

Amphenol MTC Assembly Instructions

Purpose

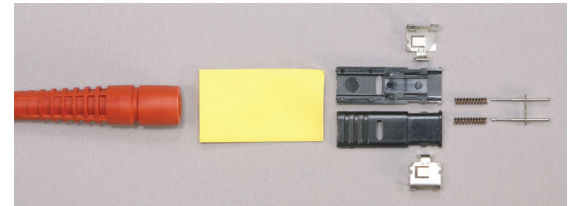
1. Instructions for proper assembly of MT ferrule termini into Amphenol® MIL-DTL-38999 Fiber Optic connectors with the use of recommended MTC assembly kits and tools.
2. Instructions for connector assembly of Amphenol® MIL-DTL-38999 Fiber Optic connectors.

MT Termini Assembly Kits

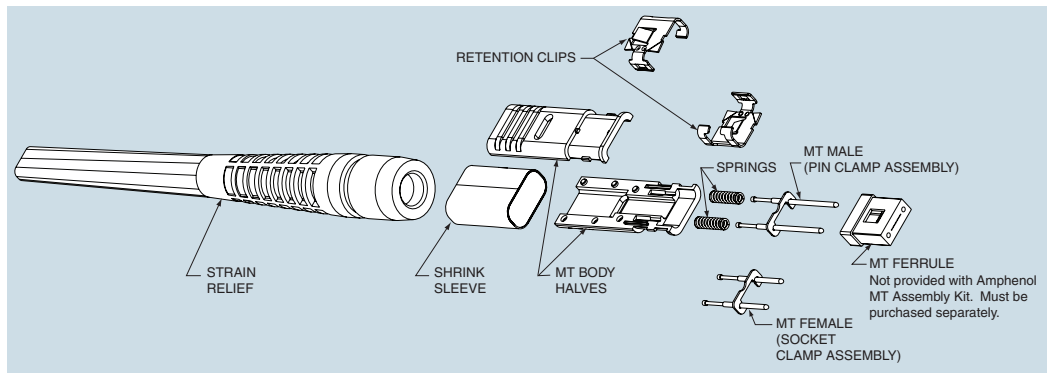
Amphenol supplies MT termini assemblies in unassembled kits, minus the MT ferrule.

Order these as follows:

- MT **male** assembly kit . . . CF-198136-000 with strain relief – 12F and 24F MT
 CF-198136-001 without strain relief – 12F and 24F MT
 CF-198233-001 with strain relief – 48F MT
 CF-198233-001 without strain relief – 48F MT
- MT **female** assembly kit...CF-198137-000 with strain relief – 12 F and 24F MT
 CF-198137-001 without strain relief – 12F and 24F MT
 CF-198234-001 with strain relief – 48F MT
 CF-198234-001 without strain relief – 48F MT



MT ferrules are not included - MT ferrules that meet the IEC1754-5 specification are recommended for use.
 MT Assembly Fixture (see Photo B on page 2). . . . 11-00000-000



1. Assembling the MT Ferrule Components from Kit

- a. Confirm that the terminated cable assembly is capable of being configured as shown in Figure 1.
- b. The cable jacket can be cut or pulled back if necessary to allow for the dimensions shown.
- c. Strain relief boot (part number CF-195063-001) included in the kit can be used if required for your assembly needs.
- d. Separately purchased MT Ferrule should be polished.
- e. Terminate the fiber ribbon to the MT Ferrule.

If the rubber boot supplied with the MT ferrule is used, it must be trimmed such that it is flush with the rear of the MT ferrule. Verify that boot material is removed and that there is no interference with the springs. Verify that the guide holes are clear of any epoxy and that there is no epoxy on the rear surface of the MT ferrule.

