

FieldSmart 96-Port PON FDH Cabinet

Installation Manual



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Application

The FieldSmart 96-Port PON FDH Cabinet is the smallest PON cabinet in the Clearfield product offering, measuring 24.2" H x 13.5" W x 10.7" D.

Designed to be pole mounted, this cabinet exterior was modeled after our existing FDH cabinet line, while the interior bulkhead was modeled after our pedestal mounted PON insert.

Offering 12 feeder/express ports and up to 96 distribution ports, the 96-Port PON FDH Cabinet is sold empty, so customers can add Clearfield's Clearview Blue Cassettes as needed, allowing them to maximize their capital expenditures and row-as-they-go.



Technical Specifications

FieldSmart 96-Port PON FDH Cabinet	
Dimensions	24.2" H x 13.5" W x 10.7" D (does not include pole mount brackets)
Mounting Option	Pole Mount – brackets included with each cabinet; No riser available for this cabinet
Feeder/Express Capacity	12 – in a Clearview Blue Cassette
Distribution Capacity	Up to 96 in Clearview Blue Cassettes
Cable Entrance Ports	4
Access	Doors on both sides allow complete access to cabinet
Splitter Capacity	Up to 5 WaveSmart Ruggedized Splitters
Security	4 Quarter Turn Latches with Pin in Hex Key
Material/Thickness	.064" Aluminum with Almond Powder Coat Paint

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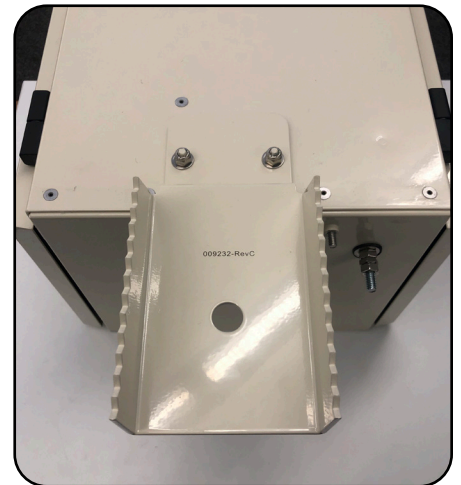
Pole Mount Installation

Note: Clearfield does not provide the mounting hardware. Required hardware includes a 5/8" threaded rod (3" longer than pole diameter), washers, lock washers, nuts and Lock Tight (red).

1. Install the hoist plate to the top of the cabinet using the provided hardware.



2. Locate the toothed bracket and mount it to the cabinet using the included hardware.



3. Determine the top height of the cabinet. Drill a 5/8" hole 9 inches below the anticipated height of the cabinet, all the way through the pole.

4. Mount the loose toothed bracket to the pole using threaded rod, washers, and nuts on either side of the pole. Rod length will depend on the diameter of the pole. It is suggested to add 3" to the diameter of pole for rod length.





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Note: Clearfield does not recommend using lag bolts to mount cabinet to pole. Clearfield recommends using hardware with a minimum of 5/8" diameter. Care should be taken to avoid over-tightening and deforming the hoist plate. Lock tight (red) should be used on nuts to prevent loosening of nuts. Make sure the thread rod/nut does not exceed the top bend in bracket or it will interfere with cabinet.

5. Lower the cabinet onto the pole mounted toothed bracket until the hoist plate is over the flange of the toothed bracket.



6. Level cabinet and drill 5/8" hole through lower bracket and pole, and install 5/8" rod, washers, and nuts to secure the cabinet.

Note: Care should be taken to avoid over-tightening and deforming the hoist plate.



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Wall Mount Installation

The FDH cabinet wall mounting kit consists of two hoist plates, with hardware to mount the hoist plates to the cabinet, and two mounting brackets. Wall mounting the cabinet will require a 5/8" socket, a drill and drill bit, and mounting hardware of your choice.

Note: Clearfield does not provide the mounting hardware. Clearfield recommends 5/8" diameter mounting hardware to support the cabinet's weight, as well as washers, lock washers, nuts and Lock Tight (red).

Note: 144 cabinet shown for reference. 96 port cabinet will be mounted to the wall using the same method.

