# Fiber Sealed Drop Closure
# FSDCS12P Series
# General Description and Installation Guide



**Figure 1 FSDCS12P**

## 1. GENERAL INTRODUCTION

### 1.1 Document Purpose

This document provides installation instructions for the 12-port Charles Fiber Sealed Drop Closure S Series (FSDCS12P). A unit is shown in Figure 1 above.

### 1.2 Product Purpose

The FSDCS12P is a terminal splice closure designed to be used with terminated SC/APC drops in fiber-to-the-home networks to distribute network connections to the premises.

### 1.3 Product Mounting and Location

The FSDCS12P is a sealed unit that can be used below grade in a hand-hole or vault, aerial strand mounted, or mounted on a pole or wall.

# 2. PRODUCT DESCRIPTION

## 2.1 Product Overview

The FSDCS12P features 4 cable ports and 12 drop ports. An Internal bulkhead includes 12 SC/APC adapters for SC/APC connectorized drop cables, as well as an extra slot for an additional adapter. This adapter can be used for the input of a pre-connectorized splitter or tap, or as a test port.

The cable ports are compatible with cables from 8mm to 18mm in diameter (0.315 to 0.710 inches). The fiber basket can store up to 144 fiber loose tube cables. Splice capacity is up to 144 single fusion splices across three trays. Optional mass fusion splice insert modules are available for use with ribbon fiber splices. The unit includes a ground stud and self-connecting ground clamps for use with armored cables.

## 2.2 Dimensions

Product outline dimensions are shown in the figure below.

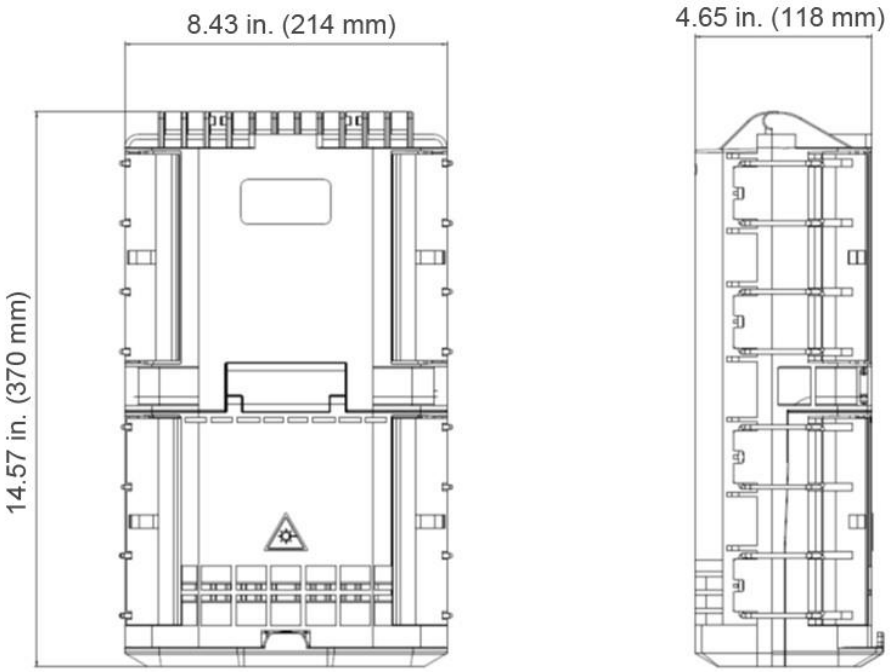



**Figure 2 FSDCS12P Outline Dimensions**

## 2.3 Included Accessories


## 3. SAFETY PRECAUTIONS

**— WARNING —**

**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.**

**— WARNING —**

**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.**

**— CAUTION —**

**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. FIBER CABLE INSTALLATION

## 4.1 Tools

The following tools are recommended for cable installation:

- Philips and flathead screwdrivers (large and small)
- Measuring tape
- Cable marking tool
- Accessories kit (included with closure)
- Knife and/or snips
- Buffer tube stripper tool
- Fiber optic stripper tool
- Fiber splicing tools and equipment
- Safety glasses and work gloves

