Glenair®

Composite Thermoplastic Connectors and Accessories

Plus Composite Enclosures, Conduit Systems, Braided Shielding, Assembly Tools and More!

United States ■ United Kingdom ■ Germany ■ France ■ Nordic ■ Italy ■ Spain ■ Japan

Four Reasons to Choose Composites for Your Next Interconnect Application

Glenair's composite interconnect components are manufactured from high-grade engineering thermoplastics for the toughest application environments. Specifically geared for high-performance air, sea, land and space applications, Glenair's line of composite connectors and backshells are ideally suited for systems which require electromagnetic compatibility, reliable environmental protection and long-term durability. Here's why:

Corrosion Resistance: One of the most appealing attributes of composites is their unlimited corrosion resistance as compared to conventional metal materials. Aluminum interconnect components, for example, are subject to galvanic coupling which causes the material to be "sacrificed" to its cadmium/nickel plating. Since high-temperature composite plastic is not sacrificial to plating, finished products last longer, require less maintenance and so directly reduce the overall cost of ownership of the interconnect system.

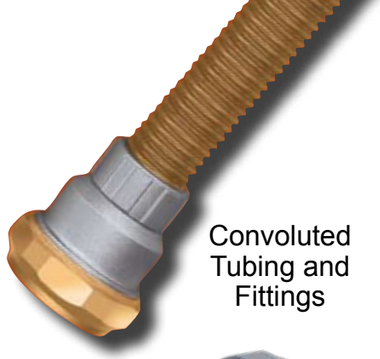
Vibration Dampening: Unlike metals, polymer plastics are less subject to harmonic resonance due to their lighter weight and inherent attenuating properties. Which means threaded components made from these materials are far less likely to vibrate loose when subjected to prolonged periods of vibration and shock. Again, reduced maintenance and reduced cost of ownership are the major benefits realized by systems built from vibration dampening composite thermoplastics.

Weight Reduction: Composites offer increased strength at lighter weights . Weight savings for composites over aluminum are approximately 40% (depending on component design). Savings versus other materials are even more pronounced: up to 80% for stainless steel and brass. Composite materials directly reduce aircraft empty weights and increase fuel fractions—resulting in smaller, lower-cost aircraft that use less fuel to perform a given mission.

Durability: Glenair's line of composite thermoplastic interconnect components are cleverly designed to avoid many of the durability problems associated with conductive plated parts. Through the use of selective plating—which limits easy-to-scratch plated surfaces to the protected portions of the part—Glenair has effectively eliminated superficial damage to coupling nuts, saddle bars and box exteriors. The parts are free from visible wear-and-tear problems that forces premature replacement of backshells, connectors, box assemblies and other EMC interconnect components.

The World's Largest Selection of *Tooled* Composite Thermoplastic Connectors and Accessories

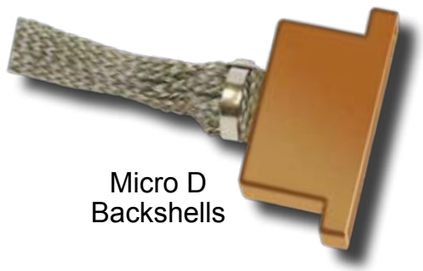
Strain Relief Backshells



Convoluted Tubing and Fittings

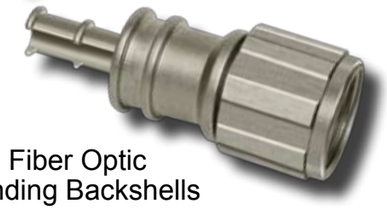
Swing-Arm Strain Relief Clamps

Protective Covers



Micro D Backshells

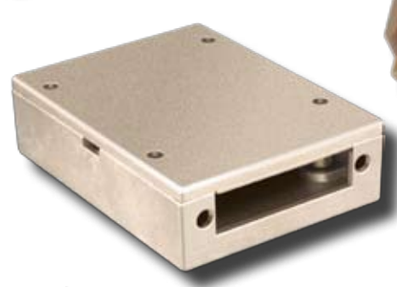
AmberStrand® Braided Shielding



Fiber Optic Banding Backshells

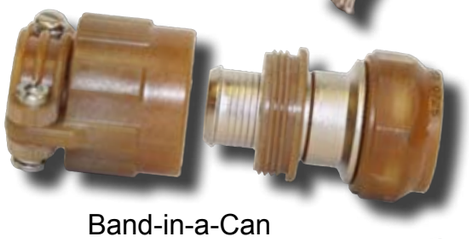
Swing-Arm with Shield Sock

Overmolded Cable Adapters

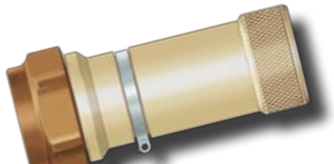


EMI/RFI Enclosures

Ultra Low-Profile Banding Backshell



Band-in-a-Can Backshells



Shorting Cap Backshells

Ultra-Light Banding Strain Relief

Non-Environmental Backshell

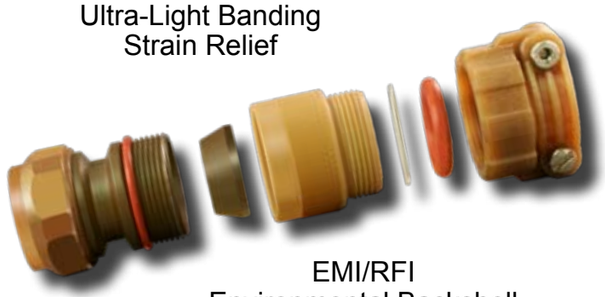
Feed-Thru Fittings

EMI Lamp Base Thread Backshells

Dual Banding Backshells

E-Nuts

Knit-Braid EMI/RFI Backshells

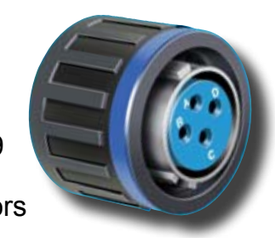


EMI/RFI Environmental Backshell

Low Profile Strain-Relief

Cone and Ring Style EMI/RFI Backshells

Multi-Port Junction Boxes



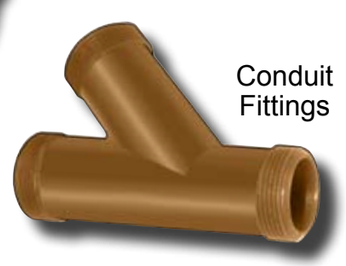
D38999 Type Connectors

Qwik-Ty Strain Relief

Environmental Backshells

Strain Relief Clamps

EMI/RFI Shield Socks



Conduit Fittings

Split Rings

Extender Backshells

Fiber Optic Backshells

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Composite Thermoplastic Connectors and Accessories

Product Selection Guide and Technical Information: Intro Pages 2-36

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Glenair Composite Thermoplastic Connector and Accessory
Product Selection Guide

310 - Shrink Boot/Overmold Adapter

Glenair composite shrink boot adapters are designed for use in open-wire bundle cable assemblies that require the splash-proof environmental protection and light-duty strain-relief provided by lipped-type shrink boots such as Glenair 770-001 heat moldable shrink boots. These simple adapters can also be used to accommodate overmolding compounds typically applied to fully-environmental, jacketed cables. The adapters are attached to standard circular connectors and can be plated to provide an EMC ground path. Our composite shrink-boot and overmold adapters are a perfect, light-weight choice for high-performance cable assemblies. The two styles are available for most circular connectors.

Description	Part Number	Page
Shrink Boot Adapter with Rotatable Coupling Nut ; Straight	310-045	A-2
Shrink Boot Adapter with Direct Coupling - Straight	310-017	A-4

311 - EMI/RFI Lamp Base Thread Backshell

A sleek, compact shield termination backshell assembly that utilizes a simple lamp-base thread device to capture conductive cable shielding; yielding both strain relief and EMI/RFI protection. Straight and 90° shell styles are available. This simple, light-weight backshell may optionally be equipped with a shrink-boot for a modicum of environmental protection.

Description	Part Number	Page
Lamp Base EMI/RFI Shield Termination Backshell - Straight and 90°	311-034	A-5
Lamp Base EMI/RFI Shield Termination Backshell with Shrink Boot Porch - Straight, 45° and 90°	311-019	A-6
Lamp Base EMI/RFI Environmental Adapter with Shrink Boot Porch and Direct Coupling - Straight	311-063	A-8

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319 - EMI/RFI Shield Sock Assemblies

Glenair shield sock assemblies offer an alternative strain relief and shield termination solution for shielded, jacketed cable assemblies. Two basic styles are available; with fixed position or user-adjustable entry angles. Made from high-temperature composite thermoplastic, these rugged assemblies offer easy installation, long term durability, and outstanding weight and cost reduction. The products are equipped with reliable "click-style" self-locking rotatable coupling nuts. Available shielding includes standard metal braid as well as light-weight metal clad composite shielding. The shield sock's braid is terminated directly to the cables own braid with *BAND-IT*® bands and tools.

320 - Extender Backshells

These simple composite backshells–when used with connectors with crimp and poke contact termination–provide extensions between the connector and strain relief, offering the convenience of additional space to accommodate service loops, re-terminations, diodes, resistors and other uses.

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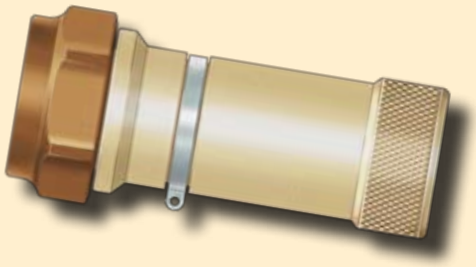

347 - Shorting Cap Backshells

Composite Shorting Cap Backshells provide a complete enclosure for the rear of panel-mounted receptacle connectors, and are also adaptable to the fabrication of shorting plugs, special purpose test connectors, or installation of discrete components. Shorting cap backshells also provide an ideal enclosure for fiber optic loop backs used in circuit testing.

Description	Part Number	Page
Shorting Cap Backshell with Lanyard Attachment and Self Locking Rotatable Coupling	347-129	A-28

360 - Non-Environmental Backshells with Strain Relief

Glenair provides straight and angled composite backshells with strain reliefs—including standard cable clamps and Glenair's patented Qwik-Clamp—for light and general duty applications where environmental protection of cable-to-connector terminations is not required.

Description	Part Number	Page
Series 360 Non-Environmental Backshell Assembly Instructions		A-30
Non-Environmental Backshell with Self Locking Rotatable Coupling and Strain Relief - Straight and 90°	360-014	A-32
Non-Environmental Backshell with Self Locking Rotatable Coupling and Qwik-Clamp - Straight, 45° and 90°	360-015	A-34

370 - Environmental Backshell with Strain Relief

Glenair composite environmental backshells with strain-relief are perfectly suited for the broad range of interconnect cable applications that require reduced weight and serious corrosion protection. Glenair makes both straight and angled versions for all popular connector series and sizes. Two basic versions are available: a standard saddle-clamp version and our patented Qwik-Clamp.

Description	Part Number	Page
Series 370 Environmental Backshell Assembly Instructions		A-36
Cable Sealing and Environmental Backshell with Self Locking Rotatable Coupling and Strain Relief Clamp or Nut - Straight or 90°	370-016	A-38
Cable Sealing and Environmental Backshell with Self Locking Rotatable Coupling and Qwik-Clamp or Nut - Straight or 90°	370-017	A-40

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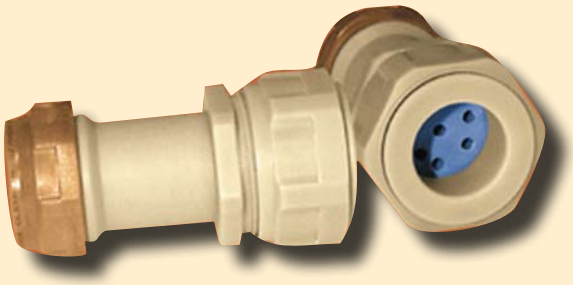
377 - Fiber Optic Backshells

Glenair composite fiber optic backshells provide protection and alignment of individual optical fiber media in open-bundle and jacketed cable assemblies. Straight, and 90° angled fittings are available for added convenience in fiber cable routing. The 90° angled versions utilize a smooth, sweeping profile to eliminate micro-bending of fiber media.



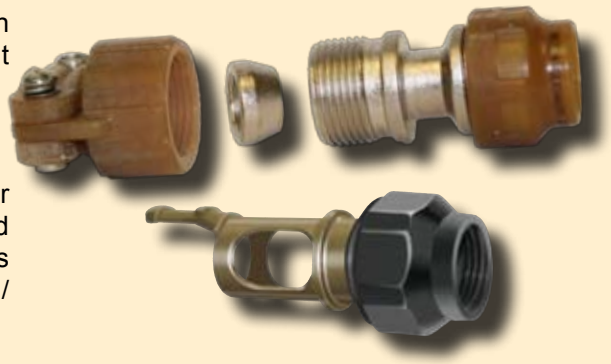
Description	Part Number	Page
Fiber Optic Strain Relief Backshell with Self Locking Rotatable Coupling and Fiber Alignment Grommet and Optional Banding adapter or Nut	377-040	A-42

380 - EMI/RFI Non-Environmental Backshells

Glenair's composite EMI/RFI Shield Termination Backshell family includes a range of reliable and convenient termination methods, including:

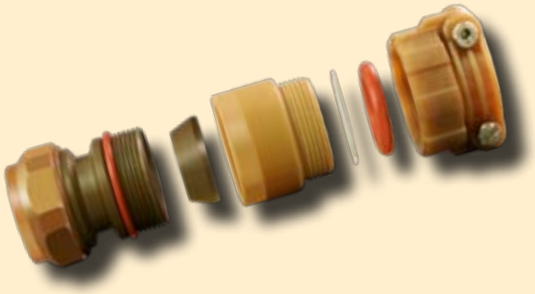
- Cone and Ring Style backshells, and
- Ultra lightweight "Knit Braid" designs

Each style offers a repairable termination method ideal for field service of damaged connector contacts in both jacketed and open-wire bundle cable assemblies. The 380 series is non-environmental. For cable sealing backshells with EMI/RFI shield termination see Series 390.



Description	Part Number	Page
Series 380 EMI/RFI Non-Env. Backshell Assembly Instructions (Type D)		A-44
Series 380 EMI/RFI Non-Env. Backshell Assembly Instructions (Type E)		A-56
Cone and Ring Style Shield Termination Backshell with Self Locking Coupling Nut and Strain Relief - Straight and 90°	380-099	A-46
Cone and Ring Style EMI/RFI Backshell with Self Locking Rotatable Coupling and Qwik-Clamp - Straight, 45° and 90°	380-100	A-48
Knit Braid Style EMI/RFI Shield Termination Backshell with Qwik-Ty and Rotatable Coupling	380-130	A-52
Knit Braid Style EMI/RFI Shield Termination Backshell with Clamp and Rotatable Coupling	380-131	A-53
Knit Braid Style EMI/RFI O-Ring Equipped Shield Termination Backshell with Shrink Boot Adapter and Rotatable Coupling	380-132	A-54
EMI/RFI Nickel Plated Copper Knit Braid Material	107-044	A-55
Multi Shield Cone and Ring Style EMI/RFI Shield Termination Backshell with Self Locking Rotatable Coupling and Strain Relief	387-083	A-58

390 - EMI/RFI Environmental Backshells



Glenair's composite Series 390 backshells utilize standard cone and ring style shield termination to deliver 360° shield/screen grounding with low DC resistance across the termination area. Cable sealing O-rings provide full-immersion protection to 6 ft. The lightweight, corrosion proof backshell is ideally suited to general duty use in both military and commercial interconnect cable applications. Glenair 390 series backshells are fully tooled for all popular connector series and sizes.

Description	Part Number	Page
Series 390 EMI/RFI Environmental Backshell Assembly Instructions		A-60
Environmental Cone and Ring Style EMI/RFI Shield Termination Backshell with Self Locking Rotatable Coupling and Strain Relief - Straight, 45° and 90°	390-052	A-62

440 - EMI/RFI Banding Backshells

Banding is by far the most popular and reliable method of EMI shield termination used today in high-performance cable assemblies. Glenair supplies composite banding backshells in straight, 45° and 90° entry angles, with accommodation for either standard or lighter weight and duty micro *BAND-IT*® bands. Various configurations are available—all made from lightweight composite thermoplastic.

Description	Part Number	Page
Banding Backshell Assembly Instructions		A-66
Ultra Lightweight Banding Strain Relief with Rotatable Coupling	440-087	A-64
EMI/RFI Micro-Banding Backshell with Qwik-Ty Strain Relief, Shrink Boot Groove and Self Locking Rotatable Coupling - Straight, 45° and Ultra Low Profile 90°	440-143	A-68
EMI/RFI Micro-Banding Backshell with Shrink Boot Groove and Self Locking Rotatable Coupling - Straight, 45° and Ultra Low Profile 90°	440-144	A-70
EMI/RFI Banding Backshell with Shrink Boot Groove and Self Locking Rotatable Coupling - Standard Profile Straight, 45° and 90°	447-325	A-72
EMI/RFI Micro-Banding Backshell with Shrink Boot Groove and Self Locking Rotatable Coupling - Standard Profile Straight, 45° and 90°	447-326	A-74
EMI/RFI Banding Backshell with Qwik-Ty Strain Relief and Shrink Boot Groove - Standard Profile Straight and 90°	447-327	A-76
EMI/RFI Dual Banding Backshell with Self Locking Rotatable Coupling - Straight and 90°	447-331	A-84
EMI/RFI Banding Backshell with Strain Relief - Standard Profile Straight and 90°	447-711	A-87

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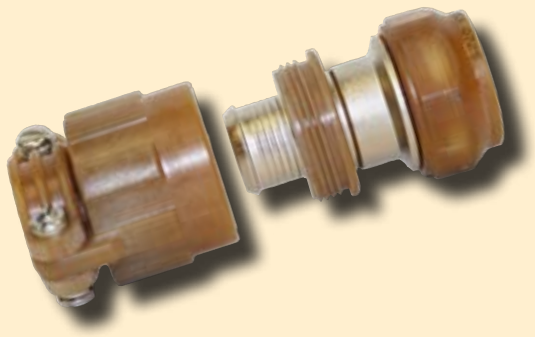
447 - EMI/RFI Band-in-a-Can

The Glenair Series 447 Band-in-a-Can backshell combines the convenience of banding with the versatility of a standard saddle bar strain-relief. The 447 series is available in both single and dual banding porch designs, as well as an optional Qwik-Clamp strain-relief version. The Band-in-a-Can is a perfect solution for standard shielded and jacketed cable assemblies. The selectively plated product offers 360° shield grounding without the wear-and-tear problems usually associated with plated interconnect products.



Description	Part Number	Page
EMI/RFI Band-in-a-Can Backshell with Strain Relief Clamp - Standard Profile Straight and 90°	447-328	A-78
EMI/RFI Environmental Band-in-a-Can Backshell with Strain Relief Clamp or Qwik-Clamp – Standard Profile Straight and 90°	447-329	A-80
EMI/RFI Non-Environmental Band-in-a-Can Backshell with Qwik-Clamp and Self-Locking Rotatable Coupling – Standard Profile Straight and 90°	447-330	A-82
EMI/RFI Low Profile Micro Band-in-a-Can Backshell with Strain Relief Clamp	447-657	A-86

450 - Qwik-Ty Strain Reliefs

Glenair's Qwik-Ty® strain reliefs offer a unique method of providing strain relief to open wire bundles equipped with circular connectors. The Qwik-Ty® comes in straight, 45° and 90° configurations, and features a low profile, reduced weight and simple installation. Assembly with plastic tie straps or lacing tape is quick and secure.

Description	Part Number	Page
Qwik-Ty Strain Relief with Self Locking Rotatable Coupling - Straight, 45° and Low Profile 90°	450-029	A-88
Qwik-Ty Strain Relief with Ground Lug and Self Locking Rotatable Coupling - Straight, 45° and Low Profile 90°	450-030	A-89
Ultra Lightweight Qwik-Ty Strain Relief with Free Rotating Coupling - Straight and Low Profile 90°	450-034	A-90

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550 - EMI/RFI Rectangular Backshells

Glenair's line of rectangular backshells is the largest in the industry. The short list of composite thermoplastic versions shown here provide EMI protection for rectangular connectors used in harsh or severe operating environments. Our D-Subminiature and Micro-D versions are both available in top, side and 45° entry configurations, in a full range of conductive and non-conductive finishes.

Description	Part Number	Page
EMI/RFI Banding Backshell for MIL-DTL-83513 Micro-D Connectors - Top, 45° and Side Entry	507-088	A-92
EMI/RFI Banding Backshell for MIL-DTL-24308 D-Subminiature Connectors - Top, Side and End Entry	557-186	A-94

610 - "E" Nuts

"E" Nuts are typically used on the back of connectors with no EMI/RFI, environmental or strain-relief requirement. But since many OEMs require that all connectors be equipped with a backshell, the "E" nut fills the threads on the back of the connector and compresses the sealing grommet—all without the added bulk or weight of a standard backshell. Composite "E" Nuts are available in both plated and unplated designs for all popular connector series and sizes.

Description	Part Number	Page
"E" Nut Backshell	610-014	A-96

620 - Strain Relief Clamps

Glenair offers a comprehensive selection of composite strain reliefs for circular connectors. Straight, 45° and 90° styles are available to fit most common connector types. Saddle clamps tighten around the cable assembly to ensure it remains in place– even in the face of potentially damaging tugs or twists.

Description	Part Number	Page
Composite Saddle Clamp Assembly Procedure		A-20
Strain Relief Clamp with Self-Locking Rotatable Coupling - Straight, 45° and 90°	620-042	A-97
Swing Arm Strain Relief with Self Locking Rotatable Coupling Nut	627-122	A-98
Swing-Arm Strain Relief with Keyed Banding Insert	627-142	A-100

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630 - Thru-Box, Panel and Bulkhead Fittings

Glenair manufactures a full-spectrum line of feed-through fittings for routing wire and cable into and out of switchgear and other types of junction boxes. The composite fittings in this section are ideal for thru-panel and bulkhead applications in harsh environmental settings.

Description	Part Number	Page
EMI/RFI Environmental Thru-Box, Panel and Bulkhead Banding Adapter - Front or Rear Mount	630-030	E-36
Universal Environmental Thru-Box, Panel and Bulkhead Universal Adapter	630-031	E-38
EMI/RFI Environmental Box Feedthru Cable / Conduit Adapter	637-094	E-40

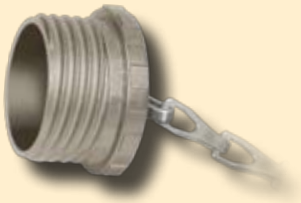
770 - Shrink Boots

Glenair offers a standard range of adhesive and non-adhesive heat moldable shrink boots for use with our metal and composite backshells. Shrink boots provide strain relief and environmental protection in non-jacketed cable and/or conduit assemblies.

Description	Part Number	Page
Heat Moldable Shrink Boot - Straight and 90°	770-001	A-102

660 - Protective Covers and Stowage Receptacles

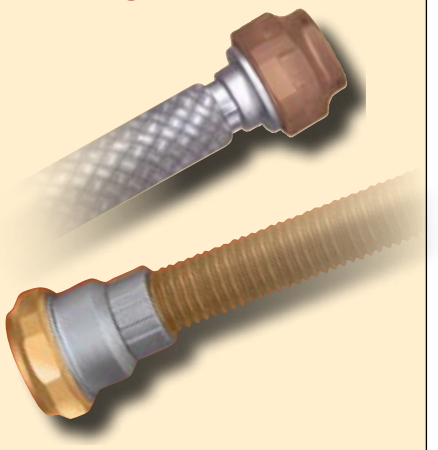
Protective covers are a critical component in interconnect systems where maintenance and test cycles can lead to damage of exposed connectors. Conductive and non-conductive plating options are available to match the conductivity and impedance requirements of the application and the connector.



Description	Part Number	Page
MIL-DTL-5015 Plug and Receptacle Covers	660-045 / 046	B-3
MIL-DTL-28840 Plug and Receptacle Covers	660-047 / 048	B-4
MIL-DTL-38999 Series III Plug and Receptacle Covers	660-049 / 050	B-5
Glenair Series 190-015 / 016 Plug and Receptacle Covers	660-077 / 078	B-6
MIL-DTL-83723 Series III Plug and Receptacle Covers	660-051 / 052	B-7
MIL-DTL-38999 Series III Dummy Stowage Receptacle	650-025	B-8
MIL-DTL-38999 Series III Receptacle Cover with Anti-Decoupling Device	667-117	B-9
MIL-DTL-5015 Receptacle Cover with Anti-Decoupling Device	667-118	B-10
MIL-DTL-38999 Series III Receptacle Cover with Anti-Rotation Device	667-079	B-11

740 - Convoluted Tubing Wire Protection Systems

Glenair's supplies a number of lightweight, flexible wire circuit protection solutions made from high-temperature polymer plastics. These polymer convoluted tubing products provide extremely rugged, lightweight enclosures for wiring systems deployed in harsh application environments. The crush-resistant materials offer exceptional flexibility and abrasion resistance, and can be combined with Glenair composite end-fittings, transition-fittings, EMI braiding and jacketing to meet almost any installation requirement. In addition to a complete range of DuPont™ Teflon® tubing types (PTFE, FEP, ETFE and so on), Glenair also offers a low-outgassing halogen-free polymer called PEEK that far out performs other plastic tubing formulas in its strength to weight ratio and has a V-O flammability rating down to 0.057 inches without the use of additives.



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103 - EMI/RFI Braided Shielding and Banding Split-Rings

For many applications, the cable shield is the most important element in controlling EMI. Unfortunately, metal shielding—especially when applied in multiple layers—can be extremely heavy. The opportunity to provide conductive EMI shielding at a fraction of the weight of metal is the principal advantage of composite thermoplastic EMI/RFI shielding*. Glenair is the industry leader in the design and manufacture of these unique screening products, supplied both in 100% composite and hybrid metal/plastic configurations.

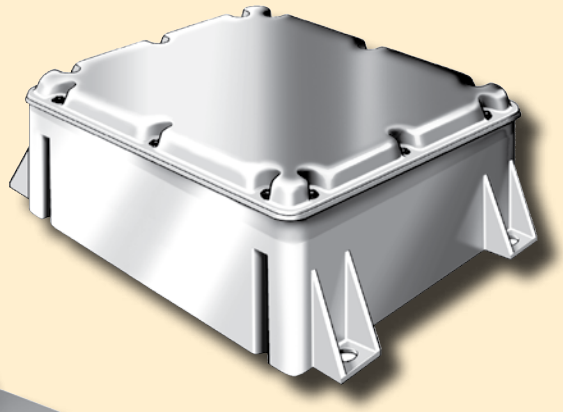
As is commonly used in conjunction with composite shield socks, the banding split ring is a useful accessory that protects wire conductors from damage in shield-to-shield terminations.

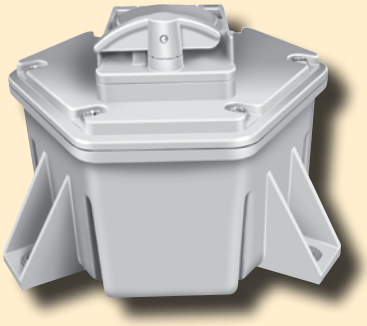
Description	Part Number	Page
Composite Light Weight Metal-Clad EMI/RFI Braided Shielding (100%)	103-026	D-2
75%/25% Blended Composite/Metal EMI/RFI Braided Shielding	103-027	D-3
PEEK Tubular Braid (Black) for Series 74 Convoluted Tubing	102-051	D-4
AS85049 Composite Banding Split-Ring	687-749	D-5

*Glenair's composite light weight metal-clad EMI/RFI braiding is made from AmberStrand®

140 - Composite EMI/RFI Junction Boxes

Glenair's lightweight/high-strength "CostSaver" Composite EMI/RFI Junction Boxes are ideally suited for use in harsh environments, where resistance to electromagnetic interference, corrosive fluids, high temperatures, shock and vibration are critical requirements. The boxes are designed to meet the shock and vibration requirements of MIL-S-901D and MIL-STD-167SHIPS. Box materials also meet stringent EMI/RFI/HIRF and indirect lightning strike performance specifications.





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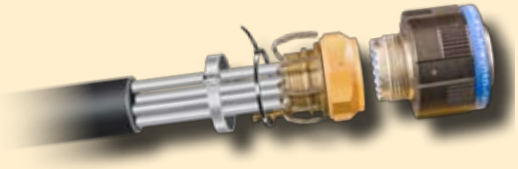
MIL-DTL-38999 Series III Type Environmental Connectors

Glenair's composite MIL-DTL-38999 Series III Type Environmental Connector Series is built to ensure robust, durable performance. Connector polarization keys and keyways are manufactured to extremely tight tolerances, facilitating reliable mating and minimizing mating cycle wear. Composite shell bodies offer reduced weight, excellent environmental performance and reliable resistance to vibration and shock. Resilient elastomer inserts and heat-treated berryllium copper contact retention clips provide trouble-free crimp contact insertion and removal. Insert arrangements are IAW MIL-STD-1560, or appropriate sub-sets depending on intended application. Consult factory for available insert arrangements.

Description	Part Number	Page
MIL-DTL-38999 Series III Type Wall Mount Receptacle	233-105-00, D0, T0	F-10
MIL-DTL-38999 Series III Type Jam Nut Receptacle	233-105-07	F-12
MIL-DTL-38999 Series III Type In-Line Receptacle	233-105-05	F-14
MIL-DTL-38999 Series III Type Plug	233-105-G6	F-16

Composite Connector Accessory Assembly Procedures

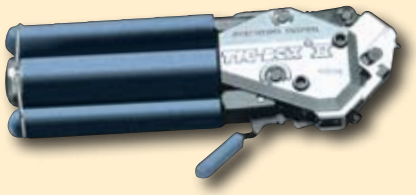


Glanair assembly procedures are provided for shield termination backshells and other complex assemblies. Below is a list of the assembly procedures in this book. Please consult factory for additional assistance.

Assembly Instructions	Page
Composite Thermoplastic Shield Sock Assembly Procedure	A-10
Series 360 Non-Environmental Backshell Assembly Instructions	A-30
Series 370 Environmental Backshell Assembly Instructions	A-36
Series 380 EMI/RFI Non-Env. Backshell Assembly Instructions (Type D)	A-44
Series 380 EMI/RFI Non-Env. Backshell Assembly Instructions (Type E)	A-56
Series 390 EMI/RFI Environmental Backshell Assembly Instructions	A-60
Banding Backshell Assembly Instructions	A-66
Composite Saddle Clamp Assembly Procedure	A-20
Composite Accessory-to-Connector Assembly Instructions	G-3
Band-It® Shield Termination Assembly Procedure	G-11

Tools and Tool Accessories

Glenair addresses interconnect system assembly requirements with a variety of military standard and specialized connector-to-backshell assembly tools, braided shielding banding tools and accessories. Our tool line for composite components includes backshell-to-connector assembly wrenches specifically designed to fit composite coupling nut dimensions.



Description	Part Number	Page
Soft Jaw Pliers	TG69	G-5
Aluminum Hex-Coupling Wrench for Composite Backshells	600-091	G-6
Stainless Steel Hex-Coupling Wrench for Composite Backshells	600-157	G-7
Backshell Assembly Strap Wrench with 3/8" Square Drive	TG70	G-8
Hand-Held Digital Torque Wrench with Dual 3/8" Drives	600-161	G-9
Bench Stand for 600-161 Digital Torque Wrench	600-162	
Large Broad Blade Utility Shears	600-164	G-10
Hand Banding Tool for Standard Bands	600-058	G-12
Hand Banding Tool for Micro Bands	600-061	
Standard Clamping Band	600-052	G-13
Standard Extended-Length Clamping Band	600-090	
Micro Clamping Band	600-057	
Micro Extended-Length Clamping Band	600-083	
Cut-Off Blade for Standard Hand Banding Tool	600-056	G-14
Cutter Knife for Standard Hand Banding Tool	600-062	
Cut-Off Blade for Micro Banding Tool	600-060	
Cutter Knife for Micro Banding Tool	600-082	
Calibration Key for Standard and Micro Hand Banding Tools	600-055	G-15
Tension Gauge for Standard Hand Banding Tools	600-072-1	
Tension Gauge for Micro Hand Banding Tools	600-086-1	

Glenair Composite Connector and Accessory Glass Fiber Additives

Glass-filled composite thermoplastic resins in pellet form, ready for use in injection molding applications.

Generally, when we speak of "composites," we refer to materials containing fibers, primarily glass, impregnated within a plastic resin or "matrix". This combination produces strong, lightweight, corrosion-resistant and dimensionally stable materials. Such materials also provide design flexibility and high dielectric strength.

Glass fiber and resin complement each other well. Just as a metallurgist might combine tin and copper to produce bronze—a material which is much stronger than either base metal by itself— combining glass fiber with a resin matrix results in a material that is more useful than either of its constituent components is on its own.

Certain plastics are extremely strong yet subject to cracking or other forms of stress-related damage. When the plastic matrix is augmented with glass fibers, a wide range of performance benchmarks can be achieved including improved wear-resistance, crush-resistance, and dimensional stability.

Glenair composite interconnect components are principally manufactured from 30% glass fiber polyetherimide (PEI), an amorphous thermoplastic with outstanding heat and chemical resistance and high strength. At room temperature the 30% glass filled PEI exhibits strength far beyond that of most engineering thermoplastics, with a tensile strength yield of over 15,000 psi. The PEI material meets the most stringent outgassing and flammability requirements.

Composite Thermoplastic Vs. Common Metal Materials

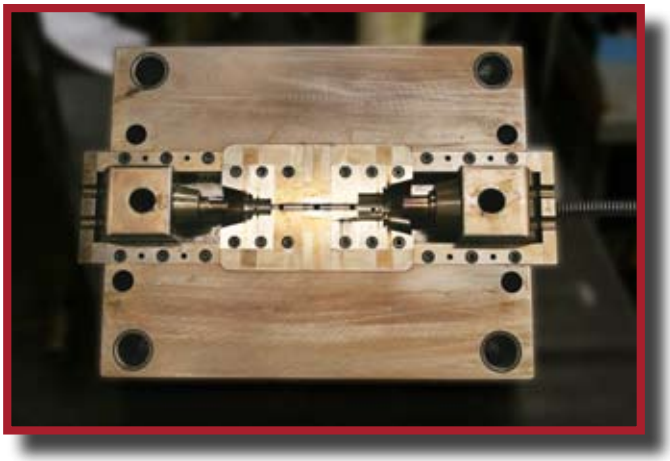
Material	Specific Gravity	Density (lbs. Inch^3)	Salt Spray
Composite	**1.27 - 1.51**	**.055**	**2000+ Hrs**
Aluminum	**2.55 - 2.80**	**.098**	**48-1000 Hrs**
Titanium	**4.51 - 4.62**	**.162**	**500-1000 Hrs**
Stainless Steel	**7.70 - 7.73**	**.284**	**500-1000 Hrs**
Brass	**8.40 - 8.70**	**.305**	**500-1000 Hrs**

Glenair Composite Connector and Accessory Production Capabilities

Glenair is the recognized leader in composite thermoplastic research and development for the interconnect accessory industry. In fact, no one else has tooled even a small fraction of the composite thermoplastic accessories available today from Glenair. The product line includes circular and rectangular connectors and accessories, cable junction boxes, conduit, conduit fittings, protective covers, shielding, shielding support rings, and more. It is an ongoing goal at Glenair, largely achieved at this point, to be able to offer equivalent function composite thermoplastic interconnect components for the complete range of interconnect products we produce in metal.

Glenair composite components are produced in injection molded and, in certain cases, machined versions ideally suited for use in harsh environments where resistance to high temperatures, outgassing, corrosive fluids, fire, and shock and vibration is required. Glenair composites are ASTM E595 space rated, and are qualified to the shock, vibration, thread strength and bend moment requirements of MIL-DTL-38999 and SAE AS85049. The materials also meet stringent EMI/RFI/HIRF and indirect lightning strike performance specifications.

Glenair has the largest and most experienced staff of composite engineers and manufacturing experts in the interconnect accessory industry. Their combined expertise insures Glenair composite products mate correctly with both metal and composite connectors and meet the customer's most stringent performance requirements. All Glenair designs provide a dimensionally stable and cadmium-free alternative to plated aluminum and brass.



Glenair composite material options include Ultem® (PEI), Amodel® (PPA), Ryton® (PPS), Torlon® (PAI), PEEK, Siltem and LCP. Base materials can be augmented with conductive and non-conductive additives and reinforcing fibers to meet specific functional specifications. As mentioned, each composite material has its own specific structural properties. The following is a brief introduction to the most common materials used by Glenair:

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Glenair Composite Connector and Accessory Production Capabilities

Ultem® (PEI) is an amorphous thermoplastic available in extruded bars for machining and pellets for injection molding. It combines high performance with good processing characteristics and offers high heat resistance, high strength

modulus and broad chemical resistance. Ultem 2300 is a 30% glass filled thermoplastic which displays excellent property retention and resistance to environmental stress. It can be further reinforced with conductive fibers, or plated, for EMI resistance. Ultem performs in operating environments up to 378° F (192° C) long term and 410° F (210° C) short term. Ultem meets ASTME595 outgassing, 14 CFR Part 25 flammability, and zero halogen outgassing requirements.

Glenair stocks an abundant supply of the composite materials used in the fabrication of our parts.

Ryton® (PPS) is a high temperature, injection molded material. It has good mechanical properties and excellent chemical resistance at elevated temperatures. Different grades are available including glass filled and glass/mineral filled versions. Ryton R4-XT is a 40 percent glass filled version engineered for improved knit-weld line characteristics. As a semi-crystalline material, Ryton exhibits excellent resistance to prolonged exposure to high temperatures, up to 500° F (260° C). Ryton also provides outstanding resistance to a broad spectrum of aggressive chemicals and has very stable dielectric and insulating properties. Ryton meets ASTME595 outgassing requirements and UL94 flammability tests.

Glenair's G-FLEX polymer (polyetherimide-siloxane) is a high-temperature material used primarily to produce annular convoluted tubing. The material is offered in a broad range of operating temperatures, has exceptional flexibility and good crush resistance. In certain applications, G-FLEX is a suitable alternative to costlier halogen-free composite polymers such as PEEK (polyetheretherketone).PEEK is a semi-crystalline thermoplastic that operates at extremely high temperatures—500°F (260° C) long-term and 600°F (315° C) short term. An extrudable material, PEEK offers one of the lightest strength to weight ratios available in a composite.

Cost Comparison and Temperature Resistance

For many people, “plastic” means “cheap and breakable.” But when engineers search for new ways to enhance weight savings, corrosion resistance, shock and vibration dampening and stealth they immediately turn to plastic—the only alternative material capable of meeting, and beating, the established performance levels of aluminum, brass, titanium and steel.

The name “plastic” refers to the ability to form or shape a material, or to the moldability a material adopts under forces such as pressure or heat. Engineers often use the term “polymer” when referring to plastic materials, because it more clearly describes how many (poly) chemical units (mers) form up in complex chains to create modern plastic resins. “Thermoplastics” are polymer materials that melt to a liquid when heated and form into a hard, dimensionally stable shape when cooled.

Thermoplastic polymers are created by subjecting various chemical and petroleum-based ingredients to heat and pressure in sealed vessels. Specific chemical additives control how the polymer is formed and contribute to its performance in such areas as surface hardness and flame resistance. The process of mixing base materials with chemical additives to create specific types of plastic resins is called “polymerization.” The resulting plastic materials can be classified in various ways—by chemical or physical structure, by strength or thermal performance and by optical or electrical properties. Thermal properties are extremely important when selecting plastic materials for use in high-performance applications. Composite glass transition temperature (the point at which the heated material softens) will dictate whether or not the plastic is suitable for use in high-heat applications such as adjacent to an engine or other heat source. But other properties, such as its specific gravity, hardness, refractive index, dielectric strength, conductivity, chemical resistance, UV and flame resistance are also critical in deciding which recipe of resins, fibers and additives will be selected for a particular project.

The glass transition temperature, or the point at which the heated resin will soften, varies from material to material. Extremely high-heat applications, such as engine sensors, are generally considered to be ill-suited for composites.

Temperature resistance can be measured in a variety of ways: melt temperature, heat deflection temperature, glass transition temperature, and continuous use temperature. The resins that offer the highest capabilities in each of these categories are often the most expensive, but typically offer the lowest lifetime cost because of enhanced durability and strength. Two of the top thermal performers, Polyetheretherketone (PEEK) and high-temperature ETFE, are high cost materials, but exceptional performers over the long run.

Additives can be used to increase flame retardency, to improve lubricity or, in the case of pigments, simply to change the color of the final product. Again, material costs can rise with the addition of chemical compounds that contribute to improved performance. In terms of cost, thermo-plastic resins can be arranged into three basic categories:

- Low cost/commodity resins with large volume market costs of less than $1.50/lb
- Medium cost/engineering resins that fall between $1.50-$3.00/lb
- High cost/high temperature resistant resins that usually cost above $3.00/lb.

Re-Designing Interconnect Systems for Composite Thermoplastics

Interconnect products made of composite materials offer significant advantages over steel or aluminum. They're lighter. They don't rust. They don't loosen under vibration. They can hide from radar. Yet the ability to design composite components that take advantage of these properties while still meeting form, fit and function requirements is no simple task.

Connector accessories, no matter the material, must thread onto the back of connectors. Intermatability with other components, whether composite or metal, is critical. Composite component design is further complicated due to the unique strengths and weakness of the material. Abrupt changes in wall thicknesses, for example, can lead to stress problems in both manufacture and use. Sharp, un-radiused angles can create stress and cause cracking. The length, shape, orientation and distribution of reinforcing fibers is also a critical concern, as is the impact of other additives, such as colorizers and flame retardants, on the behavior of the material during manufacture and use.

Interconnect systems designers continue to specify composites, despite the complications of the design and manufacturing process. The weight savings, corrosion resistance and other significant advantages of composites represent real, out-of pocket savings in fuel consumption and lifetime system maintenance for a broad range of air, sea and space applications.

Special Applications of Engineering Plastics: Flexible Tubing

Most of the products in this catalog are made from glass-filled thermoplastic resins, such as PEI (polyetherimide). These Glenair interconnect components—connectors, junction boxes, backshells and so on—are produced in an injection molding process that results in products that are known for their toughness, damage-resistance, dimensional stability and strength. But other formulas of engineering plastics, such as ETFE (ethylene tetrafluorethylene), are also widely applied by Glenair to produce a very different class of products: flexible convoluted tubing.

Unlike glass-filled thermoplastics that produce rigid parts, ETFE, FEP, and other high-temperature plastics used by Glenair in tubing fabrication produce products that are known for their folding endurance, or the number of times the material can be bent or flexed before experiencing failure. Used in wire-protection applications where a rigid, jacketed cable would experience rapid failure, flexible plastic tubing delivers outstanding performance and durability.

Glenair specializes in the manufacture of ruggedized plastic tubing for shipboard, aircraft and ground applications, and offers the world's broadest range of environmental, mechanical and EMI hardened solutions. Our recently expanded convoluted tubing and conduit manufacturing facility in Glendale is a state-of-the-art plant with every step in the tubing extrusion and finishing process centralized under one roof.

Glenair Composite Connector and Accessory Standard Materials and Finishes

The following standard materials are used for the majority of Glenair's composite products. However, components are not limited to those listed but are representative of the elements used in Glenair's composite products.

Component	Material	Specification
Bodies, clamps, Saddles, coupling nuts, protective covers, etc.	Composite	AIR 4567, AS85049 ASTM D 5205
Hardware: Such as screws, washers, rivets, wire rope, sash chain, band straps, etc.	Corrosion Resisting Steel	QQ-S-763 (300 Series)
Elastomeric seals: Such as o-rings, cable jacket seals, grommets, etc.	Silicone or Fluorosilicone	ZZ-R-765 or MIL-R-25988
Anti-friction and thrust washers	Teflon	TFE

Standard Finishes

FINISH DETAILS		
SYM	**MATERIAL**	**FINISH**
XO	Composite Thermoplastic	No Plating, Natural
XB		No Plating, Black
XZN		Conductive, Zinc Nickel, Black
XM		Conductive, Electroless Nickel
XMT		Conductive, Ni-PTFE *1000 Hour Grey™*
XW		Conductive, Cadmium O.D. Over Electroless Nickel

Locking Compound

Glenair recommends
ND VIBRA-TITE® Formula 3
Thread Locking Compound
for customers who choose to lock or seal fasteners used on composite products.

Available from ND Industries (www.ndindustries.com), this product is non-reactive to composite resins

FINISH CODE CROSS REFERENCE		
Glenair Finish	**MIL-DTL-38999**	**AS85049**
XM	**M**	**M**
XW	**J**	**J**
XMT	**T**	**X**

1000 Hour Grey™ Ni-PTFE Nickel Fluorocarbon Polymer

The MIL-DTL-38999 Rev L detail specification lists Nickel Fluorocarbon Polymer as a qualified Cadmium free plating alternative. This RoHS compliant plating formula is now available on composite interconnect products from Glenair and offers the following benefits in harsh-environment applications:

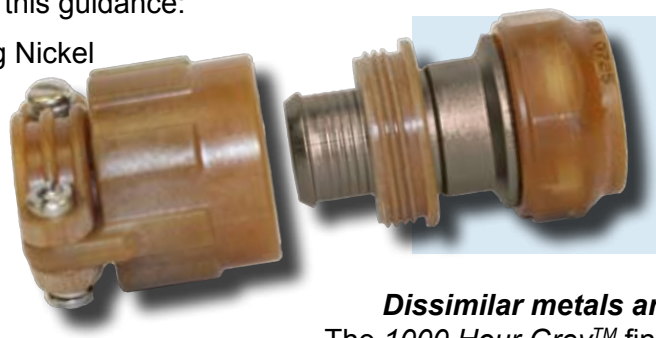
- 2000+ hour salt spray
- Cadmium free
- Outstanding mating lubricity
- Hexavalent Chromium free
- 500+ mating cycles
- Non-Magnetic

RoHS Compliant Plating Option for Composite Thermoplastic Connectors and Accessories

The 30 May 2008 MIL-DTL-38999 Rev L specification provides guidance on the use of alternative parts with less hazardous or nonhazardous materials. In this regard, the specification provides for a number of alternative plating materials. Users are directed to select the least hazardous plating material that meets the form, fit and function requirements of their application.

Glenair would like to draw our customer's attention to one of the finish options from this specification that conforms to this guidance:

T – Environment resisting Nickel fluorocarbon polymer. Conductive Nickel with fluorocarbon polymer additives over a suitable underplate to withstand 500 hours of dynamic salt spray testing.



Glenair Nickel-PTFE 1,000 Hour Grey™ RoHS Compliant Plating is Now Available for All Composite Connector and Accessory Products.

This MIL-DTL-38999L "T" plating solution is cadmium and hexavalent chromium free, which allows it to be defined as RoHS compliant. NOTE: as of this printing the SAE AS85049 committee has not yet defined plating codes for this finish.

Glenair has developed its own Ni-PTFE surface finish that meets all the D38999 requirements but radically outperforms standard nickel fluorocarbon polymer flnishes in the most important areas including an amazing 2000 hours dynamic salt spray resistance when plated on composite parts.

This Glenair nickel fluorocarbon polymer plating has been assigned the **XMT** code in the plating tables in this composite catalog. Here are just some of the key performance attributes:

Temperature Resistance: Glenair's **XMT** Ni-PTFE ***1000 Hour Grey™*** finish is rated from -65°C to +175°C.

Plating adhesion: When tested as specified in 4.5.5, there shall be no blistering, peeling, flaking or separation of plating or other damage detrimental to the operation of the part.

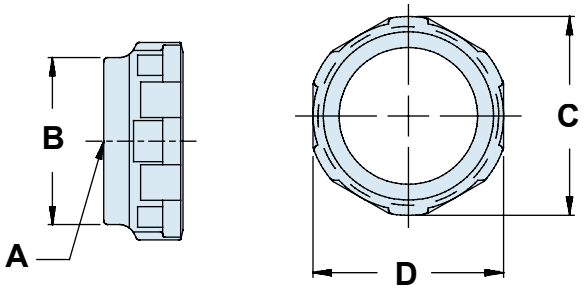
Dissimilar metals and compatible couples: The *1000 Hour Grey™* finish satisfies prohibitions against dissimilar metal coupling as specified in MIL-STD-889.

Shell-to-shell conductivity (millivolts): The **XMT** finish is rated at 2.5 millivolt drop potential.

Sulfur Dioxide Resistance: The **XMT** finish passes the requisite 336 hours resistance to Sulfur Dioxide.

