Charles Fiber Optic Dome Closure
FODC-C2 Series
General Description and Installation

1. GENERAL INTRODUCTION

1.1 Document Purpose

This document provides installation instructions and best practices for using Charles Industries large-size fiber optic dome closure FODC-C2.

> *-NOTE-*
>
> *Hereafter the Charles Fiber Optic Dome Closure Series will be referred to as the "FODC-C2" or "closure."*

1.2 Product Purpose

The FODC-C2 series has been modified from the original FODC-C series to improve usage with ribbon fiber cable. It features an enhanced structure and deeper trays that provide optimized ribbon fiber management and routing. The dome closure is used for splicing and distributing fiber optic connections.

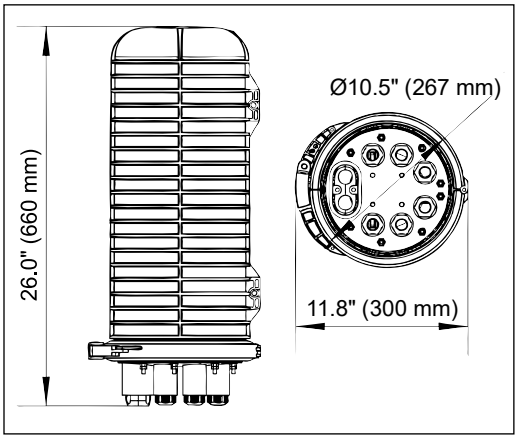


Figure 2 FODC-C2
Dimensions in inches (mm)

1.3 Product Mounting and Location

FODC-C2 is a fully sealed IP68 rated unit that can used below grade in a hand-hole or vault. It can also be mounted on an aerial strand or pole with the appropriate mounting kit.

2. PRODUCT DESCRIPTION

FODC-C2 accommodates up to 1,152 mass fusion splices with deep ribbon trays or 920 max single fusion (double stacked) in thin trays. The “RB” version is used with deep ribbon trays. The unit accommodates up to four deep trays. Each tray holds up to 24 ribbon splices and features an internal insert to hold the splices in a two-layer configuration. A thin tray has 60 splice slots for single fusion splicing and can be double stacked for 120 splice per tray. The unit can fit up to 8 thin trays.

3. SAFETY PRECAUTIONS

Risk of serious eye damage! Never look into the end of a fiber optic line or use a magnifier in the presence of laser light or radiation. Exercise caution when installing, testing or maintaining live circuits. If eyes are exposed to laser light or radiation occurs, immediately seek treatment by a medical professional.

Cable and fiber cleaning solvents may contain hazardous or harmful materials. Maintain good housekeeping practices and refer to the SDS when working with cleaning solvents or similar products.

Shards and cleaved glass fibers are very sharp and can easily pierce the skin. Use tweezers to pick up cut glass fibers and place them in a specifically designated container. Do not consume any food products near the cable installation site.

Corrugated metal or armor in feed cables is very sharp when cut or exposed. Exercise extreme caution to prevent personal injury. Use protective work gloves when handling armored cable.

Perform all bonding and grounding prior to making any electrical and communications connections.

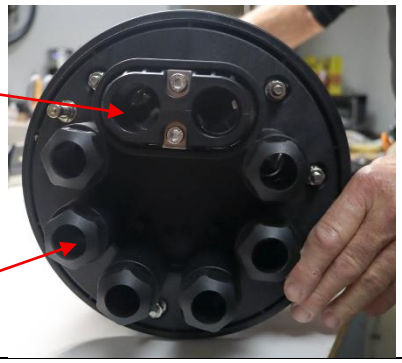
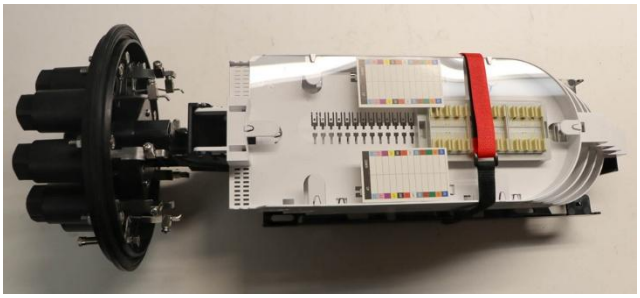
Be careful not to damage any buried cables or service wires while digging either to expose cables or to prepare a hole or trench, or while driving stakes. Buffer tubes and fibers are sensitive to excessive bending, pulling, and crushing forces. To avoid kinking of buffer tubes and fiber damage or breakage, exercise great care when working with fiber, and do not exceed or violate minimum bend radius requirements for fibers, buffer tubes, and cables.

