

QWIK MPO Termination Instructions

General

The **CommScope®** QWIK MPO Termination Kit and Connector Kit, with the Splicer Kit (ordered separately) facilitate the proper termination of **CommScope®** QWIK MPO connectors. Field termination of 8F or 12F MPO connectors onto 2mm or 3mm round 8 fiber or 12 fiber loose-tube cordage, respectively, is accomplished by following this method.

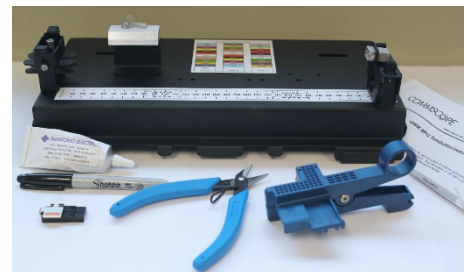
Ordering information is listed below:

Connector Kits		
Material ID	Part No.	Description
760248909	MFC-8MX-5SP-30-AQ, MPO-PC, PINNED	8F, PINNED, OM3/4/5, Aqua, for 3.0 mm round cable, male
760248910	MFC-8MP-5SP-30-AQ, MPO-PC, UNPINNED	8F, UNPINNED, OM3/4/5, Aqua, for 3.0 mm round cable, female
760251302	SFC-12MX-8SP-30-GR, QWIK MPO/APC, PINNED	12F, PINNED, SM-APC, Green, for 3.0 mm round cable
760251301	SFC-12MP-8SP-30-GR, QWIK MPO/APC, UNPINNED	12F, UNPINNED, SM-APC, Green, for 3.0 mm round cable
760251300	MFC-12MX-5SP-30-AQ, QWIK MPO, PINNED	12F, PINNED, OM3/4/5, Aqua, for 3.0 mm round cable
760251299	MFC-12MP-5SP-30-AQ, QWIK MPO, UNPINNED	12F, UNPINNED, OM3/4/5, Aqua, for 3.0 mm round cable
760249953	SFC-12MP-8LL-30-YL, MPO-APC, UNPINNED	12F, UNPINNED, SM-APC, Yellow, for 3.0 mm round cable, female, High Performance
760249956	SFC-12MX-8LL-30-YL, MPO-APC, PINNED	112F, PINNED, SM-APC, Yellow, for 3.0 mm round cable, male, High Performance



Parts List – Connector Kit includes:

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



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

Parts List – Qwik 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)

How to Contact Us

- To find out more about **CommScope**® products, visit us on the web at <http://www.commscope.com/>
- For technical assistance, refer to <http://www.commscope.com/SupportCenter>
- For information on patents, refer to <http://www.cs-pat.com>

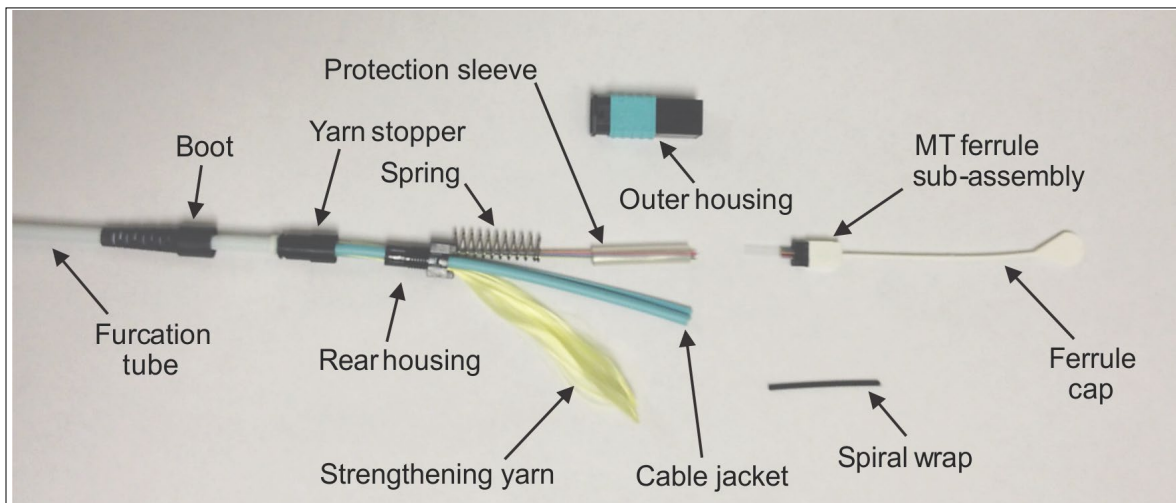
! Important Safety Cautions

- 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.

