

Series 80 Mighty Mouse Size #16 Fiber Optic Termini



Series 801 Plug with 181-057 pin terminus



Series 801 receptacle with 181-075 socket terminus

- Single Mode and Multi Mode
- Snap-in, Rear Release
- Precision Ceramic Ferrules
- 0.5 dB Typical Attenuation
- 1 to 22 Channels

Reduce Size and Weight with Series 80 Mighty Mouse Fiber Optic Connectors

New size #16 fiber optic termini can be used in any standard Mighty Mouse connector. Available for single mode or multi mode fiber, these termini have low insertion loss and are intended for high-reliability aerospace applications. Series 80 connectors offer substantial reductions in size and weight compared to our D38999 type fiber optic connectors.

SERIES 80 CONTACT ARRANGEMENTS FOR USE WITH #16 FIBER OPTIC TERMINI

1 #16	2 #16	4 #16	2 #16, 4 #23	5 #16	2 #16, 8 #23	7 #16	12 #16	14 #16	22 #16
<p>See Series 80 Mighty Mouse catalog for connector ordering information. Order connectors less contacts and order fiber optic termini separately. Cavity numbers are mating face view of pin connectors.</p>									

The Series 801 9-4 receptacle is less than half the size of our D38999 type connector.



Series 801
6 Grams
(less contacts)

D38999 Series III
27 Grams
(less contacts)

Dimensions in inches (millimeters) and are subject to change without notice.

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CAGE Code 06324

Printed in U.S.A.

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4-JUNE-2010



Series 80 Mighty Mouse Contacts and Tools

Size #16 Fiber Optic Termini 181-057 and 181-075

Size #16 Fiber Optic Termini



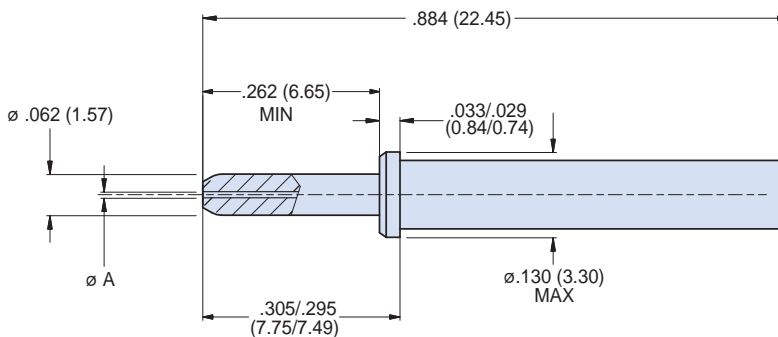
181-057 Pin Terminus



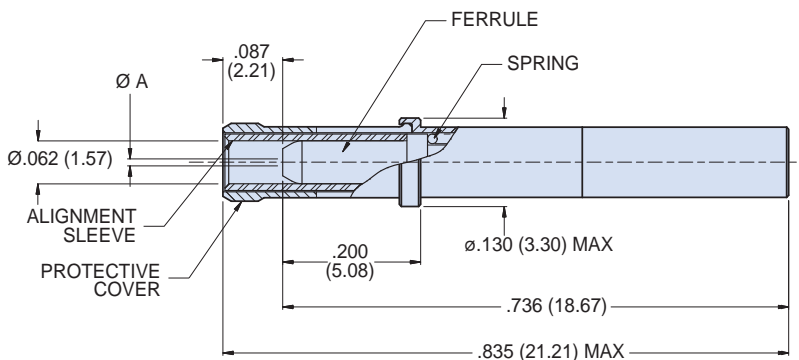
181-075 Socket Terminus

Size #16 fiber optic termini are compatible with all Series 80 Mighty Mouse connectors with size #16 cavities. These snap-in, rear-release termini feature precision ceramic ferrules and sleeves for accurate fiber alignment. Typical insertion loss 0.5 dB. Fits 50/125 and 62.5/125 multi mode and 9/125 single mode fiber. Stainless steel bodies and springs.

Termini Type	Optical Fiber Type	Part Number	A Ferrule I.D.
Pin	Multi Mode	181-057-126	126.0 microns
Pin	Single Mode	181-057-125	125.5 microns
Socket	Multi Mode	181-075-126	126.0 microns
Socket	Single Mode	181-075-125	125.5 microns



181-057 Pin Terminus



181-075 Socket Terminus

Materials and Finishes

Terminus Body: stainless steel, passivated
 Ferrule: zirconia ceramic
 Protective cover: copper alloy, nickel plated
 Spring: stainless steel, passivated
 Alignment sleeve: zirconia ceramic

Specifications

Insertion Loss: 0.5 dB typical
 Operating Temperature: -65° to +200° C
 Durability: 500 cycles

Insertion/extraction Tool

Standard size #16 plastic tool
 Glenair Part Number [809-131](#)
 Military Part Number M81969/14-03

Termination Procedure

The assembly process is similar to industry-standard procedures for MIL-PRF-29504 termini. See following pages for assembly instructions.