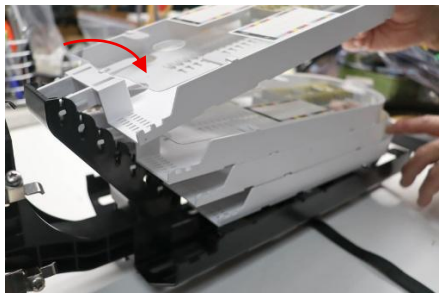
4. INSTALLATION

The following equipment is used for FODC-C2 fiber installation.

- Philips and flathead screwdrivers
- 6 mm (or 1/4") nut driver
- 5mm (or 3/16) T-handle wrench
- Measuring tape
- Cable marking tool
- Assorted cable ties
- Calipers
- Accessories bag (provided with the FODC-C2)
- Knife or snips
- Buffer tube stripper tool (score/cut buffer tubes)
- Fiber optic stripper tool
- Fiber splicing tools and equipment
- Safety glasses and work gloves

4.1 Getting Started

Step #	Instruction	
1	Open the clamp at the base of the dome. Use a flathead screwdriver for leverage if necessary. Remove the clamp. Slide the dome off of the FODC-C2 assembly. Set the clamp and dome aside for later use. Note that there are six branch cable ports and one main feed cable oval port on the bottom of the closure.	  
2	Splice trays attach to a tray tower on the FODC-C2. Tabs on each side of the tray fit into the keyholes on the bracket. FODC-C2 accommodates up to four trays based on configuration. *NOTE:* Some FODC-C2 SKUs ship with trays pre-installed.	

3	To remove a tray, gently press on the tray tabs with a flathead screwdriver and detach the tray from the tray bracket.	 
4	To install a tray, fit it into the tray bracket until the tabs click.	
5	Trays lock in an upright position for access. Gently push the tray down into the slot to lock it in the upright position. Slightly lift the tray (tab must exit the lower locking slot) before rotating it downward to the horizontal position in the transport basket. **Note: Do not attempt to rotate the tray flat with the tray in the down locked position. This can damage the tabs.**	 
6	To continue installation, remove the splice tray(s) and set aside.	

