

## FOSC450 C AND D CLOSURES

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### 1 General product information

FOSC450 C and D fiber optic splice closures, use compressed gel cable seals to environmentally seal fiber cable splice points. Both C and D closures share the same base which allows 6 cable entry ports. Size D however comes with a longer dome allowing a size-D tray to be used which has more splicing capacity.

| Tray type / closure   | C Closure   |                 |           | D Closure   |                 |           |
|---|-------------|-----------------|-----------|-------------|-----------------|-----------|
|   | Tall basket | Standard basket | No basket | Tall basket | Standard basket | No basket |
| Number of single height unit splice trays   | 5           | 6               | 8         | 5           | 6               | 8         |
| Number of double height unit splice trays   | 2           | 3               | 4         | 2           | 3               | 4         |
| Number of single splices (stranded fiber) with SM6 Modules  | 60          | 72              | 96        | 180         | 216             | 288       |
| Number of single splices (stranded fiber) with SM12 Modules                                       | 120         | 144             | 192       | 360         | 432             | 576       |
| Number of mass fusion splices using single height trays for rollable ribbon                       | 720         | 864             | NA        | 2160        | 2592            | NA        |
| Number of mass fusion splices using double height trays for rollable ribbon or flat matrix ribbon | 432         | 648             | NA        | 1152        | 1728            | NA        |

Table above shows splicing capacity of FOSC450 C and D closures. Splicing capacity depend on tray type, slack storage basket, and whether ribbon fibers or stranded are used. The standard basket is the standard size for buffer tube storage and provides a proportioned balance between splice capacity and slack storage. For applications requiring more splice capacity, a flexible sock or tray backbone may be used in place of the basket to maximize splicing capacity. For applications requiring more buffer tube storage, such as mid-span applications, tall baskets may be used to maximize slack storage.

Splicing trays are either single height or double height. Double height trays are deeper trays allowing storage of flat matrix ribbon within the tray. Single height trays can be used for flat ribbon, but slack fiber should be pulled back and stored in the basket and shouldn't be stored within the tray.

## 2 Kit contents

- Dome and clamp
- Base and O-ring
- Gel block
- Hook and loop fastener strap
- 4 Gel block plugs
- Small tie wraps
- LBT (loose buffer tube) friction tape
- Transportation tubes
- Slack storage basket\*
- Cable strain relief kits\*
- AWG10 Ground wire with alligator bond clamp (3" long)\*
- AWG6 stranded ground wire with eyelets and nut to connect to feed through lug (3" long)\*
- Loose buffer tube storage sock (used with no basket option)\*

\* Quantity depends on part number configuration

## 3 Other Accessory Kits (Sold separately)

- FOSC-ACC-C Tray 12 and 24 (Extra tray kits)
- FOSC-ACC-C/Basket
- FOSC-ACC-D Tray 36, 48 or 72 (Extra tray kits)
- FOSC-ACC-D-TRAY-RIBN-24
- FOSC-ACC-D-TRAY-RIBN-48
- FOSC-ACC-D/Basket
- FOSC-ACC-12CA-12GNDLARGESUB-KIT
- FOSC-ACC-12CA-12GNDSMALLSUB-KIT
- FOSC-ACC-TECHFLEX Sleeving kit
- FOSC-ACC-BRDSLVLV-1/4-125
- FOSC-ACC-BRDSLVLV-3/8-125
- FOSC-ACC-BRDSLVLV-1/2-125

Refer to FOSC 450 Ordering Guide for complete list of accessories and their description

## 4 Warnings and Cautions

- 4.1 Follow the installation instruction steps to ensure the performance of the closure. It is necessary to take precautions and keep the working space clean to protect the closure sealing materials and splices.
- 4.2 Exposure to laser radiation can seriously damage the retina of the eye. Do not look into the ends of any optical fiber. Do not assume the laser power is turned off or that the fiber is disconnected at the other end. Looking into the ends of any optical fiber is entirely at your own risk. A protective cap or hood **MUST** be immediately placed over any radiating adapter or optical fiber connector to avoid the potential of dangerous amounts of radiation exposure. This practice also prevents dirt particles from entering the connector and adapter.
- 4.3 Fiber optic cables may be damaged if bent or curved to a radius that is less than the recommended minimum bend radius. Always observe the recommended bend radius limit when installing fiber optic cables and patch cords.

## 5 Closure entry

To remove the dome from the closure, release the clamp handle. Slight pressure applied to the side of the handle will disengage the locking tab. Hook the handle on the two posts, and pull back until the clamp releases from the closure. Keep the O-ring, clamp, and dome clean and dry (Figure 1).

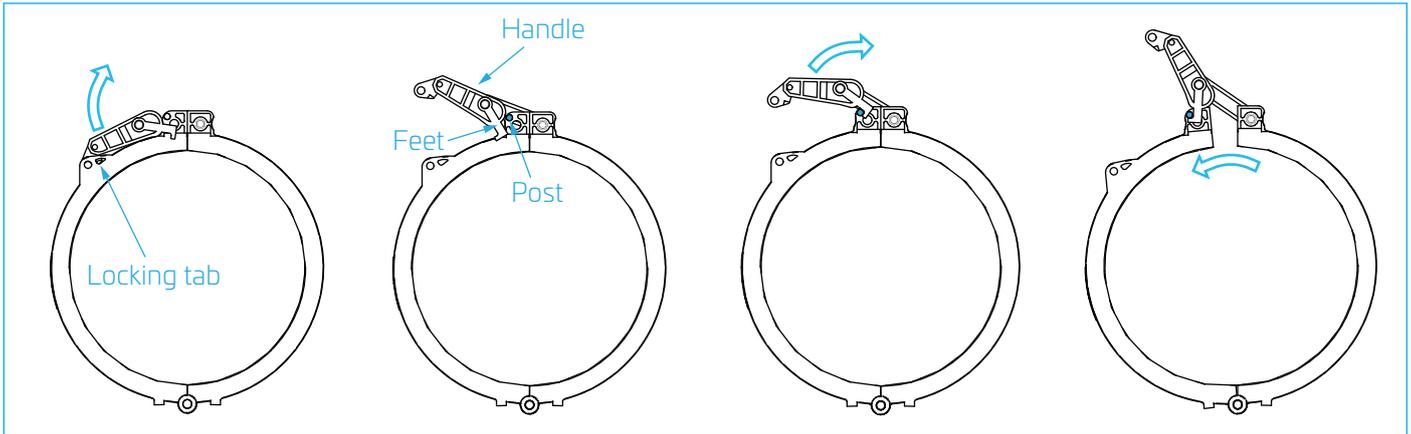


Figure 1

## 6 Base removal

Loosen the four bolts and swing the washer out of the way to remove the star bracket from the FOOSC 450 closure base (Figure 2).



