



Closet Connector and Splice Housing

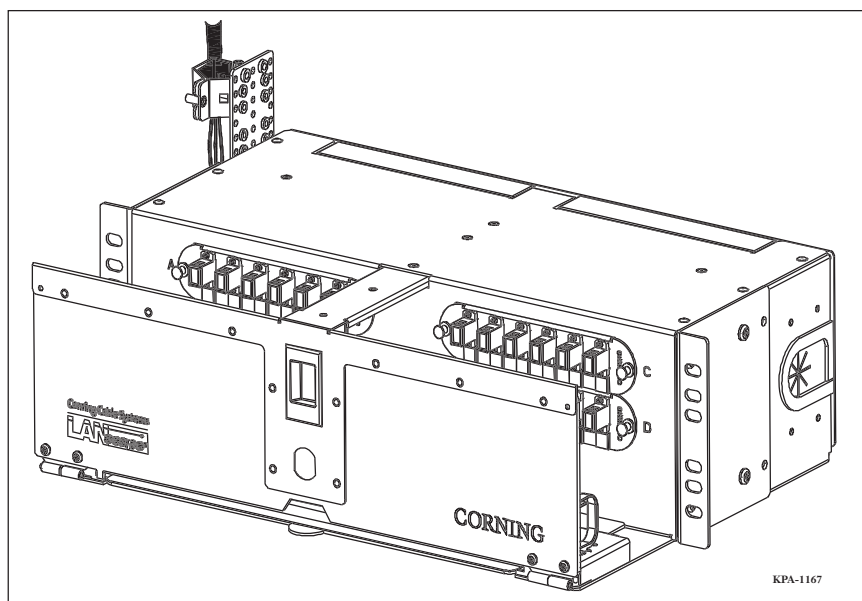


Figure 1

NOTE: Read and understand this procedure (as well as the instructions provided with related assemblies) before beginning an installation. Familiarize yourself to understand the unit's placement in your network. Make sure you know where the cable will enter the unit, where it will be placed in the utility rack, how jumpers will be routed and other details of the installation plan.

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1. General

1.1 This document describes the recommended procedure for the installation of the LANscape® CCS-03U Closet Connector and Splice Housing (Figure 1).

1.2 This document is being reissued to add the logo indicating this product is RoHS compliant.

1.3 Contact your customer service representative to purchase accessories that are sold separately.

2. Description

- A rack mounted fiber optic connector and splice housing used in premises applications in main cross-connect or intermediate cross-connect locations.
- Fits in either 19-inch or 23-inch racks. The unit can also be mounted into a 24-inch rack with the addition of adapter brackets (purchased separately).
- Accepts up to four LANscape connector panels and/or modules (purchased separately). The housing is used with pigtailed panel or module assemblies.
- Accommodates up to four 0.2-inch high splice trays or two 0.4-inch high splice trays. Splice trays are purchased separately.
- A key lock (purchased separately) can be added to either the front or rear door at any time.

3. Precautions

3.1 Laser Handling Precautions

⚠ WARNING: *Never look directly into the end of a fiber that may be carrying laser light. Laser light may 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 be suspected, arrange for an eye examination immediately.*

3.2 Safety Precautions

⚠ 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.*

⚠ CAUTION: *ISOPROPYL ALCOHOL is flammable with a flashpoint at 50°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 narcosis. In case of ingestion, consult a physician.*

3.3 Glass Fiber Precautions

⚠ WARNING: *Cleaved glass fibers are very sharp and can pierce the skin easily. Do not let cut pieces of fiber stick to your clothing or drop in the work area where they can cause injury later. Use tweezers to pick up cut or broken pieces of the glass fibers and place them on a loop of tape kept for that purpose alone. Good housekeeping is very important.*

3.4 Cable Handling Precautions

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.*

4. Tools and Equipment

In addition to the usual complement of tools, you will need a ³/₈-inch nut driver.

5. Components

5.1 Components are illustrated in Figure 2. The connector panels have been removed so the splice tray stacker in the rear of the unit is visible.

