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## Fusion Splicing Recommendations for OFS Rollable Ribbon Using the Fitel S123 M12 Fusion Splicer

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### 1. General Fusion Splice Machine Settings

1.1 Set the S123 M12 into the SM12 Single Mode program.

1.2 Follow the applicable equipment manufacturer’s guidelines for setup and maintenance of all splice equipment.

1.3 Maintain clean equipment and a clean splice environment being especially wary of windy and/or dusty conditions.

### 2. Fitel S123 M12 Fusion Splice Machines

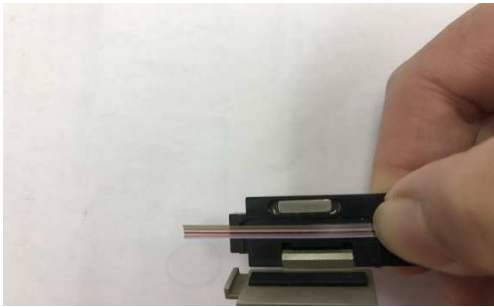




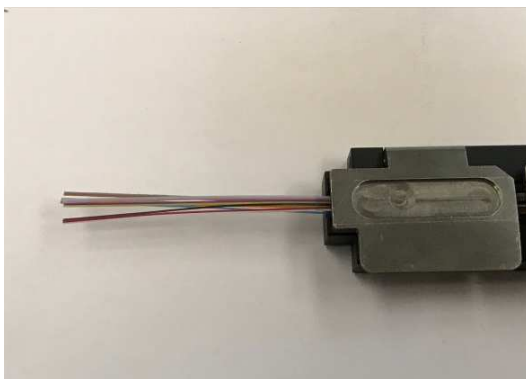
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### 3. Mass Fusion Preparation for OFS Rollable Ribbon

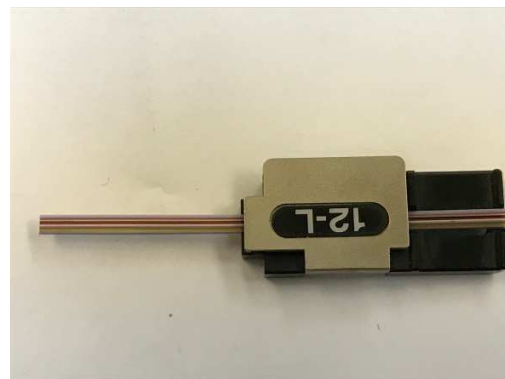
**3.1** Place the ribbon flush with the edge of the ribbon holder. While using your thumb pressure to hold the ribbon flat, slide the ribbon forward to the required length. Insure the fibers are lying flat. The 28 mm length strip length is recommended for controlling the removal of fiber color and coating.



**3.2** Attention is required to ensure the fibers do not stack on top of each other. In addition, ensure the fiber spacing is correct and the edge fibers do not flare out.



Fiber stacking



Fibers are lying flat

**3.3** When the fibers are positioned correctly, close the lid of the holder.



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3.4 Use of a heated stripper (FITEL model no. S218R) is recommended to remove the ribbon matrix and fiber coating. Ensure the stripper blades are in good condition and clean. Set the temperature on the S218R to the high position to remove color coating on fibers.



Fitel S218R heated stripper

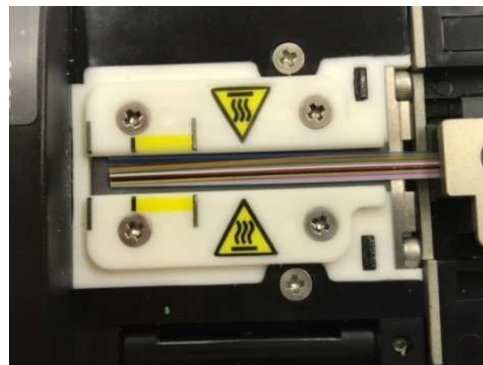


Temperature setting

3.5 Place the holder into the heated stripper. The fiber length should fall between the recommended strip lengths. Be aware of fiber positioning in the heater slot.



