

# FieldSmart® FxHD Frame

## Installation Manual



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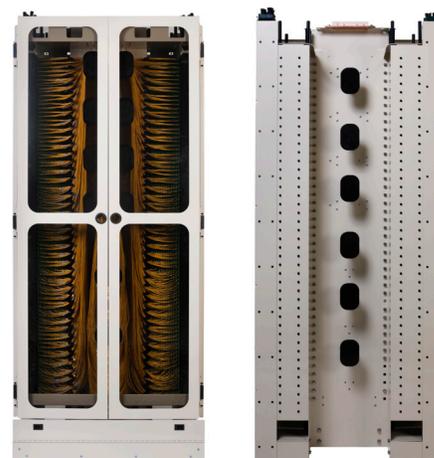


# FieldSmart® FxHD Frame

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### Application

With the FieldSmart FxHD front access design, Clearview® Cassettes are shifted to the outside of the frame and away from a fixed panel configuration. Instead of traditional panel configurations, the frame is configured with a series of Clearview Blue cassettes teamed with building brackets built into user-defined building blocks. The FxHD Frame provides the ultimate in modularity and flexibility to scale from 12 to 2,016 ports in any fiber count, optimizing your ability to maximize fiber investment and assets. Clearview Blue's in-cassette buffer tube storage allows the FxHD to reclaim the space used for traditional panels and mass buffer storage and to redeploy it by using building blocks of Clearview Blue Cassettes.



### Description

The FieldSmart High Density Fiber Crossover Distribution System (FxHD) is the highest density fiber management frame solution available in the industry today, providing 2,016 SC terminations in a 7' frame or when mounted back-to-back, FxHD supports a maximum density of 4,032 terminations in a space savings footprint of 9 cubic feet (36" x 36").

Those deploying the FieldSmart FxHD can start with one Clearview Blue Cassette and add additional cassettes as additional capacity is needed, up to a total of 168 cassettes and 2016 ports of connectivity. With instant access to all cassettes, adapters and jumpers, the frame is designed as a front access frame. The FxHD can be placed against a wall, cage in data center collocation environments or installed back to back.

User-defined Clearview building blocks configured to exact port count specifications can be deployed in seconds with Smart-Connect tool-less fasteners. Clearview Blue Cassettes simply slide into building block assemblies with a "hard-stop" feature ensuring perfect alignment every time. Additional buffer tube/ribbon slack is stored within each cassette eliminating buffer tube congestion, pile-up or identification miscues. The dedicated "w-shaped" intrabay route scheme ensures long term reliability of circuits by maximizing proper slack storage of any jumper length, greatly reducing the chance of jumper tie-in or weaving. Full length doors provide complete physical fiber protection when closed and instant visual and physical access to the entire frame when opened.

### Technical Specifications

FieldSmart FxHD Frames	
Dimensions	7.2' H x 36" W x 18" D
Ratings	Compliant to Telcordia GR-449
Port Density	2,016 SC or 4,032 LC (front access only, back-to-back mounting)
Cassette Types Supported	Clearview® Blue
Connector Types	SC/UPC, SC/APC, LC/UPC, LC/APC, MPO (additional options available upon request)
Cable Types	Indoor Riser, Indoor Plenum, Indoor/Outdoor, Outdoor (Riser/Non-Rated), Outdoor Armored (Riser/Non-Rated), FieldShield®
Splice Capacity	12 or 24 splices in each Clearview Cassette
Storage Capacity	One meter of 900 μm fiber and up to three meters of jacketed fiber
Cable Entry Compatibility	Top and bottom (floor) entry
Cable Entry Clamp Location	16 (eight left, eight right) <i>Note: Center clamping compatible for left and right same sheath distribution of buffer tubes/sub-units</i>
Recommended Jumper Length	Four meters, plus two meters for each additional frame
Material	Stainless steel with almond powder coating

# FieldSmart® FxHD Frame

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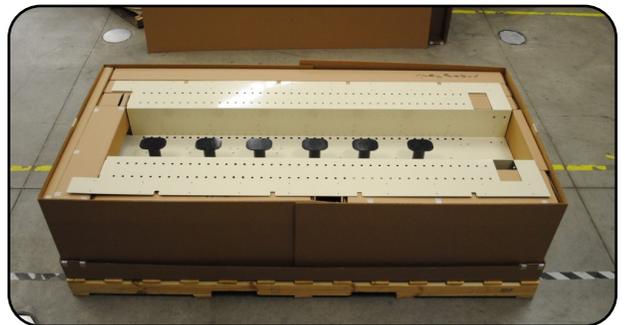


### FxHD Frame Installation

The FxHD frame system will come in a corrugated cardboard packaging crate (44" wide x 91" deep x 21" high (26" high with pallet)).



Open the crate by cutting the banding straps (not shown) and removing the top cover.



Prepare to carefully remove the contents. This should include:

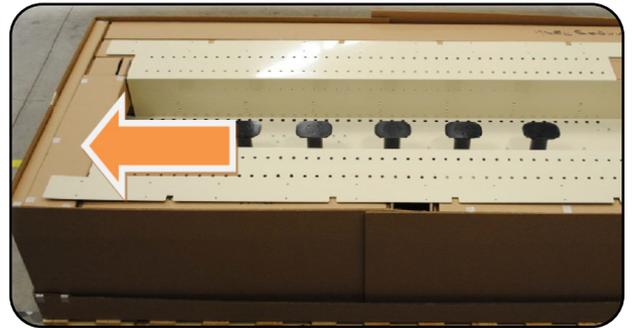
1. Bulkhead
2. Base Assembly (Base Plate and Lower Trough)
3. Isolation Pad
4. (2) Doors
5. (2) End Guards
6. Top Trough Assembly
7. Grounding Bar
8. Miscellaneous Hardware

**Note:** The FxHD Frame system comes in two main configurations, patch only and patch and splice. The difference is that the patch only main bulkhead does NOT come with the ganging brackets install on the bulkhead, as the ganging brackets will come pre-installed on the patch only cassette blocks. The patch and splice version does come with the ganging brackets already attached to the bulkhead.

Shown is a picture of a patch and splice frame system. The areas highlighted would not come with a patch only frame system.



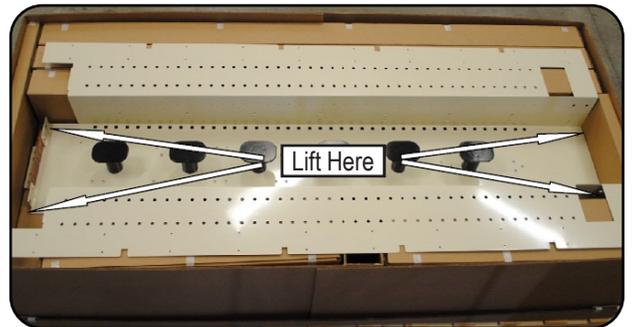
Remove the small spacer box from the top end of the bulkhead.



Carefully lift the bulkhead assembly out of the box and set aside.

**Hold the assembly by the center portion on both ends to prevent bending the bulkhead.**

On the reverse side of the bulkhead are radius limiters. **Be very careful setting this aside. Do not drag on the floor.**



Locate and remove the box labeled "Base Assembly".

Also remove the isolation pad and the floor mounting hardware and set aside. Separate the base plate from the lower trough by removing the screws from the front. Save these screws and set the lower trough aside. The bolts for mounting the base to the bulkhead are taped to the inside of the base assembly.



# FieldSmart® FxHD Frame

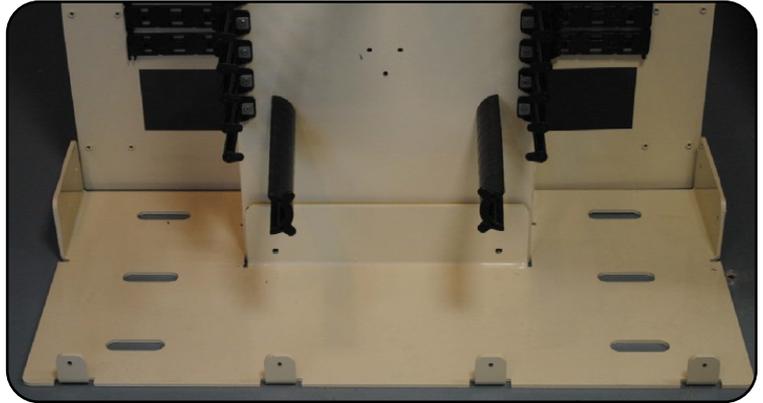
## Installation Manual



**Note:** It is important to build the frame system as much as you can before mounting to the floor. Mounting the base to the floor next to another frame or against the wall will not allow you access to the sides and back to complete the installation.

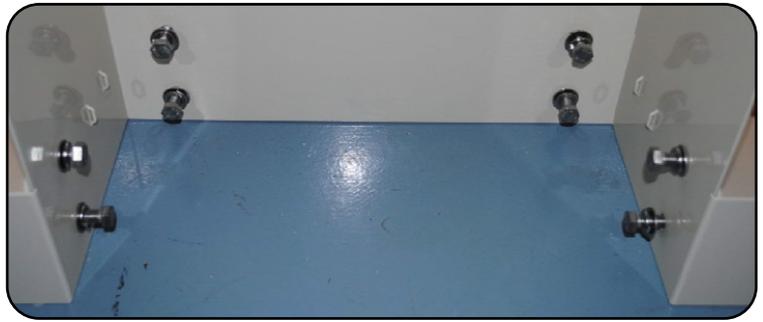
Stand the bulkhead up and slide the base plate into place as shown

**Note:** The black plastic Building Brackets shown are not included with a Patch Only Frame.

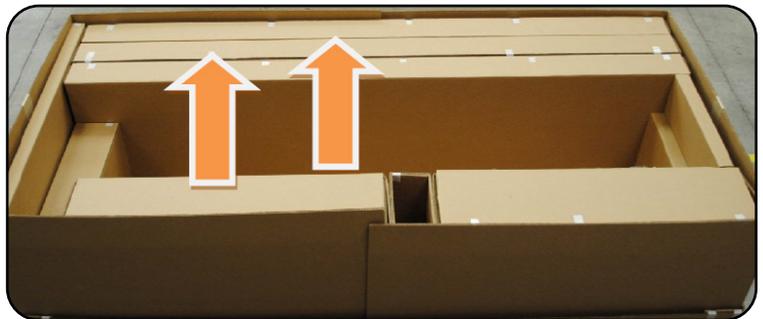


Attach the bulkhead to the base with the provided bolts from the rear of the frame. Do not fully tighten the bolts at this point.

