

QWIK Fuse MPO Ribbon Cord Termination Instructions

General

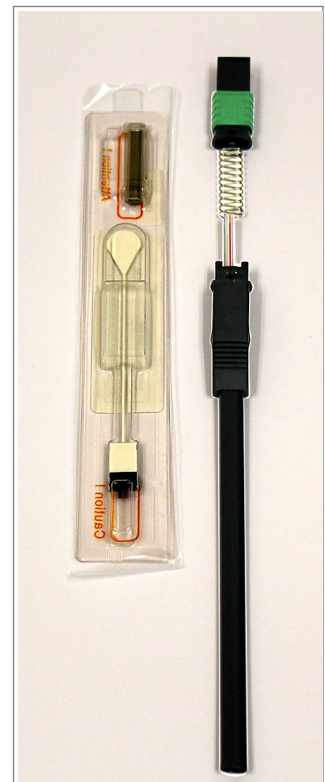
The **CommScope®** QWIK Fuse MPO Termination Kit and Connector Kit, with the Splicer Kit (ordered separately) facilitate the proper termination of **CommScope®** QWIK Fuse MPO connectors. Field termination of 8F & 12F MPO connectors onto 8 & 12F ribbon cord respectively is accomplished by following this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

Ordering information is listed below:

Connector Kits		
Material ID	Part No.	Description
760200030	SFC-12MX-8SP-RC-GR	SMAPC male, green ribbon cord
760200055	SFC-12MP-8SP-RC-GR	SMAPC female, green ribbon cord
760200071	MFC-12MX-5SP-RC-AQ	MM OM3 male, aqua ribbon cord
760200097	MFC-12MP-5SP-RC-AQ	MM OM3 female, aqua ribbon cord
760248917	MFC-8MX-5LL-RC-AQ	MM OM3/4 male, aqua, ribbon cord
760248918	MFC-8MP-5LL-RC-AQ	MM OM3/4 female, aqua, ribbon cord
760249958	SFC-12MX-8LL-RC-YL	SMAPC male, yellow, ribbon cord
760249955	SFC-12MP-8LL-RC-YL	SMAPC female, yellow ribbon cord

Parts List – Connector Kit includes:

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

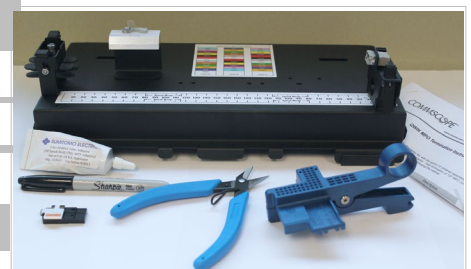


Qwik Fuse MPO Termination Kit		
Material ID	Part No.	Description
760188698	460143027	QWIK MPO termination kit

Parts List – Qwik Fuse MPO Termination Kit includes:

Quantity	Description
1	Assembly platform with fiber arrangement tool (ribbonizer)

(table continued on next page)



Quantity	Description
1	Fiber stub connector holder
1	Fiber ribbonizing glue
1	Cordage preparation tool
1	8-Fiber ribbon holder
1	Magnifying glass
1	Yarn shears
1	Fine tip marker
1	QWIK Fuse 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
- Adhesive tape
- Clips (to hold yarn)
- Quick evaporating cleaner or isopropyl alcohol (>97% 2-propanol+water)

