

CORNING

Fiber Building Terminal

P/N 003-317-AEN

Issue 9

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1. General

This document describes the installation of the fiber building terminal (FBT) (Figure 1) manufactured by Corning Incorporated.

2. Components

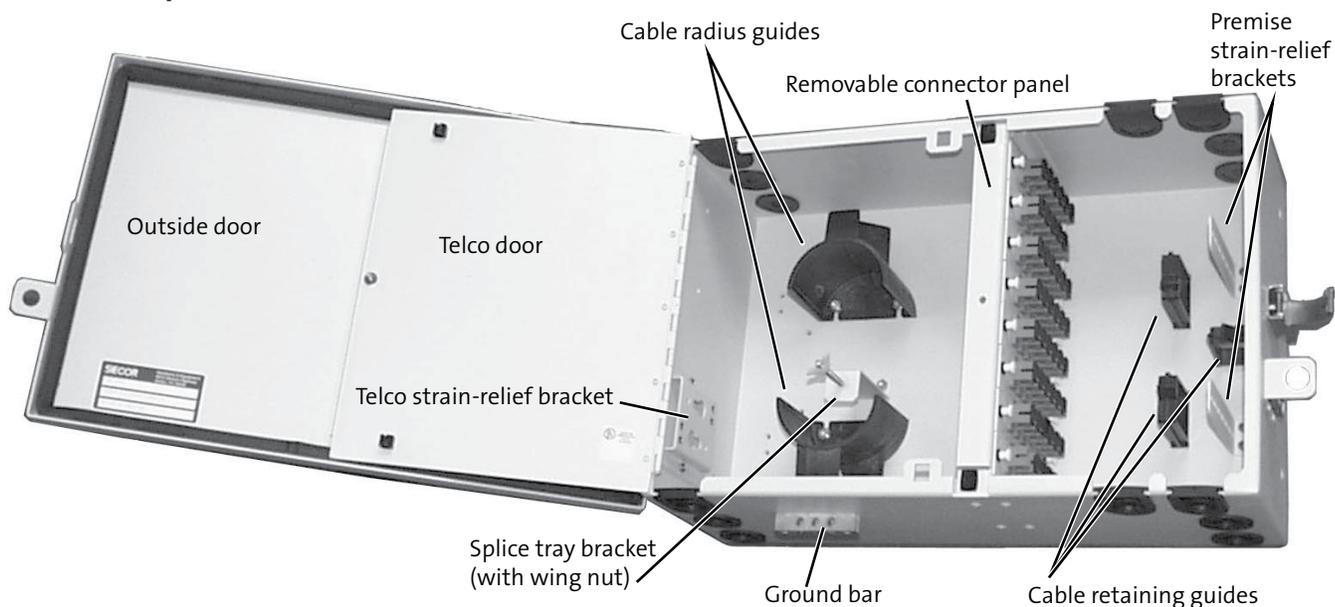


Figure 1

3. Tools and Materials

In addition to the usual complement of installation tools, a KS tool is required to open the telco door as well as a 216B tool to open the outside door.

4. Mounting

4.1 23-in Rack Mounting

Step 1: Attach the mounting brackets to the FBT as shown in Figure 2, using #10-32 x 3/16-inch slotted pan-head screws and #10 flat washers.

Step 2: Place the FBT on the mounting rack. Secure the unit to the rack using #12-24 x 1/2 in slotted pan-head screws.

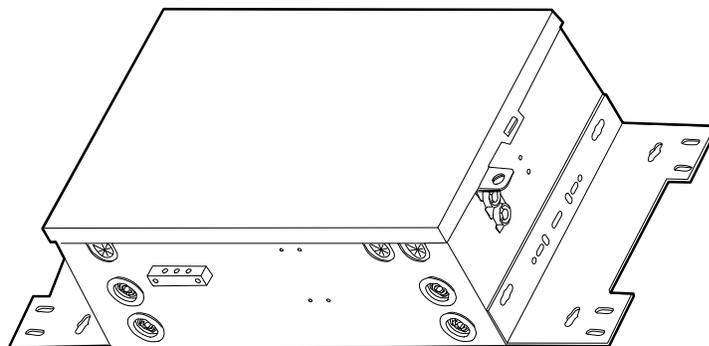


Figure 2

4.2 Wall Mounting / 19-in Rack Mounting

- Step 1: Select a vertical surface. The surface should be flat to prevent warping of the unit after it is secured to the wall.
- Step 2: Attach the mounting brackets to the FBT as shown in Figure 3, using #10 -32 x 3/16-inch slotted pan-head screws and #10 flat washers.
- Step 3: Use the enclosed template to mark hole locations. The holes are designed to use #8 screws. Drive anchors or wood screws in at these locations, leaving a 1/8-inch gap between the mounting surface and screw or bolt head.

