Ortronics Splice-On Connector Certification Program

TABLE OF CONTENTS

PAGE

1.0 Understanding Splicing Technology
1.1 How does a splicer work?

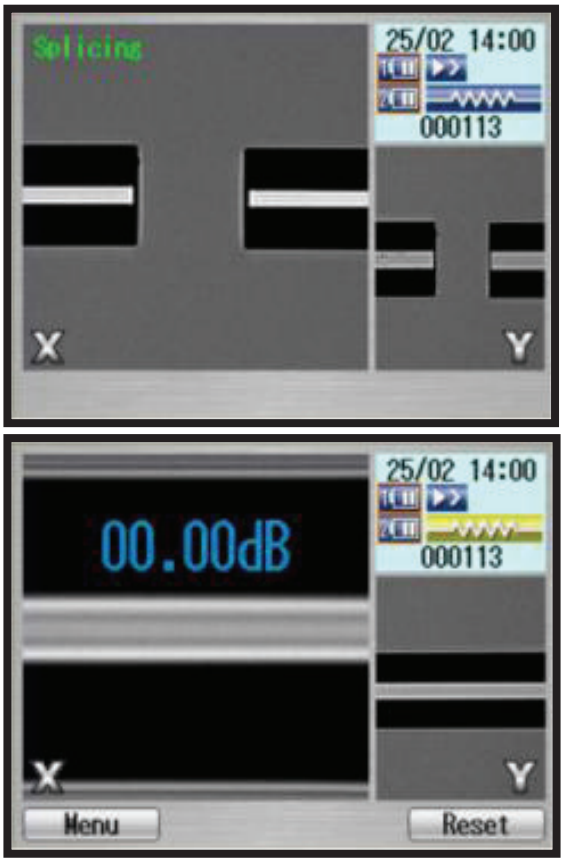
1. A fusion splicer takes precision cleaved fibers and arc welds the pieces of glass together between to metal electrodes.

2. After fibers are loaded into splicer, it will move them forward to a certain position at which splicer discharges an arc to burn off any remaining debris on the fibers.

3. Following the cleaning arc the fibers will be inspected for cleave angle, end-face quality and alignment issues against pre-set criteria. These results are often displayed.

4. With inspection complete splicer arc discharges from electrodes and an estimated loss is displayed on screen.

5. If splice loss exceeds acceptable budget or fibers are detected to have bubble, flat or thin splice point, it is recommended to re-splice fibers.



1.0 Understanding Splicing Technology
1.2 V-Groove(Clad Alignment) vs. Core Alignment

V-Groove Splicers

- Fibers sit in a fixed fiber holder, or removable holder, that is intended to hold a 900µm or 250µm buffer fiber.
- Fibers are lined up "physically" based on the outer diameter of fiber's cladding.
- Use camera(s) for splice operation but only allow for single axis movement of fiber.
- Misalignments often corrected easily by cleaning V-grooves with brush or swab to remove small debris offsetting fibers.
- Typical loss is .02 -0.05dB for Singlemode fibers, 0.03-0.06dB for Multimode fibers.
- Cost is often between $5,000 and $7,900 for new purchase kits.

Core Alignment Splicers

- Also uses either fixed fiber holders or removable fiber holders.
- Fibers viewed by multiple cameras with splicer recognizing core of fiber and aligning fiber cores using movable stages.
- Cameras inspect fiber splice and display estimated loss of splice.
- Misalignments often corrected by the movable stages.
- Typical loss is 0.02dB for both Singlemode and Multimode fibers.
- Cost is often between $8,000 and $15,000 for new purchase kits.

Acceptable Splices

Evaluating a splice can be a tricky process depending on what you use to determine a good or bad splice.

Note: A fusion splicer will provide an estimated splice loss value. This value is only an estimate and should not be used to determine splice quality. The splicer is creating an estimate based on several key factors however, until light passes through the splice. There is no accurate way of determining actual splice loss.

