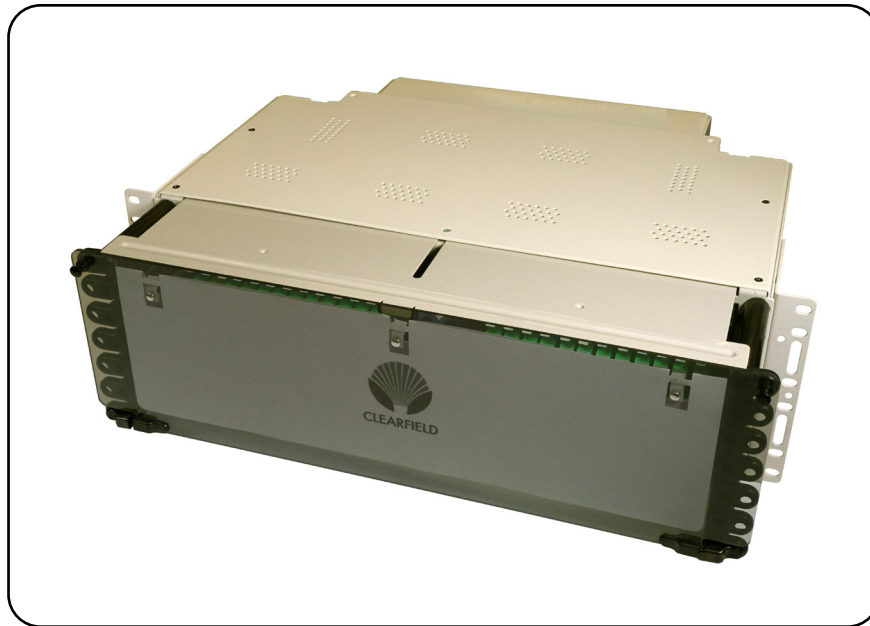# FieldSmart® FxMP Panel & Standard Frame
## Installation Manual



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# FieldSmart® FxMP Panel & Standard Frame
*Installation Manual*

## Table of Contents

# FieldSmart® FxMP Panel & Standard Frame
## *Installation Manual*

## Application

**Standard Frame:**
Frames are used for mounting equipment in a central office, head end or data center applications.

**FxMP Panel:**
Provides an interconnect or cross-connect environment for up to 288 ports of high density fiber for inside plant and outside plant environments.

## Description

**Standard Frame:**
FieldSmart FxDS Standard Frames are available in 7' (2133.60 mm) or 8' (2438.40 mm) heights and in 19" or 23" (482.60 mm or 584.20 mm) widths. Frames are seismic-rated and come with an unequal flange. When used with FieldSmart FxDS Panels, they provide the highest port density in the industry - up to 1,728 ports in a 7' (2133.60 mm) frame.

**FxMP Panel:**
The FieldSmart FxMP Panel is a high density, low maintenance fiber distribution panel for use in a data style rack/cabinet, a 19" (482.60mm) or a 23" (584.20mm) frame. Utilizing the Clearview ® Cassette, FieldSmart FxMP Panels are intelligently designed to provide the user with superior fiber access and craft-friendly, radius protected fiber management for routing and deploying fiber jumpers.

## Technical Specifications

| FieldSmart Standard Frame | |
|---|---|
| Dimensions | Available in 7' or 8' heights and in either 19" or 23" widths; depth is 10" (5" frame + 5" guard box) |
| Ratings | Compliant to Telcordia GR-449 |
| Cable Entry Clamp Location | On-frame (Note: Cable clamps included with panels) |
| Material | Steel |

| FieldSmart FxMP Panel | | | | |
|---|---|---|---|---|
| Port Density | 24 | 72 | 144 | 288 |
| Dimensions | 1.75" H (44.45mm) | 3.5" H (88.90mm) | 6" H (152.40mm) | 11" H (279.40mm) |
| Ratings | Compliant to Telcordia GR-63, GR-449, GR-20 and GR-409 | | | |
| Cassette Types Supported | Clearview® Blue | | | |
| Connector Types | SC/UPC, SC/APC, LC/UPC, LC/APC, FC/UPC, FC/APC, ST/UPC, MPO | | | |
| Cable Types | Indoor Riser, Indoor Plenum, Indoor/Outdoor, Outdoor (Riser/Non-Rated), Outdoor Armored (Riser/Non-Rated), FieldShield® | | | |
| Splice Capacity | 12 splices in each Clearview Cassette | | | |
| Storage Capacity | One meter of 250 µm fiber | | | |
| Front Protection | 3.25" (82.6 mm) or 4.77" (121.16 mm) radius fingers | | | |
| Color | Almond or black | | | |
| Material | Steel and aluminum with almond powder coating | | | |

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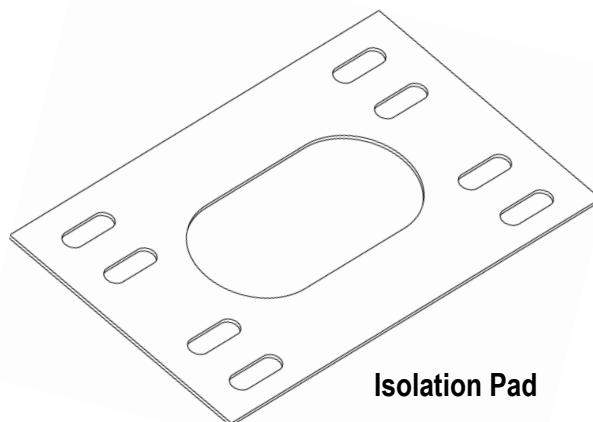
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# FieldSmart® FxMP Panel & Standard Frame
## Installation Manual

## Tools and Optional Materials

### Tools:

- Sockets (1/2", 3/4" and 15/16")
- Ratchet with Extension
- Phillips Screwdriver
- 1/8" Allen Wrench
- Hammer/Rotary Drill
- 5/8" Masonry Drill Bit
- Blowout Air Bulb or Vacuum with Small Diameter Tube



**Isolation Pad**

### Materials (ordered separately):

Standard Frame:
- Isolation Pad (19" Frame P/N FMA-L1Z-SUB, 23" Frame P/N FMA-L2Z-SUB)

Floor Mounting:
- Floor Mounting Kit (P/N 009106)

Raised Floor Mounting:
- Raised Floor Mounting Kit (P/N 011236)

Patch and Splice Panels:
- Radius Limiter Brackets for Buffer Tube Slack Storage (P/N 010600)

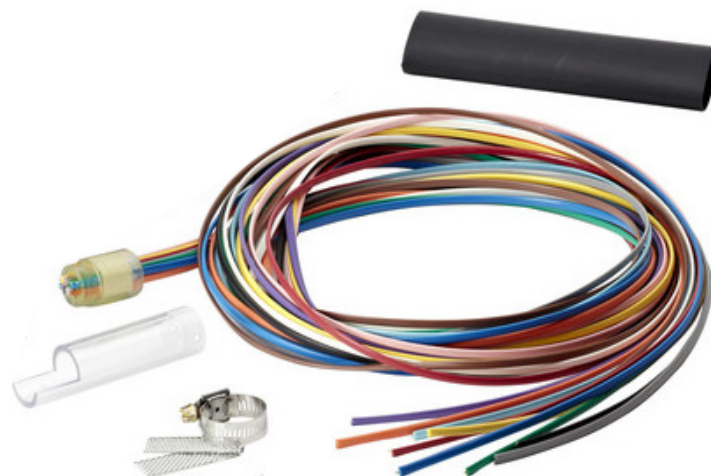Ribbon Fiber Protection:
- High Density Ribbon Breakout Kit (P/N 010475)
- Ribbon Fanout Kit (P/N FMA-MZZ)



**Radius Limiter Bracket**



**Breakout Kit**



**Fanout Kit**

## Standard Frame Floor Installation

*Note: Floor mounting hardware is NOT included with the standard frame. Hardware is sold as a separate line item (Clearfield P/N 009106).*

**IMPORTANT: If your frame is to be mounted next to a wall, or there are multiple frames in a line-up, you MUST install the interbay management and end guards BEFORE mounting the frame to the floor.**

**Tools:**

- Hammer (or rotary) drill (with depth gauge recommended)
- 5/8" masonry drill bit
- Socket wrench set
- Blowout air bulb or vacuum with small diameter tube

**1.** Determine where the frame is going to be installed. Using the isolation pad as a template, mark the 4 holes where frame will be secured to the floor.
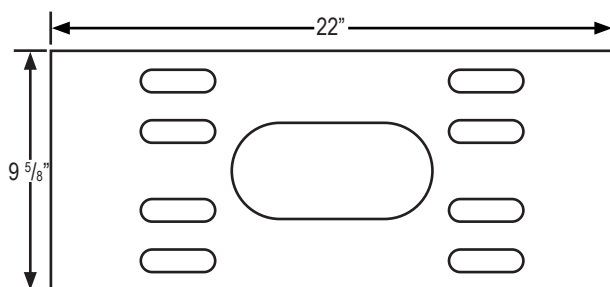


**19" Frame**
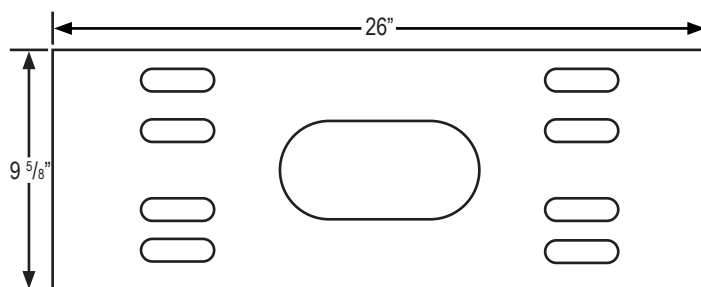


**23" Frame**

**2.** Using a 5/8" masonry bit, drill the four required holes to a minimum depth of 2" (approx. 50mm).

   *Note: If for some reason you have trouble drilling the 5/8" hole, Clearfield recommends first drilling a ¼" pilot hole before drilling out to 5/8".*

**3.** Thoroughly clean the dust from each hole, using a vacuum or blowout air bulb.



   *Note: To not degrade the anchor's installed performance, any unused anchor holes (or other nearby holes) in the concrete within 3" must be filled with an epoxy filler (pour stone) or equivalent. Filled holes must be fully cured before anchors are installed and torqued.*

**CLEARFIELD**
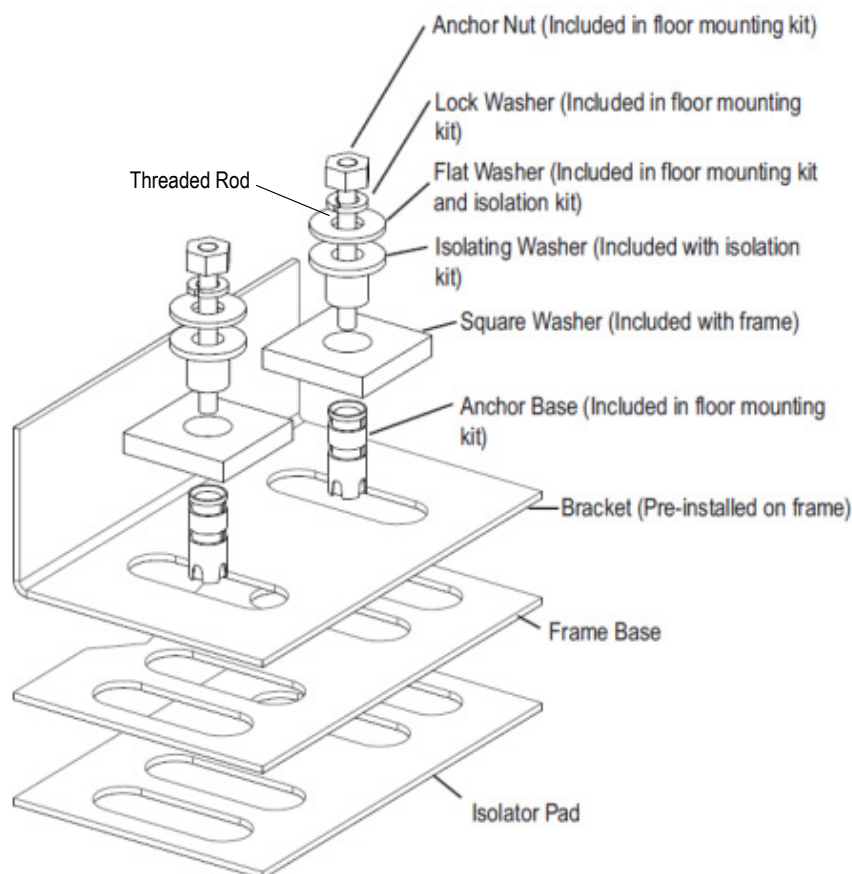
4. Place the isolation pad in position over the predrilled holes and align as necessary. Lift the frame onto the isolation pad and line up with holes.

