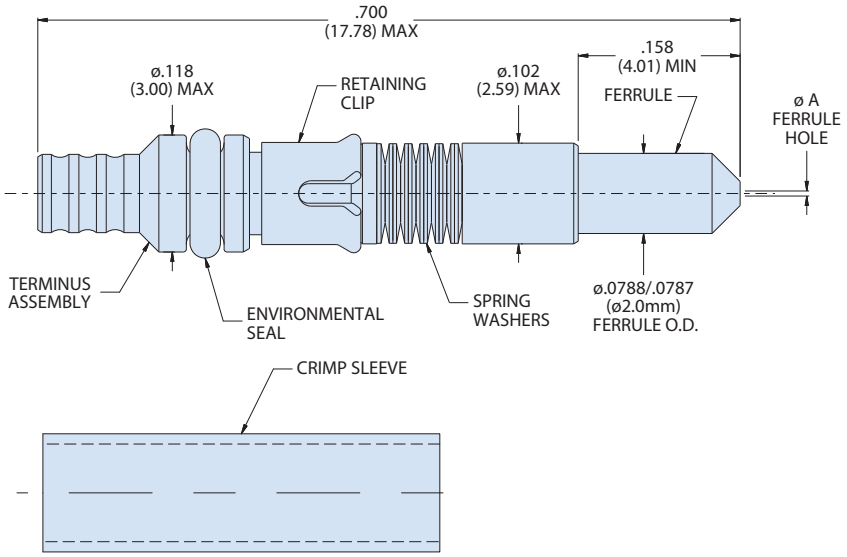
SOCKET TERMINI - HOW TO ORDER				
Mil-Spec Part Number	**ØA (Microns)**	**Fiber Type**	**Fiber Size Core/Cladding (Microns)**	**Commercial Part Number**
M29504/15-4180C	125.0	Singlemode	9/125	181-040-1250C
Not listed in Mil-Spec	125.5	Singlemode	9/125	181-040-1255C
M29504/15-4181C	126.0	Singlemode	9/125	181-040-1260C
M29504/15-4171C	126.0	Multimode	50/125, 62.5/125	181-040-1260C
M29504/15-4172C	127.0	Multimode	50/125, 62.5/125	181-040-1270C
M29504/15-4175C	142.0	Multimode	100/140	181-040-1420C

Consult factory for additional sizes and MIL-SPEC QPL status.



MIL-PRF-28876 Qualified Fiber Optics
181-054 / M29504/14 short size 16 front release pin terminus

ASSEMBLY DASH NUMBER				
Mil-Spec Part Number	ØA (Microns)	Fiber Type	Fiber Size Core/Cladding (Microns)	Commercial Part Number
M29504/14-4160C	125.0	Singlemode	9/125	181-054-1250C
N/A	125.5	Singlemode	9/125	181-054 -1255C
M29504/14-4161C	126.0	Singlemode	9/125	181-054-1260C
M29504/14-4151C		Multimode	50/125, 62.5/125	181-054-1260C
M29504/14-4152C	127.0	Multimode	50/125, 62.5/125	181-054-1270C
M29504/14-4155C	142.0	Multimode	100/140	181-054 -1420C



MATERIAL AND FINISH

- Ferrule: Zirconia Ceramic
- Terminus Assembly: Stainless Steel/ Passivate
- Retaining Clip, Spring Washers: BeCu Alloy
- Seal: Fluorosilicone
- Crimp Sleeve: Brass Alloy/Nickel

NOTES

- Crimp sleeve is supplied with terminus and may be ordered separately (see tablel). For terminus less crimp sleeve, omit **C** from end of part number.
- Pin terminus is designed to meet the general requirements of MIL-PRF-29504/14 (short terminus), and is for use with Glenair 180-040 MIL-PRF-28876 style connectors. See 181-040 (long terminus) and 181-055 (short terminus) for mating socket termini.
- See Glenair GAP-046 for termination procedure and assembly tools.

TOOLS AND ACCESSORIES	
Part Number	Description
265-008	Crimp Sleeve Ø2.4mm Max Jacket (Mil-Spec Type)
182-012	Crimp Tool
182-013	Insertion Tool, Straight
182-014	Insertion Tool, 90°
182-015	Removal Tool
182-035	Hand Polishing Tool

MIL-PRF-28876 Qualified Fiber Optics
181-055 / M29504/15 short size 16 front release socket terminus

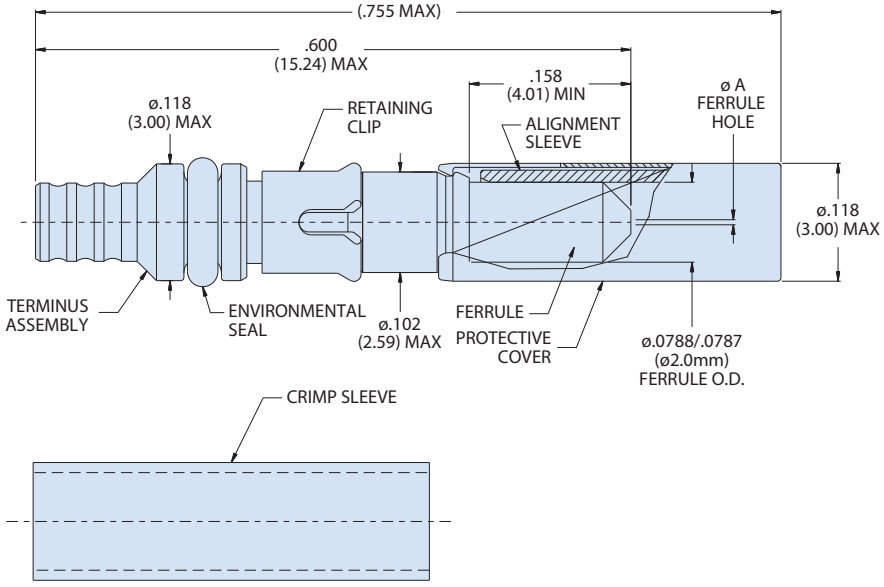
ASSEMBLY DASH NUMBER				
Mil-Spec Part Number	ØA (Microns)	Fiber Type	Fiber Size Core/Cladding (Microns)	Commercial Part Number
M29504/14-4160C	125.0	Singlemode	9/125	181-055-1250C
N/A	125.5	Singlemode	9/125	181-055-1255C
M29504/14-4161C	126.0	Singlemode	9/125	181-055-1260C
M29504/14-4151C		Multimode	50/125, 62.5/125	181-055-1260C
M29504/14-4152C	127.0	Multimode	50/125, 62.5/125	181-055-1270C
M29504/14-4155C	142.0	Multimode	100/140	181-055-1420C

MATERIAL AND FINISH

- Alignment Sleeve, Ferrule: Zirconia Ceramic
- Protective cover: BeCu Alloy / Nickel
- Terminus Assembly: Stainless Steel / Passivate
- Retaining Clip: BeCu Alloy
- Seal: Fluorosilicone
- Crimp Sleeve: Brass Alloy / Nickel

NOTES

- Crimp sleeve is supplied with terminus and may be ordered separately (see table). For terminus less crimp sleeve omit **C** from end of part number.
- Alignment sleeve assembly is supplied with terminus assembly and may be ordered separately (see table).
- Socket terminus is designed to meet the general requirements of MIL-PRF-29504/15 (short terminus), and is for use with Glenair 180-040 MIL-PRF-28876 style connectors. See 181-039 (long terminus) and 181-054 (short terminus) for mating pin termini.
- See Glenair GAP-046 for termination procedure and assembly tools.



TOOLS AND ACCESSORIES	
Part Number	Description
265-008	Crimp Sleeve Ø 2.4mm Max Jacket (Mil-Spec Type)
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
182-035	Hand Polishing Tool

MIL-PRF-28876 Wall-Mount Receptacle
180-040 (03, 13, 23, 33) • M28876 /1, /2, /3, /4

Receptacle without backshell

Receptacle with straight backshell

MATERIAL AND FINISH

- Insert: Al alloy/anodize
- Strain relief hardware: Al alloy/chem film
- Seals: fluorosilicone
- Misc. Hardware: stainless steel/passivate

NOTES

- Termini (not supplied with connector):
  - 181-039 = Terminus, pin, M29504/14 style
  - 181-040 = Terminus, skt, M29504/15 style
  - 181-051 = Terminus, dummy, M29504/03 style
- Backnut retained using thread-locking compound
- Dust covers (not supplied with connectors):
  - 660-072 = plug cover, M28876/10 style
  - 660-073 = recp cover, M28876/15 style
- Operating temperature range: -55°C to +125°C.
- See Glenair drawing 187-166 for stainless steel option.

HOW TO ORDER GLENAIR COMMERCIAL 180-040 WALL MOUNT RECEPTACLES

Sample Part Number	180-040	NF	03	-15	-08	-1	-1	P	N
Basic Number	Glenair Commercial Equivalent MIL-PRF-28876 Type Fiber Optic Wall-Mount Receptacle Connectors								
Material/Finish	See Material and Finish table								
Connector Type	**03**, **13**, **23**, **33**. See Connector Type table								
Shell Size	See Shell Size/Insert Arrangements table								
Insert Arrangement	See Shell Size/Insert Arrangements table								
Backshell Designator	**-1**, **-2**, **-3**, See Backshell Designator table (Omit for **03** non-backshell configuration)								
Keying Position	**-1** thru **-6**. See Keying Position table								
Terminus Style	**P** = Pin **S** = Socket								
Rear Backnut Option (for 03 non-backshell config.)	**Omit** = supplied with standard backnut **B** = supplied with banding backnut (See Banding Backnut table) **N** = supplied less backnut (to accommodate alternative accessory)								

HOW TO ORDER MIL-DTL28876 WALL MOUNT RECEPTACLES

Sample Part Number	M28876/1	C	1	1	P	1	N	T
Basic Number	Military QPL M28876/1 through /14 Fiber Optic Wall-Mount Receptacle Connectors							
Shell Size	See Shell Size/Insert Arrangements table							
Insert Arrangement	See Shell Size/Insert Arrangements table							
Backshell Designator	**-1**, **-2**, **-3**, See Backshell Designator table (Omit for **/1** non-backshell configuration)							
Terminus Style	**P** = Pin **S** = Socket							
Keying Position	See Keying Position table							
Rear Backnut Option (for /1 non-backshell config.)	**N** = Not Supplied with Backnut **Omit** = Supplied with Backnut							
Materials and Finish	**T** = Tin-Zinc, Bronze-Gold Over Aluminum Alloy **Omit** = Hard Anodize, Black with PTFE Over Aluminum Alloy							

CONNECTOR TYPE

Connector Type	Backshell Type	MIL-Spec	Commercial
Wall Mount Receptacle	None	M28876/1	180-040 03
	Straight	M28876/2	180-040 13
	45°	M28876/3	180-040 23
	90°	M28876/4	180-040 33

MIL-PRF-28876 Wall-Mount Receptacle
180-040 (03, 13, 23, 33) • M28876 /1, /2, /3, /4

MATERIAL AND FINISH (COMMERCIAL 180-040 SERIES)

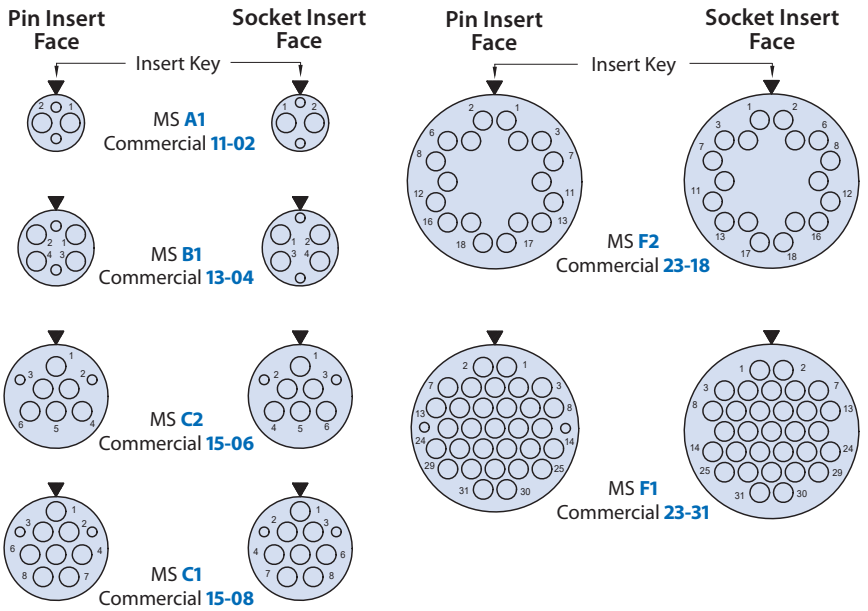
Code	Material	Finish Description
GB4	Aluminum Alloy	Hard Anodize, Black with PTFE
ME		Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZR		Zinc-Nickel, Black

BACKSHELL DESIGNATOR

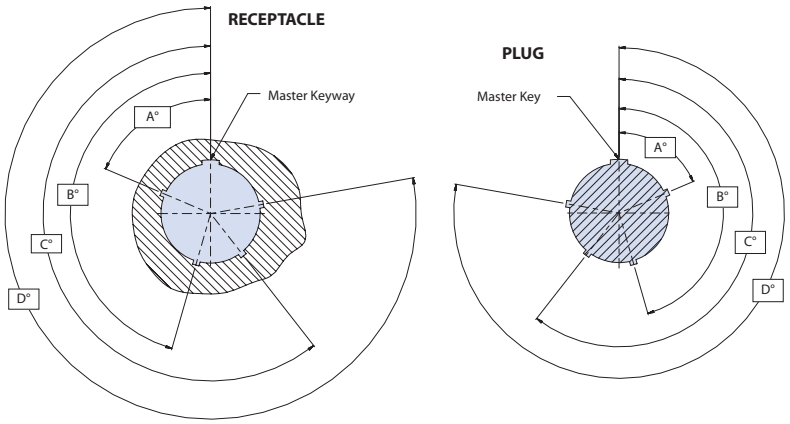
Backshell Designator	Max Allowable Cable Diameter by Shell Size			
	A (11)	B (13)	C (15)	F (23)
-1	.250 (6.4)	.285 (7.2)	.500 (12.7)	.866 (22.0)
-2	.346 (8.8)	.346 (8.8)	.250 (6.4)	1.000 (25.4)
-3	—	.453 (11.5)	.375 (9.5)	.600 (15.2)

Shell size 13, backshell designator 3 connector supplied less boot.

SHELL SIZE / INSERT ARRANGEMENTS



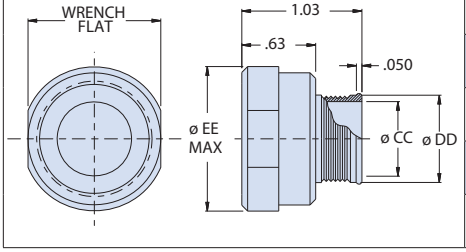
KEYING POSITION



Shell Size	Key Position	A°	B°	C°	D°
11 and 13	0*	-	-	-	-
	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	0*	-	-	-	-
	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

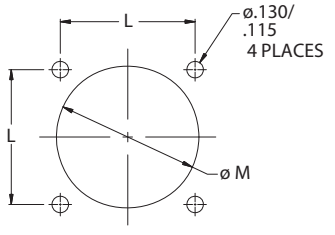
*0 indicates universal keying arrangement and is available on Series 180-040 plug connector only.

BANDING BACKNUT



Shell Size	ØCC	ØDD	ØEE
11 (A)	.350 (8.89)	.410 (10.41)	1.010 (25.65)
13 (B)	.460 (11.68)	.520 (13.21)	1.135 (28.83)
15 (C)	.645 (16.38)	.705 (17.91)	1.260 (32.00)
23 (F)	1.045 (26.54)	1.105 (28.07)	1.698 (43.13)

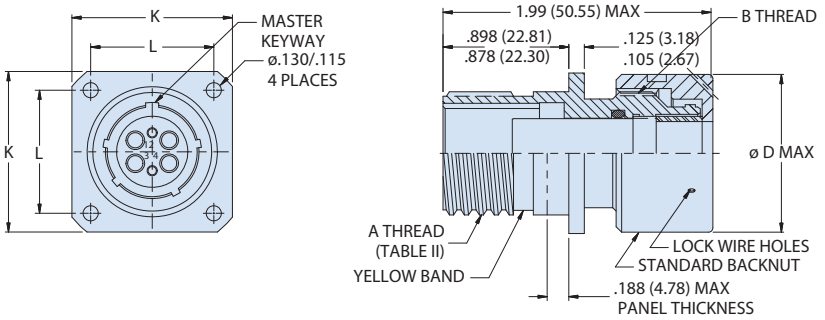
WALL MOUNT RECOMMENDED PANEL CUTOUT



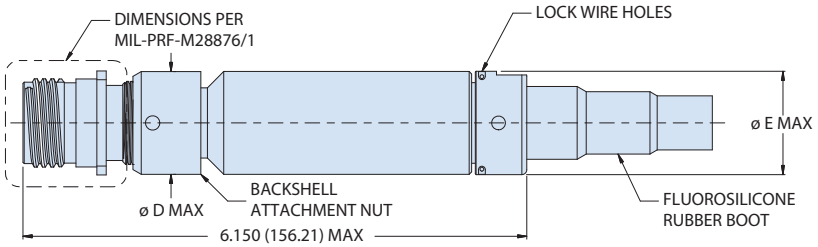
Shell Size	Ø M ± .005 (0.13)	L
11 (A)	.812 (20.6)	.750 (19.1)
13 (B)	.937 (23.8)	.843 (21.4)
15 (C)	1.124 (28.6)	.968 (24.6)
23 (F)	1.562 (39.7)	1.281 (32.5)

MIL-PRF-28876 Wall-Mount Receptacle
180-040 (03, 13, 23, 33) • M28876 /1, /2, /3, /4

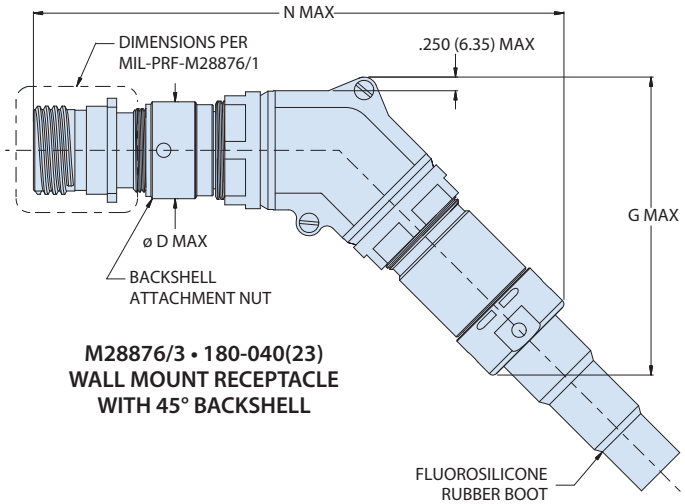
WALL MOUNT RECEPTACLE DIMENSIONS



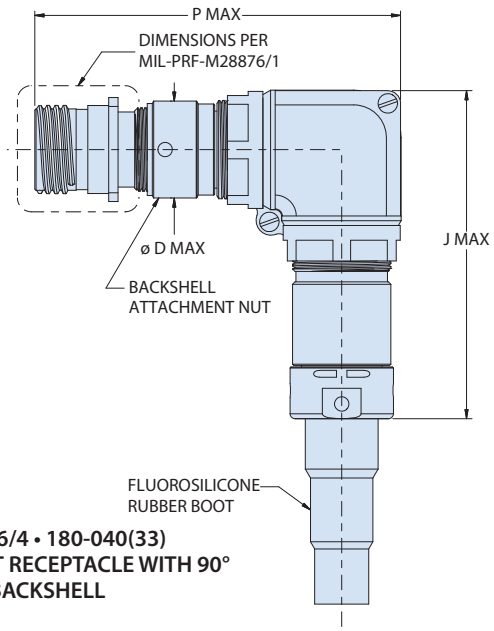
M28876/1 • 180-040(03)
WALL MOUNT RECEPTACLE WITHOUT BACKSHELL



M28876/2 • 180-040(13)
WALL MOUNT RECEPTACLE WITH STRAIGHT BACKSHELL



M28876/3 • 180-040(23)
WALL MOUNT RECEPTACLE WITH 45° BACKSHELL



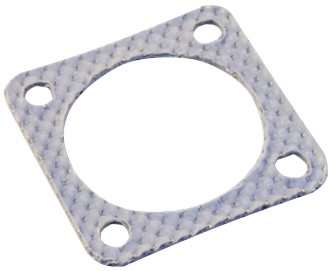
M28876/4 • 180-040(33)
WALL MOUNT RECEPTACLE WITH 90° BACKSHELL

Shell Size	A Thread	B Thread Class 2B	ØD Max	ØE Max	G Max.	J Max.	K ±.020	L	N Max.	P Max.
11 (A)	.7500 .1P-.2L-DS	.7500 -20 UNEF	.960 (24.4)	.960 (24.4)	3.540 (89.9)	4.250 (108.0)	1.022 (26.0)	.750 (19.1)	6.150 (156.2)	4.250 (108.0)
13 (B)	.8750 .1P-.2L-DS	.8750 -20 UNEF	1.085 (27.6)	1.085 (27.6)	3.580 (90.9)	4.250 (108.0)	1.137 (28.9)	.843 (21.4)	6.220 (158.0)	4.250 (108.0)
15 (C)	1.0625 .1P-.2L-DS	1.0000 -20 UNEF	1.255 (31.9)	1.257 (31.9)	3.850 (97.8)	4.500 (114.3)	1.257 (31.9)	.968 (24.6)	6.500 (165.1)	4.700 (119.4)
23 (F)	1.5000 .1P-.2L-DS	1.4375 -18 UNEF	1.695 (43.1)	1.763 (44.8)	5.000 (127.0)	5.000 (127.0)	1.718 (43.6)	1.281 (32.5)	7.500 (190.5)	5.000 (127.0)

MIL-PRF-28876 Wall-Mount Receptacle
181-040 / M29504 Termini • 930-006 / M28840/24 Panel Gasket

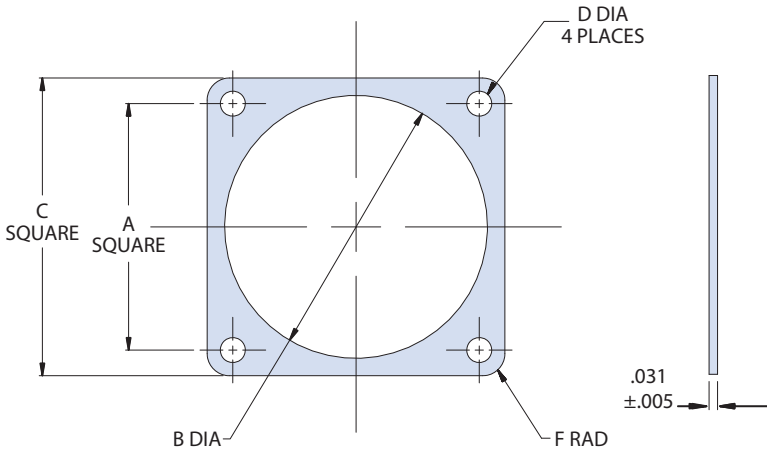
PIN TERMINI - HOW TO ORDER				
Mil-Spec Part Number	ØA	Fiber Type	Fiber Size Core/Cladding	Commercial Part Number
M29504/14-4140C	125.0µ	SMF	9/125µm	181-039-1250C
Not listed in Mil-Spec	125.5µ	SMF	9/125µm	181-039-1255C
M29504/14-4141C	126.0µ	SMF	9/125µm	181-039-1260C
M29504/14-4131C	126.0µ	MMF	50/125, 62.5/125µm	181-039-1260C
M29504/14-4132C	127.0µ	MMF	50/125, 62.5/125µ	181-039-1270C
M29504/14-4135C	142.0µ	MMF	100/140µ	181-039-1420C

SOCKET TERMINI - HOW TO ORDER				
Mil-Spec Part Number	ØA	Fiber Type	Fiber Size Core/Cladding	Commercial Part Number
M29504/15-4180C	125.0µ	SMF	9/125µ	181-040-1250C
Not listed in Mil-Spec	125.5µ	SMF	9/125µ	181-040-1255C
M29504/15-4181C	126.0µ	SMF	9/125µ	181-040-1260C
M29504/15-4171C	126.0µ	MMF	50/125, 62.5/125µ	181-040-1260C
M29504/15-4172C	127.0µ	MMF	50/125, 62.5/125µ	181-040-1270C
M29504/15-4175C	142.0µ	MMF	100/140µ	181-040-1420C

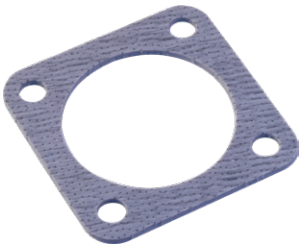


HOW TO ORDER			
Sample Part Number	930-006	F	13
Basic Number	Commercial square flange wall mount receptacle panel gasket		
Material Symbol	See Material table		
Shell Size	See Shell Size table		

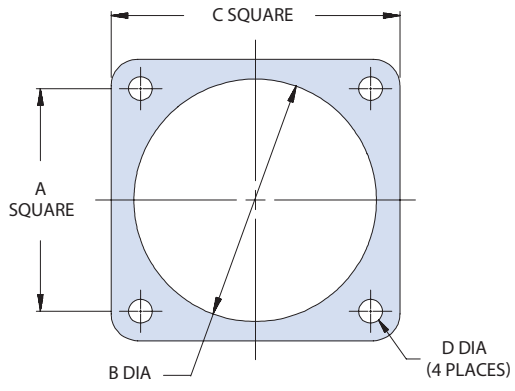
MATERIAL	
Symbol	Material Description
F	Fluorosilicone
M	Silver Plated Glass Filled Silicone (EMI)
N	Neoprene



SHELL SIZE					
Shell Size	A ± .010	Ø B +.016 -.000	C +.016 -.000	Ø D ± .010	F Radius ± .010
11 (A)	.750	.750	1.023	.120	.141
13 (B)	.843	.875	1.138		
15 (C)	.968	1.062	1.258		
23 (F)	1.281	1.500	1.718		.188



HOW TO ORDER			
Sample Part Number	M28840/24	B	A
Basic Number	M28840/24 MIL-PRF square flange wall mount receptacle panel gasket		
Shell Size	See Shell Size table		
Material Designator	A - Fluorosilicone B - EMI		



SHELL SIZE				
Shell Size	A	B Dia.	C	D Dia.
11 (A)	.760 (19.30) .740 (18.80)	.766 (19.46) .750 (19.05)	1.039 (26.39) 1.023 (25.98)	.130 (3.30) .110 (2.79)
13 (B)	.853 (21.67) .833 (21.16)	.891 (22.63) .875 (22.22)	1.154 (29.31) 1.138 (28.90)	
15 (C)	.978 (24.84) .958 (24.33)	1.078 (27.38) 1.062 (26.97)	1.274 (32.36) 1.258 (31.95)	
23 (F)	1.291 (32.79) 1.271 (32.28)	1.516 (38.51) 1.500 (38.10)	1.734 (44.04) 1.718 (43.64)	

MIL-PRF-28876 Jam Nut Receptacle
180-040 (04, 14, 24, 34) • M28876 /11, /12, /13, /14

Receptacle without backshell

Receptacle with straight backshell

MATERIAL AND FINISH

- Insert: Al alloy/anodize
- Strain relief hardware: Al alloy/chem film
- Seals: fluorosilicone
- Misc. Hardware: stainless steel/passivate

NOTES

- Termini (not supplied with connector):
  - 181-039 = Terminus, pin, M29504/14 style
  - 181-040 = Terminus, skt, M29504/15 style
  - 181-051 = Terminus, dummy, M29504/03 style
- Backnut retained using thread-locking compound
- Dust covers (not supplied with connectors):
  - 660-072 = plug cover, M28876/10 style
  - 660-073 = recp cover, M28876/15 style
- Operating temperature range: -55°C to +125°C.
- See Glenair drawing 187-166 for stainless steel option.

HOW TO ORDER GLENAIR COMMERCIAL 180-040 JAM NUT RECEPTACLES

Sample Part Number	180-040	NF	04	-15	-08	-1	-1	P	N
Basic Number	Glenair Commercial Equivalent MIL-PRF-28876 Type Fiber Optic Jam Nut Receptacle Connectors								
Material/Finish	See Material and Finish table								
Connector Type	**04**, **14**, **24**, **34**. See Connector Type table								
Shell Size	See Shell Size/Insert Arrangements table								
Insert Arrangement	See Shell Size/Insert Arrangements table								
Backshell Designator	**-1**, **-2**, **-3**, See Backshell Designator table (Omit for **04** non-backshell configuration)								
Keying Position	**-1** thru **-6**. See Keying Position table								
Terminus Style	**P** = Pin **S** = Socket								
Rear Backnut Option (for 04 non-backshell config.)	**Omit** = supplied with standard backnut **B** = supplied with banding backnut (See Banding Backnut table) **N** = supplied less backnut (to accommodate alternative accessory)								

HOW TO ORDER MIL-DTL28876 JAM NUT RECEPTACLES

Sample Part Number	M28876/1	C	1	1	P	1	N	T
Basic Number	Military QPL M28876/11 through /14 Fiber Optic Jam Nut Receptacle Connectors							
Shell Size	See Shell Size/Insert Arrangements table							
Insert Arrangement	See Shell Size/Insert Arrangements table							
Backshell Designator	**-1**, **-2**, **-3**, See Backshell Designator table (Omit for **/11** non-backshell configuration)							
Terminus Style	**P** = Pin **S** = Socket							
Keying Position	See Keying Position table							
Rear Backnut Option (for /1 non-backshell config.)	**N** = Not Supplied with Backnut **Omit** = Supplied with Backnut							
Materials and Finish	**T** = Tin-Zinc, Bronze-Gold Over Aluminum Alloy **Omit** = Hard Anodize, Black with PTFE Over Aluminum Alloy							

CONNECTOR TYPE

Connector Type	Backshell Type	MIL-Spec	Commercial
Jam Nut Receptacle	None	M28876/11	180-040 04
	Straight	M28876/12	180-040 14
	45°	M28876/13	180-040 24
	90°	M28876/14	180-040 34

MIL-PRF-28876 Jam Nut Receptacle
180-040 (04, 14, 24, 34) • M28876 /11, /12, /13, /14

MATERIAL AND FINISH (COMMERCIAL 180-040 SERIES)

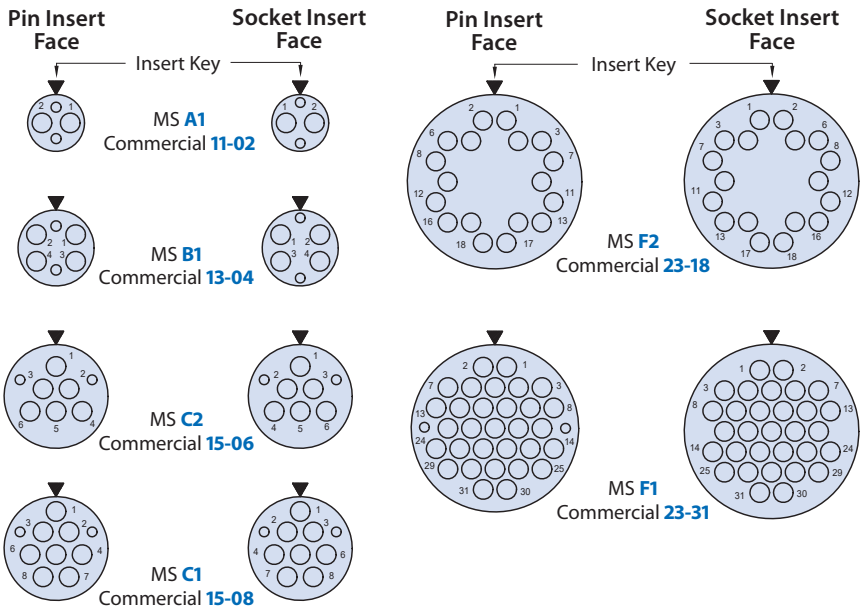
Code	Material	Finish Description
GB4	Aluminum Alloy	Hard Anodize, Black with PTFE
ME		Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZR		Zinc-Nickel, Black

BACKSHELL DESIGNATOR

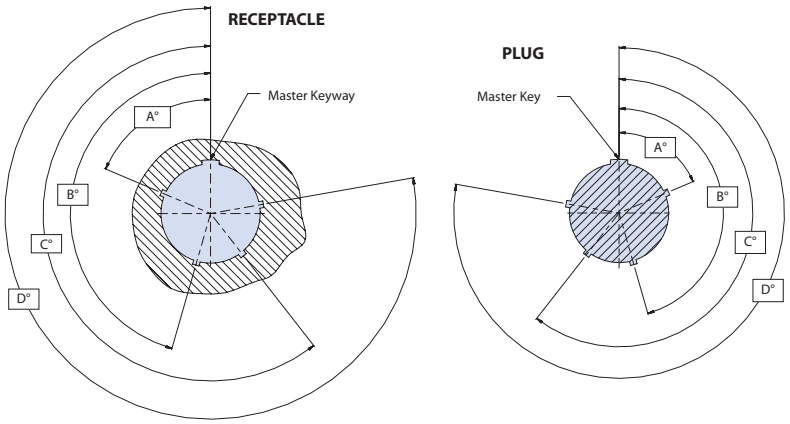
Backshell Designator	Max Allowable Cable Diameter by Shell Size			
	A (11)	B (13)	C (15)	F (23)
1	.250 (6.4)	.285 (7.2)	.500 (12.7)	.866 (22.0)
2	.346 (8.8)	.346 (8.8)	.250 (6.4)	1.000 (25.4)
3	—	.453 (11.5)	.375 (9.5)	.600 (15.2)

Shell size 13, backshell designator 3 connector supplied less boot.

SHELL SIZE / INSERT ARRANGEMENTS



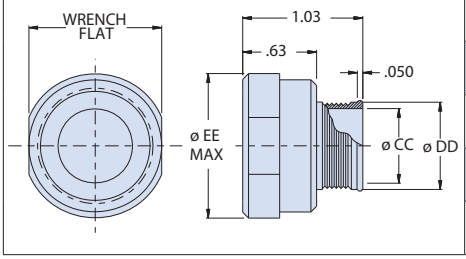
KEYING POSITION



Shell Size	Key Position	A°	B°	C°	D°
11 and 13	0*	-	-	-	-
	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	0*	-	-	-	-
	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

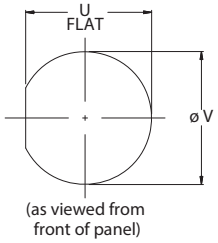
*0 indicates universal keying arrangement and is available on Series 180-040 plug connector only.

BANDING BACKNUT



Shell Size	ØCC	ØDD	ØEE
11 (A)	.350 (8.89)	.410 (10.41)	1.010 (25.65)
13 (B)	.460 (11.68)	.520 (13.21)	1.135 (28.83)
15 (C)	.645 (16.38)	.705 (17.91)	1.260 (32.00)
23 (F)	1.045 (26.54)	1.105 (28.07)	1.698 (43.13)

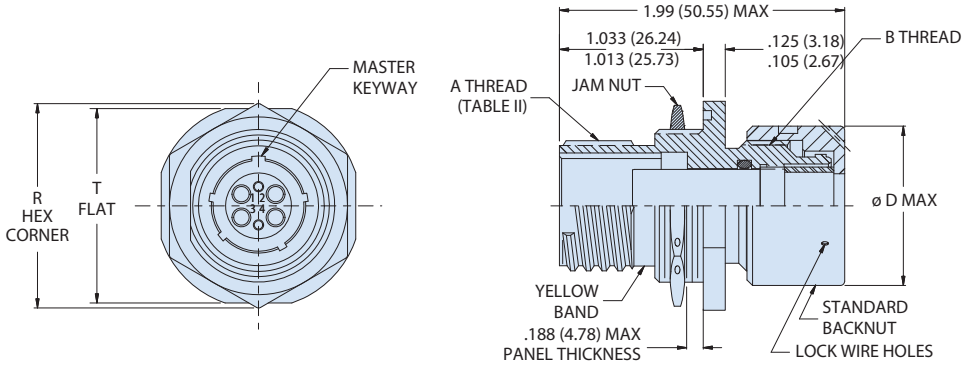
JAM NUT RECOMMENDED PANEL CUTOUT



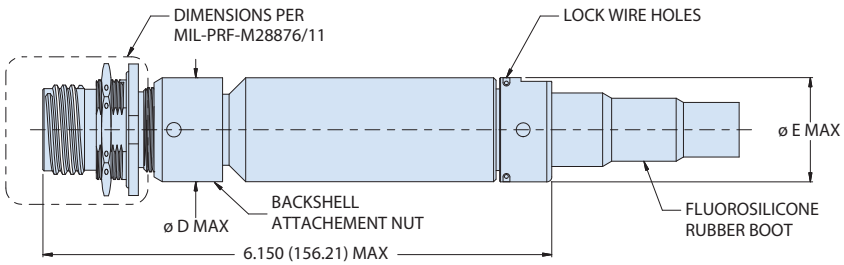
Shell Size	U ± .005 (0.13)	Ø V ± .005 (0.13)
11 (A)	.848 (21.54)	.885 (22.48)
13 (B)	.973 (24.71)	1.010 (25.65)
15 (C)	1.160 (29.46)	1.198 (30.43)
23 (F)	1.593 (40.46)	1.630 (41.40)

MIL-PRF-28876 Jam Nut Receptacle
180-040 (04, 14, 24, 34) • M28876 /11, /12, /13, /14

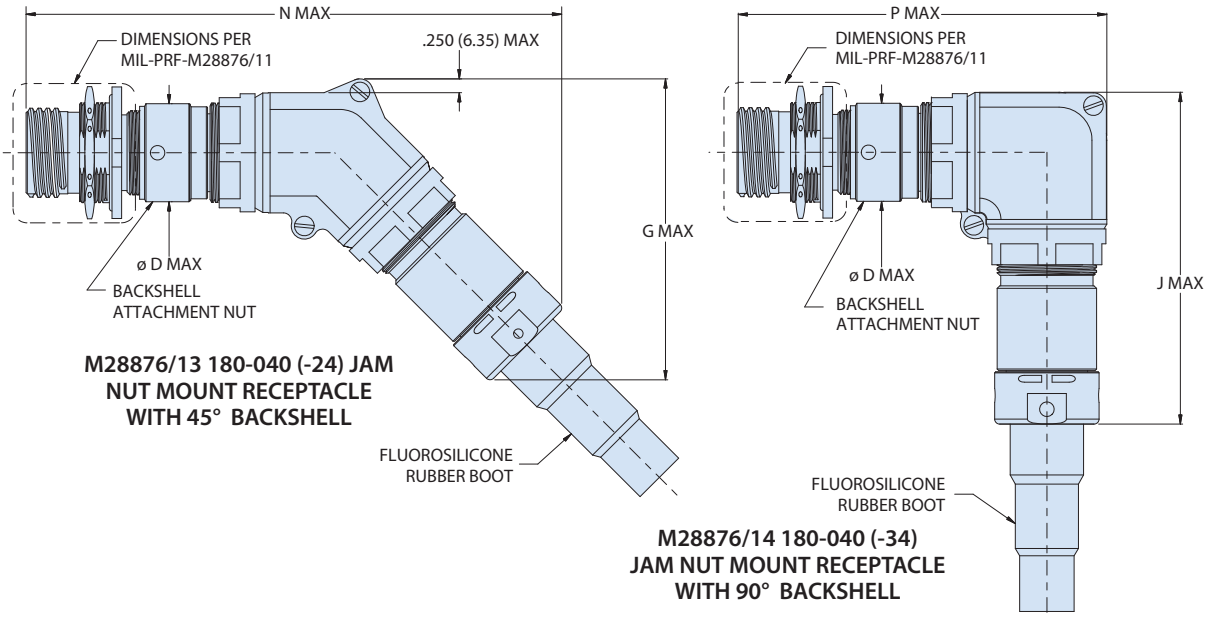
JAM NUT RECEPTACLE DIMENSIONS



M28876/11 • 180-040 (-04)
JAM NUT MOUNT RECEPTACLE WITHOUT BACKSHELL



M28876/12 • 180-040 (-14) JAM NUT MOUNT RECEPTACLE WITH STRAIGHT BACKSHELL



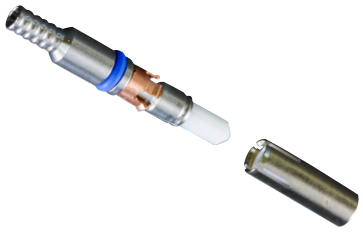
M28876/13 180-040 (-24) JAM NUT MOUNT RECEPTACLE WITH 45° BACKSHELL

M28876/14 180-040 (-34) JAM NUT MOUNT RECEPTACLE WITH 90° BACKSHELL

Shell Size	A Thread	B Thread Class 2B	ØD Max	ØE Max	G Max.	J Max.	N Max.	P Max.	R Max.	T ± .010 (.25)
11 (A)	.7500 .1P-.2L-DS	.7500 -20 UNEF	.960 (24.4)	.960 (24.4)	3.540 (89.9)	4.250 (108.0)	6.150 (156.2)	4.250 (108.0)	1.290 (32.77)	1.264 (32.11)
13 (B)	.8750 .1P-.2L-DS	.8750 -20 UNEF	1.085 (27.6)	1.085 (27.6)	3.580 (90.9)	4.250 (108.0)	6.220 (158.0)	4.250 (108.0)	1.435 (36.45)	1.389 (35.28)
15 (C)	1.0625 .1P-.2L-DS	1.0000 -20 UNEF	1.255 (31.9)	1.257 (31.9)	3.850 (97.8)	4.500 (114.3)	6.500 (165.1)	4.700 (119.4)	1.650 (41.91)	1.577 (40.06)
23 (F)	1.5000 .1P-.2L-DS	1.4375 -18 UNEF	1.695 (43.1)	1.763 (44.8)	5.000 (127.0)	5.000 (127.0)	7.500 (190.5)	5.000 (127.0)	2.093 (53.16)	2.004 (50.90)

MIL-PRF-28876 Jam Nut Receptacle Termini, Tools, and Accessories

PIN TERMINI - HOW TO ORDER				
Mil-Spec Part Number	ØA	Fiber Type	Fiber Size Core/Cladding	Commercial Part Number
M29504/14-4140C	125.0µ	Singlemode	9/125µ	181-039-1250C
Not listed in Mil-Spec	125.5µ	Singlemode	9/125µ	181-039-1255C
M29504/14-4141C	126.0µ	Singlemode	9/125µ	181-039-1260C
M29504/14-4131C	126.0µ	Multimode	50/125, 62.5/125µ	181-039-1260C
M29504/14-4132C	127.0µ	Multimode	50/125, 62.5/125µ	181-039-1270C
M29504/14-4135C	142.0µ	Multimode	100/140µ	181-039-1420C



SOCKET TERMINI - HOW TO ORDER				
Mil-Spec Part Number	ØA	Fiber Type	Fiber Size Core/Cladding	Commercial Part Number
M29504/15-4180C	125.0µ	Singlemode	9/125µ	181-040-1250C
Not listed in Mil-Spec	125.5µ	Singlemode	9/125µ	181-040-1255C
M29504/15-4181C	126.0µ	Singlemode	9/125µ	181-040-1260C
M29504/15-4171C	126.0µ	Multimode	50/125, 62.5/125µ	181-040-1260C
M29504/15-4172C	127.0µ	Multimode	50/125, 62.5/125µ	181-040-1270C
M29504/15-4175C	142.0µ	Multimode	100/140µ	181-040-1420C

DUMMY TERMINI - HOW TO ORDER	
Mil-Spec P/N	Commercial P/N
M29504/03-4038	181-051

TOOLS AND ACCESSORIES	
Part Number	Description
265-008	Crimp Sleeve Ø 2.4mm Max Jacket (Mil-Spec Type)
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
182-035	Hand Polishing Tool

MIL-PRF-28876 Plug
180-040 (06, 16, 26, 36) • M28876 /6, /7, /8, /9

Plug without backshell

Plug with straight backshell

MATERIAL AND FINISH

- Insert: Al alloy/anodize
- Strain relief hardware: Al alloy/chem film
- Seals: fluorosilicone
- Misc. Hardware: stainless steel/passivate

NOTES

- Termini (not supplied with connector):
  - 181-039 = Terminus, pin, M29504/14 style
  - 181-040 = Terminus, skt, M29504/15 style
  - 181-051 = Terminus, dummy, M29504/03 style
- Backnut retained using thread-locking compound
- Dust covers (not supplied with connectors):
  - 660-072 = plug cover, M28876/10 style
  - 660-073 = recp cover, M28876/15 style
- Dust cover lanyard attachment shall be a fastener type.
- Operating temperature range: -55°C to +125°C.
- See Glenair drawing 187-166 for stainless steel option.

HOW TO ORDER GLENAIR COMMERCIAL 180-040 PLUGS

Sample Part Number	180-040	NF	06	-15	-08	-1	-1	P	N
Basic Number	Glenair Commercial Equivalent MIL-PRF-28876 Type Fiber Optic Plug Connectors								
Material/Finish	See Material and Finish table								
Connector Type	**06**, **16**, **26**, **36**. See Connector Type table								
Shell Size	See Shell Size/Insert Arrangements table								
Insert Arrangement	See Shell Size/Insert Arrangements table								
Backshell Designator	**-1**, **-2**, **-3**, See Backshell Designator table (Omit for **06** non-backshell configuration)								
Keying Position	**-1** thru **-6**. See Keying Position table								
Terminus Style	**P** = Pin **S** = Socket								
Rear Backnut Option (for 06 non-backshell config.)	**Omit** = supplied with standard backnut **B** = supplied with banding backnut (See Banding Backnut table) **N** = supplied less backnut (to accommodate alternative accessory)								

HOW TO ORDER MIL-DTL28876 PLUGS

Sample Part Number	M28876/6	C	1	1	P	1	N	T
Basic Number	Military QPL M28876/6 through /9 Fiber Optic Plug Connectors							
Shell Size	See Shell Size/Insert Arrangements table							
Insert Arrangement	See Shell Size/Insert Arrangements table							
Backshell Designator	**-1**, **-2**, **-3**, See Backshell Designator table (Omit for **/6** non-backshell configuration)							
Terminus Style	**P** = Pin **S** = Socket							
Keying Position	See Keying Position table							
Rear Backnut Option (for /6 non-backshell config.)	**N** = Not Supplied with Backnut **Omit** = Supplied with Backnut							
Materials and Finish	**T** = Tin-Zinc, Bronze-Gold Over Aluminum Alloy **Omit** = Hard Anodize, Black with PTFE Over Aluminum Alloy							

CONNECTOR TYPE

Connector Type	Backshell Type	MIL-Spec	Commercial
Plug	None	M28876/6	180-040 06
	Straight	M28876/7	180-040 16
	45°	M28876/8	180-040 26
	90°	M28876/9	180-040 36

MIL-PRF-28876 Plug
180-040 (06, 16, 26, 36) • M28876 /6, /7, /8, /9

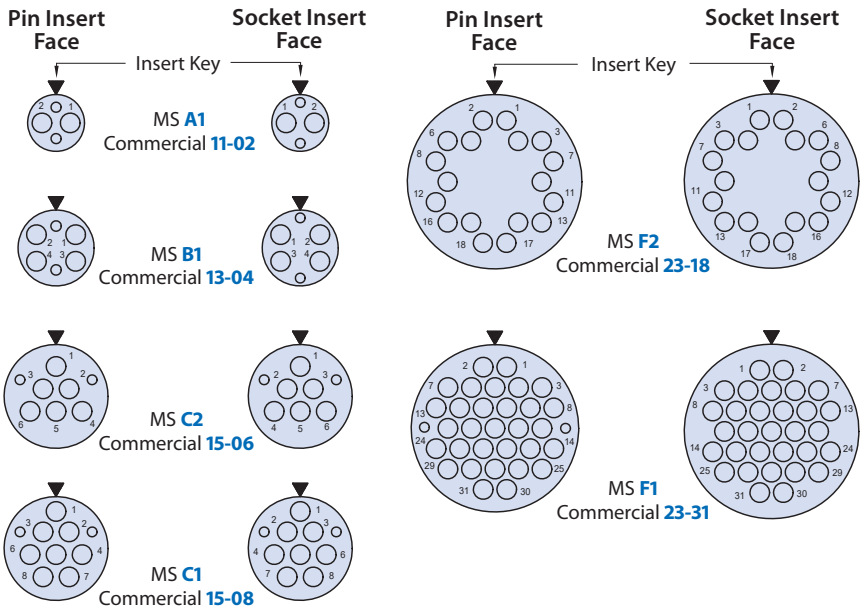
MATERIAL AND FINISHES (COMMERCIAL 180-040 SERIES)

Code	Material	Finish Description
GB4	Aluminum Alloy	Hard Anodize, Black with PTFE
ME		Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZR		Zinc-Nickel, Black

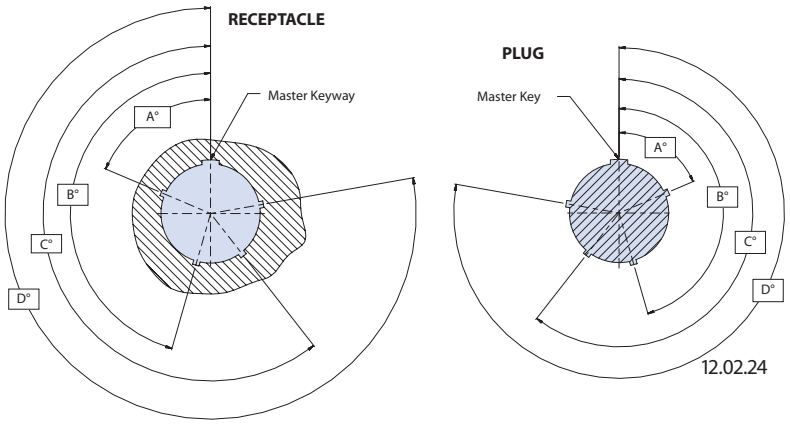
Backshell Designator	Max Allowable Cable Diameter by Shell Size			
	A (11)	B (13)	C (15)	F (23)
1	.250 (6.4)	.285 (7.2)	.500 (12.7)	.866 (22.0)
2	.346 (8.8)	.346 (8.8)	.250 (6.4)	1.000 (25.4)
3	—	.453 (11.5)	.375 (9.5)	.600 (15.2)

Shell size 13, backshell designator 3 connector supplied less boot.

SHELL SIZE / INSERT ARRANGEMENTS



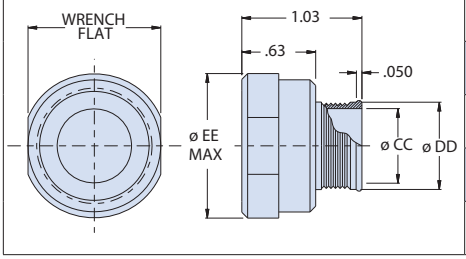
KEYING POSITION



Shell Size	Key Position	A°	B°	C°	D°
11 and 13	0*	-	-	-	-
	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	0*	-	-	-	-
	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

*0 indicates universal keying arrangement and is available on Series 180-040 plug connector only.

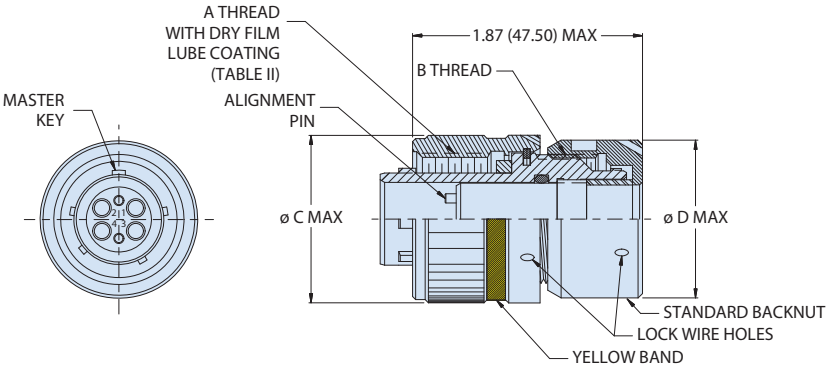
BANDING BACKNUT



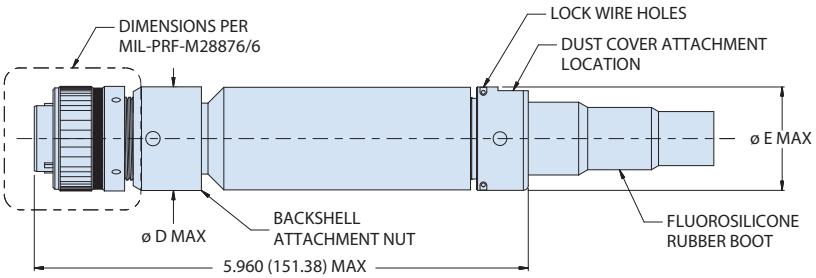
Shell Size	ØCC	ØDD	ØEE
11 (A)	.350 (8.89)	.410 (10.41)	1.010 (25.65)
13 (B)	.460 (11.68)	.520 (13.21)	1.135 (28.83)
15 (C)	.645 (16.38)	.705 (17.91)	1.260 (32.00)
23 (F)	1.045 (26.54)	1.105 (28.07)	1.698 (43.13)

MIL-PRF-28876 Plug
180-040 (06, 16, 26, 36) • M28876 /6, /7, /8, /9

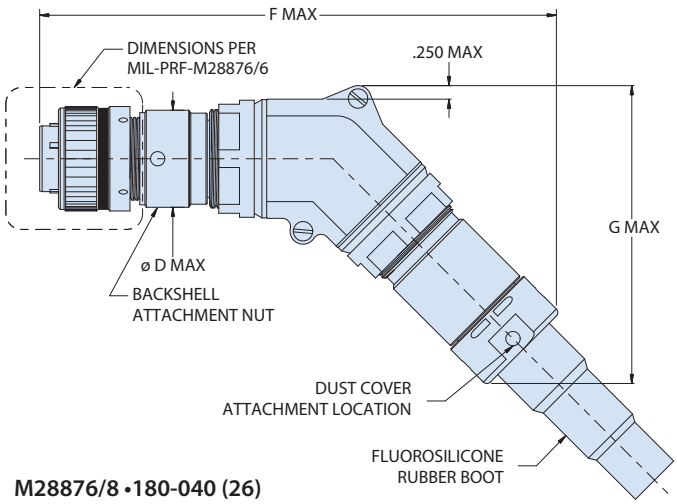
PLUG DIMENSIONS



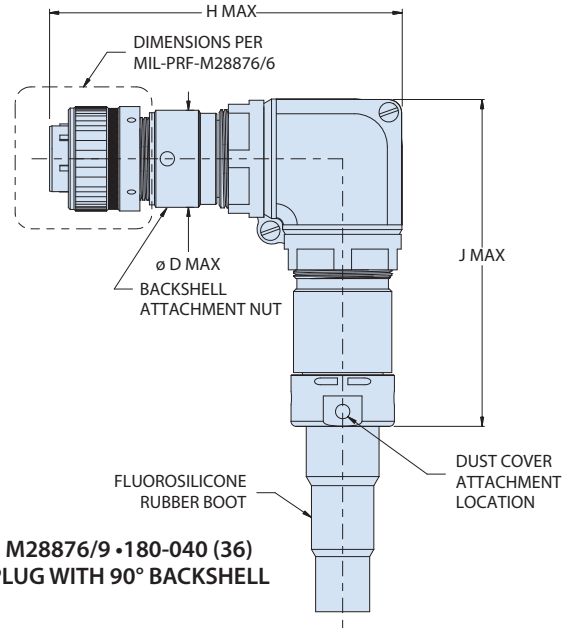
M28876/6 • 180-040 (06) PLUG WITHOUT BACKSHELL



M28876/7 • 180-040 (-16) PLUG WITH STRAIGHT BACKSHELL



**M28876/8 •180-040 (26)
PLUG WITH 45° BACKSHELL**

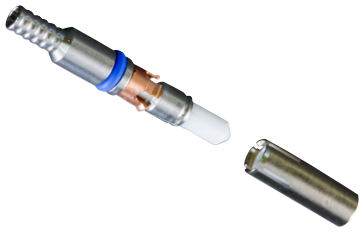


**M28876/9 •180-040 (36)
PLUG WITH 90° BACKSHELL**

Shell Size	A Thread	B Thread Class 2B	Ø C Max	ØD Max	ØE Max	F Max	G Max.	H Max	J Max.
11 (A)	.7500 .1P-.2L-DS	.7500 -20 UNEF	1.028 (26.11)	.960 (24.4)	.960 (24.4)	6.090 (154.69)	3.540 (89.9)	4.190 (106.43)	4.250 (108.0)
13 (B)	.8750 .1P-.2L-DS	.8750 -20 UNEF	1.141 (28.98)	1.085 (27.6)	1.085 (27.6)	6.160 (156.46)	3.580 (90.9)	4.190 (106.43)	4.250 (108.0)
15 (C)	1.0625 .1P-.2L-DS	1.0000 -20 UNEF	1.263 (32.08)	1.255 (31.9)	1.257 (31.9)	6.440 (163.58)	3.850 (97.8)	4.700 (119.4)	4.500 (114.3)
23 (F)	1.5000 .1P-.2L-DS	1.4375 -18 UNEF	1.705 (43.31)	1.695 (43.1)	1.763 (44.8)	7.350 (186.69)	5.000 (127.0)	4.850 (123.19)	5.000 (127.0)

MIL-PRF-28876 Plug
Termini, Tools, and Accessories

PIN TERMINI - HOW TO ORDER				
Mil-Spec Part Number	ØA	Fiber Type	Fiber Size Core/Cladding	Commercial Part Number
M29504/14-4140C	125.0µ	Singlemode	9/125µ	181-039-1250C
Not listed in Mil-Spec	125.5µ	Singlemode	9/125µ	181-039-1255C
M29504/14-4141C	126.0µ	Singlemode	9/125µ	181-039-1260C
M29504/14-4131C	126.0µ	Multimode	50/125, 62.5/125µ	181-039-1260C
M29504/14-4132C	127.0µ	Multimode	50/125, 62.5/125µ	181-039-1270C
M29504/14-4135C	142.0µ	Multimode	100/140µ	181-039-1420C

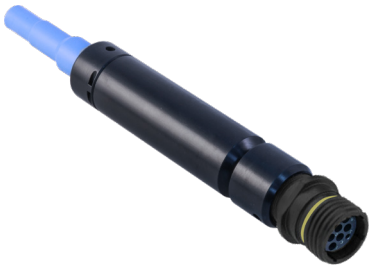


SOCKET TERMINI - HOW TO ORDER				
Mil-Spec Part Number	ØA	Fiber Type	Fiber Size Core/Cladding	Commercial Part Number
M29504/15-4180C	125.0µ	Singlemode	9/125µ	181-040-1250C
Not listed in Mil-Spec	125.5µ	Singlemode	9/125µ	181-040-1255C
M29504/15-4181C	126.0µ	Singlemode	9/125µ	181-040-1260C
M29504/15-4171C	126.0µ	Multimode	50/125, 62.5/125µ	181-040-1260C
M29504/15-4172C	127.0µ	Multimode	50/125, 62.5/125µ	181-040-1270C
M29504/15-4175C	142.0µ	Multimode	100/140µ	181-040-1420C

DUMMY TERMINI - HOW TO ORDER	
Mil-Spec P/N	Commercial P/N
M29504/03-4038	181-051

TOOLS AND ACCESSORIES	
Part Number	Description
265-008	Crimp Sleeve Ø 2.4mm Max Jacket (Mil-Spec Type)
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
182-035	Hand Polishing Tool

MIL-PRF-28876 In-Line Receptacle
180-040 (05, 15) • M28876 /5



Receptacle with straight backshell

MATERIAL AND FINISH

- Insert: Al alloy/anodize
- Strain relief hardware: Al alloy/ chem film
- Seals: fluorosilicone
- Misc. Hardware: stainless steel/ passivate

NOTES

- Termini (not supplied with connector):
  - 181-039 = Terminus, pin, M29504/14 style
  - 181-040 = Terminus, skt, M29504/15 style
  - 181-051 = Terminus, dummy, M29504/03 style
- Backnut retained using thread-locking compound
- Dust covers (not supplied with connectors):
  - 660-072 = plug cover, M28876/10 style
  - 660-073 = recp cover, M28876/15 style
- Dust cover lanyard attachment shall be a fastener type.
- Operating temperature range: -55°C to +125°C.
- See Glenair drawing 187-166 for stainless steel option.

HOW TO ORDER GLENAIR COMMERCIAL 180-040 IN-LINE RECEPTACLES

Sample Part Number	180-040	NF	05	-15	-08	-1	-1	P	N
Basic Number	Glenair Commercial Equivalent MIL-PRF-28876 Type Fiber Optic In-Line Receptacle Connectors								
Material/Finish	See Material and Finish table								
Connector Type	**05**, **15**. See Connector Type table								
Shell Size	See Shell Size/Insert Arrangements table								
Insert Arrangement	See Shell Size/Insert Arrangements table								
Backshell Designator	**-1**, **-2**, **-3**, See Backshell Designator table (Omit for **05** non-backshell configuration)								
Keying Position	**-1** thru **-6**. See Keying Position table								
Terminus Style	**P** = Pin **S** = Socket								
Rear Backnut Option (for 05 non-backshell config.)	**Omit** = supplied with standard backnut **B** = supplied with banding backnut (See Banding Backnut table) **N** = supplied less backnut (to accommodate alternative accessory)								

HOW TO ORDER MIL-DTL28876 IN-LINE RECEPTACLES

Sample Part Number	M28876/1	C	1	1	P	1	N	T
Basic Number	Military QPL M28876/11 through /14 Fiber Optic In-Line Receptacle Connectors							
Shell Size	See Shell Size/Insert Arrangements table							
Insert Arrangement	See Shell Size/Insert Arrangements table							
Backshell Designator	**-1**, **-2**, **-3**, See Backshell Designator table (Omit for **/11** non-backshell configuration)							
Terminus Style	**P** = Pin **S** = Socket							
Keying Position	See Keying Position table							
Rear Backnut Option (for /1 non-backshell config.)	**N** = Not Supplied with Backnut **Omit** = Supplied with Backnut							
Materials and Finish	**T** = Tin-Zinc, Bronze-Gold Over Aluminum Alloy **Omit** = Hard Anodize, Black with PTFE Over Aluminum Alloy							

CONNECTOR TYPE

Connector Type	Backshell Type	MIL-Spec	Commercial
In-Line Receptacle	None	N/A	180-040 05
	Straight	M28876/5	180-040-15

MIL-PRF-28876 In-Line Receptacle
180-040 (05, 15) • M28876 /5

MATERIAL AND FINISH (COMMERCIAL 180-040 SERIES)

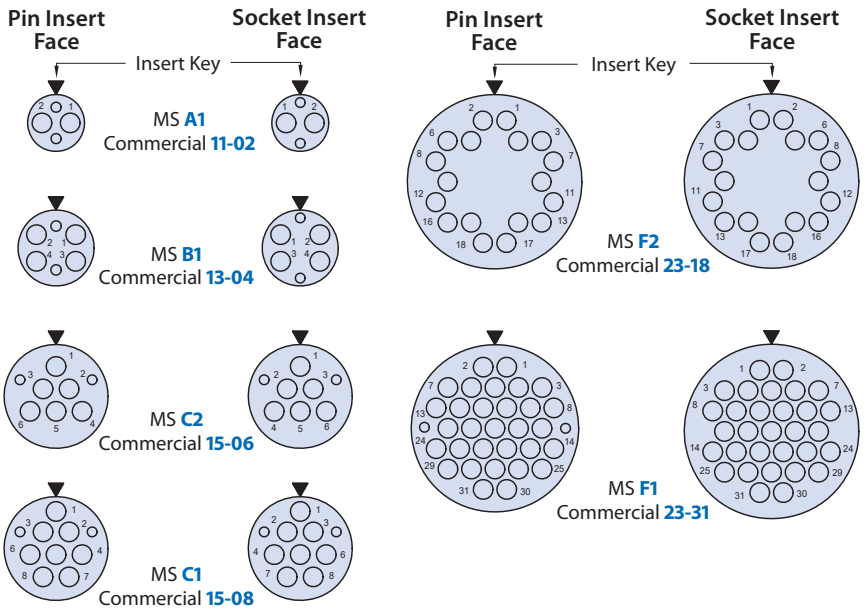
Code	Material	Finish Description
GB4	Aluminum Alloy	Hard Anodize, Black with PTFE
ME		Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZR		Zinc-Nickel, Black

BACKSHELL DESIGNATOR

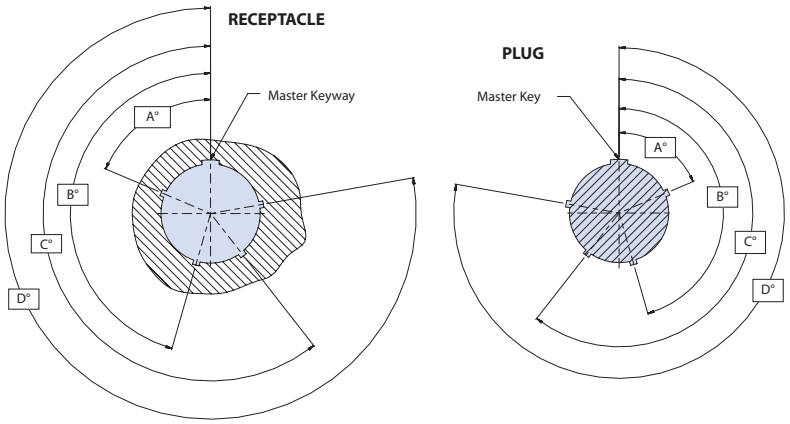
Backshell Designator	Max Allowable Cable Diameter by Shell Size			
	A (11)	B (13)	C (15)	F (23)
1	.250 (6.4)	.285 (7.2)	.500 (12.7)	.866 (22.0)
2	.346 (8.8)	.346 (8.8)	.250 (6.4)	1.000 (25.4)
3	—	.453 (11.5)	.375 (9.5)	.600 (15.2)

Shell size 13, backshell designator 3 connector supplied less boot.

SHELL SIZE / INSERT ARRANGEMENTS



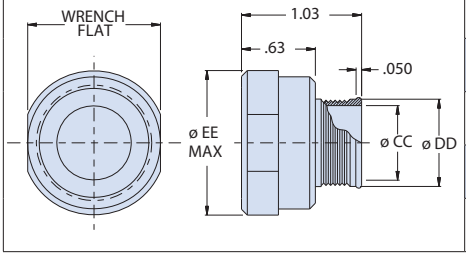
KEYING POSITION



Shell Size	Key Position	A°	B°	C°	D°
11 and 13	0*	-	-	-	-
	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	0*	-	-	-	-
	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

*0 indicates universal keying arrangement and is available on Series 180-040 plug connector only.