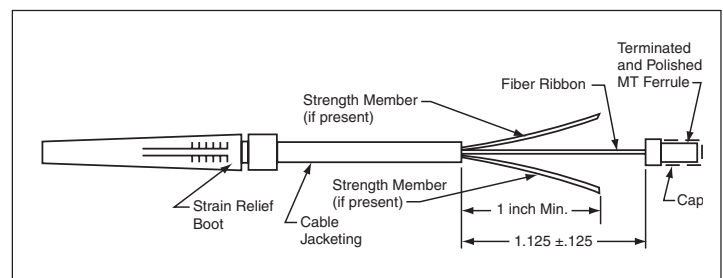


Figure 1

2. Assembling the Cap, Clamp & Springs and MT Ferrule

- a. Install protective cap - see Figure 3.
- b. Place springs onto the Guide Pins of the clamp assembly. Be sure that the springs are placed on the opposite side of the stopper plate from the guide pin bullet tips as shown in Figure 2.
- c. Next slide the assembled springs and clamp into the MT ferrule that holds the terminated fiber ribbon. The stopper plate should be resting on the top of the MT ferrule for proper seated position.

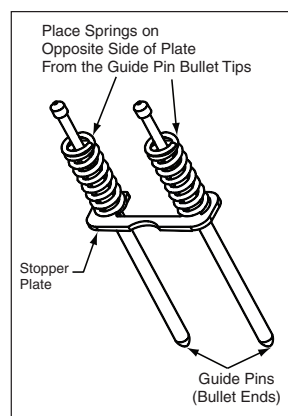


Figure 2

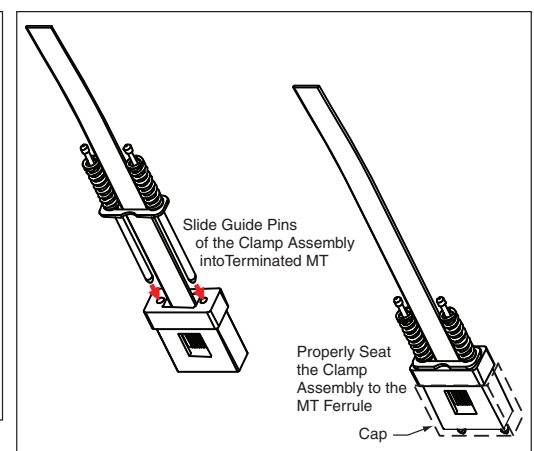


Figure 3

3. Add the MT Body Halves to Assembly

Separate the strength member in half and feed through slots in the 2 body halves as shown in Figure 4. The proper assembly of springs, cap, and body halves with cable strength member is shown in Photo A.

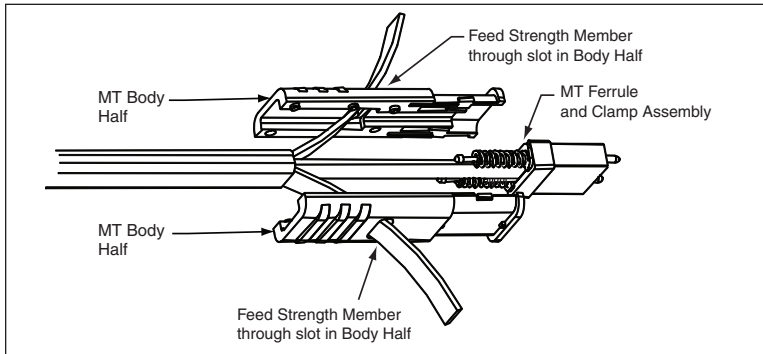


Figure 4

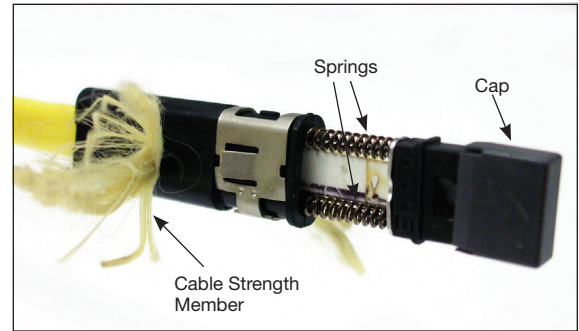


Photo A

4. Install First Retention Clip

Install one clip until fully seated. Note orientation of clip shown in Photo B. The second retention clip will be installed later in the assembly process.