5. Ensure that the anchor's expansion shield is not expanded. Place the end of the anchor into the predrilled hole. Repeat for the other drilled holes. Make sure the anchor is fully embedded in the concrete.

6. Align the edges of the 2" square washer parallel with the slots in the frame base to obtain the maximum material overlap. Once aligned, tap each anchor/washer assembly until it is seated firmly in the hole and against the 2" square washer.

7. Pre-tighten each anchor with a socket wrench or box-end wrench; do not use an open-end wrench (which could easily slip off and cause injury). Before final tightening, ensure that the frame is properly aligned (in the row and with any adjacent frames). Torque each anchor to 60 ft-lbs.

   ***Note:*** *When using the break-off type anchor, a torque wrench is not required. The anchor's (red) torque cap shears off at a predetermined torque value (approximately 60 ft-lbs.), leaving a green seal on the bolt head, indicating proper tightening.*

8. The anchoring line up should look like this:



Anchor Nut (Included in floor mounting kit)

Lock Washer (Included in floor mounting kit)

Threaded Rod

Flat Washer (Included in floor mounting kit and isolation kit)

Isolating Washer (Included with isolation kit)

Square Washer (Included with frame)

Anchor Base (Included in floor mounting kit)

Bracket (Pre-installed on frame)

Frame Base

Isolator Pad

*Note: Square washers will be packaged in base of frames*

## Standard Frame Raised Floor Installation

*Note: Raised floor mounting hardware is NOT included with the standard frame. Hardware is sold as a separate line item (Clearfield P/N 011236).*

**IMPORTANT: If your frame is to be mounted next to a wall, or there are multiple frames in a line up, you MUST install the interbay management and end guards BEFORE mounting the frame to the floor.**
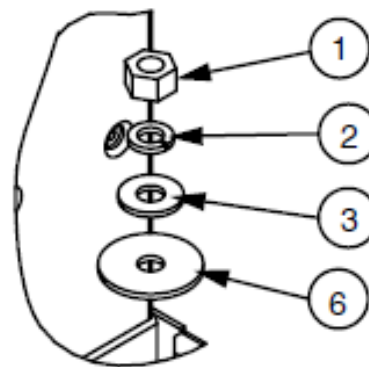
**Tools:**

- Hammer (or rotary) drill (depth gauge recommended)
- 5/8" masonry drill bit
- Socket wrench set
- Blowout air bulb or vacuum with small diameter tube

Also required is a raised floor mounting kit (Clearfield P/N 011236).

1. 1/2-13 Hex Nut (Qty 8)
2. 1/2 Lock Washer (Qty 4)
3. 1/2 Flat Washer (Qty 4)
4. 1/2-13 x 30 Threaded Rod (Qty 4)
5. Hilti HDI 1/2" Anchor (Qty 4)
6. 1/4 x 2" Flatwasher .515 Hole (Qty 8)
7. Split Tubing 30" (Qty 4)
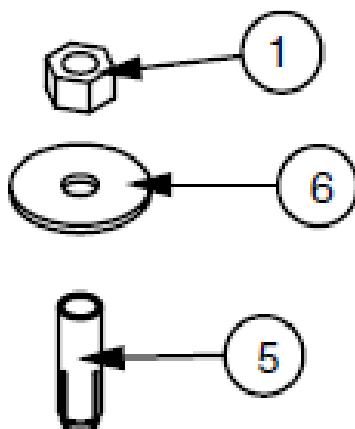
**Screw Sequence for Floor**          **Screw Sequence for Frame**

*Note: Clearfield recommends installing the anchors directly into the concrete floor.*

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# FieldSmart® FxMP Panel & Standard Frame
## *Installation Manual*

**CLEARFIELD**
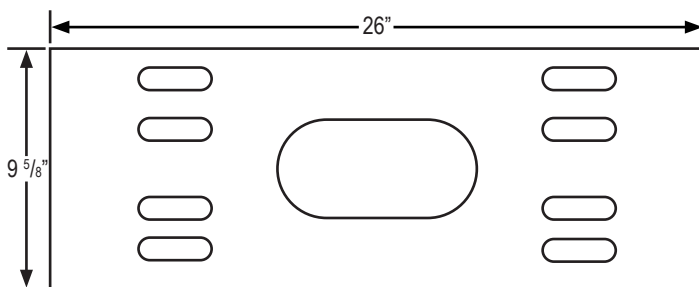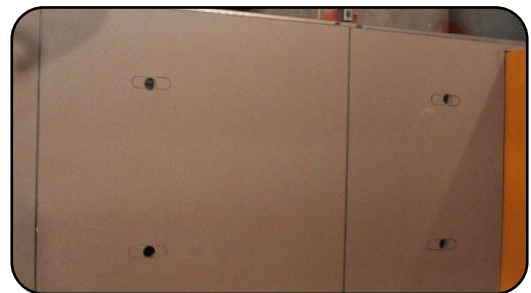
1.  Using the isolation pad as a template, mark on the panel(s) of the raised floor the 4 holes where the frame will be secured to the floor. Using a 5/8" drill bit, drill a hole through each of the oblong marks you made with the isolation pad.
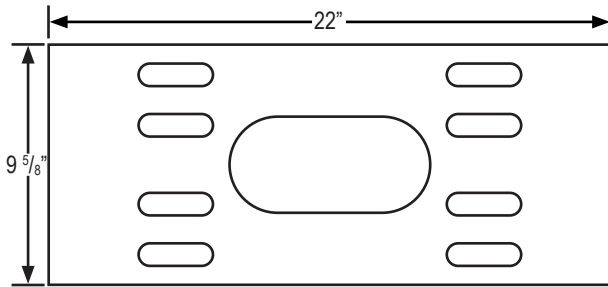


**19" Frame**



**23" Frame**

2.  Take the threaded rods from the raised floor mounting kit and slide one through each of the holes. Using a hammer and holding them perpendicular to the floor, tap on the end firmly. The goal is to make a "mark" on the concrete floor visible enough to see where the 4 holes should be drilled.

3.  Once the concrete floor is marked, remove the threaded rods and floor panels. Using a 5/8" masonry bit, drill the four required holes to a minimum depth of 2" (approx. 50mm).

    *Note: If for some reason you have trouble drilling the 5/8" hole, we recommend first drilling a 1/4" pilot hole before drilling out to 5/8".*

4.  Thoroughly clean the dust from each hole, using a vacuum or blowout air bulb.

    *Note: To not degrade the anchor's installed performance, any unused anchor holes (or other nearby holes) in the concrete within 3" must be filled with an epoxy filler (pour stone) or equivalent. Filled holes must be fully cured before anchors are installed and torqued.*

**5.** Install anchors into the floor. Replace raised floor panels and insert threaded rods through the four holes.

*Note: You are not installing the rods at this point. You are measuring the rods to be cut to the appropriate length.*

**6.** Measure the rods 2.5" above the floor and mark with a permanent marker. Remove the rods and cut each rod at the mark. Remove the floor panels.
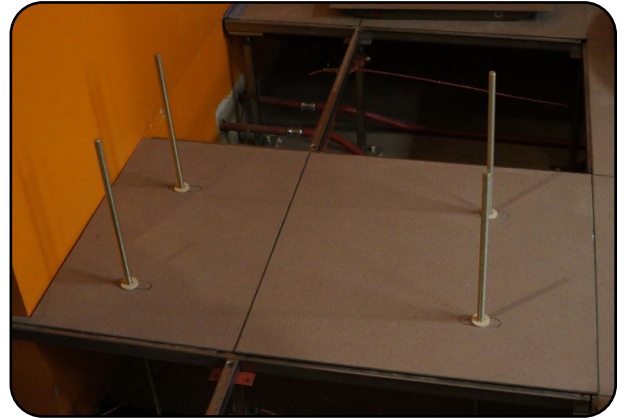


**7.** Before installing rods back into the floor, place a nut and then a washer on the threaded rods. Take the rod and install it into the anchor installed in the floor.
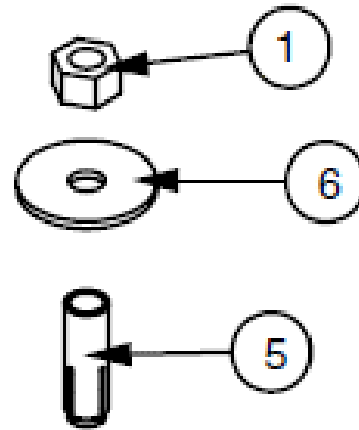


**8.** Tighten the nut down to secure the rod into the floor. Tighten each bolt to 65 ft-lbs., +10, -0 ft-lbs. The anchor will expand and secure itself to the floor.

**9.** Once all four rods are secure, thread another hex nut, then washer on each rod. Make sure the nut and washer are approximately ½" below the raised floor level. This hardware will be tightened down AFTER the frame is set into place but BEFORE securely bolting the frame to the floor.

10. Place the floor panels into position, and tighten the previously installed nuts below the raised panel until they make contact with the panel. Put the isolation pad into place (isolation pad may look different than example).
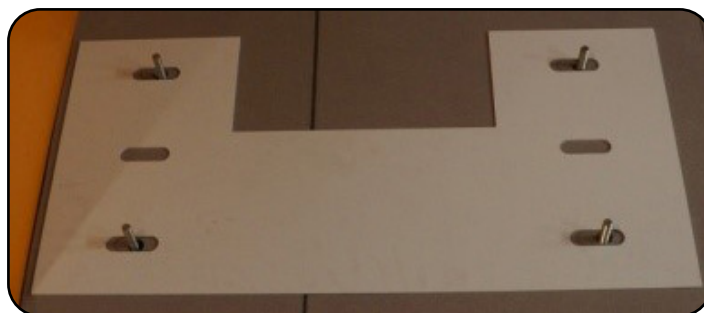


11. Lift the frame into place.

12. Place the square washers onto each rod. Align the edges of the 2" square washer parallel with the slots in the frame base to obtain the maximum material overlap. Install the isolation washers (packaged with the isolation pad) onto each rod.

