QWIK MPO Ribbon Fiber 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 12F MPO connectors onto 12F ribbon fiber is accomplished by following this method.

Ordering information is listed below:

<table>
<thead>
<tr>
<th>Tool</th>
<th>Material ID</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMAPC male, green ribbon fiber</td>
<td>760200022</td>
<td>SFC-12MX-8SP-RN-GR</td>
<td></td>
</tr>
<tr>
<td>SMAPC female, green ribbon fiber</td>
<td>760200048</td>
<td>SFC-12MP-8SP-RN-GR</td>
<td></td>
</tr>
<tr>
<td>MM OM3 male, aqua ribbon fiber</td>
<td>760200063</td>
<td>MFC-12MX-5SP-RN-AQ</td>
<td></td>
</tr>
<tr>
<td>MM OM3 female, aqua ribbon fiber</td>
<td>760200089</td>
<td>MFC-12MP-5SP-RN-AQ</td>
<td></td>
</tr>
</tbody>
</table>

Parts List – Connector Kit includes:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Boot/rear housing</td>
</tr>
<tr>
<td>1</td>
<td>Spring</td>
</tr>
<tr>
<td>1</td>
<td>Ferrule subassembly with cap</td>
</tr>
<tr>
<td>1</td>
<td>Outer housing</td>
</tr>
<tr>
<td>1</td>
<td>Protection sleeve</td>
</tr>
</tbody>
</table>

Parts List – Qwik MPO Termination Kit includes:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Assembly platform with fiber arrangement tool (ribbonizer)</td>
</tr>
<tr>
<td>1</td>
<td>Fiber stub connector holder</td>
</tr>
<tr>
<td>1</td>
<td>Fiber ribbonizing glue</td>
</tr>
<tr>
<td>1</td>
<td>Cordage preparation tool</td>
</tr>
<tr>
<td>1</td>
<td>Magnifying glass</td>
</tr>
<tr>
<td>Quantity</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Yarn shears</td>
</tr>
<tr>
<td>1</td>
<td>Fine tip marker</td>
</tr>
<tr>
<td>1</td>
<td>QWIK MPO termination instruction sheet</td>
</tr>
</tbody>
</table>

Separately Orderable Items

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

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sumitomo Mass Fusion Splicer Type-Q-101-M12 kit (Recommended) or Sumitomo Mass Fusion Splicer Type-66-M12 TuffCat kit</td>
</tr>
</tbody>
</table>

Parts List –Splicer Kit includes:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Q-101-M12 or Type-66 Mass Fusion Splicer</td>
</tr>
<tr>
<td>1</td>
<td>Ribbon fiber cleaver</td>
</tr>
<tr>
<td>1</td>
<td>Heated ribbon stripper</td>
</tr>
<tr>
<td>2</td>
<td>Ribbon 12-fiber holder (left and right side)</td>
</tr>
<tr>
<td>1</td>
<td>Power cord</td>
</tr>
</tbody>
</table>

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 www.commscope.com/
- For technical assistance:
  - Within the United States, contact your local account representative or technical support at 1-800-344-0223. Outside the United States, contact your local account representative or PartnerPRO® Network Partner.
  - Within the United States, report any missing/damaged parts or any other issues to CommScope Customer Claims at 1-866-539-2795 or email to claims@commscope.com. Outside the United States, contact your local account representative or PartnerPRO Network Partner.

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 repair 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 repairs 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

1. To prepare the cable assembly for the splice, remove the boot/ rear housing from the connector kit and insert over the exposed end of the ribbon fiber to be re-terminated.
Maintaining Polarity Method B for Fiber Splicing of QWIK MPO Connectors

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

Important: CommScope trunks follow method B fiber polarity.

1. For CommScope cable assemblies with the connector keys facing up, channel 1 on End A of the cable assembly always goes to channel 12 on End B of cable assembly. Likewise channel 12 on End A goes to channel 1 on End B of cable assembly.

2. This represents method B polarity per TIA 568C3 standards.

3. When repairing end A of a female trunk cable assembly, the blue fiber should always be positioned as channel 1 (top/ far side in the splicer). When repairing end B, the blue fiber should always be positioned as channel 12 (bottom/ near side of the splicer). See Table 1 below.

   Ferrules on female trunks should be inserted into the housings (keys up) with the ferrule window facing down. See Table 2 in Step 5.

Note: Appendices A and B on the last 2 pages of instructions show an example of the method B polarity MPO connector splice.

