Tools for Splicing Operation

The following items are standard tools for optical fiber splicing.

Consumables for cleaning
- Cotton
- Cotton swab
- Alcohol

90S Core Alignment Fusion Splicer

Single Fiber Stripper

Optical Fiber Cleaver

Protection sleeve

Setup & Preparation Before Splicing

Install battery pack or DC adaptor

⬇

Plug AC adaptor into the DC adaptor.
*No need when using battery pack.

⬇

Turn splicer ON.

⬇

Confirm Splice Mode

⬇

Confirm Heater Mode

⬇

Check Wireless Communication status

⬇

Clean before splicing

⬇

Setup & Preparation completed
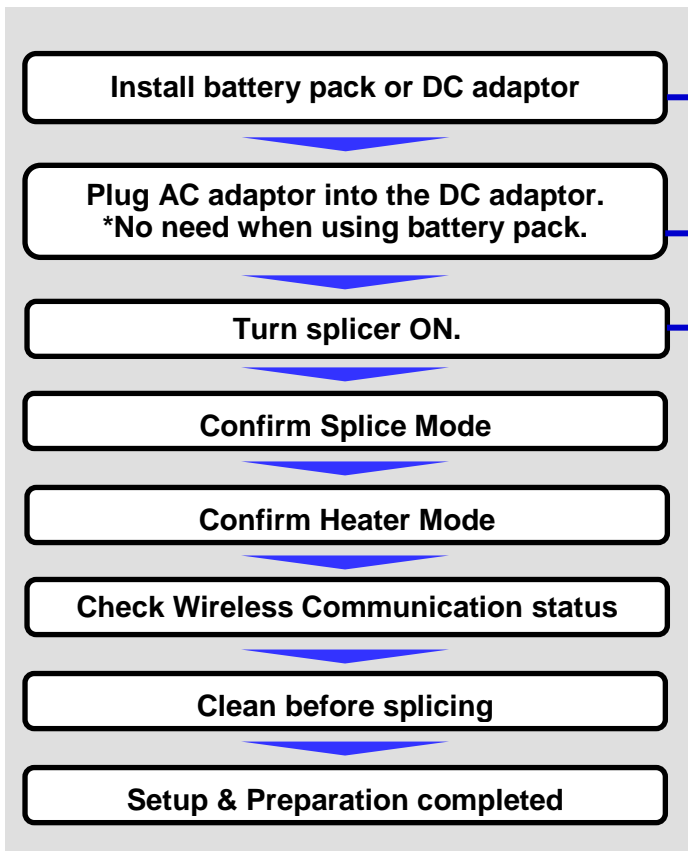
> **Turning ON**
> Press ⏻ key until **green** LED turns on.
> **Turning OFF**
> Press ⏻ key until **red** LED turns on.

Splice Mode:
- Select **"SM AUTO"** to splice standard SM fibers (ITU-T G.652).
- Select **"AUTO"** mode to splice unknown fiber types. However, splice time might be longer.
- **"SM-FAST"** will shorten the splice time. However, periodic Arc Calibrations are neccesary.

