

GAP-036
Glenair Termini Assembly Procedure
for M29504/14 (181-039) and M29504/15 (181-040)
Sheet 1 of 4



1.0 SCOPE

The following procedure is for termination of Glenair Fiber Optic Termini for use in Glenair front release 180-040 series connectors.

2.0 SAFETY NOTICE

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

3.0 ASSEMBLY TOOLS:

- A. P/N 182-012 = Tool, Crimp
- B. P/N 182-035 = Tool, Polishing
- C. P/N 182-013 = Tool, Insertion, Straight
- D. P/N 182-014 = Tool, Insertion, 90 Degree
- E. P/N 182-015 = Tool, Removal
- F. P/N 182-016 = Tool, Insertion/Removal, Alignment Sleeve (socket terminus only)

4.0 CABLE PREPARATION / TERMINATION

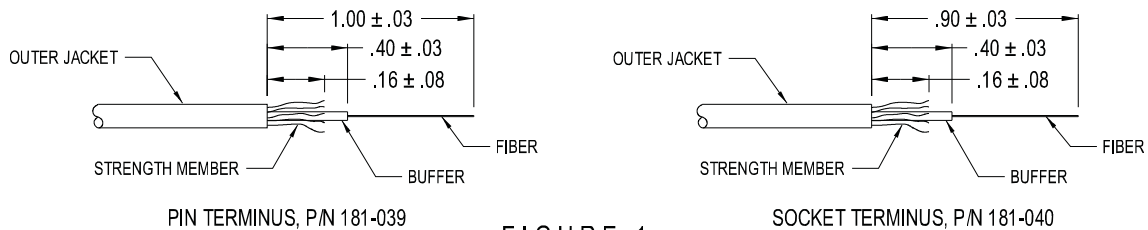
4.1 Verify cable to ensure correct type.

4.2 Select appropriate Terminus

- A. P/N 181-039 = Terminus, Pin
- B. P/N 181-040 = Terminus, Socket

4.3 Load terminus crimp sleeve onto simplex cable. Note - omit for buffered fiber applications.

4.4 Strip cable to the dimensions in inches that are indicated in Figure 1.



4.5 Wipe off bare fiber with Isopropyl alcohol immediately after stripping.

NOTE: Uncoated optical fiber can degrade when exposed to air. Termination must be done immediately within 10 minutes.

4.6 Prepare epoxy according to manufacturer's instructions.

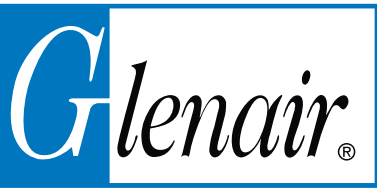
4.7 Fill syringe with epoxy and eliminate all air bubbles.

4.8 Insert syringe into rear of terminus and fill ceramic ferrule with epoxy completely until a small bead of epoxy is present at the tip of ferrule. Retract the syringe while filling the entire terminus with epoxy.

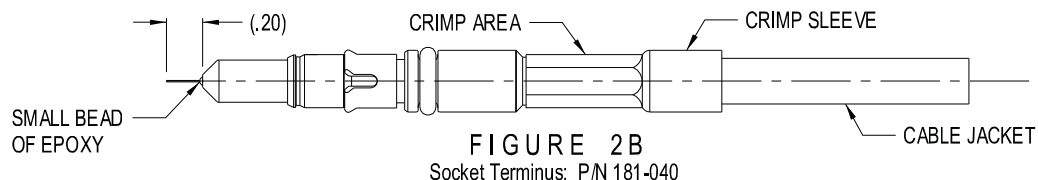
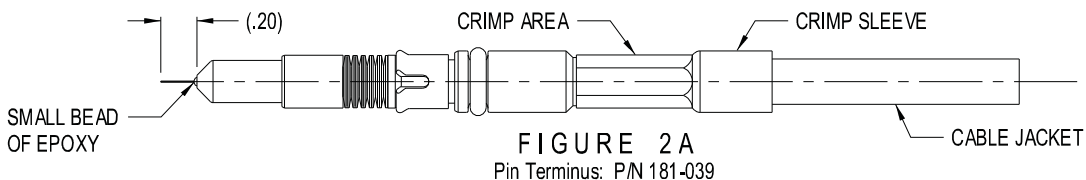
4.9 Fiber insertion

- A. Carefully insert stripped fiber into terminus until it stops.
- B. Wipe off any excess epoxy that may emerge from the rear of the terminus due to insertion of the fiber.
- C. Bare fiber should protrude out the front of terminus approximately .20 inches (see Figure 2).
- D. Ensure that the exterior surfaces of terminus are free of epoxy.
- E. Carefully distribute strength members over rear body of terminus.
- F. Slide crimp sleeve up cable jacket, and position over terminus rear body and strength members.
- G. Crimp the sleeve using crimp tool (see Figure 2).