1. Using the provided hardware and a 5/8" socket, attach one of the hoist plates to the side of the cabinet that will be facing the wall. Tighten firmly. If your cabinet already has the hoist plates installed, check to ensure that the bolts securing them to the cabinet are tightened and proceed to step two.

Note: If the cabinet will be hoisted with a rope, the additional hoist plate can be added to the other side for this purpose.



2. Install one of the mounting brackets with teeth to the bottom of the cabinet on the side of the cabinet that will face the wall, using the pems near the base of the cabinet and the hardware provided.

Note: Be sure to face the teeth away from the cabinet as shown.



3. Determine where you wish to mount the cabinet, and mark the backboard at the top center of the cabinet location.
4. Measure down 9 inches from the mark you made for the top of the cabinet. Mark this location, drill your pilot hole, and use it to mount the second/top mounting bracket.

Note: Be sure not to over-tighten hardware, as the mounting bracket could deform.



5. Briefly hang the cabinet on the top mounting bracket and mark the location for the mounting hardware for the lower bracket. If mounting hardware for the bottom mounting bracket needs to be installed into the wall/backboard, you may do so before securing the cabinet to the top mounting bracket
6. Lift the cabinet and slide the top mounting bracket under the hoist plate at the top of the cabinet until fully seated.
7. Level the cabinet prior to installing the mounting hardware into the lower mounting bracket.
8. Attach the bottom mounting bracket to the wall using appropriate hardware.



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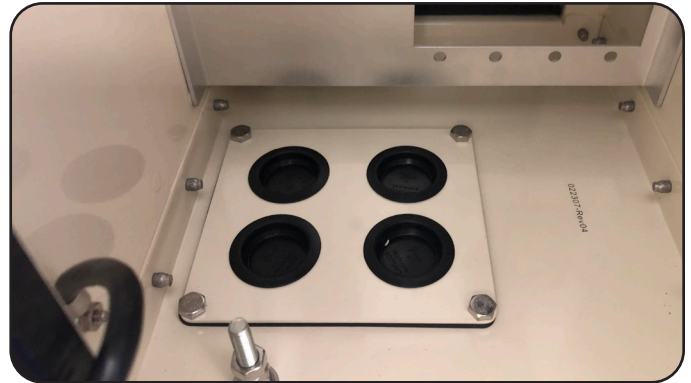
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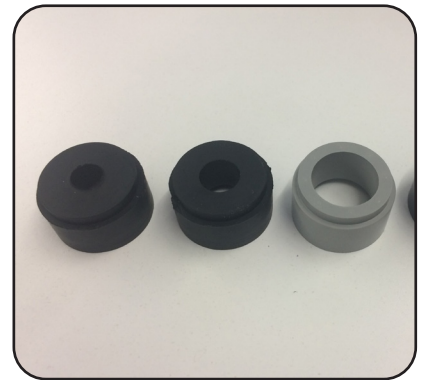
Cable Installation and Splicing

1. Determine which port(s) in the feed-through entrance plate will be used to install the cable(s) and remove the plug(s).

Note: *If you intend to bring more cables into the cabinet at a later date, it is recommended that you work from back to front, installing initial cables as far in and as close to the cabinet bulkhead as possible.*

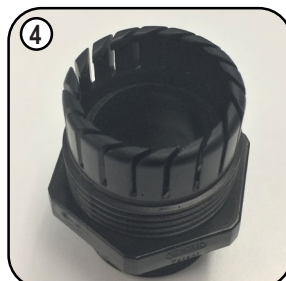
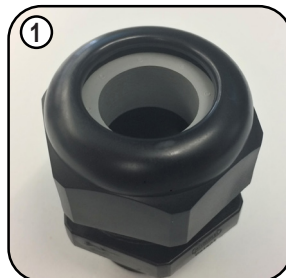


2. Select the compression fitting grommet size that most nearly fits the cable to be installed. The grommets are included in the ship-along hardware.



Compression Fitting Grommet	Cable Size (Inches)
Small Black Grommet	0.3 - 0.4
Medium Black Grommet	0.41 - 0.5
Gray Grommet (Comes Pre-Installed)	0.51 - 0.79

3. In order to swap grommets, remove the dome nut from the sealcon and pry the current grommet out, being careful not to damage the compression fitting. Push the new one in to place. Ensure new grommets are installed with the tapered side up (see pictures).



