CFIT-Flex™ Compact Universal Enclosure
General Description and Installation

Figure 1 Compact CFIT-Flex™ Enclosure

1. GENERAL INTRODUCTION

1.1. Document Purpose

This document provides general information for the Charles Industries' CFIT-Flex™ enclosures.

1.2. Product Purpose

The CFIT- Flex™ line of flexible, compact indoor/outdoor non-metallic enclosures accommodate a wide variety of fiber applications, including fiber demarcation/distribution, hub applications (PON), fiber splice storage, hybrid power protection and fiber and media converter equipment for cell sites, multi-dwelling units (MDUs), Fiber-to-the-Antenna (FTTA), Fiber-to-the-Business (FTTB), campuses, malls, etc. The flexible splicing area and bulkhead design allow for splicing or termination of various fiber types and connectors, and can accommodate multiple mounting methods, cable types and applications.

1.3. Product Mounting and Location

The CFIT-Flex™ enclosures can be mounted on a wall or pole. There are two pole/wall-mount tabs at the top and bottom of the enclosures. Four "drill through" holes, two at the top and two at the bottom, on the inside of the enclosure accommodate pole-mount kits, wall-mount accessories, etc. If the CFIT was purchased with no port plates installed, then order and install the Charles port plates during the CFIT mounting procedure. See the CFIT datasheet for a list of the port plate part numbers.

2. PRODUCT DESCRIPTION

The CFIT- Flex™ is a compact enclosure (15"H x 12"W x 5"D) that accommodates up to 24 fiber ports. Features include:

- Interchangeable, removable bottom "feed and drop" cable port plates with variable entry grommets maximize in/out flexibility while maintaining environmental protection integrity
- Accepts a variety of cable sizes and types
- 6, 12, or 24 SC fiber ports with configurable options for distribution.
- Accommodates various adapter types: SC, LC, and MPO
- Top knockouts for indoor use
- Hinged snap-pin locations to mount a partition/security door or swinging bulkhead
- Optional swinging 24-port fiber bulkhead allows easy access to feed and drop fibers and provides bend radius control and strain relief.
- Efficient internal cable management and routing with multiple tie-down locations.
- Loop-through or express capability
- Universal backplane provides ultimate flexibility to accommodate a broad range of applications. Single-snap door post for ease of opening/closing the enclosure
- Backplane accommodates up to three small hinged splice trays and cable attachments for fiber splicing.
- 216-tool lockable door with a padlock hasp for enhanced security
- Molded-in mounting brackets for pole or wall mount
- External ground for single or dual-lug grounding

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 industry standard procedures to pick up and store cut glass fibers in appropriate 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.

Do not damage any buried cables or service wires when digging to expose cables or to prepare a hole or trench, or when driving stakes.

Buffer tubes and fibers are sensitive to excessive bending, pulling, and crushing forces. To avoid kinking the buffer tubes and fiber damage or breakage, exercise great care when working with fiber, and do not exceed/violate minimum bend radius requirements for fibers, buffer tubes, and cables.

Risk of injury! Always point, push, or press away from your body when stripping, cutting, shaving or scoring cables and tubing.

— CAUTION —

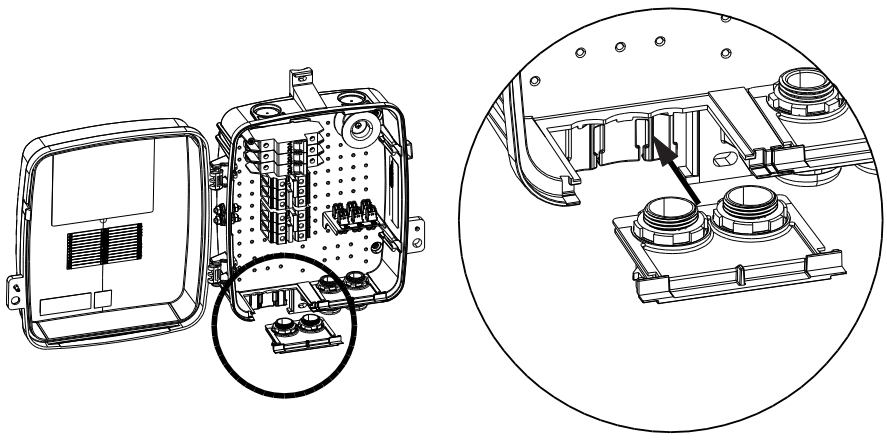
Perform all bonding and grounding prior to making any electrical and communications connections.

