

## UCA4-9 Fiber-in-the-loop (FITL) Terminal

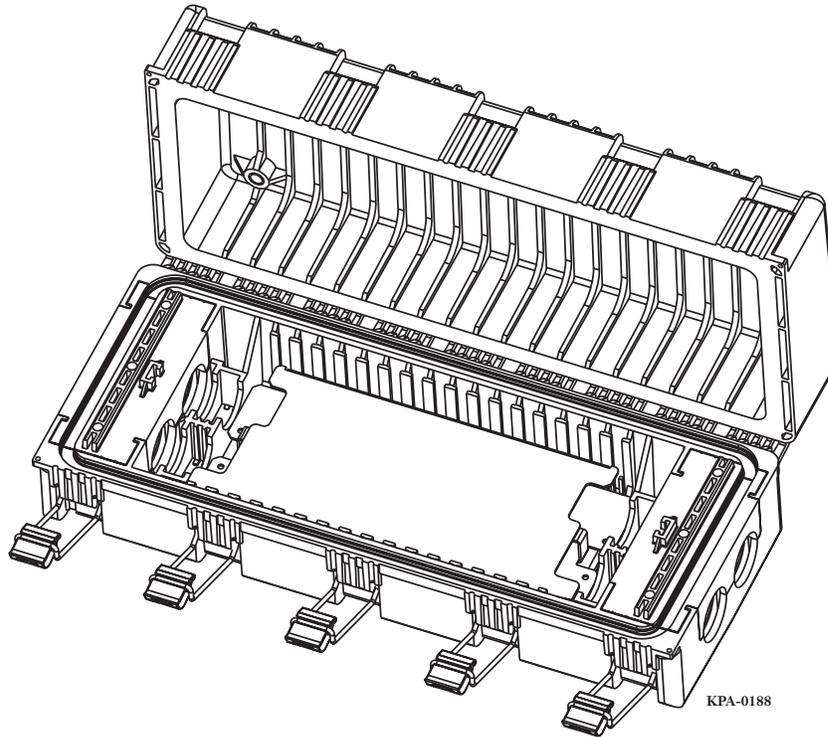


Figure 1 — UCA4-9 FITL Terminal

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## Revision History

Issue	Date	Reason for Change
1	10/2006	Initial Release

## Related Literature

EVO-433-EN	Product Specifications for UCA Grounding and UCAO Splice Closure
SRP 004-014	Instruction, Optical Fiber Access Tool
SRP 001-284	Instruction, Splice Trays Using Heatshrink Splice Protectors

## 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 Z235) 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. PRODUCT INFORMATION

The UCA4-9 Fiber-in-the-loop (FITL) terminal provides a 4-inch by 9-inch internal cavity and utilizes a hinged cover with reusable seals. The terminal provides minimal cable strain-relief. The terminal will accommodate 24 heat-shrink fiber splices. An additional 24 splices are possible using an optional add-a-tray kit. Contact your customer service representative for assistance.

## 2. CARTON CONTENTS

- (1) Terminal
- (1) Roll of sealing tape
- (2) Precut sealing tape pieces
- (2) Prewrapped dummy plugs
- (1) Sealing gasket
- (2) Sealing wedges
- (2) Bar clamps for sealing wedges
- (4) Bolts for sealing wedge bar clamps
- (2) Cleaning tissues
- (1) Gauge for sealing tape
- (2) Multihole grommets
- (1) Sealing paste - labeled as "Dichtpaste"
- (2) Bonding clamps
- (2) Grounding screws
- (2) Split washers
- (2) Shield connection
- (1) Solid plug
- (2) Cable ties, 1/8x4, white
- (1) Twisted ground cable

