CORNING

# Rack-mountable 1U 96-fiber Housing

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|---|---|
| LAN-538-EN | Product Specifications for Connector Housings |

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# 1. General

This document describes the installation of rack-mountable 1U housing with a capacity for 96 fibers (Figure 1). The unit fits into 19-inch utility racks and occupies one rack space. Contact your customer service representative to order other mounting configurations or to purchase accessories that are sold separately.

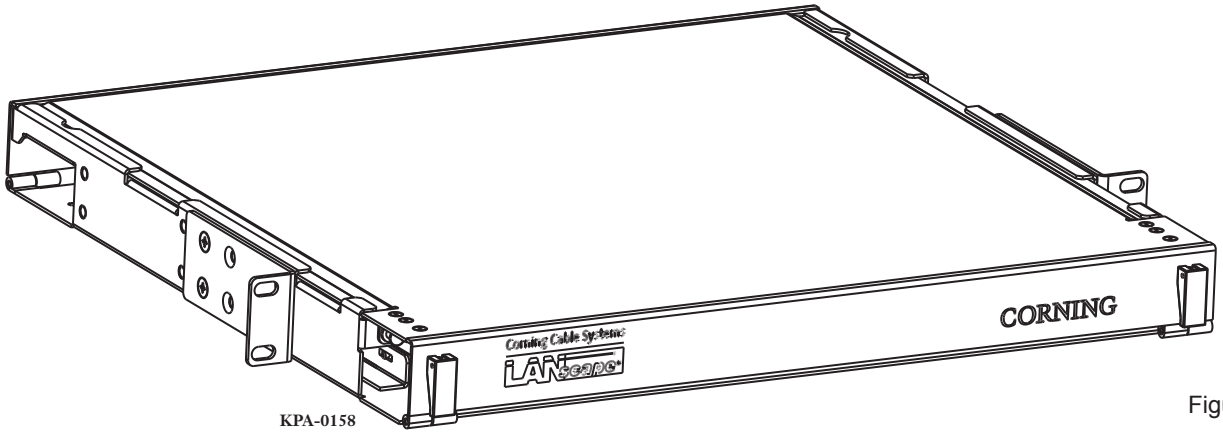


Figure 1

| Part Number | Dimensions (H x W x D) | Weight |
|---|---|---|
| PCH-96F-01U | 1.75 x 17 x 12 in. (4.5 x 43 x 28.5 cm) | 5 lb (2.3 kg) |

