

Installation Guide for SST Figure-8 Drop Cable

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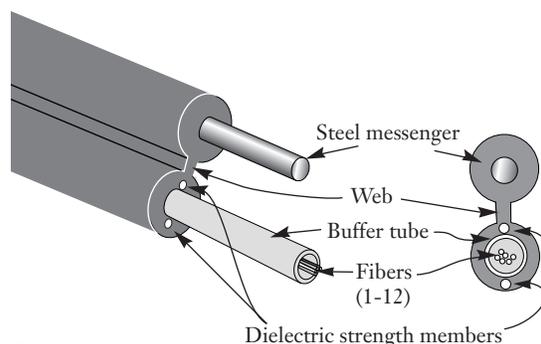


Figure 1

1. General

1.1 This document describes the procedure for installing Corning Cable Systems SST Figure-8 Drop cable in both cable-end and mid-span applications.

1.2 SST Figure-8 Drop cables are outside plant cables incorporating both a steel messenger and a single buffer tube with up to 12-fibers into a single jacket of “Figure-8” cross-section (Figure 1). The combination of messenger and optical fiber into a single cable results in a rapid installation and a more durable aerial cable plant.

1.3 This procedure contains references to specific brand-name products in order to illustrate a particular method. such references are not intended as product endorsements -other manufacturer’s equivalent hardware can be used.

1.4 This issue includes updated slack loop information.

2. Precautions

2.1 This section discusses some basic safety considerations applicable to aerial cable installations. This section is not intended to provide a comprehensive guide to safety precautions and in all cases, your company’s procedures and precautions should take precedence over the recommendations in this document.

2.2 Cable Handling Precautions

Safety Glasses



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

Safety Gloves



The wearing of **safety gloves** to protect your hands from accidental injury when using sharp-bladed tools is strongly recommended. Use extreme care when tools are open and blades are exposed. Properly dispose of used blades.

2.3 Fiber 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. Excessive bending will cause kinking which may damage the fiber inside- the cable may have to be replaced.

Electrocution Hazards



DANGER: Installing a conductive drop cable near power lines can be extremely hazardous. All installers should be familiar with their company’s safety practices and applicable codes and regulations.

Observe all applicable codes for installing drop cables to maintain legal and safe clearances for vehicles and pedestrians. Failure to do so can result in severe injury or property damage.

2.4 Laser Precautions



WARNING: *Cleaved glass fibers are very sharp and can easily pierce the skin. 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 of tape kept for that purpose alone. Good housekeeping is very important.*

2.5 Chemical Precautions



WARNING: *Laser light can damage your eyes. Laser light is invisible. Viewing it directly does not cause pain. The iris of the eye will not close involuntarily as when viewing a bright light. Consequently, serious damage to the retina of the eye is possible. NEVER LOOK INTO THE END OF A FIBER WHICH MAY HAVE A LASER COUPLED TO IT.*

Should accidental eye exposure to laser light be suspected, arrange for an eye examination immediately.

Filling Compound Remover



WARNING: *Contains petroleum distillates/ Harmful or fatal if swallowed. DO NOT INDUCE VOMITING. Call a physician or Poison Control Center immediately.*

3. Tools and Materials

3.1 The following tools and materials are required to complete this procedure:

- Small slotted screwdriver
- Safety Glasses
- Gloves
- Scissors
- Tape measure
- Filling compound remover wipes (or liquid filling compound remover and clean rags)
- Lint-free tissues
- Utility knife with new, straight blades
- Small Phillips head screwdriver
- Vinyl tape
- Buffer stripping tool (p/n 3206001)
- Needle nose pliers
- Side cutters (diagonal cutting pliers)
- Coaxial cable stripper (p/n 100107-01)
- Wirewise® clamp (cat. no. 5056 or equivalent clamp from other manufacturers)
- Cable ties
- Buffer Tube Fan-out Kit (BTF)-optional

For Mid-span Access:

- 4.8-5.3 mm tube splitter (yellow) (p/n A0400978)
- 2.8 mm tube splitter (blue) (p/n A0400978)

In addition, the installation will require the tools and materials required for the hardware in which the cable is being installed, and items necessary for bonding and grounding per your company's practices.

4. Cable Span Termination

4.1 NESG heavy loading conditions limit drop cable spans to 46 m (150 ft.) at a 1% installation sag. Increased allowable sag and more favorable conditions may greatly increase the allowable distance. Contact Corning Cable Systems for more specific application distances.

