

Pretium™ Rack-mountable 2U Housing

Revision History

Issue	Date	Reason for Change
2	06/2009	Added external strain-relief bracket to carton contents
1	03/2007	Initial Release

Related Literature

LAN-538-EN Product Specifications for Pretium™ Connector Housings

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Admonishments

The precautionary terms used by Corning Cable Systems in its standard recommended procedures conform to the guidelines expressed in the American National Standards Institute document (ANSI Z535) for hazard alert messages. Alerts are included in this instruction based on the following:



DANGER: indicates an *imminently hazardous situation which, if not avoided, will result in death or serious injury.*



WARNING: indicates a *potentially hazardous situation which, if not avoided, could result in death or serious injury.*



CAUTION: indicates a *hazardous situation which, if not avoided, may result in minor or moderate injury.*

1. GENERAL

This document describes the recommended procedure for installing the Pretium™-02U Rack-mountable housing (Figure 1). The unit fits into 19-inch utility racks and occupies two rack spaces. A separate mounting bracket kit is required to install the unit into a 23-inch rack. The housing accepts up to four CCH-style connector panels and/or modules (purchased separately). Factory-stubbed units are also available. Contact your customer service representative to purchase accessories that are sold separately.

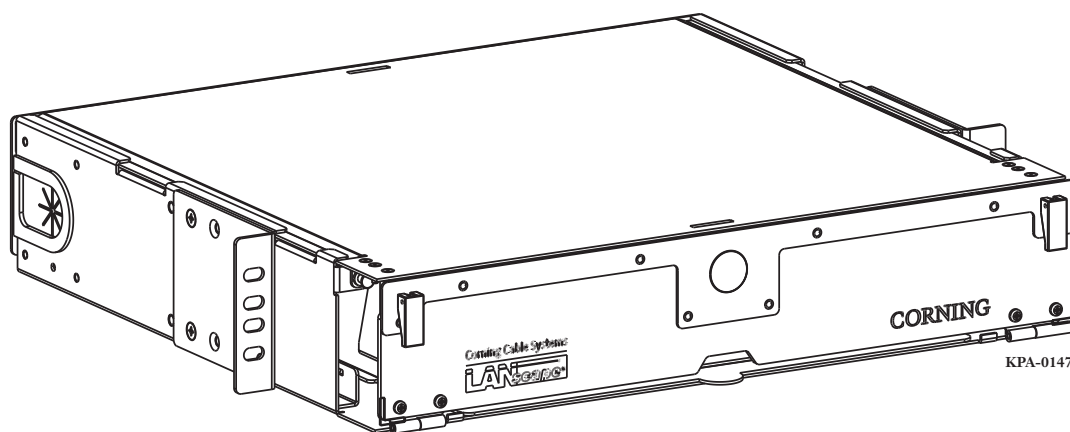


Figure 1 — PCH-02U Housing

Part Number	Dimensions (H x W x D)	Weight
PCH-02U	3.5 x 17 x 16.5 in. (9 x 43 x 42 cm)	12.6 lb (5.7 kg)

KPA-0157

Unpacking Stubbed Units

If you are installing a stubbed unit, follow the directions provided with the shipping container to remove the stubbed housing from its packaging. Place the housing on a work surface to perform preliminary work before mounting the unit in a rack.

2. CARTON CONTENTS

- Pretium™-02U Housing with (2) mounting brackets
- Hardware Kit containing:
 - (1) Unit Identification label
 - (2) Front labels
 - (2) 6-32 Nylon locknuts
 - (8) Cable ties
 - (1 ft) Spiral wrap
 - (1 ft) Double-sided hook-and-loop strap
 - (1) Fanout body bracket
 - (1) Internal strain-relief bracket (cable plate)
 - (1) External strain-relief bracket

