Application Guide #: AG004
Revision Date: 012518
Splicing 900 Micron Fiber to LC Splice-On-Connector

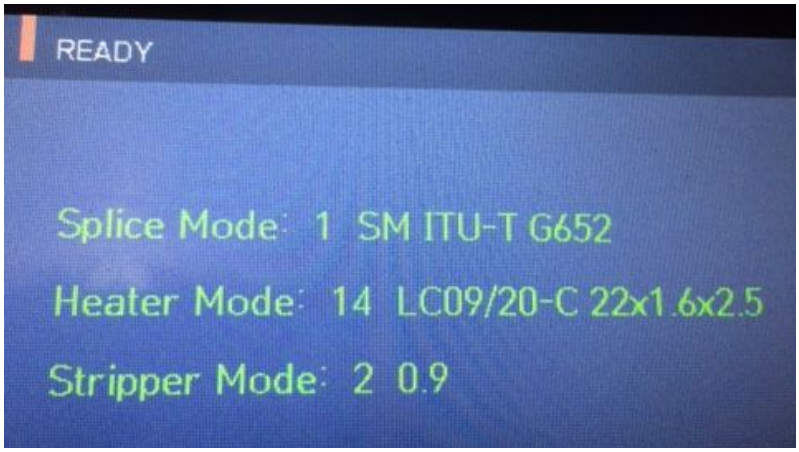
Splicers applicable to: KF4A All-in-one
Fiber types applicable to: SM, MM

Equipment needed:

Scissors, Sharpie, Metric Ruler, Soft Bristle Brush, Stiff Bristle Brush, Lint-free Wipe, Cleaning Fluid, Tweezers, Small Phillips Screwdriver, Small Swabs

Machine Preparation:

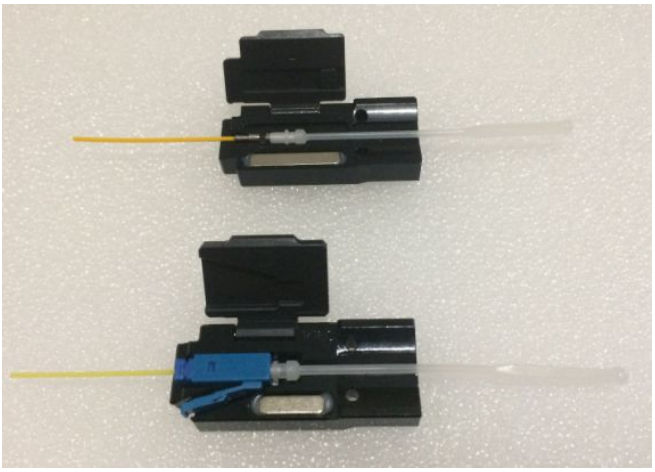
1. Ensure that the machine and material to be spliced has had a chance to acclimate to the surroundings.
2. Clean the cameras. Using the swabs and cleaning fluid, wipe the camera lenses as need be. Use the small Phillips screwdriver to remove the electrodes for better access. Replace the electrodes prior to operation.
3. Turn the machine on.
4. Select the proper settings on the machine for fiber type, stripper mode, and heater mode (corresponding to splice sleeve). Shown here is an example of the display screen set for Singlemode Fiber, a Spice-On-Connector, for 900 micron fiber. Always pick the correct setting for your connector.



   a. These settings may need to be adjusted based on environmental conditions.
5. Run an arc calibration cycle (to ensure the machine is set to the environmental conditions present). If the machine is moved to a new location with different environmental characteristics (i.e. from inside to outside etc), the arc calibration must be run again.
6. Examine the machine for general cleanliness. Inspect stripper, heater, cleaver and splicing areas. If necessary, use soft bristle brush to brush away jacket remnants or small pieces of glass from the stripper, heater and cleaver sections. Use stiff bristle

brush to clean v-groove area. Take care not to brush material into v-groove area, into cleaving blade area, or into camera area.

Connector Preparation:



1. Insert LC assembly into holder.
    a. For standard LC SOC connectors, the LC ferrule-barrel plus fiber stub is inserted into an HF4-LC holder.
    b. For improved LC-SA SOC connectors, the LC ferrule-barrel-housing subassembly is inserted into an HF4-ILC holder
2. Ensure the assembly is pushed as far forward within housing as possible to seat properly, then close magnetic doors.

Connector Stripping:

1. Open both doors of stripper. If necessary, use soft bristle brush to brush all stripper surfaces and ensure no jacket or acrylate remnants remain that could interfere with stripper operation.
2. Insert holder loaded with LC Connector. Ensure that the protruding jacketed 900 micron fiber accurately lines up with the channel. Lightly run finger along jacketed fiber to ensure it lies within the stripping channel.
3. Close the doors of the stripper.
4. Check that the machine is set to “900 Micron” for stripper actuation.
5. If the stripper actuation button has been pushed previously, the stripper will activate automatically. If it does not, check the panel of the machine; open the right hand door of the stripper, press the stripper actuation button, and close the right hand door.