13. Install the remaining hardware (washers, nuts, etc) from the raised floor installation kit.
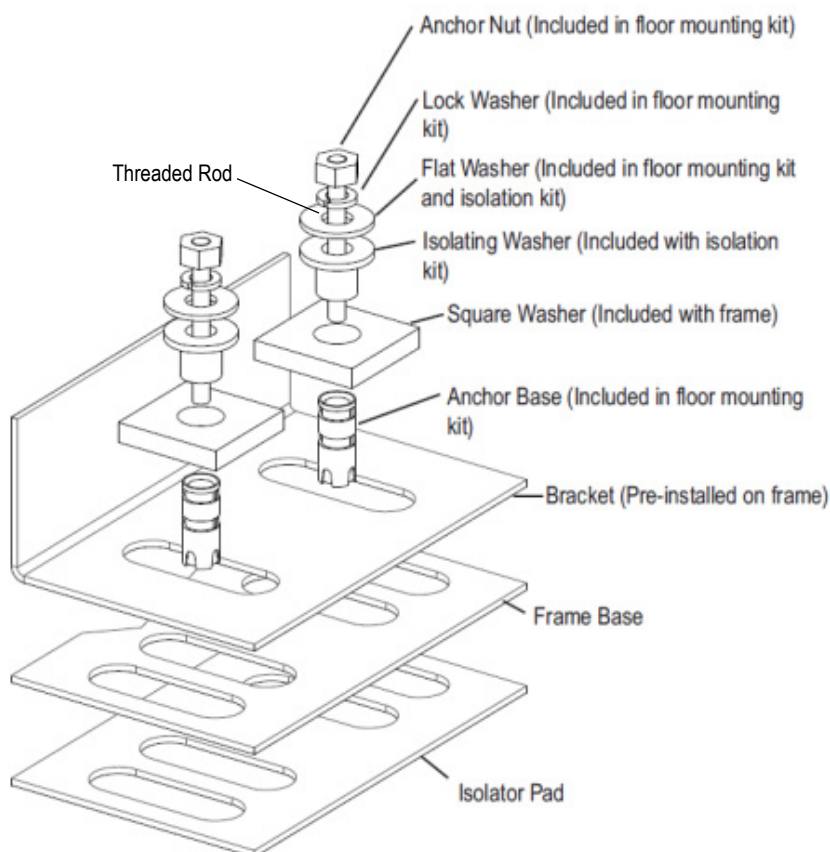


Anchor Nut (Included in floor mounting kit)

Lock Washer (Included in floor mounting kit)

Flat Washer (Included in floor mounting kit and isolation kit)

Threaded Rod

Isolating Washer (Included with isolation kit)

Square Washer (Included with frame)

Anchor Base (Included in floor mounting kit)

Bracket (Pre-installed on frame)

Frame Base

Isolator Pad

*Note: Square washers will be packaged in base of frames*

## Standard Frame Interbays and End Guards Installation

1. Attach the interbay to the front flange of the frame with the hardware provided.

2. Next, install the end guard to the interbay with the included hardware.

   *Note: End guards are only needed on frames at the end of the frame line-up.*
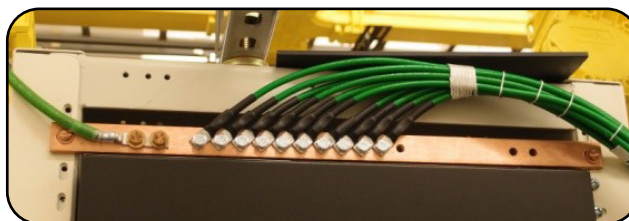
3. Repeat for the other side of the frame.



Frame   Interbay   End Guard

**Before**

**After**
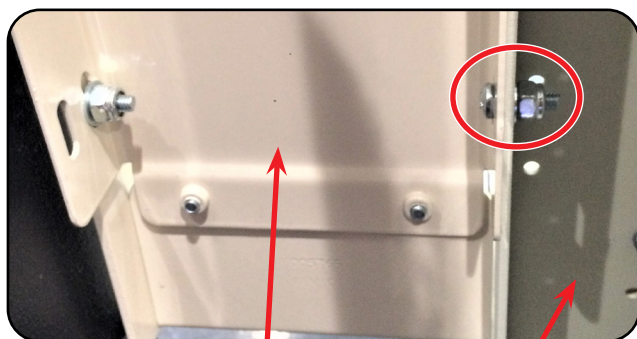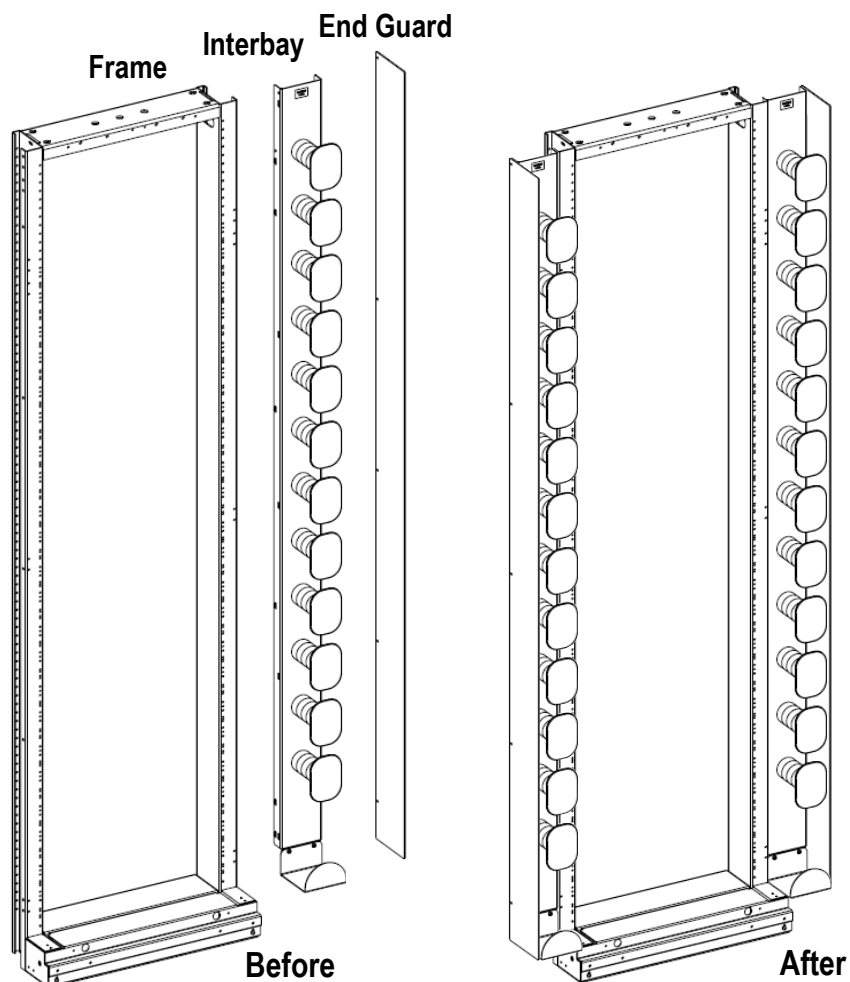


**Interbay**      **Frame**



**End Guard**      **Interbay**

## Standard Frame Grounding

Clearfield provides a ground bar with the Standard Frame which can be installed on the frame. Ground per your local practices.



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# FieldSmart® FxMP Panel & Standard Frame
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## Panel Grounding

Each panel has a ground location marked with the standard grounding symbol **(Figure 1)**.

This location is on the right side of the panel **(Figure 2)**. Use the two 10-32 screws and star washers provided to attach a 2-hole lug terminal at the grounding location **(Figure 3)**.

*Note: Ground the unit to the local facility CBN (Common Bonding Network) or IBN (Isolated Bonding Network) per local practice.*

**Figure 1**
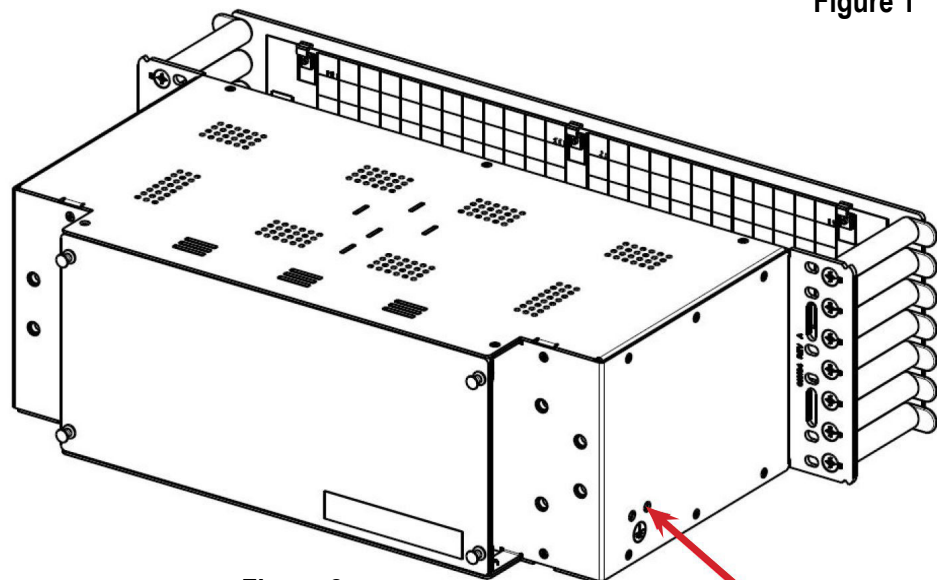
**Figure 2**

**Grounding Location**

2-HOLE LUG TERMINAL

COPPER WIRE

HOLE CENTER SPACING: 0.625 INCHES

**Figure 3**

STRIP BACK INSULATION PER LUG MANUFACTURER'S RECOMMENDATION
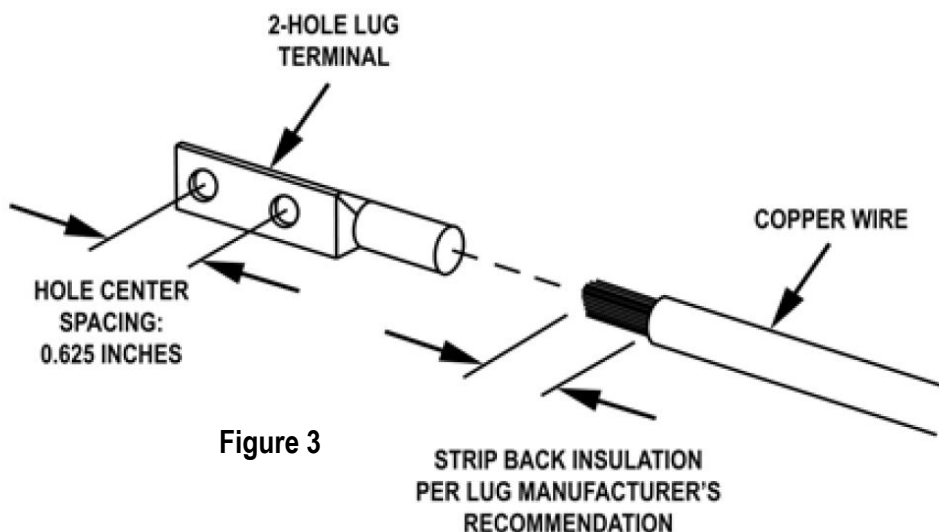
## FxMP Panel Mounting

The FieldSmart FxMP Panel will arrive with reversible mounting brackets unattached. Depending on the size of the frame, you will attach the mounting brackets in a 19 inch or 23 inch configuration.

The exception to this will be the 1RU panel, which has mounting brackets that are not reversible. These mounting brackets will attach to a 19 inch frame. Extender brackets will be supplied with the panel, which can be attached to the mounting brackets in order to mount the panel to a 23 inch frame.

### Installing Mounting Brackets for 19 Inch Frame

1. If installing reversible mounting brackets for a 19 inch frame configuration, the large side of the bracket will be mounted to the panel. The smaller side will be used to mount the panel to the frame.

   **Note:** *Mounting brackets for the left and right sides of the panel are identical, interchangeable parts.*



2. Align the reversible mounting bracket so that the holes in the bracket and the panel body match up. Using the provided screws (three per bracket) secure the bracket into place. Repeat for the other side.