Please note that **XMT** may also be applied to aluminum alloy and stainless steel, in which case the composite marker "X" is dropped and the plating code changes to **MT.**

Table I
Front End Dimensional Details



NOTES:

1. *Connector shell size designations within ☐ are for reference only; do not use in part numbers.*
2. *Metric dimensions (mm) are in parentheses and are for reference only. (1 inch = 25.4 mm)*
3. *Consult factory for accessory interface data not listed.*
4. *Use Glenair 600-091 or 600-157 tool to tighten coupling nut. Rubber jaw pliers or strap wrench may damage the parts.*

TABLE I

SHELL SIZE FOR CONNECTOR DESIGNATOR					A THREAD	B DIA	C DIA	D FLATS
A	F/L	G	H	U	REF	MAX	MAX	REF
-	08 [09]	-	-	-	7/16-28 UNEF	.59 (15.0)		
-	-	-	09 [A]	-	M12 x 1 - 6H	.65 (16.5)	.86 (21.8)	.75 (19.1)
08	-	-	-	-	1/2-20 UNF	.65 (16.5)		
-	-	-	-	08 [9] [A] [B]	1/2-28 UNEF	.65 (16.5)		
03	10 [11]	-	-	-	9/16-24 UNEF	.72 (18.3)	.98 (24.9)	.88 (22.2)
-	-	-	11 [B]	-	M15 x 1 - 6H	.77 (19.6)		
10	-	-	-	-	5/8-24 UNEF	.77 (19.6)		
-	-	-	-	10 [11] [C] [D]	5/8-28 UN	.77 (19.6)		
-	12 [13]	-	-	-	11/16-24 UNEF	.84 (21.3)	1.16 (29.4)	1.00 (25.4)
-	-	-	13 [C]	-	M18 x 1 - 6H	.89 (22.6)		
12 [7]	-	11 [A]	-	-	3/4-20 UNEF	.91 (23.1)		
-	-	-	-	12 [13] [F]	3/4-28 UNS	.91 (23.1)		
-	14 [15]	-	-	-	13/16-20 UNEF	.97 (24.6)	1.28 (32.5)	1.13 (28.6)
-	-	-	15 [D]	-	M22 x 1 - 6H	1.03 (26.2)		
14 [12]	-	13 [B]	-	-	7/8-20 UNEF	1.03 (26.2)		
-	-	-	-	14 [15] [G] [H]	7/8-28 UN	1.03 (26.2)		
-	16 [17]	-	-	-	15/16-20 UNEF	1.09 (27.7)	1.41 (35.7)	1.25 (31.8)
-	-	-	17 [E]	-	M25 x 1 - 6H	1.15 (29.2)		
16 [19]	-	15 [C]	-	-	1-20 UNEF	1.15 (29.2)		
-	-	-	-	16 [17] [J] [K]	1-28 UN	1.15 (29.2)		
18 [27]	18 [19]	-	-	-	1-1/16-18 UNEF	1.22 (31.0)	1.52 (38.5)	1.38 (35.1)
-	-	-	19 [F]	-	M28 x 1 - 6H	1.28 (32.5)		
-	-	17 [D]	-	-	1-1/8-18 UNEF	1.28 (32.5)		
-	-	-	-	18 [19] [M] [N]	1-1/8-28 UN	1.28 (32.5)		
20 [37]	20 [21]	-	-	-	1-3/16-18 UNEF	1.34 (34.0)	1.64 (41.7)	1.50 (38.1)
-	-	-	21 [G]	-	M31 x 1 - 6H	1.41 (35.8)		
-	-	19 [E]	-	-	1-1/4-18 UNEF	1.41 (35.8)		
-	-	-	-	20 [21] [P] [R]	1-1/4-28 UN	1.41 (35.8)		
22	22 [23]	-	-	-	1-5/16-18 UNEF	1.47 (37.3)	1.77 (44.9)	1.63 (41.3)
-	-	-	23 [H]	-	M34 x 1 - 6H	1.53 (38.9)		
-	-	-	-	22 [23] [S] [T]	1-3/8-28 UN	1.53 (38.9)		
24	24 [25]	23 [F]	-	-	1-7/16-18 UNEF	1.59 (40.4)	1.89 (48.0)	1.75 (44.5)
-	-	-	25 [J]	-	M37 x 1 - 6H	1.66 (42.2)		
61	-	-	-	-	1-1/2-18 UNEF	1.66 (42.2)		
-	-	-	-	24 [25] [U] [M]	1-1/2-28 UN	1.66 (42.2)	2.02 (51.2)	1.88 (47.6)
-	-	25 [G]	-		1-9/16-18 UNEF	1.66 (42.2)		
28	-	-	-	-	1-3/4-18 UNS	1.97 (50.0)	2.16 (54.8)	2.00 (50.8)

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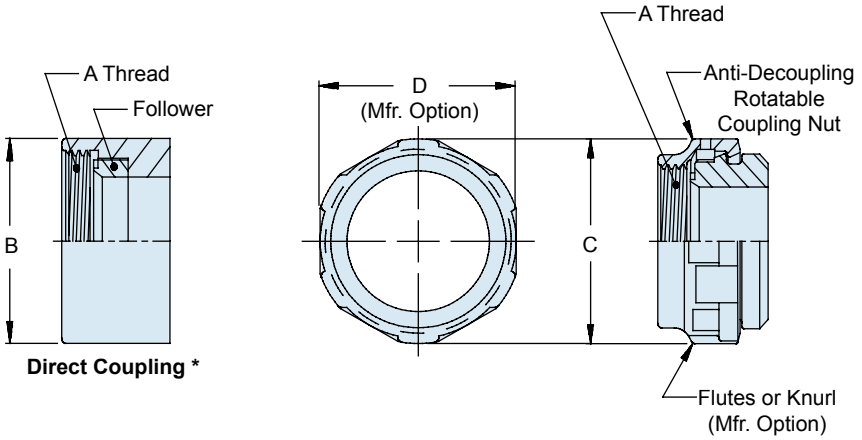
Connector Designator A

SPECIFICATION	SERIES
MIL-DTL-5015	MS34XX
MIL-DTL-26482	2
MIL-C-81703	3
MIL-DTL-83723	1 & 3
40M39569	NB
DEF 5326-3	
LN 29504	
NFC 93422	HE 302
PAN 6432-1	
PAN 6432-2	
PATT 602	
EN2997	

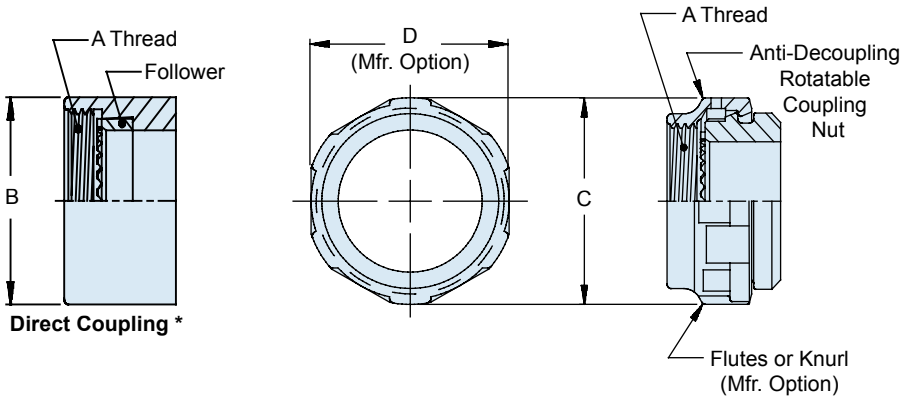


Note: Code A, rotatable coupling supplied without O-ring. Environmental seal performed by interface geometry.

* Consult factory for direct coupling part numbers.

Connector Designator F

SPECIFICATION	SERIES
MIL-DTL-38999	I & II
40M38277	NLS
NFC 93422	HE 309
NFC93422	HE 308
PAN 6433-1	
PATT 614	
PATT 616	

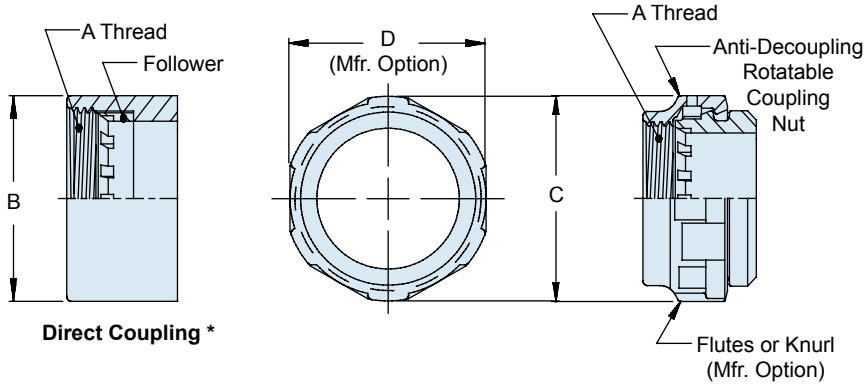


Note: Direct coupling supplied with O-ring for moisture sealing. Add modifier code 101A to end of part number for O-ring to be supplied on rotatable coupling.

* Consult factory for direct coupling part numbers.

Connector Designator G

SPECIFICATION
MIL-DTL-28840



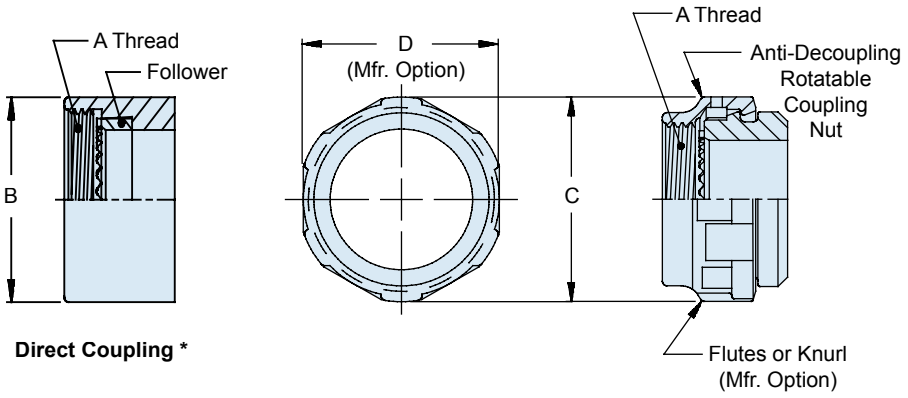
Note: Code G, rotatable coupling is supplied without O-ring. Environmental seal performed by interface geometry.

* Consult factory for direct coupling part numbers.

Common Interface Standards

Connector Designator H

SPECIFICATION	SERIES
MIL-DTL-38999 EN3645	III & IV



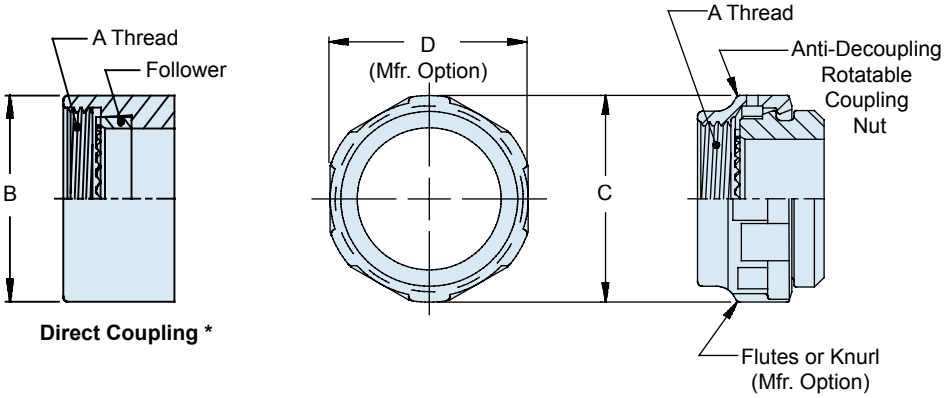
Direct Coupling *

Note: Direct coupling supplied with O-ring for moisture sealing. Add modifier code 101A to end of part number for O-ring to be supplied on rotatable coupling.

* Consult factory for direct coupling part numbers.

Connector Designator L

SPECIFICATION	SERIES
EN3372 JN1003 LN 29729 NFC93422 PAN 6433-2 PATT 615 VG 96912	HE306



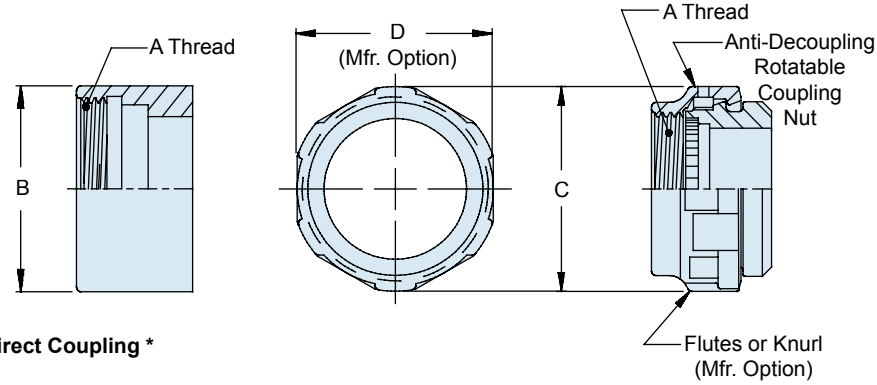
Direct Coupling *

Note: Direct coupling supplied with O-ring for moisture sealing. Add modifier code 101A to end of part number for O-ring to be supplied on rotatable coupling.

* Consult factory for direct coupling part numbers.

Connector Designator U

SPECIFICATION
MIL-C-29600



Direct Coupling *

Note: Direct coupling supplied with O-ring for moisture sealing. Add modifier code 101A to end of part number for O-ring to be supplied on rotatable coupling.

* Consult factory for direct coupling part numbers.

Military Standard Connector Index

The following is a listing of circular connectors defined by US Military Specifications, cross-referenced to the applicable active or inactive part number series. The symbols in the Connector Designator column are an essential element in Glenair's backshell part number developments.

PART NO.	CONN. DESIG.	SPECIFICATION	SERIES	DESCRIPTION
MS3400	A	MIL-DTL-5015	MS3400	Receptacle, Wall Mtg
MS3401	A	MIL-DTL-5015	MS3400	Receptacle, Cable Connecting
MS3404	A	MIL-DTL-5015	MS3400	Receptacle, Jam Nut
MS3406	A	MIL-DTL-5015	MS3400	Plug
MS3408	A	MIL-DTL-5015	MS3400	Plug, 90°
MS3409	A	MIL-DTL-5015	MS3400	Plug, 45°
MS3412	A	MIL-DTL-5015	MS3400	Receptacle, Wall Mtg
MS3424	A	MIL-C-81703	3	Receptacle, Push Pull, Wall Mtg
MS3446	A	MIL-C-81703	3	Plug, Rack & Panel
MS3450	A	MIL-DTL-5015	MS3450	Receptacle, Wall Mtg (was M83723/19/20)
MS3451	A	MIL-DTL-5015	MS3450	Receptacle, Cable Connecting (was M83723/17/18)
MS3454	A	MIL-DTL-5015	MS3450	Receptacle, Jam Nut
MS3456	A	MIL-DTL-5015	MS3450	Plug, Straight (was M83723/23/24)
MS3459	A	MIL-DTL-5015	MS3450	Plug, Straight, Self Locking (was M83723/52/53)
MS3464	A	MIL-C-81703	3	Receptacle, Push Pull, Jam Nut
MS3467	A	MIL-C-81703	3	Plug, Push Pull
MS3468	A	MIL-C-81703	3	Plug, Push Pull, Lanyard
MS3470	A	MIL-DTL-26482	2	Receptacle, Narrow Flange Mtg (was M83723/1/2)
MS3471	A	MIL-DTL-26482	2	Receptacle, Cable Connecting (was M83723/7/8)
MS3472	A	MIL-DTL-26482	2	Receptacle, Wide Flange Mtg (was M83723/3/4)
MS3474	A	MIL-DTL-26482	2	Receptacle, Rear Mtg, Jam Nut (was M83723/5/6)
MS3475	A	MIL-DTL-26482	2	Plug, RFI Shielded (was M83723/42/43)
MS3476	A	MIL-DTL-26482	2	Plug, Straight (was M83723/13/14)
MS27466	F	MIL-DTL-38999	I	Receptacle, Wall Mtg
MS27467	F	MIL-DTL-38999	I	Plug, Straight
MS27468	F	MIL-DTL-38999	I	Receptacle, Jam Nut
MS27472	F	MIL-DTL-38999	II	Receptacle, Wall Mtg
MS27473	F	MIL-DTL-38999	II	Plug, Straight
MS27474	F	MIL-DTL-38999	II	Receptacle, Jam Nut
MS27475	F	MIL-DTL-38999	II	Receptacle, Wall Mtg
MS27479	F	MIL-DTL-38999	II	Inactive Use MS27472
MS27480	F	MIL-DTL-38999	II	Inactive Use MS27473
MS27481	F	MIL-DTL-38999	II	Inactive Use MS27474
MS27482	F	MIL-DTL-38999	II	Inactive Use MS27475
MS27484T	F	MIL-DTL-38999	II	Plug, Straight
MS27497	F	MIL-DTL-38999	II	Receptacle, Back Panel Wall Mtg
MS27498	F	MIL-DTL-38999	I	Plug, 90°
MS27500	F	MIL-DTL-38999	II	Inactive See MS27473
MS27515	F	MIL-DTL-38999	I	Inactive Use MS27656

* Consult factory

Glenair®

Military Standard Connector Index

PART NO.	CONN. DESIG.	SPECIFICATION	SERIES	DESCRIPTION
MS27652	F	MIL-DTL-38999	I	Inactive Use MS27466
MS27653	F	MIL-DTL-38999	I	Inactive Use MS27467
MS27654	F	MIL-DTL-38999	I	Inactive Use MS27656
MS27656	F	MIL-DTL-38999	I	Receptacle, Back Panel, Wall Mtg
MS27661	F-752	MIL-DTL-38999	I	Plug, Lanyard Release
MS27665	F	MIL-DTL-38999	I	Plug, Rack & Panel Mtg
M28840/10	G	MIL-DTL-28840		Receptacle, Wall Mtg
M28840/11	G	MIL-DTL-28840		Receptacle, Cable Connecting
M28840/14	G	MIL-DTL-28840		Receptacle, Jam Nut
M28840/16	G	MIL-DTL-28840		Plug, Straight
D38999/20	H	MIL-DTL-38999	III	Receptacle, Wall Mtg
D38999/24	H	MIL-DTL-38999	III	Receptacle, Jam Nut
D38999/26	H	MIL-DTL-38999	III	Plug, Straight
D38999/29	H-701	MIL-DTL-38999	III	Plug, Lanyard Release
D38999/30	H-701	MIL-DTL-38999	III	Plug, Lanyard Release
D38999/40	H	MIL-DTL-38999	IV	Receptacle, Wall Mtg
D38999/42	H	MIL-DTL-38999	IV	Receptacle, Box Mtg
D38999/44	H-715	MIL-DTL-38999	IV	Receptacle, Jam Nut
D38999/46	H	MIL-DTL-38999	IV	Plug, Straight, EMI
D38999/47	H	MIL-DTL-38999	IV	Plug, Straight
M83723/1	A	MIL-DTL-83723	I	Superseded by MS3470
M83723/2	A	MIL-DTL-83723	I	Superseded by MS3470
M83723/3	A	MIL-DTL-83723	I	Superseded by MS3472
M83723/4	A	MIL-DTL-83723	I	Superseded by MS3472
M83723/5	A	MIL-DTL-83723	I	Superseded by MS3474
M83723/6	A	MIL-DTL-83723	I	Superseded by MS3474
M83723/7	A	MIL-DTL-83723	I	Superseded by MS3471
M83723/8	A	MIL-DTL-83723	I	Superseded by MS3471
M83723/13	A	MIL-DTL-83723	I	Superseded by MS3476
M83723/14	A	MIL-DTL-83723	I	Superseded by MS3476
M83723/36	A	MIL-DTL-83723	I	Inactive For New Design
M83723/37	A	MIL-DTL-83723	I	Inactive For New Design
M83723/38	A	MIL-DTL-83723	I	Inactive For New Design
M83723/39	A	MIL-DTL-83723	I	Inactive For New Design
M83723/40	A	MIL-DTL-83723	I	Inactive For New Design
M83723/41	A	MIL-DTL-83723	I	Inactive For New Design
M83723/42	A	MIL-DTL-83723	I	Superseded by MS3475
M83723/43	A	MIL-DTL-83723	I	Superseded by MS3475
M83723/48	A	MIL-DTL-83723	I	Inactive For New Design
M83723/49	A	MIL-DTL-83723	I	Inactive For New Design
M83723/66	A	MIL-DTL-83723	III	Plug, Push Pull (Pin Contacts)
M83723/67	A	MIL-DTL-83723	III	Plug, Push Pull (Socket Contacts)
M83723/68	A	MIL-DTL-83723	III	Plug, Push Pull Lanyard, (Pin Contacts)
M83723/69	A	MIL-DTL-83723	III	Plug, Push Pull, Lanyard, (Socket Contacts)
M83723/71	A	MIL-DTL-83723	III	Receptacle, Bayonet, Flange Mtg, (Socket Contact)
M83723/72	A	MIL-DTL-83723	III	Receptacle, Bayonet, Flange Mtg, (Pin Contact)
M83723/73	A	MIL-DTL-83723	III	Receptacle, Bayonet, Single Hole Mtg, (Socket Contact)

* Consult factory

CAGE Code 06324 Printed in U.S.A.

Military Standard Connector Index

PART NO.	CONN. DESIG.	SPECIFICATION	SERIES	DESCRIPTION
M83723/74	A	MIL-DTL-83723	III	Receptacle, Bayonet Single Mtg, (Pin Contact)
M83723/75	A	MIL-DTL-83723	III	Plug, Bayonet (Socket Contact)
M83723/76	A	MIL-DTL-83723	III	Plug, Bayonet (Pin Contact)
M83723/77	A	MIL-DTL-83723	III	Plug, Bayonet, RFI (Socket Contact)
M83723/78	A	MIL-DTL-83723	III	Plug, Bayonet, RFI (Pin Contact)
M83723/82	A	MIL-DTL-83723	III	Receptacle, Threaded, Flange Mtg, (Socket Contact)
M83723/83	A	MIL-DTL-83723	III	Receptacle, Threaded, Flange Mtg, (Pin Contact)
M83723/84	A	MIL-DTL-83723	III	Receptacle, Threaded Single Hole Mtg, (Socket Contact)
M83723/85	A	MIL-DTL-83723	III	Receptacle, Threaded Single Hole Mtg, (Pin Contact)
M83723/86	A	MIL-DTL-83723	III	Plug, Threaded, (Socket Contact)
M83723/87	A	MIL-DTL-83723	III	Plug, Threaded, (Pin Contact)
M83723/91	A	MIL-DTL-83723	III	Plug, Threaded, RFI (Socket Contact)
M83723/92	A	MIL-DTL-83723	III	Plug, Threaded, RFI (Pin Contact)
M83723/95	A	MIL-DTL-83723	III	Plug, Threaded, (Socket Contact), Self Locking
M83723/96	A	MIL-DTL-83723	III	Plug, Threaded, (Pin Contact), Self Locking
M83723/97	A	MIL-DTL-83723	III	Plug, Threaded, RFI (Socket Contact), Self Locking
M83723/98	A	MIL-DTL-83723	III	Plug, Threaded, RFI (Pin Contact), Self Locking
NATC00	H*	SSQ21635		Receptacle, Flange
NATC06	H*	SSQ21635		Plug
NATC07	H*	SSQ21635		Receptacle, Jam Nut
NBO	A	40M39569		Receptacle, Flange Mtg
NB4	A	40M39569		Receptacle, Flange Mtg
NB6	A	40M39569		Plug, Straight
NB6G	A	40M39569		Plug, Straight, EMI
NB7	A	40M39569		Receptacle, Jam Nut
NLSO	F	40M38277		Receptacle, Flange Mtg
NLS6	F	40M38277		Plug, Straight
NLS6G	F	40M38277		Plug, Straight, EMI
NLS7	F	40M38277		Receptacle, Jam Nut
NZGL00	H**	SSQ21635		Receptacle, Flange
NZGL06	H**	SSQ21635		Plug
NZGL07	H**	SSQ21635		Receptacle, Weld Mtg
NZGL66	H**	SSQ21635		Plug

* Consult factory

H* NATC Series size 09 through 25 mates to Glenair Connector Designator H, consult factory for sizes 33 & 37

H** NZGL Series requires special accessories manufactured by Glenair, consult factory

Connector-Backshell Interface Index

These lists of specifications, associated connector manufacturer part numbers, and common rear accessory interface designators DO NOT imply qualification status of the manufacturers indicated for each specification series. The listings are only for the identification of common interface data under the applicable Connector Designator symbol, an essential element used in Glenair's accessory part number development. For connector manufacturer part number series not shown, please consult factory.

CONN. DESIG.	SPECIFICATION	CONNECTOR MANUFACTURER	MANUFACTURER SERIES
A	MIL-DTL-5015 MS3400 MS3450	Aero-Electric Connector Flight Connector Glenair J-Tech ITT Cannon	AE55 FF IT / ITS JT 3400 / JT3450 CV340 / CV345
	MIL-DTL-26482 Series II	Aero-Electric Connector Amphenol Deutsch ECD FCI Glenair ITT Cannon	AE77 PTS-DR / 91-483 / 118 AFD5 8526 IPT PV7
	MIL-C-81703 Series III	Deutsch ECD	DBA5 / D817
	MIL-DTL-83723 Series I	Amphenol ITT Cannon ITT Cannon UK Limited Deutsch ECD	PTS-DR / 01-483 / 118 PVA PV-S AFD
	MIL-DTL-83723 Series III	Amphenol Products Amphenol/Pyle National Deutsch ECD FCI ITT Cannon Labinal/Cinch	518 B DL6 / 837 83723 MF CN0930
	40M39569	Deutsch ECD ITT Cannon	DBA / 381 PV-G
	CECC 75201.001	FCI	
	DEF 5326-3 ESC 10	Amphenol-Tuchel Amphenol/Pyle National Compagnie Deutsch FCI Hi-Rel Connectors Inc. ITT Cannon UK Limited Sealtron Inc.	602GB
	ESC 11	Amphenol/Pyle National Compagnie Deutsch	
	LN 29504	Amphenol Limited Amphenol-Tuchel Compagnie Deutsch FCI ITT Cannon UK Ltd. ITT Cannon Electric GmbH	118 / 652 118 / 652 AFD / DFE / FDBA 8525.1 PVW PVW

Connector-Backshell Interface Index

CONN. DESIG.	SPECIFICATION	CONNECTOR MANUFACTURER	MANUFACTURER SERIES
A	NFC93422 / HE302	FCI	8525
	PAN 6432-1	Amphenol Limited	602GB
		Amphenol-Tuchel	602GB
		ITT Cannon UK Ltd.	PVX
		ITT Cannon Electric GmbH	PVX
		Compagnie Deutsch	AFD
		Deutsch Ltd	RR
		FCI	8526
	PAN 6432-2	Compagnie Deutsch	DBAS
		Deutsch Ltd	DBAS
	PATT 602	Amphenol Limited	602GB
		Amphenol-Tuchel	602GB
		Deutsch Ltd.	RR
		FCI	8526
		ITT Cannon UK Ltd.	PVX
	VG 95328	Cie Deutsch	951-50
		Compagnie Deutsch	DVG / 951-50
		Glenair	IPT, IPT-SE
CONN. DESIG.	MIL-DTL-38999 Series I	Aero-Electric Connectors	AE46 / AE49
		Amphenol	LJT-R / 418-1
		FCI	8LT
F		Glenair	231
		ITT Cannon	KJL
	MIL-DTL-38999 Series II	AB Electronics	CT-R
		Aero-Electric Connectors	AE47 / AE48
		Amphenol	JT-R / 418-2
		FCI	8T
		Glenair	232
		ITT Cannon	KJ
	40M38277	Amphenol	JT-R / 10-475
		ITT Cannon	KJ
	NFC 93422 HE308	FCI	8LT
		ITT Cannon Electric France	KJL
	NFC 93422 HE309	FCI	8T
		ITT Cannon Electric France	KJ
	PAN 6433-1	Amphenol Limited	JT / JTP
		AB Electronics	CT
		FCI	8T
		ITT Cannon Electric France	KJ
		ITT Cannon UK Ltd.	KJ
		ITT Cannon Electric GmbH	KJ
		TEC	TT / TTPQ
	PATT 614	Amphenol Limited	418-2
		FCI	8T
		ITT Cannon UK Ltd.	KJ
		TEC	TT

Connector-Backshell Interface Index

CONN. DESIG.	SPECIFICATION	CONNECTOR MANUFACTURER	MANUFACTURER SERIES
F	PATT 616	Amphenol Limited FCI ITT Cannon UK Ltd.	418-1 8LT KJL
G	MIL-DTL-28840	Glenair G & H Technology Hughes Connecting Devices ITT Cannon Sunbank	90 NC GTA KFS JSC
H	MIL-DTL-38999 Series III	Aero-Electric Connector Amphenol Amphenol/Pyle National Deutsch ECD Glenair ITT Cannon	AE22 TV-R / TVS / TVS-R T3 DTS 233 KJADIV4
	MIL-DTL-38999 Series IV	Deutsch ECD Flight Connector G & H Technology Glenair	PL BL CNO 234
	CECC 75201.002	FCI Amphenol	JVS TVRB
L	JN 1003	Amphenol Limited Deutsch Limited FCI TEC	SJT HDJ 8ST STT
	LN 29729	Amphenol Limited FCI ITT Cannon Electric GmbH	SJT 8ST CGK
	NFC 93422, HE 306	FCI	8ST
	PAN 6433-2	Amphenol Limited FCI TEC	SJT 8ST STT
	PATT 615	Amphenol Limited FCI TEC	SJT 8ST STT
	VG 96912	Amphenol Limited ITT Cannon Electric GmbH FCI TEC	SJT CGK 8ST STT
U	MIL-C-29600 Series A	Deutsch Limited	DG123 DG123A

Connector Manufacturers Reference

This index of USA and international connector manufacturers provides a cross-reference of manufacturers' proprietary series designations to applicable specifications. This information does not imply qualification status but serves to indicate that the manufacturers' series is "in conformance with" the noted specifications or documents. The symbols in the Connector Designator column are an essential element in Glenair's accessory part number developments. For connector manufacturers' part number series not shown in these listings, please consult factory for applicable accessory part numbers.

MFG SERIES	CONN. DESIG.	SPECIFICATION REFERENCE	SERIES
Aero-Electric Connector Company			
AE22	H	MIL-DTL-38999	III
AE46	F	MIL-DTL-38999	I
AE47	F	MIL-DTL-38999	II
AE48	F	MIL-DTL-38999	II
AE49	F	MIL-DTL-38999	I
AE77	A	MIL-DTL-26482	II
AE83	A	MIL-DTL-83723	III
AB Electronics			
CT-R	F	MIL-DTL-38999	II
Amphenol Limited			
JT	F	PAN 6433-1	
SJT	L	JN 1003	
SJT	L	LN29729	
SJT	L	PAN 6433-2	
118	A	LN 29504	
418-1	F	PATT 616	
418-2	F	PATT 614	
418-5	L	NFC 93422	HE 306
418-5	L	PATT 615	
602GB	A	PAN 6432-1	
602GB	A	PATT 602	
652	A	LN 29504	
Amphenol Products			
JT	*	MIL-DTL-27599	
JT-R	F	MIL-DTL-38999	II
JT-R	F	40M38277	
LJT	*	MIL-DTL-27599	
LJT-R	F	MIL-DTL-38999	I
PTS-DR	A	MIL-DTL-26482	II
PTS-DR	A	MIL-DTL-83723	I
SJT	L	LN 29729	
TV	H	MIL-DTL-38999	III
TVRB	H	CECC 75201.002	III
TVS	H	MIL-DTL-38999	III
10-475	F	40M38277	
118	A	MIL-DTL-26482	II
118	A	MIL-DTL-83723	I
246	*	MIL-DTL-5015	
418-1	F	MIL-DTL-38999	I

MFG SERIES	CONN. DESIG.	SPECIFICATION REFERENCE	SERIES
Amphenol Products (Continued)			
418-2	F	MIL-DTL-38999	II
518	A	MIL-DTL-83723	III
91-483	A	MIL-DTL-26482	II
91-483	A	MIL-DTL-83723	I
Amphenol/Pyle National			
B	A	MIL-DTL-83723	III
T3	H	MIL-DTL-38999	III
	A	ESC 10, ESC 11	
Amphenol/Tuchel Electronics GmbH			
118	A	LN 29504	
162GB	*	VG 95328	
602GB	A	DEF 5326-3	
602GB	A	PAN 6432-1	
602GB	A	PATT 602	
62GB	*	DEF 5326-3	
652	A	LN 29504	
Cie Deutsch & Compagnie Deutsch GmbH			
AFD	A	LN 29504	
AFD	A	MIL-DTL-26482	I
AFD	A	PAN 6432-1	
DBAS	A	MIL-C-81703	III
DBAS	A	PAN 6432-2	
DFE	A	LN 29504	
DVG	A	VG 95328	
FDBA	A	LN 29504	
951	A	PRL 53125	
9.815	J	MIL-C-81511	III & IV
991	A	PAN 6432-4	
999.1	F	MIL-DTL-38999	I
	A	ESC 10	
	A	ESC 11	
Deutsch Engineered Connecting Devices			
AFD5	A	MIL-DTL-26482	II
AFD	A	MIL-DTL-83723	I
A815	J	MIL-C-81511	III
B815	J	MIL-C-81511	IV
BMS	E	MIL-DTL-26500	

* Consult factory for backshell part numbers.

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Connector Manufacturers Reference

MFG SERIES	CONN. DESIG.	SPECIFICATION REFERENCE	SERIES
Cie Deutsch & Compagnie Deutsch GmbH (Continued)			
DFE	A	LN 29504	
DVG	A	VG 95328	
FDBA	A	LN 29504	
951	A	PRL 53125	
9.815	J	MIL-C-81511	III & IV
991	A	PAN 6432-4	
999.1	F	MIL-DTL-38999	I
	A	ESC 10	
	A	ESC 11	
Deutsch Engineered Connecting Devices			
AFD5	A	MIL-DTL-26482	II
AFD	A	MIL-DTL-83723	I
A815	J	MIL-C-81511	III
B815	J	MIL-C-81511	IV
BMS	E	MIL-DTL-26500	
BTK	D	MIL-DTL-26482	I
DBA	A	40M39569	
DBA7	A	MIL-C-81703	III
DTS	H	MIL-DTL-38999	III
DIV4	H	MIL-DTL-38999	IV
DL6	A	MIL-DTL-83723	III
D817	A	MIL-C-81703	III
LPT	D	MIL-DTL-26482	I
381	A	40M39569	
450	D	MIL-DTL-26482	I
460	D	MIL-DTL-26482	I
837	A	MIL-DTL-83723	III
Deutsch Limited			
LL	J	MIL-C-81511	III-IV
DBAS	A	PAN 6432-2	
DTS	H	MIL-DTL-38999	III
HDJ	L	JN 1003	
RR	A	PAN 6432-1	
RR	A	PATT 602	
RR70	A	MIL-C-81703	III
SLPT	*	MIL-DTL-26482	I
DG123	U	MIL-C-29600	A
DG123A	U	MIL-C-29600	A

MFG SERIES	CONN. DESIG.	SPECIFICATION REFERENCE	SERIES
FCI/Burndy Corporation			
BT	D	MIL-DTL-26482	I
G	D	MIL-DTL-26482	I
L	D	MIL-DTL-26482	I
L-T	D	MIL-DTL-26482	I
M-T	D	MIL-DTL-26482	I
FCI			
JVS	H	CECC 75201.002	
8LT	F	MIL-DTL-38999	I
8LT	F	NFC 93422	HE 308
8ST	L	JN 1003	
8ST	L	LN 29729	
8ST	L	NFC 93422	HE 306
8ST	L	PAN 6433-2	
8ST	L	PATT 615	
8ST	L	VG 96912	
8T	F	MIL-DTL-38999	II
8T	F	NFC 93422	HE 309
83723	A	MIL-DTL-83723	III
85	D	MIL-DTL-26482	I
851	S	PATT 603	
851-50	*	PRL 53125	
851-50	*	VG 95328	
8525	A	NFC 93422	HE 302
8525.1	A	LN 29504	
8526	A	MIL-DTL-26482	II
8526	A	PAN 6432-1	
8526	A	PATT 602	
8533	A	EN 2992	
8533	A	ESC 10	
Flight Connector Corporation			
FC	*	MIL-DTL-5015	
FF	A	MIL-DTL-5015	MS3400
FH	*	MIL-DTL-5015	
FHA	K	MIL-DTL-83723	II
PL	H	MIL-DTL-38999	IV
G & H Technologies			
BL	H	MIL-DTL-38999	IV
NC	G	MIL-DTL-28840	

* Consult factory for backshell part numbers.

Connector Manufacturers Reference

MFG SERIES	CONN. DESIG.	SPECIFICATION REFERENCE	SERIES
Glenair			
IPT	A	MIL-DTL-26482	
231, 232	F	MIL-DTL-38999	I, II
233, 234	H	MIL-DTL-38999	III, IV
90	G	MIL-DTL-28840	
IT, ITS	A	MIL-DTL-5015	
ITT Cannon			
CA3106B	*	VG95234	
CV340	A	MIL-DTL-5015	MS3400
CV345	A	MIL-DTL-5015	MS3450
KFS	G	MIL-DTL-28840	
KJ	F	MIL-DTL-38999	II
KJ	F	40M38277	
KJA	H	MIL-DTL-38999	III
KJL	F	MIL-DTL-38999	I
MF	A	MIL-DTL-83723	III
PV-G	A	40M39569	
PVA	A	MIL-DTL-83723	I
PV7	A	MIL-DTL-26482	II
	A	ESC 10	KE, SE
ITT Cannon Electric France SA			
KJ	F	MIL-DTL-38999	II
KJ	F	PAN 6433-1	
KJL	F	MIL-DTL-38999	I
251	*	MIL-DTL-26482	I
ITT Cannon UK Ltd.			
KJ	F	PATT 614	
PV-S	A	MIL-DTL-83723	I
PVW	A	LN29504	
PVX	A	PAN 6432-1	
PVX	A	PATT 602	
	A	ESC 10	KE, SE
ITT Cannon Electric GmbH			
CA3106B	*	VG 95234	
CGK	L	LN 29729	
KJ	F	PAN 6433-1	
KPSE	*	VG 95328	
KPT	*	VG 95328	
PVW	A	LN 29504	
PVX	A	PAN 6432-1	

MFG SERIES	CONN. DESIG.	SPECIFICATION REFERENCE	SERIES
J-Tech			
JT 3400	A	MIL-DTL-5015	MS3400
JT 3450	A	MIL-DTL-5015	MS3450
JTVG95234	A	VG95234	
JT 3400	A	MIL-DTL-5015	MS3400
JT 3450	A	MIL-DTL-5015	MS3450
JTVG95234	A	VG95234	
Labinal/Cinch			
CNO930	A	MIL-DTL-83723	III
RMS			
RO		MIL-DTL-26500	Aluminum
Schaltbau GmbH			
674	*	VG 95328	
675	*	VG 95328	
SICEM			
SCB	*	VG 95234	
Sunbank			
JSC		MIL-DTL-28840	
TEC			
TT	F	PAN 6433-1	
STT	L	LN 29729	
STT	L	PAN 6433-2	
STT	L	PATT 615	
STT	L	VG 96912	
VEAM Litton Precision Products International			
CIR	*	VG 95234	
VPT-SE	*	MIL-DTL-26482	I
VPT-SE	*	VG 95328	

* Consult factory for backshell part numbers.

Connector Manufacturers Alpha-Numeric Index

The following alpha-numeric list is provided as a convenience in identifying the various connector manufacturers' proprietary connector series designations applicable to the US and international specifications and documents listed previously. The Glenair Connector Designator is also indicated for each listing. For complete manufacturer's identity, refer to the preceding Connector Manufacturers Index.

MFG SERIES	CONN. DESIG.	CONNECTOR MANUFACTURER
AE22	H	Aero-Electric Connector
AE46	F	Aero-Electric Connector
AE47	F	Aero-Electric Connector
AE48	F	Aero-Electric Connector
AE49	F	Aero-Electric Connector
AE55	A	Aero-Electric Connector
AE66	E	Aero-Electric Connector
AE77	A	Aero-Electric Connector
AFD	A	Compagnie Deutsch
AFD	A	Deutsch ECD
AFD5	A	Deutsch ECD
A815J	J	Deutsch ECD
B	A	Pyle-National
BG	D	Amphenol
BL	H	G & H Technology
BT	D	FCI
BTK	D	Deutsch ECD
B815	J	Deutsch ECD
CA3106B	*	Cannon Electric GmbH
CA-E/R	B	ITT Cannon
CA-RX	B	ITT Cannon
CGK	L	ITT Cannon Electric GmbH
CIR	*	VEAM
CNO	H	Labinal
CNO930	A	Labinal
CT-R	F	Plessey Connectors
CVA	K	ITT Cannon
CV340	A	ITT Cannon
CV345	A	ITT Cannon
CWLD	C	ITT Cannon Electric GmbH
DBA	A	Deutsch ECD
DBAS	A	Compagnie Deutsch
DBAS	A	Cie Deutsch
DBAS	A	Deutsch ECD
DFE	A	Cie Deutsch
DIV4	H	Deutsch ECD
DL6	A	Deutsch ECD
DTS	H	Cie Deutsch
DVG	A	Cie Deutsch
D817	A	Deutsch ECD
FC	*	Elecsys
FDBA	A	Compagnie Deutsch
FDBA	A	Deutsch
FF	A	Elecsys
FH	*	Elecsys
FHA	K	Elecsys
G	D	FCI
GTA	G	Hughes Connecting Devices
JT 3400	A	J-Tech
JT 3450	A	J-Tech
JT VG	*	J-Tech
JT	F	Amphenol
JT-R	F	Amphenol
JVS	H	FCI
TT	F	FKI
KFS	G	ITT Cannon
KJ	F	ITT Cannon UK Ltd.
KJ	F	ITT Cannon Electric France
KJ	F	ITT Cannon Electric GmbH
KJ	F	ITT Cannon
KJA	H	ITT Cannon
KJL	F	ITT Cannon Electric France
KJL	F	ITT Cannon
KPSE	S	ITT Cannon UK Ltd.
KPSE	D	ITT Cannon
KPT	*	ITT Cannon Electric GmbH
KPT	D	ITT Cannon
KPTM	*	ITT Cannon Electrc GmbH
L	D	FCI
L-T	D	FCI
LJT	F	Amphenol
LJT-R	F	Amphenol
LL	J	Deutsch
LPT	D	Deutsch ECD
M-T	D	FCI
MF	A	ITT Cannon
MF-S	D	Amphenol Products
MK 8	S	AB Electronics
MK 12	S	AB Electronics
MK 18	S	AB Electronics
NC	G	G & H Technology
PL	H	Elecsys

* Consult factory for backshell part numbers.

Connector Manufacturers Alpha-Numeric Index

MFG SERIES	CONN. DESIG.	CONNECTOR MANUFACTURER
PTS-DR	A	Amphenol
PV-G	A	ITT Cannon
PV-S	A	ITT Cannon UK Ltd.
PVA	A	ITT Cannon
PVW	A	ITT Cannon UK Ltd.
PVW	A	ITT Cannon Electric GmbH
PVX	A	ITT Cannon UK Ltd.
PVX	A	ITT Cannon Electric GmbH
PV7	A	ITT Cannon
RDN	G	Elecsys
RR	A	Hellerman Deutsch
RR50	A	Cie Deutsch
RR70	A	Deutsch Ltd.
SCB	*	SICEM
SJT	L	Amphenol
STT	L	TEC
SLPT	*	Deutsch Ltd.
TV	H	Amphenol
TVS	H	Amphenol
T3	H	Pyle-National
VPT	D	VEAM
VPTE-SE	*	VEAM
10-214	B	Amphenol
10-475	F	Amphenol
118	A	Amphenol Limited
118	A	Amphenol
118	A	Amphenol-Tuchel
162GB	*	Amphenol-Tuchel
246	*	Amphenol
251	*	Cannon Electric France

MFG SERIES	CONN. DESIG.	CONNECTOR MANUFACTURER
381	A	Deutsch ECD
418-1	F	Amphenol Limited
418-1	F	Amphenol
418-2	F	Amphenol Limited
418-2	F	Amphenol
518	A	Amphenol
602GB	A	Amphenol Limited
602GB	A	Amphenol-Tuchel
62GB	*	Amphenol-Tuchel
652	A	Amphenol Limited
652	A	Amphenol-Tuchel
674	*	Schaltbau
675	*	Schaltbau
837	A	Deutsch ECD
83723	A	FCI
851-50	*	FCI
8525	A	FCI
8525.1	A	FCI
8526	A	FCI
857	A	FCI
8D	H	FCI
8LT	F	FCI
8ST	L	FCI
8T	F	FCI
9-815	J	Cie Deutsch
9-815	J	Compagnie Deutsch
91-483	A	Amphenol
951-50	A	Cie Deutsch
951-50	A	Compagnie Deutsch
991	A	Cie Deutsch
999.1	F	Cie Deutsch

* Consult factory for backshell part numbers.

Glenair®

Shield Termination Styles for Glenair Composite EMI/RFI Backshells

RFI/EMI Backshell Shield Termination Styles

Conductive composite backshells are designed to terminate cable shielding and provide a low electrical resistant ground path. Various shield termination styles are available to match the electrical requirements of different application environments. All Glenair shield termination styles meet the shell conductivity requirements of AS85049. Standard self-locking as well as G-Load coupling styles are available for selected styles.

EMI/RFI Shield Termination Information					
Glenair Basic Part Number	Shield Termination Style	Shield Type			Page
		Overall	Individual	Combination	
311-019	Lamp Base Thread	X			A-6
311-034		X			A-5
319-134	Shield Sock Assemblies and Swing Arms	X	X	X	A-16
319-120		X	X	X	A-14
319-137		X	X	X	A-22
319-138		X	X	X	A-24
319-064		X	X	X	A-12
380-099	Cone and Ring and Knit Braid Style	X	X		A-46
380-100		X	X		A-48
380-130			X		A-52
380-131			X		A-53
380-132			X		A-54
387-083		X	X	X	A-58
390-052		X			A-62
440-087	Banding and Crimp-Ring Style	X			A-64
440-143		X	X		A-68
440-144		X	X		A-70
447-325		X	X		A-72
447-326		X	X		A-74
447-327		X	X		A-76
447-711			X		A-87
447-331		X	X	X	A-84
507-088		X	X		A-92
557-186		X	X		A-94
447-328	Band-In-a-Can	X	X		A-78
447-657		X	X		A-86
447-329		X	X		A-80
447-330		X	X		A-82

Reduced Weight and Zero Corrosion for Harsh Environment Interconnect Applications

Hundreds of Military Standard and Commercial Connector Accessories Tooled, Stocked and Ready for Shipment.

Composite connector accessories offer a wide range of benefits to the interconnect engineer, including corrosion resistance, vibration dampening, weight reduction and the reduction of magnetic signatures—a critical requirement in stealth applications.

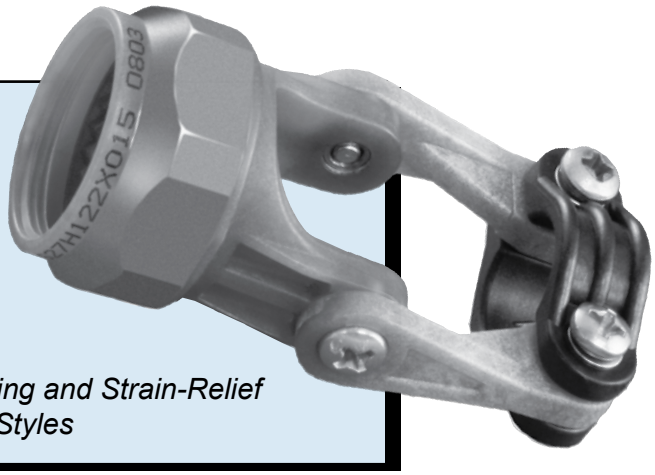
Glenair composite connector accessories are ideally suited for use in harsh environments where resistance to high temperatures, outgassing, corrosive fluids, fire, shock and vibration is required. Materials include Ultem® 2300 and other glass filled composite thermoplastics. Glenair composite accessories are ASTM E595 space rated, and are qualified to the shock, vibration, thread strength and bend moment requirements of MIL-DTL-38999 and AS85049. These materials also meet stringent EMI/RFI/HIRF and indirect lightning strike performance specifications.

Backshells Available to Fit Virtually All Military Standard and Commercial Connectors

Lightweight Components Withstand Shock, Temperature Cycling and Vibration

Conductive EMC Surface Finishes Including: Selectively Plated and RoHS Compliant Styles

EMI/RFI Shield Termination, Environmental Sealing and Strain-Relief Backshells for All Popular Connector Types and Styles

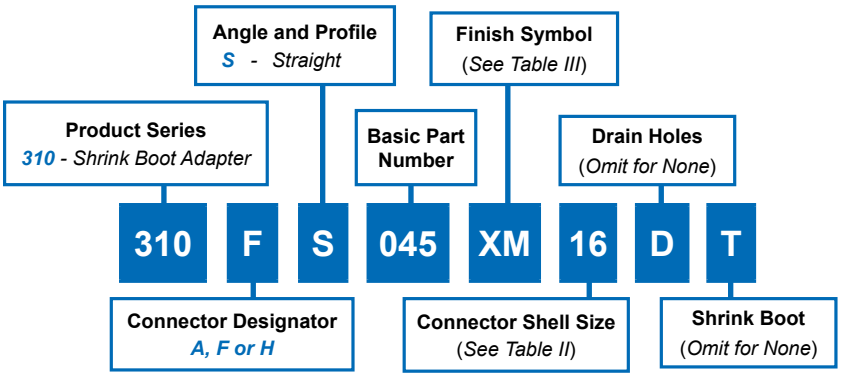


Errata

Catalog contents—including part numbers, materials and dimensions—are accurate to the best of our ability when we go to print. Even so, customers are advised to consult the factory for the latest specifications, particularly to confirm critical dimensions such as connector lengths, threads, and so on. When errors or mistakes are brought to our attention, corrected content is posted immediately to our website: www.glenair.com.

310-045
Composite Shrink Boot Adapter
with Self-Locking Rotatable Coupling Nut

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
H	MIL-DTL-38999 Series III and IV
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	



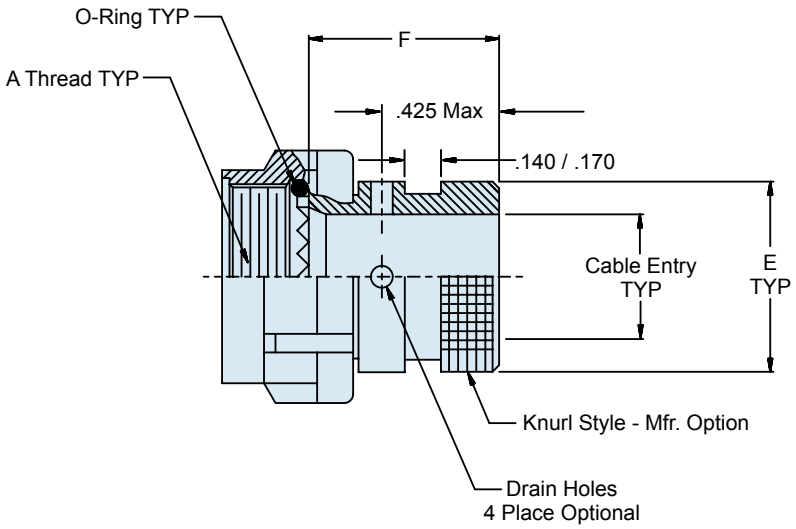


TABLE II: SHELL SIZE				
Shell Size		E Max	F Max	Cable Entry Min.
A, F	H			
08	09	.533 (13.5)	.940 (23.9)	.250 (6.4)
10	11	.605 (15.4)	.940 (23.9)	.355 (9.0)
12	13	.774 (19.7)	.940 (23.9)	.491 (12.5)
14	15	.838 (21.3)	.940 (23.9)	.565 (14.4)
16	17	.963 (24.5)	.940 (23.9)	.690 (17.5)
18	19	1.042 (26.5)	.940 (23.9)	.769 (19.5)
20	21	1.217 (30.9)	.940 (23.9)	.894 (22.7)
22	23	1.355 (34.4)	.940 (23.9)	1.019 (25.9)
24	25	1.443 (36.7)	.940 (23.9)	1.134 (28.8)

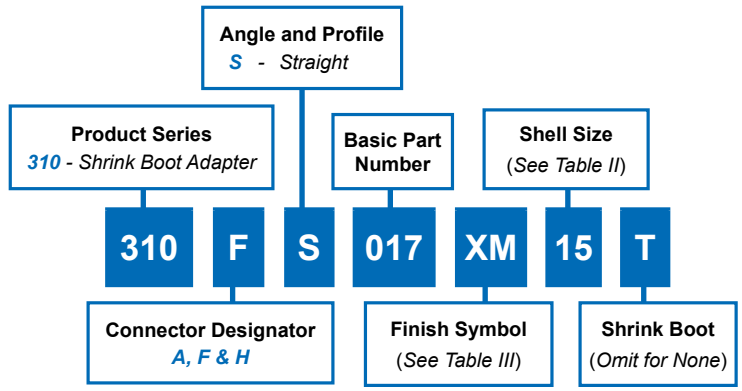
TABLE III: FINISH	
Symbol	Finish Description
XB	No Plating - Black Color (Non-Coductive Finish)
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel
XD	No Plating, Desert Tan

NOTES

1. See Table I in Intro for front-end dimensional details.
2. (**Straight**) 770-001S**-0 shrink boot supplied with "T" option.
   For angled boot, contact Glenair engineering.
   See shrink boot product page for more details.
3. O-ring supplied with H and F codes only.
4. Coupling nut supplied unplated.