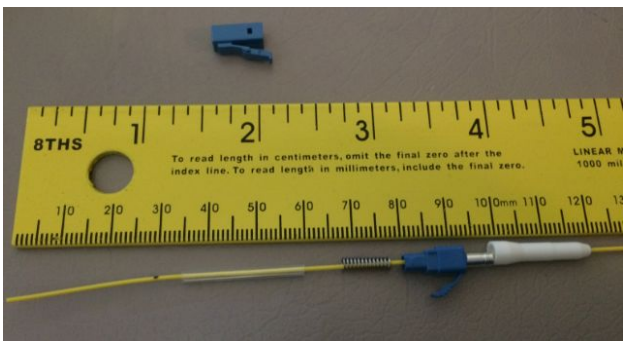
6. After the automatic stripper operation, open the left door of the stripper. Remove the holder from stripper and examine the fiber.

7. Using a lint free wipe and cleaning fluid, carefully wipe the exposed fiber to remove any remnants of coating.
8. Examine the fiber. If the fiber appears broken or jagged, it may be necessary to begin again.

Connector Cleaving:

1. Open door over the cleaving blade and the door over the disposal bin. If necessary, use tweezers to pick up glass remnants and place in bin. Try to avoid sweeping glass remnants into the cleaver machinery to prevent interference; if needed, use a swab and cleaning fluid to draw out material from cleaver assembly.
2. Insert connector holder into cleaver, aligning holder into the support channel.
3. Lightly flip disposal bin door shut.
    a. DO NOT force door shut. Door should appear to be slightly raised in an intermediate position. Door will automatically shut during cleaving operation as part of the disposal process. Forcing the door shut at this point WILL DAMAGE the door.
4. Actuate the cleaver.
    a. This may be done by closing the cleaver blade door only (on models) or pressing the cleaver actuation button (on other models).
5. Open the cleaver blade door.
    a. The rotating cleaver blade will retract back to a home position. This is a precision blade and DOES NOT touch the fiber again as it retracts.
6. Remove holder from cleaver position and place into splicer. Visually examine to ensure fiber falls into v-groove area properly. If necessary, remove holder and re-seat onto guide pins. Make sure that the dust cap does not protrude upward and interfere with the wind cover. It may be necessary to remove the dust cap, rotate until the dust cap handle does not interfere, and replace.

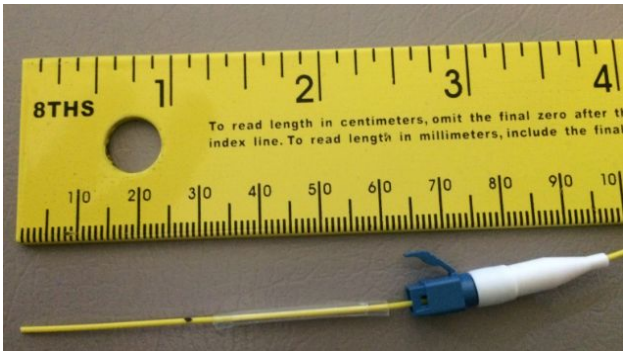
Fiber Preparation:



1. For 900 micron fiber, insert fiber through loose LC connector components.
    a. For standard LC SOC connectors, the boot, rear housing assembly, spring, and

splice sleeve should be put onto the cable and slid to an appropriate spot away from the splicing process.

b. For improved LC-SA SOC connectors, the boot, rear housing, and splice sleeve should be put onto the cable and slid to an appropriate spot away from the splicing process.



2. Using a ruler, measure back approximately 29 mm from end of fiber. Use Sharpie to apply mark.
3. Using HS-900 holder, open all magnetic doors. Lay fiber within channel and hold using thumb. Align 29mm mark with edge of holder. Close both doors ensuring the fiber is not pinched.

Fiber Stripping:

1. Open both doors of stripper. If necessary, use soft bristle brush to brush all stripper surfaces and ensure no jacket or acrylate remnants remain that could interfere with stripper operation.
2. Insert holder into stripper, aligning holder within the channel of the machine. Lightly run finger along jacketed fiber to ensure it falls within stripper channel.
3. Close the doors of the stripper.
4. Check that the machine is set to “900 Micron” for stripper actuation.
5. If the stripper actuation button has been pushed previously, the stripper will activate automatically. If it does not, check the panel of the machine; open the right hand door of the stripper, press the stripper actuation button, and close the right hand door.
6. After the automatic stripper operation, open the left door of the stripper. Remove the holder from stripper and examine the fiber.
7. Using a lint free wipe and cleaning fluid, carefully wipe the exposed fiber to remove any remnants of coating.
8. If fiber has shifted in the holder (i.e. mark is not aligned with edge of holder), open the holder and realign mark to be flush with edge of holder.
9. Examine the fibers. If fiber appears broken or jagged, it may be necessary to begin again.