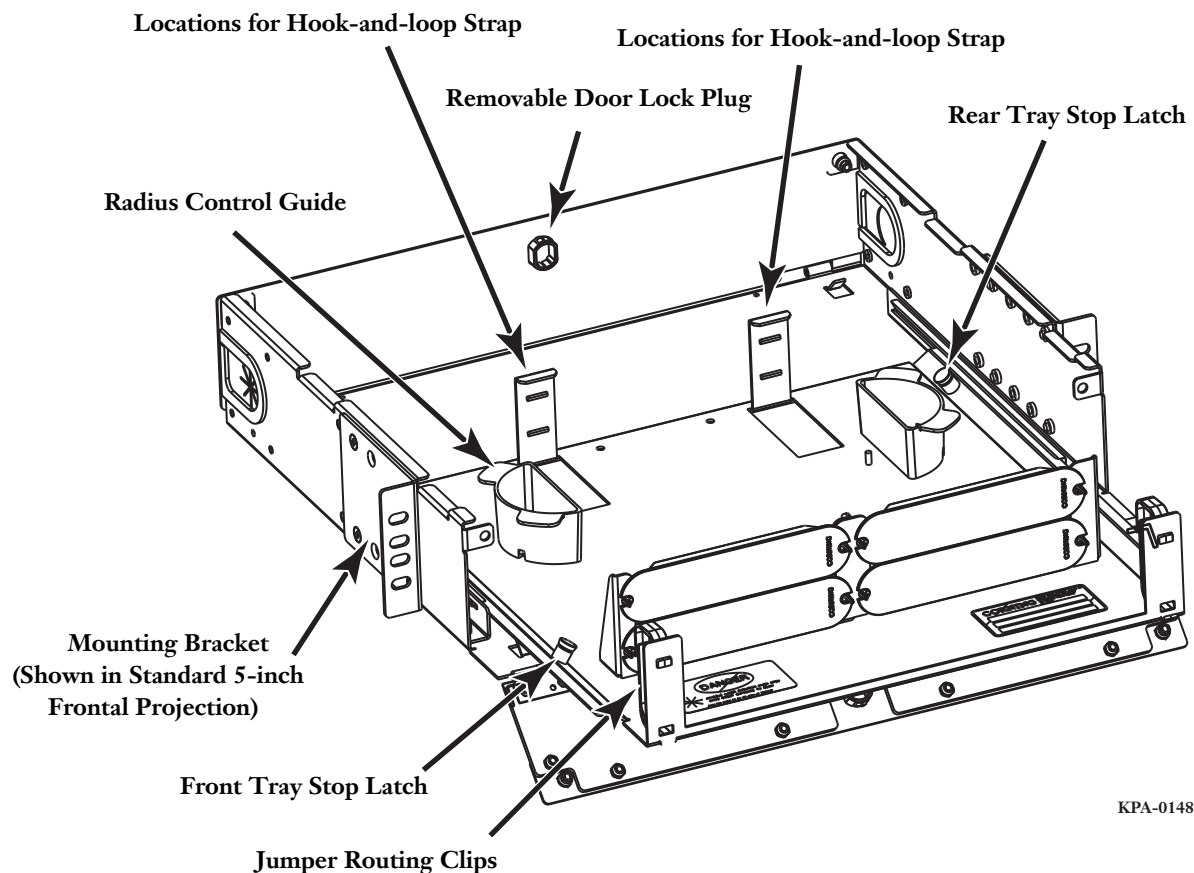


Figure 2 — Components of PCH-02U (Top Removed for Clarity)

3. TOOLS AND MATERIALS REQUIRED

3.1 Tools

- Phillips-head screwdriver
- Flat-tipped screwdriver
- 5/16-inch socket or wrench
- 11/32-inch socket or wrench
- Needle-nosed pliers
- Cable stripping tools

3.2 Materials

Depending on your application, the following materials may be required:

- Preconnectorized Adapter Panels
- Universal Cable Clamp
- p/n FDC-CABLE GRND to ground armored cable
- Buffer tube fanout (BTF) kits
- Splice tray bracket kit (p/n PC2-SPLC-6SR)

4. INSTALLATION

4.1 Opening the Housing

Removing the cover is optional but is recommended to ease installation.

Step 1: Open front and rear doors.

Step 2: Locate the plunger fasteners at the front of the unit under the housing cover and pull out to release the plungers (Figure 3).

Step 3: Lift stop latches and slide the cover of the unit toward the front until it is clear of the base. Set the cover aside.

