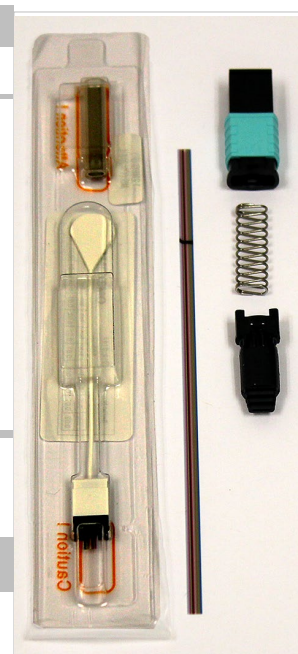


## QWIK Fuse MPO Ribbon Fiber Termination Instructions

### General

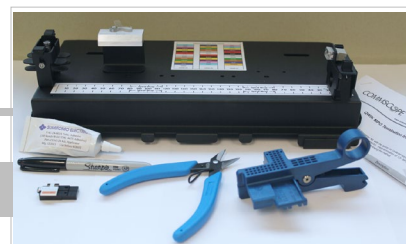
The **CommScope®** QWIK Fuse MPO Termination Kit and Connector Kit, with the Splicer Kit (ordered separately) facilitate the proper termination of **CommScope®** QWIK Fuse MPO connectors. Field termination of 8F or 12F MPO connectors onto 8F or 12F ribbon fiber, respectively, is accomplished by following this method. Ordering information is listed below:

Connector Kits		
Material ID	Part No.	Description
760248915	MFC-8MX-5SP-RN-AQ	8F MM OM3 male, aqua ribbon fiber
760248916	MFC-8MP-5SP-RN-AQ	8F MM OM3 female, aqua ribbon fiber
769249957	SFC-12MX-8LL-RN-YL	12F SMAPC male, yellow ribbon fiber
769249954	SFC-12MP-8LL-RN-YL	12F SMAPC female, yellow ribbon fiber
760251298	SFC-12MX-8SP-RN-GR	12F SMAPC male, green ribbon fiber
760251297	SFC-12MP-8SP-RN-GR	12F SMAPC female, green ribbon fiber
760251294	MFC-12MX-5SP-RN-AQ	12F MM OM3 male, aqua ribbon fiber
760251293	MFC-12MP-5SP-RN-AQ	12F MM OM3 female, aqua ribbon fiber



Parts List – Connector Kit includes:

Quantity	Description
1	Boot/rear housing
1	Spring
1	Ferrule subassembly with cap
1	Outer housing
1	Protection sleeve
1	6" ribbon fiber strip for arc test



Material ID	Part No.	Description
760188698	460143027	QWIK MPO termination kit

(QWIK Fuse MPO Termination Kit Parts List continued next page)

**Parts List – Qwik Fuse MPO Termination Kit includes:**

Quantity	Description
1	Assembly platform with fiber arrangement tool (ribbonizer)
1	Fiber stub connector holder
1	Fiber ribbonizing glue
1	Cordage preparation tool
1	Magnifying glass
1	8-Fiber Ribbon Fiber-Holder
1	Yarn shears
1	Fine tip marker
1	QWIK MPO termination instruction sheet

**Separately Orderable Items**

**Note:** Splicer Kit is not offered by **CommScope** and must be obtained through Sumitomo or other authorized sources.

Splicer Kit	
1	Sumitomo Mass Fusion Splicer Type-Q-101-M12 kit (Recommended) or Sumitomo Mass Fusion Splicer Type-66-M12 TuffCat kit

Parts List –Splicer Kit includes:

Quantity	Description
1	Q-101-M12 or Type-66 Mass Fusion Splicer
1	Ribbon fiber cleaver
1	Heated ribbon stripper
2	Ribbon 12-fiber holder (left and right side)
1	Power cord



