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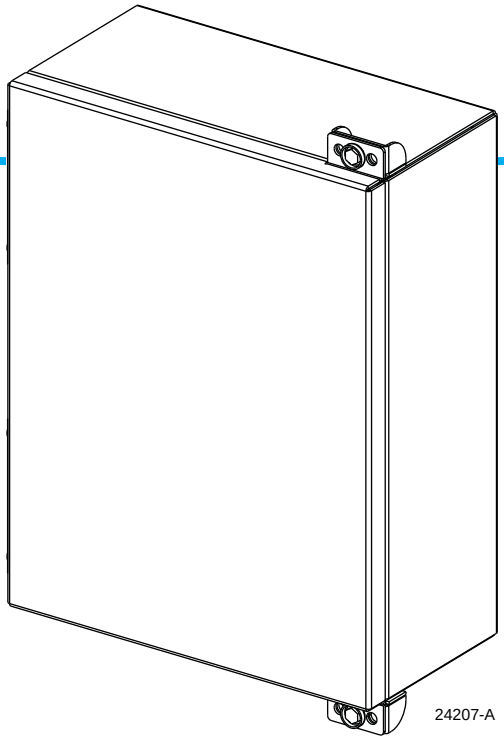
OmniReach®

Mini FDH 3000 Indoor/Outdoor Cabinet

User Manual



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REVISION HISTORY

ISSUE	DATE	REASON FOR CHANGE
1	03/2011	Original release
2	05/2011	MPO adapter port assignments revised
3	09/2011	Added craft requirements section. Added instructions for using a hose clamp when securing specified types of cables.
4	12/2011	Recommend that a minimum height be specified when mounting a cabinet from a pole
5	July 2016	Updated to CommScope format.

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ABOUT THIS MANUAL

This publication describes the OmniReach Mini FDH 3000 Indoor/Outdoor Cabinet. Also included are procedures for mounting the cabinet, installing additional splitter modules, installing additional connector panels, storing the splitter output fibers, connecting the splitter output fibers to the distribution fibers, and replacing damaged components.

RELATED PUBLICATIONS

Listed below are related manuals and their publication numbers. Copies of these publications can be ordered by contacting the CommScope Technical Assistance Center at 1.800.830.5056, or by e-mail to TAC.Americas@commscope.com.

Title	Publication Number
Optical Fiber Connector Wet and Dry Cleaning Instructions	**ADCP-90-159**
Multifiber-Push On Assembly Connector Cleaning Instructions	**ADCP-96-150**
Plug And Play Splitter Installation Guide	**ADCP-96-087**

ADMONISHMENTS

Important safety admonishments are used throughout this manual to warn of possible hazards to persons or equipment. An admonishment identifies a possible hazard and then explains what may happen if the hazard is not avoided. The admonishments — in the form of Dangers, Warnings, and Cautions — must be followed at all times. These warnings are flagged by use of the triangular alert icon (seen below) and are listed in descending order of severity of injury or damage and likelihood of occurrence.

⚠ **Danger:** *Danger is used to indicate the presence of a hazard that **will** cause severe personal injury, death, or substantial property damage if the hazard is not avoided.*

⚠ **Warning:** *Warning is used to indicate the presence of a hazard that **can** cause severe personal injury, death, or substantial property damage if the hazard is not avoided.*

⚠ **Caution:** *Caution is used to indicate the presence of a hazard that **will** or **can** cause minor personal injury or property damage if the hazard is not avoided.*

GENERAL SAFETY PRECAUTIONS

⚠ **Warning:** *Wet conditions increase the potential for receiving an electrical shock when installing or using electrically-powered equipment. To prevent electrical shock, never install or use electrical equipment in a wet location or during a lightning storm.*

Danger: *Do not look into the ends of any optical fiber. Exposure to laser radiation may result. Do not assume the laser power is turned-off or that the fiber is disconnected at the other end.*

Danger: *Use adequate lifting equipment when moving or installing Fiber Distribution Hub cabinets. Verify that the maximum lift weight rating of the equipment is sufficient to handle the weight of the cabinet.*

Danger: *Do not stand under a Fiber Distribution Hub cabinet as it is being hoisted into position for mounting. A failure of the lifting equipment or apparatus could result in serious personal injury and cause significant damage to the cabinet.*

Warning: *Before digging, check with all local utilities for the presence of buried cables or pipes. Contact with underground cables or pipes, especially electric power cables and gas service lines, could interrupt local utility service and cause serious personal injury and extensive property damage.*

STANDARDS CERTIFICATION

Telcordia: This equipment complies with the applicable sections of GR-3123-CORE and GR-3125-CORE.