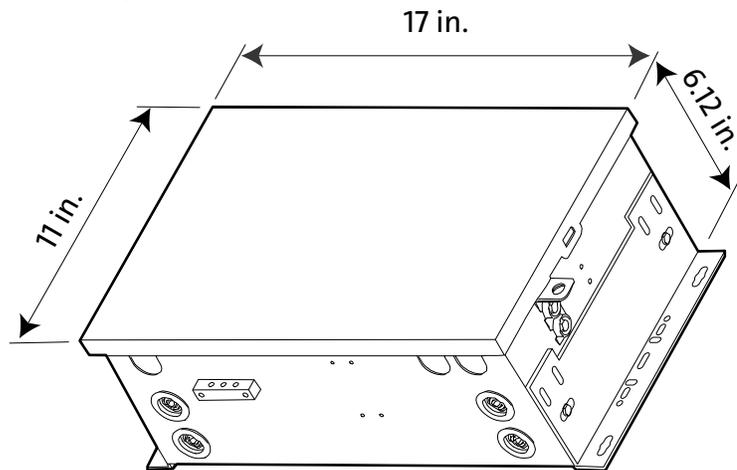


Figure 3

- Step 4: Place the FBT on the mounting hardware and tighten the screws.

5. Cable Entry

There are two types of entry holes (round and slotted) at the top and bottom of the FBT (Figure 4).

Cable may enter the round holes directly through the grommets or discard the grommets and install conduit or liquid-tight connectors (purchased separately).

The slotted holes on the premises side (right) are intended for non-strain-relieved cables and jumpers.

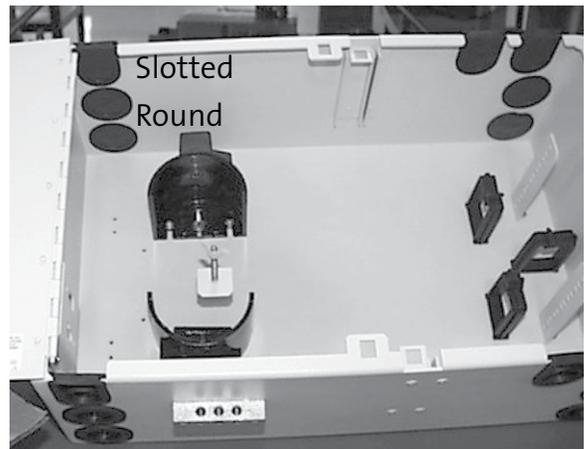
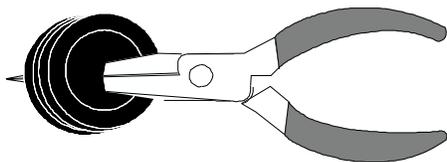


Figure 4

5.1 Directly through Round Grommets

- Step 1: Remove the grommets from the unit and pierce them with needle-nose pliers (Figure 5).
- Step 2: Thread cables through the grommets and place them back into the unit.

Grommet Preparation



Use a pair of needle-nose pliers or sharp pencil to pierce the grommet. Do not use a knife or cutters.

Grommets must fit tightly to prevent the intrusion of insects, water, dirt, or foreign particles. A knife may cut all the way through the grommet, and cutters may cut a hole that is too large for a tight fit.

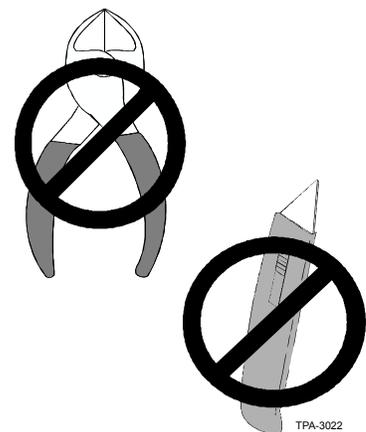


Figure 5

5.2 Through Conduit

The through holes are 1 3/8-inch in diameter and sized for 1-inch conduit fittings. If 3/4-inch conduit is planned, use reducing washers (Figure 6).

5.3 Through Liquid-Tight Connectors

Step 1: Install the liquid-tight connector with the knurled nut on the outside of the housing. In order to clamp the housing tightly, the washers must be oriented so that there is a gap between them in the center as they are clamped together.

Step 2: Secure the connector on the inside of the housing with the lock nut provided.

NOTE: Do not tighten the connector at this time. Leave it loose enough to allow the cable to slide through it while you perform sheath removal steps and strain-relieve the cable to the strain-relief bracket.

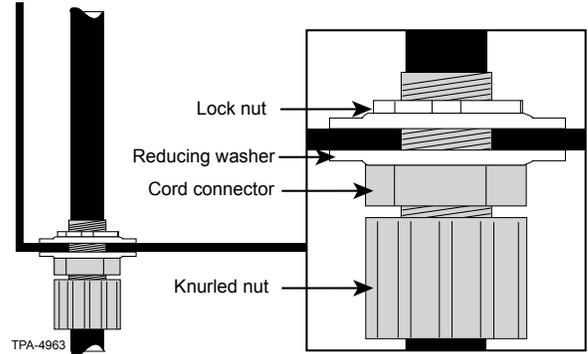


Figure 6

Step 3: Once the cable has been strain-relieved and the strain-relief bracket is secured to the housing, tighten the nuts.