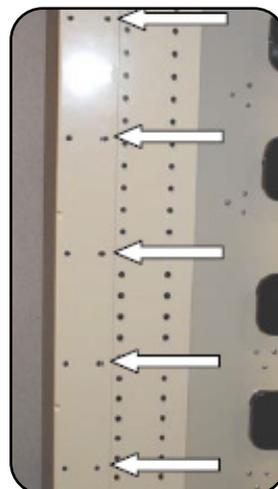
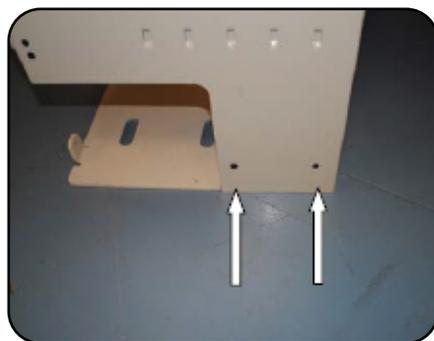
**Note:** If the frame is going to be mounted against a wall or other frame you must tighten these bolts before putting the frame into its final position.



Locate the boxes labeled “Right End Guard” and “Left End Guard” and remove. The screws for mounting the end guards will be in the box.



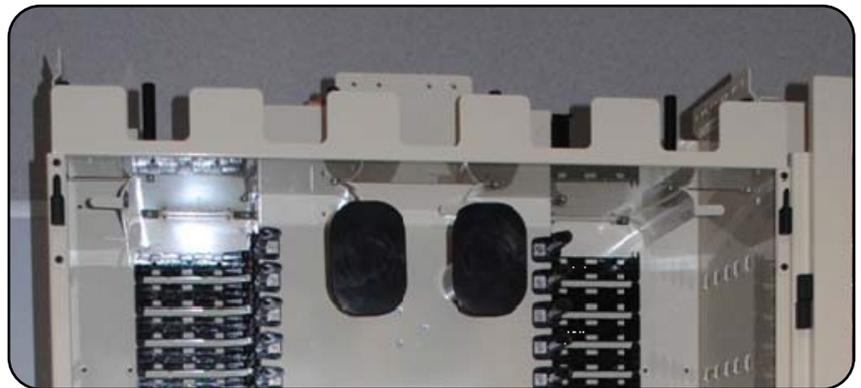
Now, stand the end guards up and mount into place one at a time. The end guards are attached with a row of screws on the rear of the frame and a pair of screws on each side at the bottom of the frame.



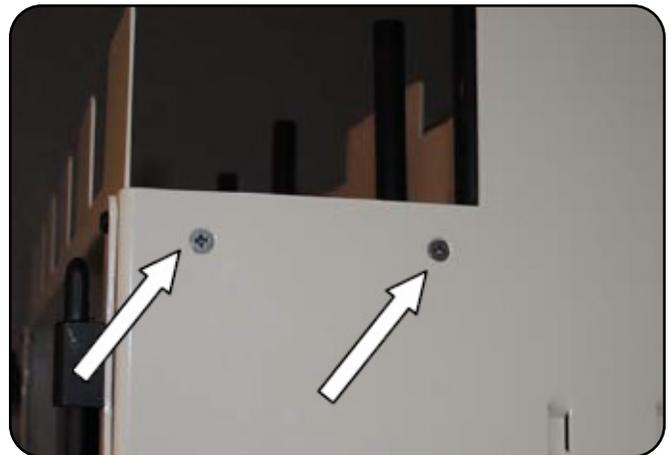
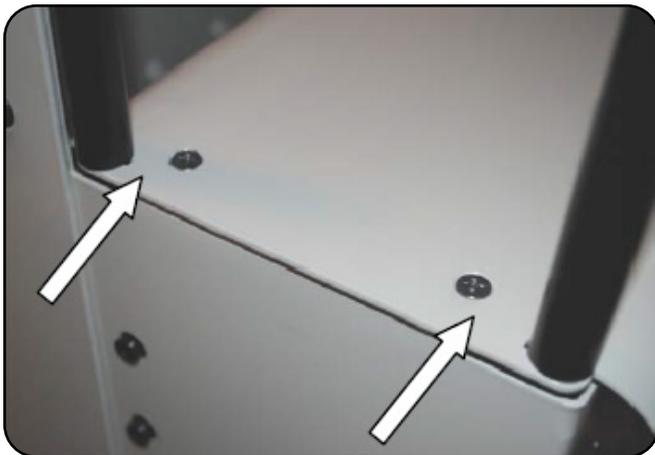
Locate the box labeled “Upper Trough”. Inside the box will be a second box labeled “End-guard Support”. Locate this box and set aside.



The upper trough is installed at the top of the frame as shown.



The upper trough is mounted using the provided screws. The mounting locations are shown below. Install two screws on each side from the top down, two on each side through the end guard, and two in front underneath the trough.



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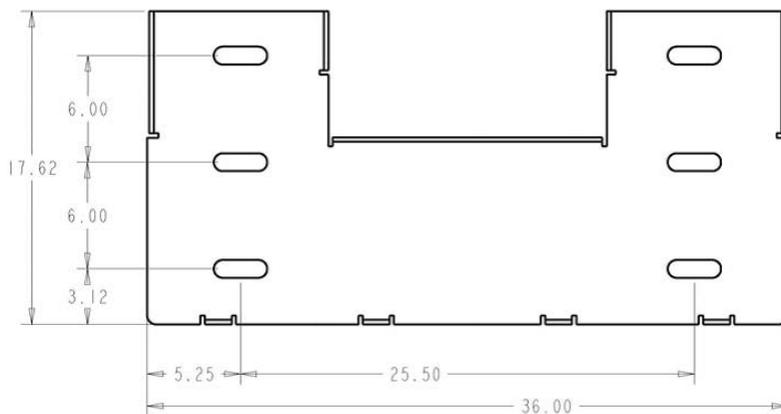
### Floor Installation

**Note:** It is important to build the frame system as much as you can before mounting to the floor. Mounting the base to the floor next to another frame or against the wall will not allow you access to the sides and back to complete the installation.

#### Tools (required or recommended):

1. Hammer (or rotary) drill (depth gauge recommended)
2. 5/8" masonry drill bit
3. Socket wrench set
4. Blowout air bulb or vacuum with small diameter tube

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



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

**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".

Thoroughly clean the dust from each hole, using an air blowout or vacuum device.

**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.

Place isolation pad in position over the pre-drilled holes and align as necessary. Lift frame onto isolation pad and line up with holes.



# FieldSmart® FxHD Frame Installation Manual

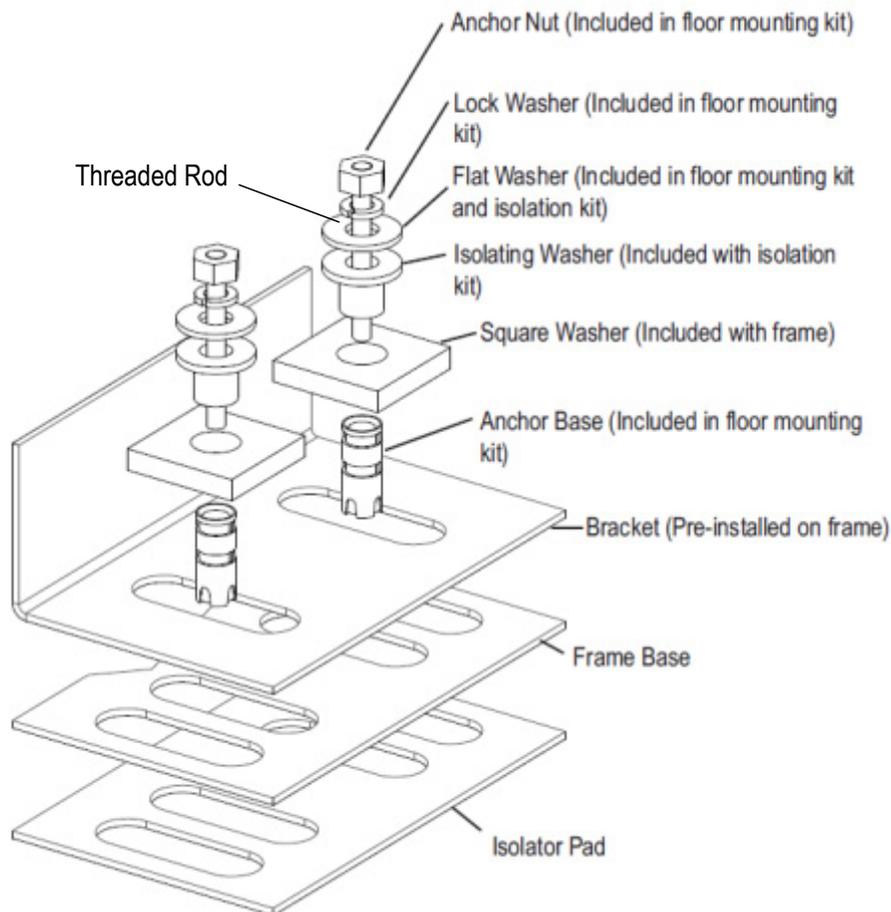
Ensure that the anchor's expansion shield is not expanded. Place the end of the anchor into the pre-drilled hole. Repeat for the other drilled holes. Make sure the anchor is fully embedded in the concrete.

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 in the hole and firmly against the 2" square washer.

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 since 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.

The anchoring line up should look like this:



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

# FieldSmart® FxHD Frame

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### Raised Floor Installation

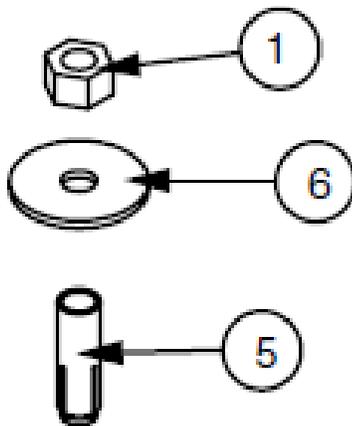
**Note:** It is important to build the frame system as much as you can before mounting to the floor. Mounting the base to the floor next to another frame or against the wall will not allow you access to the sides and back to complete the installation.

#### Tools (required or recommended):

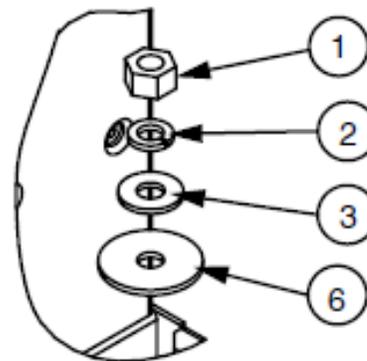
1. Hammer (or rotary) drill (depth gauge recommended)
2. 5/8" masonry drill bit
3. Socket wrench set
4. Blowout air bulb or vacuum with small diameter tube

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)



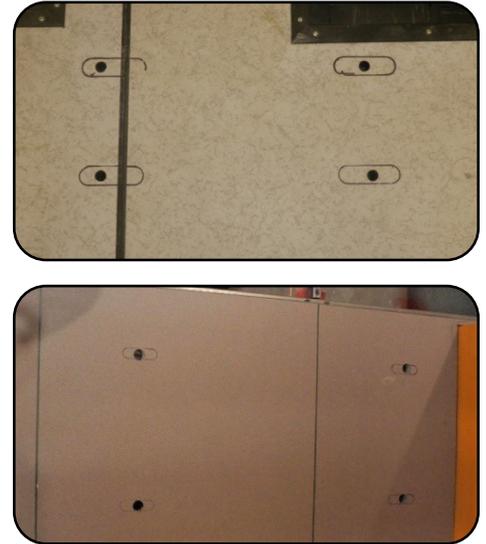
Screw Sequence for Floor



Screw Sequence for Frame

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

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



Take the threaded rods from the raised floor mounting kit and slide through each one 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.