LIST OF ACRONYMS AND ABBREVIATIONS

The acronyms and abbreviations used in this manual are detailed in the following list:

AWG	American Wire Gauge
C	Centigrade
F	Fahrenheit
FDH	Fiber Distribution Hub
FTTP	Fiber To The Premises
ID	Inside Diameter
OSP	Outside Plant
PNP	Plug and Play
RBR	Reduced Bend Radius
RMA	Return Material Authorization

1 DESCRIPTION

This section provides a description of the OmniReach Mini FDH 3000 Indoor/Outdoor Cabinet plus the cabinet specifications.

1.1 Mini FDH 3000 Cabinet

The mini FDH 3000 cabinet is a secure, above-ground, indoor/outdoor fiber optic distribution cabinet that is designed to hold the splitters, adapters, and splice trays required for Fiber To The Premises (FTTP) network applications. The cabinet feeder/distribution compartment may be configured in three versions including an all-splice version, an all-MPO connector version, and a combination splice/MPO connector version. Each cabinet type can provide up to 72 optical port terminations.

The all-splice version of the cabinet, shown in Figure 1, is equipped with universal splice trays for splicing the feeder and distribution cables. Depending on the number of terminations, one feeder splice tray and up to six distribution splice trays are provided.

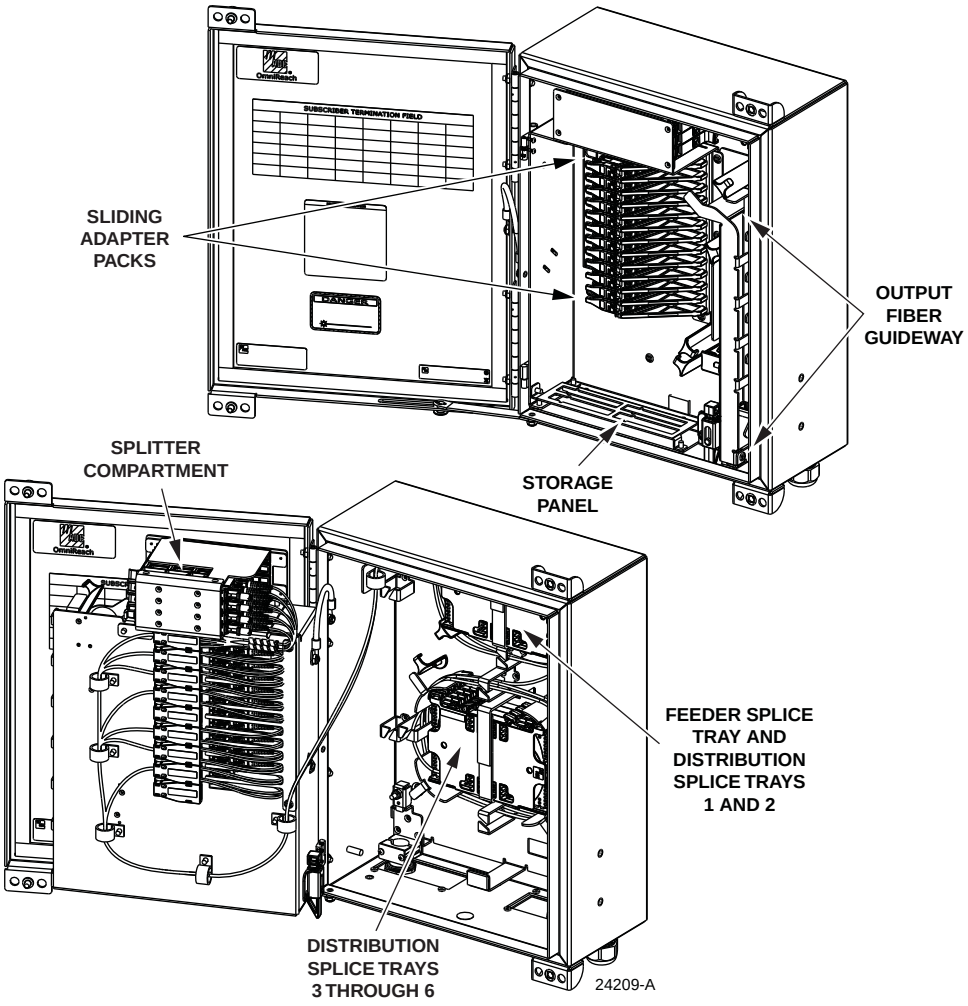

Figure 1. All-Splice Version of the Mini FDH 3000 Cabinet

The all-MPO connector version of the cabinet, shown in Figure 2, is equipped with MPO connectors and adapters for terminating the feeder and distribution cables. Depending on the option selected, either one 8-fiber or one 12-fiber female MPO connector (plus adapter) is provided for terminating the feeder cable. Depending on the options selected and the number of terminations, up to nine 8-fiber or up to six 12-fiber female MPO connectors (plus adapters) are provided for terminating the distribution cables.

Note: The 8-fiber MPO connector consists of a 12-fiber female connector that does not have active fiber in positions 1 - 2 (far left) and 11 - 12 (far right).

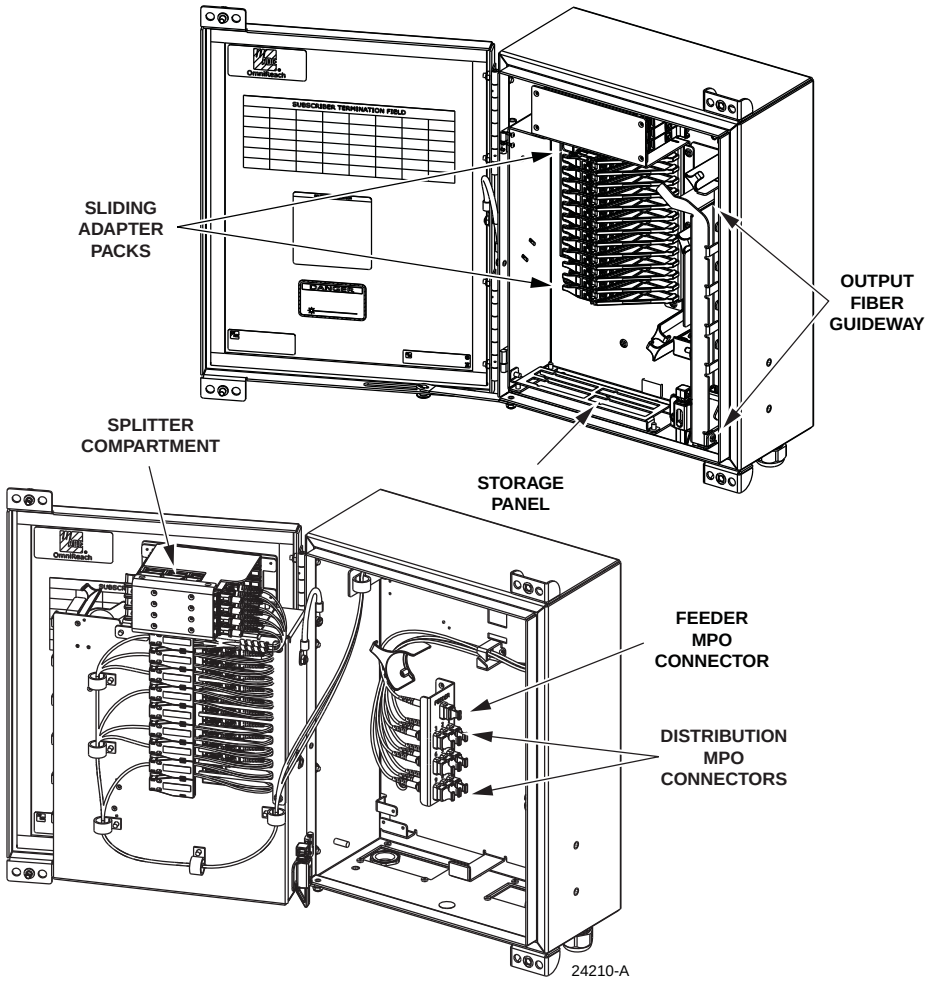

Figure 2. All-MPO Connector Version of the Mini FDH 3000

The combination splice/MPO connector version of the cabinet, shown in Figure 3, is equipped with one universal splice tray for splicing the feeder cable and MPO connectors and adapters for terminating the distribution cables. Depending on the options selected and the number of terminations, up to nine 8-fiber or six 12-fiber female MPO connectors (with adapters) are provided for terminating the distribution cables.