6. Cable Sheath Removal

CAUTION: The wearing of cut-resistant safety gloves to protect your hands from accidental injury when using sharp-bladed tools and armored cable is strongly recommended. Use extreme care when working with severed armor. There will be a sharp edge where armor is cut. To minimize the chance of injury from the cut armor, cover the exposed edge with a wrap of electrical tape. To minimize the chance of injury from sharp-bladed tools, always cut away from yourself and others. Dispose of used blades and armor scrap properly.

CAUTION: Recommend the use of safety glasses (spectacles) conforming to ANSI Z87, for eye protection from accidental injury when handling chemicals, cables or fiber. Pieces of glass fiber are very sharp and have the potential to damage the eye.

Perform cable sheath removal steps as explained in instructions for the cable being installed. Suggested lengths to leave are illustrated in Figure 7.

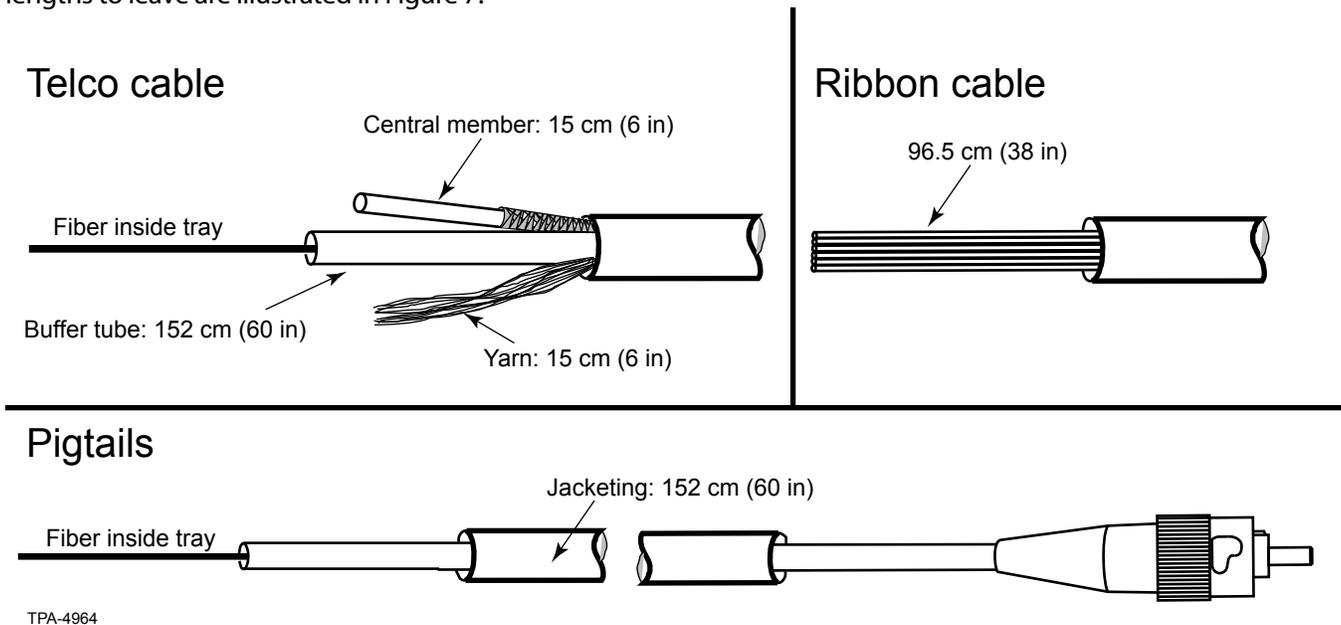
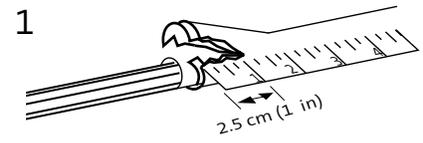


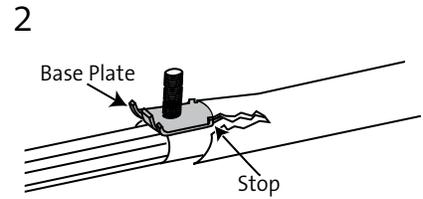
Figure 7

7. Grounding (Armored Cable Only)

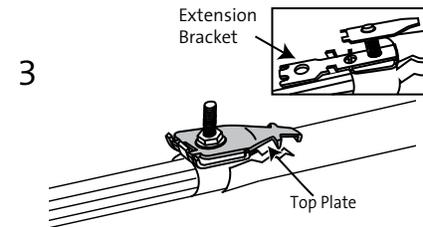
Step 1: Cut a slit into opposite sides of the outer sheath and armor about 2.5 cm (1 inch). To do this, score the armor with a cable knife (being careful not to damage the inner sheath, if present) and split the sheath by flexing it.