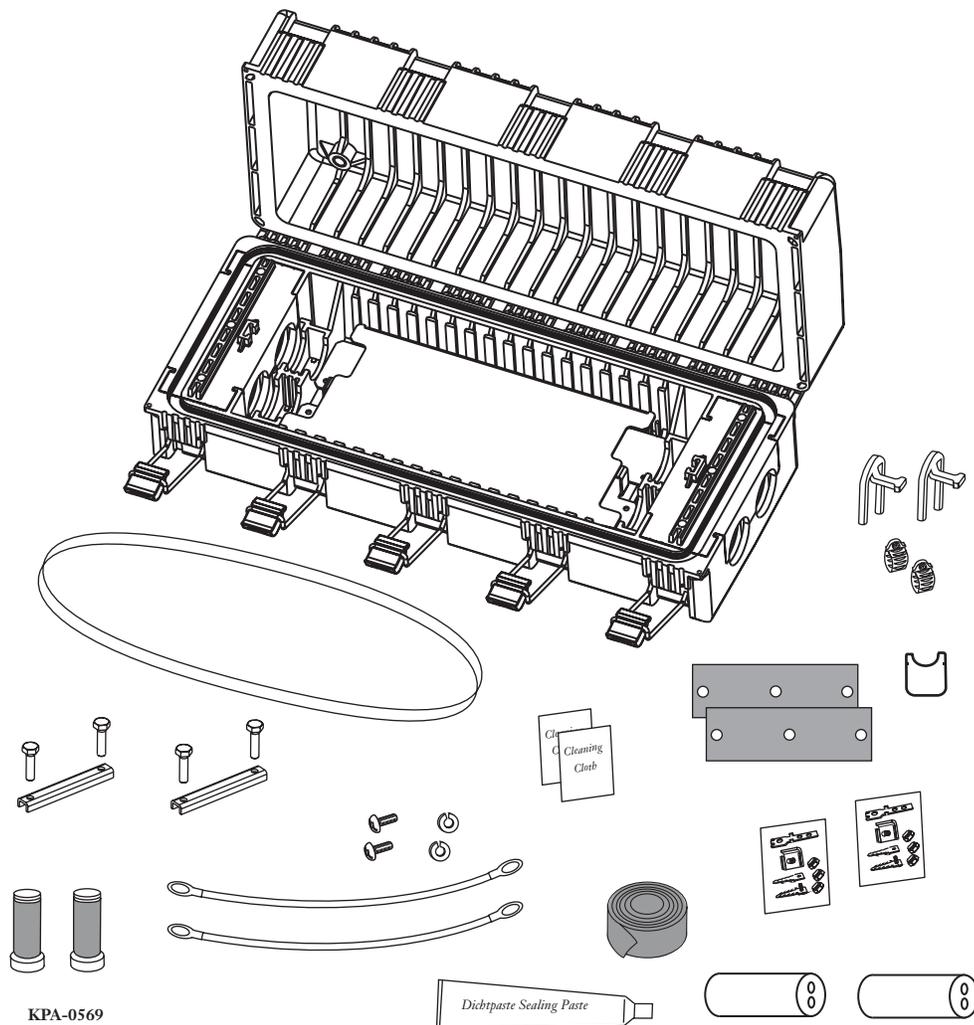


Figure 2 — Carton Contents

### 3. TOOLS AND EQUIPMENT REQUIRED

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

- Tape measure
- Scissors
- Side cutters/diagonal cutters
- Cable or utility knife
- Flat-blade screwdriver
- $\frac{5}{16}$ -inch nut driver
- $\frac{5}{16}$ -inch socket and ratchet (for end cap)
- Marker
- Pipe sealant
- Hand Pump and valve stem (not provided)
- Single-fiber heatshrink splice protectors (p/n 2806032-01 for a pack of 50 single-fiber, 40 mm protectors), purchased separately

### 4. REMOVING THE CABLE SHEATH

 **WARNING:** Do not install this unit or work with telephone wiring during a lightning storm. Telephone lines can carry high voltages from lightning causing electrical shock resulting in severe injury or death.

 **CAUTION:** 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 easily.

 **CAUTION:** The wearing of safety gloves to protect hands from accidental injury is strongly recommended when using sharp instruments.

**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 that can alter the transmission characteristics of the cable — the cable may have to be replaced.

**Step 1** Remove the length of cable sheath as indicated in Figure 3.

**Step 2** Cut the central strength member of each cable to 15 cm (6 inches) from the sheath using side cutters. Leave a length of yarn (if present) approximately 6 inches in length for strain-relieving the cable.

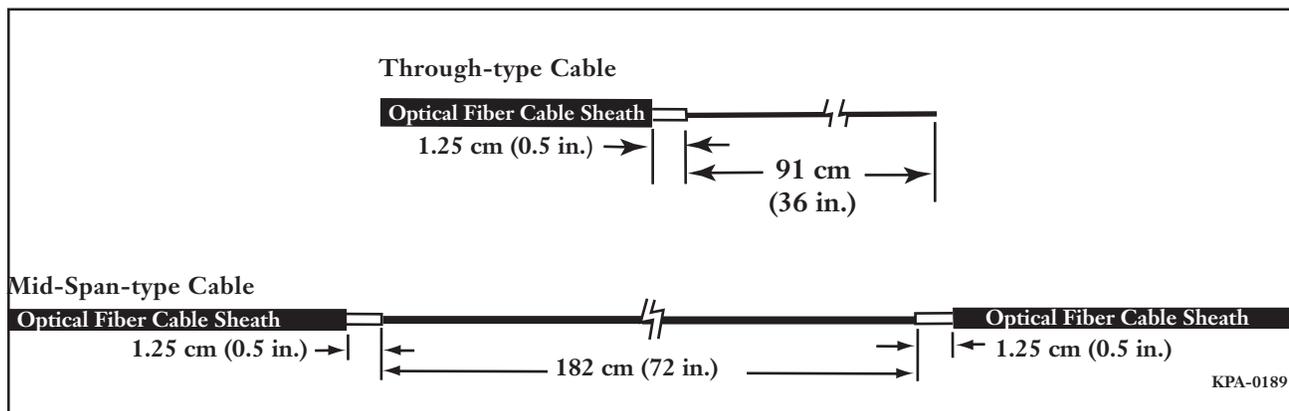


Figure 3 — Cable Sheath Strip Lengths

## 5. REMOVING THE TERMINAL COVER, IF DESIRED



**WARNING:** Do not use power tools to install or build the terminal. Power tools could damage the threaded inserts.

- Step 1** Open the latches on the cover using a flat-blade screwdriver (Figure 4A).
- Step 2** Turn the terminal around with the hinges facing you. Rotate the retention locks at the rear of the terminal one-quarter turn to the open position (Figure 4B).