**Other Tools/Supplies Required (obtain locally)**

- Wire stripper
- Tape measure
- Lint-free wipes
- Quick evaporating cleaner or isopropyl alcohol (>97% 2-propanol+water)
- Adhesive tape
- Clips (to hold yarn)

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- For technical assistance, refer to <http://www.commscope.com/SupportCenter>
- For information on patents, refer to <http://www.cs-pat.com>



**Important Safety Cautions**

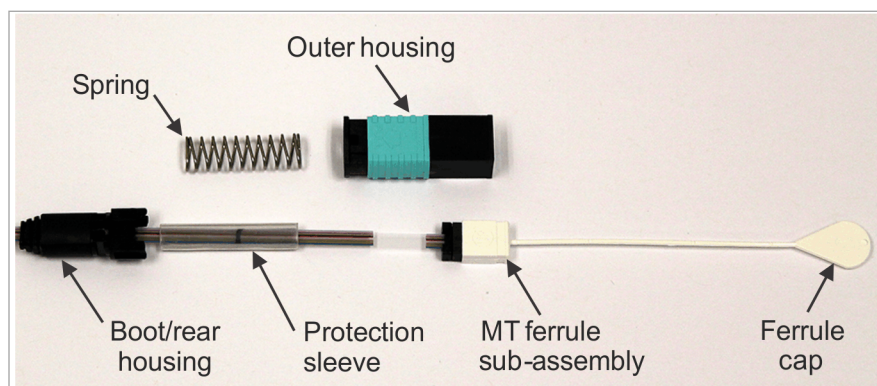
- Wear safety glasses to protect your eyes when handling optical fiber.
- Never look into the end of a microscope or optical cable connected to an optical output device that is operating. Laser radiation is invisible, and direct exposure can severely injure the human eye.

- Alcohol is flammable, causes irritation, and is harmful if swallowed or inhaled. Keep alcohol away from heat, sparks, skin, and avoid contact with eyes.

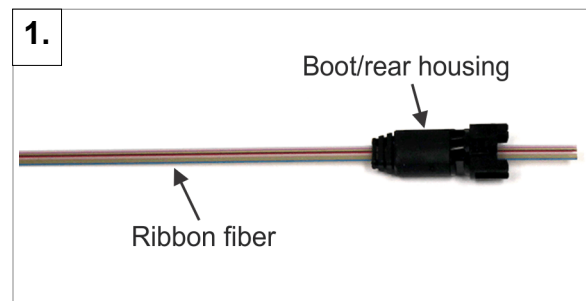
## Pre-Termination Set-Up and Preparation Recommendations

1. Ensure work area is a clean surface with adequate lighting.
2. The following termination and splicer operation should be performed by an individual with adequate and appropriate training.
3. Splicer functionality and operation is critical to achieving acceptable termination results and connector performance. Ensure that splicer is set up and functioning properly by performing a successful ARC test with the appropriate fiber type.
4. Ribbon fiber strips are provided in each connector kit for splicer ARC testing. Connector types should be tested only with the specific, provided ribbon fiber strip. Perform a new ARC test whenever preparing to splice a different connector type.
5. Confirm fiber order/orientation of both ends on cable assembly (A & B) prior to starting termination to facilitate and maintain proper polarity configuration of cable assembly.
6. Review and familiarize yourself with the splicer instruction for the safe and proper use of the equipment.

## Step 1 – Prepare the Cable



MPO Assembly Parts



1. To prepare the cable assembly for the splice, slide the boot assembly over the exposed end of the cable. Remove these components from the connector kit and insert on the cord to be re-terminated in the order listed:
  - boot; rear housing.

## Maintaining Proper Polarity for Fiber Splicing of QWIK MPO Connectors

Please note that for termination, repair, and restoration, it is important to understand the polarity configuration of CommScope's cable assemblies.

