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Operating the Corning Cable Systems FBC-006 Fiber Cleaver

1. General

1.1 This procedure describes how to use and maintain the Corning Cable Systems FBC-006 fiber cleaver (Figure 1).

1.2 The FBC-006 Precision Fiber Cleaver provides smooth, flat, perpendicular fiber end-faces necessary for low-loss fiber splicing. The FBC-006 produces high-quality, repeatable cleaves for all 125 μm single-mode and multimode fibers. The standard unit cleaves all 250 μm and 900 μm coated fibers to lengths of 5 mm or greater.

1.3 Read through and understand this manual completely before your first use. Failure to do so may result in poorly cleaved fibers and damage to the cleaver.

1.4 Featuring a diamond cutting blade for durability, the FBC-006 operates on the “pull, bend, scribe and break” principle. The FBC-006 produces repeatable fiber end-faces that average less than 0.7° from perpendicular.

1.5 Figure 1 identifies the parts of the FBC-006 cleaver. A metric length scale incorporated in the base of the cleaver allows accurate cutting to any desired length between 5 mm and 15 mm.

1.6 This issue includes updated corporate information.

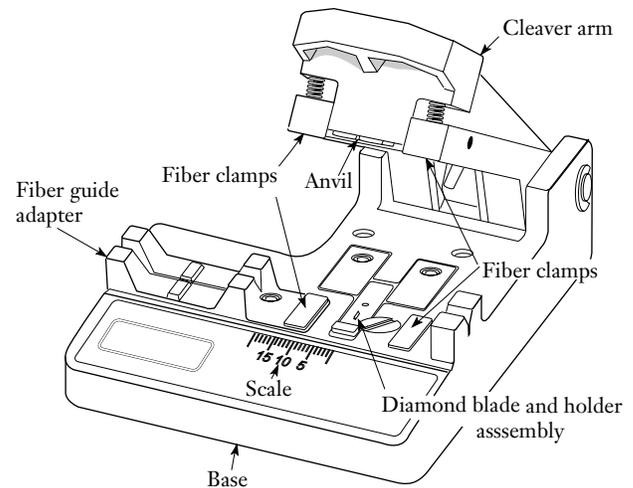


Figure 1

2. Precautions

2.1 General Precautions



Safety Glasses

WARNING: The wearing of safety glasses to protect the eyes from accidental injury is strongly recommended when cleaving fibers. Pieces of glass fiber are very sharp and can damage the cornea of the eye easily.

2.2 Fiber Precautions



WARNING: Cleaved glass fibers are very sharp and can pierce the skin easily. Do not let cut pieces of fiber stick to your clothing or drop in the work area where they can cause injury later. Use tweezers to pick up cut or broken pieces of the glass fibers and place them on a loop to tape kept for that purpose alone. Good housekeeping is very important.

2.3 Cable Handling Precautions



Caution: Fiber optic cable is sensitive to excessive pulling, bending and crushing forces. Consult the cable specification sheet for the cable you are installing. Do not bend cable more sharply than the minimum recommended bend radius. Do not apply more pulling force to the cable than specified. Do not crush the cable or allow it to kink. Doing so may cause damage that can alter the transmission characteristics of the cable. The cable may have to be replaced.

3. Tools and Materials

3.1 In addition to the FBC-006 cleaver, the following tools and materials are required for this procedure:

- Lint-free tissues
- Cleaning strips*
- Tweezers
- Vinyl tape
- Isopropyl alcohol
- 2.5 mm hex key*
- Slotted screwdriver

* items included with the FBC-006

4. Cutter Operation

4.1 Make a loop of vinyl tape, adhesive side out, on which to place cut pieces of fiber. Place the loop in a convenient location.

4.2 Open the cleaver and make sure that the following areas of the cleaver are clean:

- Cleaver arm
- Fiber clamps
- Anvil
- Diamond blade
- Fiber guide

If any of these areas need cleaning, follow the appropriate cleaning instructions in Section 5, Maintenance.

