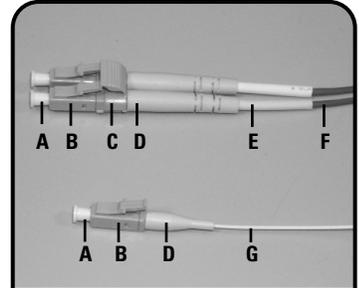
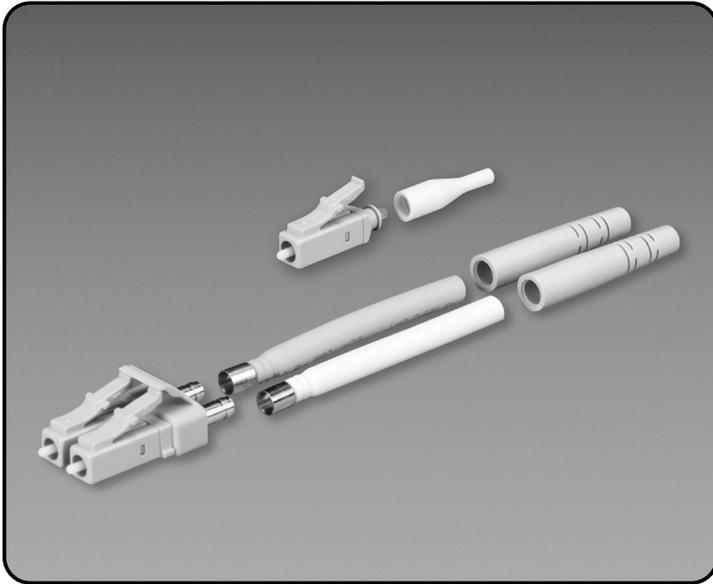


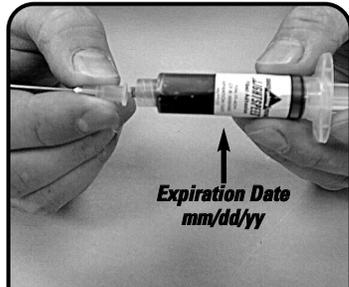
# LC Multimode & Singlemode Connector Termination Instructions



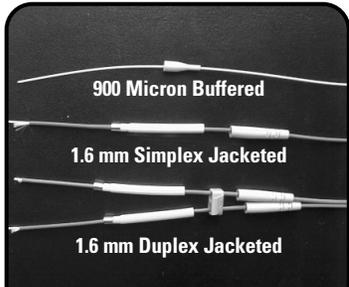
**A** Put on safety glasses and prepare work area by organizing all necessary tools from the Fiber Termination Kit (P/N: FTERM-L2), LC Upgrade Kit (P/N: FTERM-LC) and the Consumables Kit (P/N: FT-CKIT-L2). Place primer bottle into primer stand, remove dust caps from fiber connectors, etc.

*Note: To utilize the Alcohol Dispenser, fill it with 99% reagent grade isopropyl alcohol (not included). Replace cap into the pump position.*

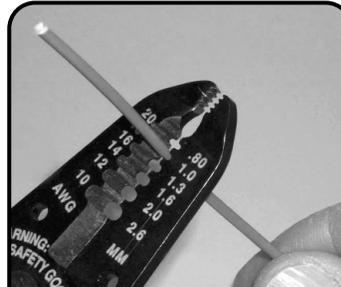
**B COMPONENTS:**  
 A. Dust Cap  
 B. Connector Body  
 C. Duplexing Clip  
 D. Boot  
 E. Shrink Tube  
 F. 1.6mm Jacketed Fiber  
 G. 900 micron Buffered Fiber