**Important: CommScope trunks can be terminated with Method A or B polarity.**

- 1. Standard Loss and Low Loss Cable Assemblies (Type B)** - CommScope "Standard Loss" and "Low Loss" assemblies are typically terminated with Type B polarity, in which the trunk cables are terminated with female (un-pinned) MPO connectors. Other cable assemblies, such as equipment cords and trunk extensions may be terminated with different gender (pinning) one each end, depending on how the cable assembly is being used. The orientation of these connector components is referenced in Tables 1 and 2 as Cable Type "LL, Standard Trunks (B-Cords)".
- 2. Standard Loss and Low Loss Singlemode Equipment Connection Assemblies (Type B)** - With regard to singlemode fiber, the MPO has an angle integrated into the connector end face. It is important to note that when dealing with "Standard Loss" and "Low Loss" singlemode MPO assemblies, the default angle does not match the angle orientation of a standard transceiver transceivers. As such, when terminating or repairing a "Standard Loss" or "Low Loss" singlemode MPO assembly, the termination process will differ for equipment connections and trunk or module connections. The orientation of these connector components is referenced in Tables 1 and 2 as Cable Type "Equipment Cords (B-Cords)". Connections to transceivers are noted as "EQ", referencing a female (un-pinned) connector with the angle orientation matching a standard transceiver. Connections to other CommScope assemblies and components are noted as "Female" or "Male", as appropriate.

**Note:** The "Equipment Cords (B-Cords)" section only applies to singlemode assemblies.

**Note:** Multimode assemblies are not made with angled MPO connectors, as such, the adjustment for angle is not necessary. In other words, standard Female (un-pinned) MPO assemblies can be directly connected to standard multimode transceivers or other CommScope assemblies and components.

- 3. Ultra Low Loss Cable Assemblies (Type B)** – CommScope "Ultra Low Loss" assemblies are typically terminated with Type B polarity, in which the trunk cables are terminated with male (pinned) MPO connectors. In most cases, the equipment cords will be terminated with female (un-pinned) connectors. Other cable assemblies, such as trunk extensions may be terminated with different gender (pinning) on each end, depending on how the cable assembly is being used. The orientation of these connector components is referenced in Tables 1 and 2 as Cable Type "ULL Trunks (B-Cords)".

**Note:** The Singlemode angle convention was adjusted to match the standard transceiver in the ULL product family. As such, standard Female (un-pinned) MPO assemblies can be directly connected to standard transceivers (singlemode or multimode) or other CommScope assemblies and components, as appropriate.

**Note:** MPO-LC modules are terminated with Enhanced Method B polarity. The cable polarity remains Type B.

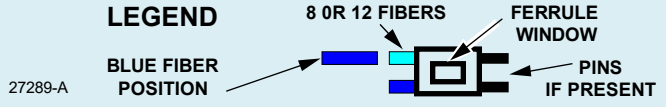
- 4. Low Loss and Ultra Low Loss Cable Assemblies (Type A)** – CommScope offers Method A polarity systems into certain customers and markets. The orientation of these connector components is referenced in Tables 1 and 2 as Cable Type "LL, ULL Trunks (A-Cords)".

Table 1 can be used as a guide to the orientation of the ribbonized cable when being spliced onto the QWIK Fuse MPO ferrule in the splicer.