Note: *It is sometimes easier to remove the grommet by using a blunt ended tool to push at it from the bottom, inside the sealcon. Take care not to damage the grommet.*

4. Place the sealcon lock nut over the end of the cable you are bringing into the cabinet.
5. Bring the cable up through the entrance hole in the bottom of the cabinet.
6. Loosen, or if needed, remove the dome nut on the sealcon to allow the cable to fit through the internal sealing grommet. Feed the cable through the sealcon.



Note: Ensure the O-ring on the underside of the sealcon is present before installation.



7. Secure the sealcon to the entrance plate by engaging and tightening the locking nut underneath the entrance plate. If the sealcon dome nut is not already installed, install after tightening lock nut, but do **NOT** tighten to secure cable.

Note: Clearfield recommends the use of a set of sealcon wrenches (P/N's 013190 - 40mm, and 013191 - 42mm) to properly tighten the sealcon lock nut and dome nut. These feature an open channel, which allows the wrench to slide over cables and onto the sealcon.



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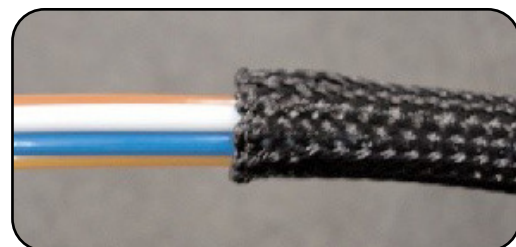
8. Pull the length of cable you intend to open through the sealcon and out of the cabinet. Clearfield recommends 15 feet of opened cable to work with inside the cabinet (12 feet of slack and 3 feet for splicing in the cassette). Open the cable.



9. Tighten the dome nut on the sealcon securely, being careful not to damage the threads.



10. Optionally, group the buffer tubes to be spliced and fully insert them into one of the mesh sleeves (snake skin) enclosed in the ship along hardware. This will help to control the bundle while routing and storing.



11. Mark the buffer tubes 12 feet from the outer jacket and staggering the marks 1" shorter for each buffer tube (12' blue, 11' 11" orange, 11' 10" green, etc.). This will allow for the different lengths required for each buffer tube to reach its cassette after storing the slack around the spools in the cabinet.



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12. See the Clearview Blue Cassette Installation Manual for splicing instructions, located under the Resources tab of the Clearfield website, www.seeclearfield.com.

The buffer tubes will be opened up and secured into the cassettes at the marks you made, using a “Left Exit” configuration. The cassette will typically use 3 feet of fiber inside the splice tray.

Viewable here:

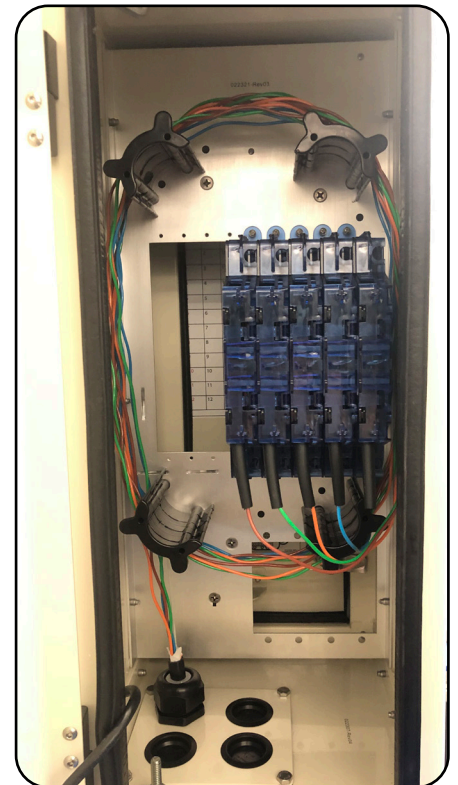
<https://www.seeclearfield.com/assets/documents/installation-manuals/clearview-blue-cassette-install-manual.pdf>

13. After splicing is complete, stack the cassettes and gang them together using cable ties and the ganging loops on the sides and back for easy installation.