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Important Safety Cautions

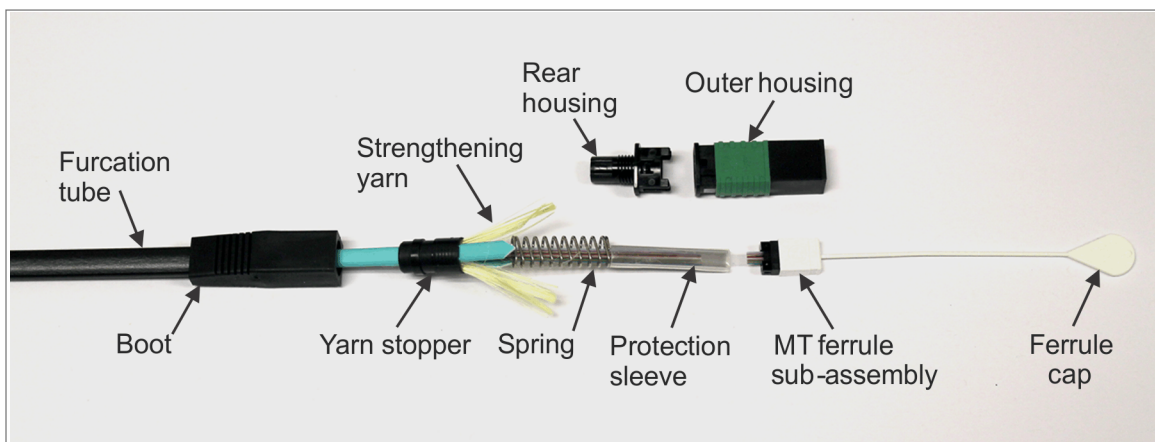
- Wear safety glasses to protect your eyes when handling optical fiber.
- Never look into the end of a microscope or optical cable connected to an optical output device that is operating. Laser radiation is invisible, and direct exposure can severely injure the human eye.
- Alcohol is flammable, causes irritation, and is harmful if swallowed or inhaled. Keep alcohol away from heat, sparks, skin, and avoid contact with eyes.



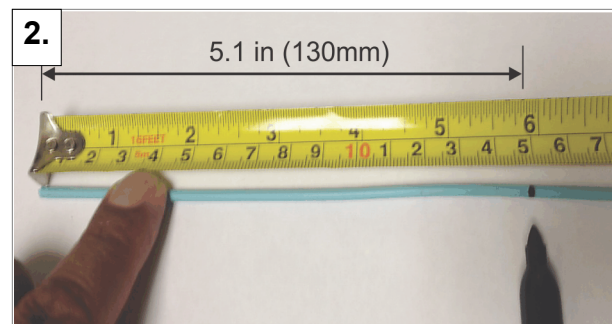
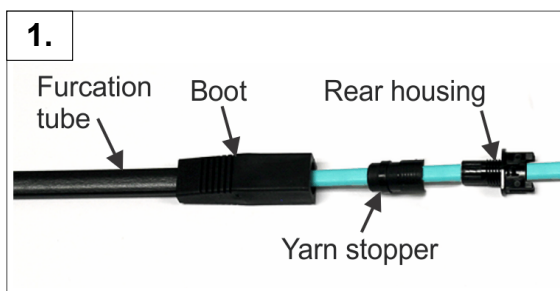
Pre-Termination Set-Up and Preparation Recommendations

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

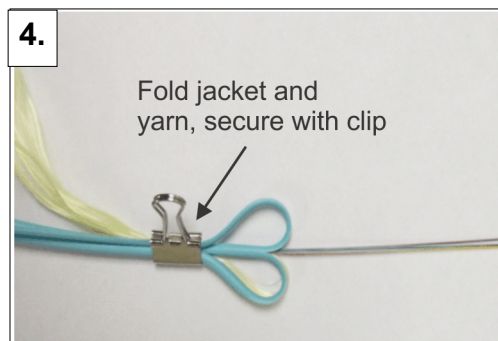
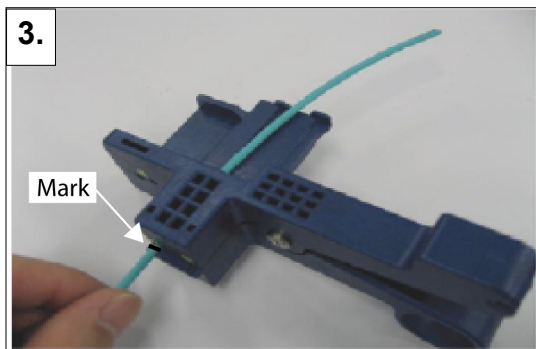


MPO Assembly Parts



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 / furcation tube; yarn stopper; rear housing.
2. To prepare cable for slitting and ribbonizing process, mark cable jacket at 5.1 in (130mm) from cord end as shown.