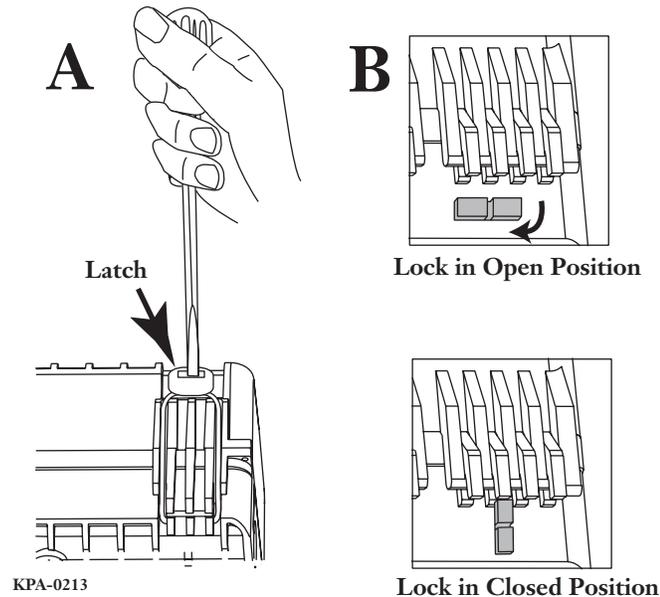


Figure 4 — Open Terminal Cover

- Step 3** Position the cover at a 90-degree angle from the base. Push down on the hinge pins until they are free of the hinges in the base. Pull the cover toward you and lift it away from the terminal (Figure 5).

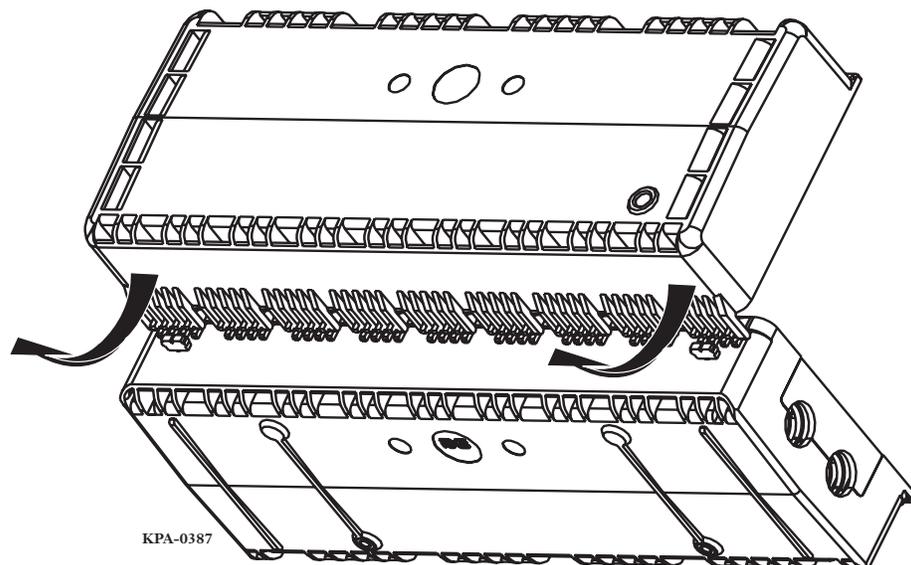


Figure 5 — Pull Cover Away from Base

## 6. MARKING CABLE

Mark the cable where the sealing tape will be wrapped around the cable (Figure 6).

## 7. INSTALLING SINGLE CABLE INTO THE TERMINAL

### 7.1 Apply Sealing Paste and Tape to Single Cables



**CAUTION:** Use sealing paste and cable cleaner in a well-ventilated area to eliminate the possibility of dizziness and nausea. If paste or cleaner comes in contact with skin or eyes, wash area immediately with soap and water to avoid irritation. Do not induce vomiting if paste or cleaner is ingested.



**CAUTION:** 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 induce mild dizziness. In case of ingestion, consult a physician.

**IMPORTANT:** Cable smaller than 7 mm or larger than 9.3 mm should go into a single port with sealing tape around it.

- Step 1** Clean the cable sheath and remove scratches and cuts by lightly scraping the sheath with the back of a knife. Do not use emery paper.
- Step 2** Clean the cable where the tape will be applied using the provided alcohol pad.
- Step 3** Use wax-paper backing from the sealing tape to spread the “dichtpaste” sealing paste evenly around the cable in the area where the sealing tape will be applied (Figure 7). Wait for the sealing paste to dry.
- Step 4** Cut and pull the strip of sealing tape as shown in Figure 8. The tape will stretch and thin before it breaks.

