

Charles Fiber Optic Dome Closure

FODCC Series

General Description and Installation

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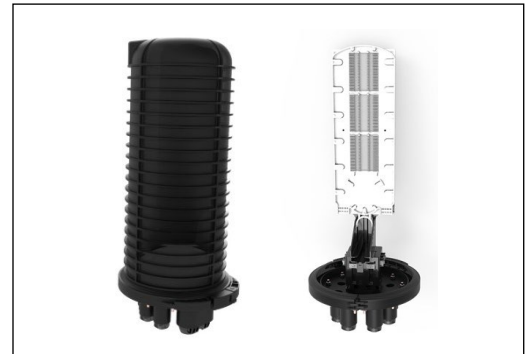


Figure 1 FODCC

1. GENERAL INTRODUCTION

1.1 Document Purpose

This document provides installation instructions for the Charles Fiber Optic Dome Closure, size C (FODCC). The FODCC is shown in Figure 1.

-NOTE-

Hereafter the Charles Fiber Optic Dome Closure Series will be referred to as the "FODCC" or "closure."

1.2 Product Purpose

The FODCC is a sealed splice closure (IP68 rated) that is used to splice and distribute fiber connections. The design allows for the use of either fiber ribbon cable or buffer tube cable.

1.3 Product Mounting and Location

The FODCC is a sealed unit that can be aerial strand mounted or pole mounted. Brackets for aerial and pole mounting are sold separately. The dome closure can also be used in a pedestal or vault.

2. PRODUCT DESCRIPTION

The FODCC is a Fiber Optic Dome Closure used for high-count fiber splicing. The FODCC includes a single splice tray that can accommodate 72 single fusion splices. This tray is intended for use with buffer tubes. An alternate splice tray is available for use with ribbon cable with a maximum of 36 splices. The FODCC can hold up to 8 splice trays, purchased separately (see Table 2 for splice tray options).

The FODCC dimensions are shown in Figure 2. The FODCC ships with a number of tools and accessories, shown in Figure 3.

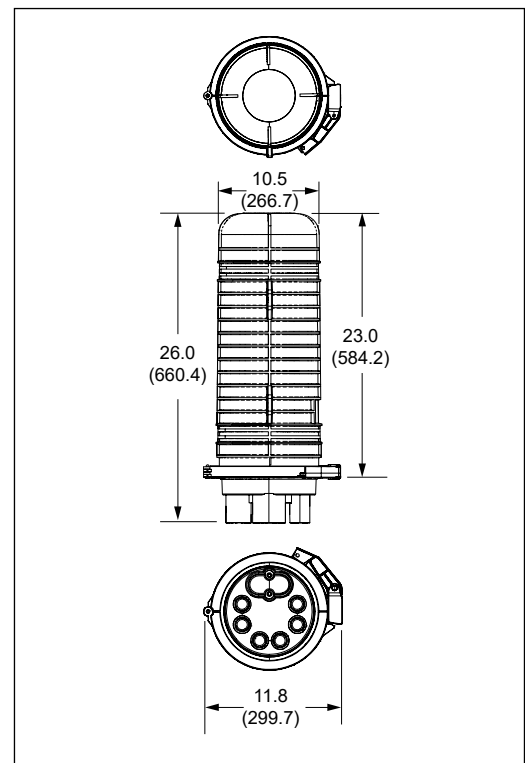


Figure 2 FODCC Dimensions in inches (mm)



Figure 3 Tools and Accessories, included with the FODCC

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.


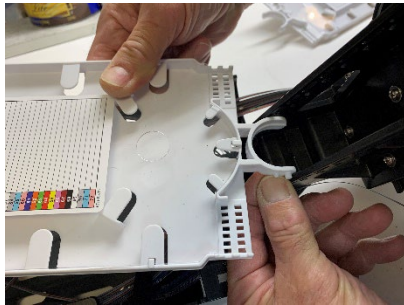

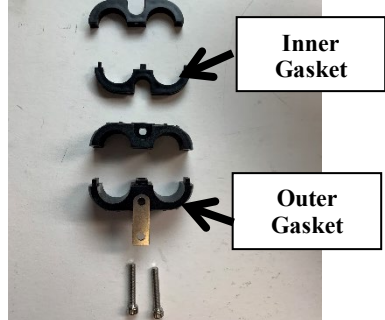

Be careful not to damage any buried cables or service wires while digging either to expose cables or to prepare a hole or trench, or while driving stakes. Buffer tubes and fibers are sensitive to excessive bending, pulling, and crushing forces. To avoid kinking of buffer tubes and fiber damage or breakage,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