KPA-1004

# 2. Carton Contents

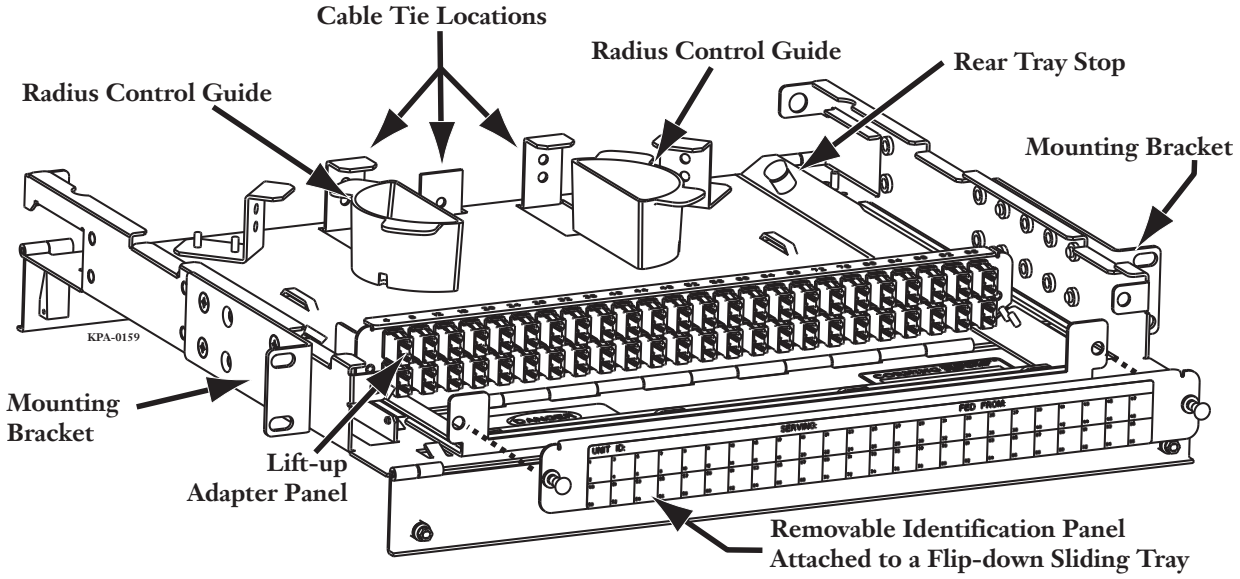


Figure 2

- Rack-mountable 1U housing with (2) mounting brackets (Figure 2)
- Hardware Kit containing:
  - (1) Unit Identification label
  - (2) 10-32 Phillips-head screws
  - (1) 6-32 Nylon wing nut
  - (2) 6-32 Phillips flat-head screws

- (4) Cable ties
- (2 ft) Spiral wrap
- (1 ft) Double-sided hook-and-loop strap
- (1) Internal strain-relief bracket (cable plate)
- (1) Universal Cable Clamp (UCC) kit
- (1) Bracket, right UCC

# 3. Tools and Materials Required

- Phillips-head screwdriver
- 3/8-inch socket or wrench
- Needle-nosed pliers
- Cable stripping tools

# 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.

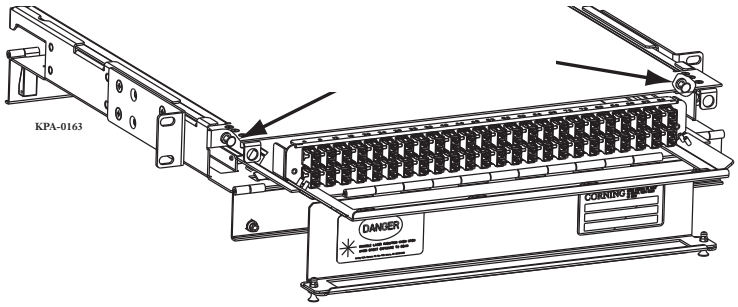


Figure 3

## 4.2 Mounting the Housing into a Rack

Attach the unit to the equipment rack using the four screws provided (two screws 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:** Install cable entry plate using the provided wing nut at the location where the cable will enter the housing.

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

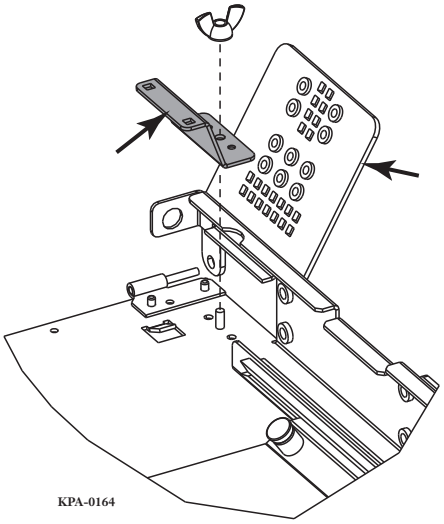


Figure 4

## 4.4 Securing the Cable

**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.

**CAUTION:** 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..

To strain-relieve the cable, 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 5 to allow installation of a second UCC if necessary.