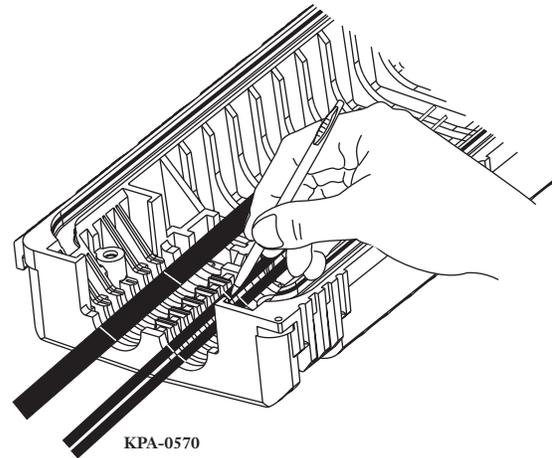


Figure 6 — Mark Cable

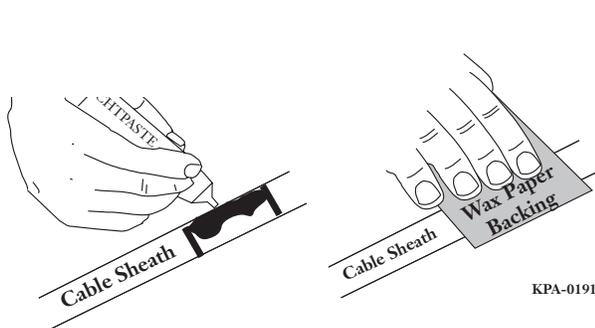


Figure 7 — Apply Sealing Paste

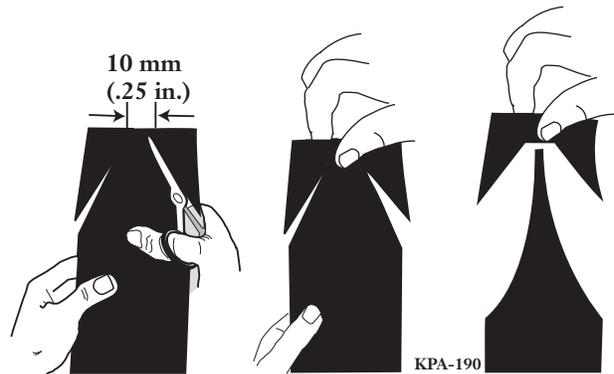


Figure 8 — Pull Sealing Tape

**Step 5** Apply sealing tape to the cable sheath in the marked area. Wrap the tape until it conforms to the diameter on the supplied gauge (Figure 9). Always finish with a complete wrap that overlaps the starting point by  $\frac{1}{2}$  inch.

**IMPORTANT:** *Failure to wrap the tape to the gauge diameter or to overlap the tape as shown may cause the terminal to leak.*

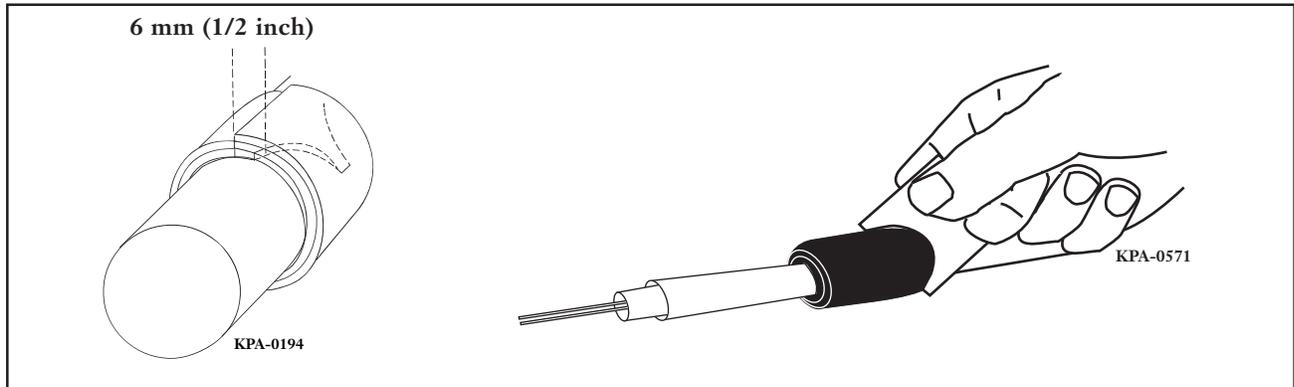


Figure 9 — Measure Wrapped Cable

## 7.2 Apply Tape to Terminal

Apply one piece of the precut sealing tape to each end of the terminal (Figure 10)

## 7.3 Insert Cable into Terminal

Insert the taped cable(s) into the base of the terminal (Figure 11).

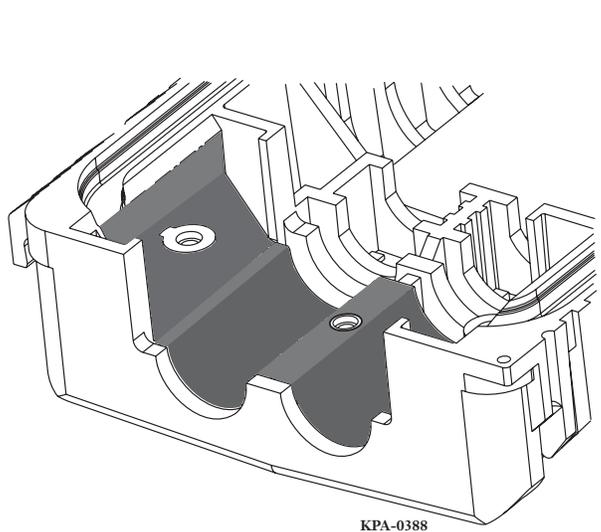


Figure 10 — Apply Sealing Tape to Terminal

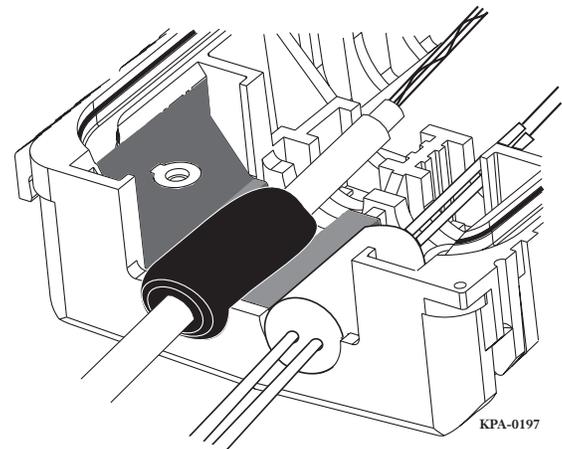


Figure 11 — Insert Cable into Terminal

## 8. INSTALLING DUAL-FIBER CABLES INTO THE TERMINAL

If using dual optical fiber cables, use the provided multihole grommet.