4.2 Slack loops may be added as required by local practices. To add slack loops, place one or more 31 cm (12 in.) diameter loops on the slack-end of the cable before routing the cable to the termination hardware. Secure the slack loops with cable ties.

4.3 To secure the cable in an aerial application, separate the cable components as described in Section 5 of this procedure and install a Wirewise # 5056 or an equivalent clamp per its manufacturer's instructions (Figure 2).

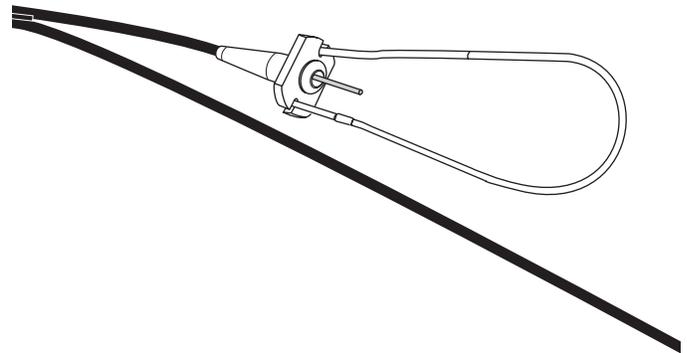


Figure 2

4.4 Route and secure the Figure-8 SST-Drop cable into the selected termination hardware according to the installation procedures for that hardware.

4.5 The messenger should be used to secure the cable to the closure or hardware according to its manufacturer's recommended procedure.

5. Cable-end Accessing of the Fibers

Separating SST Figure-8 Drop Cable Components

5.1 SST Figure-8 Drop cable components must be separated for splicing and termination operations.

Refer to the hardware documentation in which you are installing the cable for the required jacket removal lengths, e.g., the length needed for installing one end of the cable into a closure.

5.2 Mark the cable at the appropriate distances from the cable ends with wraps of tape. Use scissors or side cutters to carefully cut a 20 mm (0.75 in.) starter notch in the web that joins the messenger and the buffer tube sections of the cable (Figure 3).

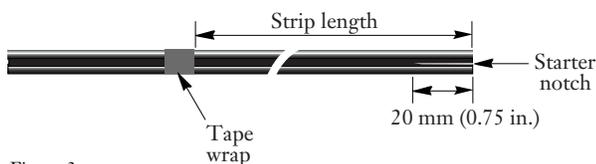


Figure 3

5.3 Using great care to avoid kinking the optical component, pull the two components apart to the tape mark (Figure 4).

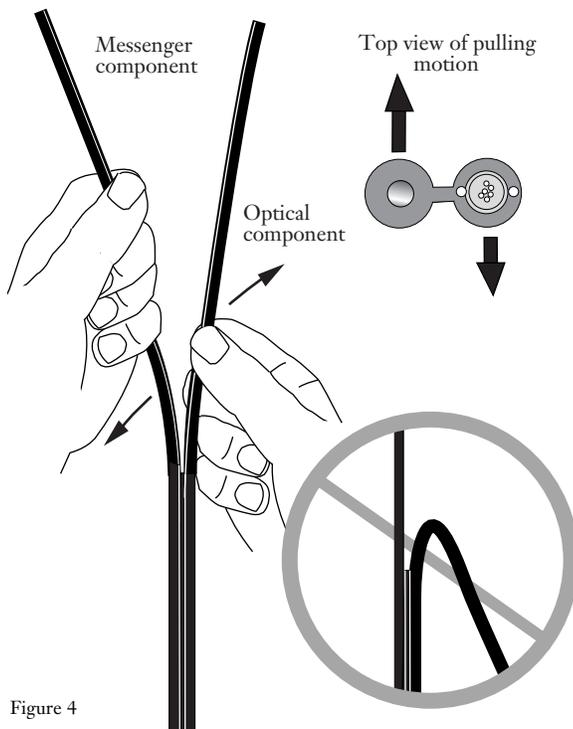


Figure 4

5.4 Route and secure the SST Figure-8 Drop cable into the selected termination hardware, following all hardware instructions. **BE EXTREMELY CAREFUL NOT TO DAMAGE THE EXPOSED FIBERS DURING THIS STEP.**

Accessing the Optical Fibers

5.5 Use a coaxial cable stripper to score the optical component (jacketed buffer tube). Scoring the circumference of at the tube will enable you to make a clean break in the tube with minimal risk to the fibers inside.