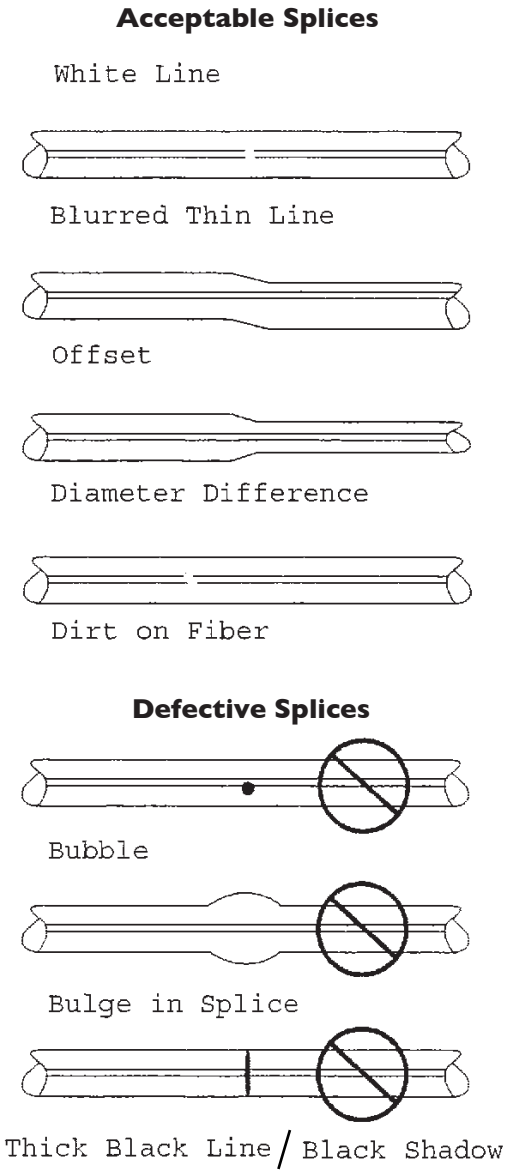
Defective Splices

Defective splices can be caused be several factors:

- Bad Cleave Angles
- Dirty Fiber
- Worn or damaged electrodes
- Contamination
- Over application of cleaning products
- Unstable Power Distribution (no are calibration)
- Unsuitable Splice Mode

**** The only way to determine splice loss is to test the link with an OTDR. ****

Note: The link should be tested in both directions. The attenuation values of the fusion splice should be averaged in order to get an accurate measurement. Fusion splices may show no attenuation in one direction and higher loss in the other.



White lines or faint lines in splices should not be considered automatic failures. Without testing through the splice there is no accurate way to evaluate the splice. Black lines or bubbles in the splice should be replaced.

2.0 Fusion Splicer Basics
2.1 Steps a splicer performs

1. Pre-fuse: Splicer discharges arc to clean off any debris.

2. Angle Measurements: Splicer identifies cleave angles and rejects poor angles that could result in poor splice. Angle thresholds can sometimes be changed in editing menu of splicer.

3. Fiber Alignment: Splicer moves fibers together and cameras verify correct angles, if fibers offset often error message will occur.

4. Splice: Splicer discharges arc melting two fibers together.

5. Tension Test: Designed to confirm the fibers are indeed spliced. If tension test not utilized, if fiber is not broken when removed it passes.

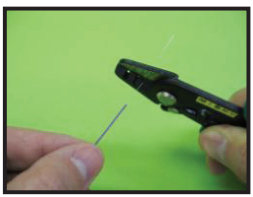
6. Splice Loss Estimation: Some splicers display estimated splice loss based on the visual inspection of the quality of splice by cameras.

7. Splice Sleeves: Heat shrink sleeves installed prior to splice now are moved into position centered over splice area and placed in oven.

8. Ovens: Internal or external ovens shrink protection sleeves onto fiber, these oven can often be adjusted for length of sleeve, temperature and length of cycle.

2.0 Fusion Splicer Basics
2.2 Hands on performing an Arc Check

1. Prepare, clean fibers for cleaving
2. Cleave fibers to correct length (refer to operators manual of splicer)
3. Choose Arc Check or Calibration for splicer menu options
4. With top hood/lid closed discharge arc for check/calibration.
5. Determine if splicer reports arc check/calibration complete/finished.
6. If not satisfactory, proceed to repeat process.




2.0 Fusion Splicer Basics
2.3 Hands on performing fusion splice

1. From splicer menu choose the type of optical fiber to be spliced(Singlemode, Multimode, etc..).

2. Prepare, clean fibers for cleaving (strip about 1 ½" of buffer off fiber)

3. Cleave fibers to correct length (refer to operators manual of splicer)

4. If using removable fiber chucks place buffer/coating at end of holder with bare optical fiber extending, then place in cleaver and cleave.

5. Load fibers into splicer, cleaved fiber should extend centered between the end of chuck/holder stage and the electrodes.

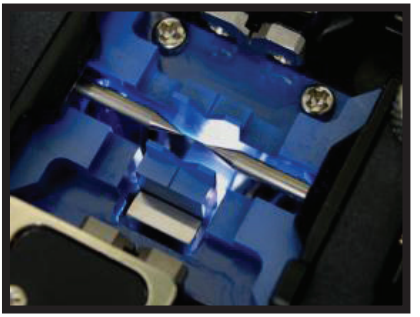
6. Press button to execute splice. Some splicers may be set to pause after angle inspection, user may have to press button again to discharge arc. This pause feature can be disabled.

