

Termination Procedure

ST One Piece Connector (3mm/2.4mm/2mm/1.6mm)

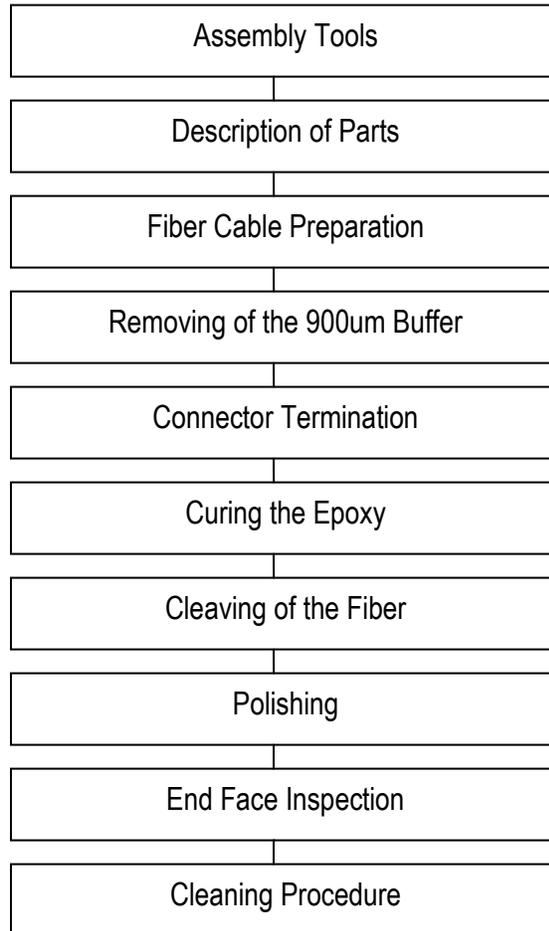
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1. Termination Process



2. Assembly Tools

The tools required for the ST assembly are:

1. Cable Jacket Stripper. SENKO P/N 106100103
2. Thermal Primary Coating (Buffer) Removal Tool. SENKO P/N 106100104
3. IPA (Isopropyl Alcohol).
4. Fiber Cleave Tool. SENKO P/N 106100111
5. Optical Connector (Reel type) cleaner. SENKO P/N 106100108
6. SENKO ST One Piece Crimp Tool Part No: CRT-401.
7. Curing Oven. SENKO P/N 106100114
8. Polishing machine. SENKO P/N APC8000 and Polishing Fixture. SENKO P/N STUPC-2.5-18-8



1.



2.



3.



4.



5.



6.



7.



8.

3. Description of Parts

The ST One Piece Connector consists of the components shown in Figure 1:

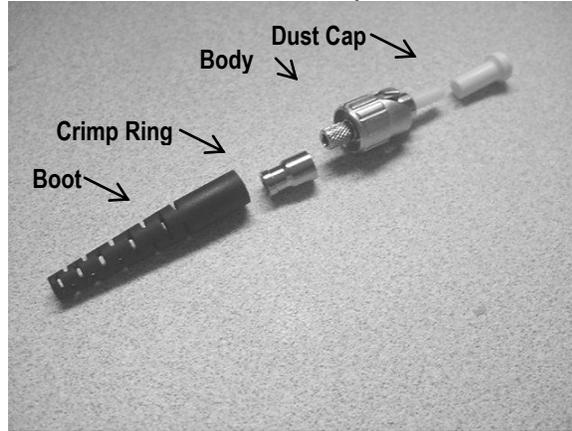


Figure 1

4. Termination Procedure

4.1 Fiber cable preparation

1. Slide components onto the cable in the order shown in Figure 2, giving attention to the direction of the parts.

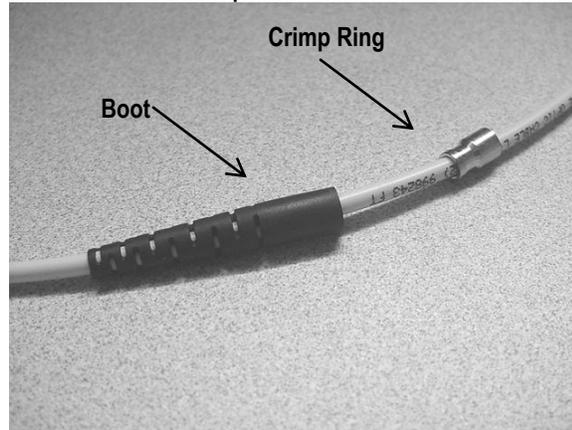


Figure 2

2. Using the template in Figure 3, mark cable jacket and strip cable to the correct lengths, using the appropriate tooling.

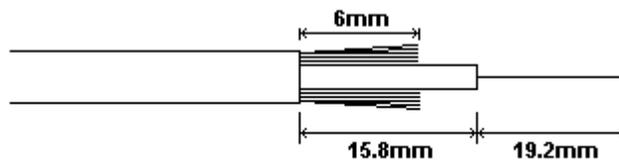


Figure 3



4.2 Removing of the 900um buffer.

Strip off the buffer 15.8 +/- 0.5mm in length, up to the pen mark using a Thermal Primary Coating (Buffer) Removal Tool.

Note1: Less than 10 mm of buffer should be stripped off at a time.