**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. Do not overtighten cable tie.

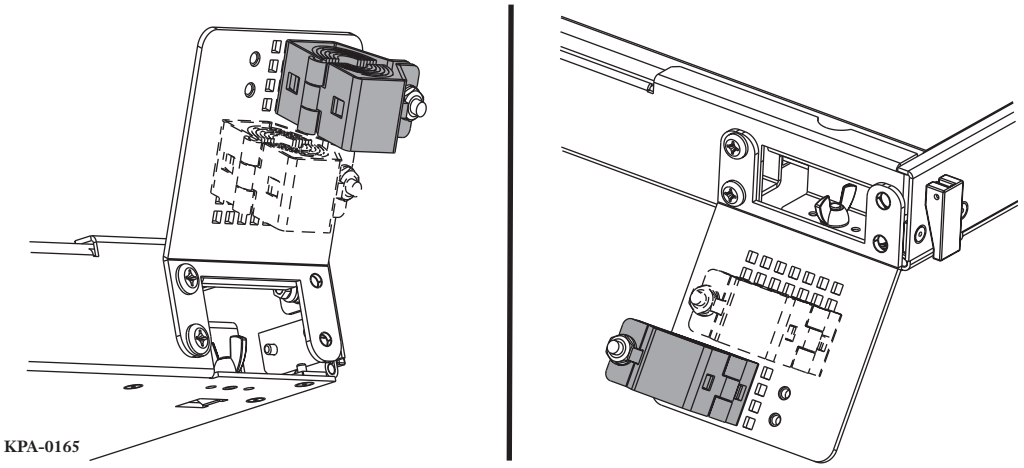


Figure 5

### 4.4.2 Using Cable Ties

**Step 1:** Attach the cable with cable ties to the strain-relief bracket in two places as shown in Figure 6.

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

**Step 3:** Secure cable to cable entry plate using a loose cable tie. Do not overtighten cable tie.

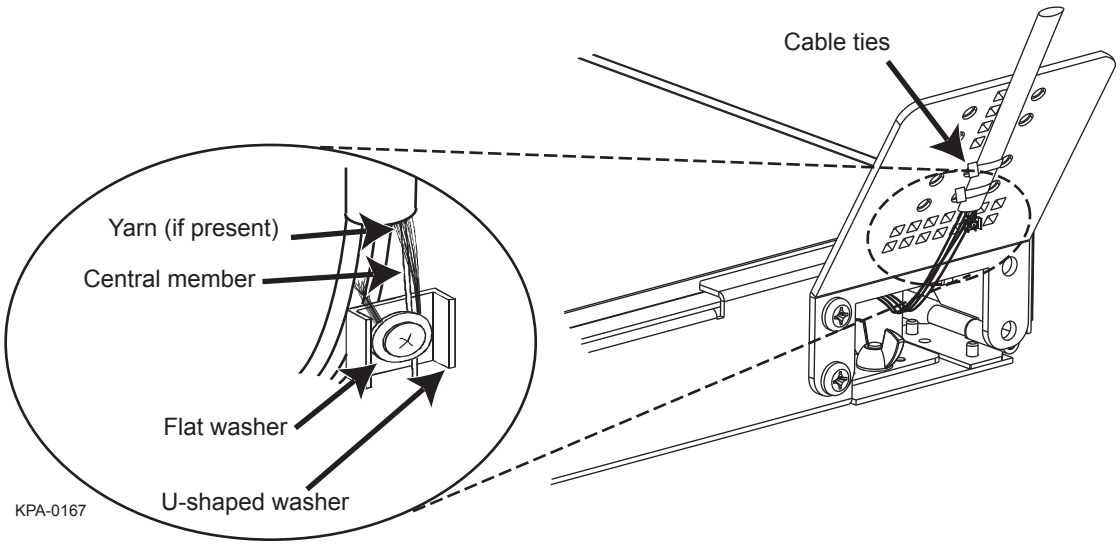


Figure 6

### 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 in Figure 6 using the supplied Phillips-head screw.

**Step 2:** Place the central member and yarn, if present, between the U-shaped washer and the flat washer.

**Step 3:** Wrap yarn in a clockwise direction around the screw 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

**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.

**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.

**Step 1:** Clean connectors and adapters as described in Section 5.

**Step 2:** Install connectors into the adapters at the rear of the connector panels.

**Step 3:** Route cable slack around radius control guides (Figure 7).

**Step 4:** Use cable ties through the lances 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.

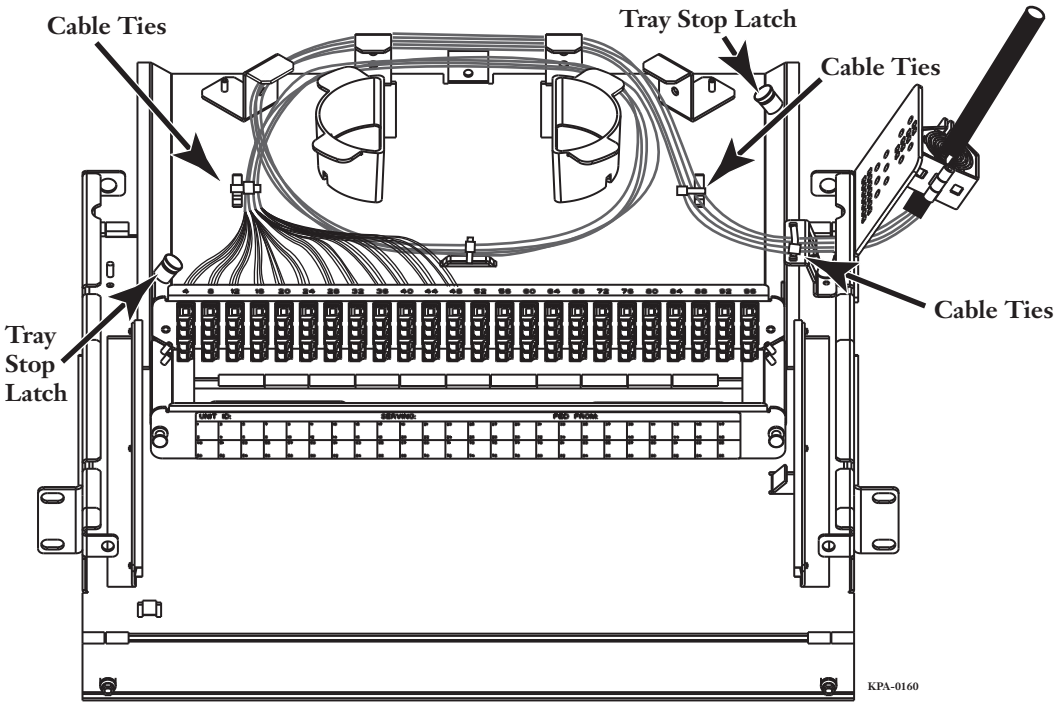