7. Review splice estimation and/or visual inspection of fiber splice to detect problems such as bubbles, streaks, separation, fat or thin area in splice.

8. Open hood/lid, remove fiber from chucks, slide protection sleeve centered over spliced area and place in oven for heat shrinking onto fiber

9. If not satisfactory, proceed to repeat process.

3.0 Splicing Maintenance
3.1 When and how to replace electrodes



1. Always be sure to review the manufacturers splicer instructional manual for specific instructions, techniques/ instructions will vary.

2. Many splicers have menu choice indicating "Replace Electrodes"

3. It is recommended to replace electrodes after 1000 arc discharges.

4. Using electrodes beyond 1000 arc discharges may result in greater splice loss and reduced splice strength.

5. Locate the electrodes which are often held into place with screw or clamp. Loosen screw and remove from sometimes a V-groove.

6. Clean the new electrodes with alcohol and clean lint free tissue.

7. Place new electrode back into place and tighten clamp or screw.

8. Reinstall cover or any other part that was removed in process.

9. Upon completion it is recommend to execute an arc check for calibration.

3.0 Splicing Maintenance
3.2 How to clean cameras and mirrors

1. Always be sure to review the manufacturers splicer instructional manual for specific instructions, techniques/instructions will vary.

2. If camera lens becomes dirty incorrect view of the fiber position may occur resulting in higher splice loss or overall poor operation.

3. Always turn off splicer prior to cleaning camera lens or mirrors.

4. User may have to remove electrodes, do not hit electrodes during cleaning process, it may damage tip resulting in replacement.

5. Gently clean the camera lenses with alcohol and thin cotton swab, starting at the center of the lens and moving in a circular motion to the outer edge. Remove any excess alcohol with dry swab with same technique.

6. Mirrors should be cleaned with alcohol and clean swabs.

7. After cleaning is complete turn on splicer and make sure no visible streaks or dirt are on the monitor.

8. Cleaning kits with swabs and solutions are available for purchase.

3.0 Splicing Maintenance
3.3 Why and When to perform an Arc Check

1. Always be sure to review the manufacturers splicer instructional manual for specific instructions, techniques/instructions will vary.

2. Atmospheric conditions such as temperature, humidity and pressure are constantly changing which can change the arc temperature.

3. Changes in arc power due to wearing electrodes cannot be corrected automatically.

4. An arc check is often recommended at the start of every day or if changes in splicing environment occurs within the day.

5. Many splicers offer a Arc Calibration choice in menu options.

6. Clean and prepare fibers normally and place in splicer.

7. Choose Arc Check/Calibration and the splicer will move fibers forward to specified setting then discharge arc. After arc, the burn back of the left and right fibers is measured and splicer will indicate operation is complete/finished or will ask for further testing or arc adjustment.

3.0 Splicing Maintenance
3.4 Recalibration

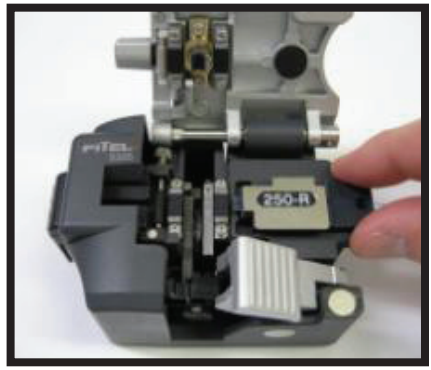
1. Always be sure to review the manufacturers splicer recommendations for recalibration of fusion splicers

2. Cleaning maintenance on splicers including replacement of electrodes, camera/mirror cleaning, overall detailed cleaning, diagnostic testing and fiber splicing evaluation are available from alternate sources other than splicer manufacturer.

3. Repairs are recommended to be returned directly to manufacturer.

4. Often recommended once a year, or depending on overall use.

4.0 Cleavers, Parts and Accessories
4.1 Cleaver Cleaning & Blade Rotation



1. Always be sure to review the manufacturers splicer recommendations for recalibration of fusion splicers

2. Cleaning maintenance is important on cleavers. If cleaver becomes contaminated the quality of cleaves could degrade and result in higher losses.

3. Clean the circular blade and clamp pads with cotton swab soaked in alcohol.

4. If cleaver does not cleave properly, rotate the blade as specified in cleaver operators manual.

5. Often blade life is 1,000 cleavers per blade position so coordinating rotating the blade with replacement of electrodes is a good idea.