## 4.2 Recommended Fiber Routing Diagrams

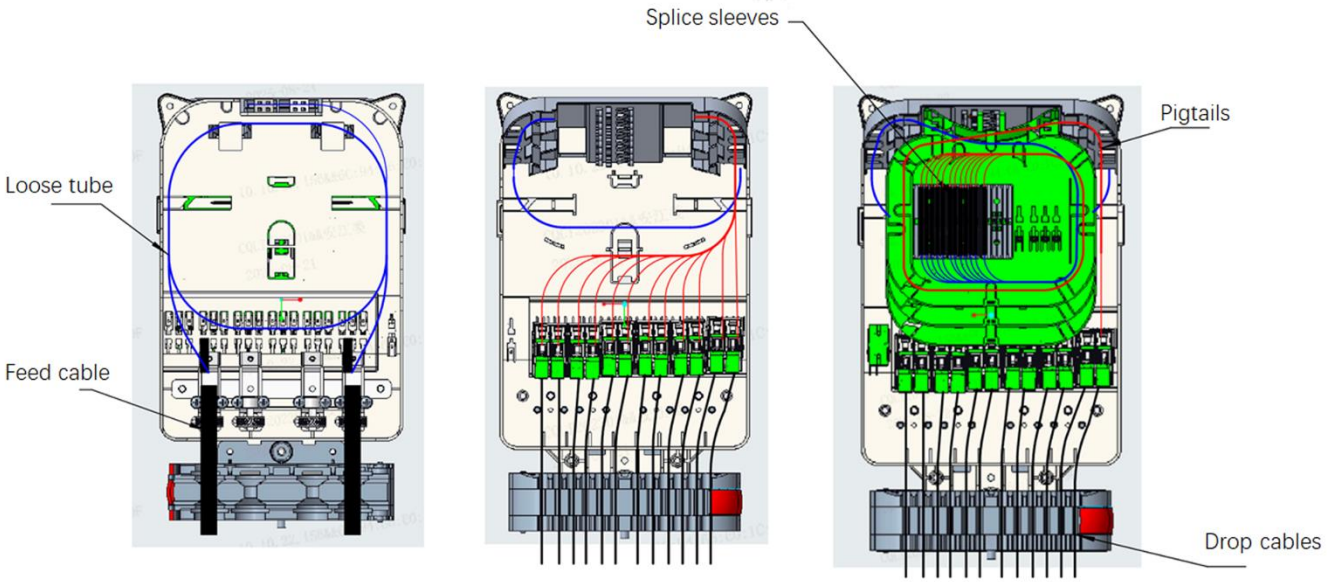



**Figure 3 Splice Routing**

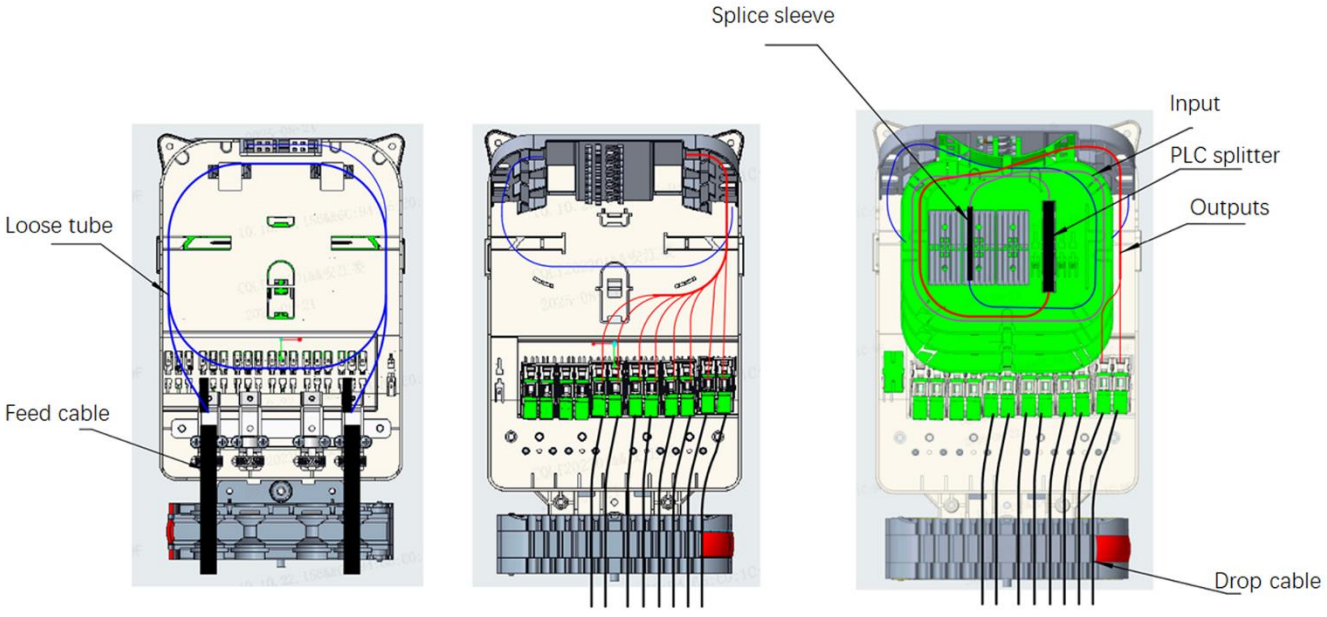
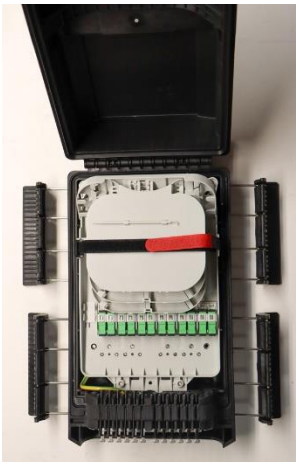