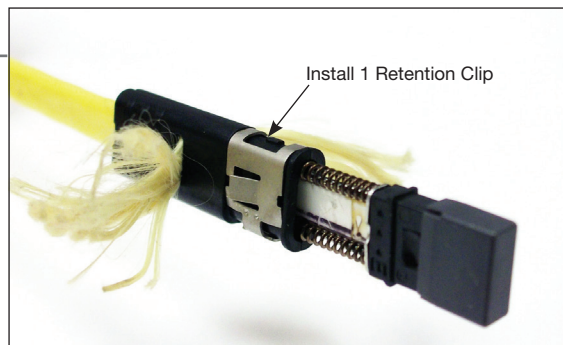


Photo B

5. Review the MT Assembly Fixture

Photo C below describes the features and parts of the MT Fixture which will be used to compress the MT ferrule.

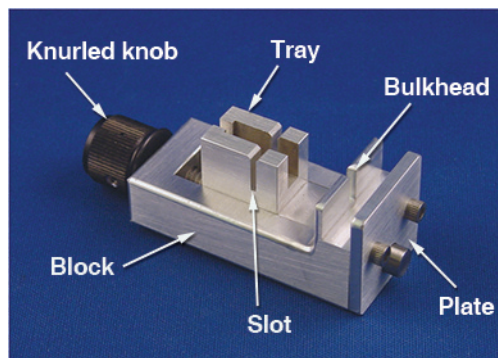


Photo C

6. Insert Termini into Fixture

- Align ferrule flange just behind the bulkhead of the fixture as shown in Photo D. The rear of the plastic body halves should butt against the rear of the tray.
- Position the cable strength members threaded out of the guide slots in the tray.
- The clip at the rear of the termini should be oriented as shown.

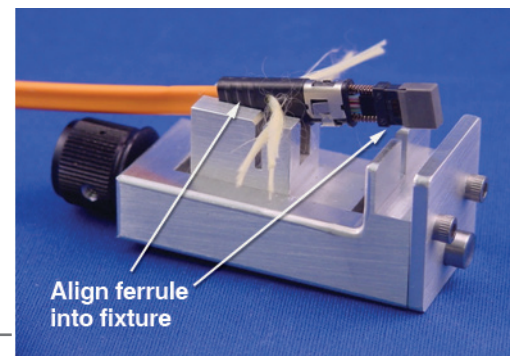


Photo D

7. Verify Proper Location in Fixture

Photo E shows the proper location of the termini assembly in the fixture.

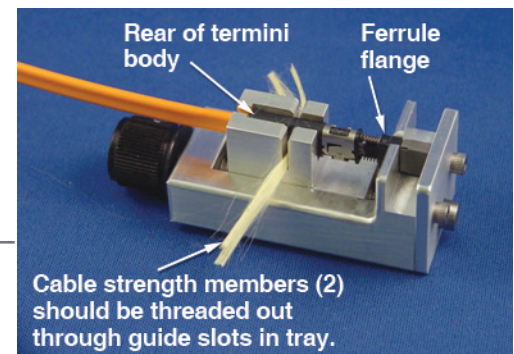


Photo E

8. Compress Termini

- Rotate the knurled knob on the fixture counter-clockwise. This compresses the guide pins into the termini body. See photo F.
- Stop turning when the springs in front of the termini are compressed.

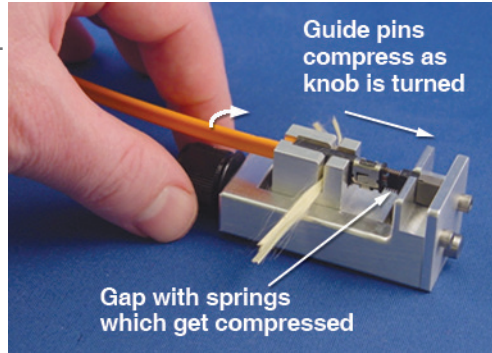


Photo F

9. Termini in Final Position

Verify springs are fully compressed, as shown in Photo G.

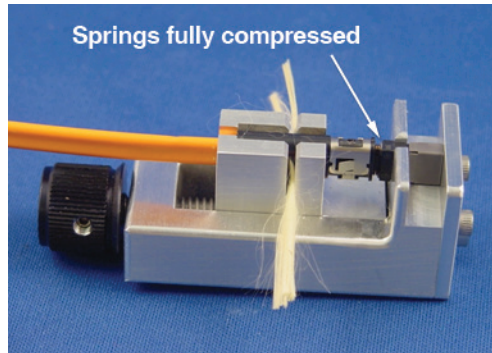


Photo G

10. Install Second Retention Clip

Install second retention clip as shown in Photo H. Verify that the clip is fully seated.