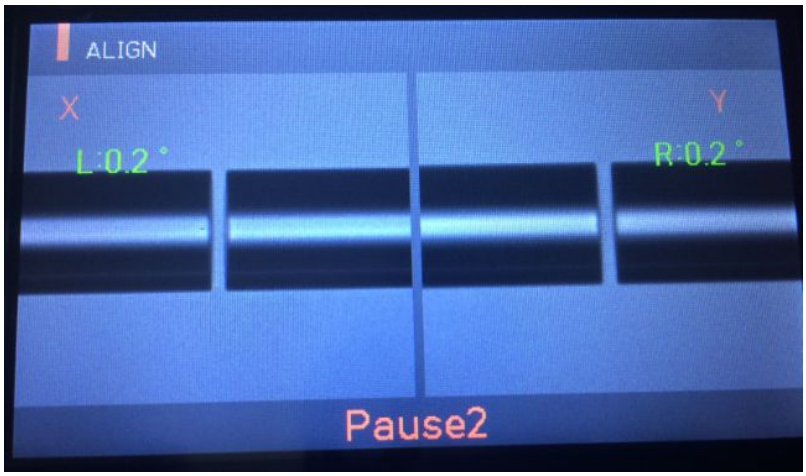
Fiber Cleaving and Holding:

1. Open door over the cleaving blade and the door over the disposal bin. If necessary, use tweezers to pick up glass remnants and place in bin. Try to avoid sweeping glass remnants into the cleaver machinery to prevent interference; if needed, use a swab and cleaning fluid to draw out material from cleaver assembly.
2. Insert connector holder into cleaver, aligning holder into the guide channel.
3. Lightly flip disposal bin door shut.
    a. DO NOT force door shut. Door should appear to be slightly raised in an intermediate position. Door will automatically shut during cleaving operation as part of the disposal process. Forcing the door shut at this point WILL DAMAGE the door.

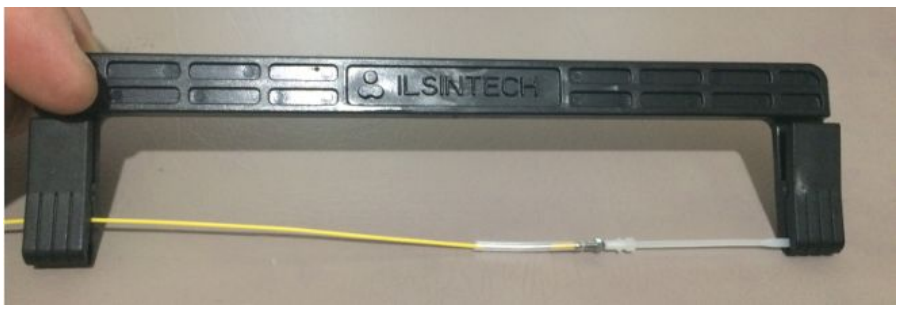
4. Actuate the cleaver.
    a. This may be done by closing the cleaver blade door only (on models) or pressing the cleaver actuation button (on other models).
5. Open the cleaver blade door.
    a. The rotating cleaver blade will retract back to a home position. This is a precision blade and DOES NOT touch the fiber again as it retracts.
6. Remove holder from cleaver position and place into splicer. Visually examine to ensure fiber falls into v-groove area properly. If necessary, remove holder and re-seat onto guide pins.

Arc Fusion Splicing:

1. After ensuring that both holders are in place, close the door of the splicer.
2. Splicer will align the fibers and display a visual representation.
    a. If the Pause 2 setting is activated, the machine will pause for viewing of the splice parameters. Press the Splice Continue button to proceed to splicing.
    b. If the Pause 2 setting is not activated, the machine will automatically splice when the door is shut.
3. Upon successful splicing, the screen will display results and estimated loss value. Up to 4 additional splice arcs may be performed.



4. If satisfied with splicing, open the door of the splicer.
    a. Splicer will automatically perform a tensile proof test on the fiber to ensure splice quality. DO NOT interrupt this test as it is important in verifying a correct splice.
5. Slide the splice sleeve close to the holder.
6. Attach the Splice support clamp to the fiber and to the dust cap. Open the magnetic doors of the splice holders. Use the clamp to carefully lift the spliced assembly from the splicer.
    a. Note: DO NOT force the splicer door shut at this time. If the magnetic holder doors are open, they will interfere with the splicer door. If necessary to shut, ensure splice holders and removed and then shut the splicer door.
7. Slide splice sleeve over the exposed splice.
    a. For standard LC connectors, take care to slide the sleeve up to 1 mm from the end of the LC barrel.
    b. For improved LC connectors, take care to slide the sleeve all the way to the rear of the LC housing.
8. Open heater door.
9. Place sleeve within heater area, aligning right edge of sleeve with right edge of heater area. Ensure that