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".

Thoroughly clean the dust from each hole, using a vacuum device.

**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.



# FieldSmart® FxHD Frame

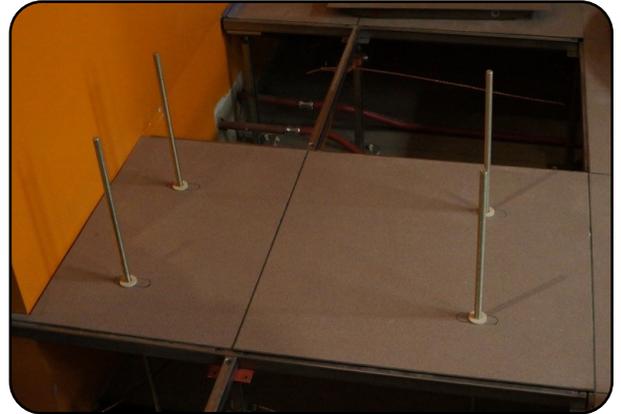
## Installation Manual



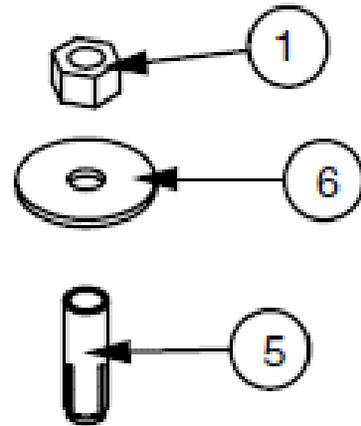
Install anchors into the floor. Replace raise floor panels and insert threaded rods through the four holes.

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

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.



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.

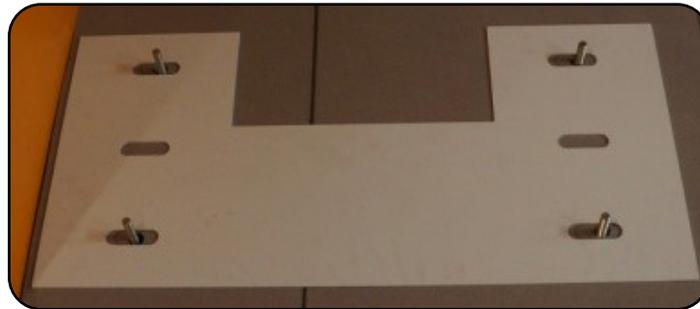


Tighten the nut down to secure the rod into the floor. Tighten each bolt to 65 ft-lbs., +10, -0 ft-lbs. The anchor will expand and secure itself to the floor.

Once all four rods are secure, thread another hex nut, then washer on each rod. Make sure the nut and washer are approximately 1/2" 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.



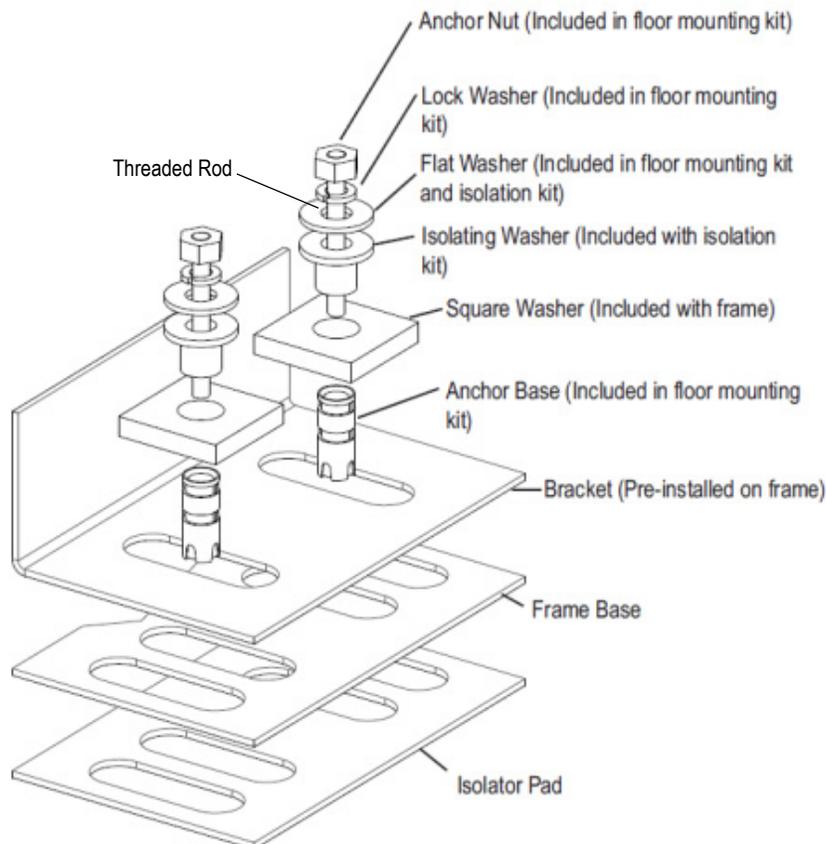
Place the floor panels into position, and tighten the previously installed nuts below the raised panel until they make contact with the panel. Put isolation pad into place (isolation pad may look different than example).



Lift the frame into place.

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.

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



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

# FieldSmart® FxHD Frame

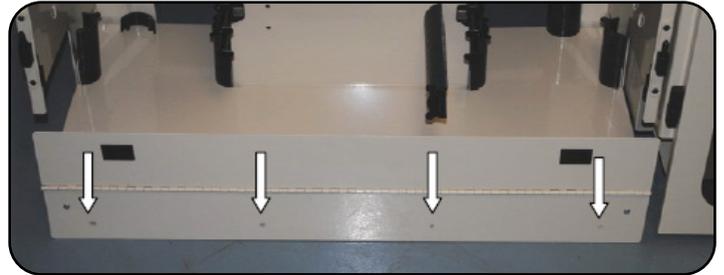
## Installation Manual



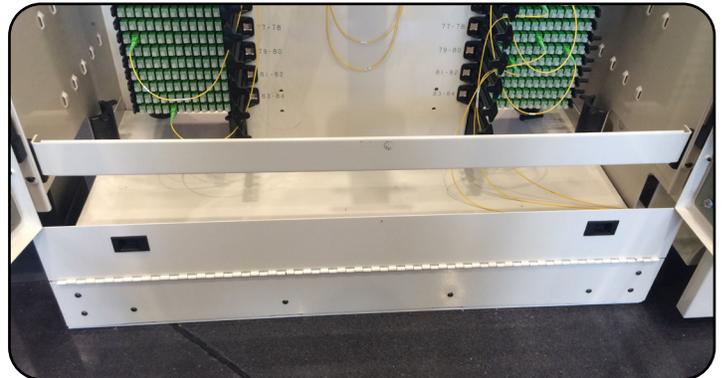
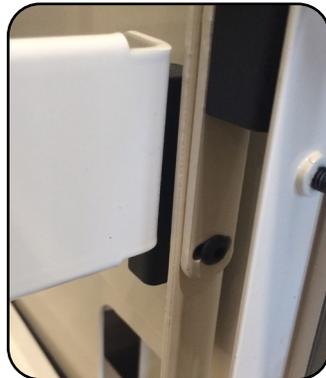
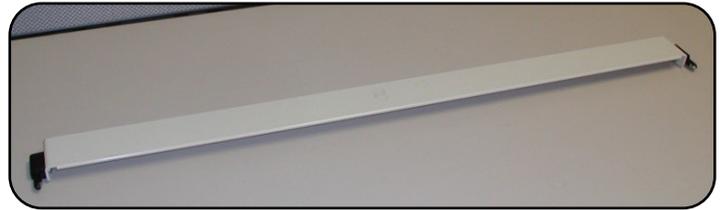
### FxHD Frame Installation Continued

The assembled frame can now be put into place where it will be permanently mounted. Mount the frame into place per the previous floor mounting instructions of this manual.

Once the frame system is secured to the floor, place the lower trough on the base, and using the 4 screws removed earlier, secure the trough to the base.



You can now add the end guard support bars. Retrieve the box marked "End Guard Support". Install the support by sliding into place as shown, aligning the pins and sockets and pressing down. These may also be called crossover or stabilizing bars.



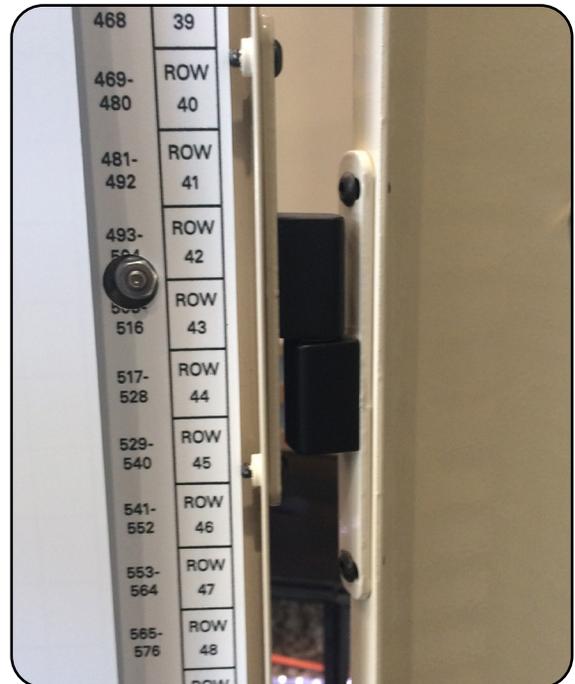
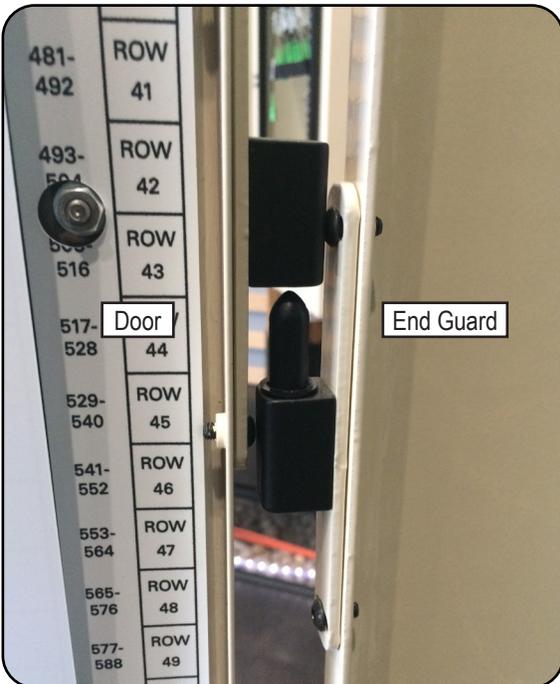
Now, you can add the doors. Locate the box labeled "Doors". Unpack the doors.