Figure 2

**Important:** Bring all cables that are to be spliced through the base before proceeding to the next step. Slide the base over the cables and out of the way.

## 7 Cable preparation

**Important:** Small round or flat cable installations -- If cables are less than 0.35" in diameter or flat drop style, an additional step is required for cable sealing in the port. In this case the cable diameter must be built up to the minimum 0.35" diameter. In addition, if multiple small cables like these are to be installed in a single port, it is imperative that gel is applied between the cables before installing them into the gel port. See FOOSC 450 drop sealing kits installation instructions for further details. Cable combinations in multi-drop kits and single cables are not to exceed 1" in diameter.

**Note:** The maximum slack storage lengths listed below will be reduced when working with Loose Buffer Tube (LBT) cable containing more than 144 fibers.

**Note:** When using single height tray to store ribbon splices, the ribbons must be routed to the slack basket first. Do not route ribbons directly to the tray unless they will be de-ribbonized for single splicing. See the accessory list on page 2 for double height tray ordering info.

## 7.1 Cable cut lengths

| Cable type  | Opening location | FOSC450 C closure<br>Min. & Max. suggested<br>storage length *** | FOSC450 D closure<br>Min. & Max. suggested<br>storage length *** | Strength member cut lengths |               |
|---|------------------|--|--|-----------------------------|---------------|
|   |                  |  |  | Small bracket               | Large bracket |
| <ul style="list-style-type: none"> <li>Stranded fiber Loose Buffer Tube</li> <li>Rollable Ribbon</li> </ul> | Mid span         | 52" - 90" in standard basket*<br>52" - 112" in tall basket       | 102" - 120" in standard basket*<br>102" - 140" in tall basket    | 2"                          | 2.5"          |
|   | End              | 43" - 72"  | 55" - 75"  | 2"                          | 2.5"          |
| Flat Ribbon cable with single height tray   | Mid span**       | 80" - 92"  | 90" - 140"   | 2"                          | 2.5"          |
|   | End              | 30" - 45"  | 70" - 90"  | 2"                          | 2.5"          |
| Ribbon cable with double height tray  | Mid span**       | 80" - 132"   | 110" - 192"  | 2"                          | 2.5"          |
|   | End              | 45" - 66"  | 60" - 96"  | 2"                          | 2.5"          |

\* LBT: 52"/102" goes directly to tray. 90"/120" mid-span cut in center makes one small loop in basket and approx. 22"/36" on tray.  
 \*\* Ribbon: 80"/90" small loop in basket in front of tower and onto the tray. 92"/140" loop to the end of the basket and onto the tray.  
 \*\*\* The Minimum cut length is based on cutting dead-to-the-field side going directly to the tray. The Maximum cut length is based on entry into the basket to tray.

## 7.2 Loose Buffer Tube cable

For loose buffer tube cable midspan applications, remove cable sheath for a length identified in the table above. Store any uncut buffer tubes in the slack basket.

## 7.3 Ribbon cable

For ribbon cable midspan applications, remove cable sheath for a length identified in the table above. To splice the ribbons, remove all but 9" of tube(s) and attach to the inside of the slack basket. Route the ribbons through the slack basket and up to the splice trays using braided sleeving or transportation tubes.

## 8 Cable installation

8.1 Determine which strength member bracket to use. The large strength member bracket is used for cables with central strength member over 1/4" in diameter. However, the large strength member bracket shouldn't be used at the upper two ports of the star bracket. Large strength member lugs can only be used with large strength member bracket (Figure 3).



Figure 3

8.2 Cut the cable strength member leaving 2" when using small strength member bracket or 2.5" when using large strength member bracket.

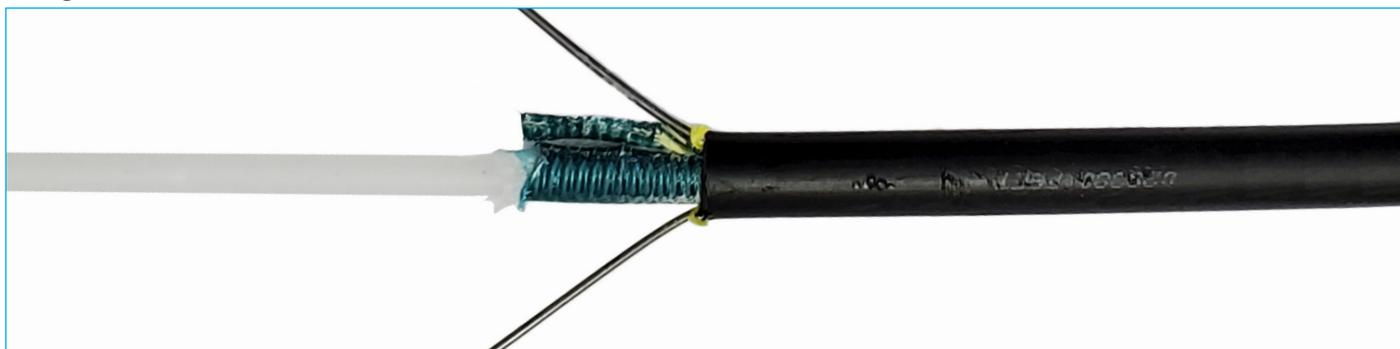


Figure 4

8.3 For armored cable, use company approved bonding hardware for bonding and grounding. If using an alligator-type bond clip, remove all but 1" of the metal shield. Pry open a 1" tab in the exposed metal shield where the shield overlaps. See Figure 4. Crimp the bond clip onto the edge of the shield. See Figure 5. Wrap the installed bond wire tightly with two or three wraps of vinyl tape.