   ***Note:*** *There are four bracket-to-panel screw holes on each side of the bracket and panel. One of the holes will be a smaller size, used for a bonding screw with the NEBS panel.*

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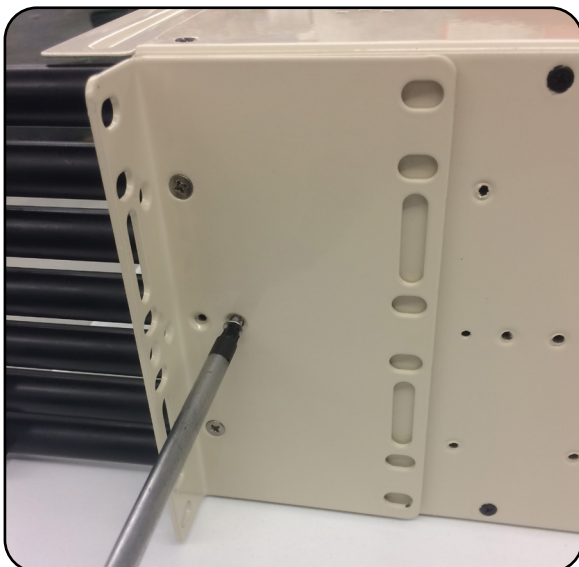
# FieldSmart® FxMP Panel & Standard Frame
## *Installation Manual*


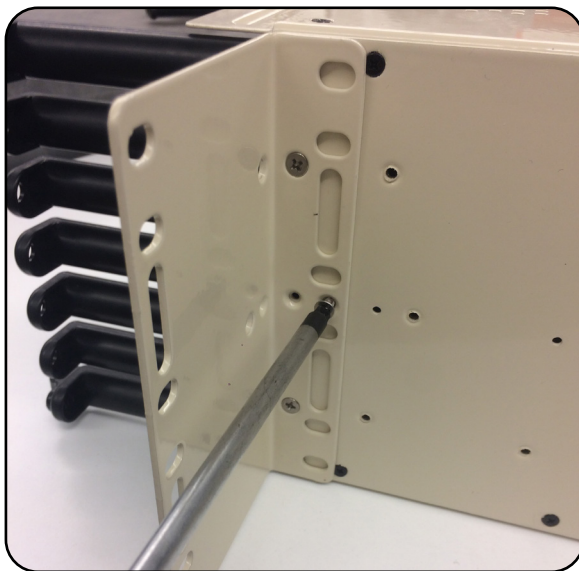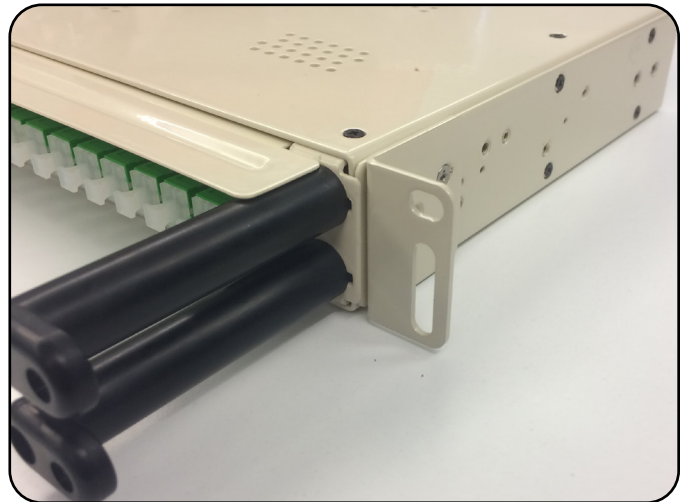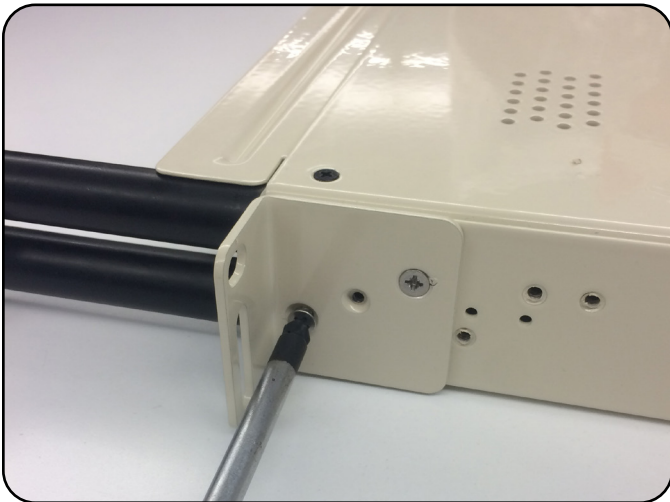
**Installing Mounting Brackets for 23 Inch Frame**

1. If installing reversible mounting brackets for a 23 inch frame configuration, the small side of the bracket will be mounted to the panel. The large side will be used to mount the panel to the frame.

   **Note:** *Mounting brackets for the left and right sides of the panel are identical, interchangeable parts.*

2. Align the reversible mounting bracket so that the holes in the bracket and the panel body match up. Using the provided screws, three per bracket, secure the bracket into place. Repeat for the other side.

   *Note: There are four bracket-to-panel screw holes on each side of the bracket and panel. One of the holes will be a smaller size, used for a bonding screw with the NEBS panel.*

**Installing Mounting/Extender Brackets for 1RU Panel**

**1.** Align the mounting bracket so that the holes in the bracket and panel body match up. Using the provided screws, two per bracket, secure the bracket in place. Repeat for the other side.

*Note: There are three bracket-to-panel screw holes on each bracket and side of the panel. One of the holes will be a smaller size, used for a bonding screw with the NEBS panel.*



**2.** If mounting the 1RU panel in a 23 inch frame, extender brackets will need to be installed. These attach on each side of the panel to the mounting brackets via the two 12-24 x ½" screws provided.



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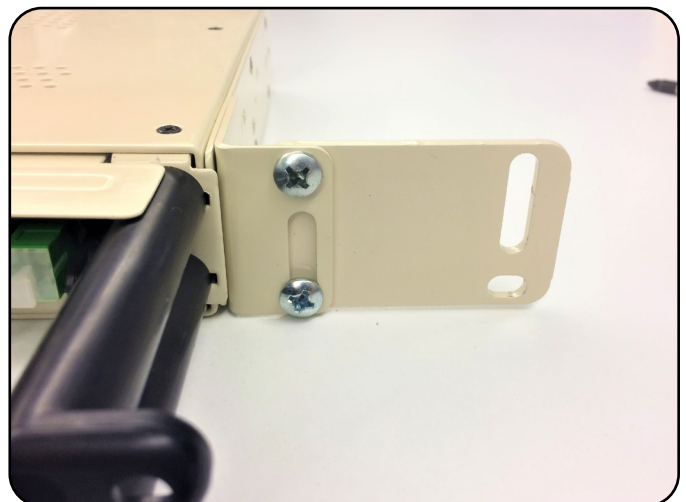
# FieldSmart® FxMP Panel & Standard Frame
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**Mounting Panel Into Frame**

While supporting the panels in the desired rack location, insert and tighten the four mounting screws (two 12-24 x ½" thread cutting screws per side) to secure the panel to the frame. In order to help align the panel, it is also recommended that vertical and horizontal holes are used on each side for mounting.



**19 Inch Mounting**



**23 Inch Mounting**



**1RU Panel - 19 Inch Mounting**



**1RU Panel - 23 Inch Mounting**

## Cable Mounting and Routing

*Patch Only panels have tails which may need to be routed through the frame and up to the appropriate ladder racks or down into the raised floor before securing the cable to the frame.*

1. Once you've mounted the panel and the cable is attached to the frame, open up your cable. Clearfield recommends a cable opening of 11 feet (up to 8ft of slack (depending upon panel size) and 3ft for splicing in the cassette). Proceed to mounting the cable to the panel.

2. Choose a green cable clamp that is close to the same size but slightly bigger than the cable you plan to mount.

   **Note:** *The difference in size can be made up by either wrapping the cable with some of the provided grommet tape, or laying a small strip of grommet tape in the bottom side of the cable clamp shell.*
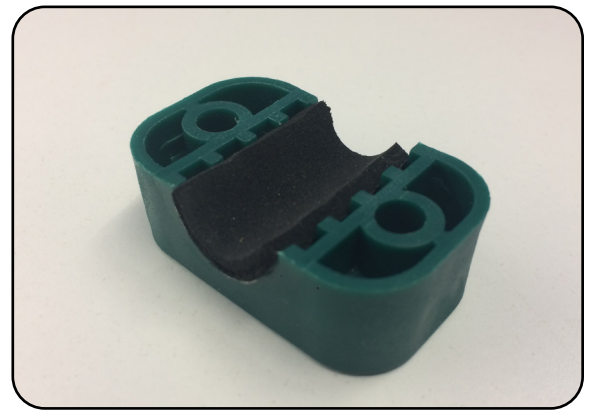


3. Use the included mounting screws to fasten the cable clamps and cable to the rear cable bracket. The cable should be mounted so that the breakout is slightly beyond the end of the clamp.

   **Note:** *Panels shown in images may not match product received. Cable mounting will be performed in the same manner regardless.*



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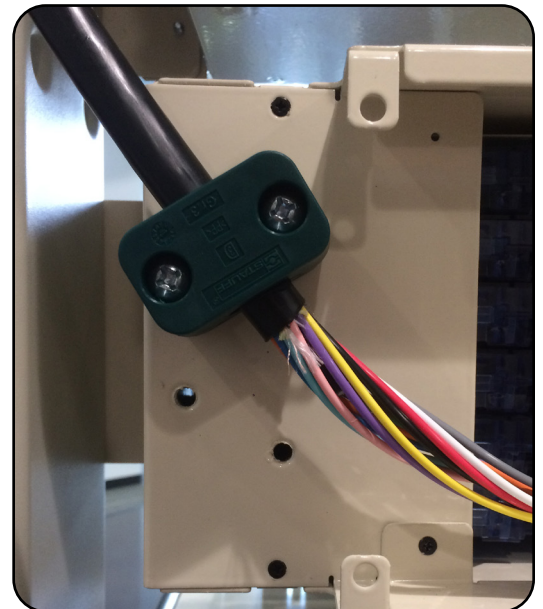
4.  If mounting the cable to the back of a 1RU panel, a vinyl coated P-clip (supplied as a ship-along) will need to be used to secure the cable. Use grommet tape around the cable as needed to increase the size of the cable for proper grip.
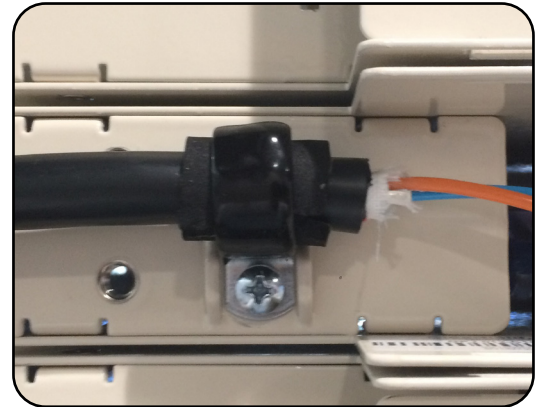
5.  Clearfield offers optional radius limiter assemblies (P/N 010600), used in pairs for storing buffer tube slack on the frame, outside of panels, shown here. This part number is ordered and shipped separately from the frame or panels.