Step 2: Position the grounding clamp base plate under the armor. The stops of the clamp should just touch the outside of the armor and sheath. Tap the sheath above the ground clamp base to drive the teeth on the plate into the cable sheath.

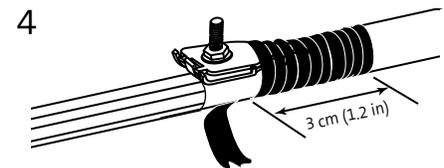


Step 3: Position the top plate and lock nut on the outer sheath over the base plate. Tighten with a 3/8-inch wrench so that the teeth on the upper plate are driven into the sheath.



NOTE: When the cable has metal strength members, attach the extension bracket to the base plate as shown in the inset before installing the top plate.

Step 4: Wrap the grounding clamp and split portion of the cable sheath with vinyl tape.



Step 5: Place the eyelet on the ground wire over the stud on the base plate. Add a second lock nut and tighten using a 3/8-inch wrench.

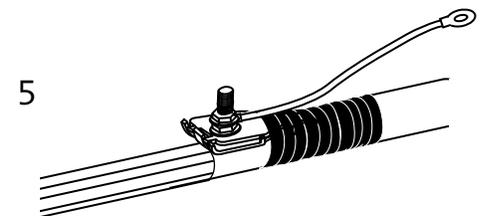


Figure 8

8. Cable Strain-Relief

The unit will accommodate two methods of cable strain-relief:

- universal cable clamp (UCC), or
- cable ties.

Using cable ties will require that you strain-relieve the cable central member.

8.1 Using a UCC

Step 1: If the telco strain-relief bracket is installed into the housing, remove it before installing the UCC.

Step 2: Attach the clamshell cover/base assembly as shown in Figure 9 using the supplied hardware.

Step 3: Secure the cable inside the UCC according to the instructions provided with the UCC.

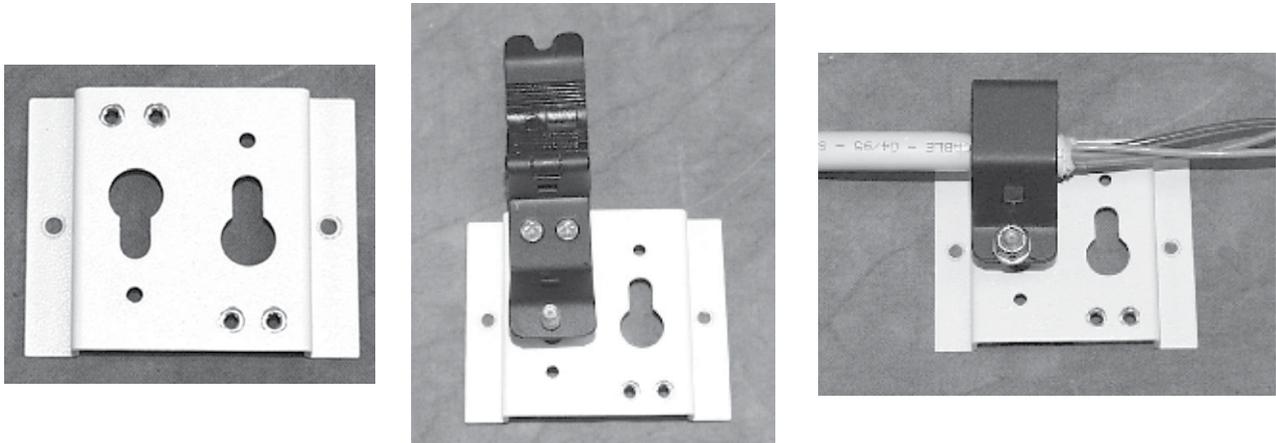


Figure 9

Step 4: Once the cable is installed, reattach the bracket to the telco compartment inside the housing (Figure 10).

IMPORTANT: The location of the UCC will depend on the entry port used by the cable. Verify locations before you secure the clamshell cover/base assembly to the bracket. When cable entry is through the center round grommet, attach the UCC as shown in Figure 10.