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

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**Table 1**

<table>
<thead>
<tr>
<th>Cable Type</th>
<th>Gender</th>
<th>Blue Fiber Position (when placed in splicer)</th>
<th>End A</th>
<th>End B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Trunks</td>
<td>Male/Male</td>
<td>Bottom 1 Top 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Trunks</td>
<td>Female/Male</td>
<td>Top 1 Top 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Trunks</td>
<td>Female/Female</td>
<td>Top 1 Bottom 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment Cords</td>
<td>EQ-Female</td>
<td>Bottom 1 Bottom 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment Cords</td>
<td>EQ-Male</td>
<td>Bottom 1 Top 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment Cords</td>
<td>EQ-EQ</td>
<td>Bottom 1 Top 12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Line represents the #1 (blue) fiber in a ribbonized cable
- Ferrule window up
- Ferrule window down
- Equipment cords (EQ) use female ferrules.
- Female ferrule
- Male ferrule

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Step 2 – Strip and Clean the Fiber

1. 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.

2. Place the fiber cable into the fiberclip holder with .98 – 1.18 in (25-30mm) of the ribbon fiber protruding as shown.
   **Note:** Because Commscope cable assemblies follow method B polarity, verify that the ribbon fiber is in the proper orientation for method 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.

3. 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.
   - Select splice condition of SM12 or MM12, 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 ressplice.
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.
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. 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>
<thead>
<tr>
<th>Cable Type</th>
<th>Gender</th>
<th>Ferrule Window Position</th>
<th>Housing Key Position</th>
<th>End A</th>
<th>End B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Trunks</td>
<td>Male/Male</td>
<td>A/B</td>
<td>A/B</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female/Male</td>
<td>Down/UP</td>
<td>UP/UP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female/Female</td>
<td>Down/Down</td>
<td>UP/UP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment Cords</td>
<td>EQ-Female</td>
<td>UP/Down</td>
<td>UP/UP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EQ-Male</td>
<td>UP/UP</td>
<td>UP/UP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EQ-EQ</td>
<td>UP/UP</td>
<td>UP/UP</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2

- Line represents the #1 (blue) fiber in a ribbonized cable.
- Ferrule window up
- Housing key up
- Ferrule window down
- Housing key down

Equipment cords (EQ) use female ferrules.
Appendix A: Ribbon Fiber Splicing with Method B Polarity onto QWIK MPO Connector
(Female-female Trunk Cables)

<table>
<thead>
<tr>
<th>Ferrule/ Ribbon Orientation when placed in Splicer</th>
<th>Ribbon Fiber Color</th>
</tr>
</thead>
</table>
| **End A** | 1. Blue  
2. Orange  
3. Green  
4. Brown  
5. Slate  
6. White  
7. Red  
8. Black  
9. Yellow  
10. Violet  
11. Pink  
12. Aqua |
| **End B** | 1. Aqua  
2. Pink  
3. Violet  
4. Yellow  
5. Black  
6. Red  
7. White  
8. Slate  
9. Brown  
10. Green  
11. Orange  
12. Blue |
### Appendix B: Ferrule / Ribbon Orientation When Inserted into MPO Housing
(Female-female Trunk Cables)

<table>
<thead>
<tr>
<th>Ribbon / Ferrule Orientation when inserted into MPO Housing</th>
<th>Housing Orientation</th>
<th>End View*</th>
<th>Ribbon Fiber Color and Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ribbon fiber / Ferrule stub</td>
<td>Housing key up</td>
<td></td>
<td>1. Blue</td>
</tr>
<tr>
<td>Ferrule window down</td>
<td>End A</td>
<td></td>
<td>2. Orange</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. Green</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4. Brown</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5. Slate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6. White</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7. Red</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8. Black</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9. Yellow</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10. Violet</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>11. Pink</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>12. Aqua</td>
</tr>
</tbody>
</table>

| Ribbon fiber / Ferrule stub | Housing key up       |           | 1. Aqua                       |
| Ferrule window down | End B               |           | 2. Pink                        |
|                    |                     |           | 3. Violet                      |
|                    |                     |           | 4. Yellow                      |
|                    |                     |           | 5. Black                       |
|                    |                     |           | 6. Red                         |
|                    |                     |           | 7. White                       |
|                    |                     |           | 8. Slate                       |
|                    |                     |           | 9. Brown                       |
|                    |                     |           | 10. Green                      |
|                    |                     |           | 11. Orange                     |
|                    |                     |           | 12. Blue                       |

* When assembled into connector housing, channel #1 is always on left when looking into the connector with housing key up.