

### Operation Procedures for the FC-6S Precision Fiber Cleaver



Before starting to use this tool, read carefully.

Always pay attention to the following contents to maintain the safety.

#### Caution

1. Taking apart the tool or oiling may cause trouble.
2. Be careful of sharp scrap ends. They must be disposed of in the exclusive place.  
Do not mix with normal garbage.
3. Do not touch a blade with bare hands. Use gloves.

#### 1. General

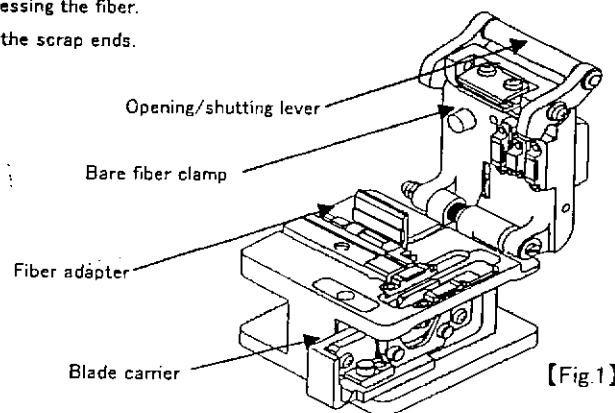
The FC-6S is a tool used for cleaving single stand optical fibers. Fiber requirements and specifications are shown in Table 1.

Table 1. Specifications

Fiber types	Single fiber
Coating diameter	$\phi 0.25 \pm 0.09 \text{ mm}$
Clad diameter	$125 \mu \text{ m}$
Cleave length	9~16mm ( $\phi 0.25 \text{ mm}$ ) 10~16mm ( $\phi 0.9 \text{ mm}$ )
Dimensions	63(W) × 65(D) × 63(H) mm
Weight	430g
Typical cleave angle	$0.5^\circ$
Blade life	36,000 fibers

#### 2. Operation (Refer to Fig.1)

- (1) Lift the opening/shutting lever and open the bare fiber clamp.
- (2) Ensure the blade is toward your side.
- (3) Open the cover of the fiber adapter and set the fiber in the groove. Set the end of the coating to a scale with enough length.
- (4) Close the cover and fix the fiber.
- (5) Ensure the fiber is straight.
- (6) Close the bare fiber clamp.
- (7) Slide the blade carrier and cleave the fiber.
- (8) Lift the opening/shutting lever and open the bare fiber clamp again.
- (9) Open the cover of the adapter pressing the fiber.
- (10) Remove the fiber and dispose of the scrap ends.



[Fig.1]

2. Maintenance

If cleaving conditions become poor, try the following steps.

(1) Cleaning the bare fiber clamp and the blade

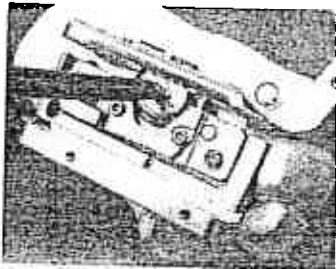
Clean the upper and lower rubber surfaces of the bare fiber clamp and the blade edge with a cotton swab moistened with pure alcohol.

(2) Rotating the blade position (Refer to Fig.2,3,4)

Follow the procedures below.

① Loosen the blade fixing screw.

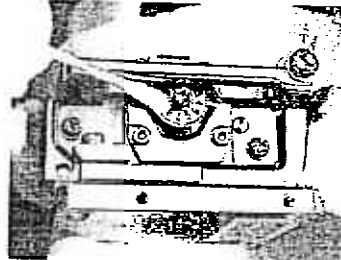
Refer to [Fig.2.]



[Fig. 2]

② Turn the blade to the next position as numbered.

Refer to [Fig. 3.]

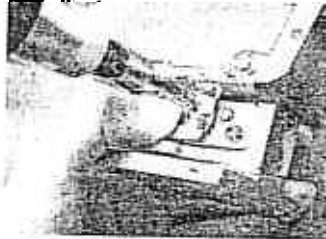


[Fig. 3]

Effective positions are 1 to 12.

Slant the cleaver downward at 45° and press a cotton swab on the side of the blade or the taper. Try to push the blade outward, which makes it easier to turn the blade

③ Tighten the blade fixing screw. Refer to [Fig.4]



[Fig. 4]

Tighten the screw pressing the blade slightly with your finger.

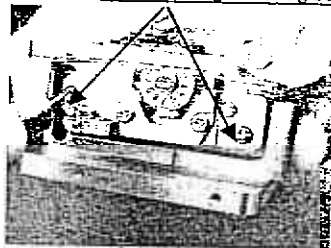
A proper tightening torque is around 10kgf.cm.

Normally there is no need to adjust the height once the blade is turned.

In case cleaving condition becomes unusual, refer to "(3) Adjusting the blade height" and try it again.

(3) Adjusting the blade height

① Loosen the blade height locking screws. Refer to [Fig. 5]



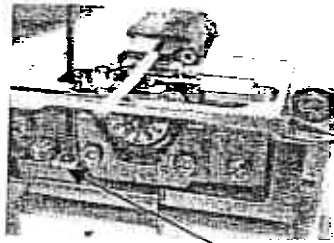
[Fig. 5]

② Loosen the pressing screw. Refer to [Fig. 6]



[Fig. 6]

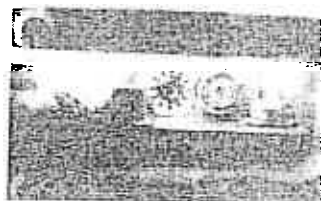
③ Put the light stick made of wood or resin on the clamp. Turn the blade pressure adjustment screw so the blade can be barely touched the stick. Turn the screw for more three or four scales clockwise.