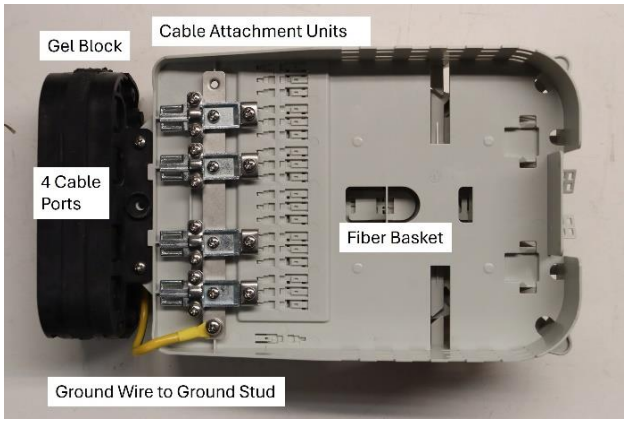

**Figure 4 Splitter Routing**


1st Printing

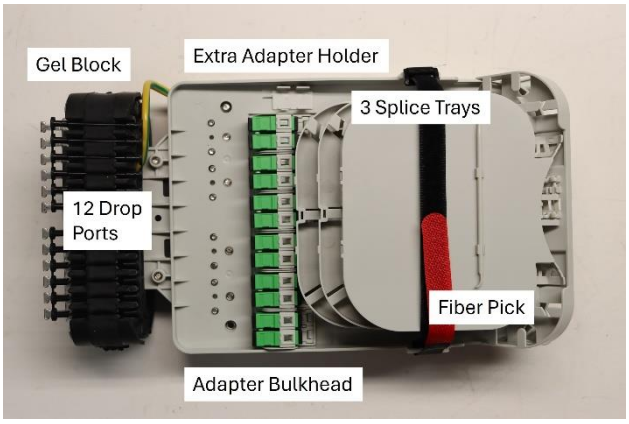
## 4.3 Open the Unit

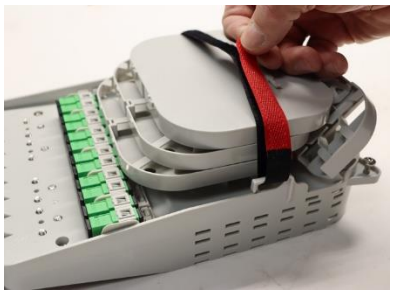
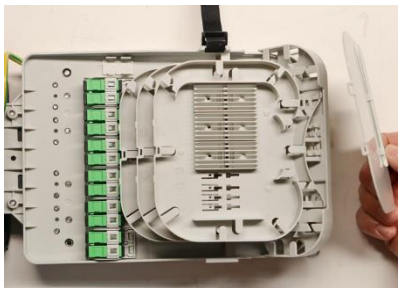
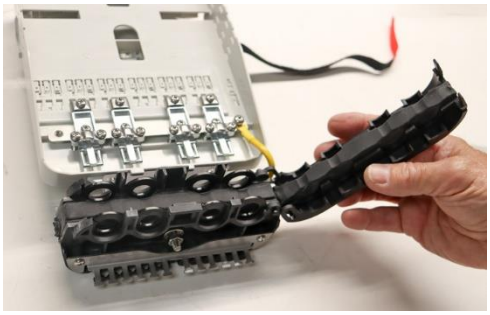
| Step Number | Instruction | |
|---|---|---|
| 1 | For ease of opening and safety, place a small flathead screwdriver in the slot on the buckles and pull down.<br><br>Each section of the two-piece cover—drop ports and splicing sections—can be opened separately for ease of access and to separate the drop area from the splicing area. |   |
| 2 | Unscrew the two anchor screws to remove the splice tray sub-assembly from the housing.<br><br>Note: These are captured screws; do not over-loosen. |  |