5.2 A hardware kit is included that contains the following:

- ## 5. Components
- 5.1** Components are illustrated in Figure 2. The connector panels have been removed so the splice tray stacker in the rear of the unit is visible.
- 5.2** A hardware kit is included that contains the following:
- (1) Unit identification (ID) label
 - (24) Cable ties
 - (1) Strain-relief bracket
 - (2) #6-32 wing nuts
 - (2) Extension brackets for mounting to a 23-inch rack
 - (2) Brackets for full-flush mounting
 - (8) #10-32 rack-mount screws
 - (4) #12-24 rack-mount screws
 - Spiral wrap
 - (4) M6 mounting screws
 - (4) M6 cage nuts
 - (2) Universal Cable Clamp (UCC) kits
 - (2) Hardware kit for securing the cable strength members:
 - (1) #8-32 screw
 - (1) M6 washer
 - (1) U-washer

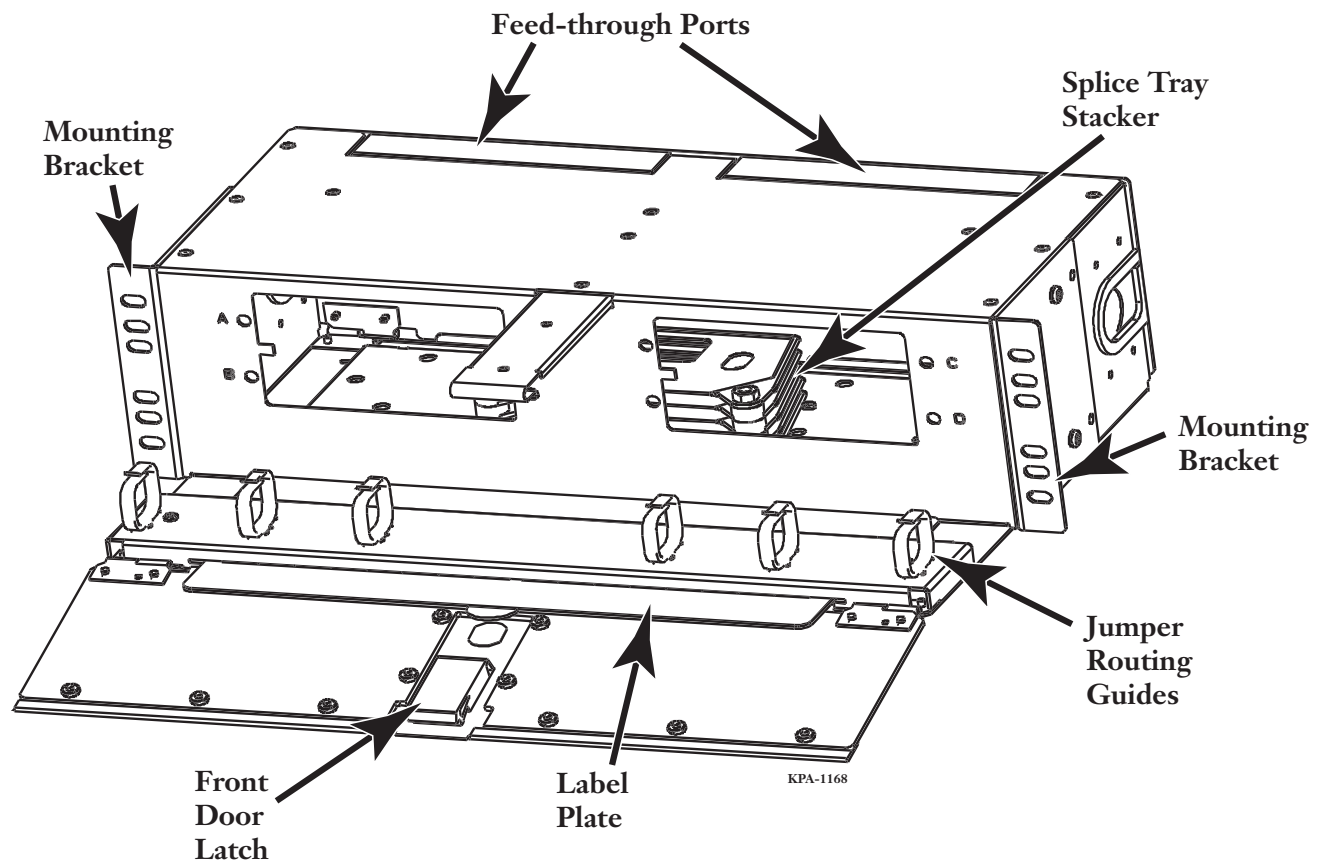


Figure 2

6. Mounting

6.1 The CCS unit comes ready to mount in a 19-inch equipment rack with EIA/TIA universal hole spacing (Figure 3).



Figure 3

6.2 Install mounting brackets:

- a) If you are mounting the unit in a 23-inch rack, attach the adapter brackets using the #10-32 screws provided (Figure 4).