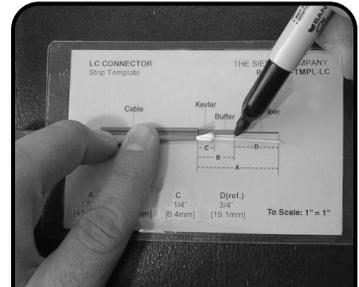
**1** Remove cap from the LightSpeed® adhesive syringe by unthreading it. Install the metal syringe tip provided by threading it onto cartridge until it locks.  
*Note: Save the syringe cap to re-cap when a partially used syringe is returned to the case for later use.*



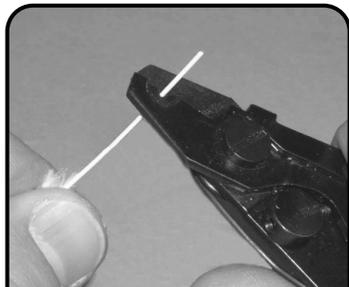
**2** Slide the strain relief boot (and crimp sleeve for jacketed fiber) over the fiber in the proper orientation as shown. For duplex LC connectors, orient the A/B clip with the letters facing the strain relief boots as shown, also see step 29 for proper polarity.  
*Note: For Jacketed fiber orient the crimp sleeve such that the shrink tube end is installed onto the cable first.*



**3 Jacket Removal: For Jacketed Terminations:**  
 Using the jacket stripper tool, strip off the outer jacket at the 'A' length indicated on the template card. Use the 1.0mm opening for 1.6mm fiber. Also trim the Kevlar to the 'C' length using the electrician style scissors.  
**For Buffered Terminations:**  
 Follow recommended cable slack guidelines to determine amount of jacket removal if applicable.



**4** Using the marker pen and the template card provided, measure and mark the buffer strip length as shown on the template.



**5** Using the buffer strippers, strip off the buffer in at least two pieces.  
*Note 1: Attempting to strip the entire length of buffer in one swipe will typically result in breakage.*  
*Note 2: Be sure the tool blade area is free of buffer debris.*



**6** Using a dry, lint-free wipe; Remove any remnants of the protective coating on the fiber after stripping the buffer.  
*Important: Ensure that all remnants of the coating are removed or the fiber will not fit into the connector.*  
**DO NOT touch fiber after cleaning.**



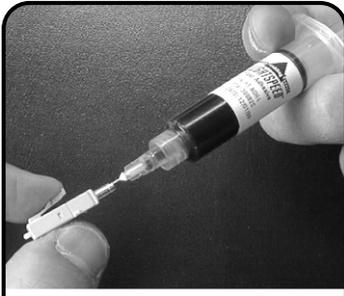
**7** Insert primer bottle into the stand. Dip the entire exposed fiber into the LightSpeed® primer and place in a protected area.  
*Note: It is important that the entire exposed fiber be coated with the primer including some portion of the buffer material. For jacketed terminations, do not be concerned with keeping the kevlar strands out of the primer solution.*



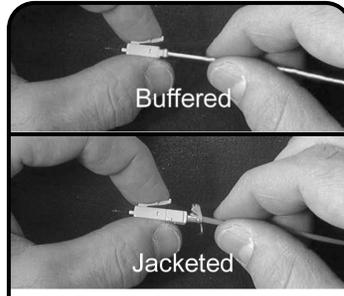
**8 Important!!**  
 To avoid possible fiber breakage, do not insert the fiber so far that it contacts the bottom of the primer bottle!! The primer bottle label indicates the minimum usable depth.

*Note: Cap the bottle when not in use to avoid contamination. Store both primer and adhesive between 40° F (4.4° C) and 100° F (38° C).*

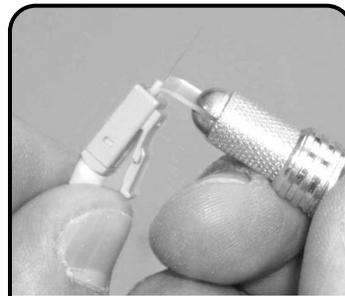
# LC Multimode & Singlemode Connector Termination Instructions