310-017
Composite Shrink Boot Adapter
with Direct Coupling Nut

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482, Series II and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
H	MIL-DTL-38999 Series III and IV
DIRECT COUPLING	



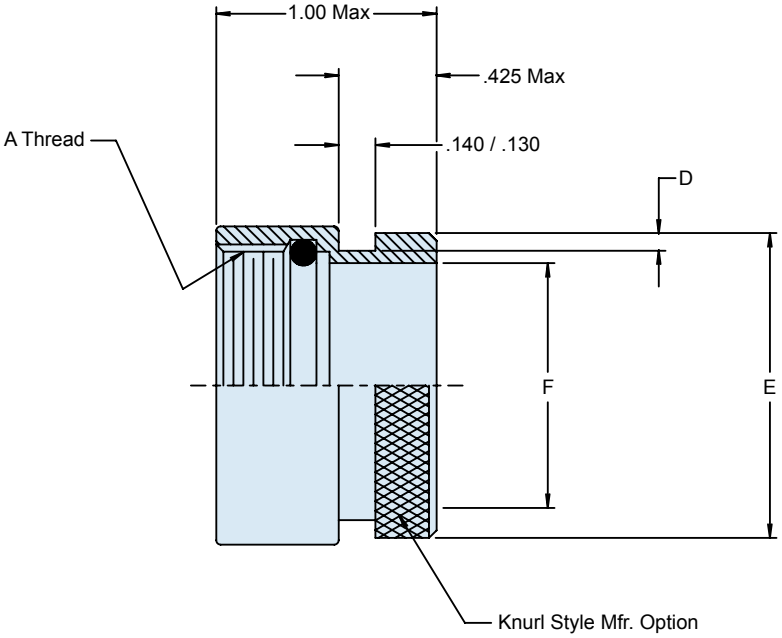


TABLE III: FINISH	
Symbol	**Finish Description**
XB	No Plating - Black Color (Non-Conductive Finish)
XO	Composite Material–No Plating, Color Black and Brown, Brass Interface Shroud and Adapter–Nickel Plated
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

TABLE II: SHELL SIZE			
Shell Size H	**D +.008 -.000**	**E +.000 -.045**	**F**
09	.044 (1.1)	.612 (15.5)	.346 (8.8)
11	.044 (1.1)	.732 (18.6)	.475 (12.1)
13	.044 (1.1)	.857 (21.8)	.589 (15.0)
15	.044 (1.1)	.980 (24.9)	.714 (18.1)
17	.044 (1.1)	1.100 (27.9)	.839 (21.3)
19	.069 (1.8)	1.215 (30.9)	.945 (24.0)
21	.069 (1.8)	1.345 (34.2)	1.070 (27.2)
23	.069 (1.8)	1.465 (37.2)	1.195 (30.4)
25	.069 (1.8)	1.590 (40.4)	1.320 (33.5)

NOTES

1. See Table I in Intro for front-end dimensional details.
2. (**Straight**) 770-001S**-0 shrink boot supplied with "T" option. For angled shrink boot, contact Glenair engineering. See shrink boot product page for more details.
3. O-Ring will not be supplied with Connector Designator A.

311-034
Composite Lamp Base Thread
EMI/RFI Shield Termination Backshell with Self-Locking Rotatable Coupling Nut

Glenair®

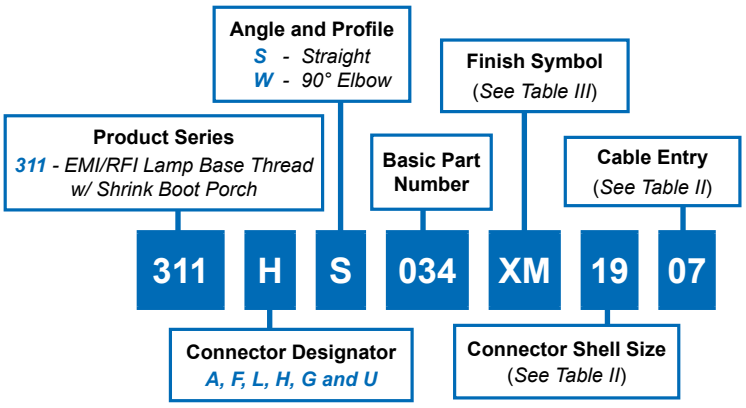
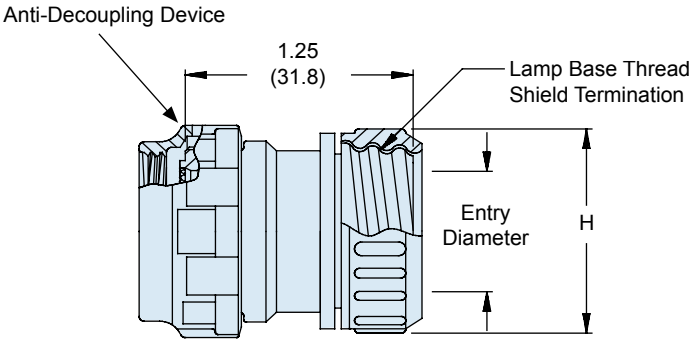
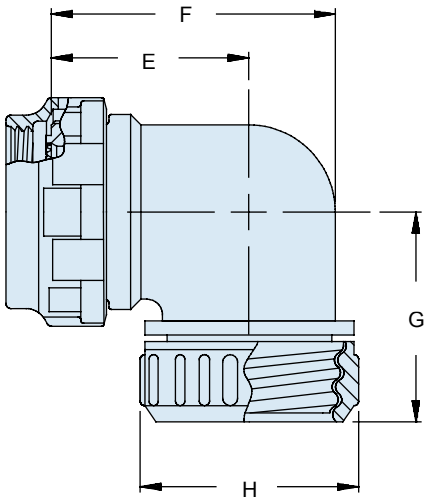


TABLE II: CABLE ENTRY

Dash No.	H ± .06	H (1.5)	Entry Dia. ±.03	Entry Dia. (0.8)
01	.45	(11.4)	.13	(3.3)
02	.52	(13.2)	.25	(6.4)
03	.64	(16.3)	.38	(9.7)
04	.77	(19.6)	.50	(12.7)
05	.92	(23.4)	.63	(16.0)
06	1.02	(25.9)	.75	(19.1)
07	1.14	(29.0)	.81	(20.6)
08	1.27	(32.3)	.94	(23.9)
09	1.43	(36.3)	1.06	(26.9)
10	1.52	(38.6)	1.19	(30.2)
11	1.64	(41.7)	1.38	(35.1)





NOTES

1. See Table I in Intro for front-end dimensional details.
2. Coupling nut supplied unplated.
3. Metric dimensions (mm) are for reference only.

TABLE II: CONNECTOR SHELL SIZE

Shell Size For Connector Designator* A	F/L	H	G	U	E ± .06	E (1.5)	F ± .09	F (2.3)	G ± .09	G (2.3)	Max Entry Dash No.**
08	08	09	–	–	.69	(17.5)	.88	(22.4)	1.19	(30.2)	02
10	10	11	–	08	.75	(19.1)	1.00	(25.4)	1.25	(31.8)	03
12	12	13	11	10	.81	(20.6)	1.13	(28.7)	1.31	(33.3)	04
14	14	15	13	12	.88	(22.4)	1.31	(33.3)	1.38	(35.1)	05
16	16	17	15	14	.94	(23.9)	1.38	(35.1)	1.44	(36.6)	06
18	18	19	17	16	.97	(24.6)	1.44	(36.6)	1.47	(37.3)	07
20	20	21	19	18	1.06	(26.9)	1.63	(41.4)	1.56	(39.6)	08
22	22	23	–	20	1.13	(28.7)	1.75	(44.5)	1.63	(41.4)	09
24	24	25	23	22	1.19	(30.2)	1.88	(47.8)	1.69	(42.9)	10
28	–	–	25	24	1.34	(34.0)	2.13	(54.1)	1.78	(45.2)	11

**Consult factory for additional entry sizes available.
See introduction for additional connector front-end details.

TABLE III

Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/ Olive Drab over Electroless Nickel

311-019
Composite Lamp Base Thread
EMI/RFI Shield Termination Backshell
with Shrink Boot Porch and Self-Locking Rotatable Coupling

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
H	MIL-DTL-38999 Series III and IV
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	

Angle and Profile
S - *Straight*
T - *45° Elbow*
W - *90° Elbow*

Finish Symbol
(*See Table III*)

Product Series
311 - EMI/RFI Lamp Base Thread w/ Shrink Boot Porch

Basic Part Number

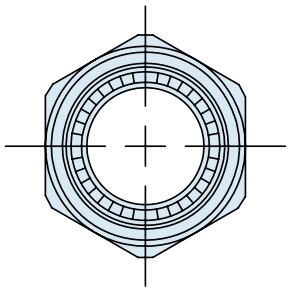
Cable Entry
(*See Table IV*)

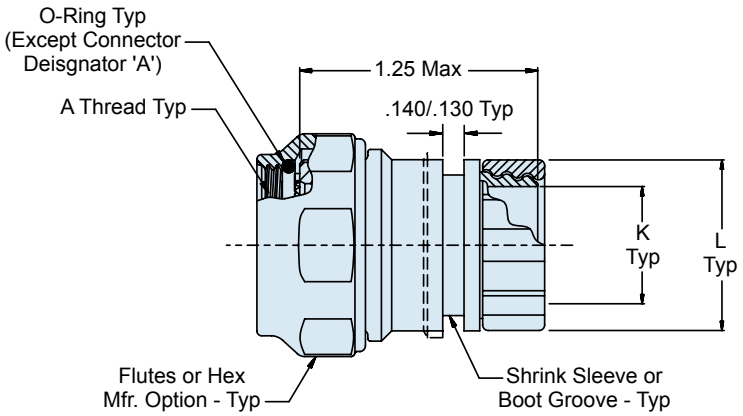
311	H	S	019	XM	15	03	T

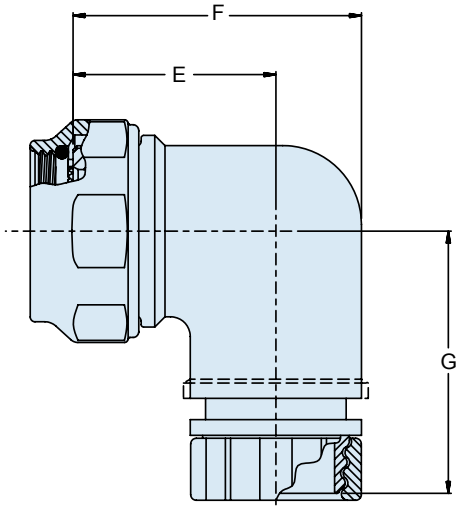
Connector Designator
A, F and H

Connector Shell Size
(*See Table II*)

Shrink Boot
(*Omit for None*)







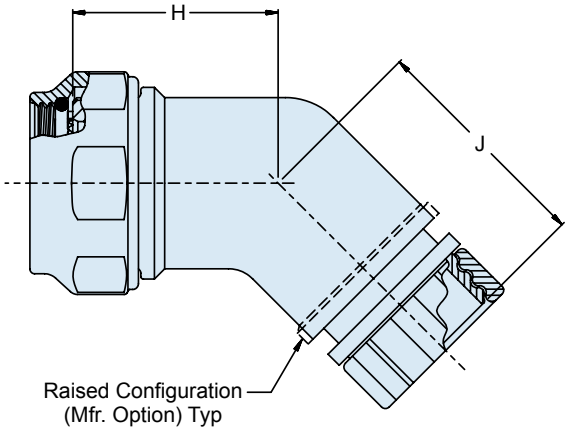


TABLE II: SHELL SIZE							
Shell Size		E ± .06	F ± .09	G ± .09	H ± .06	J ± .09	Max Dash Number (Table II)
A, F	H						
08	09	0.69 (17.5)	0.88 (22.4)	1.19 (30.2)	0.72 (18.3)	1.00 (25.4)	02
10	11	0.75 (19.1)	1.00 (25.4)	1.25 (31.8)	0.75 (19.1)	1.06 (26.9)	03
12	13	0.81 (20.6)	1.13 (28.7)	1.31 (33.3)	0.75 (19.1)	1.13 (28.7)	04
14	15	0.88 (22.4)	1.31 (33.3)	1.38 (35.1)	0.76 (19.3)	1.16 (29.5)	05
16	17	0.94 (23.9)	1.38 (35.1)	1.44 (36.6)	0.78 (19.8)	1.18 (30.0)	06
18	19	0.97 (24.6)	1.44 (36.6)	1.47 (37.3)	0.79 (20.1)	1.19 (30.2)	07
20	21	1.06 (26.9)	1.63 (41.4)	1.56 (39.6)	0.82 (20.8)	1.22 (31.0)	08
22	23	1.13 (28.7)	1.75 (44.5)	1.63 (41.4)	0.86 (21.8)	1.26 (32.0)	09
24	25	1.19 (30.2)	1.88 (47.8)	1.69 (42.9)	0.89 (22.6)	1.29 (32.8)	10

TABLE IV: ENTRY DIAMETER		
Dash Number	K Entry ± .03	L ± .06
01	.13 (3.3)	.45 (11.4)
02	.25 (6.4)	.52 (13.2)
03	.38 (9.7)	.64 (16.3)
04	.50 (12.7)	.77 (19.6)
05	.63 (16.0)	.92 (23.4)
06	.75 (19.1)	1.02 (25.9)
07	.81 (20.6)	1.14 (29.0)
08	.94 (23.9)	1.27 (32.3)
09	1.06 (26.9)	1.43 (36.3)
10	1.19 (30.2)	1.52 (38.6)
11	1.38 (35.1)	1.64 (41.7)

TABLE III: FINISH	
Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

NOTES

1. See Table I in Intro for front-end dimensional details.
2. 770-001S**-0 shrink boot supplied with T option. See shrink boot product page for more details.
3. O-Ring will not be supplied with Connector Designator A.
4. Coupling nut supplied unplated.

311-063
Composite Lamp Base Thread
EMI/RFI Environmental Shield Termination Backshell with Shrink Boot Porch and Direct Coupling Nut

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
H	MIL-DTL-38999 Series III and IV
DIRECT COUPLING	

Angle and Profile
S - Straight

Finish Symbol
(See Table III)

Product Series
311 - EMI/RFI Lamp Base Thread w/ Shrink Boot Porch

Basic Part Number

Cable Entry
(See Table IV)

311	H	S	063	M	18	05	T

Connector Designator
A, F and H

Connector Shell Size
(See Table II)

Shrink Boot
(Omit for None)

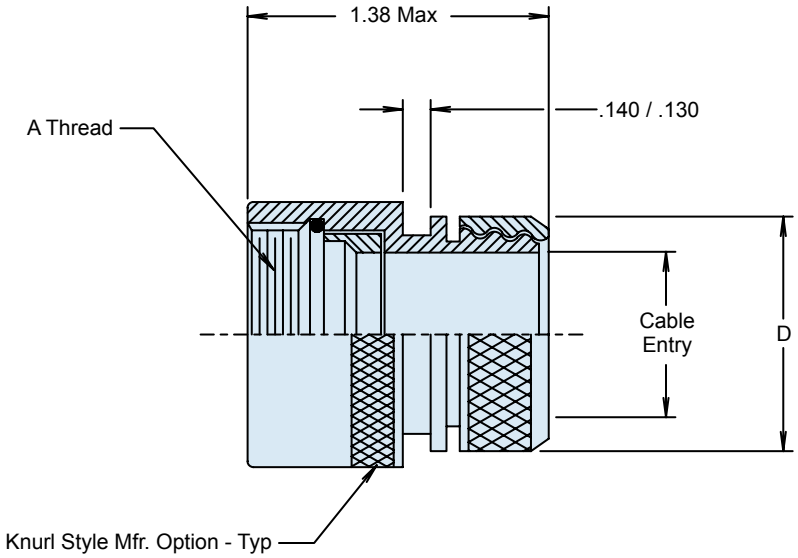


TABLE II: SHELL SIZE

Shell Size		Max Dash Number
A, F	H	
08	09	02
10	11	03
12	13	04
14	15	05
16	17	06
18	19	07
20	21	08
22	23	09
24	25	10

TABLE III: FINISH	
Symbol	**Finish Description**
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

TABLE IV: CABLE ENTRY		
Dash Number	**D Max**	**Entry Max**
01	.448 (11.4)	.13 (3.3)
02	.515 (13.1)	.25 (6.4)
03	.640 (16.3)	.38 (9.7)
04	.765 (19.4)	.50 (12.7)
05	.930 (23.6)	.63 (16.0)
06	1.015 (25.8)	.75 (19.1)
07	1.140 (29.0)	.81 (20.6)
08	1.265 (32.1)	1.06 (26.9)
09	1.432 (36.4)	1.19 (30.2)
10	1.515 (38.5)	1.38 (35.1)

NOTES

1. See Table I in Intro for front-end dimensional details.
2. For angled shrink boots, contact Glenair engineering.
3. 770-001S**-0 shrink boot supplied with T option. See shrink boot product page for more details.
4. O-Ring will not be supplied with Connector Designator A.

Composite Thermoplastic Shield Sock Assembly Procedure

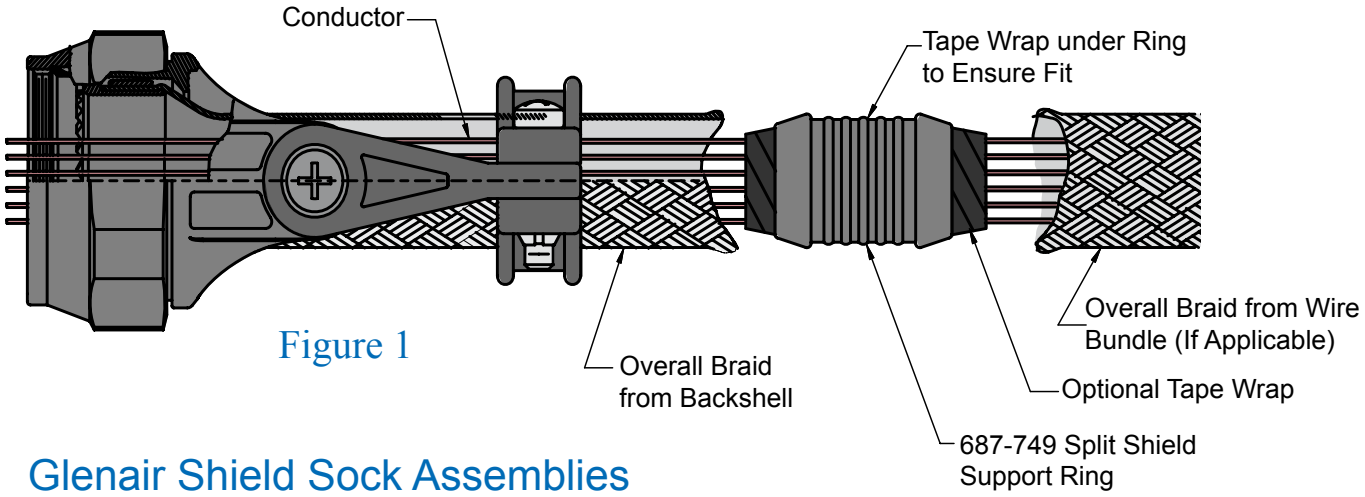


Figure 1

Glenair Shield Sock Assemblies Offer Fast and Trouble-Free Termination of EMI Shielding:

For Swing-Arm type shield sock backshells, choose Straight, 45° or 90° angle, and tighten screws to lock arms in place. For standard shield socks, ignore this step. For styles equipped with strain relief clamps, leave the saddle clamp hardware loose.

Next, insert the wire bundle into the backshell to determine if the braid transition angle from the backshell to wire bundle is less than 45º. If it is less than 45°, build up the wire bundle with tape and re-insert wire bundle into backshell to support the transition of overall braid from the backshell to the wire bundle.

Loosely assembly the adapter to the connector and push back the backshell braid. Insert the wire bundle into the adapter and bottom it against the connector. Holding the cable, mark or tag the location where the shield support ring (Glenair Part Number 687-749) will be located. This distance may vary depending on your technique and the flexibility of the wire bundle immediately to the rear of the saddles (Figure 1).

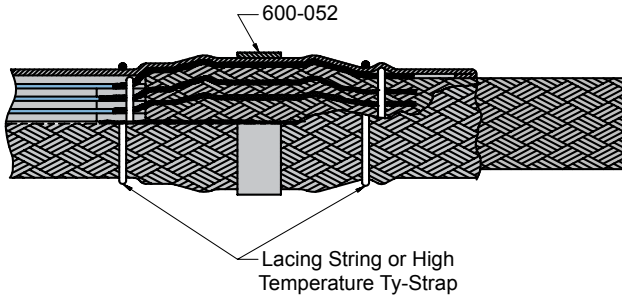


Figure 2

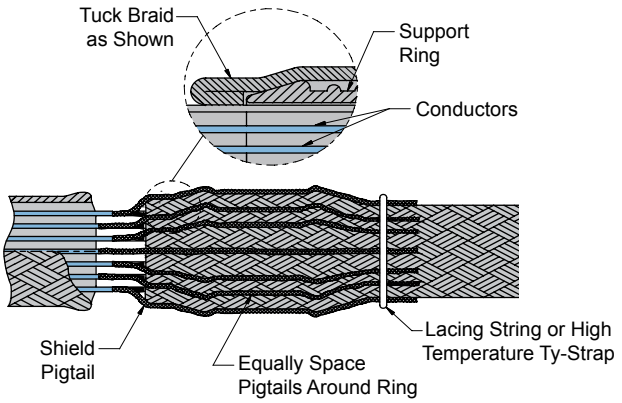


Figure 3

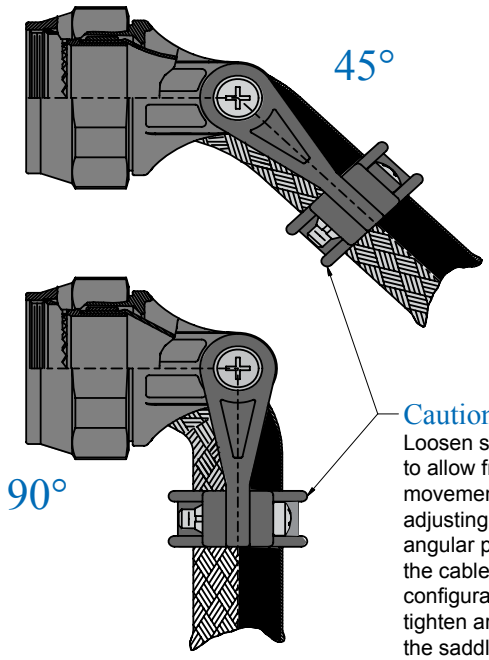
Composite Thermoplastic Shield Sock Assembly Procedure

At the marked location, near the shield support ring, wrap tape around wire bundle for snug fit of shield support ring (Figure 1). Tape wrap is optional.

You can then slide the overall braid from the wire bundle side over the shield support ring, trimming braid ends and tucking extra braid underneath itself for a clean appearance.

For pin connectors, slide the backshell forward, and hand tighten backshell to connector. Then, evenly space shield pigtails (Figure 3) or solder sleeve pigtails (Figure 4) around the shield support ring. Cut the pigtails so that they extend slightly beyond end of shield support ring.

Bring the shield sock from backshell and completely cover the pigtails and support ring. Trim and fold the braid as shown in Figure 2. Lace tie the shield adjacent to support ring ends.



Caution: Loosen saddle clamps to allow free cable movement before adjusting clamp to angular positions. Form the cable into the desired configuration, then tighten arms and secure the saddle clamps.

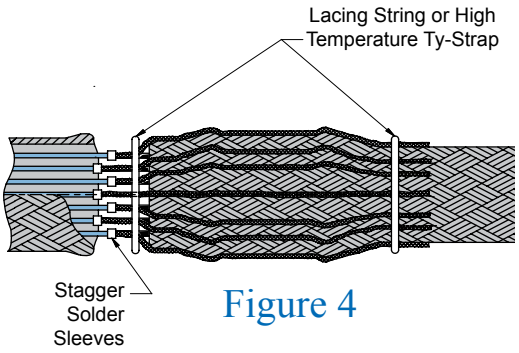


Figure 4

Install Glenair's *Band-it*® band (600-052) between the lace ties onto the center of the support ring as shown in Figure 2. The hand banding tool (600-058) or pneumatic banding tool (600-067) is used for this banding process.

Next, wrap the shield support ring assembly with high temperature tape. Place lacing cord, high temperature tape, or high temperature plastic Ty-Straps on the braid transition to the rear of the backshell to secure the overbraid on wire bundle. If you wish, you can cover the overbraid with 102-080 braid sock.

Tighten the adapter to the connector using established torque values with Glenair 600-091 or 600-157 composite hex coupling wrench and related tooling accessories. Where applicable, secure strain relief saddles onto the wire bundle using TG69 soft jaw pliers. Torque saddle screws to established values. Teflon tape wrap or AS85049/127 bushing strips may be used as needed to cushion the braid sock under the saddle clamps.

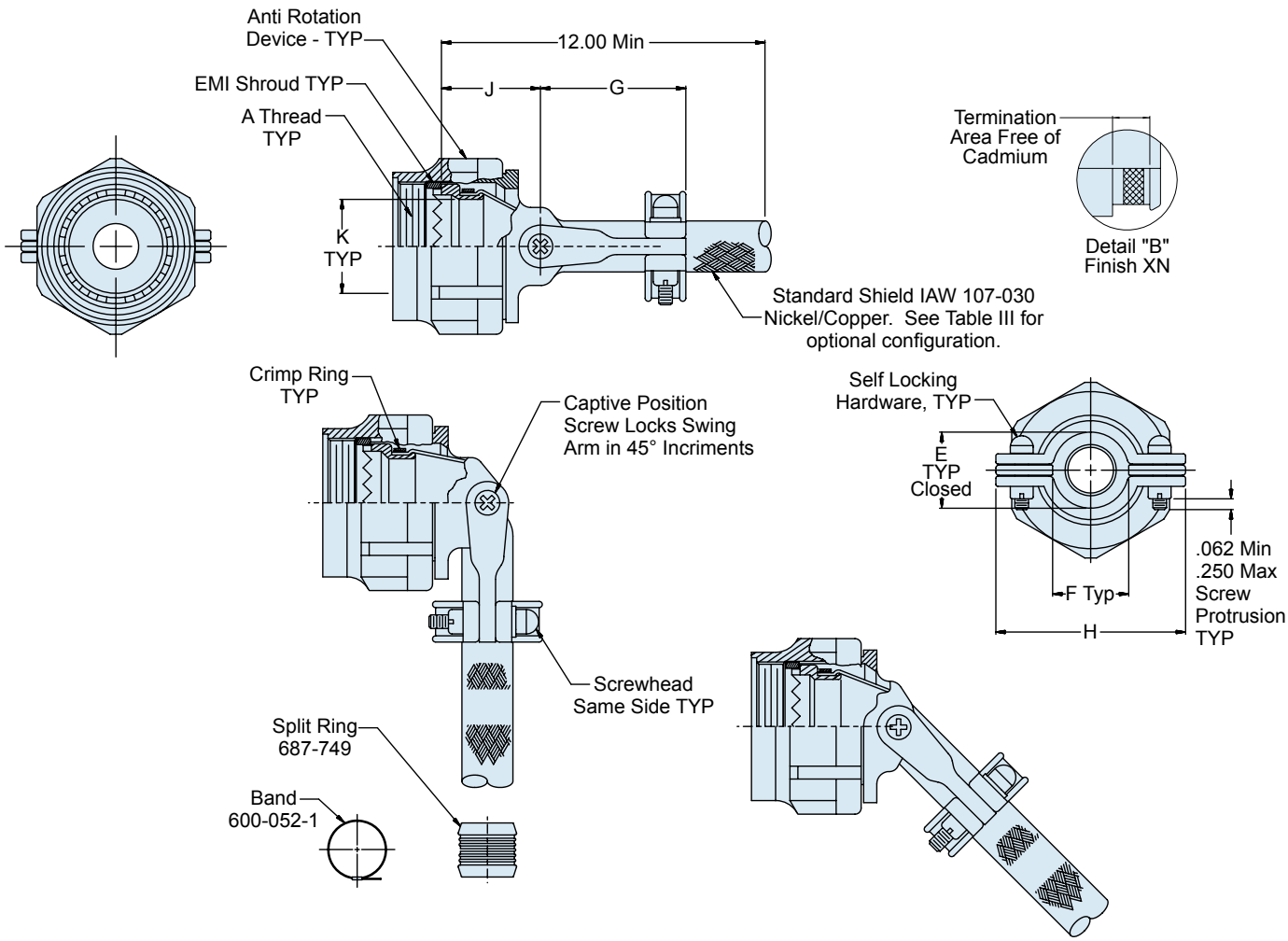
With these few steps, your Shield Sock installation is complete!

319-064
Composite Swing-Arm Backshell
with Shield Sock and
Self-Locking Rotatable Coupling

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II *(see note 3)*
H	MIL-DTL-38999 Series III and IV
SELF-LOCKING	
ROTATABLE COUPLING	

Product Series	Basic Part Number	Finish Symbol	Connector Shell Size	Split Ring / Band Option			
319	H	064	XO	15	B	R	14

- **Product Series**: *319 - EMI/RFI Shield Sock Assemblies*
- **Basic Part Number**
- **Finish Symbol** *(See Table III)*
- **Connector Shell Size** *(See Table II)*
- **Split Ring / Band Option**: *Split Ring (687-749) and Band (600-052-1) supplied with R option (Omit for none)*
- **Connector Designator**: *A, F, and H*
- **Optional Braid Material**: *Omit for Standard (See Table IV)*
- **Custom Braid Length**: *Specify In Inches (Omit for Std. 12" Length)*



319-064
Composite Swing-Arm Backshell
with Shield Sock and
Self-Locking Rotatable Coupling

Glenair®

TABLE II: SHELL SIZE

Shell Size		E ± .031	F Min.	G Max.	H Max.	J ± .06	K Min. (H Code)	K Min. (A Code)	K Min. (F Code)
A, F	H								
08	09	.265 (6.7)	.22 (5.6)	1.06 (26.9)	.98 (24.9)	.94 (23.9)	.264 (6.7)	.265 (6.7)	.275 (7.0)
10	11	.310 (7.9)	.27 (6.9)	1.09 (27.7)	1.05 (26.7)	.97 (24.6)	.390 (9.9)	.370 (9.4)	.412 (10.5)
12	13	.390 (9.9)	.35 (8.9)	1.18 (30.0)	1.20 (30.5)	1.03 (26.2)	.504 (12.8)	.506 (12.9)	.526 (13.4)
14	15	.506 (12.9)	.47 (11.9)	1.24 (31.5)	1.30 (33.0)	1.09 (27.7)	.630 (16.0)	.580 (14.7)	.657 (16.7)
16	17	.591 (15.0)	.55 (14.0)	1.32 (33.5)	1.44 (36.6)	1.12 (28.4)	.756 (19.2)	.705 (17.9)	.776 (19.7)
18	19	.661 (16.8)	.62 (15.7)	1.39 (35.3)	1.56 (39.6)	1.15 (29.2)	.843 (21.4)	.784 (19.9)	.872 (22.1)
20	21	.744 (18.9)	.70 (17.8)	1.49 (37.8)	1.69 (42.9)	1.18 (30.0)	.969 (24.6)	.909 (23.1)	1.007 (25.6)
22	23	.826 (21.0)	.78 (19.8)	1.55 (39.4)	1.77 (45.0)	1.25 (31.8)	1.091 (27.7)	1.034 (26.3)	1.132 (28.8)
24	25	.896 (22.8)	.85 (21.6)	1.61 (40.9)	1.89 (48.0)	1.28 (32.5)	1.217 (30.9)	1.149 (29.2)	1.257 (31.9)

TABLE III: FINISH

Symbol	Finish
XB	Composite Material–No Plating, Color Black, Brass Interface Shroud and Adapter–Nickel Plated
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XN	Composite Material–No Plating, Color Black and Brown, Brass Interface Shroud and Adapter–Selectively Cadmium Plated (See Detail B)
XO	Composite Material–No Plating, Color Black and Brown, Brass Interface Shroud and Adapter–Nickel Plated

TABLE IV: BRAID TYPE

Symbol	Braid Type
A	100% AmberStrand®
B	75%/25% AmberStrand® Blend
L	100% ArmorLite™
Standard	Nickel/Copper 34awg
T	Tin/Copper 34awg

NOTES

1. See Table I in Intro for front-end dimensional details.
2. See composite thermoplastic shield sock assembly procedure for detailed installation instructions.
3. Add mod code -475 to end of part number for use with Series II connectors. Backshell to be supplied less shroud.
4. Coupling nut supplied unplated.

319-120
Composite EMI/RFI Backshell
with Shield Sock and Self-Locking Rotatable Coupling

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II *(see note 3)*
H	MIL-DTL-38999 Series III and IV
SELF-LOCKING	
ROTATABLE COUPLING	
LOW PROFILE	

319	H	S	120	XB	15	B	R	14
Product Series *319 - EMI/RFI Shield Sock Assemblies*	**Connector Designator** *A, F, and H*	**Angle and Profile** *S - Straight*	**Basic Part Number**	**Finish Symbol** *(See Table III)*	**Connector Shell Size** *(See Table II)*	**Optional Braid Material** *Omit for Standard (See Table IV)*	**Split Ring / Band Option** *Split Ring (687-749) and Band (600-052-1) supplied with R option (Omit for none)*	**Custom Braid Length** *Specify In Inches (Omit for Std. 12" Length)*

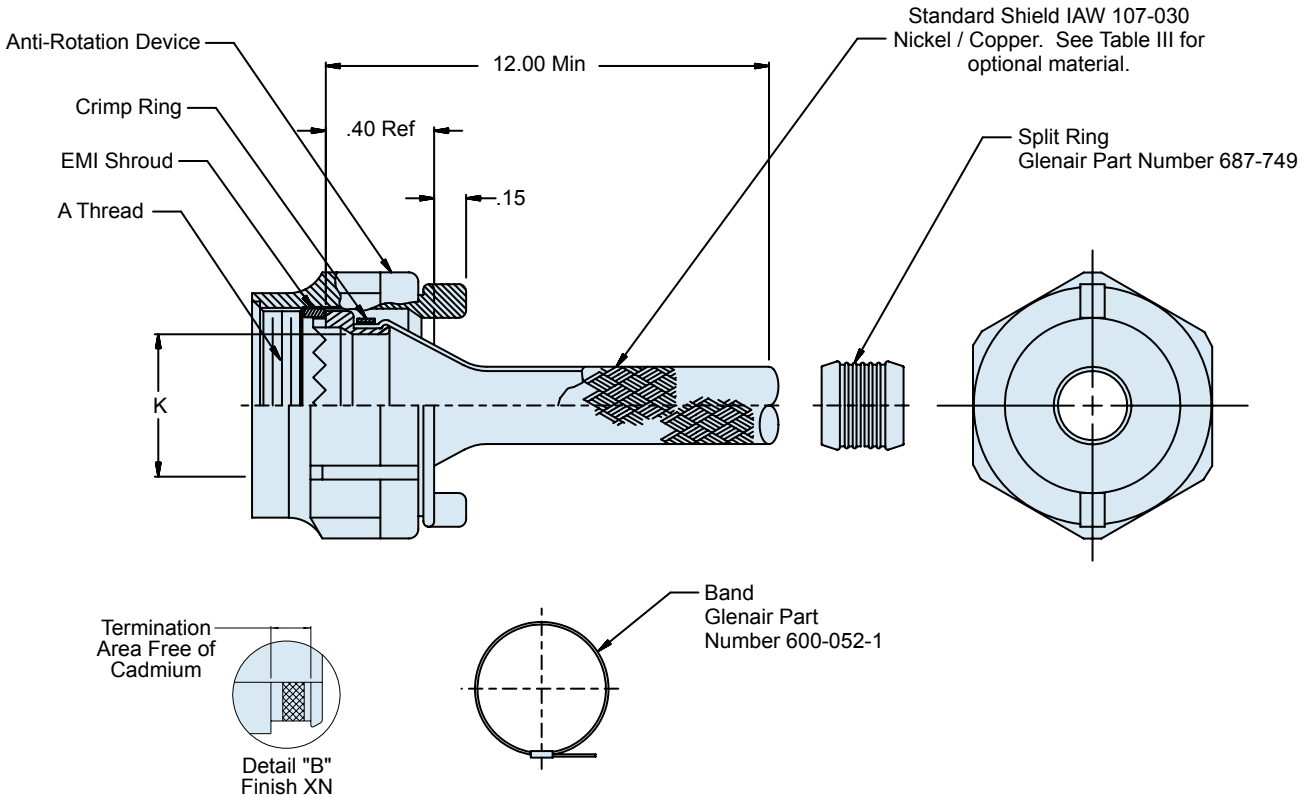


TABLE II: SHELL SIZE				
Shell Size		K Diameter		
A, F	H	A Code	F Code	H Code
08	09	.265 (6.7)	.275 (7.0)	.264 (6.7)
10	11	.370 (9.4)	.412 (10.5)	.390 (9.9)
12	13	.506 (12.9)	.526 (13.4)	.504 (12.8)
14	15	.580 (14.7)	.651 (16.5)	.630 (16.0)
16	17	.705 (17.9)	.776 (19.7)	.756 (19.2)
18	19	.784 (19.9)	.872 (22.1)	.843 (21.4)
20	21	.909 (23.1)	1.007 (25.6)	.969 (24.6)
22	23	1.034 (26.3)	1.132 (28.8)	1.091 (27.7)
24	25	1.149 (29.2)	1.257 (31.9)	1.217 (30.9)

TABLE III: FINISH	
Symbol	Finish
XB	Composite Material–No Plating, Color Black, Brass Interface Shroud and Adapter–Nickel Plated
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XN	Composite Material–No Plating, Color Black and Brown, Brass Interface Shroud and Adapter–Selectively Cadmium Plated (See Detail B)

TABLE IV: BRAID TYPE	
Symbol	Braid Type
A	100% AmberStrand®
B	75%/25% AmberStrand® Blend
L	100% ArmorLite™
Standard	Nickel/Copper 34awg
T	Tin/Copper 34awg

NOTES

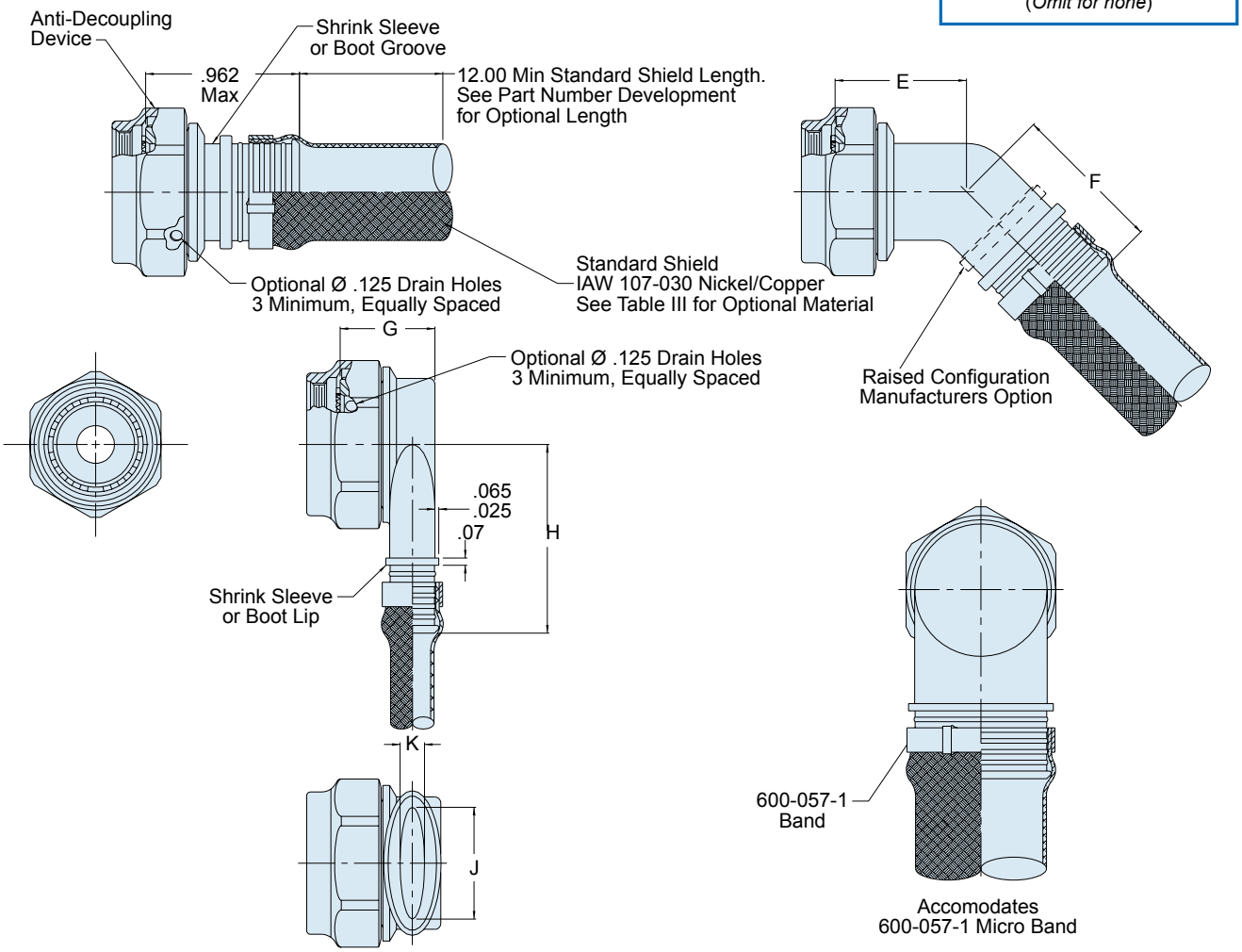
1. See Table I in Intro for front-end dimensional details.
2. See composite thermoplastic shield sock assembly procedure for detailed installation instructions.
3. Add mod code -475 to end of part number for use with Series II connectors. Backshell to be supplied less shroud.
4. Coupling nuts supplied unplated.

319-134
Composite EMI/RFI Ultra Low-Profile Shield Sock with Shrink Boot Porch and Self Locking Rotatable Coupling

CONNECTOR DESIGNATOR:	
F	MIL-DTL-38999 Series I, II
H	MIL-DTL-38999 Series III and IV
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	

Product Series	Angle and Profile	Finish Symbol	Connector Dash Number	Optional Braid Material	Custom Braid Length	Shrink Boot	
319 - EMI/RFI Shield Sock Assemblies	S - Straight T - 45° Elbow W - 90° Elbow	(See Table III)	(See Table II)	Omit for Standard (See Table IV)	Specify In Inches (Omit for Std. 12" Length)	For S and B Angle Only (Omit for None)	
319	H W	134	XO	16	P	B	R S 14

Connector Designator	Basic Part Number	Drain Hole Option	Split Ring / Band Option
F and H		(Omit "P" if Not Required)	Split Ring (687-749) and Band (600-057-1) supplied with R option (Omit for none)



319-134
Composite EMI/RFI Ultra Low-Profile Shield Sock
with Shrink Boot Porch and Self Locking Rotatable Coupling

Glenair®

TABLE II: SHELL SIZE

Shell Size		E ± .06	F ± .09	G Max	H ± .03	J	K
F	H						
08	09	.72 (18.3)	.87 (22.1)	.63 (16.0)	1.042 (26.5)	.304 (7.7)	.160 (4.1)
10	11	.75 (19.1)	.93 (23.6)	.66 (16.8)	1.107 (28.1)	.432 (11.0)	.174 (4.4)
12	13	.75 (19.1)	1.00 (25.4)	.72 (18.3)	1.174 (29.8)	.546 (13.9)	.195 (5.0)
14	15	.76 (19.3)	1.03 (26.2)	.83 (21.1)	1.241 (31.5)	.670 (17.0)	.315 (8.0)
16	17	.78 (19.8)	1.05 (26.7)	.91 (23.1)	1.305 (33.1)	.796 (20.2)	.385 (9.8)
18	19	.79 (20.1)	1.06 (26.9)	.93 (23.6)	1.371 (34.8)	.902 (22.9)	.445 (11.3)
20	21	.82 (20.8)	1.09 (27.7)	1.04 (26.4)	1.438 (36.5)	1.027 (26.1)	.525 (13.3)
22	23	.86 (21.8)	1.13 (28.7)	1.12 (28.4)	1.505 (38.2)	1.152 (29.3)	.595 (15.1)
24	25	.89 (22.6)	1.16 (29.5)	1.18 (30.0)	1.572 (39.9)	1.276 (32.4)	.655 (16.6)

TABLE III: FINISH

Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium Olive Drab Over Electroless Nickel

TABLE IV: BRAID TYPE

Symbol	Braid Type
A	100% AmberStrand®
B	75%/25% AmberStrand® Blend
L	100% ArmorLite™
Standard	Nickel/Copper 34awg
T	Tin/Copper 34awg

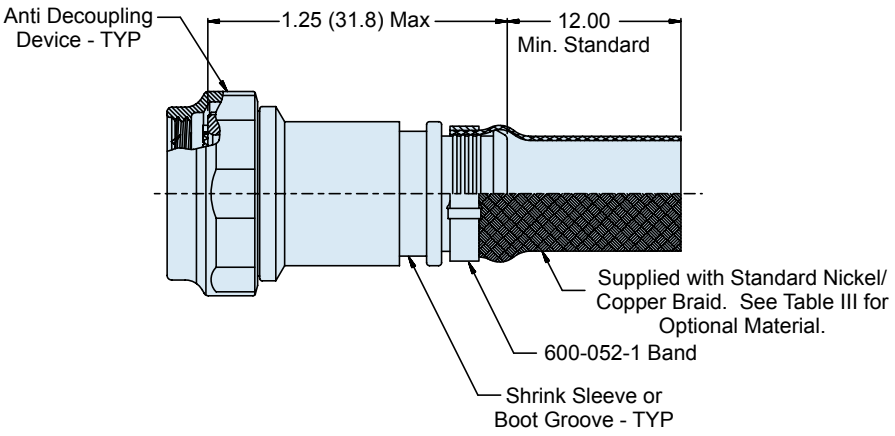
NOTES

1. 770-001S**-0 shrink boot supplied with T option. See shrink boot product page for more details.
2. Coupling nut supplied unplated.
3. See Table I in Intro for front end dimensional details.

319-136
Composite EMI/RFI Shield Sock
with Shrink Boot Porch and Self-Locking Rotatable Coupling

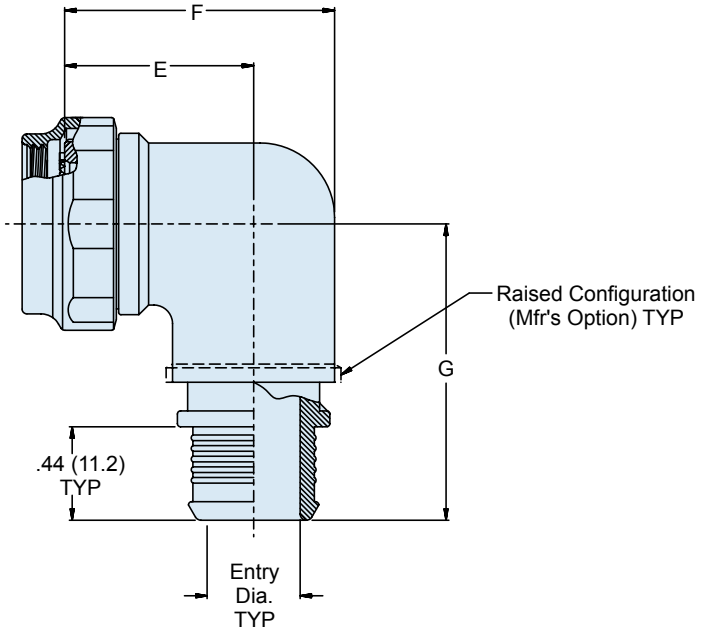
CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
H	MIL-DTL-38999 Series III and IV
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	

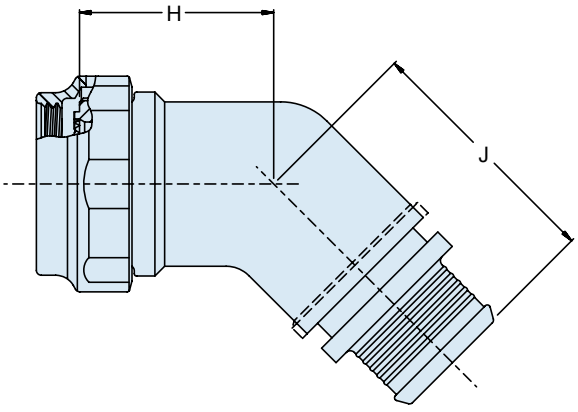
319	H	S	136	XW	19	12	B	R	T	14
Product Series *319 - EMI/RFI Shield Sock Assemblies*	**Connector Designator** *A, F, and H*	**Angle and Profile** *S - Straight* *T - 45° Elbow* *W - 90° Elbow*	**Basic Part Number**	**Finish Symbol** (See Table III)	**Connector Shell Size** (See Table II)	**Entry Diameter** (See Table IV)	**Optional Braid Material** Omit for Standard (See Table V)	**Split Ring / Band Option** Split Ring (687-749) and Band (600-052-1) supplied with R option (Omit for none)	**Shrink Boot Option** Shrink boot and o-ring supplied with T option (Omit for none)	**Custom Braid Length** Specify In Inches (Omit for Std. 12" Length)



NOTES

1. 770-001S**-0 shrink boot supplied with T option. See shrink boot product page for more details.
2. Coupling nut supplied unplated.
3. See Table I in Intro for front-end dimensional details.
4. O-Ring will not be supplied with Designator A.