14. Route the fiber slack around the outside of the spools located in the back of the cabinet.

15. Using the retaining screws, secure the cassettes into the cabinet.



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Grounding the Enclosure

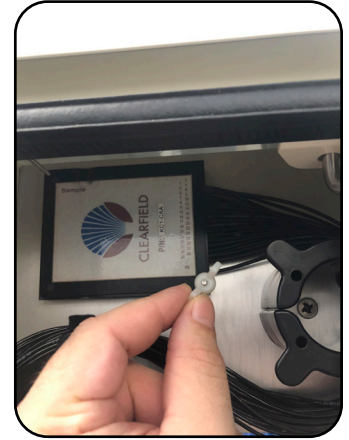
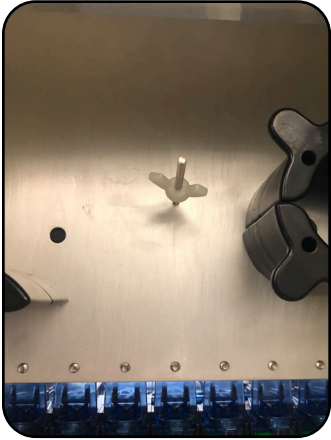
Clearfield recommends that all grounding installations follow the “per local practice” guidelines for each application.

A grounding lug is located in the lower left corner of the rear of the cabinet. The cabinet and individual cables can be grounded via the lug attached to the base of the cabinet.

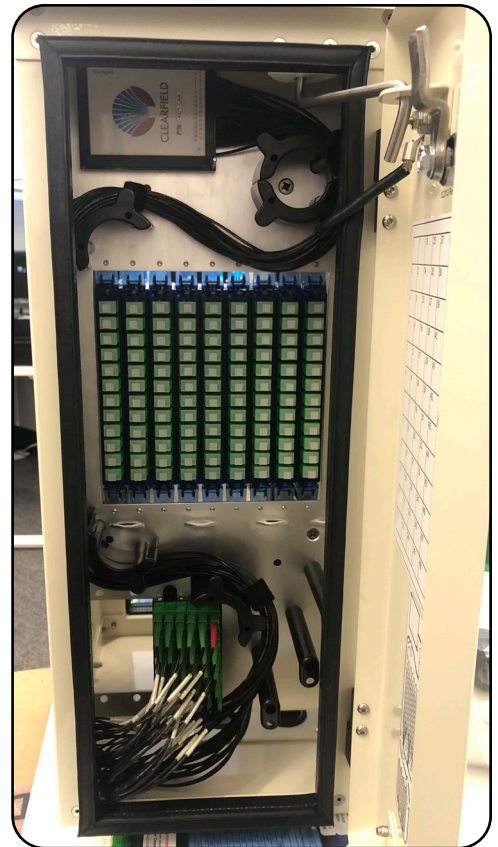
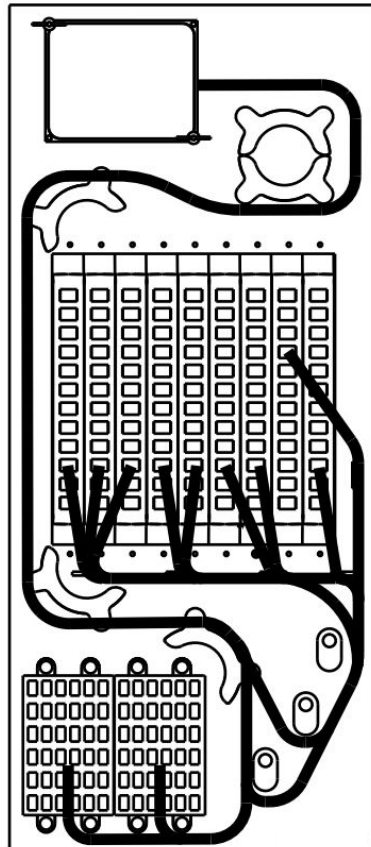


Splitter Installation and Routing

1. Remove the wing nuts from the threaded rods at the top left of the front of the cabinet.
2. Install the splitter body into place on the threaded rods through the holes located in the corners of the splitter.
3. Reinstall the wingnuts to secure the splitter body in place.