    ***Note:*** *Panels shown in images may not match product received. Cable mounting will be performed in the same manner regardless.*
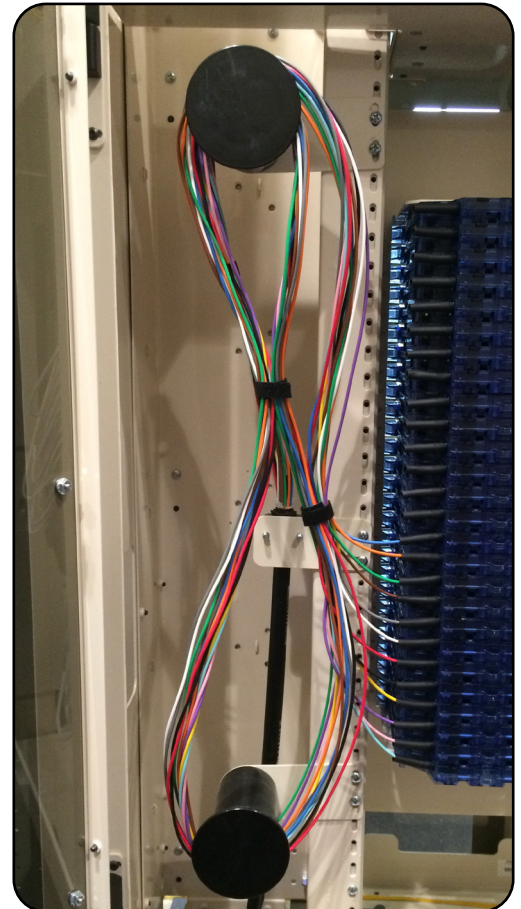
## Routing Ribbon Fiber

The High Density Ribbon Breakout Kit and Ribbon Fanout Kit are both used to protect bare ribbon on a frame before the fibers enter the protection of a panel body or cassette. The High Density Ribbon Breakout Kit allows the user to breakout a high fiber count cable (864 fibers max) into manageable 144 fiber groups that can be further broken down with the use of the Ribbon Fanout Kit. Each Ribbon Fanout Kit breaks out ribbon stacks (max 12 ribbons) of 250 um fibers (max 12 fibers per ribbon) into color-coded breakout tubes. The breakout tubes with individual ribbons can then be routed to your cassettes and secured into the tray like a buffer tube.

The High Density Ribbon Breakout Kit can also accommodate a breakout of a 1728 SpiderWeb Ribbon cable. This will be used in conjunction with the round Ribbon Fanout Kit (P/N FMA-MZZ-ROUND) which can hold 24 fibers (2 subunits of 12 fibers) each.

*Note: The installation manuals for both products are shipped with the kits. Examples shown below.*
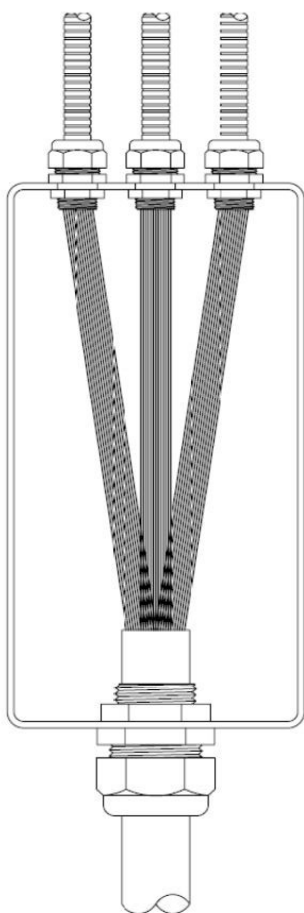
| High Density Ribbon Breakout Kit | Ribbon Fanout Kit | Kits During Installation | Completed Installation |
|---|---|---|---|

# FieldSmart® FxMP Panel & Standard Frame
*Installation Manual*

## Cassette Removal & Installation

*Note: In order to insure ease of installation and removal of cassettes from the FxMP, it is important to only load cassettes from the bottom up, and remove cassettes from the top down. This will prevent the excess weight of the cassettes above from impairing the movement of the cassette sliding in or out of the panel.*



1.  In order to access the front of the panel where the cassettes are located, first remove the front protection door. Release the push/pull plungers by pulling until you feel it disengage with a click.
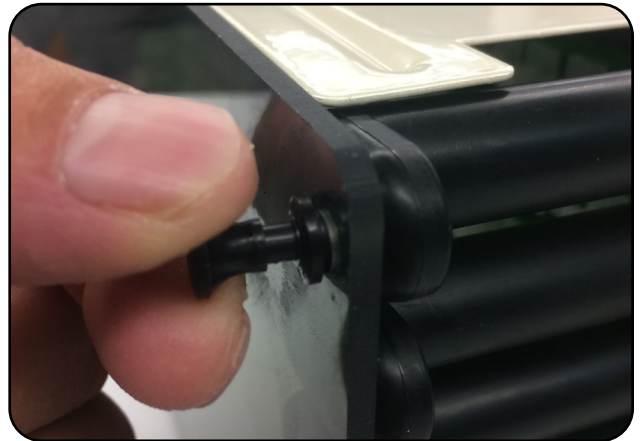


2.  Repeat for the other side and swing the door down.

3.  If you wish to remove the door, this can be done by gently flexing the door to create the space needed to pull the hinges out of their sockets.
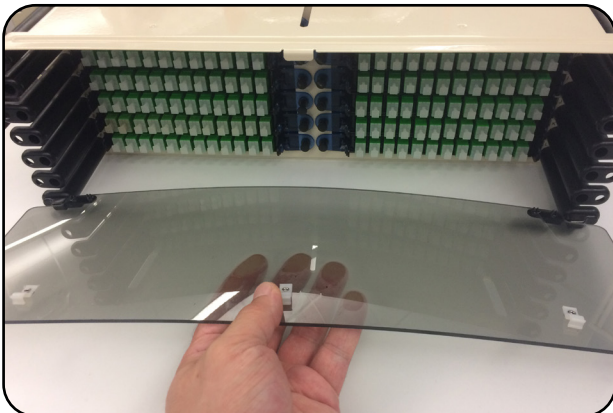
4. Slide the top protection door back into the panel. This door will have 3 positions: open, extended (closed for 3.25 inch radius finger configurations), and fully extended (closed for 4.77 inch radius finger configurations).
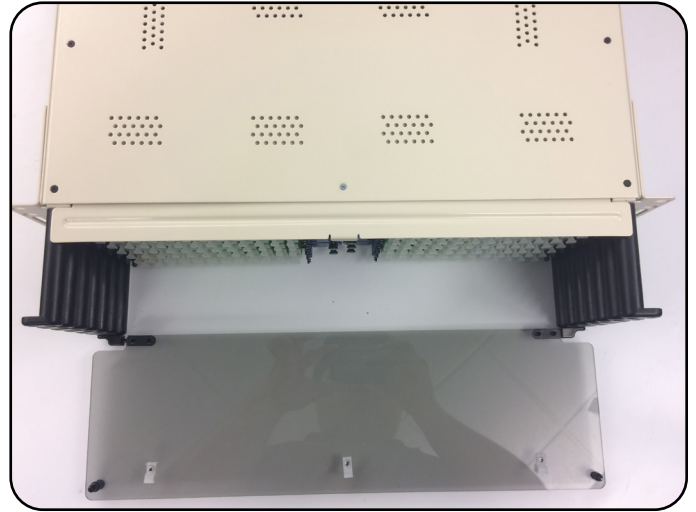


5. To remove cassettes, grip the push/pull plunger on the cassette and pull to disengage.
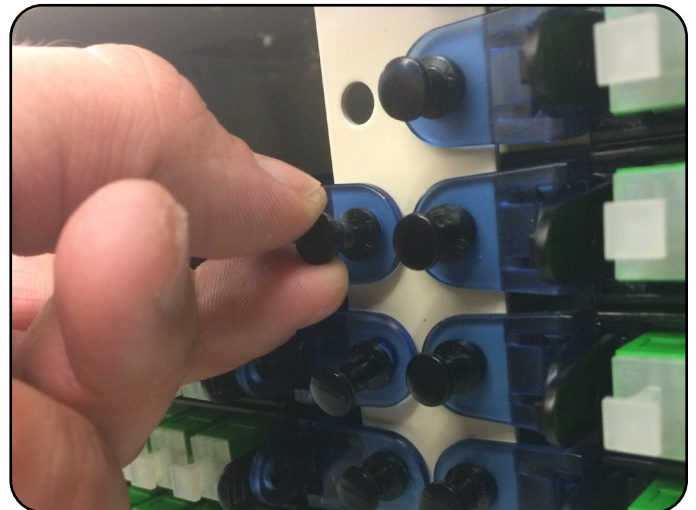


6. Grip the cassette and pull in a straight line back, sliding the cassettes t-rail along the slide rail until the cassette fully exits the panel.

## Cassette Installation

*Note: If the cassettes you wish to install into the panel do not already have an attached mounting ear and push/pull plunger, proceed with step 1. If the cassettes already have the mounting ear attached, jump ahead to step 5.*

1. The mounting ear will attach to the Clearview Blue Cassette by sliding into place along the t-rail on the side of the cassette which will be closest to the center of the panel.
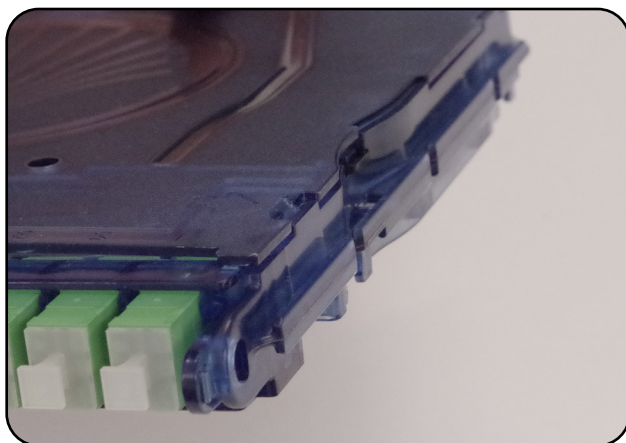


2. To attach the mounting ear onto the cassette, align the channel on the side of the mounting ear with the t-rail on the side of the cassette. Press the mounting ear firmly against the t-rail, allowing the lever to flex back and the t-rail to engage with the channel on the mounting ear.
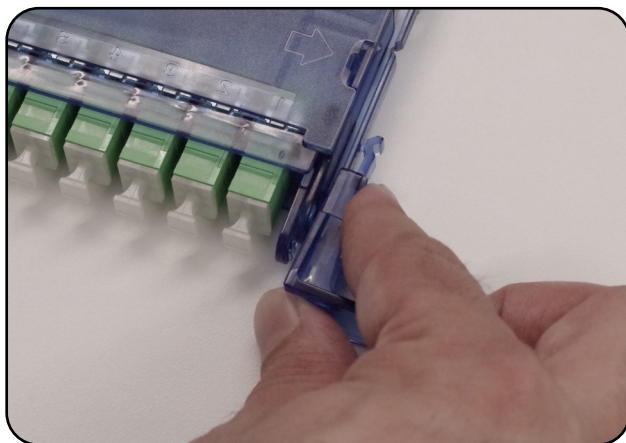


3. Slide the mounting ear up to the t-rail until it comes to a stop and the lever is fully seated into place in the first notch on the t-rail.
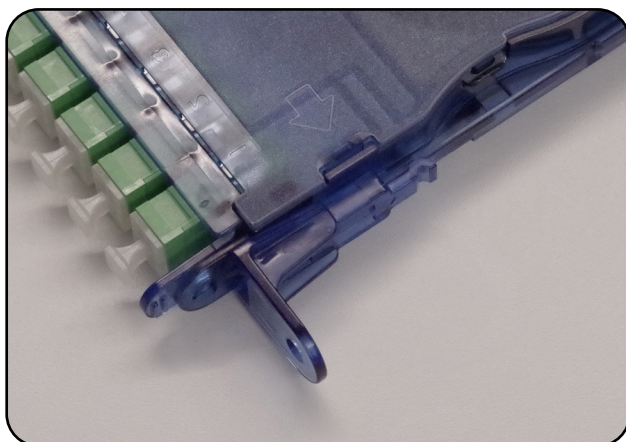
4.  If the push/pull plunger is not already installed, insert the first piece of the push/pull plunger (grommet) into the hole in the mounting ear. Follow that by installing the second piece (plunger) of the push/pull plunger into the hole of the first piece. Push the plunger in until it clicks into place, then pull back until the expansion of the grommet disengages.
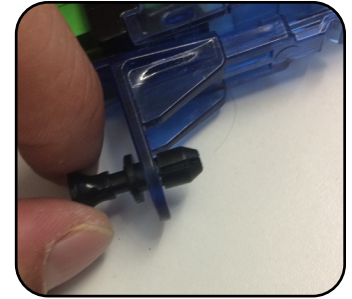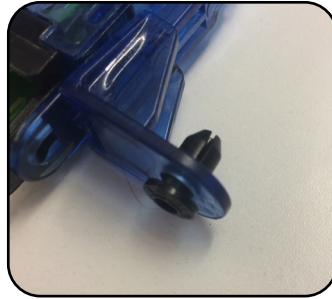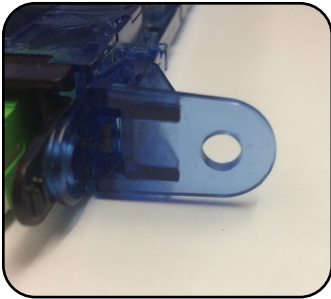