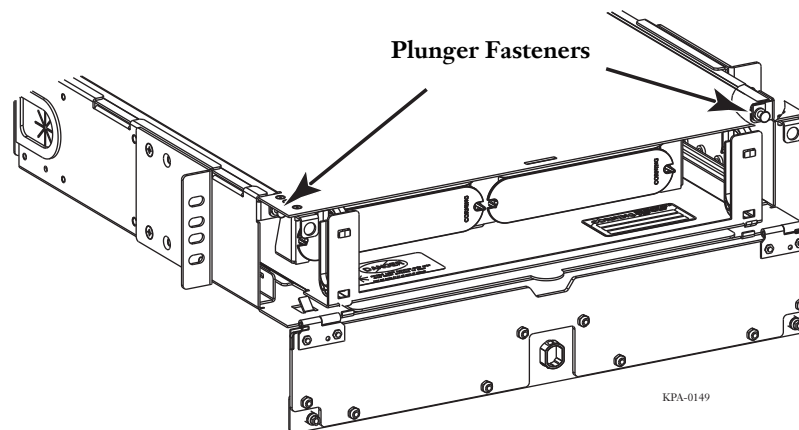


Figure 3 — Remove Cover

4.2 Mounting the Housing into a Rack

Attach the unit to the equipment rack using the four screws provided. Two screws are required per side.

4.3 Installing Cable Entry Plate

- Step 1:** Determine location for cable entry into housing.
- Step 2:** Slide drawer back completely. The drawer must be in this position to prevent fiber damage during drawer actuation.
- Step 3:** Prepare the appropriate cable entry grommet (Figure 4).

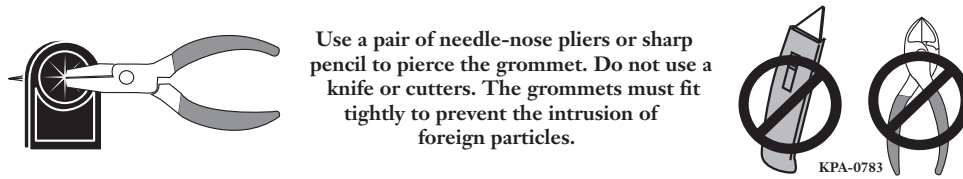


Figure 4 — Prepare Entry Grommet

- Step 4:** Install cable entry plate using the provided screw (Figure 5) at the location where the cable will enter the housing.
- Step 5:** Install the strain-relief bracket to the side of the housing (Figure 5) at the location where the cable will enter the housing.

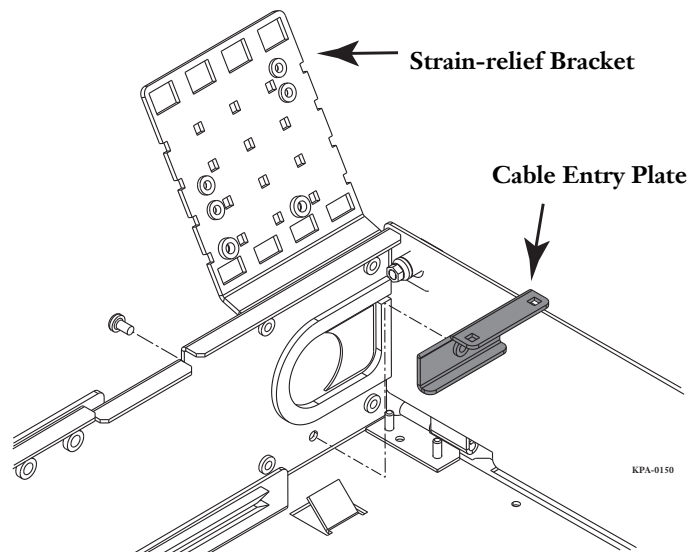


Figure 5 — Install Cable Entry Plate

4.4 Securing the Cable

NOTE: *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 than can alter the transmission characteristics of the cable; the cable may have to be replaced.*