The doors will slide onto the end guards, aligning the pins and sockets of the hinges as shown.

Doors need to be open to 90 degrees to slide in easily.

**Note:** The doors will serve as your front protection.



The bolts on the back of the frame can now be tightened into place.



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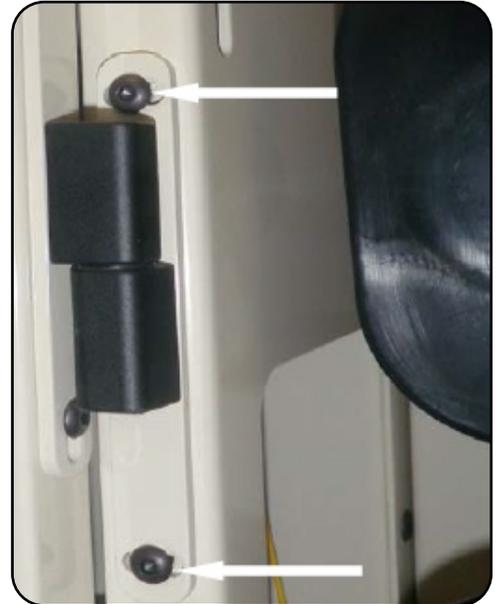


### Adjusting the Doors

To adjust the door, first align the doors so there is an even gap approximately 1/8" from the top of the doors to the bottom.

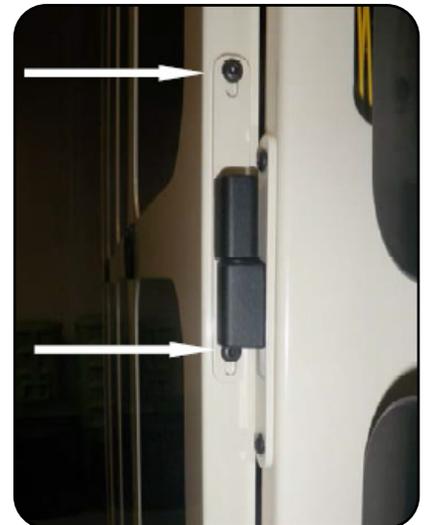
This can be done by adjusting the screws which hold the hinges to the end guards.

Start with the screw in the center of the slot as most applications will not need adjustment afterward.



After the horizontal adjustments have been made, adjust the doors to be even vertically.

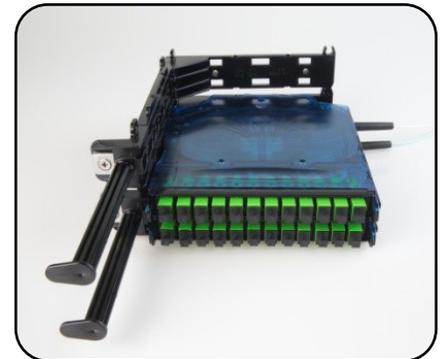
This is done by locking down the higher door and then adjusting the lower door to match.



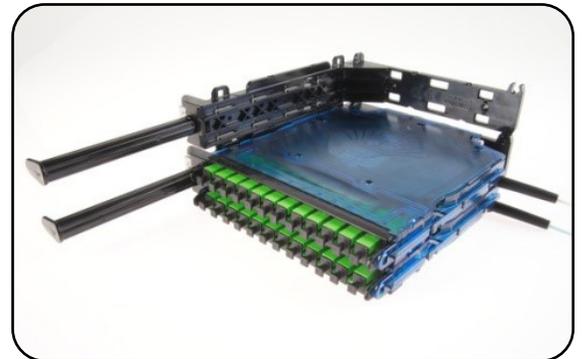
The frame is now fully installed and ready to accept the Clearview Blue Cassettes.

### Clearview Blue Patch & Splice Installation in FxHD

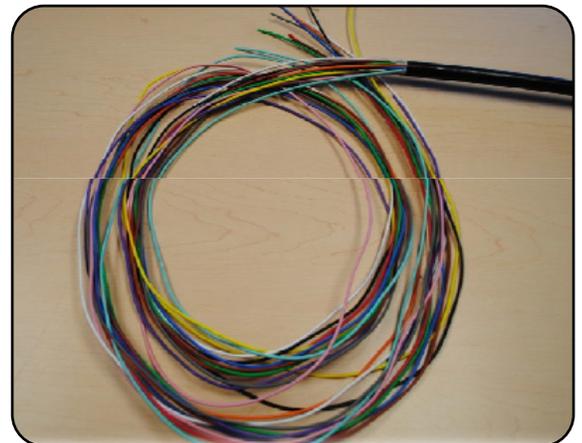
Installing Clearview Blue patch and splice cassettes into the FxHD is as simple as sliding the cassette into the black ganging bracket. The ganging bracket will already be permanently installed on the patch and splice frame system. This is done in the factory.



Clearfield recommends you install the cassettes into the frame system before prepping your incoming fiber cable. This will help ensure the proper buffer tube prep lengths when measuring them during prep.



Start by prepping and removing the jacket from the last 20 feet of the OSP cable. Locate the green cable clamp shells and corresponding mounting screws (sold separately). Determine which clamp best fits the cable to be installed. The cable clamp shells are used in same size pairs.



Avoid using a clamp that is too small and does not easily close around the cable. Instead, use the next largest clamp and pad with grommet tape.

Adhere a strip of grommet tape (included in the ship-along hardware) to at least one side of the clamp.



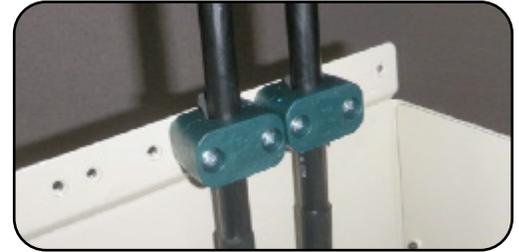
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Use the included mounting screws to fasten the cable clamp shells (sold separately) and cable to the clamping location as shown.

**Note:** It is best to start by clamping cables in the rear of the frame first and work toward the front.



**Note:** If more than 5 cables will be entering the frame on any one side, it is best to double stack the clamps as shown. Longer screws are included with the FxHD cable clamp kit (P/N 015277) in order to accomplish this.

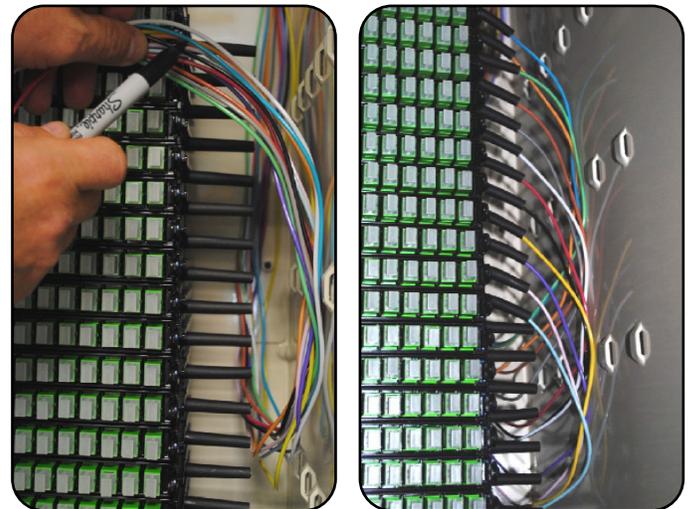


Create a slack loop with the buffer tube as shown (allowing for an additional 3ft/1m of fiber to splice inside the cassette) and mark the buffer tubes with a marker. For a group of 12 buffer tubes, a good rule of thumb is to make the loop as long as the 12 cassettes you are splicing.

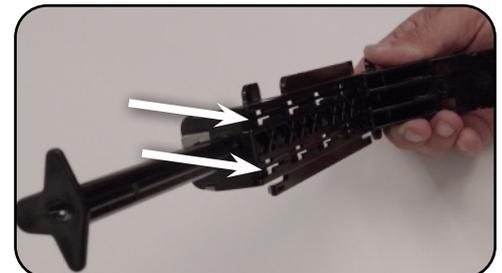
After placing a mark on the top buffer tube, begin marking each buffer tube 1" shorter for a neat slack loop.

**Note:** This loop can be smaller toward the bottom of the frame.

Splice the cassettes one at a time and store the slack up to the mark shown, per the cassette splicing instructions (see Clearview Blue Cassette Installation Manual and/or video).



Once the cassettes are spliced in, you can now slide the cassettes into the frame. Below is a side view of a cassette. The highlighted T-rail of the cassette slides into the channel of the black ganging bracket.



The FxHD comes with optional bridge lances for buffer tube organization. Carefully securing the bundle of buffer tubes to these allows for a nice clean finish and look. Clearfield recommends "snake skin" or "split loom" tubing to put around and organize the buffer tubes.

### Clearview Blue Patch Only Installation in FxHD

Installing Clearview Blue patch only cassettes into the FXHD is as simple as pulling the cable pigtail through the frame and pushing the cassette block, which will already be factory mounted into the black ganging rackets, into the appropriate area of the frame. Just push the securing mechanism and the block locks into place.

Start by feeding the blunt end of the cable through the top of the frame and into the fiber management used in this application.

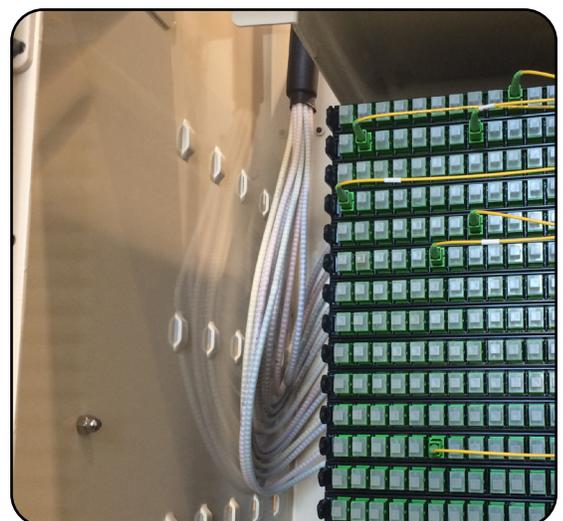
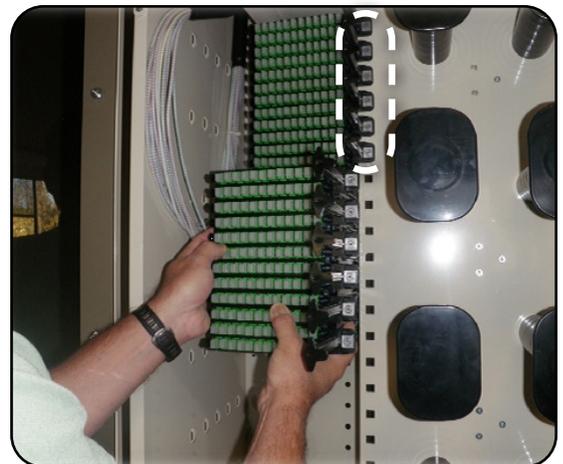
Remove the cassette block from the packaging. Continue to feed the blunt end of the cable until the cassette block is in place.