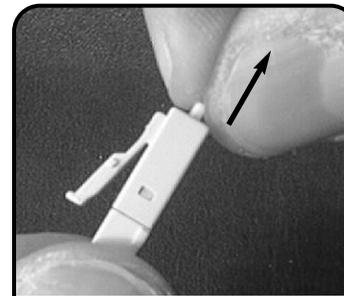
**9** Remove dust cap from the connector and insert the adhesive syringe tip into connector housing until it seats firmly inside. Inject the *LightSpeed* adhesive until a small dot of the adhesive appears at the ferrule tip. Also inject a small amount of adhesive into the back end of the connector. This ensures bonding of the buffer to the connector, strengthening the termination. Be careful not to overfill to prevent a backflow of adhesive.



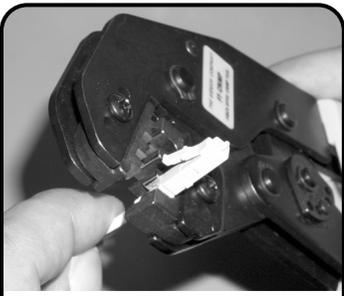
**10** Insert the fiber into the connector until the buffer bottoms out inside the housing. Allow at least 30 seconds cure time before proceeding. Tip: Rotate the connector during insertion to assist in guiding the fiber into the ferrule. For jacketed fiber, allow the kevlar to fan out around the connector barrel.  
*Note: Once primer coated fiber touches the adhesive it will start curing instantly. Fiber insertion will become increasingly more difficult if not fully inserted within 10 to 15 seconds.*



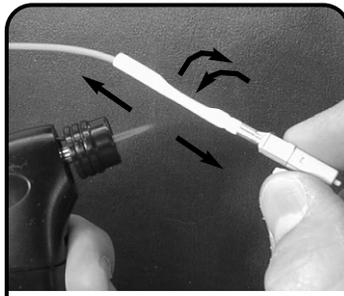
**11** Hold the flat surface of the scribe tool flat against the ferrule tip with the beveled edge facing up. Carefully score the fiber close to the intersection of the ferrule tip and fiber. Score on one side only. Clean the adhesive off blade.  
*Note: Do not use excessive pressure to prevent fiber breakage and uneven fractures. If breakage occurs see note 2 in next step.*



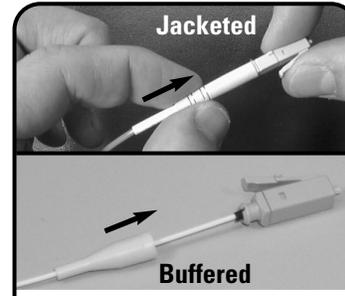
**12** Remove the excess fiber with a straight, non-twisting pull and deposit in a safe place (i.e. onto a piece of tape or in the debris container).  
*Note 1: If fiber does not readily pull off, repeat previous step – scoring on opposite side of fiber.*  
*Note 2: Fiber pieces are difficult to see. If not properly disposed, glass fibers may cause serious injury.*  
*Note 3: Be careful not to bump or brush end-face before polishing.*



**13** **Jacketed Fiber Only**  
Slide the crimp sleeve up over the kevlar so that it is seated against the shoulder of the connector housing, being sure the sleeve does not move prior to being crimped. Position the crimp tool over the crimp sleeve using the 0.12 in. opening in the crimp die. Crimp the sleeve by closing the crimp tool completely and releasing. Crimp only once.



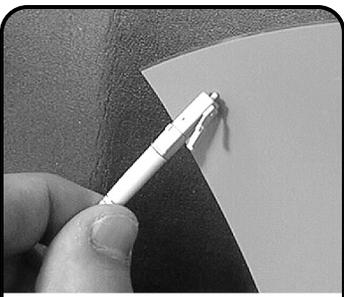
**14** **Jacketed Fiber Only**  
Using the small propane torch from the FTERM-LC or equivalent, carefully heat up the shrink tubing on all sides to provide proper strain relief.  
*Note: Hold torch several inches from cable being careful not to overheat the tubing or cable to prevent damage.*



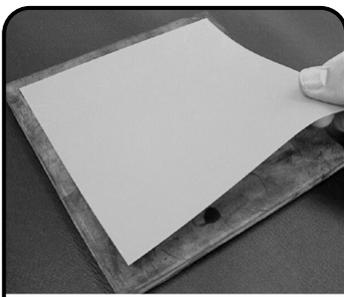
**15** **Simplex cable only**  
Slide the boot up into place onto the crimp sleeve (jacketed fiber) or connector housing barrel (buffered fiber). For duplex jacketed cable, do not slide boots up until after polishing is complete.