Note: When terminating or making a repair, cut cable back to remove any damaged fibers.ok, we



3. Make a slit from the mark to the end of the cable by using 3mm groove with the cord placed in remover tool perpendicularly.
4. Fold jacket and strengthening yarn back as shown and secure in position with clip or adhesive tape.

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.

LEGEND

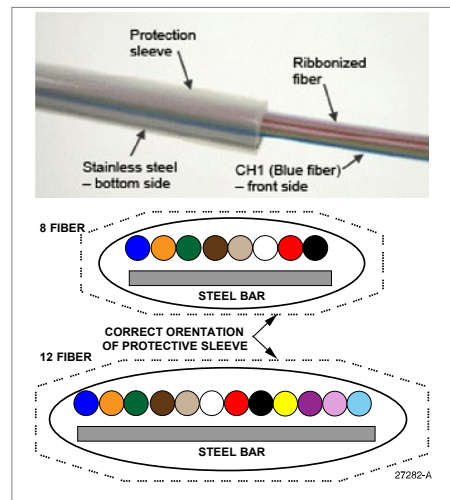
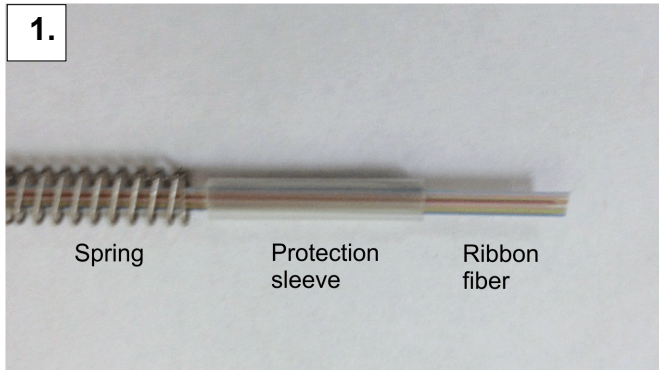
27289-A