4. Using the splitter routing diagram on the door of the cabinet, route the splitter leg slack around the spools as shown. Navigate the staging plate to the staging area in the lower left area of the bulkhead.

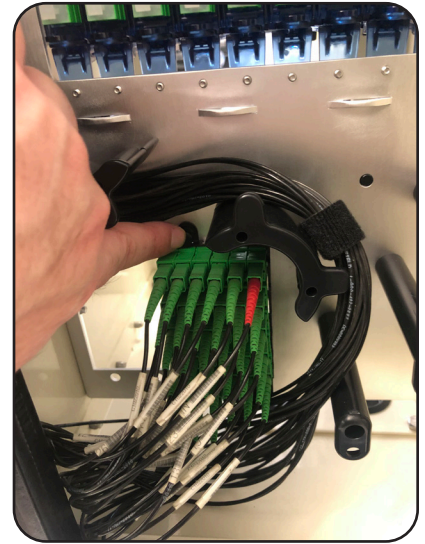


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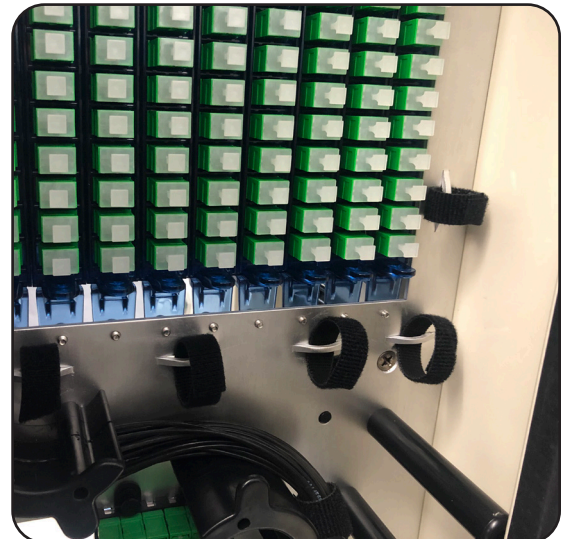
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5. Secure the staging plate to the cabinet's bulkhead in the staging area by depressing the plungers of the push/pull grommets on the staging plate.



6. Thread velcro loops about 3-4 inches long through the bridge lances on the front of the bulkhead.



7. Following the routing diagram, route the splitter legs around the radius rods and through the velcro loops as needed, to take up the splitter leg slack prior to connecting it into the desired adapter.



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 connectors and adapters prior to mating.

Inspect Then Connect

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

The use of Chemtronics end face and bulkhead cleaning products and techniques ensures a clean end face, no matter the type of contamination.

Before cleaning any connector, be sure you know what type of contaminate you are cleaning (dry, fluidic, or combination). 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.

Note: It is **NOT** recommended to use isopropyl alcohol to clean the end face.

Cleaning an SC/LC Connector

Cleaning 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 at a 90 degree angle. For APC connection, adjust by slightly tilting the container or end face. Angle is correct when no drag is felt 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.

Note: **DO NOT** retrace previous step.



Figure 1



Figure 2



Figure 3

Cleaning 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. Hold the swab, 1 side down to the wetted area and hold for a count of 1-2-3-4-5. (Figure 4)



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)



Figure 5

Cleaning the Mate Through an 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. 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, repeat cleaning if necessary, and test for signal strength.
- Use additional swabs to clean inside the actual adapter. Moisten swab, like above, and insert through hole and remove while twisting. (Figure 6)