4. INSTALLATION

Section 1 Tools and Equipment Required

- 216-tool/can wrench
- Hose clamps (2 provided)
- Level
- Double-sided Velcro tape
- Grounding equipment and tools
- Included hardware
- Knife or snips (to cut grommets)
- Tape measure
- Cable bond clamps (optional)
- Marker pen
- Wall-mounting or pole-mounting hardware
- Safety glasses & work gloves

If the CFIT was ordered with no port plates installed, then install the port plates (purchased separately) prior to mounting the CFIT. Slide the port plate into the opening on the bottom of the CFIT as shown.



Section 2 Preparing and Opening the Enclosure

1. Inspect the enclosure thoroughly upon delivery. If any damage to the equipment has occurred, immediately notify the transportation company.
2. Using a 216-tool or can wrench, turn the two bolts counterclockwise (CCW) to open the door. If the bulkhead is installed, use the can wrench to open the bulkhead.

Figure 1
Opening Outer Door

Figure 2
Opening Bulkhead

3. (Optional) In indoor applications, before mounting the enclosure, drill and remove appropriate top cable entrance ports for cable access.

Figure 3 (Indoor Only)
Removing Top Cable Entrance Ports

Section 3 Mounting and Grounding the Enclosure

1. Mount the enclosure per company practice. The mounting hardware and surface must support the weight of the enclosure and all contents. CFIT-Flex™ mounting tabs are designed for wall or pole-mount applications.
   - When mounting to a wall, hold the enclosure into the mounting position on the wall and install the mounting hardware through the mounting tabs and/or optional drill-through holes.
   - When mounting to a pole, use 1/2" band straps and/or bolts to attach the enclosure to the pole.

Figure 4
Wall-mount Tab

Figure 5
Drill-through Hole

Figure 6
CFIT-Flex Mounted to a Pole

2. The CFIT-Flex™ can accommodate a single or dual ground stud(s). If one is not present at the enclosure site and it is required, prepare it.

   Always perform grounding prior to cable attachment.

NOTE: Installation of the ground stud first requires drilling through the ground stud holes.

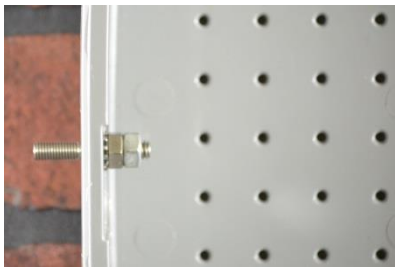


Figure 7
Single Ground Stud

Figure 8
Dual Ground Studs

Section 4 Installing the Feed Cable

1. Attach the cable bracket to the backplane of the enclosure.
2. Remove the cable sheathing from the stub to expose the fiber, leaving enough sheathing so that the hose clamp can secure the cable to the cable bracket.
3. Prepare the port plate for cable installation. Route the feed cable through the port plate. Verify that approximately 6 feet of cable, measured from the cable port, is available. This length accommodates the minimum required for splicing operations.
4. Hold the cable against the bracket and make a cut line on the sheathing midway up the bracket. To provide slack, push the cable into the duct when marking the sheathing.
5. Remove the cable sheath from the cut line to the cable end, exposing the central core tube and strength members or loose tubes and central strength member. Trim the cable strength member(s) approximately 4" longer than the cable sheath cut.
6. Trim the strength members to fit beneath the strength member clamp. Leave enough sheathing so that the hose clamp can secure the cable to the cable bracket.