Figure 4

- b) If you are mounting the unit in a 24-inch rack, purchase the adapter brackets separately.

6.3 The CCS unit may also be mounted in partially or full-flush configurations. To partially flush-mount the housing:

- a) Remove the brackets already attached to the housing.
- b) Move the brackets to their forward mounting positions.
- c) Reattach the brackets to the housing (Figure 5).

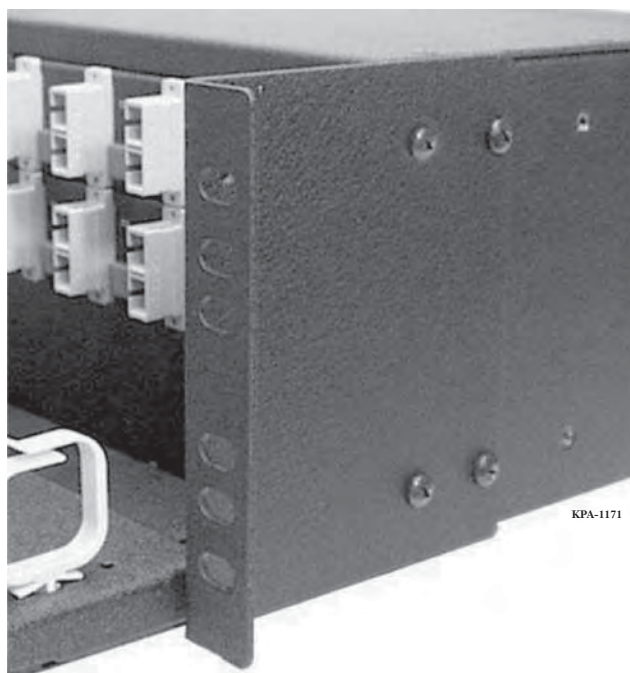


Figure 5

NOTE: Corning Cable Systems does not recommend full-flush mounting unless absolutely necessary. To completely flush-mount the CCS, the jumpers must exit the side of the CCS patching area behind the mounting rails. Running jumpers behind mounting rails may cause problems.

6.4 To mount the housing flush with the front of the frame:

- Remove and discard the mounting brackets already attached to the housing.
- Replace them with the brackets in the hardware kit for full-flush mounting (Figure 6).

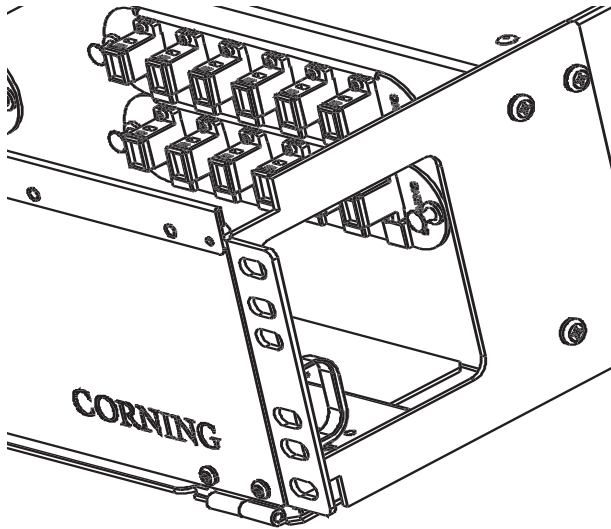


Figure 6

6.5 If you are using an EIA-310-D compliant equipment rack, align the mounting holes of the CCS unit so that the next hole above or below the housing is $\frac{1}{4}$ -inch away from the top or bottom surface of the housing (Figure 7). This will prevent misalignment of the lower mounting holes.

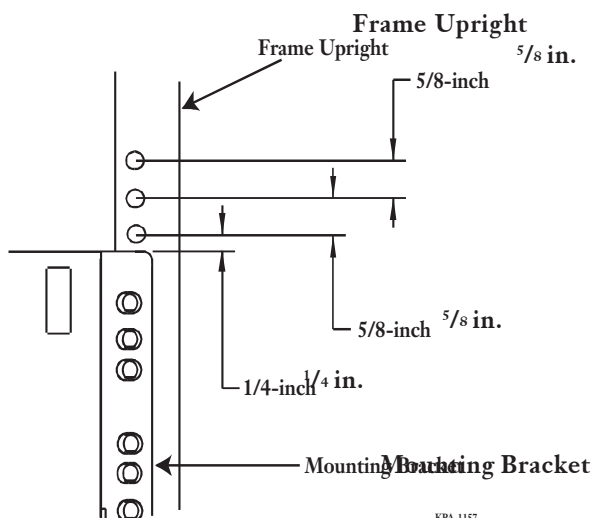


Figure 7

NOTE: If routing pigtails through one or more of the feed-through ports at the rear of the unit (for example, to splice into splice trays in another unit), remove the feed-through panels at this time. Notice that removing the rear door will simplify removal of the lower feed-through panels. To remove the door, slide it to the left and slightly bow the door to release the hinges. Reverse this procedure to replace the door.