Now, insert the cassette block into the desired location with the block almost touching the back of the frame. If applicable, slide the block up to engage the one above, then slide it back in the frame to lock into place. Each square screw will then need to be pressed until it clicks into place to fully secure the block.

**Note:** The actual number of “square mounting screws” will vary depending on the port count of the cassette block. Square screws highlighted here.

Continue to pull the fiber cable/pigtail through the frame until a slack loop of the bend limiting tubing remains. Locate the green cable clamp shells and corresponding mounting screws from the ship-along hardware. Determine which clamp best fits the cable to be installed. The cable clamp shells are used in the same size pairs.

Avoid using a clamp that is too small and does not easily close around the cable. Instead, use the next larger clamp and pad with grommet tape (included with the cassette block).

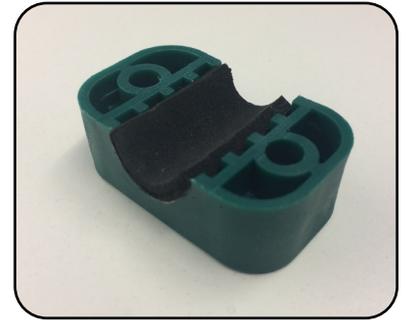


# FieldSmart® FxHD Frame

## Installation Manual



Adhere a strip of grommet tape (included in the ship-along hardware kit) to at least one side of the clamp.



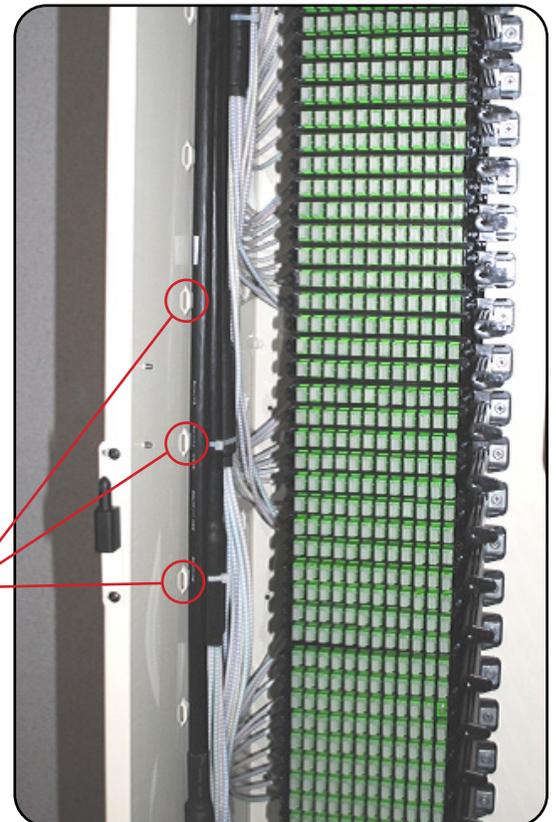
Use the mounting screws to fasten the clamp shells and cable to the clamping location as shown. It is best to start by clamping cables in the rear of the frame first and work toward the front. Cable clamps sold separately.

**Note:** As the frame gets closer to full, the breakouts will be mounted lower and lower in the frame.



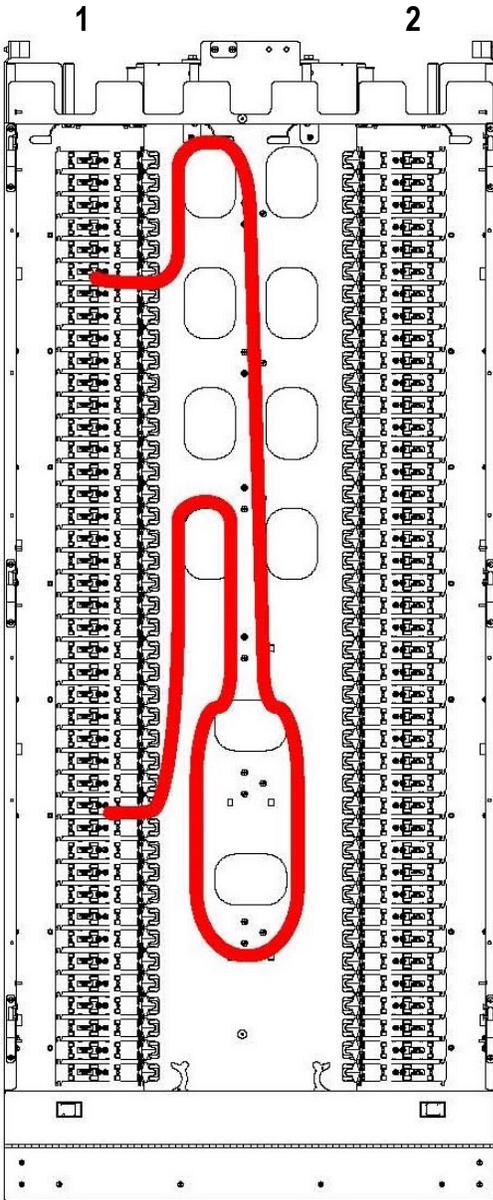
The FxHD comes with optional bridge lances for cable organization. Carefully securing each cable allows for a nice clean finish and look.