Before using the stripper, make sure that it is properly adjusted. Use a small Phillips head screwdriver to adjust one of the blades on the side of the central tube cutter so that it seats against the lower jaw but does not force the jaw open (Figure 5).

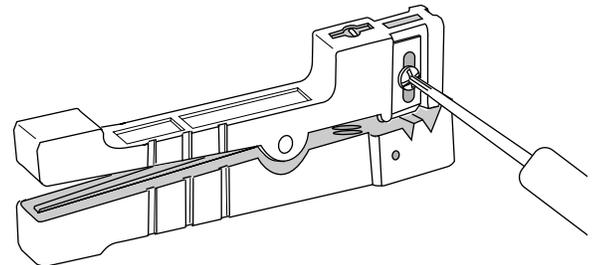


Figure 5

Leave the blades on the front and other side of the tool fully retracted so that they do not extend into the grooves of the lower jaw.

5.6 Use the last 2 to 3 inches (5 to 7.5 cm) at the end of the jacketed tube to determine the effectiveness of the stripper's blade and how many turns of the tool will be required to score the tube. *To minimize damage to the fibers inside the tube, always use the tool to score the tube, not completely cut it.*

To score a jacketed tube:

- Open the tool by squeezing its handles together and place the stripper's blade on the jacket at the desired scoring point.
- Hold the optical component steady with one hand to prevent it from twisting.
- Use your other hand to rotate the tool around the jacketed tube four to six complete turns to score it (Figure 6). The tool should cut through the jacket and dielectric strength members, and only score the buffer tube. Remove the tool from the central tube.

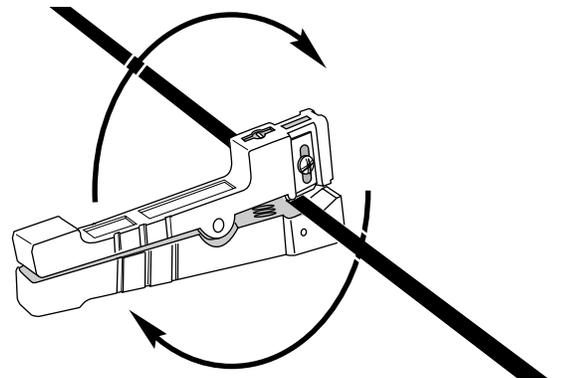


Figure 6

If the stripper completely cuts through the tube during this trial step, move the tool to a new trial area at the end of the jacketed tube and repeat a) through c) with fewer rotations in step c). If the blade cuts completely through the tube, damage to the fibers inside may result.

- d) Carefully flex the jacketed tube to break it at the score point. The break should be clean and free of rough edges (Figure 7).

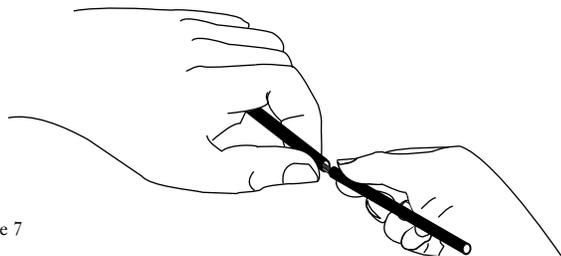


Figure 7

If the break is not clean, repeat the trial at a new location at the end of the tube with an additional rotation or two.

- e) Slide the severed section of jacketed tube off the fibers.
USE CARE TO AVOID DAMAGING THE FIBERS.

5.7 Once you have determined the number of rotations needed to score the jacketed tube, place the tool at the actual score point and carefully repeat steps 5.6 a)-c).

5.8 Using a lint-free tissue soaked with filling compound remover, clean the fibers (Figure 8). Use a dry tissue for final cleaning.