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



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B

5.0 EPOXY:

There are a variety of epoxy adhesives which maybe used depending on the application. Only 3 different adhesives are listed in this procedure (see 6.2).

6.0 EPOXY CURING

6.1 Using curing oven, carefully position terminated fiber into a cavity of curing block.
 NOTE: Care must be taken not to break protruded fiber.

6.2 EPOXIES AND ASSOCIATED CURING PROCEDURES / SCHEDULES:

- A. M24792A per MIL-PRF-24792A or equivalent (FOCI AngstromBond AB-9112, or Tra-Con TRA-BOND F112)
 Heat cure 1 hour @ 65°C (or 24 hour air cure).
- B. Tra-Con, TRA-BOND F113SC
 Heat cure 1 hour @ 65°C (or 24 hour air cure).
- C. EPO-TEK 353ND (for high temperature applications)
 Ramped cure schedule: High temp fiber only
 - 1) 30 minutes @ 80°C, then:
 - 2) 30 minutes @ 100°C, then:
 - 3) 10 minutes @ 150°C

7.0 FIBER SCRIBING

- A. Hold terminus with fiber pointing straight up, and lightly score fiber approximately .01 inches above ceramic.
- B. Gently move the blade across fiber to scribe glass using fiber scribe.
- C. Grasp fiber and pull gently upward until fiber breaks.
- D. Carefully discard piece of fiber.

8.0 POLISHING PROCEDURE

- A. Clean polishing film, tool, and tip of terminus using Isopropyl alcohol after each step.
- B. Dry all parts using wipes or compressed air.
- C. Wipe distilled water onto back of polishing film and place onto rubber pad.
- D. Insert terminus into polishing tool.
- E. Polish terminus in small figure "8" motion using the following procedure.
- F. Visually inspect terminus tip using microscope to prevent over polishing after each polishing step.
- G. 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 on Pad	15 micron Silicon Carbide	9	Light	90 Durometer Pad	Dry
2nd Polish on Pad	6 micron Diamond	9	Light	90 Durometer Pad	Distilled Water
3rd Polish on Pad	3 micron Diamond	10	Light	90 Durometer Pad	Distilled Water
4th Polish on Pad	1 micron Diamond	10	Light	90 Durometer Pad	Distilled Water
5th Polish on Pad	0.5 micron Diamond	5	Light	90 Durometer Pad	Distilled Water
6th Polish on Pad	Ultra Fine	3	Light	90 Durometer Pad	Distilled Water

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8.2 After completing final polishing step, core area must be free of epoxy, scratches, pits and cracks. See Figure 3.
 NOTE: Do not backlight fiber when inspecting for scratches.

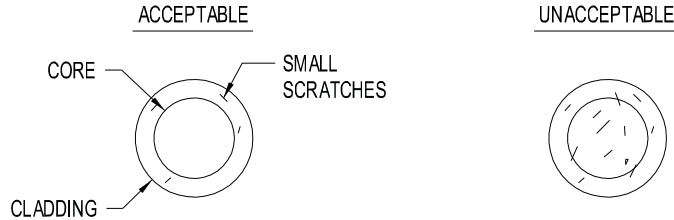


FIGURE 3

9.0 SOCKET TERMINUS ALIGNMENT SLEEVE AND PROTECTIVE COVER INSTALLATION, SEE FIGURES 4 AND 5

9.1 Carefully push alignment sleeve assembly onto terminus ferrule until seated.
 Note: For proper retention, the fingers of the protective cover must snap into the groove at the front of the terminus metal body.