**Step 1** Insert one optical fiber cable into each of the holes in the multihole grommet, ensuring that the cables extend at least 2.5 inches (6 cm) beyond the edge of the grommet inside the closure.

**Step 2** Insert the multihole grommet into the base of the terminal (Figure 11).

## 9. USING A DUMMY PLUG, IF NECESSARY

Use a prewrapped dummy plug (two are provided) to fill the unused ports. Install dummy plug with the closed end of the plug flush against the outside of the terminal (Figure 12).

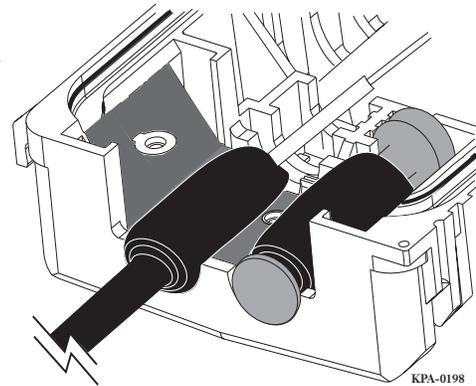


Figure 12 — Install Dummy Plug, If Necessary

## 10. SECURING THE CABLE

**Step 1** Install the sealing wedge over the cable by alternately tightening the bolts until the wedge is closed (Figure 13). The wedge must be flush with the base when closed.

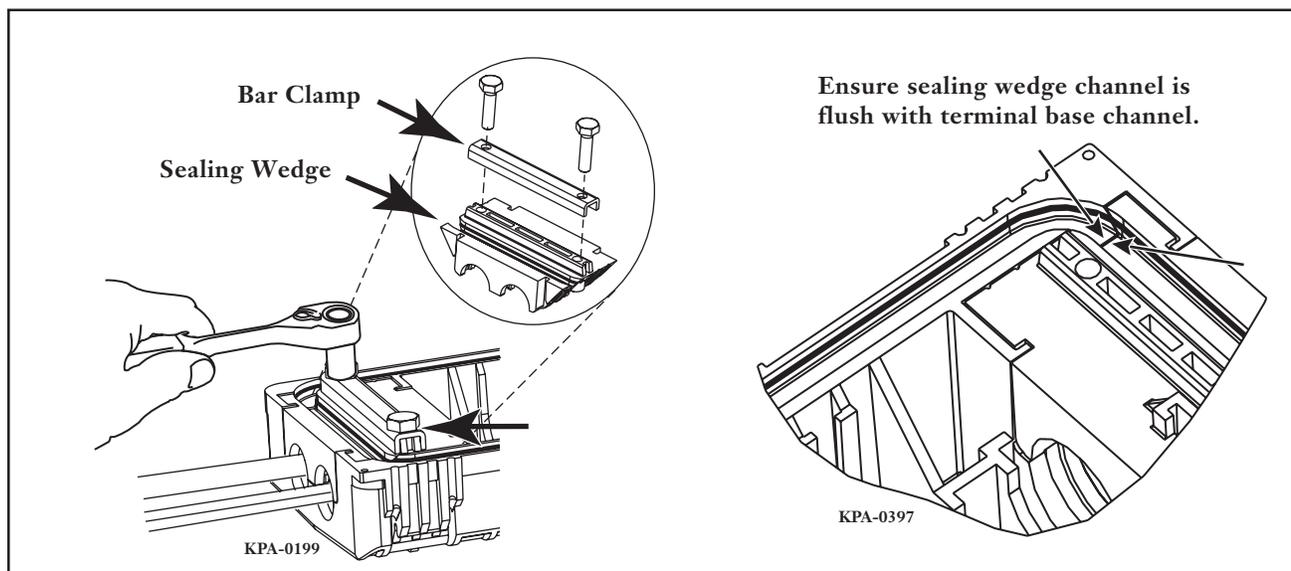


Figure 13 — Install Sealing Wedge

**Step 2** Use a flat-blade screwdriver to trim the sealing tape in the gasket groove (Figure 14A).

**IMPORTANT:** *Do not pull the tape to remove excess from the gasket groove. This will remove the tape below the gasket joint and cause leaks.*