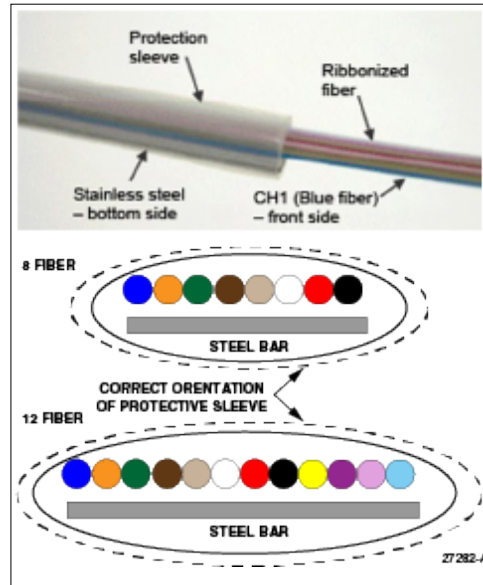
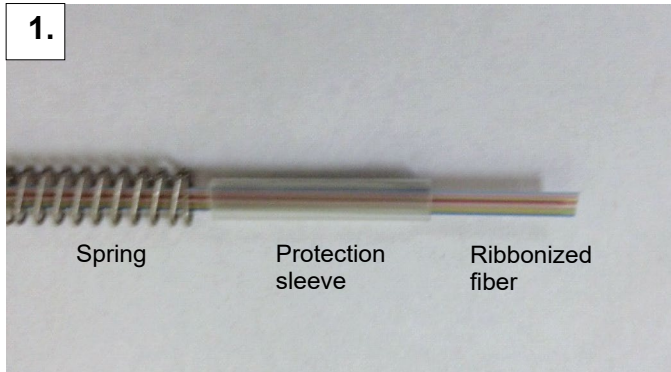
TABLE 1

Cable Type (Polarity)	Gender	Blue #1 Fiber Position (when placed in splicer)				Connector Configuration	
	End A/B	End A	Ch	End B	Ch	End A	End B
LL Standard Trunks (B-Cords)	Male-Male	Bottom	1	Top	8/12		
	Female-Male	Top	1	Top	8/12		
	Female-Female	Top	1	Bottom	8/12		
ULL Trunks (B-Cords)	Male-Male	Top	1	Bottom	8/12		
	Female-Male	Bottom	1	Bottom	8/12		
	Female-Female	Bottom	1	Top	8/12		
Equipment Cords (B-Cords)	EQ-Female	Bottom	1	Top	8/12		
	EQ-Male	Bottom	1	Top	8/12		
	EQ-EQ	Bottom	1	Top	8/12		
LL, ULL Trunks (A-Cords)	Male-Male	Bottom	1	Bottom	8/12		
	Female-Male	Bottom	1	Bottom	8/12		
	Female-Female	Bottom	1	Bottom	8/12		

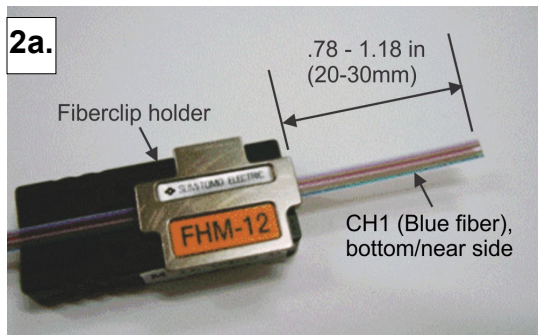
NOTE: ON 8-FIBER STUBS,  
THE TOP FIBER IS BLACK  
INSTEAD OF AQUA.



## Step 2 – Strip and Clean the Fiber



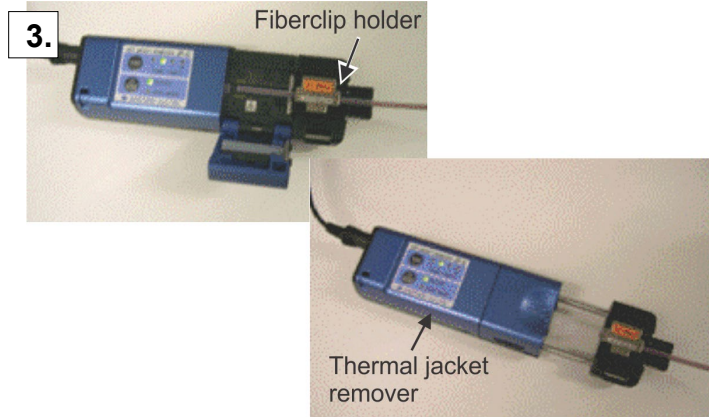
1. After removing the ribbonized fiber from the ribbon tool, slide the spring and the protection sleeve from connector kit onto ribbonized fiber as shown.  
**Important:** Verify correct orientation of the protection sleeve with steel bar on the bottom. The steel bar should be at the bottom side of the ribbon when properly positioned for placement in the holder or splicer.