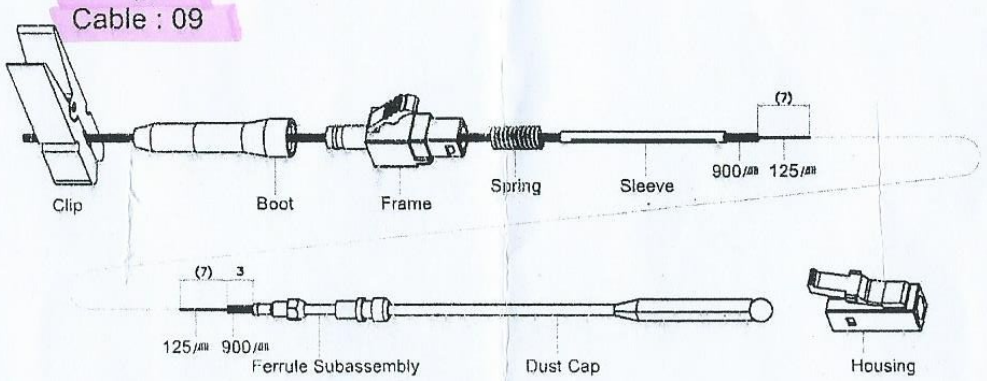
the LC connector is laying flat on its' base, with the anti-snag latch facing up toward the door of the heating chamber.

   a. Due to environmental conditions, it may be necessary to add heat, time, or both to adequately heat-shrink sleeves.
   b. Use of a shorter sleeve (example, 25mm) with heater set on longer setting (example, 60 mm) may cause excessive heating of jacket material.

10. Close heater door.
    a. Heater may be set to auto-activate upon closing of door.
    b. If heater does not auto-activate, press the heater activation button.
11. Remove assembly from heater area, place into cooling tray, and allow to cool. Remove splice support clamp.
12. After cooling, slide LC components up fiber until reaching the spliced connector.
    a. For standard LC SOC connectors, the spring is slid over the slice sleeve until seated against the hex portion of the barrel. Next, the rear housing is slid up over the sleeve until seated against the spring. Now, the dust cap is removed and the front housing is slid over the ferrule. Note for APC LC connectors, the red dot on the barrel hex must be facing up towards the anti-snag lag. Snap the front housing onto the rear housing. Replace the dust cap. Finally, slide the rear boot up until snapped on the the back portion of the rear housing.
    b. For LC-SA SOC connectors, the rear housing is slid over the splice sleeve and snapped onto the front housing assembly. Finally, the boot is tightened onto the rear portion of the rear housing.

FTTH
Swift Fusion Splice-on Connector
LC Type
Cable : 09

ILSINTECH
HIGH PRECISION TECHNOLOGY

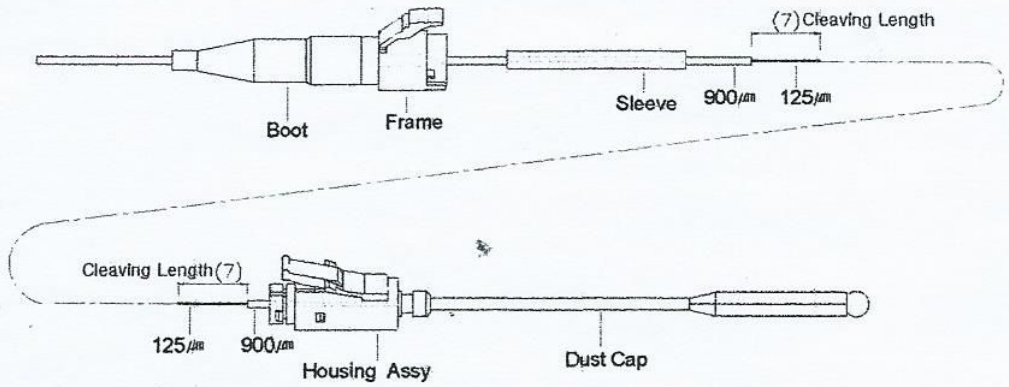


KOR PATENT NO. 10-1038195, 10-1203509

Made in INDONESIA

ILSINTECH
HIGH PRECISION TECHNOLOGY

Swift Fusion Splice-on Connector
LC Type A
Cable : 09



Made in INDONESIA

Application Guide #: AG009
Revision Date: 012518
Splicing 2mm cable to LC-SA Splice-On-Connector

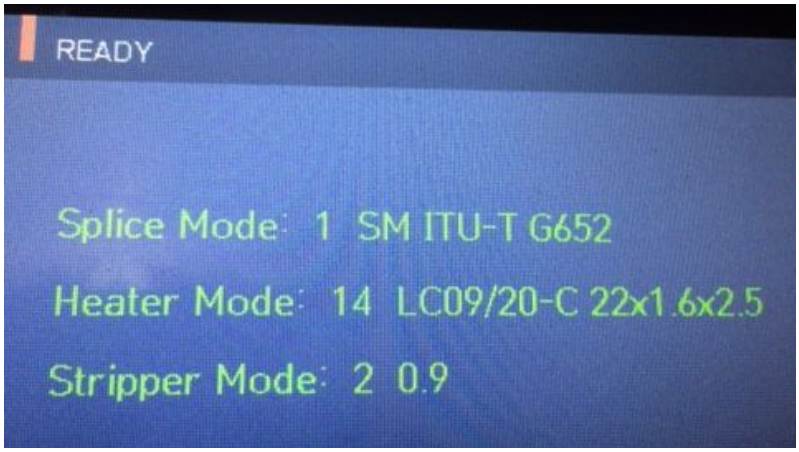
Splicers applicable to: KF4A All-in-one
Fiber types applicable to: SM, MM