NOTICE: Do not over-bend the door. Doing so will permanently warp the door.

7. Preparing the Cable

Prepare the cable as outlined in sheath removal instructions for the cable you are installing. Suggested component lengths are illustrated in Figure 8. Do not expose the bare fiber until you are ready to splice it.

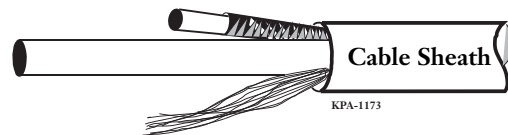


Figure 8

- Cable entry from the left side of the unit requires pigtails from panels in positions "A" and "B" cut to 114 cm (45 in.) plus the length required in the splice tray.
- Pigtails from panels in positions "C" and "D" will be cut to 135 cm (53 in.) plus the length required in the splice tray.
- When the cable enters the unit from the right side, prepare the pigtails from panels "A" and "B" at 45 in. and panels "C" and "D" at 53 in.

8. Strain-relieving the Cable

NOTE: Fiber optic cable is generally routed to the CCS housing, strain-relieved on the side of the housing and routed to splice trays inside the housing. The front and rear doors may be removed from the unit to ease cable installation. To remove the door, slide it to the left and slightly bow the door to release the hinges. Reverse this procedure to replace the door.

NOTICE: Do not over-bend the door. Doing so will permanently warp the door.

8.1 Determine the opening through which the cable will enter the housing:

- Puncture the grommet (Figure 9) at each cable entry location or
- Peel the entire center section away and leave an edge grommet.



Figure 9

NOTE: If at least 10 meters (33 ft) of outside plant cable is routed within an environmentally controlled building where temperature fluctuation is minimal, strain-relieving the cable sheath is adequate. Securing the cable strength members (yarn and/or central member) is not necessary; these components are cut flush with the cable jacket. For cable sheath retention only, cable ties or the UCC clamp should be used.

8.2 For UCC strain-relief:

- Attach the clamp to the strain-relief bracket as shown in Figure 10.
- Follow installation instructions provided with the UCC kit.

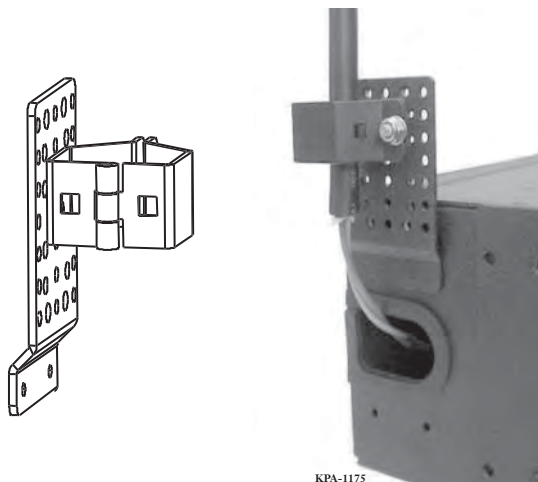


Figure 10

8.3 If using cable ties, attach the cable to the strain-relief bracket (in two places) as shown in Figure 11.

NOTE: If less than 10 meters (33 ft) of the outside plant cable is routed within an environmentally controlled building, the strength members should be secured. Failure to do so may result in damage to the cable as temperatures vary.

8.4 When fiber optic cable with a central member is not secured with the UCC, the central member must be strain-relieved (Figure 11):

- Install the 8-32x⁵/₈ screw from the front side of the strain-relief bracket through the flat washer and U-shaped washer.
- From the front side of the strain-relief bracket, wrap the strength member yarn in a clockwise direction around the bolt and under the U-shaped washer.
- Insert the central member of the cable between the flat washer and the U-shaped washer.
- Tighten the nut.

