

# CraftSmart® Splice-On Connector (SOC)

*Installation Manual*



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## Installation Manual

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## Application

Fiber assemblies are used in a variety of carrier networks and private network environments. In some applications, the fiber assembly cannot be deployed with factory terminated connectors. In other instances, there may be a need for quick fiber restoration in the field. CraftSmart Splice-On Connectors are designed for these applications.

## Description

In situations where a factory terminated fiber assembly isn't possible, the CraftSmart Splice-On Connector provides the solution for consistent performance. Common applications include field restoration of a broken fiber or when the customer is using media that is expensive and/or difficult to store. In these cases, the customer prefers to cut the media to exact length for his purposes and then use the CraftSmart Splice-On Connector. The Clearfield® advantage is that the protection splice sleeve is directly under the boot, making the routing of the terminated end easier.



The CraftSmart Splice-On Connector is available in all industry standard connectors, including SC/UPC, SC/APC and LC/UPC. The Splice-On Connector meets, and even exceeds industry standard insertion and return loss. Pre-polished and pre cleaved, the CraftSmart Splice-On Connector is packaged with all required connector components needed to splice a connector

## Technical Specifications

CraftSmart Splice-On Connector (SOC)					
Mode Type	Singlemode/APC	Singlemode/UPC	Multimode/62.5µm	Multimode/50µm	Multimode/LO
Insertion Loss (Max)	0.3 dB	0.3 dB	0.4 dB	0.4 dB	0.4 dB
Optical Return Loss	> 65 dB	> 55 dB	35 dB (typical)	35 dB (typical)	35 dB (typical)
Ferrule Type	Zirconia Pre-Polished Ferrules				
Color Code	Green	Blue	Beige	Black	Aqua
Operating Temp	-40°C to 80°C	-40°C to 80°C	-40°C to 80°C	-40°C to 80°C	-40°C to 80°C
Industry Standards	RoHS Compliant, Compliant to Telcordia GR-326				

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### Compatible Splice Machines

Manufacturer	Splicer Model	Metal Holder Compatibility	Metal Holder Part Number	Universal Holder Compatibility
FIS	Super Cougar	All Versions	CSM-SOC-FIBER-HOLDER-01	All Versions
AFL/Fujikura	FSM-11(S/M)	All Versions	SM-SOC-FIBER-HOLDER-02	All Versions
	FSM-12S FSM-19S FSM-70S	All Versions	CSM-SOC-FIBER-HOLDER-03	All Versions
	FSM-17S/R	SC and LC Only		N/A
	FSM-18S FSM-60 (S/R)	SC, LC and ST Only		
Furukawa/Fitel	S122 (A/C/M) S121 (A/M) S123 (C/M) S153 S178A	All Versions	CSM-SOC-FIBER-HOLDER-04	All Versions
Sumitomo	Type-25e (U/S/M)	All Versions	CSM-SOC-FIBER-HOLDER-05	All Versions
	Type-39FH Type-46 Type-65 Type-66 Quantum (Q101-CA)			N/A
INNO	IFS 10 IFS 15	All Versions	SM-SOC-FIBER-HOLDER-06	N/A
Greenlee	910FS	All Versions	CSM-SOC-FIBER-HOLDER-07	N/A

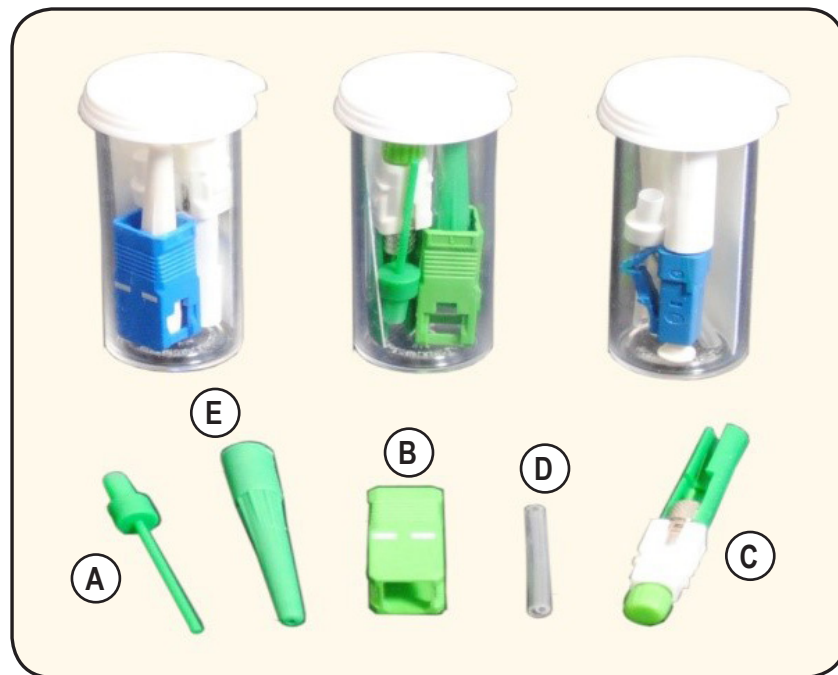


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## Fusion Splice on Connector

Before starting this process, completely read through the entire installation document. If the splice machine you are using has a tensile test option, be sure to shut this option off on your machine.