Figure 7

## 4.5.2 Installing Cable Using Buffer Tube Fanout (BTF) Kits

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

**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.

**Step 1:** Terminate the fibers according to the instruction provided with the BTF kit.

**Step 2:** Feed the fanout body and connectors through the cable entry opening.

**Step 3:** Slide the drawer back completely and loop the buffer tube under the fanout bracket and around the radius control guides. Secure the BTF truck body to the fanout bracket using a cable tie (Figure 8).

**Step 4:** Route the connectorized fibers under the plastic tabs on the radius control guides.

**Step 5:** Remove dust caps from the connectors and adapters into which they will be mated. Refer to Section 5 for recommended cleaning procedures or clean the connector end-faces and the adapter per standard company practices. Mate the connectors in the adapters.

**Step 6:** Use cable ties through the lances to secure fibers as needed.

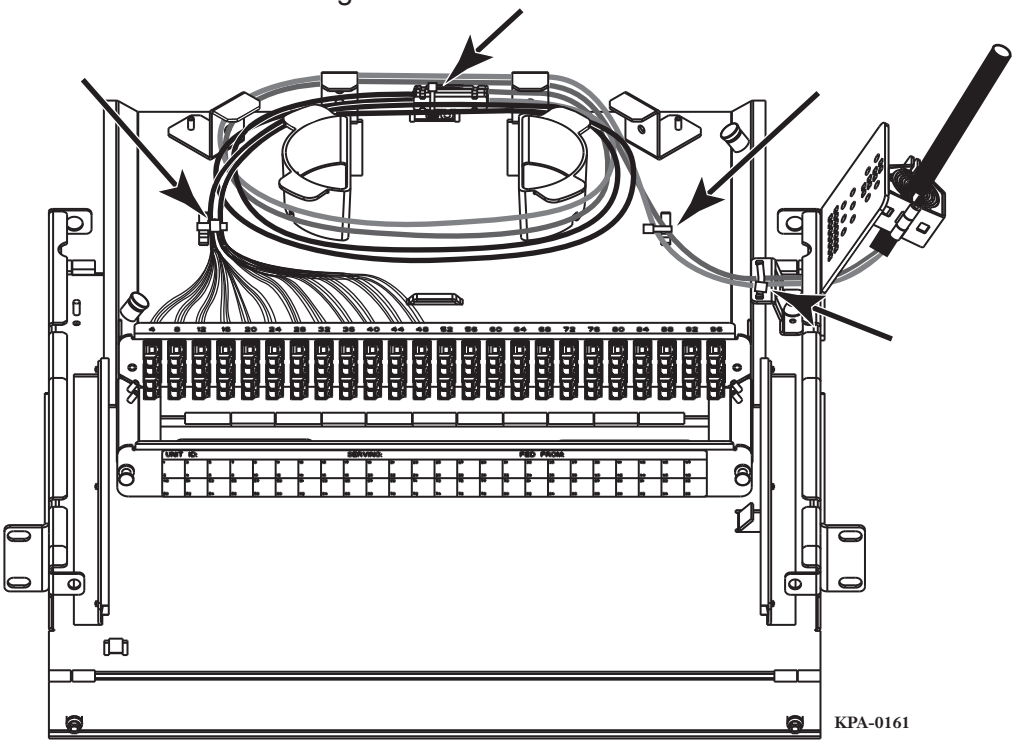


Figure 8

## 4.6 Documentation

Record fiber identification information appropriately on the identification label (Figure 9). The identification panel can be removed, if desired. Accurate recordkeeping is imperative for an organized installation.