Heater Mode:
- Select the adequate heater mode according to the sleeve. The [READY] screen shows the current heater mode.
- When using a protection sleeve which is not made by Fujikura, please set parameters based on the specific sleeve.
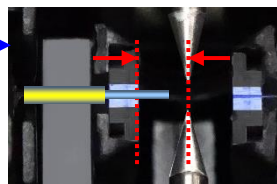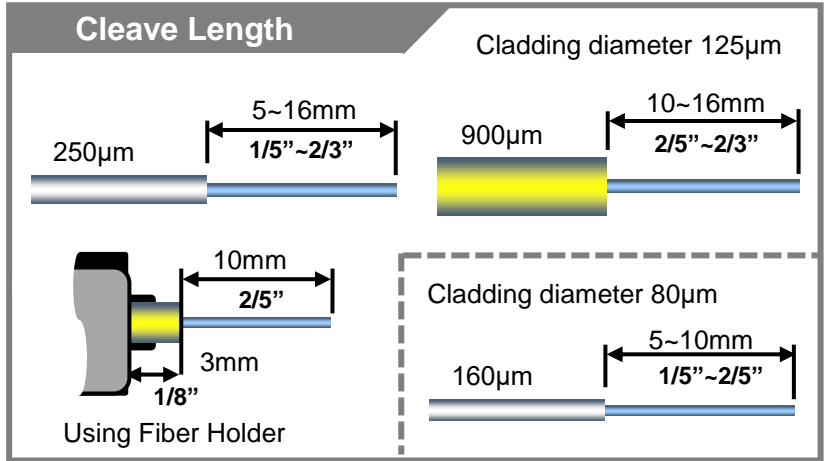
Wireless communication with accessories:
- Splicr can connect to the CT50 cleaver and RS02/03 ribbon stripper.
- When wireless comunication is established, the splicer monitors the conditon of these tools. If the splicer sees that the tool has an issue, it alerts the operator with an on-screen alarm.
- After initial pairing, the devices are always paired. Communication between splicer, cleaver and stripper resumes automatically even after power cycling.
- Refer to the setting guide "SG-02" or instruction manual for wireless communication function details.
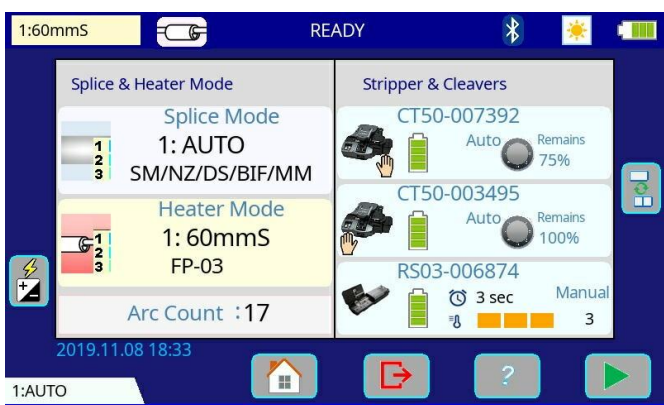
*Basic operations can be performed from the touch screen after the power is turned on.