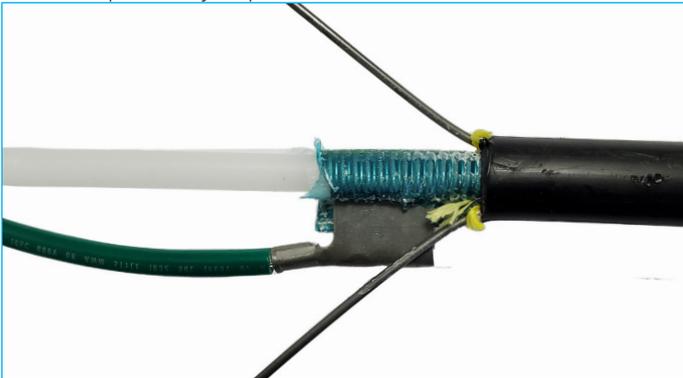


Figure 5

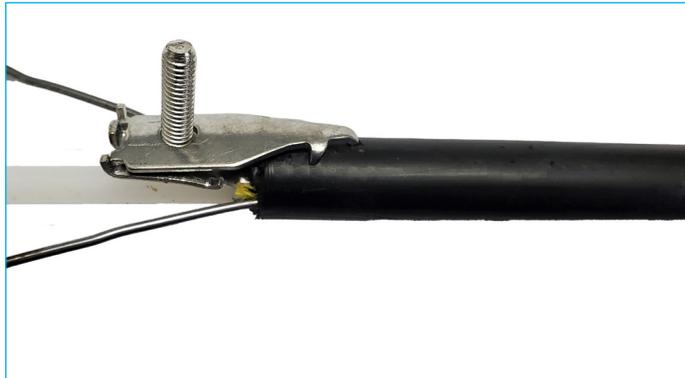


Figure 6

8.4 If using shield bond connector, push the lower plate of the bond clamp under the inner shield so that the stud bolt is positioned between strength members. Place the upper plate of the B-Bond clamp over cable jacket. See Figure 6.

8.5 Insert strength member(s) into the strength member lug and tighten screw using 1/4" nut driver. For central strength members, use the center prong (Figure 7). For dual strength members, bend the inner prong out of the way and use the two outer prongs (Figure 8).



Figure 7



Figure 8

8.6 For armored cables place strength member bracket on top of the bonding clamp. Install nut on bond clamp stud and tighten it (Figure 9 and Figure 10).



Figure 9

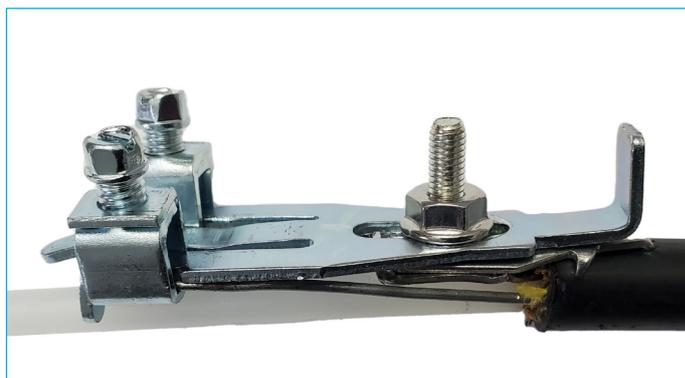


Figure 10

8.7 Place cable assembly into cable attachment bracket as shown on Figure 11 and Figure 12.

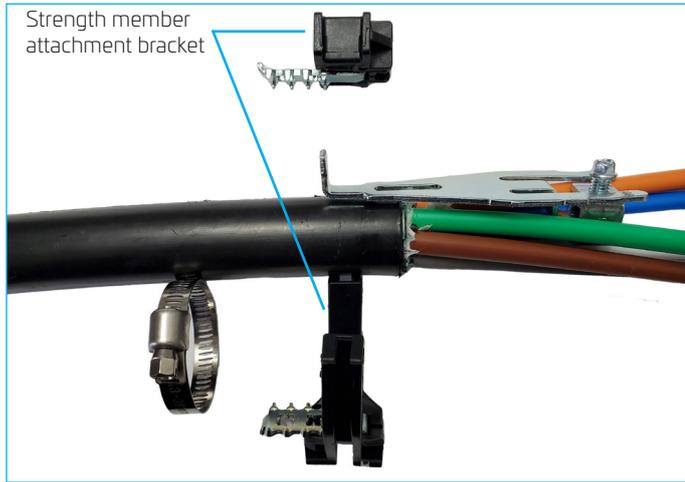


Figure 11



Figure 12

8.8 Install hose clamp and tighten such that the teeth are fully seated into the cable assembly. Don't overtighten the clamp to the point that it deforms. Use 1/4" nut driver to tighten the hose clamp. Figure 13 illustrates cable attachment with bond shield connector. Figure 14 illustrates cable attachment with alligator clip bond.

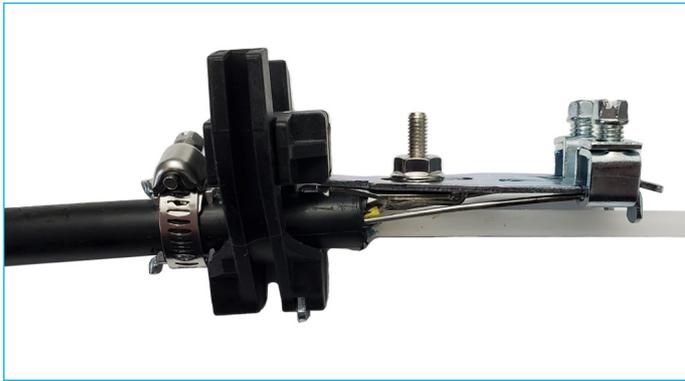


Figure 13

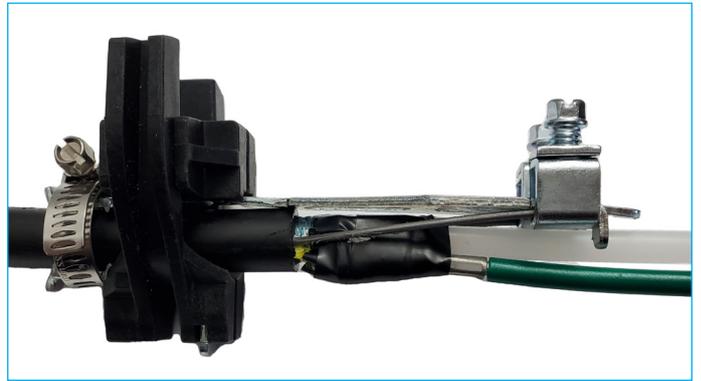


Figure 14

8.9 Slide cable attachment bracket and cable into the appropriate slot on star bracket until it locks in place.  
**Note:** Use bottom entry ports for main cables.

