CORNING

ICC/OCC Cabinets

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1.　　General

This instruction describes the installation of Corning ICC/OCC Cabinets. ICC/OCC Cabinets are fiber optic cross-connect cabinets designed to hold distribution housings configured for 23-in rack mounting. The housings are mounted on a 23-in rack inside the cabinet. Cable and jumpers are routed out of the OCC cabinet bottom (Figure 1) and ICC top through knockouts (Figure 2).
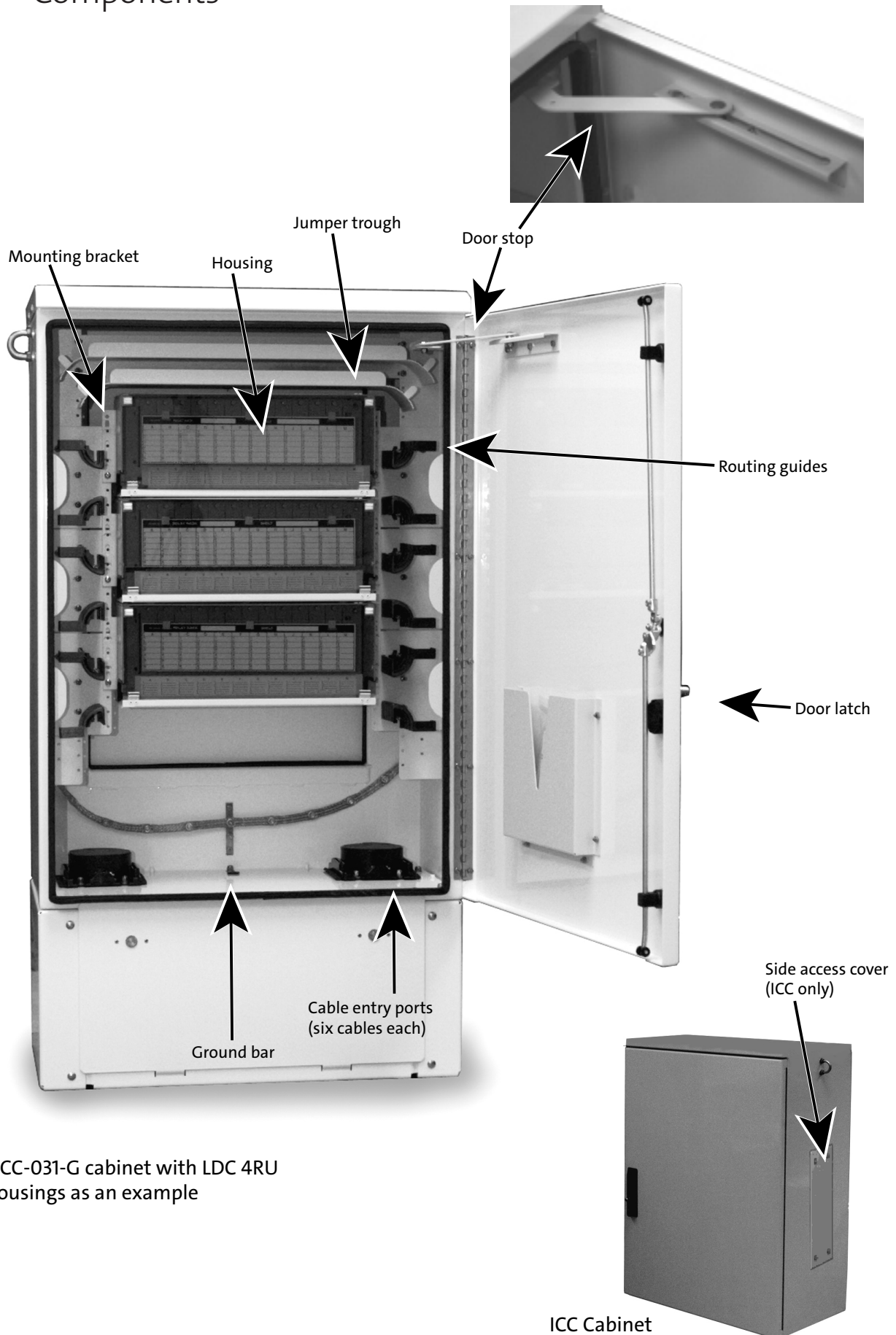

Figure 1

Figure 2

Cabinets are available with 31- or 51-in high internal mounting racks that will accommodate up to 3 or 6 housings respectively.

- The OCC cabinet for outside use is environmentally sealed by a large gasket-lined door and hood. OCC cabinets are also available in pad mount versions (OCC-XXX-G and OCC-XXX-G-CTX).

- The ICC cabinet for indoor use has additional knockouts in the top of the cabinet and access covers on the sides to simplify installation.

The cabinet is accessible through a hinged front door held shut by a three point latch. Rear access (OCC-XXX-G and OCC-XXX-G-CTX model) is provided by a lift-off panel. Both entries require a 216B tool to open and can be secured with a padlock. The unit can be wall-mounted, attached to T-slot rack, 23-in utility rack, pole-mounted or pad-mounted. T-slot rack, pole-mounting, and pad-mounting require separate kits.

2. Components

Mounting bracket

Housing

Jumper trough

Door stop

Routing guides

Door latch

Side access cover
(ICC only)

Cable entry ports
(six cables each)

Ground bar

OCC-031-G cabinet with LDC 4RU
housings as an example

ICC Cabinet

Figure 3

Tools and Equipment
No special tools are required to install the unit.

3.   Precautions

⚠	**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.
⚠	**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.**
⚠	**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.
⚠	**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.