Equipment needed:

Scissors, Sharpie, Metric Ruler, Soft Bristle Brush, Stiff Bristle Brush, Lint-free Wipe, Cleaning Fluid, Tweezers, Small Phillips Screwdriver, Small Swabs

Machine Preparation:

1. Ensure that the machine and material to be spliced has had a chance to acclimate to the surroundings.
2. Clean the cameras. Using the swabs and cleaning fluid, wipe the camera lenses as need be. Use the small Phillips screwdriver to remove the electrodes for better access. Replace the electrodes prior to operation.
3. Turn the machine on.
4. Select the proper settings on the machine for fiber type, stripper mode, and heater mode (corresponding to splice sleeve). Shown here is an example of the display screen set for Singlemode Fiber, a Spice-On-Connector, for 900 micron fiber. Always pick the correct setting for your connector.



   a. These settings may need to be adjusted based on environmental conditions.
5. Run an arc calibration cycle (to ensure the machine is set to the environmental conditions present). If the machine is moved to a new location with different environmental characteristics (i.e. from inside to outside etc), the arc calibration must be run again.
6. Examine the machine for general cleanliness. Inspect stripper, heater, cleaver and splicing areas. If necessary, use soft bristle brush to brush away jacket remnants or small pieces of glass from the stripper, heater and cleaver sections. Use stiff bristle

brush to clean v-groove area. Take care not to brush material into v-groove area, into cleaving blade area, or into camera area.

Connector Preparation:

1. Insert LC assembly into HF4-ILC holder.
2. Ensure the assembly is pushed as far forward within housing as possible to seat properly, then close magnetic doors.

Connector Stripping:

1. Open both doors of stripper. If necessary, use soft bristle brush to brush all stripper surfaces and ensure no jacket or acrylate remnants remain that could interfere with stripper operation.
2. Insert holder loaded with LC Connector. Ensure that the protruding jacketed 900 micron fiber accurately lines up with the channel. Lightly run finger along jacketed fiber to ensure it lies within the stripping channel.
3. Close the doors of the stripper.
4. Check that the machine is set to “900 Micron” for stripper actuation.
5. If the stripper actuation button has been pushed previously, the stripper will activate automatically. If it does not, check the panel of the machine; open the right hand door of the stripper, press the stripper actuation button, and close the right hand door.

6. After the automatic stripper operation, open the left door of the stripper. Remove the holder from stripper and examine the fiber.
7. Using a lint free wipe and cleaning fluid, carefully wipe the exposed fiber to remove any remnants of coating.
8. Examine the fiber. If the fiber appears broken or jagged, it may be necessary to begin again.

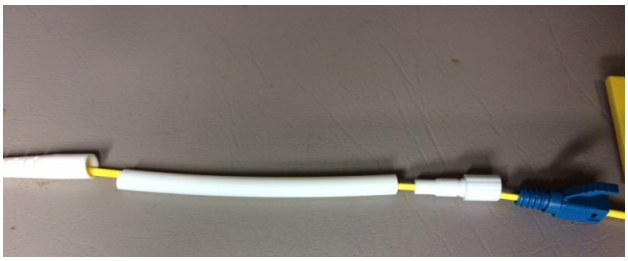
Connector Cleaving:

1. Open door over the cleaving blade and the door over the

disposal bin. If necessary, use tweezers to pick up glass remnants and place in bin. Try to avoid sweeping glass remnants into the cleaver machinery to prevent interference; if needed, use a swab and cleaning fluid to draw out material from cleaver assembly.