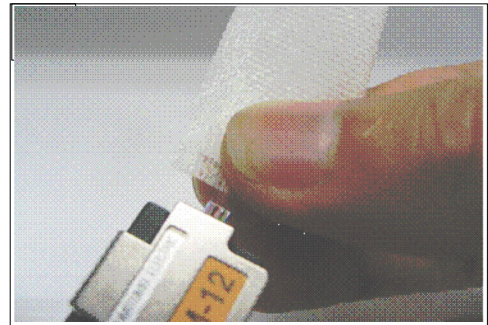
2. Place the fiber cable into the fiberclip holder with .78 –1.18 in (20-30mm) of the ribbonized fiber protruding as shown in 2A (12F) and 2B (8F, use same dimensions as shown in 2A).

**Note:** Because **CommScope** cable assemblies follow method A or B polarity, verify that the ribbonized fiber is in the proper orientation for method A or B polarity when placed in the fiberclip holder. Ensure that the ribbonized fiber is placed in the fiber clip holder such that the blue fiber orientation is consistent with Table 1 for whichever cable type and gender you are terminating.



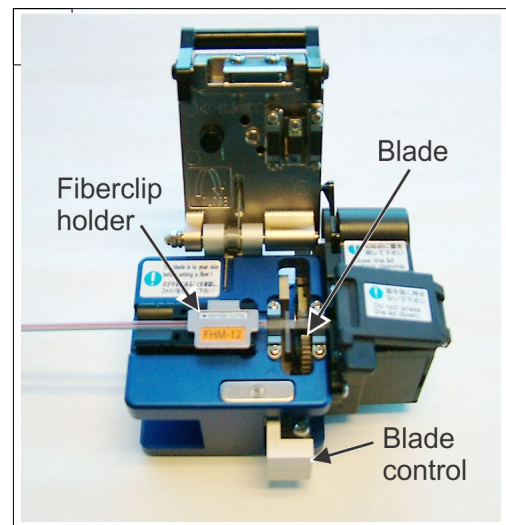


3. Place the fiberclip holder with ribbonized fiber into the thermal jacket remover and close both doors. Allow stripper to reach temperature before stripping. When the heater stops blinking, it is ready to strip.
4. Hold both doors closed and firmly pull sliding section of tool away from tool. Open doors to remove the stripped cable and fiberclip holder.
5. After stripping, verify that all the coating has been removed from the fibers. If not, repeat items 3 and 4.
6. Always clean the fibers with lab-grade alcohol wipes after stripping and before cleaving. Verify that all 8 or 12 fibers are present and not broken. Stripped coating should be aligned for all fibers. Repeat items 1 to 3 if fibers are broken.



### Step 3 – Cleave the Fiber

1. Check the fiber cleaver blade to make sure it is in the front loaded, ready position.
2. If not in position, slide blade to front.
3. Place the fiberclip holder with ribbonized fiber into the fiber cleaver as shown and close the top of the fiber cleaver.
4. Slide the blade to the back one time.
5. Open the door and remove fiberclip holder with cleaved ribbonized fiber.



### Step 4 – Align Ribbonized Fibers and Splice the Connector

1. Turn on the mass fusion splicer. Splicer display shows several fiber type options. Select the correct fiber type and arc test using proper fibers.

- If working with 12F, select splice condition of SM12 or MM12, depending on fiber type to be spliced.
- If working with 8F, select splice condition of SM8 or MM8, depending on fiber type to be spliced.