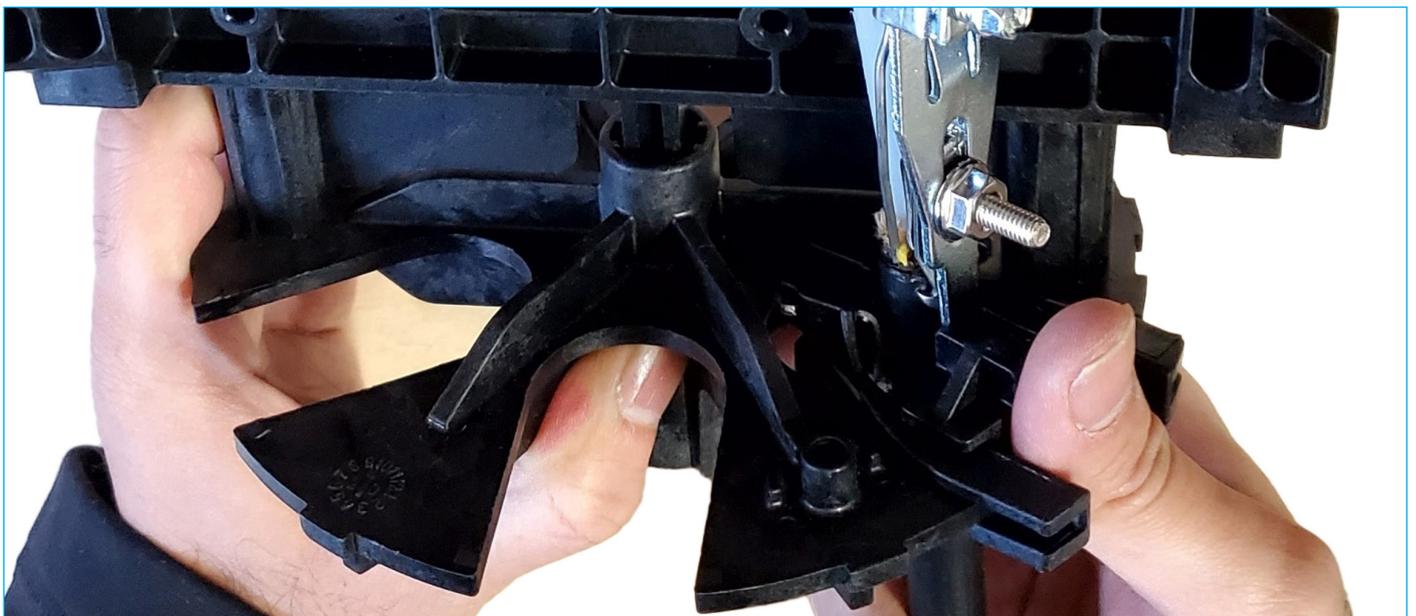


Figure 15

## 9 Routing fibers to the splice tray

- 9.1 Route subunits to the basket or directly to the tray according to the cut length selected in table in section 7.1.
- 9.2 When routing subunits from basket to tray, go to opposite side of the basket and route around the backside of the tray tower (Figure 16).

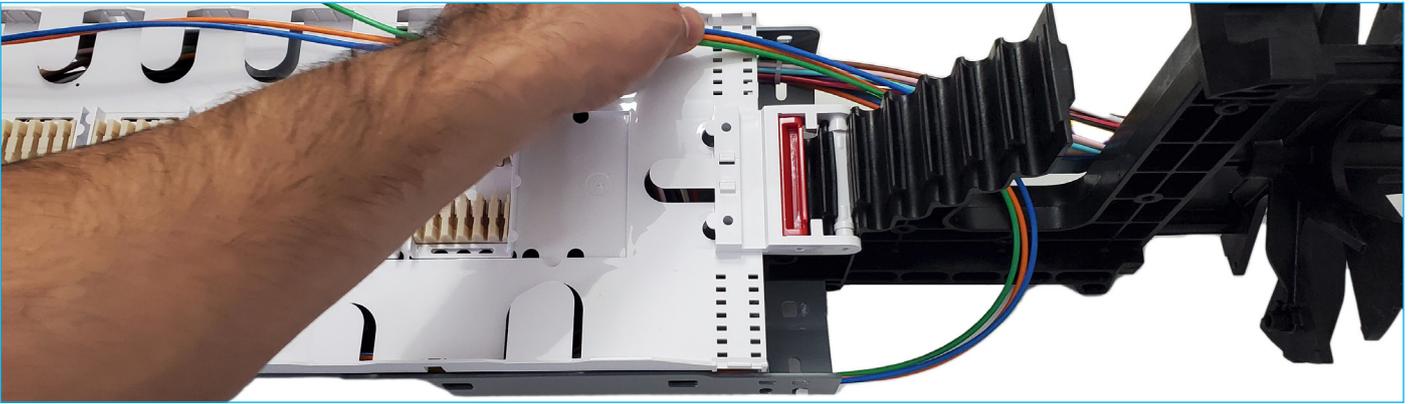


Figure 16

- 9.3 Place a mark on the buffer or transportation tube one inch past the edge of the tray (Figure 17).
- 9.4 Cut and remove the loose buffer tube (LBT) coating and clean fibers with an approved degreaser cleaner.
- 9.5 Wrap the end of the tubes with loose buffer tube (LBT) wrap and attach them to the tray with two tie wraps (Figure 18).

**Tip:** It is helpful to arrange ribbons in order or organize ribbons prior to inserting them into the transportation tube (basket location). This will improve organization on the tray.

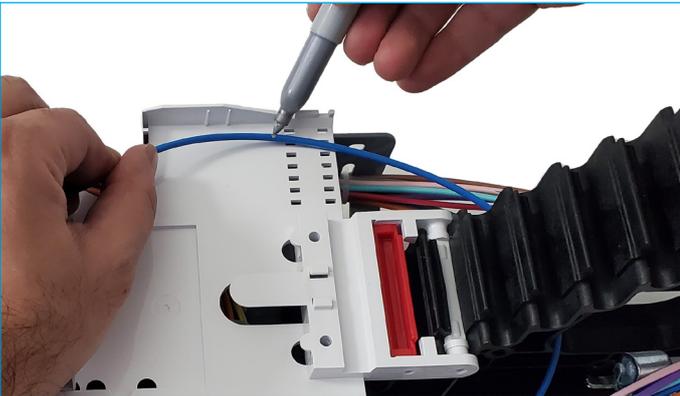


Figure 17

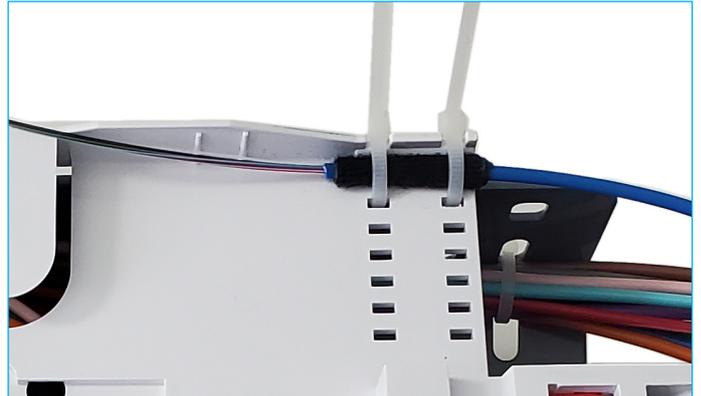


Figure 18

- 9.6 Figure 19 below shows routing of LBT fibers on single height splice tray.