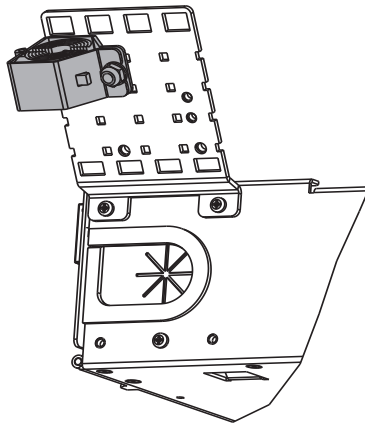
IMPORTANT: *If you are installing outside plant cable or temperature fluctuates widely along any part of the cable, the central member must be strain-relieved. Failure to do so may result in damage to the cable as temperature varies. If the entire length of cable is located in a controlled environment where temperature fluctuation is minimal, it is not necessary to secure the central members. The cable can be strain-relieved by sheath retention alone.*

For cable sheath retention only, use the Universal Cable Clamp (UCC) or cable ties.

4.4.1 Using the Universal Cable Clamp (UCC)

Step 1: Attach the UCC clamshell to the strain-relief bracket as shown in Figure 6 to allow installation of a second UCC if necessary.

**Bracket Orientation for
Cable Entry from Top**



**Bracket Orientation for
Cable Entry from Bottom**

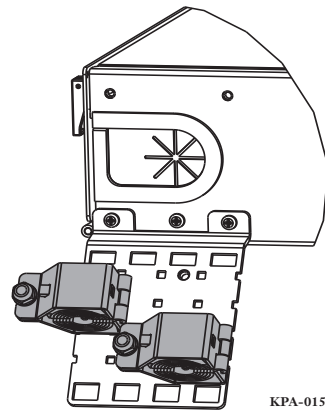


Figure 6 — Install Universal Cable Clamp

Step 2: Follow installation instructions provided with the UCC kit to secure the cable. Do not tighten yet to allow for cable adjustment if necessary.

Step 3: Secure cable to cable entry plate using a loose cable tie (Figure 7). Do not overtighten cable tie.

4.4.2 Using Cable Ties

Step 1: Attach the cable tie to the strain-relief bracket in two places as shown in Figure 8.

Step 2: Allow room on the bracket to strain-relieve the cable strength member, if present.

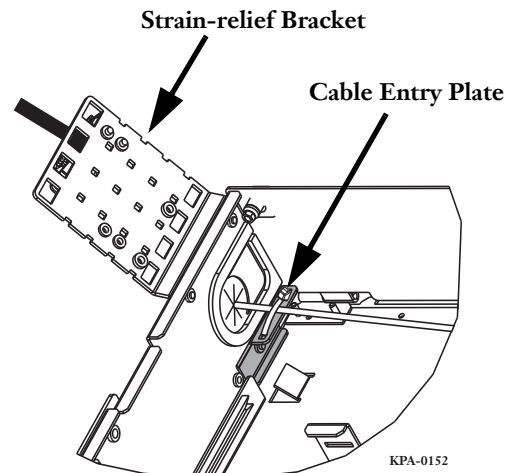


Figure 7 — Secure Cable to Entry Plate

- Step 3:** Secure cable to cable entry plate using a loose cable tie (Figure 8). Do not overtighten cable tie.