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Splice Operation

Clean coating or fiber buffer

▼

Place protection sleeve over fiber

▼

Strip fiber

▼

Clean fiber

▼

Cleave fiber

▼

Load fiber into splicer

▼

Splicing starts automatically

▼

Visually inspect monitor during splice

▼

After splicing, wind protector and sheath clamps open

▼

Protection sleeve Less than 60mm	Protection sleeve 60mm

▼ ▼

Refer to next page

▼

Grab the fiber at edge of sheath clamp : **A** mark

▼

Lift opposite fiber up, sleeve moves until left finger：**A** mark

▼

Place sleeve in center of tube heater

▼

Heating starts automatically

▼

Heater lid opens after finishing heating

▼
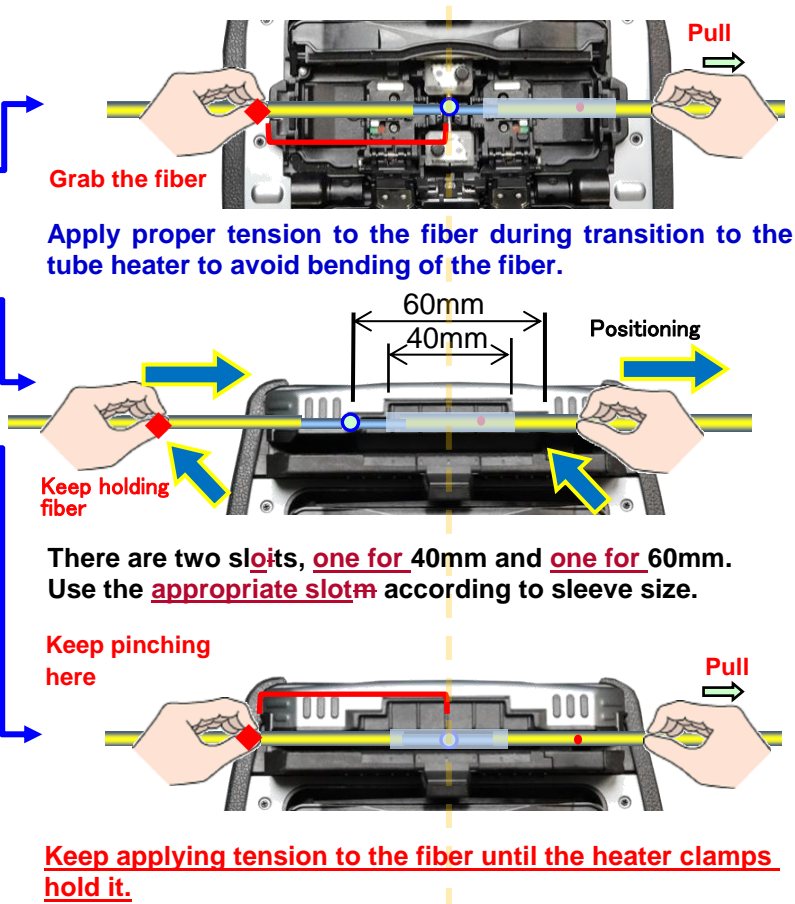
Check shrunk sleeve

▼

Completed

Cleave Length

Cladding diameter 125μm

250μm   5~16mm   **1/5"~2/3"**

900μm   10~16mm   **2/5"~2/3"**

10mm   **2/5"**
3mm   **1/8"**

Using Fiber Holder

Cladding diameter 80μm

160μm   5~10mm   **1/5"~2/5"**

- **Do not allow the cleaved fiber ends to touch anything or become contaminated.**
- **Place the fiber end between V-groove edge and Electrode center.**

A

A

Change position

*Pull

A

Do not change position

A

Marking
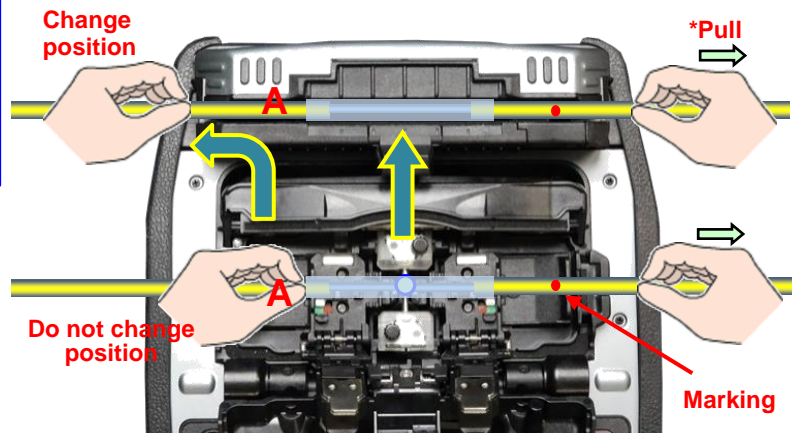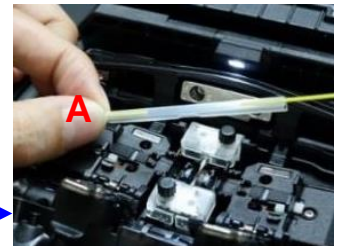
- **Pull the right fiber to apply proper tension to the fiber during operation to avoid fiber bending.**
- **Take care to keep the position. The splice point must be centered in the sleeve.**

* Apply tension to the fiber until heater clamps hold it.

In case of shorter sleeve than 60mm

▼

Grab the fiber at the edge of wind protector marked ◆.

▼

Slide the splice joint to the center of the sleeve.

▼

Place sleeve in center of tube heater

▼

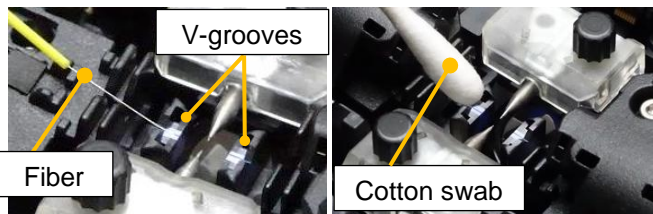| Heating starts automatically |
| --- |

▼

Heater lid opens after finishing heating

▼

Check shrunk sleeve

▼

Completed

Pull

Grab the fiber

Apply proper tension to the fiber during transition to the tube heater to avoid bending of the fiber.

60mm

40mm

Positioning

Keep holding fiber

There are two sloits, one for 40mm and one for 60mm. Use the appropriate slotm according to sleeve size.

Keep pinching here

Pull

Keep applying tension to the fiber until the heater clamps hold it.