5.  Install the cassette into the panel by engaging the t-rail on the side of the cassette with the corresponding slide rail inside the panel. Slide straight back until the mounting ear on the opposite side makes contact with the panel bulkhead.
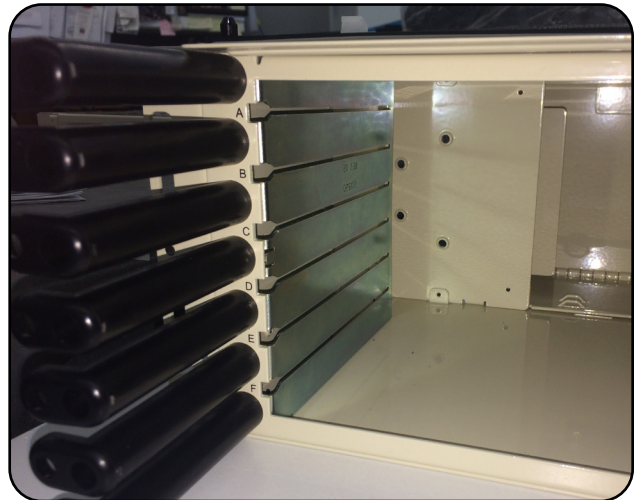


6.  Secure the cassette in place. To do this, ensure the push/pull plunger is through the small hole in the panel bulkhead, and push the plunger to expand the grommet and lock the cassette in place.

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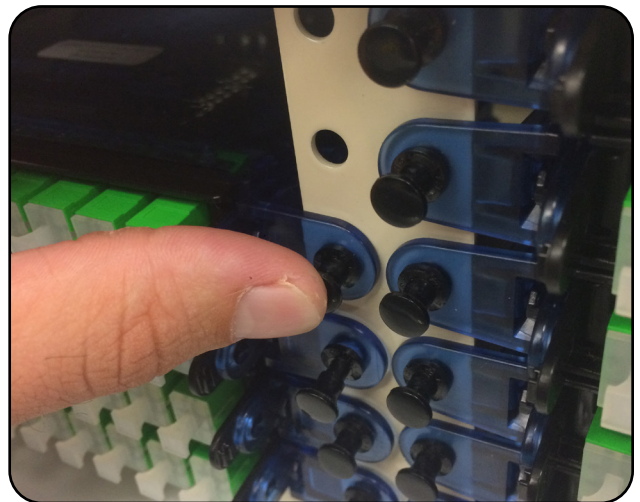
## Splicing/Buffer Tube Storage

*Note: Panels shown in images may not match product received. Splicing in cassettes and buffer tube storage will remain functionally the same.*

1.  Before splicing, remove the patch and splice cassettes.

    **Note:** *In a 144 port panel, ports 1-72 will be located in the cassettes held on the left side of the panel. The latter half, ports 73-144, will be located in the cassettes on the right side of the panel. This is true for all panel sizes.*
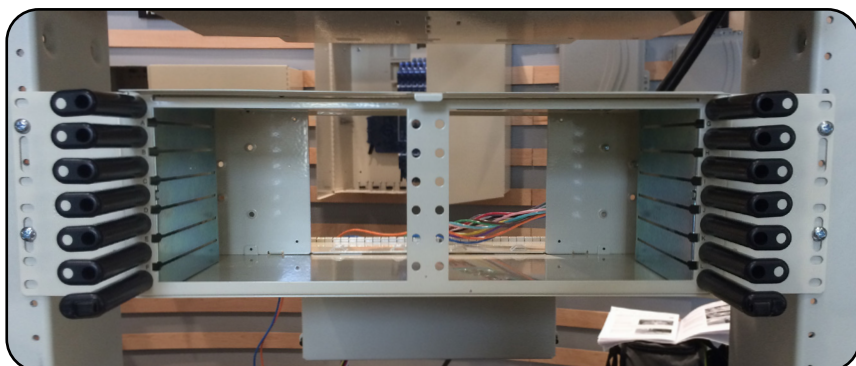
    

2.  Open the slack basket by pulling on the push/pull plungers and gently swinging the basket down.

3.  Feed the buffer tubes for all cassettes on the right side of the panel (when looking from the rear of the panel), through the front of the panel, to the right side of the bulkhead divider.
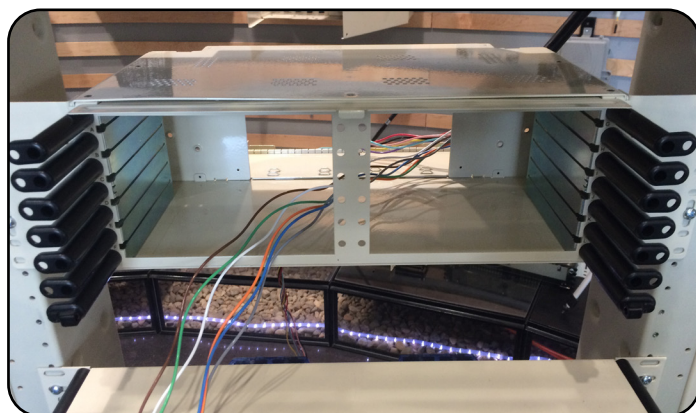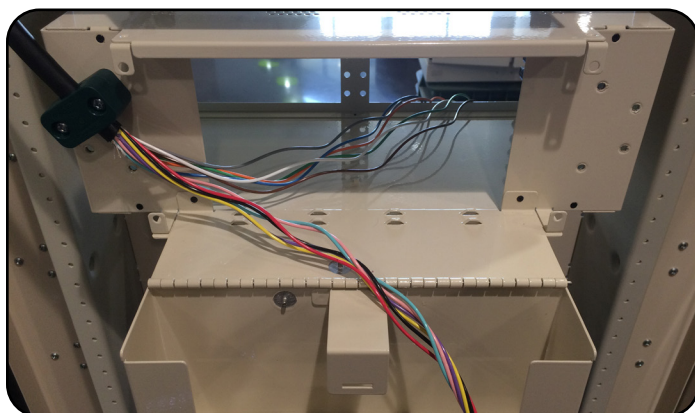


4.  Proceed to splicing the buffer tubes into the cassettes for the first half of the panel.

    **Note:** *Consult the Clearview Blue Cassette Installation Manual for splicing instructions. Viewable in the Installation Manual section, under the Resources tab, of the Clearfield website. Link here:*

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

5. After splicing, feed the buffer tubes back through the bulkhead and install the cassettes into the panel in the appropriate locations.
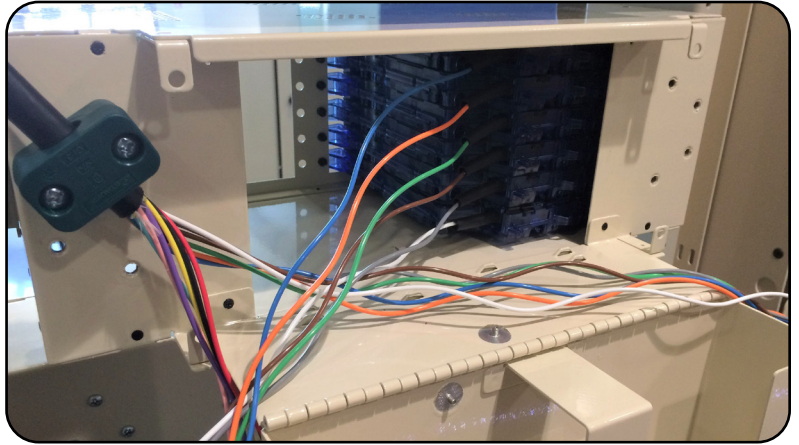
6. Feed the remaining buffer tubes through the left side of the panel (looking from the rear of the panel), interweaving the new buffer tubes with the existing ones on the right. Buffer tubes from the left and right sides should alternate as shown.
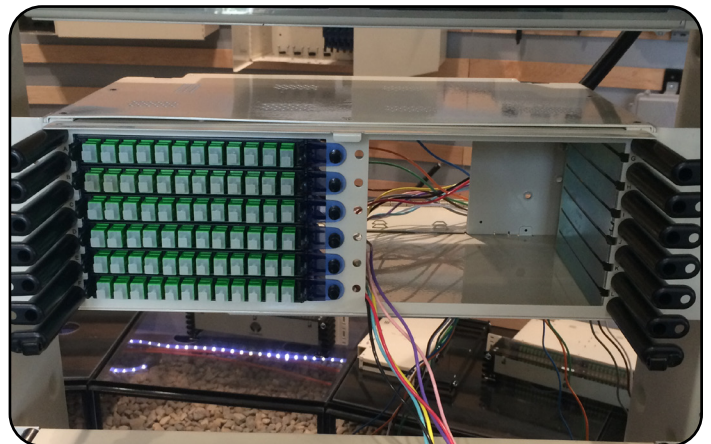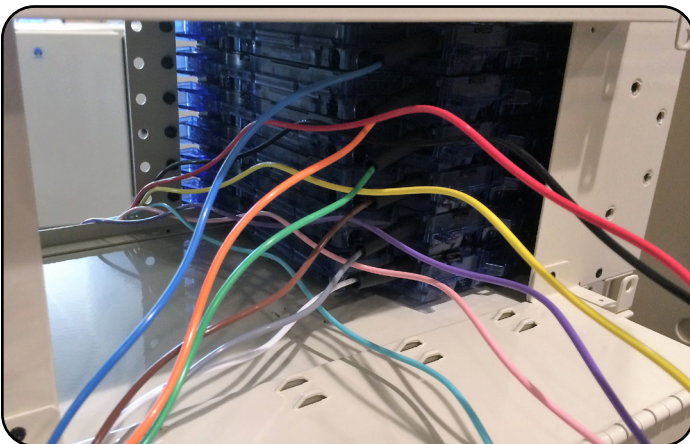




7. Proceed to splicing the buffer tubes into the cassettes for the second half of the panel. After splicing is complete, feed the buffer tubes back through the panel and install the cassettes into their corresponding slots.



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8. After both sides of the panel's cassettes have been spliced and installed into the panel, it is time to store the buffer tube slack in the slack basket. Make use of the bridge lances/tie-down locations during installation to secure the buffer tubes with the provided velcro.
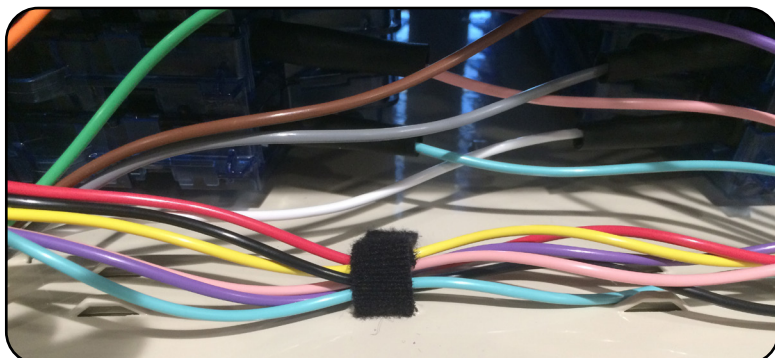


9. Start with the buffer tubes that correspond to the cassettes on the same side of the panel that the cable is mounted. Bring the buffer tubes over to the other side of the panel and drop down into the slack basket, then start to coil them in the basket.