**4-STEP POLISH QUICK REFERENCE GUIDE**

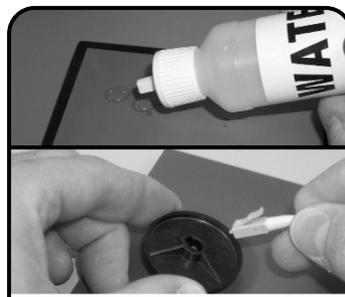
	<b>Film #1 (12 mic. Air-polish):</b> Film Color = Gray Pressure = Light Cycles = Conditional
	<b>Film #2 (3 mic. Wet Pad-polish):</b> Film Color = Pink Pressure = Medium Cycles = 25 to 30
	<b>Film #3 (1 mic. Wet Pad-polish):</b> Film Color = Purple Pressure = Medium Cycles = 30 to 35
	<b>Film #4 (Finish Film Wet Pad-polish):</b> Film Color = White Pressure = Light Cycles = 20 to 30



**16** **#1 Film (Gray):**  
Perform an "air polish" by holding the connector in one hand and the #1 polishing film in the other. Gently brush the dull side of the polishing film in a "figure 8" fashion against the ferrule tip to wear the small fiber protrusion into a smoother, more polishable tip. Continue until the tip is almost flush with the ferrule.



**17** **#2 Film (Pink):**  
Place the polishing pad onto a flat surface with the rubber side facing up. Place the #2 film onto the polishing pad with the glossy side of film down.  
*Note: Prior to polishing, clean pad surface with alcohol soaked wipe to provide for a smooth polishing surface. This will also allow the polishing paper to stick in place. (Ensure no air is trapped between pad and film). Also clean polishing puck.*

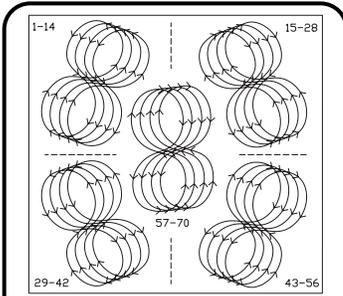


**18** Add a minimum of 3 or 4 drops of distilled/deionized water on the polishing film and carefully insert the connector ferrule into the LC compatible polishing puck (provided with the FTERM-LC) and gently place on pad. Avoid bumping ferrule tip on puck or crushing exposed fiber onto pad.

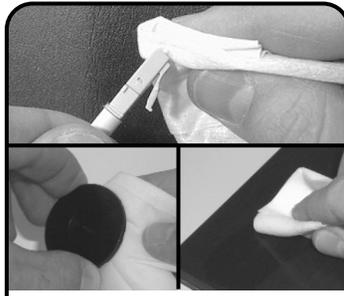


**19a** Gently grip the connector and apply medium pressure and polish in a 50-75mm [2-3 in.] "figure 8" pattern for 25 to 30 revolutions.  
*Important: Do not over-polish and do not use excessive pressure.*  
*See Step 19b for efficient use of polishing film.*

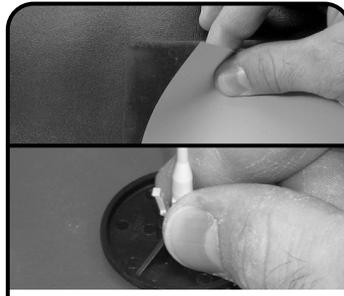
# LC Multimode & Singlemode Connector Termination Instructions



