CF-9011 CF-9011

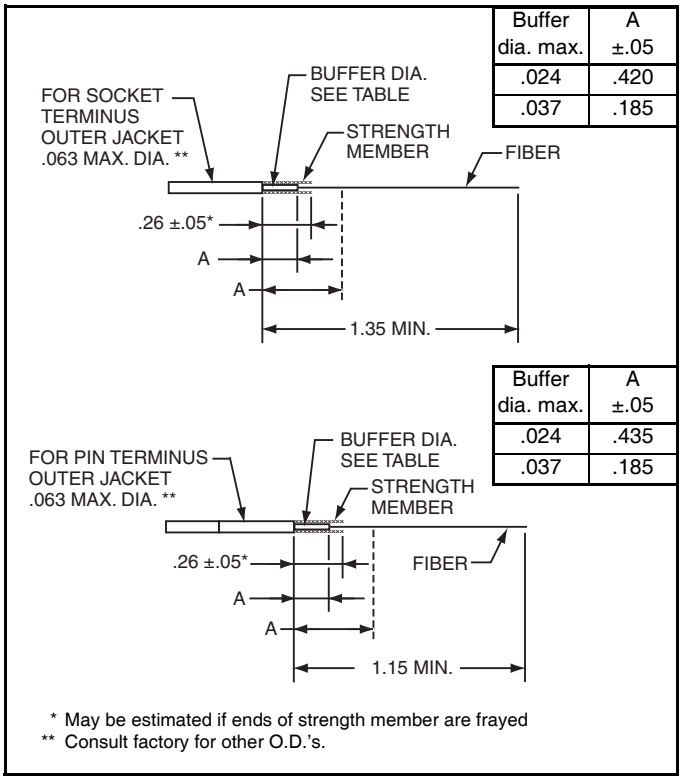
Size 20 Multimode Fiber Optic Termini
CF-198080-( ), CF-198081-( )
Cable Installation Instructions

WARNING NOTE:

Caution: Looking into fibers illuminated with laser light can cause eye damage. Follow safety procedures recommended by light source manufacturers.

Extreme care should be taken when handling glass fiber to avoid penetration of skin.

1. Ref. drawings CF-198080-CD and CF-198081-CD for identification and orientation of parts. Visually inspect cable for optical continuity.
2. Slide shrink tube back onto cable.
3. Strip cable to indicated dimensions.



* May be estimated if ends of strength member are frayed
** Consult factory for other O.D.'s.

4. Wipe off bare fiber with MEK or equivalent. Fiber surface must be clean and dry before bonding.
5. Test fit to ensure proper hole size by pushing fiber into terminus until it becomes visible on the ceramic end.
6. Prepare epoxy per manufacturer's instructions.
   Recommended Epoxy: 200°C Max Service Temp.; #353ND
   Suggested Source:
   Epoxy Technologies, Inc.
   P.O. Box 567
   Billerica, MA 01821
7. Fill syringe with epoxy.
8. Wipe bare fiber with epoxy. **Use epoxy sparingly** (should resemble dew on a spider web).
9. Add epoxy to outside rear end of terminus (.047 dia.) for approximately .150. This is to ensure bonding of the strength member to the terminus body. Carefully push stripped fiber into terminus until the buffer bottoms out on the inner body or rear of ceramic (depending on cable type). Outer jacket will be approximately .060 from the rear of terminus. Bare fiber should be protruding out the front of terminus. There could be a small bead of epoxy on the tip of the ceramic. If there is, additional polishing time may be required. Add epoxy to end of outer jacket of cable for approximately .150 to ensure sealing to shrink tube. Evenly distribute strength member over rear of terminus. Bring up shrink tube to position shown in reference drawing. (see step 1).

   Note: Neither shrink tube or strength members should be on .069 diameter.
10. Shrink tube using heat gun. Heat gun to be rated at 300°-400°C airflow temperature. Do not apply excessive heat to F.O. cable jacketing. Epoxy will turn dark amber color at full cure. Once fully cured, remove heat immediately. Repeat for other fibers.
11. To cure the epoxy at the front of the terminus between fiber and ceramic, follow either of the approved procedures listed below:
    A. When using a heat gun at recommended temperature. Insert end of ceramic and fiber into air-flow for ten (10) one-second intervals.
    B. When using a step-cure oven. Step cure per the following cure schedule:

