### Splice Operation

- **Turning splicer ON**
- **Confirming splice, heater and operation modes**
- **Cleaning coating or sheath of fiber**
- **Placing protection sleeve over fiber**
- **Stripping fiber**
- **Cleaning fiber**
- **Cleaving fiber**
- **Loading fiber onto splicer**
- **Splicing start automatically**
- **Visual inspection on LCD during splice**
- **Removing spliced fiber**
- **Centering protection sleeve in tube heater**
- **Centering spliced point in tube heater**
- **Heating start automatically**
- **Completed**

#### When using single holder
- **Adjusting the position of the fiber coating edge to holder edge**

#### Note
- **Hold the fiber at edge of splicer body.**
- **Apply tension to the fiber until heater holds the fiber.**

#### Placing Fiber Holder
- **Do not reverse Fiber Holder when placing onto splicer. Set in the direction which sees from the sheet key side and can read the name of a holder.**

#### Splice Operation Details
- When splicing only standard SM fibers (ITU-T G.652), “SM AUTO” mode is recommended.
- When splicing different types of fibers, “AUTO” mode is recommended, but splice speed is slow.

#### Holding Instructions
- Hold lid firmly
- Free of any gel residue
- Make sure the stripped fiber is free of coating debris or contamination.
- Use only 99% or better purity alcohol.

### Visual Inspection on LCD During Splice
- Hold this point firmly

### Marking

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**Fusion Splicer 19R+/70R+ Quick Reference Guide**
How to use Keypad

ON/OFF Key
- Power ON/OFF

X/Y Key
- Switch X/Y images

SET Key
- Execute Splice

ESCAPE Key
- Return to previous screen

MENU Key
- Open Main Menu
- Go to next page

UP/DOWN Key
- Move cursor
- Change value

ENTER Key
- Enter of value

LED
- Turning ON
  Press key until green LED turns on.
- Turning OFF
  Press key until red LED turns on.

Power Supply

AC Adapter

AC operation
- Input power: AC100-240V, 50-60Hz
- Use only supplied AC power cord.
- Connect to ground with ground terminal of AC power cord.
- When using a AC power generator, check output voltage periodically with a circuit tester.

DC operation
- Input power: DC12V
- Use only supplied DC power cord.

Battery Pack

How to recharge Battery Pack
- Connect AC adapter (ADC-18) and battery pack (BTR-09) with battery recharge cord (DCC-18).
- Do not stack battery pack on top of AC adapter while recharging.
- Recharging temperature: 0 ~ 40°C (32 ~ 104°F)

How to check remaining capacity
- Confirm power saving function is working when using battery pack
**Cleaning before Splice Operation**

**V-grooves**
- Clean bottom of V-groove with a thin cotton swab moistened with alcohol.
- Remove excess alcohol from V-grooves with a clean dry swab.
- Use a cleaved fiber end-face to dislodge.

**Fiber Clamp Chips**

**Fiber Cleaver**
- Clean rubber pads.
- Clean rubber anvil.
- Clean blade.

**Objective Lens**
- When lens is dirty, clean it.

**Caution of cleaning**
- Do not contact the electrode tips.
- Use only 99% or better purity of alcohol.

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**Replace Electrodes**

**Electrodes**
- When "Replace electrodes" message appears, or when the tip is damaged, replace electrodes.
- Execute [Replace Electrodes] in Maintenance Menu.
- Exchange for a new electrode the old electrode currently attached to equipment.
  
  Use attached screw driver (SD-01).

**Loosen screws**

**Remove the old electrode**

**Electrode holder**

**Tighten screws**

**Place the electrode cover**

**Install new electrode**

- Load prepared fibers onto the splicer.
- Execute [Stabilized Electrodes]
- [Arc Calibration] is executed.
# Solution of an Error

<table>
<thead>
<tr>
<th>Error Message</th>
<th>Reason</th>
<th>Solution</th>
</tr>
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</table>
| 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 setting position of the stripped fiber end on the fiber cleaver. Check the cleave length.  
                                                                  • Execute the [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.”               | • 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.” |
| ZL/ZR Motor Overrun | • The fiber is set too far back and does not reach the splice point.  
                     • The fiber is not set correctly at the bottom of the V-groove. The fiber is not located in the Camera’s field of view.  
                     • The cleave length (bare fiber part) is too short.        | • Press [RESET], re-position the fiber again with the end-face closer to the electrodes.  
                                                                  • Press [RESET], and set the fiber again to seat it correctly at the bottom of the V-groove.  
                                                                  • Confirm the setting position of the stripped fiber end on the fiber cleaver. Check the cleave length. |
| Large Cleave Angle  | • Bad fiber end-face.                                                  | • Check the condition of the fiber cleaver. If the blade is worn, rotate the blade to a new position.  
                                                                  • Increase the [Cleave Limit] to an adequate limit.          |
| Cleave Shape NG     | • Bad fiber end-face.                                                  | • Check the condition of the fiber cleaver. If the blade is worn, rotate the blade to a new position. |

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