6. When rotating the blade it is improtant not to touch the cutting edge of blade.

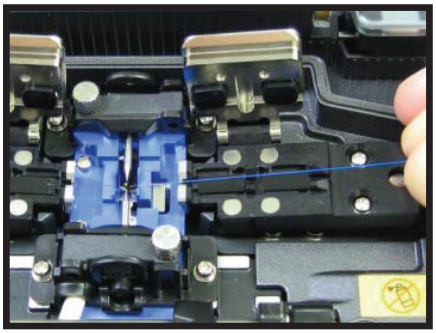
7. Use cotton swab for rotating blade to avoid damage.

8. After complete revolution of blade some cleavers have height adjustments allowing additional rotation. Be sure to see operators manual to replace cleaver blade or for specific cleaver features.

9. Replacement blade averages $100.

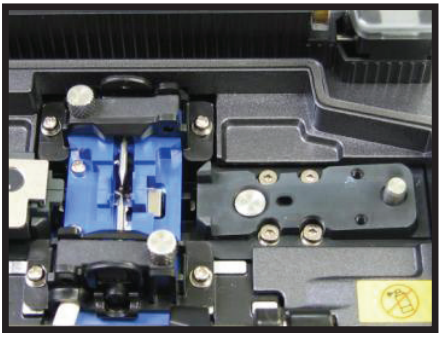
4.0 Cleavers, Parts and Accessories
4.2 Fixed Chucks (Hard) vs. Removable Chucks

Fixed Chucks (Fiber Holders)



- Fibers are cleaved to length, then put into fixed chucks on the splicer.
- Installed on most single fiber splicers in the fiber market.
- Allow for splicing of 250um or 900um in same chuck.
- Cleave lengths tend to be longer for 900um coated fibers.
- Some technicians find them faster for splicing fiber to fiber.
- Popular with Outside Plant cable with 250um coating.

Removable Chucks (Fiber Holders)



- Stripper fiber placed into chuck prior to cleaving.
- Chuck placed into cleaver for consistent cleave lengths
- Different size chucks for 250um or 900um coated fibers.
- Needed for several splice-on connector product solutions.
- Many new splicer models are featuring removable chucks.
- Set of chucks typically cost $250-$500 / pair.

4.0 Cleavers, Parts and Accessories
4.3 Accessories, Batteries, Electrodes, Video Ports

1. Manufacturers offer many accessories catering to splicing environments: Aerial Workstations, Tripods and Shoulder Harnesses.

2. Batteries are often available in different sizes; 80 splices, 160 splices or 240 splice cycles. Charging cords and cigarette plug-ins are extras.

3. Electrodes are sold in pairs and it's often recommended to replace every 1,000 splices. Some splicers will remind users of replacement with arc counter.

4. Many splicers have memory storing up to 2000 splicing results and some manufacturers offer software to download results to PC.

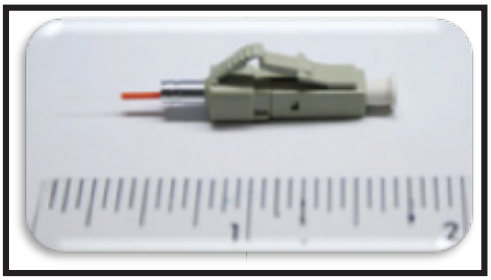
5. Among options on splicers are video ports that can allow users to post screen view to larger monitor for classroom viewing.

6. Besides onboard splice sleeve heater ovens there are external ovens available to increase cycle time waiting for heat shrink sleeves.

Ortronics Splice on Connector (SOC)

5.0 Ortronics Splice on Connector (SOC)
5.1 Components of SOC for Buffered Fibers

- Fiber pigtail less than 2 inches in length, pre-cleaved for direct insertion into special SOC holder and then into a fusion splicer.



Industry's Smallest Pigtail

- Specialty heat shrink protection sleeve 27mm length slides over the spliced area and is centered to adhere to either side of the fiber optic 900µm or 250µm buffer.

- Custom strain relief boot conceals and protects the protection sleeve eliminating the need for splice trays, chips and extra cabinets.

900µm Boot

- Cleave Protector prevents damage to fiber pigtail during shipment.

- Universal Dust Cap with extend handle can aid in transfer from holder to oven.

Note: Fiber Alignment - Fiber cable has a "memory" from being stored on a spool. Some fibers experience more memory than others. The Ortronics SOC's may also contain a "memory" in the form of a curled fiber, this is natural. This "memory" or curled fiber can sometimes create mis alignment or exessive cleave angles. The connector should always be placed in the holder with the curl of the fiber facing down, this will generally flatten out the curl. If the misalignment or high cleave angles occurs using SC or ST connectors, the connector should be rotated inside the holder 90 degrees. By rotating the connectro the technician is repositioning the fiber in the V-Groove of the splicer. This repositioning can often correct the misalignment and high cleave angles. The SC connector can be rotated three times in order to find the proper alignment.