4.3 As necessary, insert the proper fiber guide adapter for your installation according to Section 5, Maintenance.

250 μm and 900 μm Coated Fibers

4.3 Prepare the cable as described in its manufacturer's documentation.

4.4 Strip at least 4 cm (1.57 in) of coating from the fiber according to its manufacturer's instructions (Figure 2).

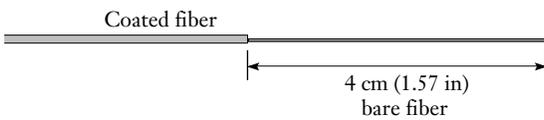


Figure 2

4.5 Clean the bare fiber by wiping it with a lint-free tissue soaked in alcohol. From this point on, do not touch the cleaned fiber with your fingers.

4.6 Place the fiber in the cleaver, aligning the end of the fiber coating with the scale to give the required cleave length. Hold the fiber in place with your left thumb or forefinger (Figure 3).

The bare fiber should extend across the base to the right fiber guide.

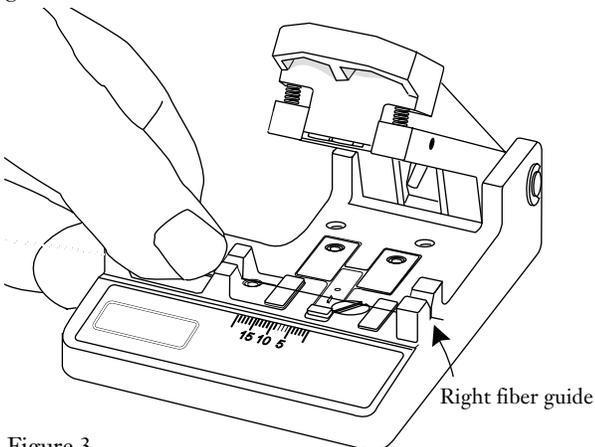


Figure 3

4.7 Gently swing the cleaver arm down so that the upper fiber clamps are resting on the fiber.

4.8 Push down on the cleaver with a *slow and gentle motion* until you hear a click — the fiber is now cleaved (Figure 4).



Caution: Always use a slow, gentle motion with the cleaver. Slamming the arm down may damage the diamond blade, resulting in poor cleaves.

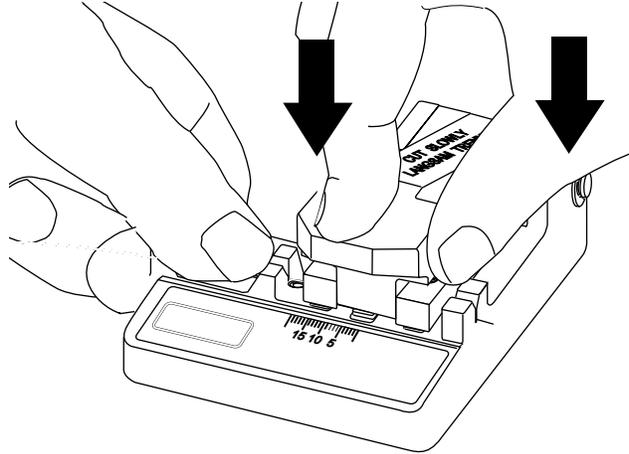


Figure 4

4.9 Remove the cut end of the fiber with tweezers and put it on the loop of tape (Figure 5).

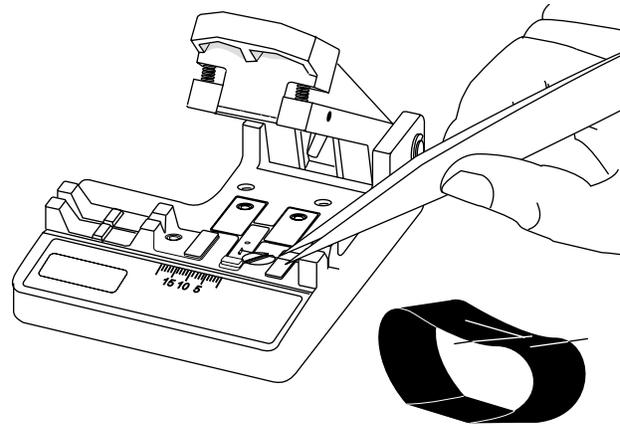


Figure 5

4.10 After completing use of the cutter, properly dispose of the tape loop holding the cut fiber ends.

2.9 mm Single-fiber Cable

IMPORTANT: Make sure that the proper fiber guide is installed in the cleaver (see step 5.2).