Temp. (°C)	Duration (minutes)
80	120
125	120
150	120

12. Scribe glass fiber approximately .010 above epoxy bead or ceramic. Grasp fiber and pull slightly until fiber breaks.

    Note: Extreme care must be taken when cleaving fiber to ensure fiber is not recessed in ceramic.
13. Place a piece of 15 micron lapping film (approx. 8 X 3 inches long) between the fingers in your hand and hold to form a slight concave radius in it. Using light pressure, glide the film over the tip of the terminus in a circular motion. Continue until the dark amber epoxy bead (if present) at the tip is nearly worn away. The tip will have a light brown color where the epoxy is. This step will reduce the fiber length for final polishing. (Holding the lapping film on a radius ensures that the fiber length will not be polished flush with ceramic).
14. Thoroughly clean termini.
15. The fully cured termini may be either hand polished or machine polished. Reference the following lists to determine which polishing fixture to use:

Hand Polishing

Use hand polishing fixture (Amphenol P/N 11-12153) when polishing either CF-198080-( ) or CF-198081-( ). This fixture will polish one termini at a time.

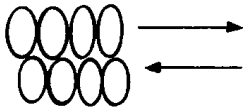
Machine Polishing

MACHINE POLISH STILL BEING DEVELOPED

AMPHENOL CORPORATION
Amphenol Aerospace
40-60 Delaware Avenue
Sidney, New York 13838-1395
www.amphenol-aerospace.com

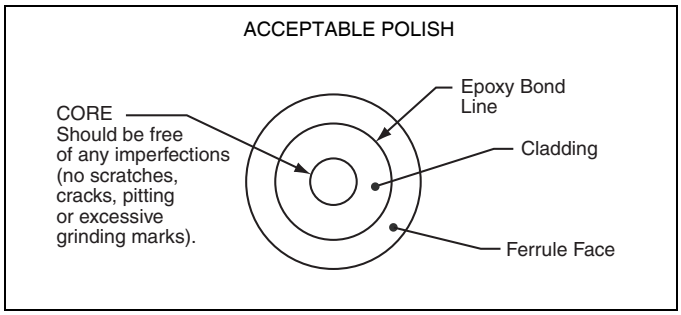
Hand Polishing

16. Install terminus in bottom fixture. Screw on appropriate top fixture, captivating terminus.
17. Using a figure-8 motion and enough pressure to overcome spring force of the polishing tool, polish terminus on .3 micron aluminum oxide lapping film backed by a glass plate. Perform approximately 25-30 small figure 8's.
. Slowly work up and down the film while polishing. (See figure below):



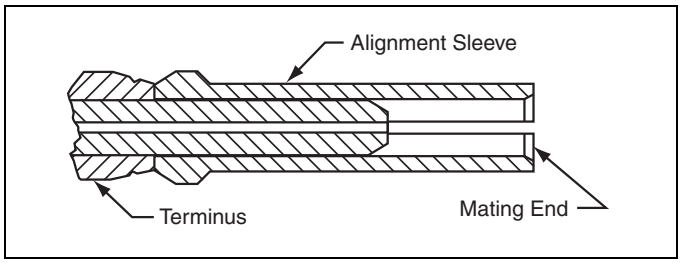
Work up and down paper while polishing

18. Inspect end of the optical fiber for desired finish using a microscope. (See figure below).



19. Thoroughly clean termini and fixture. Push on protection cap, when supplied. Cap must be removed before inserting termini into connector.
20. For socket terminus only:

    Before installing protection cap, push alignment sleeve onto socket terminus until fully seated. Note orientation of alignment sleeve in illustration below.



21. Push termini into connector until fully seated. Care should be taken not to exceed minimum bend radius of buffered fiber. If desired, insertion tool M81969/14-10 may be used to aid assembly. For removal of termini, use extraction half of supplied tool.

Machine Polishing

Please contact Amphenol, Sidney, NY for update on machine polishing instructions.

Recommended Equipment
Hand Polishing

- Razor blade and/or exacto knife
- Glass plate
- MEK
- ISO Propanol
- Epoxy, as required
- 1 syringe, .024 max. dia. needle
- Polishing fixture: 11-12153 (hand polishing)
- 15 micron & .3 micron aluminum oxide lapping film
- Microscope, 100 power or greater
- Cotton swabs
- Small scissors
- Cutting pliers
- Wire strippers or hot tweezers, depending on cable type
- .014 no nik wire strippers or equivalent
- Hot air gun (air flow temp 300-400°C)
- Fiber scriber