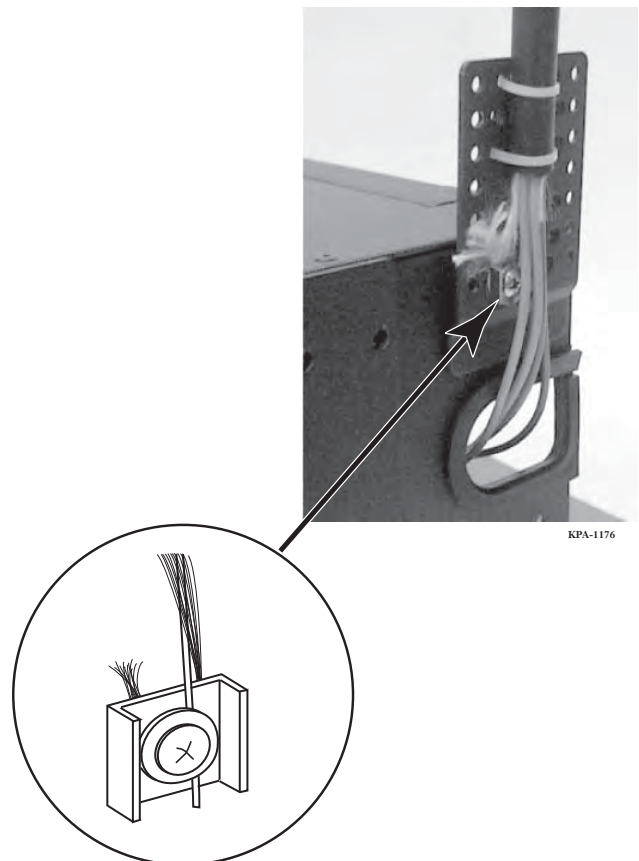


Figure 11

- e) Trim off the excess yarn and central member.

NOTE: The exposed length of the central member (after strain-relief) is to be less than or equal to 6.5 cm (2 1/2 inches) between the U-shaped washer and the end of the cable sheath.

8.5 If the central member is metallic:

- a) Place the eye of a ground wire (#6 AWG, purchased separately in appropriate length from any electrical supply store) under the U-shaped washer or under the flat washer.

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.

- b) Attach the other end of the ground wire to the equipment rack. (Remove any paint anodization to ensure proper metal-to-metal contact.) The equipment rack must be grounded to the primary building ground.
- c) Or, attach the other end of the ground wire to a rack mounted grounding bus bar (which is grounded to the primary building ground).

IMPORTANT: A ground kit (purchased separately) is required for armored cable. Attach the grounding lug to the cable armor according to the instructions that come with the ground kit. Then run a #6AWG ground wire from the lug to the primary building ground as instructed in one of the methods listed above.

8.6 When the application does not allow for outside strain-relief, the cable may also be strain-relieved inside the unit as shown in Figure 12.

NOTE: Make sure the cable does not bend excessively as it enters the unit.