**Bridge Lances**

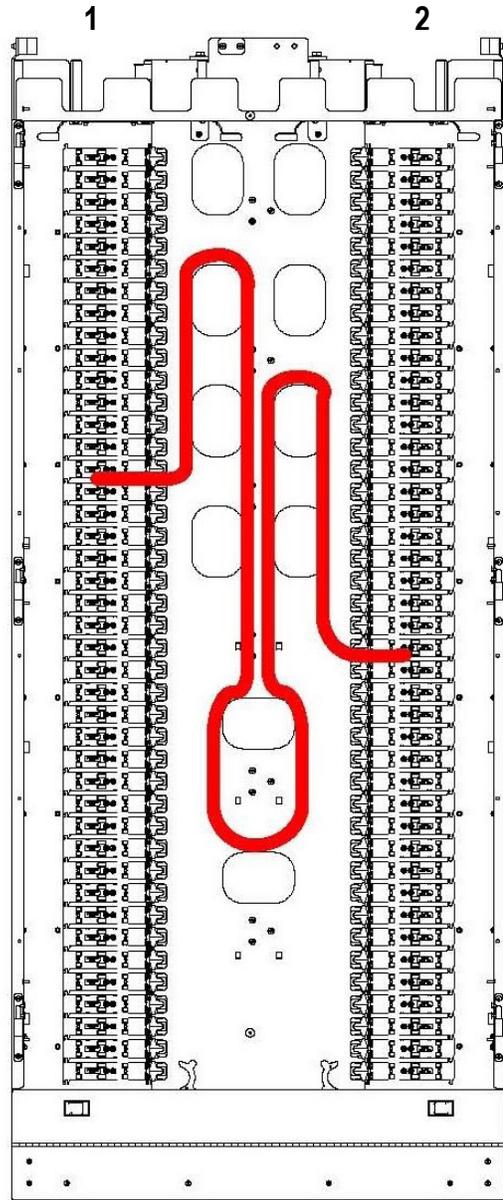


### Jumper Routing Guide

#### Single Frame Routing

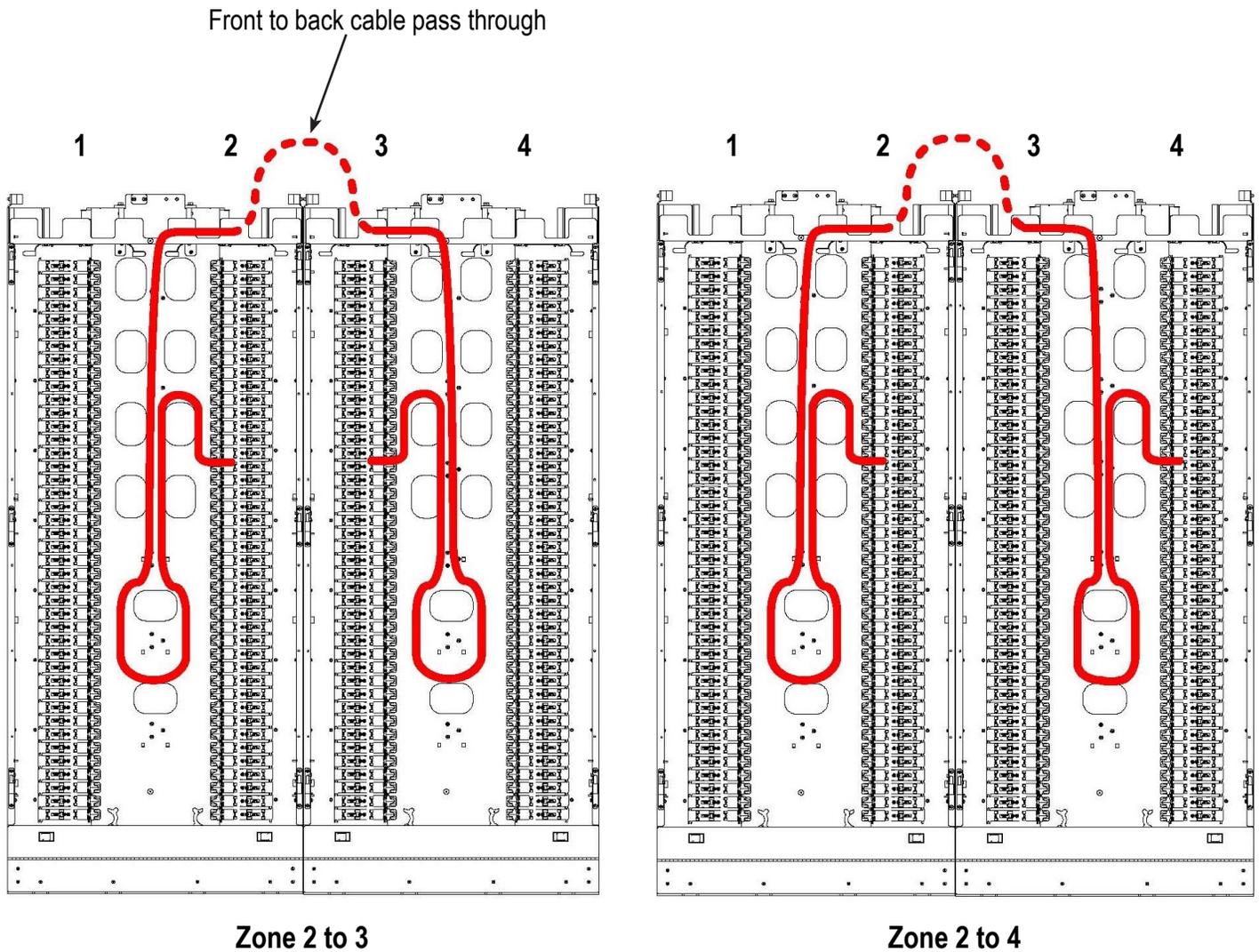


Zone 1 to 1

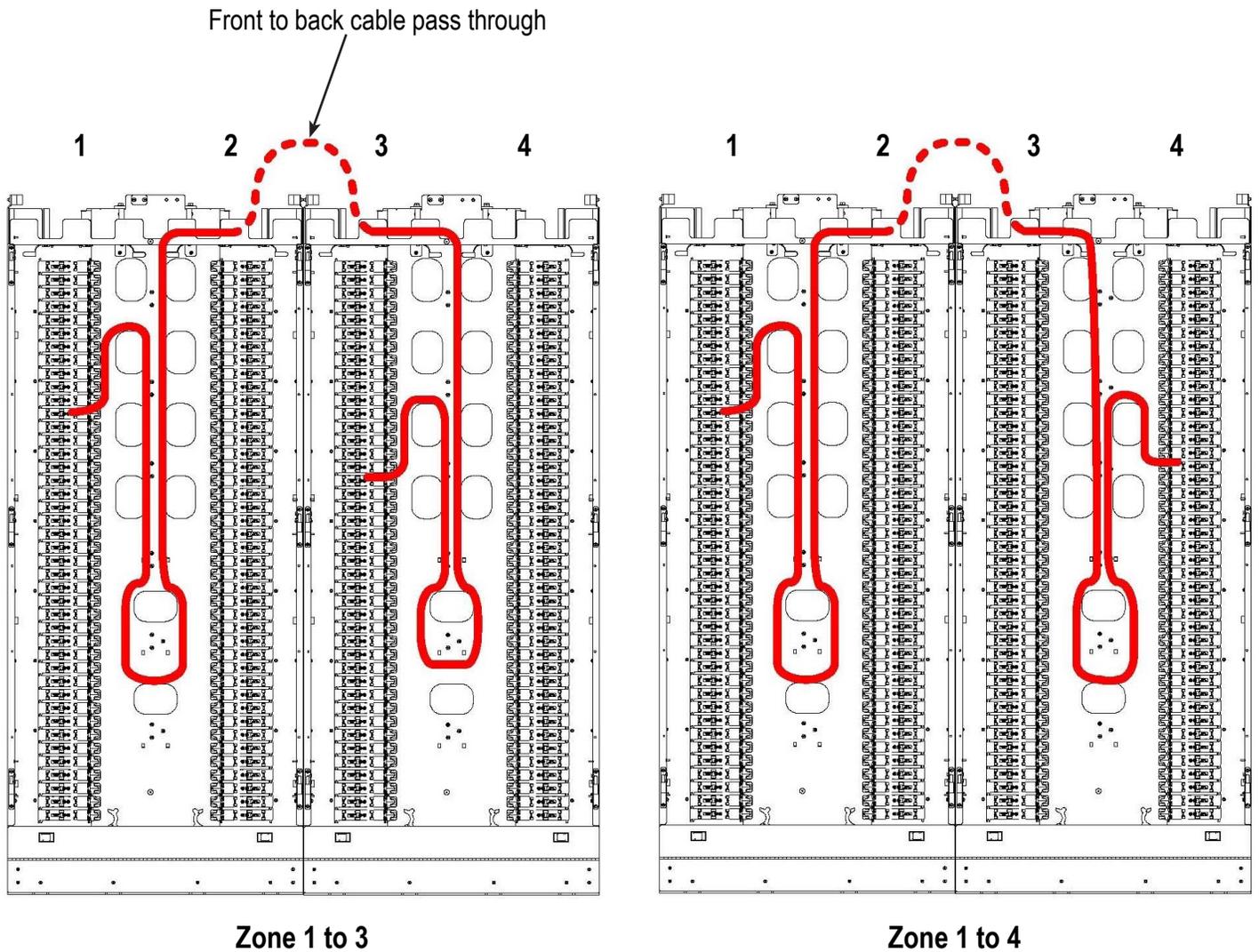


Zone 1 to 2

### Two Frames Back to Back (Upper Pass Through)



### Two Frames Back to Back (Upper Pass Through)

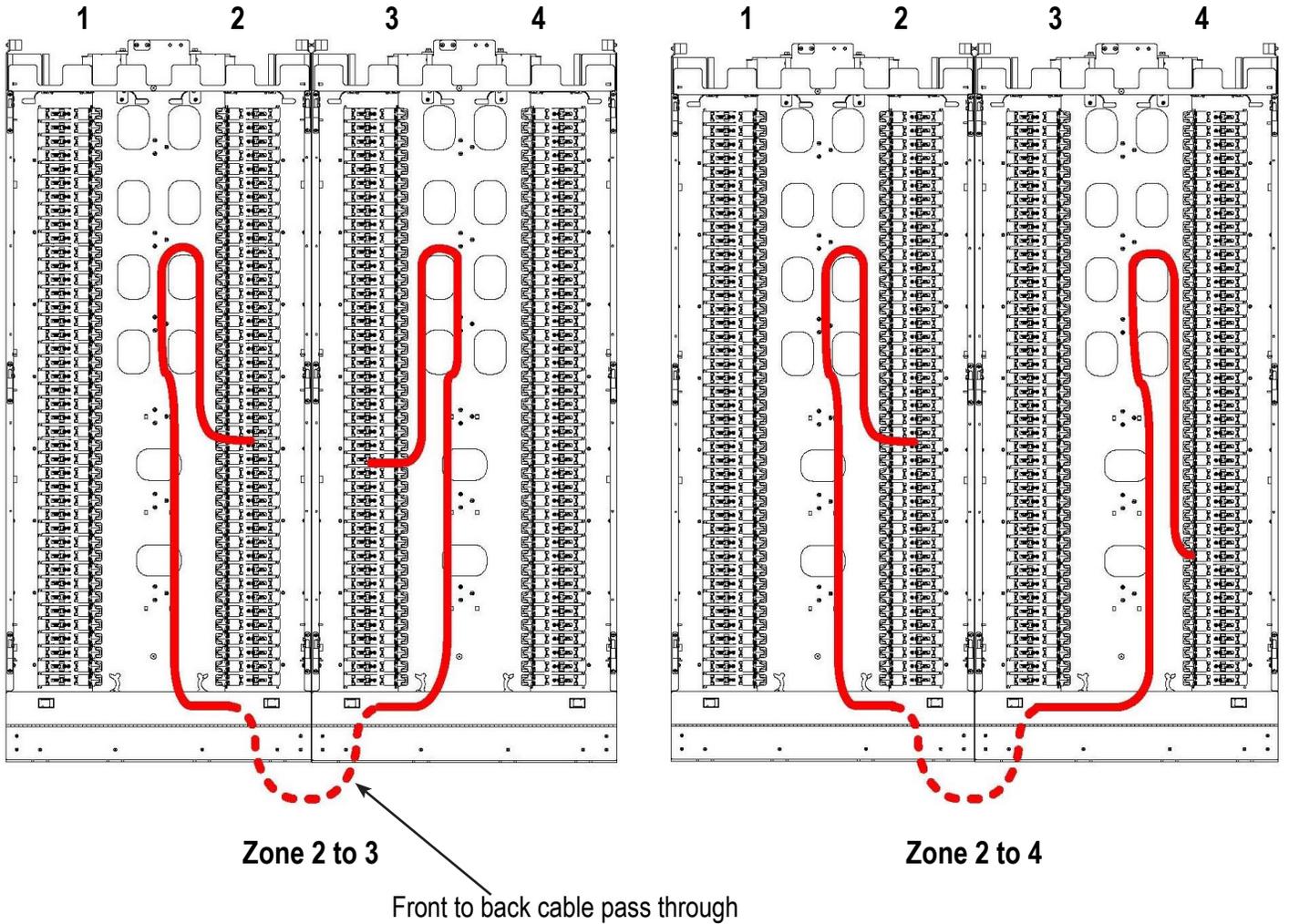


# FieldSmart® FxHD Frame

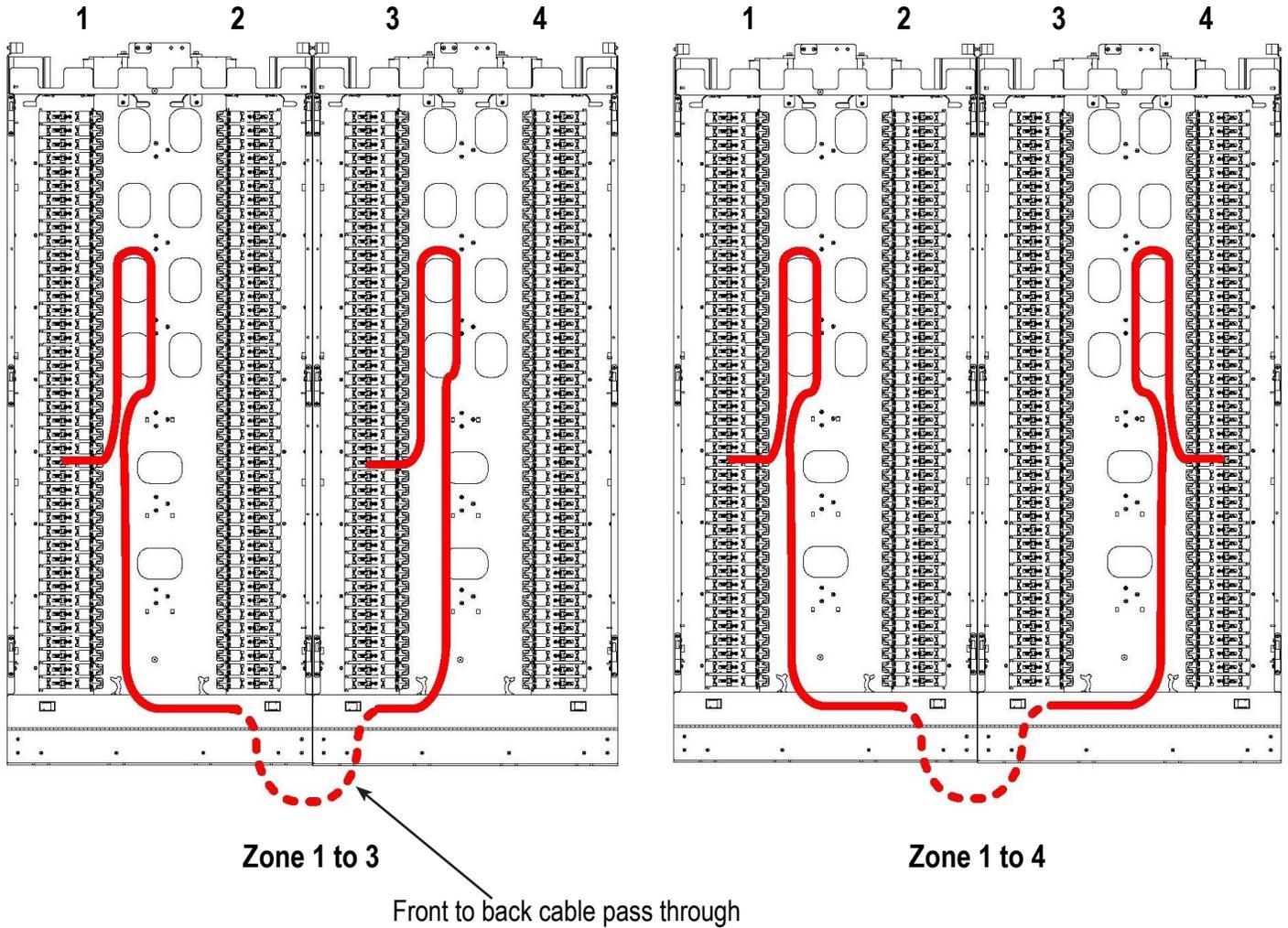
## Installation Manual



### Two Frames Back to Back (Lower Pass Through)



### Two Frames Back to Back (Lower Pass Through)

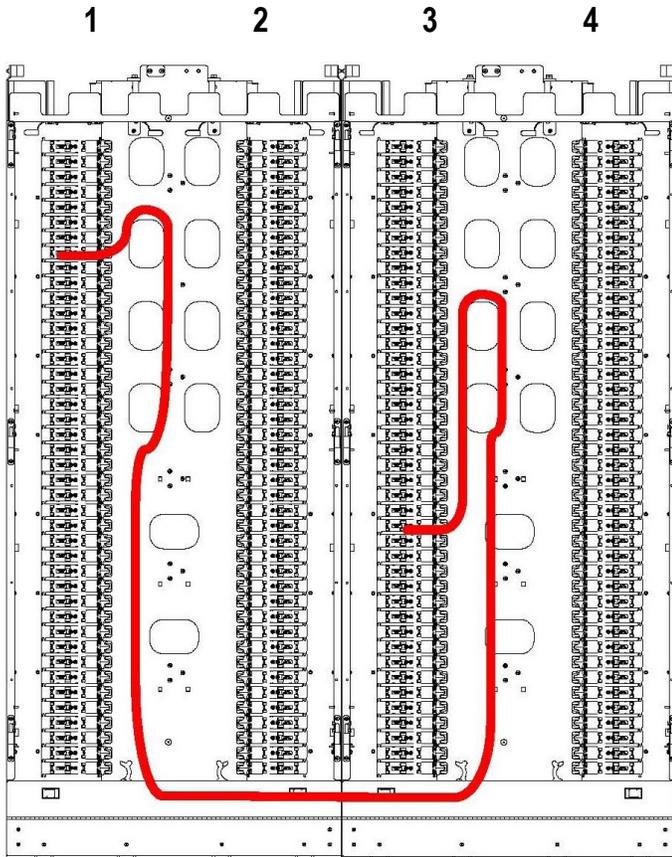


# FieldSmart® FxHD Frame

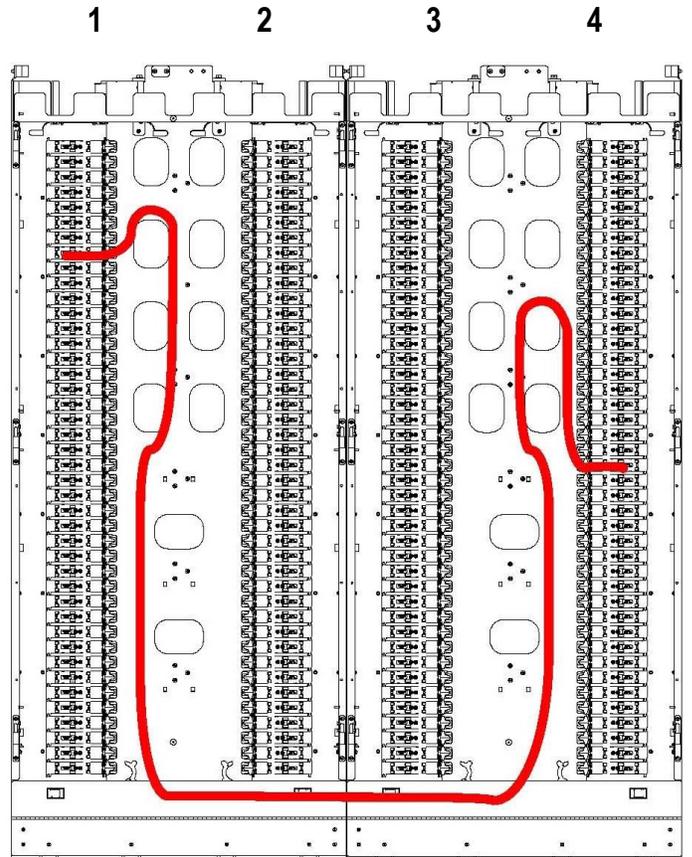
## Installation Manual



### Multiple Bays Side by Side (Lower Trough)

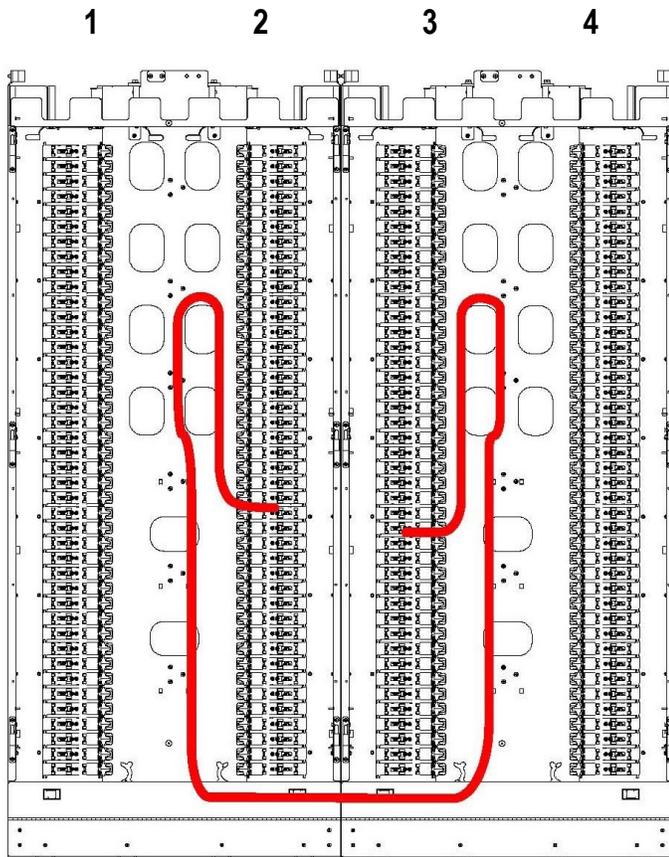


**Zone 1 to 3**

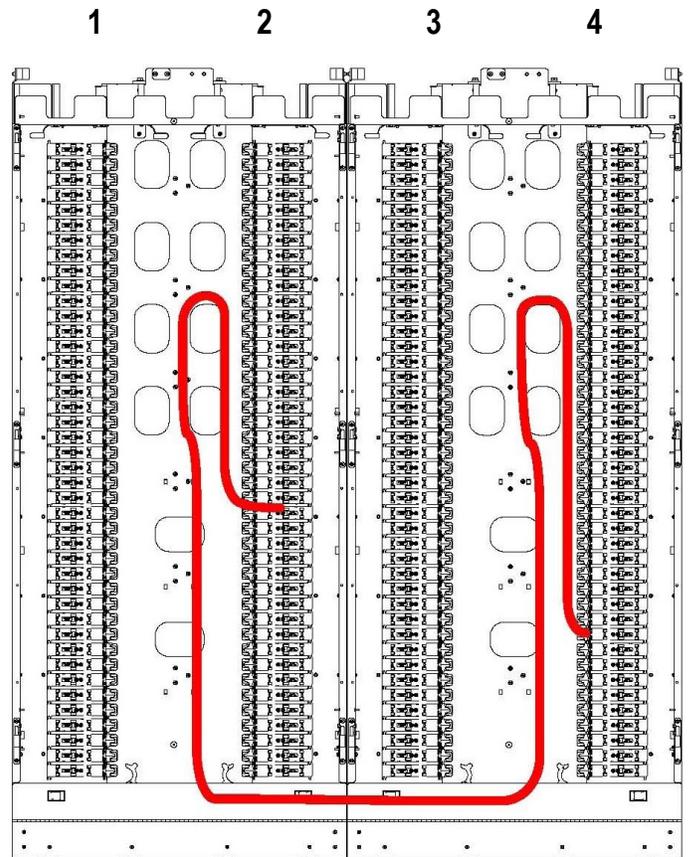


