

Optical Fiber Cleaver

**FC-6S+**

with single fiber adapter AP-FC6M

**Operation Manual**

**IMPORTANT SAFETY PRECAUTIONS**

This product has been designed and manufactured to assure personal safety. Improper use can result in bodily injury and serious damage to the fiber cleaver. Please read and observe all warnings instructions given in this operation manual.



Caution

This symbol indicates explanations about dangerous matters. If users ignore this symbol and handle the cleaver the wrong way, bodily injury and damage to the cleaver could result.

1. Do not disassemble or lubricate any parts of the cleaver. Doing so can cause serious damage to the cleaver.
2. The FC-6S+ is a precision tool. Do not impact the cleaver by hitting or dropping it. Doing so can cause personal injury and loss of cleaving performance.
3. Glass fiber fragments are extremely sharp. Handle with care. Wear safety glasses at all times during cleaving operation for protection from glass fibers.
4. Dispose of glass fiber fragments properly. After use, please empty the off-cut box and then store the cleaver in the case. There is a possibility that fiber offcuts could spill out of the box during transportation if remain in the box.
5. The blade of the cleaver is extremely sharp. Do not touch it with bare hands.
6. The FC-6S+ has the "automatic blade return" function. When the clamp cover is opened after cleaving, the blade carriage returns automatically to the forward.
7. Do not impact the top clamp lever and switching lever. Doing so can cause damage to the levers and loss of cleaving performance.
8. If the cleaver is damaged or a problem occurs, please contact our service department.

**Notice on Sumitomo genuine products**



Caution

Please be very cautious of copy products that pretend Sumitomo genuine products. For more information about counterfeit warning, please visit following website;

[https://global-sei.com/sumitomo-electric-splitters/counterfeit\\_warning/warning01.html](https://global-sei.com/sumitomo-electric-splitters/counterfeit_warning/warning01.html)



**1. General**

**Specification**

	FC-6S+
Cladding Diameter	125µm
Fiber Count	Single fiber
Coating Diameter	(φ0.25 & φ0.9mm)
Cleave length	5~20mm (single φ0.25mm) 10~20mm (single φ0.9mm)
Blade return function	Automatic return
Dimensions	93(W) x 76(D) x 63(H) mm
Weight	Approx. 390g

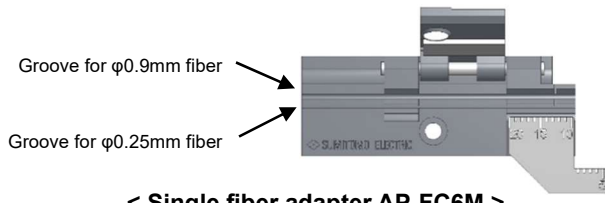
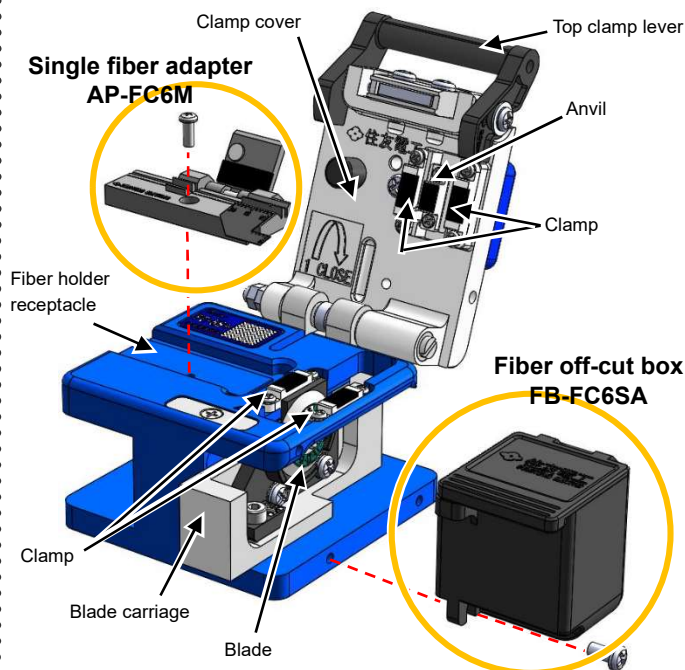
**Standard package**

Items	Qty.
Optical fiber cleaver FC-6S+	1 pc
Carrying case	1 pc
Single fiber adapter AP-FC6M	1 pc (pre-fitted)
Fiber off-cut box FB-FC6SA	1 pc (pre-fitted)