Splicing Sub-Assembly: Cable Side

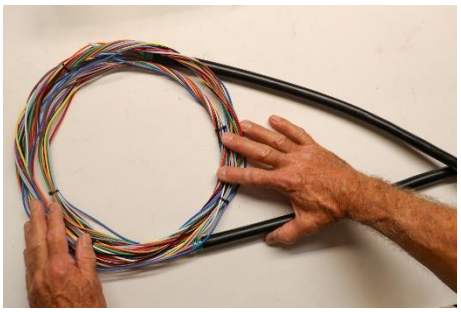


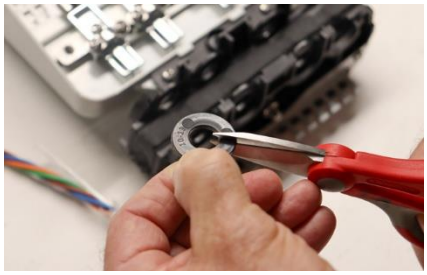
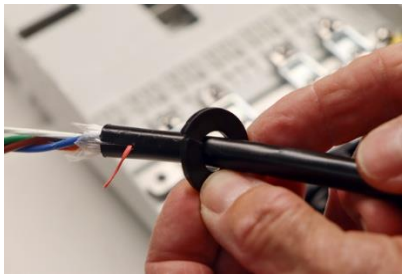
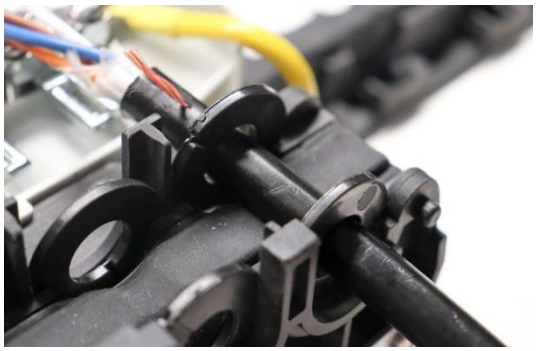
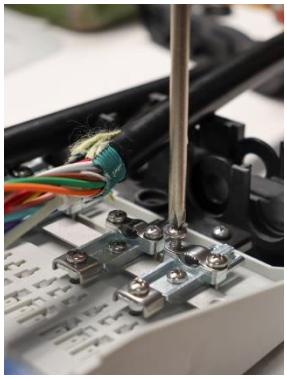
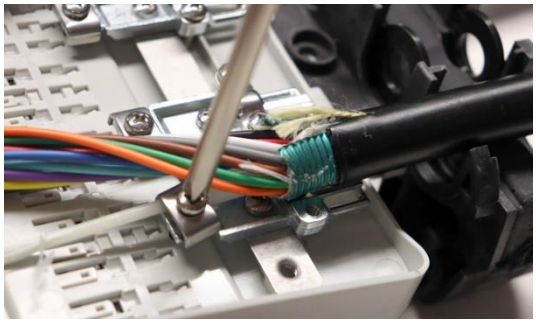

Splicing Sub-Assembly: Drop Side

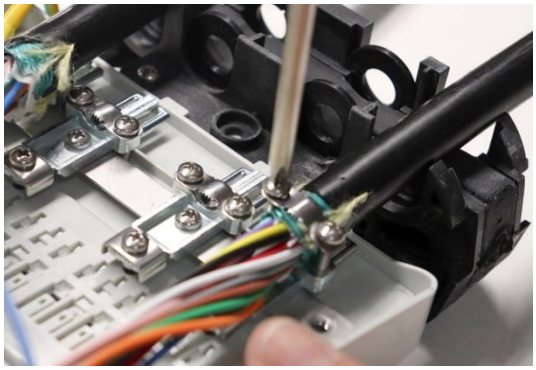
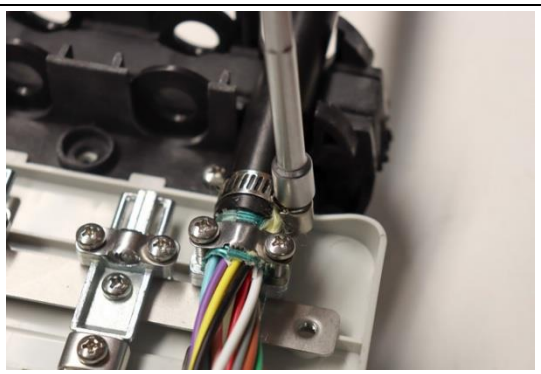
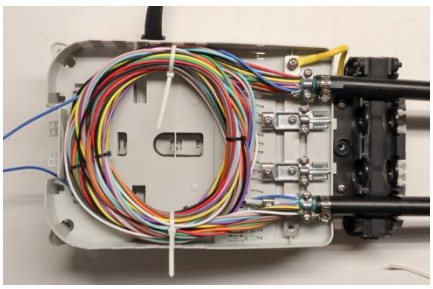