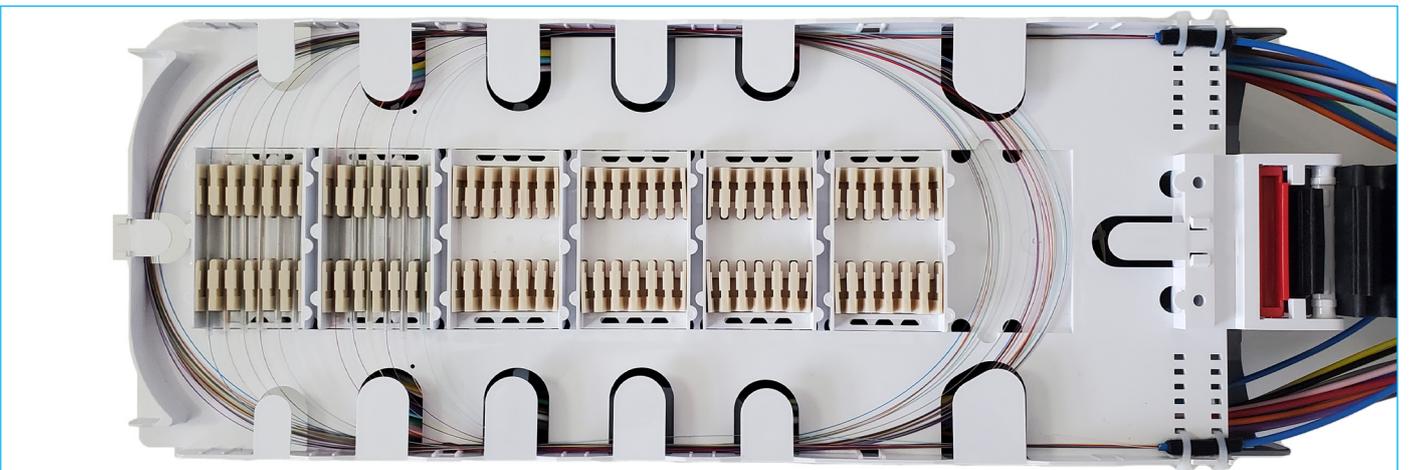


Figure 19

9.7 Figure 20 below shows ribbon fibers in single height tray where ribbon slack is stored in the basket.

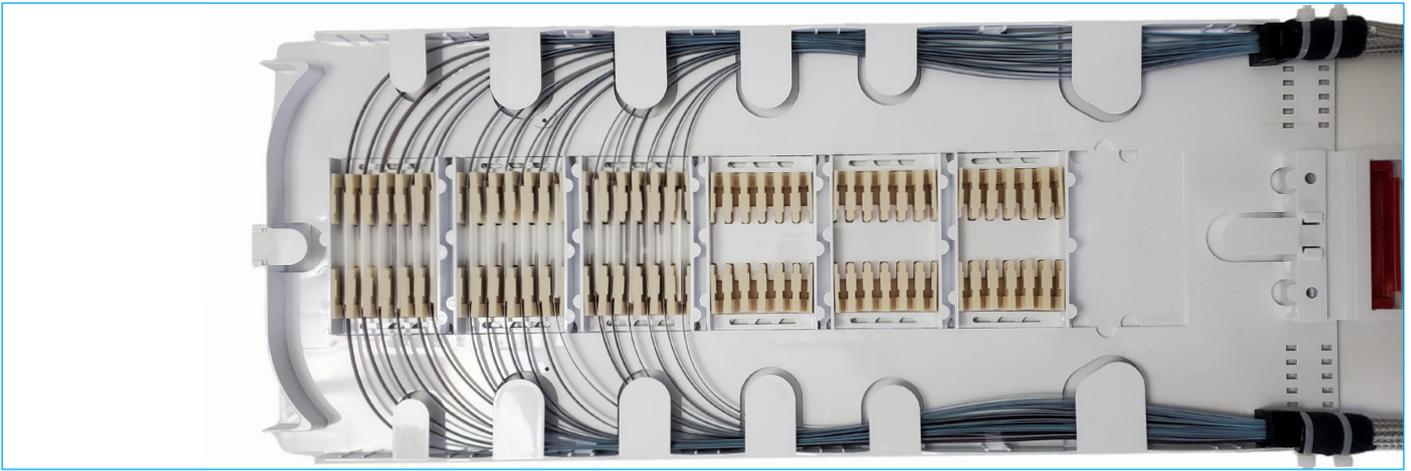


Figure 20

9.8 Double height trays are used to store flat matrix ribbon within the tray. Figures 21 and 22 show double height tray with splice capacity up to 576 fibers.

