

# FieldShield D-ROP

*Installation Manual*

---

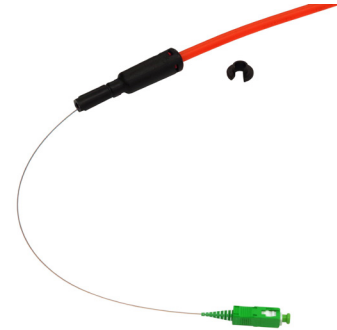


## Table of Contents

Application.....	3
Description.....	3
Accessories.....	3
Technical Specifications.....	4
Packaging.....	5
Required Tools.....	5
Installing into YOURx-Terminal.....	6
Installing into YOURx-TAP.....	8
Reducing Duct Length.....	9
Connector Cleaning Procedure.....	12
Drop Cable Options.....	15
Standard Warranty.....	16
Proprietary Notice.....	17
Technical Support.....	17

### Application

Building upon the restoration promise of FieldShield Pushable Fiber, FieldShield D-ROP is a preconnectorized drop cable delivered to market pre-placed in a 7mm microduct. The FlexConnector snaps into the FlexPort providing an air-tight, water-tight connection between the YOURx-TAP and YOURx-Terminal. Installed by the contractor as a single-pass deployment, FieldShield D-ROP also provides ease of restoration. In the event of a future fiber cut, a field technician easily identifies the cut area, and utilizes a simple coupler and a FieldShield Fiber Assembly to restore service.



### Description

D-ROP cable presents the same footprint as a flat drop cable with the added advantage of being restorable. Just like traditional FieldShield microduct and fiber, fiber cuts are located, repaired and a new fiber assembly is pulled from point A to B with a pre-terminated LC assembly. In the event that an LC is not used, blunt fiber is pulled and completed with a fuse-on connector minimizing costs and time to restore the service outage. The FlexConnector is plugged directly into the FieldShield YOURx-Terminal or YOURx-TAP FlexPort, providing a completely protected pathway from the access point directly to the premise, business or antenna with the option for restoration after accidental fiber cut. D-ROP does not have the slack storage challenges that a flat drop presents because the duct slack can be peeled or removed leaving only the 900um pre-terminated/tested fiber assembly.

### Accessories

Part Number	Description
FS-DUCT-OPENER	Microduct Opener, D-ROP



# FieldShield D-ROP

## Installation Manual



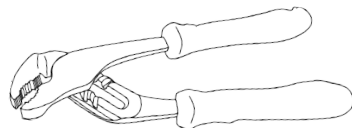
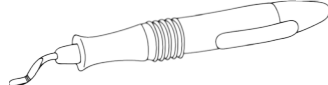
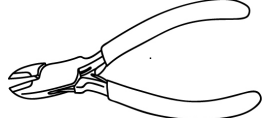
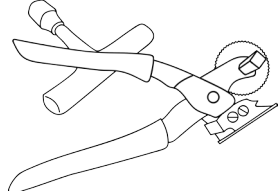
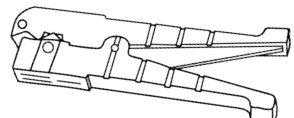
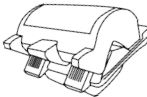
### Technical Specifications

FieldShield D-ROP	
Length	Up to 2000 foot spool (-0/+5%)
Outside Diameter	0.276" (7mm)
Inside Diameter	0.138" (3.5mm)
Wall Thickness	0.069" (1.75mm)
Ovality	≤ 5%
Material	HDPE
Installed Fiber	900 μm singlemode bend insensitive fiber
Connector Style	SC or LC
Operating Temperature	-40°F to 176°F (-40°C to 80°C)
Color	Orange or Black
Tone Wire	Copper
Markings	Part number, lot number, footage markers every two feet
Breakout Length	12 Inches
Min. Bend Radius	4.75" (120)

### Packaging



### Required Tools

Find No.	Tool	Image
001	Pliers	
002	Deburring Tool	
003	Wire Snips	
004	Duct Opener	
005	Rotary Cutter	 

### Installing into YOURx-Terminal

#### Preparing Terminal

##### Step 1: Bury Duct

Bury cable according to best practices for chosen drop method (Figure 1).

**NOTE:** Do not remove protective covering until duct has been buried.



Figure 1

##### Step 2: Remove Flex Port Tab

Use a pair of pliers to snap off tab of selected Flex Port (Figure 2).