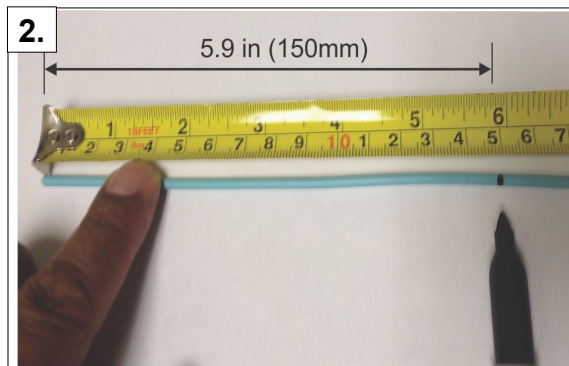
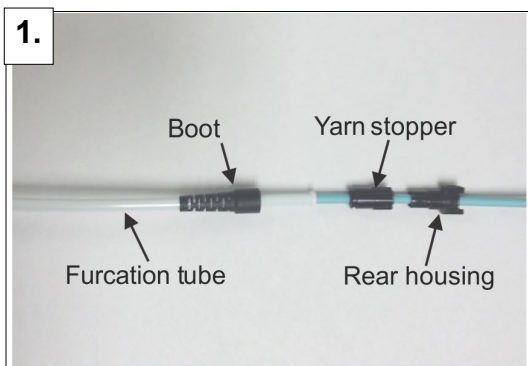
Pre-Termination Set-Up and Preparation Recommendations

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

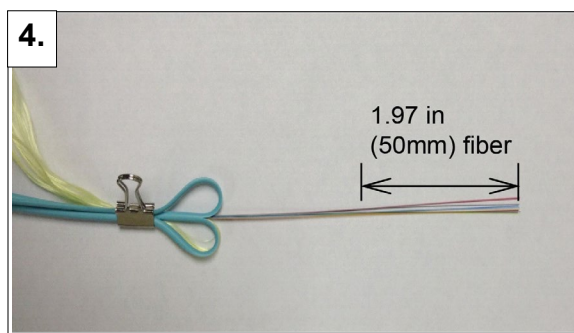
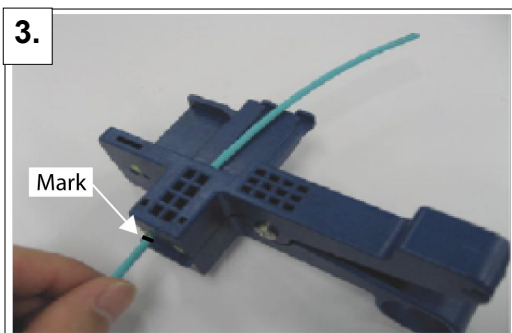


MPO Assembly Parts



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 / furcation tube; yarn stopper; rear housing.
2. To prepare cable for slitting and ribbonizing process, mark cable jacket at 5.9 in (150mm) from cord end as shown.

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

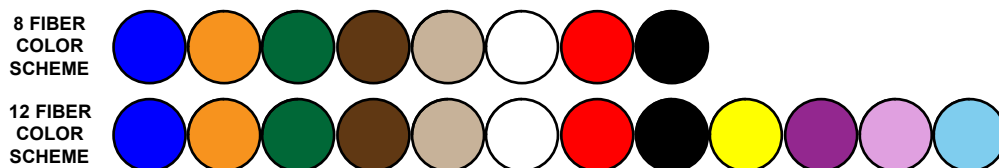


3. Make a slit from the mark to the end of the cable with the jacket remover tool.
4. Prepare to ribbonize 1.97 in (50mm) of fiber. Fold jacket and strengthening yarn back as shown and secure in position with clip or adhesive tape.