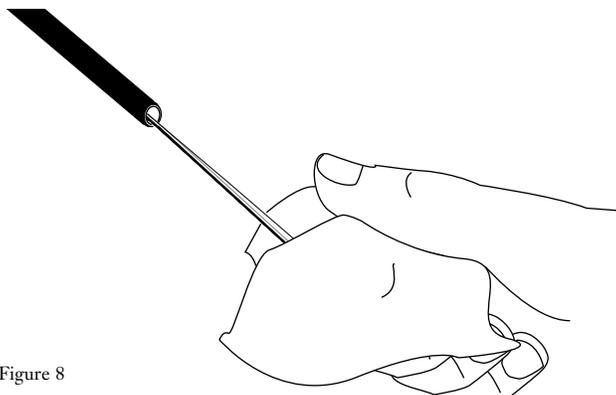


Figure 8

5.9 Terminate the fiber according to the instructions provided with the connector or splice hardware you are installing, or appropriate to the splicing method you are using.

Skip to Section 7, Hardware Placement.

6. Mid-Span-Access

IMPORTANT: Please read and completely understand this section before attempting to access the jacketed buffer tube.

This section assumes that you have already determined and marked the amount of slack needed to reach the splicing workstation and termination in the splice hardware, and that you have prepared the tie-in cable per its manufacturer's instructions.

6.1 Use utility knife with a new blade to carefully cut a 13 cm (5.0 in.) length of the web that joins the messenger and the jacketed buffer tube sections of the cable (Figure 9).

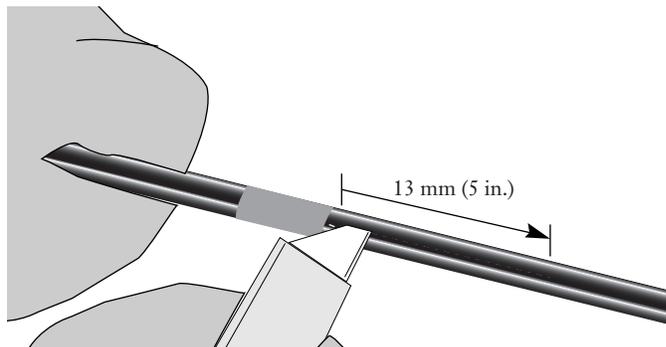


Figure 9

6.2 Using care not to kink the jacketed buffer tube, start at the split and pull the two components away from each other to "tear" the web and separate the two components for the necessary strip length (Figure 10).

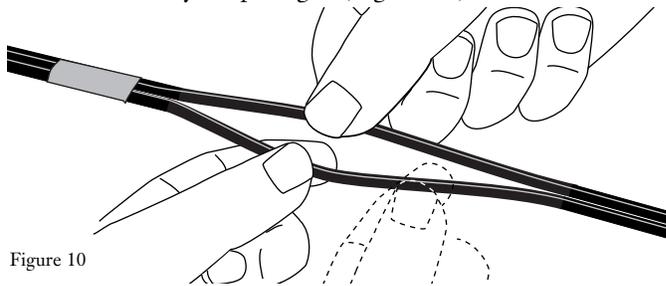


Figure 10

6.3 Determine the messenger lengths for installation in the splice closure or other hardware. After making sure that you have identified the messenger component, use side cutters to cut it (Figure 11).

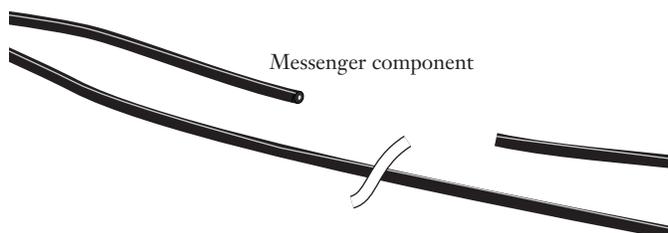


Figure 11

6.4 Remove the necessary length of jacket to bond or ground the messenger (Figure 12) and install it in the closure or other hardware.

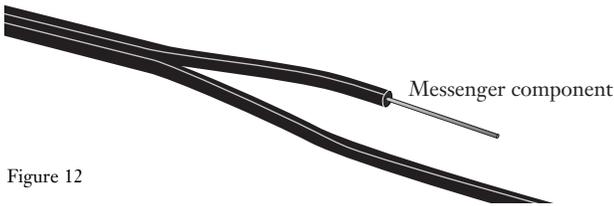


Figure 12

6.5 Carefully slit the jacket over the jacketed buffer tube with the yellow tube splitter (Figure 13).

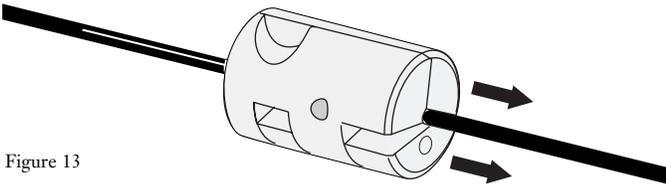


Figure 13

6.6 Pull the tube out of the slit jacket. Use scissors to cut away the jacket and the two dielectric strength members at both ends of the slit (Figure 14).