5.0 Ortronics Splice on Connector (SOC)
5.2 Available Styles and Fiber Types

Ortronics offers over 23 connector styles of Splice-On Connectors to accommodate any solution.

Available connector types:

1. ST, SC, FC, LC
2. Singlemode (OS2)
3. Multimode (OM1-62.5µm, OM2 50/125µm, OM3 50/125µm)
4. "New" OM4 10GIG Magenta
5. PC, UPC, AND APC Polishes
6. Keyed secure LC Splice-On Connectors available.

5.0 Ortronics Splice on Connector (SOC)
5.3 Advantages and Misconceptions

Advantages of Ortronics SOC

- Ease of training – no polishing, just need prep and good cleave on incoming cable end.
- Performance – SOC is preformance tested prior to cleaving, factory polish provides superior insertion loss and back reflection.
- Material Cost – Less expensive than mechanical connectors, competitive to standard pigtails without use of splice trays.
- Eliminate points of failure – Fusion splicing provides best connection and performance for termination of connectors in the field.

Eliminating Ortronics SOC Misconceptions

- SOC can not be cut back and re-spliced if error is made - "certification training" will maximize efficiency.
- Splicers often require clean/dry environment free of construction dust and wet weather conditions. *(See Splicer Maintenance)*

5.0 Ortronics Splice on Connector (SOC)
5.4 Tension Test Setup

When installing the Splice on Connector, it is recommended that the fusion splicers Tension Test, or pull test, be shut off during the splicing action. Here is how to shut the Tension Test off on a few of the popular splicer models.

Fitel S123, S153 and S178 Models

1. From the menu screen, select the "Settings."

2. From the settings screen select "Parameters."

3. Scroll down three screens until you find Tension Test, highlight "Tension Test."

4. Press enter and press the up arrow to change from "Active" to "Cancel" and press "Set."

5. Press escape and confirm the action by pressing enter on "Over Write."

AFL 18S, 60S/R, 19S, 70S/R, 12S

Turning off the Tension ("Proof Test") on an AFL splicer.

Note: You must set up the splicer with a specific fiber type (SM or MM).

Note: You cannot use any "Auto" fiber setting.

1. Select Splice Mode from the main menu screen.

2. Scroll to "SM-SM" or "MM-MM", depending on the fiber type you are splicing.

3. Select the splice mode by pressing the Green Arrow.

4. Scroll to the "Edit Mode" and select by pressing the Green Arrow.

5. Scroll to the "Proof Test" and select by pressing the Green Arrow. Turn to "OFF", and press the red ESC key to complete.

Create addition splice modes as needed for fiber types you are splicing by repeating the instructions.

Sumitomo Type39, Type66

1. Turn on the power. After initializing, from “Ready” screen, while holding down “Square” key, press “X” key.

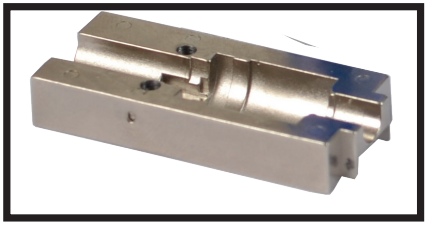
2. Input 0000 for password and press the “Right Arrow” key four times.

3. Splicer will initialize and when “Ready Screen” is displayed again press the “Left Arrow” key (Menu) to enter the administrator menu screen.

4. Scroll to window 6 of 6 and highlight “Postsplice” action.

5. Press “Right Arrow” to select the function and press the “Up Arrow” and select “None-Open”.

6. Press “Right Arrow” to select.



Custom Metal Holder

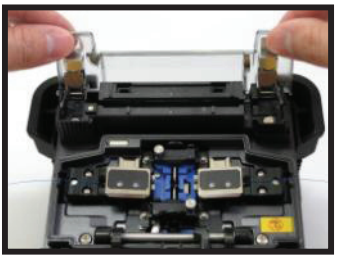
Universal Composite Holder

5.0 Ortronics Splice on Connector (SOC)
5.5 Specialty Ortronics SOC Holders

- The universal holder allows for the flexibility of use within the industries most popular fiber optic fusion splicer's such as the Alcoa Fujikura (AFL), Sumitomo Electric and Furukawa (Fitel/OFS).

- Custom Metal holders have alignment pin holes machined drilled to custom fit fusion splicers with removable holders. Expanding compatibility to other splicer manufacturers.