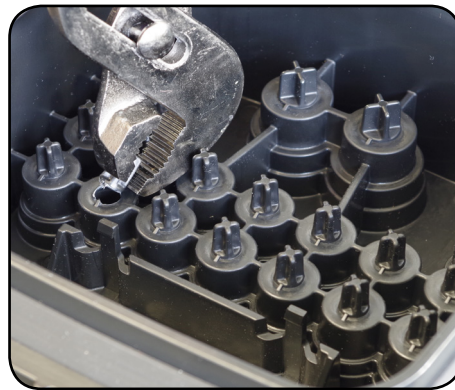


Figure 2

##### Step 3: Ream Port

Use appropriate tool (we recommend deburring tool) to ream and chamfer edges of port (Figure 3).



Figure 3

#### Seating X-Connector

##### Step 1: Feed Through Flex Port

Guide preconnectorized fiber (unassembled) into YOURx-Terminal through Flex Port (Figure 1).



Figure 1

##### Step 2: Seat FlexConnector

Once fiber is through, seat FlexConnector into FlexPort (Figure 2)



Figure 2

### Assemble Connector Housing

#### Step 1: Align Connector Housing

Align housing keyway with dot and push on outer housing (Figure 1).

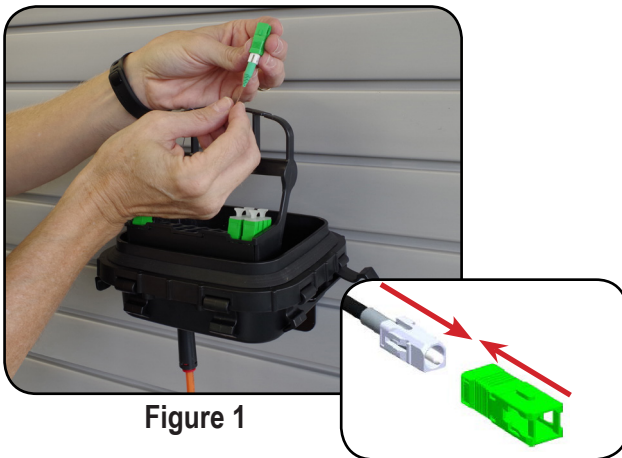


Figure 1

#### Step 2: Assemble Housing

Push outer housing until it clicks into place (Figure 2).



Figure 2

### Connect Fiber to Flex Cartridge

#### Step 1: Seat Connector into FlexCartridge

Connect Fiber to selected port in the FlexCartridge (Figure 1 & Figure 2).



Figure 1



Figure 2

### Installing into YOURx-TAP

#### Step 1: Feed through Port

Guide unassembled preconnectorized fiber into YOURx-TAP FlexPort. (Figure 1).



Figure 1

#### Step 2: Seat FlexConnector

Once fiber is through, seat Flex Connector into FlexPort. (Figure 2)



Figure 2

#### Step 3: Assemble SC Connector

Once FlexConnector is seated into FlexPort, assemble SC Connector Housing. (Figure 3).



Figure 3



When entering the YOURx-TAP **DO NOT** assemble SC Connector Outer Housing until fiber has been passed through the port. Fully connectorized fiber will not pass through port.



### Reducing Duct Length

#### Step 1:

Snip zip tie and remove the protective shipping corrugate (**Figure 1**).

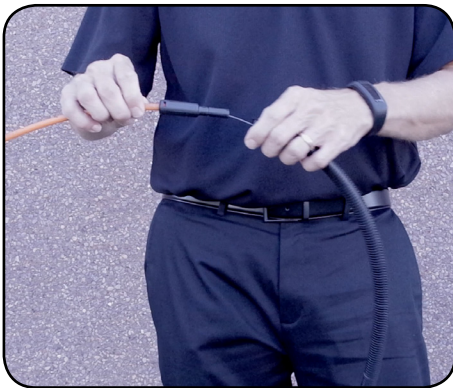


Figure 1

#### Step 2:

Working in 6 foot sections or less, determine desired length and mark duct (**Figure 2**).



Figure 2

#### Step 3:

Use rotary cutter to score duct (**Figure 3**).



Figure 3

#### Step 4:

Bend duct at scoring to break free (**Figure 4**).

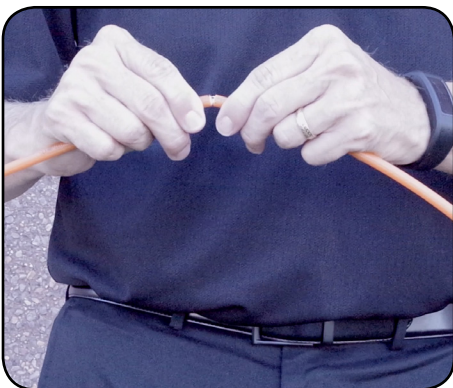


Figure 4

#### Step 5:

Use wire cutters to cut strength members, taking care not to sever fiber (**Figure 5**).