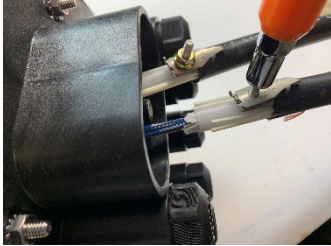
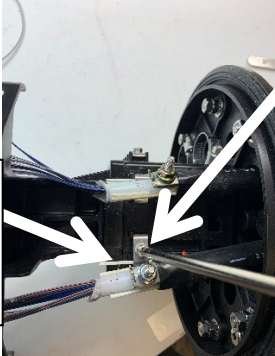
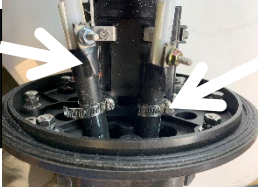
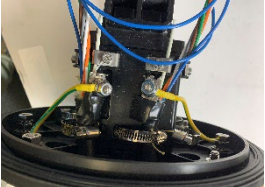
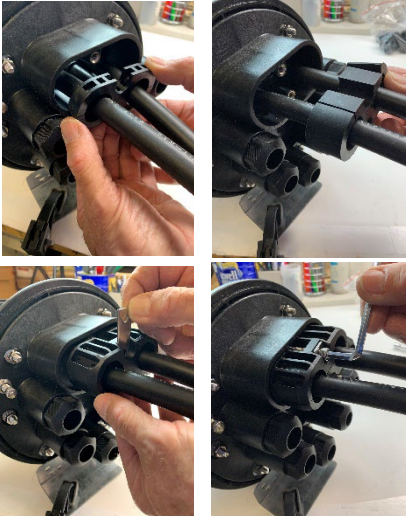
4. INSTALLATION

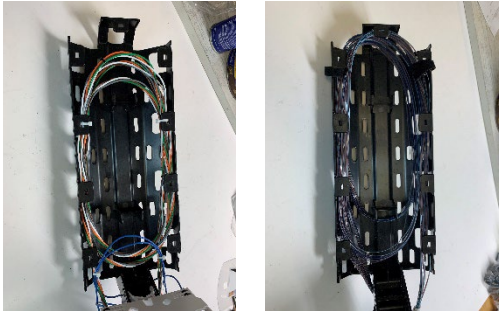
Gather the following equipment to perform the FODCC installation.

- Philips and flathead screwdrivers
- 5 mm (or 3/16") Allen wrench
- Measuring tape
- Cable marking tool
- Assorted cable ties
- Tools and Accessories bag (provided with the FODCC)
- Knife or snips (to cut grommets)
- Buffer tube stripper tool (score/cut buffer tubes)
- Fiber optic stripper tool
- Fiber splicing tools and equipment
- Safety glasses and work gloves

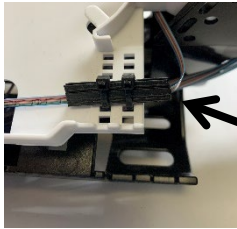

4.1 Route Express Cable Loop into Closure

Step #	Instruction	
1	Open the clamp at the base of the dome. Remove the clamp. Slide the dome off of the FODCC assembly. Set the clamp and dome aside for later use.	
2	The splice tray is attached to a tray tower on the FODCC. The tray tabs on each side fit into the keyholes on the bracket. Press the U-shaped section of the splice tray inward to release the tray from the tray tower. Remove the splice tray from the transport basket and set aside.	
3	Locate the express port (oval port) on the base of the FODCC. Use a 5 mm (or 3/16") Allen wrench to remove the screws securing the express port closed. Remove the sealing components. The inner and outer gaskets are shipped inside the express port.	 
4	Unsheath a length of cable. <ul style="list-style-type: none"> • If using buffer tube, use a 144-fiber cable maximum. Expose 8 to 9 feet of the cable. • If using ribbon cable, use a 432-fiber cable maximum. Expose 8 feet of the cable. Insert this loop into the express port and pull through to the transport basket.	