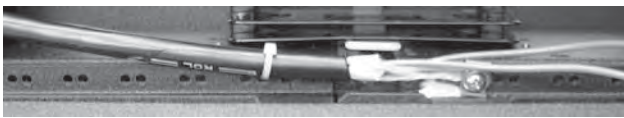


Figure 12

9. Installing Modules/Panels

9.1 Feed the pigtail cable through the opening in the front of the unit toward the rear of the housing (Figure 13).

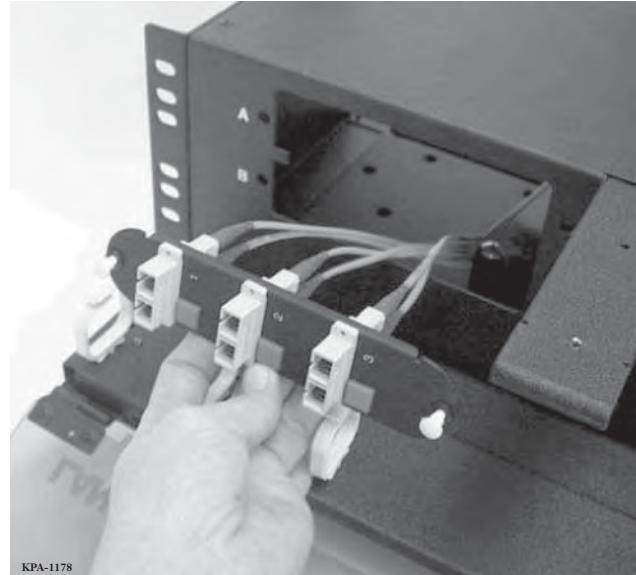


Figure 13

9.2 Secure the panels/modules to the housing as shown in Figure 14.

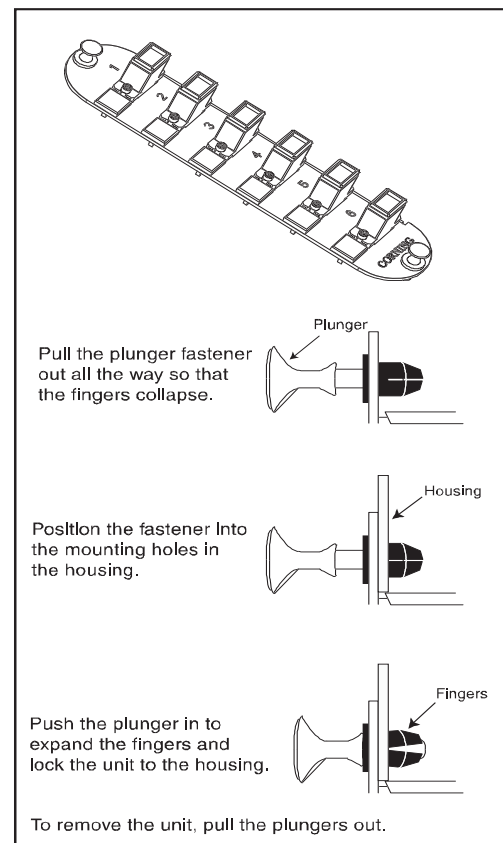


Figure 14

10. Splicing

10.1 Strip the pigtails to lengths recommended in the instruction supplied with the splice trays. Do not expose the bare fiber until you are ready to splice it.

- Cable entry from the left side of the unit requires pigtails from panels in positions “A” and “B” cut to 114 cm (45 in.) plus the length required in the splice tray.
- Pigtails from panels in positions “C” and “D” will be cut to 135 cm (53 in.) plus the length required in the splice tray.
- When the cable enters the unit from the right side, prepare the pigtails from panels “A” and “B” at 45 in. and panels “C” and “D” at 53 in.

10.2 Work on one splice tray at a time.

- Bring both pigtails and buffered fibers to a convenient splicing area - one pair at a time.
- Secure the fibers to the splice tray.
- Splice fibers as described in instructions for the splicing method you are using.

IMPORTANT: If you are splicing 900 μm fiber with mechanical splices, avoid torsional (twisting) force. See Figure 15. Torsional forces occur when the splice is turned and the fiber is twisted as it is moved from the splice area and figure-eighted in the splice tray. After some time, torsional forces can cause fiber breakage and transmission failure.

- Repeat for all required splice trays.
- Install trays into the tray stacker and secure with the hook-and-loop strap as shown in Figure 16.

NOTE: Install the splice trays with the fiber entry end of the trays on the same side as cable entry into the housing. (Figure 16 illustrates cable entry on the left side.)

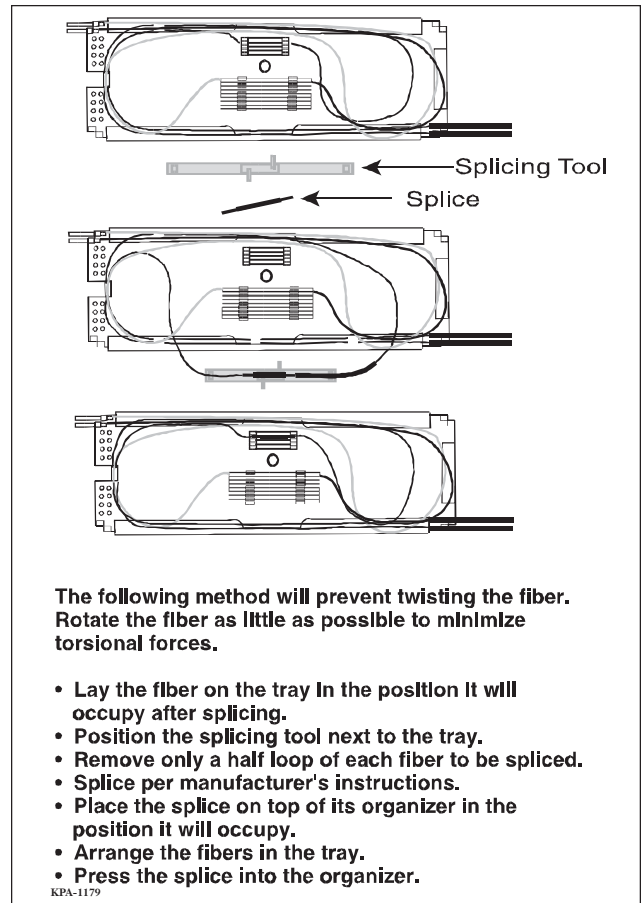


Figure 15

10.3 When splicing is complete:

- Route pigtail slack and buffer tubes/sub-unit together as shown in Figure 16.
- Fasten them to the holes in the feed-through ports using cable ties. Do not over-tighten cable ties.