Figure 5

#### Step 6:

Remove FLEX connector by pressing the attached removal tool into the base of the connector (**Figure 6**).



Figure 6

### Step 7:

Remove fiber retainer rubber stop from the end of the duct (Figure 7).

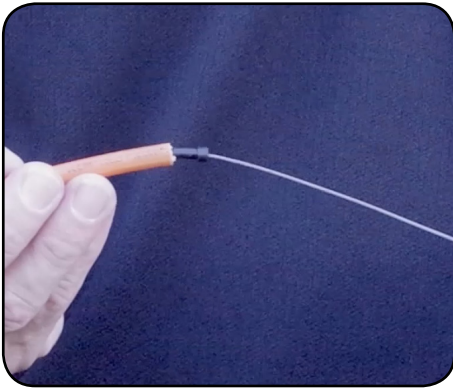


Figure 7

### Step 8:

Insert tool blade into duct (Figure 8).



Figure 8

### Step 9:

Squeeze handle to engage traction gear. (Figure 9)



Figure 9

### Step 10:

Ensure fiber is outside of mechanism (Figure 10).



Figure 10

### Step 11:

Turn handle to split duct and allow fiber to fall out. *(Cut support member if it interferes with opener's path.)* (Figure 11).



Figure 11

### Step 12:

To finalize the last 1/4 inch of the split, pull duct across blade by hand (Figure 12).



Figure 12

### Step 13:

Slide fiber retainer rubber stop along fiber and seat into new duct end (Figure 13).

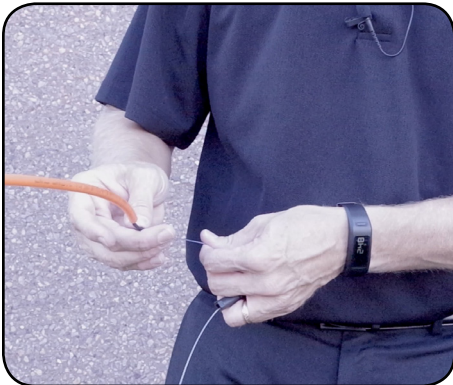


Figure 13

### Step 14:

Slide FLEX connector along fiber and seat onto new duct end (Figure 14).

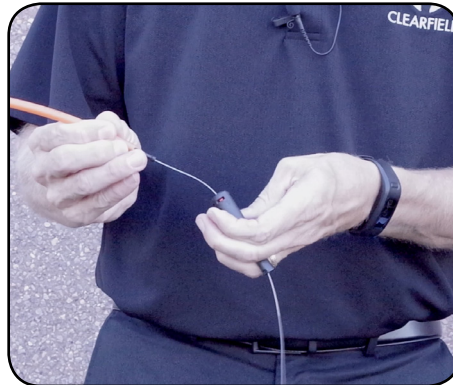


Figure 14

### Step 15:

The SC connector is now ready to pass through a FLEX port and have the outer housing assembled (Figure 15).

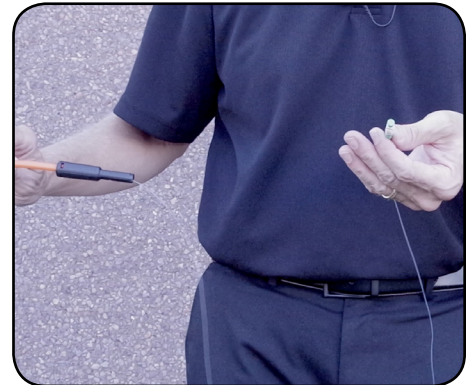


Figure 15

### Step 16:

For longer splits (up to 10 feet) a hand drill on a low gear setting may be used in place of the hand crank (Figure 16).



Figure 16

### Connector Cleaning Procedure

Whether factory terminated or field spliced, clean connectors are essential for proper system operation. Even the smallest dust particle can cause transmission problems, so for optimal network performance, inspect and if necessary, clean all connectors and adapters prior to mating.

#### I.B.Y.C...Inspect Before You Connect!

ALWAYS inspect the connector first thing with a clean fiber scope inspect the pair. Three types of contamination require different cleaning techniques. The use of Chemtronics end face and bulkhead cleaning products and techniques ensures a clean end face, no matter the type of contamination.

These are Clearfield recommended products/application. Use the product you feel will complete your cleaning procedures. Create a “best practice” for your company and follow those procedures.