BLUE FIBER
POSITION

8 OR 12 FIBERS

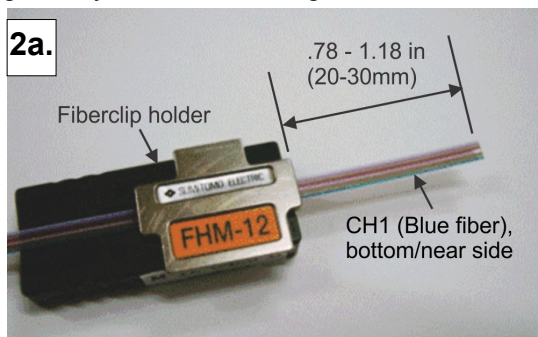
FERRULE
WINDOWPINS
IF PRESENT

Step 2 – Strip and Clean the Fiber

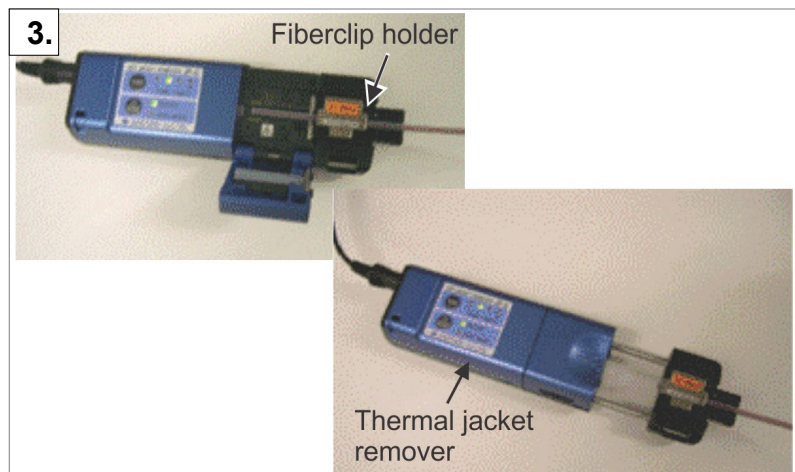


- Using the ribbon fiber to be terminated, slide the spring and the protection sleeve from connector kit onto ribbon fiber as shown.
Important: Verify correct orientation of the protection sleeve with steel bar on the bottom. The steel bar should be at the bottom side of the ribbon when properly positioned for placement in the holder or splicer.
- Place the fiber cable into the fiberclip holder with .98 – 1.18 in (25-30mm) of the ribbon fiber protruding as shown for 12 fiber holder in illustration 2a. 8-fiber holder is analogous (2b).

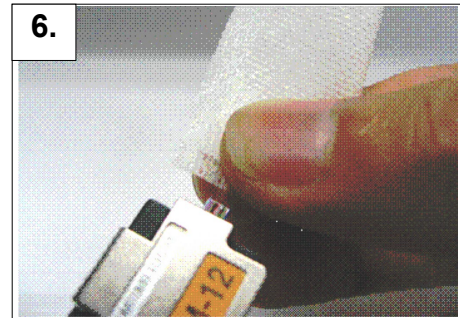
Note: Because **CommScope** cable assemblies follow method A & B polarity, verify that the ribbon fiber is in the proper orientation for A & B polarity when placed in the fiberclip holder. Ensure that the ribbon fiber is placed in the fiber clip holder such that the blue fiber orientation is consistent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



- Place the fiberclip holder with ribbon 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.

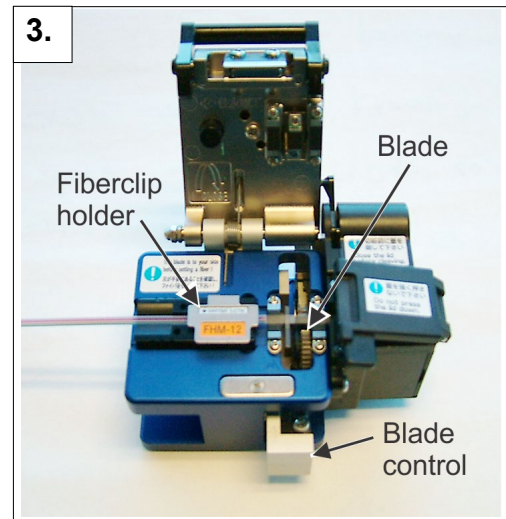


4. Hold both doors closed and firmly pull sliding section of tool away from tool. Open doors to remove the stripped cable and fiberclip holder.
5. After stripping, verify that all the coating has been removed from the fibers. If not, repeat items 3 and 4.
6. Always clean the fibers with lab-grade alcohol wipes after stripping and before cleaving. Verify that all 12 fibers are present and not broken. Stripped coating should be aligned for all fibers. Repeat items 1 to 3 if fibers are broken.



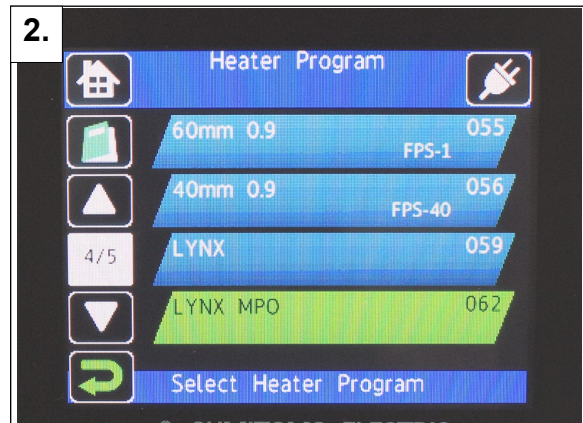
Step 3 – Cleave the Fiber

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 ribbon 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 ribbon fiber.