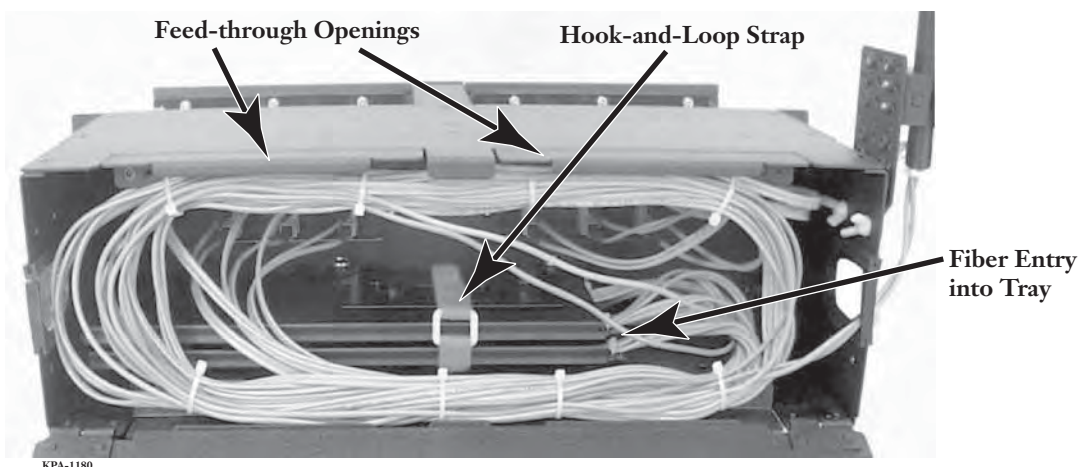


Figure 16

11. Installing Jumpers

NOTE: Jumpers are fiber optic cables with connectors on both ends. One end is installed into the adapter in the panel and the other end is generally connected to electronic equipment. Good jumper management and record keeping are imperative. Corning Cable Systems strongly recommends the use of the jumper management panel (purchased separately) and the Inter-Bay storage unit (purchased separately).

11.1 Install jumpers as instructed on planning diagrams. Refer to the fiber precautions in Section 3 of this instruction to avoid damaging jumpers during installation.

NOTE: Obey the following precautions to avoid damage to the connector.

- Use a clean tissue soaked in alcohol to gently clean the connector. Do not press heavily on it as you clean.
- Dry the connector prior to installation by blowing it dry with compressed air or a dry tissue.
- Clean all areas that will contact the connector adapter.
- Do not force the connector into the receptacle.
 - If the connector does not fit easily into the receptacle, back it out and reinstall.
 - Install threaded connectors into the adapter and tighten. Do not OVERTIGHTEN.
 - Do not allow the connector body (ferrule) to turn as you screw it into place. This causes the surfaces to grind against each other.

11.2 For ease in jumper tracing and access to connectors:

- Route jumpers through the opening above and out the sides of the patch field (Figure 17).

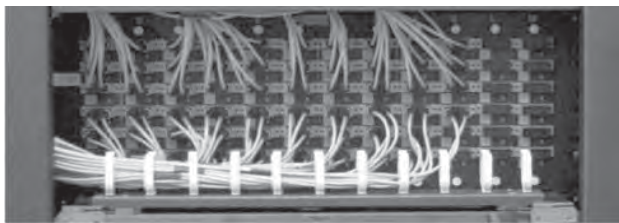


Figure 17

- When routing fibers out the sides, feed the jumpers through the routing guides along the front shelf of the housing. Do not over-populate the guides.

- Identify each connection on the pullout label plate. The label plate can be pulled straight out and rotated down or it may be removed by lifting and pulling straight out. Either write directly on the label plate or use computer printed labels. The rectangles on the label plate are sized to accept 1 in. X 0.4 in. labels.
- Place the provided unit ID label on the front door to prevent mismatching the label plates to the housings.

12. Lock Installation

A door lock kit (purchased separately) is required to install a key lock:

- Remove the double-D knockout located just below the latch in the door frame.
- Follow the instruction provided with the lock kit to install the lock.