4.   Wall Mounting

Wall brackets
28 in apart for 31 in
rack space
(46 in apart for 51 in
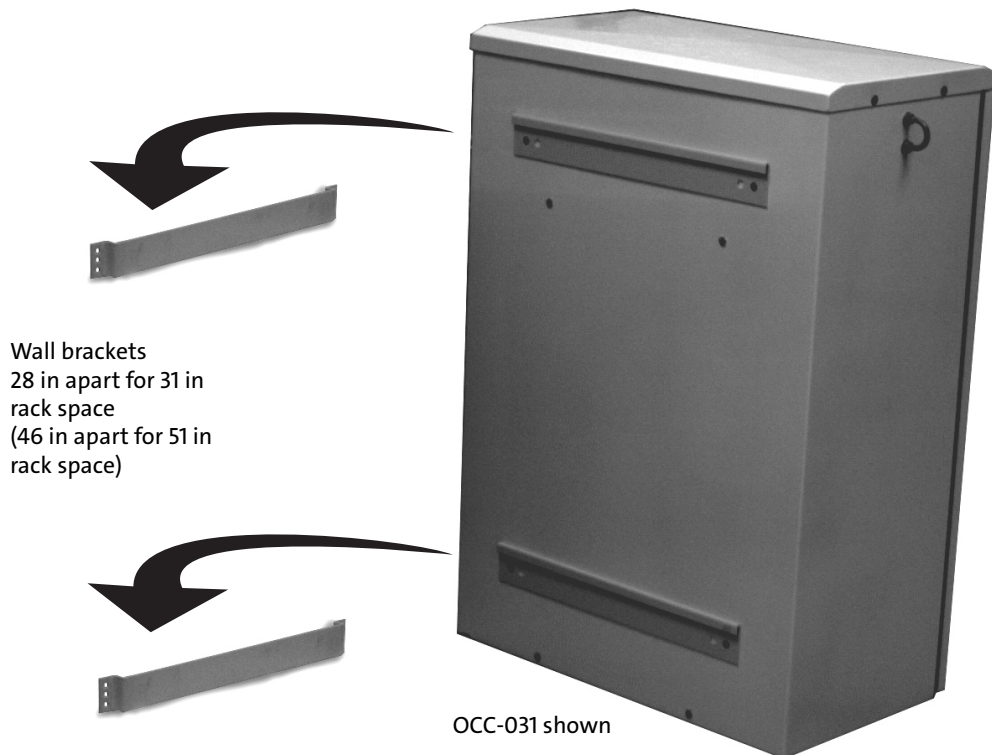rack space)

OCC-031 shown

Figure 4

Step 1: Select a vertical surface. The surface should be flat so that the unit won't warp when it is secured to the wall.

Step 2: Mark hole locations as illustrated in Figure 4. Drive anchors or wood screws in at these locations and attach mounting brackets.

Step 3: Loosen the hex-head bolts located in the lower portion of the inside cabinet.

Step 4: Place the unit on the mounting brackets and tighten the hex-head bolt.

5.   Pole Mounting

Use a CEN-BK2 Pole Mounting Kit as illustrated in Figure 5. See instructions packaged with the kit for details.

Figure 5

6.   T-Slot Rack Mounting

23 in for 31-in rack space (46 in for 51-in rack space)
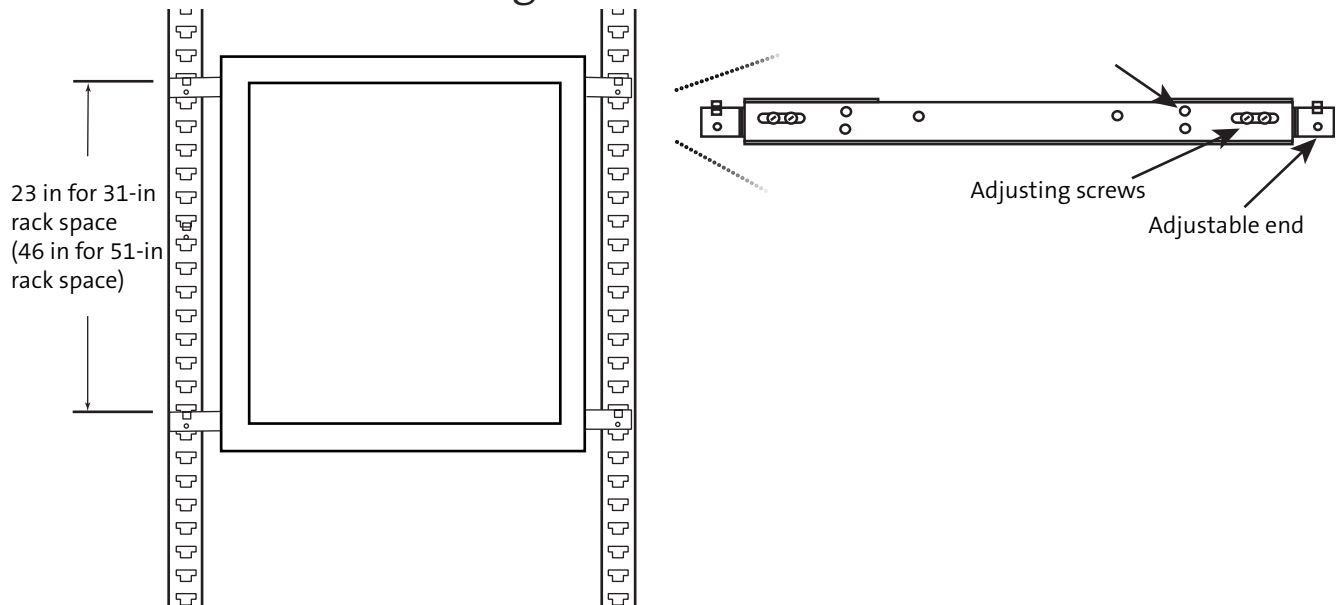
Adjusting screws

Adjustable end

Figure 6

Step 1: Use a 15-195-63 T-slot mounting kit. Select a location on the rack. The recommended distance between brackets on the rack is shown in Figure 6.

Step 2: Loosen the mounting screws on the adjustable T-slot brackets and hook them to the rack in the required locations. Once on the rack, tighten the adjusting screws.

Step 3: Insert and tighten the retaining screws. These screws will lock the brackets into place on the rack.

Step 4: Install two mounting screws in the top T- slot mounting bracket at the locations shown in Figure 6.

Step 5: Place the unit on the mounting brackets and tighten the set screws (from inside the unit) to lock the cabinet to the mounting brackets.