**Zone 1 to 4**

### Multiple Bays Side by Side (Lower Trough)

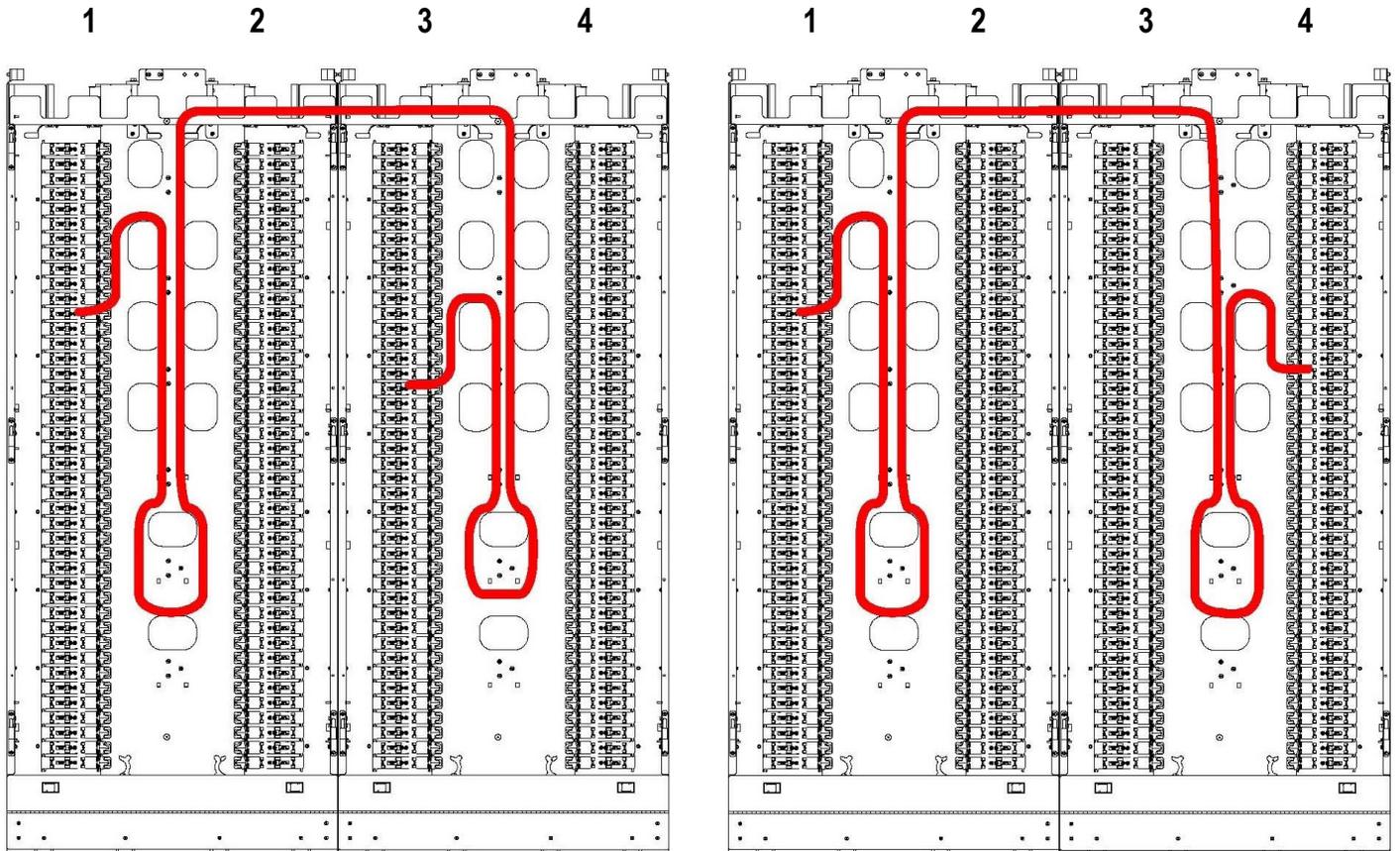


**Zone 2 to 3**



**Zone 2 to 4**

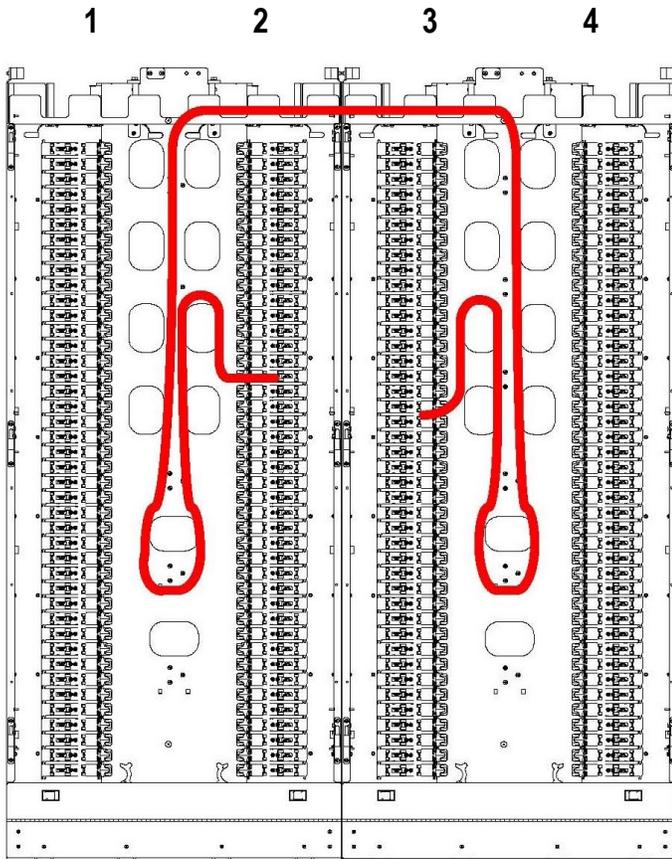
### Multiple Bays Side by Side (Upper Trough)



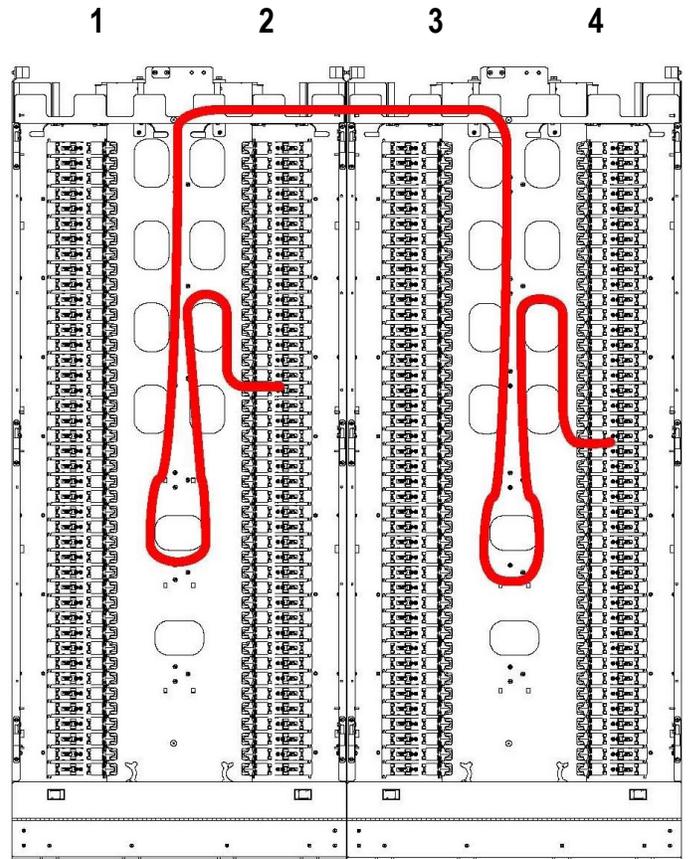
Zone 1 to 3

Zone 1 to 4

### Multiple Bays Side by Side (Upper Trough)



Zone 2 to 3



Zone 2 to 4

### 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)

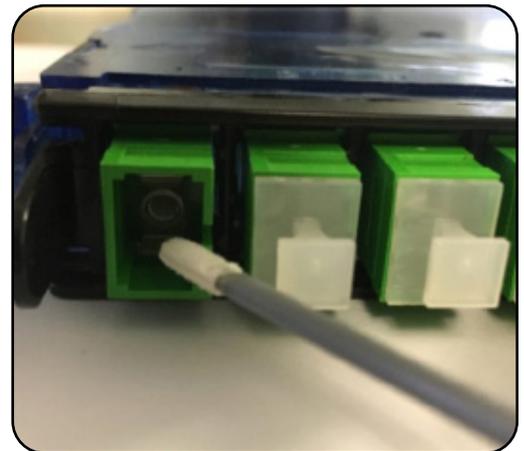
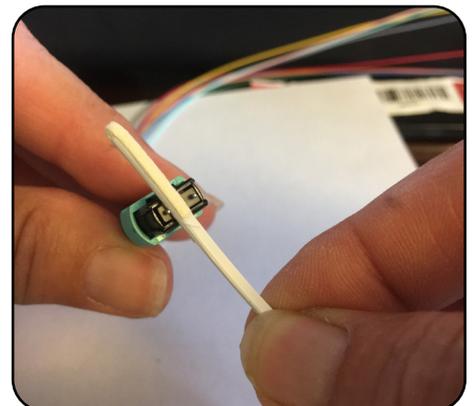


Figure 6

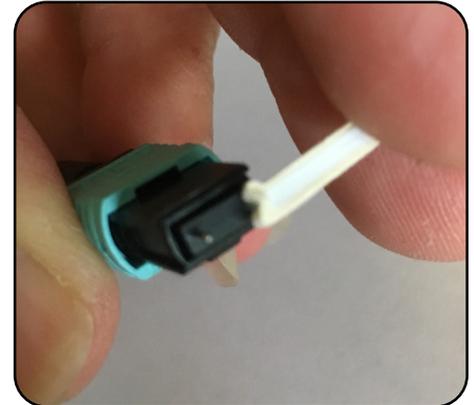
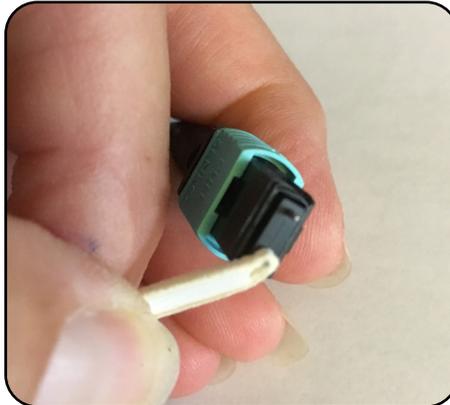
### Cleaning an MPO/MTP Connector

#### 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.

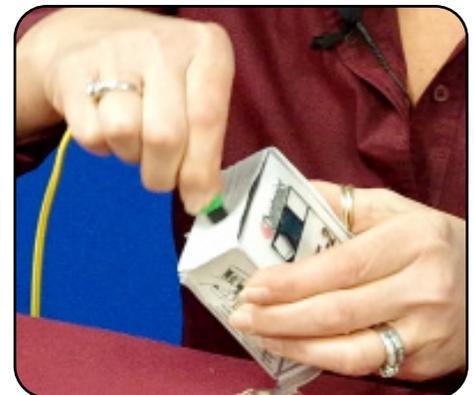