4.2 Included Accessories

Figure 3 Accessories included with FODC-C2

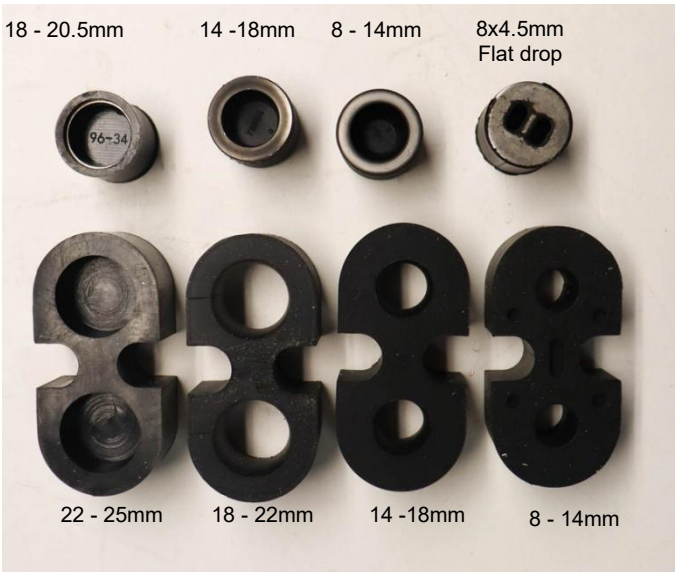
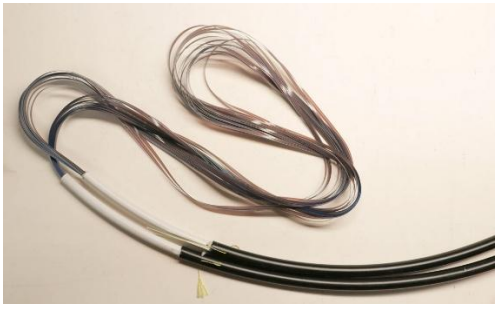
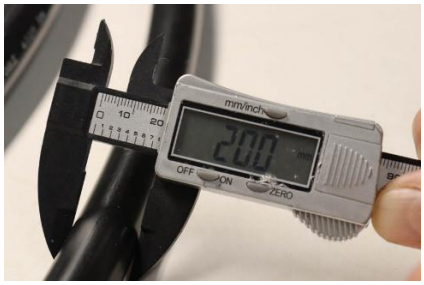
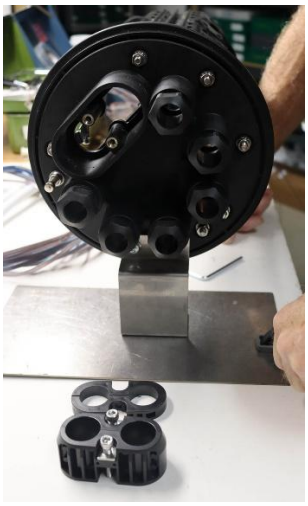
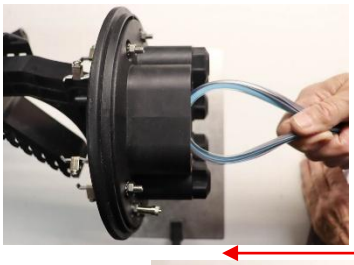
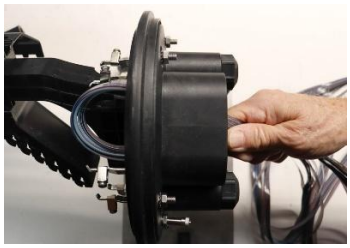
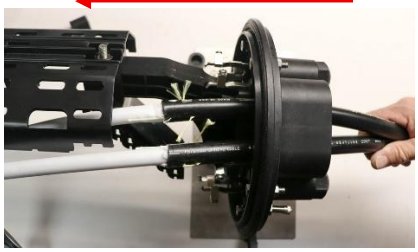
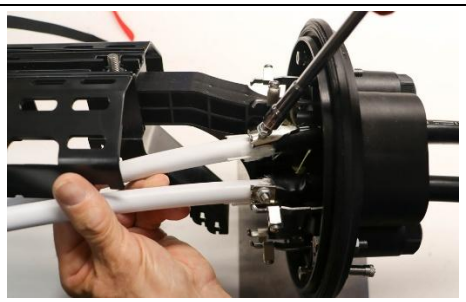


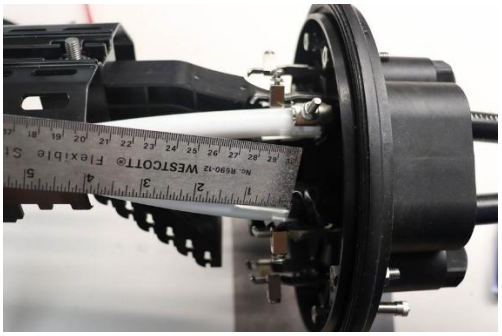
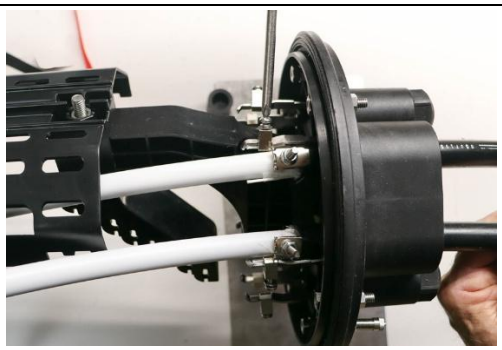
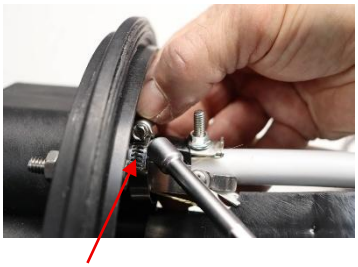
Figure 4 Grommets included with FODC-C2