5	<p>If using armored cable, attach a customer supplied bond clamp to each side of the cable sheathing.</p>	
6	<p>The strength member brackets have a hole through the center for inserting the strength member. A set screw in the top of the bracket applies pressure to the strength member to hold it in place.</p> <p>Secure both strength members using the strength member bracket set screws.</p>	 <div data-bbox="795 625 941 777" style="border: 1px solid black; padding: 2px;"> <p>Insert strength member into hole in bracket</p> </div> <div data-bbox="1237 487 1422 651" style="border: 1px solid black; padding: 2px;"> <p>Tighten set screw to hold strength member in place</p> </div>
7	<p>Use electrical tape to cover the armor to prevent injury. Wrap the tape around the bond clamp and around the cable sheathing.</p> <p>Tighten the hose clamps included with the FODCC around the cable sheathing.</p>	 <div data-bbox="844 848 964 974" style="border: 1px solid black; padding: 2px;"> <p>Tape bond clamp in place</p> </div> <div data-bbox="1229 873 1352 1003" style="border: 1px solid black; padding: 2px;"> <p>Tighten hose clamp</p> </div>
8	<p>Install a ground clamp between each bond clamp and the FODCC ground posts.</p> <p>Always use a ground clamp on any armored cable. This provides continuity when a bond strap is secured to the end plate ground stud.</p>	
9	<p>Close the express port around the cable.</p> <ul style="list-style-type: none"> The inner and outer gaskets are both made of hard plastic, and both gaskets can be split into two parts for easy installation. Select a rubber express port grommet from the Accessories bag that is best suited for the diameter of the cable in use. If the grommet does not have slits pre-cut, use snips to cut the sides. <p>Install the inner gasket first, then the rubber grommet, then the outer gasket, pushing each component into the express port. Components will be a tight fit, as is necessary to ensure a good seal.</p> <p>Install the metal express port plate into the slot on the outer gasket.</p> <p>Secure the express port closed using an Allen wrench and the two screws removed previously.</p>	

10	<p>Route the buffer tube or the ribbon fiber slack into the transport basket.</p> <p>Use the cable ties included in the Accessories bag. If preferred, use customer supplied Velcro.</p> <p>Note: if using ribbon cable, use cable ties on bare fiber ribbons.</p>	
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4.2 Route Fibers in Tray

Step #	Instruction
1	<p>The FODCC includes a splice tray for use with buffer tubes. This tray is also available as the Charles 97-FODCC72TRAY and has 72 single fusion splice holders.</p> <p>A separate tray is available for use with ribbon fiber. This tray is sold separately as the Charles 97-FODCRBTRAY and has 36 splice holders.</p>
2	<p>Separate the fiber ribbon(s) or buffer tube(s) to route into the splice tray.</p> <p>Re-install the tray into the tray bracket and lower the tray so it is covering the slack storage in the transport basket.</p> <p>Secure the ribbon/buffer tube at the entry points for the tray.</p> <p>Note: if using ribbon cable, do not use cable ties on bare fiber ribbons at this location. Use a customer supplied 3M FIBRTUBE or equivalent to protect the fiber ribbons, and then apply the cable ties around the FIBRTUBE.</p> <div data-bbox="979 762 1445 989">  <div data-bbox="1226 846 1442 974"> <p>3M FIBRTUBE (or equivalent) for securing ribbon fiber</p> </div> </div>
3	<p>If using loose buffer tube cable, remove the buffer tube cover between these two points. If using ribbon fiber, separate the fiber to be spliced.</p> <p>If using ribbon fiber, separate the fiber to be spliced.</p> <p>Route the loose fiber inside the tray.</p> <div data-bbox="834 1136 1360 1474">  <div data-bbox="834 1444 1092 1474">Route Buffer Tube Fibers</div> <div data-bbox="1149 1444 1360 1474">Route Ribbon Fibers</div> </div>

4.3 Install Plugs and Branch Cable into FODCC

Step #	Instruction	
1	Determine which branch cable ports will be used for cable and which will not be used in this installation.	
2	Locate the branch cable ports on the bottom of the closure. Open the ports by removing the compression screw using the wrenches included in the tools and parts bag.	
3	<p>Follow this step for all branch cable ports that will not be used.</p> <p>Seal all unused branch ports using the plugs included in the FODCC accessories kit.</p> <p>Insert a plastic plug into the grommets and insert the grommet into the port opening. Tighten the compression screw into the port until it will not turn any further.</p>	 
4	<p>Determine the length of branch cable needed for routing into the splice tray.</p> <p>Locate a branch cable grommet from the tool bag that is the appropriate size for the branch cable used.</p> <p>Route the branch cable through the branch cable port compression screw, through the hole(s) in the grommet, and into the FODCC.</p>	
5	<p>Push the grommet into the port, then tighten the compression screw into the port until it will not turn any further.</p> <p>The multi-hole grommets do not need to be fully populated to seal. When the compression screw is fully tightened, the grommet compresses and seals even when some grommet openings have not been fully populated with the cable.</p> <p>Pliers can be used to tighten branch port compression screws. If using pliers, use a cover on the jaws so as not to damage the screw.</p>	
6	<p>Unsheath the length of branch cable that is inside the FODCC.</p> <p>Secure the cable to the strength member bracket and tighten the hose clamp onto the sheathed end of the cable as described previously.</p>	
8	Route the branch fibers into the splice tray (both branch fibers enter the tray on the same side). Route fibers inside the tray. Secure the fibers as described previously.	
9	Perform splicing operations inside the tray.	
10	<p>When all splicing operations are complete, replace the tray cover(s).</p> <p>Use the Velcro strap included with the FODCC to secure the splicing trays into the transport basket.</p> <p>Note: Route the Velcro between the splice trays and the transport tray, then close the Velcro on top of the splice trays.</p>	