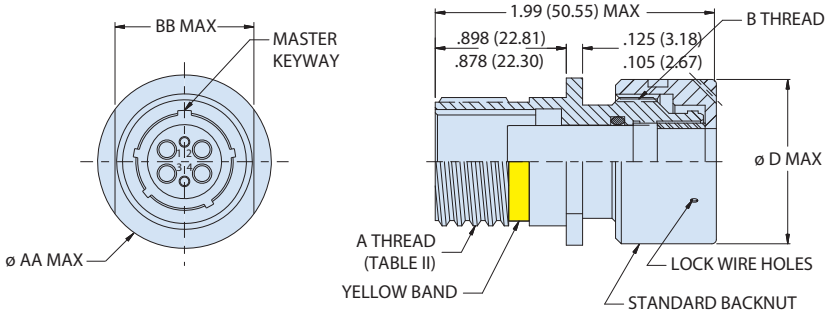
BANDING BACKNUT



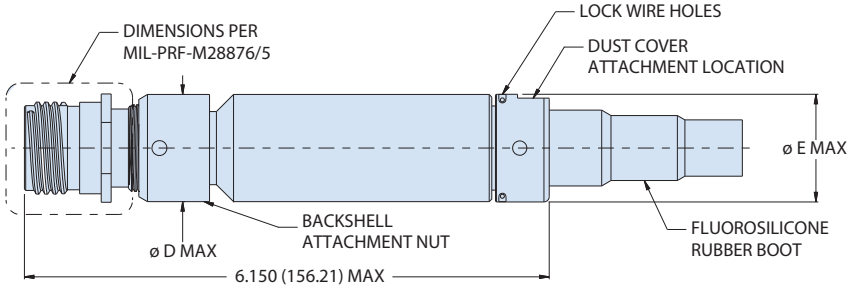
Shell Size	ØCC	ØDD	ØEE
11 (A)	.350 (8.89)	.410 (10.41)	1.010 (25.65)
13 (B)	.460 (11.68)	.520 (13.21)	1.135 (28.83)
15 (C)	.645 (16.38)	.705 (17.91)	1.260 (32.00)
23 (F)	1.045 (26.54)	1.105 (28.07)	1.698 (43.13)

MIL-PRF-28876 In-Line Receptacle
180-040 (05, 15) • M28876 /5

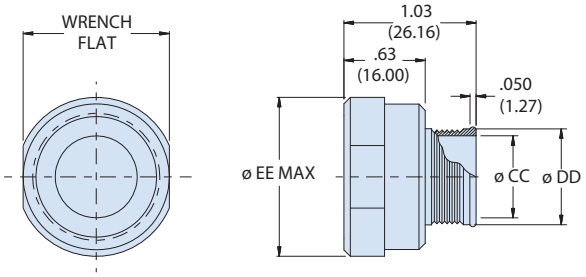
IN-LINE RECPTACLE DIMENSIONS



180-040 (05)
IN-LINE RECEPTACLE WITH STRAIGHT BACKSHELL



M28876/5 •180-040 (15)
IN-LINE RECEPTACLE WITH STRAIGHT BACKSHELL

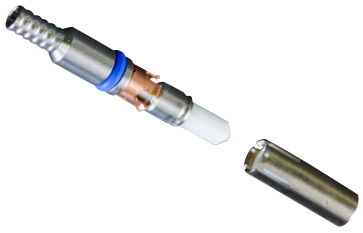


OPTIONAL BANDING BACKNUT
FOR USE WITH CONFIGURATIONS WITHOUT BACKSHELL (-03, -04, & -06)

Shell Size	A Thread	B Thread Class 2B	ØD Max	ØE Max	Ø AA Max	BB Flat
11 (A)	.7500 .1P-.2L-DS	.7500 -20 UNEF	.960 (24.4)	.960 (24.4)	.963 (24.46)	.768 (19.51)
13 (B)	.8750 .1P-.2L-DS	.8750 -20 UNEF	1.085 (27.6)	1.085 (27.6)	1.088 (27.64)	.893 (22.68)
15 (C)	1.0625 .1P-.2L-DS	1.0000 -20 UNEF	1.255 (31.9)	1.257 (31.9)	1.275 (32.39)	1.080 (27.43)
23 (F)	1.5000 .1P-.2L-DS	1.4375 -18 UNEF	1.695 (43.1)	1.763 (44.8)	1.719 (43.66)	1.518 (38.56)

MIL-PRF-28876 In-Line Receptacle Termini, Tools, and Accessories

PIN TERMINI - HOW TO ORDER				
Mil-Spec Part Number	ØA	Fiber Type	Fiber Size Core/Cladding	Commercial Part Number
M29504/14-4140C	125.0µ	Singlemode	9/125µ	181-039-1250C
Not listed in Mil-Spec	125.5µ	Singlemode	9/125µ	181-039-1255C
M29504/14-4141C	126.0µ	Singlemode	9/125µ	181-039-1260C
M29504/14-4131C	126.0µ	Multimode	50/125, 62.5/125µ	181-039-1260C
M29504/14-4132C	127.0µ	Multimode	50/125, 62.5/125µ	181-039-1270C
M29504/14-4135C	142.0µ	Multimode	100/140µ	181-039-1420C



SOCKET TERMINI - HOW TO ORDER				
Mil-Spec Part Number	ØA	Fiber Type	Fiber Size Core/Cladding	Commercial Part Number
M29504/15-4180C	125.0µ	Singlemode	9/125µ	181-040-1250C
Not listed in Mil-Spec	125.5µ	Singlemode	9/125µ	181-040-1255C
M29504/15-4181C	126.0µ	Singlemode	9/125µ	181-040-1260C
M29504/15-4171C	126.0µ	Multimode	50/125, 62.5/125µ	181-040-1260C
M29504/15-4172C	127.0µ	Multimode	50/125, 62.5/125µ	181-040-1270C
M29504/15-4175C	142.0µ	Multimode	100/140µ	181-040-1420C

DUMMY TERMINI - HOW TO ORDER	
Mil-Spec P/N	Commercial P/N
M29504/03-4038	181-051

TOOLS AND ACCESSORIES	
Part Number	Description
265-008	Crimp Sleeve Ø 2.4mm Max Jacket (Mil-Spec Type)
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
182-035	Hand Polishing Tool

189-179 O-Ring for Jam Nut Mount Receptacle Connectors (Standard)
189-144 Conductive O-Ring for Jam Nut Mount Receptacle Connectors

HOW TO ORDER			
Sample Part Number	**189-179**	**-15**	**F**
Basic Number	MIL-PRF-28876-Style O-Ring for Jam Nut Mount Receptacle Connectors		
Dash Number	See Table I		
Material Designator	**F**= Fluorosilicone		

NOTES
- See Glenair drawing 189-144 for conductive material options.
- Packaging identified with manufacturer's name, cage code, part number, and date code.
- Parts of the same dash number may be packaged in bulk.

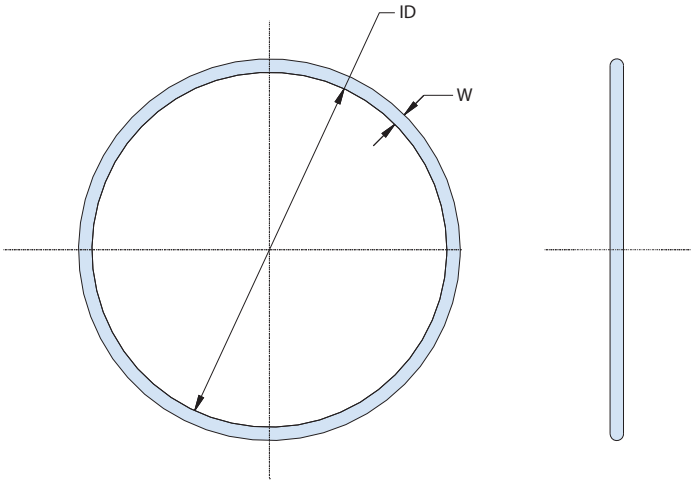


TABLE I	
Dash Number (Shell Size)	**O-Ring ID X W**
-11	.989 X .070
-13	1.114 X .070
-15	1.301 X .070
-23	1.739 X .070

HOW TO ORDER			
Sample Part Number	**189-144**	**-15**	**C**
Basic Number	MIL-PRF-28876-Style Panel Seal, Conductive O-Ring for Jam Nut Mount Receptacle Connectors		
Dash Number	See Table I		
Material Designator	**C** = Passivated silver plated aluminum filled fluorosilicone per MIL-DTL-83528, type "D" (cho-seal 1298 or equivalent)		

NOTES
- Parts of the same dash number may be packaged in bulk.
- Packaging identified with manufacturer's name, cage code, part number, and date code.

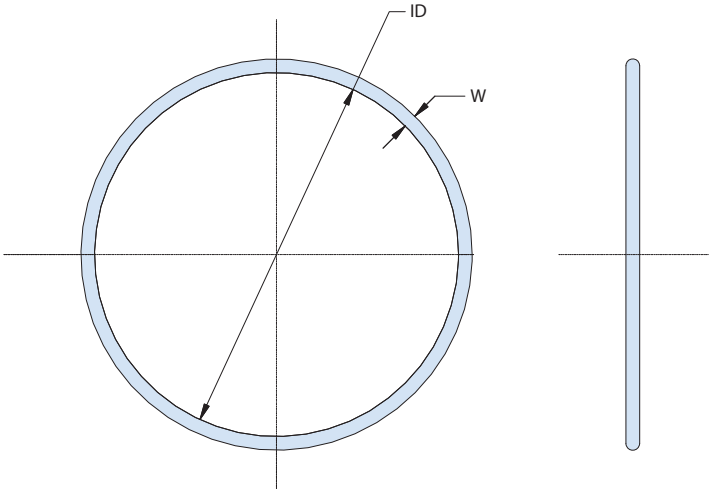


TABLE I	
Dash Number (Shell Size)	**O-Ring ID X W**
-11	.989 X .070
-13	1.114 X .070
-15	1.301 X .070
-23	1.735 X .070

189-189 Jam Nut for MIL-PRF-28876 Style Jam Nut Mount Receptacle Connectors

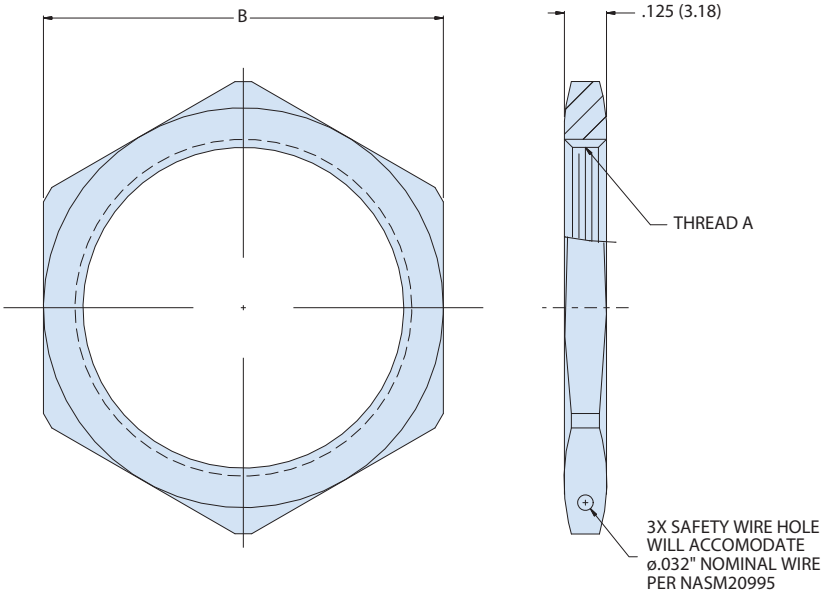
HOW TO ORDER			
Sample Part Number	**189-189**	**NF**	**-13**
Basic Number	Jam Nut for MIL-PRF-28876 Style Jam Nut Mount Receptacle Connectors		
Material/Finish Code	See Material/Finish table		
Shell Size	See Shell Size table		

MATERIAL AND FINISH

- Jam nut: see Material/Finish table

NOTES

- Part is designed in accordance with the interface requirements of MIL-PRF-28876.
- Part is packaged in a plastic bag and identified with manufacturer's name, cage code, part number, and date code - at a minimum.
- For assembly tools and procedures, consult factory.



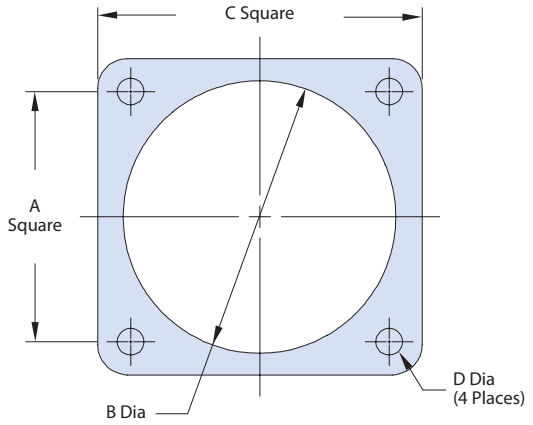
MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
GB4	Aluminum Alloy	Electroless Nickel
ME		Electroless Nickel
MT		Nickel-PTFE, Gray
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZR		Zinc-Nickel, Black
Z1	Stainless Steel	Passivate
ZL		Electro-Deposited Nickel

SHELL SIZE		
Backshell Designator	**Thread A**	**B (Hex)**
11 (A)	7/8-20 UNEF-2B	1.062 (26.97)
13 (B)	1-20 UNEF-2B	1.187 (30.15)
15 (C)	1 3/16-18 UNEF-2B	1.375 (34.92)
23 (F)	1 5/8-18 UNEF-2B	1.795 (45.59)

M28840/24 Mounting Gasket for use with MIL-PRF-28876 Connectors MS3186 Jam Nut with Safety Wire Holes

HOW TO ORDER			
Sample Part Number	**M28840/24**	**J**	**A**
Basic Number	Mounting Gasket		
Shell Size	See Dimensions table		
Material and Finish Designator	**A** = Fluorosilicone **B** = EMI, silicone		

DIMENSIONS



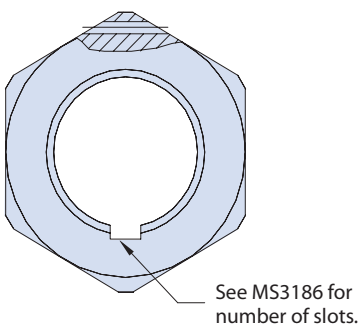
Designator	A	B Dia	C	D Dia
A (11)	.760 (19.30) .740 (18.80)	.766 (19.46) .750 (19.05)	1.039 (26.39) 1.023 (25.98)	.130 (3.30) .110 (2.79)
B (13)	.853 (21.67) .833 (21.16)	.891 (22.63) .875 (22.22)	1.154 (29.31) 1.138 (28.90)	
C (15)	.978 (24.84) .958 (24.33)	1.078 (27.38) 1.062 (26.97)	1.274 (32.36) 1.258 (31.95)	
F (23)	1.291 (32.79) 1.271 (32.28)	1.516 (38.51) 1.500 (38.10)	1.734 (44.04) 1.718 (43.64)	

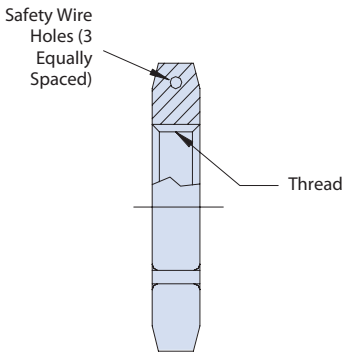
NOTES

- Assembly identified with manufacturer's name and part number, space permitting.
- For complete dimensions, see the MIL-Spec for dash numbers and associated dimensions.
- Metric dimensions (mm) are in parentheses.

HOW TO ORDER				
Sample Part Number	**MS3186**	**A**	**-113**	**B**
Basic Number	Jam Nut with Safety Wire Holes			
Material	**A** = Aluminim **S** = Steel **C** = CRES			
Dash Number	See MS3186 Spec			
Finish	See Finish table			

FINISH	
Code	**Finish Description**
A	Black Anodize (Material 'A' only)
B	Black Cadmium over Corrosion Resistant Steel (Material 'C' only)
C	Clear Cadmium (Material 'A' only)
E	Electrodeposited Nickel
N	Electroless Nickel (Space Use Only)
P	Passivated (Material 'C' only)
T	Tin Plate (Material 'S' only)
W	1,000 Hour Cadmium Olive Drab over Electroless Nickel





930-006 Gasket for MIL-DTL-28840 and MIL-PRF-28876 Receptacle Connectors

HOW TO ORDER			
Sample Part Number	**930-006**	**F**	**13**
Basic Number	Mounting Gasket		
Material and Finish	See Material and Finish table		
Shell Size	See Dimensions table		

MATERIAL AND FINISH

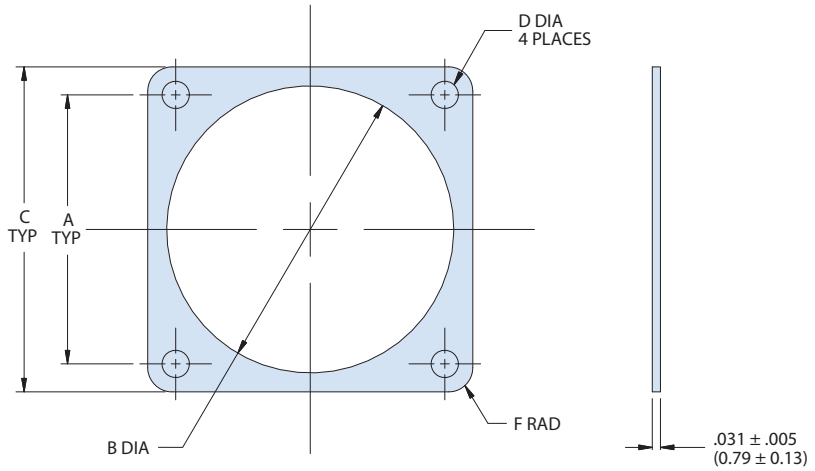
- Gasket: see Material/Finish table.

NOTES

- Identified by bag and tag in suitable quantities.

MATERIAL AND FINISH	
Sym	**Material Description**
B	Silver plated aluminum filled fluorosilicone (IAW MIL-G-83528 Type D, color beige)
C	Silicone filled monel screen cloth or expanded metal (ref: metex 704-9311 or equiv)
F	Fluorosilicone
M	Rubber IAW ZZ-R-765 (superseded by a-a-59588), class 3, grade 30, embedded with monel wireIAW QQ-N-281
N	Neoprene
S	Silicone
V	Viton (fluorocarbon)

DIMENSIONS



Shell Size MIL-C-28840	A ±.010	B DIA .016 .000	C .016 .000	D DIA ±.010	F Radius ±.010
11	0.750 (19.05)	0.750 (19.05)	1.023 (25.98)	0.120 (3.05)	0.141 (3.58)
13	0.843 (21.41)	0.875 (22.23)	1.138 (28.91)	0.120 (3.05)	0.141 (3.58)
15	0.968 (24.59)	1.062 (26.97)	1.258 (31.95)	0.120 (3.05)	0.141 (3.58)
23	1.281 (32.54)	1.500 (38.10)	1.718 (43.64)	0.120 (3.05)	0.188 (4.78)

189-113 Shrink Tubing and O-Rings for MIL-PRF-28876 Style Connectors With Backshells

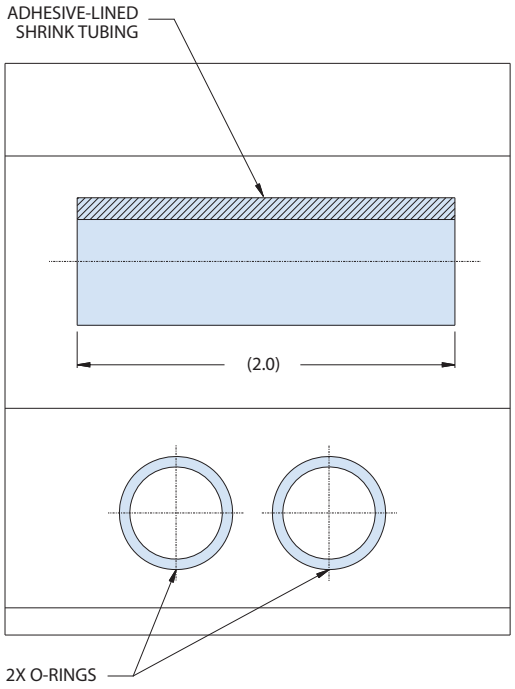
HOW TO ORDER			
Sample Part Number	**189-113**	**-13**	**2**
Basic Number	MIL-PRF-28876-Style O-Ring for Jam Nut Mount Receptacle Connectors		
Shell Size	See Shell Size table		
Backshell Designator	See table		

MATERIAL AND FINISH

- Tubing: Polyolefin/ Adhesive-Lined
- O-Ring: Neoprene

NOTES

- For use with the following Glenair connectors with backshells, at a minimum:
  - M28876
  - 180-040
  - 187-166
  - 187-154
- Packaging identified with manufacturer's name, cage code, part number, and date code.
- For use with Glenair products only.



SHELL SIZE, BACKSHELL DESIGNATOR, AND MAX ALLOWABLE CABLE DIAMETER				
Backshell Designator	**Max Allowable Cable Diameter By Shell Size**			
	11 (A)	**13 (B)**	**15 (C)**	**23 (F)**
1	.250 (6.35)	.285 (7.24)	.500 (12.70)	.866 (22.00)
2	.346 (8.79)	.346 (8.79)	.250 (6.35)	1.000 (25.40)
3	—	.453 (11.51)	.375 (9.52)	.600 (15.24)

189-043 MIL-PRF-M28876 Style Banding Insert Retention Nut

HOW TO ORDER			
Sample Part Number	**189-043**	**-15**	**M**
Basic Number	MIL-PRF-M28876 Style Banding Insert Retention Nut		
Shell Size	See Material/Finish table		
Material/Finish Code	**M** = Electroless nickel **ZR** = Zinc-nickel, black Omit for standard finish per notes		

MATERIAL AND FINISH

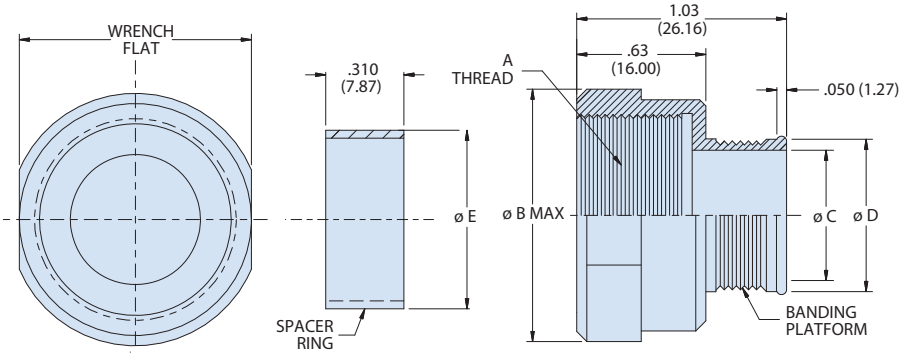
- Al alloy/see How to Order table
- Finish: cadmium, olive drab over electroless nickel

NOTES

- Product identified with manufacturer's name, cage code, part number, and date code.
- Banding strap to be ordered separately as follows:
  - 600-052 = band, flat
  - 600-052-1 = band, pre-coiled

MATERIAL AND FINISHES (COMMERCIAL 180-040 SERIES)		
Code	**Material**	**Finish Description**
GB4	Aluminum Alloy	Hard Anodize, Black with PTFE
ME		Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZR		Zinc-Nickel, Black

DIMENSIONS



Shell Size	Shell Size Designator (Ref)	A Thread Class 2B	øB Max	øC	øD	øE
11	A	.7500-20 UNEF	1.010 (25.65)	.350 (8.89)	.410 (10.41)	.410 (10.41)
13	B	.8750-20 UNEF	1.135 (28.83)	.460 (11.68)	.520 (13.21)	.532 (13.51)
15	C	1.0000-20 UNEF	1.260 (32.00)	.645 (16.38)	.705 (17.91)	.710 (18.03)
23	F	1.4375-18 UNEF	1.698 (43.13)	1.045 (26.54)	1.105 (28.07)	1.116 (28.35)

189-032 Backshell Spacer for M28876 Style Connector

HOW TO ORDER			
Sample Part Number	**189-032**	**NF**	**11**
Basic Number	Mounting Gasket		
Material and Finish	See Material and Finish table		
Shell Size	See Dimensions table		

MATERIAL AND FINISH

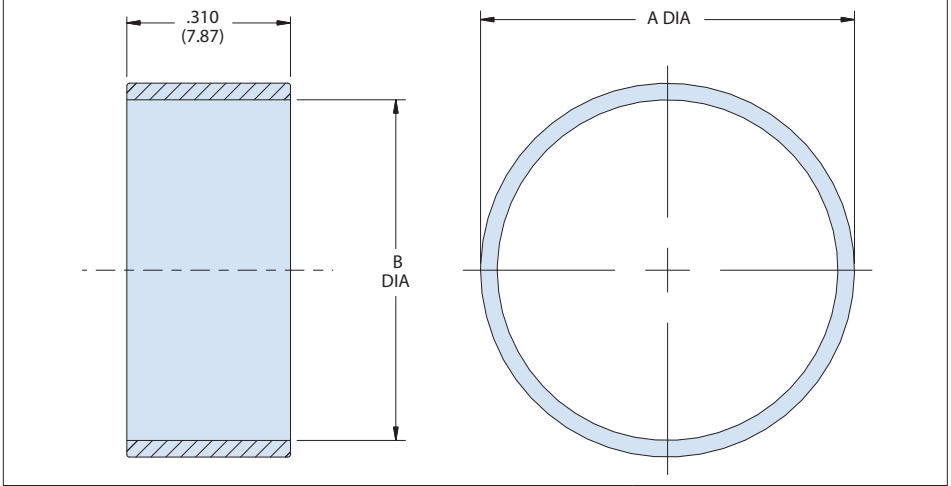
- Spacer: al alloy/see Material/ Finish table

NOTES

- Identified by bag and tag in suitable quantities.

MATERIAL AND FINISHES (COMMERCIAL 180-040 SERIES)		
Code	**Material**	**Finish Description**
GB4	Aluminum Alloy	Hard Anodize, Black with PTFE
ME		Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZR		Zinc-Nickel, Black

SHELL SIZE



Dash No.	A Dia	B Dia
11	.408 (10.36)	.350 (8.89)
13	.530 (13.46)	.460 (11.68)
15	.708 (17.98)	.645 (16.38)
23	1.114 (28.30)	1.045 (26.54)

189-122 MIL-PRF-28876 Style Backnut Assembly

HOW TO ORDER			
Sample Part Number	**189-122**	**NF**	**-13**
Basic Number	MIL-PRF-28876 Style Backnut Assembly		
Material/Finish Code	See Material/Finish table		
Shell Size	See Dimensions table		

MATERIAL AND FINISH

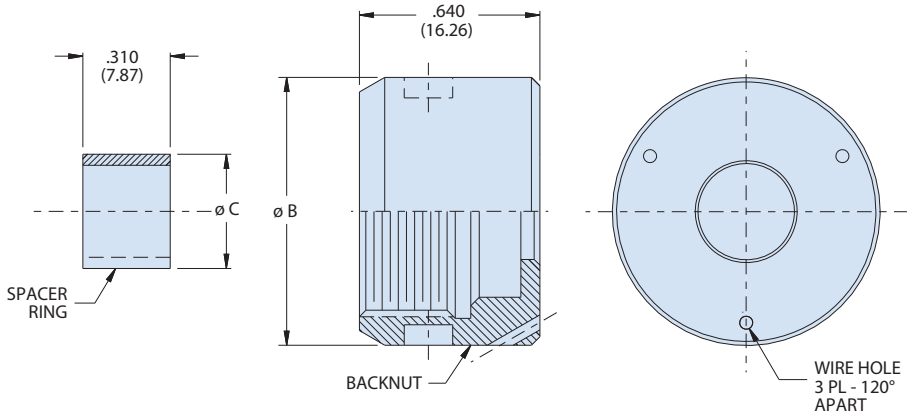
- Al alloy/see Material/Finish table

NOTES

- Backnut identified with manufacturer's name, cage code, part number, and date code.

MATERIAL AND FINISHES (COMMERCIAL 180-040 SERIES)		
Code	**Material**	**Finish Description**
GB4	Aluminum Alloy	Hard Anodize, Black with PTFE
ME		Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZR		Zinc-Nickel, Black

DIMENSIONS



Shell Size	Shell Size Designator (Ref)	A Thread Class 2B	øB Max	øC
11	A	.7500-20 UNEF	.960 (24.38)	.410 (10.41)
13	B	.8750-20 UNEF	1.085 (27.56)	.532 (13.51)
15	C	1.0000-20 UNEF	1.255 (31.88)	.710 (18.03)
23	F	1.4375-18 UNEF	1.695 (43.05)	1.116 (28.35)

189-015 Environmental Banding Backshell for MIL-PRF-28876 fiber optic connectors

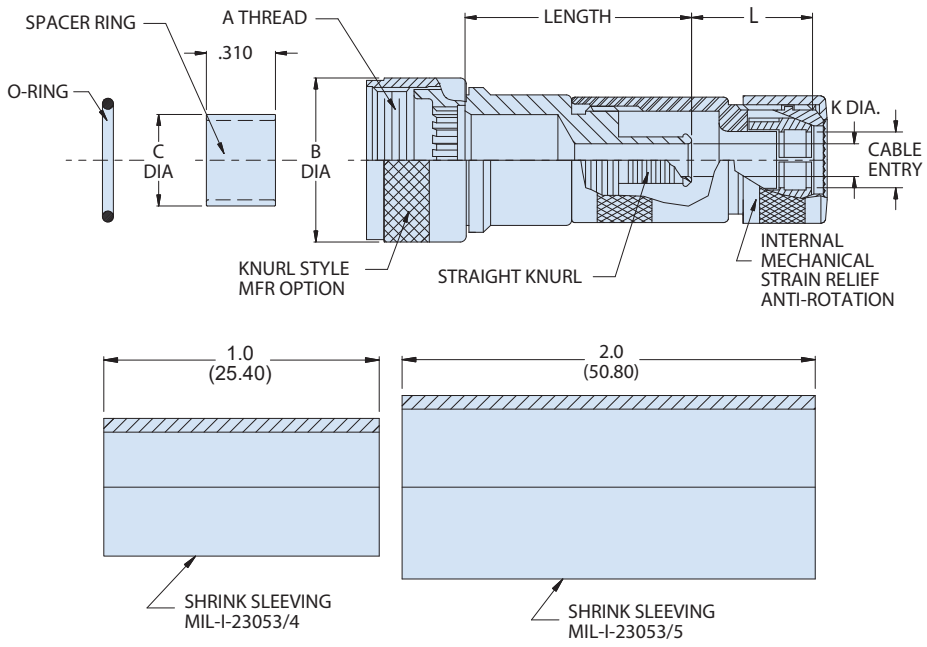
HOW TO ORDER						
Sample Part Number	**189-015**	**NF**	**13**	**05**	**-3**	**B**
Basic Number	Environmental Banding Backshell for M28876 fiber optic connectors					
Material/Finish	See Material and Finish table					
Shell Size	**11**, **13**, **15**, **23** (See Shell Size and Dimensions table)					
Dash No	See Cable Entry and Shrink Sleeve Dash Number Table					
Increments	Length in 1/2 inch increments. 1.5" minimum. (e.g. **-3** = 1 1/2")					
Banding	Band 600-052 Supplied (Omit If Not Required)					

MATERIAL AND PLATING

- Clamp Components: Ryton R 4XT-Black, Ultem 1000-Natural
- Anti-Rotation Device: Torlon 42031-Natural
- O-Ring: Fluorosilicone

NOTES

- Glenair 600 Series Backshell assembly tools are recommended for assembly and installation.
- Spacer Ring and O-Ring are packaged loose and must be installed with Connector at time of assembly. The spacer is utilized to retain the terminus Insert.
- For Shield termination see Glenair drawing 600-050 & 600-052.
- MIL-I-32053/4 & /5 Shrink sleeve included, packaged loose. Heat shrink /4 sleeve over rear of adapter before /5 shrink sleeve.
- For assembly instructions, see GAP-064



MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
B	Aluminum Alloy	Cadmium, Olive Drab
J		Gold Iridite over Cad Plate over Nickel
M		Electroless Nickel
NF		Cad / Olive Drab over Nickel
T		Cad Plate / Bright Dip over Nickel

CABLE ENTRY AND SHRINK SLEEVE DASH NUMBER								
Dash No.	**Clamp Size**	**Cable Dia Max**	**K Dia ±.005 (0.1)**	**L Max**	**MIL-I-23053 Shrink Sleeve**	**MIL-I-23053 Shrink Sleeve**	**Cable Entry Dia**	
							Minimum	**Maximum**
05	**12**	.280 (7.1)	.312 (7.9)	1.11 (28.2)	/4-203-0	/5-107-0	.233 (5.2)	.375 (9.5)
07	**16**	.395 (10.0)	.438 (11.1)	1.21 (30.7)	/4-204-0	/5-108-0	.358 (8.3)	.500 (12.7)
09	**20**	.510 (13.0)	.562 (14.3)	1.21 (30.7)	/4-204-0	/5-109-0	.482 (11.5)	.625 (15.9)
11	**24**	.621 (15.8)	.688 (17.5)	1.21 (30.7)	/4-205-0	/5-106-0	.545 (13.1)	.750 (19.1)
13	**28**	.736 (18.7)	.812 (20.6)	1.36 (34.5)	/4-205-0	/5-110-0	.670 (16.3)	.875 (22.2)

SHELL SIZE AND DIMENSIONS					
Shell Size	**Designator (Ref)**	**A Thread Class 2B**	**B Max**	**C 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

189-001 Environmental Backshell with Split Clamp for MIL-PRF-28876 fiber optic connectors

HOW TO ORDER				
Sample Part Number	**189-001**	**NF**	**13**	**S**
Basic Number	Environmental Backshell with Split Clamp			
Material/Finish	See Material and Finish table			
Shell Size	See Shell Size and Dimensions table			
Angle	**S** = Straight **R** = 90° **P** = 45°			

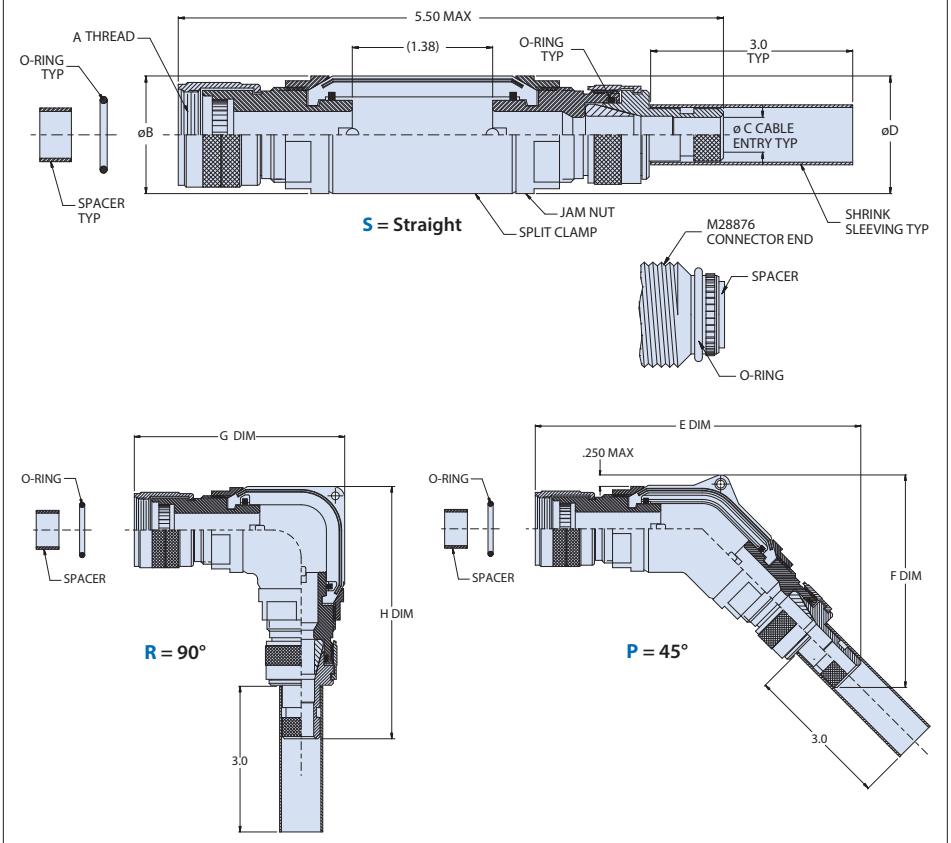
MATERIAL AND PLATING

- O-Rings: Fluorosilicone
- Shrink Sleeving: Polyolefin
- Misc Hardware: Stainless Steel/ Passivate

NOTES

- Glenair 600 Series Backshell assembly tools are recommended for assembly and installation; Assembly procedure see GAP014.
- MIL-I-23053/4 Shrink Sleeving, O-Ring and Spacer packaged loose.
- Assemble O-Ring and Spacer onto Connector as shown.

SHELL SIZE AND DIMENSIONS



Shell Size	A Thread	ØB Max	ØC Max	ØD Max	E Dim	F Dim	G Dim	H Dim
11	.750-20 UNEF	1.166 (29.62)	.350 (8.89)	1.166 (29.62)	4.437 (112.70)	2.897 (73.58)	2.867 (72.82)	3.439 (87.35)
13	.875-20 UNEF	1.166 (29.62)	.350 (8.89)	1.166 (29.62)	4.437 (112.70)	2.897 (73.58)	2.867 (72.82)	3.439 (87.35)
15	1.00 -20 UNEF	1.416 (35.97)	.475 (12.07)	1.416 (35.97)	4.695 (119.25)	3.173 (80.59)	3.120 (79.25)	3.673 (93.29)

MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
GB4	Aluminum Alloy	Black Hard Anodize with PTFE
ME		Electroless Nickel
NF		Cad / Olive Drab over Nickel
TZ		Tin-Zinc

189-007 Environmental FiberCon Backshell for MIL-PRF-28876 fiber optic connectors

HOW TO ORDER					
Sample Part Number	**189-007**	**NF**	**13**	**T**	**4**
Basic Number	Fiber-Con Backshell				
Material/Finish	See Material and Finish table				
Shell Size	See Shell Size and Dimensions table				
Adapter	**G** = Gland Nut **T** = Tubing Adapter **Omit** for Standard Shrink Boot Adapter				
Length	Length In 1/2 Inch Increments Min. 1.5" (Example: **4** = 2 Inches)				

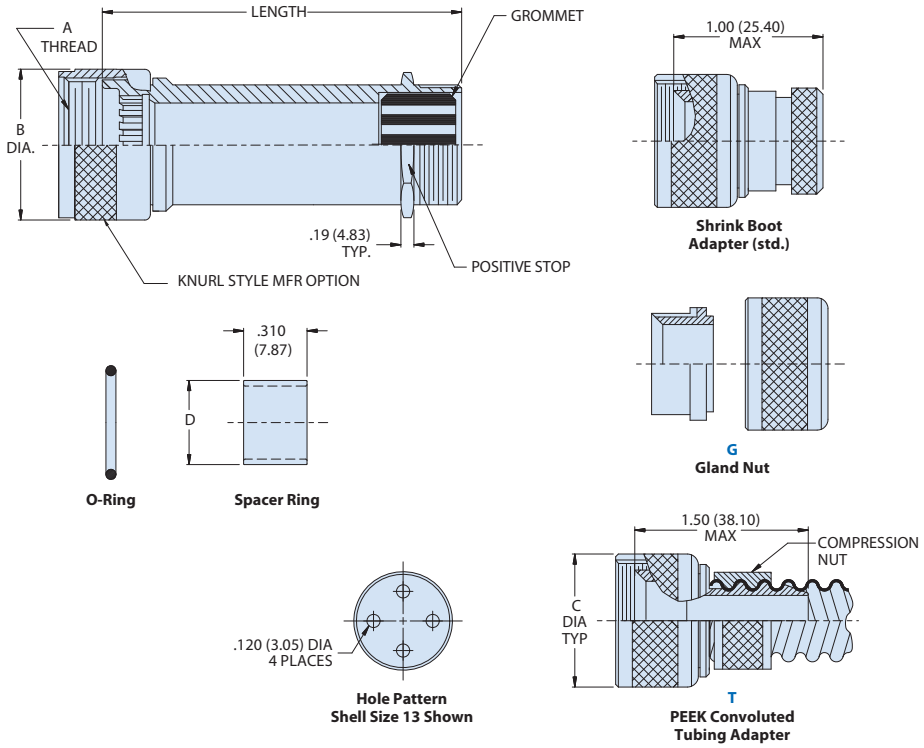
MATERIAL AND FINISH

- Grommet: Fluorosilicone
- O-Ring: Fluorosilicone

NOTES

- Glenair 600 Series Backshell assembly tools are recommended for assembly and installation.
- Spacer Ring and O-Ring are packaged loose and must be installed with Connector at time of assembly. The Spacer is utilized to retain the Terminus Insert.
- Standard minimum order is 1.5 inch. Consult factory for shorter length.

SHELL SIZE / DIMENSIONS



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 (26.11)	-	.410 (10.4)	12	2
13	B	7/8-20 UNEF	1.141 (28.98)	1.12 (28.4)	.532 (13.51)	16	4
15	C	1-20 UNEF	1.263 (32.08)	1.34 (34.0)	.710 (19.0)	24	8
23	F	17/16-18 UNEF	1.703 (43.26)	1.66 (42.2)	1.116 (28.35)	28	31

MATERIAL AND FINISHES		
Code	**Material**	**Finish Description**
B	Aluminum Alloy	Cadmium, Olive Drab
J		Gold Iridite over Cad Plate over Nickel
M		Electroless Nickel
NF		Cad / Olive Drab over Nickel
T		Cad Plate / Bright Dip over Nickel

189-009 Environmental Banding / Molding Adapter Backshell for MIL-PRF-28876 fiber optic connectors

HOW TO ORDER

Sample Part Number	189-009	S	009	NF	15	08	-04
Series	Backshell for M28876 connectors						
Angle	S = Straight H = 45° J = 90°						
Basic No.	Banding / Molding Adapter Backshell						
Material/Finish	See Material and Finish table						
Shell Size	See Shell Size and Dimensions table						
Entry Size No.	See Entry Size No. table						
Length	Length In 1/2 Inch Increments for S Straight configuration only. (Example: -04 = 2 Inches). Style 1 min. = 1.5", Style 2 min. = 2"						

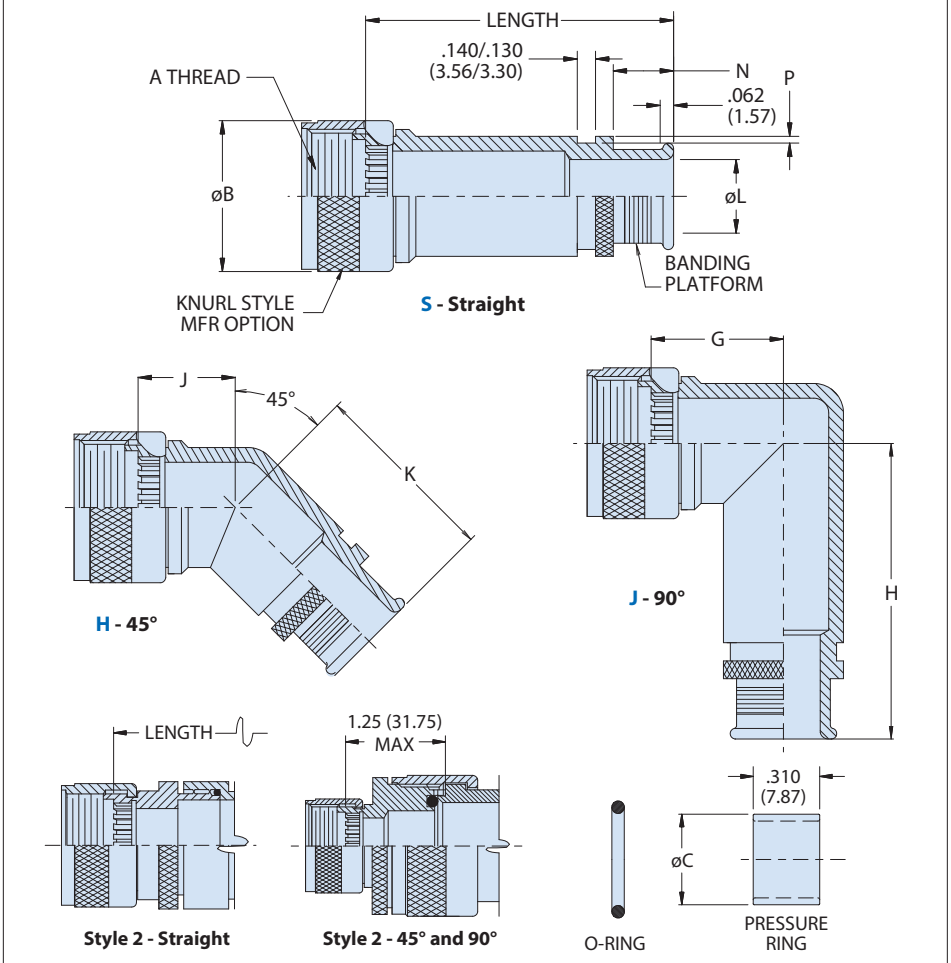
MATERIAL AND FINISH

- Adapters, Elbows, Coupling Nut, Pressure Ring: see Material and Finish table
- Clamp Components: Ryton R 4XT-Black, Ultem 1000-Natural
- O-Ring: Fluorosilicone

NOTES

- When cable diameter exceeds inside diameter of Connector Shell, Style 2 will be supplied.
- Glenair 600 Series Backshell assembly tools are recommended for assembly and installation.
- O-Ring and Pressure Ring to be packaged loose and must be installed with Connector at time of assembly.

SHELL SIZE / DIMENSIONS



Shell Size	Conn. Desig. (ref.)	A Thread UNEF	ØB Max	ØC Max	G Max	H Max	J Max	K Max	Max Entry
11	A	.750-20	.960 (26.2)	.410 (10.4)	1.28 (32.5)	1.33 (33.8)	1.14 (29.0)	1.19 (30.2)	07
13	B	.875-20	1.09 (29.0)	.532 (13.5)	1.35 (34.3)	1.40 (35.6)	1.17 (29.7)	1.22 (30.1)	08
15	C	1.000-20	1.26 (32.0)	.710 (18.0)	1.43 (36.3)	1.47 (37.3)	1.20 (30.4)	1.25 (31.8)	10
23	F	1.437-18	1.70 (43.2)	1.12 (28.4)	1.64 (41.7)	1.68 (46.7)	1.29 (32.8)	1.33 (33.8)	13

ENTRY SIZE NO.

No.	P	Ø L	N
04	.044	.205	.525
05	.044	.235	.525
06	.044	.255	.525
07	.044	.205	.525
08	.044	.330	.600
09	.044	.450	.600
10	.044	.670	.600
11	.044	.840	.600
12	.069	1.080	.600
13	.069	1.200	.600

MATERIAL AND FINISH

Code	Material	Finish Description
M	Aluminum Alloy	Electroless Nickel
NF		Cad / Olive Drab over Nickel

189-014 PEEK Convoluted Tubing Adapter for MIL-PRF-28876 fiber optic connectors

HOW TO ORDER			
Sample Part Number	**189-014**	**NF**	**11**
Basic Number	Adapter Backshell for PEEK Convoluted Tubing		
Material/Finish	See Material and Finish table		
Shell Size	See Shell Size / Dimensions / Peek Conduit Size table		

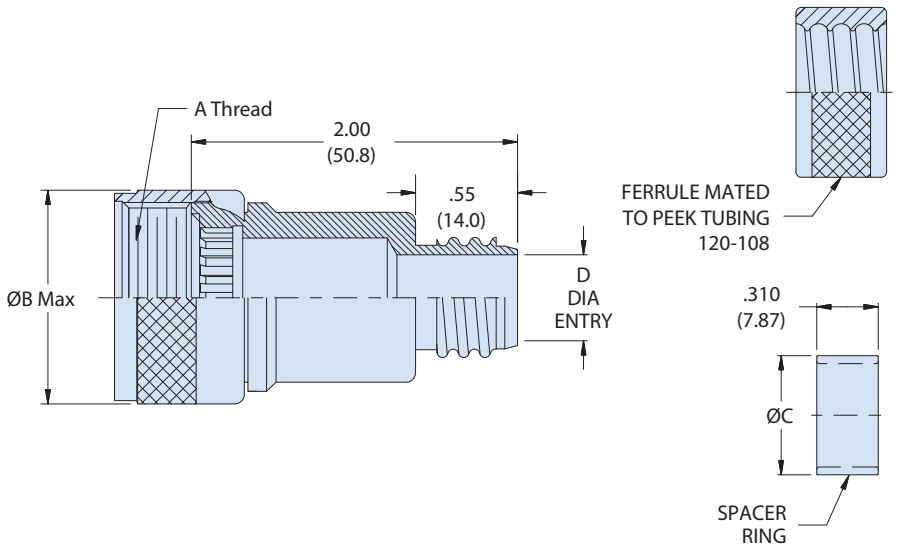
MATERIAL AND FINISH

- Spacer Ring: Monel

NOTES

- Spacer Ring is packaged loose and must be installed with Connector at time of assembly to retain Terminus Insert.
- For 45° or 90° Backshell option, see Glenair drawing 189-021.

SHELL SIZE / DIMENSIONS / PEEK CONDUIT SIZE



Shell Size	Designator (Ref)	A Thread Class 2B	ØB Max	ØC Max	Ø D Entry	PEEK Conduit Size	
						Frac. Size	Dash No.
11	A	3/4-20 UNEF	.960 (24.4)	.410 (10.4)	.390 (9.91)	1/2	16
13	B	7/8-20 UNEF	1.09 (27.7)	.532 (13.5)	.390 (9.91)	1/2	16
15	C	1-20 UNEF	1.26 (32.0)	.710 (18.0)	.390 (9.91)	1/2	16
23	F	1 7/16-18 UNEF	1.70 (43.2)	1.12 (28.4)	.890 (22.6)	1	32

MATERIAL AND FINISH

Code	Material	Finish Description
GB4	Aluminum Alloy	Hard Anodize, Black with PTFE
J		Gold Iridite over Cad Plate over Nickel
ME		Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
T		Cad Plate / Bright Dip over Nickel
TZ		Tin-Zinc, Bronze-Gold
ZR		Zinc-Nickel, Black

660-072 and 660-073 • M28876/10 and M28876/15
Protective Covers for MIL-PRF-28876 connectors

HOW TO ORDER GLENAIR COMMERCIAL PROTECTIVE COVERS						
Sample Part Number	**660-072**	**M**	**C**	**R**	**9**	**-01**
Basic Number	**660-072** Plug Cover **660-073** Receptacle cover					
Material/ Finish Code	See Material and Finish table					
Shell Size	**A, B, C, F**; See Shell Size table					
Attachment Type	See Lanyard/Attachment (Commercial) table					
Attachment Length	In inches 9" standard					
Ring Style Option	See Attachment Type (Commercial) table					

HOW TO ORDER				
Sample Part Number	**M28876/10**	**C**	**C**	**T**
Basic Number	**M28876/10** Plug Cover **M28876/15** Receptacle cover			
Shell Size	**A, B, C, F**; See Shell Size table			
Lanyard/Attachment Type	See Lanyard/Attachment (MIL-Spec) table			
Materials and Finishes	**T** = Tin-Zinc, Bronze-Gold over Aluminum Alloy **Omit** = Hard Anodize, Black with PTFE over Aluminum Alloy.			

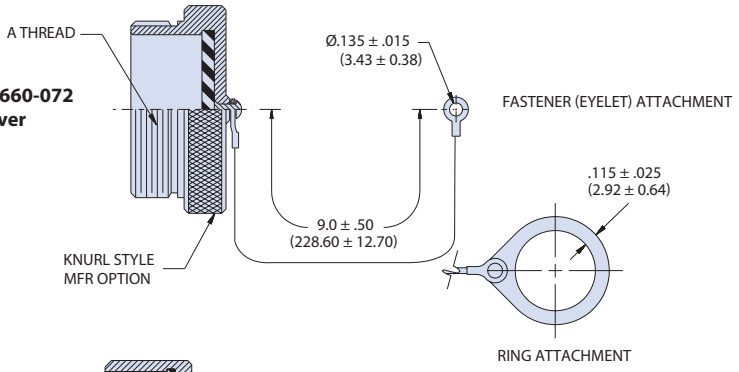
LANYARD/ATTACHMENT (MIL-SPEC)	
Symbol	**Description**
A	Chain with Fastener (Eyelet) Attachment
B	Chain with Ring Attachment
C	Wire Rope with Fastener (Eyelet) Attachment
D	Wire Rope with Ring Attachment
E	Without Chain or Wire Rope

LANYARD/ATTACHMENT (COMMERCIAL)	
Symbol	**Description**
H	Wire Rope, Coated
S	Sash Chain, Passivated
N	No Lanyard

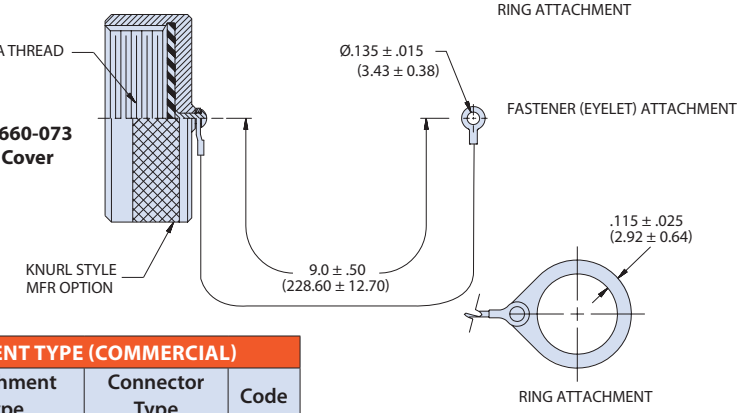
SHELL SIZE		
Shell Size (Mil-Spec)	**Shell Size (Ref)**	**A Thread**
A	11	.750-0.1P-0.2L-D.S.
B	13	.875-0.1P-0.2L-D.S.
C	15	1.062-0.1P-0.2L-D.S.
F	23	1.500-0.1P-0.2L-D.S.

MATERIAL AND FINISHES (COMMERCIAL 660 SERIES)		
Code	**Material**	**Finish Description**
GB4	Aluminum Alloy	Hard Anodize, Black with PTFE
ME		Electroless Nickel
MT		Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
ZR		Zinc-Nickel, Black

M28876/10 • 660-072
Plug Cover



M28876/15 • 660-073
Receptacle Cover



ATTACHMENT TYPE (COMMERCIAL)			
Shell Size	**Attachment Type**	**Connector Type**	**Code**
A	Ring	Plug	**13**
		Recp	**15**
B	Ring	Plug	**15**
		Recp	**17**
C	Ring	Plug	**17**
		Recp	**20**
F	Ring	Plug	**23**
		Recp	**27**
All	Fastener (Eyelet)	All	**01**

Rugged Fiber Optic CONNECTORS

Next-Generation High-Density NGCON Sea and Air Fiber Optic Connection System

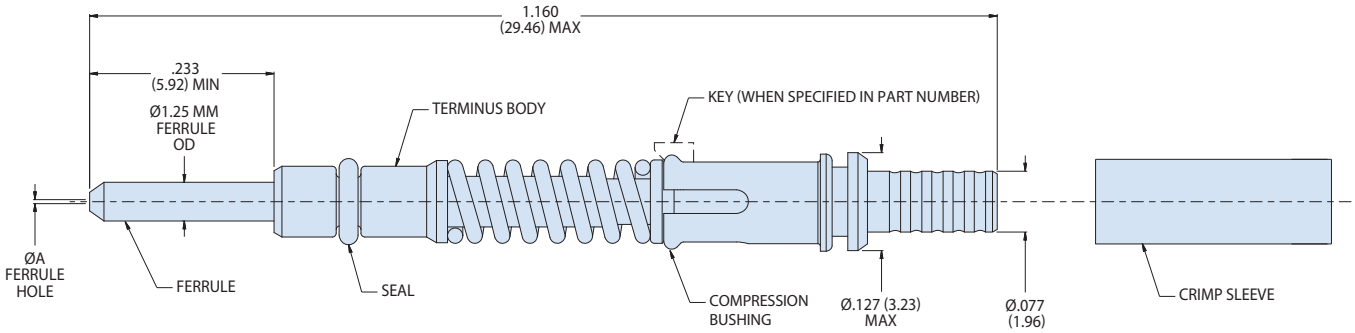
The Glenair Next Generation MIL-PRF-64266 (NGCON) fiber optic connection system is a high-performance solution for air, sea, and space applications. Developed with the NGCON design consortium, the system combines proven technology from standard MIL-PRF-28876 and MIL-DTL-38999 Series III designs with new innovations including rear-release genderless contacts, high-density packaging, and removable alignment sleeve retainers (ASR).

- **M28876 Double-start ACME mating threads, D38999 Sr. III style rear accessory threads.**
- **Multimode and singlemode capable**
- **Rear-release genderless termini, IAW M29504**
- **1.25 mm diameter ceramic ferrules and alignment sleeves**
- **Environmental O-ring sealing on terminus**
- **Receptacles compatible with M28876 panel cutouts**
- **Anti-decoupling (ratchet) mechanism on plug connector**
- **Keyed connectors and termini available for singlemode APC**

181-043 MIL-PRF-29504/18 and /20 Type Termini
181-078 Dummy terminus

HOW TO ORDER NGCON MIL-PRF-29504 TYPE TERMINI						
Part Number Non-Keyed	Part Number Keyed	ØA (Micron)	Fiber Type	Typical Fiber Size Core/Cladding/Coating (Micron)	Ref. M29504/18 Non-Keyed	Ref. M29504/20 Keyed
181-043-1250C	181-043K-1250C	125.0	SM	9/125	M29504/18-01Y	M29504/20-01Y
181-043-1255C	181-043K-1255C	125.5	SM	9/125	M29504/18-02Y	M29504/20-02Y
181-043-126SC	181-043K-126SC	126.0	SM	9/125	M29504/18-03Y	M29504/20-03Y
181-043-126C	181-043K-126C	126.0	MM	50/125, 62.5/125	M29504/18-26Y	M29504/20-26Y
181-043-127C	181-043K-127C	127.0	MM	50/125, 62.5/125	M29504/18-27Y	M29504/20-27Y
181-043-142C	181-043K-142C	142.0	MM	100/140	M29504/18-42Y	M29504/20-42Y
181-043-145C	181-043K-145C	145.0	MM	100/140	M29504/18-45Y	M29504/20-45Y
181-043-156C	181-043K-156C	156.0	MM	62.5/125/155	M29504/18-56Y	M29504/20-56Y
181-043-157C	181-043K-157C	157.0	MM	62.5/125/155	M29504/18-57Y	M29504/20-57Y
181-043-173C	181-043K-173C	173.0	MM	100/140/172	M29504/18-73Y	M29504/20-73Y
181-043-175C	181-043K-175C	175.0	MM	100/140/172	M29504/18-75Y	M29504/20-75Y

SM = Singlemode • MM = Multimode • Consult factory for additional sizes and QPL status.

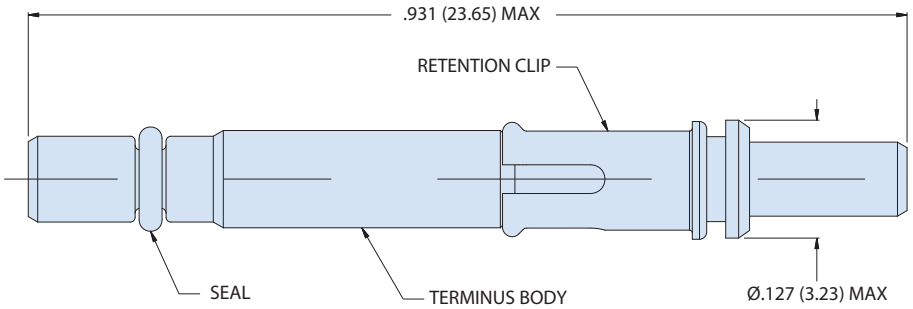


ACCESSORIES	
Part No.	Description
181-043-C	Crimp Sleeve, Ø2.4mm Max Jacket
182-012	Crimp tool
182-013	Insertion tool, straight
182-014	Insertion tool, 90°
182-021	Hand polishing tool
182-025	Removal tool

MATERIAL AND FINISH / NOTES

- Ferrule: Zirconia Ceramic
- Terminus Assembly: Stainless steel/passivate
- Retention Clip: Spring alloy
- Spring: Stainless steel/passivate
- Seal: Elastomeric rubber
- Crimp Sleeve: Stainless steel/passivate
- Crimp sleeve is supplied with terminus assembly, and may be ordered separately (see accessories table).

HOW TO ORDER NGCON DUMMY TERMINUS	
181-078	M29504/19-type rear-release dummy terminus for NGCON



NGCON MIL-PRF-64266/2 Type 180-118 (06) Plug Connector

MATERIAL AND FINISH

- Insert: Al Alloy/Anodize
- Peripheral Seal: Fluorosilicone/ Silicone Blend
- Misc. Hardware: SST/Passivate

NOTES

- Alignment Sleeve Retainer (ASR) supplied standard with insert type "S" only. One is required for each mated pair of connectors.
- Connectors with keyed terminus cavities are intended for use with keyed termini for singlemode APC.

KEY POLARIZATIONS

Polarization	Shell Size 11 P°	Shell Size 13, 15, 23 P°
1	55°	30°
2	80°	55°
3	105°	80°
4	130°	105°
5	230°	130°
6	255°	155°
7	280°	205°
8	305°	230°
9	-	255°
A	-	280°
B	-	305°
C	-	330°
Universal	Plug universal key polarization contains only primary and secondary master keys (no polarization key).	

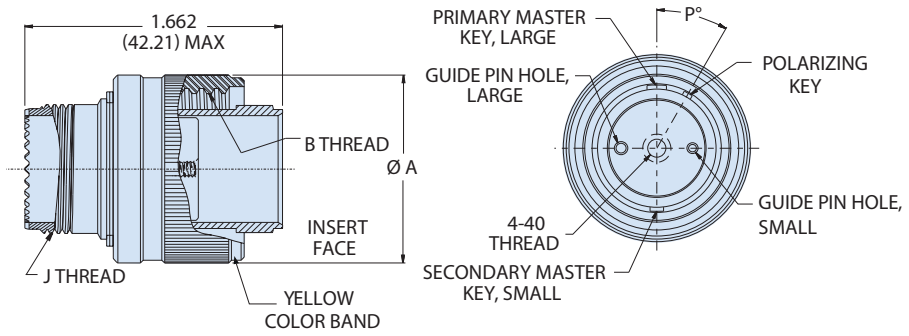
MATERIAL AND FINISH

Code	Material	Description
ME	Aluminum Alloy	Electroless Nickel
MT		Nickel-PTFE, Grey
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black
GB4		Hard Anodize, Black with PTFE
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
Z1	Stainless Steel	Passivate
ZL		Electro-deposited Nickel

HOW TO ORDER

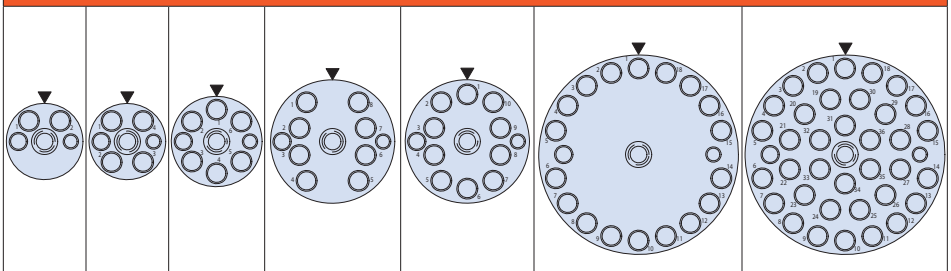
Sample Part Number	180-118	ZR	06	-15	-8	K	P	1
Basic Number	NGCON M64266 type connectors							
Material/Finish	See Material and Finish table							
Connector Style	**06** = Plug							
Shell Size	See Shell Size / Insert Arrangement and Dimensions table							
Insert Arrangement	See Shell Size / Insert Arrangement and Dimensions table							
Keyed Cavity option	**K** = Keyed Cavity (APC) in insert **Omit** for standard round non-keyed cavities							
Insert Type	**P** = Without ASR (Standard for Plug) **S** = With ASR (Standard for Receptacle)							
Key Polarization	Omit for Universal (See Key Polarizations table)							

SHELL SIZE / INSERT ARRANGEMENT AND DIMENSIONS



Shell Size	Insert Arrangement	ØA Max	B Thread	J Thread
-11	-2 or -4	1.028 (26.11)	.750-.1P-.2L-DS-2B	M15 x 1.0-6g 0.100R
-13	-6	1.141 (28.98)	.875-.1P-.2L-DS-2B	M18 x 1.0-6g 0.100R
-15	-8 or -10	1.263 (32.08)	1.062-.1P-.2L-DS-2B	M22 x 1.0-6g 0.100R
-23	-18 or -36	1.705 (43.31)	1.500-.1P-.2L-DS-2B	M34 x 1.0-6g 0.100R

INSERT ARRANGEMENTS



Size -11 Arr. -2	Size -11 Arr. -4	Size -13 Arr. -6	Shell Size -15 Arrangement -8	Shell Size -15 Arrangement -10	Shell Size -23 Arrangement -18	Shell Size -23 Arrangement -36

Plug front face shown. ▼ = Master key location ◯ = large guide pin hole ◯ = small guide pin hole

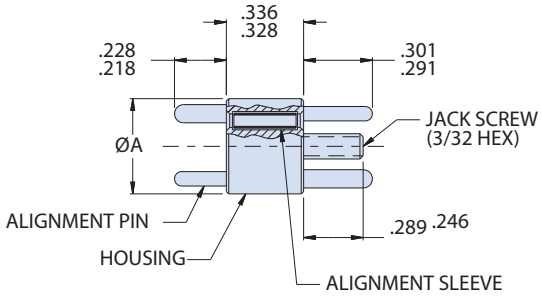
NGCON MIL-PRF-64266/2 Type
180-118ASR Alignment Sleeve Retainer

HOW TO ORDER						
Sample Part Number	**180-118**	**ASR**	**-15**	**-10**	**R**	**A**
Basic Number	NGCON M64266 type connectors					
Alignment Sleeve Retainer	**ASR** = Alignment Sleeve Retainer					
Shell Size	See 180-118ASR Dimensions table					
Insert Arrangement	See Insert Arrangements table					
ASR Type	**P** = Plug **R** = Receptacle (Standard)					
Material/Finish	**A** = Al Alloy / Anodize (standard) (**B** = Composite or **C** = Stainless Steel / Passivate consult factory)					

MATERIAL AND FINISH

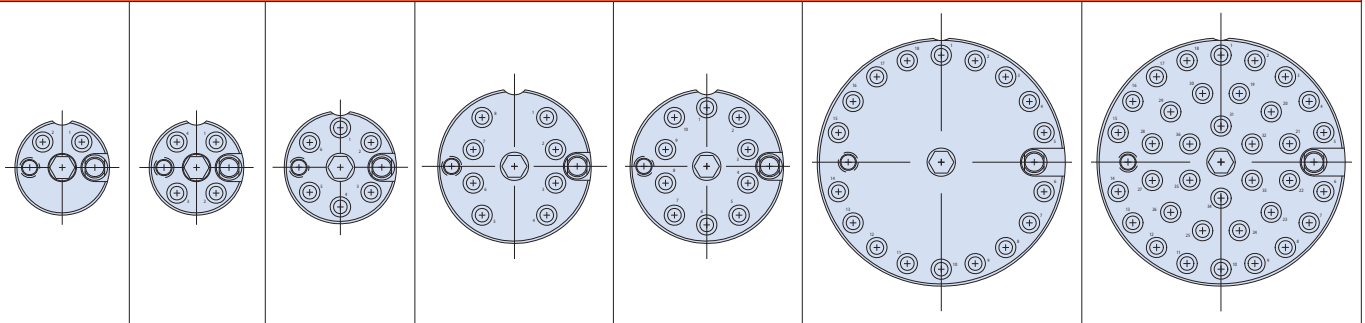
- Alignment Sleeve: Ceramic
- Alignment Pin and Screw: Stainless Steel / Passivate

180-118ASR DIMENSIONS



Shell Size	Insert Arrangement	ØA
-11	**-2**	.412 / .408 10.46 / 10.36
	-4	
-13	**-6**	.488 / .484 12.40 / 12.29
-15	**-8**	.666 / .662 16.92 / 16.81
	-10	
-23	**-18**	1.070 / 1.066 27.18 / 27.08
	-36	

INSERT ARRANGEMENTS



Shell Size -11 Arrangement -2	Shell Size -11 Arrangement -4	Shell Size -13 Arrangement -6	Shell Size -15 Arrangement -8	Shell Size -15 Arrangement -10	Shell Size -23 Arrangement -18	Shell Size -23 Arrangement -36

Receptacle front face shown. ◯ = large guide pin ◯ = small guide pin

NGCON MIL-PRF-64266/1 Type
180-118 (H7) Wall Mount Receptacle Connector

MATERIAL AND FINISH

- Insert: Al Alloy/Anodize, or High Grade Engineering Plastic - mfr's option
- Peripheral Seal: Fluorosilicone/ Silicone Blend
- Alignment sleeves: Zirconia ceramic
- Misc. Hardware: Stainless Steel/ Passivate

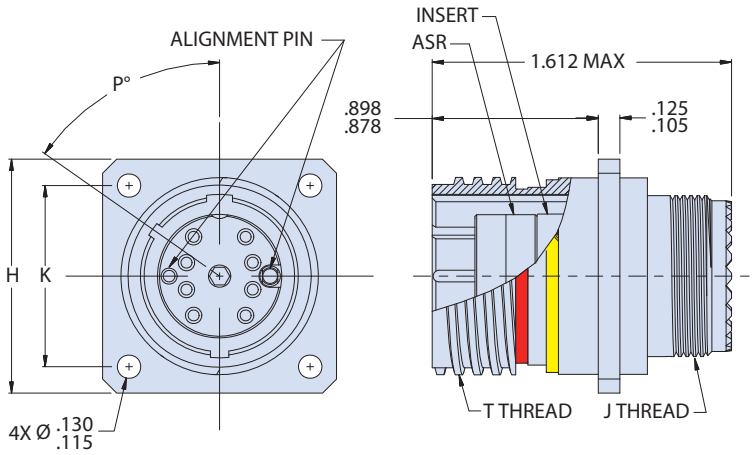
NOTES

- Alignment Sleeve Retainer (ASR) is supplied standard with insert type "S" only. One ASR is required for each mated pair of connectors.
- Connectors with keyed terminus cavities are intended for use with keyed termini for singlemode APC. Otherwise use standard non-keyed connector cavities and termini.