**\*\*NOTE: It is NOT recommended to use IPA to clean the end-face.**

#### Cleaning the end-face...but not just the end-face

- Place one wiping paper on QbE-2 FiberSafe™ Cleaning Platen. **Figure 1**
- Apply small amount of precision cleaner (about 1” in diameter) with Electro-Wash MX pen on to one end of the wipe. **Figure 2**
- Hold end face 90 degree. Adjust for APC connection by slightly tilting the container or end face. Angle is correct when no drag is left on the end face. **Figure 3**
- Draw end face from wet to dry part of the wipe 3 times. Use just enough pressure to ensure complete contact between end face and the wipe.

**DO NOT** retrace previous step.



**Figure 1**



**Figure 2**



**Figure 3**

- **CLEAN THE FERRULE...**Lightly moisten the fiber optic swab (2.5mm/38542F or 1.25mm/38040) by spotting a small amount (about 1”) of Electro-Wash PX or Electro-Wash MX pen onto the QBE-2. Hold the swab, 1 side down to the wetted area and hold for a count of 1-2-3-4-5.

**Figure 4**

- Insert swab into side of ferrule, wet side to the ceramic ferrule and circle around 2-3 times and remove. Turn swab to dry side and repeat.

**Figure 5**

### Cleaning the mate through a bulkhead adapter AND the adapter itself!

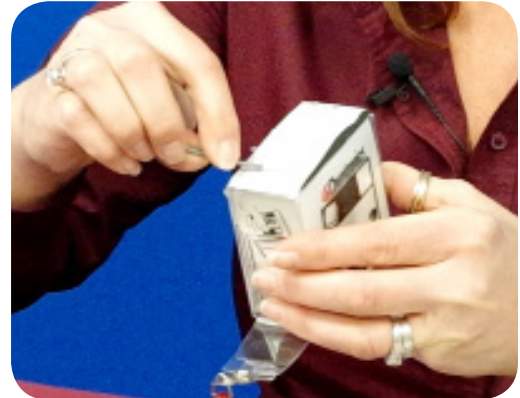
- Lightly moisten the fiber optic swab(2.5mm/38542F or 1.25mm/38040) by spotting a small amount (about 1”) of Electro-Wash PX or Electro-Wash MX pen onto the QBE-2. Hold the tip of the swab onto the wetted area and hold for a count of 1-2-3-4-5.

- Insert the swab into the adapter to the connector, press lightly against the connector, twist 2-3 times, remove and discard.

- Dry with a second dry swab.

- Inspect (re-clean if necessary) and test for signal strength.

- Use additional swabs to clean inside the actual adapter. Moisten swab, like above, insert through hole and remove while twisting. **Figure 6**



**Figure 4**



**Figure 5**



**Figure 6**

### Cleaning an MPO/MTP Connector

#### Female Connector

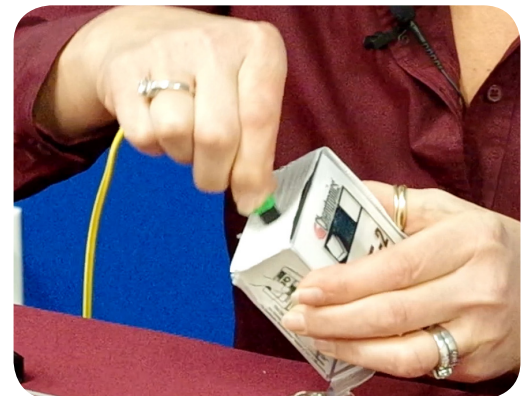
- Place one wiping paper on QbE-2 FiberSafe™ Cleaning Platen and apply small amount of precision cleaner (about 1" in diameter) with Electro-Wash MX pen on to one end of the wipe. **Figure 1**
- Hold end face 90 degree. Adjust for APC connection by slightly tilting the container or end face. Angle is correct when no drag is left on the end face. **Figure 2**



**Figure 1**

#### Male Connector

- Lightly moisten the fiber optic swab (CC505F) like above, moistening 1 side.
- Place swab, wet side down at one end of connector end-face and draw across in a diagonal sweep (ie: from fiber 1 up and across to fiber 12). Turn swab over to dry and draw back from fiber 12 to fiber 1. **Figure 3**








**Figure 2**



**Figure 3**

BEFORE cleaning any connector...be sure you know what type of contaminate you are cleaning...dry? Fluidic?...All the available products are good, it's the process that you need to be aware of. Using a dry cleaning method to clean "dirt" can lead to scratching of the end-face. Learn the process of cleaning properly!