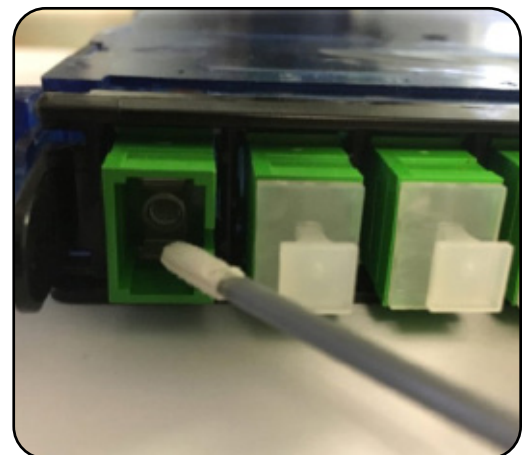
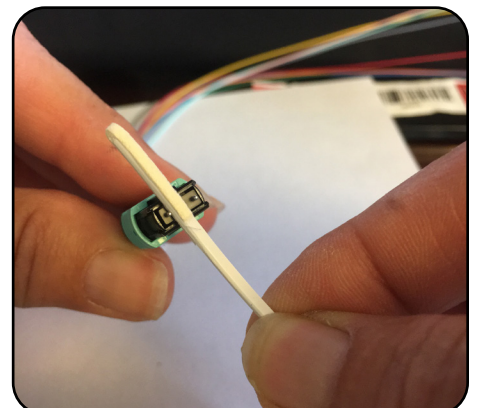
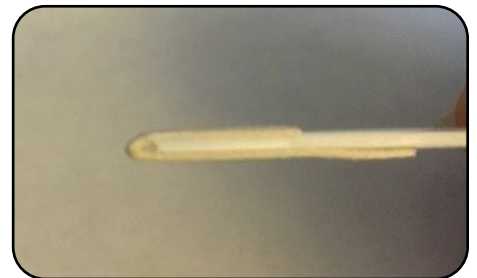


Figure 6

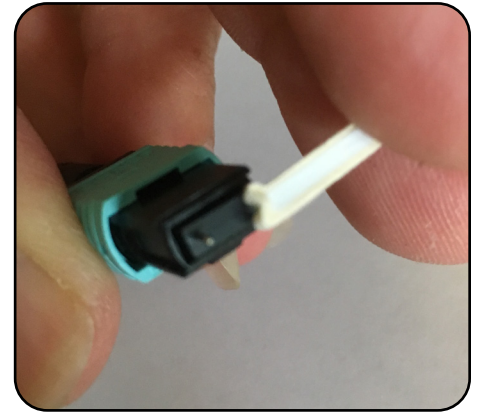
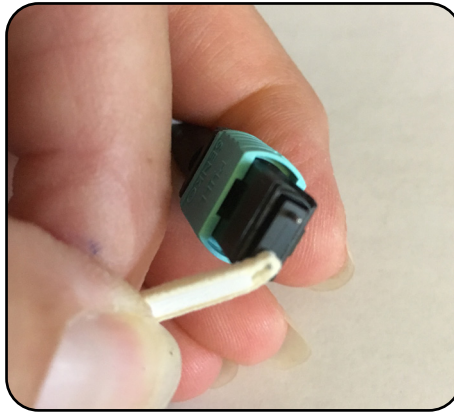
Cleaning an MPO/MTP Connector

Male Connector

- Use of Chemtronics MTP Connector Cleaning Swabs (CC505F) is recommended. Even after cleaning with a probe cleaner, you should always clean the pins with this (or an equivalent) type swab. Cleans ALL MTP/MPO connector end faces. This swab also cleans the “pins” of the male connector
- Lightly “spot” a QbE-2 wipe on the platen with Electro-Wash PX Fiber Optic Cleaner, the FiberWash or MX Pen.
- Lightly touch short side of the MTP/MPO Connector Swab to the wetted area (3-5 secs) to absorb some cleaning solution (DO NOT over saturate the swab).
- Wipe connector areas to be cleaned, sliding pad from bottom of pad across and forward to tip of swab, from 1 side to the other, turn over and use long side to dry in same movement.



- Use the hole on end of pad to clean one alignment pin, then press the end of the swab into the other pin to clean.
- Check your work with a fiber scope. This can take several attempts to get the endface clean.

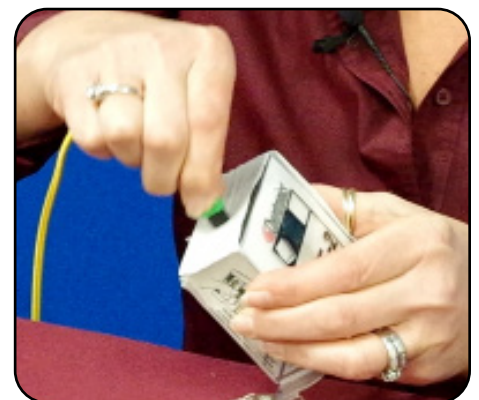


Female Connector (without pins)

- Cleaned like a single fiber connector, using a cleaning platform. The receptacles will be cleaned as long as you are using a combination cleaning process as recommended.
- Again, using a platen, moisten the platen with cleaning solvent on one end to accommodate 3 swipes of the MPO female endface.