Correct fiber positioning



incorrect fiber positioning

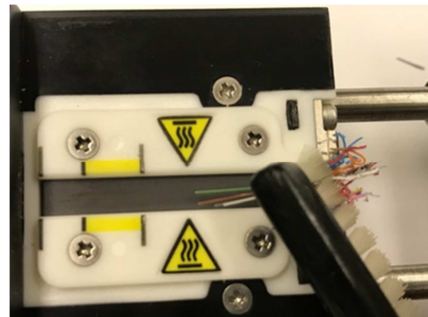


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3.6 Turn on the heated stripper by pressing the green start button. Close the lid on the stripper to start heating process. Apply light pressure to the heated side. The light will remain red until the heat is sufficient. When the light is green allow 5 to 10 seconds of additional heat time. With light pressure applied on movable lid of the stripper, slowly slide to the right. Initial resistance will be felt until the color begins to release from the fiber.



3.7 Open the lid of the heat chamber side on the stripper. The color from the fiber will be present in the stripper. It is possible that some color may remain on the fibers. If the fiber color is not completely removed with cleaning wipe, clean the stripper with a brush and re-strip the ribbon to remove the remaining color.



3.8 Make sure the fibers do not slip during the stripping process. If slippage is observed, trim the ribbon and re-strip.





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3.9 Clean the fibers with alcohol and Kim wipe.

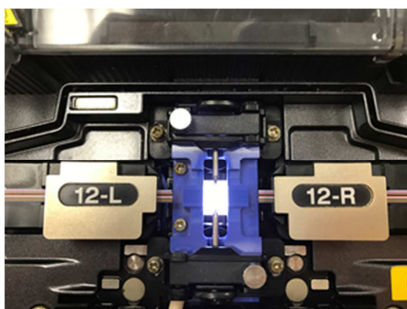


3.10 Cleave the fibers with a mechanical ribbon cleaver. Keep the cleaver in good working condition and rotate the blades as required for the best cleave results and optimal splicing. When placing ribbon into the cleaver, make sure that the fibers aren't overlapping which may cause bad cleaves or broken fibers.



#### Mass Fusion Preparation for OFS Rollable Ribbon

4.1 Place the cleaved fibers and holders in the splicer. Before closing the lid ensure the fibers are sitting correctly in the v-grooves. It may be necessary to adjust the the holders to allow fibers to sit correctly. After closing the lid ensure that all 12 fibers and are sitting in the v-grooves.



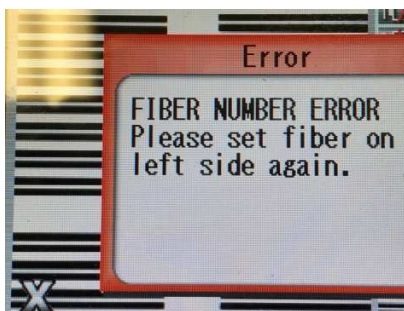
Fibers placed in V-grooves



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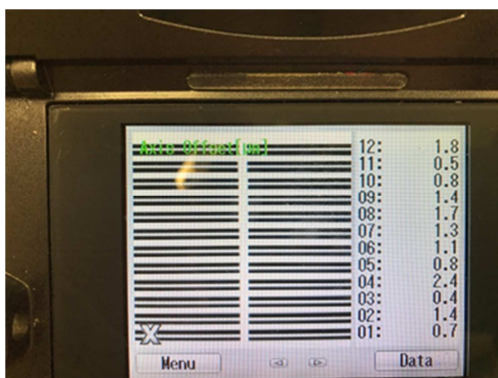
4.2 Press the fusion splice button to begin the splice. After the fibers have moved forward the machine will pre-arc to clean and remove any remaining dust from the fibers.

4.3 Review the data on the screen. If the fibers are sitting incorrect it will show errors. Check to ensure that all 12 fibers are positioned correctly. Reposition the fibers on the machine until all fibers are correctly positioned in the v-grooves.



4.4 Review the data for Apex Offset, Cleave Angle and Gap. Each screen can be seen by pressing the data button. If parameters are out of specification the values will be shown in red.