319-136
Composite EMI/RFI Shield Sock
with Shrink Boot Porch and Self-Locking Rotatable Coupling

Glenair®

TABLE II: SHELL SIZE							
Shell Size		E ± .06 (1.5)	F ± .09 (2.3)	G ± .09 (2.3)	H ± .06 (1.5)	J ± .09 (2.3)	Max. Entry Dash Number (Table III)
A, F	H						
08	09	.69 (17.5)	.88 (22.4)	1.19 (30.2)	.72 (18.3)	1.00 (25.4)	04
10	11	.75 (19.1)	1.00 (25.4)	1.25 (31.8)	.75 (19.1)	1.06 (26.9)	06
12	13	.81 (20.6)	1.13 (28.7)	1.31 (33.3)	.75 (19.1)	1.13 (28.7)	08
14	15	.88 (22.4)	1.31 (33.3)	1.38 (35.1)	.76 (19.3)	1.16 (29.5)	10
16	17	.94 (23.9)	1.38 (35.1)	1.44 (36.6)	.78 (19.8)	1.18 (30.0)	12
18	19	.97 (24.6)	1.44 (36.6)	1.47 (37.3)	.79 (20.1)	1.19 (30.2)	13
20	21	1.06 (26.9)	1.63 (41.4)	1.56 (39.6)	.82 (20.8)	1.22 (31.0)	15
22	23	1.13 (28.7)	1.75 (44.5)	1.63 (41.4)	.86 (21.8)	1.26 (32.0)	17
24	25	1.19 (30.2)	1.88 (47.8)	1.69 (42.9)	.89 (22.6)	1.29 (32.8)	19
28	-	1.34 (34.0)	2.13 (54.1)	1.78 (45.2)	.92 (23.4)	1.32 (33.5)	22

TABLE III: FINISH	
Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium Olive Drab Over Electroless Nickel

TABLE IV: BRAID TYPE	
Symbol	Braid Type
A	100% AmberStrand®
B	75%/25% AmberStrand® Blend
L	100% ArmorLite™
Standard	Nickel/Copper 34awg
T	Tin/Copper 34awg

TABLE IV: ENTRY	
Dash Number	Entry Diameter ± .03 (0.8)
03	.19 (4.8)
04	.25 (6.4)
05	.31 (7.9)
06	.38 (9.7)
07	.44 (11.2)
08	.50 (12.7)
09	.56 (14.2)
10	.63 (16.0)
11	.69 (17.5)
12	.75 (19.1)
13	.81 (20.6)
14	.88 (22.4)
15	.94 (23.9)
16	1.00 (25.4)
17	1.06 (26.9)
18	1.13 (28.7)
19	1.19 (30.2)
20	1.25 (31.8)
21	1.31 (33.3)
22	1.38 (35.1)

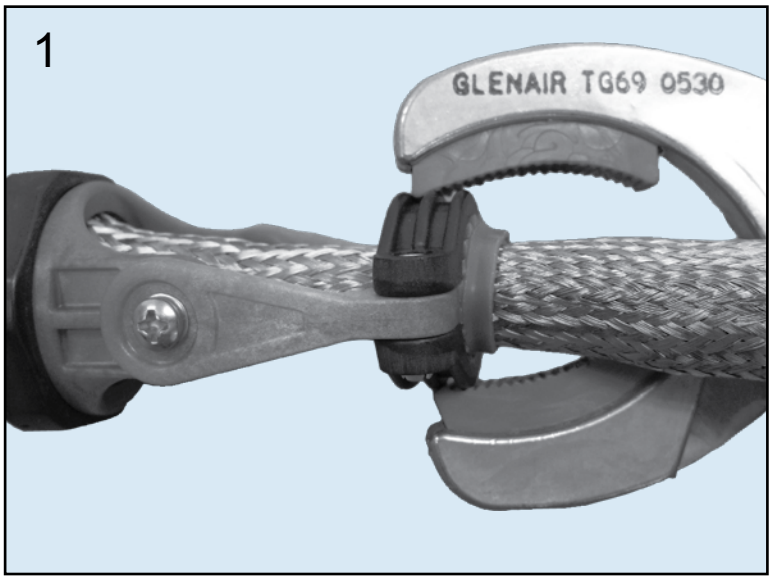
Composite Saddle Clamp Assembly Procedure

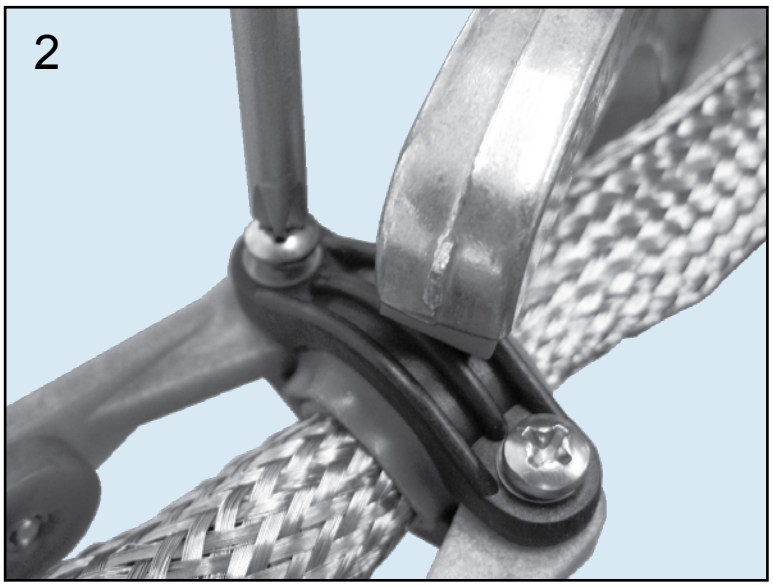
1. After terminating shields, tighten the backshell to the connector and build-up the outside diameter of the wire bundle with AS85049/127 bushing strip to achieve a moderately snug fit against the saddle-bars.

2. Position the saddle-bars on the built-up wire bundle. Then, using Glenair TG69 Soft Jaw pliers, hold the saddle-bars down firmly and evenly against the wire bundle. (See figure 1)

3. Continuing to hold down the saddle bars, tighten clamp screws. Alternate between insertion of both screws so that the saddle bars compress against the cable evenly. Stop when the saddle-bars bottom against the arms of the clamp assembly. (See figure 2)

4. Tighten screws to correct torque values





Saddle Clamp Torque Specifications	
Saddle Screw Size	Installation Torque (In/Lbs)
4	4
6	6
10	10

The Right Backshell for the Job...

...and the Right Tool for the Job

Glenair recommends the use of the appropriate sized series 600-157 or series 600-091 composite hex coupling wrench to prevent damage to the composite backshell coupling nut. The wrench is used during assembly of the backshell to the rear end of the connector.

The use of incorrect types and styles of coupling nut wrenches, such as slip-jaw pliers, will result in damage to the composite coupling nut up to and including failure due to cracking. So don't do it. You picked the right backshell, now pick up the right tool.

Glenair®
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Glendale, California 91201-2497
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319-137
Composite Shield Sock Strain Relief
with Self-Locking Rotatable Coupling

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II *(see note 3)*
H	MIL-DTL-38999 Series III and IV
SELF-LOCKING	
ROTATABLE COUPLING	
LOW PROFILE	

Product Series
319 - EMI/RFI Shield Sock Assemblies

Angle and Profile
S - Straight
A - 90°
B - 45°

Finish Symbol
(See Table III)

Optional Braid Material
B - See Table IV for Options
(Omit for Std. Nickel/Copper)

Custom Braid Length
Specify In Inches
(Omit for Std. 12" Length)

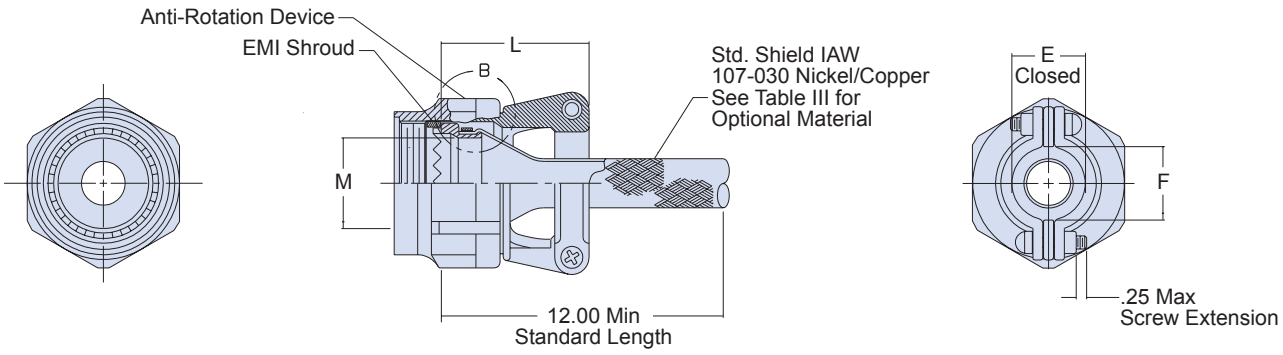
319	H	S	137	XO	15	B	R	14

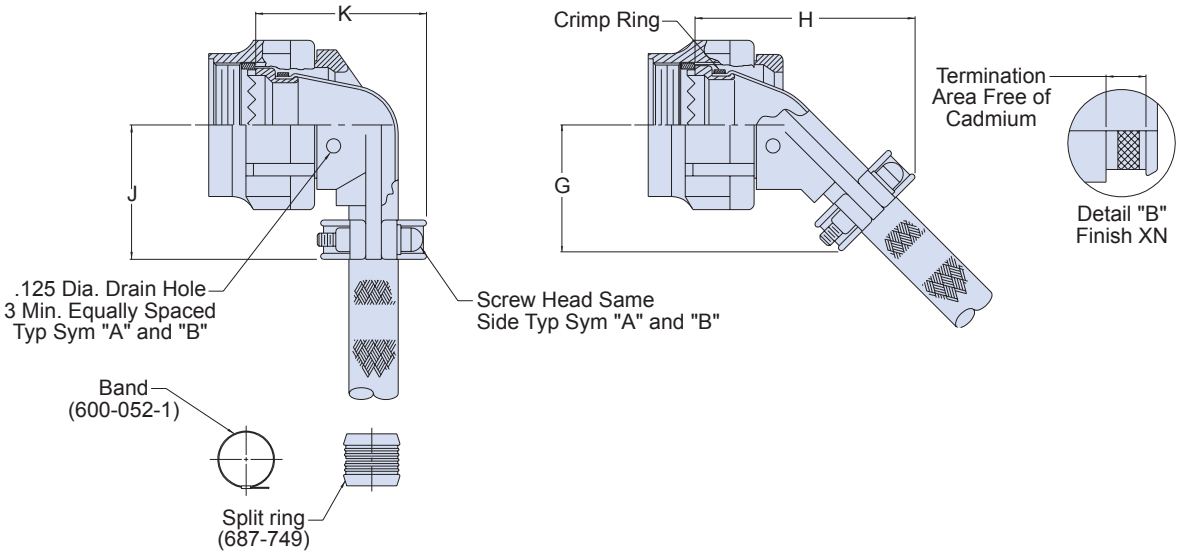
Connector Designator
A, F, and H

Basic Part Number

Connector Shell Size
(See Table II)

Split Ring / Band Option
Split Ring (687-749) and Band (600-052-1) supplied with R option
(Omit for none)





319-137
Composite Shield Sock Strain Relief
with Self-Locking Rotatable Coupling

Glenair®

TABLE II: SHELL SIZE					
Shell Size		E ± .031	F Min	G Max	H Max
A, F	H				
08	09	.265 (6.7)	.22 (5.6)	.901 (22.9)	1.388 (35.3)
10	11	.310 (7.9)	.27 (6.9)	.964 (24.5)	1.428 (36.3)
12	13	.390 (9.9)	.35 (8.9)	1.050 (26.7)	1.498 (38.0)
14	15	.506 (12.9)	.47 (11.9)	1.112 (28.2)	1.548 (39.3)
16	17	.591 (15.0)	.55 (14.0)	1.175 (29.8)	1.648 (41.9)
18	19	.661 (16.8)	.62 (15.7)	1.230 (31.2)	1.768 (44.9)
20	21	.744 (18.9)	.70 (17.8)	1.293 (32.8)	1.808 (45.9)
22	23	.826 (21.0)	.78 (19.8)	1.365 (34.7)	1.858 (47.2)
24	25	.896 (22.8)	.85 (21.6)	1.417 (36.0)	1.898 (48.2)

TABLE II: SHELL SIZE (CONTINUED)							
Shell Size		J Max	K Max	L Max	K Diameter		
A, F	H				A Code	F Code	H Code
08	09	.91 (23.1)	1.128 (28.7)	.939 (23.9)	.265 (6.7)	.275 (7.0)	.264 (6.7)
10	11	.97 (24.6)	1.168 (29.7)	1.059 (26.9)	.370 (9.4)	.412 (10.5)	.390 (9.9)
12	13	1.06 (26.9)	1.248 (31.7)	1.199 (30.5)	.506 (12.9)	.526 (13.4)	.504 (12.8)
14	15	1.16 (29.5)	1.368 (34.7)	1.199 (30.5)	.580 (14.7)	.651 (16.5)	.630 (16.0)
16	17	1.34 (34.0)	1.448 (36.8)	1.329 (33.8)	.705 (17.9)	.776 (19.7)	.756 (19.2)
18	19	1.41 (35.8)	1.528 (38.8)	1.509 (38.3)	.784 (19.9)	.872 (22.1)	.843 (21.4)
20	21	1.53 (38.9)	1.648 (41.9)	1.609 (40.9)	.909 (23.1)	1.007 (25.6)	.969 (24.6)
22	23	1.66 (42.2)	1.688 (42.9)	1.759 (44.7)	1.034 (1.034)	1.132 (28.8)	1.091 (27.7)
24	25	1.78 (45.2)	1.758 (44.7)	1.859 (47.2)	1.149 (29.2)	1.257 (31.9)	1.217 (30.9)

TABLE III: FINISH	
Symbol	Finish
XB	Composite Material–No Plating, Color Black, Brass Interface Shroud and Adapter–Nickel Plated
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XN	Composite Material–No Plating, Color Black and Brown, Brass Interface Shroud and Adapter–Selectively Cadmium Plated (See Detail B)

TABLE IV: BRAID TYPE	
Symbol	Braid Type
A	100% AmberStrand®
B	75%/25% AmberStrand® Blend
L	100% ArmorLite™
Standard	Nickel/Copper 34awg
T	Tin/Copper 34awg

NOTES

1. See composite thermoplastic shield sock assembly procedure for detailed installation instructions.
2. See Table I in Intro for front-end dimensional details.
3. Add mod code -475 to end of part number for use with Series II connectors. Backshell to be supplied less shroud.
4. Coupling nut supplied unplated.

319-138
"Wide Mouth" Composite Swing-Arm Strain Relief with Shield Sock and Self-Locking Rotatable Coupling

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II *(see note 3)*
H	MIL-DTL-38999 Series III and IV
SELF-LOCKING	
ROTATABLE COUPLING	
LOW PROFILE	

Product Series
319 - EMI/RFI Shield Sock Assemblies

Finish Symbol
(See Table III)

Custom Braid Length
Specify In Inches
(Omit for Std. 12" Length)

Connector Designator
A, F, and H

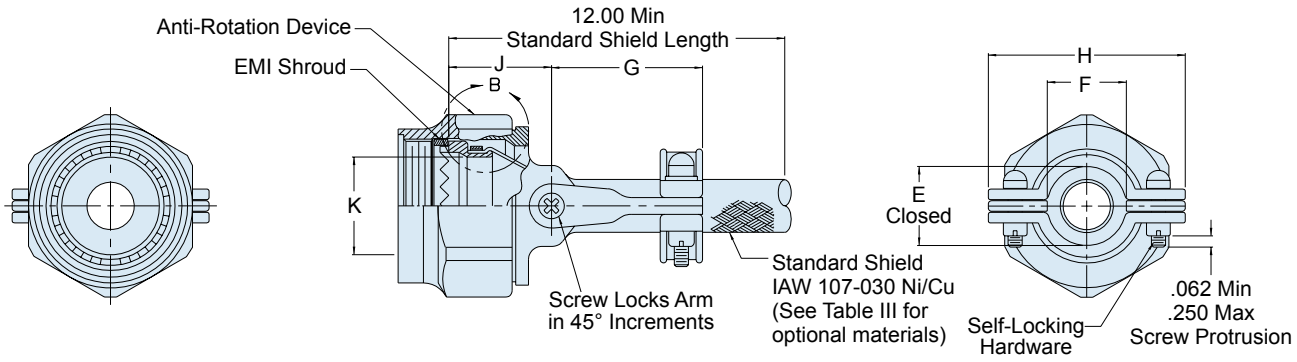
Optional Braid Material
B - See Table IV for Options
(Omit for Std. Nickel/Copper)

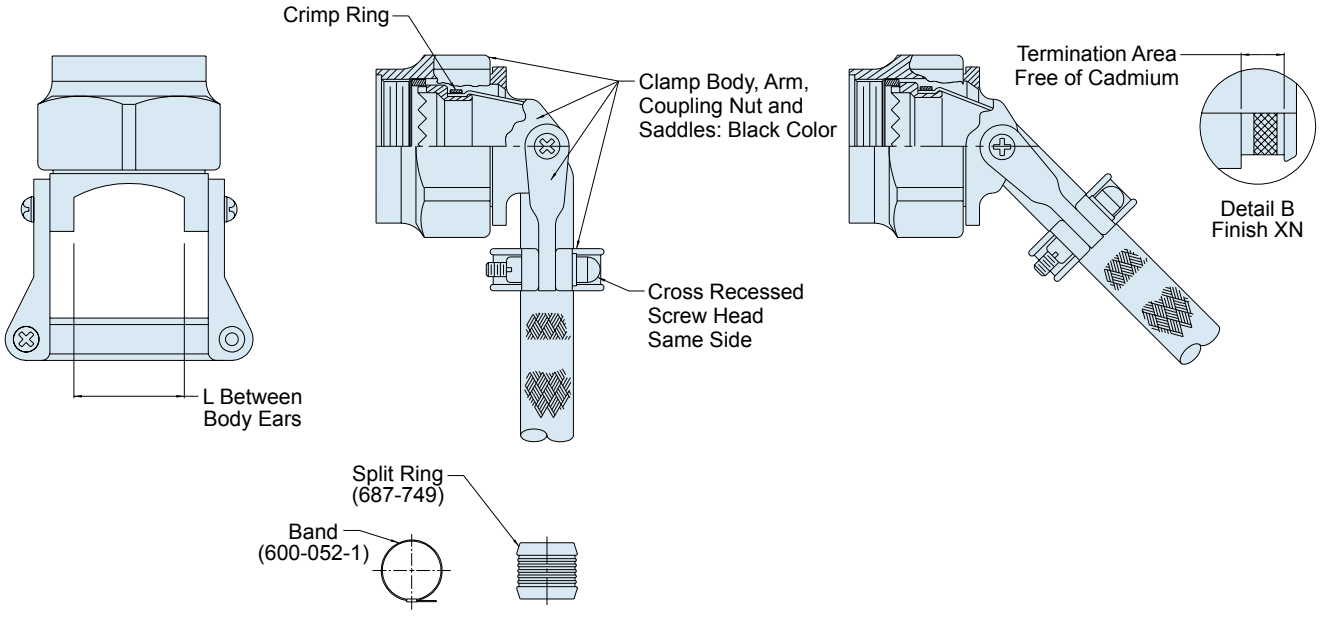
319	H	138	XO	15	B	R	8

Basic Part Number

Connector Shell Size
(See Table II)

Split Ring / Band Option
Split Ring (687-749) and Band (600-052-1) supplied with R option
(Omit for none)





319-138
"Wide Mouth" Composite Swing-Arm Strain Relief
with Shield Sock and Self-Locking Rotatable Coupling

Glenair®

TABLE II: SHELL SIZE

Shell Size		E ± .031	F Min	G Max ± .06	H ± .060	J Max	L Max	K Diameter		
A, F	H							A Code	F Code	H Code
08	09	.350 (8.9)	.350 (8.9)	1.045 (26.5)	.936 (23.8)	.94 (23.9)	.393 (10.0)	.265 (6.7)	.275 (7.0)	.264 (6.7)
10	11	.436 (11.1)	.455 (11.6)	1.045 (26.5)	1.172 (29.8)	.97 (24.6)	.455 (11.6)	.370 (9.4)	.412 (10.5)	.390 (9.9)
12	13	.636 (16.2)	.640 (16.3)	1.170 (29.7)	1.406 (35.7)	1.03 (26.2)	.598 (15.2)	.506 (12.9)	.526 (13.4)	.504 (12.8)
14	15	.706 (17.9)	.710 (18.0)	1.170 (29.7)	1.500 (38.1)	1.09 (27.7)	.710 (18.0)	.580 (14.7)	.651 (16.5)	.630 (16.0)
16	17	.790 (20.1)	.835 (21.2)	1.295 (32.9)	1.562 (39.7)	1.12 (28.4)	.839 (21.3)	.705 (17.9)	.776 (19.7)	.756 (19.2)
18	19	.872 (22.1)	.922 (23.4)	1.295 (32.9)	1.687 (42.8)	1.15 (29.2)	.934 (23.7)	.784 (19.9)	.872 (22.1)	.843 (21.4)
20	21	.996 (25.3)	1.008 (25.6)	1.467 (39.5)	1.969 (50.0)	1.18 (30.0)	1.068 (27.1)	.909 (23.1)	1.007 (25.6)	.969 (24.6)
22	23	1.060 (26.9)	1.197 (30.4)	1.467 (39.5)	2.094 (53.2)	1.25 (31.8)	1.197 (30.4)	1.034 (1.034)	1.132 (28.8)	1.091 (27.7)
24	25	1.123 (28.5)	1.323 (33.6)	1.461 (37.1)	2.281 (57.9)	1.28 (32.5)	1.323 (33.6)	1.149 (29.2)	1.257 (31.9)	1.217 (30.9)

TABLE III: FINISH

Symbol	Finish
XB	Composite Material–No Plating, Color Black, Brass Interface Shroud and Adapter–Nickel Plated
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XN	Composite Material–No Plating, Color Black and Brown, Brass Interface Shroud and Adapter–Selectively Cadmium Plated (See Detail B)

TABLE IV: BRAID TYPE

Symbol	Braid Type
A	100% AmberStrand®
B	75%/25% AmberStrand® Blend
L	100% ArmorLite™
Standard	Nickel/Copper 34awg
T	Tin/Copper 34awg

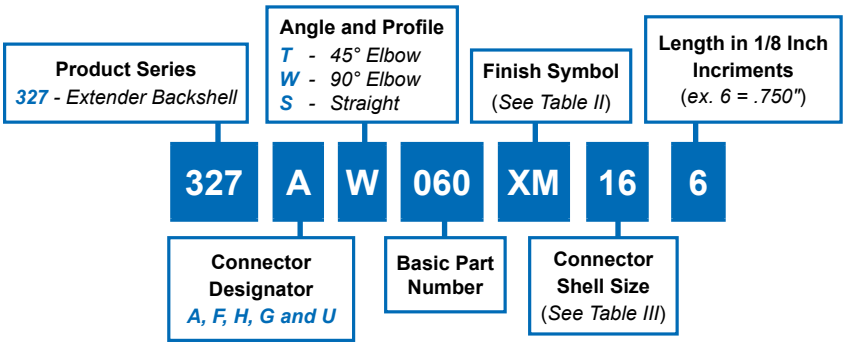
NOTES

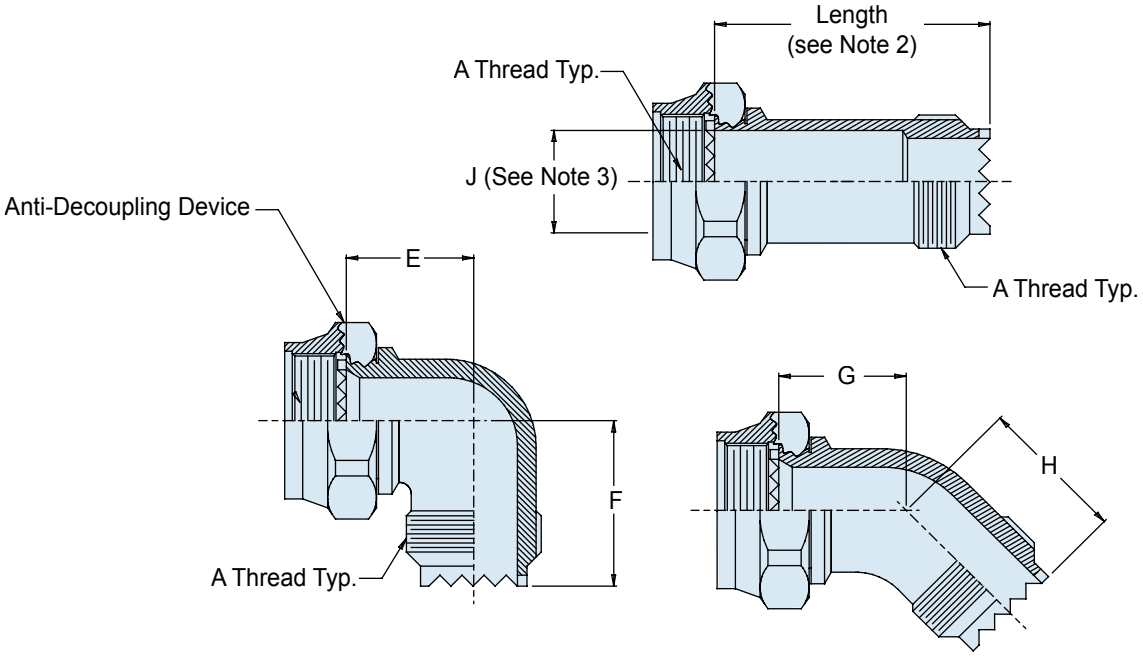
1. See Table I in Intro for front-end dimensional details.
2. See composite thermoplastic shield sock assembly procedure for detailed installation instructions.
3. Add mod code -475 to end of part number for use with Series II connectors. Backshell to be supplied less shroud.
4. Coupling nut supplied unplated.

327-060
Extender Backshell
with Self-Locking Rotatable Coupling

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
H	MIL-DTL-38999 Series III and IV
G	MIL-DTL-28840
U	DG123 and DG123A
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	

Note: See Table I in Intro for Front-End Dimensional Details





APPLICATION NOTES

1. Metric dimensions (mm) are in parentheses and are for reference only.
2. Available length, straight configuration only, 6 = .750 (19.1), 8 = 1.00 (25.4), consult factory for additional length. Omit length designator for angular functions.
3. J Diameter applicable to connector Code H, straight configuration only.
4. Coupling nut supplied unplated.
5. See Table I in Intro for front-end dimensional details.

TABLE II: FINISH	
Symbol	**Finish Description**
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XO	No Plating - Brown Color (Non-Conductive Finish)
XB	No Plating - Black Color (Non-Conductive Finish)
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

TABLE III: CONNECTOR SHELL SIZE ORDER NUMBER

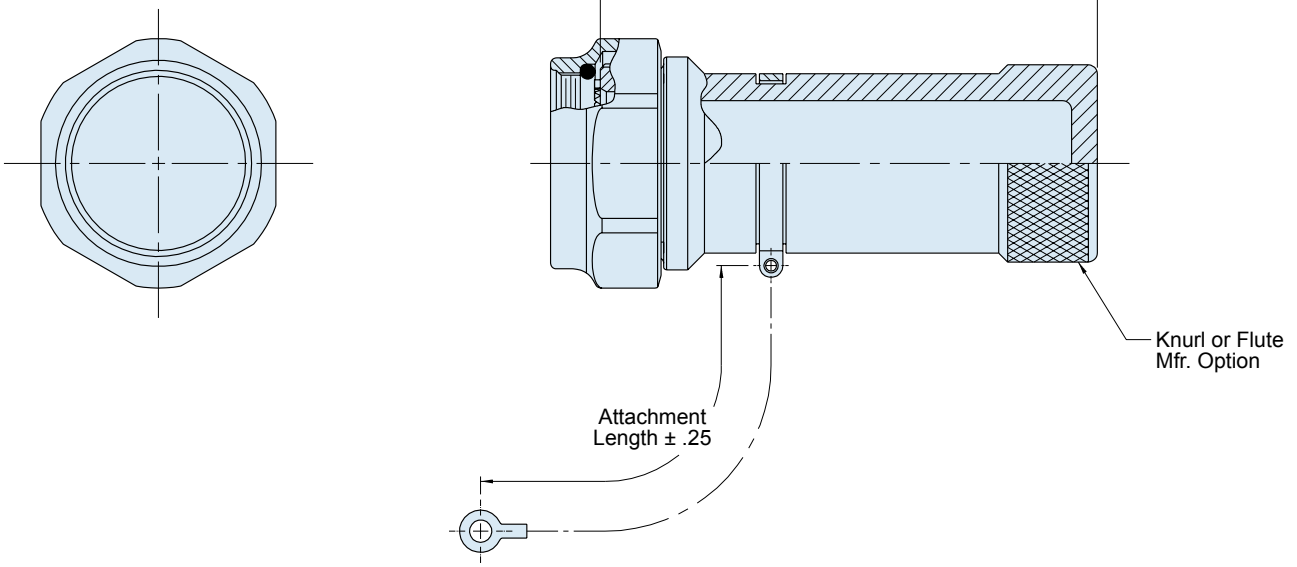
Shell Size For Connector Designator		E		F		G		H	
A, F	H	Max		Max		Max		Max	
08	09	.74	(18.8)	1.00	(25.4)	.78	(19.8)	.89	(22.6)
10	11	.80	(20.3)	1.06	(26.9)	.81	(20.6)	.92	(23.4)
12	13	.86	(21.8)	1.12	(28.4)	.81	(20.6)	.94	(23.9)
14	15	.93	(23.6)	1.19	(30.2)	.82	(20.8)	.97	(24.6)
16	17	.99	(25.1)	1.25	(31.8)	.84	(21.3)	.99	(25.1)
18	19	1.05	(26.7)	1.31	(33.3)	.85	(21.6)	1.00	(25.4)
20	21	1.12	(28.4)	1.38	(35.1)	.88	(22.4)	1.03	(26.2)
22	23	1.18	(30.0)	1.44	(36.6)	.92	(23.4)	1.07	(27.2)
24	25	1.24	(31.5)	1.50	(38.1)	.97	(24.6)	1.08	(27.4)

347-129
Composite Shorting Cap Backshell
with Lanyard Attachment and Self-Locking Rotatable Coupling

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
H	MIL-DTL-38999 Series III and IV
SELF-LOCKING	
ROTATABLE COUPLING	

Note: See Table I in Intro for Front-End Dimensional Details

Product Series	Basic Part Number	Connector Shell Size	Attachment Length in 1/2" Incriments	Attachment Symbol				
347 - Shorting Cap Backshell		(*See Table II*)	*(Ex. 6 = 3.0 Inches) 1" Min. Length*	(*See Table IV*)				
347	129	XM	19	4	H	N	4	A
					Connector Designator *A, F or H*			End Fitting Symbol (*See Table V*)
						Finish Symbol (*See Table III*)		
							Backshell Length in 1/2" Incriments *ex. 4 = 2.0 Inches 1" Min. / 2.5" Max.*	



NOTES

1. Coupling nut supplied unplated.
2. See Table I in Intro for front-end dimensional details.

TABLE II: SHELL SIZE	
A, F	H
08	09
10	11
12	13
14	15
16	17
18	19
20	21
22	23
24	25

TABLE III: FINISH	
Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium Olive Drab Over Electroless Nickel

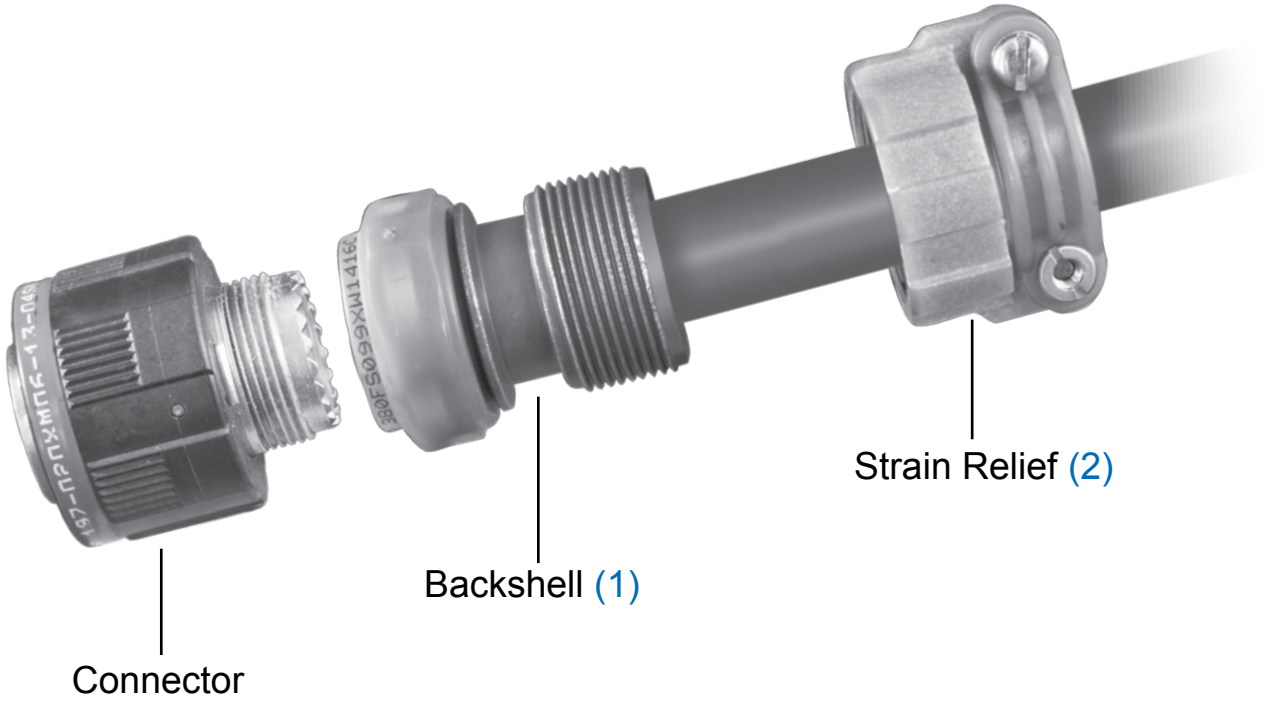
TABLE IV: ATTACHMENT STYLE	
Symbol	Attachment
C	No Attachment, Body Strap Only
D	Bead Chain, CRES/Passivate with Terminal
E	Link Chain, CRES, Passivate with Terminal
F	Wire Rope, Nylon Jacket with Terminal
G	Nylon Rope with Terminal
H	Wire Rope, Teflon Jacket with Terminal
N	Attachment Omitted
R	Wire Rope, PVC Jacket with Terminal
S	#8 Sash Chain, CRES/Passivate
U	Wire Rope, Polyurethane Jacket with Terminal

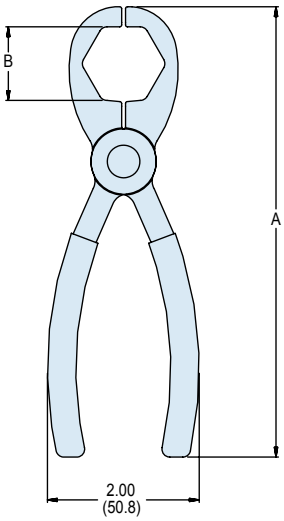
TABLE V	
Symbol	E Diameter
A	.140 (3.6)
B	.167 (4.2)
C	.182 (4.6)
D	.191 (4.9)
E	.125 (3.2)
F	.218 (5.5)

Glenair®

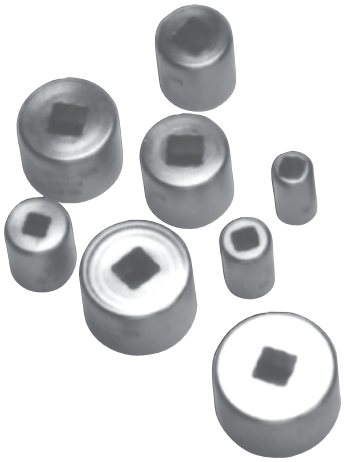
Series 360 Non-Environmental Backshell Assembly Instructions

Series 360 Non-Environmental Backshell Assembly Instructions





(3) 600-157
Stainless Steel Composite
Hex Coupling Wrench



(4) Plug and Receptacle
Holding Tools
for 1/4" and 3/8" Socket

(5) 600-161
Hand Held Digital
Torque Wrench

COMPOSITE COUPLING TORQUE VALUES

Shell Size Reference	Composite Torque (Inch-Pounds)
08/09	35
10/11	35
12/13	40
14/15	40
16/17	40
18/19	40
20/21	80
22/23	80
24/25	80
28	120
32	120
36	120

Series 360 Non-Environmental Backshell Assembly Instructions

The following suggested procedure serves as a guide for proper assembly and installation of Glenair Series 360 Non-Environmental Composite Backshells. It is recommended that trial samples of appropriate cables or wire bundles be used to determine proper trim dimensions of the individual conductors and cable jackets, if applicable.

NOTE: ***As with any electrical connector assembly procedure, be sure to use the proper tools. For convenient, reliable assembly of the connectors and backshells, it is suggested that Glenair's connector holding tools, strap wrenches and connector pliers be used.***

1. Temporarily assemble backshell (1) to connector.

2. If cable is jacketed, insert cable into backshell (1) and bottom against connector. Hold cable in position and mark cable jacket at rear end of backshell.

3. Remove backshell from connector and stage the backshell, together with the strain relief clamp (2), up the cable for installation after wires are terminated to the connector contacts.

4. Trim cable jacket at a point 1/2 inch toward connector from mark made in step two above.

5. Prepare and terminate cable conductors in accordance with established practices.

6. Thread backshell (1) onto the connector and tighten securely. Glenair recommends the use of the appropriate sized series 600-157 composite hex coupling wrench (3) to prevent damage to the composite backshell coupling nut. For added convenience in assembly, an appropriately sized series 600-005 connector holding tool (4) is recommended, as well as Glenair digital torque wrench (5).

7. Assemble strain relief (2) to backshell and tighten securely. Tighten strain relief saddles securely on cable or harness (see saddle clamp assembly procedure).

360-014
Composite Non-Environmental Backshell
with Self-Locking Rotatable Coupling and Strain Relief

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
L	MIL-DTL-38999 Series 1.5 (JN1003)
H	MIL-DTL-38999 Series III and IV
G	MIL-DTL-28840
U	DG123 and DG123A
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	

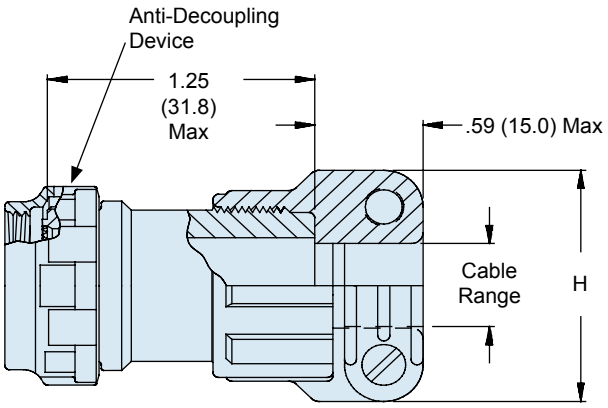
Product Series
360 - Non-Environmental Strain Relief

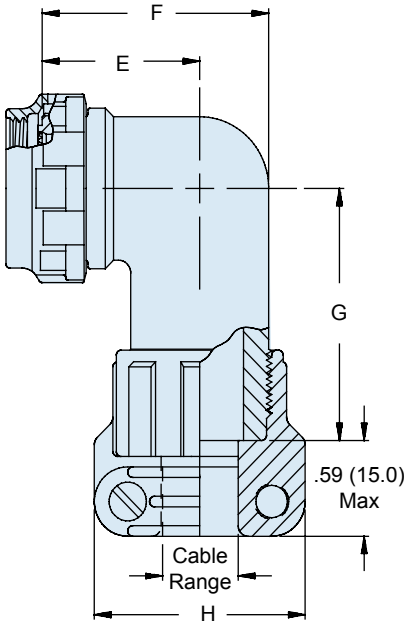
Angle and Profile
S - Straight
W - 90° Elbow

Finish Symbol
(See Table III)

Cable Entry
(Table IV)

360	H	S	014	XO	19	20
	Connector Designator *A, F, L, H, G and U*		Basic Part Number		Connector Shell Size *(See Table II)*	





NOTES

1. Coupling nut supplied unplated.
2. See Table I in Intro for front-end dimensional details.

TABLE II: CONNECTOR SHELL SIZE ORDER NUMBER

Shell Size For Connector Designator*					E		F		G		Max Entry
A	F/L	H	G	U	± .06	(1.5)	± .09	(2.3)	± .09	(2.3)	Dash No.**
08	08	09	–	–	.69	(17.5)	.88	(22.4)	1.19	(30.2)	10
10	10	11	–	08	.75	(19.1)	1.00	(25.4)	1.25	(31.8)	12
12	12	13	11	10	.81	(20.6)	1.13	(28.7)	1.31	(33.3)	14
14	14	15	13	12	.88	(22.4)	1.31	(33.3)	1.38	(35.1)	16
16	16	17	15	14	.94	(23.9)	1.38	(35.1)	1.44	(36.6)	20
18	18	19	17	16	.97	(24.6)	1.44	(36.6)	1.47	(37.3)	20
20	20	21	19	18	1.06	(26.9)	1.63	(41.4)	1.56	(39.6)	22
22	22	23	–	20	1.13	(28.7)	1.75	(44.5)	1.63	(41.4)	24
24	24	25	23	22	1.19	(30.2)	1.88	(47.8)	1.69	(42.9)	28
28	–	–	25	24	1.34	(34.0)	2.13	(54.1)	1.78	(45.2)	32

**Consult factory for additional entry sizes available.

TABLE III: FINISH

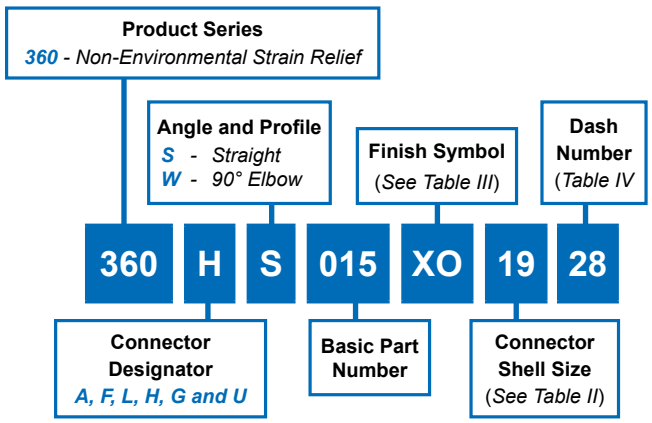
Symbol	Finish Description
XB	No Plating - Black Color
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XO	No Plating - Brown Color
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

TABLE IV: CABLE ENTRY

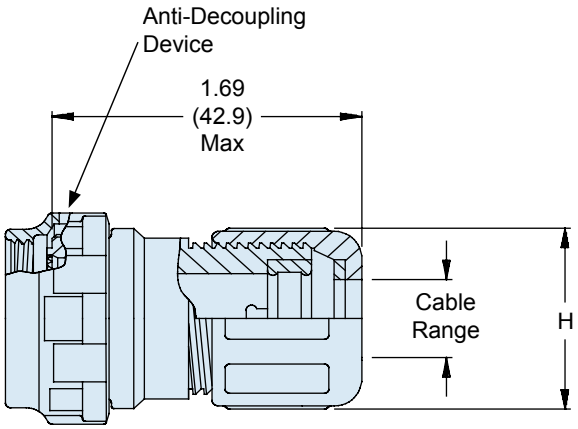
	H		Cable Range			
Dash No.	±.06	(1.5)	Minimum		Maximum	
10	.94	(23.9)	.16	(4.0)	.25	(6.4)
12	1.17	(29.7)	.29	(5.1)	.38	(9.7)
14	1.28	(32.5)	.40	(10.1)	.44	(11.2)
16	1.41	(35.8)	.52	(12.7)	.63	(15.9)
18	1.50	(38.1)	.58	(14.7)	.69	(17.5)
20	1.56	(39.6)	.64	(16.3)	.75	(19.1)
22	1.69	(42.9)	.72	(18.3)	.88	(22.2)
24	1.81	(46.0)	.79	(20.0)	1.00	(25.4)
28	1.91	(48.5)	.89	(20.3)	1.13	(28.6)
32	2.02	(51.3)	.96	(24.4)	1.25	(31.8)

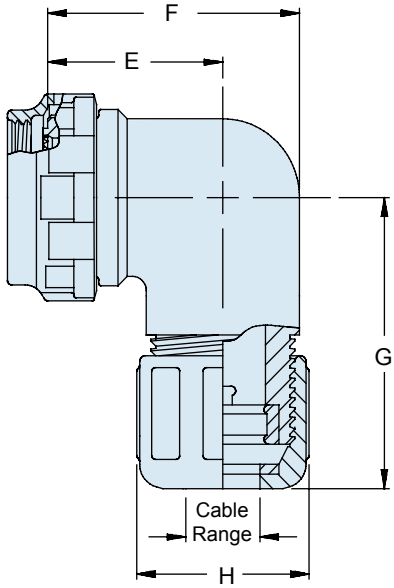
360-015
Composite Non-Environmental Backshell
with Self-Locking Rotatable Coupling and Qwik-Clamp Strain-Relief

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
L	MIL-DTL-38999 Series 1.5 (JN1003)
H	MIL-DTL-38999 Series III and IV
G	MIL-DTL-28840
U	DG123 and DG123A
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	



US PATENT 5211576





NOTES

1. Coupling nut supplied unplated.
2. See Table I in Intro for front-end dimensional details.
3. Metric dimensions (mm) are in parentheses and are for reference only

TABLE II: CONNECTOR SHELL SIZE ORDER NUMBER

Shell Size For Connector Designator		E		F		G		Max Entry
A, F/L, & H	G & U	± .06	(1.5)	± .09	(2.3)	± .09	(2.3)	Dash No. *
08, 09	---	.69	(17.5)	.88	(22.4)	1.19	(30.2)	08
03, 10, 11	08	.75	(19.1)	1.00	(25.4)	1.25	(31.8)	12
12, 13	10, 11	.81	(20.6)	1.13	(28.7)	1.31	(33.3)	16
14, 15	12, 13	.88	(22.4)	1.31	(33.3)	1.38	(35.1)	20
16, 17	14, 15	.94	(23.9)	1.38	(35.1)	1.44	(36.6)	24
18, 19	16, 17	.97	(24.6)	1.44	(36.6)	1.47	(37.3)	28
20, 21	18, 19	1.06	(26.9)	1.63	(41.4)	1.56	(39.6)	32
22, 23	20	1.13	(28.7)	1.75	(44.5)	1.63	(41.4)	36
24, 25, 61	22, 23	1.19	(30.2)	1.88	(47.8)	1.69	(42.9)	40
28	24, 25	1.34	(34.0)	2.13	(54.1)	1.78	(45.2)	44

* Consult factory for additional entry sizes available.

TABLE III: FINISH

Symbol	Finish Description
XB	No Plating - Black Color
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XO	No Plating - Brown Color
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

TABLE IV: CABLE ENTRY

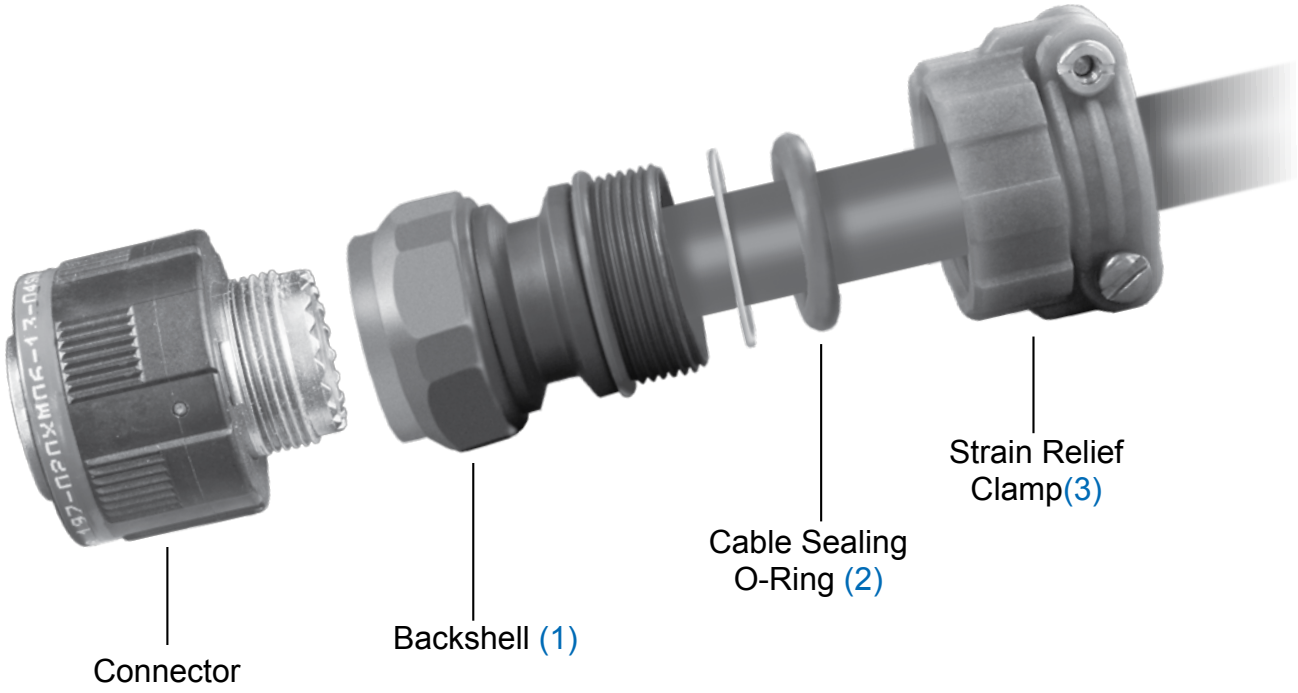
	H (Max)		Saddle Kit *		Cable Range			
Dash No	±.06	(1.5)	Minimum		Minimum		Maximum	
08	.72	(18.3)	---	---	.10	(2.5)	.25	(6.4)
12	.91	(23.1)	.10	(2.5)	.20	(5.1)	.38	(9.7)
16	1.09	(27.7)	.10	(2.5)	.33	(8.4)	.50	(12.7)
20	1.22	(31.0)	.20	(5.1)	.45	(11.4)	.63	(15.9)
24	1.34	(34.0)	.33	(8.4)	.52	(13.2)	.75	(19.1)
28	1.53	(38.9)	.45	(11.4)	.64	(16.3)	.88	(22.2)
32	1.72	(43.7)	.52	(13.2)	.77	(19.6)	1.00	(25.4)
36	1.85	(47.0)	.64	(16.3)	.86	(21.8)	1.13	(28.6)
40	1.97	(50.0)	.77	(19.6)	.98	(24.9)	1.25	(31.8)
44	2.09	(53.1)	.86	(21.8)	1.13	(28.6)	1.38	(34.9)

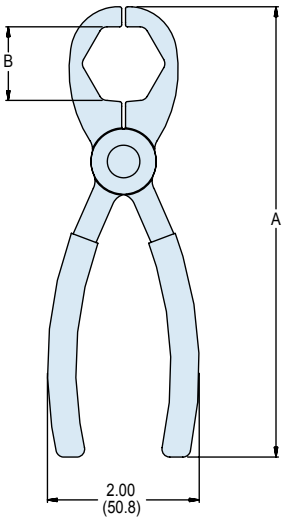
* Consult factory for availability of special saddle bar kit to reduce minimum clamp range.