7.   Pad Mounting

Requires OCC pad mounting frame p/n PAD-OCC-01 installed per the instructions supplied with the mounting frame. Customer-supplied ground stakes and ground wire should be in place at the pad site per local grounding codes. Refer to "Cable Entry" for ground wire installation.
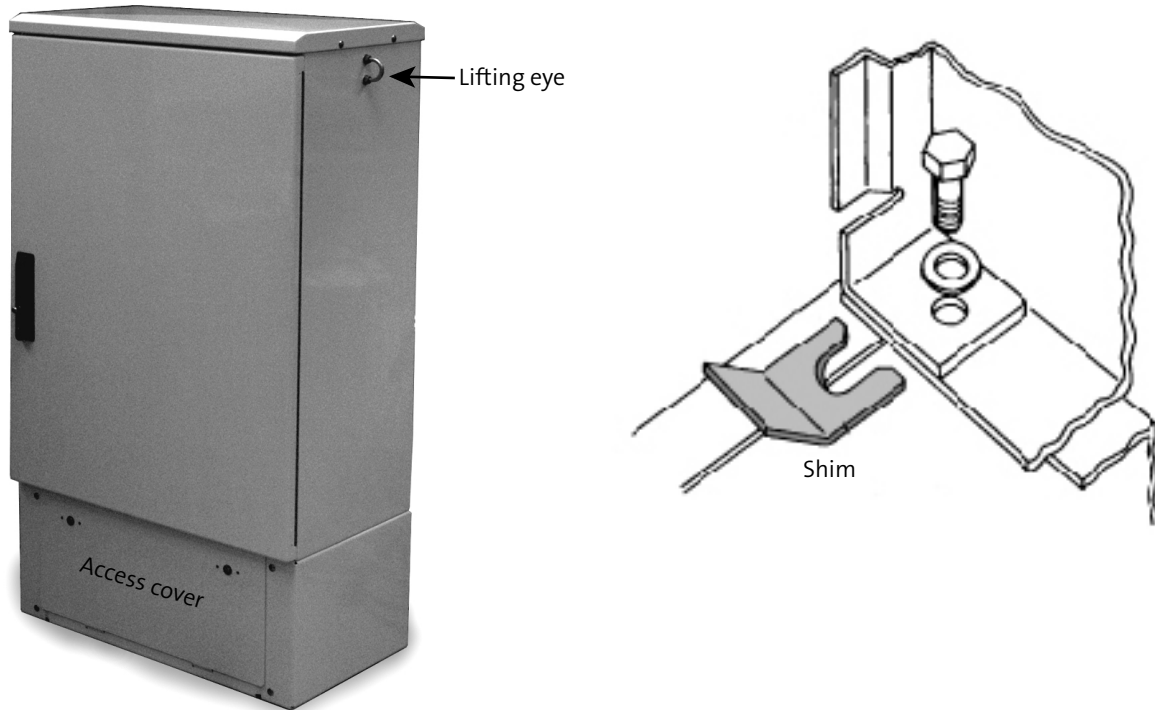

Figure 7

Step 1: Remove the unit from the packaging and inspect for damage.

Step 2: Remove access cover from the front of the base using a 216B tool.

Step 3: Using the lifting eyes provided on either side of the cabinet, hoist the unit into a position directly above the pad mounting frame.

NOTE: If your cable is already in position at the pad site, you will need to feed the cable stubs into the cabinet. Refer to "Cable Entry" for this procedure.

Step 4: Lower the unit onto the pad mounting frame so that the four holes in the frame are lined up with the four holes in the OCC base.

Step 5: Attach the unit to the frame using the supplied 1/2-in hardware and shims. Shims may be required between the pad mount frame and the unit to keep the cabinet squared when the bolts are tightened (Figure 7).

8.   Grounding

Step 1: Run the external ground wire into the cabinet by punching a hole and threading the wire through the small, rubber grommet found in the bottom of the cabinet.

Step 2: Attach the ground wire to the bottom post of the grounding bar located on the rear wall of the cabinet (Figure 8).

Braided ground strap

Ground wire
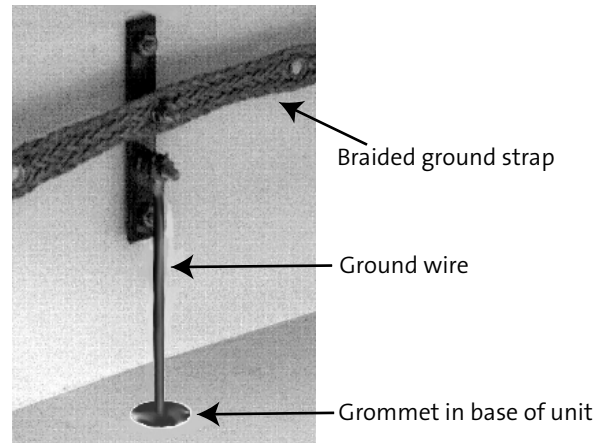
Grommet in base of unit

Figure 8

9.   Cable Entry

OCC cabinets have a removable floor panel with two cable ports that hold up to 6 cables each. Two cable entry options are offered in the OCC-XXX, OCC-XXX-CTX, OCC-XXX-G and OCC-XXX-G-CTX models.

- The standard method (supplied with the cabinet) uses a split cable entry with a poured re-enterable encapsulant to ensure a proper seal. This method is offered for applications where the end of the cable cannot be accessed for threading through the knockout and fitting.
- An alternate method uses liquid-tight fittings attached at knockout locations. This method can only be used with new installations of cable where the threading of the cable through the knockout and fitting is possible. The kit for this method is available from Corning Optical Communications.

Step 1: When using the standard method, install the bottom panels with large holes and slots to the rear.

Step 2: Determine which cables will be placed in each hole (six cables maximum per hole).

Step 3: Peel out the foam plug closest to the cable diameter you are installing and slide around the cable. Repeat for each cable passing through each port.

Step 4: Attach the plastic split entry adapters to each other and to the bottom panel using the hardware provided.

Step 5: Do not compress the foam plug into the split-entry fixture at this time. Complete housing preparation and cable routing steps first.

Step 6: To install cable in the ICC cabinets, each cable must have a cable entry kit. Each kit includes the properly sized cord connector, central member clamping hardware, grounding clamps and grounding straps. The cable entry kits are:

Part Number	For Cable Diameter
CEK-3-4	0.375 - 0.500 in
CEK-4-5	0.500 - 0.625 in
CEK-5-6	0.625 - 0.750 in
CEK-6-7	0.750 - 0.875 in
CEK-7-8	0.875 - 1.00 in

Step 7:   Locate and remove the desired knockout for each cable to be installed.