- Use the hole on end of pad to clean one alignment pin, then press the end of the swab into the other pin to clean.
- Check your work with a fiber scope. This can take several attempts to get the endface clean.



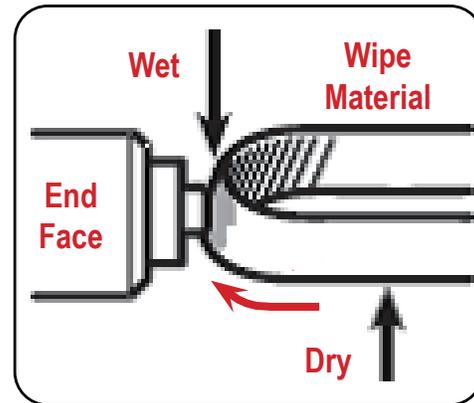
### Female Connector (without pins)

- 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.

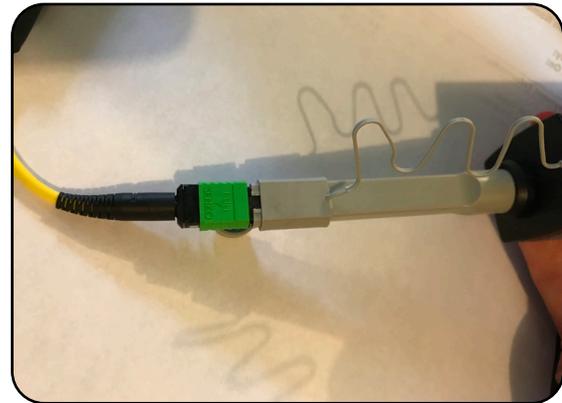
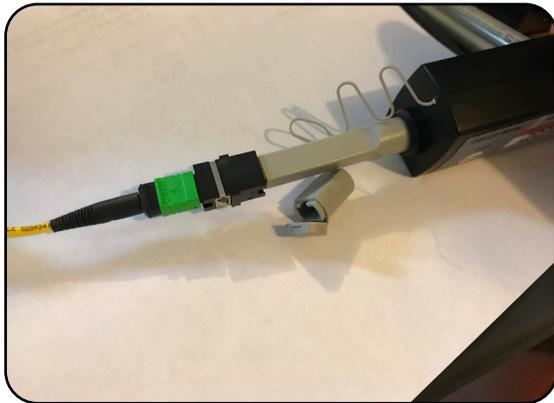


### Cleaning Using a Probe-Style Cleaning Tool

- 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)



### 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

# FieldSmart® FxHD Frame

## Installation Manual

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### Technical Support

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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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