Glenair®

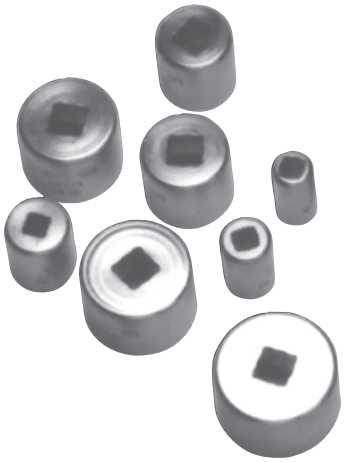
Series 370 Environmental Backshell Assembly Instructions

Series 370 Environmental Backshell Assembly Instructions





(4) 600-157
Stainless Steel Composite Hex Coupling Wrench



(5) Plug and Receptacle Holding Tools for 1/4" and 3/8" Socket

(6) 600-161
Hand Held Digital Torque Wrench

COMPOSITE COUPLING TORQUE VALUES

Shell Size Reference	Composite Torque (Inch-Pounds)
08/09	35
10/11	35
12/13	40
14/15	40
16/17	40
18/19	40
20/21	80
22/23	80
24/25	80
28	120
32	120
36	120

Series 370 Environmental Backshell Assembly Instructions

The following suggested procedure serves as a guide for proper assembly and installation of straight Glenair Series 370 Cable Sealing Backshells for use with jacketed cables. It is recommended that trial samples of appropriate cables be used to determine proper trim dimensions of the cable jacket and individual conductors.

NOTE: ***As with any electrical connector assembly procedure, be sure to use the proper tools. For convenient reliable assembly of the connector and backshell, it is suggested that Glenair's connector holding tools, strap wrenches and connector pliers be used.***

1. Temporarily assemble backshell (1) to connector.

2. Remove the strain relief clamp (3) and cable sealing o-ring (2) from the backshell and stage them in the order shown up the cable for installation after wires are terminated to the connector contacts.

3. Insert cable into backshell (1) and bottom against connector. Hold cable in position and mark cable jacket at rear end of backshell.

4. Remove backshell from connector and place on cable with components from step two above.

5. Trim cable jacket at a point 3/4 inch toward connector from mark made in step two above.

6. Prepare and terminate wires in accordance with established practices.

7. Thread backshell (1) onto the connector and tighten securely. Glenair recommends the use of the appropriate sized series 600-157 composite hex coupling wrench (4) to prevent damage to the composite backshell coupling nut. For added convenience in assembly, an appropriately sized series 600-005 connector holding tool (5) is recommended, as well as Glenair digital torque wrench (6).

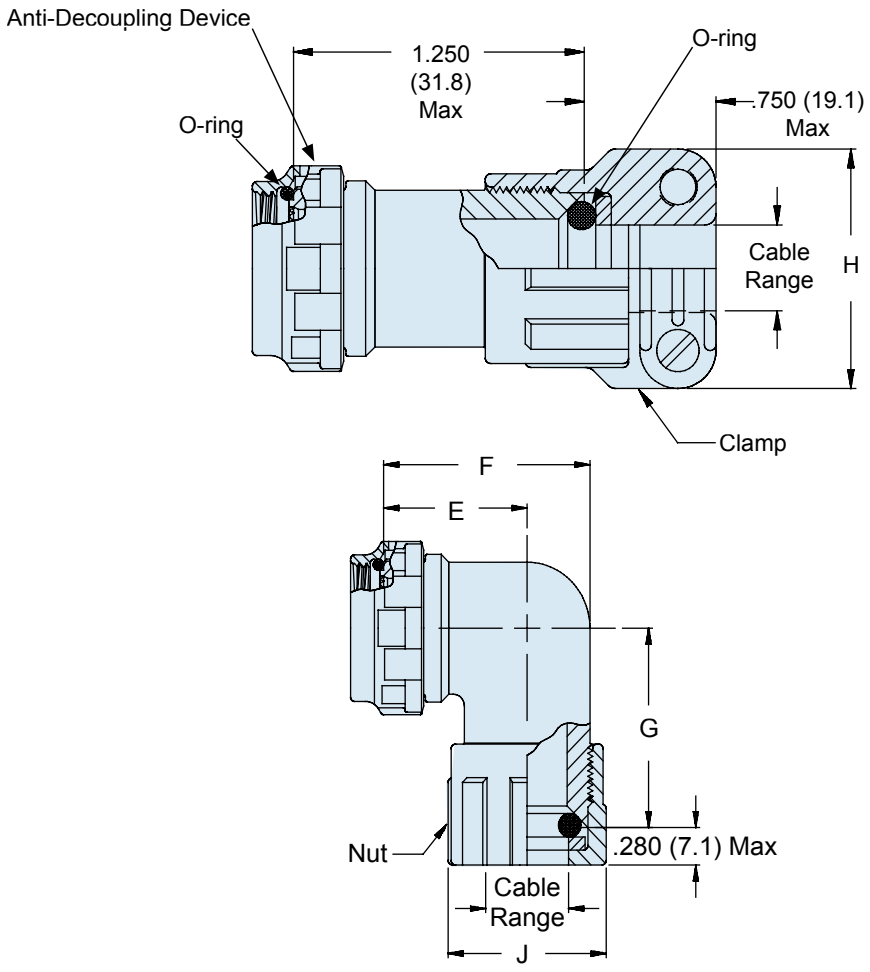
8. Slide washer (if supplied) and O-ring (2) on to backshell and tighten strain relief clamp (3) firmly in place

9. If provided, tighten saddle bar clamps until they bottom against saddle clamp ears (see saddle clamp assembly procedure).

370-016
Composite Cable-Sealing Environmental Backshell
with Self-Locking Rotatable Coupling and Strain-Relief Clamp or Nut

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
L	MIL-DTL-38999 Series 1.5 (JN1003)
H	MIL-DTL-38999 Series III and IV
G	MIL-DTL-28840
U	DG123 and DG123A
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	

Product Series	Angle and Profile	Coupling Nut Finish Symbol	Dash Number				
370 - Environmental Strain Relief	S - Straight W - 90° Split Clamp	(See Table III)	(Table IV)				
370	H	S	016	XO	19	20	C
Connector Designator A, F, L, H, G and U			Basic Part Number	Connector Shell Size (See Table II)			Strain Relief Style C - Clamp N - Nut



370-016
Composite Cable-Sealing Environmental Backshell
with Self-Locking Rotatable Coupling and Strain-Relief Clamp or Nut

Glenair®

TABLE II: CONNECTOR SHELL SIZE ORDER NUMBER

Shell Size For Connector Designator*					E		F		G		Max Entry
A	F/L	H	G	U	± .06	(1.5)	± .09	(2.3)	± .09	(2.3)	Dash No.**
08	08	09	–	–	.69	(17.5)	.88	(22.4)	1.06	(26.9)	10
10	10	11	–	08	.75	(19.1)	1.00	(25.4)	1.13	(28.7)	12
12	12	13	11	10	.81	(20.6)	1.13	(28.7)	1.19	(30.2)	14
14	14	15	13	12	.88	(22.4)	1.31	(33.3)	1.25	(31.8)	16
16	16	17	15	14	.94	(23.9)	1.38	(35.1)	1.31	(33.3)	20
18	18	19	17	16	.97	(24.6)	1.44	(36.6)	1.34	(34.0)	20
20	20	21	19	18	1.06	(26.9)	1.63	(41.4)	1.44	(36.6)	22
22	22	23	–	20	1.13	(28.7)	1.75	(44.5)	1.50	(38.1)	24
24	24	25	23	22	1.19	(30.2)	1.88	(47.8)	1.56	(39.6)	28
28	–	–	25	24	1.34	(34.0)	2.13	(54.1)	1.66	(42.2)	32

**Consult factory for additional entry sizes available.

TABLE IV: CABLE ENTRY

Dash No.	Clamp Saddle Closed		H		J		Cable Range *			
			±.06	(1.5)	±.06	(1.5)	Minimum		Maximum	
10	.16	(4.1)	.94	(23.9)	.80	(20.3)	.13	(3.3)	.25	(6.4)
12	.29	(5.1)	1.17	(29.7)	.93	(23.6)	.25	(6.4)	.38	(9.7)
14	.40	(10.2)	1.28	(32.5)	1.06	(26.9)	.31	(7.9)	.44	(11.2)
16	.52	(13.2)	1.41	(35.8)	1.22	(31.0)	.50	(12.7)	.63	(15.9)
18	.58	(14.7)	1.50	(38.1)	1.24	(31.5)	.56	(14.2)	.69	(17.5)
20	.64	(16.0)	1.56	(39.6)	1.37	(34.8)	.63	(16.0)	.75	(19.1)
22	.72	(18.3)	1.69	(42.9)	1.49	(37.8)	.75	(19.1)	.88	(22.2)
24	.79	(20.1)	1.81	(46.0)	1.62	(41.1)	.88	(22.4)	1.00	(25.4)
28	.89	(22.0)	1.91	(48.5)	1.68	(42.7)	1.00	(25.4)	1.13	(28.6)
32	.96	(24.0)	2.02	(51.3)	1.82	(46.2)	1.13	(28.6)	1.25	(31.8)

* Cable range equals diameter of cable outer jacket.

NOTES

1. Coupling nut supplied unplated.
2. See Table I in Intro for front-end dimensional details.

TABLE III: FINISH

Symbol	Finish Description
XB	No Plating - Black Color (Non-Conductive Finish)
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XO	No Plating - Brown Color (Non-Conductive Finish)
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

370-017
Composite Cable-Sealing Environmental Backshell
with Self-Locking Rotatable Coupling and Qwik-Clamp

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
L	MIL-DTL-38999 Series 1.5 (JN1003)
H	MIL-DTL-38999 Series III and IV
G	MIL-DTL-28840
U	DG123 and DG123A
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	

Product Series
370 - Environmental Strain Relief

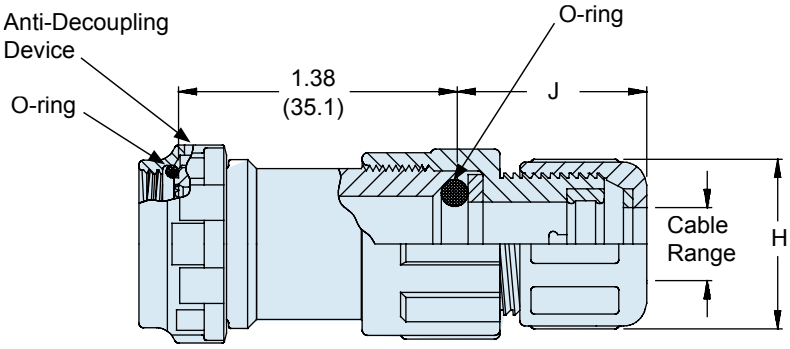
Angle and Profile
S - Straight
W - 90° Elbow

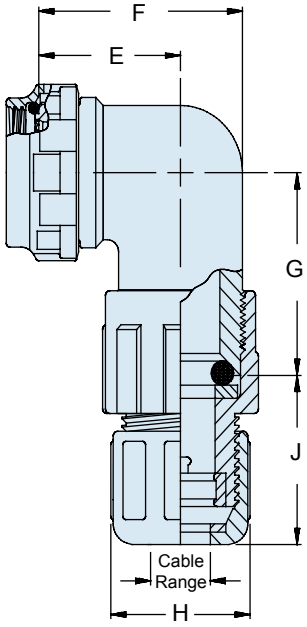
Finish Symbol
(*See Table III*)

Dash Number
(*Table IV*)

370	H	S	017	XO	19	28
Connector Designator *A, F, L, H, G and U*			Basic Part Number		Connector Shell Size (*See Table II*)	

US PATENT 5211576





NOTES

1. Coupling nut supplied unplated.
2. See Table I in Intro for front-end dimensional details.

370-017
Composite Cable-Sealing Environmental Backshell
with Self-Locking Rotatable Coupling and Qwik-Clamp

Glenair®

TABLE II: CONNECTOR SHELL SIZE ORDER NUMBER

Shell Size For Connector Designator*					E		F		G		Max Entry
A	F/L	H	G	U	± .06	(1.5)	± .09	(2.3)	± .09	(2.3)	Dash No.**
08	08	09	–	–	.69	(17.5)	.88	(22.4)	1.06	(26.9)	08
10	10	11	–	08	.75	(19.1)	1.00	(25.4)	1.13	(28.7)	12
12	12	13	11	10	.81	(20.6)	1.13	(28.7)	1.19	(30.2)	16
14	14	15	13	12	.88	(22.4)	1.31	(33.3)	1.25	(31.8)	20
16	16	17	15	14	.94	(23.9)	1.38	(35.1)	1.31	(33.3)	24
18	18	19	17	16	.97	(24.6)	1.44	(36.6)	1.34	(34.0)	28
20	20	21	19	18	1.06	(26.9)	1.63	(41.4)	1.44	(36.6)	32
22	22	23	–	20	1.13	(28.7)	1.75	(44.5)	1.50	(38.1)	36
24	24	25	23	22	1.19	(30.2)	1.88	(47.8)	1.56	(39.6)	40
28	–	–	25	24	1.34	(34.0)	2.13	(54.1)	1.66	(42.2)	44

**Consult factory for additional entry sizes available.

TABLE III: FINISH

Symbol	Finish Description
XB	No Plating - Black Color (Non-Conductive Finish)
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XO	No Plating - Brown Color (Non-Conductive Finish)
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

TABLE IV: CABLE ENTRY

Dash No.	H (Max)		J (Max)		Cable Range Minimum		Cable Range Maximum	
08	.72	(18.3)	.87	(22.1)	.13	(3.3)	.25	(6.4)
12	.91	(23.1)	1.01	(25.7)	.22	(5.6)	.38	(9.7)
16	1.09	(27.7)	1.11	(28.2)	.34	(8.6)	.50	(12.7)
20	1.22	(31.0)	1.11	(28.2)	.47	(11.9)	.63	(15.9)
24	1.34	(34.0)	1.11	(28.2)	.60	(15.0)	.75	(19.1)
28	1.53	(38.9)	1.26	(32.0)	.72	(18.3)	.88	(22.2)
32	1.72	(43.7)	1.41	(35.8)	.84	(21.3)	1.00	(25.4)
36	1.85	(47.0)	1.41	(35.8)	.97	(24.6)	1.13	(28.6)
40	1.97	(50.0)	1.41	(35.8)	1.09	(27.7)	1.25	(31.8)
44	2.09	(53.1)	1.53	(38.9)	1.22	(31.0)	1.38	(34.9)

377-040
Composite Fiber-Optic Strain-Relief Backshell
with Cable Alignment Grommet and Self-Locking Rotatable Coupling

CONNECTOR DESIGNATOR:	
H	MIL-DTL-38999 Series III and IV
U	DG123 and DG123A
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	

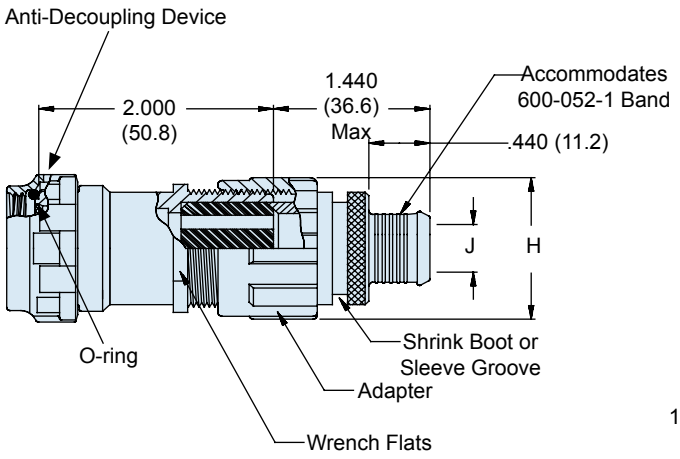
Product Series
377 - Fiber Optic Strain Relief

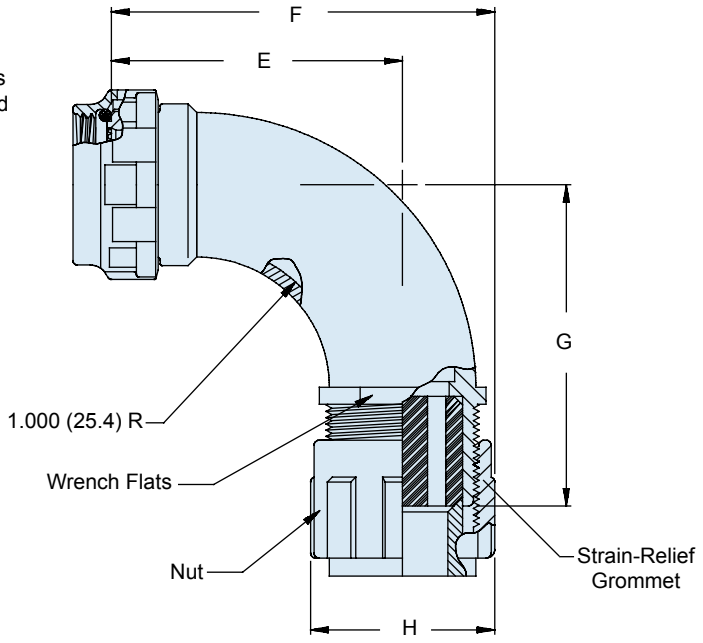
Angle and Profile
S - Straight
W - 90° Elbow

Finish Symbol
(See Table III)

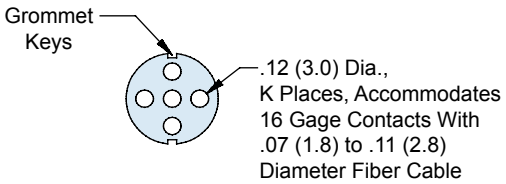
Strain Relief Style
A - Banding Adapter
N - Nut

377	H	S	040	XM	19	A	T
	Connector Designator *H and U*		**Basic Part Number**	**Connector Shell Size** *(See Table II)*		**Shrink Boot Option** *(Omit for none)*	





U.S. PATENT NO. 6358077



377-040
Composite Fiber-Optic Strain-Relief Backshell
with Cable Alignment Grommet and Self-Locking Rotatable Coupling

TABLE II: CONNECTOR SHELL SIZE ORDER NUMBER

Shell Size For Conn. Desig.		E		F		G		H		J		K (# of Holes)*	
H	U	± .06	(1.5)	± .09	(2.3)	± .06	(1.5)	(Max)		Ref.		Code H	Code U
11	---	1.70	(43.2)	2.39	(60.7)	1.90	(48.3)	1.41	(35.8)	.27	(6.9)	2	---
13	11	1.78	(45.2)	2.47	(62.7)	1.96	(49.8)	1.41	(35.8)	.33	(8.4)	4	2
15	13	1.82	(46.2)	2.51	(63.8)	2.02	(51.3)	1.41	(35.8)	.39	(9.9)	5	4
17	15	1.89	(48.0)	2.70	(68.6)	2.09	(53.1)	1.64	(41.7)	.51	(13.0)	8	5
19	17	1.93	(49.0)	2.74	(69.6)	2.13	(54.1)	1.64	(41.7)	.64	(16.3)	11	8
21	19	2.00	(50.8)	2.94	(74.7)	2.19	(55.6)	1.89	(48.0)	.77	(19.6)	16	11
23	21	2.08	(52.8)	3.02	(76.7)	2.25	(57.2)	1.89	(48.0)	.84	(21.3)	21	16
25	23	2.14	(54.4)	3.20	(81.3)	2.32	(58.9)	2.16	(54.9)	.84	(21.3)	29	21
---	25	2.22	(56.4)	3.28	(83.3)	2.39	(60.7)	2.16	(54.9)	.89	(22.6)	---	29

* Use Glenair 687-142 seal plug in vacant holes

TABLE III: FINISH

Symbol	Finish Description
XB	No Plating - Black Color (Non-Conductive Finish)
XO	No Plating - Brown Color (Non-Conductive Finish)

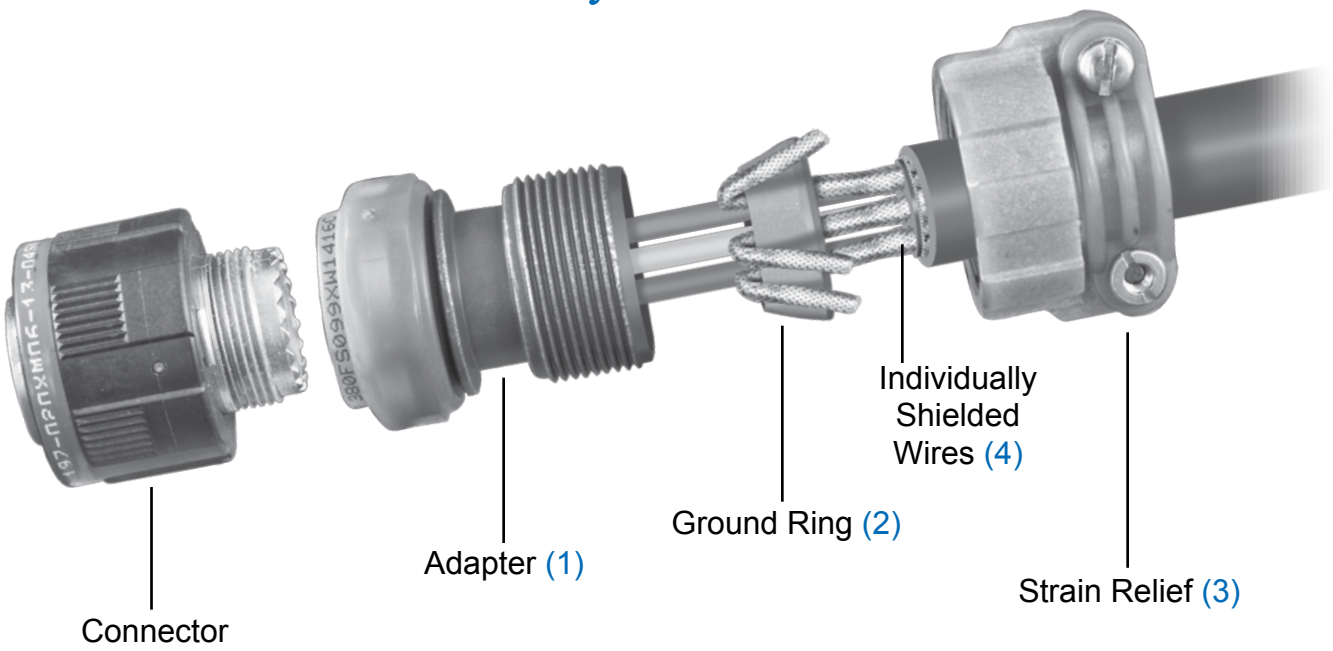
NOTES

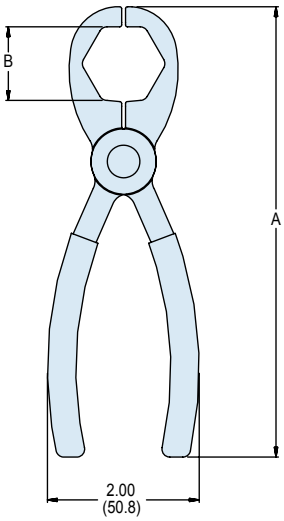
1. See Table I in Intro for front-end dimensional details.
2. Metric dimensions (mm) are in parentheses and are for reference only

Glenair®

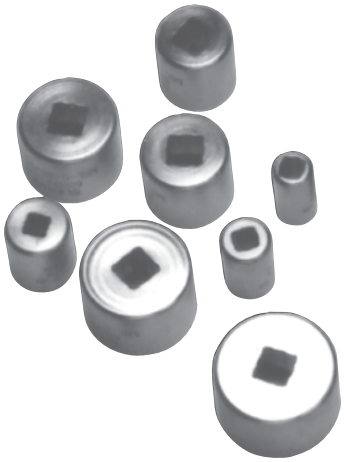
Series 380 EMI/RFI Non-Environmental Backshell Assembly Instructions

Series 380 EMI/RFI Non-Environmental (Type D) Assembly Instructions





(5) 600-157
Stainless Steel Composite Hex Coupling Wrench



(6) Plug and Receptacle Holding Tools for 1/4" and 3/8" Socket

(7) 600-161
Hand Held Digital Torque Wrench

COMPOSITE COUPLING TORQUE VALUES	
Shell Size Reference	**Composite Torque (Inch-Pounds)**
08/09	35
10/11	35
12/13	40
14/15	40
16/17	40
18/19	40
20/21	80
22/23	80
24/25	80
28	120
32	120
36	120

Series 380 EMI/RFI Non-Environmental Backshell Assembly Instructions

The following suggested procedure serves as a guide for the proper assembly and installation of Glenair Series 380 EMI/RFI Non-Environmental Backshells (Type D individual wire shield termination). It is recommended that trial samples of appropriate cables or harnesses be used to determine proper trim dimensions of the outer shield and individual conductors.

NOTE: ***As with any electrical connector assembly procedure, be sure to use the proper tools. For convenient, reliable assembly of the connector and backshell, it is suggested that Glenair's connector holding tools, strap wrenches and connector pliers be used.***

1. Temporarily assemble backshell (1) to connector.
2. Remove strain relief clamp (3) from adapter (1) and stage it, along with the ground ring (2) in the sequence pictured, up the cable for installation after wires are terminated to the connector contacts.
3. Insert cable into adapter (1), and bottom against connector. Hold cable in position and mark outer shield at rear end of adapter (1).
4. Remove adapter (1) from connector and place on cable with items in step two above.
5. Trim cable jacket at a point 3/4 inch toward connector from mark made in step three above, exposing individual conductors.
6. Trim outer shield at mark made in step three above (this procedure is for termination of individually shielded conductors only).
7. Extract shield pigtail from individual conductors. Fold back and tape or tie pigtails flat against the wire bundle.
8. Prepare and terminate contacts to individual conductors in accordance with established practices. (Crimp or solder in place)
9. Slide adapter (1) forward to connector, and tighten securely using appropriate tools.
10. Move the tapered ground ring forward near the rear of the adapter. Untie individual pigtails, and flare back over ground ring as to evenly disperse pigtails around the circumference of the ring. Tie or tape pigtails back to bundle allowing for approx. 1/2 inch of slack.
11. Push ground ring forward and into the tapered counter-bore at the rear of the backshell adapter (1).
12. Thread strain relief clamp (3) onto the adapter (1) and tighten securely.
13. Tighten strain relief saddle bar clamps until they bottom against saddle ears (see saddle clamp assembly procedure). This will provide good shielding and bonding to the adapter shell. (This same procedure can also be utilized for overall shield).

380-099
Composite Cone and Ring Style
EMI/RFI Shield Termination Backshell with Self-Locking Coupling Nut and Strain Relief

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
L	MIL-DTL-38999 Series 1.5 (JN1003)
H	MIL-DTL-38999 Series III and IV
G	MIL-DTL-28840
U	DG123 and DG123A
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	

Product Series
380 - EMI/RFI Non Environmental Backshells with Strain Relief

Angle and Profile
S - Straight
W - 90° Elbow
T - 45° Elbow

Basic Part Number

Finish Symbol
(See Table III)

Strain Relief Style
C - Clamp
N - Nut

Cable Entry
(See Table IV)

380	H	S	099	XM	19	20	C

Connector Designator
A, F, L, H, G and U

Connector Shell Size
(See Table II)

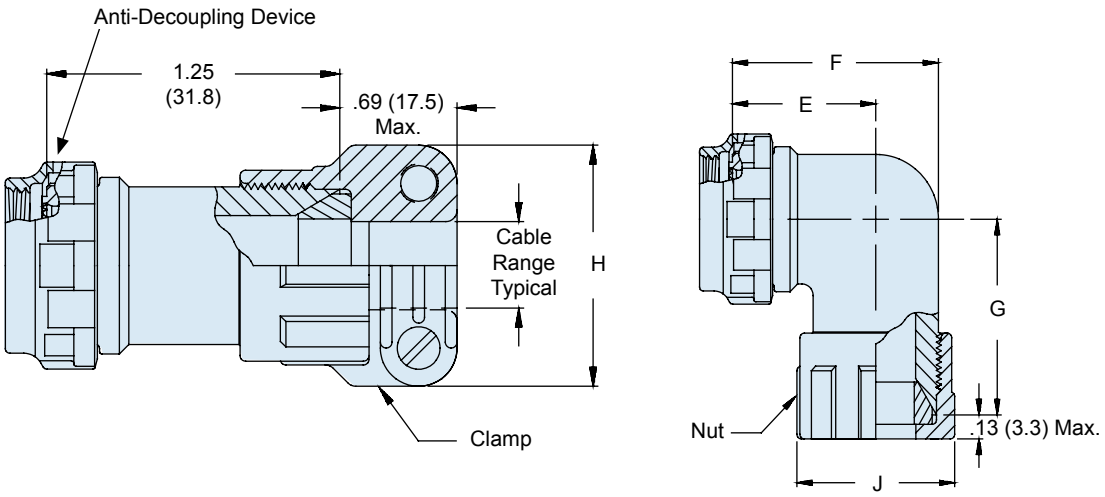


TABLE II: CONNECTOR SHELL SIZE

Shell Size For Connector Designator					E		F		G		Max Entry
A	F/L	H	G	U	± .06	(1.5)	± .09	(2.3)	± .09	(2.3)	Dash No.**
08	08	09	–	–	.69	(17.5)	.88	(22.4)	1.19	(30.2)	10
10	10	11	–	08	.75	(19.1)	1.00	(25.4)	1.25	(31.8)	12
12	12	13	11	10	.81	(20.6)	1.13	(28.7)	1.31	(33.3)	14
14	14	15	13	12	.88	(22.4)	1.31	(33.3)	1.38	(35.1)	16
16	16	17	15	14	.94	(23.9)	1.38	(35.1)	1.44	(36.6)	20
18	18	19	17	16	.97	(24.6)	1.44	(36.6)	1.47	(37.3)	20
20	20	21	19	18	1.06	(26.9)	1.63	(41.4)	1.56	(39.6)	22
22	22	23	–	20	1.13	(28.7)	1.75	(44.5)	1.63	(41.4)	24
24	24	25	23	22	1.19	(30.2)	1.88	(47.8)	1.69	(42.9)	28
28	–	–	25	24	1.34	(34.0)	2.13	(54.1)	1.78	(45.2)	32

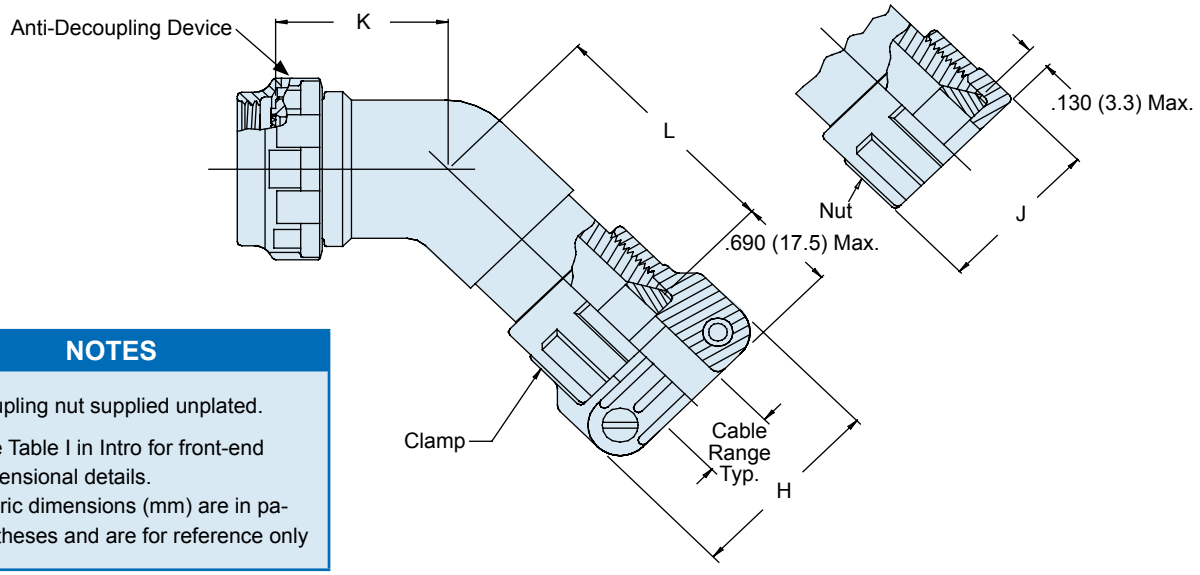
**Consult factory for additional entry sizes available.
See Introduction for additional connector front-end details.

TABLE III: FINISH

Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/ Olive Drab over Electroless Nickel

CAGE Code 06324
Printed in U.S.A.

380-099
Composite Cone and Ring Style
EMI/RFI Shield Termination Backshell with Self-Locking Coupling Nut and Strain Relief Clamp



NOTES

1. Coupling nut supplied unplated.
2. See Table I in Intro for front-end dimensional details.
3. Metric dimensions (mm) are in parentheses and are for reference only

TABLE II: CONNECTOR SHELL SIZE (CONT.)

Shell Size For Connector Designator		K		L		Max Entry
A & F/L	H	± .06	(1.5)	± .06	(1.5)	Dash No. *
08	09	.72	(18.3)	.88	(22.4)	10
10	11	.75	(19.1)	.94	(23.9)	12
12	13	.75	(19.1)	1.00	(25.4)	14
14	15	.76	(19.3)	1.03	(26.2)	16
16	17	.78	(19.8)	1.06	(26.9)	20
18	19	.79	(20.1)	1.07	(27.2)	20
20	21	.82	(20.8)	1.09	(27.7)	22
22	23	.86	(21.8)	1.14	(29.0)	24
24	25	.92	(23.4)	1.17	(29.7)	28

* Consult factory for additional entry sizes available.

TABLE IV: CABLE ENTRY

	H		J		Cable Range *			
Dash No.	±.06	(1.5)	±.06	(1.5)	Minimum		Maximum	
10	.94	(23.9)	.80	(20.3)	.16	(4.0)	.25	(6.4)
12	1.17	(29.7)	.93	(23.6)	.29	(5.1)	.38	(9.7)
14	1.28	(32.5)	1.06	(26.9)	.40	(10.1)	.44	(11.2)
16	1.41	(35.8)	1.22	(31.0)	.52	(12.7)	.63	(15.9)
18	1.50	(38.1)	1.24	(31.5)	.58	(14.7)	.69	(17.5)
20	1.56	(39.6)	1.37	(34.8)	.64	(16.3)	.75	(19.1)
22	1.69	(42.9)	1.49	(37.8)	.72	(18.3)	.88	(22.2)
24	1.81	(46.0)	1.62	(41.1)	.79	(20.0)	1.00	(25.4)
28	1.91	(48.5)	1.68	(42.7)	.89	(20.3)	1.13	(28.6)
32	2.02	(51.3)	1.82	(46.2)	.96	(24.4)	1.25	(31.8)

* Cable range equals diameter of cable outer jacket.

380-100
Composite Cone and Ring Style
EMI/RFI Shield Termination Backshell
with Self-Locking Rotatable Coupling and Qwik Clamp

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
L	MIL-DTL-38999 Series 1.5 (JN1003)
H	MIL-DTL-38999 Series III and IV
G	MIL-DTL-28840
U	DG123 and DG123A
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	

Angle and Profile
S - *Straight*
W - *90° Elbow*
T - *45° Elbow*

Finish Symbol
(*See Table III*)

Product Series
380 - EMI/RFI Non Environmental Backshells with Strain Relief

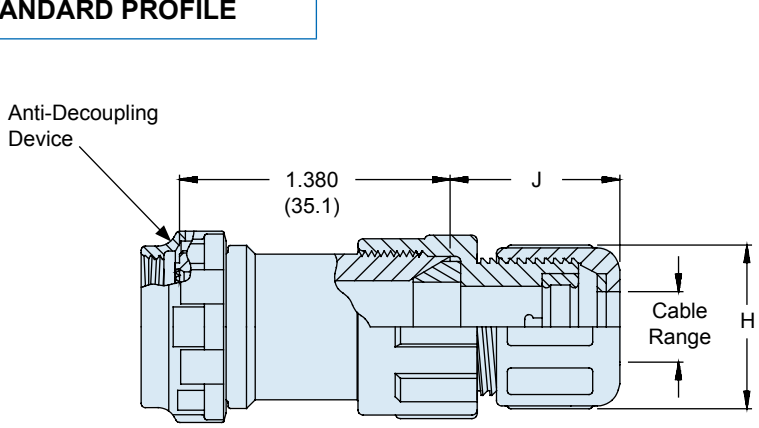
Basic Part Number

Cable Entry
(*See Table IV*)

380	H	S	100	XM	19	28

Connector Designator
A, F, L, H, G and U

Connector Shell Size
(*See Table II*)



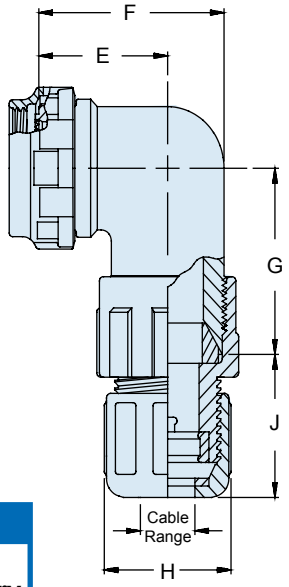


TABLE II: CONNECTOR SHELL SIZE

Shell Size For Connector Designator					E		F		G		Max Entry
A	F/L	H	G	U	± .06	(1.5)	± .09	(2.3)	± .09	(2.3)	Dash No.**
08	08	09	–	–	.69	(17.5)	.88	(22.4)	1.06	(26.9)	08
10	10	11	–	08	.75	(19.1)	1.00	(25.4)	1.13	(28.7)	12
12	12	13	11	10	.81	(20.6)	1.13	(28.7)	1.19	(30.2)	16
14	14	15	13	12	.88	(22.4)	1.31	(33.3)	1.25	(31.8)	20
16	16	17	15	14	.94	(23.9)	1.38	(35.1)	1.31	(33.3)	24
18	18	19	17	16	.97	(24.6)	1.44	(36.6)	1.34	(34.0)	28
20	20	21	19	18	1.06	(26.9)	1.63	(41.4)	1.44	(36.6)	32
22	22	23	–	20	1.13	(28.7)	1.75	(44.5)	1.50	(38.1)	36
24	24	25	23	22	1.19	(30.2)	1.88	(47.8)	1.56	(39.6)	40
28	–	–	25	24	1.34	(34.0)	2.13	(54.1)	1.66	(42.2)	44

**Consult factory for additional entry sizes available.
See introduction for additional connector front-end details.

US PATENT 5211576

380-100
Composite Cone and Ring Style
EMI/RFI Shield Termination Backshell
with Self-Locking Rotatable Coupling and Qwik Clamp

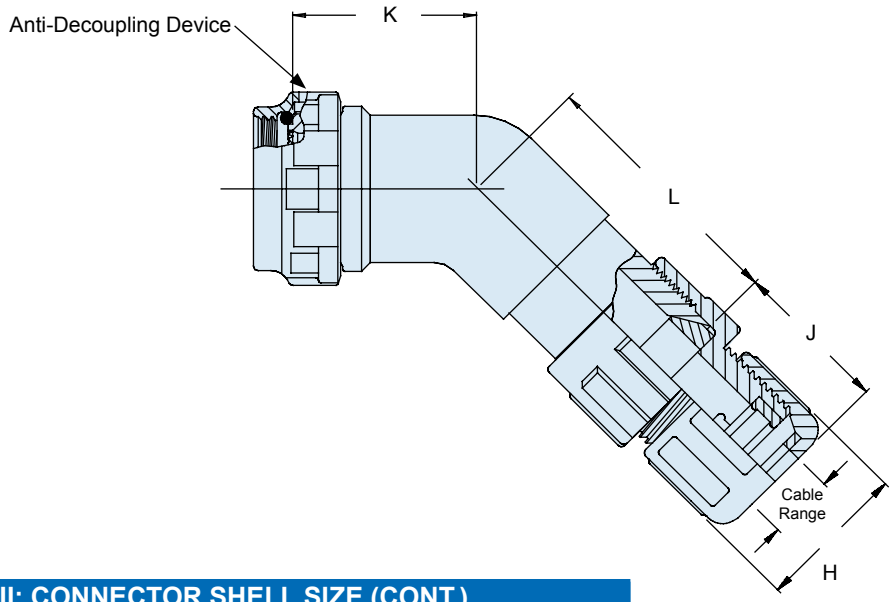


TABLE II: CONNECTOR SHELL SIZE (CONT.)

Shell Size For Connector Designator		K		L		Max Entry
A & F/L	H	± .06	(1.5)	± .06	(1.5)	Dash No. *
08	09	.72	(18.3)	.88	(22.4)	08
10	11	.75	(19.1)	.94	(23.9)	12
12	13	.75	(19.1)	1.00	(25.4)	16
14	15	.76	(19.3)	1.03	(26.2)	20
16	17	.78	(19.8)	1.06	(26.9)	24
18	19	.79	(20.1)	1.07	(27.2)	28
20	21	.82	(20.8)	1.09	(27.7)	32
22	23	.86	(21.8)	1.14	(29.0)	36
24	25	.92	(23.4)	1.17	(29.7)	40

* Consult factory for additional entry sizes available.

NOTES

1. Coupling nut supplied unplated.
2. See Table I in Intro for front-end dimensional details.
3. Metric dimensions (mm) are in parentheses and are for reference only

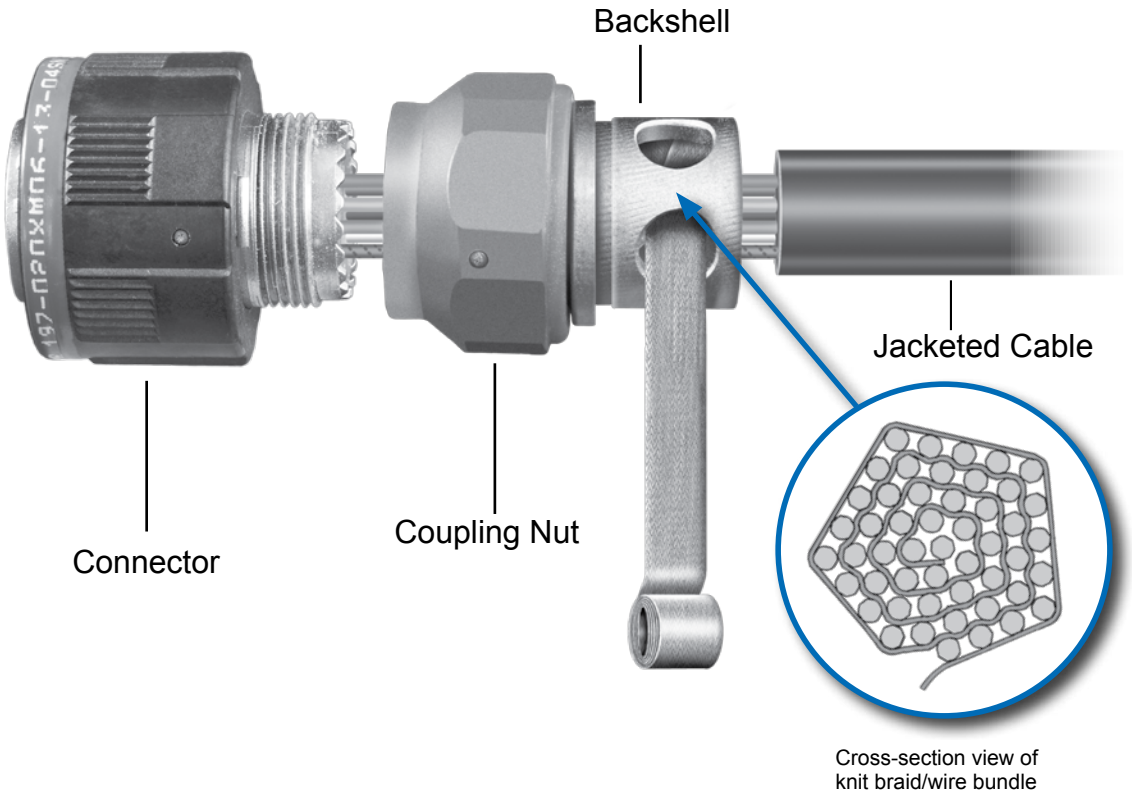
TABLE IV: CABLE ENTRY

Entry Code	H (Max)		J (Max)		Cable Range Minimum		Cable Range Maximum	
08	.72	(18.3)	.87	(22.1)	.10	(2.5)	.25	(6.4)
12	.91	(23.1)	1.01	(25.7)	.20	(5.1)	.38	(9.7)
16	1.09	(27.7)	1.11	(28.2)	.33	(8.4)	.50	(12.7)
20	1.22	(31.0)	1.11	(28.2)	.45	(11.4)	.63	(15.9)
24	1.34	(34.0)	1.11	(28.2)	.52	(13.2)	.75	(19.1)
28	1.53	(38.9)	1.26	(32.0)	.64	(16.3)	.88	(22.2)
32	1.72	(43.7)	1.41	(35.8)	.77	(19.6)	1.00	(25.4)
36	1.85	(47.0)	1.41	(35.8)	.86	(21.8)	1.13	(28.6)
40	1.97	(50.0)	1.41	(35.8)	.98	(24.9)	1.25	(31.8)
44	2.09	(53.1)	1.53	(38.9)	1.13	(28.6)	1.38	(34.9)

TABLE III: FINISH

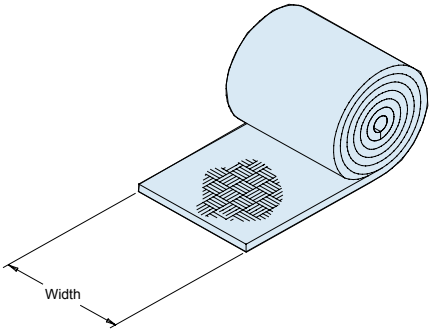
Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

Knit Braid Backshell Assembly Instructions



1. Temporarily assemble backshell to connector.
2. If cable is jacketed, insert cable into backshell and bottom against connector. Using the end of the backshell as a guide, mark the location of solder sleeves and/or pigtail breakouts on the cable.
3. Disassemble backshell from connector and stage it up the cable for installation after wire termination is complete.
4. Trim cable jacket at marked location from step 2 above and pull out pigtails and/or apply solder sleeves. Terminate contacts to wires in accordance with established practices.
5. Insert contacts into connector in accordance with established practices.
6. Pull braid forward and wrap the knit braid around individual wires in groups of two or three, ensuring that the knitmesh braid is in contact with all exposed braids (see cross-section illustration).
7. Pull the knit braid tightly around the wire bundle and pass through one of the holes in the backshell.
8. Screw the backshell partially onto the connector, ensuring that the interface teeth *do not* engage—allowing the backshell to rotate freely.

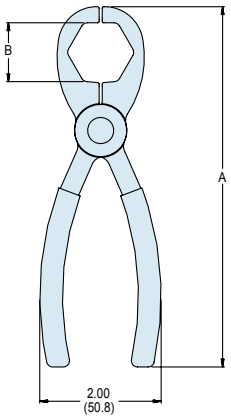
9. Rotate the backshell so that the knit braid is drawn into the backshell. Maintain firm pressure on the free knit braid during this step to provide tight coverage. Continue rotating until the knit braid is wound tightly into the backshell and further rotation becomes difficult.
10. Wrap the remaining tail of the braid protruding from the hole in the backshell one complete turn around the circumfrence of the backshell. Secure with a Band-It band or heat moldable shrink boot.
11. Tighten the backshell fully onto the connector using established procedures and torque values.
12. Secure cable bundle using strain relief clamp bars (see saddle clamp assembly procedure).