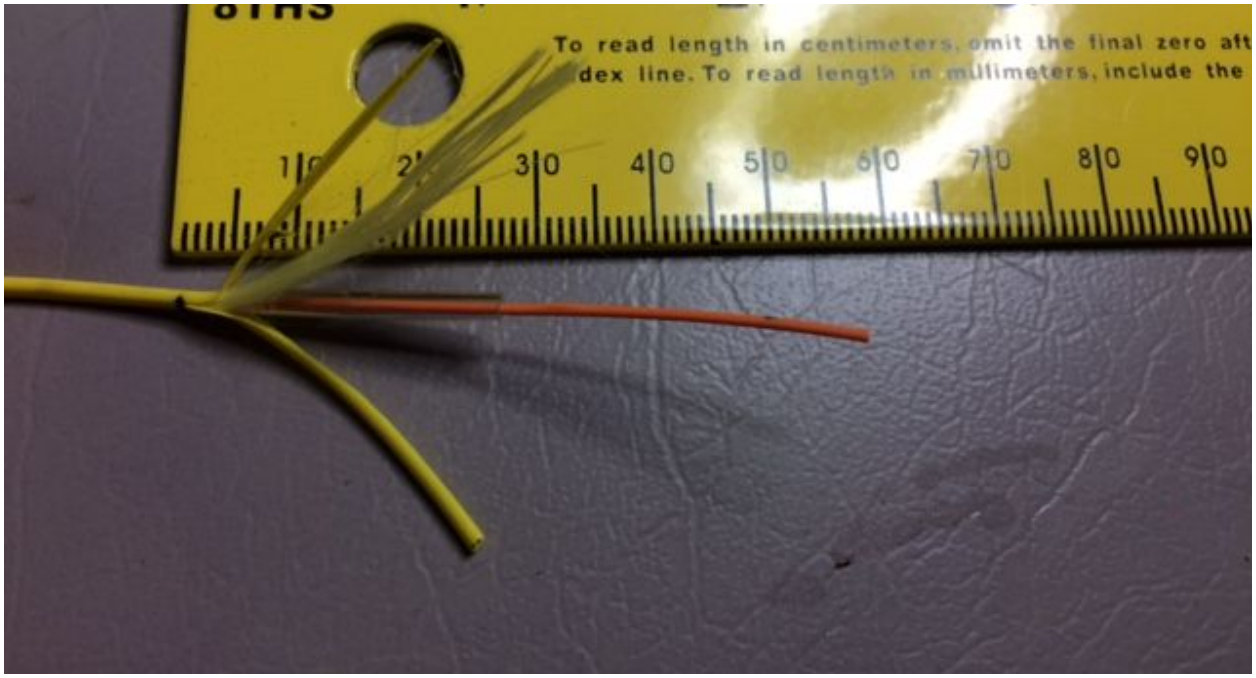
2. Insert connector holder into cleaver, aligning holder into the support channel.
3. Lightly flip disposal bin door shut.
    a. DO NOT force door shut. Door should appear to be slightly raised in an intermediate position. Door will automatically shut during cleaving operation as part of the disposal process. Forcing the door shut at this point WILL DAMAGE the door.
4. Actuate the cleaver.
    a. This may be done by closing the cleaver blade door only (on models) or pressing the cleaver actuation button (on other models).
5. Open the cleaver blade door.
    a. The rotating cleaver blade will retract back to a home position. This is a precision blade and DOES NOT touch the fiber again as it retracts.
6. Remove holder from cleaver position and place into splicer. Visually examine to ensure fiber falls into v-groove area properly. If necessary, remove holder and re-seat onto guide pins. Make sure that the dust cap does not protrude upward and interfere with the wind cover. It may be necessary to remove the dust cap, rotate until the dust cap handle does not interfere, and replace.

Fiber Preparation (Improved LC-SA method):



1. Insert fiber through loose LC connector components. For improved LC-SA SOC connectors, the boot, rear housing, and splice sleeve should be put onto the cable and slid to an appropriate spot away from the splicing process.
2. Using a ruler, measure back approximately 75 mm from end of fiber. Use Sharpie to apply mark.

3. Slit the jacket, leaving 2 halves of outer jacket, Kevlar, and exposed 900 micron cable.
4. Trim the jacket halves to 30 mm from the slit point. Trim the Kevlar to 45 mm from the slit point. Trim the 900 micron fiber to 60 mm from the slit point. Slide the splice sleeve over the 900 micron fiber.



5. Using 2.5 holder, open magnetic door. Lay fiber within channel and hold using thumb. Bend jacket halves back, along with Kevlar, and hold beneath thumb. Push fiber/sleeve assembly forward until sleeve is against front of channel. Close the magnetic door, ensuring it is fully closed.

Fiber Stripping:

1. Open both doors of stripper. If necessary, use soft bristle brush to brush all stripper surfaces and ensure no jacket or acrylate remnants remain that could interfere with stripper operation.
2. Insert holder into stripper, aligning holder within the channel of the machine. Lightly run finger along jacketed fiber to ensure it falls within stripper channel.
3. Close the doors of the stripper.
4. Check that the machine is set to “900 Micron” for stripper actuation.

5. If the stripper actuation button has been pushed previously, the stripper will activate automatically. If it does not, check the panel of the machine; open the right hand door of the stripper, press the stripper actuation button, and close the right hand door.
6. After the automatic stripper operation, open the left door of the stripper. Remove the holder from stripper and examine the fiber.
7. Using a lint free wipe and cleaning fluid, carefully wipe the exposed fiber to remove any remnants of coating.
8. If fiber has shifted in the holder, open the holder and realign. Approximately 3mm of 900 micron jacket should be protruding from holder.
9. Examine the fiber. If fiber appears broken or jagged, it may be necessary to begin again.