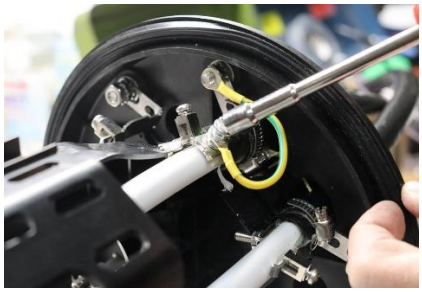
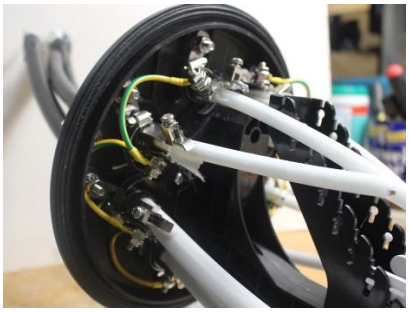
4.3 Install the Feed Cable

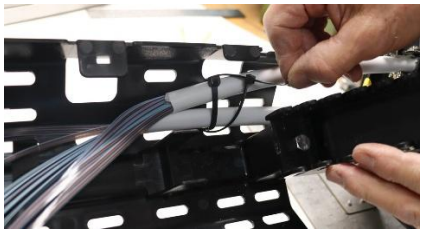
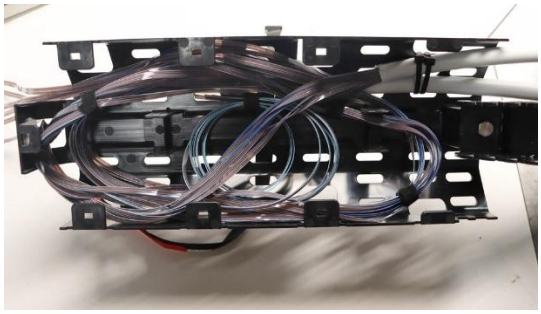
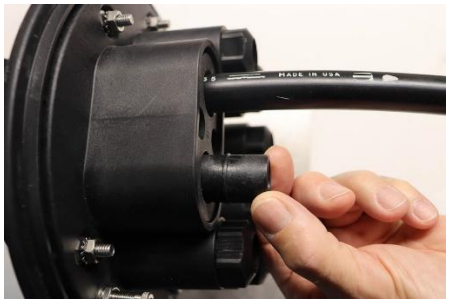
NOTE: In many of the following steps, the FODC-C2 closure can be mounted on a stand for ease of handling. Contact Amphenol Charles Industries for more information on availability of the closure stand.

1	Unsheathe approximately 9-10 feet of feed cable, following standard practices. (432 ribbon fiber cable show)	
2	Measure cable diameter and determine the proper silicone oval grommet to use with the feed cable. Each unit includes sized oval grommets 8-14 mm 14-18 mm 18-22 mm 22-25 mm *NOTE:* In this example, the cable requires the 18-22 mm grommet.	 
3	Slit the selected grommet straight down on both sides.	

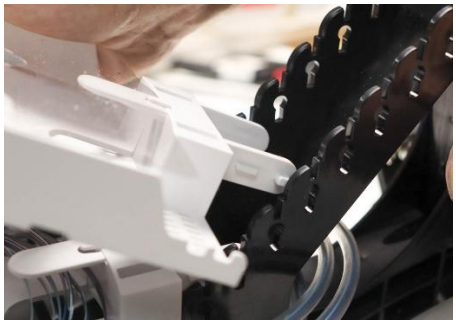
4	The hard plastic grommets come installed in the oval port. Remove these grommets from the bottom of the closure with an Allen wrench or T-handle wrench	 
5	Carefully insert the ribbon fibers through the oval port and pull the cable through.	  
6	If using armored cable, slide a shield bond clamp under the cable jacket and tighten in place. Wrap ends of cable sheathing with tape. Perform these steps on both cable sheathing ends.	