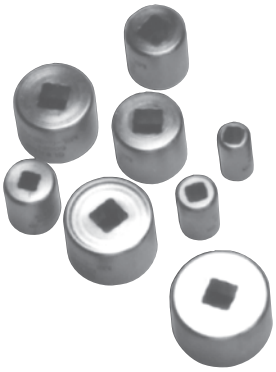
107-044
Nickel Plated Copper Knit Braid
(see product page for details)

600-052 and -057
Standard and Micro
Band-It® Bands

600-058
Band-It®
Hand Banding Tool



600-157
Stainless Steel Composite
Hex Coupling Wrench



Plug and Receptacle
Holding Tools
for 1/4" and 3/8" Socket

600-161
Hand Held Digital
Torque Wrench

COMPOSITE COUPLING TORQUE VALUES

Shell Size Reference	Composite Torque (Inch-Pounds)
08/09	35
10/11	35
12/13	40
14/15	40
16/17	40
18/19	40
20/21	80
22/23	80
24/25	80
28	120
32	120
36	120

380-130
Composite Knit-Braid Style
EMI/RFI Shield Termination Backshell with Qwik-Ty® and Rotatable Coupling

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
L	MIL-DTL-38999 Series 1.5 (JN1003)
H	MIL-DTL-38999 Series III and IV
ROTATABLE COUPLING	

Product Series
380 - EMI/RFI Non Environmental Backshells with Strain Relief

Angle and Profile
S - Straight

Basic Part Number

Finish Symbol
(See Table III)

Cable Entry
(See Table IV)

380	H	S	130	XM	15	01	SB

Connector Designator
A, F, L and H

Connector Shell Size
(See Table II)

Strain Relief Style
SB - Shrink Boot Groove
SBT - Shrink Boot Groove with boot supplied
(Omit for none)

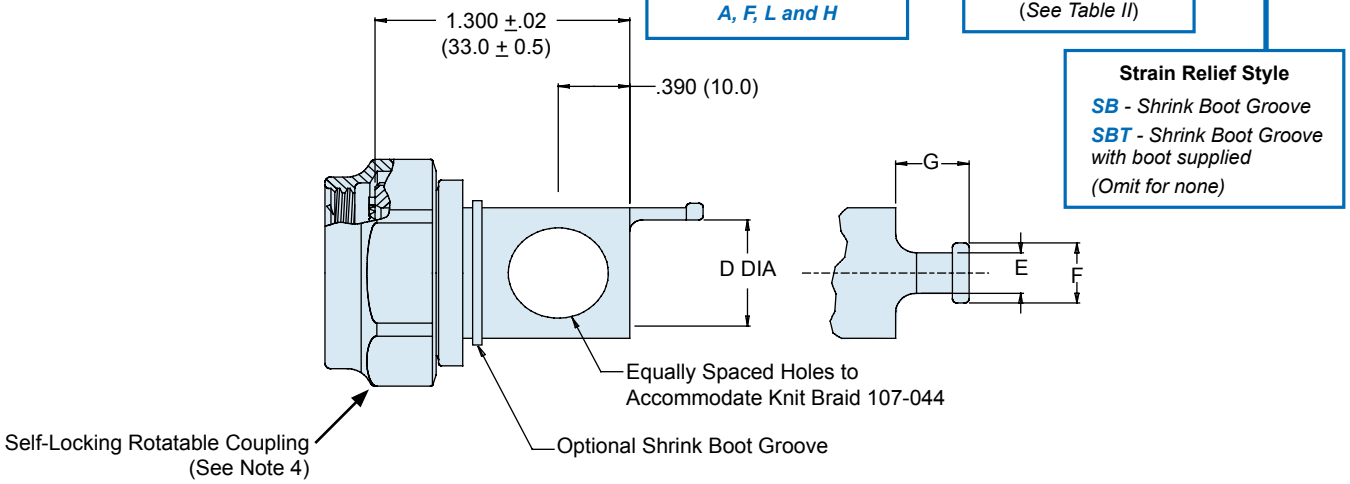


TABLE II: SHELL SIZE

Shell Size A	Max Entry Code**	Shell Size F/L	Shell Size H	Max Entry Code**
08	00	08	09	01
10	01	10	11	02
12	02	12	13	03
14	03	14	15	04
16	04	16	17	05
18	05	18	19	06
20	06	20	21	07
22	07	22	23	08
24	08	24	25	09

TABLE IV: CABLE ENTRY

Entry Code**	D ±.010 (0.25)	E ±.020 (0.50)	F ±.020 (0.50)	G ±.020 (0.50)	Number of Holes
00	.268 (6.8)	.187 (4.8)	.312 (7.9)	.512 (13.0)	2*
01	.354 (9.0)	.187 (4.8)	.312 (7.9)	.512 (13.0)	2**
02	.472 (12.0)	.187 (4.8)	.312 (7.9)	.512 (13.0)	2**
03	.591 (15.0)	.187 (4.8)	.312 (7.9)	.630 (16.0)	2*
04	.709 (18.0)	.219 (5.6)	.369 (9.4)	.630 (16.0)	2*
05	.837 (21.3)	.219 (5.6)	.369 (9.4)	.630 (16.0)	2*
06	.945 (24.0)	.219 (5.6)	.369 (9.4)	.630 (16.0)	2*
07	1.063 (27.0)	.250 (6.4)	.437 (11.1)	.630 (16.0)	4*
08	1.191 (30.3)	.250 (6.4)	.437 (11.1)	.630 (16.0)	4*
09	1.319 (33.5)	.250 (6.4)	.437 (11.1)	.630 (16.0)	4*

*Oval Holes, .256 (6.5) x .512 (13.0) **Oval Holes, .315 (8.0) x .512 (13.0) *Circular Holes, .512 (13.0) Diameter.

TABLE III: FINISH

Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

APPLICATION NOTES

1. For effective grounding, connector with conductive finish should be used.
2. Coupling nut supplied unplated.
3. Metric dimensions (mm) are in parentheses and are for reference only.
4. Connector Code H supplied with black coupling nut.
5. Consult factory for additional entry sizes available.
6. For angled part requirements, use in conjunction with Glenair 327-060 Extenders.
7. See Table I in Intro for additional connector front-end dimensional details.

380-131
Composite Knit-Braid Style
EMI/RFI Shield Termination Backshell with Strain-Relief Clamp and Rotatable Coupling

Glenair®

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
L	MIL-DTL-38999 Series 1.5 (JN1003)
H	MIL-DTL-38999 Series III and IV
ROTATABLE COUPLING	

Product Series
380 - EMI/RFI Non Environmental Backshells with Strain Relief

Angle and Profile
S - Straight

Basic Part Number

Finish Symbol
(See Table III)

Strain Relief Style
SB - Shrink Boot Groove
SBT - Shrink Boot Groove with boot supplied
(Omit for none)

380	H	S	131	XM	15	01	SB

Connector Designator
A, F, L and H

Connector Shell Size
(See Table II)

Cable Entry
(See Table IV)

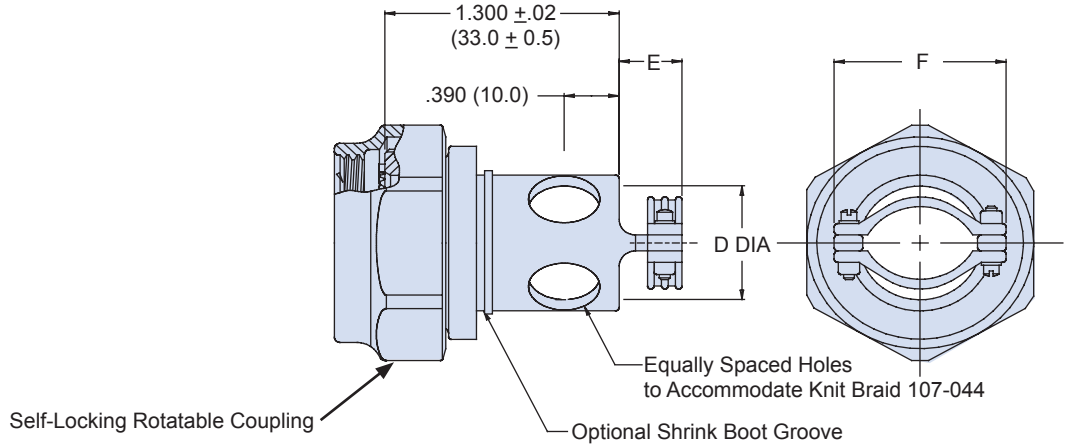


TABLE II: SHELL SIZE

Shell Size A	Max Entry Code**	Shell Size F/L	Shell Size H	Max Entry Code**
08	00	08	09	01
10	01	10	11	02
12	02	12	13	03
14	03	14	15	04
16	04	16	17	05
18	05	18	19	06
20	06	20	21	07
22	07	22	23	08
24	08	24	25	09

TABLE IV: CABLE ENTRY

Entry Code**	D ±.010 (0.25)	E ±.020 (0.50)	F ±.060 (1.5)	Number of Holes
00	.268 (6.8)	.512 (13.0)	.880 (22.4)	2•
01	.354 (9.0)	.512 (13.0)	.940 (23.9)	2••
02	.472 (12.0)	.512 (13.0)	1.170 (29.7)	2••
03	.591 (15.0)	.630 (16.0)	1.280 (32.5)	2*
04	.709 (18.0)	.630 (16.0)	1.410 (35.8)	2*
05	.837 (21.3)	.630 (16.0)	1.500 (38.1)	2*
06	.945 (24.0)	.630 (16.0)	1.560 (39.6)	2*
07	1.063 (27.0)	.630 (16.0)	1.690 (42.9)	4*
08	1.191 (30.3)	.630 (16.0)	1.820 (46.2)	4*
09	1.319 (33.5)	.630 (16.0)	1.910 (48.5)	4*

•Oval Holes, .256 (6.5) x .512 (13.0) ••Oval Holes, .315 (8.0) x .512 (13.0)
*Circular Holes, .512 (13.0) Diameter.

APPLICATION NOTES

1. Coupling nut and saddle bars supplied unplated.
2. Metric dimensions (mm) are in parentheses and are for reference only.
3. Consult factory for additional entry sizes available.
4. For angled part requirements, use in conjuncion with Glenair 327-060 Extenders.
5. See Table I in Intro for additional connector front-end dimensions.

TABLE III: FINISH

Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion ResistantCadmium/Olive Drab over Electroless Nickel

380-132
Composite Knit-Braid Style EMI/RFI
O-Ring Equipped Shield Termination Backshell with Shrink Boot Adapter and Rotatable Coupling

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
L	MIL-DTL-38999 Series 1.5 (JN1003)
H	MIL-DTL-38999 Series III and IV
ROTATABLE COUPLING	

Product Series
380 - EMI/RFI Non Environmental Backshells with Strain Relief

Angle and Profile
S - Straight

Basic Part Number

Finish Symbol
(See Table III)

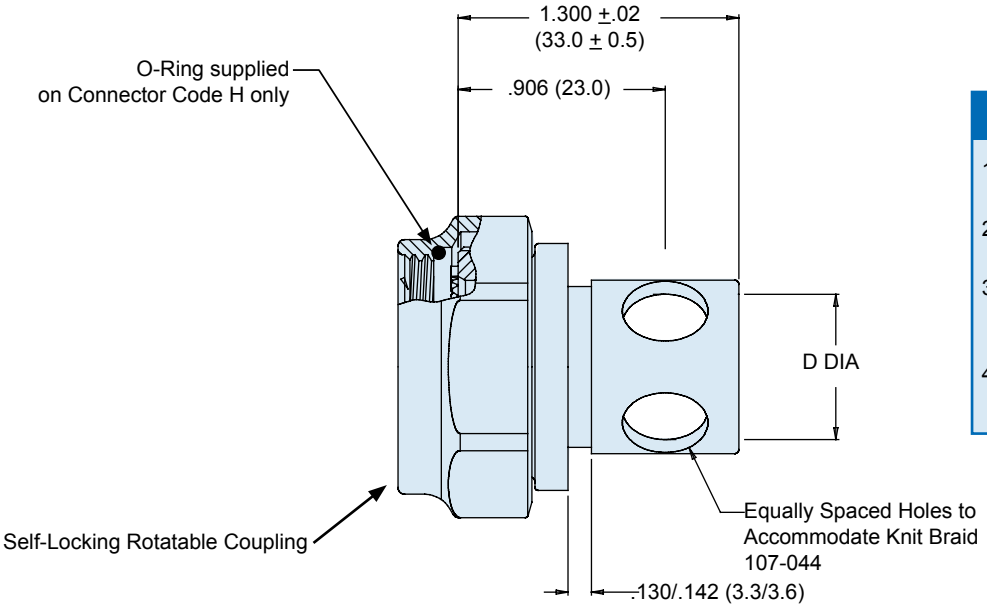
Strain Relief Style
SB - Shrink Boot Groove
SBT - Shrink Boot Groove with boot supplied
(Omit for none)

380	H	S	132	XM	15	01	SB

Connector Designator
A, F, L and H

Connector Shell Size
(See Table II)

Cable Entry
(See Table IV)



APPLICATION NOTES

1. Coupling nut and saddle bars supplied unplated.
2. Consult factory for additional entry sizes available.
3. For angled part requirements, use in conjuncion with Glenair 327-060 Extenders.
4. See Table I in Intro for additional front-end dimensional details.

TABLE II: SHELL SIZE

Shell Size A	Max Entry Code**	Shell Size F/L	Shell Size H	Max Entry Code**
08	00	08	09	01
10	01	10	11	02
12	02	12	13	03
14	03	14	15	04
16	04	16	17	05
18	05	18	19	06
20	06	20	21	07
22	07	22	23	08
24	08	24	25	09

TABLE IV: CABLE ENTRY

Entry Code**	D ±.010 (0.25)	Number of Holes
00	.268 (6.8)	2*
01	.354 (9.0)	2**
02	.472 (12.0)	2**
03	.591 (15.0)	2*
04	.709 (18.0)	2*
05	.837 (21.3)	2*
06	.945 (24.0)	2*
07	1.063 (27.0)	4*
08	1.191 (30.3)	4*
09	1.319 (33.5)	4*

*Oval Holes, .256 (6.5) x .512 (13.0)
**Oval Holes, .315 (8.0) x .512 (13.0)
*Circular Holes, .512 (13.0) Diameter.

TABLE III: FINISH

Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

107-044
EMI/RFI Nickel Plated Copper Knit Braid
for use with Knit Braid Adapters 380-130, 380-131 and 380-132

Product Series
107 - Composite Accessories

Material
B - Nickel Plated Copper
(See Table II)

107	044	B	12
	Basic Part Number		Width (See Table I)

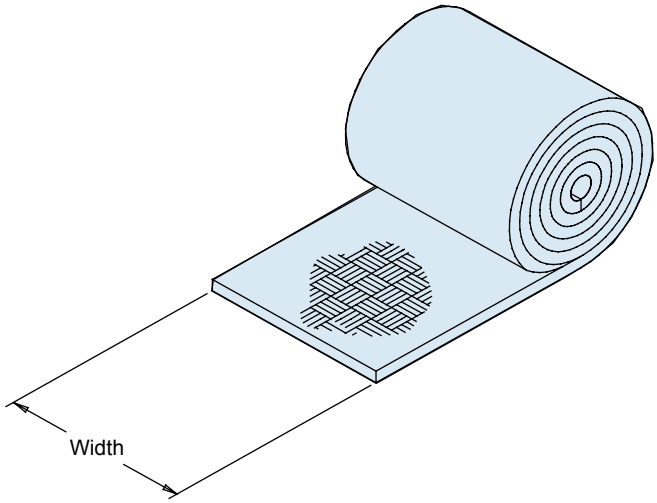


TABLE I: WIDTH

Width Code	Width	Strands Diameter	Approx. No. of Stitches per CM on Length	Approx. No. of Stitches per CM Across Length
12	.472 (12.0)	.006 (0.2)	.138 (3.5)	.173 (4.4)

TABLE II: MATERIAL

B *	Nickel Plated Copper

*** For other material options and sizes please consult factory**

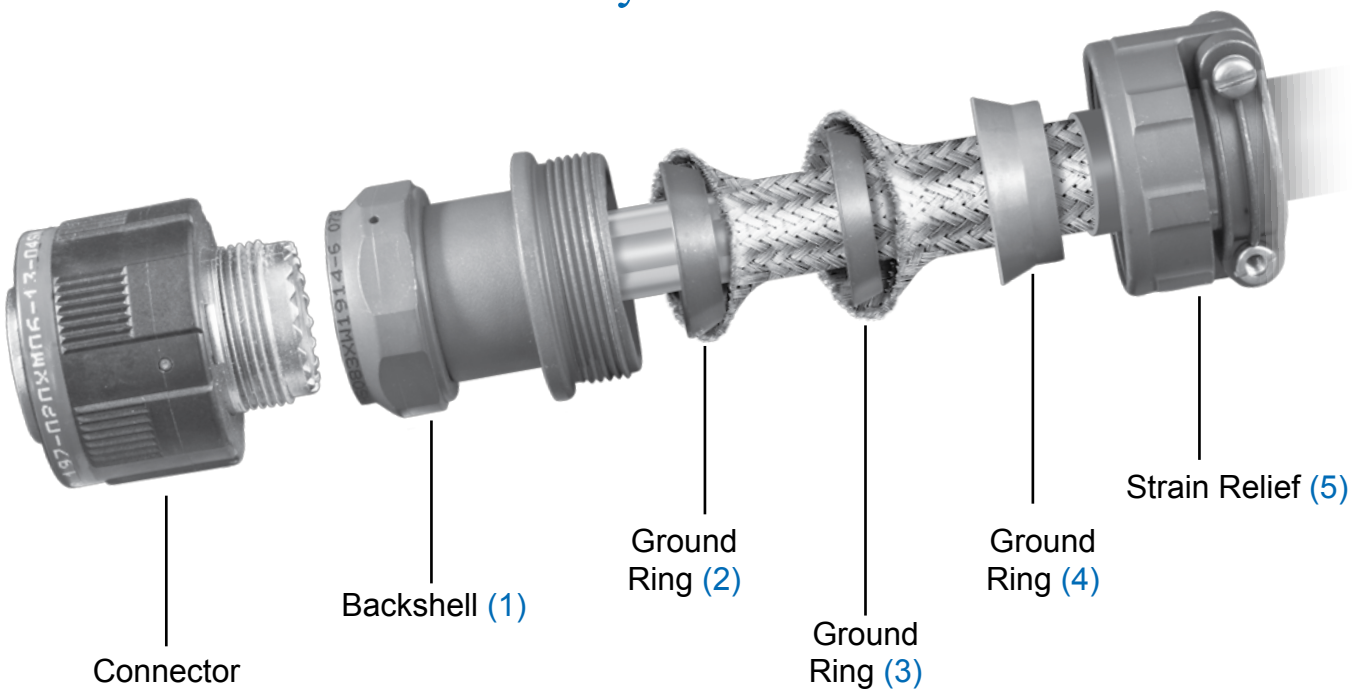
APPLICATION NOTES

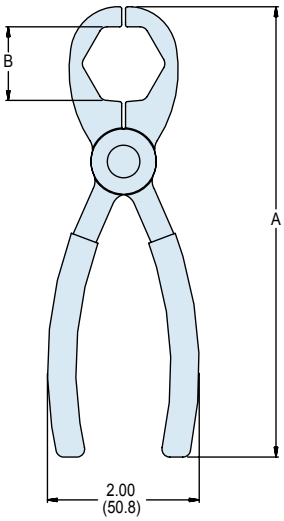
1. The woven braid is to be used with 360° RFI/EMI shield terminations.
2. Metric dimensions (mm) are in parentheses and are for reference only

Glenair®

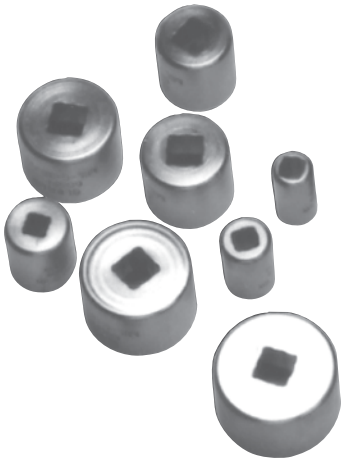
Series 380 (Type E) Multi-Shield EMI/RFI Non-Environmental Backshell Assembly Instructions

Series 380 EMI/RFI Non-Environmental (Type E) Assembly Instructions





(6) 600-157
Stainless Steel Composite
Hex Coupling Wrench



(7) Plug and Receptacle
Holding Tools
for 1/4" and 3/8" Socket

(8) 600-161
Hand Held Digital
Torque Wrench

COMPOSITE COUPLING TORQUE VALUES

Shell Size Reference	Composite Torque (Inch-Pounds)
08/09	35
10/11	35
12/13	40
14/15	40
16/17	40
18/19	40
20/21	80
22/23	80
24/25	80
28	120
32	120
36	120

Series 380 (Type E) Multi-Shield EMI/RFI Non-Environmental
Backshell Assembly Instructions

The following suggested procedure serves as a guide for the proper assembly and installation of Glenair EMI/RFI Non-Environmental Backshells (Type E shield termination). It is recommended that trial samples of appropriate cables or harnesses be used to determine proper trim dimensions of the outer shield and individual conductors. This procedure is for the three ring style.

NOTE: ***As with any electrical connector assembly procedure, be sure to use the proper tools. For convenient, reliable assembly of the connector and backshell, it is suggested that Glenair's connector holding tools, strap wrenches and connector pliers be used.***

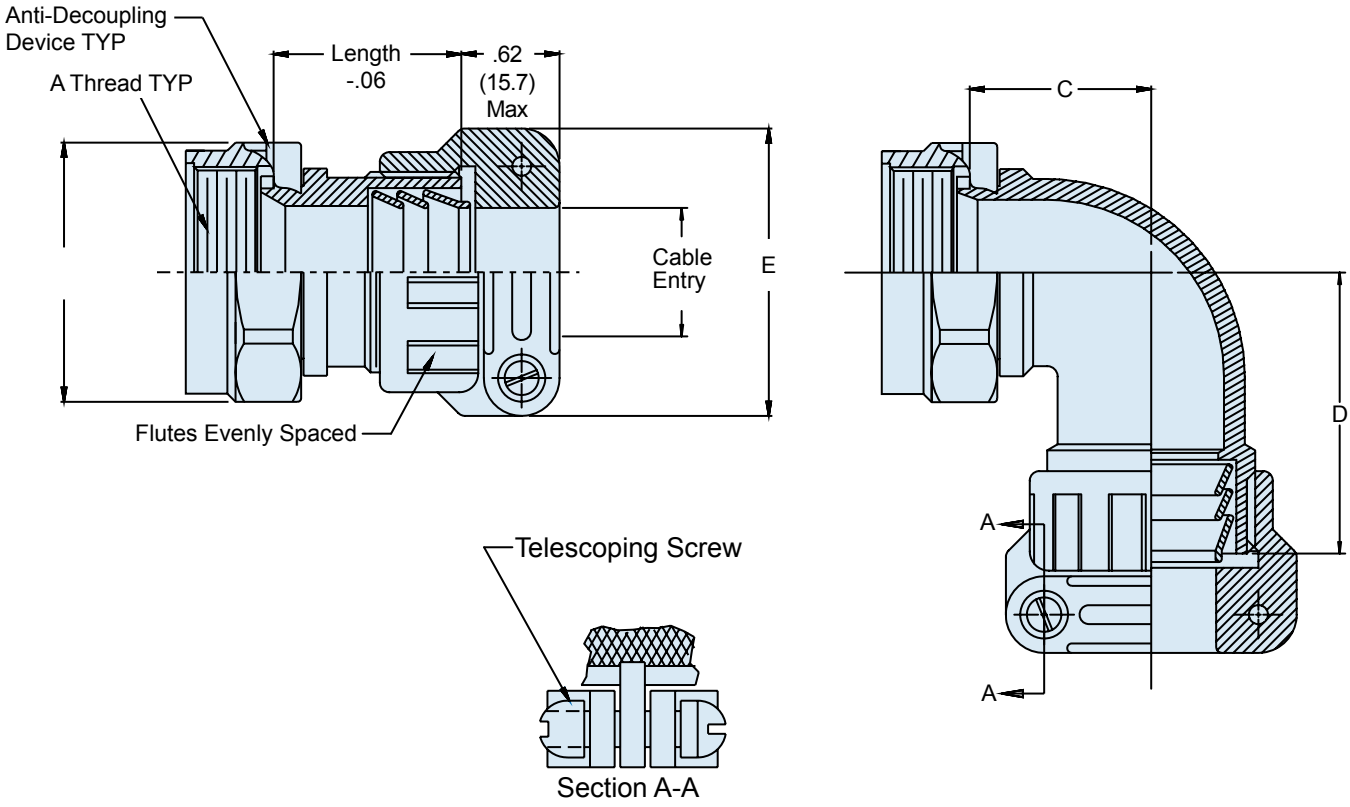
1. Temporarily assemble backshell (1) to connector.
2. Remove backshell from connector and stage it, along with the ground rings (2), (3), (4) and strain relief clamp (2), up the cable for installation after wires are terminated to the connector contacts.
3. Insert cable or harness into backshell (1) and bottom against connector. Hold cable in position and mark outer shield at rear end of backshell (1).
4. Remove backshell from connector and place on cable with items in step two above.
5. Trim outer shield at mark made in step three above.
6. Extract shield pigtail from individual conductor's. Tape or tie pigtails to the bundle.
7. Prepare and terminate contacts to individual conductors in accordance with established practices. (Crimp or solder in place.)
8. Slide backshell (1) forward to connector, and tighten securely.
9. Remove tape or untie pigtails from bundle. Slide ground ring (2) forward to flared-out pigtails. Fold pigtails back over ground ring (2) tie back to bundle leaving about 1/2" to 1" slack.
10. Bring ground ring (3) forward to overall braid, fold braid back over ring (3), push forward onto ring (2). Slide ground ring (4) onto overall braid and onto ring (3). . . push all three rings forward into the counter bore at the rear of backshell (1).
11. Thread backshell (1) onto the connector and tighten securely. Glenair recommends the use of the appropriate sized series 600-157 composite hex coupling wrench (6) to prevent damage to the composite backshell coupling nut. For added convenience in assembly, an appropriately sized series 600-005 connector holding tool (7) is recommended, as well as Glenair digital torque wrench (8). Tighten strain relief saddles securely on cable or harness (see saddle clamp assembly procedure). This will then provide a good ground or bonding joint for both the individual and over-all shields. (For the two ring style, ground ring (3) is omitted, and above steps I or J is utilized with either overall or individual braids).

387-083
Composite Multi-Shield Cone and Ring Style
EMI/RFI Shield Termination Backshell with Self-Locking Rotatable Coupling and Strain Relief

CONNECTOR DESIGNATOR:	
H	MIL-DTL-38999 Series III and IV
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	

Note: See Table I in Intro for Front-End Dimensional Details

Product Series	Connector Designator	Angle and Profile	Basic Part Number	Finish Symbol	Connector Shell Size	Cable Entry	Length in 1/4 Inch Increments
387	H	S	083	XM	17	05	5
387 - EMI/RFI Backshells with Strain Relief	*H - MIL-DTL-38999 Series III and IV*	*S - Straight* *W - 90° Elbow*		*(See Table III)*	*(See Table II)*	*(See Table IV)*	*(e.g. 5 = 1.25 Inches)*



NOTES

1. See Table I in Intro for front-end dimensional details.
2. Coupling nut supplied unplated.
3. Metric dimensions (mm) are in parenthesis and are for reference only.

TABLE II: SHELL SIZE						
Shell Size	Shell Size Code	A Thread ISO Metric	B Max	C ±.078 (2.0)	D ±.078 (2.0)	Max Available Entry
09	A	M12x 1-6H	.94 (23.9)	.722 (18.3)	1.750 (44.4)	04
11	B	M15x 1-6H	1.06 (26.9)	.784 (19.9)	1.820 (46.2)	06
13	C	M18x 1-6H	1.17 (29.7)	.816 (20.7)	1.860 (47.2)	08
15	D	M22x 1-6H	1.29 (32.8)	.878 (22.3)	1.880 (47.8)	10
17	E	M25x 1-6H	1.42 (36.1)	.942 (23.9)	1.942 (49.3)	12
19	F	M28x 1-6H	1.54 (39.1)	1.003 (25.5)	2.000 (50.8)	14
21	G	M31x 1-6H	1.67 (42.4)	1.037 (26.3)	2.062 (52.4)	16
23	H	M34x 1-6H	2.01 (51.1)	1.116 (28.3)	2.194 (55.7)	17
25	J	M37x 1-6H	2.12 (53.8)	1.194 (30.3)	2.257 (57.3)	20

TABLE IV: CABLE ENTRY		
Dash Number	E Max	Cable Entry ±.039 (1.0)
04	1.125 (28.6)	.312 (7.9)
06	1.250 (31.8)	.437 (11.1)
08	1.312 (33.3)	.500 (12.7)
10	1.438 (36.5)	.625 (15.9)
12	1.625 (41.3)	.750 (19.1)
14	1.688 (42.9)	.874 (22.2)
16	1.750 (44.5)	.937 (23.8)
17	1.906 (48.5)	1.094 (27.8)
20	2.062 (52.4)	1.250 (31.8)

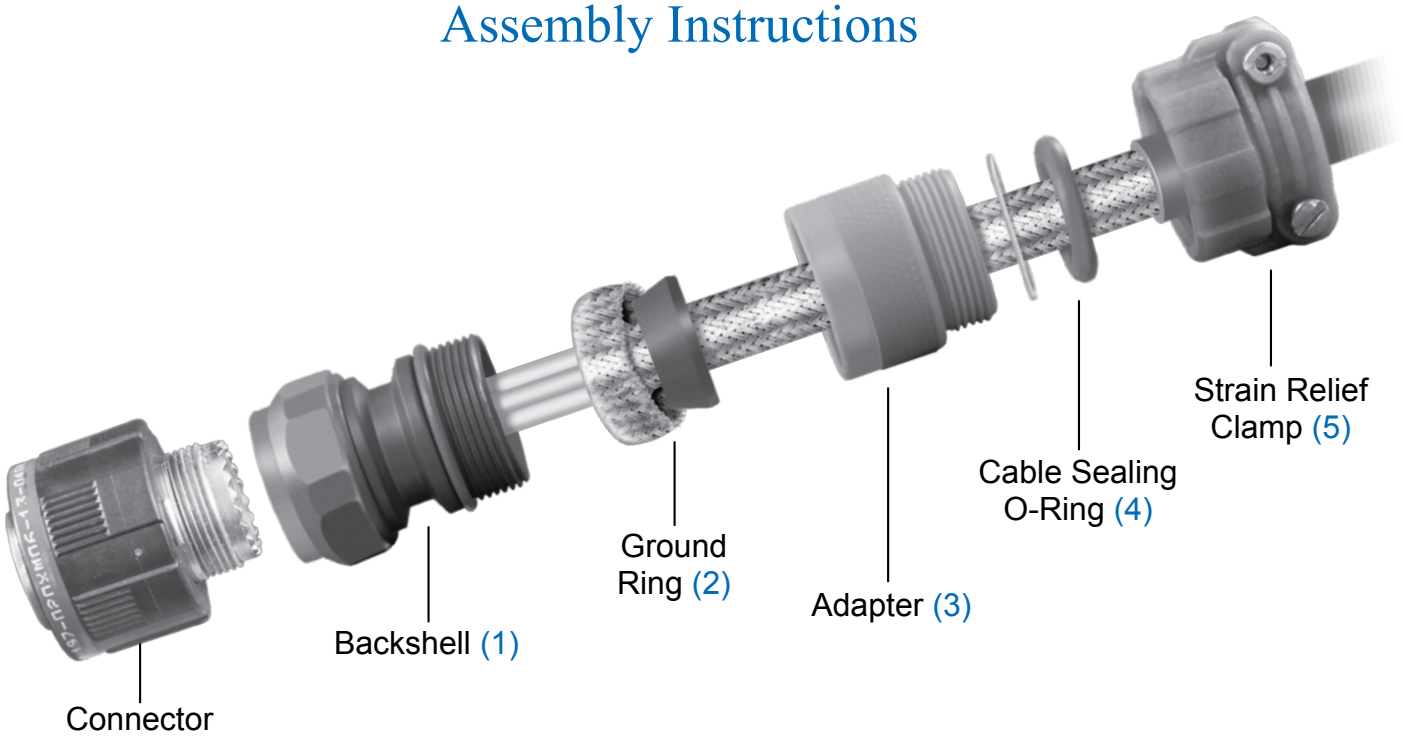
TABLE III: FINISH	
Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/ Olive Drab over Electroless Nickel

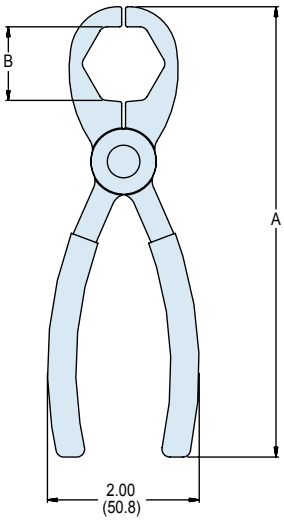
BACKSHELL WEIGHT					
Symbol "S" Straight Weight Table			Symbol "W" 90° Weight Table		
Shell Size	Dash Number	Max Weight (KG)	Shell Size	Dash Number	Max Weight (KG)
09	04	.0296	09	04	.0326
11	06	.0327	11	06	.0360
13	08	.0370	13	08	.0420
15	10	.0430	15	10	.0480
17	12	.0500	17	12	.0550
19	12	.0560	19	12	.0610
21	16	.0640	21	16	.0690
23	16	.0700	23	16	.0750
25	20	.0750	25	20	.0800

Glenair®

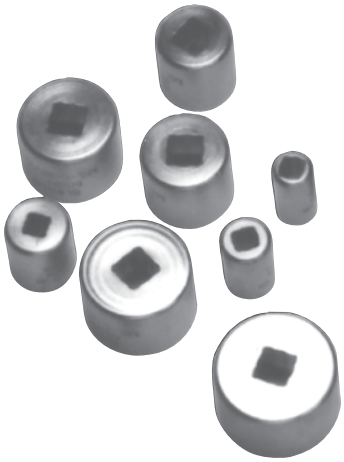
Series 390 (Single Shield) EMI/RFI Environmental Backshell
Assembly Instructions

Series 390 (Single Shield) EMI/RFI Environmental Assembly Instructions





(6) 600-157
Stainless Steel Composite Hex Coupling Wrench



(7) Plug and Receptacle Holding Tools for 1/4" and 3/8" Socket

(8) 600-161
Hand Held Digital Torque Wrench

COMPOSITE COUPLING TORQUE VALUES

Shell Size Reference	Composite Torque (Inch-Pounds)
08/09	35
10/11	35
12/13	40
14/15	40
16/17	40
18/19	40
20/21	80
22/23	80
24/25	80
28	120
32	120
36	120

Series 390 (Single Shield) EMI/RFI Environmental Backshell
Assembly Instructions

The following suggested procedure serves as a guide for proper assembly and installation of straight Glenair Series 390 EMI/RFI Cable Sealing Backshells for use with jacketed cables and a single overall EMI shield. It is recommended that trial samples of appropriate cables be used to determine proper trim dimensions of the cable jacket, individual conductors and shielding.

NOTE: ***As with any electrical connector assembly procedure, be sure to use the proper tools. For convenient reliable assembly of the connector and backshell, it is suggested that Glenair's connector holding tools, strap wrenches and connector pliers be used.***

1. Temporarily assemble backshell (1) to connector.
2. Place the ground ring (2), adapter, o-ring seal (plus washer if provided) and strain relief clamp on the cable in the sequence shown. You are staging these components on the cable for installation after wires are terminated to the connector contacts.
3. Insert cable into backshell (1) and bottom against connector. Hold cable in position and mark cable jacket at rear end of backshell.
4. Remove backshell from connector and place on cable with components from step two above
5. Trim cable jacket at a point 3/4 inch toward connector from mark made in step two above, exposing cable shielding.
6. Prepare and terminate wires in accordance with established practices.
7. Assemble backshell (1) to connector and tighten securely using appropriate tools.
8. Flare EMI shield completely over grounding ring. Manipulate shield into the connical counter-bore in the adapter and capture in place with the ground ring.
9. Tighten adapter in place using TG70 strap wrench.
10. Slide O-ring and washer (if provided) against adapter (3).
11. Thread strain relief clamp (5) firmly in place.
12. Tighten saddle bar clamps until they bottom against saddle clamp ears (see saddle clamp assembly procedure).

390-052
Composite Cone and Ring Style
EMI/RFI Environmental Shield Termination Backshell with Self-Locking Rotatable Coupling and Strain Relief

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
L	MIL-DTL-38999 Series 1.5 (JN1003)
H	MIL-DTL-38999 Series III and IV
G	MIL-DTL-28840
U	DG123 and DG123A
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	

Angle and Profile
S - *Straight*
W - *90° Elbow*
T - *45° Elbow*

Finish Symbol (*See Table III*)

Strain Relief Style
C - *Clamp*
N - *Nut*

Product Series
390 - *EMI/RFI Environmental Backshells with Strain Relief*

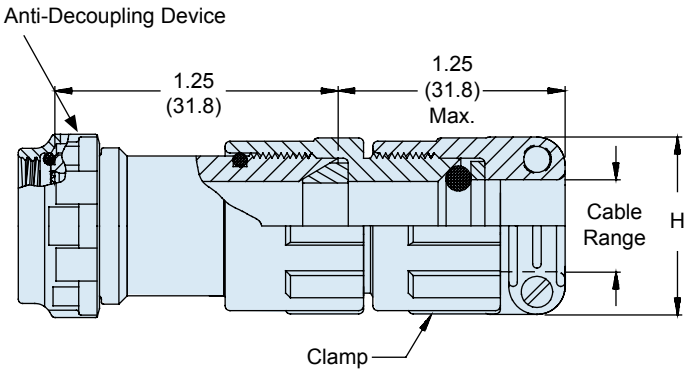
Basic Part Number

Cable Entry (*See Table IV*)

390	H	S	052	XM	19	20	C

Connector Designator
A, F, L, H, G and U

Connector Shell Size (*See Table II*)



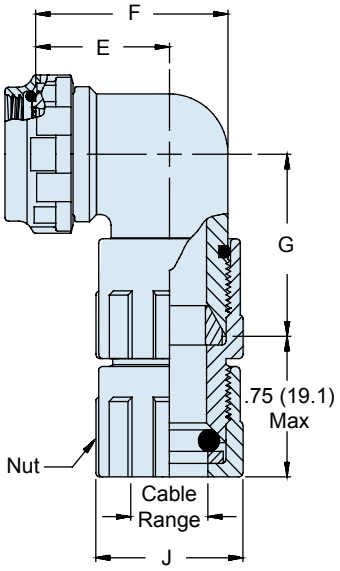


TABLE II: CONNECTOR SHELL SIZE

Shell Size For Connector Designator					E		F		G		Max Entry
A	F/L	H	G	U	± .06	(1.5)	± .09	(2.3)	± .09	(2.3)	Dash No.**
08	08	09	–	–	.69	(17.5)	.88	(22.4)	1.06	(26.9)	10
10	10	11	–	08	.75	(19.1)	1.00	(25.4)	1.13	(28.7)	12
12	12	13	11	10	.81	(20.6)	1.13	(28.7)	1.19	(30.2)	14
14	14	15	13	12	.88	(22.4)	1.31	(33.3)	1.25	(31.8)	16
16	16	17	15	14	.94	(23.9)	1.38	(35.1)	1.31	(33.3)	20
18	18	19	17	16	.97	(24.6)	1.44	(36.6)	1.34	(34.0)	20
20	20	21	19	18	1.06	(26.9)	1.63	(41.4)	1.44	(36.6)	22
22	22	23	–	20	1.13	(28.7)	1.75	(44.5)	1.50	(38.1)	24
24	24	25	23	22	1.19	(30.2)	1.88	(47.8)	1.56	(39.6)	28
28	–	–	25	24	1.34	(34.0)	2.13	(54.1)	1.66	(42.2)	32

TABLE III: FINISH

Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

390-052
Composite Cone and Ring Style
EMI/RFI Environmental Shield Termination Backshell with Self-Locking Rotatable Coupling and Strain Relief

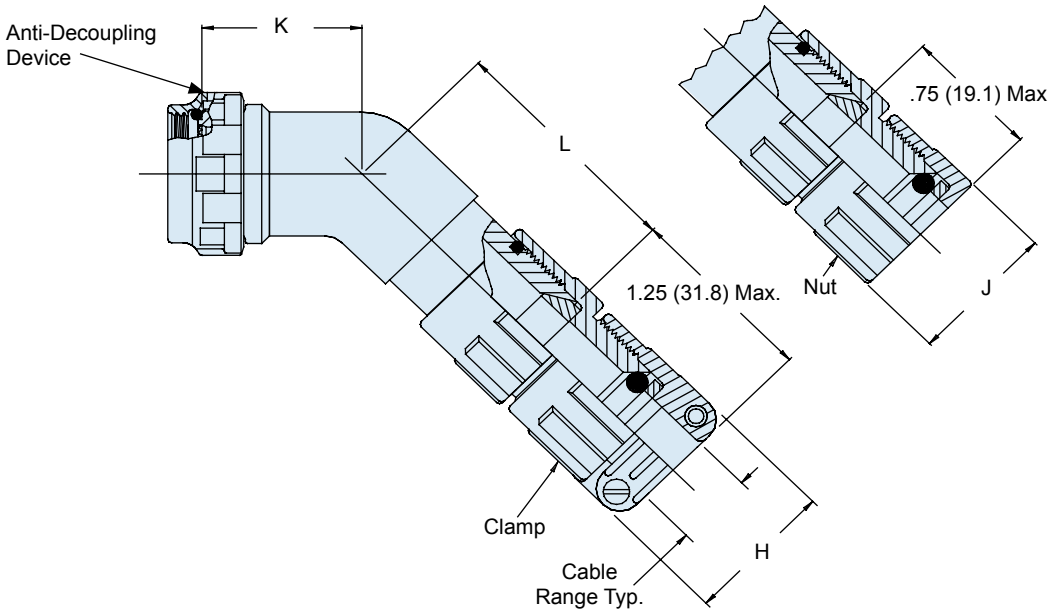


TABLE IV: CABLE ENTRY (CONT.)

Entry	H		J		Cable Range				Entry	Clamp	
					Minimum		Maximum			Saddle Closed	
Code	±.06	(1.5)	±.06	(1.5)					Code		
10	.94	(23.9)	.80	(20.3)	.13	(3.3)	.25	(6.4)	10	.16	(4.1)
12	1.17	(29.7)	.93	(23.6)	.25	(6.4)	.38	(9.7)	12	.29	(5.1)
14	1.28	(32.5)	1.06	(26.9)	.31	(7.9)	.44	(11.2)	14	.40	(10.2)
16	1.41	(35.8)	1.22	(31.0)	.50	(12.7)	.63	(15.9)	16	.52	(13.2)
18	1.50	(38.1)	1.24	(31.5)	.56	(14.2)	.69	(17.5)	18	.58	(14.7)
20	1.56	(39.6)	1.37	(34.8)	.63	(16.0)	.75	(19.1)	20	.64	(16.0)
22	1.69	(42.9)	1.49	(37.8)	.75	(19.1)	.88	(22.2)	22	.72	(18.3)
24	1.81	(46.0)	1.62	(41.1)	.88	(22.4)	1.00	(25.4)	24	.79	(20.1)
28	1.91	(48.5)	1.68	(42.7)	1.00	(25.4)	1.13	(28.6)	28	.89	(22.0)
32	2.02	(51.3)	1.82	(46.2)	1.13	(28.6)	1.25	(31.8)	32	.96	(24.0)

TABLE II: CONNECTOR SHELL SIZE (CONT.)

Shell Size For Connector Designator		K		L		Max Entry
A & F/L	H	± .06	(1.5)	± .06	(1.5)	Dash No. *
08	09	.72	(18.3)	.88	(22.4)	10
10	11	.75	(19.1)	.94	(23.9)	12
12	13	.75	(19.1)	1.00	(25.4)	14
14	15	.76	(19.3)	1.03	(26.2)	16
16	17	.78	(19.8)	1.06	(26.9)	20
18	19	.79	(20.1)	1.07	(27.2)	20
20	21	.82	(20.8)	1.09	(27.7)	22
22	23	.86	(21.8)	1.14	(29.0)	24
24	25	.92	(23.4)	1.17	(29.7)	28

NOTES

1. Coupling nut supplied unplated.
2. Metric dimensions (mm) are in parenthesis and are for reference only.
3. Consult factory for additional entry sizes available.
4. See Table I in Intro for front-end dimensional details.

440-087
Ultra Lightweight Banding Strain Relief
with Rotatable Coupling

CONNECTOR DESIGNATOR:	
F	MIL-DTL-38999 Series I, II
H	MIL-DTL-38999 Series III and IV
ROTATABLE COUPLING	
STANDARD PROFILE	

Product Series
440 - Banding Strain Relief

Angle and Profile
A - 90° Clamp
B - 45° Clamp
S - Straight
W - 90° Split Clamp

Coupling Nut Finish Symbol
(*See Table III*)
XM - 90° Elbow

Supplied with 600-083 Band
(*Omit if Not Required*)

440	F	S	087	XM	20	B	L
	Connector Designator *F and H*		**Basic Part Number**		**Connector Shell Size** (*See Table II*)		*Add* Letter **"L"** for Coupling Nut Less G Diameter *Omit* Letter **"L"** for Coupling Nut With G Diameter

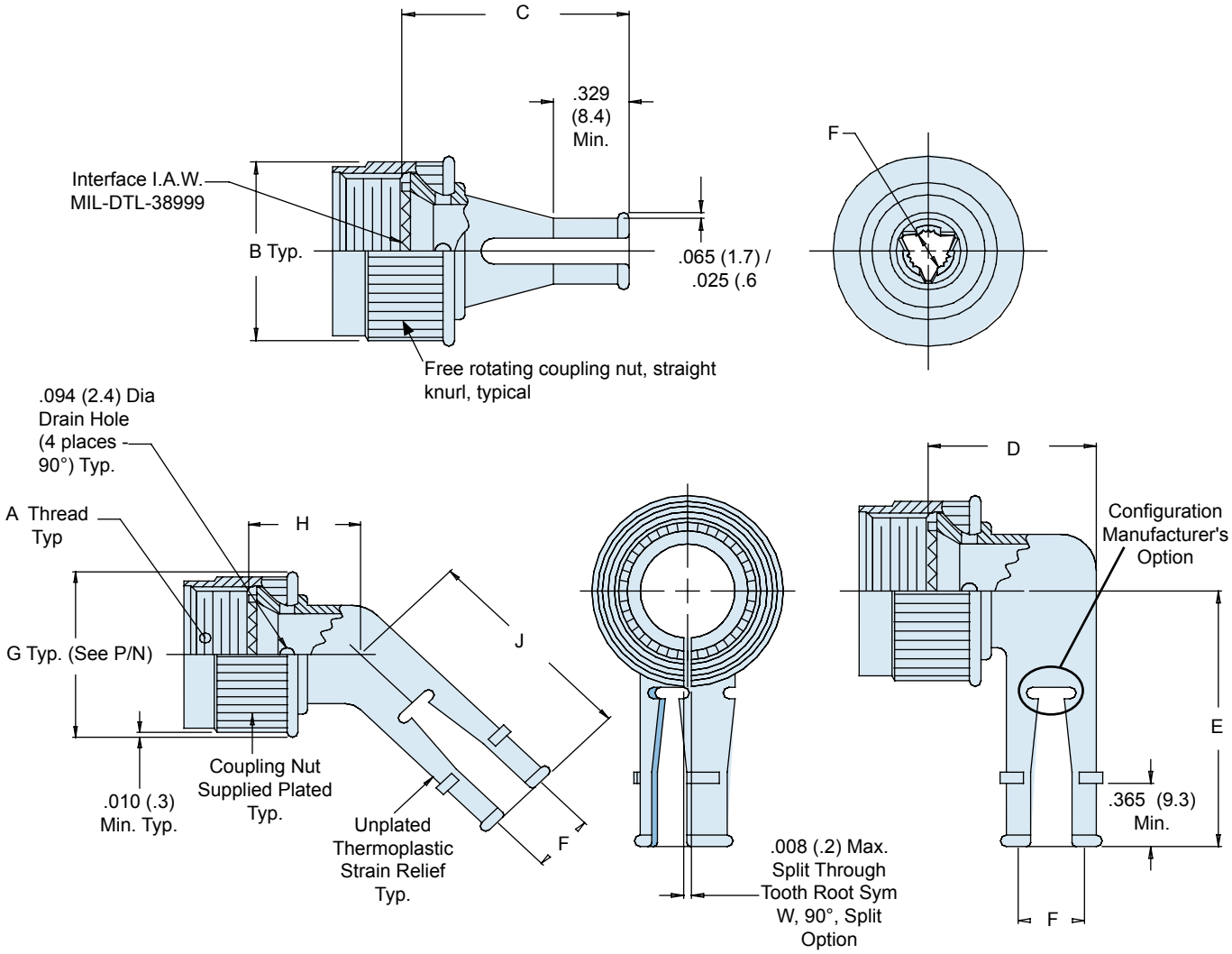


TABLE II: CONNECTOR SHELL SIZE ORDER NUMBER

Shell Size For Connector Designator		B	C	D +.03 -.06	D (.8) (1.5)	E
H	F	Max	Max			Max
09	08	.562 (14.3)	1.22 (31.0)	.66	(16.8)	1.02 (25.9)
11	10	.688 (17.5)	1.22 (31.0)	.69	(17.5)	1.07 (27.2)
13	12	.817 (20.8)	1.22 (31.0)	.75	(19.1)	1.13 (28.7)
15	14	.930 (23.6)	1.22 (31.0)	.86	(21.8)	1.33 (33.8)
17	16	1.062 (27.0)	1.22 (31.0)	.94	(23.9)	1.40 (35.6)
19	18	1.188 (30.2)	1.22 (31.0)	1.00	(25.4)	1.46 (37.1)
21	20	1.312 (33.3)	1.30 (33.0)	1.07	(27.2)	1.61 (40.9)
23	22	1.438 (36.5)	1.30 (33.0)	1.15	(29.2)	1.66 (42.2)
25	24	1.562 (39.7)	1.30 (33.0)	1.21	(30.7)	1.72 (43.7)

TABLE II: CONNECTOR SHELL SIZE ORDER NUMBER (CONT.)

Shell Size For Connector Designator		F Cable Dia		G	H	J
H	F	Minimum	Maximum	Max	Max	Max
09	08	.094 (2.4)	.203 (5.2)	.65 (16.5)	.470 (11.9)	1.02 (25.9)
11	10	.141 (3.6)	.250 (6.4)	.76 (19.3)	.482 (12.2)	1.07 (27.2)
13	12	.172 (4.4)	.323 (8.2)	.89 (22.6)	.494 (12.5)	1.13 (28.7)
15	14	.203 (5.2)	.422 (10.7)	1.04 (26.4)	.530 (13.5)	1.33 (33.8)
17	16	.234 (5.9)	.500 (12.7)	1.16 (29.5)	.557 (14.1)	1.40 (35.6)
19	18	.265 (6.7)	.562 (14.3)	1.28 (32.5)	.576 (14.6)	1.46 (37.1)
21	20	.297 (7.5)	.625 (15.9)	1.40 (35.6)	.600 (15.2)	1.61 (40.9)
23	22	.328 (8.3)	.703 (17.9)	1.51 (38.4)	.627 (15.9)	1.66 (42.2)
25	24	.359 (9.1)	.765 (19.4)	1.63 (41.4)	.653 (16.6)	1.72 (43.7)

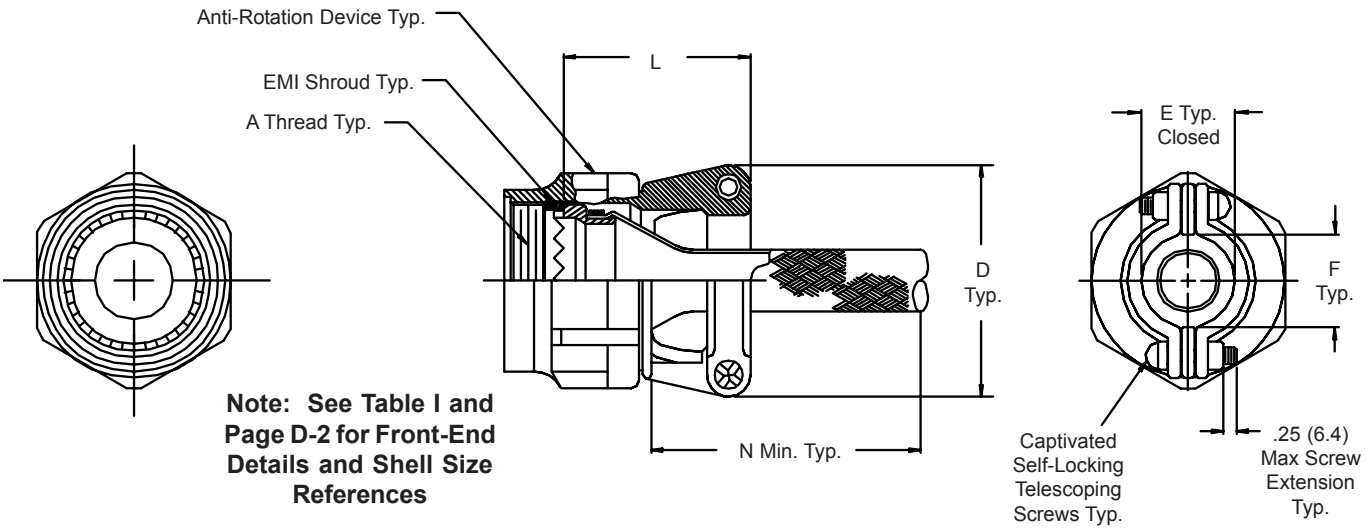
NOTES

1. Metric dimensions (mm) are in parenthesis and are for reference only.
2. See Table I in Intro for front-end dimensional details.