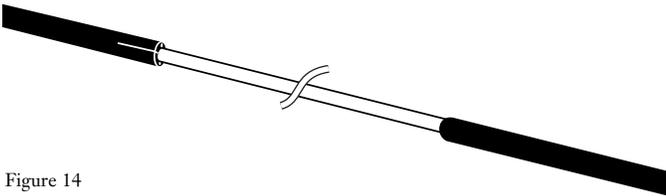


Figure 14

6.7 Carefully slit the buffer tube with the blue tube splitter (Figure 15).

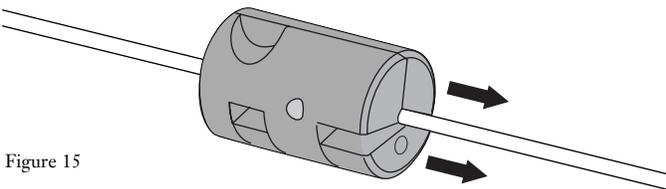


Figure 15

6.8 Carefully pull each tube half away from the fibers and cut them at both ends of the slit with scissors (Figure 16).

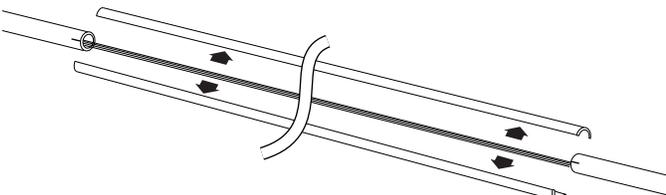


Figure 16

6.9 Determine the end of the accessed fiber(s) to be cut by checking the system design splice plan and the feet/ meter marks printed on the cable jacket before cutting any fibers.

As shown in Figure 17, typically you will cut the fiber(s) at the end opposite the Local Convergence Point (LCP) point of origin.

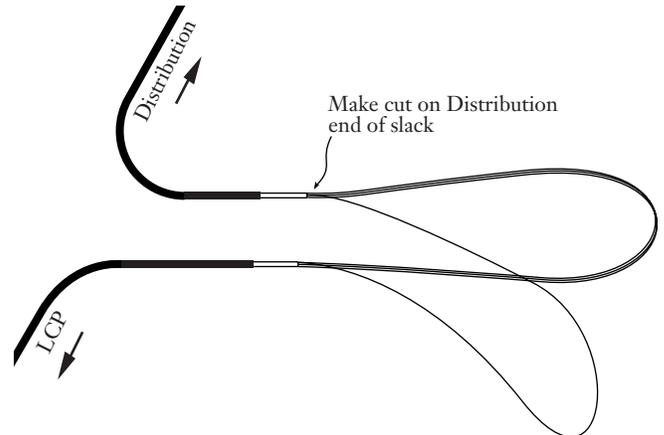


Figure 17

Fiber from LCP to be accessed

6.10 Using scissors, cut the fiber(s) to be accessed as close as possible to the appropriate end of the buffer tube (Figure 18). USE EXTREME CARE TO CUT ONLY THE FIBER(S) TO BE ACCESSED.

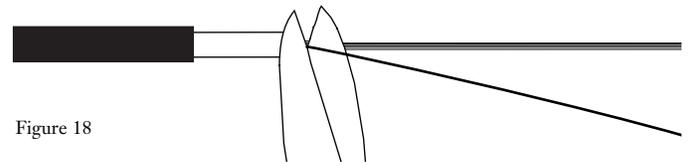


Figure 18

6.11 Using a lint-free tissue soaked with filling compound remover, clean the fibers. Use a dry tissue for final cleaning.

6.12 To complete the mid-span access:

- a) Secure the two ends of the buffer tube to a splice tray with small cable ties (Figure 19).