[Fig. 7] blade pressure adjustment screw

Refer to [Fig. 7]

④ One scale of the blade pressure adjustment screw is 20 μm. Refer to [Fig.8]



2 [Fig. 8]

The blade pressure adjustment screw is turned, when 20~30 μm of the blade pressure has already occurred.

Therefore, when ③ is done, more 60~80 μm should be added and the blade pressure

amounts to around 80~110  $\mu$ m.

④ Tighten the blade fixing screw. A proper tightening torque is around 6kgf.cm.

⑤ Tighten the blade height locking screw. A proper tightening torque is around 10kgf.cm.

(4) When cleaving conditions are unsatisfactory

A. Uncleavable, rip, big angle of cross section

Although Both of the cleaver and the blade pressure are completely adjusted following the procedures aforesaid, the phenomenon above-mentioned occurs : There may be a possibility that the blade pressure is lower. Raise the pressure according to "(3) Adjusting the blade height".

It is suitable to turn the screw for less than one scale (if possible, a half scale) to additionally raise the pressure.

B. Cracking(Shadow appears near the cleaving section in the microscope of the splicer), big angle of cross section

Although Both of the cleaver and the blade pressure are completely adjusted following the procedures aforesaid, The phenomenon above-mentioned occurs : There may be a possibility that the blade pressure is higher. Lower the pressure according to "(3) Adjusting the blade height".

It is suitable to turn the screw for less than one scale (if possible, a half scale) to additionally lower the pressure.

The edge angle could be bigger when the blade pressure is not only lower but also higher. This results from cracking and it is considered that shadow doesn't appear near the cleaving section in the microscope of the splicer because the cracking side isn't accidentally turned toward the direction of the microscope.

C. Nevertheless, when cleaving condition still isn't improved at all, there might be a defect in functional parts except the blade. In this case, please make an inquiry to a maintenance service center.

(5) Adjusting blade pressure at three steps

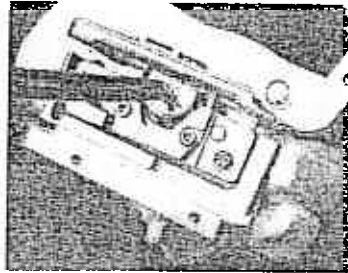
After all of blade positions(1 to 12) are used, setting back the position to 1. Adjusting the height enables to cleave again. Follow the procedures below.

① Referring to the "(3) Adjusting the blade height", turn one more scale than normal case.

② The height adjustment can be done twice. In short, 36 blade positions can be used with one blade.

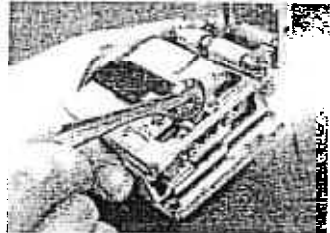
(6) Blade replacement

① Take the blade fixing screw. Refer to [Fig. 9]



[Fig. 9]

② Take the used blade out of the cleaver with tweezers. Refer to [Fig. 10]

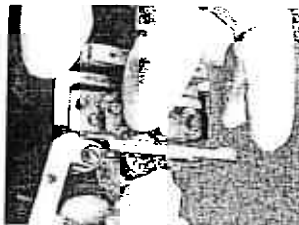


[Fig. 10]

As shown in [Fig. 11,12] slant the cleaver downwards and take out the used blade so it can be pushed or slipped outward.

Caution, Do not touch the blade with bare hands. Use gloves

[Fig. 11]



[Fig. 12]



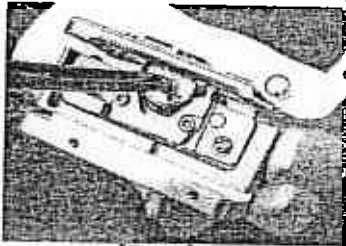
- ④ Slant the cleaver downward at 45°. Turn the number "1" of index sticker upwards and put the blade on the blade fixed side of the holder and insert the blade with smoothness. Refer to [Fig. 13]



[Fig. 13]

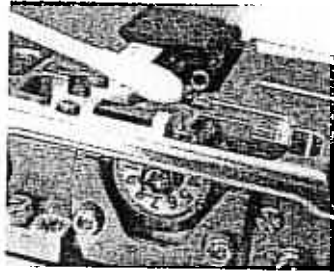
Caution; Do not touch the blade with bare hands. Use gloves.

- ⑤ Temporarily tighten the blade fixing screw. Refer to [Fig. 14]



[Fig. 14]

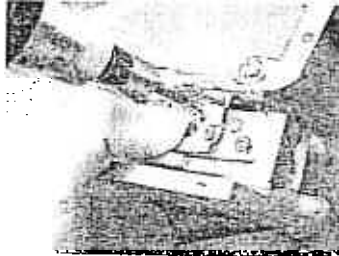
- ⑥ Keep the cleaver downwards at 45°, push the blade down slightly with a swab and ensure the blade is completely fitted into the holder. Refer to [Fig. 15]



[Fig. 15]

Caution; Do not push the blade strongly. Or the blade could be damaged and stuck into the holder, which is hard to take it out again.

- ⑦ Tighten the blade fixing screw. A proper tightening torque is around 10kgf.cm. Refer to [Fig. 16]



[Fig. 16]

Tighten the screw pressing the blade slightly with your finger.