MATERIAL AND FINISH		
Code	**Material**	**Description**
ME	Aluminum Alloy	Electroless Nickel
MT		Nickel-PTFE, Grey
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black
GB4		Hard Anodize, Black with PTFE
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
Z1	Stainless Steel	Passivate
ZL		Electro-deposited Nickel

HOW TO ORDER								
Sample Part Number	**180-118**	**ZR**	**H7**	**-15**	**-8**	**K**	**S**	**1**
Basic Number	NGCON M64266 type connectors							
Material/Finish	See Material and Finish table							
Connector Style	**H7** - Wall Mount Receptacle							
Shell Size	**S**ee Shell Size / Insert Arrangement and Dimensions table							
Insert Arrangement	See Insert Arrangements table							
Keyed Cavity option	**K** = Keyed Cavity (APC) in insert **Omit** for standard round non-keyed cavities							
Insert Type	**P** = Without ASR (Standard for Plug) **S** = With ASR (Standard for Receptacle)							
Key Polarization	Omit for Universal (See Keyway Polarizations table)							

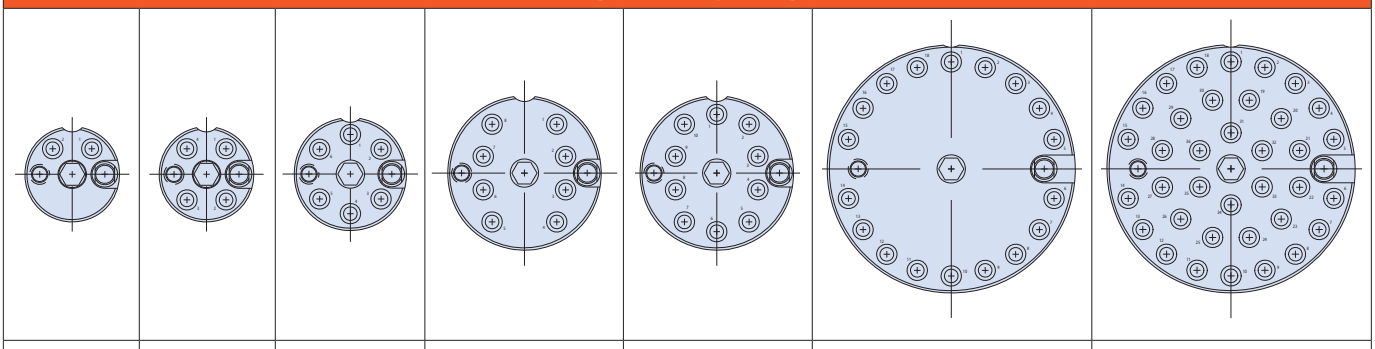
SHELL SIZE / INSERT ARRANGEMENT AND DIMENSIONS



Shell Size	Insert Arrangement	H ±.015	K	J Thread	T Thread
-11	**-2** or **-4**	1.023 (25.98)	.750 (19.05)	M15 x 1.0-6g 0.100R	.750-.1P-.2L-DS-2A
-13	**-6**	1.138 (28.91)	.843 (21.41)	M18 x 1.0-6g 0.100R	.875-.1P-.2L-DS-2A
-15	**-8** or **-10**	1.258 (31.95)	.968 (24.59)	M22 x 1.0-6g 0.100R	1.062-.1P-.2L-DS-2A
-23	**-18** or **-36**	1.718 (43.64)	1.281 (32.54)	M34 x 1.0-6g 0.100R	1.500-.1P-.2L-DS-2A

NGCON MIL-PRF-64266/1 Type 180-118 (H7) Wall Mount Receptacle Connector

INSERT ARRANGEMENTS



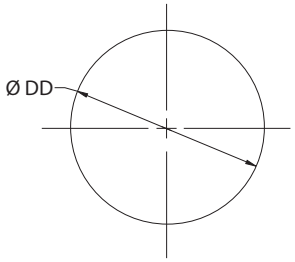
Shell Size -11 Arrangement -2	Shell Size -11 Arrangement -4	Shell Size -13 Arrangement -6	Shell Size -15 Arrangement -8	Shell Size -15 Arrangement -10	Shell Size -23 Arrangement -18	Shell Size -23 Arrangement -36

Receptacle front face shown. ◯ = large guide pin ◯ = small guide pin

KEYWAY POLARIZATIONS

Polarization	Shell Size 11 P°	Shell Size 13, 15, 23 P°
1	55°	30°
2	80°	55°
3	105°	80°
4	130°	105°
5	230°	130°
6	255°	155°
7	280°	205°
8	305°	230°
9	-	255°
A	-	280°
B	-	305°
C	-	330°
Universal	Receptacle connector universal keyway polarization contains all polarizations (1–9, A, B, and C)	

RECOMMENDED PANEL CUTOUT



Shell Size	ØDD ±.005
11	.812 (20.62)
13	.937 (23.80)
15	1.124 (28.55)
23	1.562 (39.67)

NGCON MIL-PRF-64266/3 Type
180-118 (08) Jam Nut Mount Receptacle

HOW TO ORDER

Sample Part Number	180-118	ZR	08	-15	-8	K	S	1
Basic Number	NGCON M64266 type connectors							
Material/Finish	See Material and Finish table							
Connector Style	**08** = Jam Nut Receptacle							
Shell Size	See Shell Size / Insert Arrangement and Dimensions table							
Insert Arrangement	See Insert Arrangements table							
Keyed Cavity option	**K** = Keyed Cavity (APC) in insert **Omit** for standard round non-keyed cavities							
Insert Type	**P** = Without ASR (Standard for Plug) **S** = With ASR (Standard for Receptacle)							
Key Polarization	Omit for Universal (See Keyway Polarizations table)							

MATERIAL AND FINISH

- Insert: Al Alloy/Anodize, or High Grade Engineering Plastic - mfr's option
- Panel Seal: Fluorosilicone
- Alignment sleeves: Zirconia ceramic
- Misc. Hardware: Stainless Steel/ Passivate

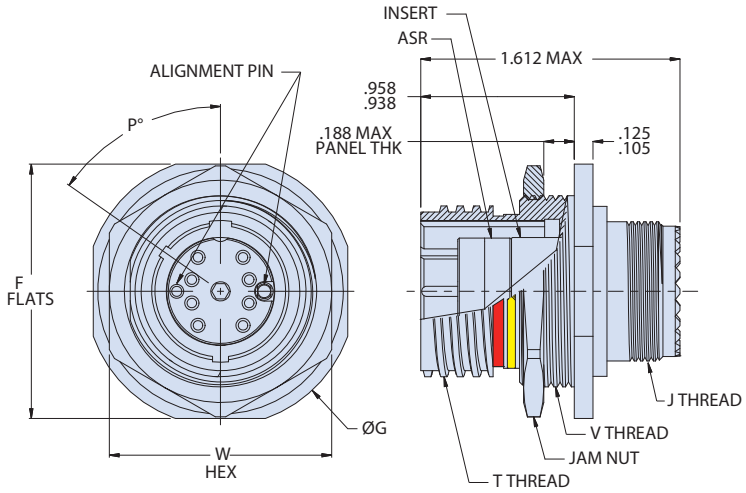
NOTES

- Alignment Sleeve Retainer (ASR) is supplied standard with insert type "S" only. One ASR is required for each mated pair of connectors.
- Connectors with keyed terminus cavities are intended for use with keyed termini for singlemode APC. Otherwise use standard non-keyed connector cavities and termini.

MATERIAL AND FINISH

Code	Material	Description
ME	Aluminum Alloy	Electroless Nickel
MT		Nickel-PTFE, Grey
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black
GB4		Hard Anodize, Black with PTFE
NF		Cadmium, Olive Drab
TZ		Tin-Zinc, Bronze-Gold
Z1	Stainless Steel	Passivate
ZL		Electro-deposited Nickel

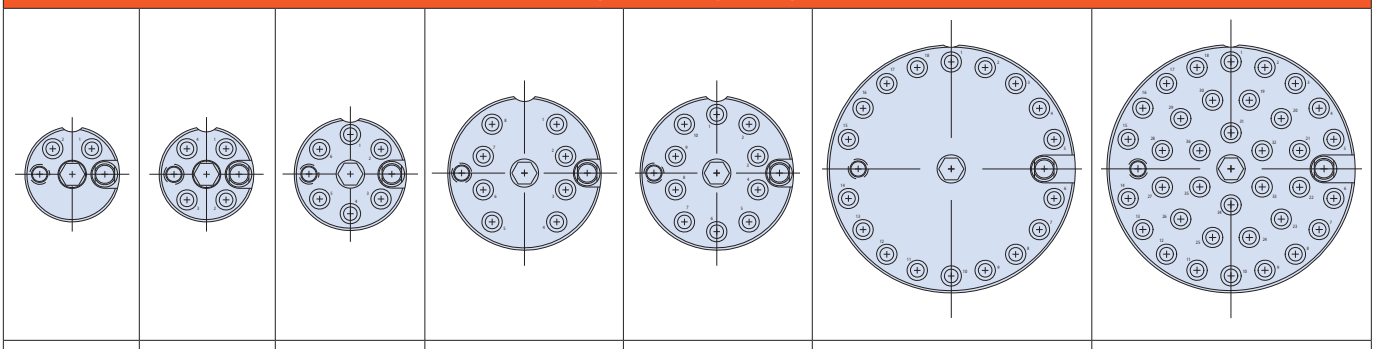
SHELL SIZE / INSERT ARRANGEMENT AND DIMENSIONS



Shell Size	Insert Arrangement	F ±.010	ØG ±.010	W	J Thread	T Thread	V Thread
-11	-2 or -4	1.264 (32.11)	1.358 (34.49)	1.075 / 1.045 (27.31 / 26.54)	M15 x 1.0-6g 0.100R	.750-.1P-.2L-DS-2B	.8750-20 UNEF-2A
-13	-6	1.389 (35.28)	1.498 (38.05)	1.205 / 1.171 (30.61 / 29.74)	M18 x 1.0-6g 0.100R	.875-.1P-.2L-DS-2B	1.0000-20 UNEF-2A
-15	-8 or -10	1.577 (40.06)	1.671 (42.44)	1.329 / 1.358 (33.76 / 34.49)	M22 x 1.0-6g 0.100R	1.062-.1P-.2L-DS-2B	1.1875-18 UNEF-2A
-23	-18 or -36	2.004 (50.90)	2.098 (53.29)	1.812 / 1.778 (46.02 / 45.16)	M34 x 1.0-6g 0.100R	1.500-.1P-.2L-DS-2B	1.6250-18 UNEF-2A

NGCON MIL-PRF-64266/3 Type 180-118 (08) Jam Nut Mount Receptacle

INSERT ARRANGEMENTS



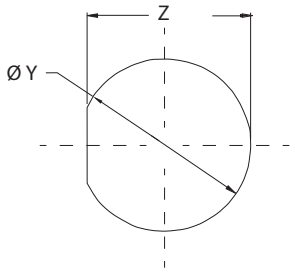
Shell Size -11 Arrangement -2	Shell Size -11 Arrangement -4	Shell Size -13 Arrangement -6	Shell Size -15 Arrangement -8	Shell Size -15 Arrangement -10	Shell Size -23 Arrangement -18	Shell Size -23 Arrangement -36

Receptacle front face shown. ◯ = large guide pin ◯ = small guide pin

KEYWAY POLARIZATIONS

Polarization	Shell Size 11 P°	Shell Size 13, 15, 23 P°
1	55°	30°
2	80°	55°
3	105°	80°
4	130°	105°
5	230°	130°
6	255°	155°
7	280°	205°
8	305°	230°
9	-	255°
A	-	280°
B	-	305°
C	-	330°
Universal	Receptacle connector universal keyway polarization contains all polarizations (1–9, A, B, and C)	

RECOMMENDED PANEL CUTOUT



Shell Size	ØY ±.005	Z ±.005
11	.885 (22.48)	.848 (21.54)
13	1.010 (25.65)	.976 (24.79)
15	1.198 (30.43)	1.160 (29.46)
23	1.630 (41.40)	1.593 (40.46)

GLENAIR SIGNATURE
FIBER OPTIC CONNECTION SYSTEMS

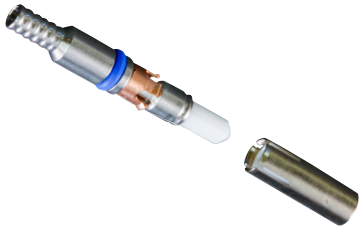
Rugged Fiber Optic CONNECTORS

Pierside Fiber Optic Connection System IAW NAVSEA 737971 and 737972

Pierside fiber optic interconnects built IAW NAVSEA 737971 and 737972 are part of a mission-critical ship-to-shore datalink system that ensures ships returning to port can immediately access and network to shore-based command, control, and information systems. The rugged, hermaphroditic construction ensures fast and easy installation. Stock cable lengths may be daisy-chained together to meet unique pierside requirements.

- **Fully compliant and tested IAW NAVSEA 737971 and 737972**
- **Full-spectrum series: connectors, termini, cables, and hermaphroditic protective covers**
- **Versatile hermaphroditic connector design with easy plug and receptacle reconfiguration**
- **NAVSEA-qualified M29504/14 and /15 pin and socket termini**
- **Singlemode and multimode and hybrid**

Pierside fiber optic connection system
Termini and Accessories • 180-156ASR Alignment Sleeve Retainer



PIN TERMINI - HOW TO ORDER				
Mil-Spec Part Number	ØA	Fiber Type	Fiber Size Core/Cladding	Commercial Part Number
M29504/14-4140C	125.0µ	Singlemode	9/125µ	181-039-1250C
Not listed in Mil-Spec	125.5µ	Singlemode	9/125µ	181-039-1255C
M29504/14-4141C	126.0µ	Singlemode	9/125µ	181-039-1260C
M29504/14-4131C	126.0µ	Multimode	50/125, 62.5/125µ	181-039-1260C
M29504/14-4132C	127.0µ	Multimode	50/125, 62.5/125µ	181-039-1270C
M29504/14-4135C	142.0µ	Multimode	100/140µ	181-039-1420C

SOCKET TERMINI - HOW TO ORDER				
Mil-Spec Part Number	ØA	Fiber Type	Fiber Size Core/Cladding	Commercial Part Number
M29504/15-4180C	125.0µ	Singlemode	9/125µ	181-040-1250CN
Not listed in Mil-Spec	125.5µ	Singlemode	9/125µ	181-040-1255CN
M29504/15-4181C	126.0µ	Singlemode	9/125µ	181-040-1260CN
M29504/15-4171C	126.0µ	Multimode	50/125, 62.5/125µ	181-040-1260CN
M29504/15-4172C	127.0µ	Multimode	50/125, 62.5/125µ	181-040-1270CN
M29504/15-4175C	142.0µ	Multimode	100/140µ	181-040-1420CN

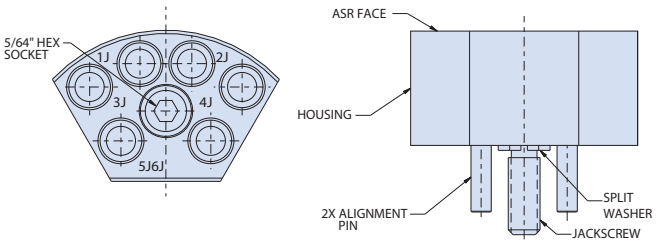
DUMMY TERMINI - HOW TO ORDER	
Mil-Spec P/N	Commercial P/N
M29504/03-4038	181-051

TOOLS AND ACCESSORIES	
Part Number	Description
265-008	Crimp Sleeve Ø 2.4mm Max Jacket (Mil-Spec Type)
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
182-035	Hand Polishing Tool

MATERIAL AND FINISH

- Alignment Pin and Jackscrew: Stainless Steel / Passivate
- Alignment Sleeve: Zirconia Ceramic
- Sleeve Retainer: BeCu Alloy / Nickel
- Split Washer: Copper-Nickel-Zinc Alloy

PIERSIDE CONNECTOR ALIGNMENT SLEEVE RETAINERS - HOW TO ORDER				
Sample Part Number	180-156ASR	-6	E	1
Basic Number	Pierside Fiber Optic Alignment Sleeve Retainer			
Number Of ASR Channels	6 = 6 ASR channels, 12 connector channels (ref)			
Sleeve Retention	N = Normal (standard) E = Enhanced			
Housing Material/Finish	1 = Aluminum alloy, anodize 2 = Aluminum alloy, electroless nickel			



Pierside Fiber Optic Connectors IAW NAVSEA 737971 / 737972
180-156 (16) hermaphroditic plug with backshell / strain relief

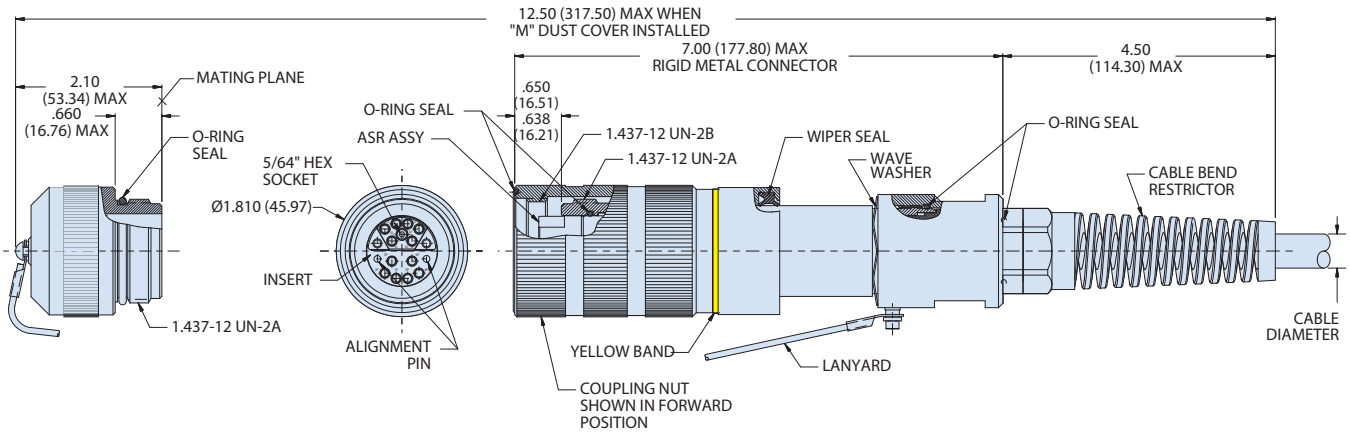
HOW TO ORDER

Sample Part Number	180-156	G2	16	-12	E	1	M	1	A
Basic Number	Pierside Fiber Optic plug								
Material/Finish Code	**G2** = Aluminum alloy, hard anodize, gray **NF** = Aluminum alloy, cadmium, olive drab								
Connector Type	**16** = Plug with integral straight backshell and strain relief								
Number Of Connector Channels	12								
Sleeve Retention	**N** = Normal **E** = Enhanced								
Insert Material/Finish Dash No.	**1** = Aluminum alloy, anodize **2** = Aluminum alloy, electroless nickel								
Dust Cover Dash Sym	**H** = Hermaphroditic **M** = Male **N** = None								
O-Ring Seal Material	**1** = Fluorosilicone								
Cable Diameter Range	**A** = .200-.350 (5.08- 8.89) **B** = .280-.470 (7.11-11.94) **C** = .350-.630 (8.89-16.00)								

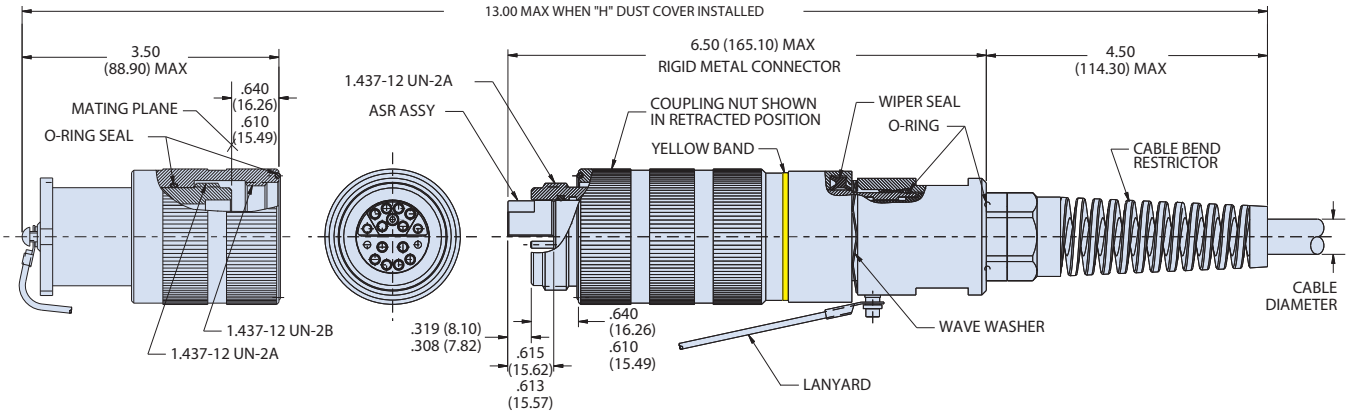
MATERIAL AND FINISH

- Internal hardware: Al alloy/chem film
- Misc. Hardware: stainless steel/ passivate
- Alignment sleeves: zirconia ceramic
- Sleeve retainers: copper alloy/ nickel
- Lanyard: stainless steel/coated
- Wiper seal: urethane
- Cable bend restrictor: nylon

Pierside Fiber Optic Connectors IAW NAVSEA 737971 / 737972
180-156 (16) hermaphroditic plug with backshell / strain relief



16 - Plug with M - Male Dust Cover



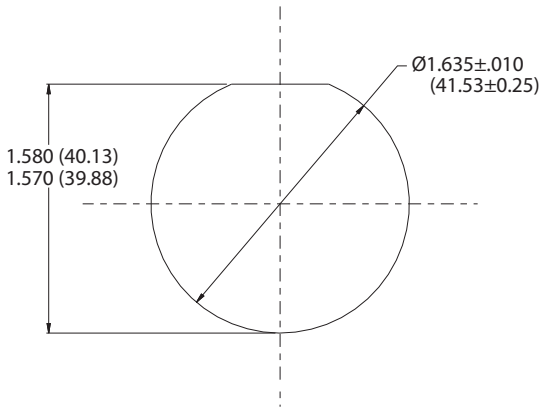
16 - Plug with H - Hermaphroditic Dust Cover

Pierside Fiber Optic Connectors IAW NAVSEA 737971 / 737972
180-157 (08), (13) Jam nut receptacles

HOW TO ORDER									
Sample Part Number	**180-157**	**G2**	**08**	**-12**	**E**	**1**	**F**	**1**	**A**
Basic Number	Pierside Fiber Optic jam nut receptacle								
Material/Finish Code	**G2** = Aluminum alloy, hard anodize, gray **MT** = Aluminum alloy, nickel-PTFE, gray								
Connector Type	**08** = jam nut receptacle **13** = jam nut receptacle, extended								
Number Of Connector Channels	12								
Sleeve Retention	**N** = Normal **E** = Enhanced								
Insert Material/Finish Dash No.	**1** = Aluminum alloy, anodize **2** = Aluminum alloy, electroless nickel								
Dust Cover Dash Sym	**F** = Female **N** = None								
O-Ring Seal Material	**1** = Fluorosilicone, non-conductive 2 = Fluorosilicone, conductive								
Cable Diameter Range for Extended Receptacle	**A** = .200-.350 (5.08- 8.89) **B** = .280-.470 (7.11-11.94) **C** = .350-.630 (8.89-16.00) **Omit** for 08 non-backshell version								

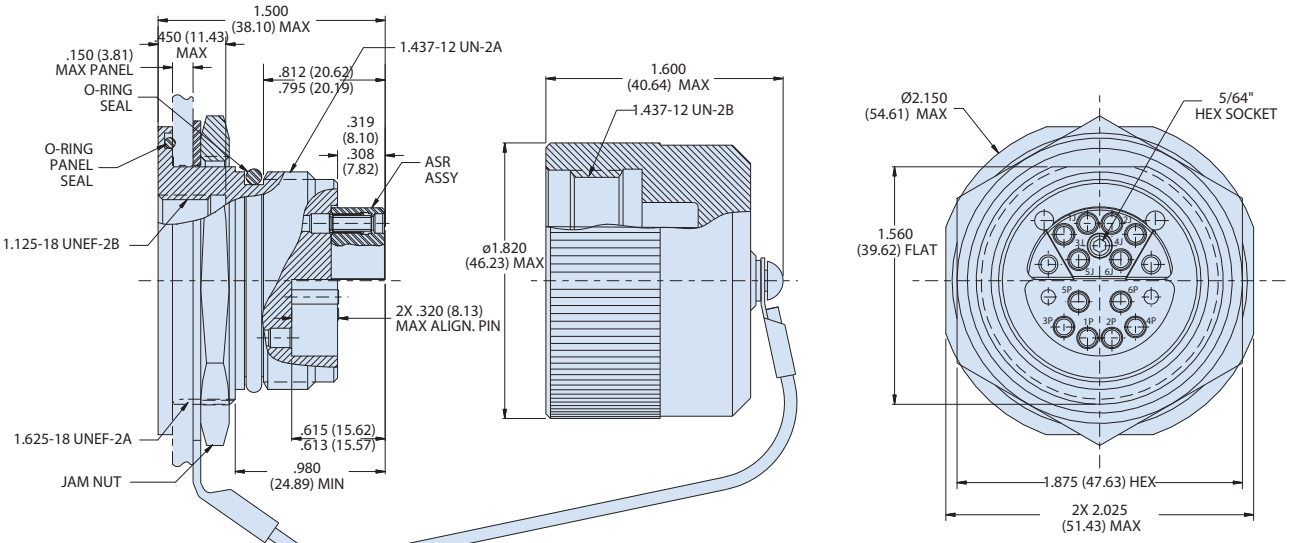
MATERIAL AND FINISH

- Internal hardware: Al alloy/chem film
- Misc. Hardware: stainless steel/ passivate
- Alignment sleeves: zirconia ceramic
- Sleeve retainers: BeCu alloy/ nickel
- Lanyard: stainless steel/coated
- Cable bend restrictor: nylon

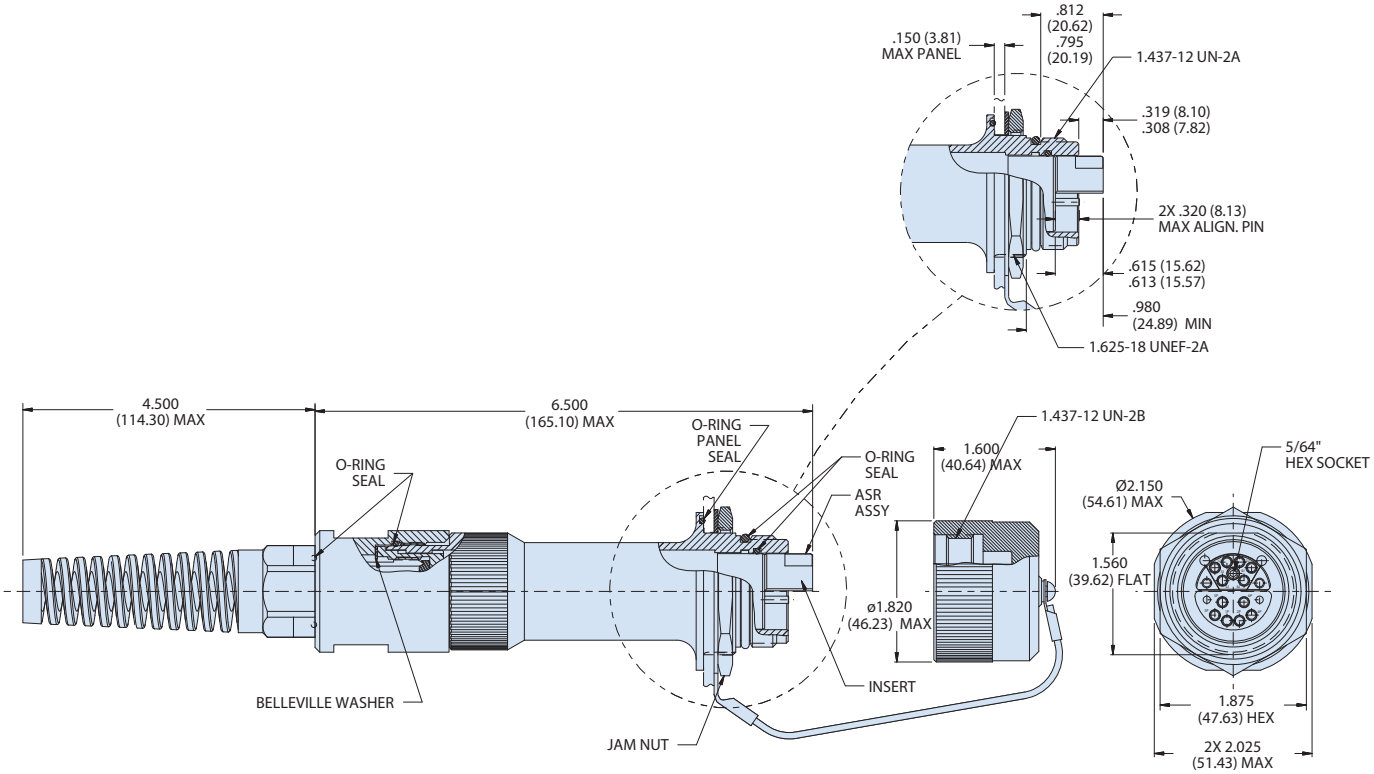


Recommended Panel Cutout

Pierside Fiber Optic Connectors IAW NAVSEA 737971 / 737972
180-157 (08), (13) Jam nut receptacles



08 - **Jam Nut Receptacle**



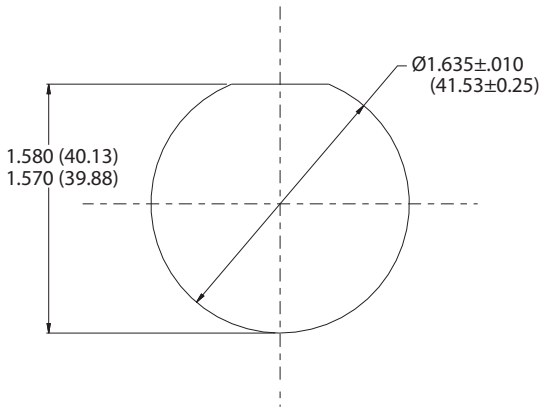
13 - **Jam Nut Receptacle, Extended**

Pierside Fiber Optic Connectors IAW NAVSEA 737971 / 737972
180-158 (08) (13) jam nut receptacles

HOW TO ORDER									
Sample Part Number	**180-158**	**G2**	**08**	**-12**	**E**	**2**	**F**	**1**	**A**
Basic Number	Pierside Fiber Optic jam nut receptacle								
Material/Finish Code	**NF** = Aluminum Alloy / Cad, Olive Drab								
Connector Type	**08** = jam nut receptacle **13** = jam nut receptacle, extended								
Number Of Connector Channels	12								
Sleeve Retention	**N** = Normal **E** = Enhanced								
Insert Material/Finish Dash No.	**2** = Aluminum alloy, electroless nickel								
Dust Cover Dash Sym	**F** = Female **N** = None								
O-Ring Seal Material	**1** = Fluorosilicone, conductive								
Cable Diameter Range for Extended Receptacle	**A** = .200-.350 (5.08- 8.89) **B** = .280-.470 (7.11-11.94) **C** = .350-.630 (8.89-16.00) **Omit** for 08 non-backshell version								

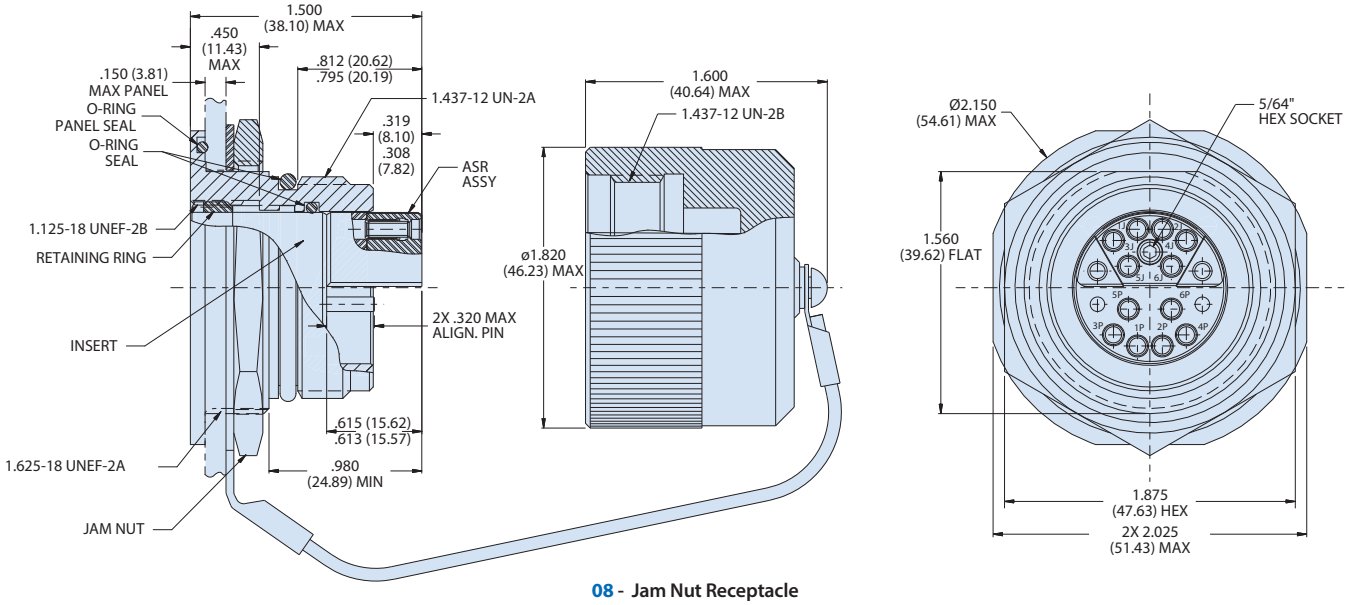
MATERIAL AND FINISH

- Jan Nut: Stainless steel / passivate
- Internal hardware: Al alloy/chem film
- Misc. Hardware: stainless steel/ passivate
- Alignment sleeves: zirconia ceramic
- Sleeve retainers: BeCu alloy/ nickel
- Lanyard: stainless steel/coated
- Cable bend restrictor: nylon

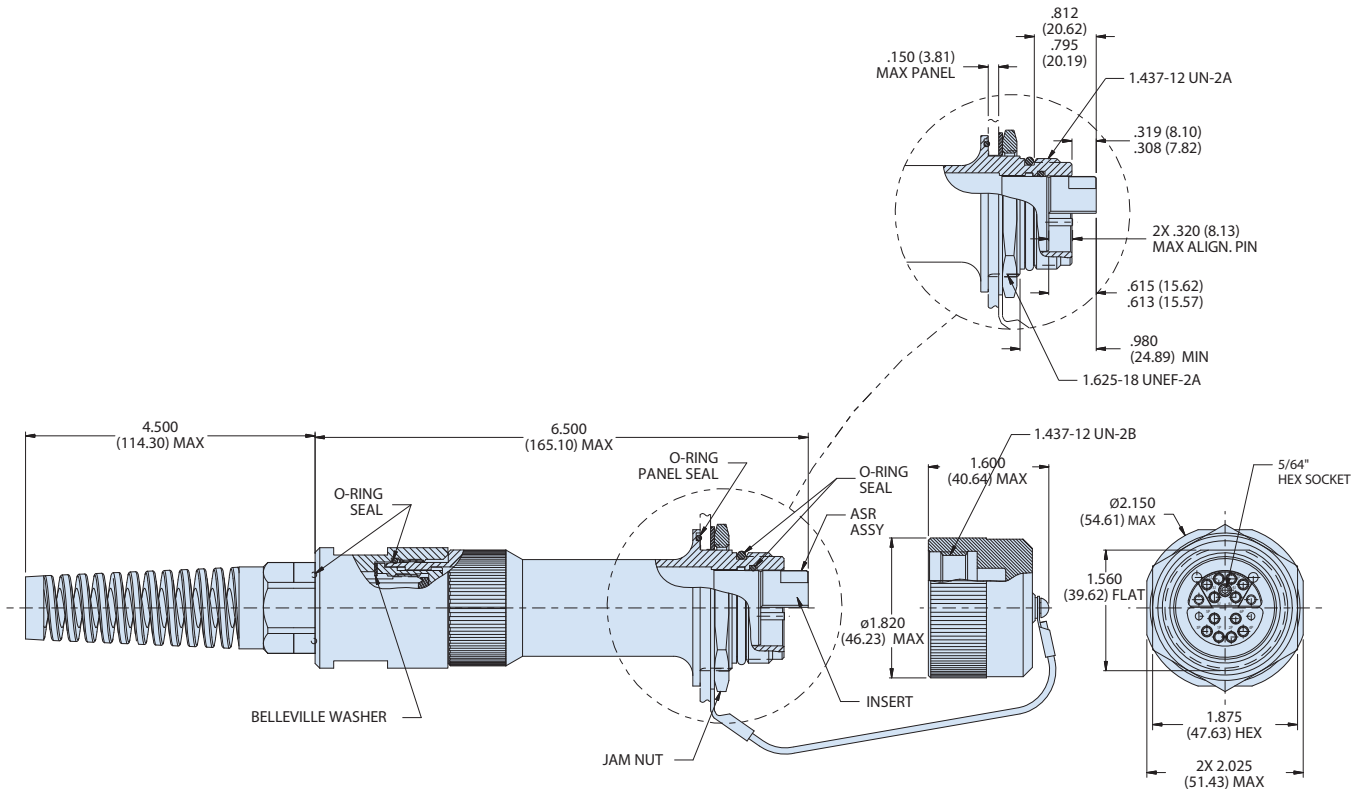


Recommended Panel Cutout

Pierside Fiber Optic Connectors IAW NAVSEA 737971 / 737972
180-158 (08) (13) jam nut receptacles



08 - Jam Nut Receptacle

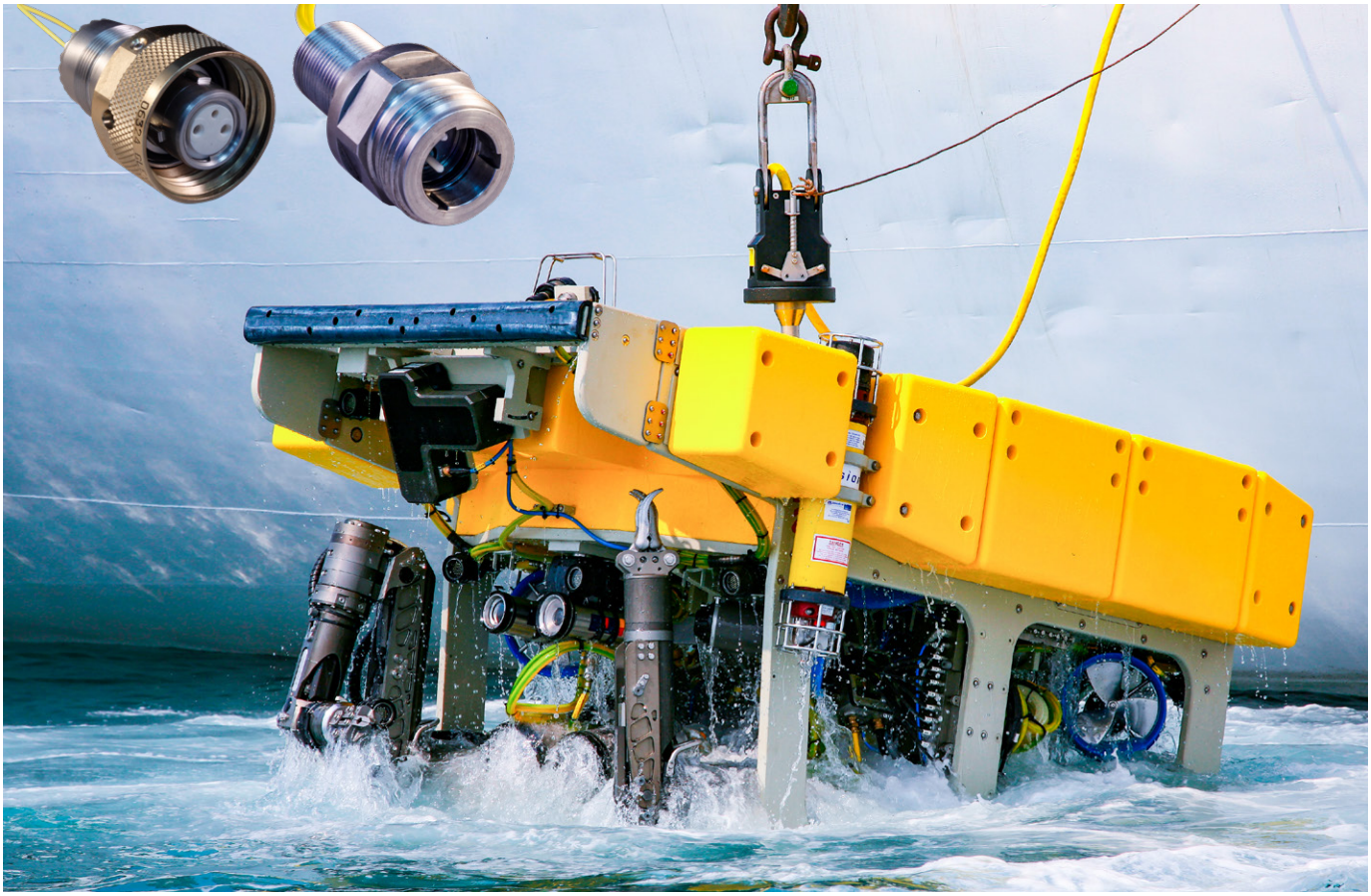


13 - Jam Nut Receptacle, Extended

GLENAIR
SIGNATURE
FIBER OPTIC
CONNECTION
SYSTEMS

Rugged Fiber Optic CONNECTORS

SeaKing™ Fiber Optic 10K PSI open-face pressure rated fiber optic connectors, cables and jumpers

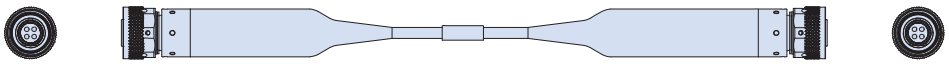


Data-intensive applications such as towed array sonar systems, well logging and monitoring equipment, digital seismic streamers, as well as magnetic flux leakage and ultrasonic inspection sensors used in intelligent pipeline inspection are ideally suited for ruggedized high-pressure fiber optics. Fiber optic interconnect systems deliver ultra high data bandwidth, immunity from RFI and other forms of electromagnetic interference, as well as reduced size and weight compared to high-speed copper.

- **Overmolded and PBOF butt-joint assemblies**
- **Full hydrostatic qualification test report available**
- **Wide range of fiber and hybrid fiber/electric layouts**
- **Singlemode and multimode**
- **<1.0db per mated connection data loss for singlemode**

SeaKing Fiber Optic Series Overview

ENVIRONMENTAL OVERMOLDED FIBER OPTIC JUMPERS

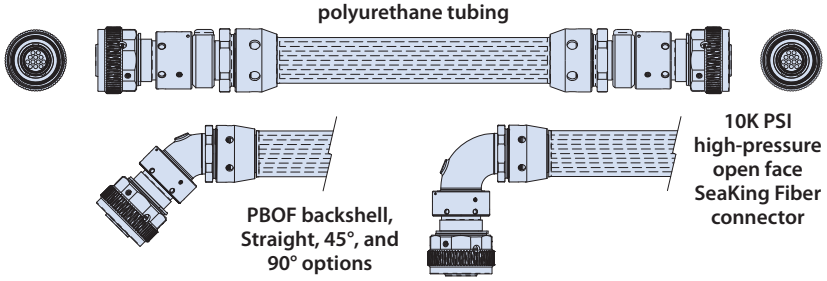


Straight and right-angle cable routing

High-pressure fiber optic cable

Chemical-resistant Viton® or polyurethane overmolding

PRESSURE-BALCANCED OIL-FILLED (PBOF) HIGH-PRESSURE FIBER OPTIC ASSEMBLIES

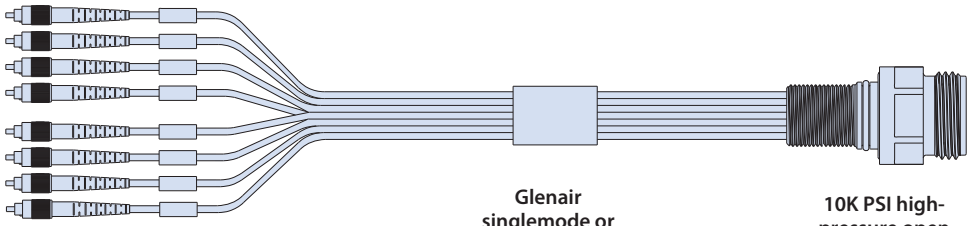


High-pressure fiber optic cable in clear polyurethane tubing

PBOF backshell, Straight, 45°, and 90° options

10K PSI high-pressure open face SeaKing Fiber connector

SEAKING™ BCR OR FCR TO COMMERCIAL FIBER OPTIC PIGTAIL ASSEMBLY FOR I/O-TO-BOARD MODULE APPLICATIONS



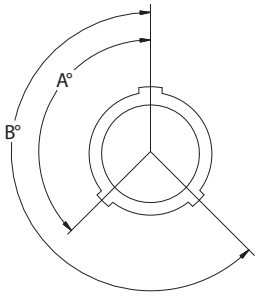
Multibranch transceiver terminations

Glenair singlemode or multimode fiber optic cable

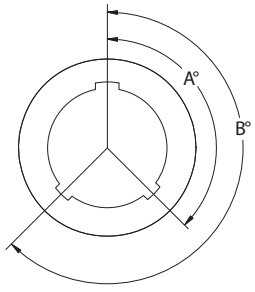
10K PSI high-pressure open face SeaKing Fiber connector

KEY AND KEYWAY POSITONS

Alternate Keyway Positions		
Key Position	Key Rotation A°	Key Rotation B°
Normal (N)	150°	210°
A	75°	210°
B	95°	230°
C	140°	275°



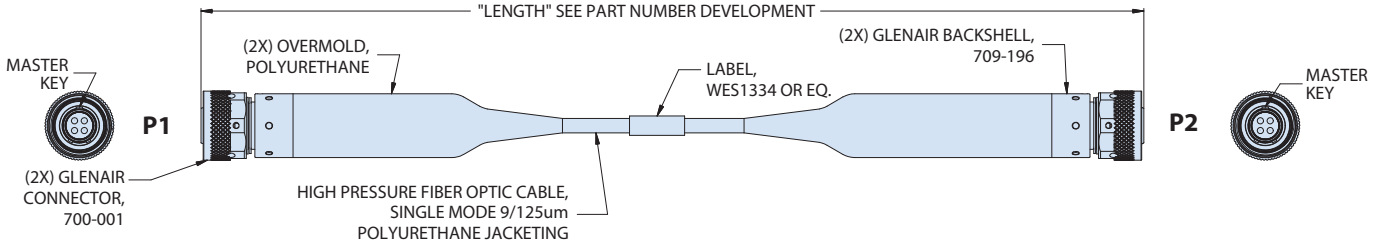
Plug (Key)



Receptacle (Keyway)

FA09648 SeaKing Fiber Optic
Overmolded CCP plug-to-plug jumper / breakout assemblies

HOW TO ORDER								
Sample Part Number	**FA09648**	**-MF4**	**-Z1**	**-N**	**-N**	**-XXXX**	**C**	**-XXXX**	**-CFM**
Basic Number	SeaKing Fiber Optic overmolded plug jumper/breakout assembly								
Shell Size & Insert Arrangement	See Glenair drawing 709-098								
Shell Material	**Z1** = 316 Stainless Steel (Consult Factory For Titanium or Peek Options)								
P1 Connector Key Arrangement	(**N**, **A**, **B**, **C**)								
P2 Connector Key Arrangement	(**N**, **A**, **B**, **C**) (**1** = Blunt End Cable, Less P2 Connector, Backshell, & Overmold)								
Length In Inches	See Standard Tolerance Table								
Pressure Cap Option	**C** = Provided With Pressure Caps **N** = No Pressure Caps								
Serial Number	Glenair Use Optional, Omit For None								
CFM Option	Glenair Use Optional, Omit For None								



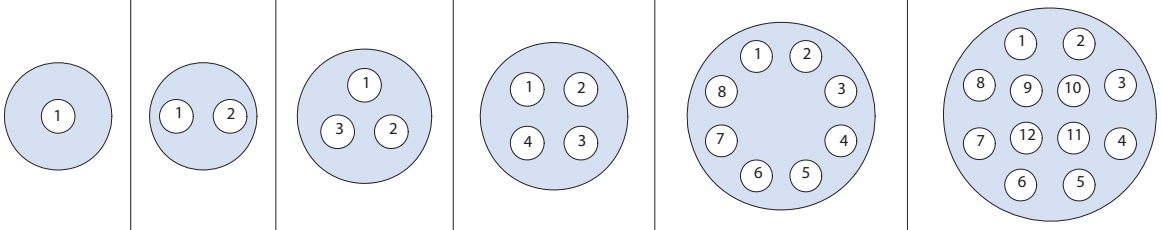
NOTES

- Optical performance: insertion loss shall be <1.0dB per mated connection when measured @ 1310nm wavelength. Insertion loss can be measured at 1550nm upon customer request.
- Unit pack: 1 EA. In a bag and/or cardboard box, label package IAW illustration.
- Molding process for high pressure applications shall be used for polyurethane overmolds.
- See drawing 700-001 for connector dimensions, materials, and finishes; see drawing 709-196 for backshell dimensions, materials, and finishes; see drawing 709-098 for available insert arrangement.
- Wiring for each arrangement is one to one.
- Cables over 240" (20FT) shall be shipped on reel.
- Pressure rating up to 3,000 PSI.

STANDARD-TOLERANCE	
Length	**Tolerance**
Up to 24 In	+1 In -0
24 Up to 120 In	+3 In -0
120 Up to 600 In	+6 In -0
600 Up to 1200 In	+12 In -0
1200 In and Up	+24 In -0

FA09648 SeaKing Fiber Optic
Overmolded CCP plug-to-plug jumper / breakout assemblies

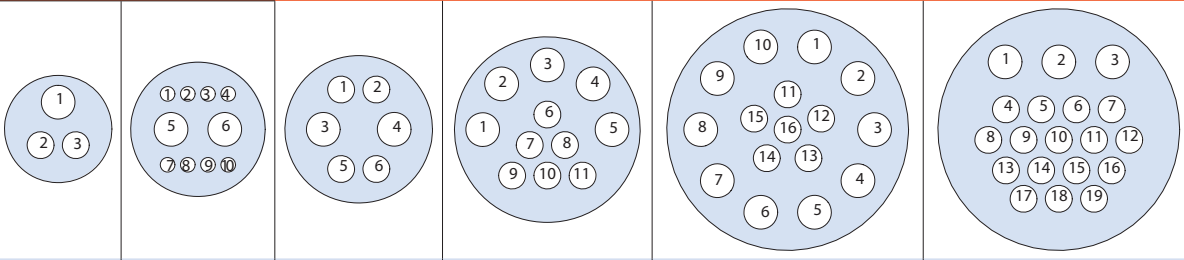
FIBER OPTIC-ONLY INSERT ARRANGEMENTS



Shell Size	E	K	L	M	O	P
Insert Arrangement	**EF1**	**KF2**	**LF3**	**MF4**	**OF8**	**PF12**
No. of F/O Termini	1 FO	2 FO	3 FO	4 FO	8 FO	12 FO

Face view of receptacle insert. Contact arrangements of plug inserts are reverse. Insert body 316 SST.

HYBRID COPPER-FIBER INSERT ARRANGEMENTS

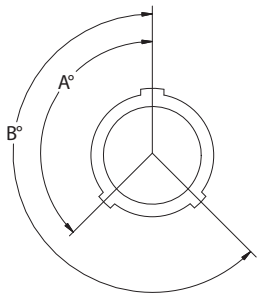


Shell Size	K	L	M	O	Q	Q
Insert Arrangement	**KH12**	**LH28**	**MH24**	**OH56**	**QH106**	**QH316**
No. of F/O Termini	1 FO	2 FO	2 FO	5 FO	10 FO	3 FO
No. of Contacts	2 #16	8 #22	4 #16	6 #16	6 #16	16 #16

Face view of receptacle insert. Contact arrangements of plug inserts are reverse. Insert body 316 SST.

ELECTRICAL CONTACT SPECIFICATIONS		
Contact Size	**#22**	**#16**
Amps	3	10
Wire Gage Accommodation	22	16
All contact arrangements are rated for 600 volts. Wiring 1-to-1.		

Alternate Key Positions



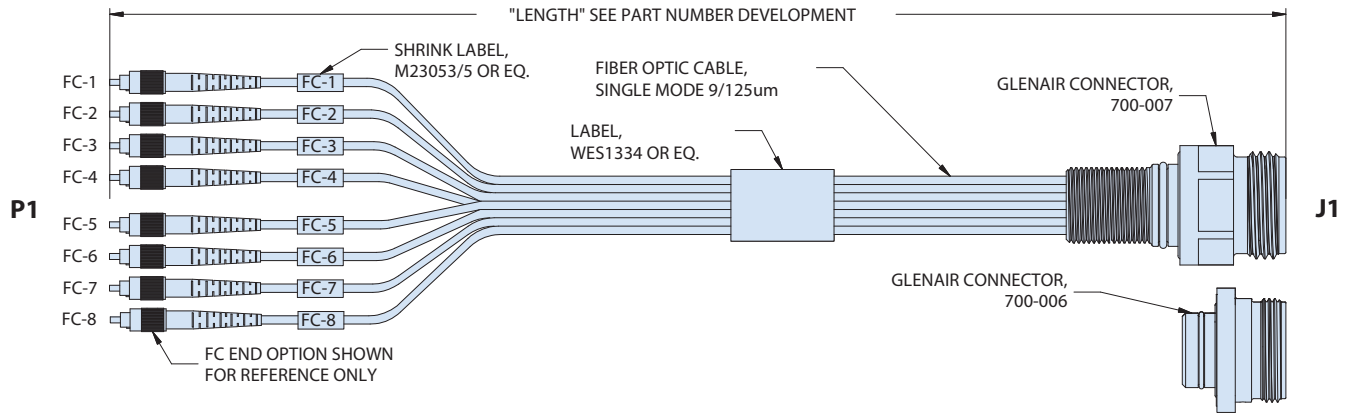
Key Position	Key Rotation A°	Key Rotation B°
Normal (N)	150°	210°
A	75°	210°
B	95°	230°
C	140°	275°

FA09649 SeaKing Fiber Optic
BCR or FCR Receptacle Breakout assembly

HOW TO ORDER

Sample Part Number	FA09649	-B	F	Z1	-0F8	N	-XXXX	C

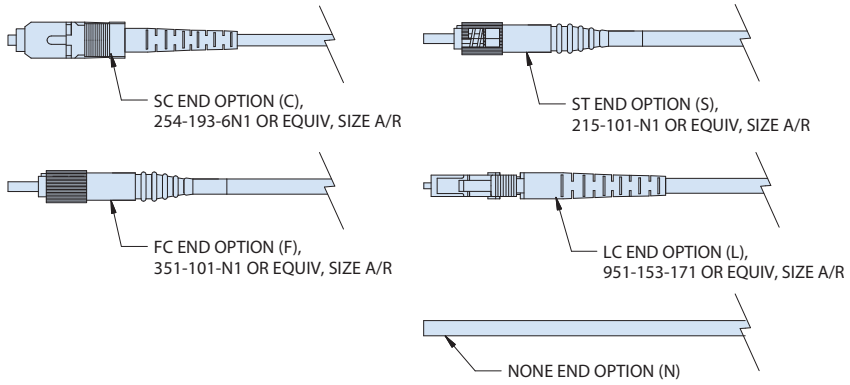
Basic Number	SeaKing Fiber Optic receptacle breakout assembly
J1 Option	**B** = BCR **F** = FCR
P1 Option	**C** = SC Leads **F** = FC Leads **L** = LC Leads **N** = None **S** = ST Leads
Shell Material	**TC** = Titanium **Z1** = 316 Stainless Steel
Insert Arrangement	See Insert Arrangements tables Insert Body Material: 316 SST
Key Arrangement	**A**, **B**, or **C**; N = normal,
Length	In inches (See Standard Tolerance Table)
Pressure Cap Option	**C** = Provided With Pressure Caps **N** = No Pressure Caps



NOTES

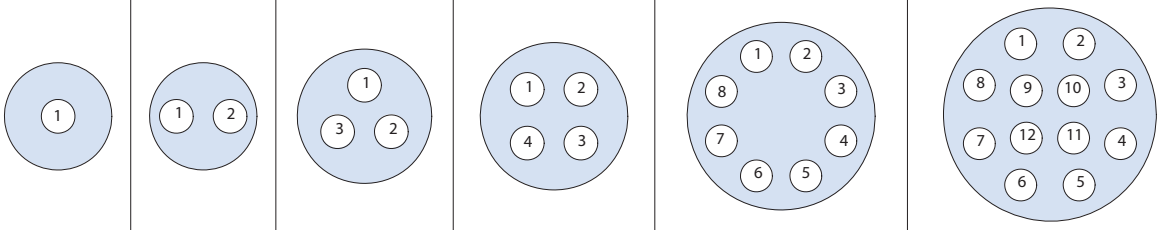
- Optical performance: insertion loss shall be <1.0dB when measured @ 1310nm wavelength. Insertion loss can be measured at 1550nm upon customer request.
- Unit pack: 1 EA. In a bag and/or cardboard box, label package IAW illustration.
- Mark reference designators as shown. Reference designator number shall match the contact number.
- See drawing 700-006 and 700-007 for connector dimensions, materials, and finishes.
- Wiring for each arrangement is one to one.

END 2 COMMERCIAL FIBER OPTIC CONNECTOR OPTIONS



FA09649 SeaKing Fiber Optic
BCR or FCR Receptacle Breakout assembly

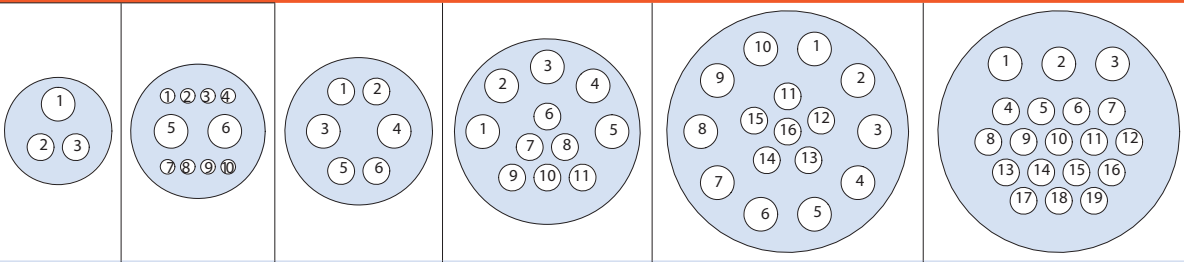
FIBER OPTIC-ONLY INSERT ARRANGEMENTS



Shell Size	E	K	L	M	O	P
Insert Arrangement	**EF1**	**KF2**	**LF3**	**MF4**	**OF8**	**PF12**
No. of F/O Termini	1 FO	2 FO	3 FO	4 FO	8 FO	12 FO

Face view of receptacle insert. Contact arrangements of plug inserts are reverse. Insert body 316 SST.

HYBRID COPPER-FIBER INSERT ARRANGEMENTS



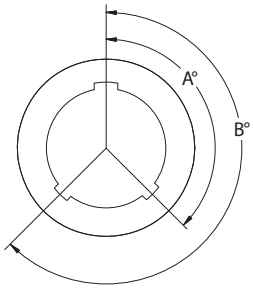
Shell Size	K	L	M	O	Q	Q
Insert Arrangement	**KH12**	**LH28**	**MH24**	**OH56**	**QH106**	**QH316**
No. of F/O Termini	1 FO	2 FO	2 FO	5 FO	10 FO	3 FO
No. of Contacts	2 #16	8 #22	4 #16	6 #16	6 #16	16 #16

Face view of receptacle insert. Contact arrangements of plug inserts are reverse. Insert body 316 SST.

ELECTRICAL CONTACT SPECIFICATIONS		
Contact Size	**#22**	**#16**
Amps	3	10
Wire Gage Accommodation	22	16
All contact arrangements are rated for 600 volts. Wiring 1-to-1.		

STANDARD-TOLERANCE	
Length	**Tolerance**
Up to 24 In	+1 In -0
24 Up to 120 In	+3 In -0
120 Up to 600 In	+6 In -0
600 Up to 1200 In	+12 In -0
1200 In and Up	+24 In -0

Alternate Keyway Positions

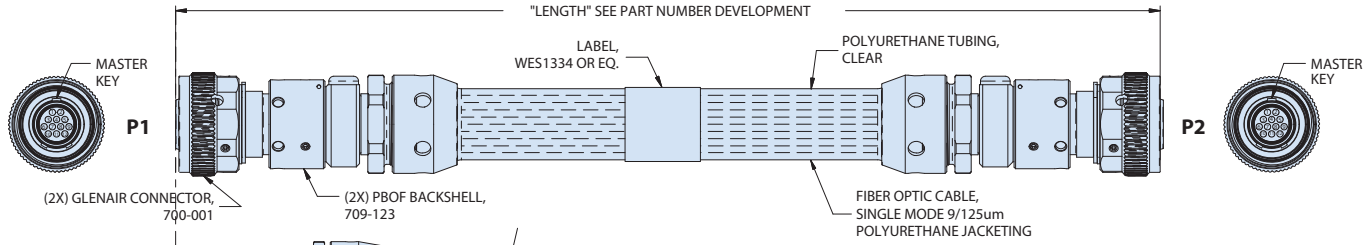


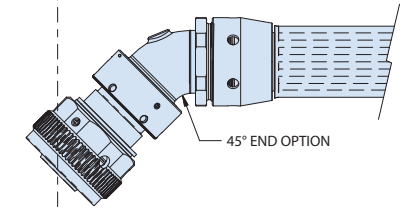
Key Position	Key Rotation A°	Key Rotation B°
Normal (N)	150°	210°
A	75°	210°
B	95°	230°
C	140°	275°

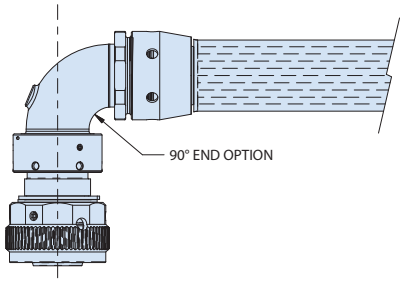
FA09650 SeaKing Fiber Optic
PBOF point-to-point assembly with straight, 45°, and 90° options

HOW TO ORDER

Sample Part Number	FA09650	-MF4	-Z1	-N	L	1	S	-N	L	1	S	-XXXX	C
Basic Number	SeaKing Fiber Optic PBOF point-to-point assembly												
Shell Size & Insert Arrangements	See Insert Arrangements Table												
Shell Material	**Z1** = 316 Stainless Steel (Consult Factory For Titanium Or Peek Options)												
P1 Connector Key Arrangements	(**N**, **A**, **B**, **C**)												
P1 Backshell Style	**L** = Straight	**M** = 45 Degree		**N** = 90 Degree									
P1 Fill Port Option	**0** = No	**1** = Yes											
P1 Swivel/Fixed Option	**F** = Fixed	**S** = Swivel											
P2 Connector Key Arrangements	(**N**, **A**, **B**, **C**)												
P2 Backshell Style	**L** = Straight	**M** = 45 Degree		**N** = 90 Degree									
P2 Fill Port Option	**0** = No	**1** = Yes											
P2 Swivel/Fixed Option	**F** = Fixed	**S** = Swivel											
Length	In inches (See Standard Tolerance Table)												
Pressure Cap Option	**C** = Provided With Pressure Caps			**N** = No Pressure Caps									





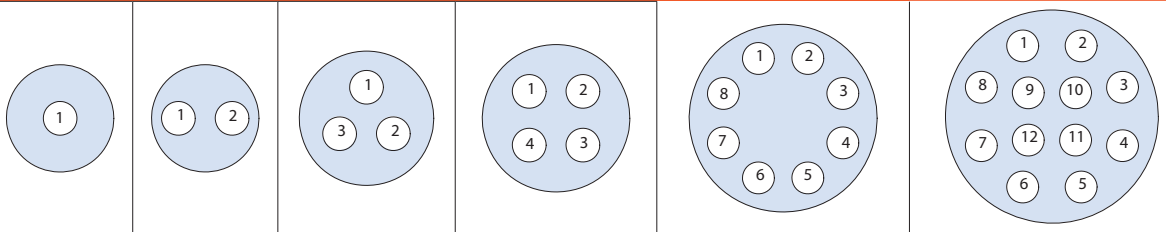


NOTES

- Optical performance: Insertion loss shall be <1.0dB per mated connection when measured @ 1310nm wavelength. Insertion loss can be measured at 1550nm upon customer request.
- Unit pack: 1 EA. In a bag and/or cardboard box, label package IAW Illustration.
- Operate pressure up to 10,000 PSI.
- See drawing 700-001 for connector dimensions, materials, and finishes; see drawing 709-098 for available insert arrangements; see drawing 709-123 for backshell dimensions, materials, and finishes.
- Wiring for each arrangement is one to one.