**Step 3** Spread this portion of the sealing tape over the joint of the base and the wedge as shown in Figure 14B.

**Step 4** Remove any excess sealing tape from the rest of the joint area.

**Step 5** Repeat for each of the four corners where the wedge and base meet.

**Step 6** Repeat from Section 5 for the cable(s) to be installed in the opposite end of the base.

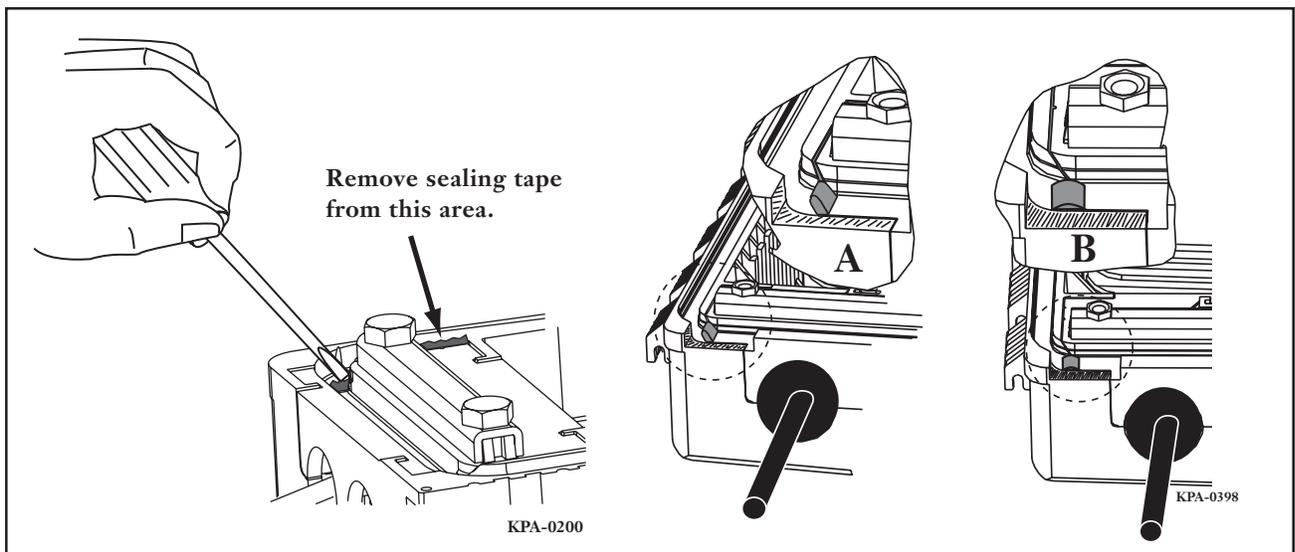


Figure 14 — Remove Exposed Sealing Tape

## 11. SPLICING THE CABLE

- Step 1** Splice fibers according to the instructions for your splicing equipment.
- Step 2** Protect splice and install into splice organizer. Use p/n 2806032-01 single-fiber, 40 mm heatshrink protectors (purchased separately).
- Step 3** Loop fiber lengths under tabs in splice compartment (Figure 15A).
- Step 4** Place protective cover over splices (Figure 15B).
- Step 5** Identify fiber and fiber splices per local practices.

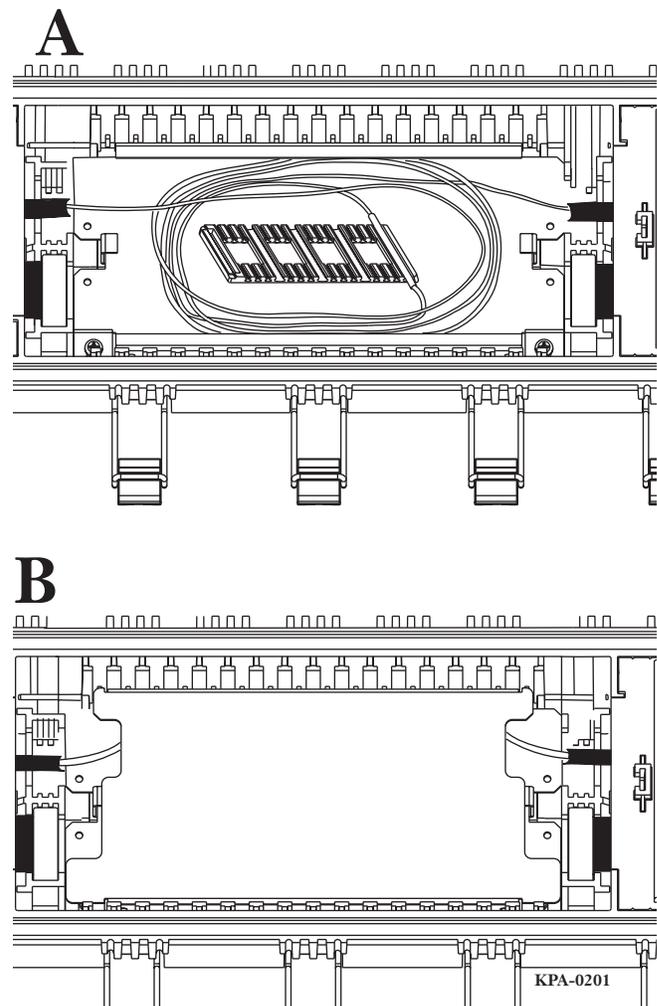


Figure 15 — Splice Fibers

## 12. SEALING THE TERMINAL

### 12.1 Clean the Sealing Channel

Clean channel around the perimeter of the base. Insert the sealing gasket into the base with the channel on the gasket facing upwards and the three ridges facing downward (Figure 16).