Step 8:   Install cable stub and cable entry kit on Factory-stubbed Housings (Cable stub exiting cabinet from inside) as follows (Figure 9):

- Thread the cable stub through the lock nut.
- Thread the cable stub through the cabinet from the inside to the outside.
- Thread the cable stub through the cord connector starting from the end with the smaller diameter external thread. Secure the cord connector to the cabinet with the lock nut.
- Thread the cable stub through the large knurled nut starting from the internally threaded end. You may loosely thread the knurled nut onto the cord connector to keep it out of the way while you continue routing the cable stub to its final termination.
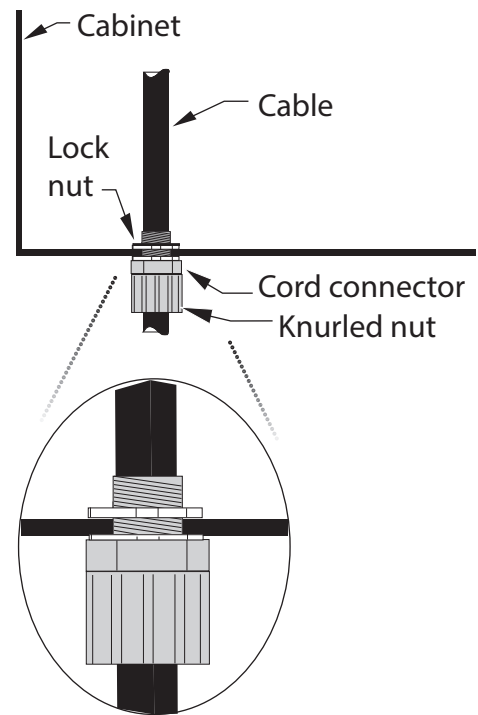- Retain the split seal for use after the housing has been installed.

Figure 9

Step 9:   Install cable stub and cable entry kit on Field-installed Housings (Cable stub entering cabinet from outside) as follows:

- Thread the cable stub through the large knurled nut starting from the small diameter non-threaded end.
- Thread the cable stub through the cord connector starting from the end with the larger diameter external thread.
- Thread the cable stub through the cabinet from the outside to the inside.
- If the cable stub will not be terminated at a single housing, thread it through the central member clamping bracket.
- Thread the cable stub through the lock nut.
- Secure the cord connector and central member clamping bracket (if used) to the cabinet with the lock nut.
- You may loosely thread the knurled nut onto the cord connector to keep it out of the way while you continue routing the cable stub to its final termination.
- Retain the split seal for use after the housing has been installed.

10. Housing Preparation

Step 1: If you are installing factory-stubbed housings, attach the mounting brackets for a 19- inch rack configuration (Figure 10) and proceed to Section 12 Housing Installation.

Step 2: For a cable that terminates on a single housing, complete the cable installation as described in the instructions provided with the housing, attach the mounting brackets for a 19- inch rack configuration and proceed to Section 12 Housing Installation.

Step 3: For a cable that terminates on multiple housings, use the following procedure.

    a. Refer to the instruction for the specific housing that you will be installing to determine the recommended sheath stripping length for a cable terminated at the housing.

    b. Determine the length of cable required to get to the furthest housing if the entire cable were being terminated at the housing from the entry knockout in the cabinet.

    c. Add the lengths above. Strip the sheath of the cable by this total length.

    d. Route, strain-relieve, and terminate the fiber to each housing as described in the procedure for the housing that you are installing.

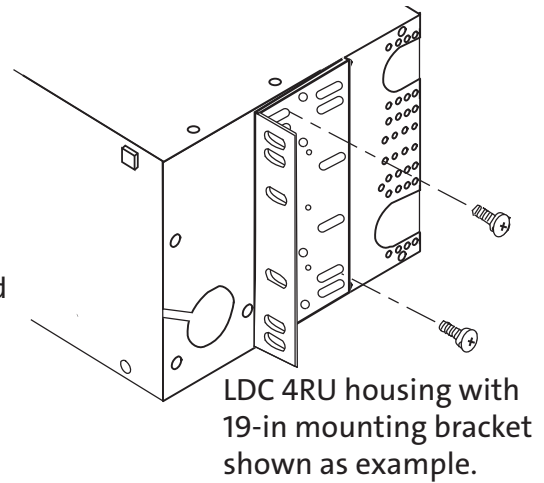   e. Attach the mounting brackets to each housing for a 19-in rack configuration.

LDC 4RU housing with 19-in mounting bracket shown as example.

Figure 10

11. Mounting Housings

11.1 Mounting LDC or ECL Housings into OCC-031-G or OCC-051-G Cabinet

Units are shipped pre-configured for installation of 7-in housings (Figure 11, left side). Housing capacities are as follows:

Part Number	7-in Housings	8.75 in Housings
031	3	3
051	6	5
080	10	8

Step 1: If installing 8.75-in housings, relocate the routing guides as shown in Figure 11, right side. Housings should be attached to the cabinet mounting rack from top to bottom.

Step 2: Locate and attach the housing to the mounting rack inside the cabinet allowing the cable stub to slide through the split-entry fixture previously attached to the cabinet.