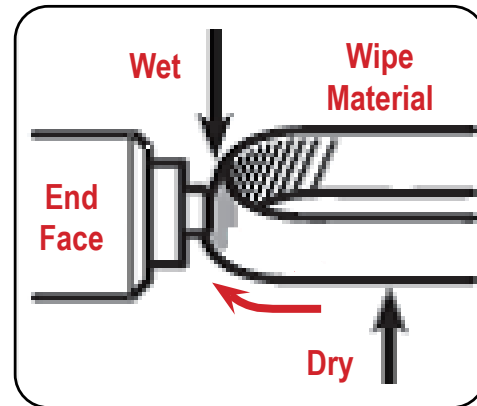


- Holding the connector (If APC, slightly at an angle to accommodate for 8° angle) swiping with medium pressure, from the wet area into the dry area 3 times, without wiping over previous area.
- Inspect, and if clean, make the connection. If NOT, repeat above steps until clean or if determined that the end face is damaged (based on standards of 5 cleanings per connection), replace.

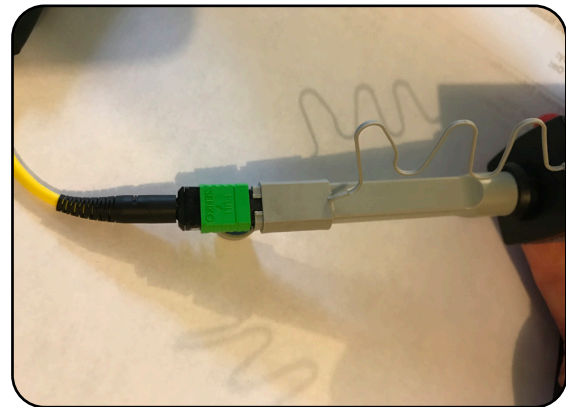
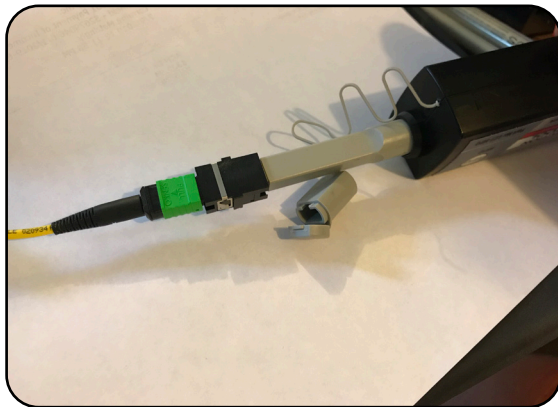


Cleaning Using a Probe-Style Cleaning Tool

- The probe style cleaning tools are capable of cleaning a connector end face separately or through the adapter.
- Slightly engage probe by pulling back but do not allow to click. Lightly “spot” a QbE-2 wipe on the platen with Electro-Wash PX Fiber Optic Cleaner, this will help alleviate “over saturation” of the material.
- Lightly touch the tip of probe and release.



- Insert connector or insert probe through adapter and click 2-3 times to move past the wet area and allow material to dry wipe.



- Inspect connector, repeat if necessary (following standards)
- If cleaning a male connector, clean the pins (see above)

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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 three (3) 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 by Clearfield, the product will be returned to the Customer and the customer billed for freight in both directions.

View our warranty policy here: <https://www.seeclearfield.com/warranty.html>

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

Clearfield assumes no warranty liability regarding defects caused by:

1. Customer's modification of Product, excepting installation activities described in Clearfield documentation
2. 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
3. Customer's installation or maintenance, excepting activities described in and performed in accordance with Clearfield documentation
4. Customer's improper or negligent use or application of Product
5. 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
6. Environmental factors and weathering resulting in aging and damage not necessary or applicable to the function of the product



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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.

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