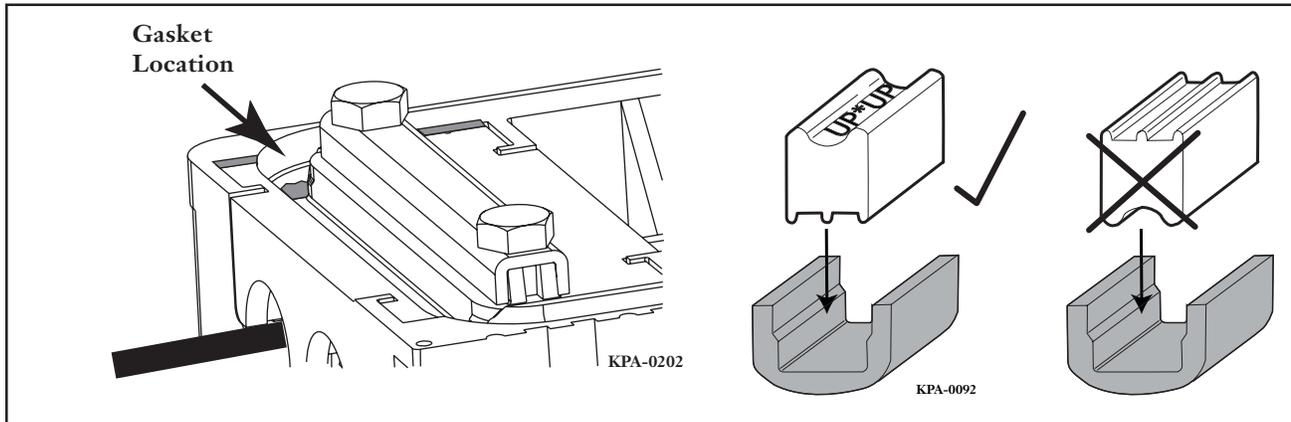


Figure 16 — Install Sealing Gasket

### 12.2 Reattach the Cover, if Removed

**Step 1** Attach the top cover by sliding the hinge pins back into the hinge position. Rotate the retention locks on the hinge side of the terminal one-quarter turn to the closed position (Figure 17A).

**Step 2** Close the latches (Figure 17B) to secure the cover in place.

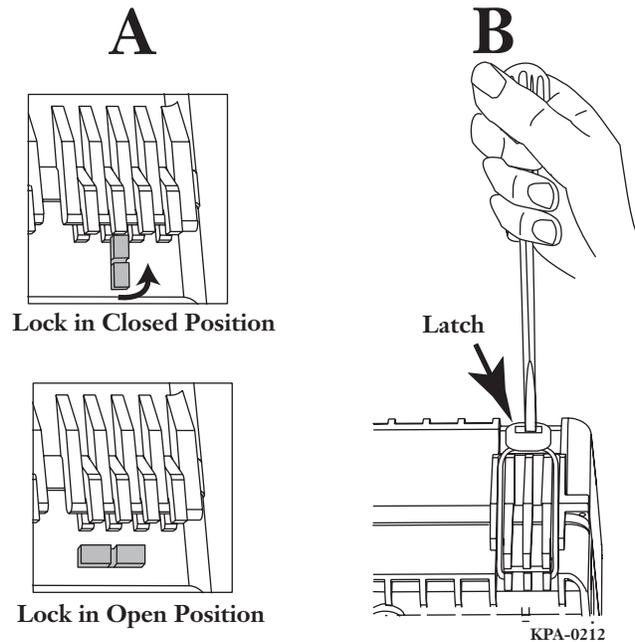


Figure 17 — Reattach Cover, if it was Removed

## 12.3 Perform a Flash Test

### 12.3.1 Install a flash test air valve

- Step 1** Use a screwdriver to pierce the bottom of the threaded hole in the terminal cover.
- Step 2** Apply lubricant to the threads of a valve stem (p/n UCN-KT-FV, package of five, purchased separately).
- Step 3** Install the valve stem finger-tight, then another half turn with a wrench, into the threaded hole as shown in Figure 18.

### 12.3.2 Perform flash test

- Step 1** Inject a maximum of 5 psi of air into the terminal using a hand pump (Figure 19). Check pressure regularly.



**WARNING:** To avoid a potentially hazardous situation that could result in death or serious injury, do not exceed 5 psi (35 kpa) gauge pressure. The terminal could burst.

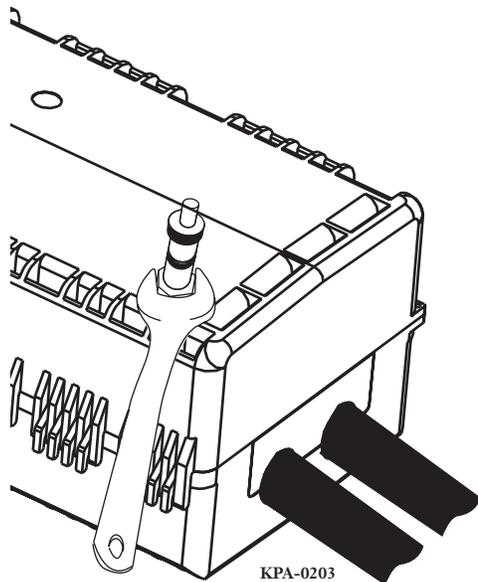


Figure 18 — Install Air Valve

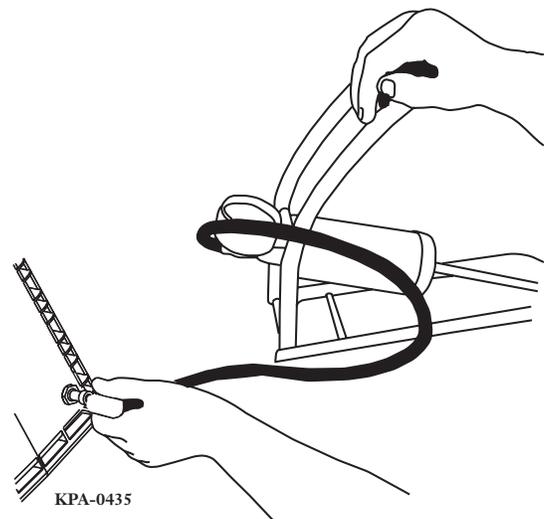


Figure 19 - Pressure Test Terminal

- Step 2** Apply soapy water to the seal points and watch the terminal for signs of leakage (bubbling of soap).