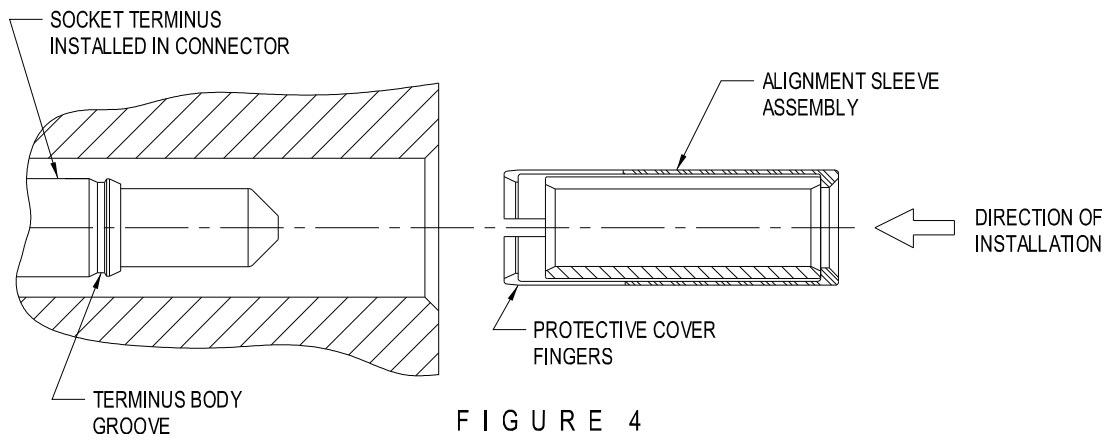


FIGURE 4

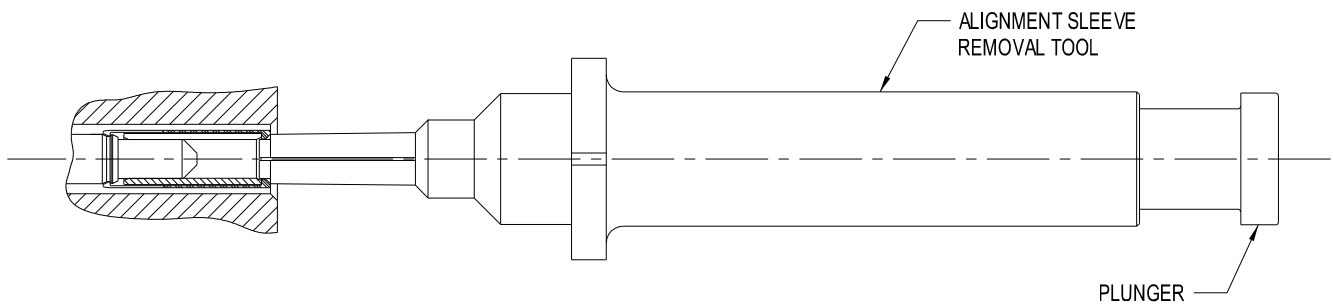
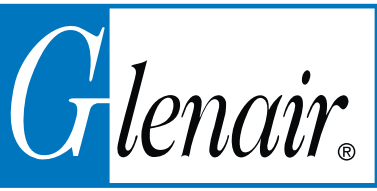


FIGURE 5

- Step 1: Insert tip of alignment sleeve removal tool into alignment sleeve assembly.
- Step 2: Depress the tool plunger and pull away from the connector.
- Step 3: Release plunger to release alignment sleeve assembly from tool.

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10.0 TERMINUS REMOVAL, SEE FIGURE 6.

Step 1: Slide tip of tool over front of terminus until it bottoms inside connector insert.

Step 2: While pushing tool handle forward, simultaneously depress plunger to eject terminus form connector insert.

B

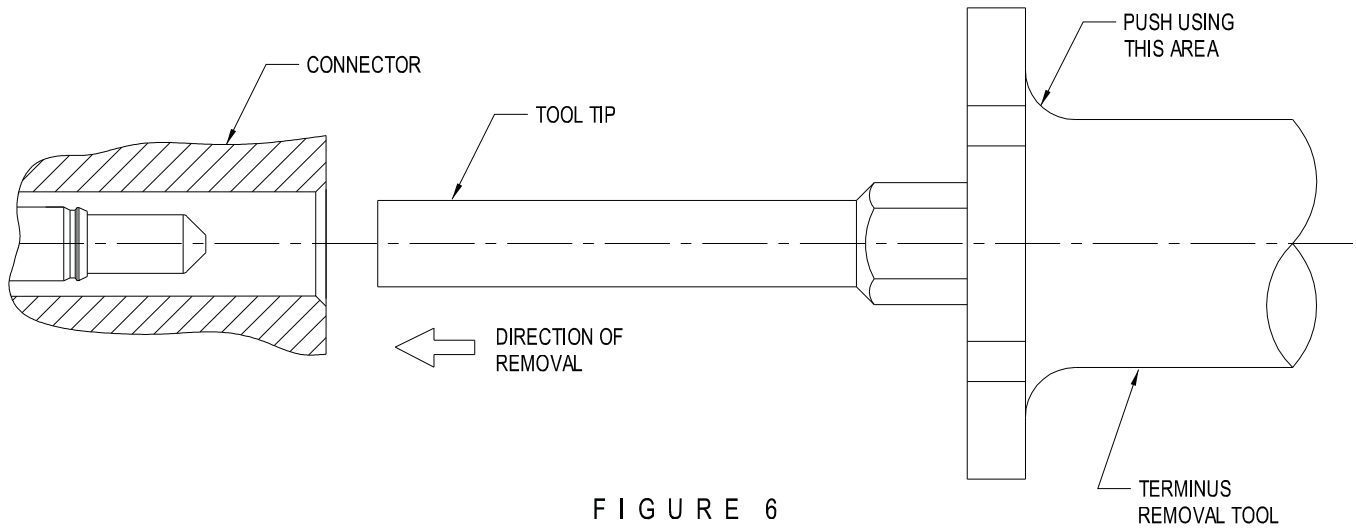


FIGURE 6

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