Step 2 – Ribbonize the Fiber

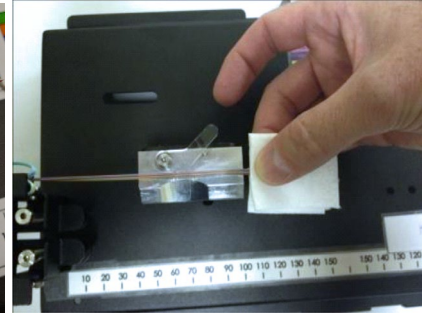
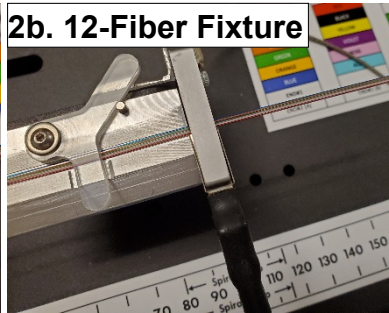
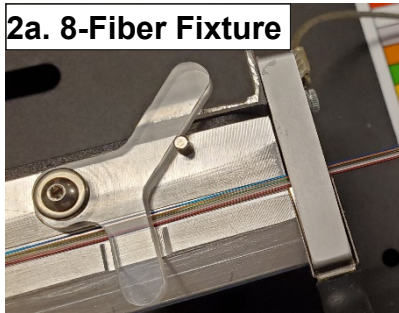
1. Rotate the clear plastic lever arm of the ribbonizer clockwise until it stops. Rotate the flip lever downward. Slide each fiber into position under plastic lever and into flip lever as shown below.
2. Arrange 8 or 12 fibers to create a ribbon using the ribbonizing block and flip lever.

Ribbonize starting with the blue fiber and follow the standard color code (BOGBSWRBYVRA) as indicated in 2a (8F) or 2b (12F). Arrange fibers, inspecting fiber order with a magnifying glass.



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3.

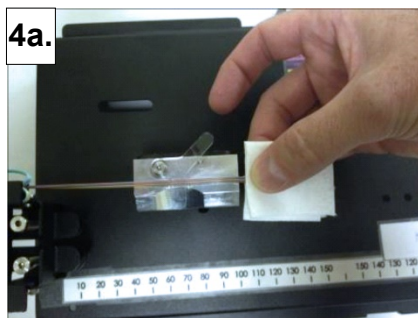


- Use the platform scale to place jacket mark at scale edge ("0"). Insert fiber shim when all 8 or 12 fibers are inserted. Insert fibers into ribbonizer, one at a time using the color guide. Maintain fiber color order. Clean fibers with lab-strength alcohol wipe..

Note: Before proceeding, verify the color order and ensure that no fibers are crossed or out of order. Inspect fiber order with magnifying glass to ensure color coding accuracy.

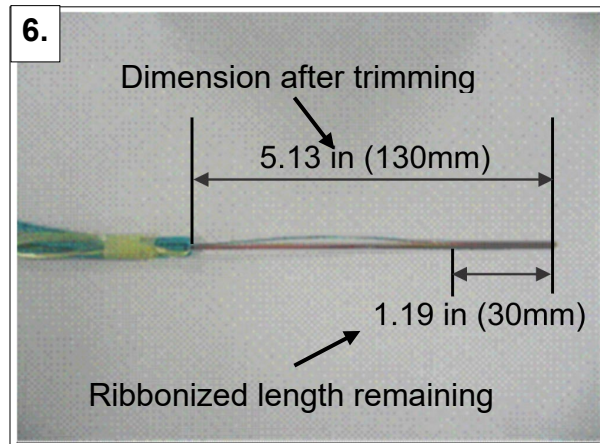
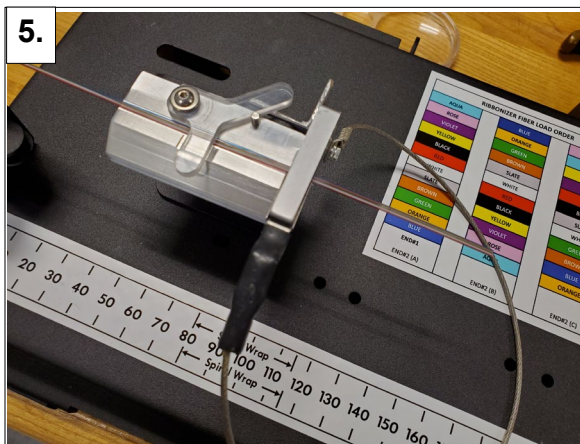
- After all the fibers are in place in the ribbonizer, apply a single line of adhesive on white lint-free wipe, as shown in photo 4A. Sandwich wipe with adhesive around the arranged fibers. While pressing down, wipe adhesive on fibers, spreading adhesive about 1.97 in (50mm) from end as shown. Alternatively, a glue stick can be used by sliding the glue stick along the ribbon from left to right as shown in photo 4B. Spread fiber and glue evenly by pulling fiber between thumb and index finger.