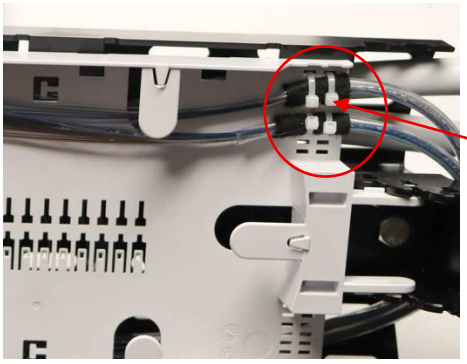
7	Cut the cable strength member approximately 1-1/4" from end of cable sheathing.	
8	Slide the strength member under the strength member clip and tighten the screw.	
9	Install a hose clamp around the cable attachment unit and cable in both entry locations. Hand-tighten each clamp with a 6 mm nut driver.	  Hose clamp
10	Disassemble the previously removed plastic oval grommets.	 

11	Install the grommets in the following order (outside the closure): 1) Install the inner (hard) narrow grommet around the cable. 2) Install the split silicone (soft) grommet around the cable. 3) Install the outer (hard) wide grommet around the cable. Push all grommets into the oval port.	1   2 3 
12	Slide the metal locking plate into the slot in the outer hard plastic grommet. This ensures even pressure across the grommet. Insert the long hex-head bolts and tighten with a 5 mm T-handle wrench. (or the included Allen wrench) Hand tighten until the bolts will no longer turn.	
13	If using armored cable, attach a ground wire from the shield bond clamp to the ground stud. For isolated cable grounding, continue to run a ground wire from the shield bond clamp to the ground stud for each installed armored cable.	
14	For common ground applications, connect the ground wire from the bond clamp to the ground for the first cable. For additional armored cables, attach a ground wire from the bond clamp of that cable to the connected cable; then connect the bond clamps in a daisy chain orientation.	

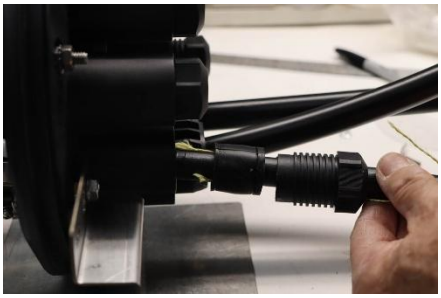
15	Secure the feed cables in the fiber basket with cable ties.	
16	Separate ribbons to be spliced, then route and secure the slack ribbons in the fiber basket using hook-and-loop straps.	
17	If installing FODC-C2 at the end of a line, the closure will have a single cable entering the oval port, and no cable exiting the port. In this case, install a plug in the unused grommet to seal it. Choose a plug based on cable diameter. > 18mm: Black plug < 18mm: White plug Then tighten the grommet assembly as in step 4.3.12	

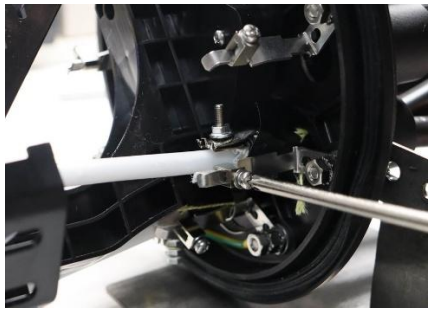
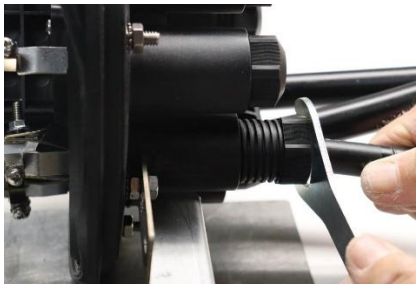
4.4 Route Fibers into Splice Tray