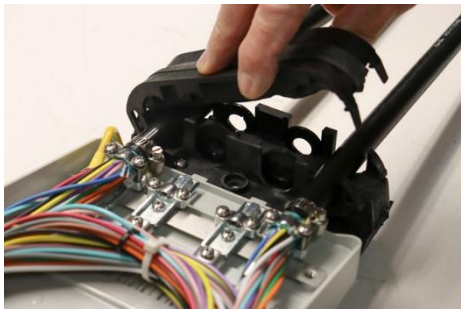
| | | |
|---|---|---|
| 3 | Open the hook-and-loop strip to access the splice trays.<br>Remove the splice tray cover for simpler access. |   |
| 4 | Open the gel block to prepare for cable installation. |  |

## 4.4 Install Feeder Cables

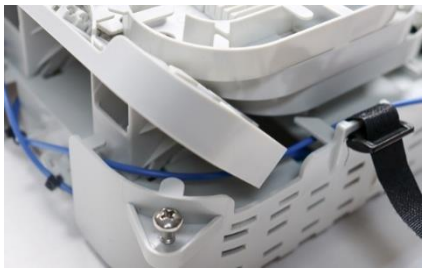
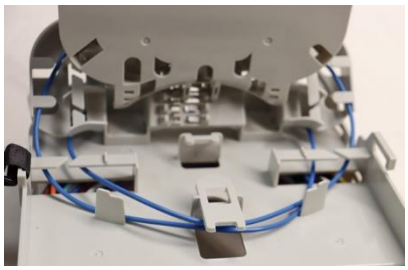
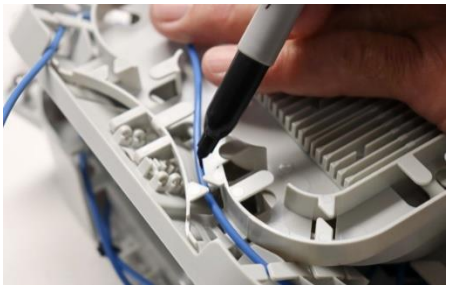
| Step Number | Instruction | |
|---|---|---|
| 1 | Prepare the cable per company practices.<br>It is recommended to unsheathe 72" to 96" of cable depending on the cable fiber count. Allow 96" for cables of fiber count 12 to 72. Unsheathe 72" for fiber counts of 96 to 144. Branch cables can be unsheathed 36" to 48".<br>A maximum of 8 feet of 12 buffer tubes can be stored in the FSDCS12P. |  |
| 2 | Utilize included spacers to help maintain shape in the gel block and secure feeder cable in feeder port.<br>1. 6-13mm OD cables use spacer marked: 10-13<br>2. 13-16mm OD cables use spacer marked: 13-16<br>3. 16-18mm OD cables use spacer marked 16-19<br>Two spacers are used per cable |   The spacer for 6-13mm cable For 13-16mm feed cable For 16-18mm feed cable |