Note: Inspect before and after adhesive is applied to ensure fibers do not cross,



- Let adhesive dry for 45 seconds. Rotate the lever arm counterclockwise, lift flip lever upwards, and release ribbonized fiber from ribbonizer.

Note: Inspect fiber order with magnifying glass.



6. **Measure 5.13 in (130mm) from the jacket mark to end of the fibers and trim the ribbonized fiber end evenly.**

Measure to ensure 1.19 in (30mm) of ribbonized fiber still remains at the end as shown.

Note: Trim only after the adhesive has dried.

Maintaining Proper Polarity for Fiber Splicing of QWIK MPO Connectors

Please note that for termination 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 repairing or terminating 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

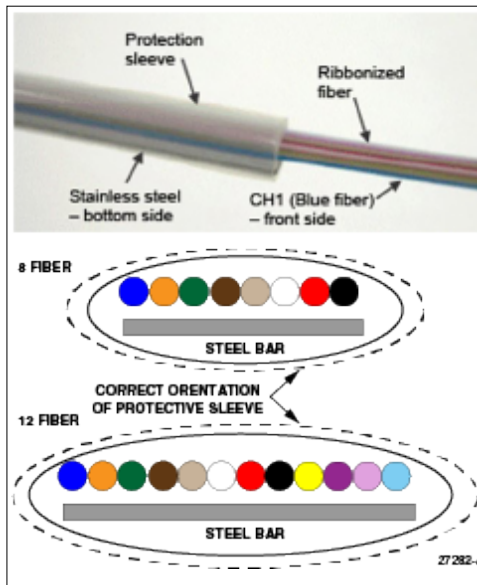
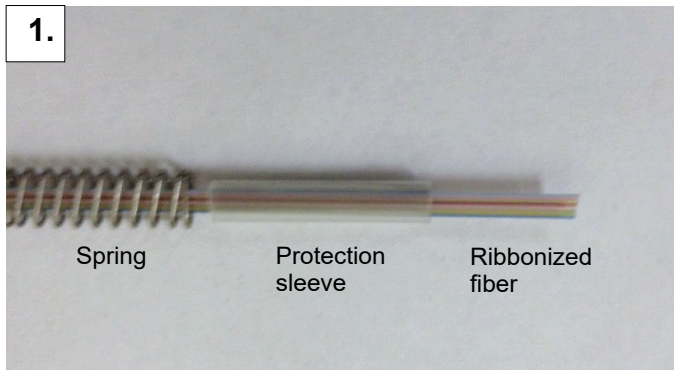
Cable Type (Polarity)	Gender	Blue #1 Fiber Position (when placed in splicer)				Connector Configuration	
	End A/B	End A	Ch	End B	Ch	End A	End B
LL, Standard Trunks (B-Cords)	Male-Male	Bottom	1	Top	8/12		
	Female-Male	Top	1	Top	8/12		
	Female-Female	Top	1	Bottom	8/12		
ULL Trunks (B-Cords)	Male-Male	Top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

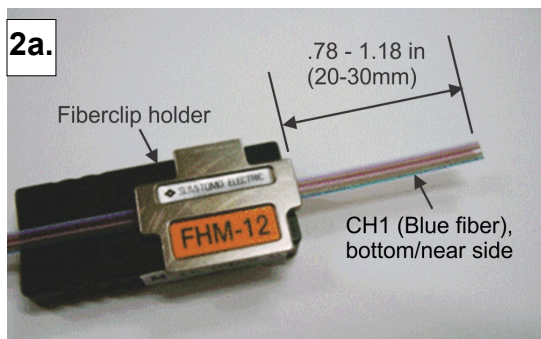
LEGEND

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Step 3 – Strip and Clean the Fiber

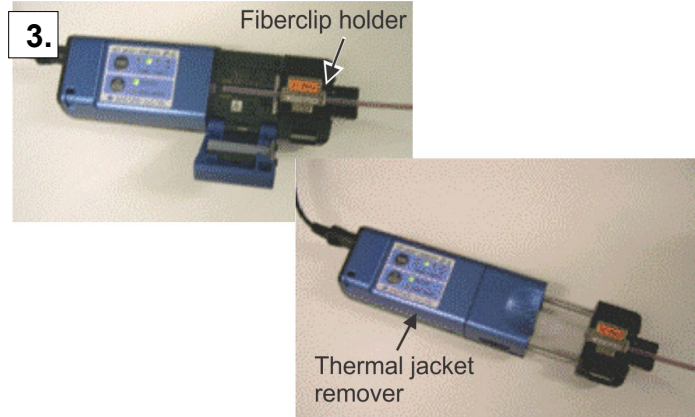


1. After removing the ribbonized fiber from the ribbon tool, slide the spring and the protection sleeve from connector kit onto ribbonized fiber as shown.
Important: Verify correct orientation of the protection sleeve with steel bar on the bottom. The steel bar should be at the bottom side of the ribbon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