FA09650 SeaKing Fiber Optic
PBOF point-to-point assembly with straight, 45°, and 90° options

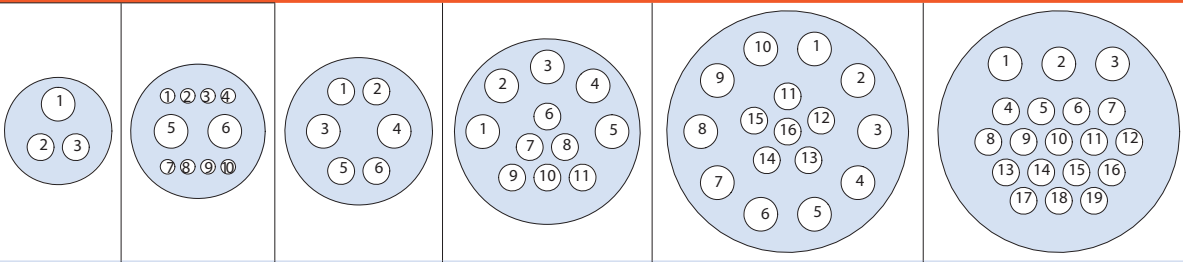
FIBER OPTIC-ONLY INSERT ARRANGEMENTS



Shell Size	E	K	L	M	O	P
Insert Arrangement	**EF1**	**KF2**	**LF3**	**MF4**	**OF8**	**PF12**
No. of F/O Termini	1 FO	2 FO	3 FO	4 FO	8 FO	12 FO

Face view of receptacle insert. Contact arrangements of plug inserts are reverse. Insert body 316 SST.

HYBRID COPPER-FIBER INSERT ARRANGEMENTS



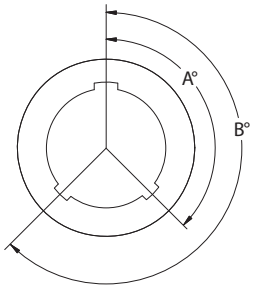
Shell Size	K	L	M	O	Q	Q
Insert Arrangement	**KH12**	**LH28**	**MH24**	**OH56**	**QH106**	**QH316**
No. of F/O Termini	1 FO	2 FO	2 FO	5 FO	10 FO	3 FO
No. of Contacts	2 #16	8 #22	4 #16	6 #16	6 #16	16 #16

Face view of receptacle insert. Contact arrangements of plug inserts are reverse. Insert body 316 SST.

ELECTRICAL CONTACT SPECIFICATIONS		
Contact Size	**#22**	**#16**
Amps	3	10
Wire Gage Accommodation	22	16
All contact arrangements are rated for 600 volts. Wiring 1-to-1.		

STANDARD-TOLERANCE	
Length	**Tolerance**
Up to 24 In	+1 In -0
24 Up to 120 In	+3 In -0
120 Up to 600 In	+6 In -0
600 Up to 1200 In	+12 In -0
1200 In and Up	+24 In -0

Alternate Keyway Positions



Key Position	Key Rotation A°	Key Rotation B°
Normal (N)	150°	210°
A	75°	210°
B	95°	230°
C	140°	275°

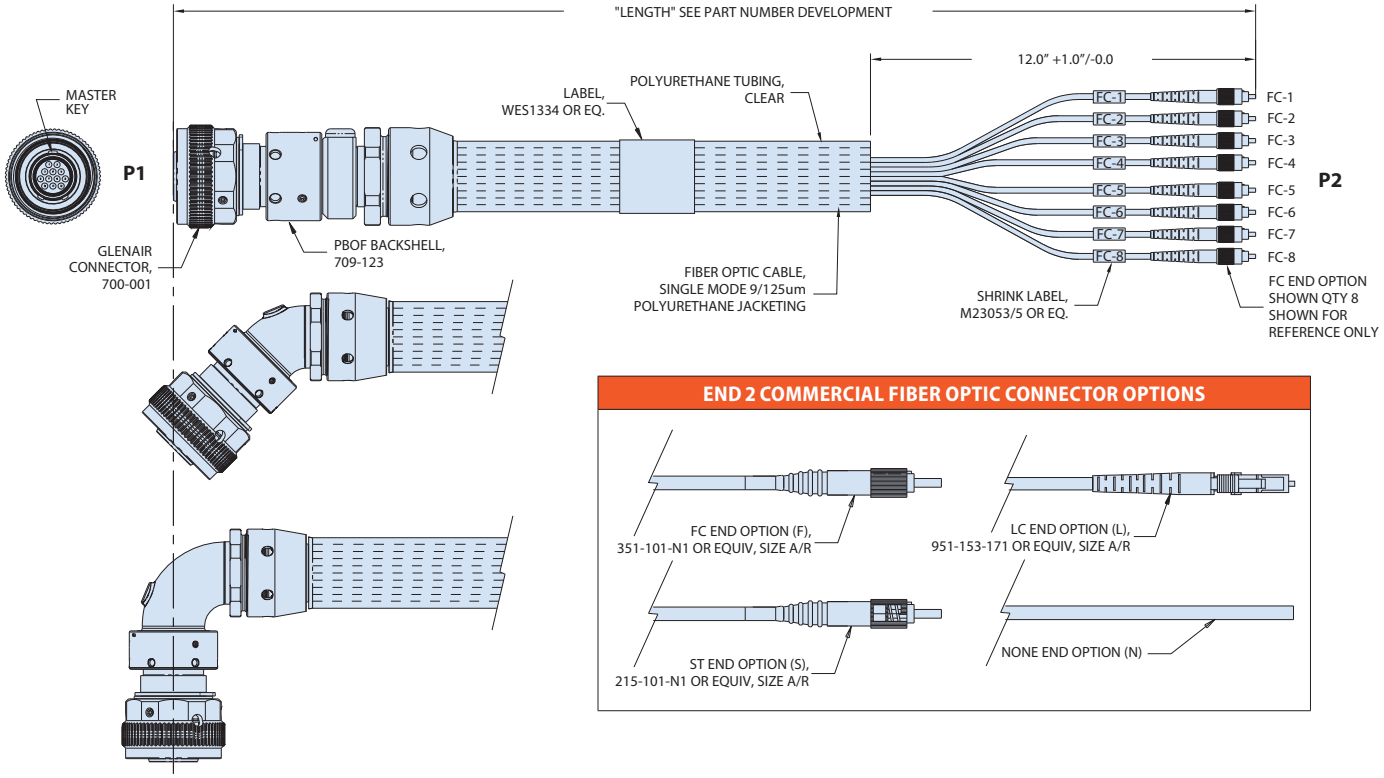
FA09781 SeaKing Fiber Optic
PBOF breakout plug assembly with straight, 45°, and 90° options

NOTES

- Optical performance: Insertion loss shall be <1.0dB per mated connection when measured @ 1310nm wavelength. Insertion loss can be measured at 1550nm upon customer request.
- Unit pack: 1 EA. In a bag and/or cardboard box, label package IAW Illustration.
- Operate pressure up to 10,000 PSI.
- See drawing 700-001 for connector dimensions, materials, and finishes; see drawing 709-098 for available insert arrangements; see drawing 709-123 for backshell dimensions, materials, and finishes.
- Wiring for each arrangement is one to one.

HOW TO ORDER

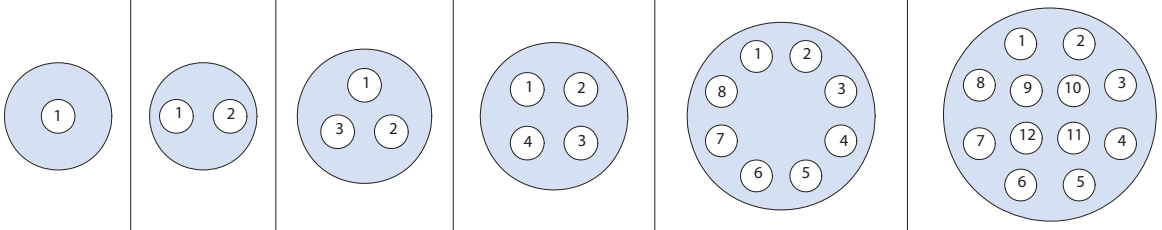
Sample Part Number	FA09781	-MF4	-Z1	-N	L	1	S	-N	-XXXX	C
Basic Number	SeaKing Fiber Optic PBOF Breakout Plug Assembly									
Shell Size & Insert Arrangements	See Glenair Drawing 709-098									
Shell Material	**Z1** = 316 Stainless Steel (Consult Factory For Titanium Or Peek Options)									
P1 Connector Key Arrangements	(**N**, **A**, **B**, **C**)									
P1 Backshell Style	**L** = Straight **M** = 45 Degree **N** = 90 Degree									
P1 Fill Port Option	**0** = No **1** = Yes									
P1 Swivel/Fixed Option	**F** = Fixed **S** = Swivel									
P2 Option	**F** = FC Leads **L** = LC Leads **N** = None **S** = ST Leads									
Length In Inches	In inches (See Standard Tolerance Table)									
Pressure Cap Option	**C** = Provided With Pressure Caps **N** = No Pressure Caps									



END 2 COMMERCIAL FIBER OPTIC CONNECTOR OPTIONS

FA09781 SeaKing Fiber Optic
PBOF breakout plug assembly with straight, 45°, and 90° options

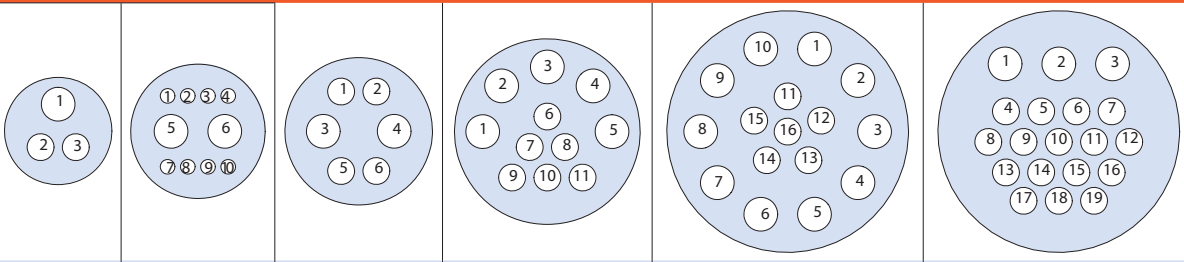
FIBER OPTIC-ONLY INSERT ARRANGEMENTS



Shell Size	E	K	L	M	O	P
Insert Arrangement	**EF1**	**KF2**	**LF3**	**MF4**	**OF8**	**PF12**
No. of F/O Termini	1 FO	2 FO	3 FO	4 FO	8 FO	12 FO

Face view of receptacle insert. Contact arrangements of plug inserts are reverse. Insert body 316 SST.

HYBRID COPPER-FIBER INSERT ARRANGEMENTS



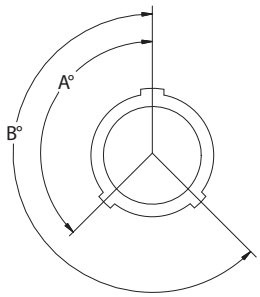
Shell Size	K	L	M	O	Q	Q
Insert Arrangement	**KH12**	**LH28**	**MH24**	**OH56**	**QH106**	**QH316**
No. of F/O Termini	1 FO	2 FO	2 FO	5 FO	10 FO	3 FO
No. of Contacts	2 #16	8 #22	4 #16	6 #16	6 #16	16 #16

Face view of receptacle insert. Contact arrangements of plug inserts are reverse. Insert body 316 SST.

ELECTRICAL CONTACT SPECIFICATIONS		
Contact Size	**#22**	**#16**
Amps	3	10
Wire Gage Accommodation	22	16
All contact arrangements are rated for 600 volts. Wiring 1-to-1.		

STANDARD-TOLERANCE	
Length	**Tolerance**
Up to 24 In	+1 In -0
24 Up to 120 In	+3 In -0
120 Up to 600 In	+6 In -0
600 Up to 1200 In	+12 In -0
1200 In and Up	+24 In -0

Alternate Key Positions



Key Position	Key Rotation A°	Key Rotation B°
Normal (N)	150°	210°
A	75°	210°
B	95°	230°
C	140°	275°

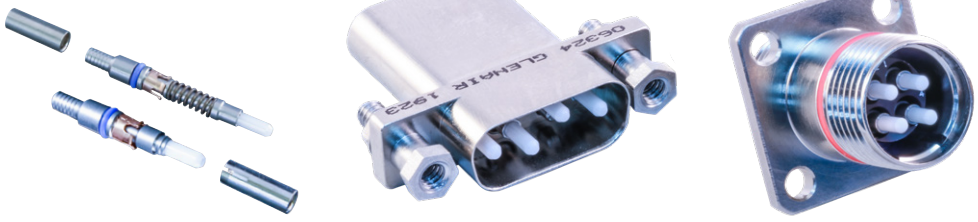
GLENAIR
SIGNATURE
FIBER OPTIC
CONNECTION
SYSTEMS

Rugged Fiber Optic CONNECTORS

Glenair Front Release (GFR) Fiber Optic Connection System: the Fast Road to Fiber Optic Integration

The Glenair Front Release system allows for rapid connector integration of optical media by placing retention and environmental sealing components directly on the termini. GFR enables fast design and development of 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**
- **Supports cylindrical and rectangular connectors**
- **Connector shells available in aluminum and stainless steel**



GFR fiber optic termini integration in micro miniature rectangular and circular connector packaging

Product selection guide

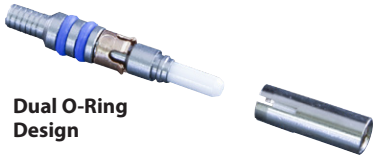
Glenair Front Release (GFR) fiber optic termini perform at insertion loss levels equivalent to the MIL-PRF-29504 termini designed for use in high-performance fiber optic systems such as MIL-DTL-38999 and MIL-PRF-28876. The GFR termini feature integrated O-ring sealing and retention clips, making them suitable for easy integration into machined connector cavities in virtually any form-factor connector. This approach has enabled Glenair to integrate optical media—with ruggedized, low dB loss performance—in Micro-D, D-Subminiature, and any number of custom connector shells, both rectangular and circular. This section of the catalog presents three examples of GFR connector integration. Contact the factory for availability and application engineering assistance for both standard and custom GFR fiber optic applications.

DIMENSIONAL NOTES

- Catalog dimensions are subject to change without notice. Consult Glenair engineering for a controlled-release sales drawing.
- Metric dimensions appear in parentheses in diagrams and tables, based on 1 inch = 25.4 mm, for reference only.
- Unless otherwise specified, the following other dimensional tolerances apply:
- .xx = ± .03 (0.8) • .xxx = ± .015 (0.4) • Angles = ± 5°

181-011 Socket Terminus, Size 16

Single O-Ring Design (Standard)



Dual O-Ring Design

MATERIAL AND FINISH

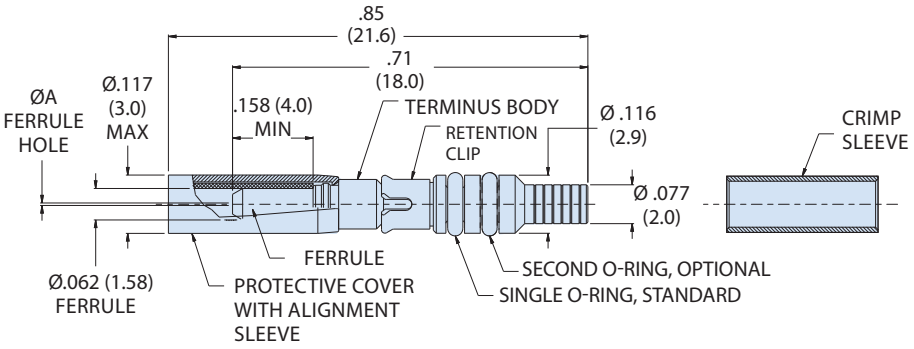
- Ferrule, Alignment Sleeve: Zirconia Ceramic
- Protective Cover: BeCu Alloy/ Nickel
- Terminus Body: Stainless Steel/ Passivate
- Retention Clip: BeCu Alloy
- O-Ring(s): Fluorosilicone
- Crimp Sleeve: Brass Alloy/Nickel

NOTES

- Alignment sleeve assembly (protective cover and alignment sleeve) and crimp sleeve are supplied with assembly. Spares may be ordered separately (See Tools and Accessories Table).
- See Glenair GAP-031 and GAP-031B for termination and assembly tools/procedures.

HOW TO ORDER				
Sample Part Number	**181-011**	**-126**	**K**	**D**
Basic Number	Size 16 Glenair front release (GFR) fiber optic socket terminus			
Dash Number	See Assembly Dash Number table			
Alignment Sleeve Option	**K** = Stainless steel alignment sleeve **Omit** = ceramic alignment sleeve (standard)			
Second O-ring, optional	**D** = second O-ring **Omit** for single O-ring (standard)			

DIMENSIONS, FIBER SPECS, AND ASSEMBLY DASH NUMBER



Assembly Dash Number	Ø A (Micron)	Typ. Fiber Type	Fiber Size Core/Cladding/Coating (Microns)
-125	125.5	Single Mode	9/125
-126S	126.0	Single Mode	9/125
-126	126.0	Multi Mode	50/125, 62.5/125
-142	142.0	Multi Mode	100/140
-156	156.0	Multi Mode	62.5/125/155 (Polyimide)
-173	173.0	Multi Mode	100/140/172 (Polyimide)
-175	175.0	Multi Mode	100/140/172 (Polyimide)
-231	231.0	Multi Mode	200/225
-236	236.0	Multi Mode	200/230
-286	286.0	Multi Mode	200/280
-448	448.0	Multi Mode	400/440

Consult factory for additional sizes

TOOLS AND ACCESSORIES	
Part Number	**Description**
265-002	Crimp Sleeve, Ø 2.2mm Max Jacket
181-011-S	Protective Cover with Ceramic Sleeve
181-011-K	Protective Cover with Stainless Steel Sleeve
182-005S	Polishing Tool
182-012	Crimp Tool
182-013	Insertion Tool, Straight
182-014	Insertion Tool, 90 Degree
182-015	Removal Tool
182-016	Insertion/Removal Tool, Alignment Sleeve

181-012 Pin Terminus, Size 16
181-051 Dummy Terminus, Size 16

Single O-Ring Design (Standard)

Dual O-Ring Design

MATERIAL AND FINISH

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

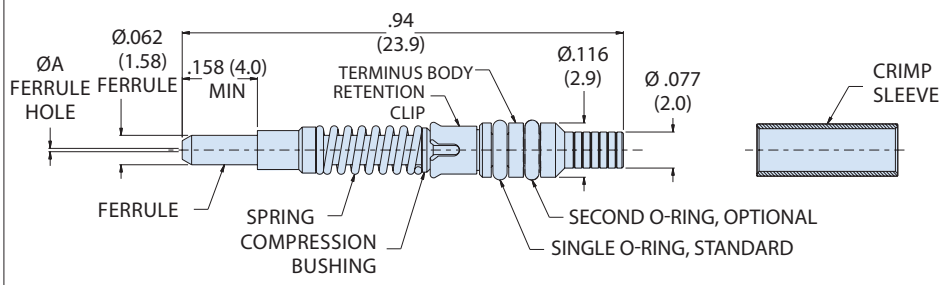
NOTES

- Crimp sleeve supplied with assembly. Spares may be ordered separately (See Tools and Accessories Table).
- See Glenair GAP-031 and GAP-031B for termination and assembly tools/procedures.

TOOLS AND ACCESSORIES	
Part Number	**Description**
265-002	Crimp Sleeve, Ø 2.2mm Max Jacket
182-005P	Polishing Tool
182-012	Crimp Tool
182-013	Insertion Tool, Straight*
182-014	Insertion Tool, 90 Degree*
182-015	Removal Tool*
*Also applies to 181-051 dummy terminus	

HOW TO ORDER			
Sample Part Number	**181-012**	**-126**	**D**
Basic Number	Size 16 Glenair front release (GFR) fiber optic pin terminus		
Dash Number	See Assembly Dash Number table		
Second O-Ring, Optional	**D** = second O-ring **Omit** for single O-ring (standard)		

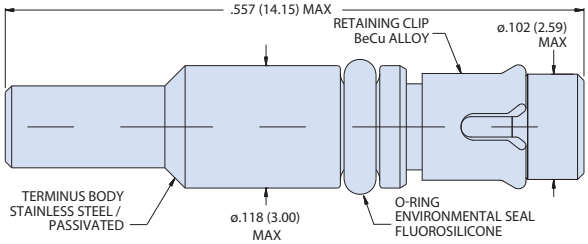
DIMENSIONS, FIBER SPECS, AND ASSEMBLY DASH NUMBER



Assembly Dash Number	Ø A (Micron)	Typ. Fiber Type	Fiber Size Core/Cladding/Coating (Microns)
-125	125.5	Single Mode	9/125
-126S	126.0	Single Mode	9/125
-126	126.0	Multi Mode	50/125, 62.5/125
-142	142.0	Multi Mode	100/140
-156	156.0	Multi Mode	62.5/125/155 (Polyimide)
-173	173.0	Multi Mode	100/140/172 (Polyimide)
-175	175.0	Multi Mode	100/140/172 (Polyimide)
-231	231.0	Multi Mode	200/225
-236	236.0	Multi Mode	200/230
-286	286.0	Multi Mode	200/280
-448	448.0	Multi Mode	400/440

Consult factory for additional sizes

DUMMY TERMINUS FOR GFR	PART NUMBER
Dummy Terminus, Size 16	181-051



Micro-D Rectangular
180-063 Pin Receptacle Connector

Micro-D form-factor GFR Pin Receptacle. Supports from one to eight GFR pin termini with insertion loss performance comparable to industry-standard MIL-PRF-29504. Precision-machined with integral alignment pins for optimum optical fiber alignment and low dB data loss performance. Available in aluminum and stainless steel. Termini sold separately. Supports single- and dual-O-ring termini.

MATERIAL AND FINISH

- Misc. Hardware: Stainless Steel/ Passivate

NOTES

- This connecter is designed to be front panel mount only.
- For backshell drawings, see 189-155 (oval cable entry) and 189-156 (round cable entry.
- Backshells are to be used only with non-panel mount configurations.
- Fiber Optic Pin Termini to be ordered separately (see Glenair drawing 181-012).
- For mating plug connector, see Glenair drawing 180-064.

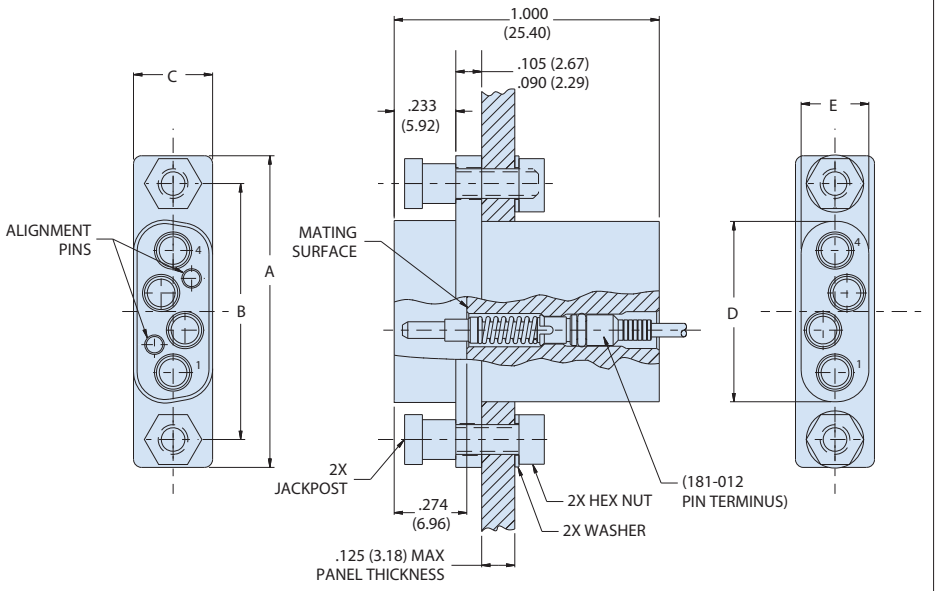
MATERIAL/FINISH

Code	Material	Finish
C	Aluminum Alloy	Anodize, Black
M		Electroless Nickel
NF		Cadmium, Olive Drab over Electroless Nickel
ZN		Zinc-Nickel, Olive Drab, Over Electroless Nickel
Z1	Stainless Steel	Passivate

HOW TO ORDER

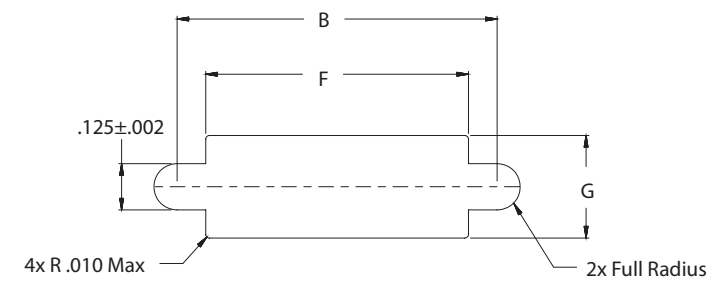
Sample Part Number	180-063	-25	-4	M	-JS
Basic Number	Micro-D GFR fiber optic receptacle connector				
Shell Size Dash No.	See Shell Size table				
Insert Arrangement Dash No.	See Shell Size table				
Material/Finish Code	See Material and Finish table				
Attachment Hardware	**-JS** = Jackscrew hardware **Omit** = Jackpost hardware (standard)				

SHELL SIZE AND DIMENSIONS



Shell Size	Insert Arrangement (Pin Count)	A ±.010 (0.25)	B ±.003 (0.08)	C ±.010 (0.25)	D ±.010 (0.25)	E ±.002 (0.05)	F ±.005 (0.13)	G ±.005 (0.13)
-9	-1	.775 (19.7)	.565 (14.4)	.298 (7.6)	.298 (7.6)	.255 (6.5)	.410 (10.4)	.270 (6.9)
-15	-2	.925 (23.5)	.715 (18.2)	.298 (7.6)	.530 (13.5)	.255 (6.5)	.560 (14.2)	.270 (6.9)
-21	-3	1.075 (27.3)	.865 (22.0)	.298 (7.6)	.680 (17.3)	.255 (6.5)	.710 (18.0)	.270 (6.9)
-25	-4	1.175 (29.8)	.965 (24.5)	.298 (7.6)	.654 (16.6)	.255 (6.5)	.810 (20.6)	.270 (6.9)
-31	-5	1.325 (33.7)	1.115 (28.3)	.298 (7.6)	.930 (23.6)	.255 (6.5)	.960 (24.4)	.270 (6.9)
-100	-8	2.160 (54.9)	1.800 (45.7)	.384 (9.8)	1.425 (36.2)	.322 (8.2)	1.455 (37.0)	.340 (8.6)

RECOMMENDED PANEL CUTOUT



Micro-D Rectangular
180-064 Socket Plug Connector

Micro-D form-factor GFR Socket Plug. Supports from one to eight GFR socket termini with insertion loss performance comparable to industry-standard MIL-PRF-29504. Precision-machined with integral alignment pin holes for optimum optical fiber alignment and low dB data loss performance. Available in aluminum and stainless steel. Termini sold separately. Supports single- and dual-O-ring termini.

MATERIAL AND FINISH

- Misc. Hardware: Stainless Steel/ Passivate

NOTES

- For backshell drawings, see 189-155 (oval cable entry) and 189-156 (round cable entry.
- Backshells are to be used only with non-panel mount configurations.
- When jackpost hardware is specified, connector to be front-panel mounted only. Panel thickness is .125 (3.2)max.
- Fiber Optic Socket Termini to be ordered separately (see Glenair drawing 181-011).
- For mating receptacle connector, see Glenair drawing 180-063.

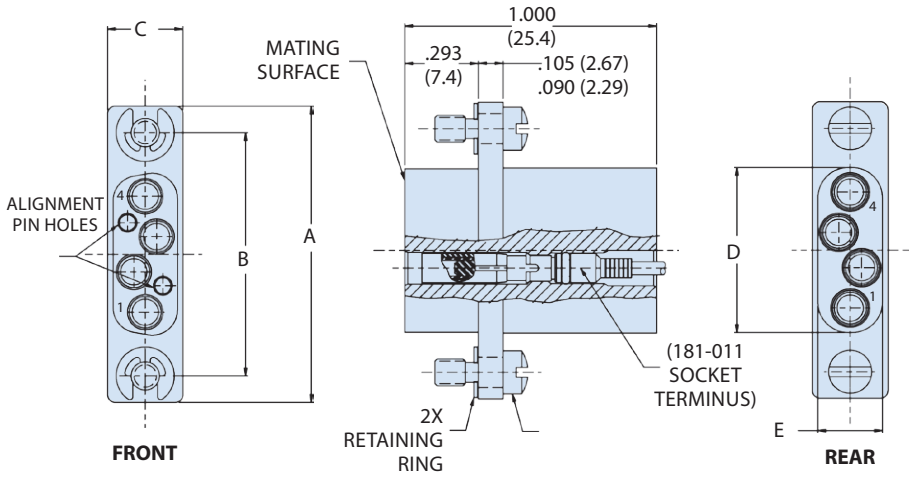
MATERIAL/FINISH

Code	Material	Finish
C	Aluminum Alloy	Anodize, Black
M		Electroless Nickel
NF		Cadmium, Olive Drab over Electroless Nickel
ZN		Zinc-Nickel, Olive Drab, Over Electroless Nickel
Z1	Stainless Steel	Passivate

HOW TO ORDER

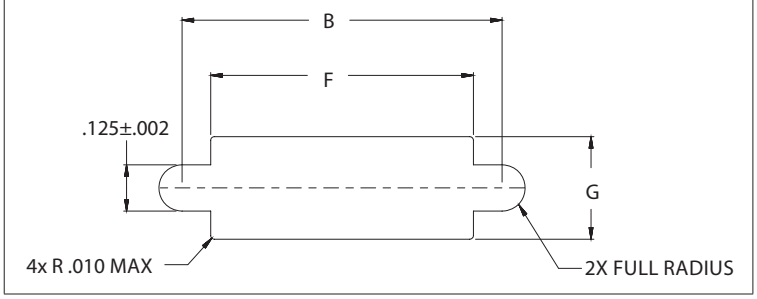
Sample Part Number	180-064	-25	-4	M	-JP
Basic Number	Micro-D GFR fiber optic plug connector				
Shell Size Dash No.	See Shell Size table				
Insert Arrangement Dash No.	See Shell Size table				
Material/Finish Code	See Material and Finish table				
Attachment Hardware	-JP = Jackpost hardware Omit = Jackscrew hardware (standard)				

SHELL SIZE AND DIMENSIONS

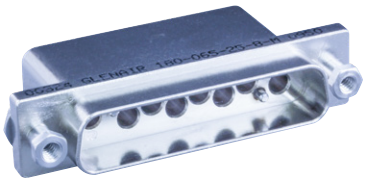


Shell Size	Insert Arrangement (Socket Count)	A ±.010 (0.25)	B ±.003 (0.08)	C ±.010 (0.25)	D ±.010 (0.25)	E ±.010 (0.25)	F ±.005 (0.13)	G ±.005 (0.13)
-9	-1	.775 (19.7)	.565 (14.4)	.298 (7.6)	.298 (7.6)	.255 (6.5)	.410 (10.4)	.270 (6.9)
-15	-2	.925 (23.5)	.715 (18.2)	.298 (7.6)	.530 (13.5)	.255 (6.5)	.560 (14.2)	.270 (6.9)
-21	-3	1.075 (27.3)	.865 (22.0)	.298 (7.6)	.680 (17.3)	.255 (6.5)	.710 (18.0)	.270 (6.9)
-25	-4	1.175 (29.8)	.965 (24.5)	.298 (7.6)	.654 (16.6)	.255 (6.5)	.810 (20.6)	.270 (6.9)
-31	-5	1.325 (33.7)	1.115 (28.3)	.298 (7.6)	.930 (23.6)	.255 (6.5)	.960 (24.4)	.270 (6.9)
-100	-8	2.160 (54.9)	1.800 (45.7)	.384 (9.8)	1.425 (36.2)	.322 (8.2)	1.455 (37.0)	.340 (8.6)

RECOMMENDED PANEL CUTOUT



D-Subminiature Rectangular 180-065 Pin Receptacle Connector



HOW TO ORDER				
Sample Part Number	**180-065**	**-15**	**-5**	**–M**
Basic Number	D-subminiature GFR fiber optic receptacle			
Shell Size Dash No.	See Shell Size table			
Insert Arrangement Dash No.	See Shell Size table			
Material/Finish Code	See Material/Finish table			

D-Subminiature form-factor GFR Pin Receptacle. Supports from four to twelve GFR pin termini with insertion loss performance comparable to industry-standard MIL-PRF-29504. Precision-machined with integral alignment pins for optimum optical fiber alignment and low dB data loss performance. Available in aluminum and stainless steel with standard jackpost hardware included. Termini sold separately. Supports single- and dual-O-ring termini. Panel cutout IAW MIL-DTL-24308.

MATERIAL AND FINISH

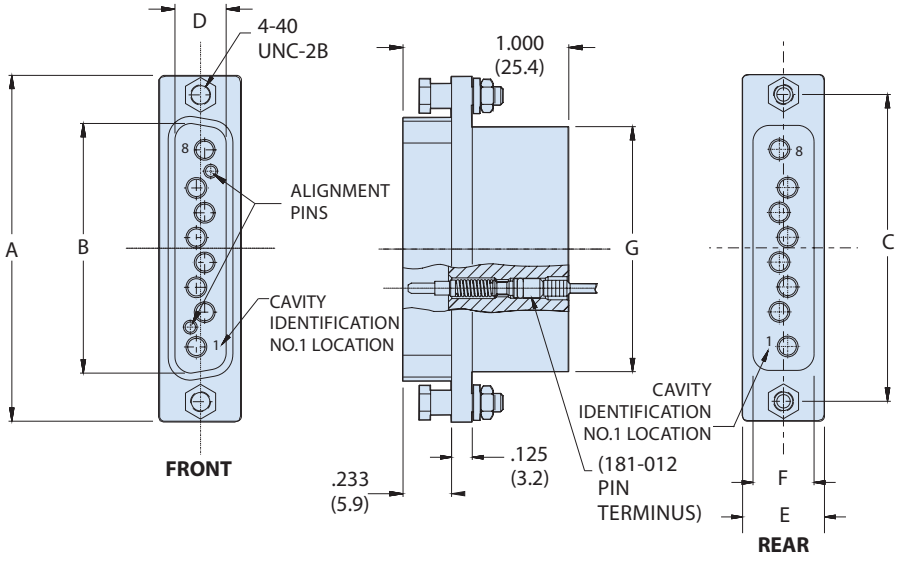
- Misc. hardware: stainless steel/ passivate

NOTES

- This connecter is designed to be front panel mount only.
- Fiber Optic Pin Termini to be ordered separately (see Glenair drawing 181-012).
- For mating plug connector, see Glenair drawing 180-066.

MATERIAL/FINISH		
Code	**Material**	**Finish**
C	Aluminum Alloy	Anodize, Black
M		Electroless Nickel
NF		Cadmium, Olive Drab over Electroless Nickel
ZN		Zinc-Nickel, Olive Drab, Over Electroless Nickel
Z1	Stainless Steel	Passivate

SHELL SIZE AND DIMENSIONS



Shell Size	Insert Arrangement (Pin Count)	A ±.010 (0.25)	B ±.010 (0.25)	C ±.005 (0.13)	D ±.010 (0.25)	E ±.010 (0.25)	F ±.010 (0.25)	G ±.010 (0.25)
-9	**-4**	1.213 (30.8)	.666 (16.9)	.984 (25.0)	.330 (8.4)	.498 (12.6)	.369 (9.4)	.650 (16.5)
-15	**-5**	1.545 (39.2)	.994 (25.2)	1.312 (33.3)	.330 (8.4)	.498 (12.6)	.369 (9.4)	.932 (23.7)
-25	**-8**	2.090 (53.1)	1.535 (39.0)	1.852 (47.0)	.330 (8.4)	.498 (12.6)	.369 (9.4)	1.479 (37.6)
-50	**-12**	2.640 (67.1)	2.087 (53.0)	2.406 (61.1)	.445 (11.3)	.610 (15.5)	.500 (12.7)	2.000 (50.8)

D-Subminiature Rectangular
180-066 Socket Plug Connector

HOW TO ORDER				
Sample Part Number	**180-066**	**-15**	**-5**	**-M**
Basic Number	D-subminiature GFR fiber optic plug connector			
Shell Size Dash No.	See Shell Size table			
Insert Arrangement Dash No.	See Shell Size table			
Material/Finish Code	See Material/Finish table			

D-Subminiature form-factor GFR Socket Plug. Supports from four to twelve GFR socket termini with insertion loss performance comparable to industry-standard MIL-PRF-29504. Precision-machined with integral alignment pin holes for optimum optical fiber alignment and low dB data loss performance. Available in aluminum and stainless steel with standard jackscrew hardware included. Termini sold separately. Supports single- and dual-O-ring termini.

MATERIAL AND FINISH

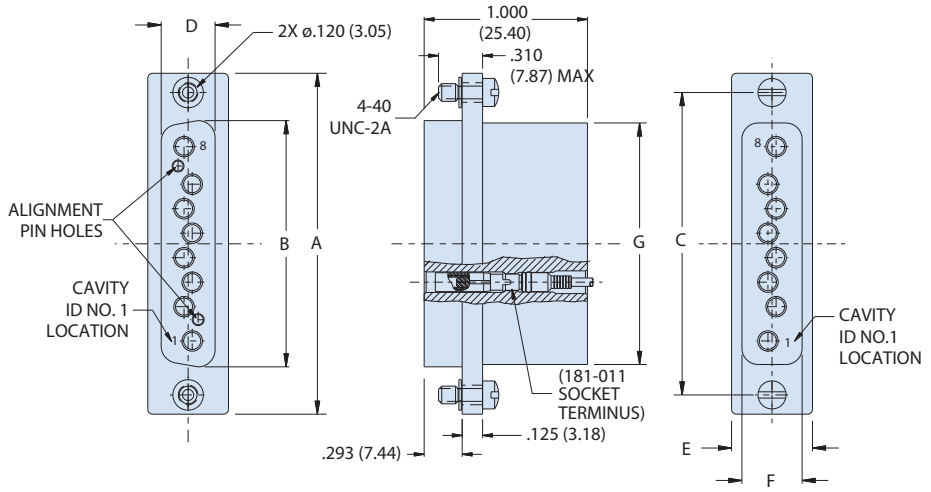
- Misc. Hardware: Stainless steel/ passivate

NOTES

- This connecter is designed to be front panel mount only.
- Fiber Optic Socket Termini to be ordered separately (see Glenair drawing 181-011).
- For mating receptacle connector, see Glenair drawing 180-065.

MATERIAL/FINISH		
Code	**Material**	**Finish**
C	Aluminum Alloy	Anodize, Black
M		Electroless Nickel
NF		Cadmium, Olive Drab over Electroless Nickel
ZN		Zinc-Nickel, Olive Drab, Over Electroless Nickel
Z1	Stainless Steel	Passivate

SHELL SIZE AND DIMENSIONS



Shell Size	Insert Arrangement (Socket Count)	A ±.010 (0.25)	B ±.010 (0.25)	C ±.005 (0.13)	D ±.010 (0.25)	E ±.010 (0.25)	F ±.010 (0.25)	G ±.010 (0.25)
-9	**-4**	1.213 (30.8)	.643 (16.3)	.984 (25.0)	.308 (7.82)	.498 (12.6)	.369 (9.4)	.650 (16.5)
-15	**-5**	1.545 (39.2)	.968 (24.6)	1.312 (33.3)	.308 (7.82)	.498 (12.6)	.369 (9.4)	.932 (23.7)
-25	**-8**	2.090 (53.1)	1.508 (38.3)	1.852 (47.0)	.308 (7.82)	.498 (12.6)	.369 (9.4)	1.479 (37.6)
-50	**-12**	2.640 (67.1)	2.062 (52.4)	2.406 (61.1)	.420 (10.67)	.610 (15.5)	.500 (12.7)	2.000 (50.8)

Micro-Miniature Circular
180-132 (06) Plug Connector

Micro-Miniature Circular GFR Plug. Supports from two to twelve GFR pin or socket termini with insertion loss performance comparable to industry-standard MIL-PRF-29504. Precision-machined with O-ring environmental peripheral seal. Back-end threads and teeth accept Glenair Mighty Mouse accessories. Available in aluminum and stainless steel. Termini sold separately. Supports single- and dual-O-ring termini.

MATERIAL AND FINISH

- O-ring: fluorosilicone
- Locking ring: Al Alloy or CRES

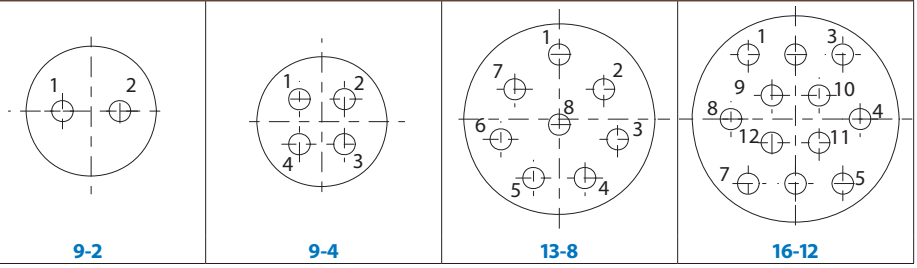
NOTES

- Fiber Optic Pin or Socket Termini 181-012/181-011 to be ordered separately

HOW TO ORDER

Sample Part Number	180-132	M	06	-9-4	P	A
Series	GFR Micro Miniature Circular					
Material / Finish	See Material/Finish table					
Connector Style	**06-** Plug					
Shell Size/Insert Arr.	**9-2, 9-4, 13-8, 16-12**					
Contact Type	**P** - Pin Termini **S** - Socket Termini					
Key Polarization	**A, B, C, D** (See Key Polarization table). **Omit** for 9-2 Arrangement which has 2 Keys/Keyways only.					

INSERT ARRANGEMENTS (PIN REAR SHOWN)



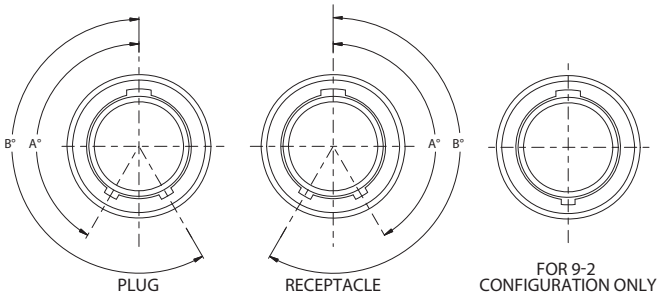
9-2 9-4 13-8 16-12

MATERIAL/FINISH

Code	Material	Finish
C	Aluminum Alloy	Anodize, Black
M		Electroless Nickel
NF		Cadmium, Olive Drab over Electroless Nickel
ZN		Zinc-Nickel, Olive Drab over Electroless Nickel
ZNU		Black Zinc-Nickel over Electroless Nickel
Z1	Stainless Steel	Passivate

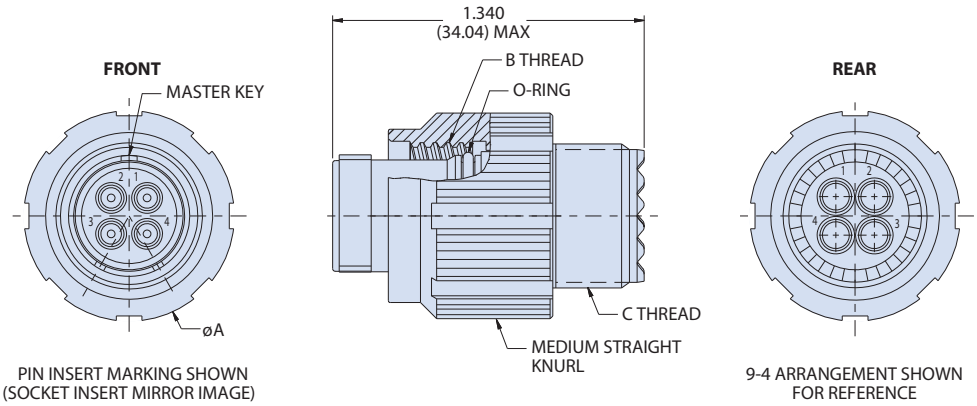
KEY POLARIZATION

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



Micro-Miniature Circular
180-132 (06) Plug Connector

SHELL SIZE AND DIMENSIONS



PIN INSERT MARKING SHOWN
(SOCKET INSERT MIRROR IMAGE)

9-4 ARRANGEMENT SHOWN
FOR REFERENCE

Shell Size	Ø A	B Thread	C Thread
9	0.830 (21.08); 0.800 (20.32)	.5625-.05P-.1L-2B	.5625-24 UNEF-2A
13	1.050 (26.67)	.8125-.1P-.2L-2B	.6875-24 UNEF-2A
16	1.240 (31.50)	1.0000-.1P-.2L-2B	.9375-20 UNEF-2A

Micro-Miniature Circular
180-132 (04) Jam Nut Receptacle w/ Wire Holes

Micro-Miniature Circular GFR Jam Nut Receptacle with Safety Wire Holes. Supports from two to twelve GFR pin or socket termini with insertion loss performance comparable to industry-standard MIL-PRF-29504. Precision-machined with O-ring environmental seal. Back-end threads and teeth accept Glenair Mighty Mouse accessories. Available in aluminum and stainless steel. Termini sold separately. Supports single- and dual-O-ring termini.

MATERIAL AND FINISH

- O-ring: fluorosilicone
- Insulator: Al Alloy / Anodize

NOTES

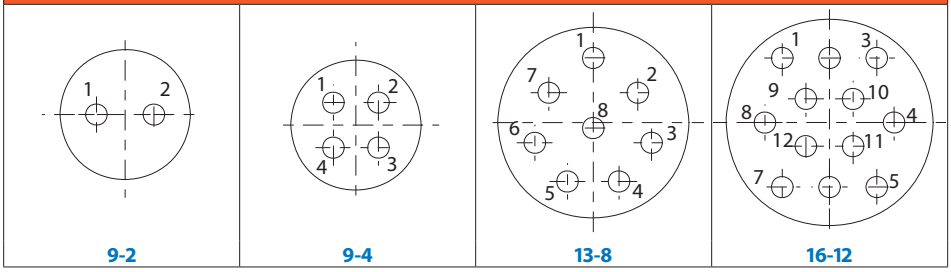
- Fiber Optic Pin or Socket Termini 181-012/181-011 to be ordered separately

HOW TO ORDER

Sample Part Number	180-132	M	04	-9-4	P	A

Series	GFR Micro Miniature Circular
Material / Finish	See Material/Finish table
Connector Style	**04-** Jam Nut Receptacle with Safety Wire Holes
Shell Size/Insert Arr.	**9-2**, **9-4**, **13-8**, **16-12**
Contact Type	**P** - Pin Termini **S** - Socket Termini
Key Polarization	**A**, **B**, **C**, **D** (See Key Polarization table). **Omit** for 9-2 Arrangement which has 2 Keys/Keyways only.

INSERT ARRANGEMENTS (PIN REAR SHOWN)

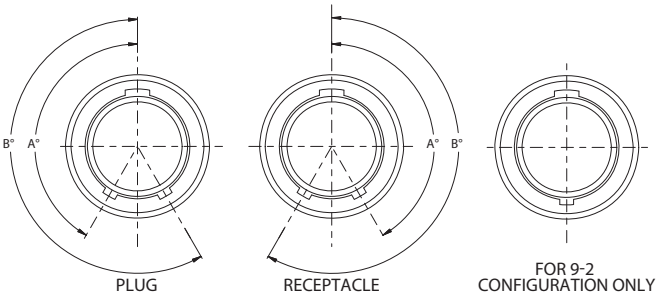


MATERIAL/FINISH

Code	Material	Finish
C	Aluminum Alloy	Anodize, Black
M		Electroless Nickel
NF		Cadmium, Olive Drab over Electroless Nickel
ZN		Zinc-Nickel, Olive Drab over Electroless Nickel
ZNU		Black Zinc-Nickel over Electroless Nickel
Z1	Stainless Steel	Passivate

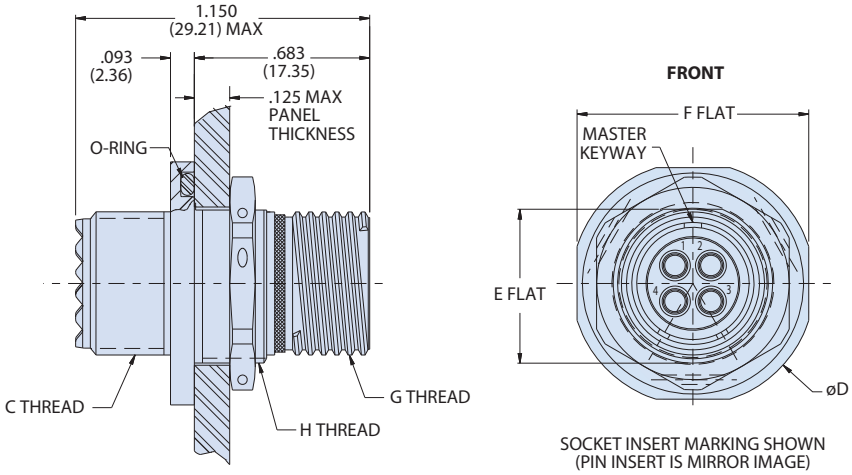
KEY POLARIZATION

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



Micro-Miniature Circular
180-132 (04) Jam Nut Receptacle w/ Wire Holes

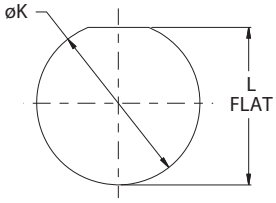
SHELL SIZE AND DIMENSIONS



SOCKET INSERT MARKING SHOWN
(PIN INSERT IS MIRROR IMAGE)

Shell Size	Ø D	E Flat	F Flat	G Thread	H Thread	C Thread
9	0.830 (21.08)	0.596 (15.14)	0.790 (20.07)	.5625-.05P-.1L-2A	.6250-32 UN-2A	.5625-24 UNEF-2A
13	1.078 (27.38)	0.845 (21.46)	1.044 (26.52)	.8125-.1P-.2L-2A	.8750-28 UN-2A	.6875-24 UNEF-2A
16	1.264 (32.11)	1.022 (25.96)	1.230 (31.24)	1.000-.1P-.2L-2A	1.0625-20 UN-2A	.9375-20 UNEF-2A

RECOMMENDED PANEL CUTOUT



Shell Size	Ø K	L Flat
9	0.635 (16.13)	0.611 (15.52) 0.607 (15.42)
13	0.885 (22.48)	0.861 (21.87) 0.857 (21.77)
16	1.075 (27.30)	1.040 (26.42) 1.036 (26.31)

Micro-Miniature Circular
180-132 (08) Jam Nut Receptacle

Micro-Miniature Circular GFR Jam Nut Receptacle. Supports from two to twelve GFR pin or socket termini with insertion loss performance comparable to industry-standard MIL-PRF-29504. Precision-machined with O-ring environmental seal. Back-end threads and teeth accept Glenair Mighty Mouse accessories. Available in aluminum and stainless steel. Termini sold separately. Supports single- and dual-O-ring termini.

MATERIAL AND FINISH

- O-ring: fluorosilicone
- Insulator: Al Alloy / Anodize

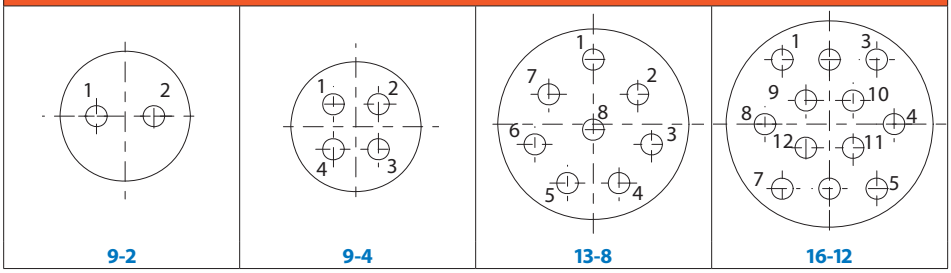
NOTES

- Fiber Optic Pin or Socket Termini 181-012/181-011 to be ordered separately

HOW TO ORDER

Sample Part Number	180-132	M	08	-9-4	P	A
Series	GFR Micro Miniature Circular					
Material / Finish	See Material/Finish table					
Connector Style	**08**- Jam Nut Receptacle					
Shell Size/Insert Arr.	**9-2**, **9-4**, **13-8**, **16-12**					
Contact Type	**P** - Pin Termini **S** - Socket Termini					
Key Polarization	**A**, **B**, **C**, **D** (See Key Polarization table). **Omit** for 9-2 Arrangement which has 2 Keys/Keyways only.					

INSERT ARRANGEMENTS (PIN REAR SHOWN)

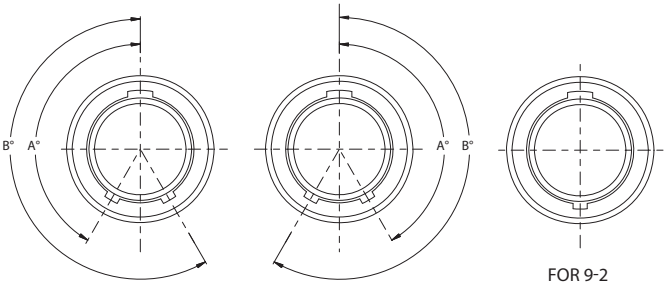


MATERIAL/FINISH

Code	Material	Finish
C	Aluminum Alloy	Anodize, Black
M		Electroless Nickel
NF		Cadmium, Olive Drab over Electroless Nickel
ZN		Zinc-Nickel, Olive Drab over Electroless Nickel
ZNU		Black Zinc-Nickel over Electroless Nickel
Z1	Stainless Steel	Passivate

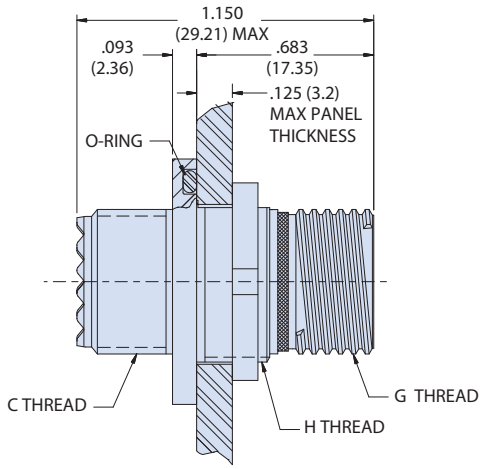
KEY POLARIZATION

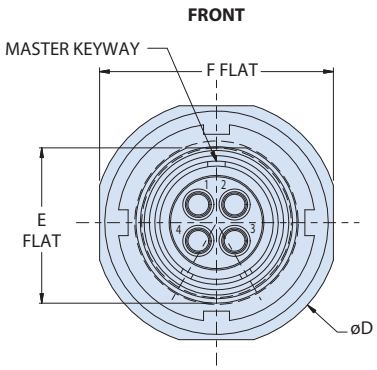
Position	A°	B°
A	150°	210°
B	75°	210°
C	95°	230°
D	140°	275°



Micro-Miniature Circular
180-132 (08) Jam Nut Receptacle

SHELL SIZE AND DIMENSIONS

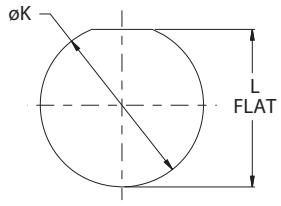




SOCKET INSERT MARKING SHOWN
(PIN INSERT IS MIRROR IMAGE)

Shell Size	Ø D	E Flat	F Flat	G Thread	H Thread	C Thread
9	0.830 (21.08)	0.596 (15.14)	0.790 (20.07)	.5625-.05P-.1L-2A	.6250-32 UN-2A	.5625-24 UNEF-2A
13	1.078 (27.38)	0.845 (21.46)	1.044 (26.52)	.8125-.1P-.2L-2A	.8750-28 UN-2A	.6875-24 UNEF-2A
16	1.264 (32.11)	1.022 (25.96)	1.230 (31.24)	1.000-.1P-.2L-2A	1.0625-20 UN-2A	.9375-20 UNEF-2A

RECOMMENDED PANEL CUTOUT



Shell Size	Ø K	L Flat
9	0.635 (16.13)	0.611 (15.52) 0.607 (15.42)
13	0.885 (22.48)	0.861 (21.87) 0.857 (21.77)
16	1.075 (27.30)	1.040 (26.42) 1.036 (26.31)

Micro-Miniature Circular
180-132 (07) Wall Mount Receptacle

Micro-Miniature Circular GFR Wall Mount Receptacle. Supports from two to twelve GFR pin or socket termini with insertion loss performance comparable to industry-standard MIL-PRF-29504. Precision-machined with O-ring environmental seal. Back-end threads and teeth accept Glenair Mighty Mouse accessories. Available in aluminum and stainless steel. Termini sold separately. Supports single- and dual-O-ring termini.

MATERIAL AND FINISH

- O-ring: fluorosilicone
- Insulator: Al Alloy / Anodize

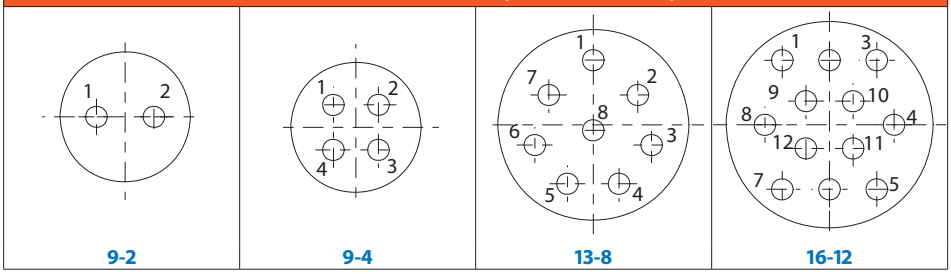
NOTES

- Fiber Optic Pin or Socket Termini 181-012/181-011 to be ordered separately

HOW TO ORDER

Sample Part Number	180-132	M	07	-9-4	P	A
Series	GFR Micro Miniature Circular					
Material / Finish	See Material/Finish table					
Connector Style	**07-** Wall Mount Receptacle					
Shell Size/Insert Arr.	**9-2, 9-4, 13-8, 16-12**					
Contact Type	**P** - Pin Termini **S** - Socket Termini					
Key Polarization	**A, B, C, D** (See Key Polarization table). **Omit** for 9-2 Arrangement which has 2 Keys/Keyways only.					

INSERT ARRANGEMENTS (PIN REAR SHOWN)

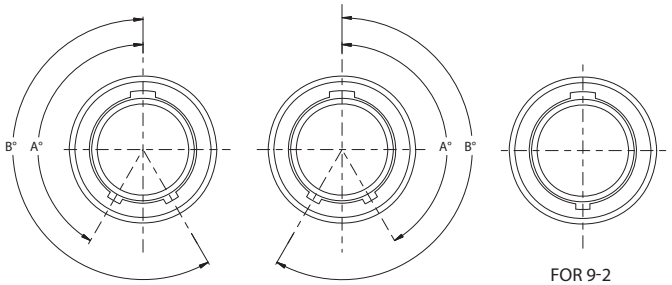


MATERIAL/FINISH

Code	Material	Finish
C	Aluminum Alloy	Anodize, Black
M		Electroless Nickel
NF		Cadmium, Olive Drab over Electroless Nickel
ZN		Zinc-Nickel, Olive Drab over Electroless Nickel
ZNU		Black Zinc-Nickel over Electroless Nickel
Z1	Stainless Steel	Passivate

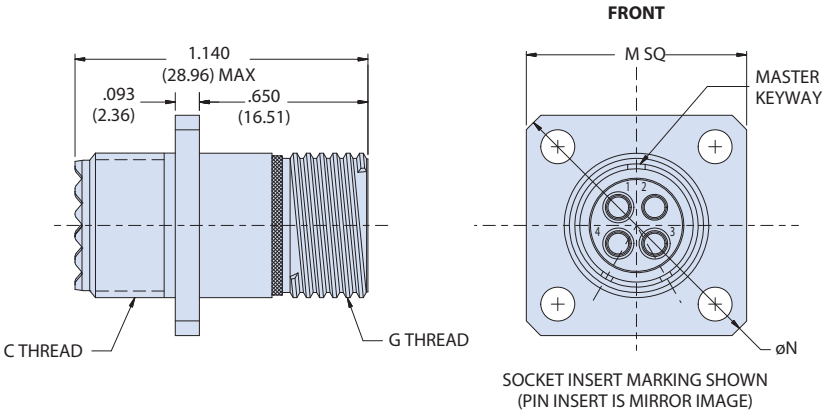
KEY POLARIZATION

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



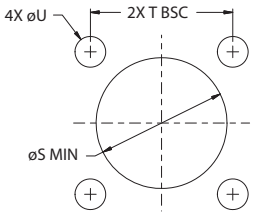
Micro-Miniature Circular
180-132 (07) Wall Mount Receptacle

SHELL SIZE AND DIMENSIONS



Shell Size	M SQ	Ø N	G Thread	C Thread
9	0.850 (21.59)	1.125 (28.58)	.5625-.05P-.1L-2A	.5625-24 UNEF-2A
13	1.030 (26.16)	1.375 (34.92)	.8125-.1P-.2L-2A	.6875-24 UNEF-2A
16	1.219 (30.96)	1.625 (41.28)	1.0000-.1P-.2L-2A	.9375-20 UNEF-2A

RECOMMENDED PANEL CUTOUT

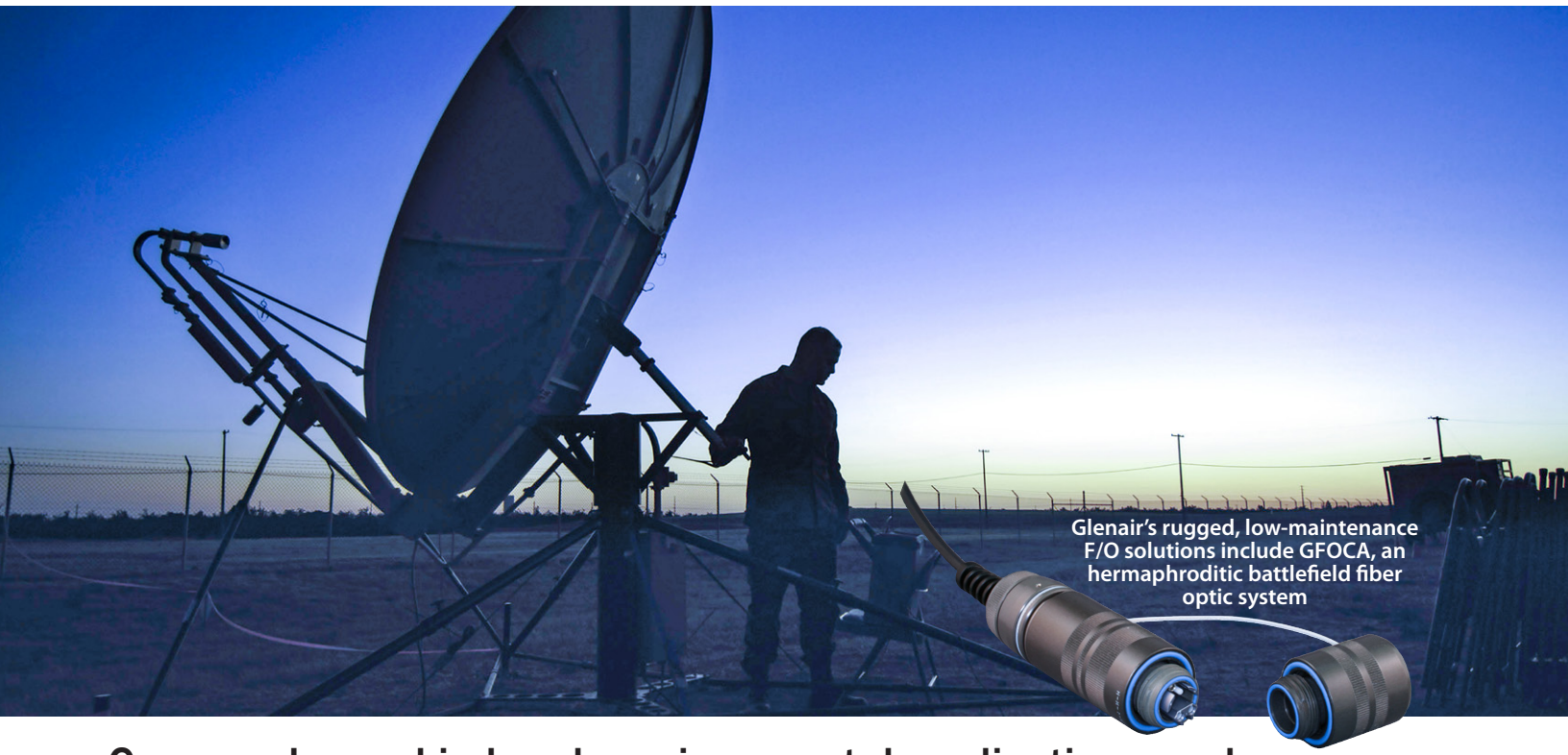


Shell Size	Ø S Min	T BSC	Ø U
9	0.580 (14.73)	0.607 (15.42)	0.130 (3.30) 0.126 (3.20)
13	0.835 (21.21)	0.812 (20.62)	
16	1.030 (26.16)	0.981 (24.92)	

GLENAIR
SIGNATURE
FIBER OPTIC
CONNECTION
SYSTEMS

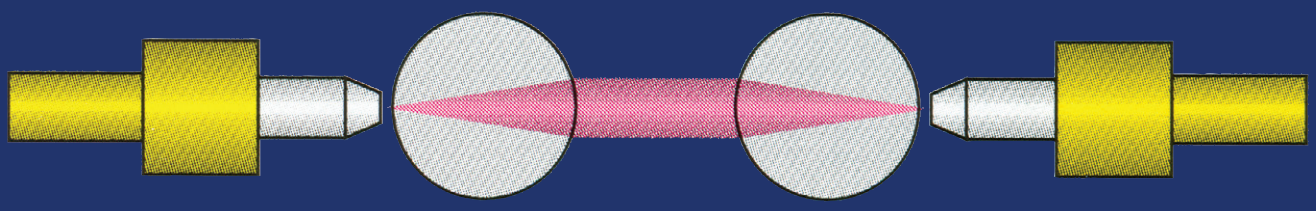
Rugged Fiber Optic CONNECTORS

Rugged Field and Expanded Beam Fiber Optics: **Eye-Beam GLT, GMA, and Power** Plus **GFOCA** D83526



Commonly used in harsh environmental applications such as directed energy weapons, long-run battlefield communications, and Free Space Optical applications, Glenair Expanded Beam fiber optics virtually eliminate field maintenance and cleaning difficulties, with low dB loss mating system performance rated to 1000-2000 cycles depending on fiber media selection.