   *Note: If the cable is mounted to the left side of the panel as shown in these images, start with the buffer tubes that enter the cassettes on the left side of the panel (when looking from the back).*
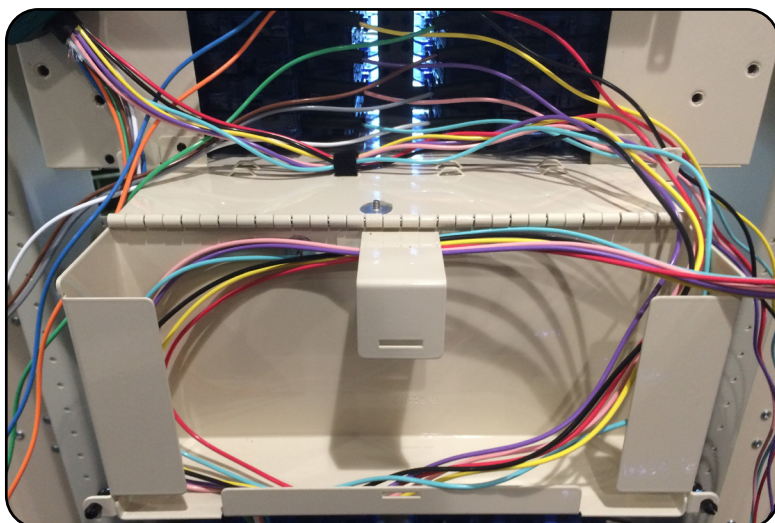


10. Since the buffer tubes will be routing in the opposite direction that is needed for a clean sweep up to the cassettes, a redirect to the direction of the coil will need to be added. Cut through the middle of the slack basket and curve back up, beginning to coil in the opposite direction.
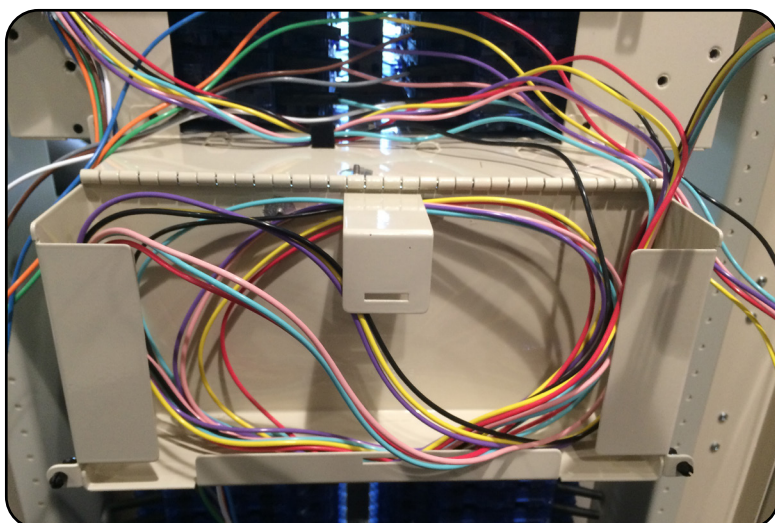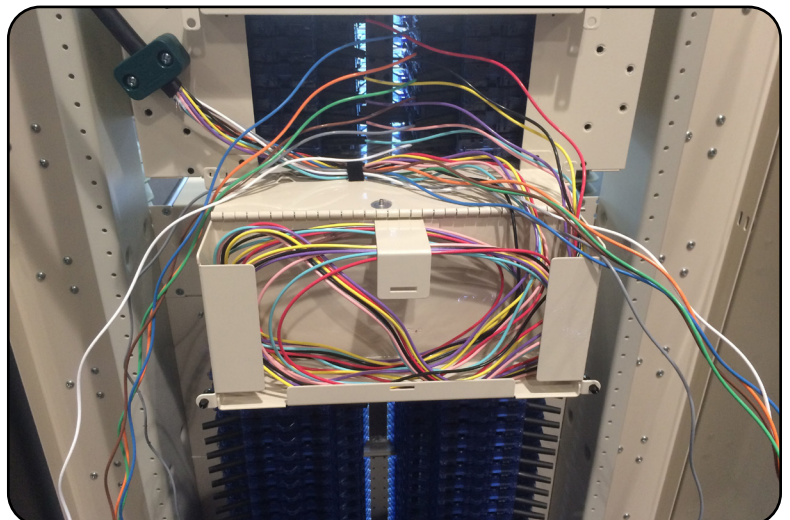
11. Finish coiling the buffer tubes you have been routing into the slack basket. If what is left over is not an appropriate length for a clean sweep up to the cassettes and there is too much slack, pull out a coil from the slack basket and resize the loop to take up the extra slack
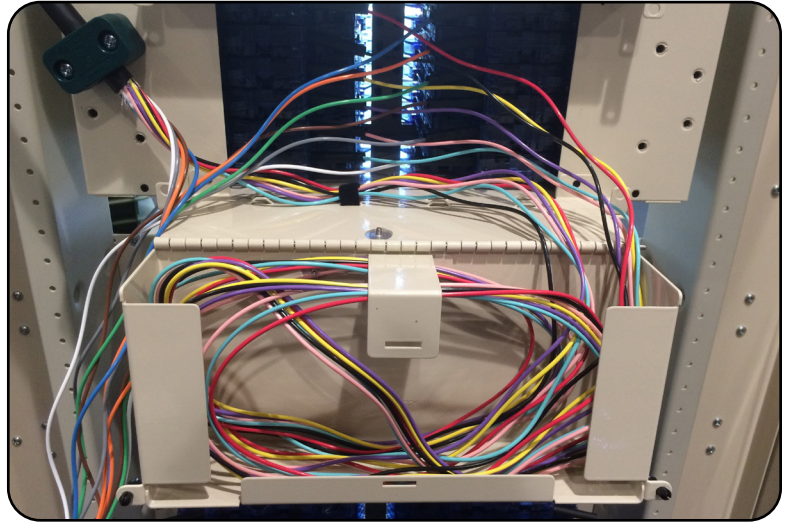


12. Bring the remaining buffer tubes into the bundle traveling across the panel and secure them in place with the velcro.
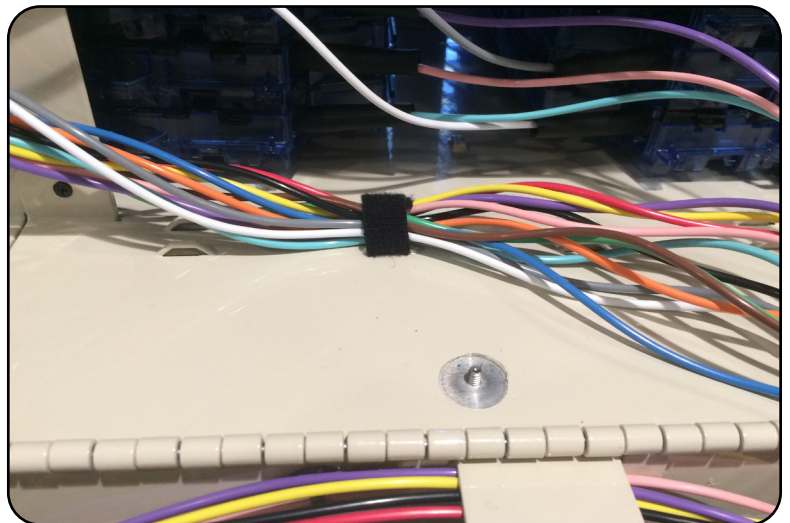


13. You will now route the remaining buffer tubes, which correspond to the cassettes on the opposite side of the panel from the cable mounting location



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14. These buffer tubes will route in the direction needed for a clean sweet up to the cassettes, so no redirect will be needed. Simply coil the buffer tubes into the slack basket until the slack is taken up, resizing the loops if needed.



15. Use the bridge lances and slots in the slack basket to secure the buffer tubes into place with the provided velcro.

    *Note: Buffer tubes should transition from slack basket to cassettes without too much slack, as that can cause unwanted bends when closing the slack basket.*
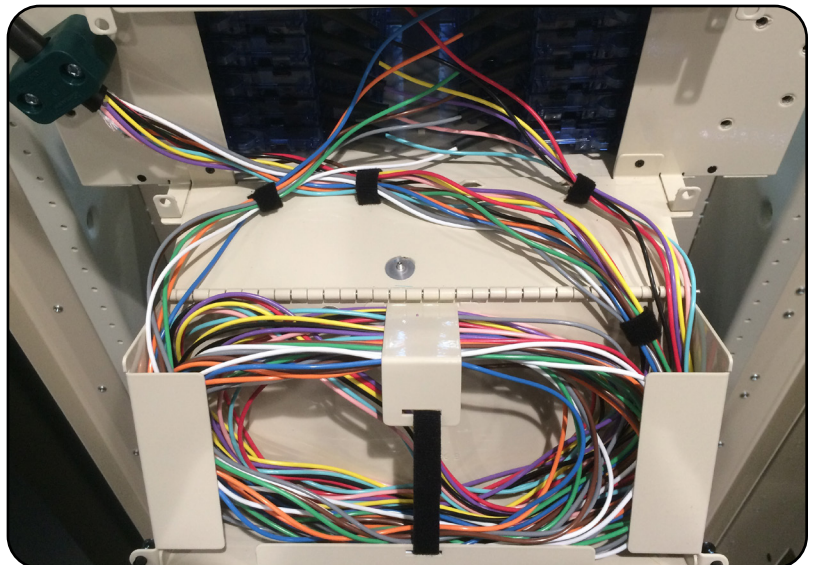


16. Carefully close and secure the slack storage basket by pressing on the push/pull plunger, paying attention to not damage the buffer tubes.

**1RU Panels**

*Note: Panels shown in images may not match product received. Splicing in cassettes and buffer tube storage will remain functionally the same.*

1. When using the 1RU panel, use the following steps to store the buffer tube slack in the panel after splicing, as 1RU panels do not include a slack basket due to buffer tube bend limitations.