Application Notes

1. Mighty Mouse fiber optic termini are intended for use in Glenair Series 801, 802 and 805 threaded coupling connectors.
2. Refer to technical manual NAVSEA 01-1A-505-4 "AIRCRAFT FIBER OPTIC CABLING" for installation and maintenance procedures applicable to military aircraft. Available on request from Glenair.
3. Glenair is an industry-leading supplier of factory-terminated fiber optic cable assemblies and molded cordsets. Contact Glenair for more information.

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**Series 80 Mighty Mouse
Contacts and Tools
Size #16 Fiber Optic Termini Assembly Procedure**



SIZE #16 FIBER OPTIC TERMINI ASSEMBLY INSTRUCTIONS

This assembly procedure applies to Glenair fiber optic termini part numbers 181-057 and 181-075. These instructions are to support operators who have had prior training in fiber optic assembly procedures. Operators will have been made aware of all health and safety issues.

CAUTION

Assembly of fiber optic termini entails the exposure of operators to fragile glass fibers, solvents and gases. Every precaution is to be taken against harmful effects by the use of protective gloves, safety glasses and good ventilation. All local health and safety regulations should be adhered to and operators should follow designated safe working practices. The use of protective gloves and barrier creams are recommended when using solvents and adhesives. Repeated skin contact should be avoided and care should be taken to wear safety glasses when handling these materials. Attention should be taken of the recommendations of the relevant MSDS sheets for the materials being used.

CAUTION

Extreme care should be taken when handling optical fiber to avoid penetration of skin. Avoid eye contact with illuminated laser light which can cause permanent eye damage.

ASSEMBLY TOOLS AND CONSUMABLES

Ruler with 6 inch scale	Syringe	Polishing films	Special polishing tools are available from Glenair: 1. Tool for pin terminus 182-001P 2. Tool for socket terminus 182-045
Cable jacket cutter	Dispensing needle	Razor blade or exacto knife	
Mechanical stripper	Curing fixture	Microscope (200X)	
Kevlar shears	Cleaving tool	Bundle light source	
Buffer stripper	Glass polishing plate	Compressed air	
Isopropyl Alcohol			

RECOMMENDED EPOXIES AND CURING SCHEDULES

This assembly instruction lists two epoxies: a standard temperature epoxy and a high temperature epoxy. Ensure that the epoxy curing temperature is compatible with the temperature rating of the cable.

Recommended Epoxy	Fiber Type	Epoxy Curing Schedule
M24792A or equivalent AngstromBond® AB-9112 (Fiber Optic Center, Inc) TRA-BOND™ F112 (Henkel)	Standard	1 Hour @ 65°C or 24 Hour Air Cure
	Standard	2 Hours @ 80°C
EPO-TEK® 353ND (Epoxy Technology, Inc.)	High temperature	Stage 1: 30 min. @ 80°C
		Stage 2: 30 min. @ 100°C
		Stage 3: 10 min. @ 150°C

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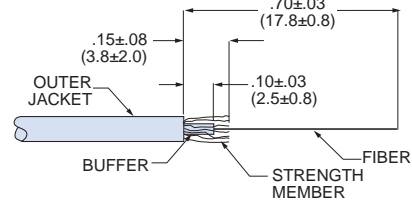


Series 80 Mighty Mouse Contacts and Tools

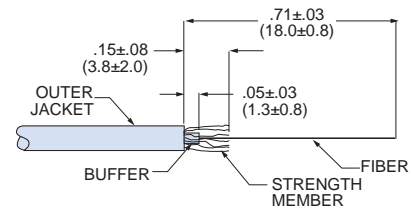
Size #16 Fiber Optic Termini Assembly Procedure

STEP 1: CABLE PREP AND EPOXY FILLING

1. Strip cable to length. Dimensions are in inches (millimeters).
2. Wipe off bare fiber with isopropyl alcohol immediately after stripping. **NOTE: uncoated optical fiber can degrade when exposed to air. Termination must be done within 10 minutes of stripping the buffer.**
3. Prepare epoxy according to manufacturer's instruction.
4. Fill syringe with epoxy and eliminate all air bubbles.
5. Insert syringe into rear of terminus and completely fill ceramic ferrule with epoxy. A small bead of epoxy should be visible at the tip of the ferrule. Retract the syringe while filling the entire terminus with epoxy.