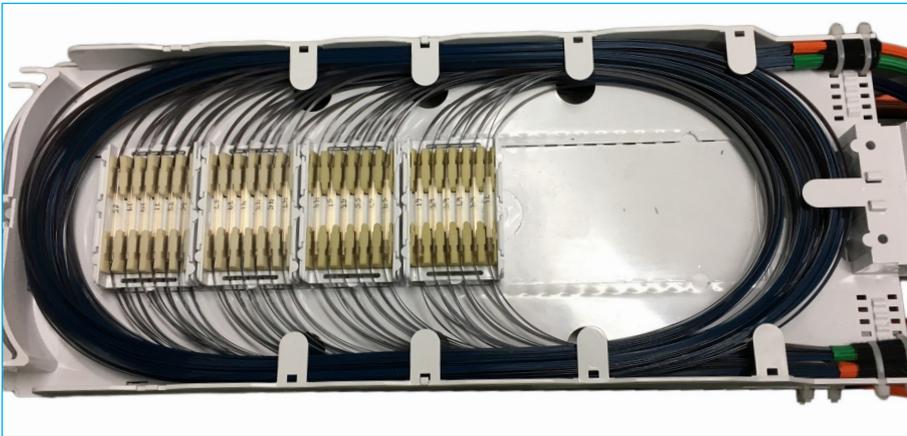


Figure 21

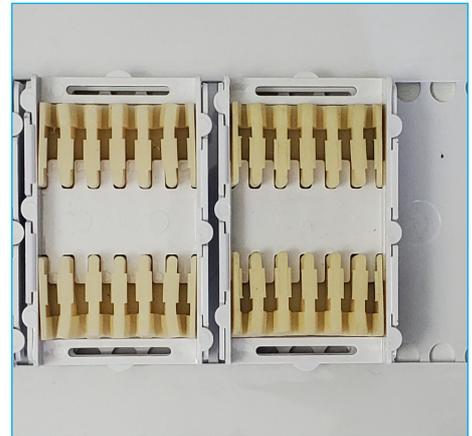


Figure 22

9.9 Tubing should be used to route fibers from basket to trays. For flat matrix ribbon and Rollable Ribbon fibers, braided sleeving can be used. Braided sleeving accommodates more fiber ribbons, provides fiber protection, and takes less space inside basket and tray. Example of braided sleeving is shown in Figure 23 and Figure 24.



Figure 23



Figure 24

**9.10 Ribbon holders** are used to organize ribbons within the splice tray and protect the fiber under tie wraps.

- Install ribbon holders under braided sleeving.
- For 24-fiber ribbons, lay the ribbon bundle in the ribbon holder as shown in Figure 25 A and B, remove all the spacers.
- For 12-fiber ribbons, fold the appropriate number of spacers as shown in Figure 26 A, remove the one(s) that will not be used. All fibers should be on one side of the spacers.
- Use the chart in Figure 25 to determine number of spacers to fold down (remove the ones not used).
- Stand the 12-fiber ribbons in the ribbon holder as shown in Figure 26 B.
- Once ribbons are in the ribbon holder, fold the other half over and snap shut (Figure 25 B and Figure 26 C).
- Slide the ribbon holder into the sleeving.
- Both 24- and 12-fiber ribbons should be oriented vertically when secured to the splice tray. Orientate the ribbon holder accordingly.

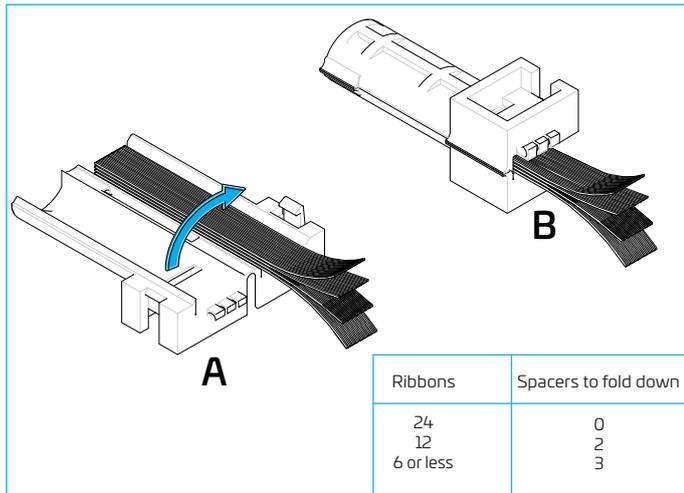


Figure 25

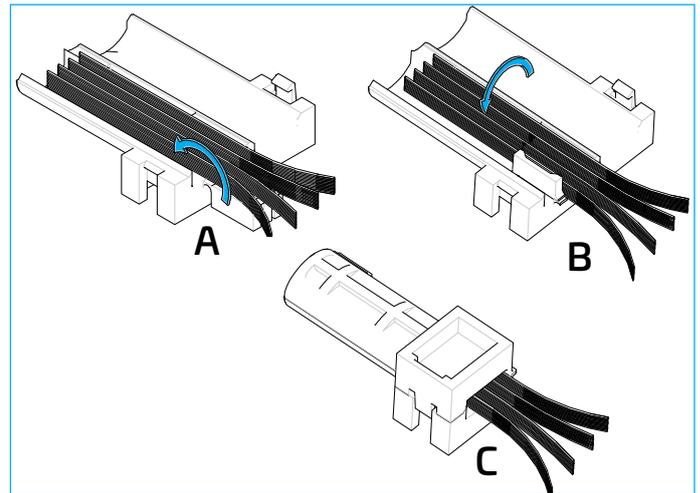


Figure 26

9.11 Wrap a piece of LBT tape over the sleeving and secure to the splice tray with tie wraps (Figure 27).

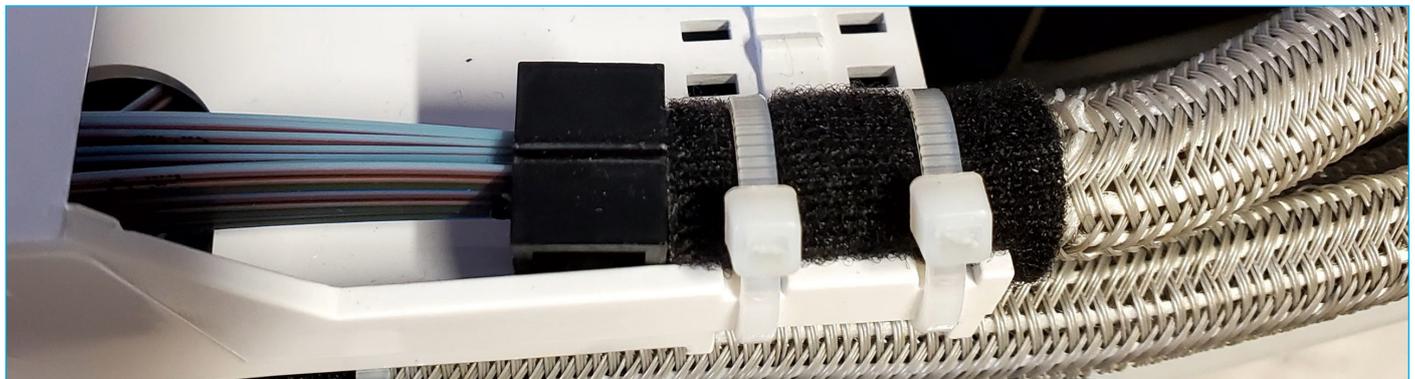


Figure 27

## 10 Gel Block Installation

**Note:** Cables with diameter larger than 1" (25.4mm) and less than 1.04" (26.4mm) can be used, however gel block has to be modified. For specific instructions please contact CommScope.