Figure 9
Attaching Cable Bracket to Backplane

Figure 10
Routing Feed Cable Through Port Plate

Figure 11
Securing the Strength Member to Cable Bracket

7. (Optional) Port plates can be removed and are interchangeable with other available port plates. To remove the port plate, press in on the hooked tabs on each side of the port plate and slide it out.

Figure 12
Pressing on Tabs to Remove Port Plate

8. Attach an approved cable bond clamp to the cable shield at the sheath cut. Follow manufacturer's instructions or company practice when attaching cable bond clamp.
9. Secure the cable to the cable bracket with a hose clamp.

Figure 13
Cable Bond Clamp Attached

Figure 14
Attaching Hose Clamp

10. Route the buffer tubes on the left side of the fiber storage basket and into the top of the basket, securing them with a cable tie to the inside of the basket. Typically, two loops of buffer tube slack are stored.
11. For ribbon, insert the ribbon fiber end into a transportation tube. As the ribbon fiber is pushed through the transportation tube, slide the tube so that it butts up to the central core tube. Secure the transportation tube to the basket using two cable ties.

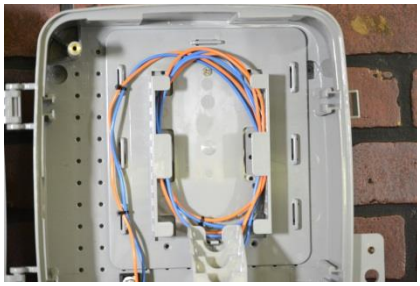


Figure 15
Routing Buffer Tubes

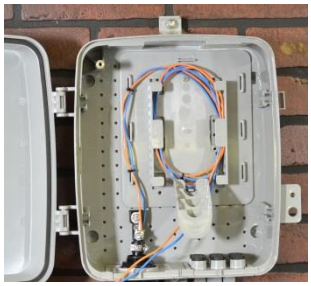


Figure 16
Complete Buffer Tube Routing

12. Remove the splice tray cover and install two cable ties at the left rear corner of the tray using the tie-down slots. Repeat the process for the right rear corner.

Figure 17
Installing Cable Ties in Left Corner of Splice Tray

Figure 18
Installing Cable Ties in Right Corner of Splice Tray

13. Position the tube so that it overlaps 1" past the edge of the tray and mark the tube to remove any excess length. Ring cut the tube at the mark and remove the excess, leaving approximately 26" of fiber in the splice tray.

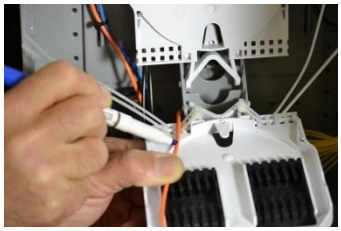


Figure 19
Marking Tube

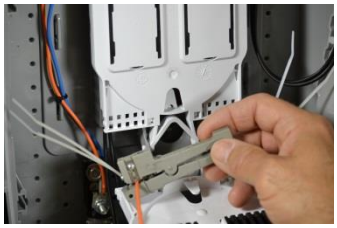


Figure 20
Cutting Tube

14. With the cut tube overlapping the tray corner about 1", secure the tube to the tray using the two cable ties at the corner.
15. Label the tubes per company practice.

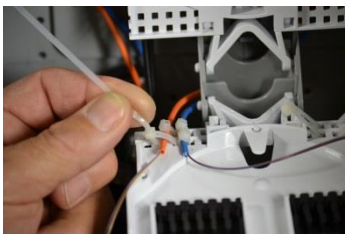


Figure 21
Securing Tube to Tray

16. Per company practice, wrap and store the fibers in the splice tray for splicing at a later time, then attach the tray cover to protect the fibers.

Figure 22
Fibers Stored in Splice Tray

Figure 23
Attaching Tray Cover

17. (Optional) To remove splice trays, ensure sufficient cable slack is available. Lift the hinge tabs and remove the tray/hinge assembly.

Figure 24
Removing Splice Tray

18. To reinstall the splice tray, orient the splice tray so the cover/top side faces up and the straight end faces the rear of the enclosure. Attach the tray to the bracket by aligning the hinge tabs with the holes into the bracket and snapping it into place.