**Optional accessories / Consumables**

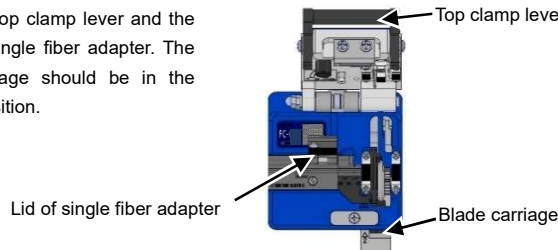
Items	Name
Fiber off-cut box	FB-FC6SA
Spare blade	FCP-20BL

**2. Structure**

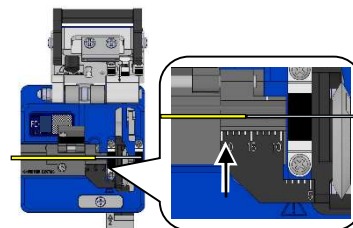


**3. Operating procedures**

- 1: Open the top clamp lever and the lid of the single fiber adapter. The blade carriage should be in the forward position.

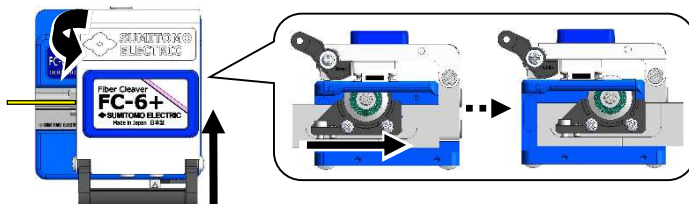


- 2: Lower the fiber straight into the correct V-groove with the end of the fiber coating (e.g. if the cleave length is 16mm) at the 16mm mark on the ruler.

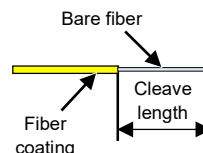


- 3: Close the lid of the single fiber adapter.

- 4: Lower the top clamp lever. Slide the blade carriage to the rear of the cleaver. The fiber will be cleaved.

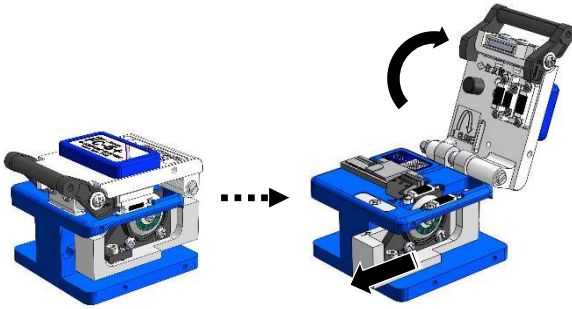


- 5: Open the top clamp lever. Then open the lid of the single fiber adapter and lift the newly cleaved fiber. Lift the off-cut and dispose it properly. The blade carriage returns automatically after cleave, please refer "Automatic blade return function".



## Automatic blade return function

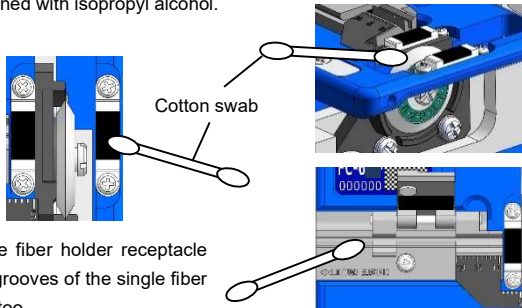
The FC-6S+ has the "automatic blade return" function. When the clamp cover is opened after cleaving, the blade carriage returns automatically to the forward.



## 4. Maintenance

### Cleaning

To keep excellent cleaving quality, cleaning must be performed after use. Clean the blade edge, the rubber pad of the clamp and the anvil with a cotton swab moistened with isopropyl alcohol.



Clean the fiber holder receptacle and the grooves of the single fiber adapter, too.

- Dust on the blade edge or the clamp might cause loss of cleaving performance or poor quality of fiber end face.
- Do not clean them with any other kind of chemicals.
- If the top clamp lever is closed leaving an off-cut fiber on the clamp, the rubber pad of the clamp will have a trace of the fiber, causing loss of cleaving performance or poor quality of fiber end face.