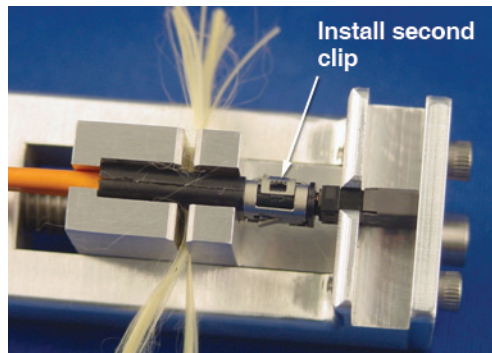


Photo H

11. Remove Termini from Fixture

- Rotate knurled knob clockwise to release the pressure (1/2 to 1 turn).
- Grip the cable jacket and clip portion of the termini. Lift straight up from the tray and bulkhead. See Photo I.

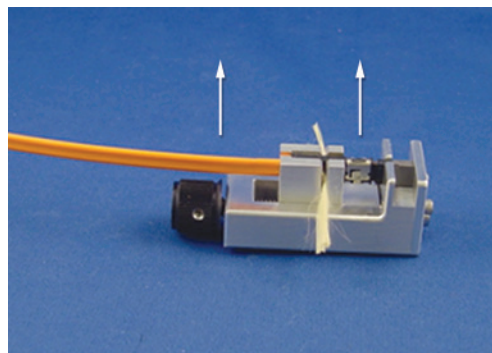


Photo I

12. Apply Epoxy to Termini Assembly

Lightly coat ribbed section of the body of the termini assembly with epoxy as shown in Figure 5. Use Epotek 353 NDT or equivalent.

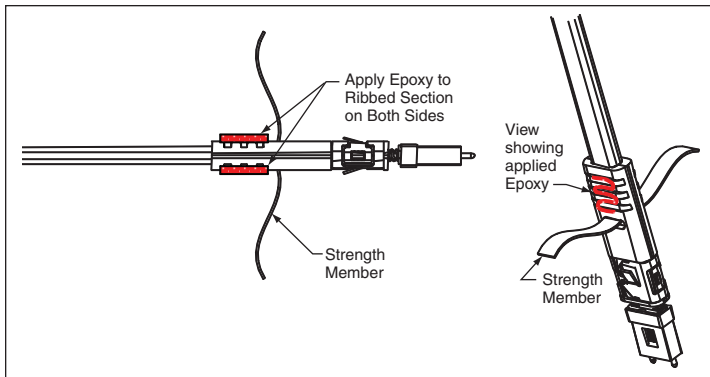


Figure 5

13. Slide Shrink Tube on and Apply Heat

- Slide shrink tube over entire assembly from the front (MT face).
- Apply heat using a standard bench heat gun to shrink the tubing for 10 sec. max. while rotating assembly to prevent excessive localized heating. No epoxy should be visible after shrinking. See Figure 6 below for required dimensions of shrink tube after shrinking.

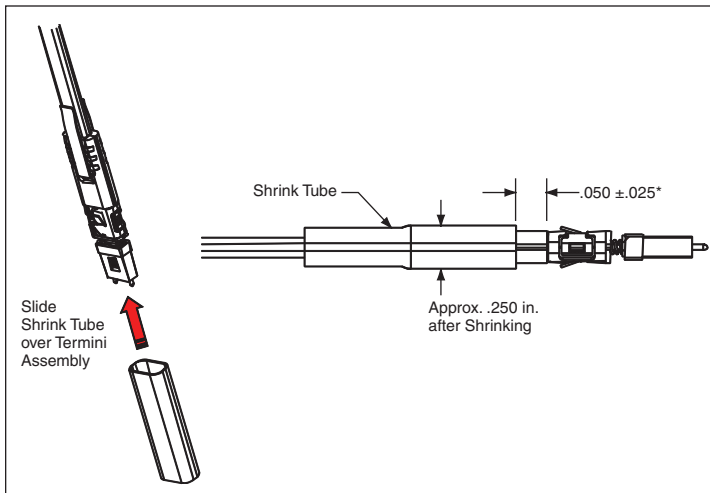
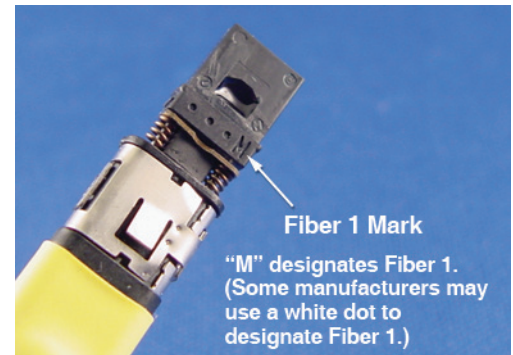