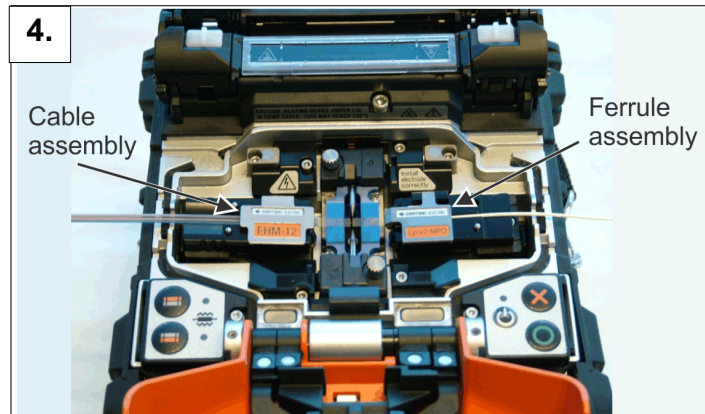
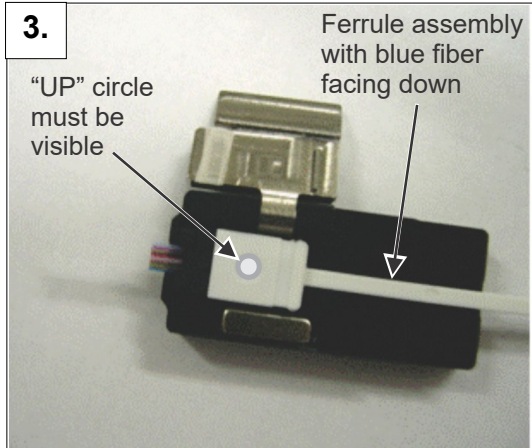


Step 4 – Align Ribbon Fiber and Splice the Connector

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 SM12 or MM12, depending on fiber type to be spliced.
 - If working with 8F, select splice condition SM8 or MM8, depending on fiber type to be spliced.
2. Select the "Lynx MPO" Heater Program for heating the protective sleeve.

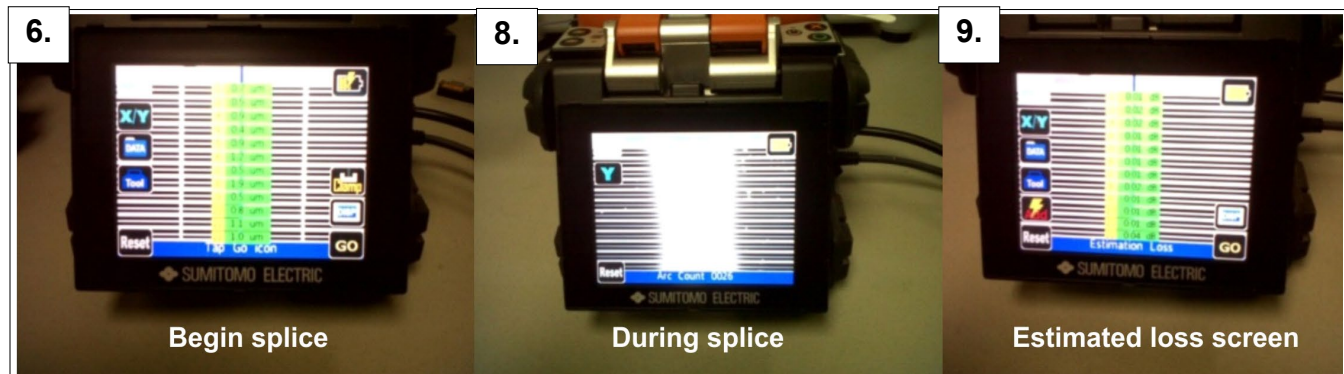


3. Open top door of the splicer.
Get the ferrule sub-assembly from connector kit and place it into the fiberclip holder with the "UP" circle showing on top as shown. Close the door on the clip.
4. **Important:** Place the fiberclip holder with ferrule assembly in the splicer on the **right side**.
Fiberclip holder with ribbon cable assembly is always placed on the **left side**.