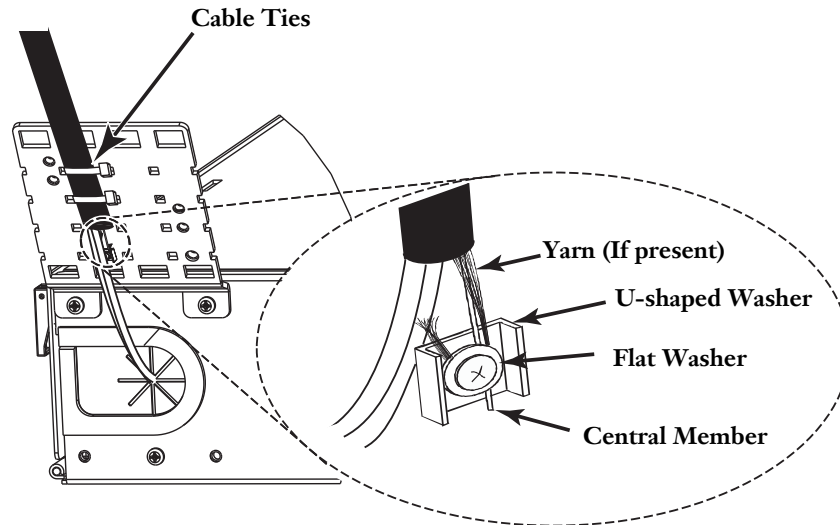


Figure 8 — Strain-relieve Central Member

4.4.3 Strain-relieving the Cable Central Member

- Step 1:** Install the U-shaped washer and the flat washer on the strain-relief bracket in the orientation shown using the supplied Phillips-head machine screw.
- Step 2:** Place the central member and yarn, if present, between the U-shaped washer and the flat washer.
- Step 3:** Wrap yarn around the screw in a clockwise direction and under the U-shaped washer.
- Step 4:** Tighten the screw.
- Step 5:** Trim off the excess yarn and central member.

4.4.4 Grounding Armored Cable

One grounding kit (p/n FDC-CABLE-GRND, purchased separately) is required to ground each armored cable. Follow instructions provided with the grounding kit.

- Step 1:** Attach the other end of the ground wire to the equipment rack. The equipment rack must be grounded to the primary building ground.
- Step 2:** Remove the paint from the frame at the grounding location to ensure metal-to-metal contact. It is recommended to use an antioxidant on the bare metal to prevent corrosion.
- Step 3:** Or, attach the other end of the ground wire to a rack-mounted grounding bus bar, which is grounded to the primary building ground.

4.5 Managing Cable

4.5.1 Installing Preconnectorized Cable into Connector Panels



Never look directly into the end of a fiber that may be carrying laser light.

Laser light is invisible and can damage your eyes. Viewing it directly does no 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.



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.

Step 1: Remove the blank panels from the unit and replace with connector panels (purchased separately).

Step 2: Clean connectors and adapters as described in Section 5.

Step 3: Install connectors into the adapters at the rear of the connector panels.

Step 4: Route cable slack around radius control guides (Figure 9).

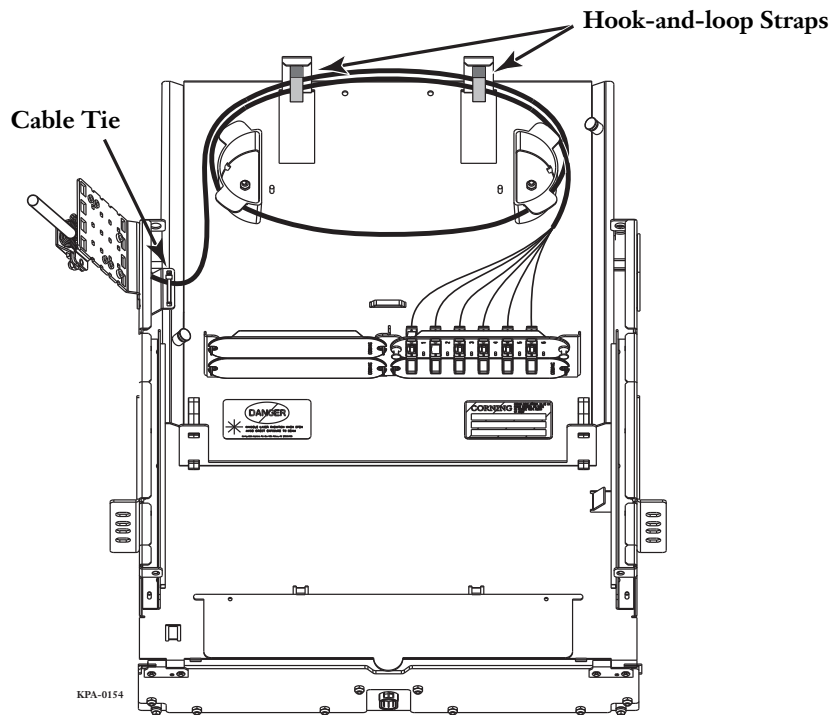


Figure 9 — Routing Preconnectorized Fibers

Step 5: Cut the provided hook-and-loop strap into two pieces and feed the two straps into the slots at the rear of the housing. Use the straps to secure fibers as needed.