Custom external SOC Heat Oven



Internal Heat Oven on Splicer

5.0 Splice on Connector (SOC)
5.6 Protection splice sleeve ovens

- Some internal splicer ovens will accommodate the LC and SC versions of SOC.

- Both FC and ST style connectors require the use of Ortronics external SOC oven due to the width of the outer body, they will not fit into internal splicer ovens.

- Ortronics external SOC oven will accommodate all connector styles. The SOC holder will fit along side the heater block to support fiber during cycle.

- Ortronics external SOC oven features rechargble batteries and LED button indicates when heating cycle is complete.

INSTALLATION INSTRUCTIONS FOR THE SOC

Note: This Splice-On Connector is compatible with 900µm optical fiber.

The Splice-On Connector Contains the Following Items:

A. (1) Universal dust cap with extension handle
B. (1) Outer housing (SC style only)
C. (1) Splice-On Connector (SOC) pigtail with cleave protector and fiber alignment sleeve
D. (1) 27mm mini splice sleeve
E. (1) Universal strain relief boot
F. (1) Fiber positioning tool (Not Pictured)

Note: If fiber alignment sleeve has become separated from the SOC body, do not attempt to re-install, discard it and continue with cable preparation (SC and LC styles only.) .

SPLICER PREPARATION

Disable tension/pull test function. *(See manufacturer instructions if necessary.)* **When splicing SOC this function, unlike fiber to fiber splicing, pulls on the fiber epoxy inside the connector. Tension placed on connector fiber/ epoxy can cause fiber breakage.**

CABLE PREPARATION

Slide the 900µm strain relief boot and then the 27mm mini splice sleeve onto the 900µm field fiber. Strip, clean, and cleave the field fiber to a 10mm cleave length per standard fiber optic stripping practices. Insert the cleaved fiber into the left-hand fiber holder of the fusion splicer. Make sure to butt the 900µm buffer up to the edge of the fiber holder. This will ensure that the mini splice sleeve will adhere to both sides of the 900µm buffer.

INSTALLATION

1. Remove the factory dust cap from the connector.
Note: The extended dust cap may be placed on at this time, if so desired, to aid in the transfer of the connector. DO NOT LEAVE THE EXTENDED DUST CAP ON THE CONNECTOR, INSIDE THE FUSION SPLICE MACHINE.

2. While holding the connector firmly, pull down on the cleave protector to remove it from the connector (Figure 1). Note: Do not touch the cleaved fiber stub with the protector or your fingers as this may damage the factory cleave.

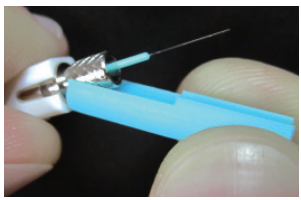


Figure 1

3. Insert the connector into the Universal Splice-On Connector Holder so that the back end of the connector is flush with the end of the holder (Figures 2-5). Once aligned properly, the connector should fit freely into the holder with no force required. Note: Cleaning Connectors - Splice on Connector fibers come pre-cleaned and pre-cleaved. The cleaved portion of the Splice on Connector shouldn't be cleaned. By attempting to clean the pre-cleaved fiber the user risks further contamination or damaging the cleave. Contamination is the most common cause of poor splice quality.

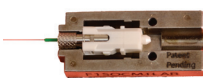


Figure 2 (SC)

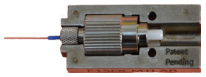


Figure 3 (FC)

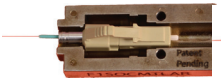


Figure 4 (LC)

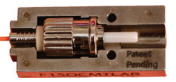


Figure 5 (ST)

4. Insert the holder into the right hand side of the splicer (Figure 6), being sure that the fiber stub lays properly into the v-groove block of the splicer (Figure 7). You may use the fiber positioning tool to help align the fiber in the v-groove.

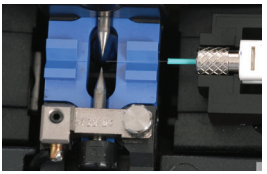


Figure 6

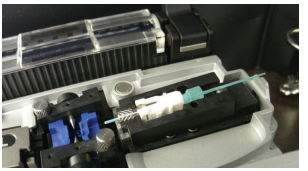


Figure 7 (Note: Remove the Extended Dust Cap Before Initiating the Fusion Splice

5. Perform the fusion splice as described in the fusion splicer manufacturer's instructions. Note: Prefuse operations - Fusion splicers have a very specific set of procedures that must be complete before the fiber is ready to splice properly. One of the last steps in the splice process is called the "Prefuse." The Prefuse is a very important stage which attempts to remove dust or contaminants. During the Prefuse stage the splicer will create a static discharge which is designed to remove small amounts of contamiants such as dust or dirt. If a technician sees a splice on connector with small amounts of contaminants, the splicer should be allowed to complete the Prefuse stage before the connector is considered unacceptable. If the splicer will not splice the connector then it should be considered unacceptable.