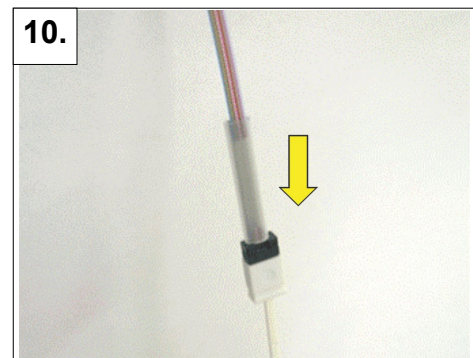


5. Confirm correct splice condition (item 1) is selected. Confirm correct heater program (item 2) is selected.
 6. Close door and splicer automatically aligns the fibers and displays X/Y alignment offset, and machine pauses.
 7. The display tracks splice progress and the alignment result, as shown on 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.
8. 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.

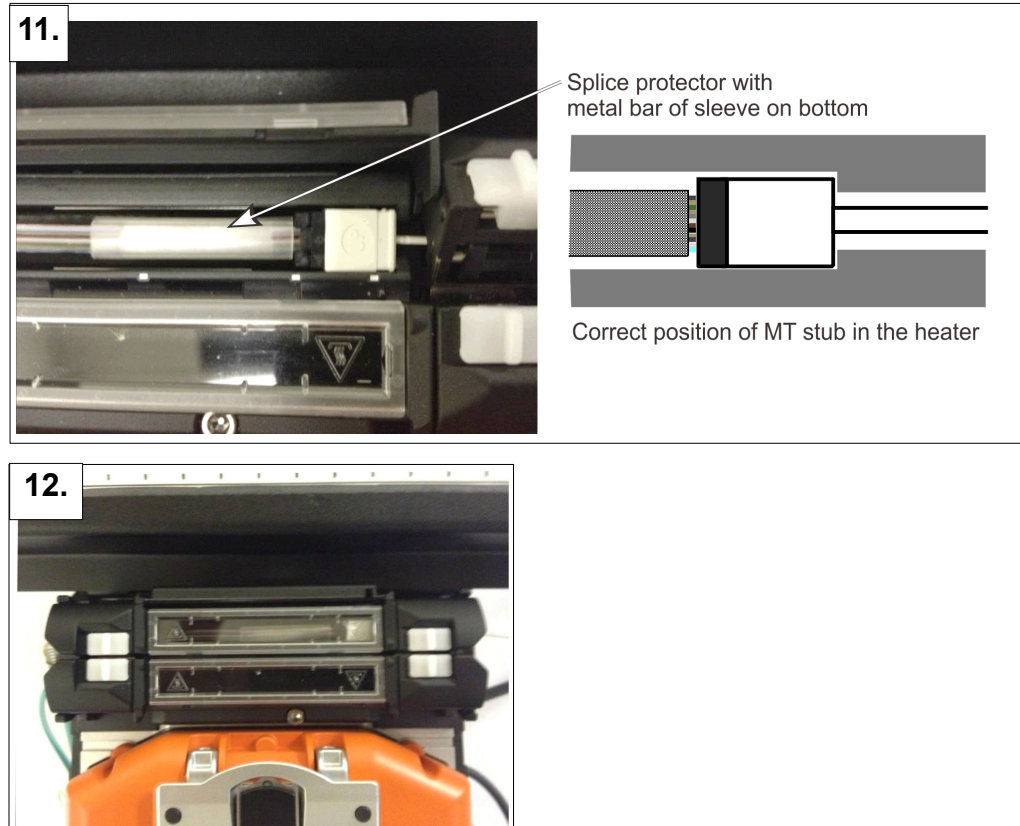
IMPORTANT: Do not pull the fibers during splicing.