IMPORTANT: *Lift the tray stop latches and slide the drawer backward and forward to verify that the drawer slides in the grooves of the guides and that there is enough fiber slack to prevent violating the minimum fiber bend radius of the cable.*

4.5.2 Installing Cable Using Buffer Tube Fanout (BTF) Kits

- Step 1:** Terminate the fibers according to the instruction provided with the BTF kit.
- Step 2:** Install the fanout bracket using the provided nuts.
- Step 3:** Feed the fanout body and connectors through the entry grommet.
- Step 4:** Slide the drawer back completely and loop the buffer tube under the fanout bracket and around the radius control guides. Slide the BTF truck body into the fanout bracket. Install a cable tie to secure the fanout body (Figure 10).
- Step 5:** Route the connectorized fibers behind the plastic tabs on the radius control guides.
- Step 6:** Cut the provided hook-and-loop strap into two pieces and feed the two straps into the slots at the rear of the housing. Use the straps to secure fibers as needed.

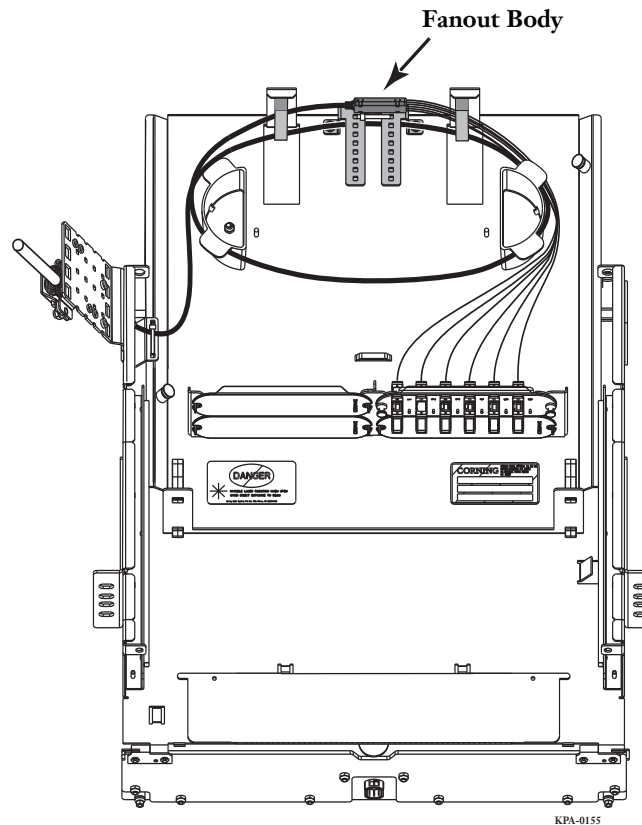


Figure 10 — Routing Fibers from Fanouts

- Step 7:** Remove blank panels by pinching the tabs together and pulling the panel away from the opening. Install or remove connector panels by extending or depressing the nylon fasteners on each end of the connector panel.
- Step 8:** Remove dust caps from the connectors and adapters into which they will be mated. Refer to Section 5 and clean the connector end-faces and the adapter per standard company practices. Mate the connectors in the adapters.

4.5.3 Installing Cable Using Splice Trays

A splice tray bracket kit (p/n PC2-SPLC-6SR, purchased separately) is required to install splice trays. Follow instructions provided with the splice tray bracket kit.

4.6 Documentation

Record fiber identification information appropriately on the provided identification label (Figure 11). Accurate recordkeeping is imperative for an organized installation.

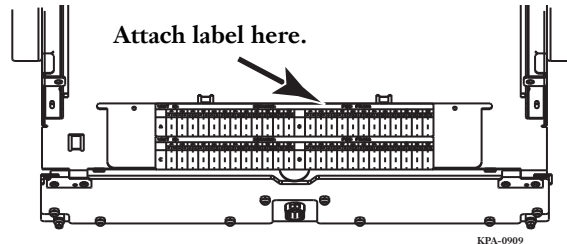


Figure 11 — Attach Identification Label

4.7 Closing the Housing

- Step 1:** Lift up on stop latches and slide drawer toward the front of the housing to make sure cable is not stressed. If necessary, readjust cable strain-relief to prevent stress on fibers.
- Step 2:** Slide drawer back to original position.
- Step 3:** If previously removed, slide the cover back in the retaining flanges on top of the housing. Push the plunger fasteners to secure.
- Step 4:** Close the front and rear doors.