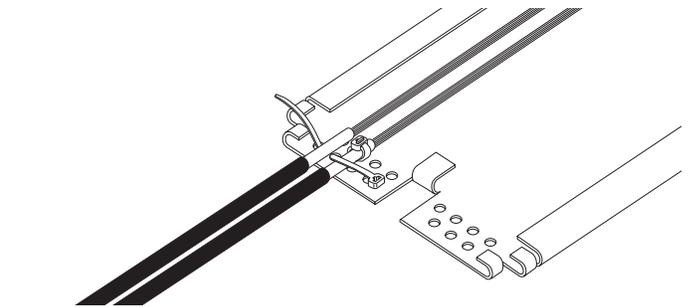


Figure 19

- b) Coil the through fibers in the tray and splice the drop fiber(s) per the splice plan.

7. Hardware Placement

7.1 Route and secure the messenger component of the SST Figure-8 Drop cable into the selected termination hardware, following all hardware instructions.

BE EXTREMELY CAREFUL NOT TO DAMAGE THE EXPOSED FIBERS DURING THIS STEP.

Cable End Termination with a BTF Kit (Optional)

7.2 After following steps 6.1 - 6.10 to achieve the desired fiber length (all fibers were cut in step 6.10 for this application), you may install a Corning Cable Systems BTF Kit on Figure-8 SST-Drop cable using the following steps:

- a) Use the coaxial cable stripper to ring cut the jacket approximately 2.5 cm (1.0 in.) from the end of the tube (Figure 20).

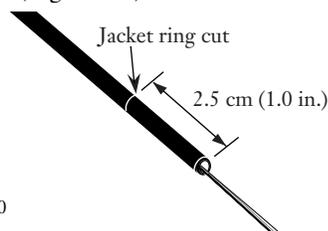


Figure 20

- b) Using extreme care, use a utility knife with a new blade to shave the jacket from the tube from the ring cut to the end of the tube. Remove the section of jacket from the buffer tube (Figure 21).

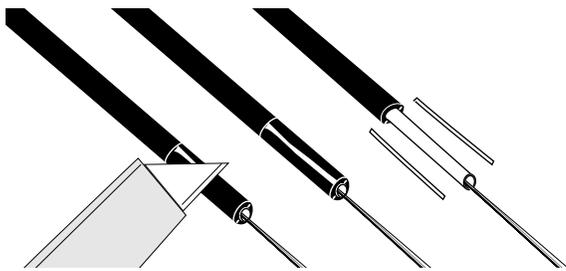


Figure 21

- c) Install the BTF kit following its instructions (Figure 22).

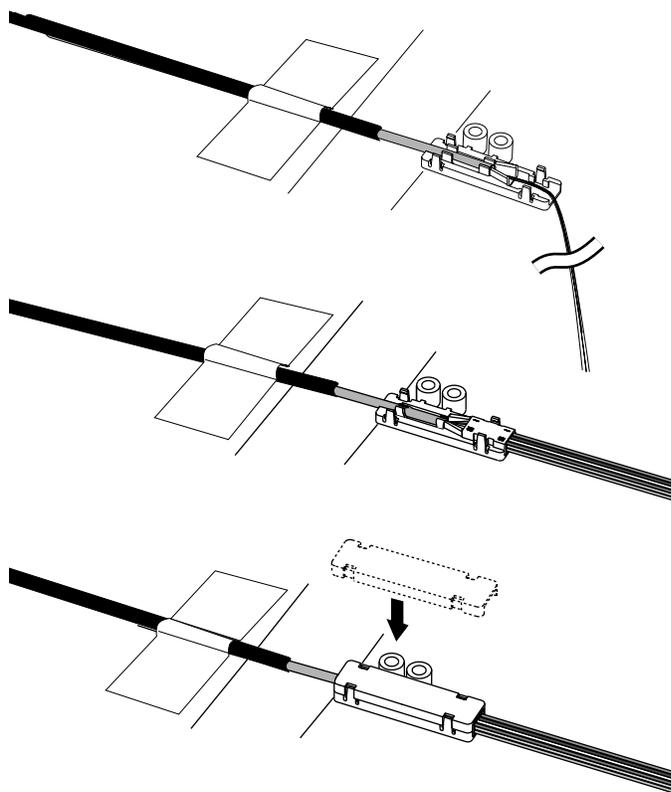


Figure 22

*Special Note:
Fiber Optic
Training
Programs*



Corning Cable Systems offers comprehensive, integrated training programs. Courses are structured for: Telephony, CATV, LAN, Intelligent Transportation Systems and Power Utilities.

For information on Engineering Services Training call: 800-743-2671.

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