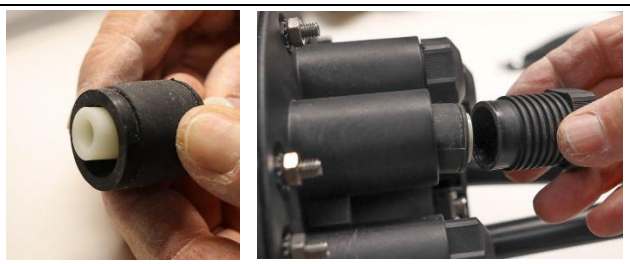
Step #	Instruction	
1	Install trays in the closure following procedures detailed in section 4.1. Split 24-fiber ribbons into two 12-fiber ribbons. With trays in upright position, install 12-fiber ribbon in approximately 12" of transportation tube. This will help protect the fiber as it transitions between the basket and tray.	
2	Secure transportation tube in fiber basket with a cable tie.	

3	Wrap the end of the transportation tube with felt tape. Route ribbon into the tray, utilizing cable management features to hold ribbon in place. Secure with two small tie wraps. Tie wraps should wrap around the felt on the transportation tube. *NOTE:* To simplify cable routing and management, pre-load two small tie wraps at the tray entry point slots. Tie down the ribbons here once they are installed.	

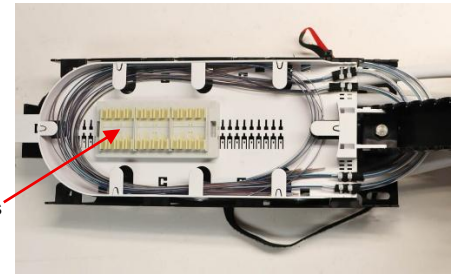
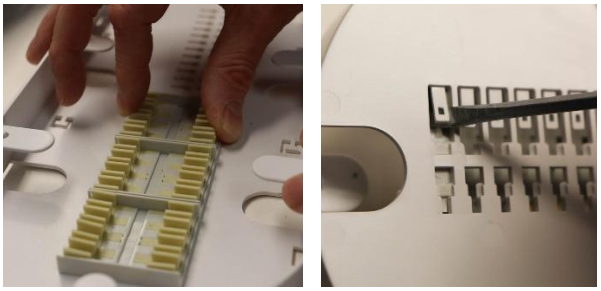
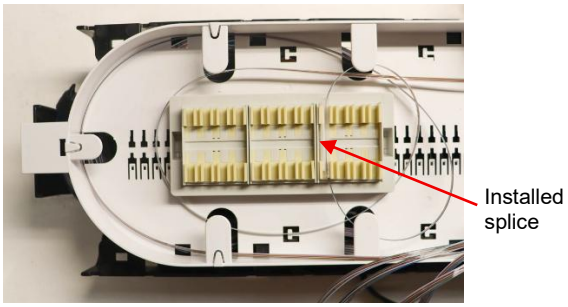
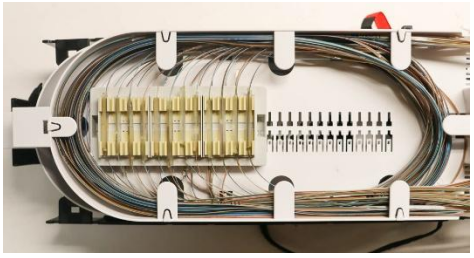
4.5 Install Branch Cables

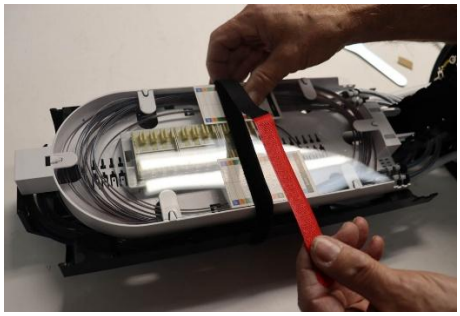
Step #	Instruction	
1	Branch ports accommodate cable sizes from 8 to 25 mm. Select the proper sized grommet according to diameter. "A" 8-14 mm "B" 14-18 mm "J" 18-20.5 mm "F" 2-hole, 8 x 4.5 mm flat drop cable	 
2	Remove the plastic port compression screws from the branch ports to be used. Use the included wrench, or pliers with protective covers on the jaws.	
3	Thread the port screw (first) and grommet (second) on the branch cable. *NOTE:* This step must be completed before inserting the branch cable in the enclosure. Insert the branch cable in the appropriate port. If necessary, wrap the end of the ribbon with tape to simplify insertion.	
4	Unsheathe 4-6 feet of branch cable to allow for required slack.	