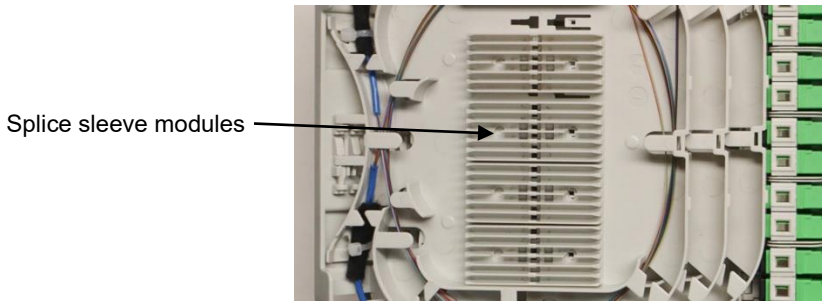
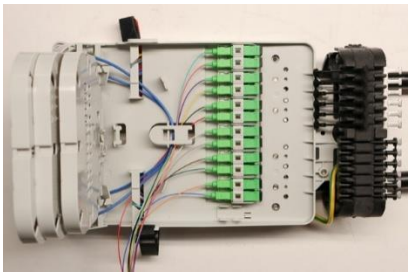
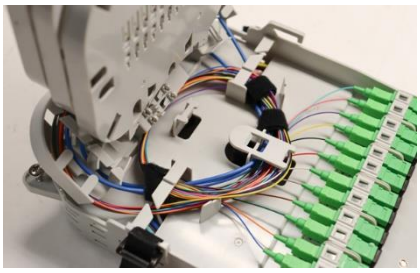
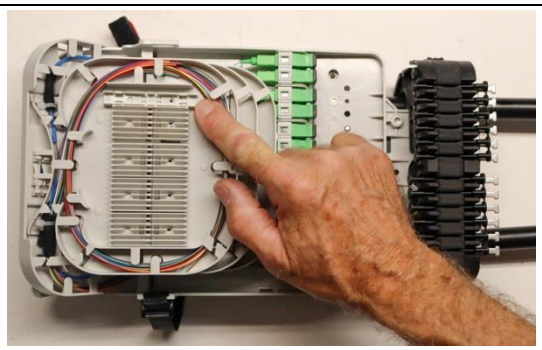
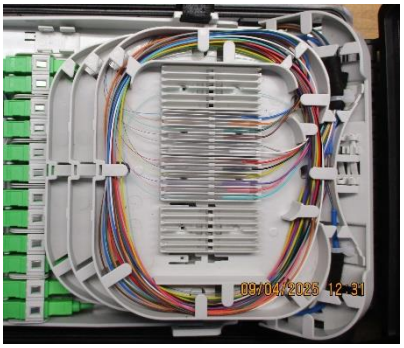
| | | |
|---|---|---|
| 3 | Cut spacer at indentation line to open it, then place two spacers around each cable. |   |
| 4 | Locate a spacer at both the front and rear of gel block. Gel will seal around the cable.<br>Place the feeder cable in one of the feeder port openings. |  |
| 5 | Remove the cable clamp and strength member clamp.<br>Mark the strength member and cut to length. |  |
| 6 | Insert the strength member under the clamp and tighten.<br>Cut and remove excess strength member. |  |

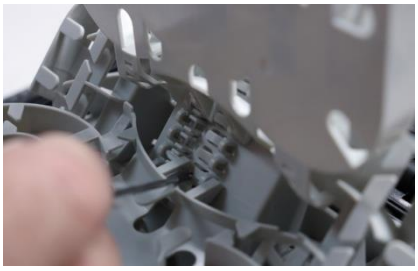
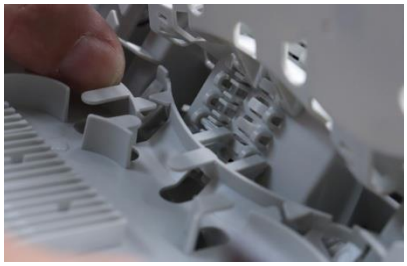
| | | |
|---|---|---|
| 7 | Secure the cable in the cable clamp and hand-tighten. |  |
| 8 | Attach a hose clamp and hand-tighten.<br><br>The hose clamp has a 6mm nut. A 1/4" nut driver can also be used.<br><br>Repeat the previous steps for the second feeder cable. |  |
| 9 | Separate fiber to be spliced from the fiber assembly. Use cable ties to secure these fibers to cable management clips. |  |
| 10 | Pre-load a cable tie on each side of the fiber storage basket to simplify cable management. Leave the cable tie open until fiber is in place.<br><br>Route fiber to be spliced into the splicing tray. Store pass-through fiber cable in the storage area.<br><br>Loop fiber cable in storage area and secure with installed cable ties. |   |

| | | |
|---|---|---|
| 11 | Re-attach the gel block. |  |

## 4.5 Route Fiber into Splice Trays

| Step Number | Instruction | |
|---|---|---|
| 1 | Using cable management tabs and channels, route fibers to be spliced into the splicing area. |   |
| 2 | Remove buffer tube to expose fibers from the tube to be spliced. Mark the location for buffer tube removal first to ensure proper removal. |  |
| 3 | Wrap felt tape around buffer tube to help protect and secure fiber in cable management channel. Add a cable tie to ensure security.<br>Store fiber that will be spliced in the tray. |   |