   *Note: If the buffer tube used in splicing a 2RU panel is too stiff to coil in the slack basket, the slack can be stored in the same fashion as the 1RU panel.*
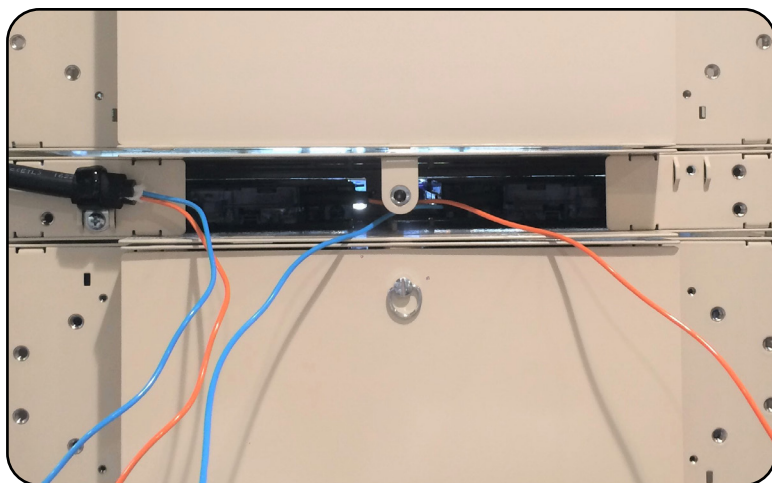


2. After splicing the cassettes, reinstall them into the bulkhead.

3. Coil up the buffer tubes from each cassette into a coil around 6-7" in diameter.

4. The coil can then be secured with the provided velcro.



5. The buffer tubes can then be inserted into the panel, either above or below the cassettes.

6. Reinstall the back panel, pushing in the plungers to secure it in place.
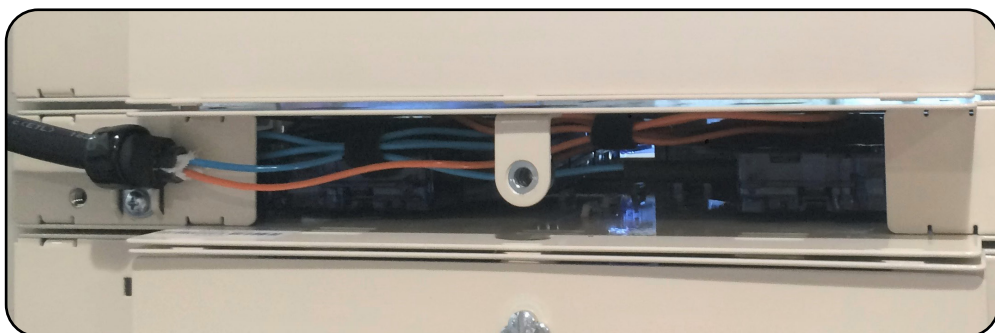
## FxMP Tie Panels

*Note: Panels shown in images may not match product received. Fiber routing and protection will remain functionally the same.*

1. Tie plates will attach to the panel in a similar manner to cassettes, except instead of sliding a t-rail into one of the panel's slide rails, the hook on the end of the tie plate will insert into the front of the slide rail. Press on the push/pull plunger to secure the tie plate.
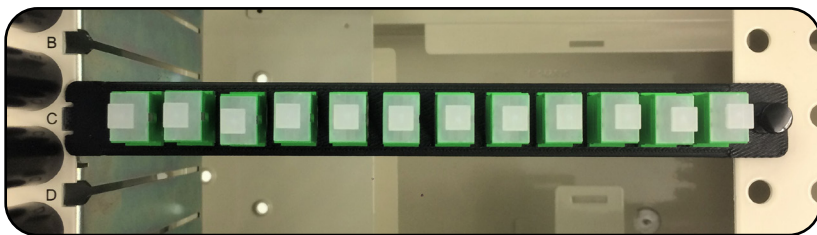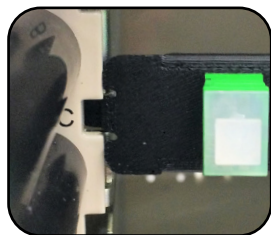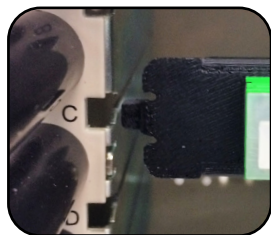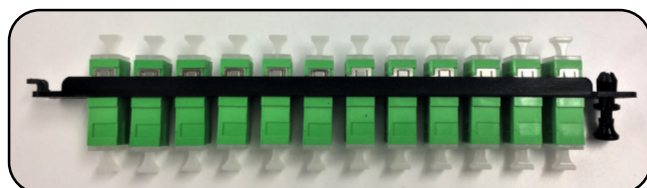




2. Route and install the fiber into the panel. Clamping off the incoming multi-fiber bundle is done in the same method as our standard panels. Refer to the "Cable Mounting and Routing" section for more information.

3. Use the included mounting screws to fasten the green clam shells and cable to the rear cable bracket. The cable should be mounted so that the breakout is slightly beyond the end of the clamp (see below).

4. If bringing jumpers into the tie panel, the cables can either be bundled and wrapped in foam tape to clamp to the back of the panel, or tied to the provided bridge lances.

    *Note: If bringing in jumpers periodically it is recommended you use velcro and bridge lances to secure the jumpers. This will make it easier to unsecure and re-secure the jumpers when fiber is added.*

5. Clearfield will send along foam separators, which can be used to organize fibers inside the tie panel. Remove the plastic film to expose the adhesive strips and secure the separators vertically at about the midpoint of the panel. Cut the foam separators to height as necessary for smaller panels.
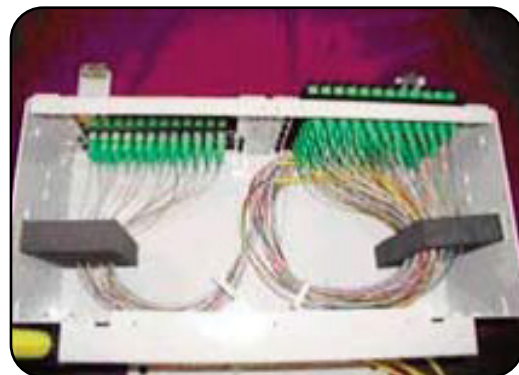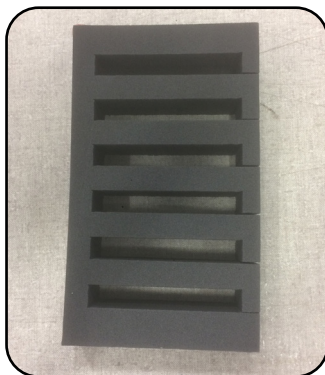




## FxMP Designation Card

Located on the inside of the front door protection will be the designation card, used for recording information about each of the ports in the panel. With the door open, detach the velcro and unfold the card to reveal a designation card layout like the one below.



Pictured is a typical layout for a 144 port FxMP panel. Your designation card may differ, for instance if you are using HD cassettes, which contain 24 ports per cassette.

When connecting jumpers, always be sure to follow your companies rules and practices for inspection and cleaning. Clearfield's recommended cleaning procedure can be found on the following pages.

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## 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.*



**Figure 1**

## 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 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**

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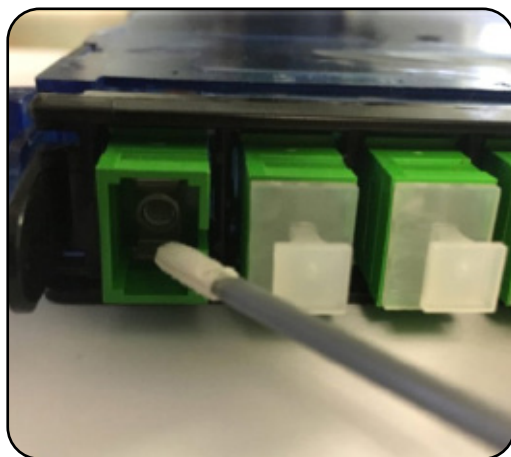
## Cleaning an MPO/MTP Connector

**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).
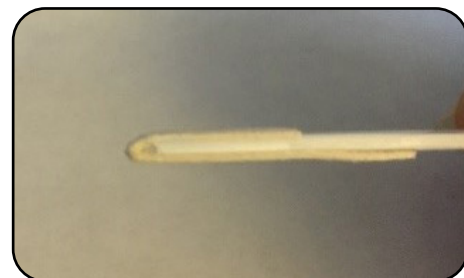


- Wipe connector areas to be cleaned, sliding pad from bottom of pad across and forward to tip of swab, from 1 side to the other, turn over and use long side to dry in same movement.
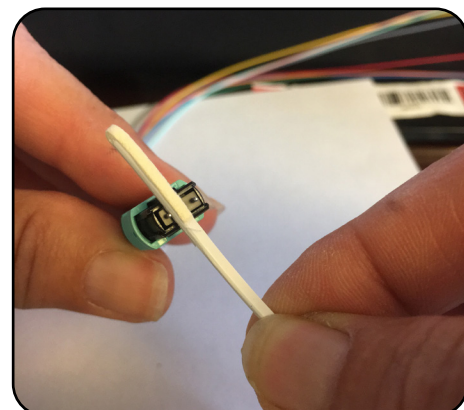
- Use the hole on end of pad to clean one alignment pin, then press the end of the swab into the other pin to clean.

- Check your work with a fiber scope. This can take several attempts to get the endface clean.
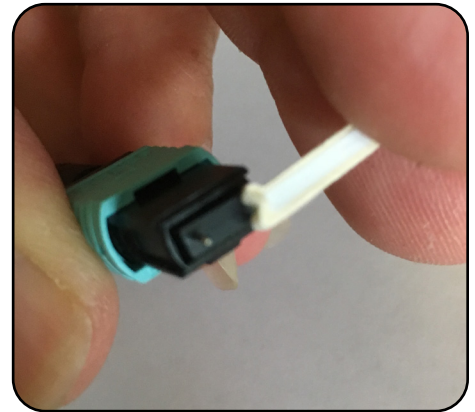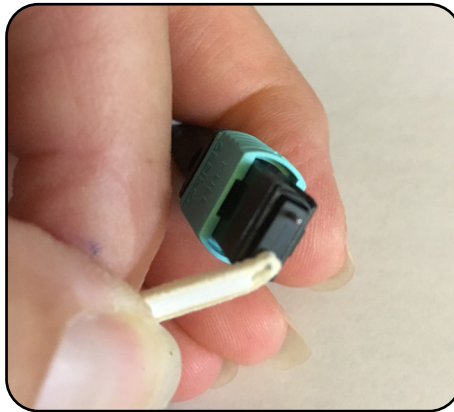



## Female Connector (without pins)

- 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.



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**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.
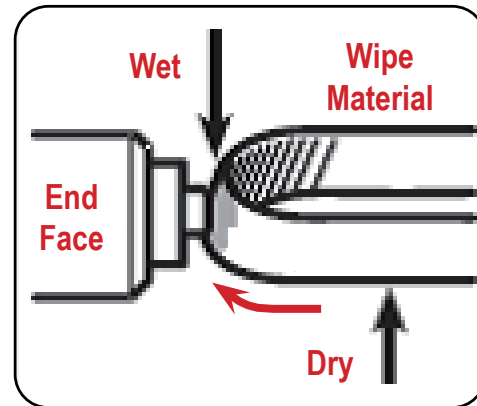




- Insert connector or insert probe though adapter and click 2-3 times to move past the wet area and allow material to dry wipe.
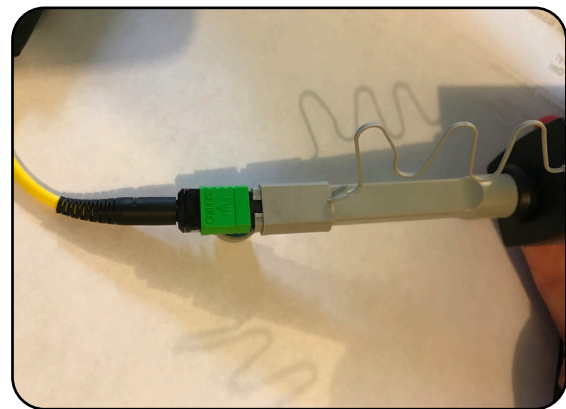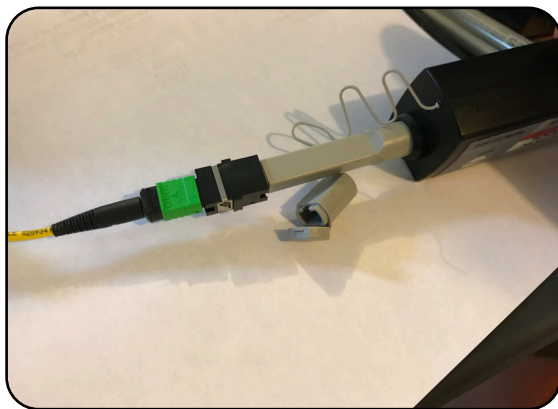




- Inspect connector, repeat if necessary (following standards)

- If cleaning a male connector, clean the pins (see above)

## 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.

Clearfield, Inc.
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Minneapolis, MN 55428

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