EXPANDED BEAM TECHNOLOGY



Expanded Beam connectors utilize a sealed lens to expand the emitting beam of light from the fiber media making connections less sensitive to alignment and contaminants. The expanded beam enters an air gap between connectors and is then refocused back into the fiber of the mating half. Sealed expanded beam assemblies are ideally suited for environmental applications where optical connectors are subject to repeated mating and unmating cycles. Easy to clean, terminate, and insensitive to contamination.

Product Selection Guide

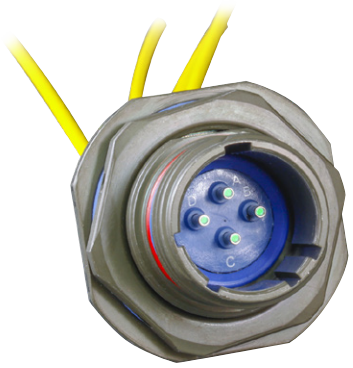
Glenair supplies four different expanded beam fiber optic interconnect systems. PRIZM® MT expanded-beam technology is covered in this catalog's MT chapter. The remaining three, Eye-Beam™ GLT, Eye-Beam™ GMA, and Eye-Beam™ Power, are covered in this section and are optimized for reliable, low-maintenance performance in the wide range of ground / air applications. Eye-Beam™ GLT is a grin-lens termini solution, Eye-Beam™ GMA is a workalike for the popular HMA hermaphroditic connector system, and Eye-Beam™ Power is a ruggedized, high optical power terminus design for directed energy and Free Space Optical applications. GFOCA hermaphroditic F/O interconnects are also presented in this section. This series, built IAW MIL-DTL-83526 and is equipped with MIL-PRF-29504/16 type termini. The GFOCA is one of Glenair's most ruggedized field-deployable fiber optic platforms.

DIMENSIONAL NOTES

- Catalog dimensions are subject to change without notice. Consult Glenair engineering for a controlled-release sales drawing.
- Metric dimensions appear in parentheses in diagrams and tables, based on 1 inch = 25.4 mm, for reference only.
- Unless otherwise specified, the following other dimensional tolerances apply:
- .xx = ± .03 (0.8) • .xxx = ± .015 (0.4) • Angles = ± 5°

Eye-Beam™ GLT
Product Overview

INNOVATIVE EXPANDED BEAM TERMINI DELIVER OPTIMAL PERFORMANCE IN HARSH ENVIRONMENTS

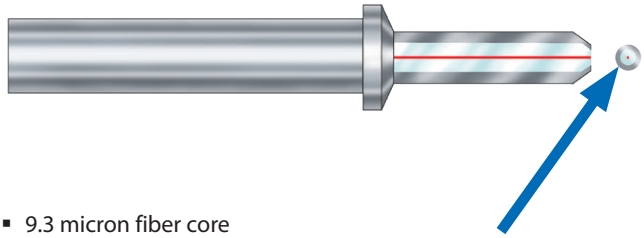


- All the benefits of an expanded beam connection system built into a versatile fiber optic terminus
- Factory-terminated Eye-Beam™ GLT termini easily integrated into any connector package
- Innovative expanded beam lens terminus expands signal 27X from a standard 9.3 micron fiber core
- Revolutionary design delivers low dB loss performance (1.5 dB multimode, 2.0 dB singlemode untuned) while reducing maintenance, inspection and test costs
- Ultra-high precision ceramic sleeves and custom designed terminus bodies ensure axial alignment

Eye-Beam™ GLT Expanded Beam fiber optic termini can be integrated into virtually any circular or rectangular connector package. Factory terminated lens pin termini and lens socket termini on cable jumpers allow for easy fusion splicing in the field.

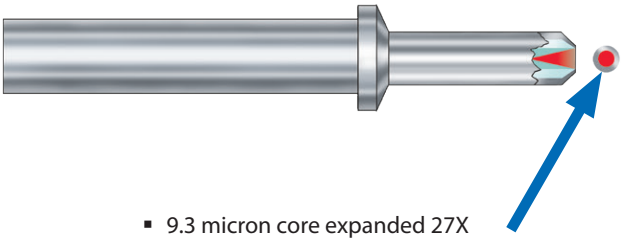
Comparison of standard butt-joint fiber optic terminus to Eye-Beam™ GLT expanded beam fiber optic terminus

Butt-Joint Fiber Optic Terminus



- 9.3 micron fiber core
- Fiber surfaces exposed and susceptible to damage
- Must be cleaned prior to mating

Eye-Beam™ GLT Expanded Beam Fiber Optic Terminus



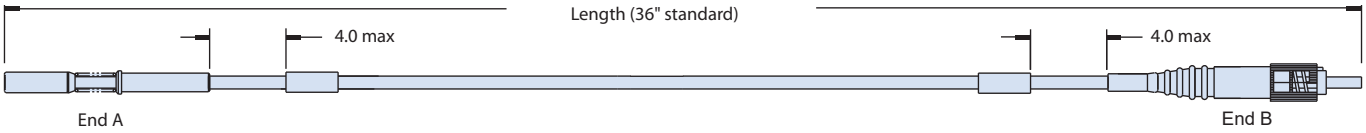
- 9.3 micron core expanded 27X
- Fiber surfaces protected from contamination
- Lens surface easy to clean

Eye-Beam™ GLT
FA1000 Jumper Cable

HOW TO ORDER FACTORY-TERMINATED EYE-BEAM™ GLT JUMPERS

1. Eye-Beam™ GLT system part numbers begin with the FA1000 Basic Part Number
2. Select fiber size (Consult factory for additional options)
3. Select operating wavelength
4. Select jumper cable configuration. Jumpers are supplied standard with 36 inches of fiber cable. Specific lengths available in part number breakdown as shown below.

HOW TO ORDER							
Sample Part Number	**FA1000**	**-50**	**-85**	**A**	**1**	**XXXX**	**A**
Basic Number	Eye-Beam Jumper Cable						
Fiber Size	**09** = 9.3/125 Singlemode **50** = 50/125 Multimode **62** = 62.5/125 Multimode						
Operating Wavelength	**85** = 850nm **13** = 1300/1310nm **15** = 1550nm						
End A	See Eye-Beam™ GLT Termini table						
End B	See Eye-Beam™ GLT Termini and Commercial Connectors table						
Length (Inches)	Ex: -0040 = 40 inches (Omit for Standard 36 Inches)						
Temperature Rating	**A** = -40°C to +85°C **B** = -55°C to +125°C **C** = Customer Specified* "A" and "B" temperature rating use EPO-TEK 353ND epoxy. "C" temperature rating as per customer specification.						



NOTES

- Optical performance: Insertion loss to be less than 2.0 dB when measured at 1310 nm or 1550 nm wavelength for singlemode, or when measured at 850 nm or 1300 nm for multimode. For singlemode lens, back reflection to be 20 dB minimum at 1310 nm or 1550 nm.
- * For customer-specific requirements, Glenair will assign a unique part number for the cable assembly.

EYE-BEAM™ GLT TERMINI		
Designator	**Description**	**Connector Series**
A	M29504/04 Style Pin (181-070)	MIL-DTL-38999 Series III
	Mighty Mouse Size 16 Pin (181-070)	Series 80 Mighty Mouse
B	M29504/05 Style Socket (181-071)	MIL-DTL-38999 Series III
C	M29504/14 Style Pin (181-095)	MIL-PRF-28876
D	M29504/15 Style Socket (181-096)	MIL-PRF-28876
F	Mighty Mouse Size 16 Socket (181-083)	Series 80 Mighty Mouse
G	GFR Pin (181-082)	Glenair GFR System
H	GFR Socket (181-081)	Glenair GFR System

STANDARD TOLERANCE FOR CABLE JUMPERS	
Length	**Tolerance**
5 in, up to 2 ft	+1/-0 in
Over 2 ft, up to 10 ft	+3/-0 in
Over 10 ft, up to 50 ft	+6/-0 in
Over 50 ft, up to 100 ft	+1/-0 ft
Over 100 ft	+2/-0 ft

EYE-BEAM™ GLT TERMINI AND COMMERCIAL CONNECTORS			
A	M29504/04 Style Pin (181-070)	**1**	LC Connector
	Mighty Mouse Size 16 Pin (181-070)	**2**	LC APC Connector
B	M29504/05 Style Socket (181-071)	**3**	FC Connector
C	M29504/14 Style Pin (181-095)	**4**	FC APC Connector
D	M29504/15 Style Socket (181-096)	**5**	ST Connector
F	Mighty Mouse Size 16 Socket (181-083)	**6**	SC Connector
G	GFR Pin (181-082)	**9**	Customer Specified*
H	GFR Socket (181-081)		

GLENAIR SIGNATURE
FIBER OPTIC CONNECTION SYSTEMS

Rugged Fiber Optic CONNECTORS

MIL-DTL-83526 HMA type **Eye-Beam™ GMA** Ball-Lens Expanded-Beam Fiber Optics

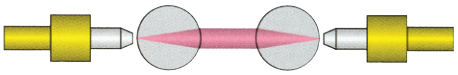
Eye-Beam™ GMA is the Glenair HMA-type harsh-environment expanded-beam fiber optic connection system with industry-leading insertion/return loss performance and mating durability. Built IAW MIL-DTL-83526/20 and /21 and fully intermateable with standard HMA type solutions.

- **Field-deployable system for both indoor and outdoor applications**
- **Beam expansion dramatically reduces loss due to contamination**
- **Large ball lens facilitates easy cleaning**
- **Fully intermateable with all MIL-DTL-83526 /20 and /21 compliant connectors**
- **2 and 4-channel insert arrangements**
- **Singlemode and multimode versions, plus broad support for a wide range of standard and tactical military cables**

Rugged Field and Expanded Beam Fiber Optics

Eye-Beam™ GMA
MIL-DTL-83526 /20 & /21 Series 185-002 HMA type

EXPANDED BEAM TECHNOLOGY



Expanded Beam connectors utilize a sealed lens to expand the emitting beam of light from the fiber media. The expanded beam is then refocused back into the fiber of the mating half. These sealed assemblies are ideally suited for environmental applications where optical connectors are subjected to repeated mating/unmating cycles. Easy to clean, and insensitive to contamination.

Field-deployable GMA connector and cable technology may be deployed in a broad range of applications, from tactical communications to oil & gas industry exploration, satellite communications, and more. Multichannel fiber optic cable—including ruggedized simplex and mil-tactical solutions—are fully supported.

SERIES 185-002 EYE-BEAM™ GMA MATERIALS/FINISHES

Plug	
Front housing, shell, and coupling nut	Aluminum Alloy / hard anodize
Insert body	Copper-nickel-zinc alloy
Guide pin	Stainless steel / passivate
Strain relief boot, facial seal, and grip sleeve	Fluorosilicone
Dust cap	Thermoplastic
Lanyard	Stainless steel / coated
Receptacle	
Front housing	Aluminum alloy / hard anodize
Insert body	Copper-nickel-zinc alloy
Guide pin	Stainless steel / passivate
Shell, jam nut and back nut	Aluminum Alloy / Zinc-Nickel black
Facial seal and panel seal	Fluorosilicone
Dust cap	Thermoplastic
Lanyard	Stainless steel / coated

SERIES 185-002 EYE-BEAM™ GMA PERFORMANCE SPECIFICATIONS

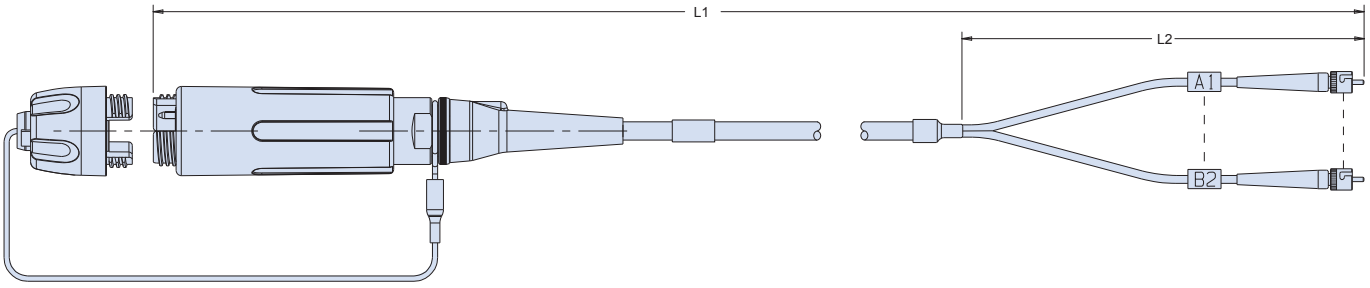
Insertion Loss	Multimode: ≤1.5 dB typical at 850/1300nm Singlemode: ≤2.0 dB typical at 1310/1550nm
Return Loss	Singlemode: Better than 31 dB typical mated Better than 34 dB typical unmated
Operating Temperature	-55°C to +85°C
Storage Temperature	-57°C to +85°C
Mating Durability	3000 mating cycles minimum
Cable Retention	1500N (cable dependent)
Bump	4000 bumps at 40g acceleration
Impact	8 drops from 0.9m per TIA/EIA-455-2, Method C, Service Class: Severe
Drop (Free Fall)	500 falls onto concrete from 1.2m
Vibration - Sinusoidal	10g Peak per TIA/EIA-455-11, Test Condition III
Vibration - Random	9g RMS per TIA/EIA-455-11, Test Condition VI-C, for 1.5 hours
Physical Shock (Half-sine Pulse)	50g Peak, 5 shocks per axis (30 shocks total) per TIA-455-14, Test Condition A
Water Immersion	Depth of 15m for 24 hours per TIA-455-74

Eye-Beam™ GMA
M83526 type In-Line Plug breakout assembly

REFERENCE PART NUMBER*							
Sample Part Number	FA03936	-60	-1	-3	-1	-4	-36-12

Basic number	GMA Fiber Optic cable
GMA Connector Type	**-60** = Plug, hermaphroditic, in-line
Fiber Type	**-1** = Singlemode 9/125 **-2** = Multimode 50/125 **-3** = Multimode 62.5/125
Wavelength	**-1** = Multimode 850 nm **-2** = Multimode 1300 nm **-3** = Singlemode 1310 nm **-4** = Singlemode 1550 nm
Pigtail Connector Type	**-0** = ST M83522/16 style **-1** = ST connector **-2** = FC connector **-3** = SC connector **-4** = SC duplex **-5** = SMA connector (906) **-6** = LC connector **-7** = LC duplex **-8** = SMA connector (905) **-9** = Customer specified
Number of Fibers	**-2** = 2 channel **-4** = 4 channel
Length (L1, L2)	in inches. -L1 = overall length -L2 = breakout length

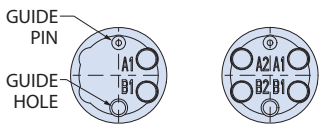
* Use this part number for reference only. A unique Glenair part number will be assigned to your cable order



OPTICAL PERFORMANCE

- <1.0dB at 850nm multimode
- <1.5dB at 1310nm singlemode

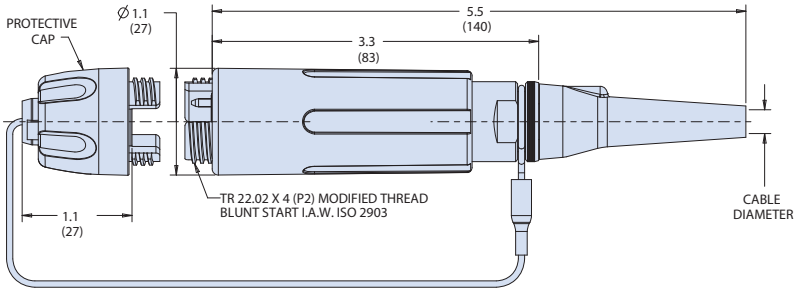
NUMBER OF FIBERS



-2 2-Channel **-4** 4-Channel

Connector Mating Face

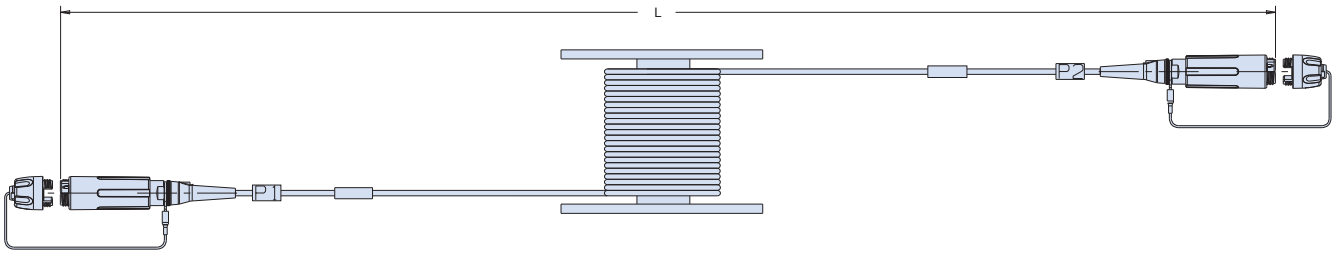
Plug Connector



Eye-Beam™ GMA
M83526 type In-Line Plug-to-Plug cable assembly

REFERENCE PART NUMBER*							
Sample Part Number	FA03939	-60	-1	-3	-4	-100	-3
Basic number	GMA Fiber Optic cable						
GMA Connector Type	-60 = Plug, hermaphroditic, in-line						
Fiber Type	-1 = Singlemode 9/125 -2 = Multimode 50/125 -3 = Multimode 62.5/125						
Wavelength	-1 = Multimode 850 nm -2 = Multimode 1300 nm -3 = Singlemode 1310 nm -4 = Singlemode 1550 nm						
Number of Fibers	-2 = 2 channel -4 = 4 channel						
Length	Overall length in feet						
Reel Type	-1 = Metal reel -2 = Metal reel with castors -3 = Wooden reel -4 = Plastic reel -5 = Manpack reel -6 = Customer specified (Omit for no reel)						

* Use this part number for reference only. A unique Glenair part number will be assigned to your cable order

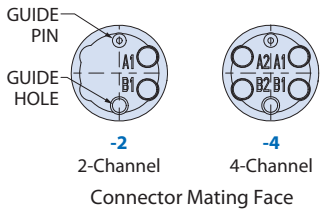


RUGGED FIELD / EXPANDED BEAM

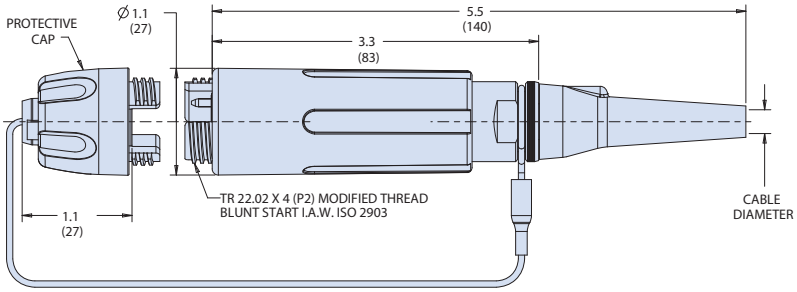
OPTICAL PERFORMANCE

- <1.0dB at 850nm multimode
- <1.5dB at 1310nm singlemode

NUMBER OF FIBERS



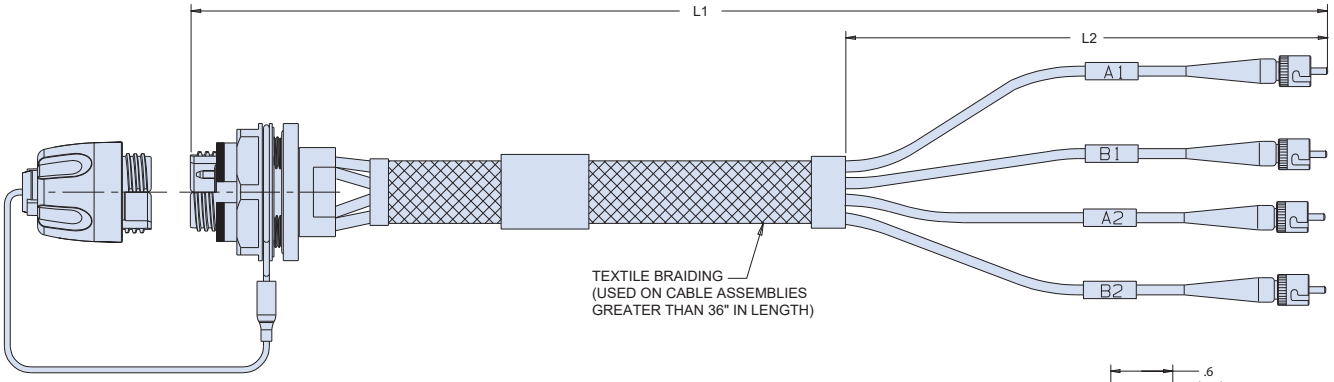
Plug Connector



Eye-Beam™ GMA
M83526 type Low-Profile Receptacle breakout assembly

REFERENCE PART NUMBER*							
Sample Part Number	FA03937	-80	-1	-3	-1	-4	-36-12
Basic number	GMA Fiber Optic cable						
GMA Connector Type	-70 = Wall mount receptacle -80 = Jam nut mount receptacle						
Fiber Type	-1 = Singlemode 9/125 -2 = Multimode 50/125 -3 = Multimode 62.5/125						
Wavelength	-1 = Multimode 850 nm -2 = Multimode 1300 nm -3 = Singlemode 1310 nm -4 = Singlemode 1550 nm						
Pigtail Connector Type	-0 = ST M83522/16 style -1 = ST connector -2 = FC connector -3 = SC connector -4 = SC duplex -5 = SMA connector (906) -6 = LC connector -7 = LC duplex -8 = SMA connector (905) -9 = Customer specified						
Number of Fibers	-2 = 2 channel -4 = 4 channel						
Length (L1, L2)	in inches. -L1 = overall length -L2 = breakout length						

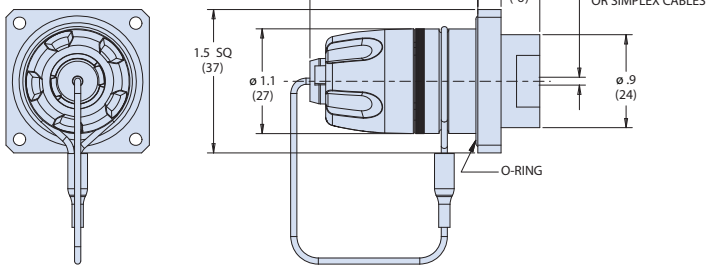
* Use this part number for reference only. A unique Glenair part number will be assigned to your cable order



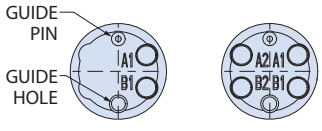
OPTICAL PERFORMANCE

- <1.0dB at 850nm multimode
- <1.5dB at 1310nm singlemode

Low-Profile Wall-Mount Receptacle



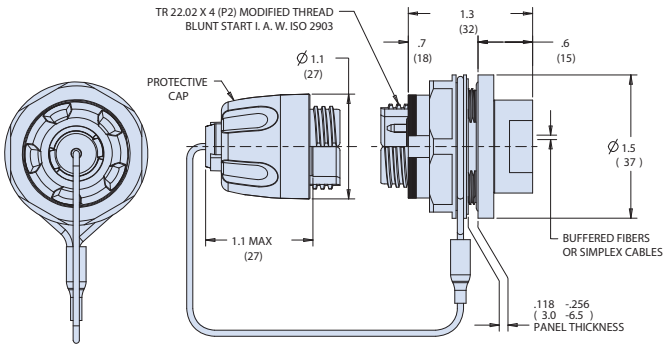
NUMBER OF FIBERS



Connector Mating Face

There is a rotational relationship between D-flat on the panel cutout and the jam nut receptacle connector mating face.

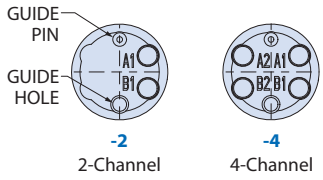
Low-Profile Jam Nut Receptacle



Eye-Beam™ GMA
185-002-60 Plug

NOTE: Eye-Beam GMA connectors are sold as parts of complete assemblies. Individual connectors require specialized termination, assembly, and cleaning processes. Customers are advised to consult with Glenair's fiber optic application engineering team before purchasing.

NUMBER OF FIBERS



OPTICAL PERFORMANCE

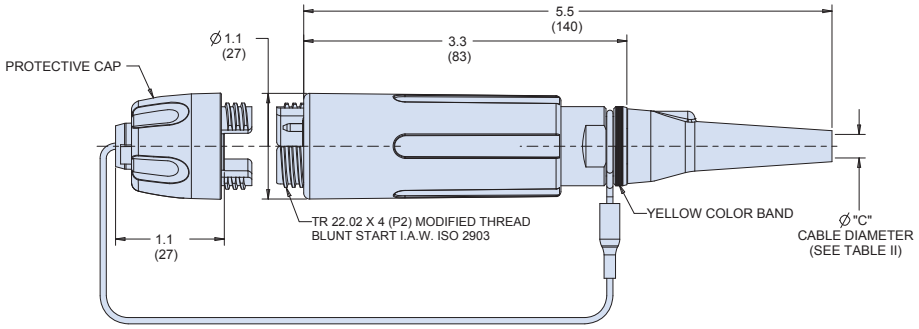
- <1.0dB at 850nm multimode
- <1.5dB at 1310nm singlemode

HOW TO ORDER

Sample Part Number	185-002	-60	G	-4	B	90	L
Basic number	GMA Fiber Optic connector series						
Connector Type	**-60** = Plug, hermaphroditic, in-line						
Material/Finish	**G** = Al Alloy / hard anodize						
Number of Channels	**2** = 2 channels **4** = 4 channels						
Operating Wavelength	**A** = Multimode dual wavelength, 850 / 1300 nm. **B** = Singlemode, 1310 nm. **C** = Singlemode, 1550 nm. **D** = Singlemode dual wavelength, 1310 / 1550 nm.						
Cable Diameter	See Cable Diameters Table						
Termini Option	**L** = Less termini, order termini separately **T** = Termini included in same quantity as number of channels (order connectors less termini (option **L**) for best / fastest availability)						

CABLE DIAMETERS

Dash No.	Ø "C" Max Cable Dia. for Plug
50	.126 (3.2)
60	.165 (4.2)
70	.197 (5.0)
80	.216 (5.5)
90	.236 (6.0)



HOW TO ORDER GMA TERMINI

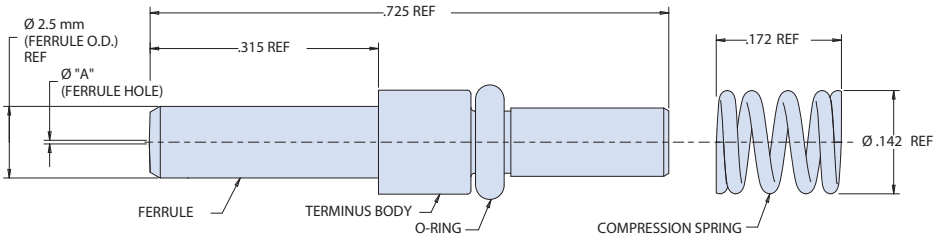
Sample Part Number	181-101	-1253
Basic number	Terminus for GMA connector	
Dash Number	See Dash No. Table	

DASH NO.

Dash No.	Ø A (microns)	Fiber Size Core/Cladding (microns)
-1253	125.3	9/125 (singlemode)
-1260	126.0	50/125 and 62.5/125 (multimode)
Consult factory for additional sizes		

MATERIALS

- Ferrule: Zirconia ceramic
- Terminus body: Stainless steel / passivate
- Compression spring: Stainless steel/passivate
- O-ring: Nitrile rubber

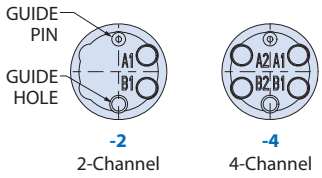


Eye-Beam™ GMA
185-002-70 and -71 Wall-Mount Receptacles

NOTE: Eye-Beam GMA connectors are sold as parts of complete assemblies. Individual connectors require specialized termination, assembly, and cleaning processes. Customers are advised to consult with Glenair's fiber optic application engineering team before purchasing.

HOW TO ORDER							
Sample Part Number	185-002	-70	G	-4	B	90	L
Basic number	GMA Fiber Optic connector series						
Connector Type	**70** = Receptacle, wall mount, low profile **71** = Receptacle, wall mount, extended backend						
Material/Finish	**ZR** = Al Alloy / Zinc-Nickel black						
Number of Channels	**2** = 2 channels **4** = 4 channels						
Operating Wavelength	**A** = Multimode dual wavelength, 850 / 1300 nm. **B** = Singlemode, 1310 nm. **C** = Singlemode, 1550 nm. **D** = Singlemode dual wavelength, 1310 / 1550 nm.						
Cable Diameter	See Cable Diameters Table						
Termini Option	**L** = Less termini, order termini separately **T** = Termini included in same quantity as number of channels (order connectors less termini (option **L**) for best / fastest availability)						

NUMBER OF FIBERS



NOTES

- Square flange connector can be installed as front panel mount or rear panel mount by installing an O-ring in the proper groove/ side of the flange.
- Panel thickness for square flange connector to be 6mm max.

OPTICAL PERFORMANCE

- <1.0dB at 850nm multimode
- <1.5dB at 1310nm singlemode

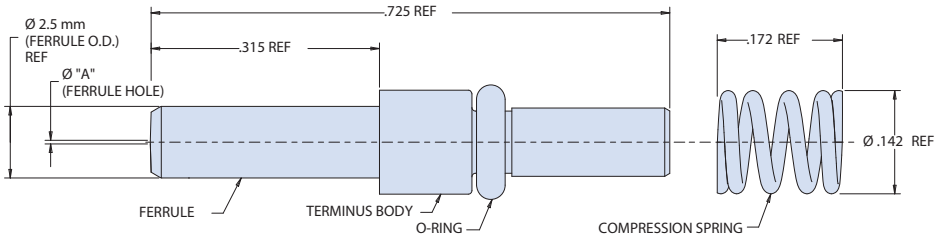
CABLE DIAMETERS		
Dash No.	Ø "A" Max Cable Dia. for Receptacle, Low Profile	Ø "B" Max Cable Dia. for Receptacle, Extended Backend
10	.039 (1.0) buffered fiber	
20	.082 (2.1) simplex cable	
30		2X .118 (3.0)
40		4X .118 (3.0)
50		.126 (3.2)
60		.165 (4.2)
70		.197 (5.0)
80		.216 (5.5)
90		.236 (6.0)

HOW TO ORDER GMA TERMINI		
Sample Part Number	181-101	-1253
Basic number	Terminus for GMA connector	
Dash Number	See Dash No. Table	

DASH NO.		
Dash No.	Ø A (microns)	Fiber Size Core/Cladding (microns)
-1253	125.3	9/125 (singlemode)
-1260	126.0	50/125 and 62.5/125 (multimode)
Consult factory for additional sizes		

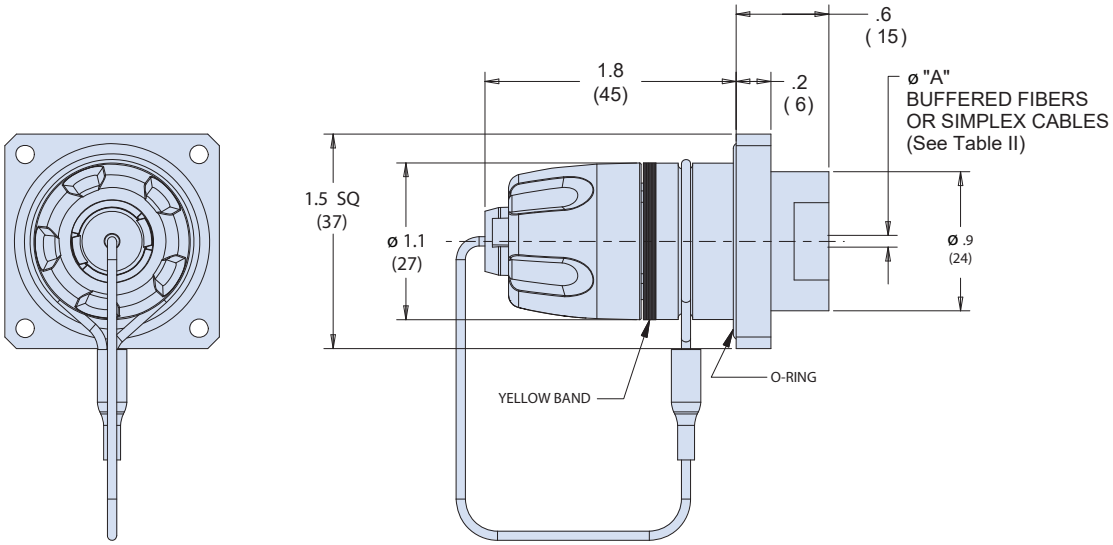
MATERIALS

- Ferrule: Zirconia ceramic
- Terminus body: Stainless steel / passivate
- Compression spring: Stainless steel/passivate
- O-ring: Nitrile rubber

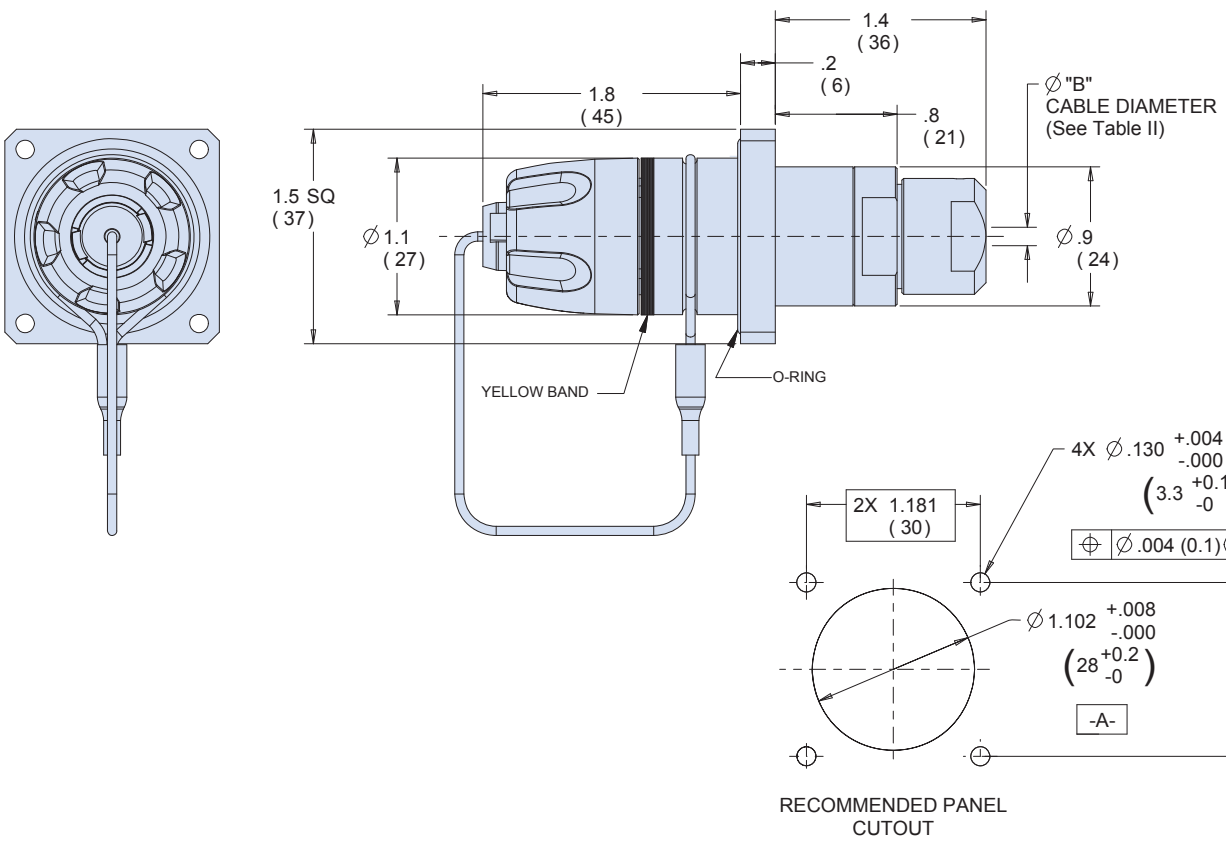


Eye-Beam™ GMA
185-002-70 and -71 Wall-Mount Receptacles

185-002-70 LOW-PROFILE WALL MOUNT RECEPTACLE



185-002-71 WALL MOUNT RECEPTACLE WITH EXTENDED BACKEND



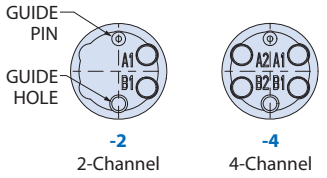
Eye-Beam™ GMA
185-002-80 and -81 Jam Nut Receptacles

NOTE: Eye-Beam GMA connectors are sold as parts of complete assemblies. Individual connectors require specialized termination, assembly, and cleaning processes. Customers are advised to consult with Glenair's fiber optic application engineering team before purchasing.

HOW TO ORDER

Sample Part Number	185-002	-60	G	-4	B	90	L
Basic number	GMA Fiber Optic connector series						
Connector Type	80 = Receptacle, jam nut mount, low profile 81 = Receptacle, jam nut mount, extended backend						
Material/Finish	ZR = Al Alloy / Zinc-Nickel black						
Number of Channels	2 = 2 channels 4 = 4 channels						
Operating Wavelength	A = Multimode dual wavelength, 850 / 1300 nm. B = Singlemode, 1310 nm. C = Singlemode, 1550 nm. D = Singlemode dual wavelength, 1310 / 1550 nm.						
Cable Diameter	See Cable Diameters Table						
Termini Option	L = Less termini, order termini separately T = Termini included in same quantity as number of channels (order connectors less termini (option L) for best / fastest availability)						

NUMBER OF FIBERS



There is a rotational relationship between D-flat on the panel cutout and the jam nut receptacle connector mating face.

CABLE DIAMETERS

Dash No.	Ø "A" Max Cable Dia. for Receptacle, Low Profile	Ø "B" Max Cable Dia. for Receptacle, Extended Backend
10	.039 (1.0) buffered fiber	
20	.082 (2.1) simplex cable	
30		2X .118 (3.0)
40		4X .118 (3.0)
50		.126 (3.2)
60		.165 (4.2)
70		.197 (5.0)
80		.216 (5.5)
90		.236 (6.0)

OPTICAL PERFORMANCE

- <1.0dB at 850nm multimode
- <1.5dB at 1310nm singlemode

HOW TO ORDER GMA TERMINI

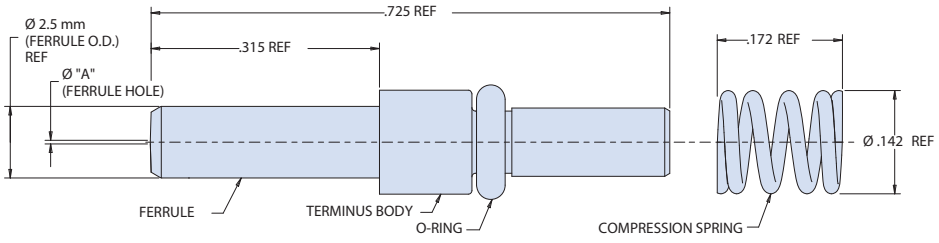
Sample Part Number	181-101	-1253
Basic number	Terminus for GMA connector	
Dash Number	See Dash No. Table	

DASH NO.

Dash No.	Ø A (microns)	Fiber Size Core/Cladding (microns)
-1253	125.3	9/125 (singlemode)
-1260	126.0	50/125 and 62.5/125 (multimode)
Consult factory for additional sizes		

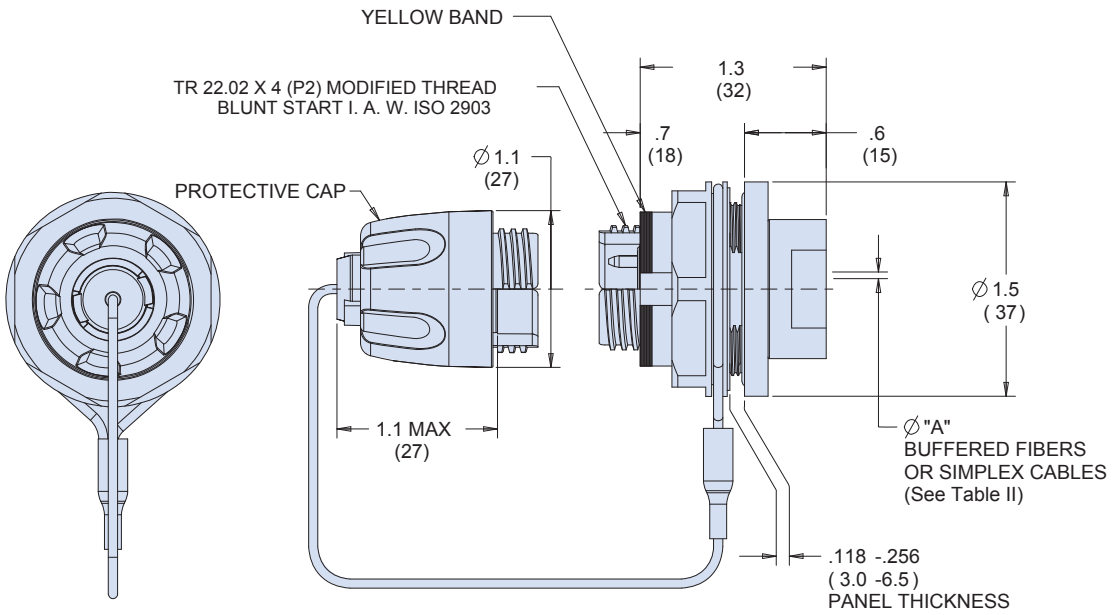
MATERIALS

- Ferrule: Zirconia ceramic
- Terminus body: Stainless steel / passivate
- Compression spring: Stainless steel/passivate
- O-ring: Nitrile rubber

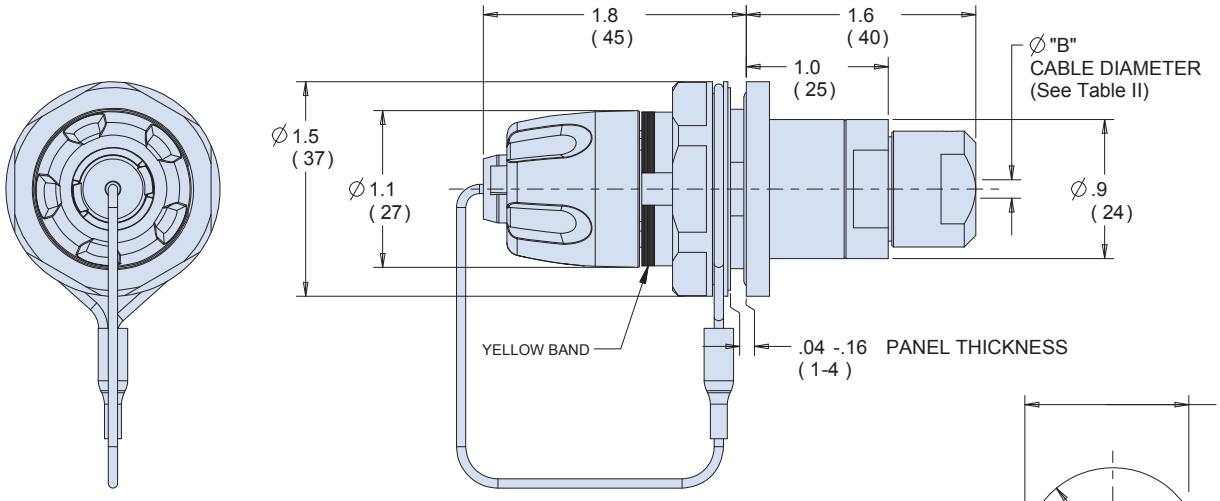


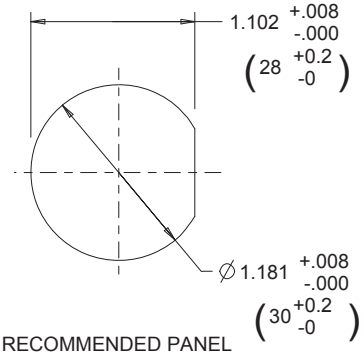
Eye-Beam™ GMA
185-002-80 and -81 Jam Nut Receptacles

185-002-80 LOW-PROFILE JAM NUT MOUNT RECEPTACLE



185-002-81 JAM NUT MOUNT RECEPTACLE WITH EXTENDED BACKEND





RECOMMENDED PANEL
CUTOUT (as viewed from front of panel)

GLENAIR
SIGNATURE
FIBER OPTIC
CONNECTION
SYSTEMS

Rugged Fiber Optic CONNECTORS

Expanded Beam **Eye-Beam™ Power** Rugged, High-Power Fiber Optics for Directed Energy and FSO Applications

Eye-Beam™ Power utilizes a novel expanded optical beam approach to create a robust and stable optical connection in any environment. The industry-standard size #8 contact module allows Eye-Beam Power to be loaded into a multitude of connector form factors. This 20W and higher optical power solution is compatible with standard polarization-maintaining 1064nm fiber. 1550nm and other wavelengths can also be supported. The Glenair expanded-beam termini experiences low temperature rise at peak power, minimizing the need for additional heat sinking or thermal management beyond that of a simple copper wire overbraid.

- **Size #8 drop-in expanded-beam optical contact**
- **Powerful 20W and higher optical contact ideally suited for directed energy applications**
- **Compatible with 1064nm polarization-maintaining fiber with a 0.5 dB typical insertion loss**
- **Low temperature rise at peak power**
- **Signature assembly process optimizes optical alignment for mission-critical reliability**

MULTI-PIN CONNECTOR PACKAGING FOR EYE-BEAM POWER

SuperNine "better than QPL" MIL-DTL-38999 Series III

Series 806 Mil-Aero microminiature circular

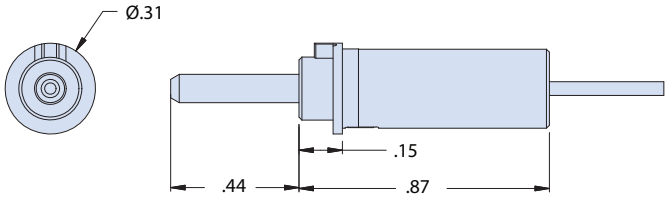
Series 792 high-performance micro rectangular

059-0051 Power Adapter for SuperNine / Series 792 size #8 cavity
059-0088 Test Fixutre for Eye-Beam Power connectors

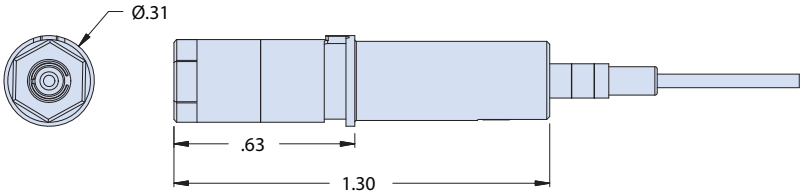
HOW TO ORDER						
Sample Part Number	**059-0051**	**-SMF**	**01**	**-0150**	**B**	**A**

Basic Number	**059-0051**
Fiber Type	See Fiber Type Table
Mated Pair Return Loss Measurement	**01**= Return Loss < .50 dB for applications greater than 5W **02**= .50 dB < Return Loss < 1.00 dB for applications less than 5W
Length (Meters)	Order in Increments of 0.01 Meters Example: 0150 = 1.50m
Contact Type	**A** = Pin **B** = Socket
Connector Type	**A** = D38999 **B** = Series 792

PIN



SOCKET



MATERIAL AND FINISH

- Cavity reducer: Al alloy/anodize
- Ferrule: Zirconia cerramic

NOTES

- Recommended extraction tool for adapter: P/N M81969/14-06.
- Rear-release / rear-insert
- Contacts are compatible with any standard size 8 "SuperNine" socket and pin cavities.
- PM assemblies extinction ratio greater than 12 db.
- Contacts are recommended to be heat sunk with Glenair braided assembly SA7079.

FIBER TYPE			
Type	**Basic Part Number**	**Wavelength**	**Description**
-SMF	FA07375	1550 nm	SMF-28 Ultra
-PML	FA07376	1064 nm	Liekki 10/125, PM
-PMN	FA08141	1064 nm	Nufern 10/125, PM
-PMP	FA07377	1550 nm	Panda 9/125, PM

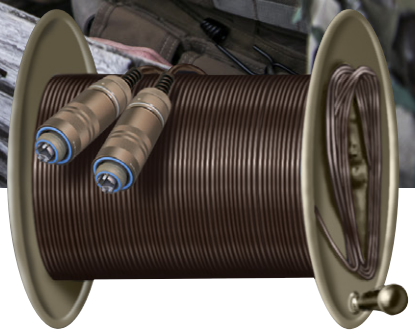
TEST FIXTURE FOR EYE-BEAM POWER CONNECTORS

HOW TO ORDER				
Sample Part Number	**059-0088**	**-0072**	**-08**	**-1250**

Basic Part Number	Eye-Beam Power Connector Test Fixture
Length	in inches. Example **-0072** = 72"
Fiber Size (microns)	**-08** = SM 8/125 **-09** = SM 8.2/125 **-10** = PM 10/125 **-25** = LMA 25/260
Wavelength (nanometers)	Example **-1250** = 1250 nanometers

Rugged Fiber Optic CONNECTORS

Harsh-Environment, Field-Deployable **GFOCA** Fiber Optic Connection System



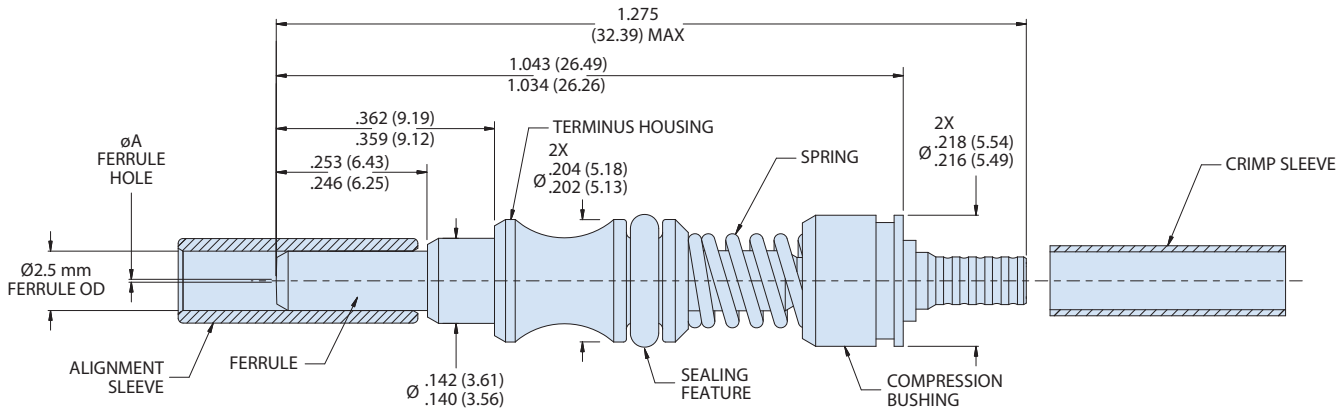
Most commonly used by the army for long-run battlefield communications, the GFOCA Connection System is also well suited to dockside naval communications, down-hole drilling and other harsh environment applications. The hermaphroditic system utilizes low insertion loss butt-joint termini and a ruggedized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

- **Low insertion loss genderless termini.**
- **Ø 2.5 mm ceramic ferrules and alignment sleeves.**
- **4 channel singlemode and multimode configurations.**
- **Designed to meet the interface requirements of MIL-PRF 29504/16 and /17 and MIL-DTL-83526/16 and /17 (draft revisions).**
- **Discrete components or complete cable-on-reel solutions available.**

181-050 Genderless Terminus, M29504/16 type

PART NUMBER DEVELOPMENT		
Part Number	Ø A (Microns)	Fiber Type (Typical)
181-050-1250C	125.0	SM
181-050-1255C	125.5	SM
181-050-1260C	126.0	SM and MM
181-050-1270C	127.0	MM
181-050-1420C	142.0	MM
181-050-2300C	230.0	MM
SM: Singlemode • MM: Multimode Consult Factory for Additional Sizes		

TERMINUS ACCESSORIES	
Part Number	Description
181-050-S	Alignment Sleeve Split, Ceramic
265-008	Crimp Sleeve, Ø 2.4 mm Max Jacket



MATERIAL AND FINISH

- Ferrule: Zirconia ceramic
- Terminus Housing: Stainless steel/passivate
- Spring: Stainless steel/passivate
- Compression Bushing: Stainless steel/passivate
- Crimp Sleeve: Brass alloy/nickel (not shown)
- Seal: EPDM

NOTES

- Terminus is designed to meet the general requirements of MIL-PRF-29504/16. (draft)
- Terminus is intended for use with the following Glenair GFOCA MIL-PRF-83526 style connectors, at a minimum:
  - 180-145: Plug, hermaphroditic
  - 180-146: Recp, jam nut mount
  - 180-147: Recp, flange mount
- Assembly packaged in plastic bag or vial and tag identified with manufacturer's name, cage code, part number, and date code.
- Crimp sleeve is supplied with terminus assembly, and to be ordered seperately (see Part Number Development table). For terminus less crimp sleeve, omit "C" from dash number.

181-059 Dummy Terminus, M29504/17 type

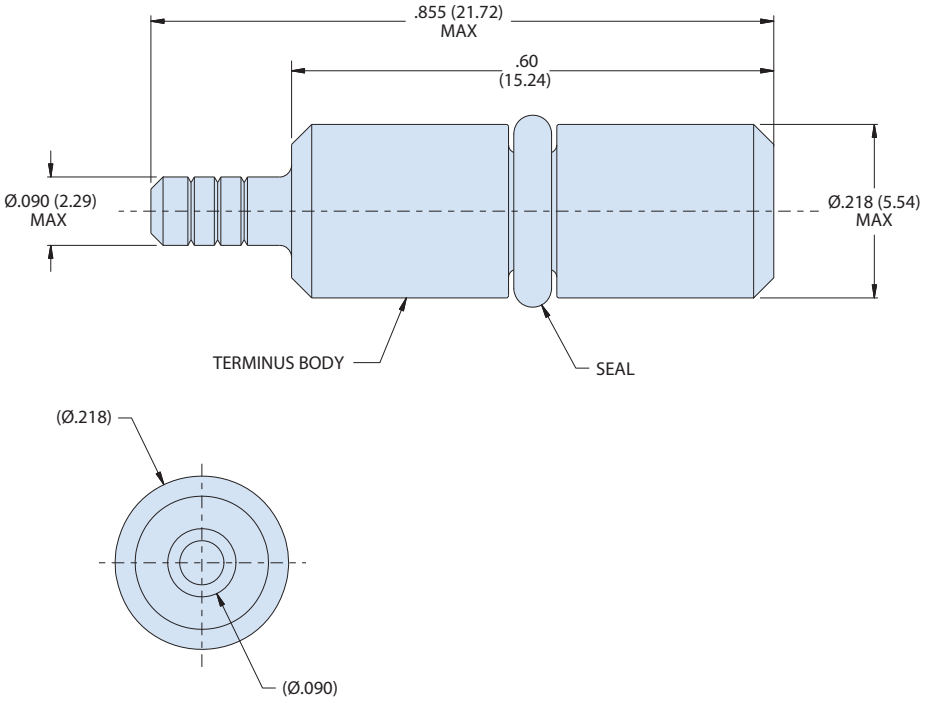
PART NUMBER	
181-059	GFOCA M29504/17 Type Dummy Terminus

MATERIAL AND FINISH

- Terminus body: Stainless steel/ passivate
- Seal: EPDM

NOTES

- Terminus is designed to meet the general requirements of MIL-PRF-29504/17 (draft)
- Terminus is intended for use with the following connectors:
  - 180-145: Plug, hermaphroditic
  - 180-146: Recp, jam nut mount
  - 180-147: Recp, flange mount



180-145 Hermaphroditic Plug Connector, 4-channel MIL-DTL-83526/16 type

HOW TO ORDER

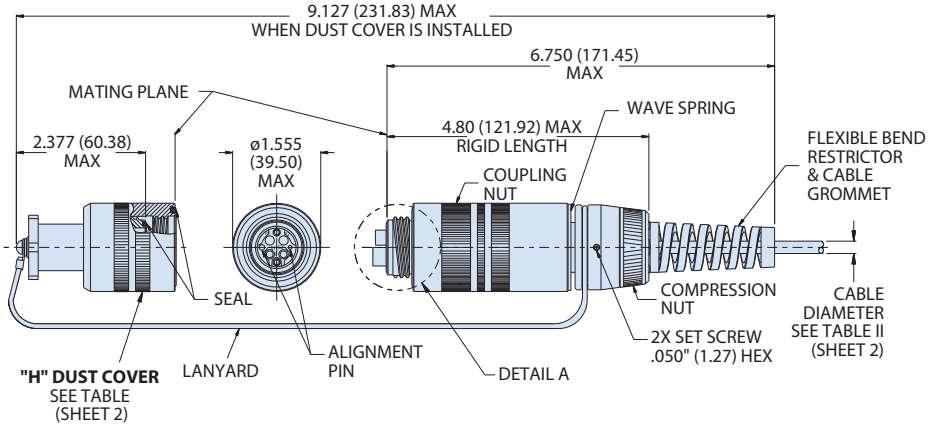
Sample Part Number	180-145	G2	-01	N	1	H	1
Basic Number	Hermaphroditic plug GFOCA connector, 4 channel						
Material/Finish	See Material and Finish Table						
Cable Entry Code	**-01** or **-02**, see Cable Entry Table						
Alignment Sleeve Style	**N** = None. Consult factory for additional options						
Insert Cap Key	**1**, **2**, **3**, **4** (See Insert Cap Key Table)						
Dust Cover Style	**M** = Male **H** = Hermaphroditic **N** = None						
Seal Material	**1** = Primary seals: Fluorosilicone & Nitrile Secondary seals: Fluorosilicone, Urethane, and Nitrile						

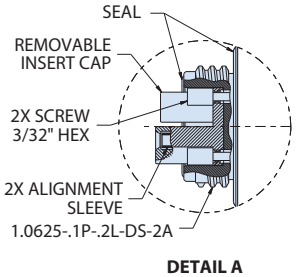
MATERIAL AND FINISH

- Internal hardware: Al alloy/ anodize
- Misc. hardware: Stainless steel/ passivate
- Lanyard: Stainless steel/coated
- Strain relief wedge: BeCu alloy/nickel
- Flexible bend resistrictor: Nylon
- Cable grommet: Nitrile

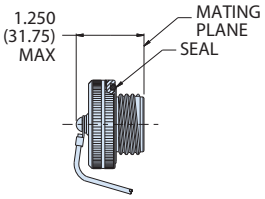
NOTES

- Connector assembly is designed IAW the interface requirements of MIL-DTL-83526/16 (Draft).





DETAIL A



"M" DUST COVER
SEE TABLE V
(SHEET 2)

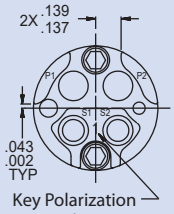
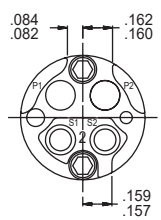
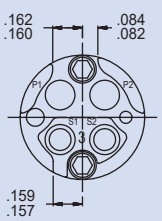
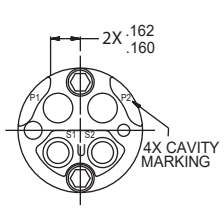
MATERIAL AND FINISH

Code	Material	Finish Description
G2	Aluminum Alloy	Hard Anodize, Gray
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black (RoHS)
Z1	Stainless Steel	Passivate
ZL		Electrodeposited Nickel

CABLE ENTRY

Dash No.	Cable Diameter	
	Inch	mm
-01	.190-.315	4.83-8.00
-02	.316-.379	8.03-9.63

INSERT CAP KEY CONFIGURATIONS

Dash No:	1	2	3	4
Config.	Key 1	Key 2	Key 3	Key U (universal)
				

180-137 90° Plug Connector, 4-channel MIL-DTL-83526/16 type

RUGGED FIELD / EXPANDED BEAM

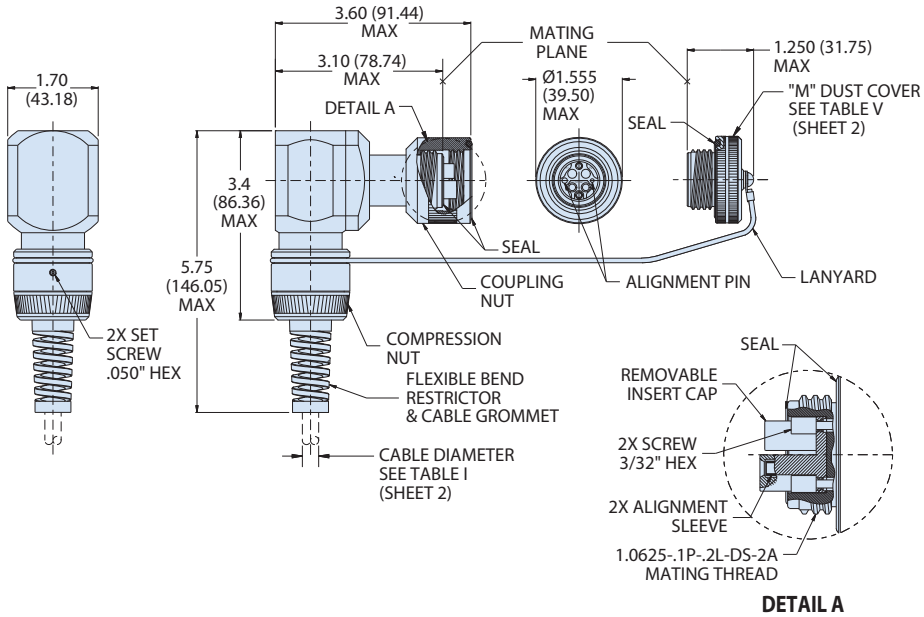
HOW TO ORDER							
Sample Part Number	**180-137**	**G2**	**-01**	**N**	**1**	**M**	**1**
Basic Number	90 degree hermaphroditic GFOCA plug connector, 4 channel						
Material/Finish	See Material and Finish Table						
Cable Entry Code	**-01** or **-02**, see Cable Entry Table						
Alignment Sleeve Style	**N** = None; Consult factory for additional options						
Insert Cap Key	**1**, **2**, **3**, **4** (See Insert Cap Key Table)						
Dust Cover Style	**M** = Male **N** = None						
Seal Material	**1** = Fluorosilicone						

MATERIAL AND FINISH

- Internal hardware: Al alloy/ anodize
- Misc. hardware: Stainless steel/ passivate
- Lanyard: Stainless steel/coated
- Strain relief wedge: BeCu alloy/nickel
- Flexible bend resistrictor: Nylon
- Cable grommet: Nitrile

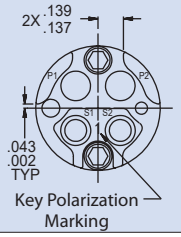
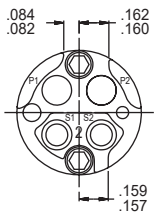
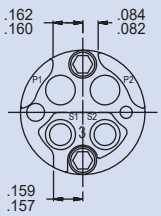
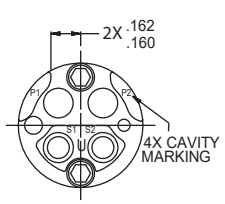
NOTES

- Connector assembly is designed IAW the interface requirements of MIL-DTL-83526/16 (Draft).



MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
G2	Aluminum Alloy	Hard Anodize, Gray
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black (RoHS)
Z1	Stainless Steel	Passivate
ZL		Electrodeposited Nickel

CABLE ENTRY		
Dash No.	**Cable Diameter**	
	Inch	**mm**
-01	.190-.315	4.83-8.00
-02	.316-.379	8.03-9.63

INSERT CAP KEY CONFIGURATIONS				
Dash No:	**1**	**2**	**3**	**4**
Config.	**Key 1**	**Key 2**	**Key 3**	**Key U (universal)**
				

180-146 Jam Nut Mount Receptacle, 4-channel MIL-DTL-83526/17 type

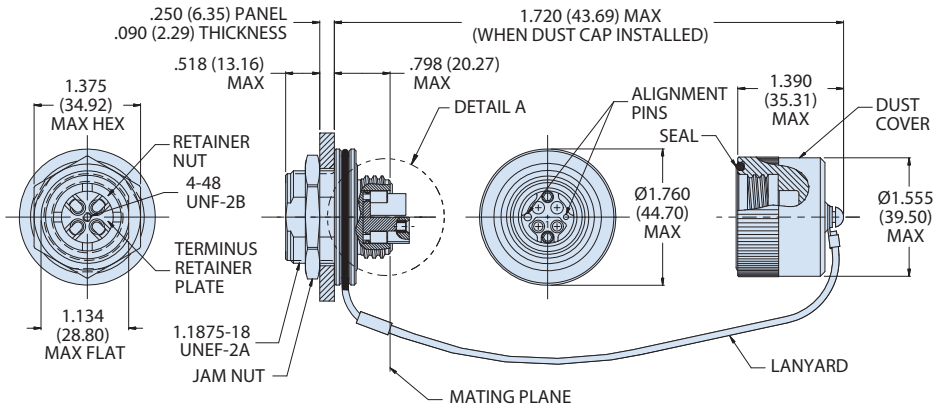
HOW TO ORDER							
Sample Part Number		**180-146**	**ZR**	**-N**	**1**	**F**	**1**
Basic Number	Hermaphroditic GFOCA jam nut receptacle, 4 channel						
Material/Finish	See Material and Finish Table						
Alignment Sleeve Style	**N** = None; Consult factory for additional options						
Insert Cap Key	**1, 2, 3, 4** (See Insert Cap Key Table)						
Dust Cover Style	**F** = Female **H** = Hermaphroditic **N** = None						
Seal Material	See Seal Material Table						

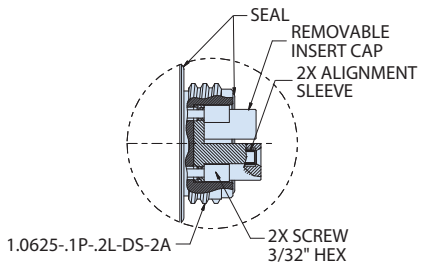
MATERIAL AND FINISH

- Insert cap: Al alloy/anodize
- Misc. hardware: Stainless steel/ passivate
- Lanyard: Stainless steel/coated

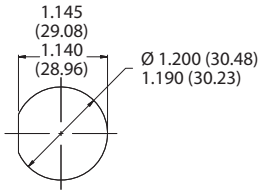
NOTES

- Connector assembly is designed IAW the interface requirements of MIL-DTL-83526/17 (Draft).





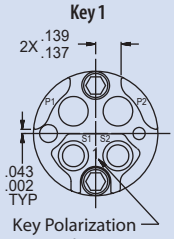
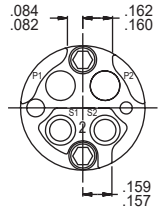
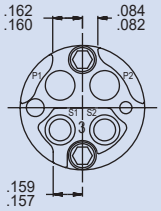
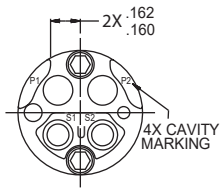
DETAIL A



PANEL CUT-OUT
AS VIEWED FROM
FRONT OF PANEL

MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
G2	Aluminum Alloy	Hard Anodize, Gray
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black (RoHS)
Z1	Stainless Steel	Passivate
ZL		Electrodeposited Nickel

SEAL MATERIAL	
No.	**Seal Material(s)**
1	Fluorosilicone with Fluorosilicone panel seal
2	Fluorosilicone with conductive fluorosilicone panel seal
3	EPDM with EPDM panel seal
4	EPDM with conductive EPDM panel seal

INSERT CAP KEY CONFIGURATIONS				
Dash No:	**1**	**2**	**3**	**4**
Config.	**Key 1**	**Key 2**	**Key 3**	**Key U (universal)**
				

180-148 Internal Mount Jam Nut Receptacle, 4-channel MIL-DTL-83526 type

RUGGED FIELD / EXPANDED BEAM

HOW TO ORDER							
Sample Part Number	**180-148**	**ZR**	**-N**	**1**	**F**	**1**
Basic Number	Hermaphroditic GFOCA internal mount jam nut receptacle
Material/Finish	See Material and Finish Table
Alignment Sleeve Style	**N** = None. Consult factory for additional options
Insert Cap Key	**1**, **2**, **3**, **4** (See Insert Cap Key Table)
Dust Cover Style	**F** = Female **N** = None
Seal Material	See Seal Material Table

MATERIAL AND FINISH

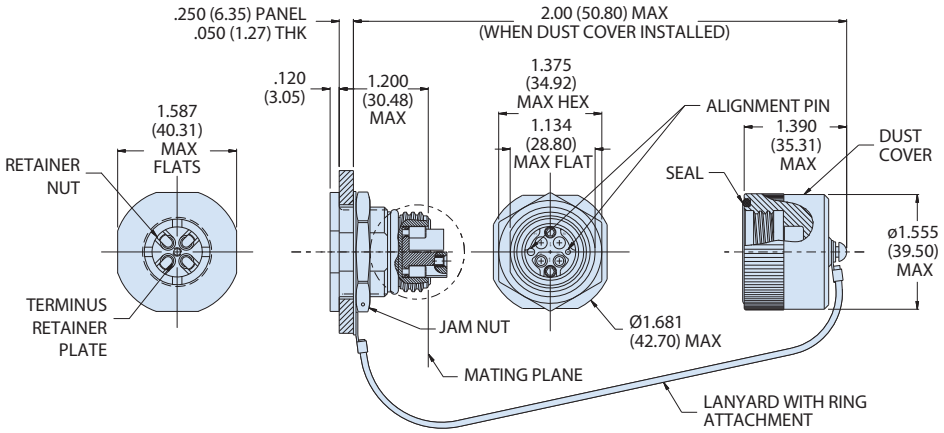
- Insert Cap: Al alloy/anodize
- Misc. hardware: Stainless steel/ passivate
- Lanyard: Stainless steel/coated

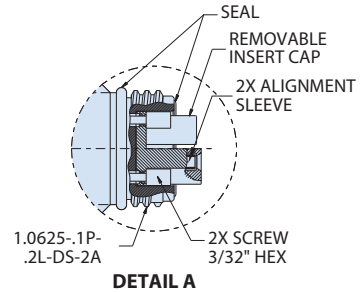
NOTES

- Connector assembly is designed IAW the interface requirements of MIL-PRF-83526/17 (Draft).

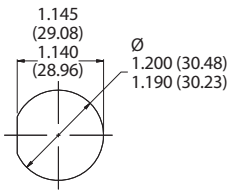
MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
G2	Aluminum Alloy	Hard Anodize, Gray
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black (RoHS)
Z1	Stainless Steel	Passivate
ZL		Electrodeposited Nickel

SEAL MATERIAL	
No.	**Seal Material(s)**
1	Fluorosilicone with Fluorosilicone panel seal
2	Fluorosilicone with conductive fluorosilicone panel seal
3	EPDM with EPDM panel seal
4	EPDM with conductive EPDM panel seal

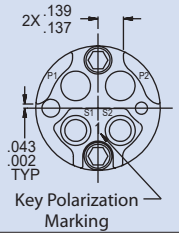
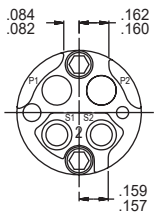
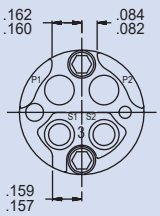
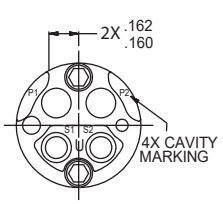




DETAIL A



PANEL CUT-OUT
AS VIEWED FROM
FRONT OF PANEL

INSERT CAP KEY CONFIGURATIONS				
Dash No:	**1**	**2**	**3**	**4**
Config.	**Key 1**	**Key 2**	**Key 3**	**Key U (universal)**
				

180-149 Internal Mount Jam Nut Receptacle with Accessory Threads, 4-channel, MIL-DTL-83526 type

HOW TO ORDER							
Sample Part Number	**180-149**	**ZR**	**-N**	**1**	**F**	**1**
Basic Number	Hermaphroditic GFOCA internal mount jam nut receptacle with accessory threads
Material/Finish	See Material and Finish Table
Alignment Sleeve Style	**N** = None. Consult factory for additional options
Insert Cap Key	**1, 2, 3, 4** (See Insert Cap Key Table)
Dust Cover Style	**F** = Female **N** = None
Seal Material	See Seal Material Table

MATERIAL AND FINISH

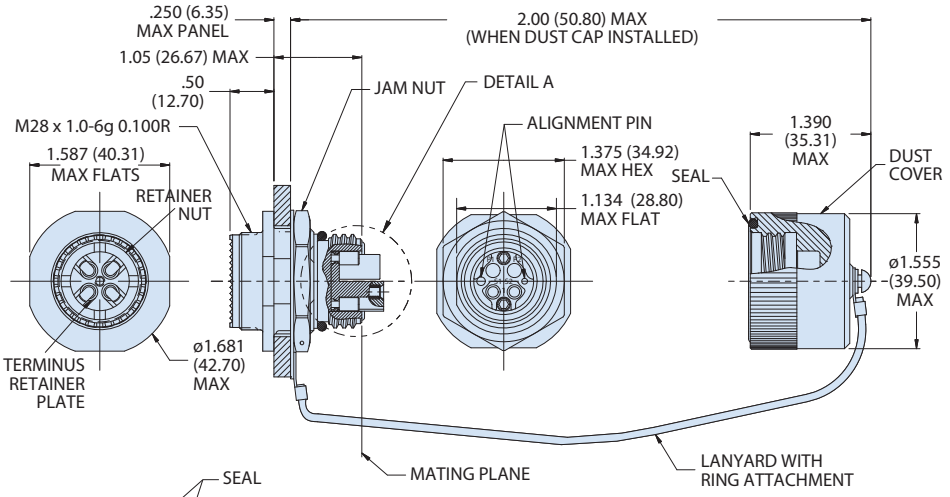
- Insert Cap: Al alloy/anodize
- Misc. hardware: Stainless steel/ passivate
- Lanyard: Stainless steel/coated

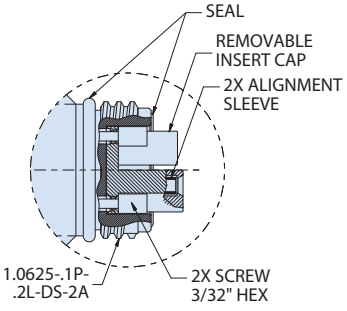
NOTES

- Connector assembly is designed IAW the interface requirements of MIL-PRF-83526/17 (Draft).

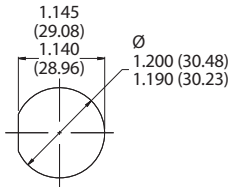
MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
G2	Aluminum Alloy	Hard Anodize, Gray
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black (RoHS)
Z1	Stainless Steel	Passivate
ZL		Electrodeposited Nickel

SEAL MATERIAL	
No.	**Seal Material(s)**
1	Fluorosilicone with Fluorosilicone panel seal
2	Fluorosilicone with conductive fluorosilicone panel seal
3	EPDM with EPDM panel seal
4	EPDM with conductive EPDM panel seal

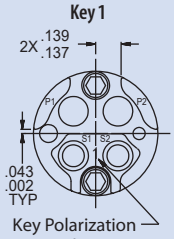
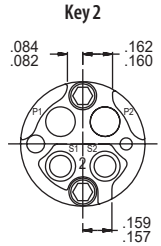
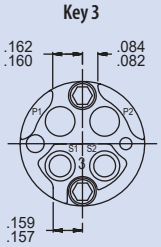
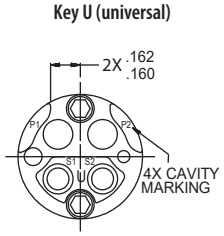




DETAIL A



PANEL CUT-OUT
AS VIEWED FROM FRONT OF PANEL

INSERT CAP KEY CONFIGURATIONS				
Dash No:	**1**	**2**	**3**	**4**
Config.	**Key 1**	**Key 2**	**Key 3**	**Key U (universal)**
				

180-153 Internal Mount Jam Nut Receptacle with Strain Relief, 4-channel, MIL-DTL-83526 type

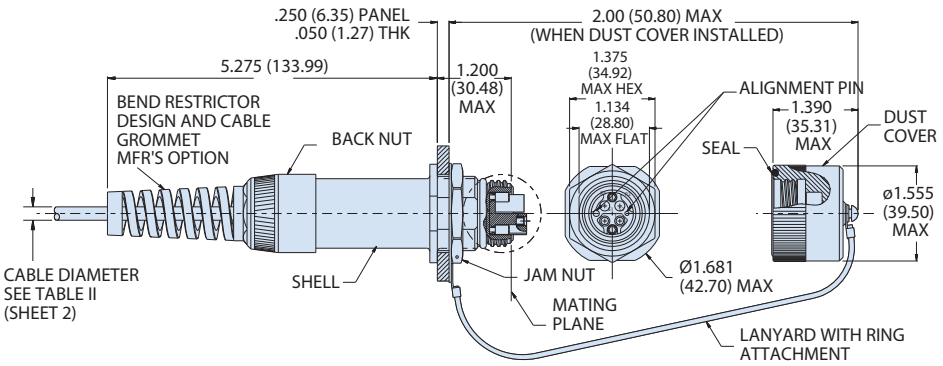
MATERIAL AND FINISH

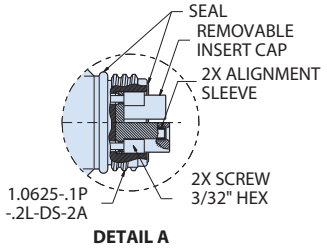
- Internal hardware: Al alloy/ anodize
- Misc. hardware: Stainless steel/ passivate
- Lanyard: Stainless steel/coated
- Strain relief wedge: Copper alloy/nickel
- Flexible bend resistrictor: Nylon
- Cable grommet: Nitrile

NOTES

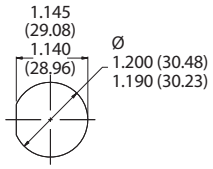
- Connector assembly is designed IAW the interface requirements of MIL-DTL-83526/17 (Draft).

HOW TO ORDER								
Sample Part Number	**180-153**	**ZR**	**-01**	**N**	**1**	**F**	**1**	
Basic Number	Hermaphroditic GFOCA internal mount jam nut receptacle with strain relief							
Material/Finish	See Material and Finish Table							
Cable Entry Code	**-01** or **-02**, see Cable Entry Table							
Alignment Sleeve Style	**N** = None. Consult factory for additional options							
Insert Cap Key	**1**, **2**, **3**, **4** (See Insert Cap Key Table)							
Dust Cover Style	**F** = Female **H** = Hermaphroditic **N** = None							
Seal Material	See Seal Material Table							





DETAIL A

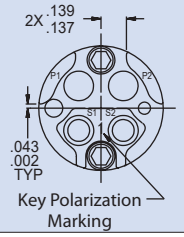
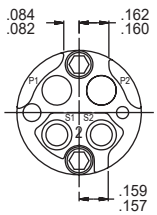
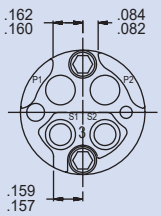
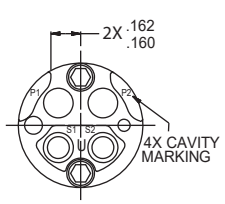


PANEL CUT-OUT
AS VIEWED FROM
FRONT OF PANEL

MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
G2	Aluminum Alloy	Hard Anodize, Gray
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black (RoHS)
Z1	Stainless Steel	Passivate
ZL		Electrodeposited Nickel

SEAL MATERIAL	
No.	**Seal Material(s)**
1	Fluorosilicone and nitrile with Fluorosilicone panel seal
2	Fluorosilicone and nitrile with conductive fluorosilicone panel seal

CABLE ENTRY		
Dash No.	**Cable Diameter**	
	Inch	**mm**
-01	.190-.315	4.83-8.00
-02	.316-.379	8.03-9.63

INSERT CAP KEY CONFIGURATIONS				
Dash No:	**1**	**2**	**3**	**4**
Config.	**Key 1**	**Key 2**	**Key 3**	**Key U (universal)**
				

180-147 Square Flange Mount Receptacle, 4-channel MIL-DTL-83526 type

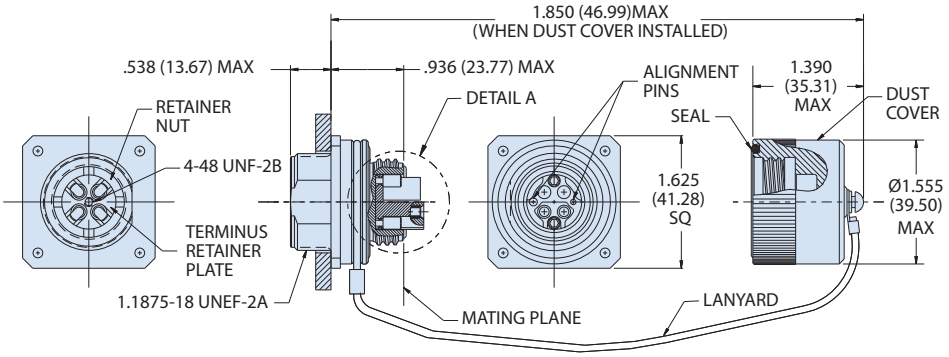
HOW TO ORDER							
Sample Part Number		**180-147**	**ZR**	**-N**	**1**	**F**	**1**
Basic Number	Hermaphroditic GFOCA square flange receptacle, 4 channel						
Material/Finish	See Material and Finish Table						
Alignment Sleeve Style	**N** = None. Consult factory for additional options						
Insert Cap Key	**1, 2, 3, 4** (See Insert Cap Key Table)						
Dust Cover Style	**F** = Female **H** = Hermaphroditic **N** = None						
Seal Material	See Seal Material Table						

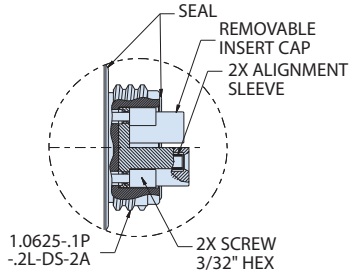
MATERIAL AND FINISH

- Misc. hardware: Stainless steel/ passivate
- Insert Cap: Al Alloy / anodize
- Lanyard: Stainless steel/coated

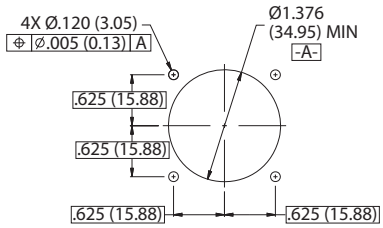
NOTES

- Connector assembly is designed IAW the interface requirements of MIL-DTL-83526/17 (Draft).





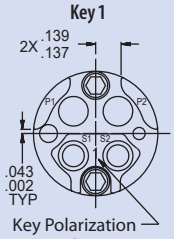
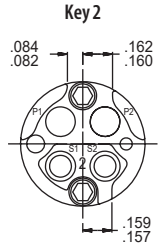
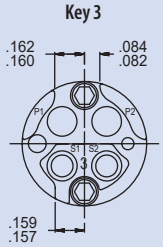
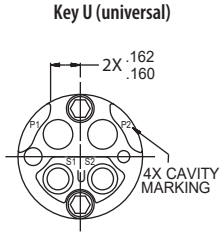
DETAIL A



PANEL CUT-OUT

MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
G2	Aluminum Alloy	Hard Anodize, Gray
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black (RoHS)
Z1	Stainless Steel	Passivate
ZL		Electrodeposited Nickel

SEAL MATERIAL	
No.	**Seal Material(s)**
1	Fluorosilicone with Fluorosilicone panel seal
2	Fluorosilicone with conductive fluorosilicone panel seal
3	EPDM with EPDM panel seal
4	EPDM with conductive EPDM panel seal

INSERT CAP KEY CONFIGURATIONS				
Dash No:	**1**	**2**	**3**	**4**
Config.	**Key 1**	**Key 2**	**Key 3**	**Key U (universal)**
				

180-150 Square Flange Mount Receptacle with Accessory Threads, 4-channel, MIL-DTL-83526 type

HOW TO ORDER

Sample Part Number	180-150	ZR	-N	1	F	1

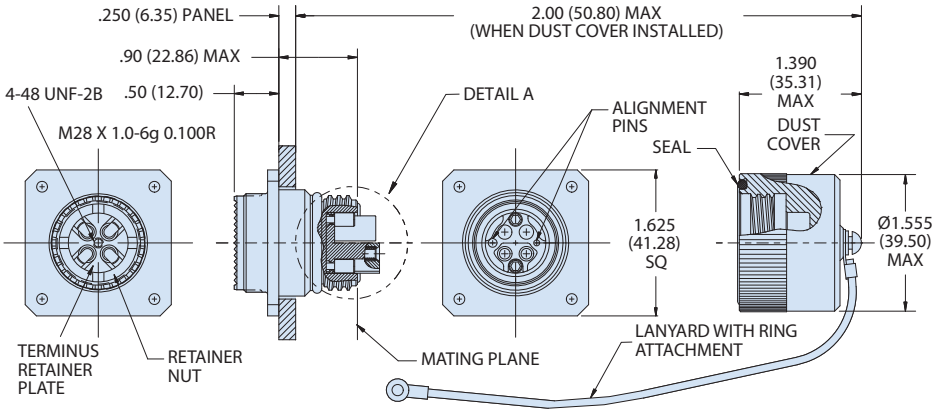
Basic Number	Hermaphroditic GFOCA square flange mount receptacle with accessory threads
Material/Finish	See Material and Finish Table
Alignment Sleeve Style	**N** = None. Consult factory for additional options
Insert Cap Key	**1**, **2**, **3**, **4** (See Insert Cap Key Table)
Dust Cover Style	**F** = Female **H** = Hermaphroditic **N** = None
Seal Material	See Seal Material Table

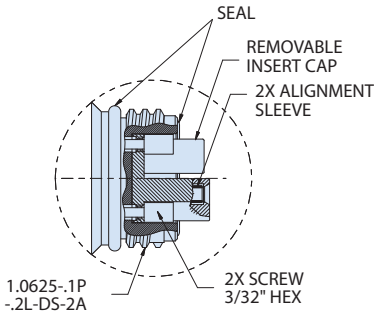
MATERIAL AND FINISH

- Internal hardware: Al alloy/ anodize
- Misc. hardware: Stainless steel/ passivate
- Lanyard: Stainless steel/coated

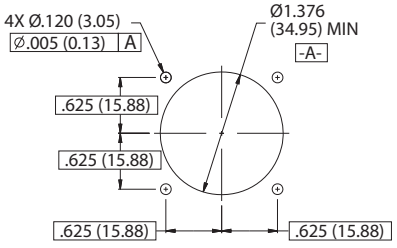
NOTES

- Connector assembly is designed IAW the interface requirements of MIL-PRF-83526/17 (Draft).
- Accessory threads per shell size 19, D38999 Series III connector.





DETAIL A



PANEL CUT-OUT

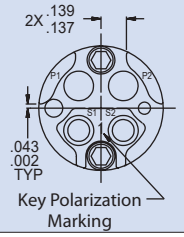
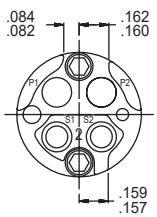
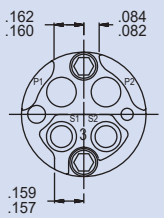
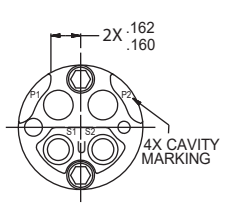
MATERIAL AND FINISH

Code	Material	Finish Description
G2	Aluminum Alloy	Hard Anodize, Gray
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black (RoHS)
Z1	Stainless Steel	Passivate
ZL		Electrodeposited Nickel

SEAL MATERIAL

No.	Seal Material(s)
1	Fluorosilicone with Fluorosilicone panel seal
2	Fluorosilicone with conductive fluorosilicone panel seal
3	EPDM with EPDM panel seal
4	EPDM with conductive EPDM panel seal

INSERT CAP KEY CONFIGURATIONS

Dash No:	1	2	3	4
Config.	Key 1	Key 2	Key 3	Key U (universal)
				

180-188 Internal Mount Square Flange Receptacle with Accessory Threads, 4-channel, MIL-DTL-83526 type

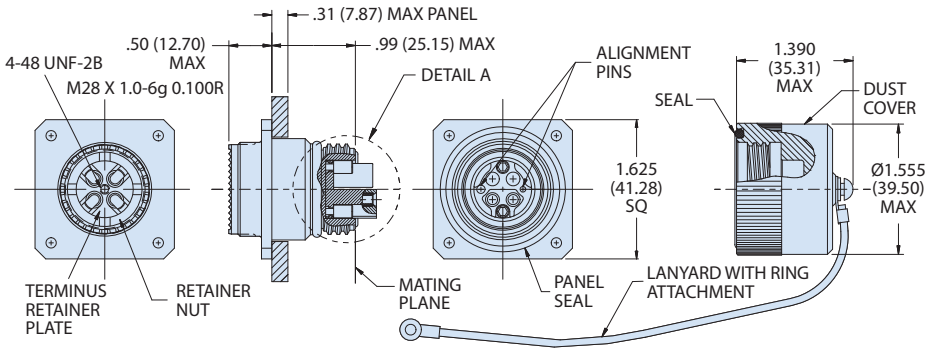
HOW TO ORDER							
Sample Part Number	**180-188**	**ZR**	**-N**	**1**	**F**	**1**	
Basic Number	Hermaphroditic GFOCA internal mount square flange receptacle with accessory threads						
Material/Finish	See Material and Finish Table						
Alignment Sleeve Style	**N** = None. Consult factory for additional options						
Insert Cap Key	**1, 2, 3, 4** (See Insert Cap Key Table)						
Dust Cover Style	**F** = Female **N** = None						
Seal Material	See Seal Material Table						

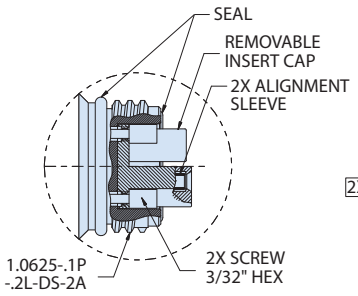
MATERIAL AND FINISH

- Internal hardware: Al alloy/ anodize
- Misc. hardware: Stainless steel/ passivate
- Lanyard: Stainless steel/coated

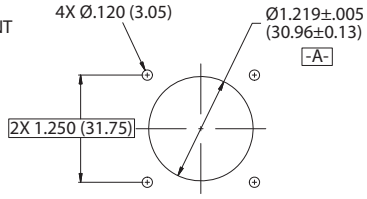
NOTES

- Connector assembly is designed IAW the interface requirements of MIL-PRF-83526/17 (Draft).
- Accessory threads per shell size 19, D38999 Series III connector.





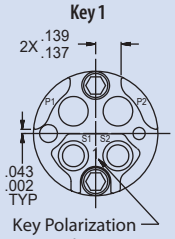
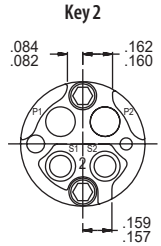
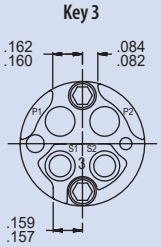
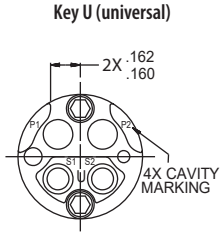
DETAIL A



PANEL CUT-OUT

MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
G2	Aluminum Alloy	Hard Anodize, Gray
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black (RoHS)
Z1	Stainless Steel	Passivate
ZL		Electrodeposited Nickel

SEAL MATERIAL	
No.	**Seal Material(s)**
1	Fluorosilicone with Fluorosilicone panel seal
2	Fluorosilicone with conductive fluorosilicone panel seal
3	EPDM with EPDM panel seal
4	EPDM with conductive EPDM panel seal

INSERT CAP KEY CONFIGURATIONS				
Dash No:	**1**	**2**	**3**	**4**
Config.	**Key 1**	**Key 2**	**Key 3**	**Key U (universal)**
				

180-242 Internal Mount Square Flange Receptacle with Strain Relief, 4-channel, MIL-DTL-83526 type

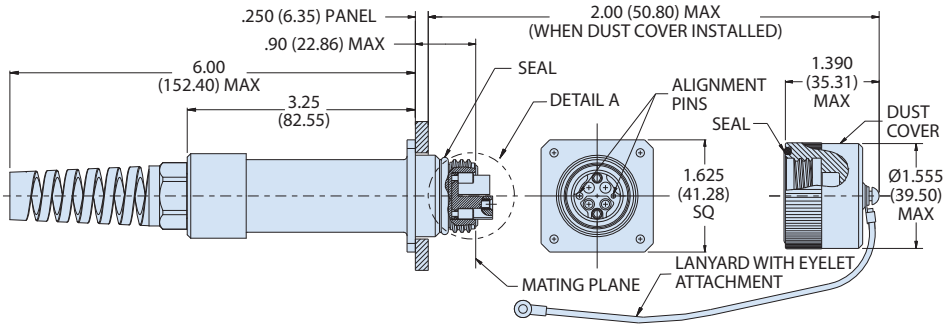
MATERIAL AND FINISH

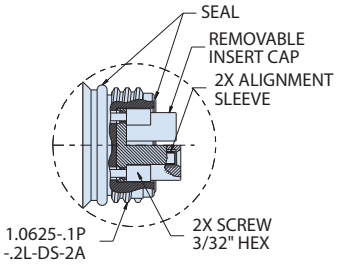
- Internal hardware: Al alloy/ anodize
- Misc. hardware: Stainless steel/ passivate
- Lanyard: Stainless steel/coated

NOTES

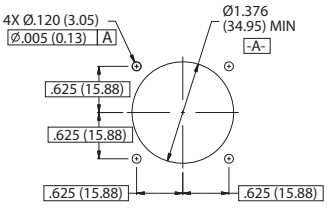
- Connector assembly is designed IAW the interface requirements of MIL-PRF-83526 (Draft).

HOW TO ORDER								
Sample Part Number		**180-242**	**ZR**	**-01**	**N**	**1**	**F**	**1**
Basic Number	Hermaphroditic GFOCA internal mount square receptacle with strain relief							
Material/Finish	See Material and Finish table							
Cable Entry Code	**-01** or **-02**, see Cable Entry table							
Alignment Sleeve Style	**N** = None. Consult factory for additional options							
Insert Cap Key	**1**, **2**, **3**, **4** (See Insert Cap Key table)							
Dust Cover Style	**F** = Female **H** = Hermaphroditic **N** = None							
Seal Material	See Seal Material Table							





DETAIL A

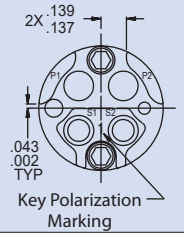
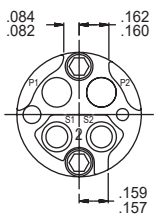
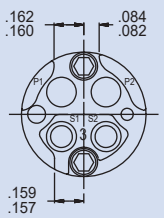
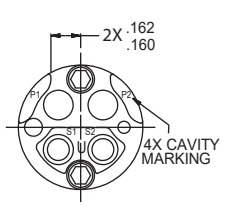


PANEL CUT-OUT

MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
G2	Aluminum Alloy	Hard Anodize, Gray
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black (RoHS)
Z1	Stainless Steel	Passivate
ZL		Electrodeposited Nickel

SEAL MATERIAL	
No.	**Seal Material(s)**
1	Fluorosilicone with Fluorosilicone panel seal
2	Fluorosilicone with conductive fluorosilicone panel seal
3	EPDM with EPDM panel seal
4	EPDM with conductive EPDM panel seal
5	EPDM with conductive Fluorosilicone panel seal

CABLE ENTRY		
Dash No.	**Cable Diameter**	
	Inch	**mm**
-01	.190-.315	4.83-8.00
-02	.316-.379	8.03-9.63

INSERT CAP KEY CONFIGURATIONS				
Dash No:	**1**	**2**	**3**	**4**
Config.	**Key 1**	**Key 2**	**Key 3**	**Key U (universal)**
				

189-130 GFOCA Dust Covers
189-154 GFOCA Replacement Jam Nut

MATERIAL AND FINISH

- Misc. hardware: Stainless steel/ passivate
- Lanyard: Stainless steel/coated

NOTES

- Dust cap assembly is designed IAW the interface requirements of MIL-PRF-83526/16/17 (Draft).

MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
MT	Aluminum Alloy	Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
G2		Hard Anodize, Gray
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black (RoHS)
Z1	Stainless Steel	Passivate
ZL		Electrodeposited Nickel
ZZR		Zinc-Nickel, Black

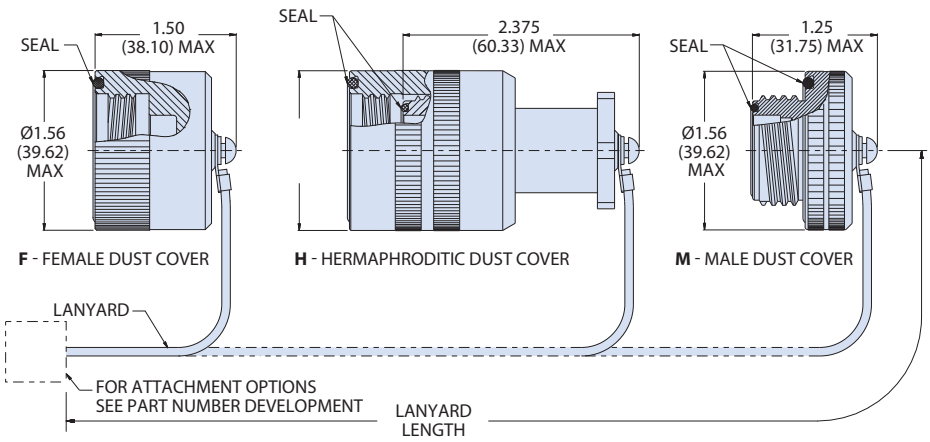
LANYARD ATTACHEMENT GUIDE			
Connector P/N	**Dust Cover Style**	**Attachment Style**	**Lanyard Length**
180-135	H or M	C	15
180-137	M	C	15
180-145	H or M	C	15
180-146	F	C	10
180-147	F	C	10
180-148	F	R	05
180-149	F	R	05
180-150	F	E	05
180-162	M	C	15
180-188	F	E	05

MATERIAL AND FINISH		
Code	**Material**	**Finish Description**
MT	Aluminum Alloy	Nickel-PTFE, Grey
NF		Cadmium, Olive Drab
G2		Hard Anodize, Gray
ZN		Zinc-Nickel, Olive Drab
ZR		Zinc-Nickel, Black (RoHS)
Z1	Stainless Steel	Passivate
ZL		Electrodeposited Nickel
ZZR		Zinc-Nickel, Black

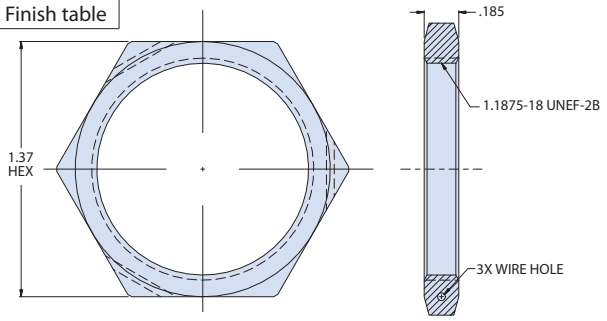
NOTES

- Designed IAW the requirements of MIL-PRF-83526/17 (Draft).

HOW TO ORDER DUST COVERS						
Sample Part Number	**189-130**	**F**	**C**	**1**	**-ZR**	**-10**
Basic Number	GFOCA dust covers					
Dust Cover Style	**F** = Female **H** = Hermaphroditic **M** = Male					
Attachment Type	**C** = Crimp (supplied with shrink tubing) **E** = Eyelet (Size 4 hole) standard **F** = Eyelet (Size 10 hole) special (consult factory) **R** = Solid Ring (accommodates standard GFOCA jam nut 1.1875-18 UNEF-2A thread					
Seal Material	**1** = Fluorosilicone **2** = EPDM					
Material / Finish	See Material and Finish Table					
Lanyard Length	in Inches. e.g. **-10** = 10 inches, **-05** = 5 inches Length of 10 in. recommended for plug connectors. Length of 5 in. recommended for receptacle connectors					



HOW TO ORDER JAM NUTS		
Sample Part Number	**189-154**	**ZR**
Basic number	Jam Nut for GFOCA	
Material / Finish	See Material and Finish table	



GLENAIR SIGNATURE

FIBER OPTIC CONNECTION SYSTEMS

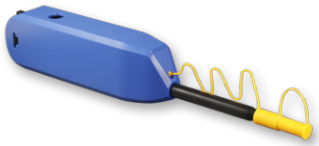
Rugged Fiber Optic CONNECTORS

Fiber Optic Termination, Inspection and Trouble-Shooting Equipment

Our fiber optic termination kits, inspection tools, and cleaning supplies allow both lab and field technicians to complete reliable assembly of fiber optic systems. Our termination kits, for example, are equipped with all of the necessary tools—pin and socket polishing tools, jacket strippers, shears, scribes—literally every device required for ongoing termination and test of fiber optic systems. The same holds true for our test probe, inspection and cleaning tools.

- **Kits contain pin and socket polishing tools, jacket strippers, shears, scribes**
- **GFKR for 181-001 & 181-002 (MIL-PRF-29504/4 and /5) Termini and 181-011 & 181-012 (GFR) Termini**
- **Inspection and testing instructions offer solution to optical test and measurement**

Selection Guide



CATALOG NOTES

- Metric dimensions appear in parentheses in diagrams and tables, based on 1 inch = 25.4 mm, for reference only.
- Unless otherwise specified, the following other dimensional tolerances apply:
- .xx = ± .03 (0.8) • .xxx = ± .015 (0.4) • Angles = ± 5°

Fiber Optic Cable Preparation and Termination

Fiber optic cable preparation and termination instructions

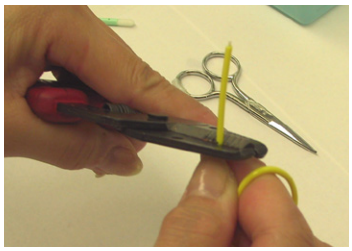
The Right Fiber Optic Tool for the Job

Fiber optic connectors are designed to be connected and disconnected many times without affecting the optical performance of the fiber circuit. Optimal performance can be achieved by following the correct process for termination of the fiber circuit—a task which requires the use of a wide range of specialized tooling. Glenair's extensive experience in building fiber optic interconnect cables has enabled us to select the right tools for each step in the termination and assembly process. Our Fiber Optic Termination and Test Probe Kits allow field technicians the convenience of completing final termination of precision termini on location for easy and efficient cable routing and installation. Each kit contains pin and socket polishing tools, jacket strippers, shears, scribes—literally all the tools and supplies required for ongoing termination and test of fiber optic systems. Polishing tools are also sold separately for factory use or as replacement parts in field termination kits.

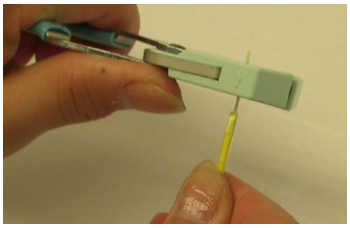
Glenair Fiber Optic Toolkits contains all of the tools you will need for fiber optic termination, plus a laminated card with termination instructions.

Typical Fiber Preparation

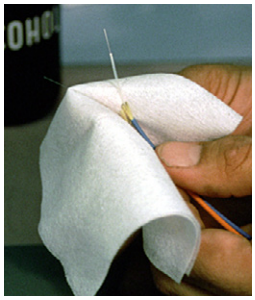
1. Measure and mark cable to desired length
2. Place jacket stripper on mark and squeeze gently until cutter closes
3. Using the tool, gently pull the cut section of jacketing off the cable



4. Mark Kevlar at specified length
5. Cut away excess Kevlar at measured mark with scissors
6. Slide clear heat shrink sleeve over buffer, using it to fold Kevlar back over cable jacket
7. After measuring, place buffer stripper on buffer jacket and squeeze gently until cutter closes
8. Strip buffer in several incremental steps to avoid damaging fiber



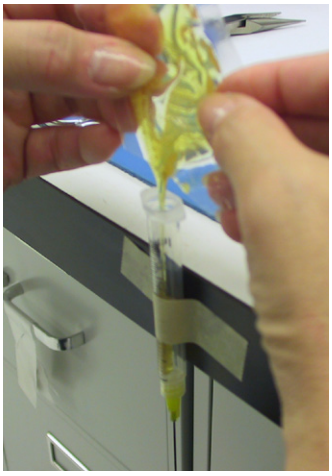
9. Clean fiber thoroughly using a lint-free, alcohol-soaked tissue



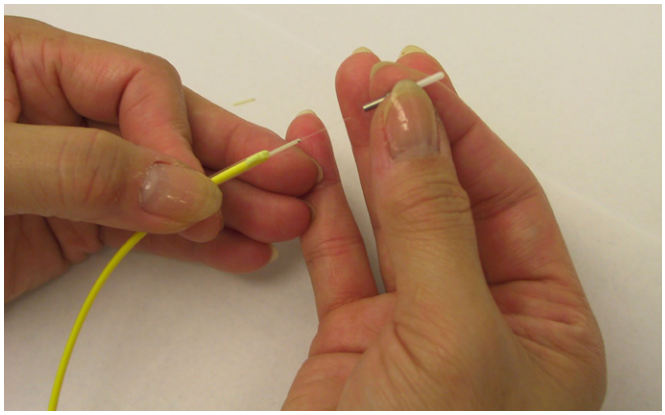
Fiber Optic Cable Preparation and Termination

Typical Fiber Optic Cable Termination

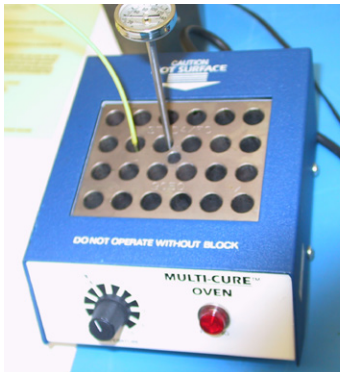
1. Remove the separating clip and mix the epoxy thoroughly.
2. Remove syringe plunger and install needle tip
3. Cut open bi-pack and squeeze epoxy into applicator
4. Install plunger into filled applicator and remove air from needle
5. Slowly inject epoxy thru applicator until epoxy appears at the ceramic tip



6. Using a twisting motion, gently insert fiber into the terminus until it bottoms



7. Gently slide clear sleeve over the Kevlar, evenly distributing the Kevlar over the rear body
8. Using a heat gun, shrink the sleeve over Kevlar, securing the cable to the contact assembly
9. Clean any excess epoxy from the rear body with alcohol soaked swab
10. Add a small bead of epoxy to the ferrule transition
11. Heat cure epoxy to appropriate cure temperature and clean with alcohol
12. Cleave excess fiber from termini end



Glenair: The Fiber Optic Experts

With our depth of experience engineering fiber optic interconnect solutions, Glenair has developed all of the tools you will need for accurate fiber optic cable preparation and termination.

Visit our website at www.glenair.com for complete, easy-to-follow instruction videos for every facet of fiber optic preparation, termination, cleaning and testing.

We are experts at building made-to-order termination, test and cleaning kits. This chapter presents just our core capabilities. Consult our website or call the factory for made-to-order toolkits, training and process documentation.

Termination Kit For Field Termination and Repair Of Optical Interconnects GFKR for 181-001 & 181-002 Termini and GFR 181-011 & 181-012 Termini

- **Turn-Key Termination of MIL-PRF-29504/4 and /5 Fiber Termini or Glenair Front Release (GFR) 181-011 & 181-012 Termini**
- **Singlemode or Multimode**
- **110 Volt or 220 volt**
- **Complete Kit With All Tools, Instruments and Consumables**
  - Power Meter
  - LED Source
  - 200X Microscope
  - Polishing Media
  - Curing Oven
  - Hand Tools
  - Epoxies, Wipes and Swabs

Our termination kit allows field technicians the convenience of on-site optical fiber termination. Each kit contains jacket strippers, polishing tools, hand tools, light source, power meter and microscope as well as a full complement of consumables including epoxy, polishing media, swabs and adhesives.

HOW TO ORDER			
Sample Part Number	**GFKR02**	**U**	**09**
Basic Number	**02** = D38999 **03** = D38999 20 AWG **04** = GHD **05** = GFR **06** = GFOCA **07** = M28876 **08** = Mighty Mouse 16 AWG **09** = Mighty Mouse 20 AWG **10** = ARINC 801 **11** = NGCON		
Voltage	**U** = 110 **E** = 220		
Fiber Size	**09** = 9.3/ SM **50** = 50/125 MM **62** = 62.5/125 mm		

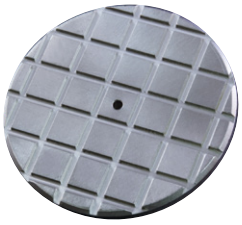
Glenair: Your source for fiber optic kits

Glenair offers a full range of kits for fiber optic interconnect systems. Kits include components for all aspects of fiber optic system management including:

- **Termination**
- **Inspection**
- **Cleaning**
- **Testing**

Kits can be configured to your specifications with components designed for your specific fiber optic interconnect system. Contact the factory for details.

Fiber Optic Polishing Pucks



Polishing Puck showing grooves for wet polish

PART NUMBER	COMPATIBLE TERMINI		
M29504 type (MIL-DTL-38999 Series III type) termini			
182-001P	181-002	M29504/04 Pin	Add **W** to part number for Wet Polish, Supplied with Grooves. Omit for Dry Polish, Less Grooves
	181-036	Large Core Size 16 Pin Terminus	
182-001S	181-001	M29504/05 Socket	
	181-035	Large Core Size 16 Socket Terminus	
182-039P	181-065	Size 20 Pin Terminus	
182-039S	181-066	Size 20 Socket Terminus	
182-030	181-052	Jewel Pin Terminus, Size 16	Supplied with Grooves for Wet Polish
	181-053	Jewel Socket Terminus, Size 16	
GHD TERMINI			
182-018	181-047	GHD Size 18 keyed genderless terminus	Add **W** to part number for Wet Polish, Supplied with Grooves. Omit for Dry Polish, Less Grooves
	181-056	GHD Size 18 non-keyed genderless terminus	
MIGHTY MOUSE TERMINI			
182-001P	181-057	Mighty Mouse Size 16 Pin Terminus	Add **W** to part number for Wet Polish, Supplied with Grooves. Omit for Dry Polish, Less Grooves
182-045	181-075	Mighty Mouse Size 16 Socket Terminus	
182-056P	181-084	Mighty Mouse Size 20HD Pin Terminus	
182-056S	181-085	Mighty Mouse Size 20HD Socket Terminus	
GFR TERMINI			
182-005P	181-012	GFR Size 16 Pin	Add **W** to part number for Wet Polish, Supplied with Grooves. Omit for Dry Polish, Less Grooves
182-005S	181-011	GFR Size 16 Socket	
NGCON TERMINI			
182-054	181-043	NGCON Genderless Rear-Release Terminus	Add **W** to part number for Wet Polish, Supplied with Grooves. Omit for Dry Polish, Less Grooves
GFOCA TERMINI			
182-007	181-050	M29504/16 Type Genderless GFOCA fiber optic terminus	Add **W** to part number for Wet Polish, Supplied with Grooves. Omit for Dry Polish, Less Grooves
M29504 TYPE (MIL-PRF-28876) TERMINI			
182-035	181-039	M29504/14 Pin	Add **W** to part number for Wet Polish, Supplied with Grooves. Omit for Dry Polish, Less Grooves
	181-040	M29504/15 Socket	
ARINC 801 TERMINI			
182-054	182-054	ARINC Genderless, Keyed Rear-Release Terminus	Add **W** to part number for Wet Polish, Supplied with Grooves. Omit for Dry Polish, Less Grooves

Fiber Optic Inspection and Testing

Fiber optic Inspection and testing instructions

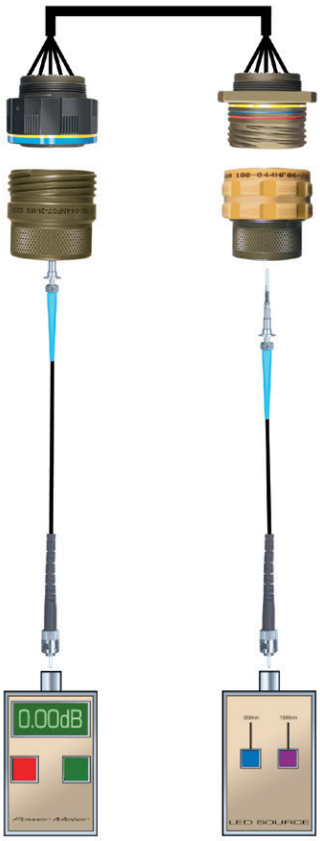
Patented optical test and measurement system

Traditional optical test harnesses are expensive and easily contaminated in normal use. Glenair's test probe, in conjunction with our precise-mating test adapter, offers a complete solution to optical test and measurement. The probe design offers precision alignment with the use of ceramic ferrules and alignment sleeves. The test probe system is designed to simulate the terminus endface mating pressure inherent to the specific connection system. The built-in insertion and removal tool on the test probe allows for quick probing from one channel to the next with repeatable performance. The probe also consists of a rubber strain-relief boot to protect the optical fiber from potential bend stress.

Specified by advanced military aircraft programs

The Glenair fiber optic test probe system has become a standard tool for the field testing of fiber optic media in front-line fighter jets and other advanced aircraft. With the upgrading of so many avionic systems to fiber optics, the need for fast and efficient troubleshooting equipment has become paramount. The traditionally heavy and expensive test harnesses of the past are now being replaced with Glenair's lightweight and easy-to-use fiber optic test probes and adapters.

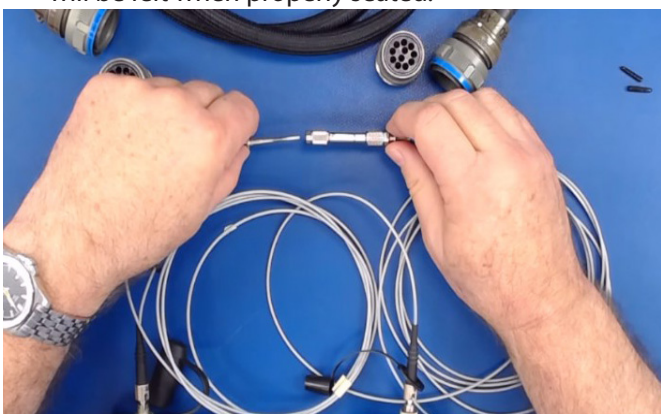
Troubleshooting a shell size 25 MIL-DTL-38999 Series III Connector previously required an expensive test harness with 29 fiber optic terminations. Today, this test assembly has been replaced by Glenair with a single probe jumper and a re-usable connector adapter. The system is now being used in advanced military aircraft programs as well as in naval weapons systems, sonar, video, audio, and a wide range of other military and commercial applications.



Fiber Optic Inspection and Testing

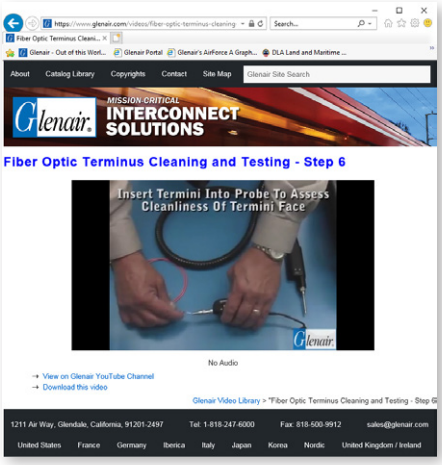
1. Attach test probe jumpers to light source and power meter

2. Insert probes into calibration adapters. Tactile click will be felt when properly seated.



3. Zero out test probe adapters by pressing and holding the button labeled dB/dBm. Readout is in dB.

4. Attach test probe adapters to connectors and insert test probes into corresponding pin and socket.



Glenair fiber optic inspection and testing video instruction

For more information on Glenair's patented Fiber Optic Test Probe and Connector Adapter System and complete video instruction, please visit our website at www.glenair.com.

We are experts at building made-to-order termination, test and cleaning kits. This chapter presents just our core capabilities. Consult our website or call the factory for made-to-order toolkits, training and process documentation.

Fiber Optic Terminus Insertion and Extraction Tools

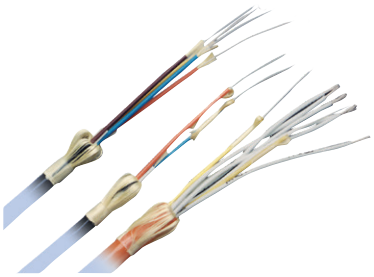
PART NUMBER	COMPATIBLE TERMINI	
Insertion/extraction tool for size 20 rear-release fiber optic termini		
809-207	181-065	Size 20 Pin Terminus
	181-066	Size 20 Socket Terminus
Insertion/extraction tool for size 20HD mighty mouse rear-release fiber optic termini		
809-203D	181-084	Mighty Mouse #20HD Pin Terminus
	181-085	Mighty Mouse #20HD Socket Terminus
Extraction tool for size 18 GHD front-release fiber optic termini		
182-011-18	181-047	GHD Size 18 keyed front release genderless terminus
	181-056	GHD Size 18 non-keyed front release genderless terminus
Insertion tool for size 18 buffered, GHD front release keyed fiber optic termini		
182-019	181-047	GHD Size 18 keyed front release genderless terminus
Insertion/extraction tool for: size 16, MIL-PRF-29504 04/05 rear-release fiber optic termini and size 16 Mighty Mouse termini		
809-131	181-001	M29504/04 Socket
	181-002	M29504/04 Pin
	181-035	Large Core #16 Socket Terminus
	181-036	Large Core #16 Pin Terminus
	181-057	Mighty Mouse #16 Pin Terminus
	181-075	Mighty Mouse #16 Socket Terminus

Part Number	Compatible Termini	
Fiber optic terminus crimping tool for M29504 14/15, GFR, GHD, GFOCA and NGCON		
182-012	181-039	M29504/14 Pin
	181-040	M29504/15 Socket
	181-011	Glenair Front Release (GFR) #16 Socket
	181-012	Glenair Front Release (GFR) #16 Pin
	181-056	Genderless GHD, Non-Keyed
	181-047	Genderless GHD, Keyed
	181-043	NGCON Genderless Rear-Release Terminus
	181-050	M29504/16 type genderless GFOCA fiber optic terminus

Alignment Sleeve Insertion and Extraction Tool for D38999 Type Fiber Optic Termini

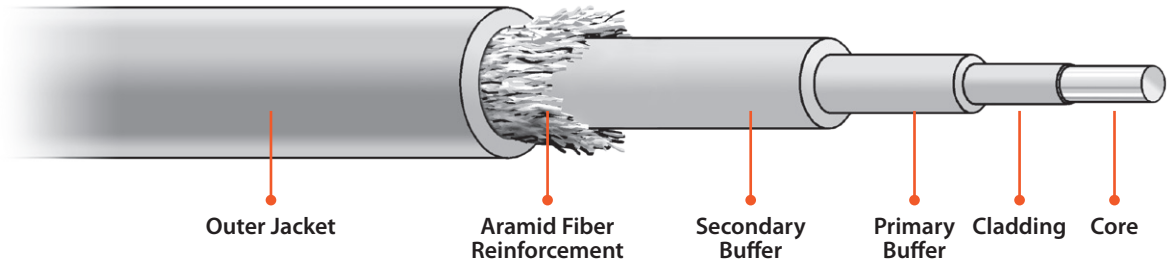
PART NUMBER	COMPATIBLE TERMINI	
Alignemnt sleeve inertion tool for D38999 type fiber optic jewel socket terminus		
182-031	181-053	D38999 type fiber optic jewel socket terminus
Alignment sleeve extraction tool for D38999 type fiber optic jewel socket terminus		
182-032	181-053	D38999 type fiber optic jewel socket terminus
Straight insertion tool for fiber optic termini		
182-013	181-039	M29504/14 Pin
	181-040	M29504/15 Socket
	181-051	M29504/03 Dummy
	181-011	Glenair Front Release (GFR) #16 Socket
	181-012	Glenair Front Release (GFR) #16 Pin
	181-056	Genderless GHD, Non-Keyed
	181-047	Genderless GHD, Keyed
	181-043	NGCON Genderless Rear-Release Terminus
Right angle (90°) insertion tool for fiber optic termini		
182-014 *The 182-014, right angle tool can be used where there is limited space behind the connector*	181-039	M29504/14 Pin
	181-040	M29504/15 Socket
	181-051	M29504/03 Dummy
	181-011	Glenair Front Release (GFR) #16 Socket
	181-012	Glenair Front Release (GFR) #16 Pin
	181-056	Genderless GHD, Non-Keyed
	181-047	Genderless GHD, Keyed
	181-043	NGCON Genderless Rear-Release Terminus
Extraction tool for front-release fiber optic termini		
182-015	181-039	M29504/14 Pin
	181-040	M29504/15 Socket
	181-051	M29504/03 Dummy
	181-011	Glenair Front Release (GFR) #16 Socket
	181-012	Glenair Front Release (GFR) #16 Pin
Alignment sleeve insertion/extraction tool for fiber optic termini		
182-016	181-040	M29504/15 Socket
	181-011	Glenair Front Release (GFR) #16 Socket
Insertion/extraction tool for gfoca fiber optic termini		
182-010	181-050	M29504/16 type genderless GFOCA fiber optic terminus

Bulk simplex fiber optic cable • how-to-order



All Glenair fiber optic connection systems are supported with a complete range of bulk simplex cable choices including stepped and graded-index configurations as well as radiation and atomic oxygen resistant configurations for satellite applications.

HOW TO ORDER BULK SIMPLEX FIBER OPTIC CABLE



Part Number	Core/Cladding (µm)	Singlemode / Multimode	Index Profile	Primary Buffer (µm)	Secondary Buffer (µm)	Jacket (Ø in Inches)	Attenuation	Bandwidth	Numerical Aperture	Proof Test.	Operating Temperature
ABC3586	9.3/125	SM	Stepped	500 ± 25	900 ± 50	Hytrel, Yellow .083 ± .007	3.0 dB/km @1310 nm 2.0 dB/km @1550 nm		.110 ±.010	≥100 KPSI	-40°C to +85°C
FA01859	9.3/125	SM	Stepped	500 ± 25	900 ± 50	ETFE, Yellow .083 ± .007	3.0 dB/km @1310 nm 2.0 dB/km @1550 nm		.110 ±.010	≥100 KPSI	-40°C to +85°C
ABC3580	50/125	MM	Graded	500 ± 25	900 ± 50	Hytrel, Orange .083 ± .007	4.0 dB/km @ 850 nm 2.5 dB/km @ 1300 nm	4700 Mhz/km min @850 nm 500 MHz/km min @1300 nm	.200 ±.010	100 KPSI	-60°C to +85°C
FA01860	50/125	MM	Graded	500 ± 25	900 ± 50	ETFE, Orange .083 ± .007	4.0 dB/km @ 850 nm 2.5 dB/km @ 1300 nm	4700 Mhz/km min @850 nm 500 MHz/km min @1300 nm	.200 nom.	100 KPSI	-40°C to +85°C
ABC3569	62.5/125	MM	Graded	500 ± 25	900 ± 50	Hytrel, Gray .083 ± .007	4.0 dB/km @ 850 nm 2.0 dB/km @ 1300 nm	160 Mhz/km min @850 nm 500 MHz/km min @1300 nm	.275 nom.	≥100 KPSI	-40°C to +85°C
ABC3821	62.5/125	MM	Graded	500 ± 25	900 ± 50	ETFE, Yellow .083 ± .007	4.0 dB/km @ 850 nm 2.0 dB/km @ 1300 nm	160 Mhz/km min @850 nm 500 MHz/km min @1300 nm	.275 nom.	100 KPSI	-40°C to +85°C
ABC 3571	100/140	MM	Graded	500 ± 25	900 ± 50	Hytrel, Green .083 ± .007	6.0 dB/km @ 850 nm 4.0 dB/km @ 1300 nm	100 Mhz/km min @850 nm 100 MHz/km min @1300 nm	.290 ±.015	≥100 KPSI	-40°C to +85°C
FA01861	100/140	MM	Graded	500 ± 25	900 ± 50	ETFE, Green .083 ± .007	6.0 dB/km @ 850 nm 4.0 dB/km @ 1300 nm	100 Mhz/km min @850 nm 100 MHz/km min @1300 nm	.290 ±.015	≥100 KPSI	-40°C to +85°C

GTK1000 Glenair Fiber Optic Testing Kit for MIL-DTL-38999 Series III Fiber Optic Connection Systems

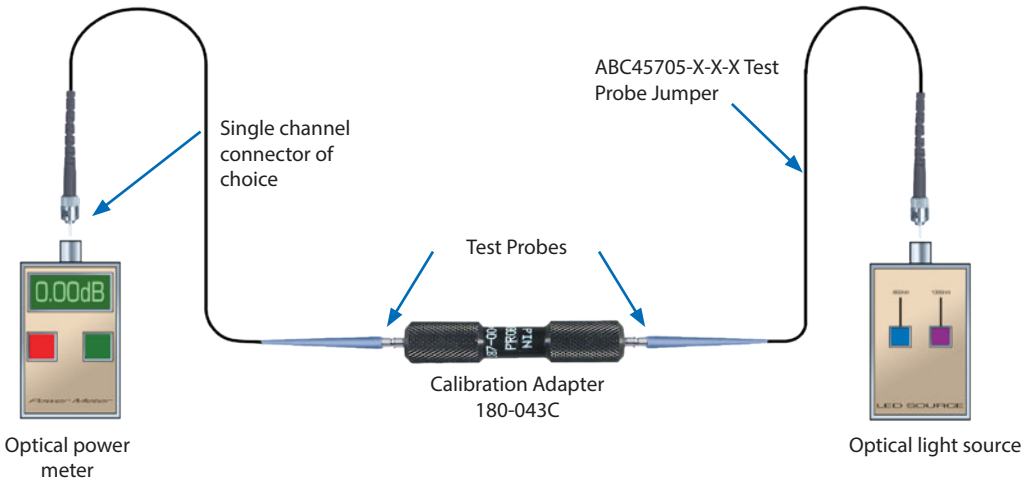
Fiber optic testing kit for fiber optic connection systems

Traditional optical test harnesses are expensive and easily contaminated in normal use. The Glenair fiber optic testing kit utilizes a special probe device in conjunction with our precise-mating test adapter, to provide a complete solution to optical test and measurement. The GTK-1000 comes with a power meter, source meter, test probes and a test probe calibration adapter. For accurate results, the test probe calibration adapter will "zero out" your meters.

The Glenair patented test probe design provides less than 1.0 dB insertion loss, and is used with test probe adapters and a calibration feedthrough to perform efficient measurements of fiber optic cable performance. The kit accommodates all standard fiber sizes and multiple fiber optic connection systems.

HOW TO ORDER			
Sample Part Number	**GTK1000**	**B**	**A**
Basic Number	Power and Source Meters (Several Options) 4 Test Probes (3 meters long) Calibration Adapter		
Fiber Size	(See Fiber Size table)		
Type of Meter Connection	**A** = ST Connector **C** = SC Connector **B** = FC Connector **E** = Customer Defined		

Fiber Size	
Symbol	**Fiber Size**
A	100/140u
B	62.5/125u
C	50/125u
D	200/300u
E	9.3 Single Mode
F	Customer Defined



NOTE:

Replacement calibration adapters and test probe jumpers sold separately.
Test probe connector adapters sold separately
The fiber optic test probe kit supports MIL-DTL-38999 Series I and III fiber optic connection systems. For test kits for other Glenair high performance fiber optic connection systems, please consult factory.

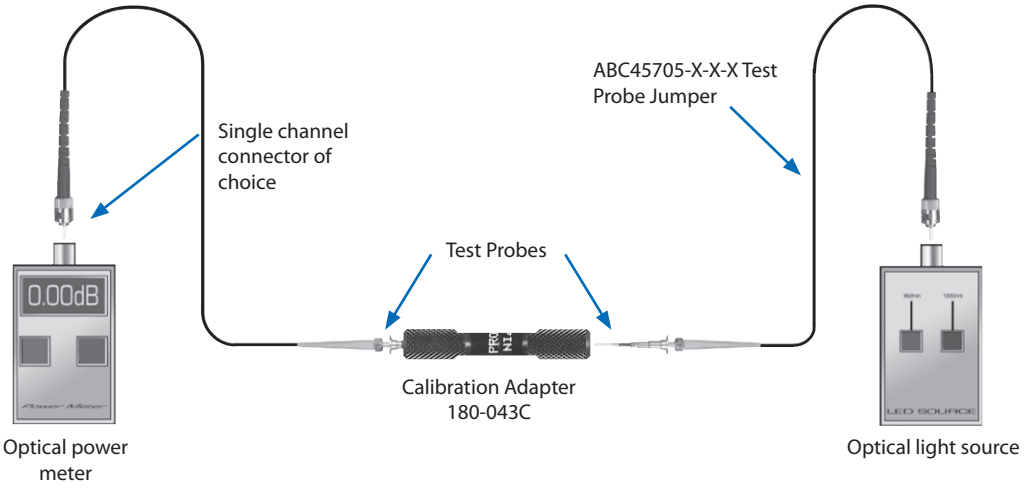
GTK1000 Glenair Fiber Optic Testing Kit for MIL-DTL-38999 Series III Fiber Optic Connection Systems

Effective use of Glenair fiber optic test equipment

Step 1: "Zeroing-out" optical power meter and light source

The first step in using the optical test probes is to install each end of the probe cable assembly to the optical power meter and light source. Next, insert each probe into the calibration adapter.

The test probe loss can now be recorded as a reference measurement or may be "zeroed-out."

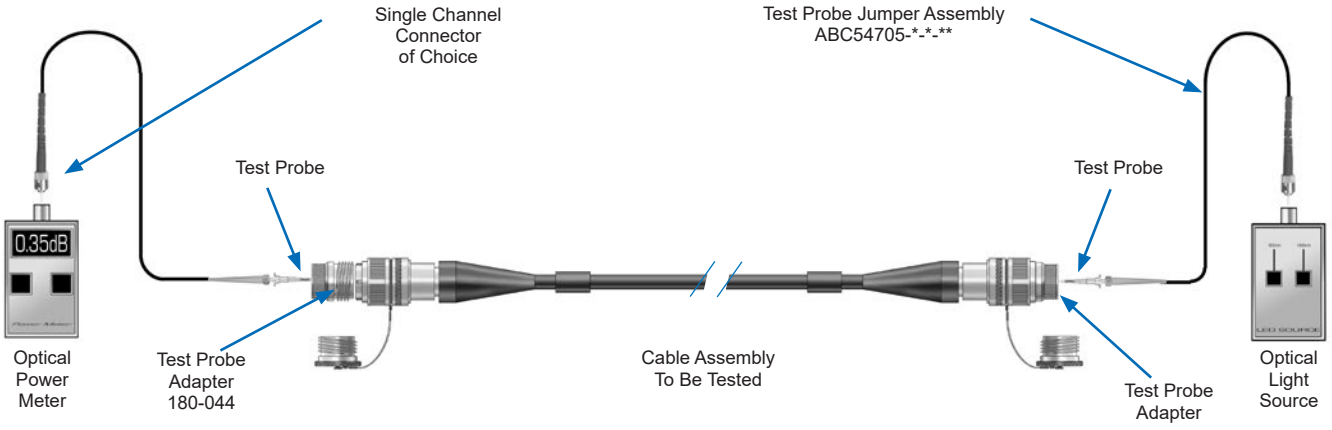


Step 2: Performing optical measurement

Now you are ready to perform optical measurements on the fiber optic cable harness. First, select the proper Glenair D38999 Series III Probe Adapter.