6. Once the fusion splicing cycle is completed, remove the connector from the splicer and slide the splice protection sleeve up to cover the splice. An equal amount of the sleeve should cover the 900µm buffer on either side of the splice. Note: The extended cap may be put in place now to aid in the transfer to the splice sleeve oven.

7. Transfer the splice to the splice sleeve heat oven. Verify the position of the splice sleeve and initiate the heat cycle. Note: The Splice-On Connector Sleeve Oven is specifically designed for use with the Splice-On Connector. Re-check the correct position of the protection sleeve on the fiber, then lower the oven shield. Press the "START" button to run the shrink cycle (Figure 8).

Figure 8: Connector in oven

8. Verify that the splice protection sleeve is completely shrunk onto the fiber to avoid the end catching on the strain relief boot. If the splice sleeve is not completely shrunk, then place it back in the sleeve oven and initiate a second heat cycle. Note: Make sure that the splice sleeve has fully cooled before sliding the strain relief boot into place. For SC connectors, install the outer housing onto the connector, being sure to align the angled corners of the inner housing with those of the outer housing (Figure 9).

Figure 9

Compatibility Chart:

This chart is for reference of compatibility of a variety of splicers and styles of SOC.

Manufacturer	AFL		Sumitomo	FITEL
Model	FSM-11 (S/M) FSM-50R FSM-12S FSM-19S	FSM-18 (S/R) FSM-17 (S/R) FSM-60 (S/R) FSM-70 (S/R)	Type-25e (U/S/M) Type-39, 46, 65, 66 Q101-CA (Quantum)	S122 (A/C/M) S121 (A/M), S123 (C/M) S153, S178 (A)
Compatible SOC's	All versions (900µm)	SC, LC and ST ONLY	All versions (900µm)	All versions (900µm)

Manufacturer	Greenlee	INNO	FIS
Model	910FS	IFS10 IFS15	CA3
Compatible SOC's	All versions (900µm)	All versions (900µm)	All versions (900µm)

7.0 Fusion Splicer Troubleshooting

1. **Motor Overrun:**

    - Fiber is set too far back and does not reach the splice point.
    - Fiber is not set correctly into bottom of the V-groove.
    - Fiber cleave length is too short.

2. **Large Cleave Angle:**

    - Bad Fiber End Face or Cleave angle it set too low.

3. **Fiber Offset:**

    - Dust or Dirt is on the V-Groove or on the Fiber Clamp, cleaning required.
    - Dust or Dirt on optical fiber surface, cleaning required.

4. **Q-Tipping:**

    - Fibers were not close enough during splice for arc discharge to melt fibers together.

5. **Fan Out Kits:**

    - Often fiber will piston within the fan out tubing prevents fibers from splicing. The fiber fan out tubing moves but the optical fiber itself does not.

6. **High Estimated Loss:**

    - Insufficient fiber cleaning, Bad cleave angle, Dust or dirt on the camera lens, faulty electrodes, splice mode is unsuitable for optical fibers in splicer, or inadequate arc power being discharged.

ORTRONICS SPLICE-ON CONNECTOR

FEATURES
- Return loss: APC >60dB, UPC >55dB and MM 35dB (typical)
- 23 styles available: SM, MM, 10Gig
- Universal holders work with AFL, Sumitomo, and Fitel fusion splicers
- 900um boot protects splice for easy cable management
- Includes color coded 900um buffer, boot, cleave protector and extended dust cap for easy fiber indentification

Using a factory terminated and pre-polished connector the Splice-On Connector provides a connection meeting or exceeding industry standards for loss and back reflection. The Splice-On Conenctor is provided with a factory cleaved 900um fiber stub to ensure easy of use and optimal performance. The unique 900um boot allows the entire splice to be concealed and protected, allowing for a simpler cable management system within the rack or enclosure. To terminate, just remove the cleave protector, place the connector into the holder, place the holder in the splicer, prepload the field fiber and the is ready to be terminated.

All ferrules are made of zirconia. Fusion splice sleeve and connector boot are included with each SOC.

Note: The Splice-On Connector requires the use of a fusion splicer with removeable fiber holders.