5	Cut the strength member 1-1/4" beyond the cable jacket.	
6	If using armored cable, slide a shield bond clamp under the cable jacket and tighten in place. Add a shield bond stud to the clamp.	
7	Attach the strength member to the strength member clamp.	
8	Secure the branch cable with a hose clamp. Install the clamp on the cable jacket, between the bond clamp and the closure base.	
9	Hand-tighten the port compression screw with the included wrench. Route slack fiber into the fiber basket.	

10	Seal all unused branch ports using the plugs included in the accessories kit. Insert a plastic inner plug into the grommet and insert the grommet into the port opening. Hand-tighten the compression screw with the included wrench.	

4.6 Route and Splice Fibers

Step #	Instruction	
1	Each splice tray accommodates up to 24 ribbon splices in six 4-ribbon slot modules. Each module includes 4 splice holders. Modules can be stacked or placed next to one another the length of the tray. Stacking the splice modules facilitates routing fiber slack	
2	The trays come with the splice modules installed. To remove a module, lift the appropriate tabs on the underside of the tray with a small flathead screwdriver. This will release the splice module. Reinstall splice modules by clicking them into place. Stacked modules lock in place as well.	
3	Separate the ribbons to be spliced. Route the ribbons in the tray using cable management tabs. Splice per standard practices. Insert the splice protection sleeve in the module. Route the slack fiber in the tray.	
4	Repeat previous steps with additional fibers to be spliced. A populated splice tray should appear as pictured at right.	

5	After completing all splices in the tray, replace the tray covers. Secure the trays with the attached hook-and-loop strap.	

4.7 Close and Seal the FODC-C2

Step #	Instruction	
1	Place the dome over the base and tray assembly. Replace and tighten the clamp around the FODC-C2.	 

4.8 External Cable Grounding

Step #	Instruction	
1	Connect ground wire to ground stud adjacent to installed branch cable.	

5. MOUNTING

Mounting options for the FODC-C2 include pole or aerial strand mounting, as well as placement in a pedestal, vault, or hand-hole. See the accessories list for mounting kits.

5.1 Aerial Strand Mounting

The aerial strand mounting kit (97-FODCAMKT) is compatible with a 1/4" to 3/8” aerial strand.

1. Place the aerial mounting bracket(s) on the outside of the FODC-C2 closure.
2. Thread the mounting strap(s) through the mounting bracket.
3. Attach the FODC-C2 brackets around the dome by tightening the straps.
4. Attach the D-clamps to the aerial strand.

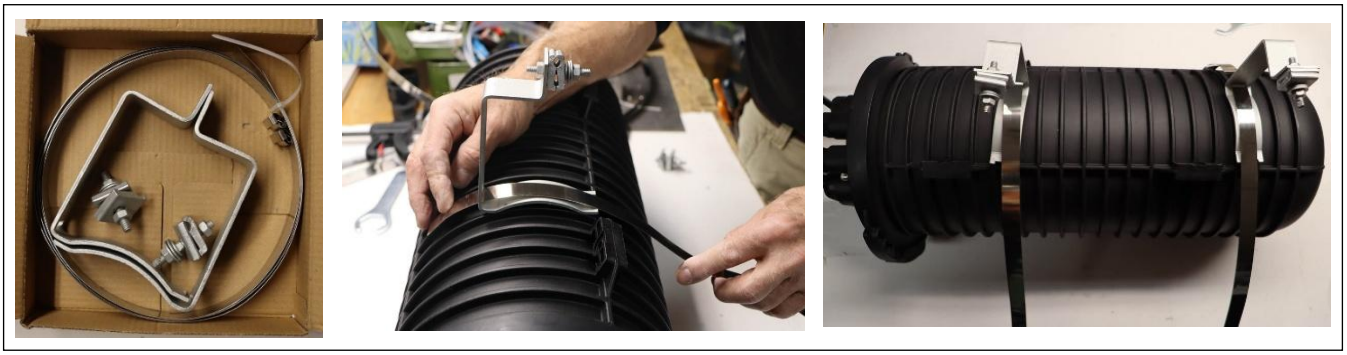


Figure 5 Aerial Strand Mounting Kit

5.