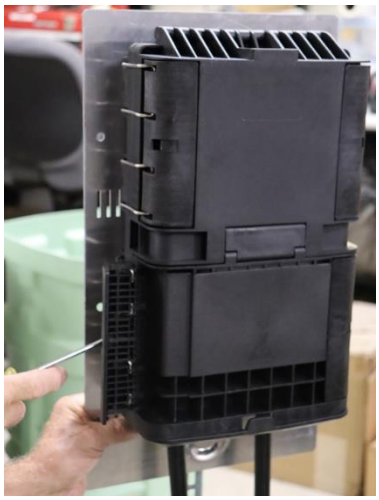
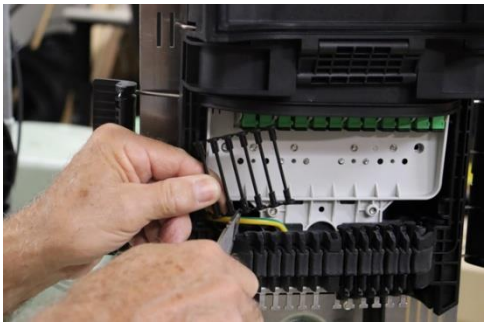
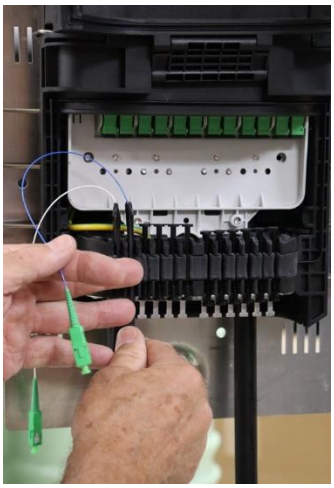
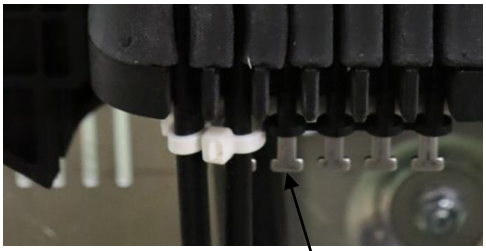
| | | |
|---|---|---|
| 4 | Each splice sleeve module holds 6 slots for a total of 12 splices (double stacked) per module.<br><br>Trays hold a maximum of 4 splice sleeve modules, for a capacity of 48 splices per tray, and a maximum of 144 splices per FSDCS12P unit. |  |
| 5 | Install fiber optic pigtails at the SC/APC adapter bulkhead.<br><br>Route pigtails to the fiber tray by looping fiber and utilizing cable management tabs. Wrap with felt tape for additional security. |   |
| 6 | Splitter module(s) may also be installed on the splice tray.<br><br>Snap the splitter module into place using dovetail tabs on the tray. |  |
| 7 | Conduct splicing operation to optical device or pigtails.<br><br>Insert splice protection sleeve(s) into slot(s) in the splice insert module.<br><br>Close tray and replace splice tray cover. |  |

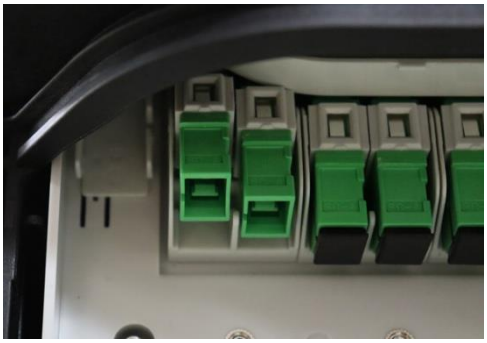
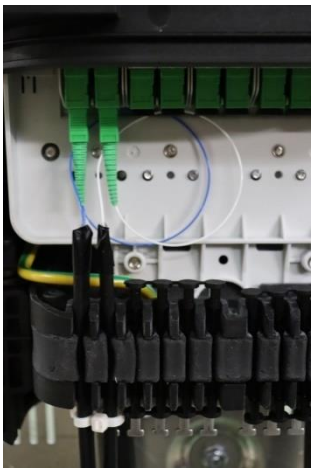
| | | |
|---|---|---|
| 8 | *For use with a Charles Optical Tap Module:*<br><br>The FSDCS12P can accommodate a Tap module by removing the bottom tray.<br><br>To remove the tray, gently press the spring clip that holds the tray in place, then slide the tray to the right.<br><br>Thread a strip of hook-and-loop through the slots in the bottom of the tray. This will secure the Tap module in place in a later step.<br><br>Connect the Tap module cables to the appropriate bulkhead adapters.<br><br>Loop and store slack fiber.<br><br>Route fibers to be spliced to the tray.<br><br>Place the Tap module between the tabs in the tray. Secure the module in place using the hook-and-loop strip. |     |

## 4.6 Re-Install Splice Assembly & Secure Closure

| Step Number | Instruction | |
|---|---|---|
| 1 | After completing all fiber splicing, return the splice assembly to the enclosure. Secure with screws. |  |
| 2 | Close the cover and use a flathead screwdriver to securely close buckles. |  |