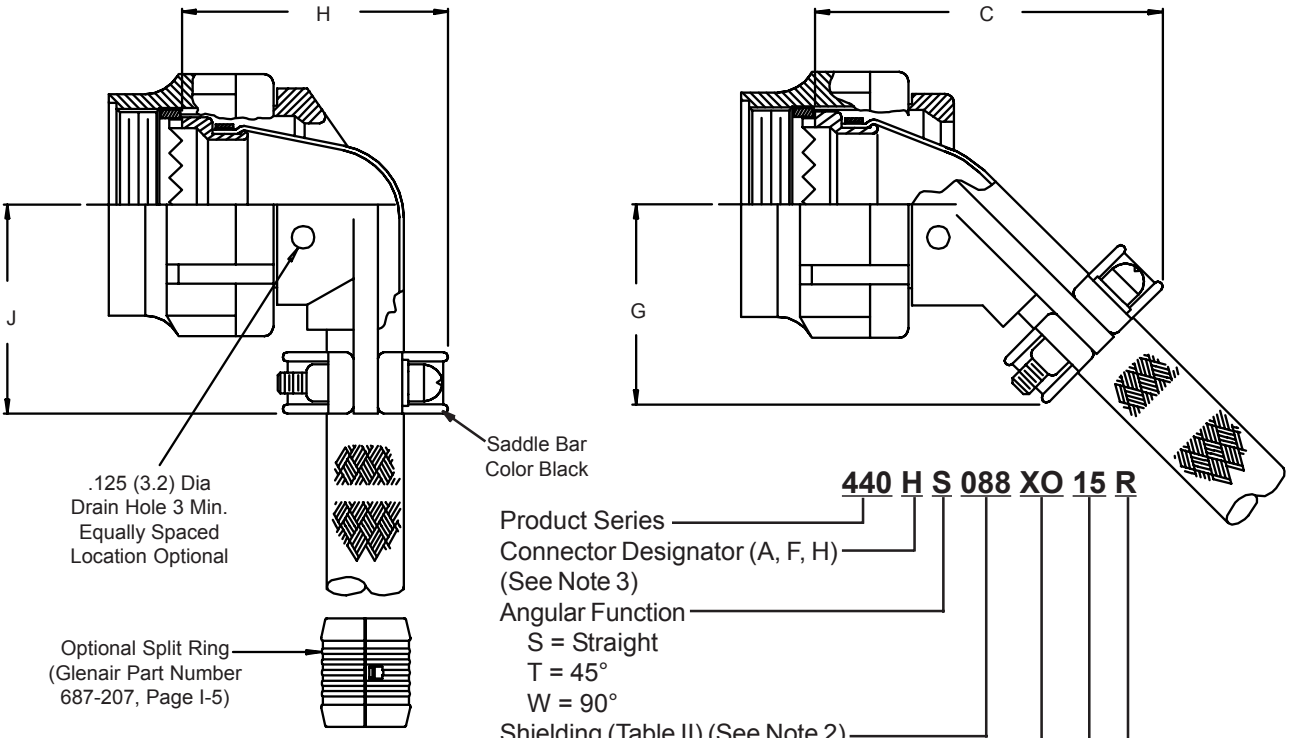
TABLE III: FINISH

Symbol	Material / Finish Description
XM	Coupling Nut: Aluminum / Electroless Nickel Body: Thermoplastic / Black Color
XMT	Coupling Nut: Aluminum / *1000 Hour Grey™* Body: Thermoplastic / Black Color
XW	Coupling Nut: Aluminum / Cad O.D. over Electroless Nickel Body: Thermoplastic / Black Color

440-088 and 440-089
Self-Locking Rotatable Coupling
Composite RFI/EMI Strain Relief Backshells
with Integrated EMI/RFI Shield Sock & Optional Split Ring



Note: See Table I and Page D-2 for Front-End Details and Shell Size References



440 H S 088 XO 15 R

- Product Series
- Connector Designator (A, F, H) (See Note 3)
- Angular Function
  - S = Straight
  - T = 45°
  - W = 90°
- Shielding (Table II) (See Note 2)
  - 088 = Copper/Nickel Plate Shield
  - 089 = Aramid/Nickel Braid Shield
- Material (No Plating):
  - XB = Black Material
  - XO = Base Material Non-Conductive
- Connector Shell Size (Table I, Page D-2)
- R = Split Ring (687-207, Page I-5) and Band (600-052) Supplied. (Omit if Not Required)

440-088 and 440-089
Self-Locking Rotatable Coupling
Composite RFI/EMI Strain Relief Backshells
with Integrated EMI/RFI Shield Sock with Optional Split Ring

Glenair®

TABLE I: CONNECTOR SHELL SIZE ORDER NUMBER

Connector Shell Size	C Max	D Max	Cable Entry E ±.031 (.8)	Cable Entry F Min
08/09	1.388 (35.3)	.98 (24.9)	.265 (6.7)	.22 (5.6)
10/11	1.428 (36.3)	1.05 (26.7)	.310 (7.9)	.27 (6.9)
12/13	1.498 (38.0)	1.20 (30.5)	.390 (9.9)	.35 (8.9)
14/15	1.548 (39.3)	1.30 (33.0)	.506 (12.9)	.47 (11.9)
16/17	1.648 (41.9)	1.44 (36.6)	.591 (15.0)	.55 (14.0)
18/19	1.768 (44.9)	1.56 (39.6)	.661 (16.8)	.62 (15.7)
20/21	1.808 (45.9)	1.69 (42.9)	.744 (18.9)	.70 (17.8)
22/23	1.858 (47.2)	1.77 (45.0)	.826 (21.0)	.78 (19.8)
24/25	1.898 (48.2)	1.89 (48.0)	.896 (22.8)	.85 (21.6)

TABLE I: CONNECTOR SHELL SIZE ORDER NUMBER (Continued)

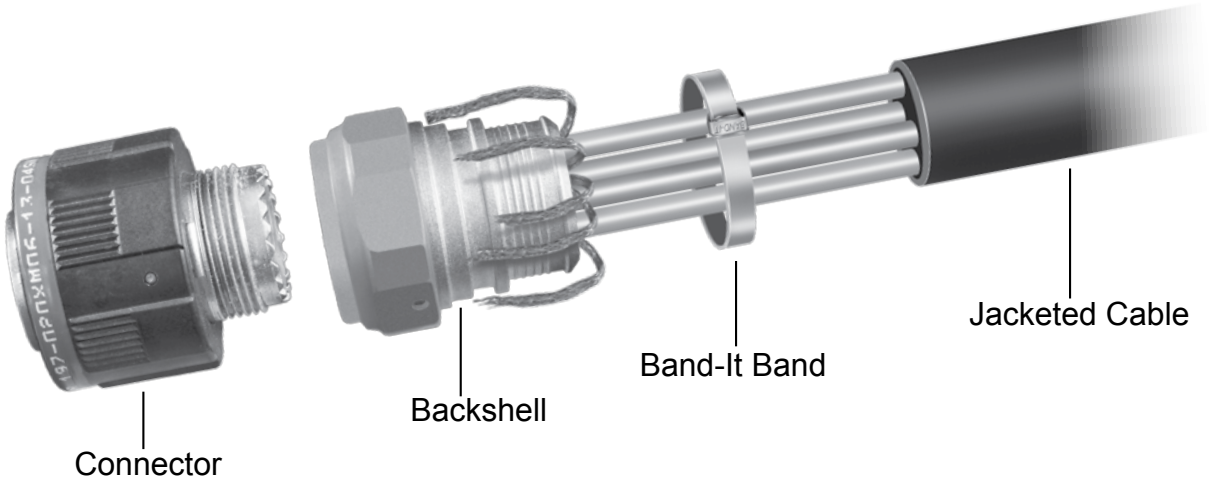
Connector Shell Size	G Max	H Max	J Max	L Max	M Max
08/09	.901 (22.9)	1.128 (28.7)	.91 (23.1)	.939 (23.9)	.264 (6.7)
10/11	.964 (24.5)	1.168 (29.7)	.97 (24.6)	1.059 (26.9)	.390 (9.9)
12/13	1.050 (26.7)	1.248 (31.7)	1.06 (26.9)	1.199 (30.5)	.504 (12.8)
14/15	1.112 (28.2)	1.368 (34.7)	1.16 (29.5)	1.199 (30.5)	.630 (16.0)
16/17	1.175 (29.8)	1.448 (36.8)	1.34 (34.0)	1.329 (33.8)	.756 (19.2)
18/19	1.230 (31.2)	1.528 (38.8)	1.41 (35.8)	1.509 (38.3)	.843 (21.4)
20/21	1.293 (32.8)	1.648 (41.9)	1.53 (38.9)	1.609 (40.9)	.969 (24.6)
22/23	1.365 (34.7)	1.688 (42.9)	1.66 (42.2)	1.759 (44.7)	1.091 (27.7)
24/25	1.417 (36.0)	1.758 (44.7)	1.78 (45.2)	1.859 (47.2)	1.217 (30.9)

TABLE II: SHIELDING

Shell Size	440-088 Shield N Min Braid Length	440-088 Shield Braid No.	440-089 Shield N Min Braid Length	440-089 Shield Braid No.	687-207 Dash No.
09	12.00 (304.8)	107-030-43	7.00 (177.8)	103-016-008	04
11	12.00 (304.8)	107-030-43	7.00 (177.8)	103-016-016	06
13	12.00 (304.8)	107-030-53	7.00 (177.8)	103-016-016	08
15	12.00 (304.8)	107-030-53	7.00 (177.8)	103-016-016	10
17	12.00 (304.8)	107-030-63	9.00 (228.6)	103-016-024	12
19	12.00 (304.8)	107-030-63	9.00 (228.6)	103-016-024	14
21	12.00 (304.8)	107-030-71	9.00 (228.6)	103-016-024	16
23	12.00 (304.8)	107-030-71	11.00 (279.4)	103-016-032	18
25	12.00 (304.8)	107-030-77	11.00 (279.4)	103-016-032	20

1. Metric dimensions (mm) are in parentheses and are for reference only.
2. Material/Finish:
   Clamp Body, Coupling Nut, Saddles - High Grade Engineering Thermoplastic/Unplated
   Clamp Hardware - Cres/Passivate
   Anti-Rotation Device - Corrosion Resistant Material
   440-088 Shield - Copper Braid/Nickel Plate
   440-089 Shield - 75% Nickel Clad Aramid Braid, 25% Nickel Copper Braid
   Interface Ring and Shroud - Brass/Nickel Plated
3. Connector Code F mates to MIL-DTL-38999 Series I only; contact factory for Series II.

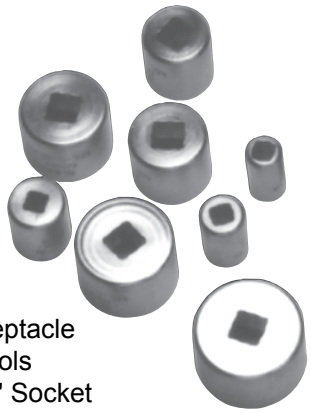
Banding Backshell Assembly Instructions
for 440-143, 440-144, 447-325 and 447-326



1. Temporarily assemble backshell to connector.
2. If cable is jacketed, insert cable into backshell and bottom against connector. Using the end of the backshell as a guide, mark the location of solder sleeves and/or pigtail breakouts on the cable.
3. Remove backshell from connector and stage it up the cable for installation after wire termination is complete.
4. Trim cable jacket at marked location from step 2 above and pull out pigtails and/or apply solder sleeves. Terminate contacts to wires in accordance with established practices.
5. Evenly distribute shields around backshell banding platform.
6. Secure shields to banding platform via Band-It band. See banding assembly procedure for details.

COMPOSITE COUPLING TORQUE VALUES	
Shell Size Reference	**Composite Torque (Inch-Pounds)**
08/09	35
10/11	35
12/13	40
14/15	40
16/17	40
18/19	40
20/21	80
22/23	80
24/25	80
28	120
32	120
36	120

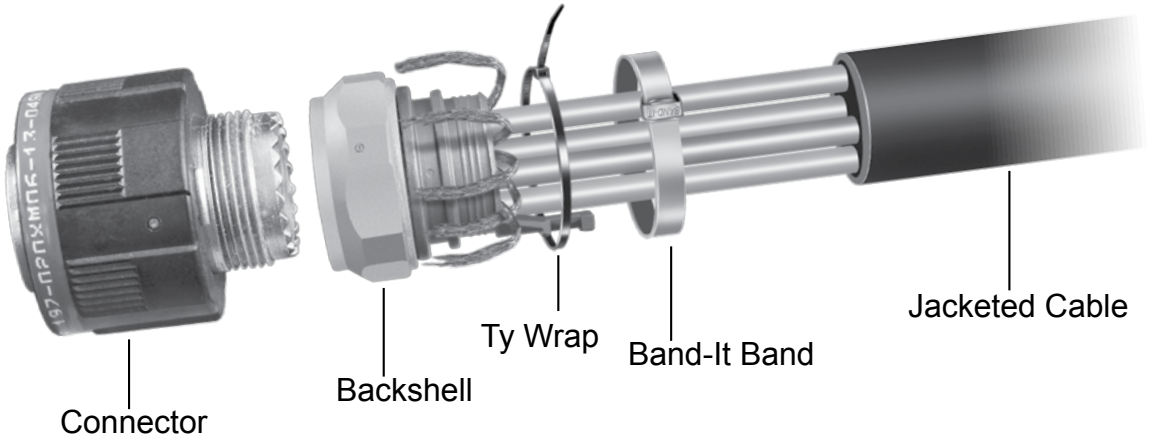
7. Apply silicone tape to band area (if applicable).
8. Apply Glenair 770-001 heat moldable shrink boot to terminated banding area for added environmental protection and strain relief. See heat moldable product user instructions for details.



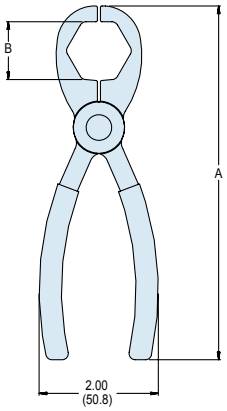
Plug and Receptacle Holding Tools for 1/4" and 3/8" Socket

600-161 Hand Held Digital Torque Wrench

Banding Backshell with Qwik-Ty Assembly Instructions
for 440-143 and 447-327



1. Temporarily assemble backshell to connector.
2. If cable is jacketed, insert cable into backshell and bottom against connector. Using the end of the backshell as a guide, mark the location of solder sleeves and/or pigtail breakouts on the cable.
3. Remove backshell from connector and stage it up the cable for installation after wire termination is complete.
4. Trim cable jacket at marked location from step 2 above and pull out pigtails and/or apply solder sleeves. Terminate contacts to wires in accordance with established practices.
5. Evenly distribute shields around backshell banding platform.
6. Secure shields to banding platform via Band-It band. See banding procedure for details.
7. Apply silicone tape to band area (if applicable).
8. Apply lacing cord or ty wrap around bundle—securing it to Qwik Ty arm.
9. Apply Glenair 770-001 heat moldable shrink boot to terminated banding area for added environmental protection and strain relief. See heat moldable product user instructions for details.



600-157
Stainless Steel Composite
Hex Coupling Wrench

600-052 and -057
Standard and Micro
Band-It® Bands

600-058
Band-It®
Hand Banding Tool

440-143
Composite Ultra Low Profile EMI/RFI
Micro-Banding Backshell with Qwik-Ty, Shrink Boot Porch and Self-Locking Rotatable Coupling

CONNECTOR DESIGNATOR:	
F	MIL-DTL-38999 Series I, II
H	MIL-DTL-38999 Series III and IV
SELF-LOCKING	
ROTATABLE COUPLING	
ULTRA LOW PROFILE	

Angle and Profile
S - Straight
T - 45° Elbow
W - 90° Low Profile, Solid
A - 90° Low Profile, Std
E - 90° Low Profile, Split

Cable Entry
(*See Table II*)
Omit for E and W Option Only

Drain Hole Option
(*Omit "D" if not required*)

Shrink Boot Option
Shrink boot supplied with T option
O-Ring will not be supplied with Connector Designator A
(*Omit for none*)

Product Series
440 - EMI/RFI Non-Environmental Micro-Banding Backshells

Basic Part Number

Finish Symbol
(*See Table III*)

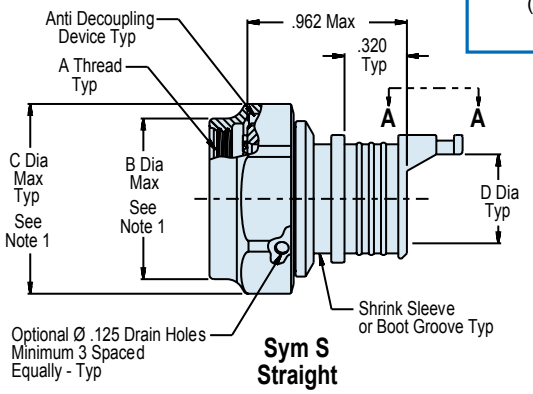
440	H	S	143	XM	15	09	D	B	T	S

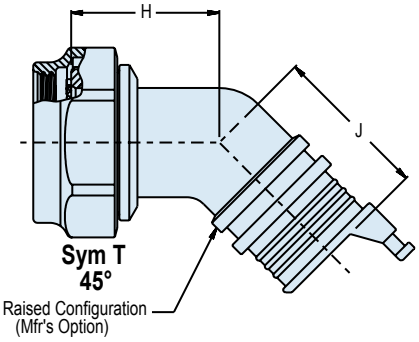
Connector Designator
A, F or H
(*See Table I*)
See Note 1

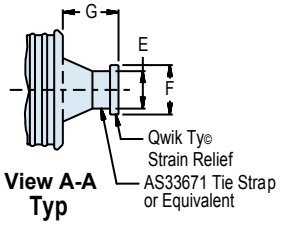
Connector Shell Size
(*See Table I*)
See Note 1

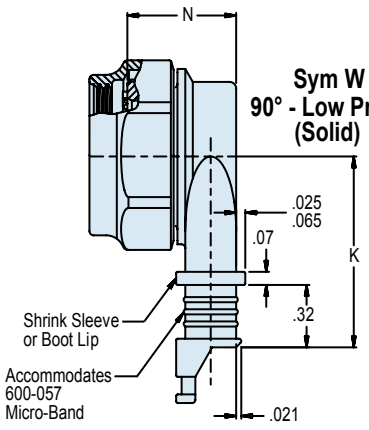
Band Option
Band supplied with B option
(*Omit for none*)

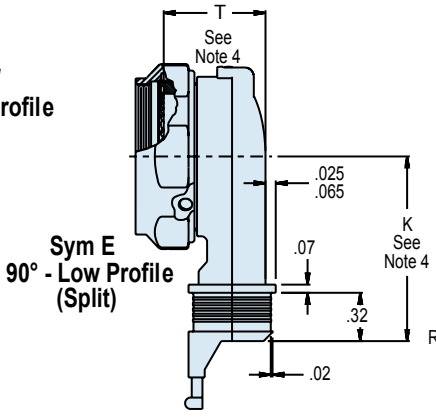
Shield Termination Slot
(*Omit for none*)

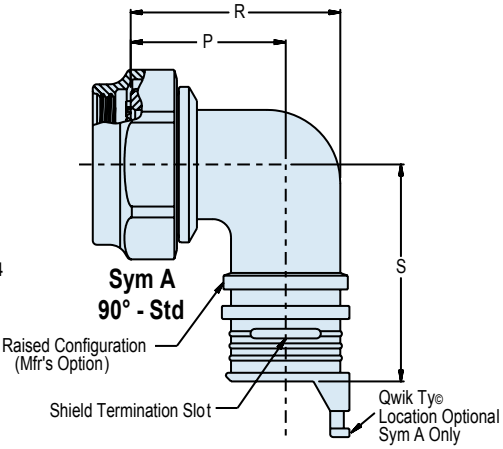


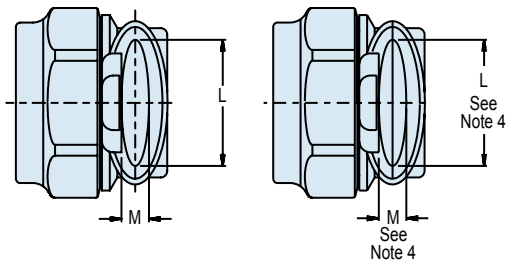












440-143
Composite Ultra Low Profile EMI/RFI
Micro-Banding Backshell with Qwik-Ty, Shrink Boot Porch and Self-Locking Rotatable Coupling

Glenair®

TABLE I: SHELL SIZE

Shell Size		Entry Code Available for Straight, 45° and 90° Std Configuration	K ± .03	L	M	N Max	P ±.09	R ±.09	S Max	T Max
A & F	H									
08	09	04	1.042 (26.5)	.304 (7.7)	.160 (4.1)	.630 (16.0)	.690 (17.5)	.880 (22.4)	1.360 (34.5)	.810 (20.6)
10	11	05	1.107 (28.1)	.432 (11.0)	.174 (4.4)	.660 (16.8)	.750 (19.1)	1.000 (24.5)	1.420 (36.1)	.810 (20.6)
12	13	07	1.174 (29.8)	.546 (13.9)	.195 (5.0)	.720 (18.3)	.810 (20.6)	1.130 (28.7)	1.480 (37.6)	.820 (20.8)
14	15	09	1.241 (31.5)	.670 (17.0)	.315 (8.0)	.830 (21.1)	.880 (22.4)	1.310 (33.3)	1.550 (39.4)	.880 (22.4)
16	17	05 and 11	1.305 (33.1)	.796 (20.2)	.385 (9.8)	.910 (23.1)	.940 (23.9)	1.380 (35.1)	1.610 (40.9)	.930 (23.6)
18	19	07 and 13	1.371 (34.8)	.902 (22.9)	.445 (11.3)	.930 (23.6)	.970 (24.6)	1.440 (36.6)	1.640 (41.7)	.990 (25.1)
20	21	09 and 15	1.438 (36.5)	1.027 (26.1)	.525 (13.3)	1.040 (26.4)	1.060 (26.9)	1.630 (41.4)	1.730 (43.9)	1.060 (26.9)
22	23	11 and 16	1.505 (38.2)	1.152 (29.3)	.595 (15.1)	1.120 (28.4)	1.130 (28.7)	1.750 (44.5)	1.800 (45.7)	1.130 (28.7)
24	25	07, 13 and 17	1.572 (39.9)	1.276 (32.4)	.655 (16.6)	1.180 (30.0)	1.190 (30.2)	1.880 (47.8)	1.860 (47.2)	1.050 (26.7)
24*	25		1.850 (47.0)	1.460 (37.1)	.450 (11.4)	1.020 (26.0)				1.050 (26.7)

*See Note 4

TABLE II: CABLE ENTRY

Entry Code	D ± .030	E ± .020	F ± .020	G ± .020	H ± .060	J ± .090
04	.250 (6.4)	.187 (4.7)	.312 (7.9)	.512 (13.0)	.720 (18.3)	.870 (22.1)
05	.310 (7.9)	.187 (4.7)	.312 (7.9)	.512 (13.0)	.750 (19.1)	.930 (23.6)
07	.440 (11.2)	.187 (4.7)	.312 (7.9)	.512 (13.0)	.750 (19.1)	1.00 (25.4)
09	.560 (14.2)	.219 (5.6)	.375 (9.5)	.630 (16.0)	.760 (19.3)	1.03 (26.2)
11	.680 (17.3)	.219 (5.6)	.375 (9.5)	.630 (16.0)	.780 (19.8)	1.05 (26.7)
13	.810 (20.6)	.219 (5.6)	.375 (9.5)	.630 (16.0)	.790 (20.1)	1.06 (26.9)
15	.940 (23.9)	.219 (5.6)	.375 (9.5)	.630 (16.0)	.820 (20.8)	1.09 (27.7)
16	1.000 (25.4)	.219 (5.6)	.375 (9.5)	.630 (16.0)	.860 (21.8)	1.13 (28.7)
17	1.160 (29.5)	.250 (6.4)	.437 (11.1)	.630 (16.0)	.890 (22.6)	1.16 (29.5)

TABLE III: FINISH

Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

NOTES

1. 770-001S**-0 shrink boot supplied with T option. See shrink boot product page for more details.
2. Coupling nut supplied unplated.
3. See Table I in Intro for front-end dimensional details.
4. For Sym "E" low profile split shell sizes 24 and 25 dimensions, use indicator row in Table I.

440-144
Composite Ultra Low Profile EMI/RFI
Micro-Banding Backshell with Shrink Boot Porch and Self-Locking Rotatable Coupling

CONNECTOR DESIGNATOR:	
F	MIL-DTL-38999 Series I, II
H	MIL-DTL-38999 Series III and IV
SELF-LOCKING	
ROTATABLE COUPLING	
ULTRA LOW PROFILE	

Angle and Profile
S - Straight
T - 45° Elbow
W - 90° Low Profile, Solid
A - 90° Low Profile, Std
E - 90° Low Profile, Split

Cable Entry
(*See Table II*)
Omit for E and W Option Only

Drain Hole Option
(*Omit "D" if not required*)

Shrink Boot Option
Shrink boot supplied with T option
O-Ring will not be supplied with Connector Designator A
(*Omit for none*)

Product Series
440 - EMI/RFI Non-Environmental Micro-Banding Backshells

Basic Part Number

Finish Symbol
(*See Table III*)

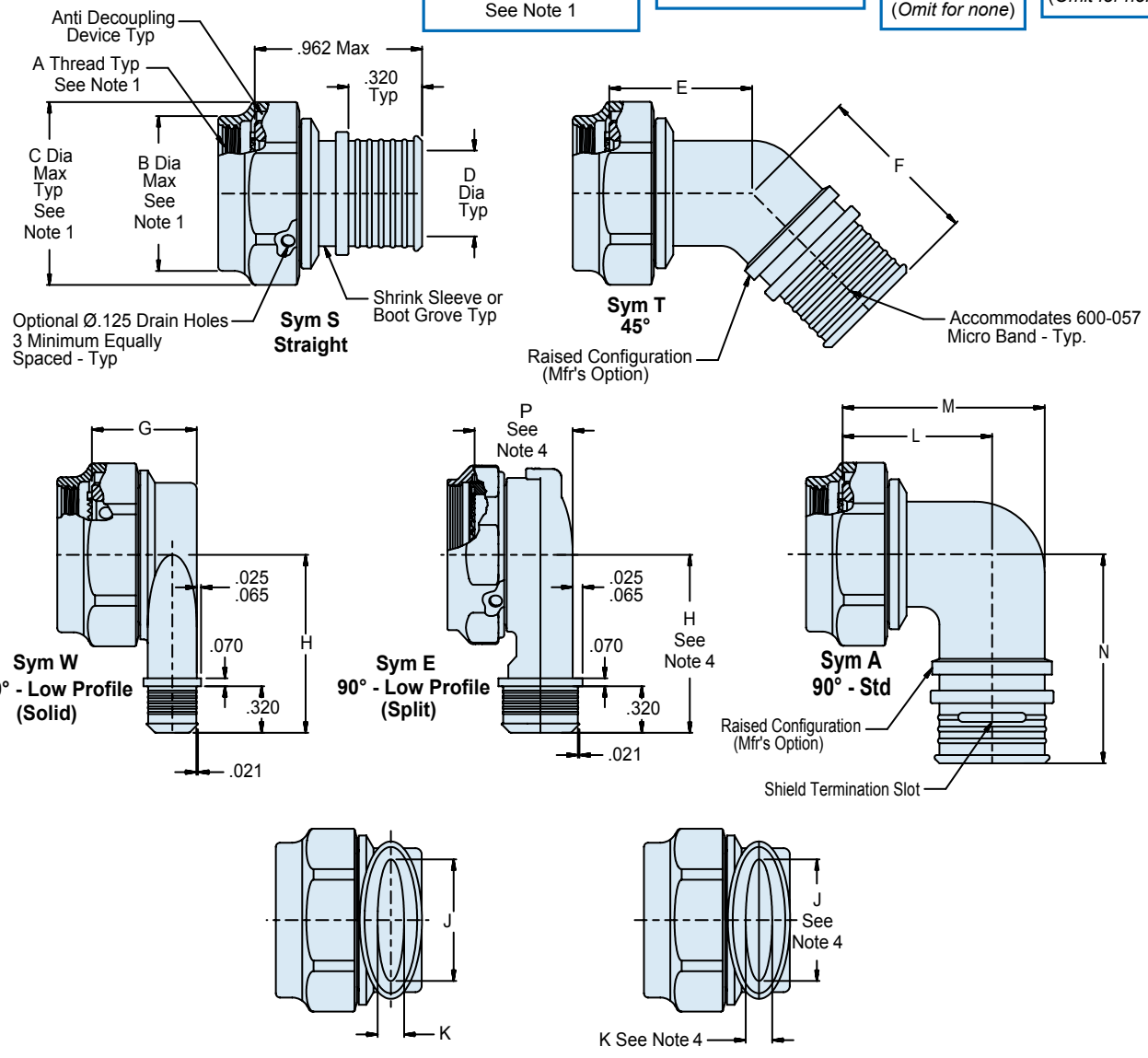
440	H	S	144	XM	15	09	D	B	T	S

Connector Designator
A, F or H
(*See Table I*)
See Note 1

Connector Shell Size
(*See Table I*)
See Note 1

Band Option
B - 600-057
K - 600-057-1
(*Omit for none*)

Shield Termination Slot
(*Omit for none*)



CAGE Code 06324
Printed in U.S.A.

440-144
Composite Ultra Low Profile EMI/RFI
Micro-Banding Backshell with Shrink Boot Porch and Self-Locking Rotatable Coupling

Glenair®

TABLE I: SHELL SIZE

Shell Size		Entry Code Available for Straight, 45° and 90° Std Configuration	G Max	H ± .03	J	K	L. ± 09	M ±.09	N Max	P Max
A & F	H									
08	09	04	.630 (16.0)	1.042 (26.5)	.304 (7.7)	.160 (4.1)	.690 (17.5)	.880 (22.4)	1.360 (34.5)	.810 (20.6)
10	11	05	.660 (16.8)	1.107 (28.1)	.432 (11.0)	.174 (4.4)	.750 (19.1)	1.000 (24.5)	1.420 (36.1)	.810 (20.6)
12	13	07	.720 (18.3)	1.174 (29.8)	.546 (13.9)	.195 (5.0)	.810 (20.6)	1.130 (28.7)	1.480 (37.6)	.820 (20.8)
14	15	09	.830 (21.1)	1.241 (31.5)	.670 (17.0)	.315 (8.0)	.880 (22.4)	1.310 (33.3)	1.550 (39.4)	.880 (22.4)
16	17	05 and 11	.910 (23.1)	1.305 (33.1)	.796 (20.2)	.385 (9.8)	.940 (23.9)	1.380 (35.1)	1.610 (40.9)	.930 (23.6)
18	19	07 and 13	.930 (23.6)	1.371 (34.8)	.902 (22.9)	.445 (11.3)	.970 (24.6)	1.440 (36.6)	1.640 (41.7)	.990 (25.1)
20	21	09 and 15	1.040 (26.4)	1.438 (36.5)	1.027 (26.1)	.525 (13.3)	1.060 (26.9)	1.630 (41.4)	1.730 (43.9)	1.060 (26.9)
22	23	11 and 16	1.120 (28.4)	1.505 (38.2)	1.152 (29.3)	.595 (15.1)	1.130 (28.7)	1.750 (44.5)	1.800 (45.7)	1.130 (28.7)
24	25	07, 13 and 17	1.180 (30.0)	1.572 (39.9)	1.276 (32.4)	.655 (16.6)	1.190 (30.2)	1.880 (47.8)	1.860 (47.2)	1.050 (26.7)
24*	25		1.020 (26.0)	1.850 (47.0)	1.460 (37.1)	.450 (11.4)				1.050 (26.7)

*See Note 2

TABLE II: CABLE ENTRY

Entry Code	D ± .030	E ± .060	F ± .090
04	.250 (6.4)	.720 (18.3)	.870 (22.1)
05	.310 (7.9)	.750 (19.1)	.930 (23.6)
07	.440 (11.2)	.750 (19.1)	1.000 (25.4)
09	.560 (14.2)	.760 (19.3)	1.030 (26.2)
11	.680 (17.3)	.780 (19.8)	1.050 (26.7)
13	.810 (20.6)	.790 (20.1)	1.060 (26.9)
15	.940 (23.9)	.820 (20.8)	1.090 (27.7)
16	1.000 (25.4)	.860 (21.8)	1.130 (28.7)
17	1.160 (29.5)	.890 (22.6)	1.160 (29.5)

TABLE III: FINISH

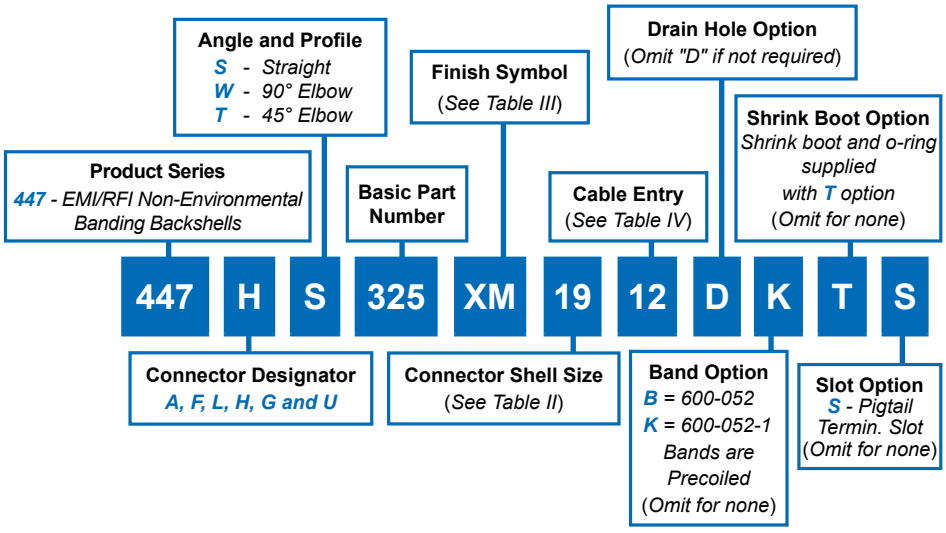
Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

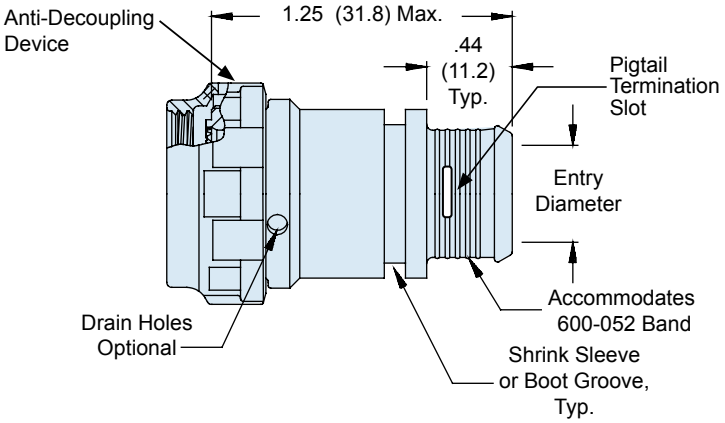
NOTES

1. 770-001S**-0 shrink boot supplied with T option. See shrink boot product page for more details.
2. For Sym "E" low profile split shell sizes 24 and 25 dimensions, use indicator row in Table I.
3. Coupling nut supplied unplated.
4. See Table I in Intro for front-end dimensional details.

447-325
Composite Standard Profile EMI/RFI
Banding Backshell with Shrink Boot Porch and Self-Locking Rotatable Coupling

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
L	MIL-DTL-38999 Series 1.5 (JN1003)
H	MIL-DTL-38999 Series III and IV
G	MIL-DTL-28840
U	DG123 and DG123A
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	





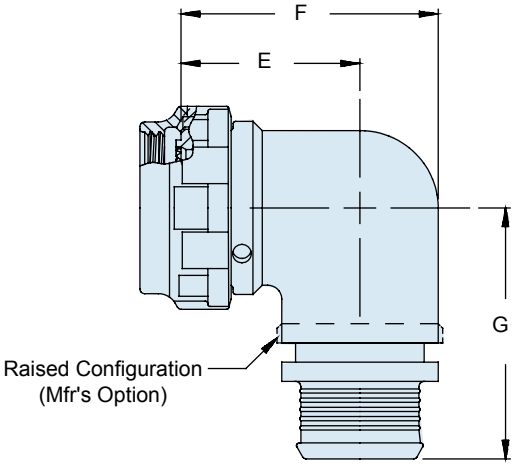


TABLE II: CONNECTOR SHELL SIZE (90°)

Shell Size For Connector Designator*					E		F		G		Max Entry Dash No.
A	F/L	H	G	U	± .06	(1.5)	± .09	(2.3)	± .09	(2.3)	(Table IV)**
08	08	09	–	–	.69	(17.5)	.88	(22.4)	1.19	(30.2)	04
10	10	11	–	08	.75	(19.1)	1.00	(25.4)	1.25	(31.8)	06
12	12	13	11	10	.81	(20.6)	1.13	(28.7)	1.31	(33.3)	08
14	14	15	13	12	.88	(22.4)	1.31	(33.3)	1.38	(35.1)	10
16	16	17	15	14	.94	(23.9)	1.38	(35.1)	1.44	(36.6)	12
18	18	19	17	16	.97	(24.6)	1.44	(36.6)	1.47	(37.3)	13
20	20	21	19	18	1.06	(26.9)	1.63	(41.4)	1.56	(39.6)	15
22	22	23	–	20	1.13	(28.7)	1.75	(44.5)	1.63	(41.4)	17
24	24	25	23	22	1.19	(30.2)	1.88	(47.8)	1.69	(42.9)	19
28	–	–	25	24	1.34	(34.0)	2.13	(54.1)	1.78	(45.2)	22

**Consult factory for additional entry sizes available.

CAGE Code 06324
Printed in U.S.A.

447-325
Composite Standard Profile EMI/RFI
Banding Backshell with Shrink Boot Porch and Self-Locking Rotatable Coupling

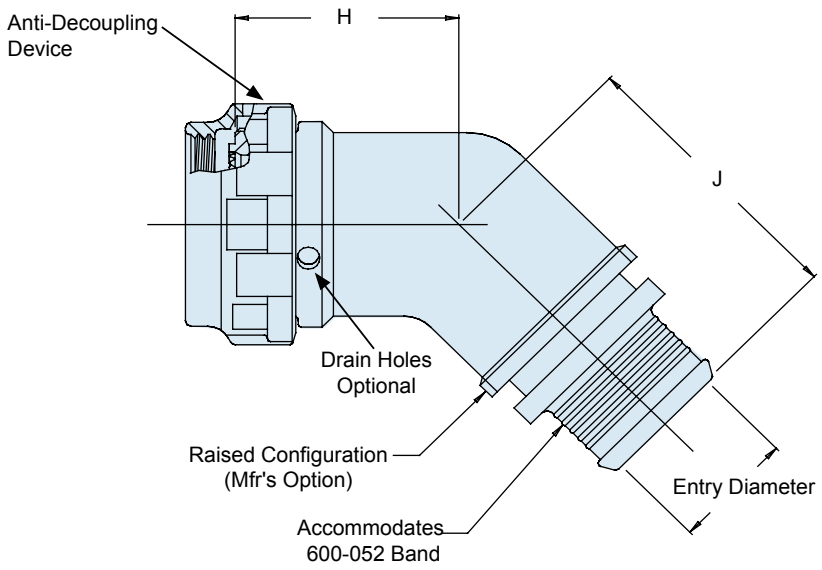


TABLE IV: CABLE ENTRY

Entry Code	Entry Dia. ±.03	(0.8)	Dash No.	Entry Dia. ±.03	(0.8)
03	.19	(4.8)	13	.81	(20.6)
04	.25	(6.4)	14	.88	(22.4)
05	.31	(7.9)	15	.94	(23.9)
06	.38	(9.7)	16	1.00	(25.4)
07	.44	(11.2)	17	1.06	(26.9)
08	.50	(12.7)	18	1.13	(28.7)
09	.56	(14.2)	19	1.19	(30.2)
10	.63	(16.0)	20	1.25	(31.8)
11	.69	(17.5)	22	1.38	(35.1)
12	.75	(19.1)			

TABLE III: FINISH

Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

TABLE II: CONNECTOR SHELL SIZE (45°)

Shell Size For Connector Designator*					H		J		Max Entry Dash No.
A	F/L	H	G	U	± .06	(1.5)	± .09	(2.3)	(Table IV)
08	08	09	–	–	.72	(18.3)	1.00	(25.4)	04
10	10	11	–	08	.75	(19.1)	1.06	(26.9)	06
12	12	13	11	10	.75	(19.1)	1.13	(28.7)	08
14	14	15	13	12	.76	(19.3)	1.16	(29.5)	10
16	16	17	15	14	.78	(19.8)	1.18	(30.0)	12
18	18	19	17	16	.79	(20.1)	1.19	(30.2)	13
20	20	21	19	18	.82	(20.8)	1.22	(31.0)	15
22	22	23	–	20	.86	(21.8)	1.26	(32.0)	17
24	24	25	23	22	.89	(22.6)	1.29	(32.8)	19
28	–	–	25	24	.92	(23.4)	1.32	(33.5)	22

NOTES

1. 770-001S**-0 shrink boot supplied with T option. See shrink boot product page for more details.
2. O-Ring will not be supplied with Connector Designator A.
3. Coupling nut supplied unplated.
4. Consult factory for O-Ring to be supplied with part less shrink boot.
5. Metric dimensions (mm) are in parenthesis and are for reference only.
6. See Table I in Intro for front-end dimensional details.

447-326
Composite Standard Profile EMI/RFI
Micro-Banding Backshell
with Self-Locking Rotatable Coupling and Shrink Boot Porch

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
L	MIL-DTL-38999 Series 1.5 (JN1003)
H	MIL-DTL-38999 Series III and IV
G	MIL-DTL-28840
U	DG123 and DG123A
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	

Product Series
447 - EMI/RFI Non-Environmental Banding Backshells

Angle and Profile
S - Straight
W - 90° Elbow
T - 45° Elbow

Basic Part Number

Finish Symbol
(See Table III)

Drain Hole Option
(Omit "D" if not required)

Shrink Boot Option
Shrink boot and o-ring supplied with T option (Omit for none)

447	H	S	326	XM	19	12	D	K	T	S

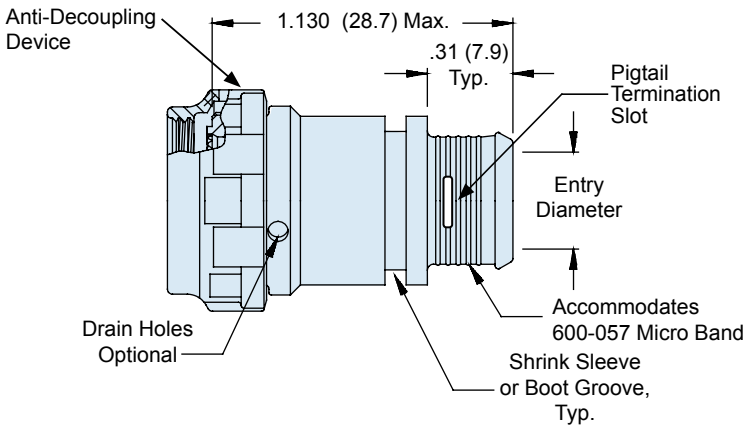
Connector Designator
A, F, L, H, G and U

Connector Shell Size
(See Table II)

Cable Entry
(See Table IV)

Band Option
B = 600-052
K = 600-052-1 Bands are Precoiled (Omit for none)

Slot Option
S - Pigtail Termin. Slot (Omit for none)



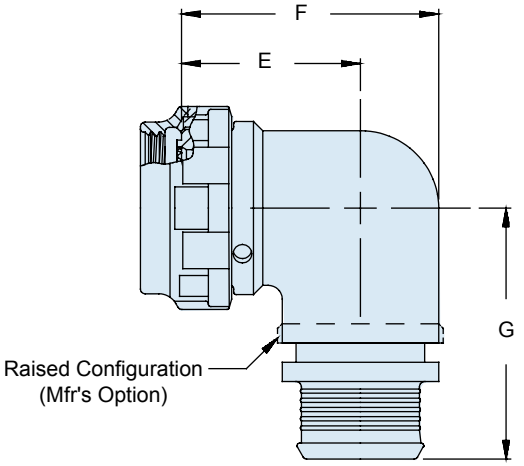


TABLE II: CONNECTOR SHELL SIZE

Shell Size For Connector Designator*					E		F		G		Max Entry
A	F/L	H	G	U	± .06	(1.5)	± .09	(2.3)	± .09	(2.3)	Dash No.**
08	08	09	–	–	.69	(17.5)	.88	(22.4)	1.06	(26.9)	04
10	10	11	–	08	.75	(19.1)	1.00	(25.4)	1.13	(28.7)	06
12	12	13	11	10	.81	(20.6)	1.13	(28.7)	1.19	(30.2)	08
14	14	15	13	12	.88	(22.4)	1.31	(33.3)	1.25	(31.8)	10
16	16	17	15	14	.94	(23.9)	1.38	(35.1)	1.31	(33.3)	12
18	18	19	17	16	.97	(24.6)	1.44	(36.6)	1.34	(34.0)	13
20	20	21	19	18	1.06	(26.9)	1.63	(41.4)	1.44	(36.6)	15
22	22	23	–	20	1.13	(28.7)	1.75	(44.5)	1.50	(38.1)	17
24	24	25	23	22	1.19	(30.2)	1.88	(47.8)	1.56	(39.6)	19
28	–	–	25	24	1.34	(34.0)	2.13	(54.1)	1.66	(42.2)	22

**Consult factory for additional entry sizes available.
See introduction for additional connector front-end details.

TABLE III: FINISH

Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/ Olive Drab over Electroless Nickel

CAGE Code 06324

Printed in U.S.A.

447-326
Composite Standard Profile EMI/RFI
Micro-Banding Backshell
with Self-Locking Rotatable Coupling and Shrink Boot Porch

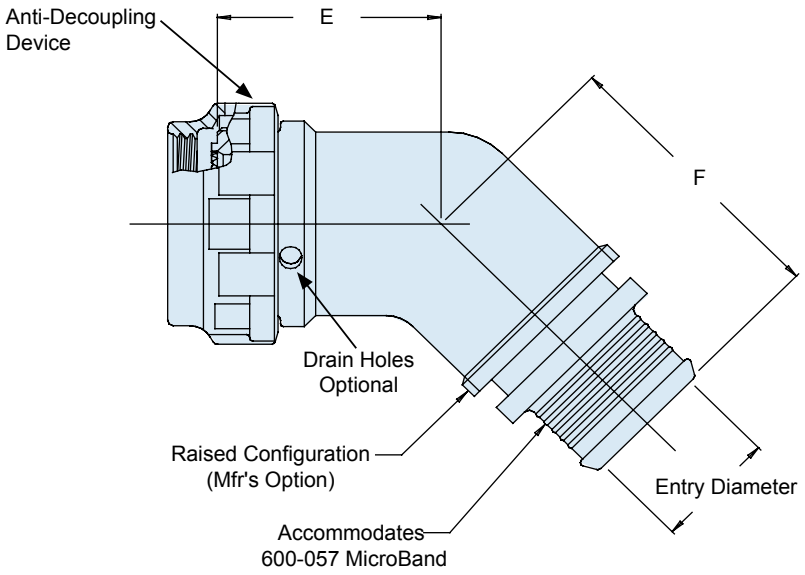


TABLE II: CONNECTOR SHELL SIZE (CONT.)

Shell Size For Connector Designator*					E		F		Max Entry Dash No. (Table 2)
A	F/L	H	G	U	± .06	(1.5)	± .09	(2.3)	
08	08	09	–	–	.72	(18.3)	.87	(22.1)	04
10	10	11	–	08	.75	(19.1)	.93	(23.6)	06
12	12	13	11	10	.75	(19.1)	1.00	(25.4)	08
14	14	15	13	12	.76	(19.3)	1.03	(26.2)	10
16	16	17	15	14	.78	(19.8)	1.05	(26.7)	12
18	18	19	17	16	.79	(20.1)	1.06	(26.9)	13
20	20	21	19	18	.82	(20.8)	1.09	(27.7)	15
22	22	23	–	20	.86	(21.8)	1.13	(28.7)	17
24	24	25	23	22	.89	(22.6)	1.16	(29.5)	19
28	–	–	25	24	.92	(23.4)	1.19	(30.2)	22

TABLE IV: CABLE ENTRY

Entry Code	Entry Dia. ±.03	(0.8)	Dash No.	Entry Dia. ±.03	(0.8)
02	.13	(3.3)	12	.75	(19.1)
03	.19	(4.8)	13	.81	(20.6)
04	.25	(6.4)	14	.88	(22.4)
05	.31	(7.9)	15	.94	(23.9)
06	.38	(9.7)	16	1.00	(25.4)
07	.44	(11.2)	17	1.06	(26.9)
08	.50	(12.7)	18	1.13	(28.7)
09	.56	(14.2)	19	1.19	(30.2)
10	.63	(16.0)	20	1.25	(31.8)
11	.69	(17.5)	22	1.38	(35.1)

NOTES

1. 770-001S**-0 shrink boot supplied with T option. See shrink boot product page for more details.
2. O-Ring will not be supplied with Connector Designator A.
3. Metric dimensions (mm) are in parenthesis and are for reference only.
4. Coupling nut supplied unplated.
5. See Table I in Intro for front-end dimensional details.