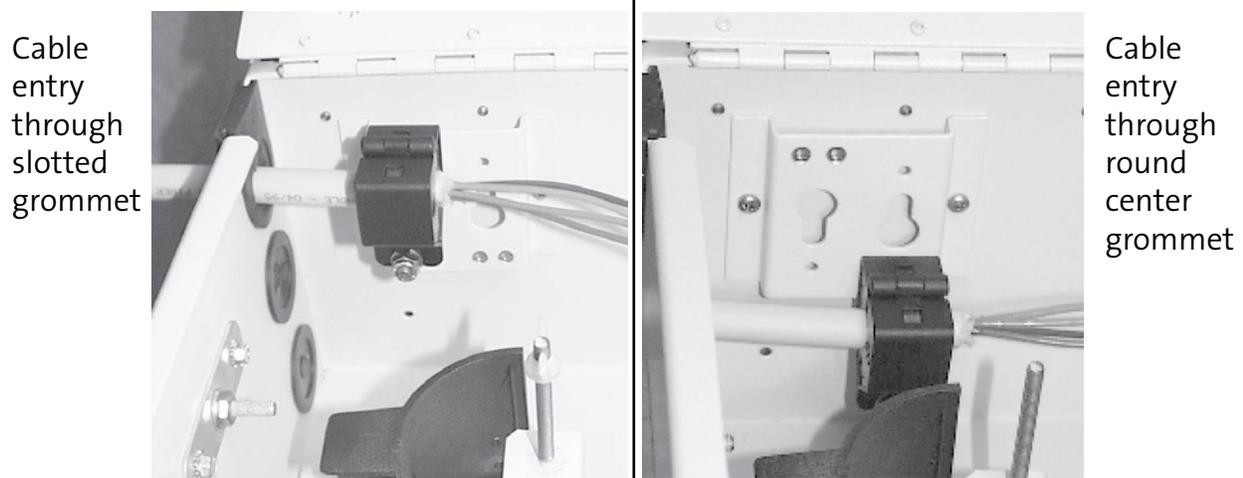


Figure 10

Step 5: When your application requires installation of two cables, attach the clamshells as shown (Figure 11).

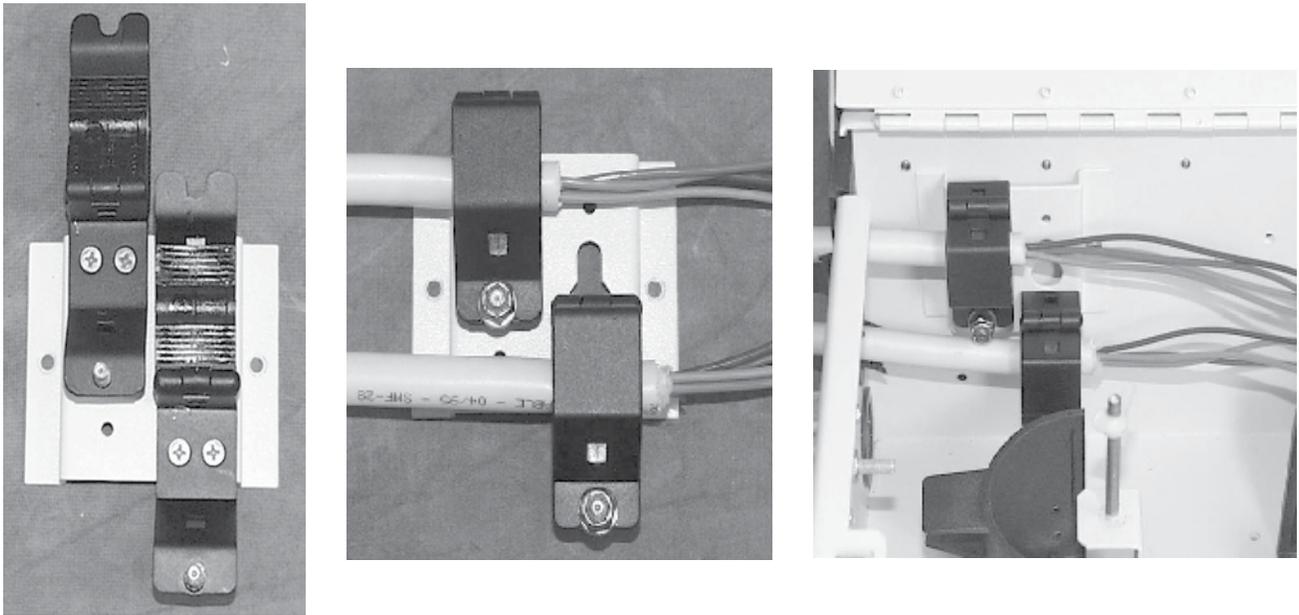


Figure 11



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 the 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.

8.2 Using Cable Ties

Step 1: In order to use cable ties to strain-relieve telco cable, move the strain-relief brackets from the premise side of the unit and install them into the telco compartment.