IMPORTANT: The components must be oriented as shown in Figure 18 in order for the lock to function properly.

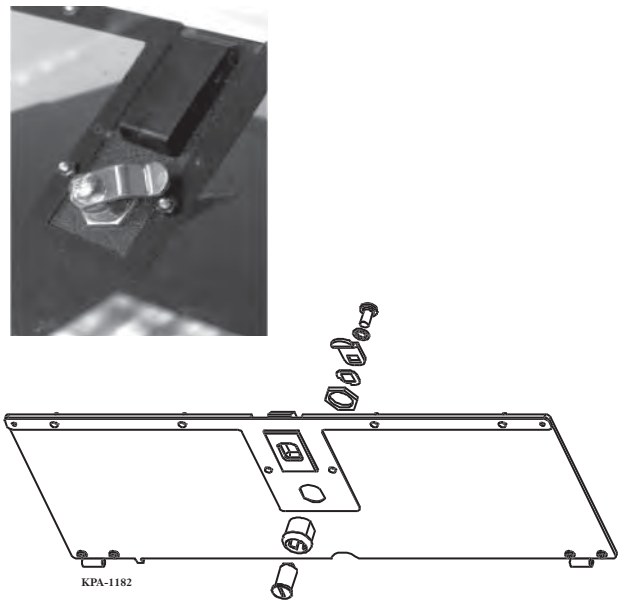


Figure 18

13. Maintenance

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

13.2 External components may be cleaned occasionally with a damp, non abrasive cloth.

13.3 Internal components should be checked periodically for the following:

Loose Parts: Check nuts, bolts, and screws for looseness and tighten.

Moisture: Check the housing for accumulated moisture and remove as necessary.

Fiber Bends: Check fiber optic cable to make sure bends do not exceed the minimum bend radius. Check cable for unnecessary strain. Check cable entries and exits for crimping or crushing.

Documentation: Check record labels to make sure all are clear and accurate.

14. Dimensions

Dimensions are illustrated in Figure 19.

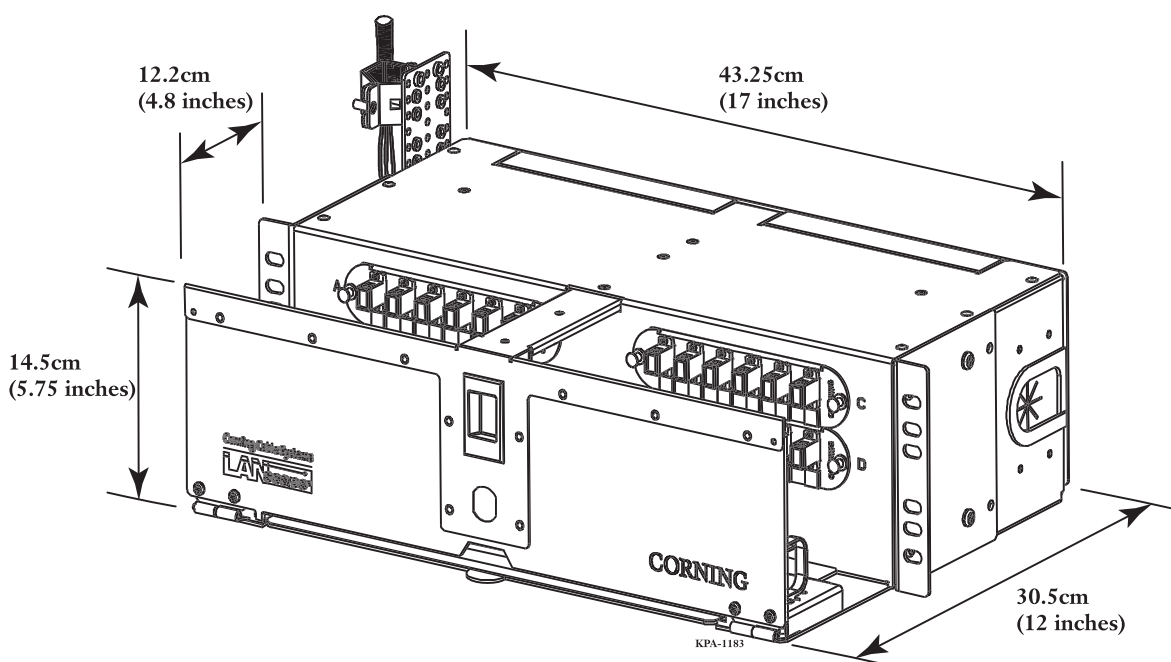


Figure 19

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