1. Safety Precautions
  - a) Please read and follow all fusion splicer manufacturer recommended procedures concerning.
  - b) Splicing operation and precautions.
  - c) Safety glasses should be worn when handling cleaved fibers. Cleaved fibers are sharp and can pierce eyes, skin or clothing.
  - d) Never look into the end of a microscope or optical cable connected to an operating optical output device. Laser radiation is invisible, and direct exposure can severely injure the human eye.
2. Remove the connector and components from the individually packaged tube.
3. Separate all the parts and identify the parts you will be using for your application.



- A) Dust Cap with Handle
- B) Outer Housing
- C) Inner Housing Connector Assembly
- D) Fusion Splice Protection Sleeve
- E) Strain Relief Boot

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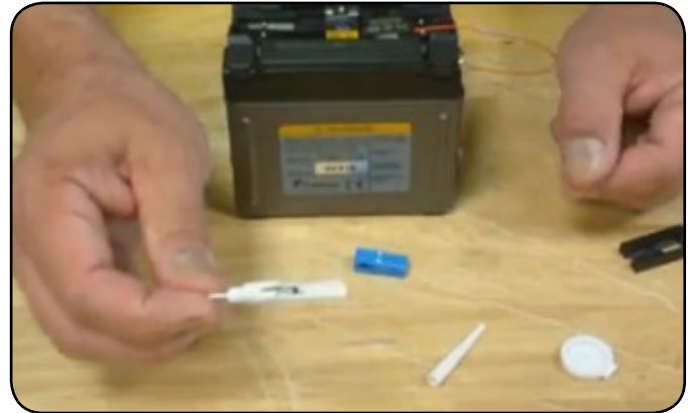
### 4. Required Tools for CraftSmart Fusion Splice on Connector



1. Fusion Splicer
2. Cleaver
3. Jacket Ringer and Stripper
4. Kevlar Shears
5. Fiber Stripper
6. Splice Holders for Splicer
7. Marking Pen



5. Remove the dust cap from the connector sub-assembly and put aside for later use.
6. Install the dust cap with the handle on to the ferrule.



7. Carefully remove the fiber protection cover from the back side of the connector. Using caution, do not touch the stripped end of the fiber or let anything bump against it.



**Note: The Fiber is already stripped, cleaned and cleaved to the exact dimension needed. Do not touch the fiber.**

8. Insert the connector sub-assembly in to the fusion splice holder, making sure the fiber sits into the center of the fiber groove.



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9. Following the splice machines instructions carefully insert the splice holder with the connector inside of the holder into one side of the machine. Using extreme caution, do not touch or bump the stripped fiber against anything.



10. Insert the Strain Relief Boots narrow end first on to the 900um fiber that you will be splicing to.
11. Insert the Fusion Splice Protection Sleeve on to the 900um fiber after the Strain Relief Boot.
12. Following the Fusion Splicer's manufacturers recommendations strip the fiber to length.
13. Place the fiber in the splice holder.

14. Clean bare fiber with clean wipe and alcohol.



15. Cleave the bare fiber to 10mm. If the cleave length is too long it will not be protected in the Splice Protection Sleeve.
16. Following the splice machines instructions carefully insert the splice holder with the 900um fiber into the opposite side of the machine. Using extreme caution, do not touch or bump the stripped fiber against anything.
17. Following the Fusion Splicer's manufacturers procedure splice the connector to the fiber.
18. Once the splicer has completed the process and you are satisfied with the results, carefully slide the protection sleeve up to the fiber holder and remove the fiber and connector from the splicer.



19. Slide the protection sleeve toward the connector centering it over the stripped bare fiber splice.



20. Insert the fiber and protection sleeve into the protection sleeve oven with the connector all the way to one side of the oven keeping it out of the oven as the best as you can. If you cannot close the ovens cover then you can lay the splice protection holder over the protection sleeve to help keep the heat inside.



**Note:** *If the splice protection sleeve is not shrunk down all the way then you can run the heat cycle again. You may want to increase the ovens time duration if this continues to happen.*

21. Slide the Strain Relief Boot up to the back of the connector and snap in place.
22. Replace the dust cap with handle back to the original dust cap.