**NOTE:** A correctly sealed terminal maintains pressure with no leaks.

### 12.3.3 Remove air valve

After the flash test has been performed and the terminal sealed correctly, carefully remove the air valve and allow air to escape.

### 12.3.4 Install solid plug

Place lubricant (purchased separately) on the threads of a solid plug and install the plug into the threaded hole in the terminal cover (Figure 20). Tighten all the way until the solid plug is installed completely.

## 13. GROUNDING THE TERMINAL

If grounding is required, and was not performed previously, use a #M6-12 mm screw to attach a #6 AWG ground wire to the terminal at the ground location shown. Terminate the other end of the ground wire per standard codes and local methods and practices (Figure 21).

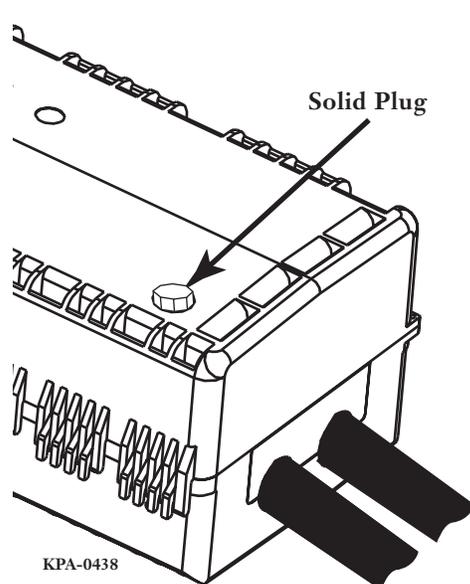


Figure 20 — Install Solid Plug

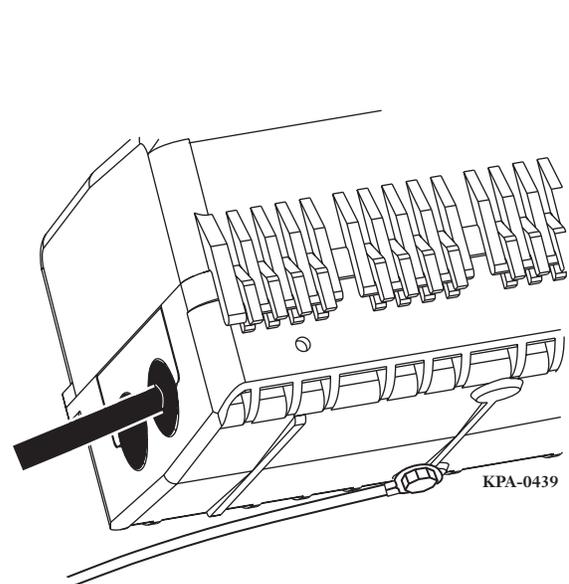


Figure 21 — Ground the Terminal

## 14. REENTERING TERMINAL

**Step 1** Place a flat-blade screwdriver in the latches.

**Step 2** Pry open as shown in Figure 22.

## 15. REPLACING OR ADDING CABLES

**Step 1** Remove sealing gasket.

**Step 2** Remove screws holding the sealing wedge collar and set collar aside.

**Step 3** Lift the sealing wedge out using a flat-blade screwdriver (Figure 23).



**CAUTION:** Do not use power tools to remove the sealing wedge. The sealing wedge may crack and become unusable.

**Step 4** Remove any pieces of sealing tape from the sealing wedge and lower half-shell.

**Step 5** Install cable(s) as described in this procedure.

**IMPORTANT:** The terminal must be flash tested after each cable installation.

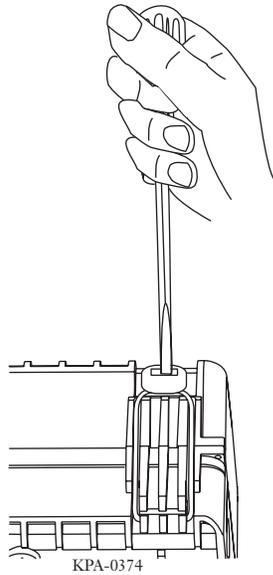


Figure 22 — Open Terminal Cover

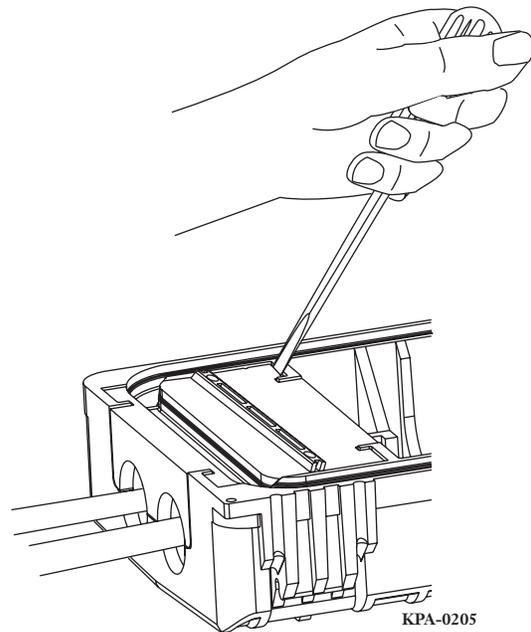


Figure 23 — Remove Sealing Wedge