Cleaning before Splice Operation

V-grooves

V-grooves

Fiber

### V-groove Clamps

Cotton swab

V-groove clamps

Tools

Optical fiber cleaver
- Clean rubber pads.
- Clean rubber anvil.
- Clean cleaving blade.

Single fiber stripper
- Clean stripping blade

- Clean the bottom of the V-grooves with a thin lint-free cotton swab moistened with alcohol.
- Remove excess alcohol from V-grooves with a clean dry swab.
- Dislodge debris in the V-groove by using the cleaved fiber end face if there is a remaining deposit in the bottom of the V-groove.

Electrode Replacement

- When the "Replace electrodes" message appears, or when the tip is damaged, replace electrodes.
- If the electrodes appear heavily worn, it is recommended to replace the electrodes even if the alarm message hasn't appeared.
- Execute [Replace Electrodes] in Maintenance Menu.

Objective Lens
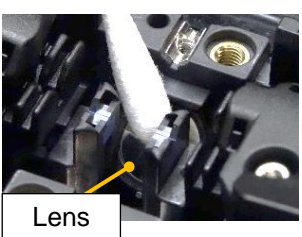
Lens

- When the lens is dirty, clean it with a thin cotton swab moistened with alcohol.
- Remove the electrodes when cleaning the lens.
- Take care not to damage the lens surface by using a rigid or hard object when cleaning.

Cleaning Cautions

- Do not allow contact onto the electrode tips.
- Use only 99% or better purity of alcohol.
- Use new lint-free cotton swab every time you clean.

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Solutions for Common Splicer Errors

Error Message	Reason	Solution
Too Long Fiber	· The fiber end-face is placed on the electrode centerline, or beyond it · The cleave length (bare fiber part) is too long · Dust or dirt is on the objective lens	· Press RESET, and set the fiber end-face between the electrode centerline and the V-groove edge. · Confirm the placement of the stripped fiber end on the fiber cleaver. Check the cleave length. · Execute [Dust Check]. Clean the lens when dust or dirt exists.
Too Dusty Fiber	· Dust or dirt is on the fiber surface · Dust or dirt is on the objective lens. · [Cleaning Arc] time is too short or "OFF." · Splicing fibers with unresolvable core positions using the SM or DS modes · [Align] is set to "Core" when splicing fibers with unresolvable core positions when using other splice modes · [Focus] is incorrectly set when using other splice modes.	· Completely prepare the fiber again (strip, clean and cleave). · Execute the [Dust Check]. Clean the lens if dust or dirt exists. · Set the [Cleaning Arc] time to "150ms." When splicing carbon coated fibers, set to "200ms." · Use the MM mode to splice fibers with unresolvable core positions (i.e. MM fiber). · Set [Align] to "Clad" to splice these fibers (i.e. MM fiber). · Set [Focus] to "Edge" to splice fibers with unresolvable core positions (i.e. MM fiber). To splice distinct core fibers, "Auto" or the correct focus value should be entered.
ZL/ZR Motor Overrun	· The fiber is set too far back and does not reach the splice point · The cleave length (bare fiber part) is too short. · Splicing loose buffer tube fiber without protrusion engaged	· Press RESET, re-position the fiber again with the end-face closer to the electrodes. · Confirm the placement of the stripped fiber end on the fiber cleaver. Check the cleave length. · Flip the protrusion switch so it engages the loose buffer tube fiber.
Large Cleave Angle	· Bad fiber end-face · [Cleave Limit] was changed to a low cleave angle.	· Check the condition of the fiber cleaver. If the blade is worn, rotate the blade to a new position. · Load the default cleave angle value from the splice mode database.
Cleave Shape NG	· Bad fiber end-face	· Clean and check the condition of the fiber cleaver. If the blade is worn, rotate the blade to a new position.
High Estimated Loss	· Dust or dirt is on the fiber surface · Bad fiber end-face · Improper splice mode selected · Unstable arc discharge	· Completely prepare the fiber again (strip, clean and cleave). · Check the condition of the fiber cleaver. If the blade is worn, rotate the blade to a new position. · Select proper splice mode · Electrodes might be worn. Perform [Electrode Stabilization] or replace electrodes.

*This table only shows a few possible errors. Refer to the instruction manual for a more comprehensive list.

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Authorized Splicer Distributor

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