Step 3: When the cable is terminated at a single housing, and the cable is armored, has a steel central member that requires grounding, or is factory-stubbed with a ground cable exiting the cable end, the ground cable should be attached using one of the housing mounting screws and an external tooth lock washer to the mounting rack.
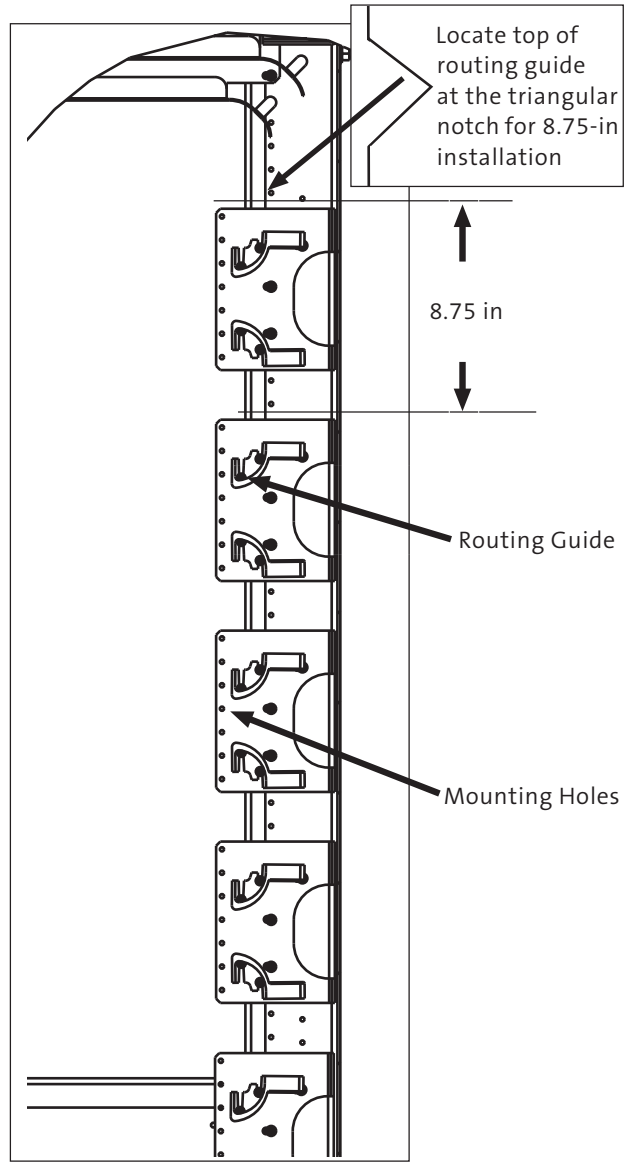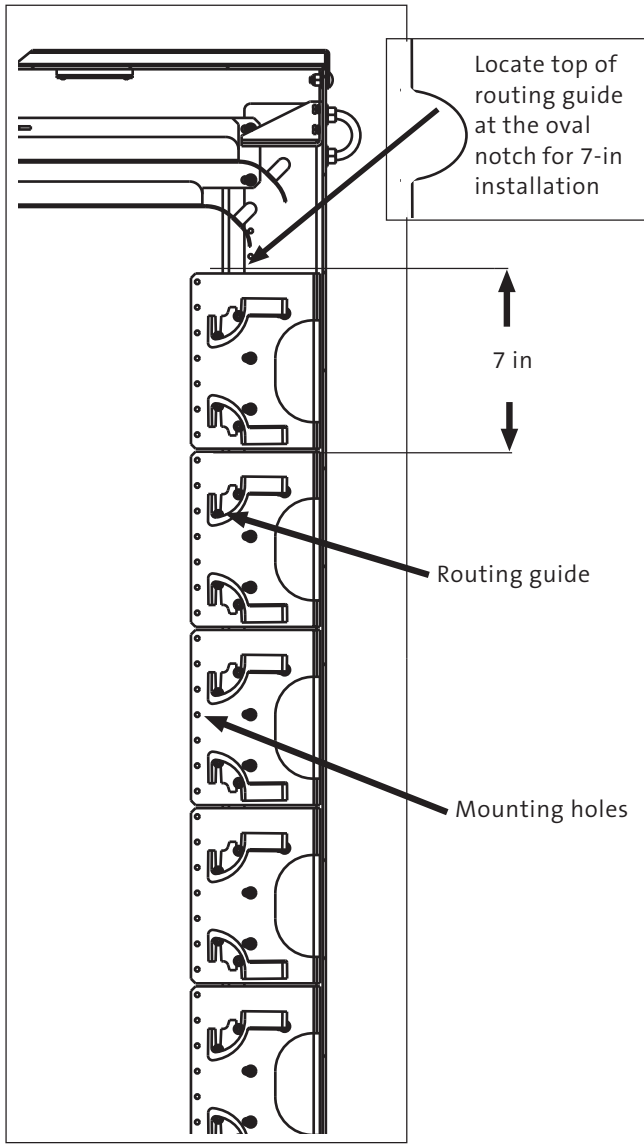
Locate top of routing guide at the oval notch for 7-in installation

7 in

Routing guide

Mounting holes

Locate top of routing guide at the triangular notch for 8.75-in installation

8.75 in

Routing Guide

Mounting Holes

Figure 11

11.2 Mounting Centrix™ Housings into OCC-031-G-CTX or OCC-051-G-CTX Cabinet

Step 1: Reposition the cable strain-relief bracket (if necessary) to the forwardmost mounting position at the rear of the housing (Figure 12).

NOTE: If stubbed housing is equipped with a horizontal shipping plate supporting the cable at the rear of the housing, unscrew and discard the plate before installing the housing into the cabinet.
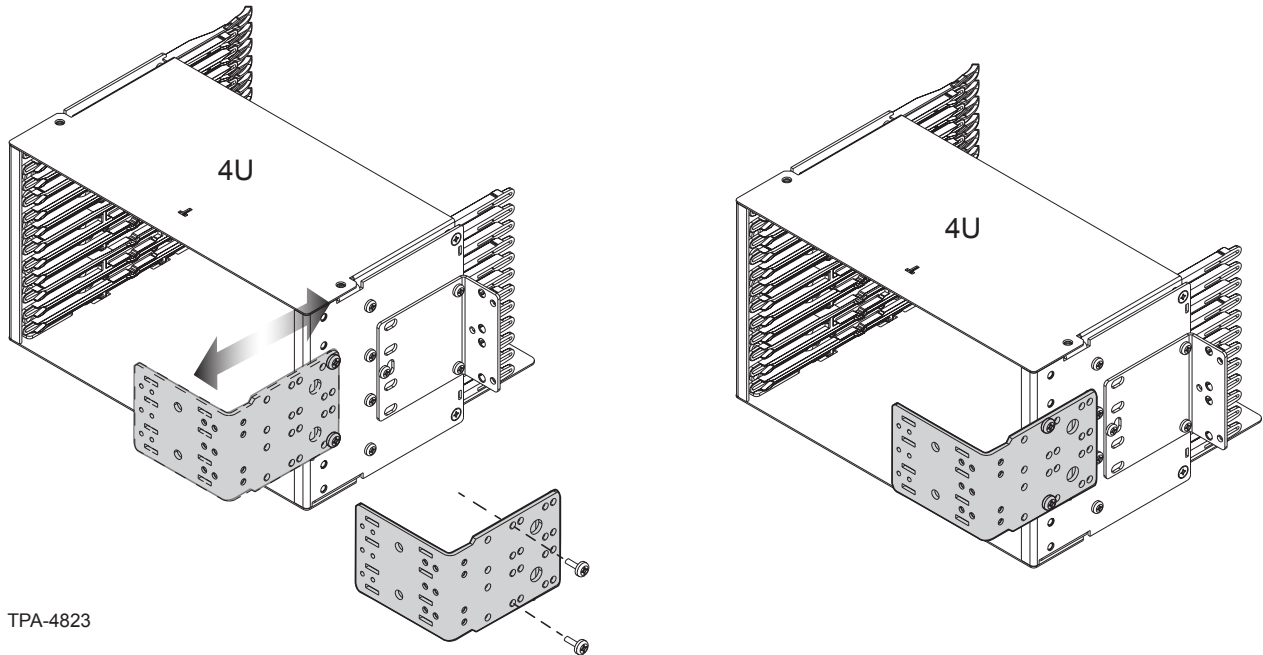
TPA-4823