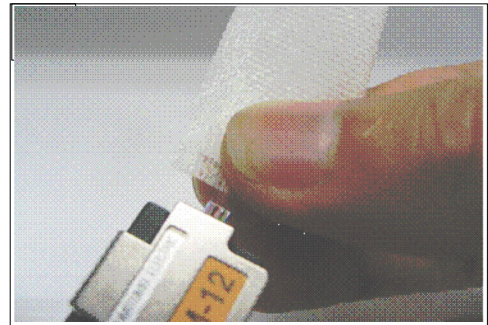


2. Place the fiber cable into the fiberclip holder with .78 –1.18 in (20-30mm) of the ribbonized fiber protruding as shown in 2A (12F) and 2B (8F, use same dimensions as shown in 2A).

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.

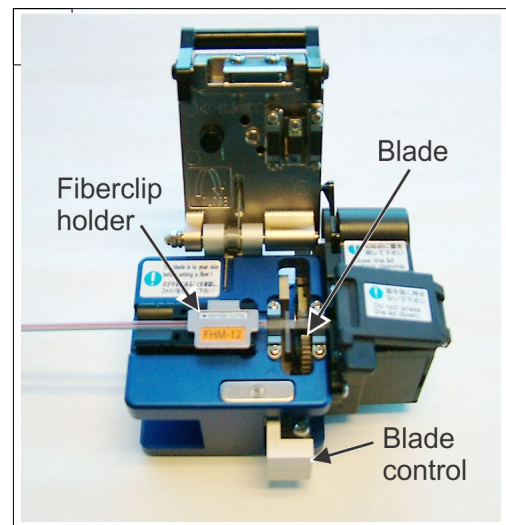


3. Place the fiberclip holder with ribbonized fiber into the thermal jacket remover and close both doors. Allow stripper to reach temperature before stripping. When the heater stops blinking, it is ready to strip.
4. Hold both doors closed and firmly pull sliding section of tool away from tool. Open 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 4 – Cleave the Fiber

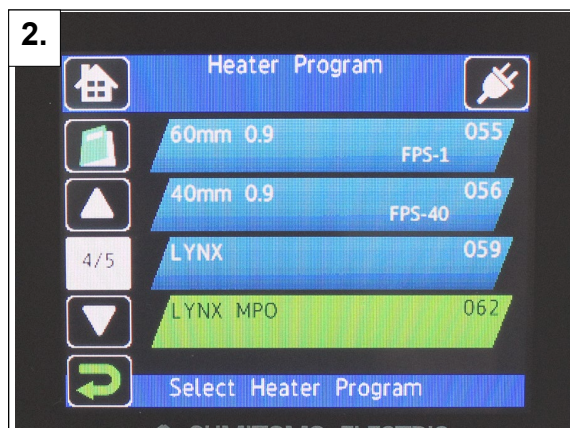
1. Check the fiber cleaver blade to make sure it is in the front loaded, ready position.
2. If not in position, slide blade to front.
3. Place the fiberclip holder with ribbonized fiber into the fiber cleaver as shown and close the top of the fiber cleaver.
4. Slide the blade to the back one time.
5.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