Figure 6

- *When assembly in Figure 6 is used in an EMI MTC Connector (Has a metal spacer instead of a rear rubber grommet), the indicated dimension should be $.350 \pm .025$.



MTC Connector Assembly

Assembling the MT Ferrules into MT Connectors

Photo J at right shows:

- A connector pair, shell size 21 with four ferrule cavities on left
- A connector pair, shell size 11 with one ferrule cavity on right
- An assembled MT ferrule ready for installation

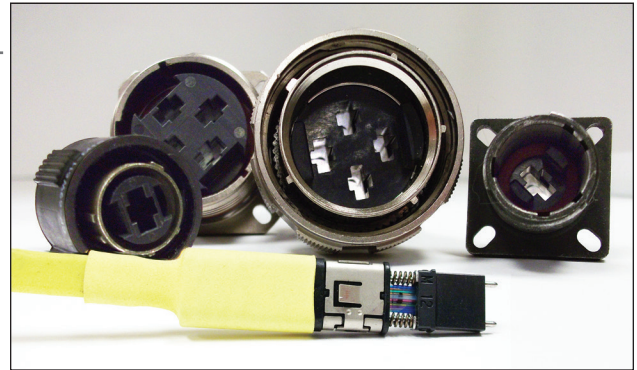


Photo J

1. MT Connector Orientation

Photo K below shows the orientation of the master key on the front of the connector shell.

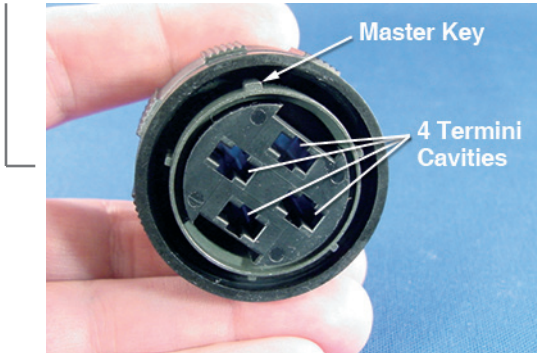


Photo K

2. Rear View of Master Key and Rear Grommet Orientation

Rear of socket grommet shown.

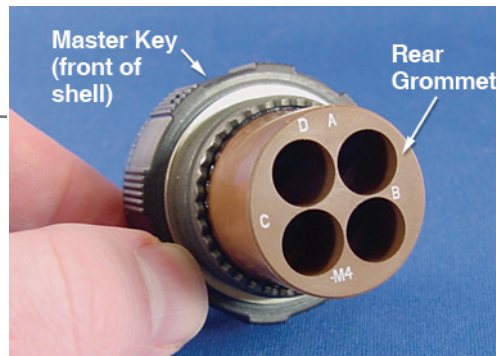
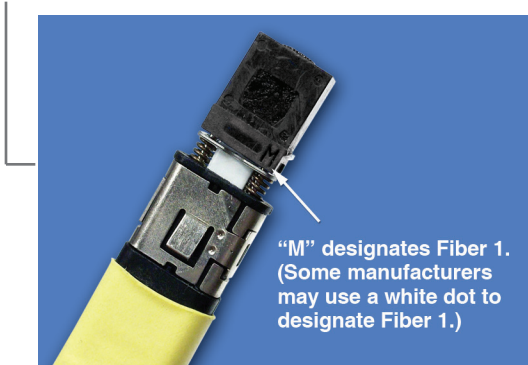


Photo L

3. Find Fiber 1 on MT Ferrule

MT Ferrule manufacturer's designate FIBER 1 with a mark. In example Photo M shown below, the mark is the letter "M". Some manufacturers use a white dot.