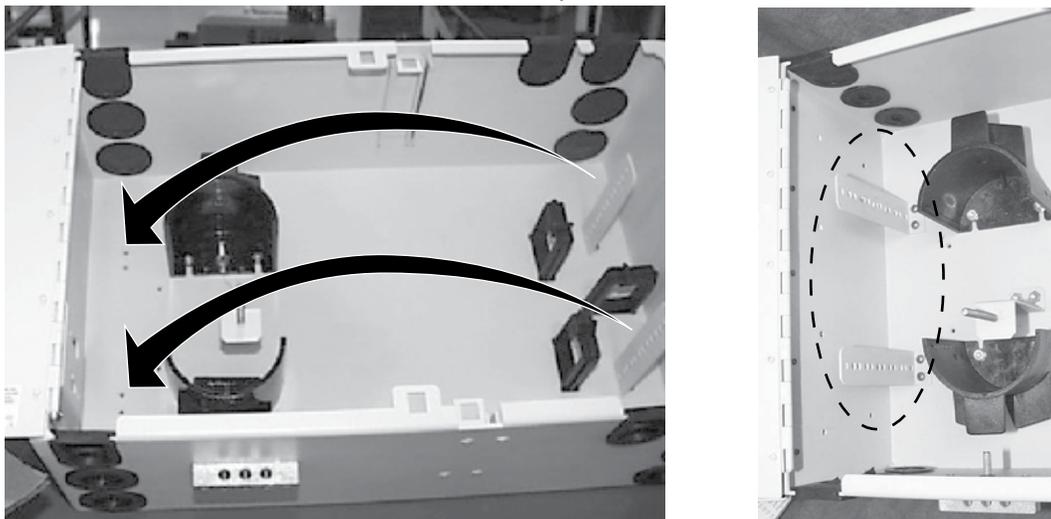


Figure 12

Step 2: Use a cable tie to attach the cable to the bracket in a hole that lines up with the cable entry port (Figure 13).

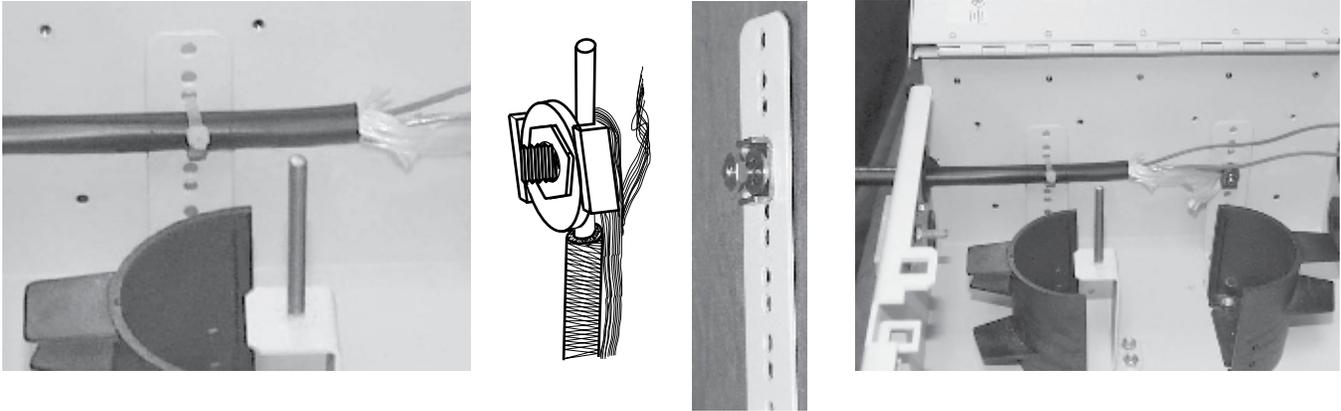


Figure 13

Step 3: Install the 8-32 x 5/8-inch bolt from the back side of the second strain-relief bracket. Attach the U-shaped washer and then the flat washer. Loosely install the hex nut.

Step 4: From the front side of the strain-relief bracket, wrap the strength member yarn, if present, in a clockwise direction around the bolt and under the U-shaped washer.

Step 5: Insert the central member between the flat washer and the U-shaped washer.

Step 6: Tighten the hex nut.

Step 7: Trim off the excess central member and yarn, if necessary.

NOTE: The exposed length of the central member after strain-relief is to be less than or equal to 6.5 cm (2.5 inch) between the U-shaped washer and the end of the cable sheath.

Step 8: If the central member is metallic, place the eye of a ground wire (#6 AWG, purchased separately in appropriate length from any electrical supply store) under the flat washer and attach the other end of the ground wire to the building ground.

NOTE: The ground wire must have metal-to-metal contact providing an electrical path to the central member in order to properly ground the cable.

Step 9: Attach the grounding strap from the cable to the ground lug at the base of the telco compartment (Figure 14).

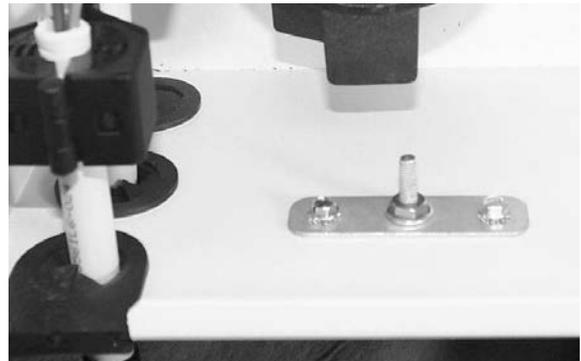


Figure 14

9. Connector Panels

Step 1: Rotate the quarter-turn fasteners securing the mounting bracket to the LGX-compatible connector panel.