Step 5 – Align Ribbonized Fibers and Splice the Connector

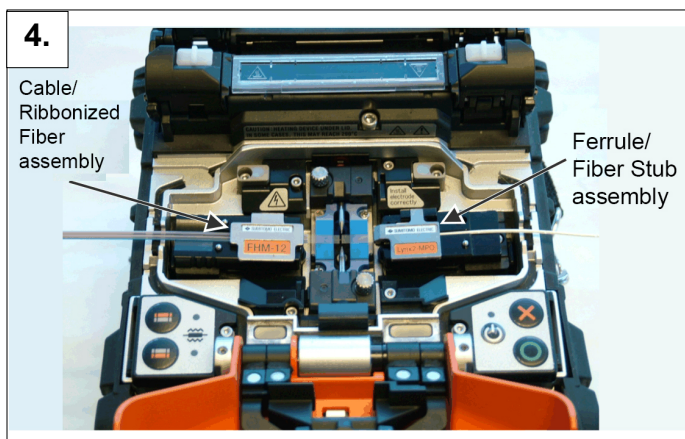
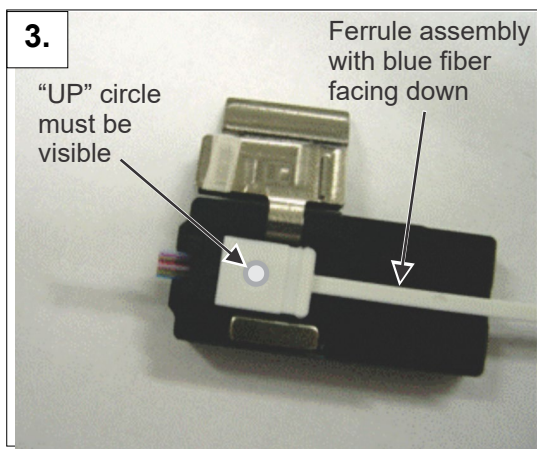
1. Turn on the mass fusion splicer. Splicer display shows several fiber type options. Select the correct fiber type and arc test using proper fibers.
 - If working with 12F, select splice condition of SM12 or MM12, depending on fiber type to be spliced.
 - If working with 8F, select splice condition 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**.

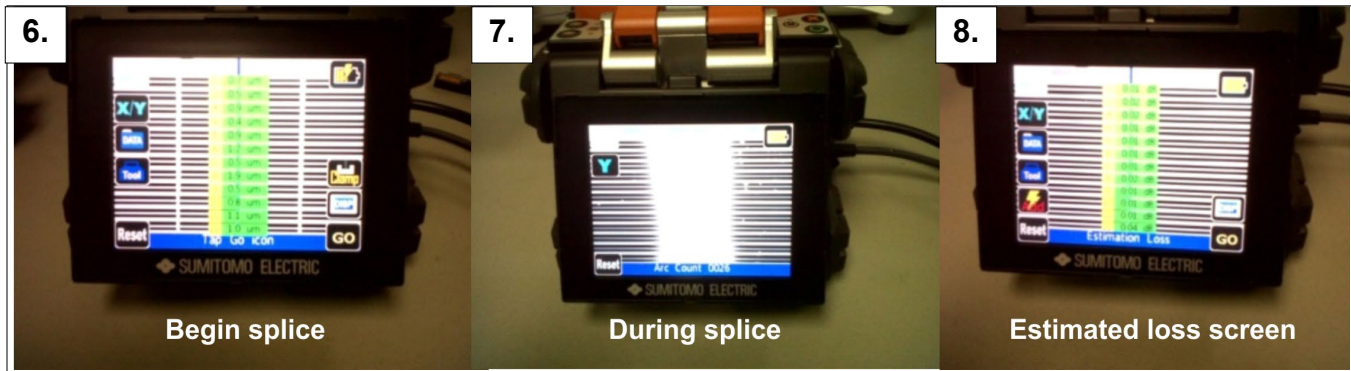


4. Confirm correct splice program (item 1) is selected. Confirm correct heater program (item 2) is selected.
5. Close door and splicer automatically aligns the fibers and displays X/Y alignment offset, and machine pauses.
6. The display tracks splice progress and the alignment result, as shown on the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

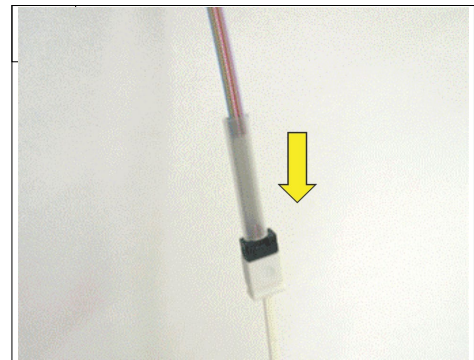


- 8. After the splice is complete, estimated results will display, green for passing, red for failing.