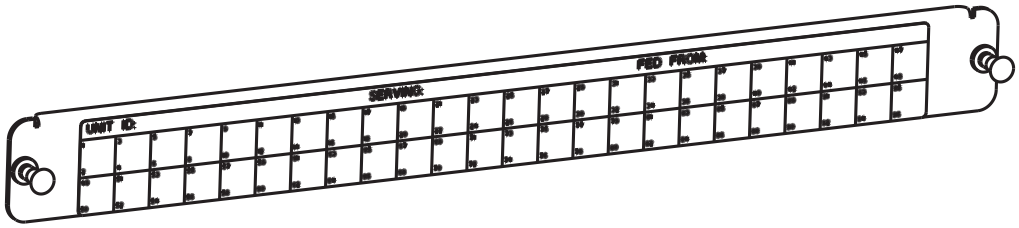


Figure 9

## 4.7 Closing the Housing

**Step 1:** Lift up on stop latches and slide drawer forward to make sure cable is not stressed. If necessary, readjust cable strain-relief to prevent stress on fibers. Tighten UCC clamp.

**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 or clean connector end-faces and adapters per standard company practices and insert connectors into adapters.

**Step 2:** Install jumpers as specified on planning diagrams. The panel can be raised to access the adapters on the bottom row. When raising the panel, the cover must be removed to prevent damage to the connectors on the back side of the panel. Cut the provided hook-and-loop strap into small sections and feed the strap through the appropriate lance at the front of the housing. Loosely secure jumpers using the straps at the front of the housing (Figure 10).

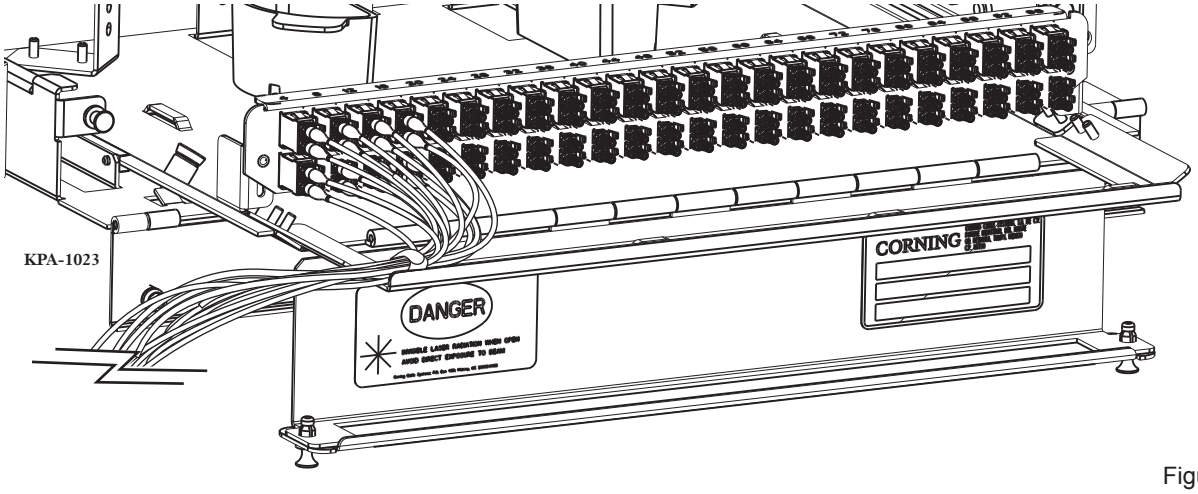


Figure 10

**Step 3:** Provide enough jumper slack to allow the connector panel tray to slide backward and forward without violating the minimum bend radius of the jumper.

**Step 4:** Record jumper routing information on the provided identification label. The identification panel can be removed, if desired. Accurate recordkeeping is imperative for an organized installation.

# 5. Connector Care and Cleaning

**WARNING:** Isopropyl alcohol is flammable with a flashpoint at 54ºF. 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.

# 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.

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