Figure 12

Step 2: Install the Centrix™ System housing per the instructions provided with the housing (Figure 13).
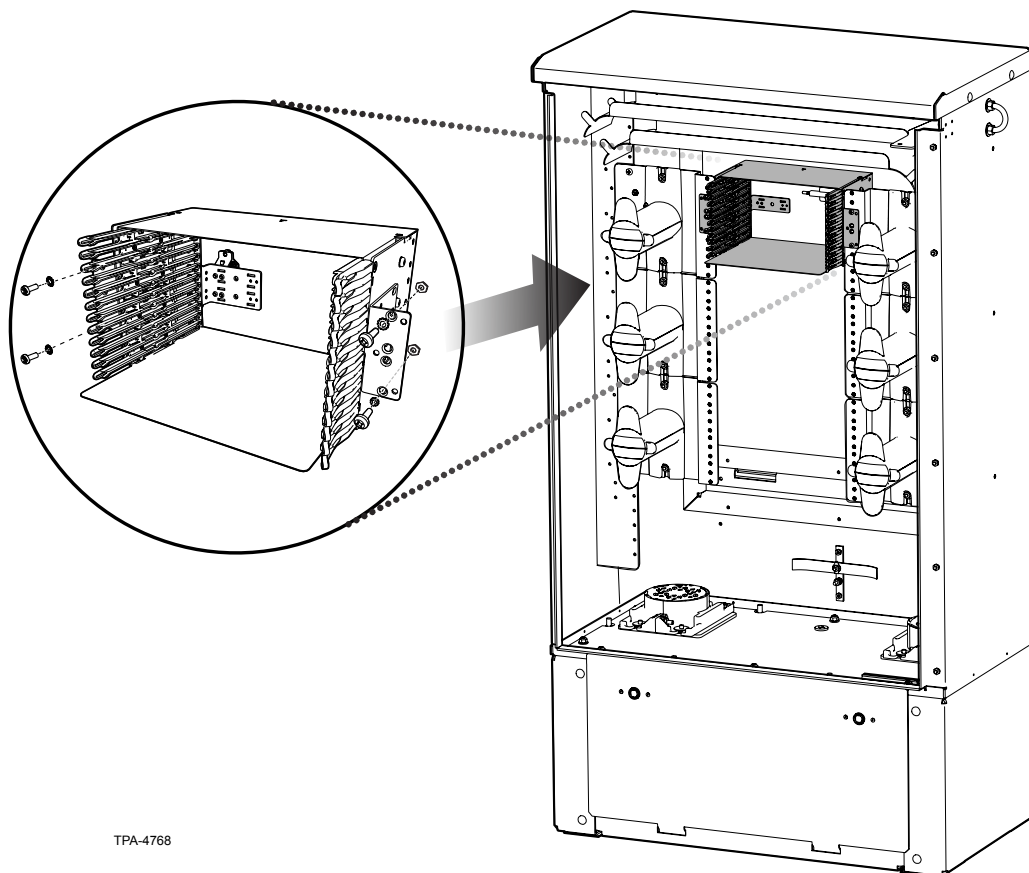
TPA-4768

Figure 13

12.   Housing Installation

Housings should be attached to the cabinet mounting rack from top to bottom if you are using bottom cable entry ports in the cabinet. If you are using the cabinets top cable entry ports, housings should be attached to the cabinet mounting rack from bottom to top.

Cabinet mounting rack

Mounting bracket

Routing guide

Figure 14

Step 1:   Locate and attach the housing to the mounting rack inside the cabinet (Figure 13) allowing the cable stub to slide through the cord connector previously attached to the cabinet.

Step 2:   When the cable is terminated at a single housing, and the cable is armored, has a steel central member that requires grounding, or is factory-stubbed with a ground cable exiting the cable end, the ground cable should be attached using one of the housing mounting screws and an external tooth lock washer to the mounting rack.

Step 3:   When the cable is terminated at multiple housings, and the cable is armored or has a steel central member that requires grounding, the ground cable provided with the cable entry kit should be attached to the cable and one of the grommeted holes in the braided ground strap located at the bottom of the cabinet. Use the hardware included in the cable entry kit (Figure 15 and Figure 16).
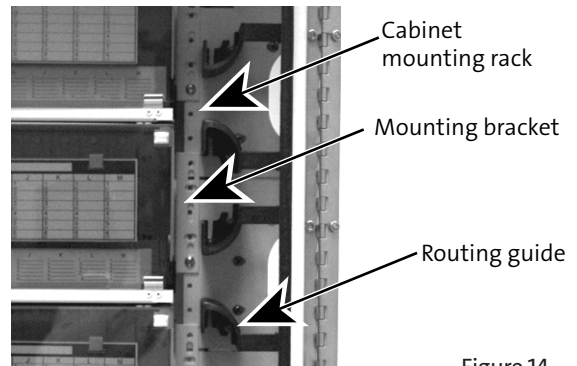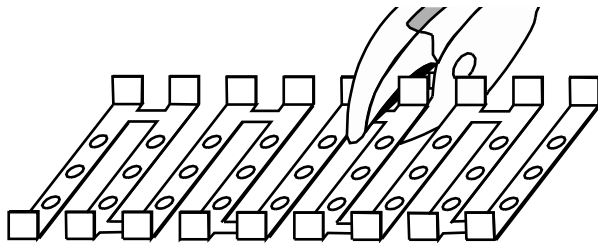