This completes the installation process of the CraftSmart Splice-on Connector

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### Connector Cleaning Procedure

Whether factory terminated or field spliced, clean connectors are essential for proper system operation. Even the smallest dust particle can cause transmission problems, so for optimal network performance inspect, and if necessary, clean connectors and adapters prior to mating.

#### Inspect Then Connect

These are Clearfield recommended products/applications. Use the product you feel will complete your cleaning procedures. Create a “best practice” for your company and follow those procedures.

The use of Chemtronics end face and bulkhead cleaning products and techniques ensures a clean end face, no matter the type of contamination.

Before cleaning any connector, be sure you know what type of contaminate you are cleaning (dry, fluidic, or combination). All the available products are good, it's the process that you need to be aware of. Using a dry cleaning method to clean “dirt” can lead to scratching of the end face. Learn the process of cleaning properly.

**Note:** It is **NOT** recommended to use isopropyl alcohol to clean the end face.

### Cleaning an SC/LC Connector

#### Cleaning the End Face

- Place one wiping paper on QbE-2 FiberSafe™ Cleaning Platen. (Figure 1)
- Apply small amount of precision cleaner (about 1” in diameter) with Electro-Wash MX pen on to one end of the wipe. (Figure 2)
- Hold end face at a 90 degree angle. For APC connection, adjust by slightly tilting the container or end face. Angle is correct when no drag is felt on the end face. (Figure 3)
- Draw end face from wet to dry part of the wipe 3 times. Use just enough pressure to ensure complete contact between end face and the wipe.

**Note:** **DO NOT** retrace previous step.



Figure 1



Figure 2



Figure 3

### Cleaning the Ferrule

- Lightly moisten the fiber optic swab (2.5mm/38542F or 1.25mm/38040) by spotting a small amount (about 1") of Electro-Wash PX or Electro-Wash MX pen onto the QbE. Hold the swab, 1 side down to the wetted area and hold for a count of 1-2-3-4-5. **(Figure 4)**

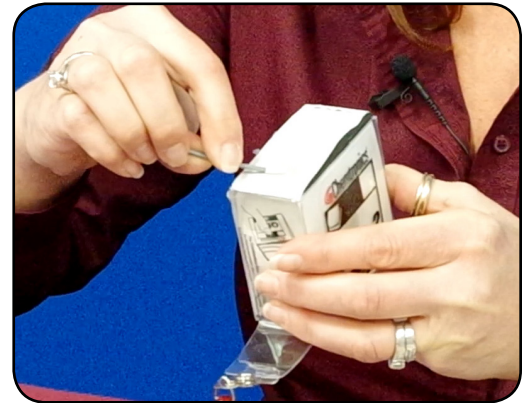


Figure 4

- Insert swab into side of ferrule, wet side to the ceramic ferrule and circle around 2-3 times and remove. Turn swab to dry side and repeat. **(Figure 5)**



Figure 5

### Cleaning the Mate Through an Adapter AND the Adapter Itself

- Lightly moisten the fiber optic swab (2.5mm/38542F or 1.25mm/38040) by spotting a small amount (about 1") of Electro-Wash PX or Electro-Wash MX pen onto the QbE. Hold the tip of the swab onto the wetted area and hold for a count of 1-2-3-4-5.
- Insert the swab into the adapter to the connector, press lightly against the connector, twist 2-3 times, remove and discard.
- Dry with a second dry swab.
- Inspect, repeat cleaning if necessary, and test for signal strength.
- Use additional swabs to clean inside the actual adapter. Moisten swab, like above, and insert through hole and remove while twisting. **(Figure 6)**

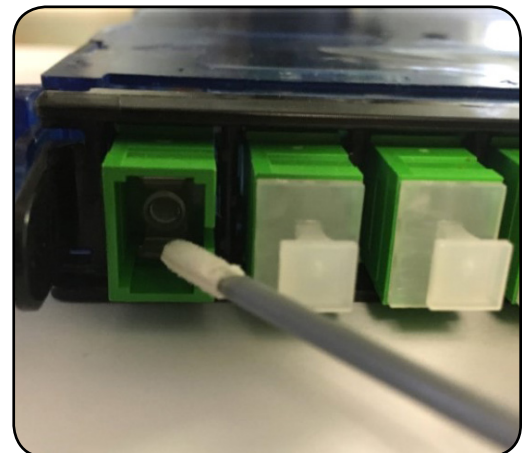


Figure 6



### Cleaning an MPO/MTP Connector

#### Female Connector

- Place one wiping paper on QbE-2 FiberSafe™ Cleaning Platen and apply small amount of precision cleaner (about 1" in diameter) with Electro-Wash MX pen on to one end of the wipe. **(Figure 1)**