Figure 25
Attaching Trays to Bracket

Figure 26
Installed Trays

19. Swing the splice tray to the closed position and secure the tray using the Velcro strap.

Figure 27
Splice in Closed Position

20. For splice only products with greater than 3 splice trays use the provided Velcro to bundle the sub units as shown. This bundling helps keep the buffer tubes out of the way when closing the door, preventing kinking or breakage.

Figure 28
Splice in Closed Position

Section 5. Installing the Fanout Assembly

Overview – when fanouts are used in conjunction with a cable stub, they extend from the assigned bulkhead adapter panel locations to the splice tray. The jacketed fibers transition to a buffer tube that contains the fibers to be spliced.

1. (Optional) To facilitate the installation of the fanout assembly, the bulkhead door can be removed. To remove bulkhead, push in and release the snap hinges.
2. Splice trays can be removed prior to routing the buffer tubes (refer to Section 4, steps 17 and 18).

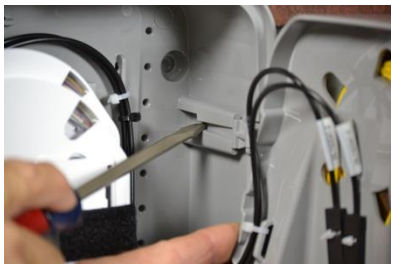


Figure 29
Releasing Snap Hinges

3. Attach two fanouts to the designated locations on the feed side of the bulkhead using provided cable ties. The fanouts are oriented so that the buffer tube is on the top and the 900 micron fibers are on the bottom (refer to Figure 29).

Figure 30
Attaching Fanout to Bulkhead

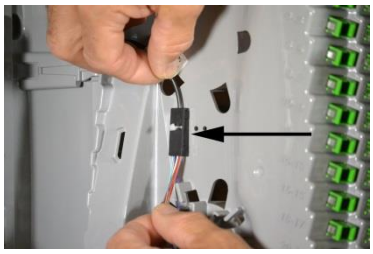


Figure 30
Fanout Attached to Bulkhead

4. The 900 micron fibers are routed through the built-in bend controls. Following standard color code, continue routing all 900 micron fibers to their corresponding bulkhead locations.
5. Route the 3 mm buffer tube to the splice basket, where typically one loop of buffer tube slack is stored. Secure the tube at the cable tie-down locations before routing it into the storage basket.

Figure 31
Routing Fibers Through Bend Control

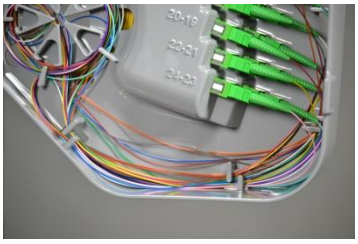


Figure 32
Routing Fibers to Bulkhead Locations

Figure 33
Routing Fibers to Splice Basket

6. Attach the snap hinges onto the bulkhead pins.
7. Insert snap hinge into base slots until they snap into place.

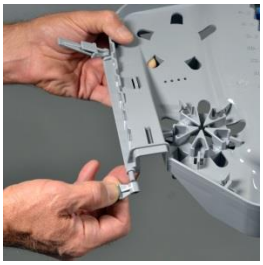


Figure 34
Attaching Snap Hinges onto Bulkhead Pins

Figure 35
Inserting Snap Hinges into Base Slots

8. Route the fanout buffer tubes inside the basket with one loop and then under the hinge (where the splice tray is attached to the bracket beneath the basket).

Figure 36
Routing Fanout Tube

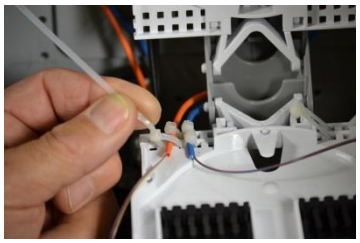


Figure 37
Securing Fanout Tube

9. Position the tube so that it overlaps 1" past the edge of the tray. Mark and ring cut the tube and remove any excess tube, leaving approximately 26" of fiber in the splice tray.
10. Overlap the tube and secure it to the tray using two cable ties at the corner. If splicing is not done at this time, wrap and store the fiber in the tray.
11. Install the tray cover and secure the tray to the basket using Velcro straps.