- Take a section of clamp material and wrap it around the cable to determine the length needed for one full wrap.
- Use side cutters to cut the clamp material so that it ends up one section shorter than this length.
- Place the cut length of clamp material 1.25 cm (0.5 in) from the end of the cable sheath. Install a hose clamp over it, covering as many of the small holes in the clamp material as possible. Hand-tighten with a slotted screwdriver or 5/16-in nut driver.
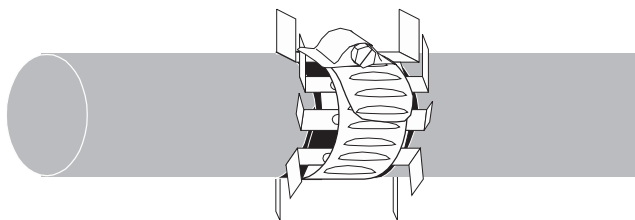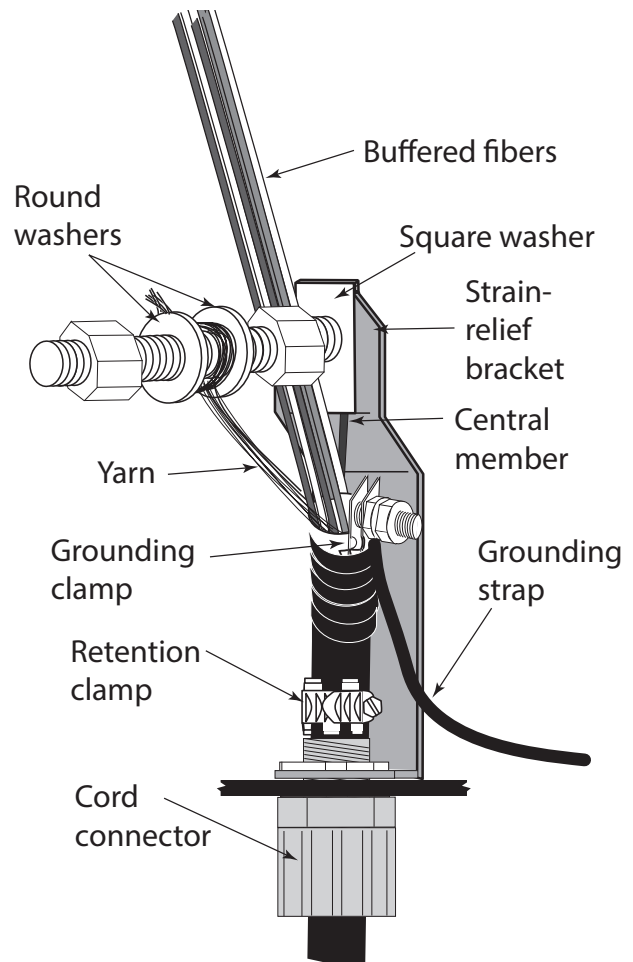
Figure 15

Buffered fibers

Round washers

Square washer

Strain-relief bracket

Central member

Yarn

Grounding clamp

Grounding strap

Retention clamp

Cord connector

Figure 16

Step 4:   Ground armored cable as shown in Figure 17.

  a.   Cut a slit into opposite side of the outer sheath and armor about 3 me long. To do this, score the armor with a cable knife (being careful not to damage the inner sheath) and split the sheath by flexing it.

  b.   Position the base of the grounding clamp under the armor. The stops of the clamp should just touch the outside of the armor and sheath.

  c.   Position the top plate and a lock nut on the stud. Tighten the lock nut with a 10-mm wrench so that the teach on the upper plate are driven into the sheath.

  d.   Cover the completed assembly and the slit with a few wraps of vinyl tape.

  e.   Place the grounding strap on top of the lock nut and secure it with a second lock nut. Tighten the assembly with a 10-mm wrench.

A

6 mm (.25 in)   3 cm (1.2 in)

B

Base Plate

Stop

C

Top Plate

D

Vinyl tape

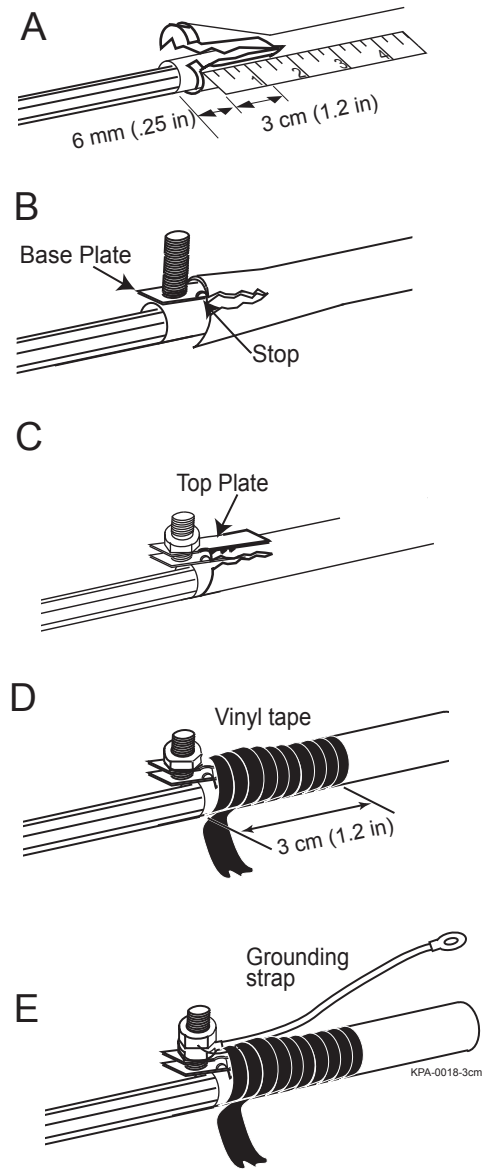3 cm (1.2 in)

Grounding strap

E

KPA-0018-3cm

Figure 17

Step 5:   When the cable is terminated at multiple housings, cut and terminate the cable central member to the central member clamp as described in the procedure included with the cable entry kit.

Step 6: Unscrew the large knurled nut from the cord connector, if it is attached, and slip the split seal around the exiting cable stub as near to the cord connector as possible. Position the tapered end of the seal toward the cord connector (Figure 18).