4.11 Measure and remove the outer cable jacket and aramid yarn according to the appropriate connector or splicer instructions for your installation (Figure 6).



Figure 6

4.12 Place the fiber in the cleaver to give the desired cleave length as shown in Figure 7. Hold the fiber in place with your left thumb or forefinger- position the fiber so that its bow is placed downward to force the fiber to lay straight across the blade.

The bare fiber should extend across the base to the right fiber guide. Make sure that no aramid yarn is on the clamping pads during cleaving (Figure 7).

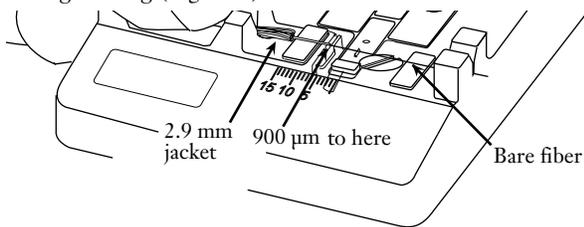


Figure 7

4.13 Gently swing the cleaver arm down so that the upper fiber clamps are resting on the fiber.

4.14 Push down on the cleaver with a *slow and gentle motion* until you hear a click – the fiber is now cleaved (see Figure 4).

4.15 Remove the cut end of the fiber with tweezers and put it on the loop of tape (see Figure 5).

4.16 After completing use of the cutter, properly dispose of the tape loop holding the cut fiber ends.

5. Maintenance

Cutter Cleaning

5.1 After each day's use, clean the guides, clamping pads, blade, and anvil of the FBC-006 as follows:

- Clean the clamping pads by inserting a cleaning strip soaked in alcohol between the pads and pressing down on the cleaver to close them. Pull the strip from between the pads (Figure 8). Repeat this step several times.

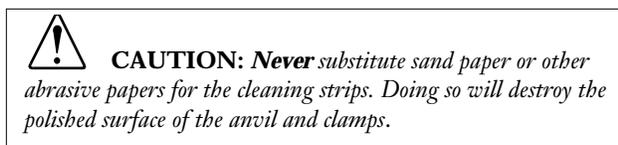
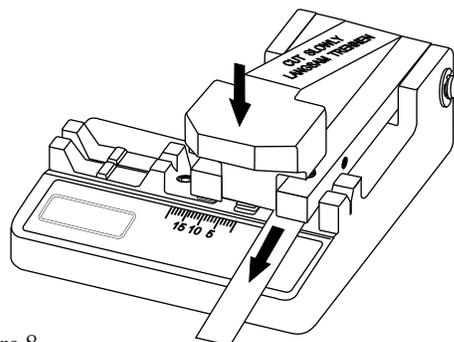


Figure 8



- To clean the diamond cutting blade:

Insert a cleaning strip soaked in alcohol between the anvil and the cutting blade. Gently press down on the cleaver bar to bring the anvil into contact with the strip. Pull the strip from the cleaver.

Open the cleaver and use the strip to clean the end faces of the blade (Figure 9).

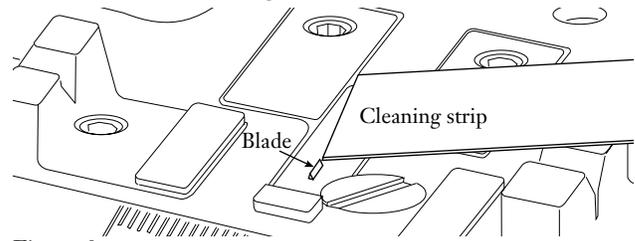


Figure 9

- Carefully inspect the cutter for any fiber remnants, bits of dirt, etc. Repeat steps a and b if necessary.