"M" designates Fiber 1.
(Some manufacturers may use a white dot to designate Fiber 1.)

4. Front Connector Orientation for MT Ferrule

Termini are installed with Fiber 1 closest to the master key, as shown in Photo N.

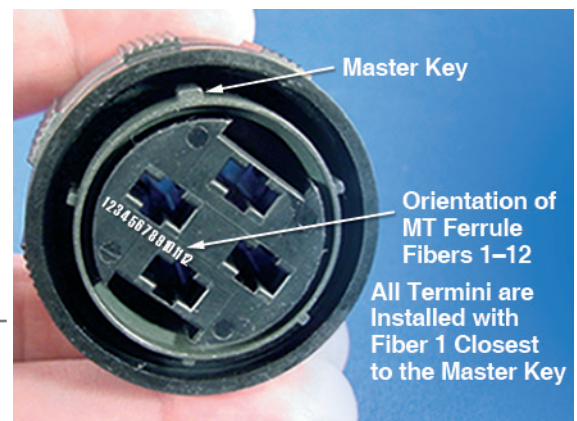


Photo N

4. Insert Termini into Rear Grommet with Fiber 1 in the "UP" Position

Insert termini until it is seated.

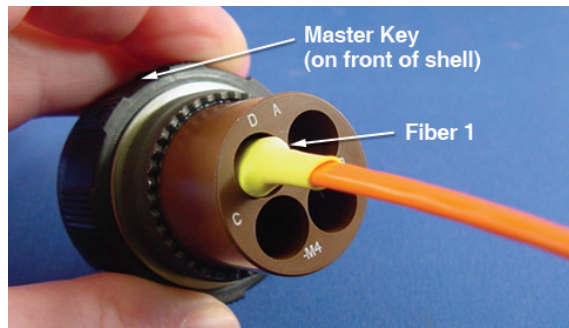


Photo P

4. Size 8 Tool (10-538988-081) can be used to Push on the back of the Termini

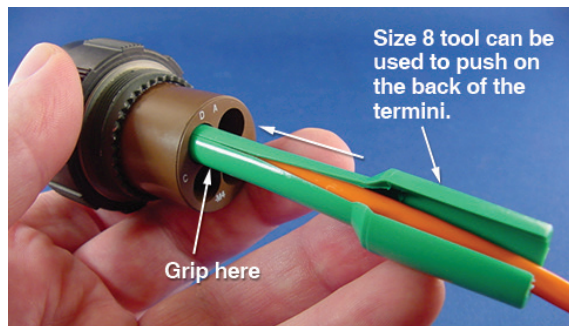


Photo Q

5. Verify Termini is Fully Seated

Observe front of connector and verify that the termini is correctly aligned in cavity and fully seated. To aid aligning of termini - install the insert end (marked INS) of CF-008025-000 tool into front insert cavity until it bottoms. Tool will align termini in the up/down direction. If the termini does not slide in, move it in the left/right direction while pushing. For removal of termini - install removal end of tool (marked REM) into front insert cavity until it bottoms. Grab end of termini and pull out. Note: Removal end of tool is fragile; improper handling can bend the flexible beams. If bending occurs, bend beams to a straight to slightly flared position.

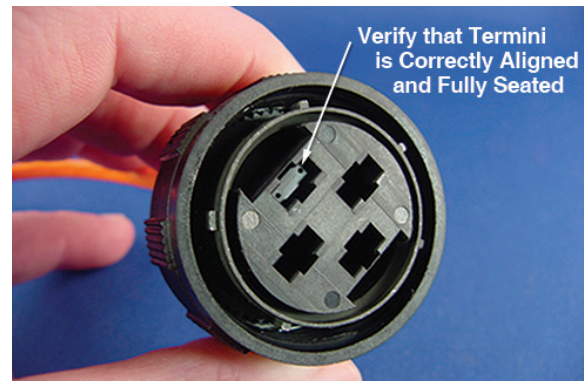


Photo R

10. Slide Boot into Grommet

Photo Group S shows the installation of the boot over the MT ferrule wire.



Photo Group S

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