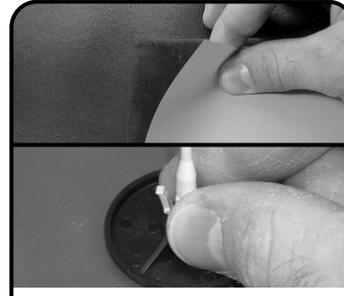
**19b** Applicable to films 2 & 3 only.  
 Note: To optimize optical performance of the connectors while maximizing polishing film life, use separate sections of the film per 14 connectors. Using five sections of the film assures a life of at least 70 connectors per film. Variables such as amount of adhesive on tip, size of "figure 8", and polishing pressure can also affect film life.



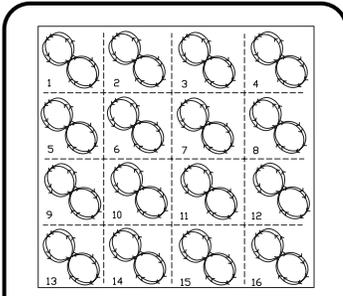
**20** **IMPORTANT:**  
 Remove the connector from the polishing puck and clean the ferrule and puck using a lint-free wipe moistened with 99% reagent grade isopropyl alcohol or alcohol-soaked pads. **It is also important to thoroughly rinse surface of film with distilled/deionized water prior to storing to assure ideal conditions for next connector.**



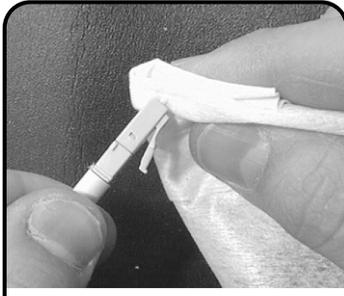
**21** **#3 Film (Purple):**  
 Replace the #2 film with the purple #3 film and repeat steps 18-20..



**22a** **#4 Finishing Film (White):**  
 Required for singlemode and recommended for multimode especially 50/125 micron laser optimized applications. Replace the #3 film with the white #4 film and repeat steps 18-20\* but use light pressure for 25-to-35 cycles.  
 \*Use step 22b in place of 19b.  
 See 22b before proceeding.



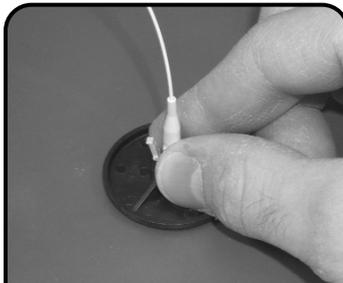
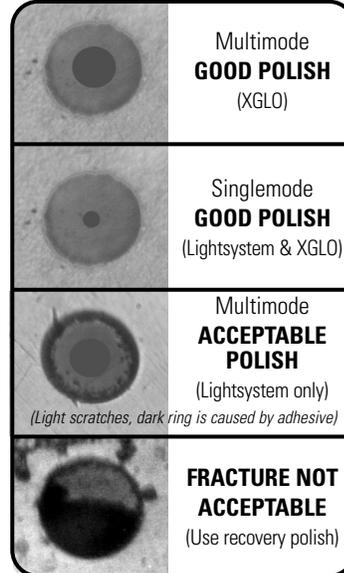
**22b** **#4 Finishing Film (White).**  
 Use one section of the film per connectors. Be sure to limit the size of the "Figure 8's" to 1.5 inches in height. The same section of this film is not reusable as with the #2 & 3 films.



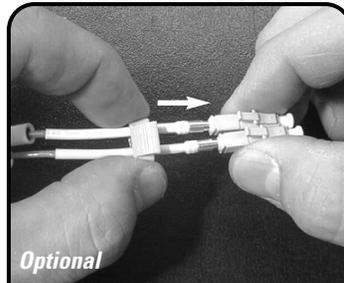
**23** Prior to viewing endface of connector with microscope clean with a dry lint-free wipe.