Changing Guides

5.2 The following optional guides and guide sets are available for the FBC-006 cleaver:

- **FBC-006-04** -standard universal fiber guide (for 250 mm and 900 mm fiber)
- **FBC-006-05** - 3 mm fiber guide, permits cleaving 3 mm cable for FuseLite™ termination.
- **FBC-006-07** - Fanout and OptiStrip Kit, two fiber guides and instructions, permits cleaving 3 mm OptiStrip cable or fanned-out fibers in a buffer tube fan-out kit.

5.3 To change a guide :

- Use a 2.5 mm hex key to remove the hex-head cap screw which secures the guide to the cleaver base (Figure 10).

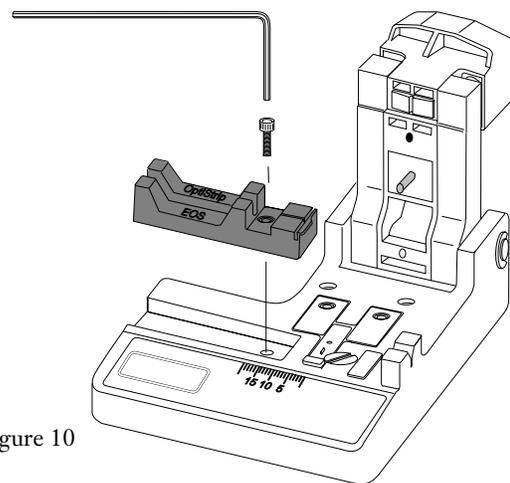


Figure 10

- Place the new guide in the base and secure it with the cap screw. Optionally, the guide may be held in place by the magnetic base without the securing screw.

Blade Replacement

5.4 If your cleaver begins to perform inconsistently or fails to make acceptable cuts, first clean the blade as described in step 5.1 b.

Check the condition of the blade for damage — if nicks or other damage to the blade are visible, replace the blade as described in step 5.5.

5.5 To replace the diamond blade assembly (p/n FBC-006-01):

- Use a 2.5 mm hex key to remove the screws from the blade access covers (Figure 9). Lift the covers out of the cleaver base.
- Use a slotted screwdriver to remove the slotted screw which serves as a blade retainer (Figure 11).
- Use tweezers to remove the old blade assembly.

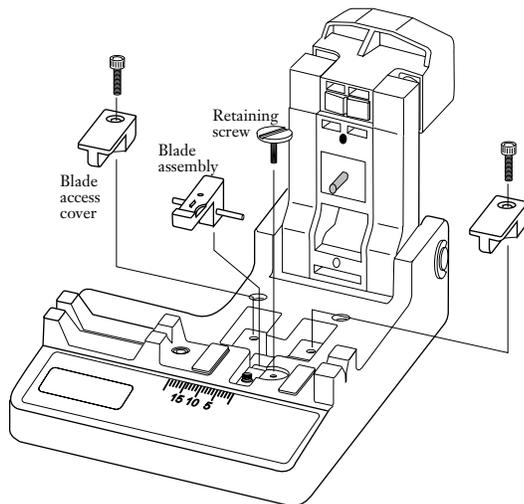


Figure 11

- Clean any dust or fiber fragments from inside the base of the cleaver.

- Insert the new blade assembly into the base of the cleaver. Be sure to properly place its shafts in the two recesses in the base of the cleaver.
- Carefully replace the slotted retainer screw removed in step b and the two covers and cap screws removed in step a. *Do not over tighten the screws — the blade must be able to pivot freely.*

6. Technical Support

6.1 If the cleaver ever fails to work properly, you may:

- **Talk to a Corning Cable Systems Engineer** - call 800-743-2671, 8:30 am - 5:00 pm Eastern time. and ask for the duty engineer.
- **Return the cutter for service** - contact your Corning Cable Systems Customer Service Representative at 800-743-2671 or the numbers listed below

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