Caution

### Blade position change

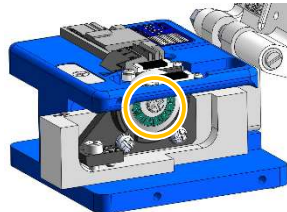
As the number of the cleave's increases, a symptom that fiber cannot be cleaved or cracks will occur. If such symptom continues to appear, the blade position is worn out. Rotate the blade according to the following procedures and use a new blade position.

[Reference] 2,250 fibers per position (\*)

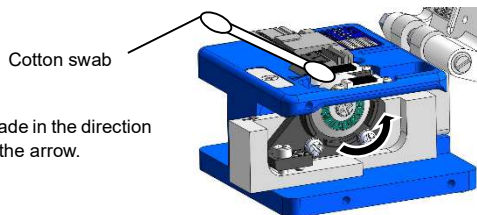
(\*) The number above is not guaranteed. It may vary depending on the operating environment.

Remove the off-cut collector first.

- 1: Loosen the blade setscrew with a slotted screwdriver.



- 2: Rotate the blade to the next position by pressing its side or edge with a cotton swab.



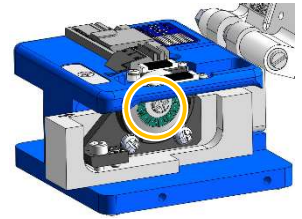
Rotate the blade in the direction indicated by the arrow.



Caution

- Do not rotate the blade with hands.
- Do not rotate the blade with metallic tweezers. Doing so may damage the blade.

- 3: Tighten the blade setscrew.  
[Reference] Optimum torque:  
Approx. 0.98N·m (10kgf·cm)



Caution

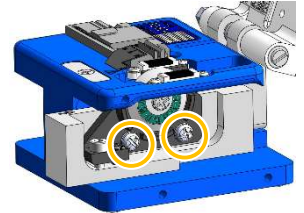
- Do not over-tighten the blade setscrew. The screw will get worn out.

- 4: Try and cleave the fiber. Make visual check of the fiber end face with the splicer. If the fiber end face is poor, adjust the blade height. (Refer to "Blade height adjustment".)

### Blade height adjustment

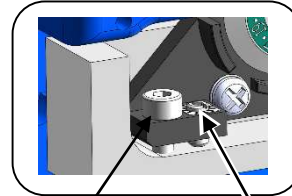
Remove the off-cut collector first.

- 1: Loosen the 2 cross head screws.



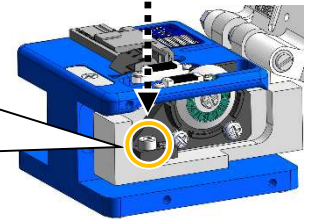
- 2: Slide the blade carriage to the rear of the cleaver, then loosen the blade height locking screw.

Put a Hex driver (US) or Allen key (UK) here.



Blade height locking screw

Blade height adjustment screw

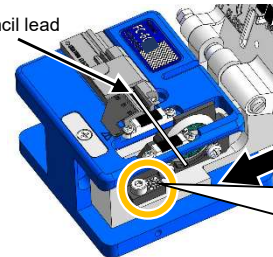


- 3: Place a mechanical pencil lead or a light stick on the clamps. Slide the blade carriage back and forth and turn the blade height adjustment screw. The point where the lead barely touches the edge of the blade is a reference point (0μm).

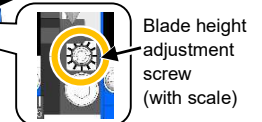
#### ☑Tips

- To make the blade higher, turn the blade height adjustment screw clockwise.
- To make the blade lower, turn the blade height adjustment screw anti-clockwise. (Turn the screw while pushing the blade down with a cotton swab.)

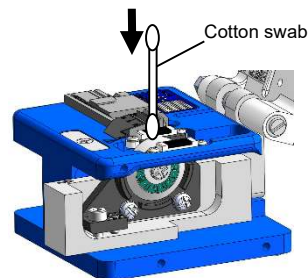
Mechanical pencil lead



Slide the blade carriage.

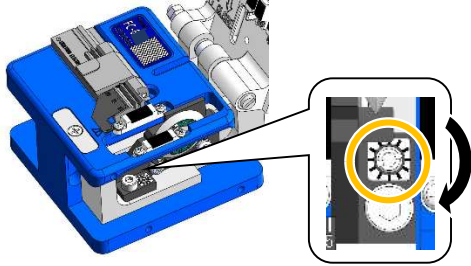


[Reference]  
1 mark on scale = Approx. 10μm



To make the blade lower, turn the blade height adjustment screw anti-clockwise, while pushing the blade down with a cotton swab.