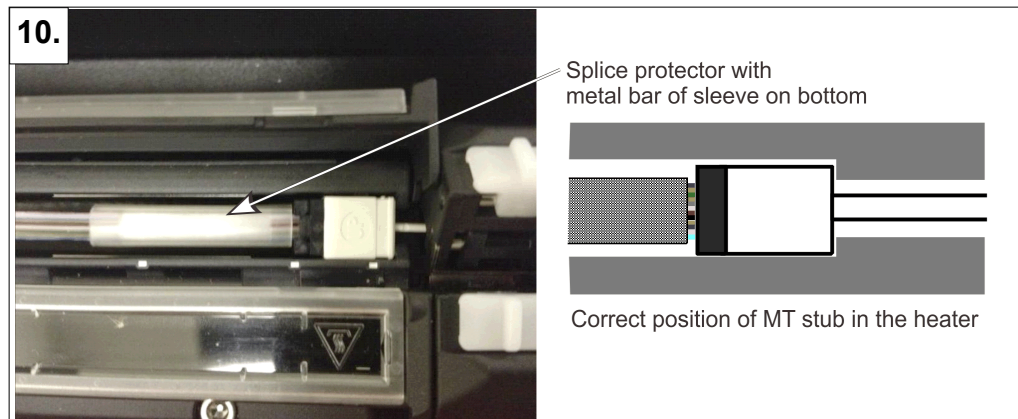
Note: If the splice has failed, the stub must be cut off and the entire procedure repeated starting at Step 1 on Page 3.

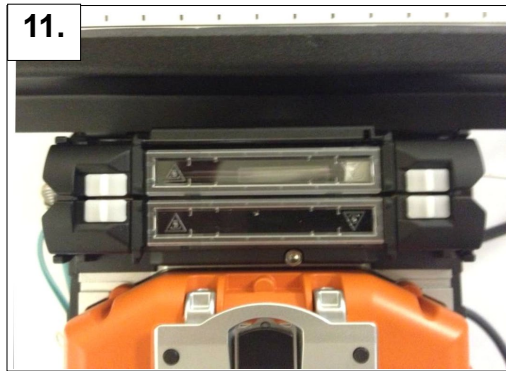
- 9. Open the door and remove the assembly from the fiber clamps.

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.



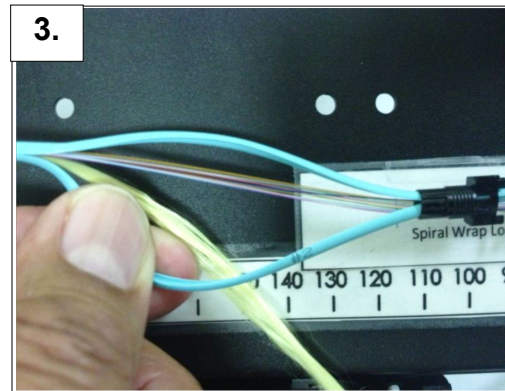
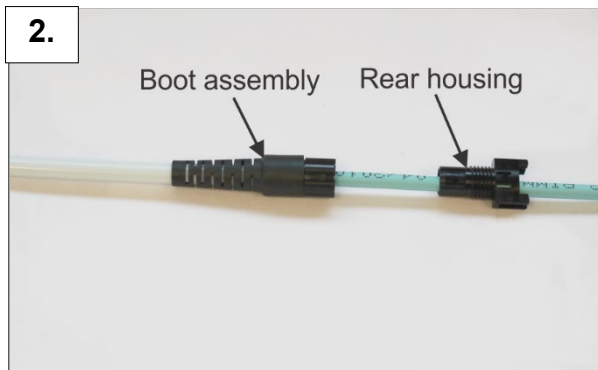
- 10. Pick up the sleeve side, and allow the sleeve to slide down towards the ferrule, making sure that the splice protector is flush against the ferrule.



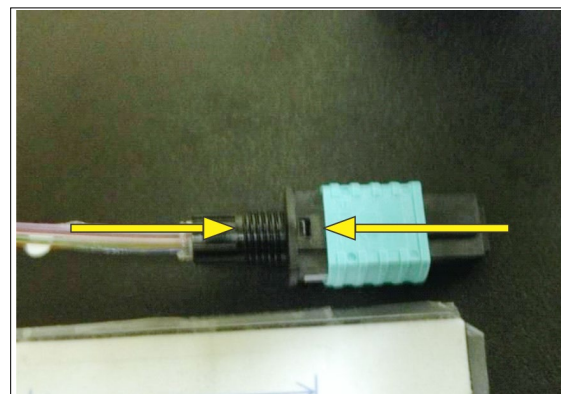
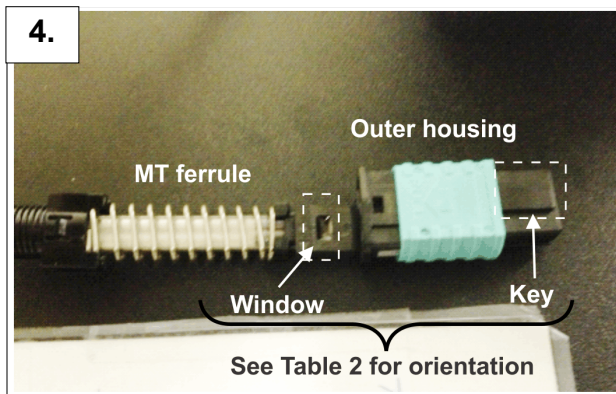