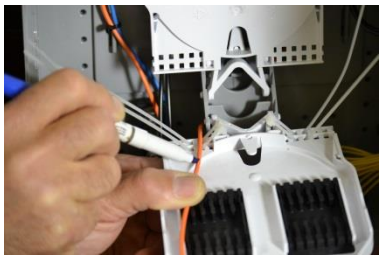


Figure 38
Marking Tube

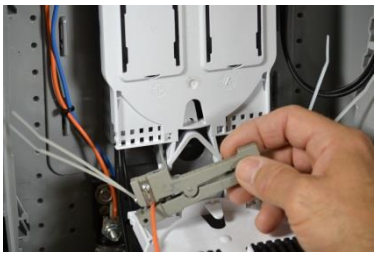


Figure 39
Cutting Tube

NOTE: If splicing is to be completed at this time, splice the assigned fibers and store them in the tray per company practice. Use the provided label to note spliced fibers and reattach the tray cover. Secure the tray to the basket using Velcro straps.

Section 6. Installing Preconnectorized Distribution Cables

1. Remove grommets from the enclosure port plate where drop cable access is required.
2. Cut the grommet(s) for buffer tube installation.
3. Insert the buffer tube into the grommet.
4. Install grommet with buffer tube into port plate.

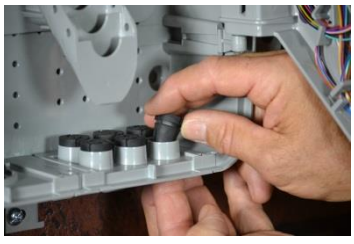


Figure 40
Removing Grommet from Enclosure Plate

Figure 41
Cutting Grommet

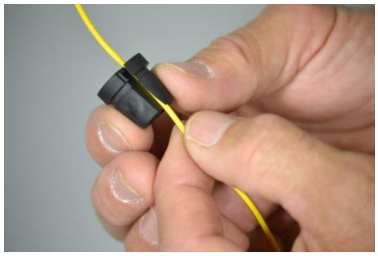


Figure 42
Inserting Buffer Tube into Grommet

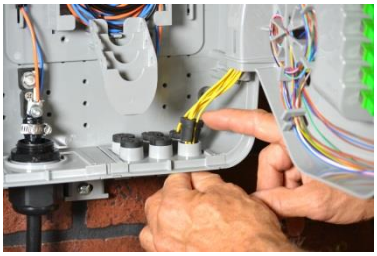


Figure 43
Installing Grommet with Buffer Tube into Port Plate

5. Route the drops around bend controls prior to installing connectors in the bulkhead.
6. Use the door label per company practice to document which distribution customers are connected.

Figure 44
Drops Routed Around Bend Controls

Section 7. Specifications

Model	Feature	U.S.	Metric
CFIT-Flex™	Height (panel only)	15 in.	38 cm
	Depth, base (front to back)	5.5 in.	14 cm
	Width	12 in.	30.5 cm
	Weight	4 lbs.	1.8 Kg
	Construction	Rugged UL94-5VA Gray Polycarbonate	
	Supported Fiber Connector Types	SC, LC or MPO	
	Compliance	Designed to meet GR-950, GR2898, NEMA 4, IP66	
	Splicing Capacity	Up to three 4”x6” hinged splice trays on feed fiber side.	
	Bulkhead Capacity	24 SC Adapters	

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. WARRANTY & CUSTOMER SERVICE

Charles Industries LLC offers a one-year warranty on the CUBE product. The Charles warranty is limited to the operation of the CUBE hardware as described in this documentation and does not cover equipment which may be integrated by a third party. The terms and conditions applicable to any specific sale of product shall be defined in the resulting sales contract. For questions on warranty or other customer service assistance, contact your Charles Customer Service Representative.

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http://www.charlesindustries.com/main/telecom_sales_support.htm