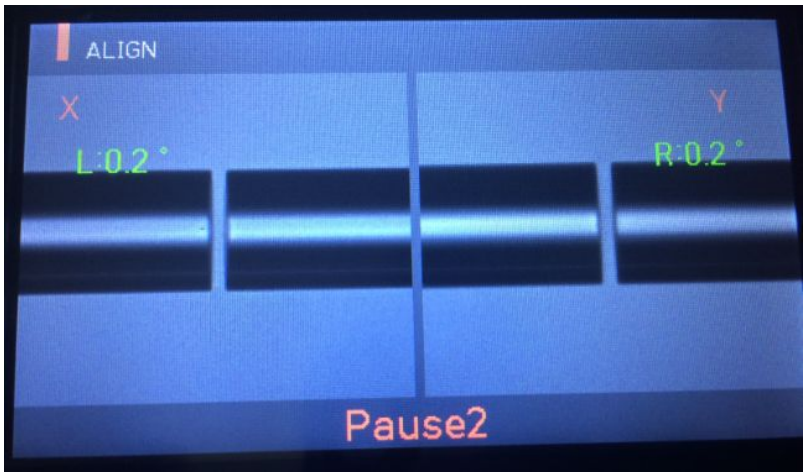
Fiber Cleaving and Holding:

1. Open door over the cleaving blade and the door over the disposal bin. If necessary, use tweezers to pick up glass remnants and place in bin. Try to avoid sweeping glass remnants into the cleaver machinery to prevent interference; if needed, use a swab and cleaning fluid to draw out material from cleaver assembly.
2. Insert connector holder into cleaver, aligning holder into the guide channel.
3. Lightly flip disposal bin door shut.
    a. DO NOT force door shut. Door should appear to be slightly raised in an intermediate position. Door will automatically shut during cleaving operation as part of the disposal process. Forcing the door shut at this point WILL DAMAGE the door.

4. Actuate the cleaver.
    a. This may be done by closing the cleaver blade door only (on models) or pressing the cleaver actuation button (on other models).
5. Open the cleaver blade door.
    a. The rotating cleaver blade will retract back to a home position. This is a precision blade and DOES NOT touch the fiber again as it retracts.
6. Remove holder from cleaver position and place into splicer. Visually examine to ensure fiber falls into v-groove area properly. If necessary, remove holder and re-seat onto guide pins.

Arc Fusion Splicing:

1. After ensuring that both holders are in place, close the door of the splicer.
2. Splicer will align the fibers and display a visual representation.
    a. If the Pause 2 setting is activated, the machine will pause for viewing of the splice parameters. Press the Splice Continue button to proceed to splicing.
    b. If the Pause 2 setting is not activated, the machine will automatically splice when the door is shut.
3. Upon successful splicing, the screen will display results and estimated loss value. Up to 4 additional splice arcs may be performed.
4. If satisfied with splicing, open the door of the splicer.
    a. Splicer will automatically perform a tensile proof test on the fiber to ensure splice quality. DO NOT interrupt this test as it is important in verifying a correct splice.

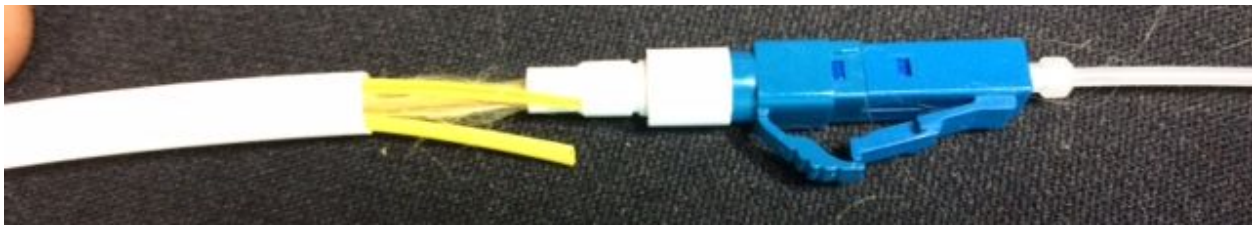


5. Slide the splice sleeve close to the holder.
6. Open the magnetic doors of the splice holders. Carefully lift the spliced assembly from the splicer.
    a. Note: DO NOT force the splicer door shut at this time. If the magnetic holder doors are open, they will interfere with the splicer door. If necessary to shut, ensure splice holders and removed and then shut the splicer door.
7. Slide splice sleeve over the exposed splice. Take care to slide the sleeve all the way to the rear of the LC housing.
8. Open heater door.
9. Place sleeve within heater area, aligning right edge of sleeve with right edge of heater area. Ensure that the LC connector is laying flat on its' base, with the anti-snag latch facing up toward the door of the heating chamber.
    a. Due to environmental conditions, it may be necessary to add heat, time, or both to adequately heat-shrink sleeves.
    b. Use of a shorter sleeve (example, 25mm) with heater set on longer setting (example, 60 mm) may cause excessive heating of jacket material.
10. Close heater door.
    a. Heater may be set to auto-activate upon closing of door.
    b. If heater does not auto-activate, press the heater activation button.

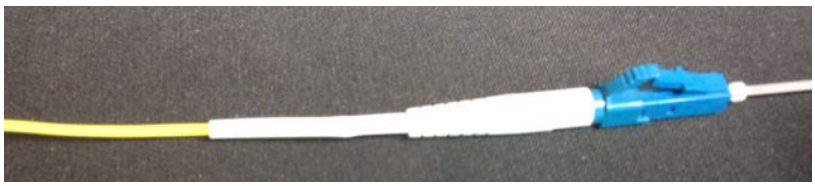
11. Remove assembly from heater area, place into cooling tray, and allow to cool. After cooling, slide LC components up fiber until reaching the spliced connector. The rear housing is first slid over the splice sleeve and snapped onto the front housing assembly.