Now, mate or couple the adapters to each end of the cable harness. Next, insert each probe in the appropriate channel to be tested by pushing on the knurled area on the test probes. Read and record the optical performance.

To measure the next channel, remove the test probe by pushing on the large diameter of the test probe. The probe can now be removed and inserted into the next channel. Re-establishing or verification of reference can be performed at any time by following Step 1.



ABC 54705 Replacement Fiber Optic Test Probe Jumper

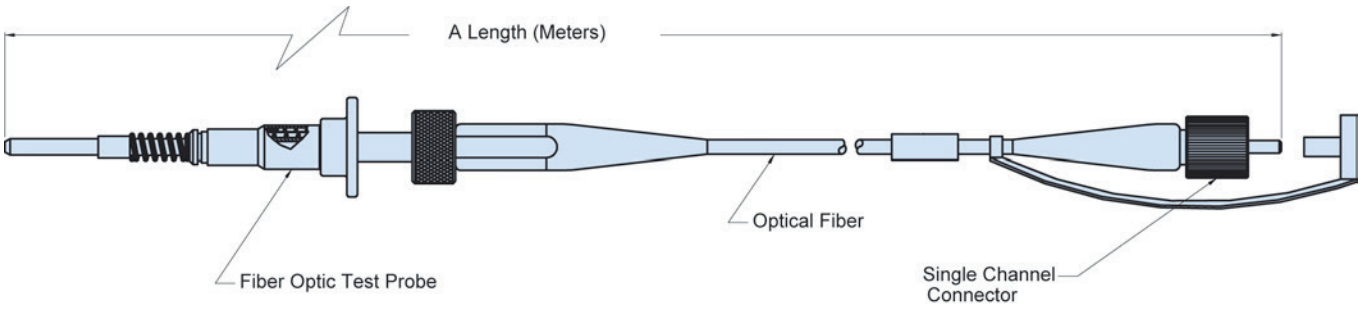
Fiber optic test probe for fast and easy optical analysis of installed fiber optic systems

Fiber Size	
Symbol	Size
A	100/140 µm
B	62.5/125 µm
C	50/125 µm
D	200/230 µm
E	Singlemode 9.3/125
F	Customer Defined
G	SM 5.8/125 M/F DIA. .21na
H	SM 7.5/125 M/F DIA. .17na

HOW TO ORDER					
Sample Part Number	ABC 54705	A	A	3	C
Basic Number	ABC 54705 Replacement Fiber Optic Test Probe Jumper				
Fiber Size	See Fiber Size table				
Connector Type:	A = ST Connector B = FC Connector C = SC Connector D = FC/APC Connector E = Customer Defined F = LC Connector G = SC/APC Connector H = M29504/04 Pin J = M29504/05 Socket K = LC/APC Connector				
"A" Length	In meters (Standard length is 3 meters)				
Polish	F = Flat Polish C = Flat Polish with Undercut Fiber (Probe end only. Omit for standard "PC" physical contact polish)				

Optical insertion loss ≤ 1.0 dB @ 850 or 1300 nm wavelength for Multimode and ≤ 1.0 dB @ 1310 or 1550 nm for Singlemode. Glenair Fiber Optic Test Probe U.S. Patent Number 5,960,137.

Standard Tolerance	
Length	Tolerance
Up to 1 meter	+0.03 M -0
1 meter up to 3 meters	+0.08 M -0
3 meters up to 15 meters	+0.15 M -0
15 meters up to 30 meters	+0.30 M -0
30 meters and up	+0.61 M -0



Fiber optic polishing tool for fiber optic test probes

HOW TO ORDER		
Sample Part Number	182-002	W
Basic Number	182-002	
Polish	W= Wet Polish Supplied with V-Grooves (Omit for Dry Polish)	

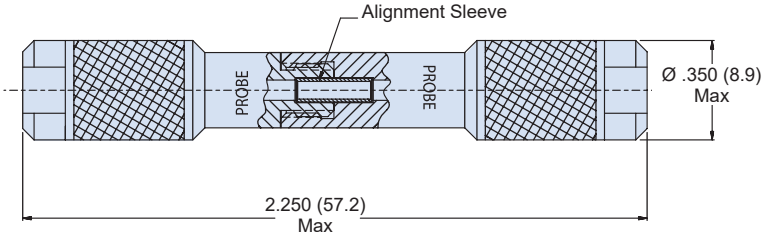
180-043 • 180-049 • 180-050 Test Probe Calibration (Zeroing) Adapters for M29504/04 or /05 Termini

Test probe calibration (zeroing) adapters for MIL-DTL-38999 (MIL-PRF-29504/4 and /5 termini) fiber optic connection system

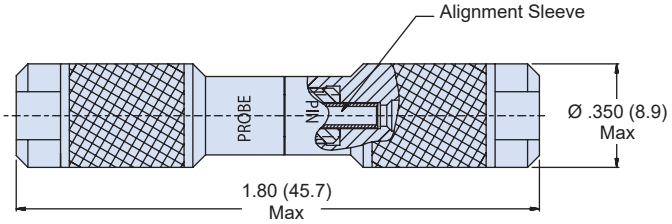
U.S. PATENT 5,960,137

HOW TO ORDER		
Sample Part Number	**180-049**	**C**
Basic Number	**180-049** = Probe-to-Pin connector **050** = Probe-to- Socket connector **043** = Probe-to- Probe connector	
Finish Symbol	**C** = Black Anodize **M** = Electroless Nickel	

-043 Probe-to-Probe Connector

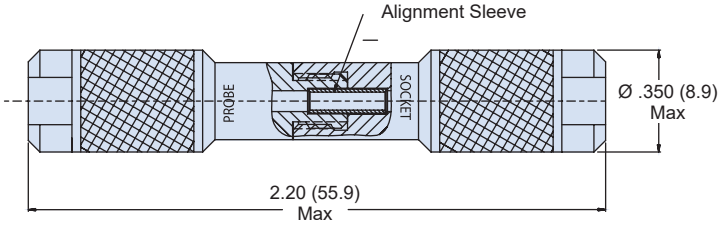


-049 Probe-to-Pin Connector



Pin Side Accepts 181-002 and M29504/04 Termini

-050 Probe-to-Socket Connector



Socket Side Accepts 181-001 and M29504/05 Termini

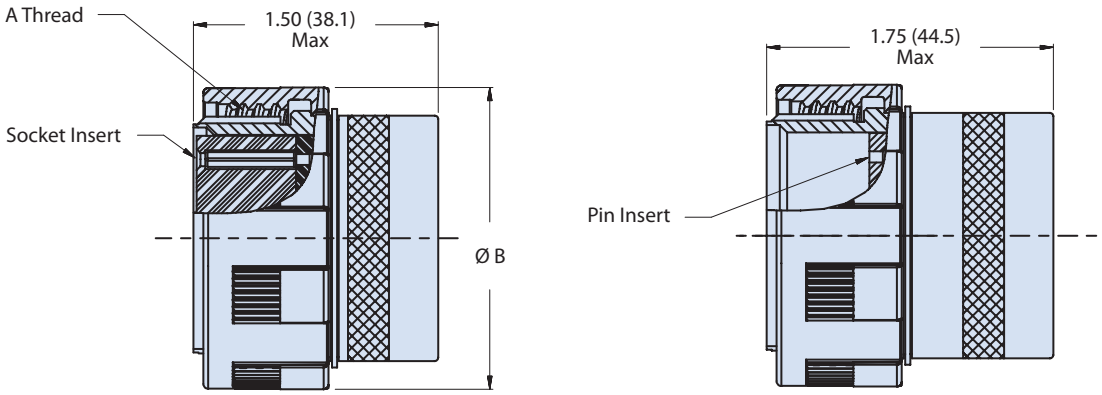
MATERIAL AND FINISH

Housing: Aluminum Alloy/see Part Number Development
Alignment Sleeve: Zirconia Ceramic
Retaining Clips: BeCu Alloy

MIL-DTL-38999 Series III
180-044 (06) Fiber Optic Test Adapter, Plug

MIL-DTL-38999 test adapter (plug)

HOW TO ORDER							
Sample Part Number	**180-044**	**M**	**06**	**17**	**8**	**P**	**A**
Basic Number	**180-044** Fiber Optic Test Adapter, Plug						
Material/Finish	See Material and Finish table						
Connector Style	**06** = Plug Adapter						
Shell Size	See Shell Size and Insert Arrangements table						
Insert Arrangement	Per MIL-STD-1560 (Table I)						
Insert Type	**P** = Pin **S** = Socket						
Alternate Keying Position	**N**, **A**, **B**, **C**, **D** & **E** Per MIL-DTL-38999, Series III Omit to receive universal single key (master) only. This option not recommended for larger shell sizes (19-25)						



06 - PLUG ADAPTER
FOR USE WITH RECEPTACLE CONNECTOR

U.S. PATENT NO. 5,960,137

MATERIAL AND FINISH

Barrel: See Material and Finish table
Insert, Coupling Nut: Hi-Grade Engineering Thermoplastic
Alignment Sleeve: Zirconia Ceramic
Retaining Ring: Stainless Steel
Retaining Clips: BeCu Alloy
Lock Cap, Lock Nut: Al Alloy/Anodize

NOTES

For fiber optic test probe (standard) jumper, see Glenair drawing ABC54705
For fiber optic test probe (low profile, probe-to-probe) jumper, see Glenair drawing FO01757.
Suggested for 25-37 insert arrangement.

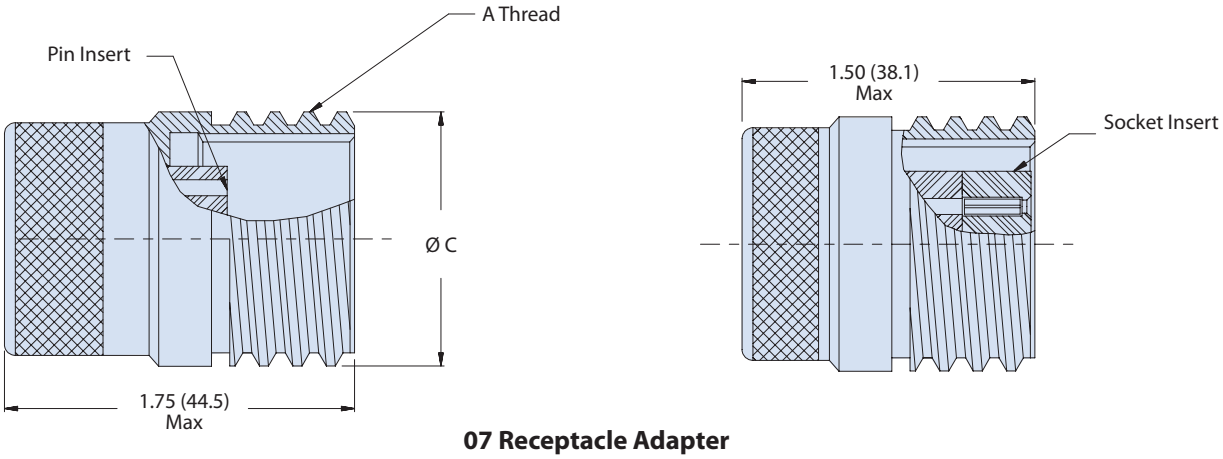
MIL-DTL-38999 Series III
180-044 (06) Fiber Optic Test Adapter, Plug

Shell Size and Insert Arrangements				
Shell Size	Shell Size Code (Ref)	Shell Size & Insert Arrangement	A Thread 0.1P-0.3L-TS-2	Ø B Max
11	B	11-2	.750 (19.1)	.984 (25.0)
13	C	13-4	.875 (22.2)	1.157 (29.4)
15	D	15-5	1.000 (25.4)	1.279 (32.5)
15	D	15-97	1.000 (25.4)	1.279 (32.5)
17	E	17-8	1.187 (30.1)	1.406 (35.7)
19	F	19-11	1.250 (31.8)	1.516 (38.5)
21	G	21-16	1.375 (34.9)	1.642 (41.7))
23	H	23-21	1.500 (38.1)	1.768 (44.9)
23	H	23-99	1.500 (38.1)	1.768 (44.9)
25	J	25-20	1.625 (41.3)	1.889 (48.0)
25	J	25-29	1.625 (41.3)	1.889 (48.0)
25	J	25-37	1.625 (41.3)	1.889 (48.0)
25	J	25-43	1.625 (41.3)	1.889 (48.0)

Material and Finish		
Code	Material	Finish
M	Aluminum Alloy	Electroless Nickel
NF		Cadmium/Olive Drab

MIL-DTL-38999 Series III
180-044 (07) Fiber Optic Test Adapter, Receptacle

HOW TO ORDER							
Sample Part Number	**180-044**	**M**	**07**	**17**	**8**	**S**	**A**
Basic Number	**180-044** Fiber Optic Test Adapter, Receptacle						
Material/Finish	See Material and Finish table						
Connector Style	**07** = Receptacle Adapter						
Shell Size	See Shell Size and Insert Arrangements table						
Insert Arrangement	Per MIL-STD-1560 (See Material and Finish table)						
Insert Type	**P** = Pin **S** = Socket						
Alternate Keying Position	**A**, **B**, **C**, **D** & **E** Per MIL-DTL-38999, Series III Omit to receive "N" normal key position. (No universal key option available.)						



07 Receptacle Adapter
U.S. PATENT NO. 5,960,137

MATERIAL AND FINISH

Shell: See Material and Finish table
Insert: Hi-Grade Engineering Thermoplastic
Alignment Sleeve: Zirconia Ceramic
Retaining Clips: BeCu Alloy
Lock Cap, Lock Nut: Al Alloy/Anodize

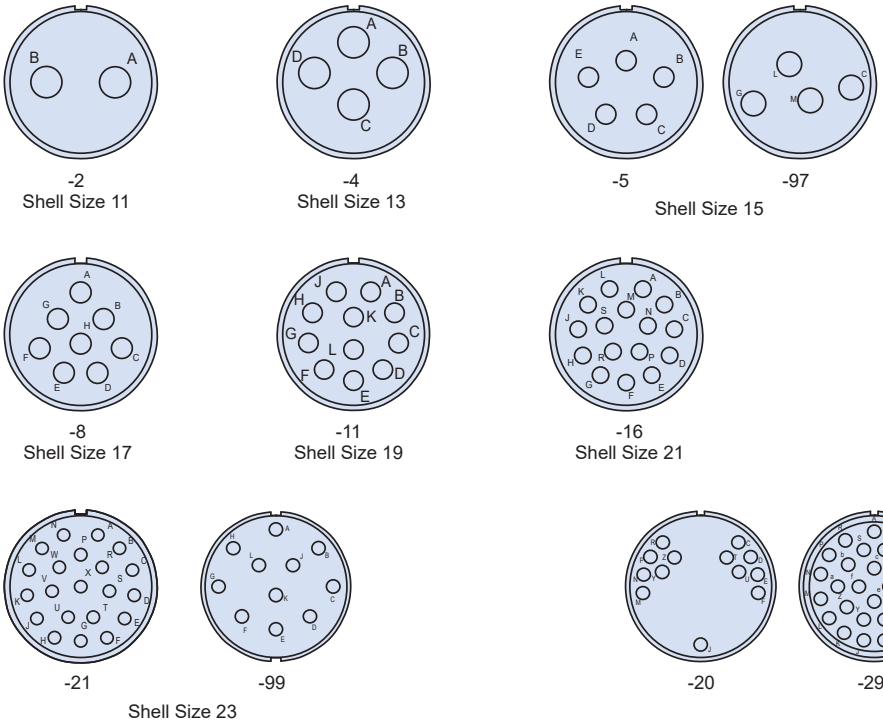
NOTES

For fiber optic test probe (standard) jumper, see Glenair drawing ABC54705
For fiber optic test probe (low profile, probe-to-probe) jumper, see Glenair drawing FO03187.
Suggested for 25-37 insert arrangement.

Rev. 05.29.25

MIL-DTL-38999 Series III
180-044 (07) Fiber Optic Test Adapter, Receptacle

Insert Arrangements: Socket Rear Insert Shown



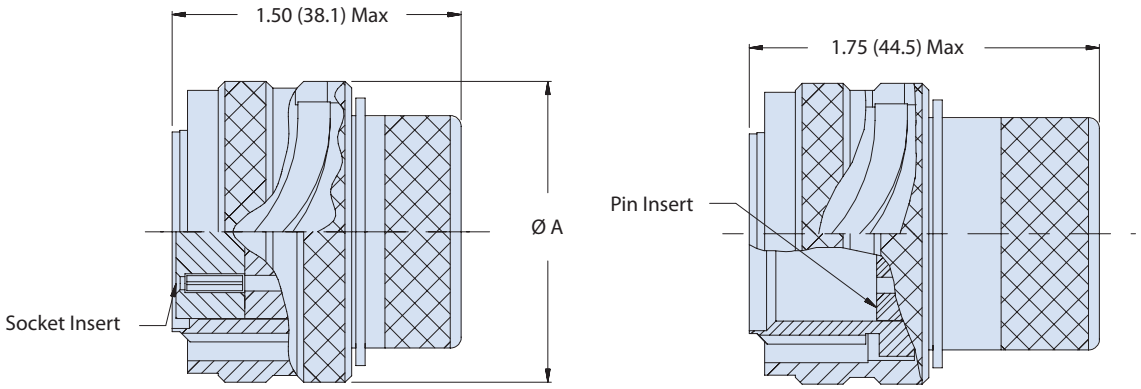
Shell Size and Insert Arrangements				
Shell Size	Shell Size Code (Ref)	Shell Size & Insert Arrangement	A Thread 0.1P-0.3L-TS-2	Ø C Max
11	B	11-2	.750 (19.1)	.750 (19.1)
13	C	13-4	.875 (22.2)	.875 (22.2)
15	D	15-5	1.000 (25.4)	1.000 (25.4)
15	D	15-97	1.000 (25.4)	1.000 (25.4)
17	E	17-8	1.187 (30.1)	1.188 (30.2)
19	F	19-11	1.250 (31.8)	1.250 (31.8)
21	G	21-16	1.375 (34.9)	1.375 (34.9)
23	H	23-21	1.500 (38.1)	1.500 (38.1)
23	H	23-99	1.500 (38.1)	1.500 (38.1)
25	J	25-20	1.625 (41.3)	1.625 (41.3)
25	J	25-29	1.625 (41.3)	1.625 (41.3)
25	J	25-37	1.625 (41.3)	1.625 (41.3)
25	J	25-43	1.625 (41.3)	1.625 (41.3)

Material and Finish		
Code	Material	Finish
M	Aluminum Alloy	Electroless Nickel
NF		Cadmium/Olive Drab

MIL-DTL-38999 Series I
180-072 (06) Fiber Optic Test Adapter, Plug

MIL-DTL-38999 test adapter (plug)

HOW TO ORDER							
Sample Part Number	**180-072**	**NF**	**06**	**17**	**8**	**P**	**A**
Basic Number	**180-072** Fiber Optic Test Adapter, Plug						
Material/Finish	See Material and Finish table						
Connector Style	**06** = Plug Adapter						
Shell Size	See Shell Size and Insert Arrangements table						
Insert Arrangement	Per MIL-STD-1560 (See Shell Size and Insert Arrangements table)						
Insert Type	**P** = Pin **S** = Socket (with alignment sleeves						
Alternate Keying Position	Per MIL-DTL-38999, Series I (Omit for normal)						



06 - PLUG ADAPTER
FOR USE WITH RECEPTACLE CONNECTOR

U.S. PATENT NO. 5,960,137

MATERIAL AND FINISH

Barrel: See Material and Finish table
Insert, Coupling Nut: Hi-Grade Engineering Thermoplastic
Alignment Sleeve: Zirconia Ceramic
Misc. Hardware: Stainless Steel
Retaining Clips: BeCu Alloy
Lock Cap, Lock Nut: Al Alloy/Anodize

NOTES

For fiber optic test probe jumper, see Glenair drawing ABC54705

MIL-DTL-38999 Series I
180-072 (06) Fiber Optic Test Adapter, Plug

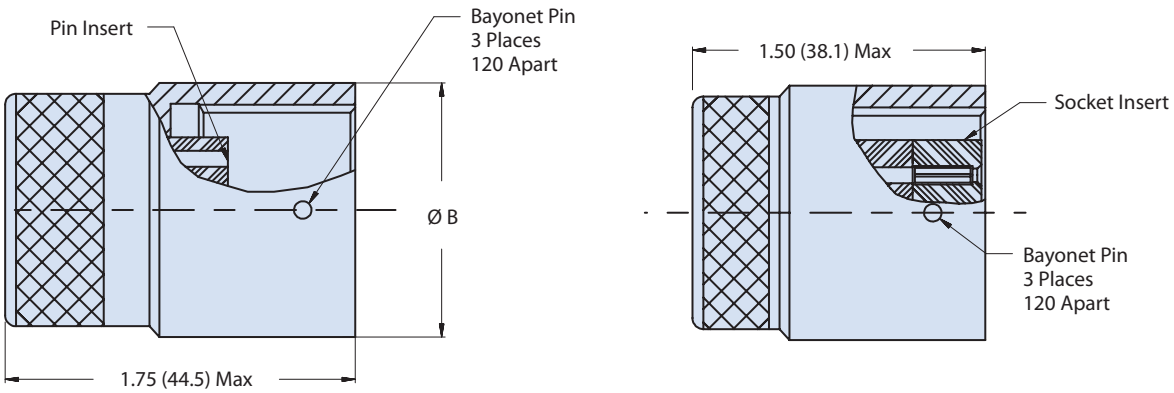
Shell Size and Insert Arrangements		
Shell Size & Insert Arrangement	**Shell Size Code Ref.**	**Ø A Max**
11-2	**B**	.964 (24.5)
13-4	**C**	1.141 (29.0)
15-5	**D**	1.266 (32.2)
15-97	**D**	1.266 (32.2)
17-8	**E**	1.391 (35.3
19-11	**F**	1.500 (38.8)
21-16	**G**	1.625 (41.3)
23-21	**H**	1.750 (44.5)
23-99	**H**	1.750 (44.5)
25-20	**J**	1.875 (47.6)
25-29	**J**	1.875 (47.6)
25-37A	**J**	1.875 (47.6)
25-37B	**J**	1.875 (47.6)

Material and Finish		
Code	**Material**	**Finish**
M	Aluminum Alloy	Electroless Nickel
NF		Cadmium/Olive Drab

MIL-DTL-38999 Series I
180-072 (07) Fiber Optic Test Adapter, Receptacle

MIL-DTL-38999 test adapter (receptacle)

HOW TO ORDER							
Sample Part Number	**180-072**	**NF**	**07**	**17**	**8**	**P**	**A**
Basic Number	**180-072** Fiber Optic Test Adapter, Receptacle						
Material/Finish	See Material and Finish table						
Connector Style	**07** = Receptacle Adapter						
Shell Size	See Shell Size and Insert Arrangements table						
Insert Arrangement	Per MIL-STD-1560 (See Shell Size and Insert Arrangements table)						
Insert Type	**P** = Pin **S** = Socket (with alignment sleeves						
Alternate Keying Position	Per MIL-DTL-38999, Series I (Omit for normal)						



07 - RECEPTACLE ADAPTER
FOR USE WITH PLUG CONNECTOR

U.S. PATENT NO. 5,960,137

MATERIAL AND FINISH

Shell: See Material and Finish table
Insert: Hi-Grade Engineering Thermoplastic
Alignment Sleeve: Zirconia Ceramic
Retaining Clips: BeCu Alloy
Lock Cap, Lock Nut: Al Alloy/Anodize

NOTES

For fiber optic test probe jumper, see Glenair drawing ABC54705

MIL-DTL-38999 Series I
180-072 (07) Fiber Optic Test Adapter, Receptacle

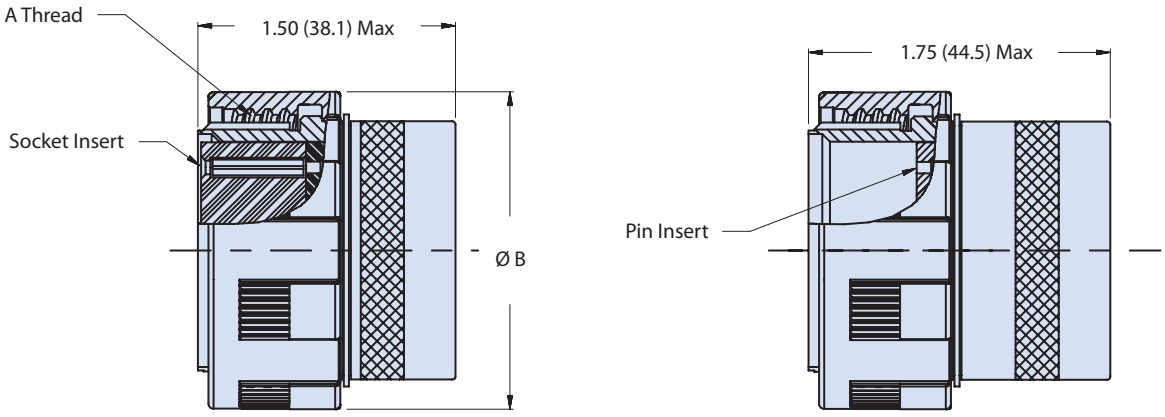
Shell Size and Insert Arrangements		
Shell Size & Insert Arrangement	**Shell Size Code Ref.**	**Ø B Max**
11-2	**B**	.750 (19.1)
13-4	**C**	.875 (22.2)
15-5	**D**	1.000 (25.4)
15-97	**D**	1.000 (25.4)
17-8	**E**	1.187 (30.1)
19-11	**F**	1.250 (31.8)
21-16	**G**	1.375 (34.9)
23-21	**H**	1.500 (38.1)
23-99	**H**	1.500 (38.1)
25-20	**J**	1.625 (41.3)
25-29	**J**	1.625 (41.3)
25-37A	**J**	1.625 (41.3)
25-37B	**J**	1.625 (41.3)

Material and Finish		
Code	**Material**	**Finish**
M	Aluminum Alloy	Electroless Nickel
NF		Cadmium/Olive Drab

MIL-DTL-38999 Series III
180-073 (06) Fiber Optic Test Adapter, Plug

MIL-DTL-38999 test adapter (plug)

HOW TO ORDER							
Sample Part Number	**180-073**	**M**	**06**	**25**	**24**	**P**	**A**
Basic Number	**180-073** Fiber Optic Test Adapter, Plug						
Material/Finish	See Material and Finish table						
Connector Style	**06** = Plug Adapter						
Shell Size	See Shell Size and Insert Arrangements table						
Insert Arrangement	Per MIL-STD-1560 (See Shell Size and Insert Arrangements table)						
Insert Type	**P** = Pin **S** = Socket (with alignment sleeves						
Alternate Keying Position	**N**, **A**, **B**, **C**, **D** & **E** Per MIL-DTL-38999, Series III Omit keying designator to receive universal single key (master) only. This option not recommended for larger shell sizes (19-25)						



06 - PLUG ADAPTER
FOR USE WITH RECEPTACLE CONNECTOR

U.S. PATENT NO. 5,960,137

MATERIAL AND FINISH

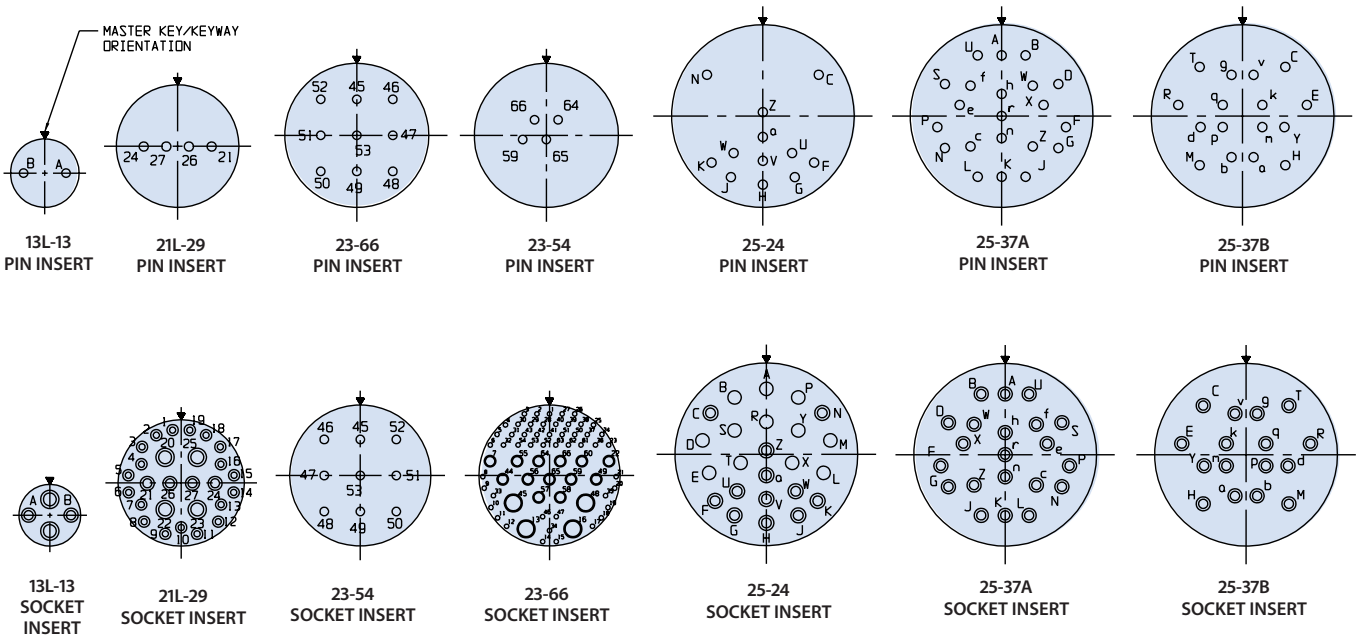
Barrel: See Material and Finish table
Insert, Coupling Nut: Hi-Grade Engineering Thermoplastic
Alignment Sleeve: Zirconia Ceramic
Misc. Hardware: Stainless Steel
Retaining Clips: BeCu Alloy
Lock Nut: Al Alloy/Anodize

NOTES

For fiber optic test probe jumper, see Glenair drawing ABC54705
For fiber optic test probe (low profile, probe-to-probe) jumper see Glenair drawing FO01757
25-37 insert cavity spacing too close to probe using one adapter. 2 adapters (25-37A and 25-37B) are required
Shell size 23 for insert 23-66 only is made of 300 series stainless steel
Cavity markings applied to rear insert face only

MIL-DTL-38999 Series III
180-073 (06) Fiber Optic Test Adapter, Plug

FRONT FACE OF PIN AND SOCKET INSULATORS SHOWN, REAR SURFACE OPPOSITE



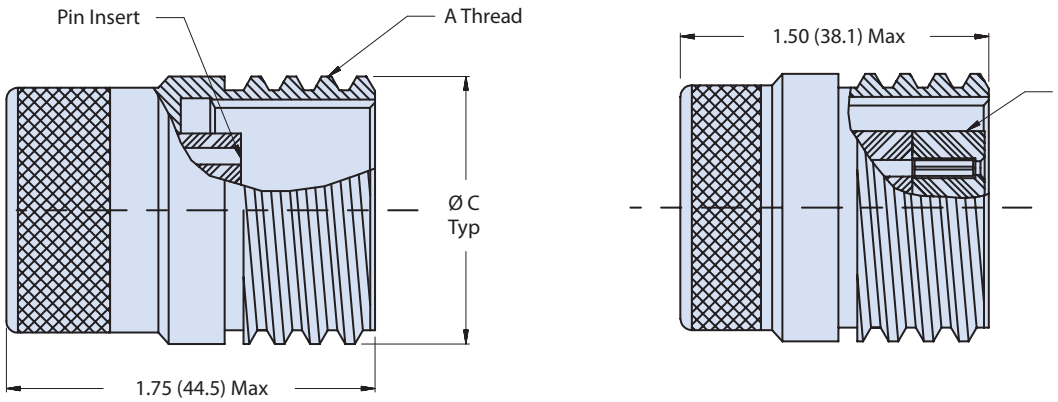
Shell Size and Insert Arrangements				
Shell Size	Shell Size Code (Ref)	Insert Arrangement Dash No.	A Thread 0.1P-0.3L-TS-2	Ø B Max
13	C	13L-13	.875 (22.2)	1.157 (29.4)
21	G	21L-29	1.375 (34.9)	1.642 (41.7)
23	H	23-54	1.500 (38.1)	1.768 (44.9)
23	H	23-66	1.500 (38.1)	1.768(44.9)
25	J	25-24	1.625 (41.3)	1.890 (48.0)
25	J	25-37A	1.625 (41.3)	1.890 (48.0)
25	J	25-37B	1.625 (41.3)	1.890 (48.0)

Finish		
Code	Material	Finish
M	Aluminum Alloy	Electroless Nickel
NF		Cadmium, Olive Drab
Z1	Stainless Steel	Passivate

MIL-DTL-38999 Series III
180-073 (07) Fiber Optic Test Adapter, Receptacle

MIL-DTL-38999 test adapter (receptacle)

HOW TO ORDER							
Sample Part Number	**180-073**	**M**	**07**	**25**	**24**	**P**	**A**
Basic Number	**180-073** Fiber Optic Test Adapter, Receptacle						
Material/Finish	See Material and Finish table						
Connector Style	**07** = Receptacle Adapter						
Shell Size	See Shell Size and Insert Arrangements table						
Insert Arrangement	Per MIL-STD-1560 (See Shell Size and Insert Arrangements table)						
Insert Type	**P** = Pin **S** = Socket (with alignment sleeves						
Alternate Keying Position	**A**, **B**, **C**, **D** & **E** Per MIL-DTL-38999, Series III Omit to receive "N" normal key position. (No universal key option available.)						



07 - RECEPTACLE ADAPTER
FOR USE WITH PLUG CONNECTOR

U.S. PATENT NO. 5,960,137

MATERIAL AND FINISH

Shell: See Material and Finish table
Insert: Hi-Grade Engineering Thermoplastic
Alignment Sleeve: Zirconia Ceramic
Retaining Clips: BeCu Alloy
Lock Nut: Al Alloy/Anodize

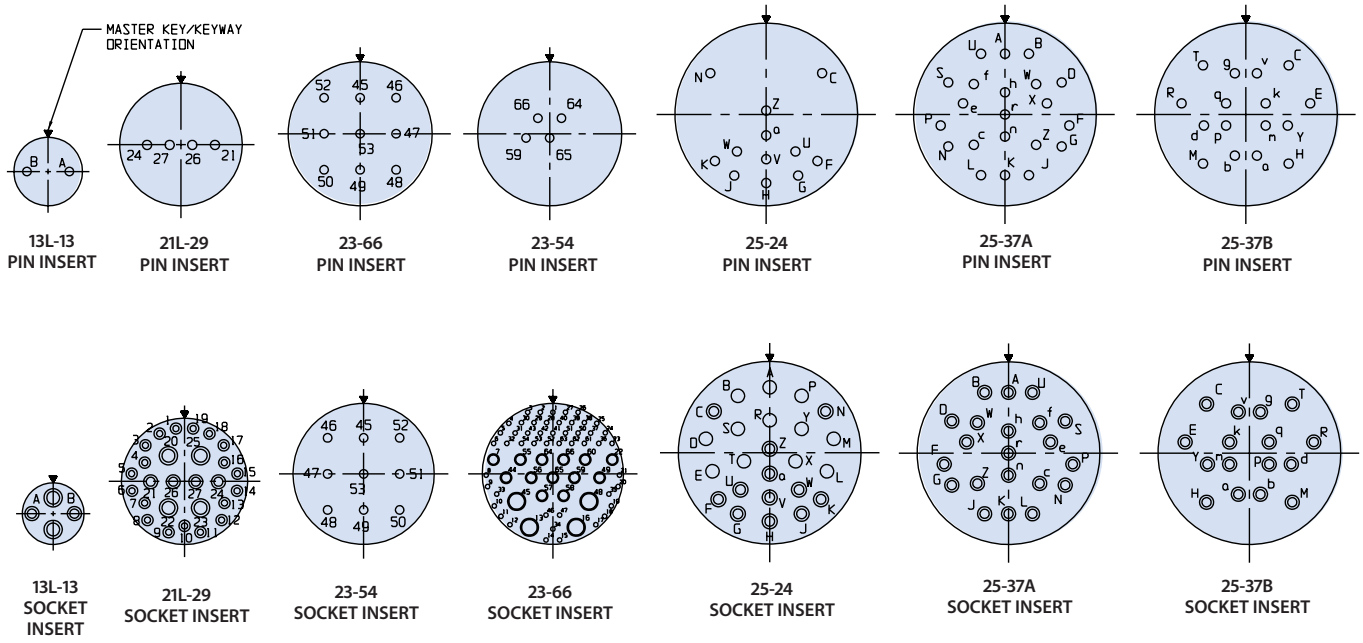
NOTES

For fiber optic test probe jumper, see Glenair drawing ABC54705
For fiber optic test probe (low profile, probe-to-probe) jumper see Glenair drawing FO03187
25-37 insert cavity spacing too close to probe using one adapter. 2 adapters (25-37A and 25-37B) are required
Shell size 23 for insert 23-66 only is made of 300 series stainless steel
Cavity markings applied to rear insert face only

Rev. 05.29.25

MIL-DTL-38999 Series III
180-073 (07) Fiber Optic Test Adapter, Receptacle

FRONT FACE OF PIN AND SOCKET INSULATORS SHOWN, REAR SURFACE OPPOSITE



Shell Size and Insert Arrangements				
Shell Size	Shell Size Code (Ref)	Insert Arrangement Dash No.	A Thread 0.1P-0.3L-TS-2	Ø C Max
13	C	13L-13	.875 (22.2)	.875 (22.2)
21	G	21L-29	1.375 (34.9)	1.375 (34.9)
23	H	23-54	1.500 (38.1)	1.500 (38.1)
23	H	23-66	1.500 (38.1)	1.500 (38.1)
25	J	25-24	1.625 (41.3)	1.625 (41.3)
25	J	25-37A	1.625 (41.3)	1.625 (41.3)
25	J	25-37B	1.625 (41.3)	1.625 (41.3)

Finish		
Code	Material	Finish
M	Aluminum Alloy	Electroless Nickel
NF		Cadmium, Olive Drab
Z1	Stainless Steel	Passivate

GHD Fiber Optic Connection Systems
GTK2000 Glenair Fiber Optic Testing Kit

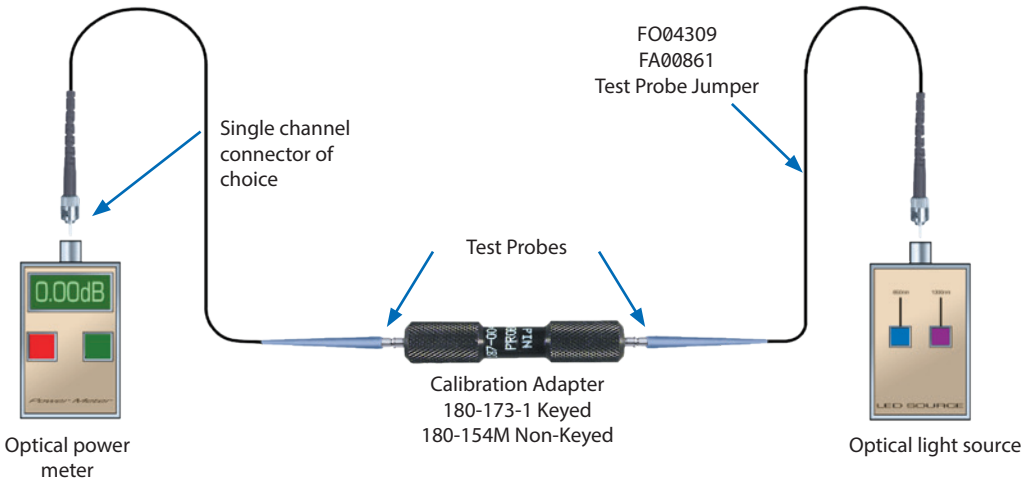
Fiber optic testing kit for fiber optic connection systems

Traditional optical test harnesses are expensive and easily contaminated in normal use. The Glenair fiber optic testing kit utilizes a special probe device in conjunction with our precise-mating test adapter, to provide a complete solution to optical test and measurement. The GTK-2000 comes with a power meter, source meter, test probes and a test probe calibration adapter. For accurate results, the test probe calibration adapter will "zero out" your meters.

The Glenair patented test probe design provides less than 1.0 dB insertion loss, and is used with test probe adapters and a calibration feedthrough to perform efficient measurements of fiber optic cable performance. The kit accommodates all standard fiber sizes and multiple fiber optic connection systems.

HOW TO ORDER			
Sample Part Number	**GTK2000**	**B**	**A**
Basic Number	Power and Source Meters (Several Options) 4 Test Probes (3 meters long) Calibration Adapter		
Fiber Size	See Fiber Size table		
Type of Meter Connection	**A** = ST Connector **B** = FC Connector **C** = SC Connector		

Fiber Size	
Symbol	**Fiber Size**
A	100/140u
B	62.5/125u
C	50/125u
D	200/300u
E	9.3 Single mode
F	Customer Defined



NOTE:

Replacement calibration adapters and test probe jumpers sold separately.
Test probe connector adapters sold separately
The fiber optic test probe kit supports GHD fiber optic connection systems. For test kits for other Glenair high performance fiber optic connection systems, please consult factory.

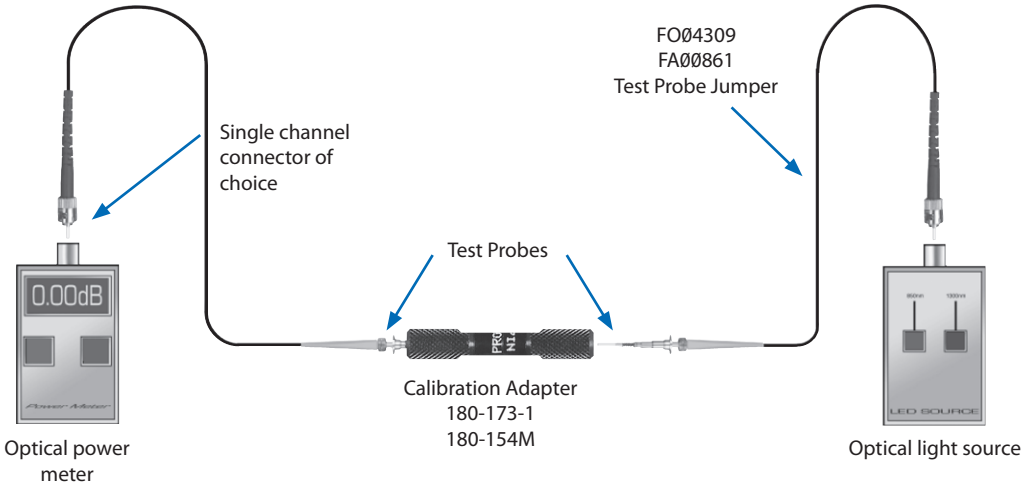
GHD Fiber Optic Connection Systems
GTK2000 Glenair Fiber Optic Testing Kit

Effective use of Glenair fiber optic test equipment

Step 1: "Zeroing-out" optical power meter and light source

The first step in using the optical test probes is to install each end of the probe cable assembly to the optical power meter and light source. Next, insert each probe into the calibration adapter.

The test probe loss can now be recorded as a reference measurement or may be "zeroed-out."

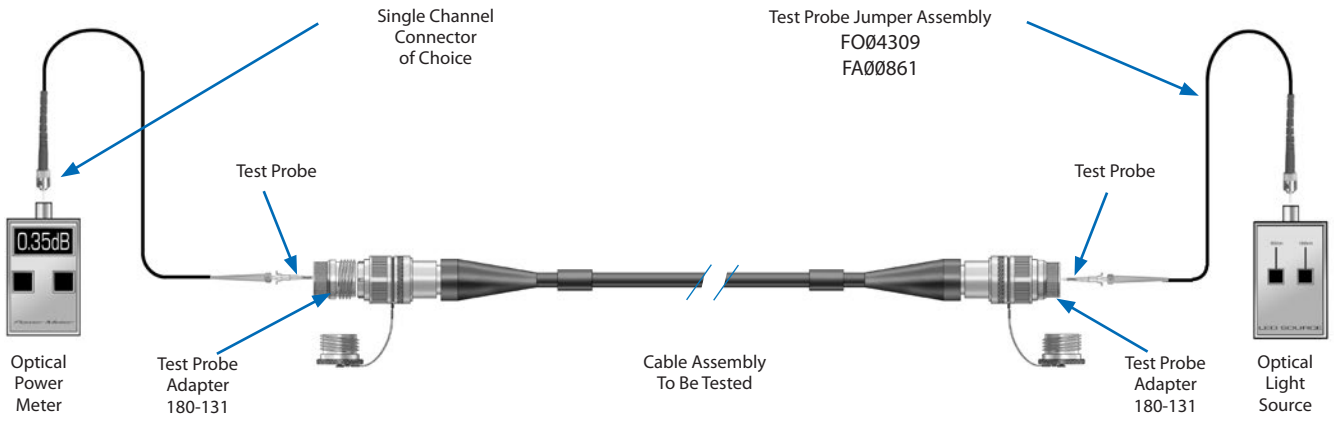


Step 2: Performing optical measurement

Now you are ready to perform optical measurements on the fiber optic cable harness. First, select the proper Glenair Probe Adapter.

Now, mate or couple the adapters to each end of the cable harness. Next, insert each probe in the appropriate channel to be tested by pushing on the knurled area on the test probes. Read and record the optical performance.

To measure the next channel, remove the test probe by pushing on the large diameter of the test probe. The probe can now be removed and inserted into the next channel. Re-establishing or verification of reference can be performed at any time by following Step 1.



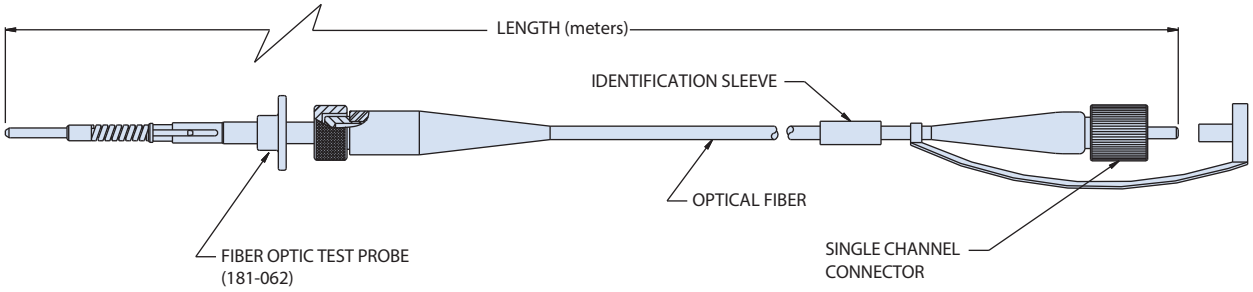
Non-Keyed Jumper Assembly
FA00861 GHD Fiber Optic Test Probe

Fiber optic test probe for fast and easy optical analysis of installed fiber optic systems

Fiber Size	
Symbol	Size
A	MM 100/140
B	MM 62.5/125
C	MM 50/125
D	MM 200/230
E	SM 9.3/125
F	SM 5.8/125
G	SM 7.5/125

HOW TO ORDER				
Sample Part Number	FA00861	A	A	3
Basic Number	FA00861 GHD Fiber Optic Test Probe			
Fiber Size	(Micron) See Fiber Size table			
Connector Type	A = ST Connector B = FC Connector C = SC Connector D = LC Connector E = FC/APC Connector F = SC/APC Connector G = LC/APC Connector			
"A" Length	(in meters)			

Optical insertion loss ≤ 0.5 dB @ 850 or 1310 nm wavelength.
Glenair Fiber Optic Test Probe U.S. Patent Number 5,960,137.



Standard Length Tolerance	
Length	Tolerance
1 meter	±1.00 (25.4)
2 to 3 meters	±3.00 (76.2)
4 to 6 meters	±4.00 (101.6)
7 to 10 meters	±6.00 (152.4)

NOTE

1. "PC" physical contact polish to be IAW Glenair manufacturing procedure AQS-A002-F
2. For use with the following test probe adapters:
   180-131: GHD (180-122)

Fiber optic polishing tool for GHD style termini fiber optic test probes

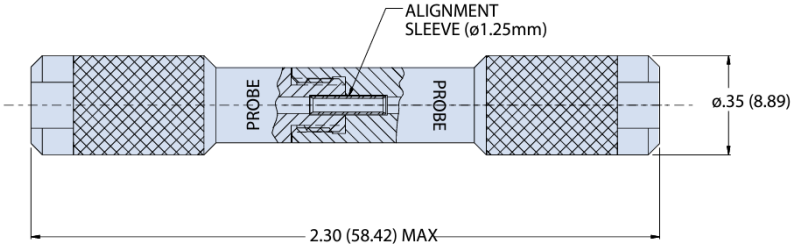
HOW TO ORDER		
Sample Part Number	182-018	W
Basic Number	018 Fiber optic polishing tool	
Polish	W= Wet Polish Supplied with V-Grooves (Omit for Dry Polish)	

NOTE

1. Polishing puck is for PC polish only. For APC Glenair recommends autopolish, consult factory for more information
2. Polishing tool is designed for use with the folloing Glenair termini:
   181-047 (Pin, size 18 terminus)
   181-056 (Pin, size 18 terminus)

GHD, ARINC 801, and NGCON Fiber Optic Connectors
180-154 Probe-to-Probe Calibration (zeroing) Adapter

HOW TO ORDER		
Sample Part Number	**180-154**	**M**
Basic Number	**154** = Probe-to-Probe Adapter, Non-Keyed	
Material / Finish	**M** = Aluminum Alloy, Electroless Nickel	



Probe-to-Probe Adapter

MATERIAL AND FINISH

Housing: See Part Number Development
Alignment Sleeve: Zirconia Ceramic
Retaining Clips: BeCu Alloy

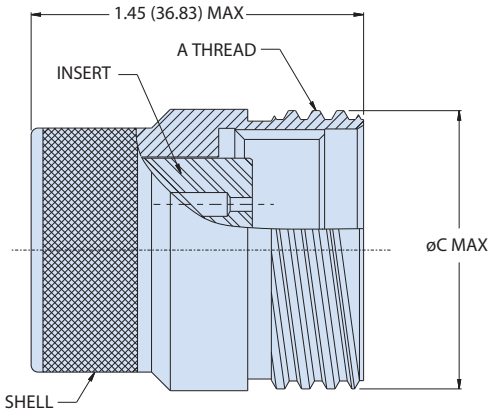
NOTES

For use with non-keyed PC polish test probe jumper FA00861.

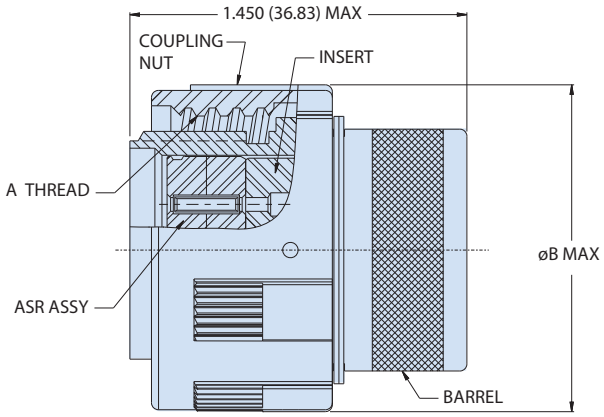
GHD High-Density Insert Arrangement
180-131 Fiber Optic Test Adapter, Plug and Receptacle

GHD test adapter, plug and receptacle

HOW TO ORDER						
Sample Part Number	**180-131**	**M**	**06**	**13**	**6**	**N**
Basic Number	**180-131** Fiber Optic Test Adapter, Plug and Receptacle					
Material/Finish	**M** = Alminum alloy/electroless nickel					
Connector Type	**06** = Plug Adapter **07** = Receptacle Adapter					
Shell Size	See Dimensions table					
Insert Arrangement	Per MIL STD-1560 (See Dimensions table)					
Alternate Keying Positions	**N**, **A**, **B**, **C**, **D** & **E**					



07 - RECEPTACLE ADAPTER
FOR USE WITH PLUG CONNECTOR



06 - PLUG ADAPTER
FOR USE WITH RECEPTACLE CONNECTOR

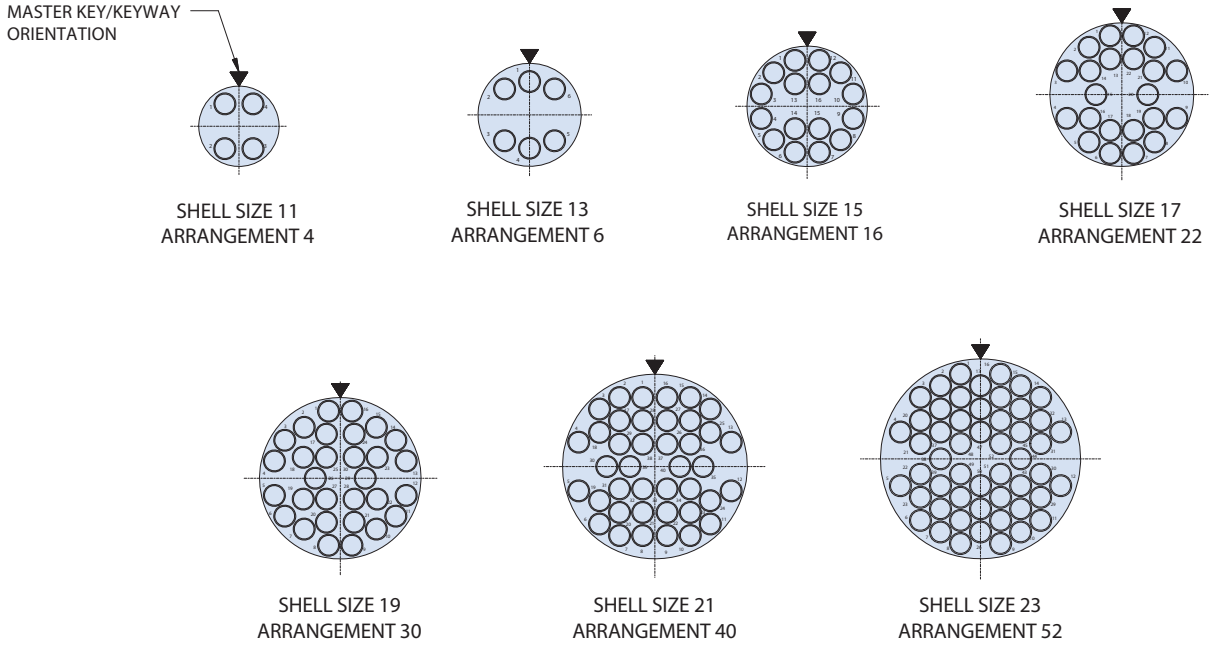
07 Receptacle and 06 Plug Adapter
U.S. PATENT NO. 5,960,137

Dimensions					
Shell Size	**Shell Size Code**	**No of Contacts**	**A Thread 0.P-0.3L-TS-2**	**Ø B**	**Ø C**
11	B	4	0.7500	0.984	0.750
13	C	6	0.8750	1.157	0.875
15	D	16	1.0000	1.280	1.000
17	E	22	1.1875	1.406	1.188
19	F	30	1.2500	1.516	1.250
21	G	40	1.3750	1.642	1.375
23	H	52	1.5000	1.768	1.500

GHD High-Density Insert Arrangement
180-131 Fiber Optic Test Adapter, Plug and Receptacle

GHD high-density insert arrangements

RECEPTACLE INSERT REAR FACE SHOWN — PLUG REAR FACE - OPPOSITE



NOTES

1. Materials and Finish
   Barrel Shell: aluminum alloy/nickel
   Coupling Nut: Hi-Grade Engineering Thermoplastic
   Insert: high-grade engineering thermoplastic or aluminum alloy/anodize; Mfr's option
   Alignment Sleeve: Zirconia Ceramic
   Contact retention clip: copper alloy
   Alignment sleeve retainer (ASR): aluminum alloy/anodized
   Insert retainer: aluminum alloy/anodized
   Miscellaneous hardware: stainless steel
2. Connector adapters designed for use with Glenair 180-122 series GHD connectors
3. Alignment sleeve retainer (ASR) is supplied with plug adapter only. To order separately, see Glenair drawing 180-122ASR
4. "For fiber ooptic test probe jumber, see Glenair drawings:
   - FA00861 = Non-keyed probe (181-061), PC polish
   - FO04309 = Keyed probe (181-062), APC polish

Rev. 10.23.24

ARINC 801 Fiber Optic Connection Systems
GTK3000 Glenair Fiber Optic Testing Kit

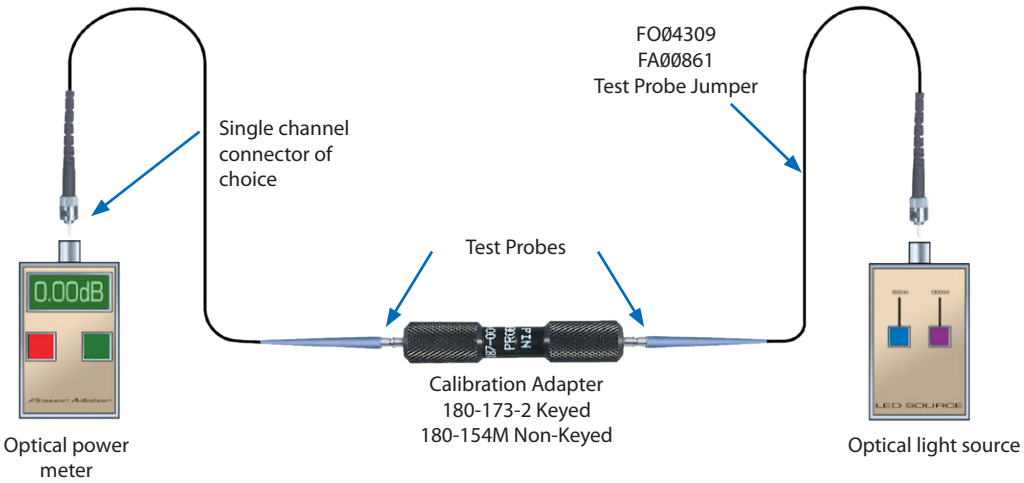
Fiber optic testing kit for fiber optic connection systems

Traditional optical test harnesses are expensive and easily contaminated in normal use. The Glenair fiber optic testing kit utilizes a special probe device in conjunction with our precise-mating test adapter, to provide a complete solution to optical test and measurement. The GTK-3000 comes with a power meter, source meter, test probes and a test probe calibration adapter. For accurate results, the test probe calibration adapter will "zero out" your meters.

The Glenair patented test probe design provides less than 1.0 dB insertion loss, and is used with test probe adapters and a calibration feedthrough to perform efficient measurements of fiber optic cable performance. The kit accommodates all standard fiber sizes and multiple fiber optic connection systems

HOW TO ORDER			
Sample Part Number	**GTK3000**	**B**	**A**
Basic Number	Power and Source Meters (Several Options) 4 Test Probes (3 meters long) Calibration Adapter		
Fiber Size	See Fiber Size table		
Type of Meter Connection	**A** = ST Connector **B** = FC Connector **C** = SC Connector		

Fiber Size	
Symbol	**Fiber Size**
A	100/140u
B	62.5/125u
C	50/125u
D	200/300u
E	9.3 Single Mode
F	Customer Defined



NOTE:

Replacement calibration adapters and test probe jumpers sold separately.
Test probe connector adapters sold separately
The fiber optic test probe kit supports ARINC 801, fiber optic connection systems. For test kits for other Glenair high performance fiber optic connection systems, please consult factory.

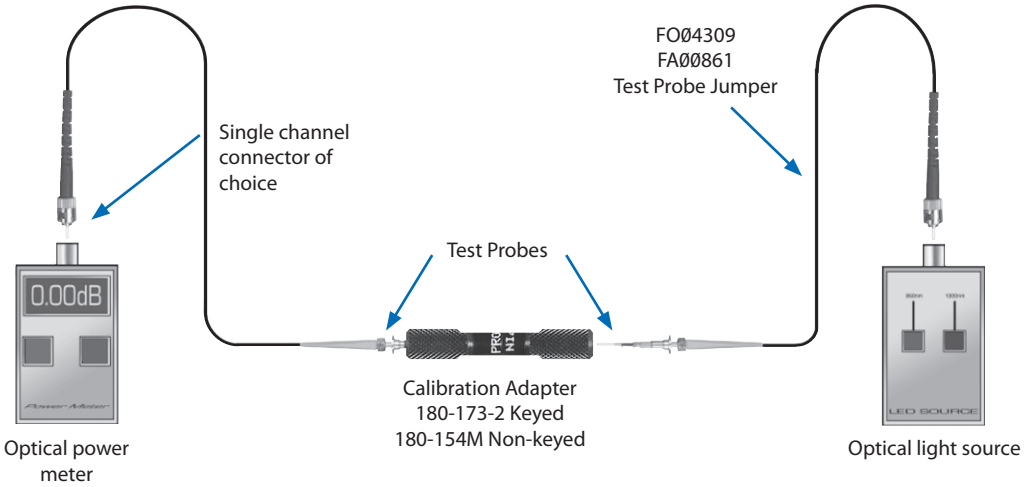
ARINC 801 Fiber Optic Connection Systems
GTK3000 Glenair Fiber Optic Testing Kit

Effective use of Glenair fiber optic test equipment

Step 1: "Zeroing-out" optical power meter and light source

The first step in using the optical test probes is to install each end of the probe cable assembly to the optical power meter and light source. Next, insert each probe into the calibration adapter.

The test probe loss can now be recorded as a reference measurement or may be "zeroed-out."

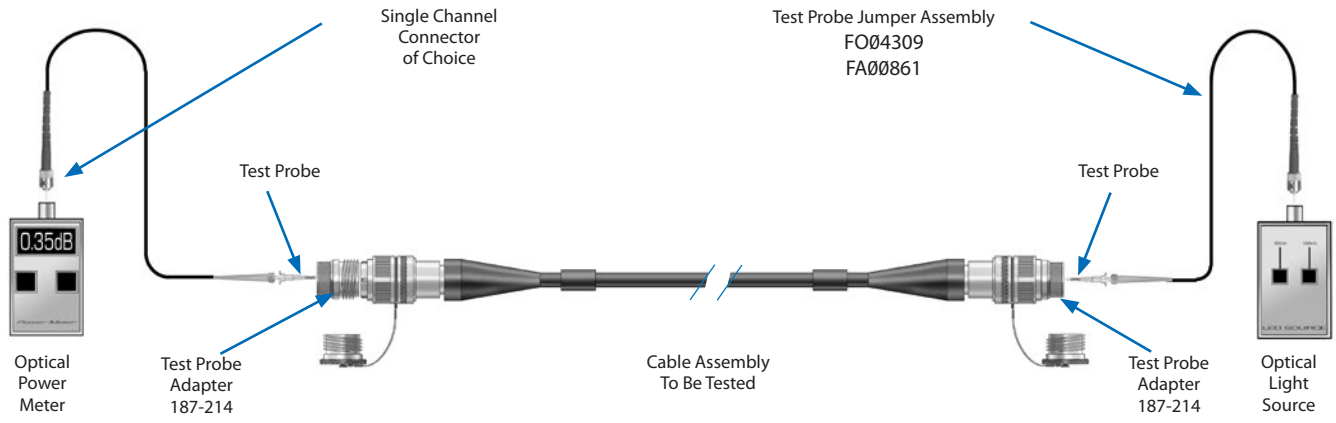


Step 2: Performing optical measurement

Now you are ready to perform optical measurements on the fiber optic cable harness. First, select the proper Glenair D38999 Series III Probe Adapter.

Now, mate or couple the adapters to each end of the cable harness. Next, insert each probe in the appropriate channel to be tested by pushing on the knurled area on the test probes. Read and record the optical performance.

To measure the next channel, remove the test probe by pushing on the large diameter of the test probe. The probe can now be removed and inserted into the next channel. Re-establishing or verification of reference can be performed at any time by following Step 1.



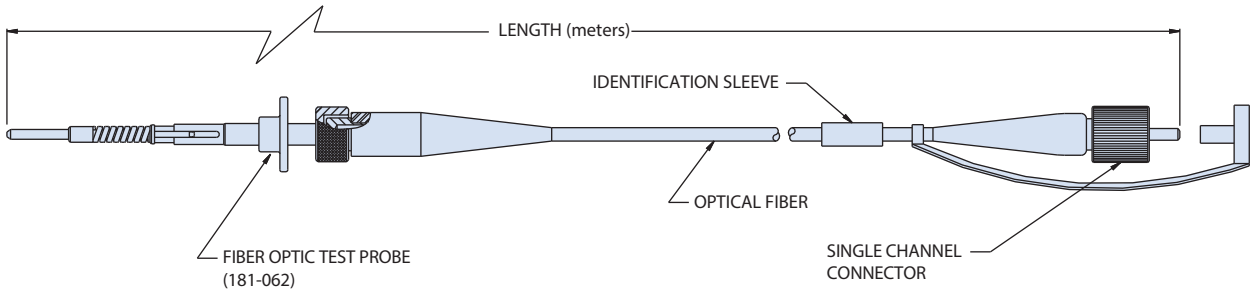
Non-Keyed Jumper Assembly
FA00861 ARINC 801 Fiber Optic Test Probe

Fiber optic test probe for fast and easy optical analysis of installed fiber optic systems

Fiber Size	
Symbol	Size
A	MM 100/140
B	MM 62.5/125
C	MM 50/125
D	MM 200/230
E	SM 9.3/125
F	SM 5.8/125
G	SM 7.5/125

HOW TO ORDER				
Sample Part Number	FA00861	A	A	3
Basic Number	FA00861 ARINC801 Fiber Optic Test Probe			
Fiber Size	(Micron) See Fiber Size table			
Connector Type	A = ST Connector B = FC Connector C = SC Connector D = LC Connector E = FC/APC Connector F = SC/APC Connector G = LC/APC Connector			
"A" Length	In meters			

Optical insertion loss ≤ 0.5 dB @ 850 or 1310 nm wavelength.
Glenair Fiber Optic Test Probe U.S. Patent Number 5,960,137.