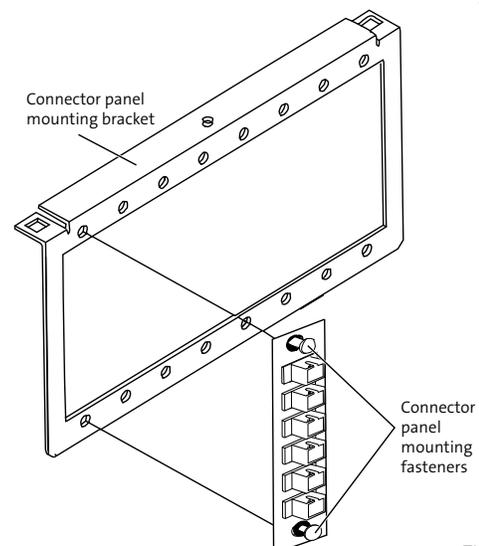


Figure 15

10. Splicing

	<p>WARNING: Never look directly into the end of a fiber that may be carrying laser light. Laser light can be invisible and can damage your eyes. 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. Should accidental eye exposure to laser light be suspected, arrange for an eye examination immediately.</p>
	<p>CAUTION: Cleaved or broken glass fibers are very sharp and can pierce the skin easily. Do not let these pieces of fiber stick to your clothing or drop in the work area where they can cause injury later. Use tweezers to pick up cleaved or broken pieces of glass fibers and place them on a loop of tape kept for that purpose alone. Good housekeeping is very important.</p>
	<p>WARNING: DO NOT use magnifiers in the presence of laser radiation. Diffused laser light can cause eye damage if focused with optical instruments. Should accidental eye exposure to laser light be suspected, arrange for an eye examination immediately.</p>

NOTE: FBT-048 can accept splice trays up to 0.4-inches thick. To maintain the appropriate cable bend radius, the splice tray bracket must be installed into the housing with the opening in the bracket towards the bottom of the unit (Figure 16).

Step 1: If splicing cable to pigtails inside the cabinet, make sure that the cable is strain-relieved (and grounded, if necessary) and the connector panels are properly installed. When the pigtail is single fiber in spiral wrap, label both the fiber to be spliced and the pigtails with identification tags (Figure 17).

Step 2: Route the cable and pigtails to an appropriate splicing surface and perform splicing steps as described in instructions for the splice tray and splicing method you are using. If pigtails are not long enough to reach the splicing surface, remove the entire connector mounting bracket (Section 9) with connector panels installed and print it to the splicing location.

Step 3: Once splicing is complete, route cable slack around the plastic guides inside the telco compartment (Figure 18) and secure the splice tray (and mounting bracket) into the unit. Be careful to avoid making bends tighter than the cable's recommended bend radius.