4.4 Closing the FODCC

Step #	Instruction	
1	Set the dome over the FODCC. Replace and tighten the clamp around the FODCC.	

4.5 Mounting the FODCC

The FODCC can be mounted on a pole or on an aerial strand using an appropriate mounting kit (purchased separately, see Table 1).

4.5.1 Pole Mounting

The pole mounting kit (Figure 4) includes four mounting straps and a pair of offset mounting brackets.

1. Use two straps to secure the mounting brackets to the FODCC.
2. Use the remaining two straps to secure the FODCC to the pole.

The pole mounting assembly is shown in Figure 5.

If mounting to a wooden pole, the mounting brackets can also be mounted to the pole using bolts. Then use straps to secure the FODCC to the mounting brackets.

4.5.2 Aerial Strand Mounting

The aerial strand mounting kit (Figure 6) is compatible with a 1/4" to 3/8" aerial strand.

1. Attach the D-cable lashing clamp to the FODCC brackets
2. Attach the FODCC brackets around the dome by tightening the straps
3. Attach the D-clamps to the aerial strand.

The aerial strand mounting assembly is shown in Figure 7.

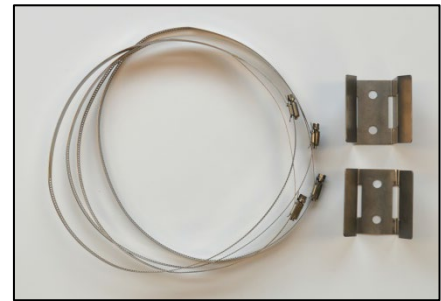


Figure 4 Pole Mount Kit



Figure 5 Pole Mounted FODCC

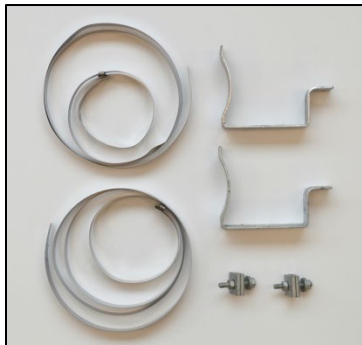


Figure 6 Aerial Strand Kit



Figure 7 Aerial Mounted FODCC

5. TECHNICAL ASSISTANCE AND REPAIR SERVICE

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

847-806-8500

techserv@charlesindustries.com (email)

<http://www.charlesindustries.com/techserv.htm>

6. SPECIFICATIONS

Physical	
Dimensions and Weight	26"H, dome: Ø10.5", clamp: Ø11.8"; approximately 14 lbs. (6.4 kg) unit weight
Feed Cable Ports	0.393 to 1.0 inch O.D. (10 to 25 mm)
Six branch port cable entries: Grommet options	Each port can accommodate 0.315" to 0.669" (8 to 17 mm) cable or multiple smaller cables per port. See grommet table for options.
Environmental	
Ambient Temperature Range	- 40°F to + 149°F (- 40°C to + 65°C)

Table 1 FODCC Specifications

7. PART NUMBER INFORMATION

Model	Description
FODCC576BG	Fiber Optic Dome Closure, C size, with dual entry feed port and 6 branch ports (1) 72-fiber splice tray included
Available Accessories	
97-FODCAMKT	Aerial mount kit
97-FODCLKTC	Pole mount kit
97-FODCC72TRAY	Replacement splice tray for FODCC with 72 splice holders (use with buffer tubes)
97-FODCRBTRAY	Replacement splice tray for FODCC with 36 splice holders (use with ribbon fibers)

Table 2 Part Numbers



97-FODCC72TRAY



97-FODCRBTRAY