447-327
Composite Standard Profile EMI/RFI
Banding Backshell with Qwik-Ty® Strain Relief and Self-Locking Rotatable Coupling

A

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
L	MIL-DTL-38999 Series 1.5 (JN1003)
H	MIL-DTL-38999 Series III and IV
G	MIL-DTL-28840
U	DG123 and DG123A
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	

Product Series
447 - EMI/RFI Non-Environmental Banding Backshells

Angle and Profile
S - Straight
W - 90° Elbow

Basic Part Number

Finish Symbol
(See Table III)

Cable Entry
(See Table IV)

Drain Hole Option
(Omit "D" if not required)

Polysulfide Strips
Termination area free of cadmium, XW finish only (Omit for none)

Slot Option
S - Pigtail Termin. Slot (Omit for none)

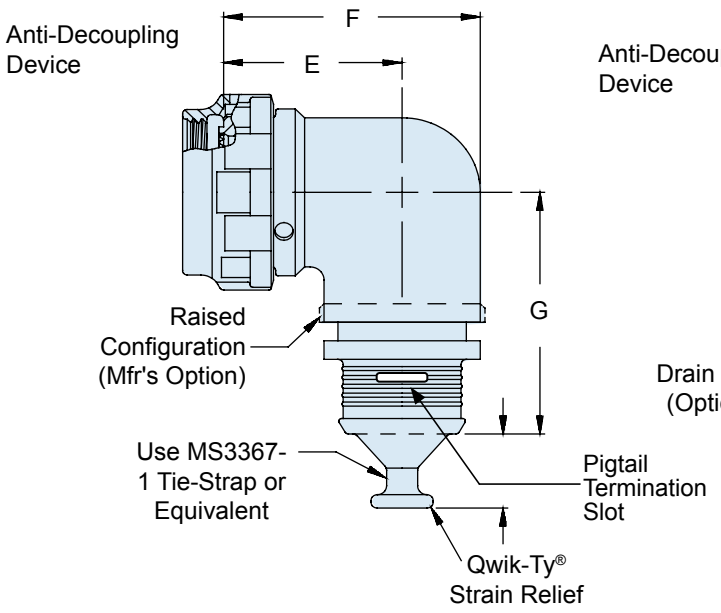
447	H	S	327	XW	19	13	D	K	P	T	S

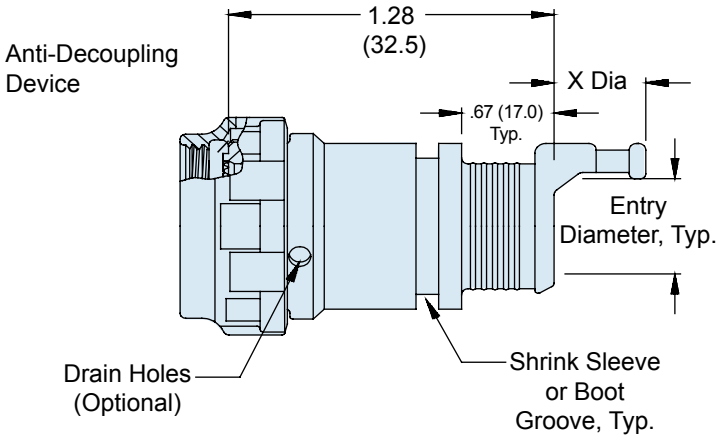
Connector Designator
A, F, L, H, G and U

Connector Shell Size
(See Table II)

Band Option
600-052-1 standard coiled band supplied with K option (Omit for none)

Shrink Boot Option
Shrink boot and o-ring supplied with T option (Omit for none)





447-327
Composite Standard Profile EMI/RFI
Banding Backshell with Qwik-Ty® Strain Relief and Self-Locking Rotatable Coupling

TABLE II: CONNECTOR SHELL SIZE

Shell Size For Connector Designator*					E		F		G		Max Entry
A	F/L	H	G	U	± .06	(1.5)	± .09	(2.3)	± .09	(2.3)	Dash No**
08	08	09	–	–	.69	(17.5)	.88	(22.4)	1.36	(34.5)	04
10	10	11	–	08	.75	(19.1)	1.00	(25.4)	1.42	(36.1)	05
12	12	13	11	10	.81	(20.6)	1.13	(28.7)	1.48	(37.6)	07
14	14	15	13	12	.88	(22.4)	1.31	(33.3)	1.55	(39.4)	09
16	16	17	15	14	.94	(23.9)	1.38	(35.1)	1.61	(40.9)	11
18	18	19	17	16	.97	(24.6)	1.44	(36.6)	1.64	(41.7)	13
20	20	21	19	18	1.06	(26.9)	1.63	(41.4)	1.73	(43.9)	15
22	22	23	–	20	1.13	(28.7)	1.75	(44.5)	1.80	(45.7)	17
24	24	25	23	22	1.19	(30.2)	1.88	(47.8)	1.86	(47.2)	20

**Consult factory for additional entry sizes available.

TABLE III: FINISH

Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

TABLE IV: CABLE ENTRY

Entry Code	Entry Dia. ±.03 (0.8)		X Dia. ±.03 (0.8)	
04	.250	(6.4)	.510	(13.0)
05	.310	(7.9)	.510	(13.0)
07	.440	(11.2)	.510	(13.0)
09	.560	(14.2)	.630	(16.0)
11	.680	(17.3)	.630	(16.0)
13	.810	(20.6)	.630	(16.0)
15	.940	(23.9)	.630	(16.0)
16	1.000	(25.4)	.630	(16.0)
17	1.160	(29.5)	.630	(16.0)
20	1.250	(31.8)	.630	(16.0)

NOTES

1. 770-001S**-0 shrink boot supplied with T option. See shrink boot product page for more details.
2. O-Ring will not be supplies with Connector Designator A.
3. Consult factory for O-ring to be supplied with part less shrink boot.
4. Metric dimensions (mm) are in parenthesis and are for reference only.
5. Coupling nut supplied unplated.
6. See Table I in Intro for front-end dimensional details.

447-328
Composite Standard Profile EMI/RFI
Band-in-a-Can Backshell with Strain-Relief Clamp and Self-Locking Rotatable Coupling

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
L	MIL-DTL-38999 Series 1.5 (JN1003)
H	MIL-DTL-38999 Series III and IV
G	MIL-DTL-28840
U	DG123 and DG123A
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	

Product Series
447 - EMI/RFI Non-Environmental Banding Backshells

Angle and Profile
S - Straight
W - 90° Elbow

Basic Part Number

Finish Symbol
(*See Table III*)

Cable Entry
(*See Table IV*)

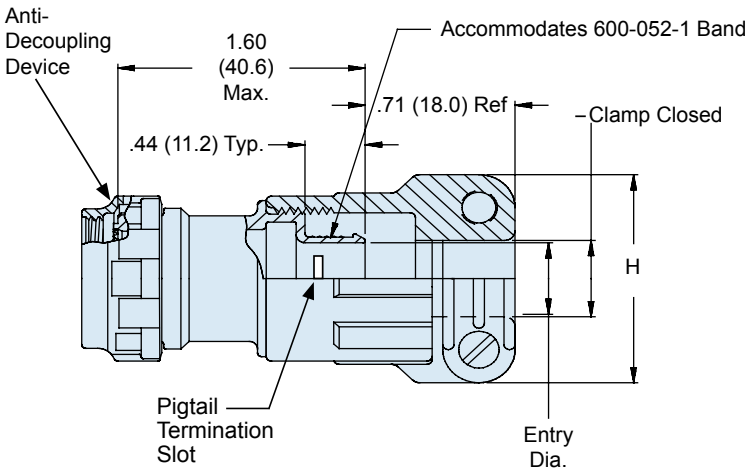
Slot Option
S - Pigtail Termin. Slot
(*Omit for none*)

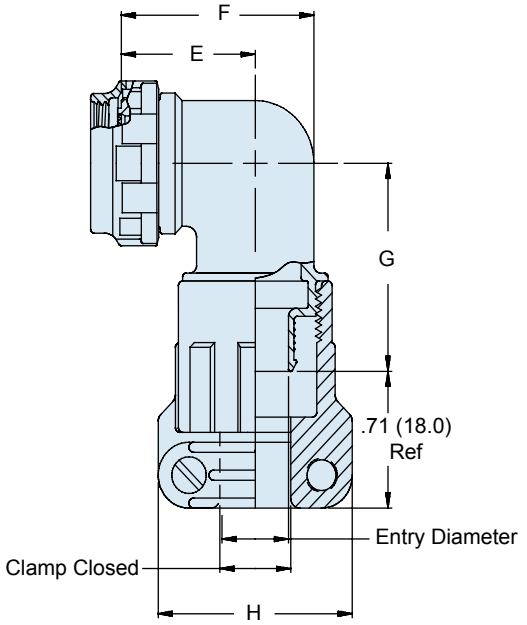
447	H	S	328	XM	19	20	K	S

Connector Designator
A, F, L, H, G and U

Connector Shell Size
(*See Table II*)

Band Option
Band supplied with K option
(*Omit for none*)





NOTES

1. Metric dimensions (mm) are in parenthesis and are for reference only.
2. Coupling nut supplied unplated.
3. See Table I in Intro for front-end dimensional details.

TABLE II: CONNECTOR SHELL SIZE

Shell Size For Connector Designator*					E		F		G		Max Entry
A	F/L	H	G	U	± .06	(1.5)	± .09	(2.3)	± .09	(2.3)	Dash No.**
08	08	09	–	–	.69	(17.5)	.88	(22.4)	1.19	(30.2)	10
10	10	11	–	08	.75	(19.1)	1.00	(25.4)	1.25	(31.8)	12
12	12	13	11	10	.81	(20.6)	1.13	(28.7)	1.31	(33.3)	14
14	14	15	13	12	.88	(22.4)	1.31	(33.3)	1.38	(35.1)	16
16	16	17	15	14	.94	(23.9)	1.38	(35.1)	1.44	(36.6)	20
18	18	19	17	16	.97	(24.6)	1.44	(36.6)	1.47	(37.3)	20
20	20	21	19	18	1.06	(26.9)	1.63	(41.4)	1.56	(39.6)	22
22	22	23	–	20	1.13	(28.7)	1.75	(44.5)	1.63	(41.4)	24
24	24	25	23	22	1.19	(30.2)	1.88	(47.8)	1.69	(42.9)	32
28	–	–	25	24	1.34	(34.0)	2.13	(54.1)	1.78	(45.2)	32

**Consult factory for additional entry sizes available.

TABLE III: FINISH

Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

TABLE IV: CABLE ENTRY

Entry Code	H ±.06	(1.5)	Entry Dia.* ±.03	(0.8)	Clamp Closed ±.03	(0.8)
10	.94	(23.9)	.22	(5.6)	.26	(6.6)
12	1.17	(29.7)	.28	(7.1)	.34	(8.6)
14	1.28	(32.5)	.34	(8.6)	.46	(11.7)
16	1.41	(35.8)	.46	(11.7)	.55	(14.0)
18	1.50	(38.1)	.55	(14.0)	.62	(15.7)
20	1.56	(39.6)	.62	(15.7)	.70	(17.8)
22	1.69	(42.9)	.70	(17.8)	.78	(19.8)
24	1.81	(46.0)	.78	(19.8)	.85	(21.6)
28	1.91	(48.5)	.85	(21.6)	.95	(24.1)
32	2.02	(51.3)	.95	(24.1)	1.02	(25.9)

* Entry diameter equals maximum wire bundle diameter.

447-329
Composite EMI/RFI Environmental
Band-in-a-Can Backshell with Strain-Relief Clamp and Self-Locking Rotatable Coupling

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
L	MIL-DTL-38999 Series 1.5 (JN1003)
H	MIL-DTL-38999 Series III and IV
G	MIL-DTL-28840
U	DG123 and DG123A
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	

Product Series
447 - EMI/RFI Non-Environmental Banding Backshells

Angle and Profile
S - Straight
W - 90° Elbow

Basic Part Number

Finish Symbol
(*See Table III*)

Band Option
Band supplied with K option
(*Omit for none*)

Cable Entry
(*See Table IV*)

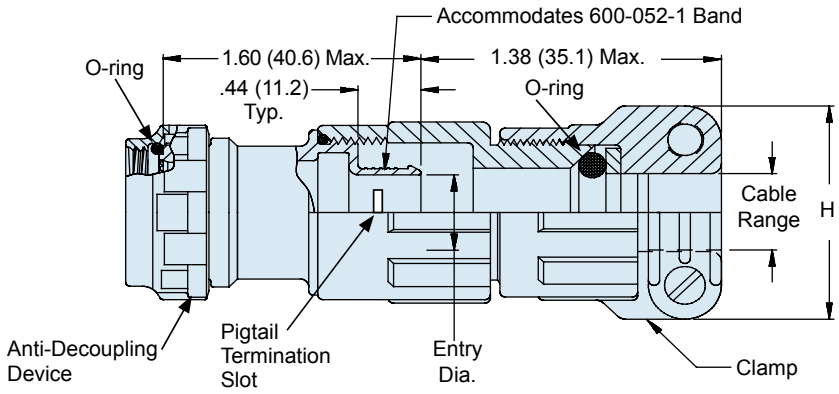
447	H	S	329	XM	19	20	C	K	S

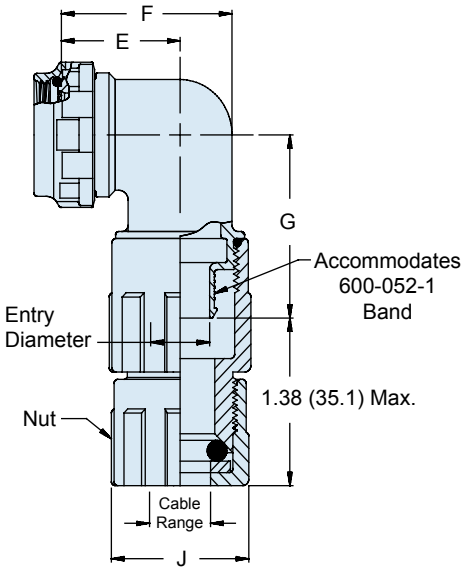
Connector Designator
A, F, L, H, G and U

Connector Shell Size
(*See Table II*)

Strain Relief Style
C - Clamp
N - Nut

Slot Option
S - Pigtail Termin. Slot
(*Omit for none*)





NOTES

1. Metric dimensions (mm) are in parenthesis and are for reference only.
2. Coupling nut supplied unplated.
3. See Table I in Intro for front-end dimensional details.

TABLE II: CONNECTOR SHELL SIZE

Shell Size For Connector Designator*					E		F		G		Max Entry
A	F/L	H	G	U	± .06	(1.5)	± .09	(2.3)	± .09	(2.3)	Dash No.**
08	08	09	–	–	.69	(17.5)	.88	(22.4)	1.19	(30.2)	10
10	10	11	–	08	.75	(19.1)	1.00	(25.4)	1.25	(31.8)	12
12	12	13	11	10	.81	(20.6)	1.13	(28.7)	1.31	(33.3)	14
14	14	15	13	12	.88	(22.4)	1.31	(33.3)	1.38	(35.1)	16
16	16	17	15	14	.94	(23.9)	1.38	(35.1)	1.44	(36.6)	20
18	18	19	17	16	.97	(24.6)	1.44	(36.6)	1.47	(37.3)	20
20	20	21	19	18	1.06	(26.9)	1.63	(41.4)	1.56	(39.6)	22
22	22	23	–	20	1.13	(28.7)	1.75	(44.5)	1.63	(41.4)	24
24	24	25	23	22	1.19	(30.2)	1.88	(47.8)	1.69	(42.9)	28
28	–	–	25	24	1.34	(34.0)	2.13	(54.1)	1.78	(45.2)	32

**Consult factory for additional entry sizes available.

TABLE III: FINISH

Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

TABLE IV: CABLE ENTRY

Entry Code	H ±.06	(1.5)	J ±.06	(1.5)	Entry Dia.* ±.03	(0.8)	Cable Range ** Minimum	(3.3)	Maximum	(6.4)
10	.94	(23.9)	.80	(20.3)	.22	(5.6)	.13	(3.3)	.25	(6.4)
12	1.17	(29.7)	.93	(23.6)	.28	(7.1)	.25	(6.4)	.38	(9.7)
14	1.28	(32.5)	1.06	(26.9)	.34	(8.6)	.31	(7.9)	.44	(11.2)
16	1.41	(35.8)	1.22	(31.0)	.46	(11.7)	.50	(12.7)	.63	(15.9)
18	1.50	(38.1)	1.24	(31.5)	.55	(14.0)	.56	(14.2)	.69	(17.5)
20	1.56	(39.6)	1.37	(34.8)	.62	(15.7)	.63	(16.0)	.75	(19.1)
22	1.69	(42.9)	1.49	(37.8)	.70	(17.8)	.75	(19.1)	.88	(22.2)
24	1.81	(46.0)	1.62	(41.1)	.78	(19.8)	.88	(22.4)	1.00	(25.4)
28	1.91	(48.5)	1.68	(42.7)	.85	(21.6)	1.00	(25.4)	1.13	(28.6)
32	2.02	(51.3)	1.82	(46.2)	.95	(24.1)	1.13	(28.6)	1.25	(31.8)

* Entry diameter equals maximum wire bundle diameter.
** Cable range equals diameter of cable outer jacket.

447-330
Composite Non-Environmental EMI/RFI
Band-in-a-Can Backshell with Qwik-Clamp Strain-Relief and Self-Locking Rotatable Coupling

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
L	MIL-DTL-38999 Series 1.5 (JN1003)
H	MIL-DTL-38999 Series III and IV
G	MIL-DTL-28840
U	DG123 and DG123A
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	

Product Series
447 - EMI/RFI Non-Environmental Banding Backshells

Angle and Profile
S - Straight
W - 90° Elbow

Basic Part Number

Finish Symbol
(See Table III)

Cable Entry
(See Table IV)

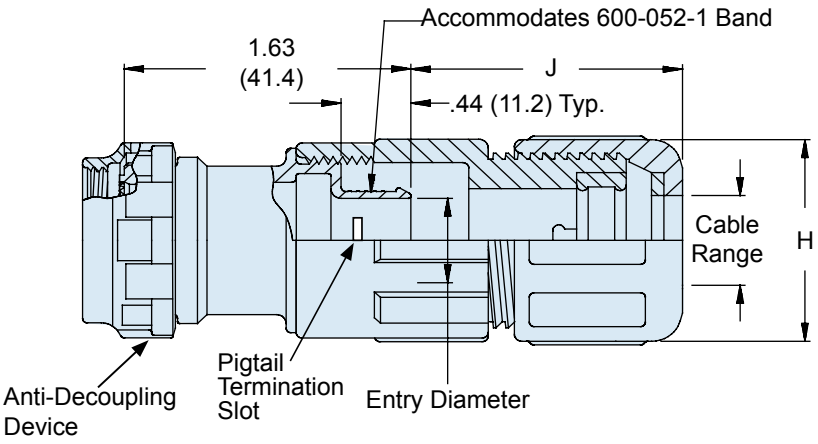
Slot Option
S - Pigtail Termin. Slot
(Omit for none)

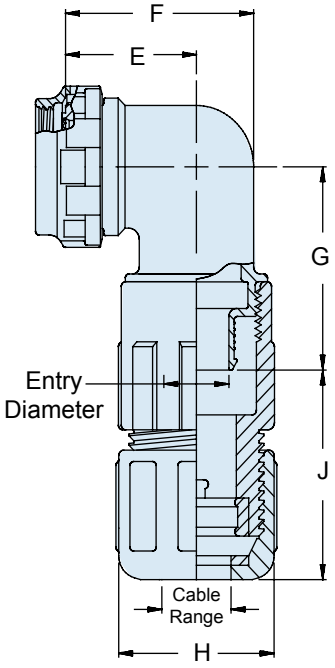
447	H	S	330	XM	19	28	K	S

Connector Designator
A, F, L, H, G and U

Connector Shell Size
(See Table II)

Band Option
Band supplied with K option
(Omit for none)





US PATENT 5211576

NOTES

1. Metric dimensions (mm) are in parenthesis and are for reference only.
2. Coupling nut supplied unplated.
3. See Table I in Intro for front-end dimensional details.

TABLE II: CONNECTOR SHELL SIZE

Shell Size For Connector Designator*					E		F		G		Max Entry
A	F/L	H	G	U	± .06	(1.5)	± .09	(2.3)	± .09	(2.3)	Dash No**
08	08	09	–	–	.69	(17.5)	.88	(22.4)	1.19	(30.2)	08
10	10	11	–	08	.75	(19.1)	1.00	(25.4)	1.25	(31.8)	12
12	12	13	11	10	.81	(20.6)	1.13	(28.7)	1.31	(33.3)	16
14	14	15	13	12	.88	(22.4)	1.31	(33.3)	1.38	(35.1)	20
16	16	17	15	14	.94	(23.9)	1.38	(35.1)	1.44	(36.6)	24
18	18	19	17	16	.97	(24.6)	1.44	(36.6)	1.47	(37.3)	28
20	20	21	19	18	1.06	(26.9)	1.63	(41.4)	1.56	(39.6)	32
22	22	23	–	20	1.13	(28.7)	1.75	(44.5)	1.63	(41.4)	36
24	24	25	23	22	1.19	(30.2)	1.88	(47.8)	1.69	(42.9)	40
28	–	–	25	24	1.34	(34.0)	2.13	(54.1)	1.78	(45.2)	44

**Consult factory for additional entry sizes available.

TABLE III: FINISH

Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

TABLE IV: CABLE ENTRY

Entry Code	H ±.06	H (1.5)	J ±.06	J (1.5)	Entry Dia. ±.03	Entry Dia. (0.8)	Cable Range Minimum	Cable Range Maximum
08	.72	(18.3)	.97	(24.6)	.25	(6.4)	.10 (2.5)	.25 (6.4)
12	.91	(23.1)	1.11	(28.2)	.38	(9.7)	.20 (5.1)	.38 (9.7)
16	1.09	(27.7)	1.21	(30.7)	.50	(12.7)	.33 (8.4)	.50 (12.7)
20	1.22	(31.0)	1.21	(30.7)	.63	(15.9)	.45 (11.4)	.63 (15.9)
24	1.34	(34.0)	1.21	(30.7)	.75	(19.1)	.52 (13.2)	.75 (19.1)
28	1.53	(38.9)	1.36	(34.5)	.88	(22.2)	.64 (16.3)	.88 (22.2)
32	1.72	(43.7)	1.51	(38.4)	1.00	(25.4)	.77 (19.6)	1.00 (25.4)
36	1.85	(47.0)	1.51	(38.4)	1.13	(28.6)	.86 (21.8)	1.13 (28.6)
40	1.97	(50.0)	1.51	(38.4)	1.25	(31.8)	.98 (24.9)	1.25 (31.8)
44	2.09	(53.1)	1.63	(41.4)	1.38	(35.1)	1.13 (28.6)	1.38 (35.1)

* Entry diameter equals maximum wire bundle diameter.
** Cable range equals cable outer diameter.

447-331
Composite EMI/RFI Dual-Banding Backshell
with Self-Locking Rotatable Coupling

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
L	MIL-DTL-38999 Series 1.5 (JN1003)
H	MIL-DTL-38999 Series III and IV
G	MIL-DTL-28840
U	DG123 and DG123A
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	

Product Series
447 - EMI/RFI Non-Environmental Banding Backshells

Angle and Profile
S - Straight
W - 90° Elbow

Finish Symbol
(*See Table III*)

Drain Hole Option
(*Omit "D" if not required*)

Slot Option
S - Pigtail Termin. Slot
(*Omit for none*)

Basic Part Number

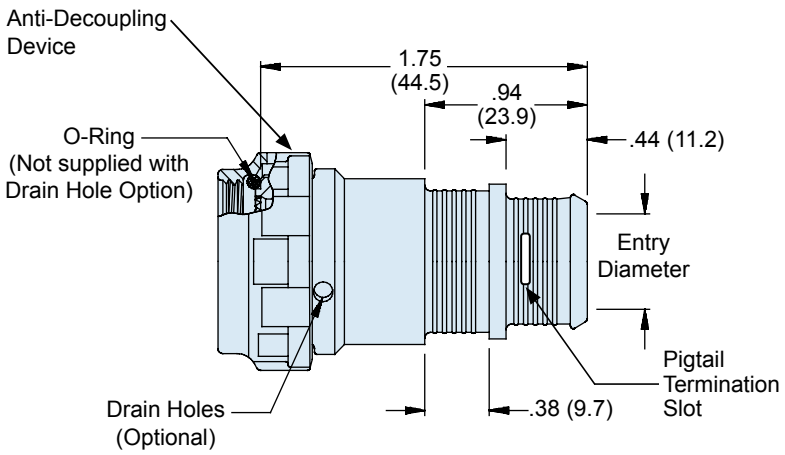
Cable Entry
(*See Table IV*)

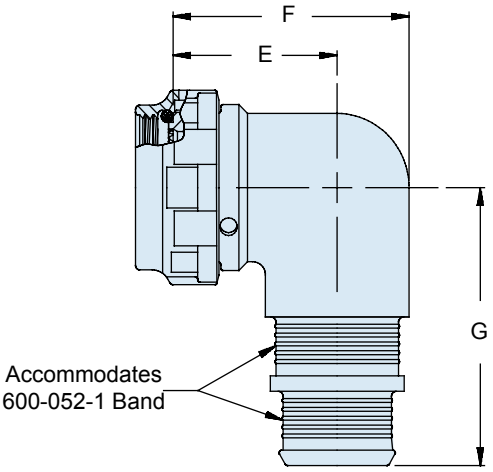
447	H	S	331	XM	19	12	D	K	S

Connector Designator
A, F, L, H, G and U

Connector Shell Size
(*See Table II*)

Band Option
2 bands supplied with K option
(*Omit for none*)





NOTES

1. Metric dimensions (mm) are in parenthesis and are for reference only.
2. Coupling nut supplied unplated.
3. See Table I in Intro for front-end dimensional details.

TABLE II: CONNECTOR SHELL SIZE

Shell Size For Connector Designator*					E		F		G		Max Entry
A	F/L	H	G	U	± .06	(1.5)	± .09	(2.3)	± .09	(2.3)	Dash No.**
08	08	09	–	–	.69	(17.5)	.88	(22.4)	1.69	(42.9)	04
10	10	11	–	08	.75	(19.1)	1.00	(25.4)	1.75	(44.5)	06
12	12	13	11	10	.81	(20.6)	1.13	(28.7)	1.81	(46.0)	08
14	14	15	13	12	.88	(22.4)	1.31	(33.3)	1.88	(47.8)	10
16	16	17	15	14	.94	(23.9)	1.38	(35.1)	1.94	(49.3)	12
18	18	19	17	16	.97	(24.6)	1.44	(36.6)	1.97	(50.0)	13
20	20	21	19	18	1.06	(26.9)	1.63	(41.4)	2.06	(52.3)	15
22	22	23	–	20	1.13	(28.7)	1.75	(44.5)	2.13	(54.1)	17
24	24	25	23	22	1.19	(30.2)	1.88	(47.8)	2.19	(55.6)	19
28	–	–	25	24	1.34	(34.0)	2.13	(54.1)	2.28	(57.9)	22

**Consult factory for additional entry sizes available.

TABLE III: FINISH

Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

TABLE IV: CABLE ENTRY

Entry Code	Entry Dia. ±.03	(0.8)	Dash No.	Entry Dia. ±.03	(0.8)
03	.19	(4.8)	13	.81	(20.6)
04	.25	(6.4)	14	.88	(22.4)
05	.31	(7.9)	15	.94	(23.9)
06	.38	(9.7)	16	1.00	(25.4)
07	.44	(11.2)	17	1.06	(26.9)
08	.50	(12.7)	18	1.13	(28.7)
09	.56	(14.2)	19	1.19	(30.2)
10	.63	(16.0)	20	1.25	(31.8)
11	.69	(17.5)	22	1.38	(35.1)
12	.75	(19.1)			

447-657
Composite Low-Profile Micro Band-in-a-Can Backshell with Strain-Relief Clamp and Self-Locking Rotatable Coupling

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
H	MIL-DTL-38999 Series III and IV
SELF-LOCKING	
ROTATABLE COUPLING	
STANDARD PROFILE	

Product Series
447 - EMI/RFI Non-Environmental Banding Backshells

Finish Symbol
(See Table III)

Connector Designator
A, F or H

Basic Part Number

Band Option
K - Pre-Coiled Band
(Omit for none)

Slot Option
S - Pigtail Termin. Slot
(Omit for none)

447	F	S	657	XM	18	04	K	S

Angle and Profile
S - Straight

Connector Shell Size
(See Table II)

Cable Entry
(See Table IV)

NOTES

1. Metric dimensions (mm) are in parenthesis and are for reference only.
2. Coupling nut supplied unplated.
3. See Table I in Intro for front-end dimensional details.

For angled part requirements, use in conjuncion with Glenair 327-060 Extenders

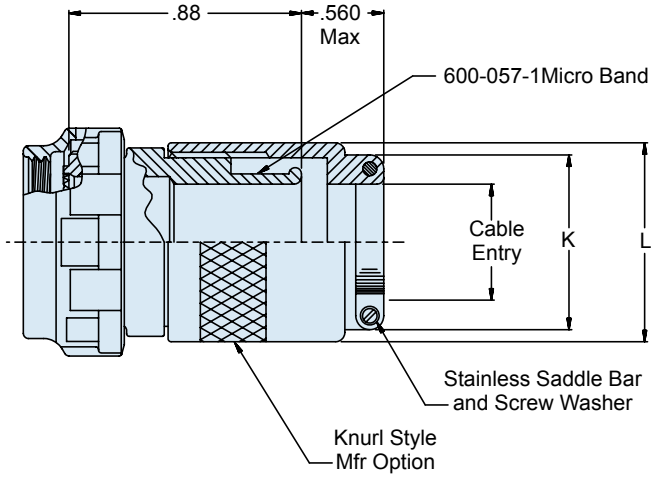


TABLE II SHELL SIZE

Shell Size			Max Dash Number (Table II)	
A	F	H	A	F, H
08	08	09	01	01
10	10	11	01	02
12	12	13	04	04
14	14	15	04	05
16	16	17	05	06
18	18	19	06	06
20	20	21	07	07
22	22	23	08	08
24	24	25	09	09
28	-	-	10	10
32	-	-	10	10
36	-	-	10	10
40	-	-	10	10

TABLE III: FINISH

Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel

TABLE IV: CABLE ENTRY

Dash Number	K Max	L Max	Cable Entry	
			Min	Max
01	.843 (21.4)	.78 (19.8)	.125 (3.2)	.250 (6.4)
02	.968 (24.6)	.97 (24.6)	.156 (4.0)	.375 (9.5)
03	1.046 (26.6)	1.05 (26.7)	.250 (6.4)	.438 (11.1)
04	1.156 (29.4)	1.15 (29.2)	.280 (7.1)	.500 (12.7)
05	1.218 (30.9)	1.22 (31.0)	.375 (9.5)	.625 (15.9)
06	1.343 (34.1)	1.34 (34.0)	.500 (12.7)	.750 (19.1)
07	1.468 (37.3)	1.47 (37.3)	.625 (15.9)	.875 (22.2)
08	1.593 (40.5)	1.59 (40.4)	.750 (19.1)	1.000 (25.4)
09	1.718 (43.6)	1.72 (43.7)	.875 (22.2)	1.125 (28.6)
10	1.843 (46.8)	1.84 (46.7)	1.000 (25.4)	1.250 (31.8)

CAGE Code 06324
Printed in U.S.A.

447-711
Composite EMI/RFI Banding Backshell
with Strain Relief
and Self-Locking Rotatable Coupling

Product Series
447 - EMI/RFI Non-Environmental Banding Backshells

Connector Designator
A, F, L, H, G and U

Finish Symbol
(See Table III)

Basic Part Number

Drain Hole Option
(Omit "D" if not required)

Cable Entry
(See Table IV)

Band Option
Band supplied with K option (Omit for none)

Shrink Boot Option
Shrink boot and o-ring supplied with T option (Omit for none)

447	H	S	711	XW	19	13	D	S	K	P	T

Angle and Profile
S - Straight
W - 90° Elbow

Connector Shell Size
(See Table II)

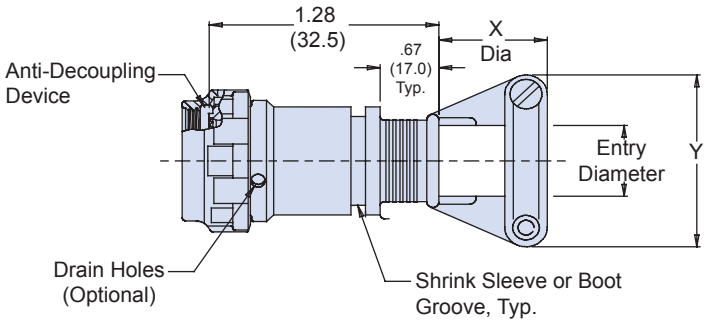
Shield Termination Slot
(Omit for none)

Polysulfide Strips
Termination area free of cadmium, XW finish only (Omit for none)

TABLE IV: CABLE ENTRY

Entry Code	Entry Dia. ±.03 (0.8)		X Dia. ±.03 (0.8)		Y Dia. ±.03 (0.8)	
04	.250	(6.4)	.51	(13.0)	.875	(22.2)
05	.310	(7.9)	.51	(13.0)	.936	(23.8)
07	.420	(10.7)	.51	(13.0)	1.172	(29.8)
09	.530	(13.5)	.63	(16.0)	1.281	(32.5)
10	.630	(16.0)	.63	(16.0)	1.406	(35.7)
12	.750	(19.1)	.63	(16.0)	1.500	(38.1)
13	.810	(20.6)	.63	(16.0)	1.562	(39.7)
15	.940	(23.9)	.63	(16.0)	1.687	(42.8)
16	1.00	(25.4)	.63	(16.0)	1.812	(46.0)
19	1.16	(29.5)	.63	(16.0)	1.912	(48.6)

NOTE: Coupling Nut Supplied Unplated



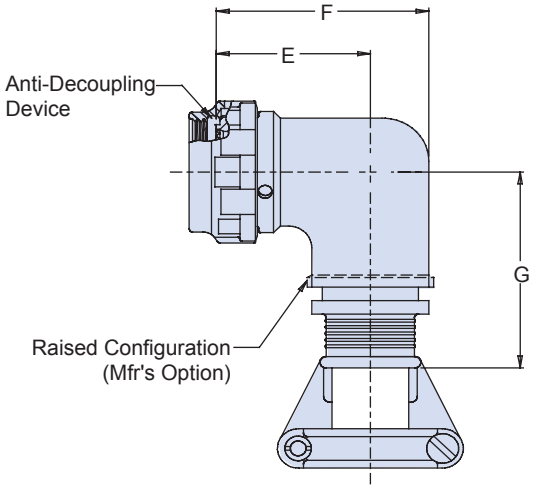


TABLE II: CONNECTOR SHELL SIZE

Shell Size For Connector Designator*					E		F		G		Max Entry
A	F/L	H	G	U	± .06	(1.5)	± .09	(2.3)	± .09	(2.3)	Dash No.**
08	08	09	–	–	.69	(17.5)	.88	(22.4)	1.36	(34.5)	04
10	10	11	–	08	.75	(19.1)	1.00	(25.4)	1.42	(36.1)	05
12	12	13	11	10	.81	(20.6)	1.13	(28.7)	1.48	(37.6)	07
14	14	15	13	12	.88	(22.4)	1.31	(33.3)	1.55	(39.4)	09
16	16	17	15	14	.94	(23.9)	1.38	(35.1)	1.61	(40.9)	11
18	18	19	17	16	.97	(24.6)	1.44	(36.6)	1.64	(41.7)	13
20	20	21	19	18	1.06	(26.9)	1.63	(41.4)	1.73	(43.9)	15
22	22	23	–	20	1.13	(28.7)	1.75	(44.5)	1.80	(45.7)	17
24	24	25	23	22	1.19	(30.2)	1.88	(47.8)	1.86	(47.2)	20

**Consult factory for additional entry sizes available.
Consult factory for O-Ring to be supplied with part less shrink boot.

TABLE III: FINISH

Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/ Olive Drab over Electroless Nickel

CAGE Code 06324

Printed in U.S.A.

450-029
Composite Qwik-Ty® Strain-Relief
with Self-Locking Rotatable Coupling
Straight, 45° and 90°

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
L	MIL-DTL-38999 Series 1.5 (JN1003)
H	MIL-DTL-38999 Series III and IV
G	MIL-DTL-28840
U	DG123 and DG123A
SELF-LOCKING	
ROTATABLE COUPLING	
LOW PROFILE	

Product Series
450 - Qwik-Ty Strain Relief

Angle and Profile
A - 90° Elbow
B - 45° Clamp
S - Straight

Finish Symbol
(See Table III)

450	H	S	029	XO	19
	Connector Designator *A, F, L, H, G and U*		**Basic Part Number**		**Connector Shell Size** *(See Table II)*

NOTES

1. Metric dimensions (mm) are in parenthesis and are for reference only.
2. See Table I in Intro for front-end dimensional details.

TABLE III: FINISH

Symbol	Finish Description
XB	No Plating - Black Material
XO	No Plating - Brown Material

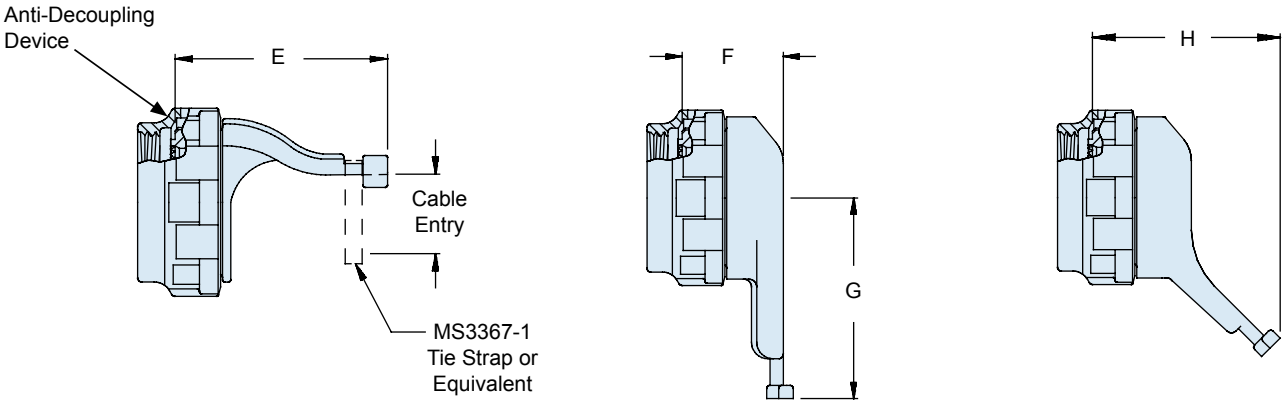


TABLE II: CONNECTOR SHELL SIZE ORDER NUMBER

Shell Size For Connector Designator*					E Code A,F,H Max		E Code G,U Max		F Max		G Max		H Max		Cable Entry Max	
A	F/L	H	G	U												
08	08	09	–	–	1.14	(29.0)	–		.75	(19.0)	1.22	(31.0)	1.14	(29.0)	.25	(6.4)
10	10	11	–	08	1.14	(29.0)	1.30	(33.0)	.75	(19.0)	1.29	(32.8)	1.14	(29.0)	.38	(9.7)
12	12	13	11	10	1.20	(30.5)	1.36	(34.5)	.75	(19.0)	1.62	(41.1)	1.14	(29.0)	.50	(12.7)
14	14	15	13	12	1.38	(35.1)	1.54	(39.1)	.75	(19.0)	1.66	(42.2)	1.64	(41.7)	.63	(16.0)
16	16	17	15	14	1.38	(35.1)	1.54	(39.1)	.75	(19.0)	1.72	(43.7)	1.64	(41.7)	.75	(19.1)
18	18	19	17	16	1.44	(36.6)	1.69	(42.9)	.75	(19.0)	1.72	(43.7)	1.74	(44.2)	.81	(21.8)
20	20	21	19	18	1.57	(39.9)	1.73	(43.9)	.75	(19.0)	1.79	(45.5)	1.74	(44.2)	.94	(23.9)
22	22	23	–	20	1.69	(42.9)	1.91	(48.5)	.75	(19.0)	1.85	(47.0)	1.74	(44.2)	1.06	(26.9)
24	24	25	23	22	1.83	(46.5)	1.99	(50.5)	.75	(19.0)	1.91	(48.5)	1.95	(49.5)	1.19	(30.2)
28	–	–	25	24	1.99	(50.5)	2.15	(54.6)	.75	(19.0)	2.07	(52.6)	n/a		1.38	(35.1)

450-030
Composite Qwik-Ty® Strain-Relief
with Self-Locking Rotatable Coupling and Ground Lug
Straight, 45° and 90°

Glenair®

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
F	MIL-DTL-38999 Series I, II
L	MIL-DTL-38999 Series 1.5 (JN1003)
H	MIL-DTL-38999 Series III and IV
G	MIL-DTL-28840
U	DG123 and DG123A
SELF-LOCKING	
ROTATABLE COUPLING	
LOW PROFILE	

Product Series
450 - Qwik-Ty Strain Relief

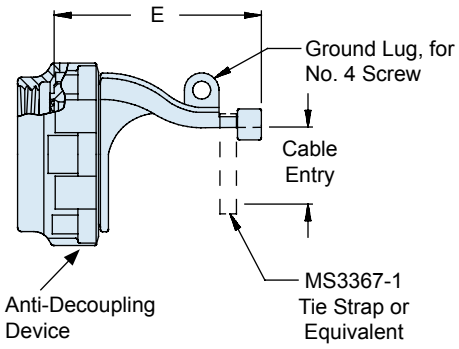
Angle and Profile
A - 90° Elbow
B - 45° Clamp
S - Straight

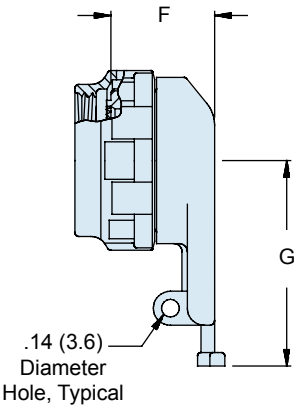
Finish Symbol
(See Table III)

450	H	S	030	XM	19
	Connector Designator *A, F, L, H, G and U*		Basic Part Number		Connector Shell Size *(See Table II)*

TABLE III: FINISH

Symbol	Finish Description
XM	2000 Hour Corrosion Resistant Electroless Nickel
XMT	2000 Hour Corrosion Resistant Ni-PTFE, Nickel-Fluorocarbon Polymer. *1000 Hour Grey™*
XW	2000 Hour Corrosion Resistant Cadmium/Olive Drab over Electroless Nickel
XB	No Plating - Black Material
XO	No Plating - Brown Material





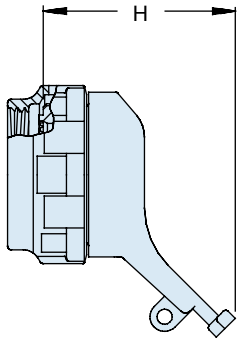


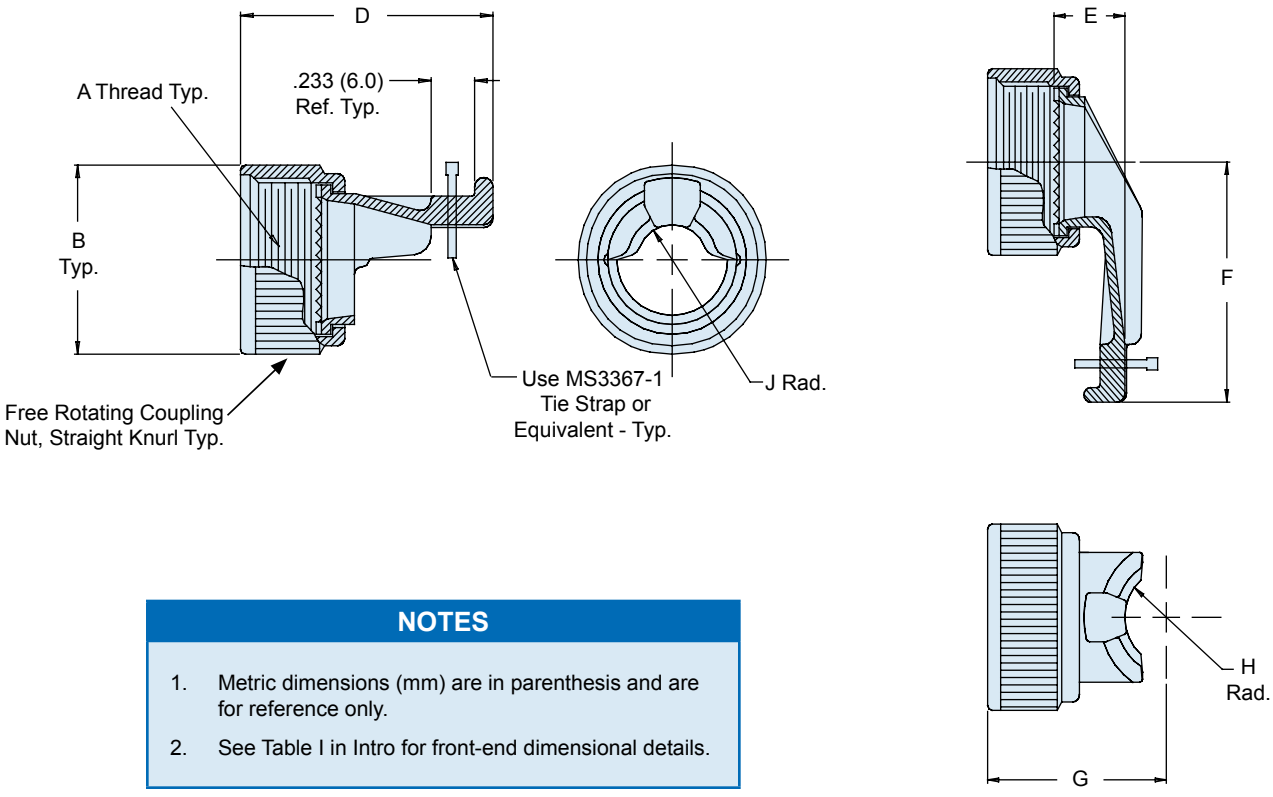
TABLE II: CONNECTOR SHELL SIZE ORDER NUMBER

Shell Size For Connector Designator*					E Code A,F,H		E Code G,U		F		G		H		Cable Entry	
A	F/L	H	G	U	Max		Max		Max		Max		Max		Max	
08	08	09	–	–	1.14	(29.0)	–		.75	(19.0)	1.22	(31.0)	1.14	(29.0)	.25	(6.4)
10	10	11	–	08	1.14	(29.0)	1.30	(33.0)	.75	(19.0)	1.29	(32.8)	1.14	(29.0)	.38	(9.7)
12	12	13	11	10	1.20	(30.5)	1.36	(34.5)	.75	(19.0)	1.62	(41.1)	1.14	(29.0)	.50	(12.7)
14	14	15	13	12	1.38	(35.1)	1.54	(39.1)	.75	(19.0)	1.66	(42.2)	1.64	(41.7)	.63	(16.0)
16	16	17	15	14	1.38	(35.1)	1.54	(39.1)	.75	(19.0)	1.72	(43.7)	1.64	(41.7)	.75	(19.1)
18	18	19	17	16	1.44	(36.6)	1.69	(42.9)	.75	(19.0)	1.72	(43.7)	1.74	(44.2)	.81	(21.8)
20	20	21	19	18	1.57	(39.9)	1.73	(43.9)	.75	(19.0)	1.79	(45.5)	1.74	(44.2)	.94	(23.9)
22	22	23	–	20	1.69	(42.9)	1.91	(48.5)	.75	(19.0)	1.85	(47.0)	1.74	(44.2)	1.06	(26.9)
24	24	25	23	22	1.83	(46.5)	1.99	(50.5)	.75	(19.0)	1.91	(48.5)	1.95	(49.5)	1.19	(30.2)
28	–	–	25	24	1.99	(50.5)	2.15	(54.6)	.75	(19.0)	2.07	(52.6)	n/a		1.38	(35.1)

450-034
Composite Qwik-Ty® Strain-Relief
with Free-Rotating Coupling
90° and 45°

CONNECTOR DESIGNATOR:	
A	MIL-DTL-5015, -26482 Series II, and -83723 Series I and III
H	MIL-DTL-38999 Series III and IV
ROTATABLE COUPLING	
LOW PROFILE	

Product Series	Angle and Profile		Finish Symbol		
450 - Qwik-Ty Strain Relief	*A - 90° Elbow*		*(See Table III)*		
450	H	S	034	XB	15
Connector Designator *A and H*		Basic Part Number		Connector Shell Size *(See Table II)*	



NOTES

1. Metric dimensions (mm) are in parenthesis and are for reference only.
2. See Table I in Intro for front-end dimensional details.

TABLE II: CONNECTOR SHELL SIZE & CABLE ENTRY					
Shell Size*		B Dia	D	E	F
A	H	Max	Max	Max	Max
08	09	.640 (16.3)	1.107 (28.1)	.472 (12.0)	.886 (22.5)
10	11	.765 (19.4)	1.107 (28.1)	.472 (12.0)	.945 (24.0)
12	13	.890 (22.6)	1.166 (29.6)	.492 (12.5)	1.004 (25.5)
14	15	1.015 (25.8)	1.268 (32.2)	.492 (12.5)	1.319 (33.5)
16	17	1.140 (29.0)	1.270 (32.3)	.452 (11.5)	1.378 (35.0)
18	19	1.265 (32.1)	1.418 (36.0)	.492 (12.5)	1.476 (37.5)
20	21	1.390 (35.3)	1.548 (39.3)	.472 (12.0)	1.515 (38.5)
22	23	1.454 (36.9)	1.666 (42.3)	.472 (12.0)	1.575 (40.0)
24	25	1.594 (40.5)	1.796 (45.6)	.472 (12.0)	1.653 (42.0)

* Even Number Shell Size, Code A
Odd Number Shell Size, Code H

TABLE II: CONNECTOR SHELL SIZE & CABLE ENTRY (CONT.)					
Shell Size*	G Max	H Rad. Max	J Rad. Max	Weight In Grams	
				Straight	90°
08/09	.945 (24.0)	.197 (5.0)	.098 (2.5)	1.8	1.9
10/11	.945 (24.0)	.197 (5.0)	.138 (3.5)	2.3	2.6
12/13	.945 (24.0)	.197 (5.0)	.157 (4.0)	2.9	3.2
14/15	1.023 (26.0)	.275 (7.0)	.197 (5.0)	3.3	3.8
16/17	1.023 (26.0)	.295 (7.5)	.236 (6.0)	3.9	4.6
18/19	1.102 (28.0)	.335 (8.5)	.295 (7.5)	5.1	5.7
20/21	1.161 (29.5)	.394 (10.0)	.295 (7.5)	5.8	6.4
22/23	1.161 (29.5)	.394 (10.0)	.335 (8.5)	7.0	7.4
24/25	1.319 (33.5)	.551 (14.0)	.374 (9.5)	8.6	9.3

TABLE III: FINISH	
Symbol	Finish Description
XB	No Plating - Black Material (Non-Conductive Finish)
XO	No Plating - Brown Material (Non-Conductive Finish)