SPECIFICATIONS

Connector Type	SM/APC	SM/UPC	MM/62.5um	MM/50um	MM/OM3	MM/OM4
Insertion Loss (max)	0.3dB		0.4dB			
Optical Return Loss	>65dB	>55dB	35dB (typical)			
Ferrule Type	All Zirconica Pre-Polished Ferrules					
Color Code	Green	White	Beige	Black	Aqua	Magenta
Operating Temperature	-40 to +85 degrees C					
Industry Standards	RoHS Compliant, Telcordia GR-326-CORE Compliant					

COMPATIBLE FUSION SPLICERS

Manufac-turer	Splicer Model	Metal Holder Compatability	Metal Holder Part Number	Universal Holder Compatability
AFL/Fujikura	FSM-11(S/M)	All Versions	FCSPLFXTAR	All Versions
	FSM-12S		FCSPLFXTA	N/A
	FSM-17S	SC & LC Only		
	FSM-18S	SC, LC & ST Only		
	FSM- 19S			
	FSM-60(S/R)			
	FSM-70(S/R)			
Furukawa/Fitel	S122 (A/C/M)	All Versions	FCSPLFXTF	All Versions
	S121 (A/M)			
	S123 (C/M)			
	S153			
	S178A			
Sumitomo	Type-25e (U/S/M)	All Versions	FCSPLFXTS	All Versions
	Type-39FH			N/A
	Type-46			
	Type-65			
	Type-66			
	Quantum (Q101-CA)			

Metal Injection-Molded SOC Holder

Dimensions (Both Versions):
L x W x H
1.466" x 0.633" x 0.248"
37.2mm x 16.1mm x 6.3mm

ABS Plastic Injection-Molded SOC Holder

SOC HOLDER COMPATABILITY CHART

Metal Injection-Molded SOC Holder

ABS Plastic Injection-Molded SOC Holder

Dimensions (Both Versions): 1.466" x 0.633" x 0.248"
L x W x H 37.2mm x 16.1mm x 6.3mm

Manufacturer	Splicer Model	SOC Cordage Size Compatability	Metal Holder Compatability	Metal Holder Part Number	Universal Holder Compatability
AFL/Fujikura	FSM-11(S/M)	900µm	All Versions	FCSPLFXTAR	All Versions
	FSM-12S			FCSPLFXTA	
	FSM-17S		SC & LC Only		N/A
	FSM-18S		SC, LC & ST Only		
	FSM-19S				
	FSM-60(S/R)				
	FSM-70(S/R)				
Furukawa/Fitel	S122 (A/C/M)	900µm	All Versions	FCSPLFXTF	All Versions
	S121 (A/M)				
	S123 (C/M)				
	S153				
	S178A				
Sumitomo	Type-25e (U/S/M)	900µm	All Versions	FCSPLFXTS	All Versions
	Type-39FH				N/A
	Type-46				All Versions
	Type-66				N/A
	Quantum (Q101-CA)				

SOC Accessories

AFL/Fujikura Accessories

S014549	900um Tight Buffer Holders	**For FSM-18S/19S and FSM-60S/70S**
S014570	900um Loose Tube Sheath Clamps	

Furukawa/Fitel Accessories

S712S900	900um Fiber Holders	**For S123, S153, S178**

Notes for SOC Holder

- There is some play in the fit of the holder. This allows for minor adjustments when fiber load or fiber feed errors occur.
- Ortronics recommends the use of the SOC oven for all 900um SOC applications.
- Ortronics recommends the use of the metal holder for ALL SOC applications.

SOC TIPS AND TRICKS GUIDE

GENERAL TIPS

- There is some play in the fit of the SOC holder. This allows for minor adjustments when "Fiber Load" or "Fiber Feed" errors occur while splicing
- Always perform an Arc Check prior to starting an SOC project.
- Occaisionally, the fiber coming from the back of the SOC may be shifted to one side. If this occurs, gently center the fiber using your fingers or the provided Fiber Alignment Tool, being careful not to touch the cleaved end of the fiber.
- Always remove the dust cap from the SOC ferrule before insertion into the fusion splicer.
- Always use the SOC Splice Sleeve Oven (Ortronics p/n FCSPLHSOVEN) to shrink the splice sleeve on a 900um SOC.

SPLICER-SPECIFIC TIPS AND TRICKS

Manufacturer	Splicer Model	Tips and Tricks
AFL/ Fujikura	FSM-18S	• To assist in fiber positioning problems due to fiber curl, release the right-side v-groove clamp from the hood to hold fiber in place during hood closure.
	FSM-60(S/R)	
Sumitomo	Type-39FH	• Turn off the tension test in order to prevent damaging the finished splice. • Turn off the arc pause to splice correctly.
	Type-66	• To assist in fiber positioning problems due to fiber curl, release the right-side v-groove clamp from the hood to hold fiber in place during hood closure.

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