10.1 First, turn the "tail" of the gel block counterclockwise to release gel compression, until it stops to ensure that the cable openings are in the open position. Squeeze the gel block on either side of the top of the block to open it (Figure 29).

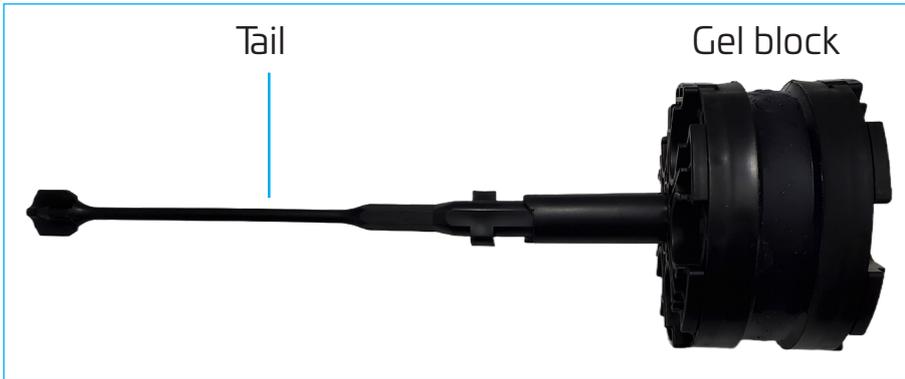


Figure 28



Figure 29

10.2 Position the gel block against the spacer on the star bracket. Position the cables and snap the gel block closed.

**Warning:** Do not use a braided or stranded ground wire when installing ground wire through a port on the FOSC450 closures. To prevent a leak path, only a bonded solid ground wire with sealing kit is to be used. Refer to the external ground wire installation manual for more details.

10.3 Important: Insert one port plug in each unused port (Figure 31).



Figure 30



Figure 31

10.4 For armored cables, install braided ground wire and nut on ground stud that corresponds to armored cable position, see Figure 32 and Figure 33.



Figure 32



Figure 33

10.5 Slide the base up and over the gel block. The arrow on the base must be at the top of the closure, see Figure 34.  
**Note:** If gel end piece collects dirt, it should be washed off with water only.

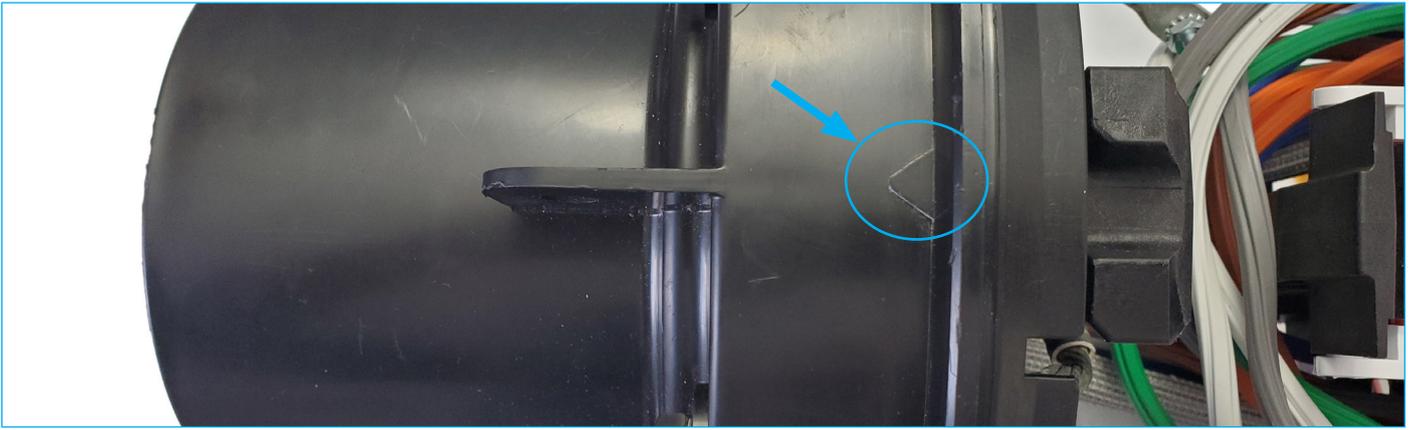


Figure 34

10.6 Inside the base, swing the 4 metal washers into position to secure the base to the star bracket. Then tighten the bolts securely. Confirm the arrow is on top of the base.

10.7 Connect the base bonding wire to cable bonding hardware. See Figure 35 and Figure 36.



Figure 35



Figure 36

10.8 Using the tail, pull gel block away from the closure to seat the gel block to the end of the base. Turn the tail clockwise until it dead ends at the physical stop to seal cables and plug, see Figure 37.

**Note:** If more than three cables are installed, the physical stop may not be reached. Turn the tail until it stops.



Figure 37

- 10.9 Place a large tie wrap or vinyl tape around all the cables just beyond the end of the tail.
- 10.10 Once the splicing is complete, wrap hook and loop fastener strap around the splice trays and basket.
- 10.11 If desiccant is to be used (optional – ordered separately) install 150 grams of desiccant on top of the uppermost splice tray. Secure trays and desiccant in place with a hook and loop fastener strap.

**Important:** Place all unused cable termination hardware in a bag and keep for future cable installations.

**Important:** Make sure the O-ring is in the correct position.

- 10.12 Mount dome onto base, aligning arrow on base with arrow on dome.