4: Turn the blade height adjustment screw clockwise by more 4 to 6 marks from the reference point.



• Do not make the blade too high. Doing so will damage the anvil and increases the chipped fiber ends.

5: Tighten the blade height locking screw.

[Reference] Optimum torque: Approx. 0.59N·m (6kgf·cm)

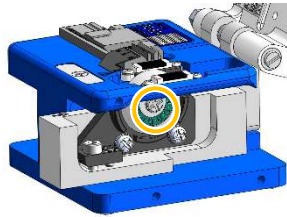
6: Tighten the 2 cross head screws.

[Reference] Optimum torque: Approx. 0.98N·m (10kgf·cm)

## Blade replacement

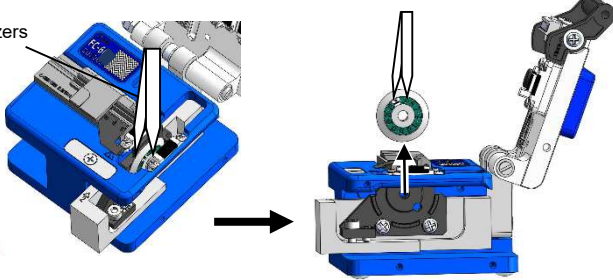
Remove the off-cut collector first.

1: Unscrew the blade setscrew.



2: Remove the blade with tweezers.

Tweezers



- The edge of a blade is manufactured precisely. If the edge is hit against metallic objects, it will crack, resulting in poor cleaving performance. Handle with care.
- When using metallic tweezers, be careful not to damage the blade.
- Do not touch the blade with hands. Use gloves.
- Dispose of the old blade properly.

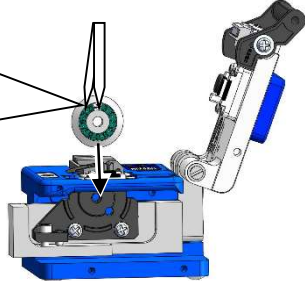
3: Insert a new blade in the cleaver so that “(1)” of the number sticker is in the top position. (Refer to the enlarged view below.)

The hole of the blade should be aligned with the hole of the blade receptacle.

### Enlarged view

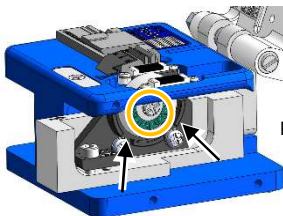
“(1)” should be in the top position.

(24) (1) (2)



4: Tighten the blade setscrew completely, while pressing the side of the blade.

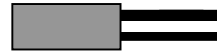
[Reference] Optimum torque: Approx. 0.98N·m (10kgf·cm)



Press the side of the blade.

5: Adjust the blade height, referring to “Blade height adjustment” at page 2.

## Troubleshooting



Good



Poor cleave angle



Lip



Crack

If the cleaving problem occurs, the followings are possible causes.

- The fiber is placed obliquely in the cleaver.
  - ➔ Make sure that the fiber is placed straight in the cleaver.
- The blade height is too high.
  - ➔ Adjust the blade height.
- Dust or dirt remains on the clamp.
  - ➔ Clean the clamp.
- Dust or dirt remains on the blade.
  - ➔ Clean the blade.
- Dust or dirt remains on the fiber.
  - ➔ Remove the fiber coating and clean the bare fiber again.

If the problem still persists, please contact our service department.

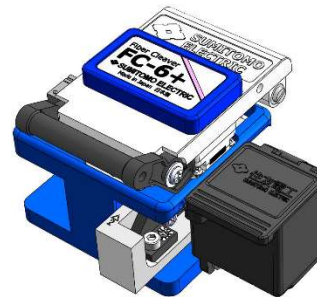
## 5. Fiber off-cut box

### Installing fiber off-cut box

1: Fit the fiber off-cut box to the cleaver and tighten the 1 screw. Pay attention to the orientation of fitting.



2: Completed.



Caution

- Remove the fiber off-cut box from the cleaver and dispose of fiber off-cuts properly.
- Dispose of the old blade properly.
- Pay great attention to fiber off-cuts.

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