4.8 Install Jumpers

- Step 1:** Remove dust caps from the connectors and adapters into which they will be mated. Refer to Section 5 for cleaning instructions. Clean connector end-faces and adapters per standard company practices and insert connectors into adapters.

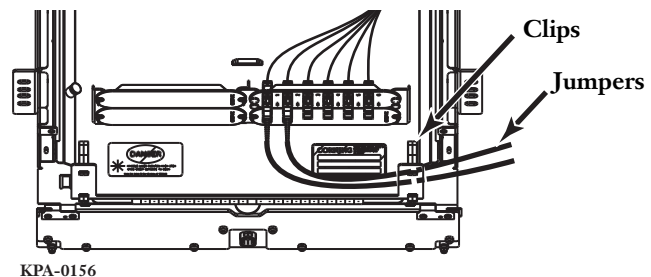


Figure 12 — Route Jumpers

- Step 2:** Install jumpers as specified on planning diagrams. Route jumpers through the routing clips on either side at the front of the housing (Figure 12).
- Step 3:** Provide enough jumper slack to allow the connector panel tray to slide to the back and forward positions without violating the minimum bend radius of the jumper.
- Step 4:** Record jumper routing information on the provided identification label. Accurate recordkeeping is imperative for an organized installation.

5. CONNECTOR CARE AND CLEANING

- 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.



Isopropyl alcohol is flammable with a flashpoint at 54°F. It can cause irritation to eyes on contact. In case of eye contact, flush eyes with water for at least 15 minutes. Inhaling fumes may cause mild dizziness. In case of ingestion, consult a physician.

Step 3: Repeat previous step with a dry wipe.

6. TESTING

6.1 Provisioning Tests

Equipment should be tested from the source (or central office) to receiver at the time of provisioning to verify signal continuity and acceptable loss limits. Use an optical power meter to verify signal continuity and determine loss measurements are within specified local standards.

6.2 Troubleshooting Tests

An optical power meter can be used to perform the first step in troubleshooting. A power meter designed for measuring only dBm power levels is suitable for maintenance purposes.

For high attenuation:

- Remove connector and reclean connector and adapter.
- Verify cable ties are not too tight.
- Maintain appropriate fiber bend radius. Make sure there are no sharp bends.

Once a fault is isolated to the installed cable link, an OTDR (Optical Time Domain Reflectometer) is needed. An OTDR can locate fiber events and measure the losses attributable to cable, connectors, splices, and/or other components. The graphical display of loss over a cable's entire length provides the most revealing analysis and documentation available on a cable link, commonly referred to as its signature trace. Corning Cable Systems recommends performing an OTDR analysis to document the integrity of the cable system, locate and measure each event or component, and uncover faults throughout the cable. Follow the instructions provided with the OTDR tester you are using.

7. 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.

8. GROWTH

Additional connector panels or modules may be installed until the housing is filled to capacity.

Glossary

Adapter

A mechanical media termination device designed to align and join fiber optic connectors; often referred to as a coupling, bulkhead, or interconnect sleeve.

Aramid Yarn

Strength elements that provide cable tensile strength, support and additional protection of the fiber bundles. Kevlar® is a brand of aramid yarn.

Attenuation

The decrease in magnitude of power of a signal in transmission between points; a term used for expressing the total loss of an optical system, normally measured in decibels (dB) at a specific wavelength.

Central Strength Member

Any component of a communication cable, metallic or optical, the function of which is to protect the transport medium, i.e., conductor or fiber, from excessive tensile and bending stresses during installation and while in service.

Fanout

Tight-buffered breakout-style multifiber cable.

Fiber Bend Radius

Radius a fiber can bend before the risk of breakage or increase in attenuation.

Jumper

Optical fiber cable that has connector(s) installed on both ends.

Minimum Bend Radius

The amount of bend a fiber (or cable) can withstand before experiencing problems in performance.