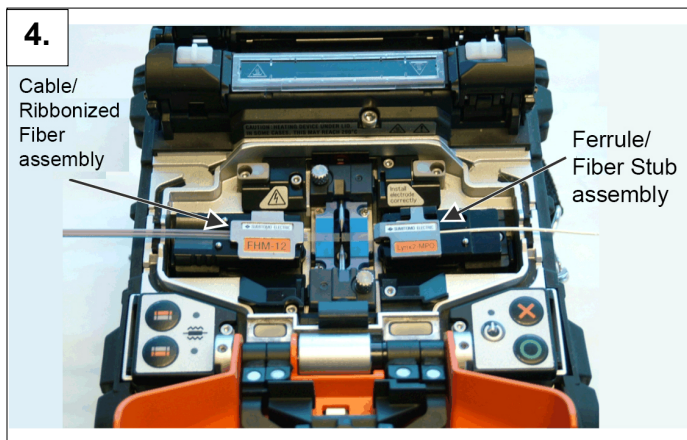
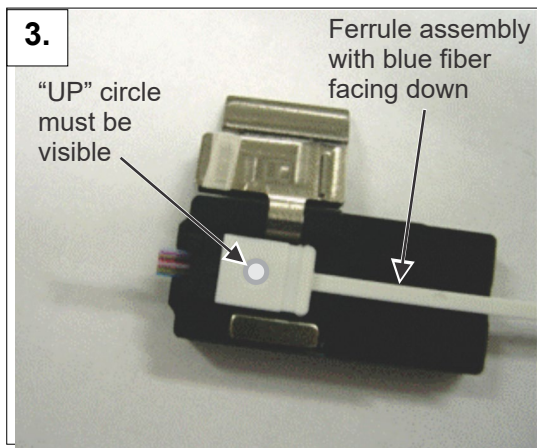
2. Select the “Lynx MPO” Heater Program for heating the protective sleeve.

**Note:** Example below .



3. Open top door of the splicer.  
Get the ferrule sub-assembly from connector kit and place it into the fiberclip holder with the “UP” circle showing on top as shown. Close the door on the clip.

**Important:** Place the fiberclip holder with ferrule assembly in the splicer on the **right side**.  
Fiberclip holder with ribbonized cable assembly is always placed on the **left side**.



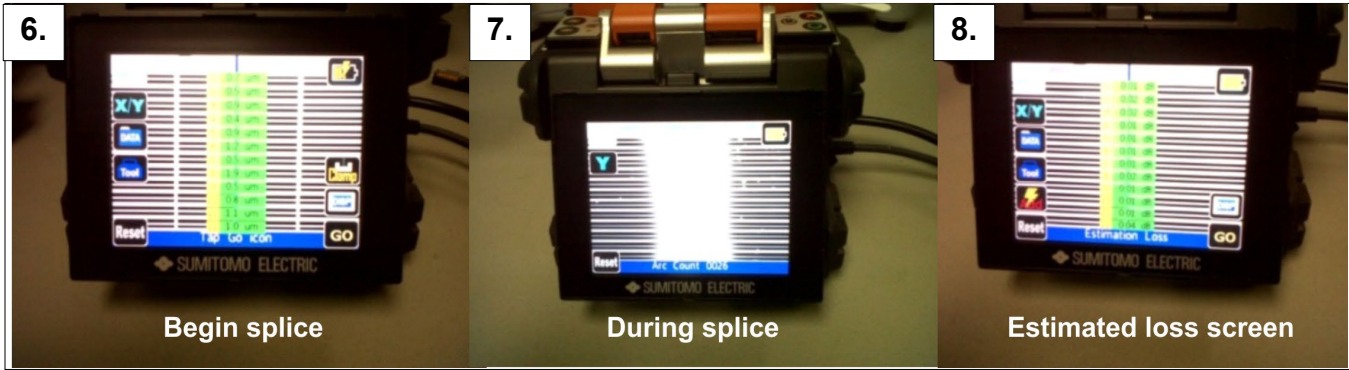
4. Confirm correct splice program (item 1) is selected. Confirm correct heater program (item 2) is selected.
5. Close door and splicer automatically aligns the fibers and displays X/Y alignment offset, and machine pauses.
6. The display tracks splice progress and the alignment result, as shown on the next page.