## 4.7 Install Drop Cables

| Step Number | Instruction | |
|---|---|---|
| 1 | Drop cables are often added after the initial cable(s).<br>Open the lower cover of the unit to expose the drop cable area. If necessary, utilize the clip on top of the drop cable area door to secure the door in the open position.<br>Note: Photos show a pedestal-mounted application. |   |
| 2 | Ensure the sealing plugs are in place in the drop port area.<br>Determine where drop cable will be placed and cut/remove the plugs in this area.<br>Replace plugs in slots where drop cable will not be installed. |  |
| 3 | Place the drop cable in the appropriate slot and secure it with a cable tie, utilizing the external strain relief bar for additional security. |   Strain relief tie-down |

| | | |
|---|---|---|
| 4 | Connect drop cable to adapter. Note that adapters can be angled slightly upward to simplify connection. Loop slack fiber in drop cable storage area. |  Angle adapters for connection  |
| 5 | Close the drop cable access door. Use a small flathead screwdriver to close and secure buckles. |  |

## 4.8 Install External Ground Wire

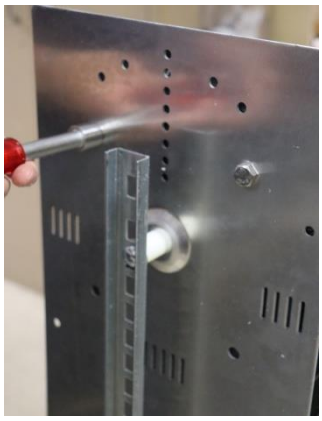
Secure a standard ground cable to the ground stud on the bottom of the closure.

# 5. MOUNTING THE CLOSURE

The FSDCS12P can be deployed below grade in a hand-hole or vault, and can be mounted in a pedestal, on a wall or pole, or on an aerial strand.

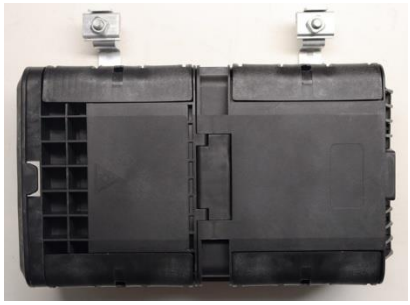
## 5.1 Mounting in a Pedestal

Bolt the FSDCS12P into a Charles pedestal configured with the universal terminal backboard (pedestal option 012).
A Charles B06 pedestal is shown below.

| Step Number | Instruction | |
|---|---|---|
| 1 | Align the closure with bolt holes on mounting stake/plate. |   |
| 2 | Secure the closure in place. | |

## 5.2 Aerial Strand Mounting

For aerial strand mounting, use aerial mounting kit 97-FSDCMAMKT. The kit includes two adjustable aerial strand brackets.

| Step Number | Instruction | |
|---|---|---|
| 1 | Align and bolt the brackets to the back of the closure. |   |
| 2 | Open the bracket clamps, hang on the aerial strand and tighten. | |

## 5.3 Pole Mounting

For pole mounting, follow standard practices and utilize the following FSDC pole mount kits: 97-FSDCPLKTA for use with pole bands or 97-FSDCPLKTB for use with lag bolts.

## 5.4 Mounting in a Handhole or Vault

Generally, the FSDCS12P is simply placed in the handhole or vault without any special mounting hardware.

## 6. TECHNICAL ASSISTANCE

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

## 7. STANDARD PART NUMBERS

| Part Number | Description | Standard pack |
|---|---|---|
| FSDCS12P12SXX | 12 SC/APC adapters, 144-splice capacity, 24 splice sleeves | 6 |
| FSDCS12P12SPG | 12 SC/APC adapters, 144-splice capacity, 12-way pigtails, 24 splice sleeves | 6 |
| FSDCS12PSA108A | 12 SC/APC adapters, 144-splice capacity, 1x8 splitter installed, 24 splice sleeves | 6 |
| 97-FSDCMAMKT | Aerial brackets for FSDCS, FSDCM, and FDRC4 | 10 |
| 97-FSDCPLKTA | FSDC Pole-mount kit with brackets and hose clamp pole band | 10 |
| 97-FSDCPLKTB | FSDC Pole-mount kit for lag bolts with extended bottom bracket (lag bolts not included) | 10 |
| B04SS07-21012BK | B04 Series 12" x 12" x 28" vertical stake-mounted pedestal with backboard for mounting FSDC closures | 24 |
| B06SS07-20012BK | B06 Series 12" x 12" x 30" Vertical buried base pedestal with backboard for mounting FSDC closures | 12 |

Charles Industries reserves the right to modify part numbers at any time without notice. Please contact Charles Industries, LLC to validate current ordering numbers.