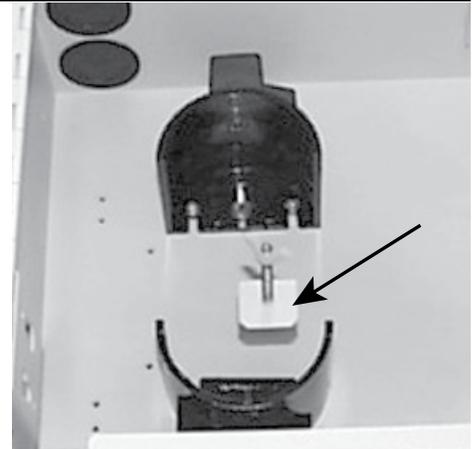


Figure 16

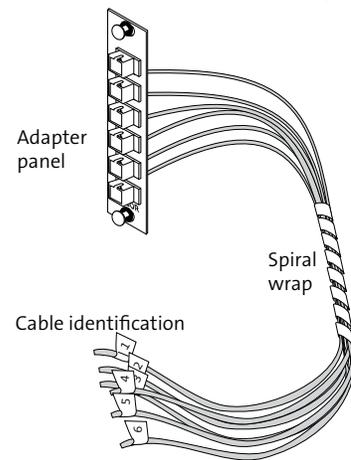


Figure 17

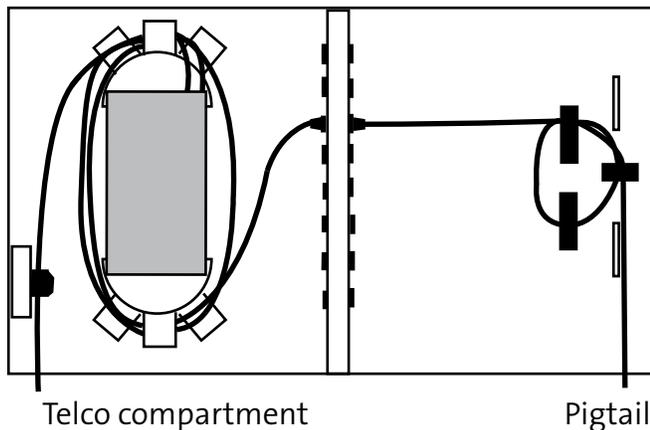


Figure 18

11. Connector Installation

- Step 1: If the cable you are installing must be connectorized, do so at this time per connector manufacturer's instructions.
- Step 2: Install the connectors into the adapters. Pull out the connector mounting bracket to reach the adapters at the back of the unit. Follow the manufacturer's connector installation instructions carefully.
- Step 3: Clean the connector end faces and adapters per standard company practices or as described in Section 12.
- Step 4: Once the connections are made, route cable slack around the plastic cable guides inside the telco compartment.

12. Connector Care and Cleaning



WARNING: Isopropyl alcohol is flammable with a flashpoint at 54°F. It can cause irritation to eyes on contact. In case of contact, flush eyes with water for at least 15 minutes. Inhalation of vapors irritates the respiratory tract. Exposure to high concentrations has a narcotic effect, producing symptoms of dizziness, drowsiness, headache, staggering, unconsciousness and possibly death.

- Always keep dust caps on connectors and adapters when not in use.
- Ensure dust caps are clean before reuse.
- Use optical cleaning materials as standardized by your company.
- Clean the connector before every mating, especially for test equipment patch cords (jumpers).
- A minimum level of cleaning is listed below. Local procedures may require more rigorous cleaning methods.

- Step 1: Remove plugs from the connector adapter.
- Step 2: Wipe the connector ferrule twice with a lint-free wiping material moistened with isopropyl alcohol. Then wipe across the end of the ferrule.
- Step 3: Repeat previous step with a dry wipe.

13. Jumper Installation

- Step 1: Route jumpers into the unit through the top or bottom holes in the premises compartment and cable tie them to the strain-relief brackets.

NOTE: The UCC must be used for telco strain-relief when jumper strain-relief is desired.

- Step 2: Once connections are made, route cable slack around the plastic guides inside the telco compartment (Figure 19).

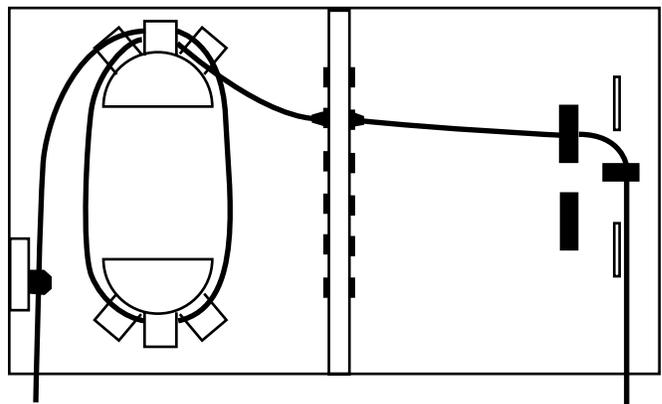


Figure 19

14. Documentation

Record information on each fiber on the label located on the front of the telco compartment door (Figure 20).

MODULE A			CROSS-CONNECTED TO			MODULE B			CROSS-CONNECTED TO		
CONN	CABLE	FIBER	RELAY RACK	SHELF	CONN	CONN	CABLE	FIBER	RELAY RACK	SHELF	CONN
1						7					
2						8					
3						9					
4						10					
5						11					
6						12					
MODULE C			CROSS-CONNECTED TO			MODULE D			CROSS-CONNECTED TO		
CONN	CABLE	FIBER	RELAY RACK	SHELF	CONN	CONN	CABLE	FIBER	RELAY RACK	SHELF	CONN
13						19					
14						20					
15						21					
16						22					
17						23					
18						24					
MODULE E			CROSS-CONNECTED TO			MODULE F			CROSS-CONNECTED TO		
CONN	CABLE	FIBER	RELAY RACK	SHELF	CONN	CONN	CABLE	FIBER	RELAY RACK	SHELF	CONN
25						31					
26						32					
27						33					
28						34					
29						35					
30						36					
MODULE G			CROSS-CONNECTED TO			MODULE H			CROSS-CONNECTED TO		
CONN	CABLE	FIBER	RELAY RACK	SHELF	CONN	CONN	CABLE	FIBER	RELAY RACK	SHELF	CONN
37						43					
38						44					
39						45					
40						46					
41						47					
42						48					

Figure 20

15. Maintenance

The unit requires very little maintenance to ensure fibers and parts remain in good condition.

- External components may be cleaned occasionally with a damp, nonabrasive cloth.
- Check nuts, bolts, and screws; tighten as needed.
- Check fiber optic cable to make sure bends do not exceed the minimum bend radius.
- Check cables for unnecessary strain, for crimping or crushing at entries and exits, and for damage.
- Check unit record labels to make sure all are clear and accurate.