11. When the clamps are closed on the oven, the machine will automatically heat. The oven will beep, indicating that the heating is done and cooling cycle begins.

Step 6 – Assemble the Connector



1. Remove the tape or clip holding the cable jacket and the strengthening yarn.
2. Unscrew the rear housing 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 ferrule window is appropriate for the desired Cable Type, Gender (pinning) and Cable End as noted in Table 2.

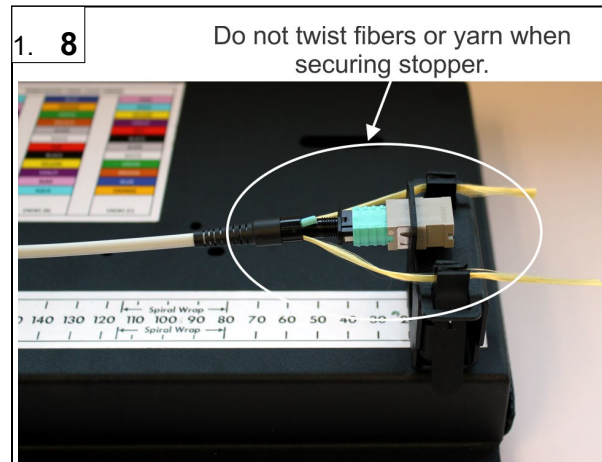
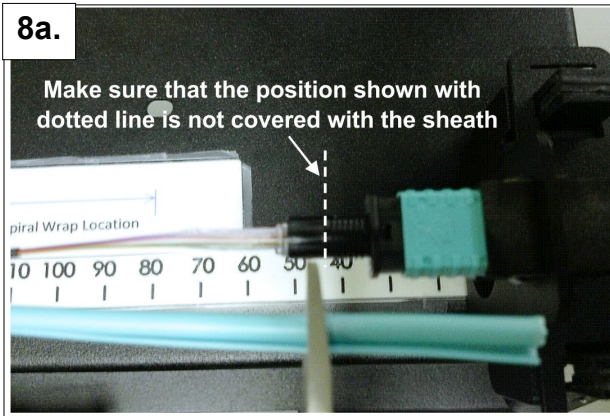
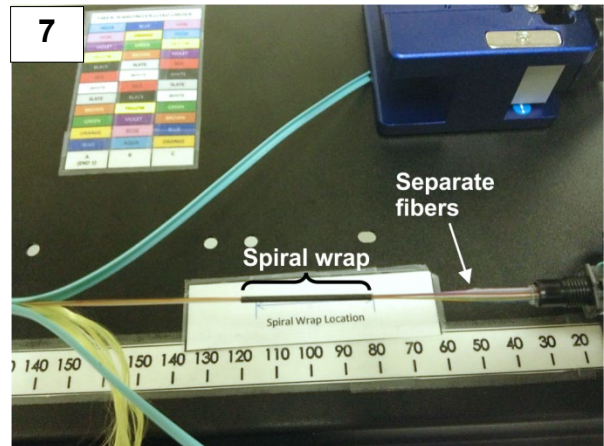
5. Slide the outer housing over the ferrule and spring, and snap onto the end of the rear housing.

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		FERRULE WINDOW UP		HOUSING KEY UP
	BLUE FIBER POSITION		27281-A		FERRULE WINDOW DOWN
					HOUSING KEY DOWN

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.
7. Gently separate the ribbonized fibers behind connector to reduce fiber stiffness. Place spiral wrap on all 8 or 12 fibers as shown, midway between the connector and beginning of jacket split.



8. 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.
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.
9. Trim strengthening yarn, screw jacket and boot until seated.



How to Contact Us

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