### Drop Cable Options

Product Name	Cable Jacket	UV	Temperature	FieldShield Connector	Jacket Color	Can be stapled	Best Application
FieldShield FLATdrop 	Outdoor	Yes	-40° to 176°F	No	Black	Yes	For use when fast installation and low up-front cost is most desired feature.
FieldShield D-ROP 	Outdoor	Yes	-40° to 176°F	Yes	Black/ Orange	Yes	For use when a single pass and restorable solution at a competitive price is ideal.
FieldShield FLEXdrop 	Indoor (Plenum Rated)/ Outdoor	Yes	-40° to 176°F	Yes	Black/ White	Yes	For use when a premium product that has maximum workability, flexibility and restorability is desired.
FieldShield (Classic) 	Outdoor in Duct	Yes in Duct	-40° to 176°F	Yes	Black	Yes	For use when the distance from the access point to the SFU/MDU is longer than normal and a more rigid solution is required to maintain restorability for drops longer than 300 feet.
FieldShield StrongFiber 	Indoor/ Outdoor in Duct	Yes in Duct	-40° to 176°F	Yes	Black	Yes in Duct	For use when a reusable pathway is needed and maximum slack storage is desirable.

### Standard Warranty

Clearfield warrants to the original purchaser of the Product sold hereunder is free from defects in material and workmanship under normal use and service, subject to exceptions stated herein. Product purchased is warranted as follows: Clearfield designed and branded Products are warranted for five (5) years: Products manufactured by Clearfield to customer prints and/or specifications are warranted for one (1) year; and any Product Clearfield acquires from or through a third-party manufacturer or distributor and resells to Customer as the original customer will carry the manufacturer's pass-through warranty, if any. In all cases, the warranty period commences on the date of shipment to the original purchaser.

### Warranty Claim Procedure

If any Product purchased from Clearfield is found defective under the above warranty, the following basic procedure must be followed:

1. Customer must contact Clearfield and obtain a Return Materials Authorization
2. Following authorization, the Customer ships the product-freight collect-to Clearfield's manufacturing facility
3. Clearfield shall repair or replace the defective Product at its sole option and discretion, and return the repaired or replacement Product to Customer's site, freight prepaid

Note: If the Product is not found to be defective at Clearfield, the product will be returned to the Customer and the customer billed for freight in both directions.

### Limitations of Warranty

Correction of defects by repair or replacement, at the option of Clearfield Inc, shall constitute the exclusive sole remedy for a breach of this limited warranty. Clearfield shall not be liable under any circumstances for any special, consequential, incidental, punitive, or exemplary damages arising out of or in any way connected with the product or with agreement to sell product to buyer, including, but not limited to damages for lost profits, loss of use, or for any damages or sums paid by buyer to third parties. The foregoing limitation of liability shall apply whether the claim is based upon principles of contract, warranty, negligence or other tort, breach of statutory duty, principles of indemnity or contribution, the failure of any limited or exclusive remedy to achieve its essential purpose, or otherwise.

Clearfield will not be responsible for any labor or materials costs associated with installation or incorporation of Clearfield products at customer sites, including any costs of alteration, replacement or defective product, or any field repairs.

### Other Limitations

1. Clearfield assumes no warranty liability regarding defects caused by:
2. Customer's modification of Product, excepting installation activities described in Clearfield documentation
3. Customer re-packaging of Product for shipment to third parties or destinations other than those originally shipped to by Clearfield, or any defects suffered during shipping where the Product has been re-packaged
4. Customer's installation or maintenance, excepting activities described in and performed in accordance with Clearfield documentation
5. Customer's improper or negligent use or application of Product
6. Other causes external to the Product, including but not limited to accidents, catastrophe, acts of God, government action, war, riot, strikes, civil commotion, sovereign conduct, or the acts or conduct of any person or persons not party to or associated with Clearfield





### Proprietary Notice

#### About FieldShield Product Line Application

Information contained in this document is copyrighted by Clearfield, Inc. and may not be duplicated in full or part by any person without prior written approval of Clearfield, Inc.

Its purpose is to provide the user with adequately detailed documentation to efficiently install the equipment supplied. Every effort has been made to keep the information contained in this document current and accurate as of the date of publication or revision.

However, no guarantee is given or implied that the document is error free or that it is accurate with regard to any specification.

### Technical Support

Clearfield, Inc. can be contacted for any issues that arise with the supplied product.

If you need to return the supplied product, you must contact the Clearfield, Inc. Customer Service Department to request a Returned Materials Authorization (RMA) number.

Clearfield, Inc.  
7050 Winnetka Ave N  
Minneapolis, MN 55428

Toll Free: 800.422.2537  
Phone: 763.476.6866  
Fax: 763.475.8457

Customer Support: [sales@clfd.net](mailto:sales@clfd.net)  
Technical Support: [techsupport@clfd.net](mailto:techsupport@clfd.net)