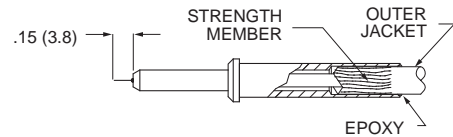
Pin Terminus 181-057



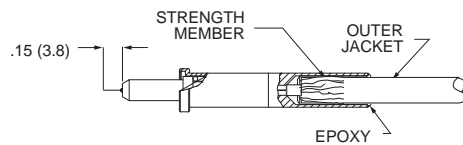
Socket Terminus 181-075

STEP 2: FIBER INSERTION

1. Fold back strength members and distribute evenly over outer jacket of cable.
2. Carefully insert stripped fiber into terminus until the cable jacket bottoms inside the terminus body.
3. Wipe off any excess epoxy that may emerge from the rear of the terminus upon insertion of the cable.
4. Bare fiber should protrude approximately .15 inches (3.8mm) from the front of the terminus.
5. Be sure that the exterior surfaces of terminus are free of epoxy.



Pin Terminus 181-057



Socket Terminus 181-075

STEP 3: EPOXY CURING

1. Using curing oven, carefully position terminated fiber into a cavity of curing block. **NOTE: care must be taken to avoid breaking the protruding fiber.**
2. See "Recommended Epoxies and Curing Schedules" (previous page) for cure times.

STEP 4: SCRIBE AND REMOVE EXCESS FIBER

1. Hold terminus with fiber pointing straight up and lightly score fiber approximately .01 inch (0.3mm) above the ceramic ferrule.
2. Using fiber cleaving tool, gently move the blade across fiber to scribe glass. Do not use a sawing motion.
3. Grasp fiber and pull gently upward until fiber breaks.
4. Carefully discard piece of fiber.

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**Series 80 Mighty Mouse
Contacts and Tools**
Size #16 Fiber Optic Termini Assembly Procedure



STEP 5: POLISHING PROCEDURE

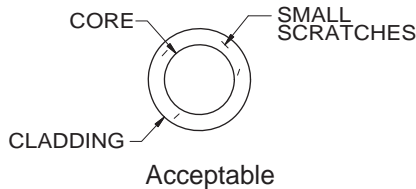
1. Clean polishing film, tool, and tip of terminus using distilled water after each step.
2. Dry all parts using lint-free wipes or compressed air.
3. Wipe distilled water onto back of polishing film and place onto rubber pad.
4. Insert terminus into polishing tool.
5. Polish terminus in small figure 8 motions using the following procedures.
6. Visually inspect terminus tip using microscope to prevent overpolishing after each polishing step.
7. Use light pressure through each polishing step.

POLISHING STEPS FOR DOMED PC POLISH

Polish Step	Paper Grit Size	# of Figure 8's	Hand Pressure	Polishing Surface	Lubricant
1st Polish	3 micron Silicon Carbide	15-20	Light	90 Durometer Pad	Dry
2nd Polish	3 micron Diamond	10	Light	90 Durometer Pad	Distilled Water
3rd Polish	1 micron Diamond	10	Light	90 Durometer Pad	Distilled Water
4th Polish	0.5 micron Diamond	5	Light	90 Durometer Pad	Distilled Water
5th Polish	Ultra Fine	3	Light	90 Durometer Pad	Distilled Water

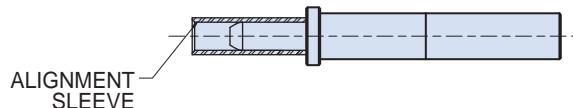
STEP 6: WORKMANSHIP INSPECTION

After completing final polishing step, core area must be free of epoxy, scratches, pits and cracks.
NOTE: do not backlight fiber when inspecting for scratches.



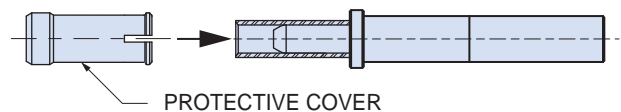
STEP 7: INSTALL ALIGNMENT SLEEVE ON SOCKET TERMINUS

Carefully slide alignment sleeve onto terminus ferrule until seated.



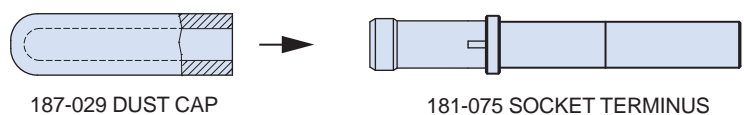
STEP 8: INSTALL PROTECTIVE SLEEVE ON SOCKET TERMINUS

Push on protective metal sleeve until you feel it snap into place.



STEP 9: CLEAN AND INSTALL DUST CAP ON SOCKET TERMINUS

Clean end of terminus and install dust cap over protective cover.



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