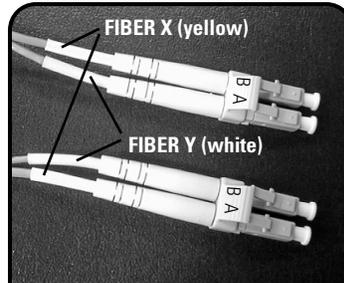
**24** Using the microscope fitted with the LC compatible insert\*, inspect the polished surface for scratches, voids or chips. If polish is acceptable, place dust cap on connector.  
 Note: It is also recommended to check insertion loss and/or back reflection with a power meter and light source.  
 \*LC compatible insert can easily be installed by unscrewing existing insert and replacing with LC insert.. -See LC upgrade kit for insert.



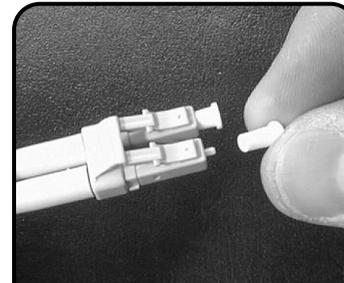
**25** **Recovery Polish (if required)**  
**Scratch Recovery:** Repeat steps 21 and 22 (#3 film and #4 film).  
**Fracture Recovery:** This procedure requires the 6 micron recovery film (P/N: FT-PFG) sold separately. Using the 6 micron recovery film, repeat steps 18-20 using medium to hard pressure then start over from step 17 with #2 film.



**26** **For LC Duplex Connectors Only —**  
 Slide the A/B clip onto the connector housing and snap into place. Slide boots over crimp sleeve and press into place.



**27** Note: To ensure proper transmitter-to-receiver patching, be certain to assemble each end of a duplex assembly with the opposing orientation as shown. To help identify proper orientation it is helpful to place the same color shrink tubing on opposite end of the same fiber strand. If correctly assembled the final duplex assembly will have opposite color-coded strands on the A side as well as the B side.



**28** Replace dust caps onto the connector ferrules while connectors are not in use.

# LC Multimode & Singlemode Connector Termination Instructions

## **WARNING:**

**Optical transmitters and fiber optic test equipment used in the telecommunications industry uses invisible infrared energy. At sufficient power, this may cause eye or skin damage.**

If you work with fiber optic products, including test equipment, consider the following:

1. Do not look into fibers or connectors. They may be 'live'.
2. Know what is happening with the fiber under test at the far end!
3. When connecting a light source, try to make it the last element you connect!
4. Whenever possible, switch off and disconnect your light source(s) before breaking any fiber connections.
5. Always consider the hazard to other people:
  - a. Use warning signs, etc.
  - b. Keep caps on unconnected fibers whenever possible.
  - c. If using "live" optical beams, keep them low and facing away from personnel.
6. Don't view optical outputs with a microscope, use a TV camera/monitor.
7. Elect a safety officer to:
  - a. Train staff
  - b. Maintain records of equipment classification, calibrations and safety checks.
8. Be careful of cut fibers. Remember they are sharp and difficult to see!

## **POSSIBLE VARIABLES FOR POOR ATTENUATION OR RETURN LOSS READINGS**

1. Fractured/broken fibers:
  - Dull cleaver
  - Dried adhesive on cleaver blade
  - Twisted or uneven pulling when removing stub
  - Bumped or brushed end-face of fiber before polishing
  - Too much pressure during initial pad polish or air polish
2. Adhesive/primer not curing:
  - Date code expired or exposed to extreme temperatures
  - Contaminated primer/adhesive
  - Not enough primer or adhesive
  - Did not allow enough cure time
  - Movement during cure time
  - Excessive buffer length pushing out adhesive during insertion
3. Excessive or insufficient polishing
4. Dirty pad, puck, paper, or end-face of connector

**Note: Instructional video for this product is also available at [www.siemon.com](http://www.siemon.com)**

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For a complete listing of our global offices visit our web site