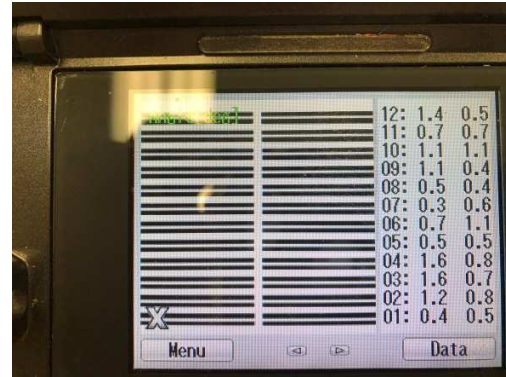
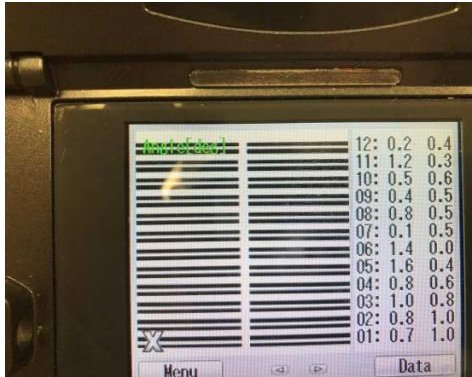
4.5 If apex offset is out of specification, opening and closing the lid to make the fibers move may correct the offset or it may be necessary to adjust the holders back and forth until the offsets are corrected. Apex offset effects splice loss values so lower values are preferred.



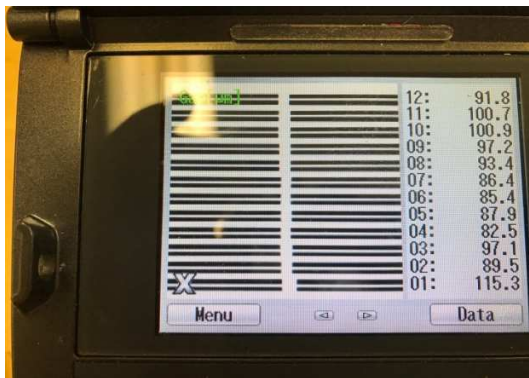
4.6 Cleave angles are shown in degrees for fibers on both sides (left and right). Cleave angles are critical during ribbon splicing. Bad cleave angles may cause air bubbles in splice or high loss. If cleave angles are failing it will be necessary to check condition of cleaver blade and rotate to next position. Typical cleave angle specification is  $\leq 2.0$  degrees.



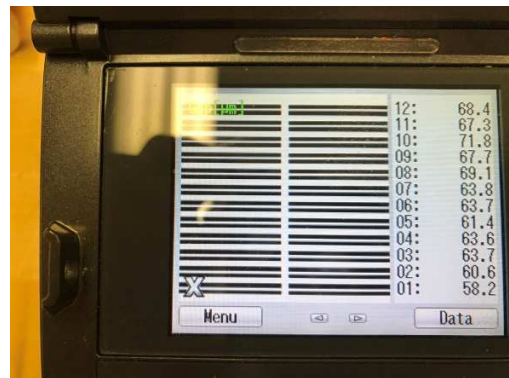
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4.7 Gap is defined as the distance between the two fibers in  $\mu\text{m}$ . Gap is typically easy to see on the screen. If there is too much gap, the splice loss could be high. It may be necessary to re-cleave when the gaps are wide. The gap is due to fibers moving independently during the heated stripping process.



Wide Gap on fiber 1



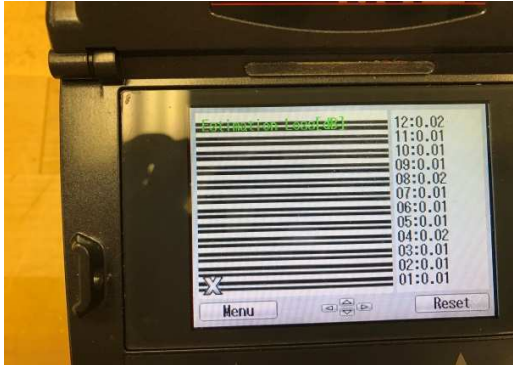
Gap value is similar for all fibers

4.8 When all of the splice parameters are acceptable, press the splice button to complete the splice. After splicing review the screen for defects. Values shown are splice loss estimates and are not actual values. Estimated splice loss will indicate if the splices are good but bi-directional OTDR and power meter measurements are required to confirm actual splice and power loss.



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Installation Practice IP-089  
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Slice loss estimates on screen

***For additional information please contact your sales representative. You can also visit our website at [www.ofsoptics.com](http://www.ofsoptics.com) or call 1-888-FIBER-HELP (1-888-342-3743) from inside the USA or 1-770-798-5555 from outside the USA.***

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