5.2 Pole Mounting

Pole-mounting procedures follow steps similar to aerial strand mounting. Attach the mounting straps through the mounting brackets, then secure with included clamps.

Figure 6 Pole Mounting Kit

5.3 Hand-Hole, Vault, Enclosure & Pedestal Mounting

For additional mounting options, follow standard practices for each location. Charles Industries CMPH multipurpose enclosures and B07 pedestals provide ideal pedestal solutions for housing FODC-C2 closures.

Figure 7 FODCC2 in CMPH

6. TECHNICAL ASSISTANCE AND REPAIR SERVICE

For questions on product repair or if technical assistance is required, contact Charles Technical Support.

1-847-806-8500
techserv@charlesindustries.com (email)
http://www.charlesindustries.com/techserv.htm

7. SPECIFICATIONS

Physical	
Material	Glass-filled polypropylene
Dimensions	26" x Ø 10.5" (Ø 11.8" with clamp)
Weight	Approximately 14 lb. (without cable)
Cable port sizes	Oval dual feed port: 8 - 25 mm (.315" - 0.98") Six branch ports: 8 - 20.5 mm (0.315" -0.80")
Splice trays	Up to four 288 mass fusion splice ribbon trays Up to eight 72 single fusion splice trays
Environmental	
Temperature range	- 40°F to + 149°F (- 40°C to + 65°C)
Rating	IP68
Mounting deployment	Aerial strand, pole, pedestal, or hand-hole/vault

Table 1 FODC-C2 Specifications

8. PART NUMBER INFORMATION

Part Number	Description	Standard Pack
FODCC2RB	FODC-C 2nd Gen, oval port & 6 branch ports, no tray	24 (pallet)
FODCC2RB1T	FODC-C 2nd Gen, oval port & 6 branch ports, 1 deep 288-splice ribbon tray	24 (pallet)
FODCC2RB2T	FODC-C 2nd Gen, oval port & 6 branch ports, 2 deep 288-splice ribbon trays	24 (pallet)
FODCC2RB3T	FODC-C 2nd Gen, oval port & 6 branch ports, 3 deep 288-splice ribbon trays	24 (pallet)
FODCC2RB4T	FODC-C 2nd Gen, oval port & 6 branch ports, 4 deep 288-splice ribbon trays	24 (pallet)
FODCC2LT1T	FODC-C 2nd Gen, oval port & 6 branch ports, 1 60 slot single splice tray	24 (pallet)
97-FODCC2RBTRY	FODC-C2 deep ribbon tray kit with 24 ribbon splice sleeves	30 (carton)
97-FODCC2SFTRY	FODC-C2, 60.120 single splice tray kit with 120 single fusion splice sleeves	60 (carton)
97-FODCAMKT	FODC aerial strand mounting kit	20 (carton)
97-FODCCPLKT	FODC-C pole mounting kit	20 (carton)
97-FODCAGR	Grommet kit, 1-hole, 14-18 mm, kit of 10	10 kits
97-FODCBGR	Grommet kit, 2-hole, 8-14 mm, kit of 10	10 kits
97-FODCCGR	Grommet kit, 4-hole, 5-7 mm, kit of 10	10 kits
97-FODCDGR	Grommet kit, 4-hole, 4-5 mm, kit of 10	10 kits
97-FODCEGR	Grommet kit 9-hole, 3 mm, kit of 10	10 kits
97-FODCFLGR	Grommet kit, 2-hole, 8x4 mm flat, kit of 10	10 kits
97-FODCHGR	Grommet kit, 2-hole, 6-8 mm, kit of 10	10 kits
97-FODCJGR	Grommet kit, 1-hole, 18-22.5 mm, kit of 10	10 kits

Table 2 Part Numbers