**Note:** Estimated loss screen of .00 shows “near no loss”, a preferred outcome. Red estimated loss screen indicates out of tolerance splice and the need to resplice.

**Note:** Proceed to next item when splice has passed. Repeat Steps 1-6 if splice has failed.

7. If alignment is acceptable, press the green button on top of mass fusion splicer to begin fusion splice. The fiber ends will glow during splicing. **IMPORTANT:** Do not pull the fibers during splicing..



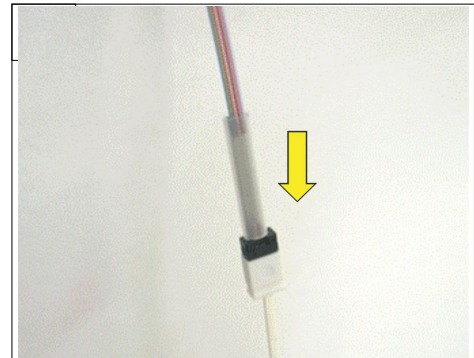


8. After the splice is complete, estimated results will display, green for passing, red for failing.

**Note:** If the splice has failed, the stub must be cut off and the entire procedure repeated starting at Step 1 on Page 3.

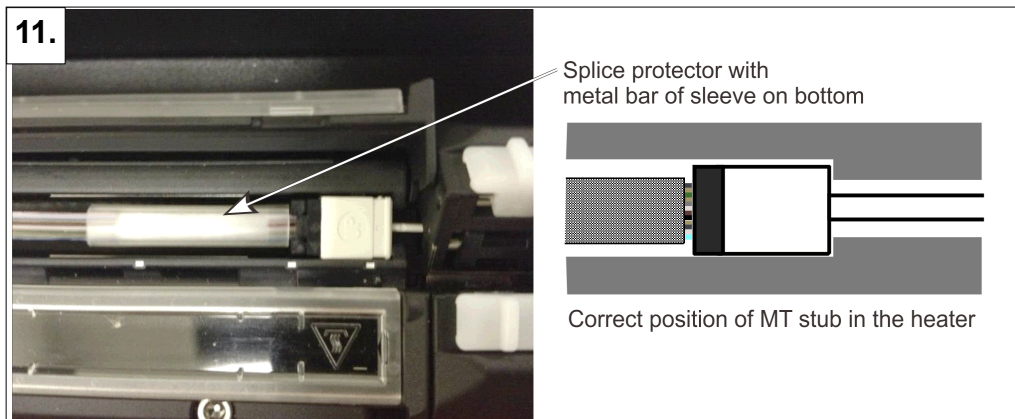
9. Open the door and remove the assembly from the fiber clamps.

**Note:** After splicing, the machine performs a proof test which places the splice under slight mechanical tension. This tension must be gently relaxed before attempting to remove the splice from the fiber holders. This is done by placing the index finger of your left hand on the fiber holder and ribbon just to the left of the left side fiber holder lid and applying pressure. The lid is then opened and the tension is slowly released by decreasing the pressure of your index finger. This method dramatically reduces the chance of accidentally breaking the fiber splice once the fiber clamps are opened.