Step 7: Screw the large knurled nut back onto the cord connector and hand tighten.
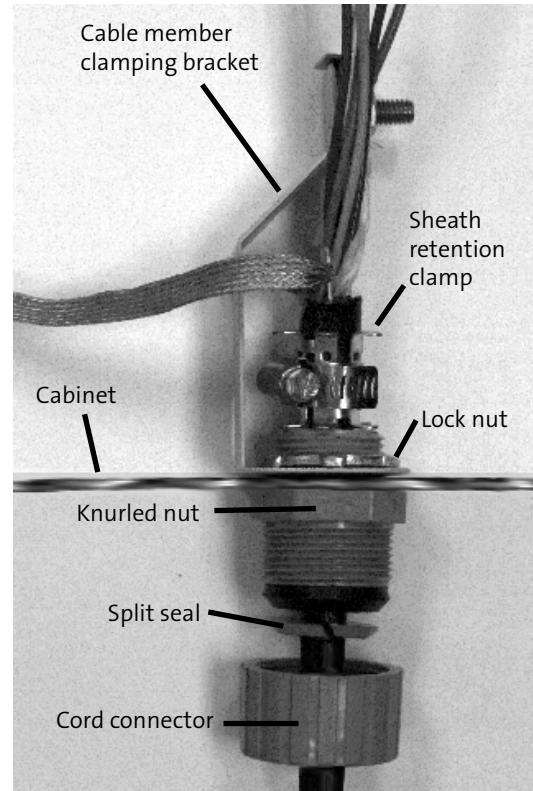
13. Jumper Routing

13.1 Jumper Routing for LDC and ECL

**Step 1:** Route jumpers from housings through routing guides.

Step 2: When routing jumpers from one housing to external equipment, attach jumpers to the strain relief bracket with cable ties (Figure 19). Jumpers may be routed through knockouts in the bottom of the OCC unit.

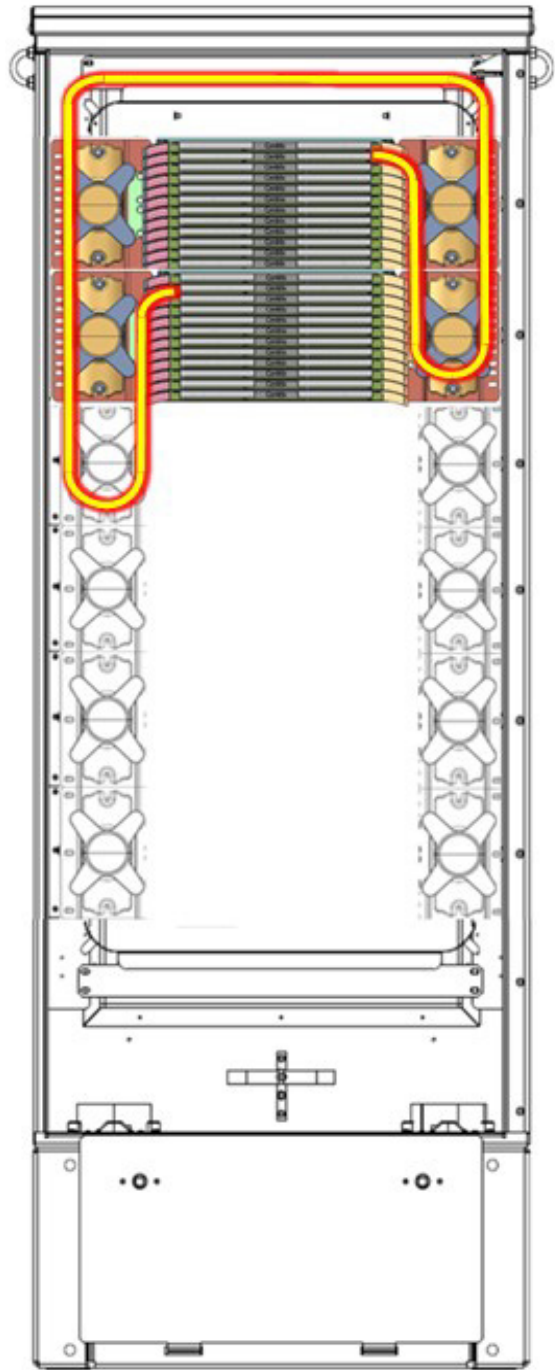**Step 3:** Use routing guides as slack storage.

Figure 18

Figure 19

13.2   Jumper Routing for Centrix™ Housings in OCC-031-G-CTX or OCC-051-G-CTX Cabinet
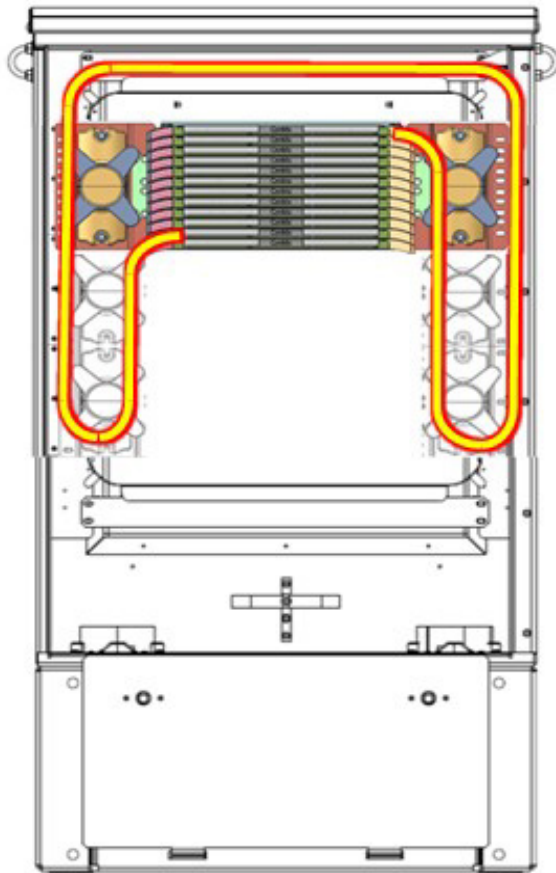
OCC-031-G-CTX
(shown with (1) CTX-S4U Installed)

OCC-051-G-CTX
(shown with (2) CTX-S4U Installed)

Figure 20