Standard Length Tolerance	
Length	Tolerance
1 meter	±1.00 (25.4)
2 to 3 meters	±3.00 (76.2)
4 to 6 meters	±4.00 (101.6)
7 to 10 meters	±6.00 (152.4)

NOTE

1. "PC" physical contact polish to be IAW Glenair manufacturing procedure AQS-A002-F
2. For use with the following test probe adapters:
   180-131: GHD (180-122)

Fiber optic polishing tool for ARINC 801 style termini fiber optic test probes

HOW TO ORDER		
Sample Part Number	182-054	W
Basic Number	054 Fiber optic polishing tool	
Polish	W= Wet Polish Supplied with V-Grooves (Omit for Dry Polish)	

NOTE

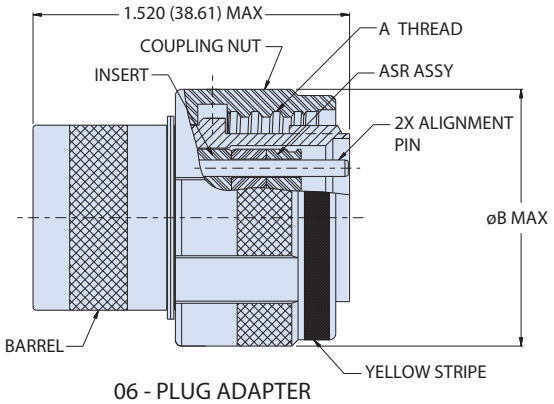
1. Polishing puck is for PC polish only. For APC Glenair recommends autopolish, consult factory for more information
2. Polishing tool is designed for use with the following Glenair termini:
   181-047 (Pin, size 18 terminus)
   181-056 (Pin, size 18 terminus)

Rev. 01.06.25

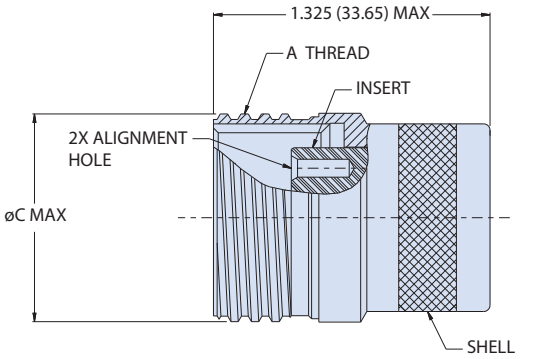
187-214 Fiber Optic Test Adapter, Plug and Receptacle for ARINC 801 Fiber Optic Connectors

ARINC 801 test adapter, plug and receptacle

HOW TO ORDER						
Sample Part Number	**187-214**	**M**	**06**	**15**	**6**	**N**
Basic Number	**187-214** Fiber Optic Test Adapter, Plug and Receptacle					
Material/Finish	**M** = Alminum alloy/electroless nickel					
Connector Style	**06** = Plug Adapter **07** = Receptacle Adapter					
Shell Size	See Dimensions table					
Insert Arrangement	Per MIL-STD-1560					
Alternate Keying Position	**N**, **A**, **B**, **C**, **D** & **E** Omit for universal (master key only) Universal available on plug adapter only					



06 - PLUG ADAPTER
FOR USE WITH RECEPTACLE CONNECTOR



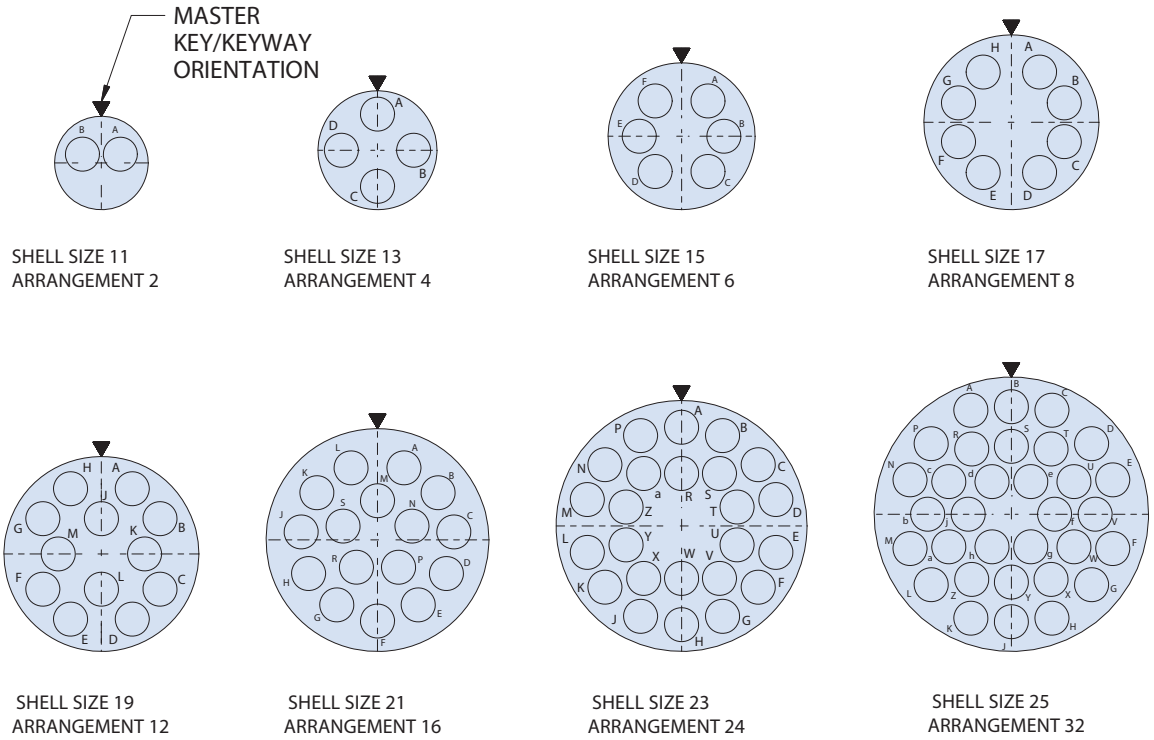
07 - RECEPTACLE ADAPTER
FOR USE WITH PLUG CONNECTOR

07 Receptacle and 06 Plug Adapter
U.S. PATENT NO. 5,960,137

Dimensions					
Shell Size	Shell Size Code	No of Contacts	A Thread 0.P-0.3L-TS-2	Ø B	Ø C
11	B	4	0.7500	0.984	0.750
13	C	6	0.8750	1.157	0.875
15	D	16	1.0000	1.280	1.000
17	E	22	1.1875	1.406	1.188
19	F	30	1.2500	1.516	1.250
21	G	40	1.3750	1.642	1.375
23	H	52	1.5000	1.768	1.500
25	J	70	1.6250	1.890	1.625

187-214 Fiber Optic Test Adapter, Plug and Receptacle for ARINC 801 Fiber Optic Connectors

ARINC 801 insert arrangements



SHELL SIZE 11
ARRANGEMENT 2

SHELL SIZE 13
ARRANGEMENT 4

SHELL SIZE 15
ARRANGEMENT 6

SHELL SIZE 17
ARRANGEMENT 8

SHELL SIZE 19
ARRANGEMENT 12

SHELL SIZE 21
ARRANGEMENT 16

SHELL SIZE 23
ARRANGEMENT 24

SHELL SIZE 25
ARRANGEMENT 32

RECEPTACLE INSERT REAR FACE SHOWN
PLUG REAR FACE - OPPOSITE

CAVITY KEYWAYS NOT SHOWN FOR CLARITY

NOTES

1. Materials and Finish
   Barrel, shell: aluminum alloy/nickel
   Coupling nut: high-grade rigid dielectric
   Insert: high-grade rigid dielectric, aluminum alloy/ anodized, or aluminum alloy/electroless nickel - Mfr's O ption Alignment Sleeve: Zirconia Ceramic
   Contact retention clip: copper alloy
   Alignment sleeve retainer (ASR): aluminum alloy/anodized or alumimun alloy/electorless nickel - Mfr's option
   Insert retainer: aluminum alloy/anodized
   Miscellaneous hardware: SST passivate
2. Connector adapters designed for use with Glenair 187-214ASR
3. Alignment sleeve retainer (ASR) is supplied with plug adapter only. To order separately, see Glenair drawing
   180-214ASR
4. "For fiber ooptic test probe jumper, see Glenair drawings:
   - FA00861 = Non-keyed probe (181-061), PC polish
   - FO04309 = Keyed probe (181-062), APC polish

GTK4000 Glenair Fiber Optic Testing Kit for NGCON Fiber Optic Connection Systems

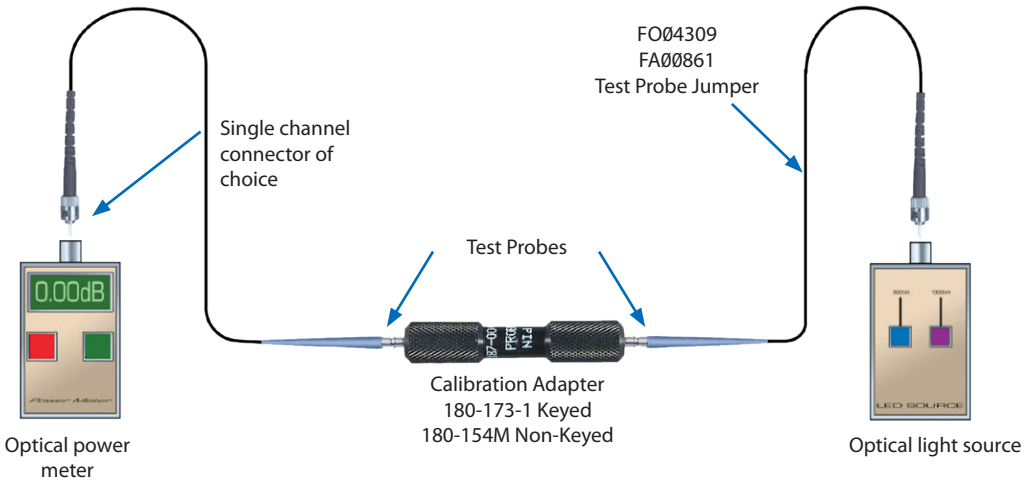
Fiber optic testing kit for fiber optic connection systems

Traditional optical test harnesses are expensive and easily contaminated in normal use. The Glenair fiber optic testing kit utilizes a special probe device in conjunction with our precise-mating test adapter, to provide a complete solution to optical test and measurement. The GTK4000 comes with a power meter, source meter, test probes and a test probe calibration adapter. For accurate results, the test probe calibration adapter will "zero out" your meters.

The Glenair patented test probe design provides less than 1.0 dB insertion loss, and is used with test probe adapters and a calibration feedthrough to perform efficient measurements of fiber optic cable performance. The kit accommodates all standard fiber sizes and multiple fiber optic connection systems

HOW TO ORDER			
Sample Part Number	**GTK4000**	**B**	**A**
Basic Number	Power and Source Meters (Several Options) 4 Test Probes (3 meters long) Calibration Adapter		
Fiber Size	See Fiber Size table		
Type of Meter Connection	**A** = ST Connector **B** = FC Connector **C** = SC Connector		

Fiber Size	
Symbol	**Fiber Size**
A	100/140u
B	62.5/125u
C	50/125u
D	200/300u
E	9.3 Single Mode
F	Customer Defined



NOTE:

Replacement calibration adapters and test probe jumpers sold separately.
Test probe connector adapters sold separately
The fiber optic test probe kit supports NGCON fiber optic connection systems. For test kits for other Glenair high performance fiber optic connection systems, please consult factory.

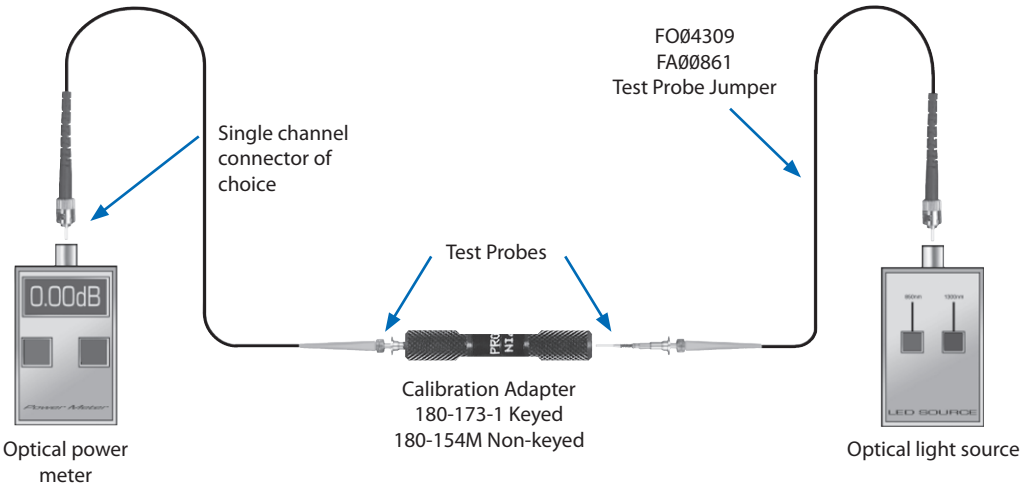
GTK4000 Glenair Fiber Optic Testing Kit for NGCON Fiber Optic Connection Systems

Effective use of Glenair fiber optic test equipment

Step 1: "Zeroing-out" optical power meter and light source

The first step in using the optical test probes is to install each end of the probe cable assembly to the optical power meter and light source. Next, insert each probe into the calibration adapter.

The test probe loss can now be recorded as a reference measurement or may be "zeroed-out."

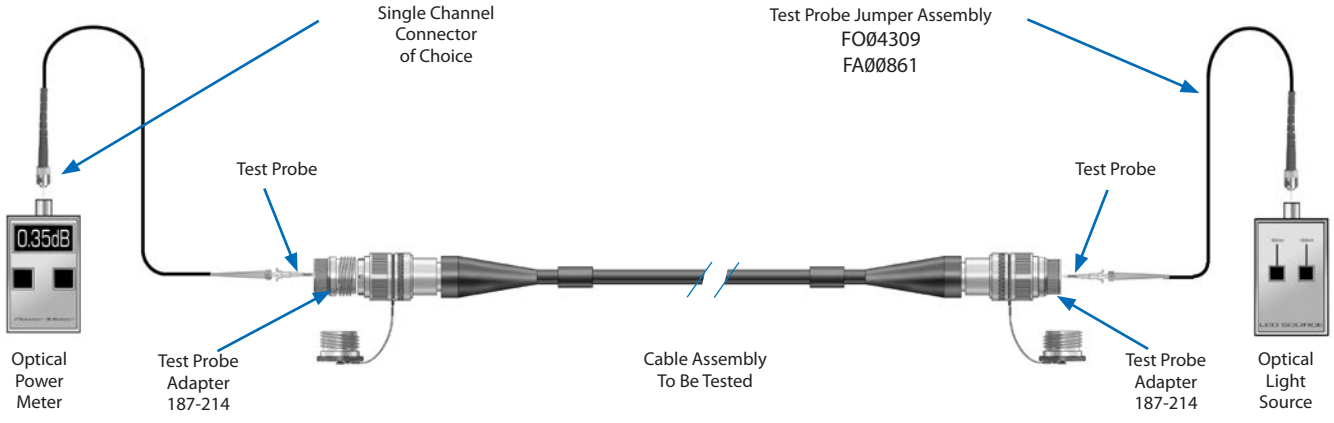


Step 2: Performing optical measurement

Now you are ready to perform optical measurements on the fiber optic cable harness. First, select the proper Glenair D38999 Series III Probe Adapter.

Now, mate or couple the adapters to each end of the cable harness. Next, insert each probe in the appropriate channel to be tested by pushing on the knurled area on the test probes. Read and record the optical performance.

To measure the next channel, remove the test probe by pushing on the large diameter of the test probe. The probe can now be removed and inserted into the next channel. Re-establishing or verification of reference can be performed at any time by following Step 1.



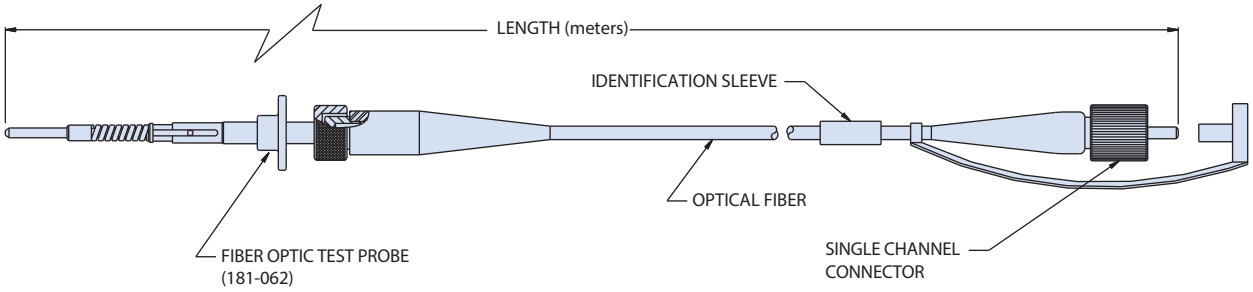
Non-Keyed Jumper Assembly
FA00861 NGCON Fiber Optic Test Probe

Fiber optic test probe for fast and easy optical analysis of installed fiber optic systems

Fiber Size	
Symbol	Size
A	MM 100/140
B	MM 62.5/125
C	MM 50/125
D	MM 200/230
E	SM 9.3/125
F	SM 5.8/125
G	SM 7.5/125

HOW TO ORDER				
Sample Part Number	FA00861	A	A	3
Basic Number	FA00861 NGCON Fiber Optic Test Probe			
Fiber Size	(Micron) See Fiber Size table			
Connector Type	A = ST Connector B = FC Connector C = SC Connector D = LC Connector E = FC/APC Connector F = SC/APC Connector G = LC/APC Connector			
"A" Length	in meters			

Optical insertion loss ≤ 0.5 dB @ 850 or 1310 nm wavelength.
Glenair Fiber Optic Test Probe U.S. Patent Number 5,960,137.



Standard Length Tolerance	
Length	Tolerance
1 meter	±1.00 (25.4)
2 to 3 meters	±3.00 (76.2)
4 to 6 meters	±4.00 (101.6)
7 to 10 meters	±6.00 (152.4)

NOTE

1. "PC" physical contact polish to be IAW Glenair manufacturing procedure AQS-A002-F
2. For use with the following test probe adapters:
   180-173-1 Keyed and 180-154M Non-keyed

Fiber optic polishing tool for NGCON style termini fiber optic test probes

HOW TO ORDER		
Sample Part Number	182-054	W
Basic Number	054 = Fiber optic polishing tool	
Polish	W= Wet Polish Supplied with V-Grooves (Omit for Dry Polish)	

NOTE

1. Polishing puck is for PC polish only. For APC Glenair recommends autopolish, consult factory for more information
2. Polishing tool is designed for use with the folloing Glenair termini:
   181-047 (Pin, size 18 terminus)
   181-056 (Pin, size 18 terminus)

180-134 Fiber Optic Test Adapter, Plug and Receptacle For NGCON (M64266 Style) Fiber Optic Connectors

NGCON test adapter, plug and receptacle

HOW TO ORDER							
Sample Part Number	**180-134**	**ME**	**06**	**15**	**8**	**P**	**N**
Basic Number	**180-134** Fiber Optic Test Adapter, Plug and Receptacle						
Material/Finish	**ME** = Alminum alloy/electroless nickel						
Connector Style	**06** = Plug Adapter **05** = Receptacle Adapter						
Shell Size	See Dimensions table						
Insert Arrangement	Per ARINC 801 (Dimensions table)						
Insert Type	**P** = Pin (no ASR included) **S** = Socket (ASR included)						
Alternate Keying Position	See Key Polarization table, Omit for universal						

DIMENSIONS			
SHELL SIZE	THREAD A .1P-.2L-DS	øB	øC
11	.750	1.01 (25.65)	0.74 (18.80)
13	.875	1.14 (28.96)	0.87 (22.10)
15	1.062	1.26 (32.00)	1.05 (26.67)
23	1.500	1.70 (43.18)	1.49 (37.85)

KEY POLARIZATION		
P°	SHELL SIZE 11	SHELL SIZE 13, 15 & 23
1	55°	30°
2	80°	55°
3	105°	80°
4	130°	105°
5	230°	130°
6	255°	155°
7	280°	205°
8	305°	230°
9	-	255°
A	-	280°
B	-	305°
C	-	330°

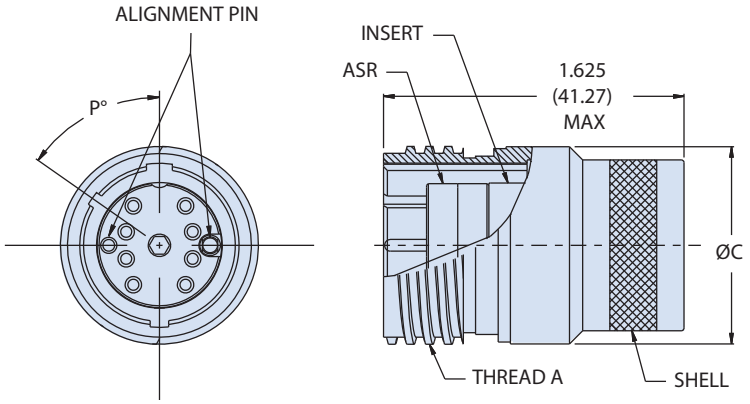
NOTES

1. Connector adapters designed for use with Glenair 180-118 series MIL-PRF-64266 (NGCON) style connectors
2. Alignment sleeve retainer (ASR) is supplied standard with receptacle connector. To order separately, use Glenair P/N 180-118ASR
3. Plug Adapter Universal key polarization only contains the the primary and secondary master keys (no polarization keys). Receptacle adapter universal keyway polarization contains all polarizations (1 thru 9, A, B and C)
4. For fiber optic test probe cable, see glenair drawings:
   - FA00861 = non-keyed probe (181-061), PC polish
   - FO04309 = keyed probe (181-062), APC polish

MATERIAL AND FINISH

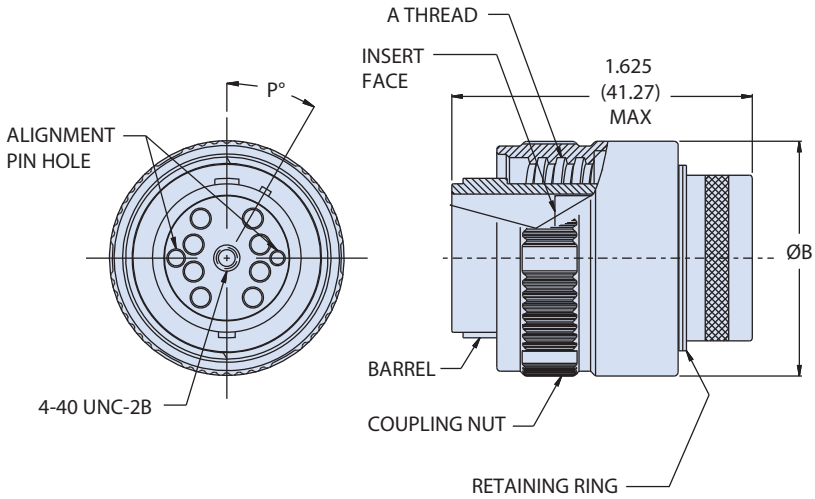
- Barrel, shell, coupling nut: aluminum alloy/electroless nickel
- Insert: aluminum/anodize
- Alignment sleeve (not shown): zirconia ceramic
- Contact retention clip (not show): spring alloy
- Alignment sleeve retiner (ASR): aluminum alloy/anodize
- Insert retainer (not shown): aluminum alloy/anodize
- Miscellaneous hardware: stainless steel/passivate

180-134 Fiber Optic Test Adapter, Plug and Receptacle For NGCON (M64266 Style) Fiber Optic Connectors



05 - RECEPTACLE

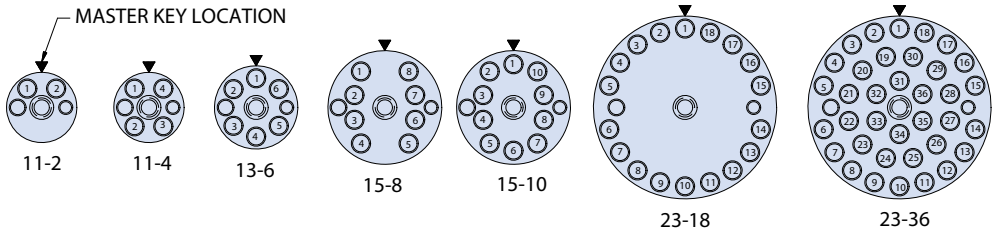
STANDARD CONFIGURATION
INCLUDES ASR
SEE TABLE II



06 - PLUG

SEE TABLE II

07 Receptacle and 06 Plug Adapter
U.S. PATENT NO. 5,960,137



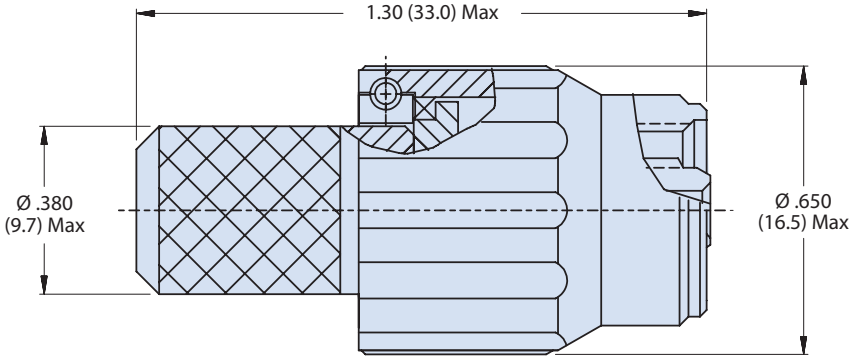
INSERT ARRANGEMENTS

FRONT PLUG FACE SHOWN

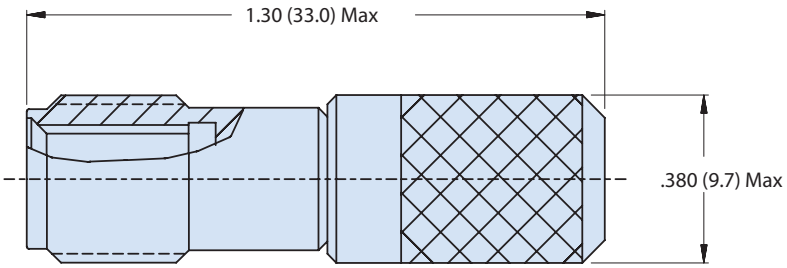
180-102 Fiber Optic Probe Adapter, Plug and Receptacle for NGCON Fiber Optic Connectors

Fiber optic plug and receptacle probe adapter for use with 180-071 connectors

HOW TO ORDER				
Sample Part Number	**180-102**	**NF**	**07**	**1**
Basic Number	**180-102** Fiber Optic Probe Adapter, Plug and Receptacle			
Material/Finish	See Material and Finish table			
Adapter Type	**06** = Plug Adapter **07** = Receptacle Adapter			
Alternate Keying Position	**1**, **2**, **3**, **4**, & **5**			



06 Plug Adapter
U.S. PATENT NO. 5,960,137



07 Receptacle Adapter
U.S. PATENT NO. 5,960,137

Material and Finish		
Code	**Material**	**Finish**
C	Aluminum Alloy	Anodize, Black
M		Electroless Nickel
NF	Aluminum	Cadmium, Olive Drab

MATERIAL AND FINISH

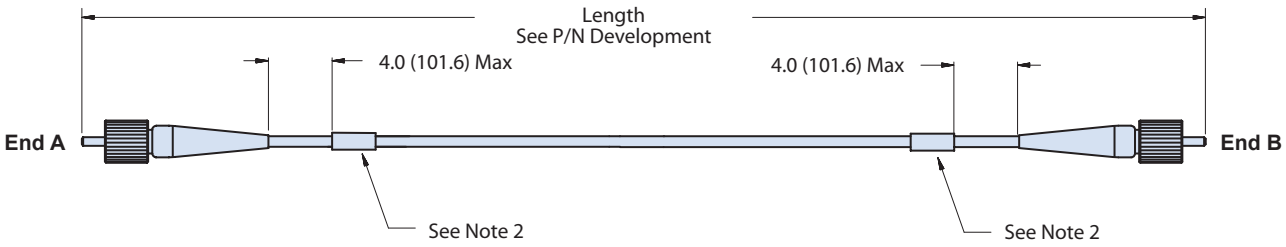
Receptacle
Shell, Rear body: See Material and Finish table
Retaining Clips: BeCu Alloy
Misc. Hardware: Stainless Steel
Seal: Fluorosilicone

Plug
Barrel, Coupling Nut, Rear body: See Material and Finish table
Retaining Clips: BeCu Alloy
Misc. Hardware: Stainless Steel/ Passivate
O-Ring: Fluorosilicone

NOTES

For fiber optic test probe jumper, see Glenair drawing ABC54705

Simplex
FO1006 Fiber Optic Patch Cord



HOW TO ORDER					
Sample Part Number	**FO1006**	**1-1**	**XXXX**	**09**	**A**
Basic Number	FO1006 Fiber Optic Patch Cord				
Connector/Terminus Type	**0** – ST Connector, M83522/16 Style **1** – ST Connector **2** – FC Connector **3** – SC Connector **4** – Glenair Socket Terminus M29504/05 Style (181-001) **5** – Glenair Pin Terminus M29504/04 Style (181-002) **6** – SMA Connector (906) **7** – LC Connector **8** – SMA Connector (905) **9** – Customer Specified **10** – Glenair GHD Terminus (181-047) **11** – Glenair GFR Pin Terminus (181-012) **12** – Glenair GFR Socket Terminus (181-011) **13** – Glenair GHD Terminus, PC Only (181-056) **14** – Glenair Pin Terminus, M29504/14 Style (181-039) **15** – Glenair Socket Terminus, M29504/15 Style (181-040)				
Length	In Inches				
Fiber Size	**05** – 5.8/125 Singlemode **07** – 7.5/125 Singlemode **09** – 9.3/125 Singlemode **50** – 50/125 Multimode **62** – 62.5/125 Multimode **10** – 100/140 Multimode **20** – 200/230 Multimode **1K** – 1000um Multimode **CS** – Customer Specified Singlemode **CM** – Customer Specified Multimode				
Temperature Rating	**A** – -40°C to +85°C **B** – -55°C to +125°C **C** – Customer Specified (See Note 3)				

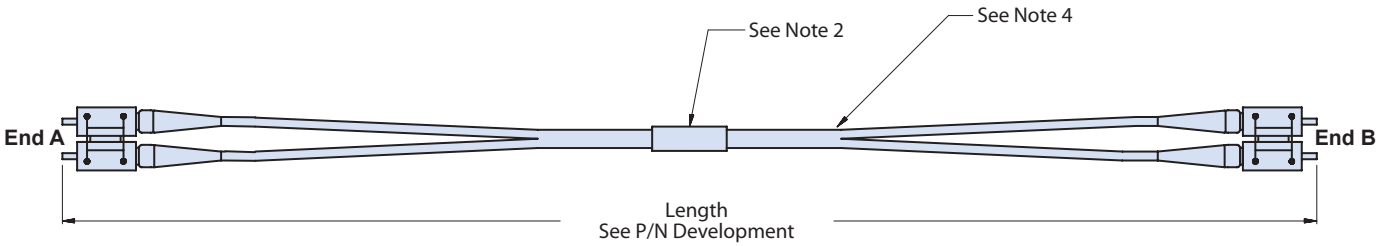
Standard Tolerance	
Length	**Tolerance**
5 in to 2 ft.	+1 in -0
2 to 10 ft.	+3 in -0
10 to 50 ft.	+6 in -0
50 to 100 ft.	+1 ft -0
100 ft. and up	+2 ft -0

APPLICATION NOTES

1. Optical performance: insertion loss to be less than 1.5 dB when measured at 850 nm wavelength for Multimode and 1310 nm wavelength for Singlemode.
2. Assy is marked with the Glenair PN in two places.
3. Temperature Rating:
   - "A" Temperature rating use TRA-BOND F113 Epoxy.
   - "B" Temperature rating use EPO-TEK 353ND Epoxy.
   - "C" Temperature rating as per customer specification.
4. Metric dimensions (mm) are indicated in parentheses.
5. For angle polish, add "A" to end of Connector/Terminus Type Number (otherwise omit). Type numbers, 4, 5, 6, 8, 11,12, 13, 14, and 15 do not allow angle polish.
6. For military qualified product, add "M" to end of Connector/Terminus Type number (otherwise omit). Type number 4, 5, 14, and 15 only.

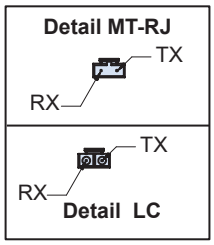
KITS AND TOOLS

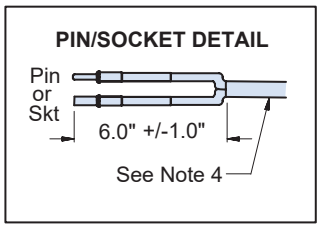
Duplex
FO1007 Fiber Optic Patch Cord

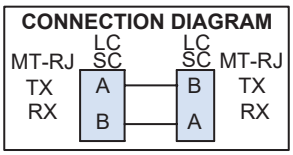


HOW TO ORDER						
Sample Part Number	**FO1007**	**1-1**	**XXXX**	**09**	**A**	**X**
Basic Number	FO1007 Fiber Optic Patch Cord					
Connector/Terminus Type	**0** – ST Connector, M83522/16 Style **1** – ST Connector **2** – FC Connector **3** – SC Connector **4** – Glenair Socket Terminus M29504/05 Style (181-001) **5** – Glenair Pin Terminus M29504/04 Style (181-002) **6** – SMA Connector (906) **7** – LC Connector **8** – SMA Connector (905) **9** – Customer Specified **10** – Glenair GHD Terminus (181-047) **11** – Glenair GFR Pin Terminus (181-012) **12** – Glenair GFR Socket Terminus (181-011) **13** – Glenair GHD Terminus, PC Only (181-056) **14** – Glenair Pin Terminus, M29504/14 Style (181-039) **15** – Glenair Socket Terminus, M29504/15 Style (181-040)					
Length	In Inches					
Fiber Size	**05** – 5.8/125 Singlemode **07** – 7.5/125 Singlemode **09** – 9.3/125 Singlemode **50** – 50/125 Multimode **62** – 62.5/125 Multimode **10** – 100/140 Multimode **20** – 200/230 Multimode **1K** – 1000um Multimode **CS** – Customer Specified Singlemode **CM** – Customer Specified Multimode					
Temperature Rating	**A** – -40°C to +85°C **B** – -55°C to +125°C **C** – Customer Specified (See Note 3)					
MTRJ	**X** = Cross Wired TX to RX and RX to TX (MTRJ Only; See Note 5) Omit for Normal					

Standard Tolerance	
Length	**Tolerance**
5 in to 2 ft.	+1 in -0
2 to 10 ft.	+3 in -0
10 to 50 ft.	+6 in -0
50 to 100 ft.	+1 ft -0
100 ft. and up	+2 ft -0







APPLICATION NOTES

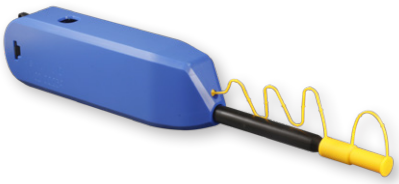
1. Optical performance: insertion loss to be less than 1.5 dB when measured at 850 nm wavelength for Multimode and 1310 nm wavelength for Singlemode.
2. Assembly is marked with the Glenair P/N, located aprox. in the center.
3. "A" Temperature rating use TRA-BOND F113 Epoxy. "B" Temperature rating use EPO-TEK 353ND Epoxy. "C" Temperature rating as per customer specification.
4. When using simplex cable apply heat shrink as needed to combine both fibers leaving aprox. 6.0" on each end open.
5. MTRJ'S are connected per connections diagram unless cross wired is specified in P/N description.
6. Metric dimensions (mm) are indicated in parentheses.
7. For angle polish, add "A" to end of Connector/Terminus Type Number (otherwise omit).Type numbers, 4, 5, 11, 12, 14, and 15 do not allow angle polish.
8. For military qualified product, add "M" to end of Connector/Terminus Type number (otherwise omit). Type number 4, 5, 14, and 15 only.

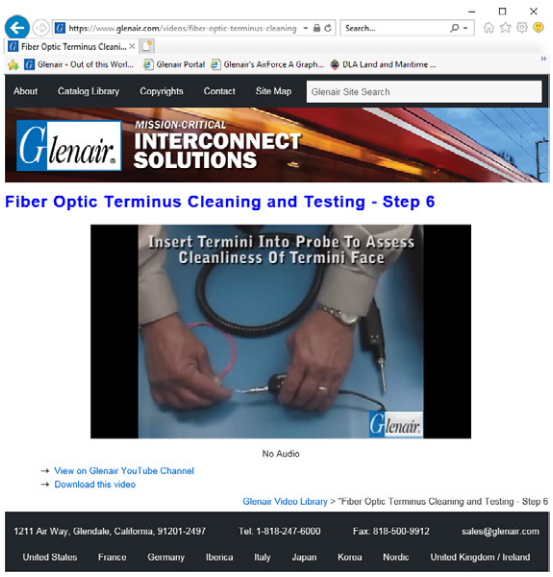
Fiber Optic Cleaning and Troubleshooting

Cleaning and troubleshooting instructions for critical fiber optic systems

Dirty termini can seriously degrade the performance of any fiber optic system. Glenair stocks a full range of cleaning tools and supplies, plus a portable video bore scope inspection kit that contains a miniature inspection camera, hand-held video monitor, termini adapters and cleaning swabs. Designed for use with Glenair test probe adapters, the special adapter tip accurately aligns the inspection camera for optimum viewing. This video inspection system is intended for initial inspection and cleaning of D38999 multi-channel fiber assemblies prior to inserting Glenair test probes for optical measurement.

Glenair Dry Action Cleaning Tools are easy-to-handle fiber optic terminus cleaning devices, highly effective at removing oil and dust contamination from pin and socket termini—either inside or outside connector shells. Traditional wet-swab cleaning methods add drying time and can even introduce new contaminants to the polished terminus endface. The Dry Action Cleaning Tool's novel dry cleaning strand gently sweeps and lifts away dust and residue from the terminus end-face without the problems associated with wet swab methods. The tool features a convenient single-unit configuration and an extendable tip for easy access to installed fiber optic termini—saving time and avoiding potential additional contamination.



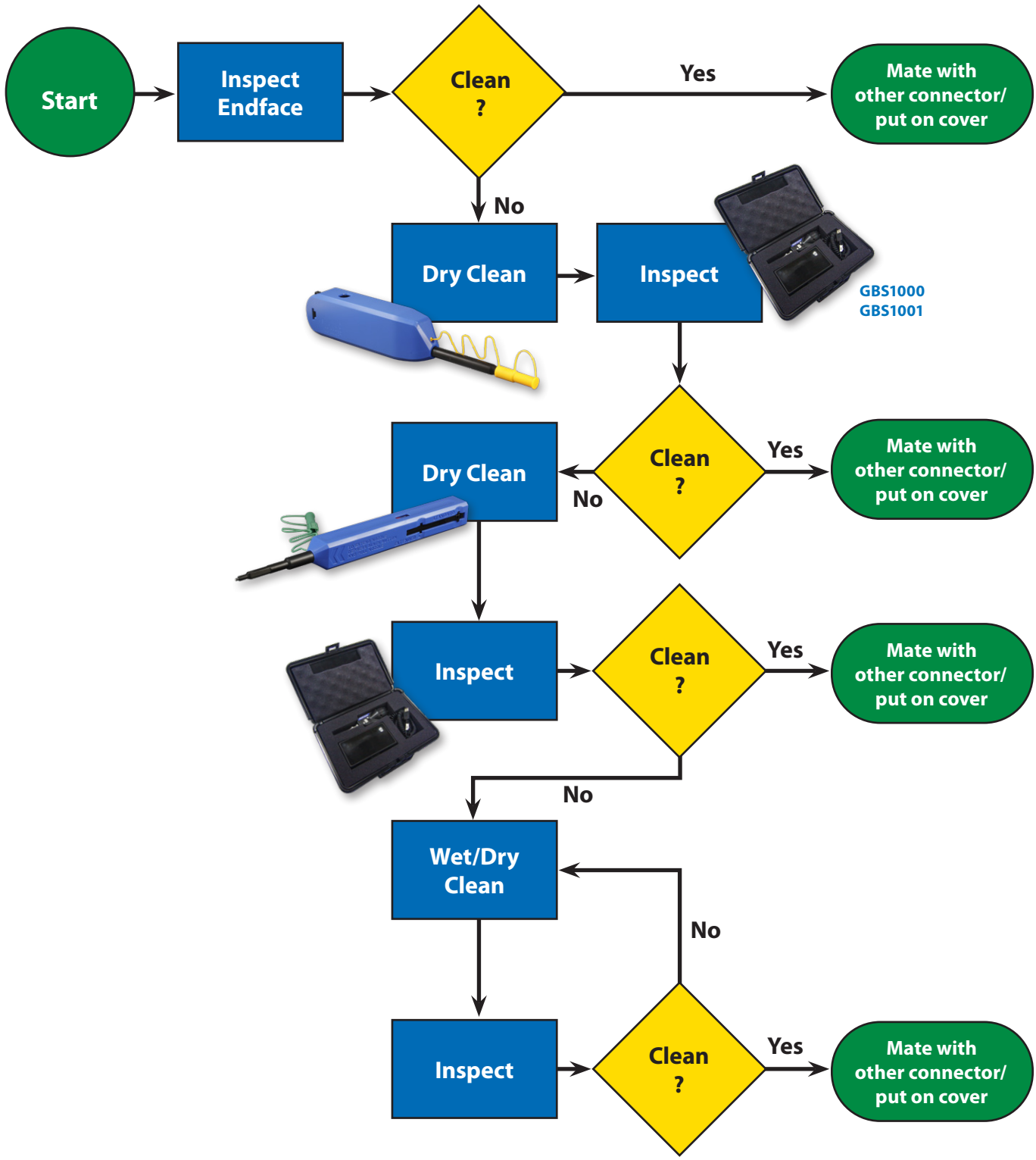


Glenair Terminus Cleaning

Visit our website at www.glenair.com or our youtube channel at www.youtube.com/user/GlenairInc to see complete, easy to follow step-by-step video instructions to help you clean your fiber optic termini.

We are experts at building made-to-order termination, test and cleaning kits. This chapter presents just our core capabilities.
Consult our website or call the factory for made-to-order toolkits, training and process documentation.

Fiber Optic Cleaning and Troubleshooting Process Flow



GBS1000 and GBS1001 Portable Fiber Optic Video Bore Scope Inspection System

Fiber optic video bore scope inspection system for MIL-DTL-38999 and other small form-factor connectors such as SC, LC, ST and FC

- **Field/Bench Use System Includes Video Display Unit, Inspection Camera and Standard 2.5 mm & 1.25 mm Patchcord Inspection Tips**
- **Tips available Use with all Common F/O Connector Types: SC, LC, ST, and FC plus MIL-DTL-38999 and Small Form Factor Connectors**
- **200X and 400X Magnification**
- **Built-in NiMH Rechargeable Battery with Automatic Shut-off Function**
- **Rugged Watertight Case**

Glenair Video Inspection System Provides The Ultimate Solution to Field Maintenance of Fiber Optic Systems

Dirty or contaminated fiber optic termini can seriously degrade the performance of a fiber optic system. But inspecting individual contacts in complex connector devices such as bulkhead feed-throughs and multi-channel Mil-Spec connectors can be a difficult and time-consuming task. The Glenair video inspection system supplies everything you need to quickly and conveniently inspect and clean butt-jointed fiber optic contacts. Optional add-ons enable turnkey integration with computer desktops, digital cameras and powerful optical test software.

HOW TO ORDER	
Sample Part Number	**GBS1000**
Basic Number	Handheld Inspection Monitor Inspection Probe (200x & 400x) 4 tips Portable Ruggedized Carrying Case Glenair Swabs

GBS1000 and GBS1001 Portable Fiber Optic Video Bore Scope Inspection System

Glenair's handheld Bore Scope is a small, lightweight video microscope used to examine fiber optic end-faces. The GBS1000 displays a clear and concise live image with the ability to view fibers at either 200x or 400x magnifications.

The Quick Capture GBS1000-U USB Module can be added to the GBS1000. This valuable item allows the user to inspect and capture fiber end-faces on your PC. Works great with Fiber Chek software to inspect, test and capture images. To order separately, use part number GMP-002.

The dual magnification mode inherent in all Fiber Chek Pro platforms provides a large, easily centered image during handheld focusing. This greatly simplifies your ability to achieve a quality image. A high-magnification image is acquired, analyzed, and graded. FiberChek Pro software can analyze several zones of the fiber end-face.

GBS1000 Specifications	
Dimensions	1.8" W x 1.7" H x 5.5" L
Weight	4.08 oz / 115.6 gms
Video Output	NTSC or PAL
Light Source	Blue LED 1000,000+ hour life
Lighting Technique	Coaxial
Attenuation Filter	2 mm thick Schott KG1
Camera type	.33" CCD

GBS1001 Specifications	
Weight	.11 Kg / .25 lb
Resolution	Better than 1.5 Microns
Cable	Integrated USB 2.0 coil cable 2.5' relaxed, 10.5' fully extended
Certification	CE
Warranty	1 year

GBS1001 Inspection Probe with USB Adapter and FiberChek Pro Software

HOW TO ORDER	
Sample Part Number	**GBS1001**
Basic Number	Inspection probe with USB adapter 2 tips Fiber Chek 2 Software

The GBS1001 is the only inspection probe today with a high resolution, all digital sensor and USB2 video stream which delivers high-resolution uncompressed images directly to your personal computer or cell phone with proper app installed.

Comes with 2 tips
(installed on the probe):

GIT-003	*Universal 1.25mm patch cord*
GIT-002	*Universal 2.5mm patch cord*

FiberChek Pro Software Fiber Optic Analysis Program

FiberChek Pro is an integrated hardware/ software package engineered with the single purpose of critically and consistently grading fiber end-faces. Works hand in hand with the Quick Capture Analog Probe for visual inspection, taking pictures and testing fibers.

- Automatic debris and defect detection, including fine scratches
- Measures epoxy ring for out-of-tolerance conditions
- Inspection results, including image data, can be printed or archived
- Utilizes industry standards or user defined threshold settings

Fiber Optic Cleaning and Troubleshooting
Dry Action Cleaning Tools

Dry Action Cleaning Tools

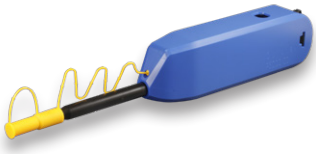
Dry action cleaning tools provide an easy way to thoroughly clean termini in all Glenair fiber optic connection systems. The dry cleaning strand gently sweeps away dust and residue without the need for solvents. Dry action cleaning tools are easy to use, durable, and crush- and impact-resistant.

- **A simple push motion engages tool**
- **Audible click when tool is fully engaged**
- **Durable—over 525 engagements per tool**
- **Crush resistant to over 250N**
- **Impact resistant to survive drops over 1.5M**

Dry action cleaning tool for MIL-DTL-38999 system

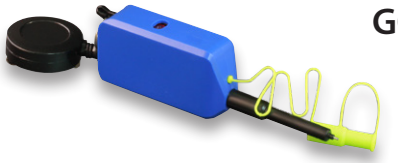
GCLT-H160

Dry action cleaning tool for GFOCA system



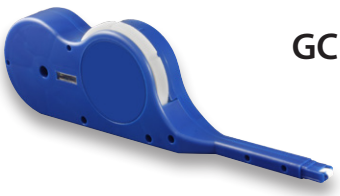
GCLT-HC250

Dry action cleaning tool for D38999 #20 and Mighty Mouse #20HD systems



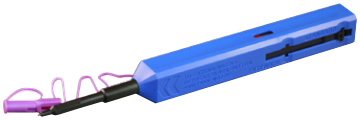
GCLT-H100

Dry action cleaning tool for MTP, MPO, MT (female and male) connectors



GCLT-MPO

Dry action cleaning tool for GHD, NGCON, and ARINC 801 systems



GCLT-H125

Dry action cleaning tool for 2.0 mm MIL-PRF-28876 system

GCLT-H200

Dry action cleaning tool for SC, ST, and FC connectors

GCLT-C250

Dry action cleaning tool for LC and MU connectors

GCLT-C125

Dry action cleaning tool for MT male connectors

GCLT-C125-RE (Refill Cartridge)

Fiber Optic Cleaning and Troubleshooting
Dry Action Cleaning Tools and Cleaning Swabs

Dry Action Cleaning Tools for test adapters

These dry action cleaning tools are configured for use with clean-through Glenair test adapters for GHD, NGCON, ARINC 801 and D38999 fiber optic connection systems.

Dry action cleaning tool for GHD, NGCON, and ARINC 801 test adapters

GCLT-HA125

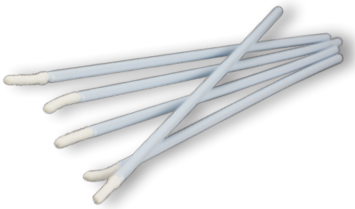
Dry action cleaning tool for MIL-DTL-38999 test adapters

GCLT-HA160

Cleaning Swabs

Precision swabs for cleaning 1.25mm, 2.00mm, 2.5mm and Glenair 181-001 termini. Designed to work with cleaning solution to remove contaminants.

Fiber optic cleaning swab for part 181-001 socket terminus - 50 swabs/bag



187-024

Fiber optic cleaning swabs 1.25 mm cletop - bag of 5 swabs

187-021

Fiber optic cleaning swab 2.00 mm and 2.50 mm cletop - 5 swabs/bag

187-045

Hand Banding Tools
601-100 and 600-058 the *Band-Master*™ ATS Clamping System

STANDARD BANDING TOOL

Color-coded tool handle:

= Standard; Black

The 601-100 Band-Master ATS® Standard Tool with Counter for Standard Bands

Weighs approximately 1.2 lbs., and is designed for .240" wide clamping bands in a tension range from 100 to 180 lbs. Calibrate at 150 lbs. ± 5 lbs. for most shield terminations. Tool and band should never be lubricated.

The 600-058 QPL Qualified (M81306/1A) Standard Banding Tool without Counter

Weighs 1.2 and is designed for .240" wide clamping bands in a tension range from 100 to 180 lbs. Calibrate at 150 lbs. ± 5 lbs. for most shield terminations. Tool and band should never be lubricated (not shown).

	Band-Master ATS® Standard Band Selection					
	Length		Part Number		Fits Diameter	
Bands	In.	mm.	Flat	Pre-Coiled	In.	mm.
Short Standard	9.0	228.6	601-005	601-006	1.0	25.4
Medium Standard	14.25	361.95	601-040	601-041	1.8	45.7
Long Standard	18.0	457.2	601-049	601-050	2.5	63.5

Cable Pull Strength for BandMaster™ ATS Standard Bands							
Name	Material Type	Band Width		Band Thickness		Calibration Setting	Cable Pull Strength
		In	mm	In	mm		
Standard	300 SS	0.240	6.10	.020	.51	150 ±5 lbs	per AS85049/128

	QPL Qualified Standard Band Selection					
	Length		Mil Spec Part Number		Fits Diameter	
Bands	in.	mm.	Flat	Pre-Coiled	in.	mm.
Standard Band	14.25	361.95	M85049/128-3	M85049/128-4	1.8	45.7

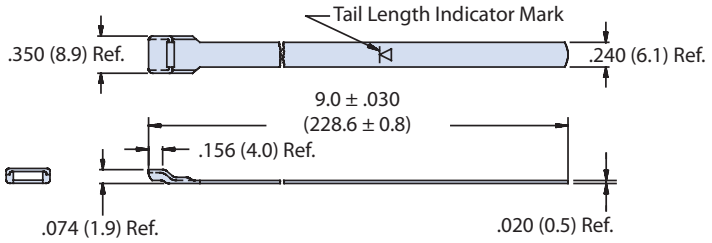
Cable Pull Strength for Standard QPL Qualified Bands							
Name	Material Type	Band Width		Band Thickness		Calibration Setting	Cable Pull Strength
		In	mm	In	mm		
Standard	300 SS	0.240	6.10	.020	.51	150 ±5 lbs	per AS85049/128

Hand Banding Tools
Standard Bands the *Band-Master*™ ATS Clamping System

STANDARD BANDS

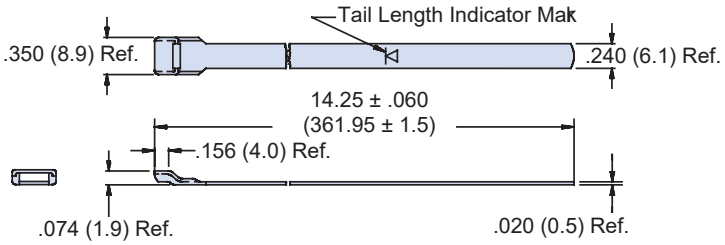
Short Flat 601-005
Short Precoiled 601-006

Standard bands are precision constructed of 300 Series SST passivate IAW AMS 2700 . Short standard bands are 9.00 inches (228.6) in length and designed for use with the Band-Master ATS® 60-100 manual banding tool or the 601-106 pneumatic banding tool. Bands should always be double wrapped and will accommodate diameters up to approximately 1.0 inches (25.4).



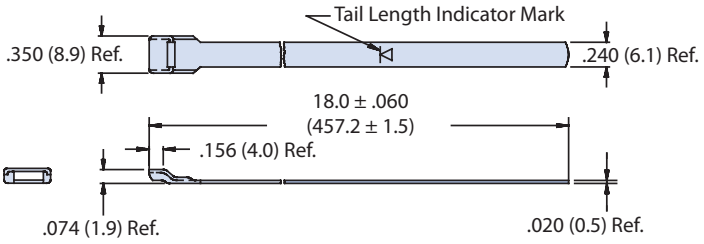
Medium Flat 601-040
Medium Precoiled 601-041

Standard bands are precision constructed of 300 Series SST passivate IAW AMS 2700. Medium standard bands are 14.25 inches (361.95) in length and designed for use with the Band-Master ATS® 601-100 manual banding tool or the 601-106 pneumatic banding tool. Bands should always be double wrapped and will accommodate diameters up to approximately 1.8 inches (45.7).



Long Flat 601-049
Long Precoiled 601-050

Standard bands are precision constructed of 300 Series SST passivate IAW AMS 2700. Long standard bands are 18.0 inches (457.2) in length and designed for use with the Band-Master ATS® 601-100 manual banding tool or the 601-106 pneumatic banding tool. Bands should always be double wrapped and will accommodate diameters up to approximately 2.5 inches (63.5).



Hand Banding Tools
601-101 and 600-061 the Band-Master™ ATS Clamping System

MICRO BANDING TOOL

The 601-101 Band-Master ATS® Micro Tool with Counter for Micro Bands

Weighs approximately 1.20 lbs., and is designed for micro .120" width clamping bands in a tension range from 50 to 85 lbs. Calibrate at 80 lbs ±3 lbs. for most shield terminations. Tool and band should never be lubricated.

The 600-061 QPL Qualified (M81306/1B) Micro Banding Tool without Counter

Weighs 1.11 and is designed for micro .120" width clamping bands in a tension range from 60 to 85 lbs. Calibrate at 80 lbs ±5 lbs. for most shield terminations. Tool and band should never be lubricated (not shown).

Color-coded tool handle:

= Micro; Blue

Band-Master ATS® Micro Band Selection						
	Length		Part Number		Fits Diameter	
Bands	in.	mm.	Flat	Pre-Coiled	in.	mm.
Short Micro	5.0	127.0	601-024	601-025	0.5	12.7
Medium Micro	8.125	206.38	601-060	601-061	.88	22.4
Long Micro	14.25	361.95	601-064	601-065	1.8	45.7

Cable Pull Strength for Band-Master ATS® Micro Bands							
Name	Material Type	Band Width		Band Thickness		Calibration Setting	Cable Pull Strength
		In	mm	In	mm		
Micro	300 SS	0.120	3.05	.015	.38	80 ±5 lbs	per AS85049/128

QPL Qualified Micro Band Selection						
	Length		Part Number		Fits Diameter	
Bands	in.	mm.	Flat	Pre-Coiled	in.	mm.
Standard Micro	8.125	206.38	M85049/128-7	M85049/128-8	.88	22.4

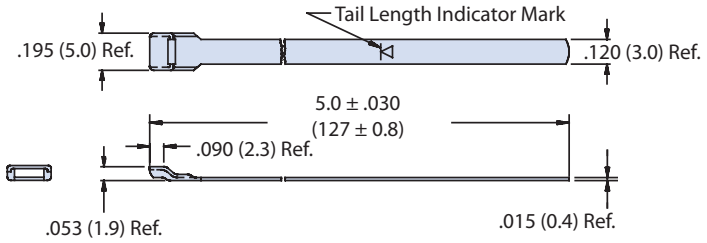
Cable Pull Strength for Micro QPL Qualified Bands							
Name	Material Type	Band Width		Band Thickness		Calibration Setting	Cable Pull Strength
		In	mm	In	mm		
Micro	300 SS	0.120	3.05	.015	.38	80 ±5 lbs	per AS85049/128

Band-Master™ ATS Clamping System
Coiled or Flat Micro Bands

MICRO BANDS

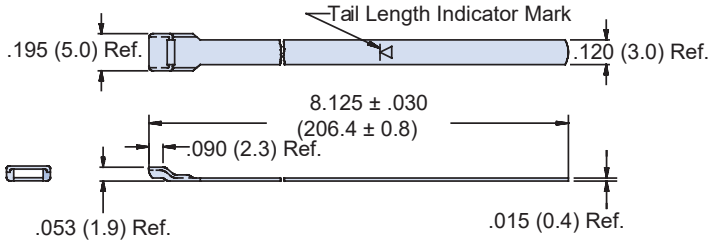
Short Flat 601-024
Short Precoiled 601-025

Micro Bands are precision constructed of 300 Series SST passivate IAW AMS 2700. Short micro bands are 5.00 inches (127) in length and designed for use with the Band-Master™ 601-101 hand banding tool or the 601-107 pneumatic banding tool. Bands should always be double wrapped and will accommodate diameters up to approximately .5 inches (12.7).



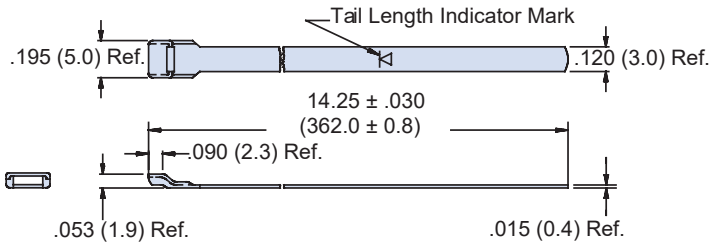
Medium Flat 601-060
Medium Precoiled 601-061

Micro Bands are precision constructed of 300 Series SST passivate IAW AMS 2700. Medium micro bands are 8.00 inches (203.2) in length and designed for use with the Band-Master™ 601-101 hand banding tool or the 601-107 pneumatic banding tool. Bands should always be double wrapped and will accommodate diameters up to approximately .88 inches (22.4).



Long Flat 601-064
Long Precoiled 601-065

Micro Bands are precision constructed of 300 Series SST passivate IAW AMS 2700. Long Micro Bands are 14.00 inches (355.6) in length and designed for use with the Band-Master™ 601-101 hand banding tool or the 601-107 pneumatic banding tool. Bands should always be double wrapped and will accommodate diameters up to approximately 1.88 inches (47.8).



The *Band-Master*™ ATS Clamping System
EMI Shield Termination Instructions

1. Prepare Cable Braid for termination process (Figure 1).
2. Push Braid forward over Adapter Retention Lip to the Adapter Incline Point (or .4" [10.2mm] minimum braid length). Milk Braid as required to remove slack and ensure a snug fit around the shield termination area (Figure 2).
3. Prepare the Band in the following manner:

   IMPORTANT: Due to Connector/ Adapter circumference, it may be necessary to prepare the Band around the Cable or Retention Area.

   A. Roll Band through the Buckle Slot twice. (Bands must be double-coiled.)

   B. Pull on Band until Mark (▷|) is within approximately .250 inch (6.4mm) of Buckle Slot (Figure 3). The Band may be tightened further if desired.

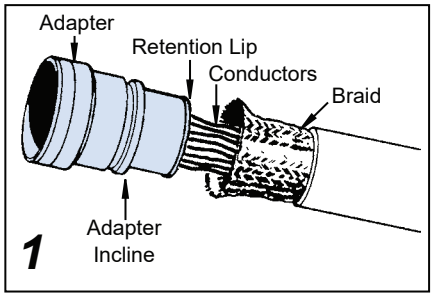
   NOTE: Prepared Band should have (▷|) Mark visible approximately where shown in Figure 3.

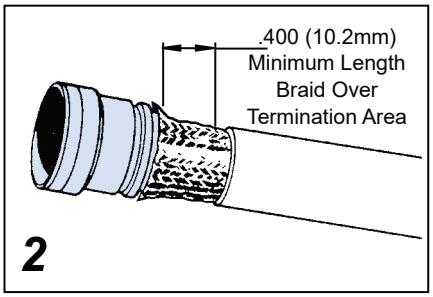
   <u>Shield Termination ClampingProcess (Figures 4 thru 8)</u>

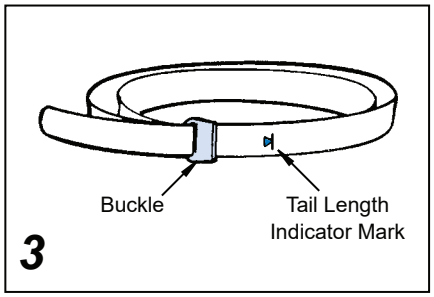
   NOTE: To free Tool Handles, move Holding Clips to center of Tool.

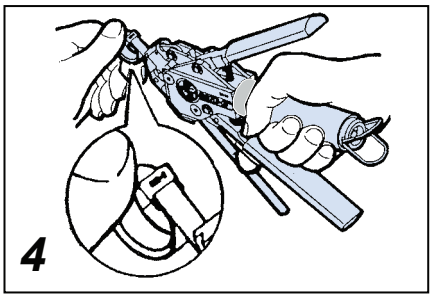
4. Squeeze Gripper Release Lever and insert Band into the front end opening of the Tool. (NOTE: Circular portion of looped band must always face downward.)
5. Aligning the Band and Tool with the Shield Termination Area, squeeze Black Pull-Up Handle repeatedly using short strokes until it locks against Tool Body. (This indicates the Band is compressed to the Tool Precalibrated Tension.)

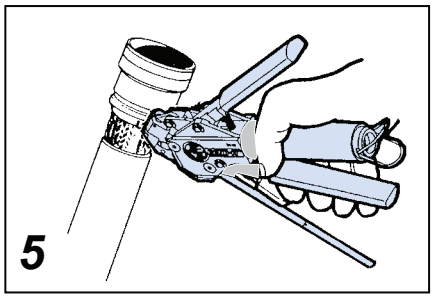
   NOTE: If alignment of band and shield is unsatisfactory, tension on band can be relaxed by pushing on slotted release lever on top of tool. Make adjustments as necessary and again squeeze black pull-up handle.

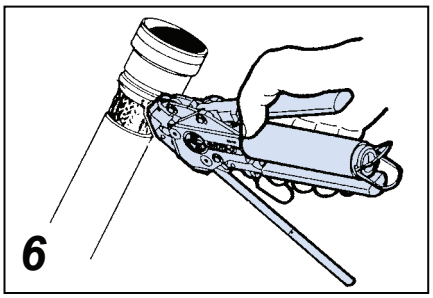


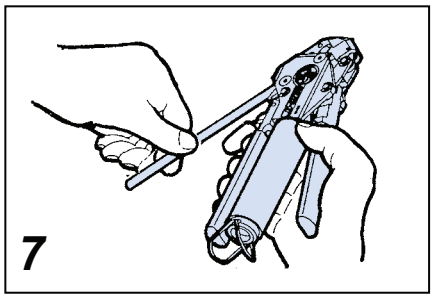


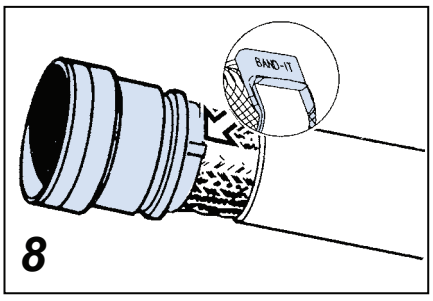












6. Complete the Clamping Process by squeezing the Gray Cut-Off Handle.
7. Remove excess band from tool and dispose.
8. Inspect Shield Termination.

Glenair Fiber Optic Custom Tooling Request

Please submit the following form, and a Glenair fiber optic specialist will contact you shortly to discuss in greater detail (required fields are indicated with an *).

Name* first _____ last _____

Company Name _____

Company Address _____

_____

E-mail* _____ **Phone** _____

What market segment are you in?

- ❑ Mil-aero
- ❑ Aerospace
- ❑ Armored vehicle
- ❑ Naval and marine
- ❑ Rail industry

Which termination process is applicable to you?

- ❑ Terminating copper cables in a lab
- ❑ Terminating copper cables on-site
- ❑ Terminating fiber optic cables in a lab
- ❑ Terminating fiber optic cables on-site
- ❑ No termination activities

What kind of fiber do you plan to use?

- ❑ Single mode
- ❑ Multi mode
- ❑ Both

What kind of termini will be terminated?

- ❑ MIL-PRF-29504/4 and /5
- ❑ MIL-PRF-29504/14 and /15
- ❑ Commercial ST
- ❑ Commercial LC
- ❑ Commercial SC
- ❑ Other

If other, please describe: _____

Glenair Fiber Optic Custom Tooling Request

Which process do you want to perform?

- ❑ Repair, termination, cleaning, inspection, and testing
- ❑ Cleaning and inspection
- ❑ Insertion loss test
- ❑ Cleaning, inspection, and testing
- ❑ Insertion and return loss
- ❑ Return loss test

Does the kit need to have battery power? ❑Yes ❑No

Do you want to perform end face inspection?

- ❑ Yes. Via video bore scope and storage of data
- ❑ Yes. Via visual front face inspection with no storage of data
- ❑ Yes. Via an interfermeter for symmetry measurements
- ❑ No end face inspection needed

Does a laptop need to be included in the testing kit? ❑Yes ❑No

What is the preferred case configuration?

- ❑ Hard-side case
- ❑ Back pack
- ❑ Other

If other, please describe: _____

What is the skill level of the operator?

- ❑ Highly trained
- ❑ Infrequent operator
- ❑ No formal training

Do you need a formal training?

- ❑ Yes, I would like to be trained in fiber optic termination
- ❑ No, I do not require additional training

Please mark the subjects Glenair need to take into account (Check all that apply)

- ❑ Repair, termination, cleaning, inspection, and testing
- ❑ Cleaning, inspection, and testing
- ❑ Training held on customer's premises
- ❑ Training held in U.S.A. (Glendale, CA)
- ❑ Training held in Europe (Bologna, Italy)
- ❑ Training held in UK (Mansfield)
- ❑ Other

If other, please describe: _____

MISSION-CRITICAL

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