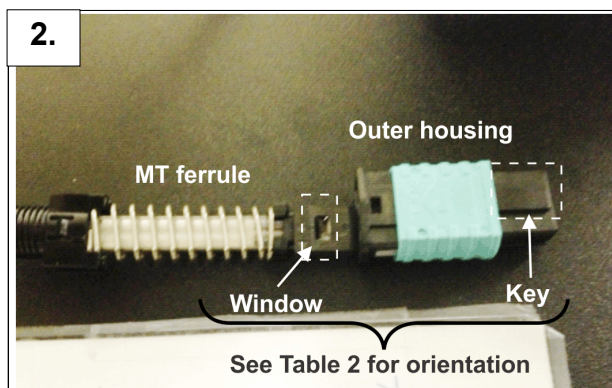
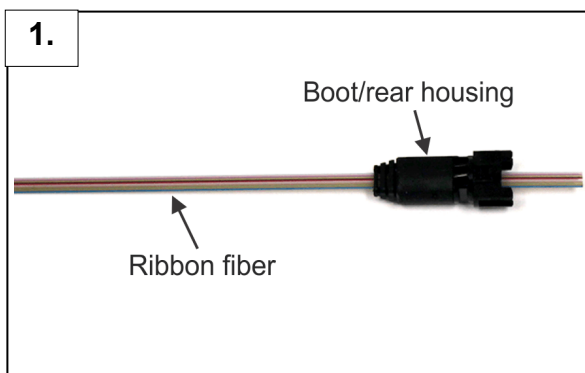
10. Pick up the sleeve side, and allow the sleeve to slide down towards the ferrule, making sure that the splice protector is flush against the ferrule.

11. When the clamps are closed on the oven, the machine will automatically heat. The oven will beep, indicating that the heating is done and cooling cycle begins.

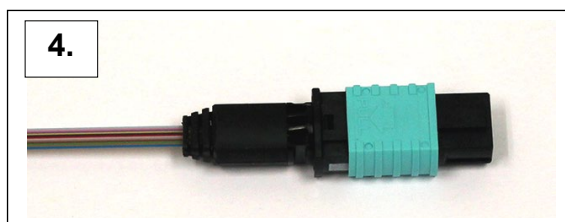
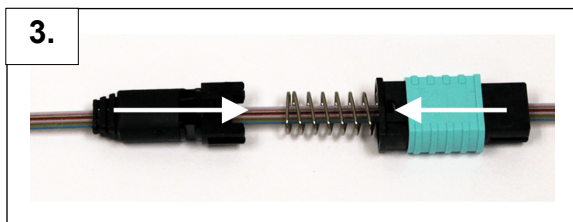




### Step 5 – Assemble the Connector



1. Slide the rear housing up to the ferrule.
2. Remove the dust cap from the ferrule and install the connector body by pushing it onto the end of the ferrule. Ferrule window and housing key are in the same orientation for male/male trunks and opposite for female-female trunks.



3. Slide the outer housing over the ferrule and spring
4. Snap outer housing onto the end of the rear housing.  
**Note: Refer to polarity method B shown in Table 2 below for orientation configuration options.**

TABLE 2

Cable Type	Gender	Ferrule Window Position	Housing	Connector Configuration	
	End A/B	A/B	A/B	End A	End B
Standard Trunks (B-Cords)	Male-Male	Up/Up	Up/Up		
	Female-Male	Down/Up	Up/Up		
	Female-Female	Down/Down	Up/Up		
ULL Trunks (B-Cords)	Male-Male	Down/Down	Up/Up		
	Female-Male	Up/Down	Up/Up		
	Female-Female	Up/Up	Up/Up		
Equipment Cords (B-Cords)	EQ-Female	Up/Down	Up/Up		
	EQ-Male	Up/Up	Up/Up		
	EQ-EQ	Up/Up	Up/Up		
ULL Trunks (A-Cords)	Male-Male	Up/Up	Up/Up		
	Female-Male	Up/Up	Up/Up		
	Female-Female	Up/Up	Up/Up		

NOTE: ON 8-FIBER STUBS, THE TOP FIBER IS BLACK INSTEAD OF AQUA.

LEGEND

BLUE FIBER POSITION

27281-A



FERRULE WINDOW UP



HOUSING KEY UP



FERRULE WINDOW DOWN



HOUSING KEY DOWN

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