Note2: Be careful that the tip of the stripper blade never touches the optical fiber.

Note3: Take care not to damage the fiber when removing the primary coating (buffer).

4.3 Connector termination

1. Wipe clean the needle tip before applying the epoxy.

Note: Senko recommends TRA-BOND F-253 or EPO-TEK 353-ND.

2. Inject epoxy into the ferrule by inserting the epoxy needle up to the back of the ferrule inside the body.

Note: Hold the body with the ferrule pointing up.

3. Press the syringe plunger gently until a very small bead of epoxy appears on the tip of the ferrule.

4. Wipe Excess epoxy off the tip with a wipe.

Note: Be careful not to get excess epoxy between the metal guide tube and the body, as this will cure in the oven and stop the spring from compressing.

5. Slightly pullback the needle inside the body by 1mm and inject another small amount of epoxy to the back of the ferrule.

6. Clean the full length of the fiber using IPA (Isopropyl Alcohol) and a Kimwipe.

7. Insert the optical fiber into the back of the body.

Note: Be careful not to break the fiber, insert the fiber slowly until the fiber guide tube is located, and then fully insert the fiber into the body.

Note2: Confirm that the optical fiber is completely inserted into the ferrule.



Figure 4

8. Slide the crimp ring up and over the back of the body, making sure the Kevlar is evenly distributed around the bodies back post as show in figure 4.
Note: The crimp ring body needs to be aligned against the sides of the body.
9. Using the .178 Hex die on SENKO CRT - 401 crimp tool; crimp the crimp ring over the bodies back post as shown in figure 4.
10. Using the .151 Hex die on SENKO CRT - 401 crimp tool; crimp the crimp ring over the cable jacket as shown in figure 4.
Note: SENKO crimp rings are designed for Ø3.00mm, Ø2.40mm, Ø2.00mm, and Ø1.6mm cable jackets. In some special cases the cable jacket may have a thinner diameter; this may cause rotational movement after the crimp ring has been crimped. If this is the case SENKO recommends using a silicone based glue to be applied to the base of the crimp ring to stabilize the cable jacket and boot.

4.4 Curing the Epoxy

1. Using a suitable curing oven.
2. Set the temperature according to the epoxy manufacturer's specifications. For connector applications in uncontrolled environments, consult your SENKO sales department.
3. Gently place the assembly into the oven and cure for the specified time described by manufacturer.
4. When the connectors are fully cured, remove from the oven, cool to room temperature.



Figure 5



5. Slide the boot up over the back of the crimp ring as shown in figure 5.
Note: The SENKO Boot design is meant to allow some rotational movement over the crimp ring. If this is not suitable SENKO recommends using a flexible epoxy to secure the I.D. of the boot onto the crimp ring, two epoxy examples are:
 - a. Fiber Optic Center's "Angstrombond® AB9245" www.focenter.com
 - b. Loctite's Henkel Corporation, "Teromix #6700" www.stickwithhenkel.com

4.5 Cleaving of the fiber

Note: In the following step, take care not to break the exposed fiber.

1. After the connector has cooled to room temperature, use a suitable cleave tool e.g. (Diamond tip, Sapphire, Tungsten Carbide Pen type), remove the excess fiber protruding the tip of the ferrule.
2. This is achieved by holding the ferrule with the fiber pointing upwards.
3. Rest the blade of the cleave tool against the fiber just on top of the epoxy bead on the surface of the ferrule.
4. Gently run the full length of the blade over one side of the fiber.
Note: Be careful not to knock the fiber off with the cleave tool.
5. Remove the excess fiber by running your thumb and finger up the length of the fiber, without forcing the fiber to break off. The fiber should fall away from the assembly.
6. Place fiber off-cuts in a suitable sharps bin for proper disposal.
7. When all fiber has been removed, check the sides of the ferrule for any excess epoxy that may have cured. If this is the case, use a scalpel or Stanley blade to remove the excess.

5. Polishing

If Telcordia GR-326-CORE type endface criteria and performance are to be achieved it is advisable to use SENKO APC8000 polishing machine and polishing consumables

For polishing procedures, please contact your local SENKO representative.

6. End Face Inspection

Caution: Optical fibers may emit radiation if the far end is connected with a working laser or light-emitting diode (LED). Never view the fiber end of the cable or plug with the naked eye or any optical instrument until absolute verification is established that the fiber is disconnected from any laser or LED source.

Check the polished end face of the ferrule using a microscope or a magnifier.



Note: There should be no scratches or cracks. See Figure 6.

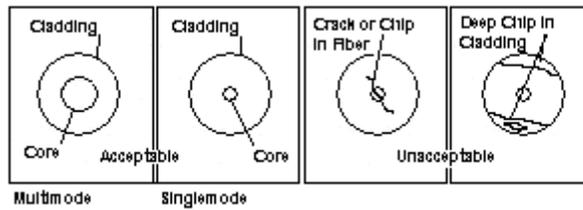


Figure 6

7. Cleaning Procedure

1. Wipe the ferrule endface using an Optical Connector Cleaner.
2. Clean the inside of the dust cap before putting it on the ferrule.
Note: Cleaning should be done thoroughly, since it affects the connection Characteristics of plugs.



Figure 7

3. Place the dust cap over the ferrule as shown in figure 7.



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Note: Specifications are subject to change without notice