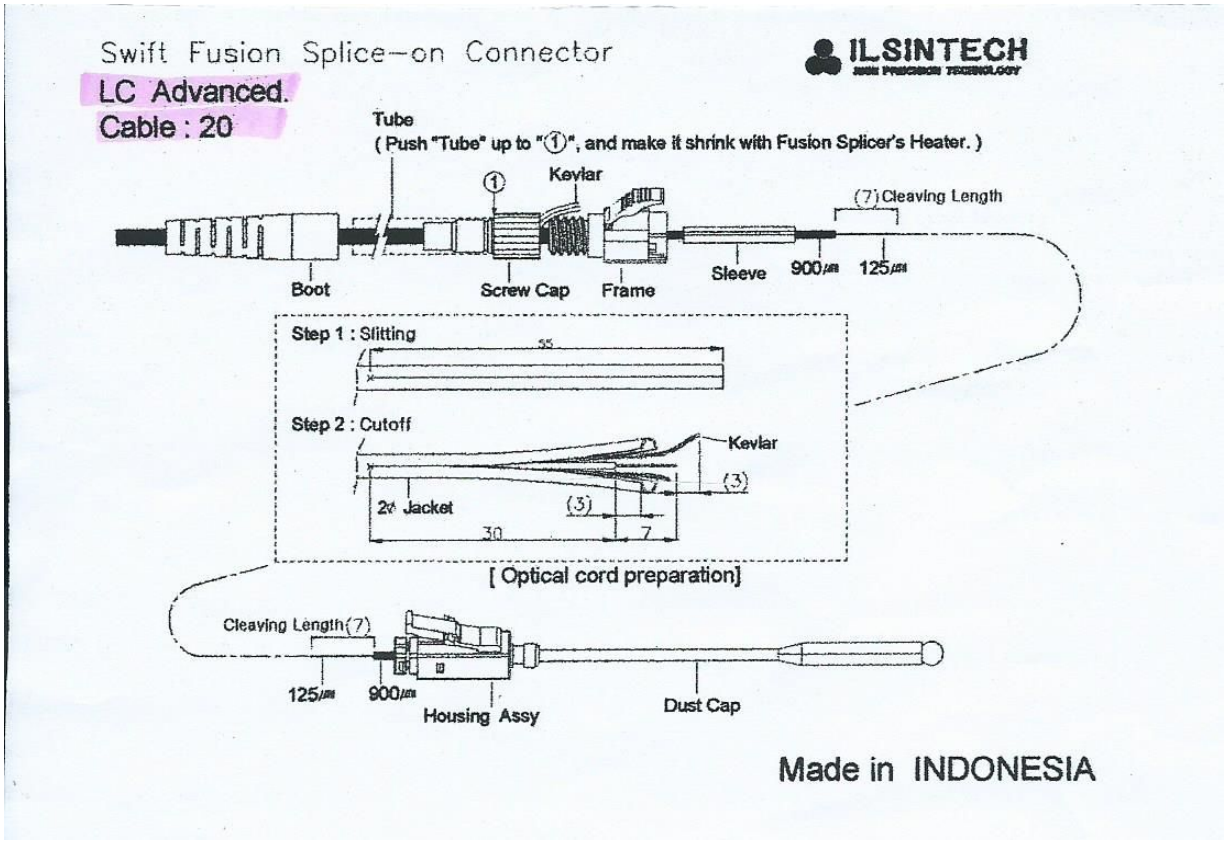
12. Next, the white screw-on cap is slid up past the jacket halves BUT ALLOWING THE KEVLAR TO REMAIN INSIDE IT. If the Kevlar slips out, it needs to be threaded through the white cap. Ensure the Kevlar is captured between the threads of the white cap and the rear housing. If necessary, loosen the cap and trim any Kevlar that extends outward.

13. Place the jacket halves on either side of the white screw cap. Slide the heat-shrink tube up over the jacket halves onto the white cap.



14. Heat the heat shrink using the heater on the splicer. Reset the splicer so the heater is using 60x1.2x2.6 Open the doors of the heater and place the connector with the heat-shrink tube inside. Run the heater cycle. The heat shrink should shrink down onto the cable.
15. Finally, the boot is slid over the heat shrink and adjacent to the rear portion of the white screw cap.




Swift Fusion Splice-on Connector
ILSINTECH
LC Advanced.
Cable : 20
Tube
(Push "Tube" up to "①", and make it shrink with Fusion Splicer's Heater.)
①
Kevlar
(7) Cleaving Length
Boot
Screw Cap
Frame
Sleeve
900㎛
125㎛
Step 1 : Slitting
55
Step 2 : Cutoff
Kevlar
(3)
2ϕ Jacket
(3)
30
7
[Optical cord preparation]
Cleaving Length(7)
125㎛
900㎛
Housing Assy
Dust Cap
Made in INDONESIA