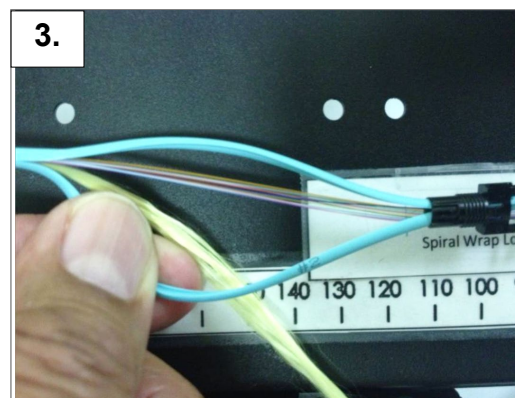
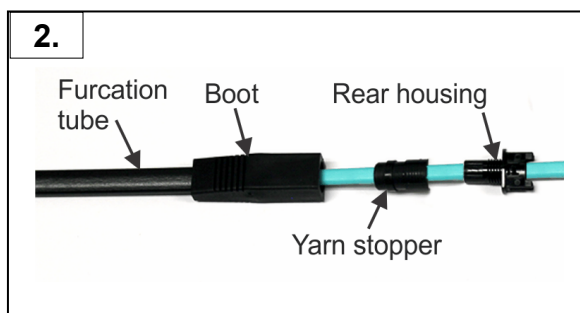
9. After the splice is complete, estimated results will display: green for passing, red for failing. Open the door and remove the assembly from the fiber clamps.
Note: Proceed to next item when splice has passed.
Repeat Steps 1-5 if splice has failed.
10. Pick up the sleeve side, and allow the sleeve to slide down towards the ferrule, making sure that the splice protector is flush against the ferrule.



11. Place the assembly into the oven, with the metal side of the splice protector facing down.
12. 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

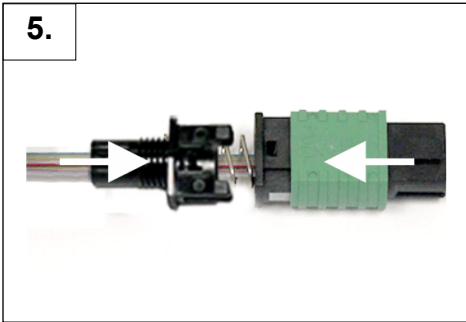
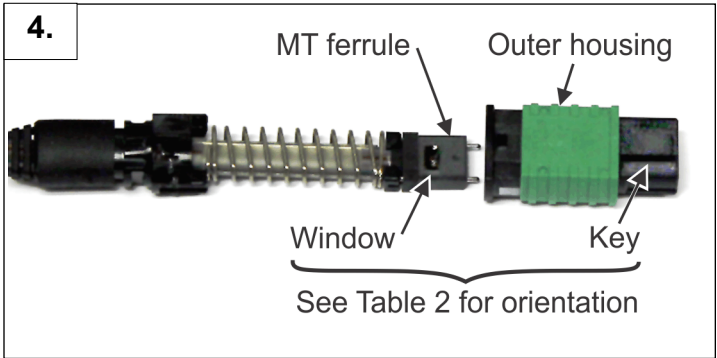


1. Remove the tape or clip holding the cable jacket and the strengthening yarn.
2. Unscrew the rear housing and yarn stopper from the boot assembly.
3. Slide the rear housing up to the ferrule, pulling the jacket and strengthening yarn through the rear housing.



4. Remove the dust cap from the ferrule and install the connector body by pushing it onto the end of the ferrule.

Note: Insure that the orientation of the housing key and the ferule window is appropriate for the the desire Cable Type, Gender (pinning), and Cable End, as noted in Table 2.