Figure 1

- Hold end face at a 90 degree angle. For APC connection, adjust by slightly tilting the container or end face. Angle is correct when no drag is felt on the end face. **(Figure 2)**

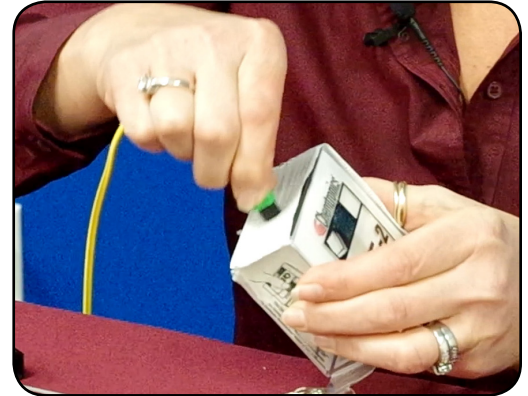


Figure 2

#### Male Connector

- Lightly moisten one side of the fiber optic swab (CC505F) by spotting a small amount (about 1") of Electro-Wash PX or Electro-Wash MX pen onto the QbE. Hold the swab, 1 side down to the wetted area and hold for a count of 1-2-3-4-5.
- Place swab, wet side down, at one end of connector end face and draw across in a diagonal sweep; i.e., from fiber 1 up and across to fiber 12. Turn swab over to dry and draw back from fiber 12 to fiber 1. **(Figure 3)**



Figure 3



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### Standard Warranty

Clearfield warrants to the original purchaser of the Product sold hereunder is free from defects in material and workmanship under normal use and service, subject to exceptions stated herein. Product purchased is warranted as follows: Clearfield designed and branded Products are warranted for three (3) years; Products manufactured by Clearfield to customer prints and/or specifications are warranted for one (1) year; and any Product Clearfield acquires from or through a third-party manufacturer or distributor and resells to Customer as the original customer will carry the manufacturer's pass-through warranty, if any. In all cases, the warranty period commences on the date of shipment to the original purchaser.

### Warranty Claim Procedure

If any Product purchased from Clearfield is found defective under the above warranty, the following basic procedure must be followed:

1. Customer must contact Clearfield and obtain a Return Materials Authorization
2. Following authorization, the Customer ships the product-freight collect-to Clearfield's manufacturing facility
3. Clearfield shall repair or replace the defective Product at its sole option and discretion, and return the repaired or replacement Product to Customer's site, freight prepaid

Note: If the Product is not found to be defective by Clearfield, the product will be returned to the Customer and the customer billed for freight in both directions.

View our warranty policy here: <https://www.seeclearfield.com/warranty.html>

### Limitations of Warranty

Correction of defects by repair or replacement, at the option of Clearfield Inc, shall constitute the exclusive sole remedy for a breach of this limited warranty. Clearfield shall not be liable under any circumstances for any special, consequential, incidental, punitive, or exemplary damages arising out of or in any way connected with the product or with agreement to sell product to buyer, including, but not limited to damages for lost profits, loss of use, or for any damages or sums paid by buyer to third parties. The foregoing limitation of liability shall apply whether the claim is based upon principles of contract, warranty, negligence or other tort, breach of statutory duty, principles of indemnity or contribution, the failure of any limited or exclusive remedy to achieve its essential purpose, or otherwise.

Clearfield will not be responsible for any labor or materials costs associated with installation or incorporation of Clearfield products at customer sites, including any costs of alteration, replacement or defective product, or any field repairs.

### Other Limitations

Clearfield assumes no warranty liability regarding defects caused by:

1. Customer's modification of Product, excepting installation activities described in Clearfield documentation
2. Customer re-packaging of Product for shipment to third parties or destinations other than those originally shipped to by Clearfield, or any defects suffered during shipping where the Product has been re-packaged
3. Customer's installation or maintenance, excepting activities described in and performed in accordance with Clearfield documentation
4. Customer's improper or negligent use or application of Product
5. Other causes external to the Product, including but not limited to accidents, catastrophe, acts of God, government action, war, riot, strikes, civil commotion, sovereign conduct, or the acts or conduct of any person or persons not party to or associated with Clearfield
6. Environmental factors and weathering resulting in aging and damage not necessary or applicable to the function of the product



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### Proprietary Notice

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However, no guarantee is given or implied that the document is error free or that it is accurate with regard to any specification.

### Technical Support

Clearfield, Inc. can be contacted for any issues that arise with the supplied product.

If you need to return the supplied product, you must contact the Clearfield, Inc. Customer Service Department to request a Returned Materials Authorization (RMA) number.

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