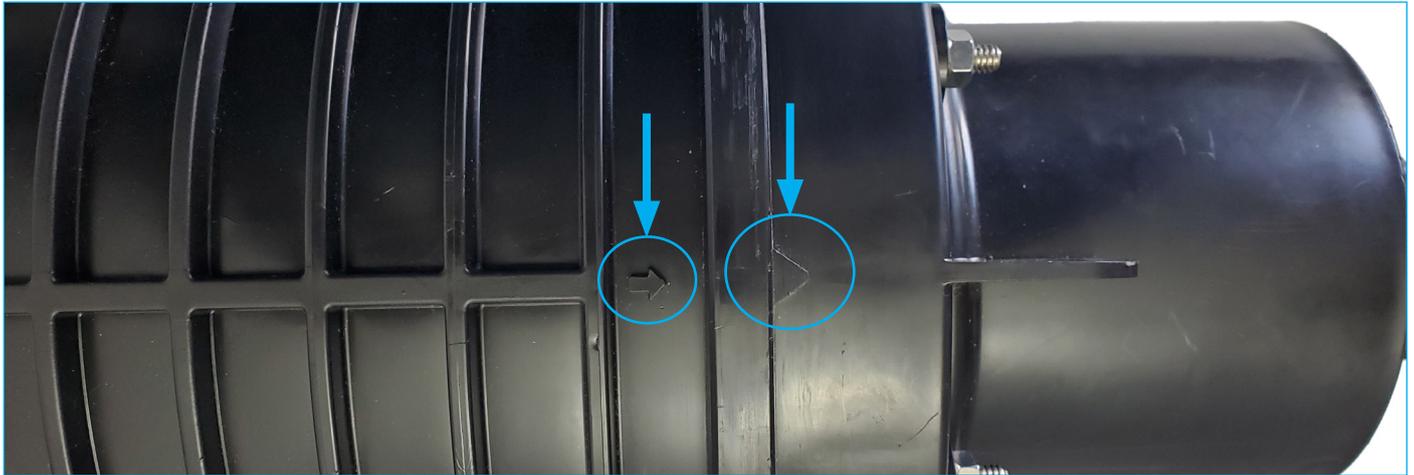


Figure 38

- 10.13 Install clamp around dome/base interface. Position feet of handle in front of the two posts and push down on the handle to pull the two halves of the clamp together.

- 10.14 Continue to push handle down until the small pin on the handle snaps into the triangular hole in the clamp.

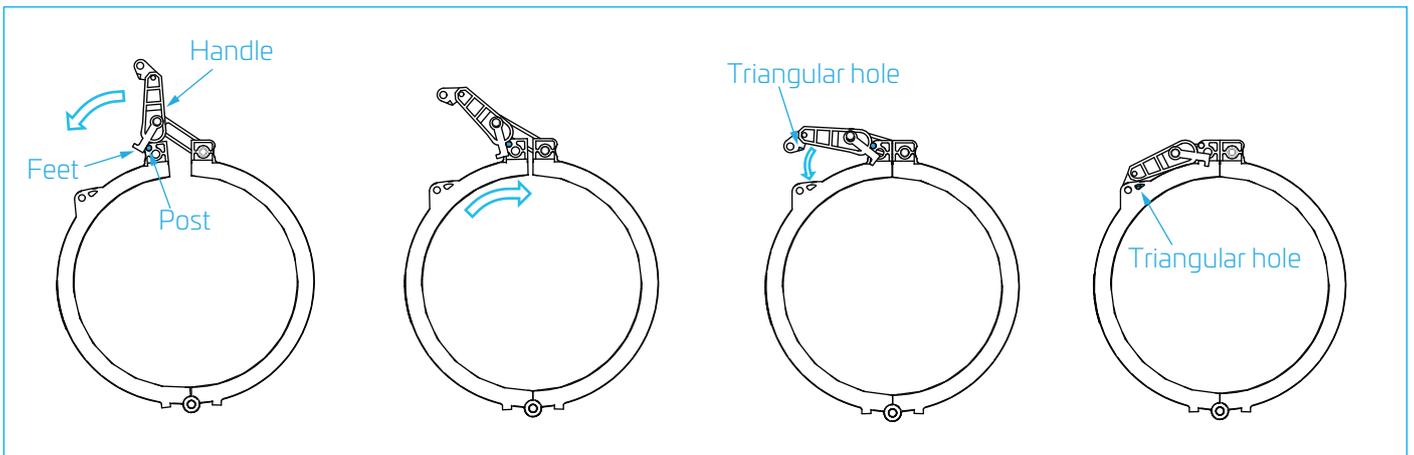


Figure 39

- 10.15 A security lock or tie wrap may be inserted through the round holes in the handle and clamp to lock the closure.

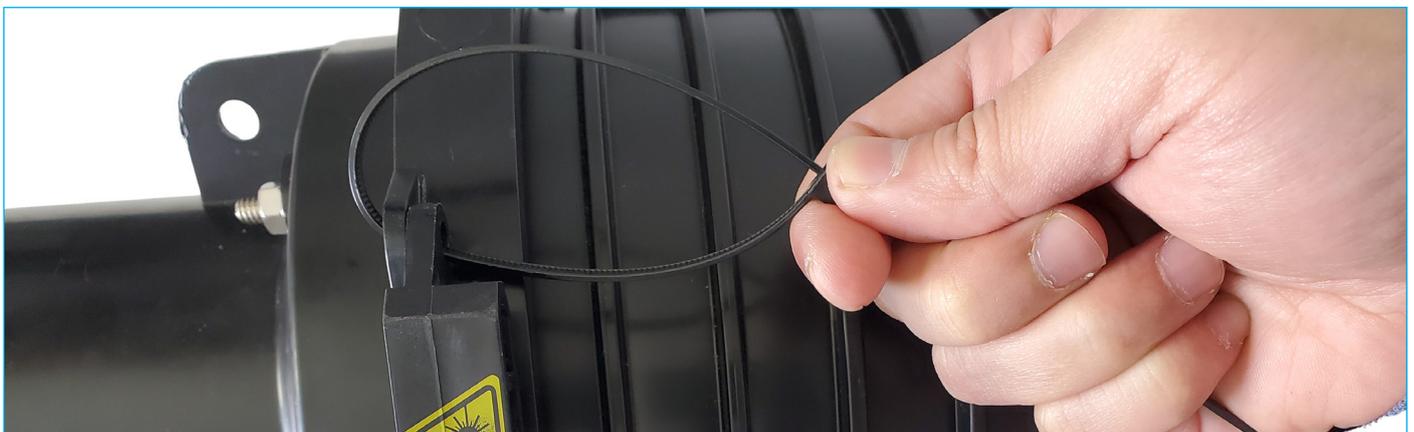


Figure 40

## 11 Flash Test

Flash test the closure to a maximum of 5 psi. Thoroughly soap seals to check for integrity.

**Important:** After flash testing, bleed all pressure from the closure through the valve.

## 12 Re-entry

Make sure all air is bled from closure. To remove the dome from the closure, release the clamp handle, hook the handle on the two posts, and pull back until the clamp releases from the closure. Remove the dome and keep the O-ring, clamp, and dome clean and dry.

## 13 Adding cables

- 13.1 Turn the tail of the gel block counterclockwise to loosen the seal between the gel block and the base. (See Figure 28)
- 13.2 Loosen the four metal bolts and turn the washers inside the base to release the star bracket from the base. (See Figure 2)
- 13.3 Slide the base back over the cables and out of the way.
- 13.4 Refer to section "7 Cable preparation" on page 3 through section "9 Routing fibers to the splice tray" on page 7 to install a new cable and re-seal the closure.

## 14 Disclaimer

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