5. Snap outer housing onto the end of the rear housing. Slide the outer housing over the ferrule and spring, snap onto the end of the rear housing.

Note: Refer to polarity method B shown in Table 2 below for orientation configuration options.

6. Insert assembled connector into the MPO adapter on the platform and secure the cable jacket with the clamp on the opposite end of the platform. Keep jacket and fibers taut to minimize any slack in the fiber/cable while mounted in the assembly platform.

TABLE 2

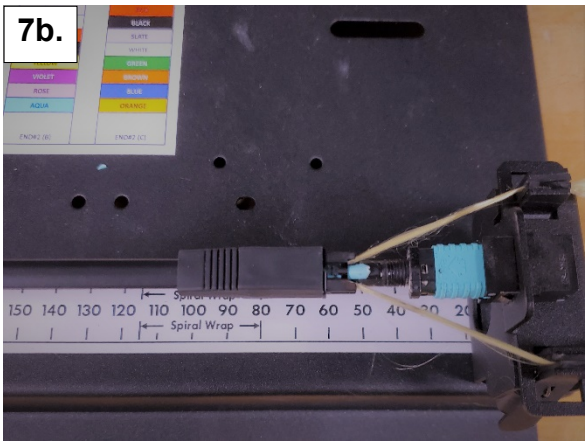
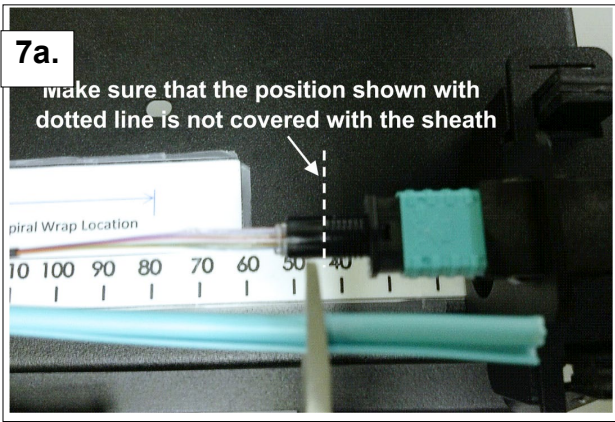
Cable Type	Gender	Ferrule Window Position	Housing	Connector Configuration	
	End A/B	A/B	A/B	End A	End B
Standard Trunks (B-Cords)	Male-Male	Up/Up	Up/Up		
	Female-Male	Down/Up	Up/Up		
	Female-Female	Down/Down	Up/Up		
ULL Trunks (B-Cords)	Male-Male	Down/Down	Up/Up		
	Female-Male	Up/Down	Up/Up		
	Female-Female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

(Table is ontinued on next page)



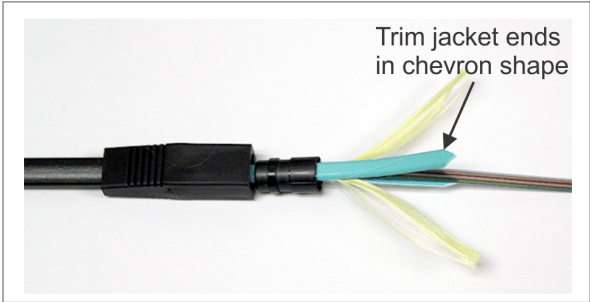
TABLE 2 (Continued)

ULLTrunks (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  FERRULE WINDOW DOWN  HOUSING KEY UP  HOUSING KEY DOWN					



7. a: Trim the jacket up to the slotted edge (dotted line) as shown. Do not trim too short. The jacket should rest in the slotted area of the rear housing.

Note: When trimming the jacket end, cut on a slight angle to form a chevron as shown:



- b: While holding the strengthening yarn and jacket tightly together, evenly distribute the yarn, place the jacket into its slot and slide the boot assembly up against rear housing.

8. Screw jacket and boot until tightly sealed to rear housing.



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