Note: The 8-fiber MPO connector consists of a 12-fiber female connector that does not have active fiber in positions 1 - 2, (far left) and 11 - 12 (far right).

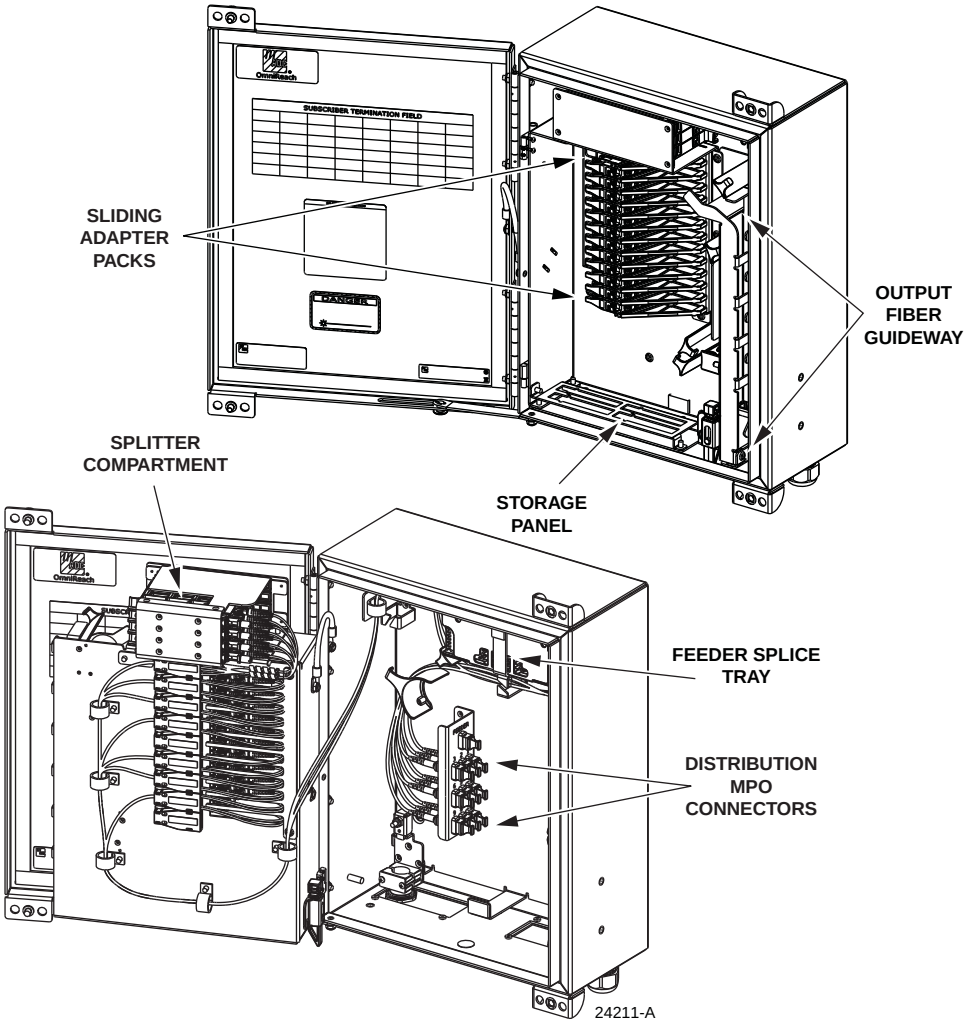

Figure 3. Splice/MPO Connector Version of the Mini FDH 3000

The following lists the basic interior components of the mini FDH 3000 indoor/outdoor cabinet and describes their function:

All Cabinet Versions

Sliding Adapter Packs – Provide a point for connecting the splitter output fibers to the terminated distribution cable fibers. The adapter packs provide mounting spaces for up to 72 bulkhead adapters. The cabinet may be configured with SC/APC connectors/ adapters.

Storage Panel – Provides a temporary “parking lot” for unused splitter output fibers. Each splitter module comes with a connector pack that mounts in the storage panel.

Four 8-position connector packs or two 16-position (32 fibers total) can be mounted in the storage panel.

Output Fiber Guideway – Provides a guideway for routing the splitter output fibers to the sliding adapter packs.

Splitter Compartment – Provides a place for mounting the plug and play splitter modules. Supports up to four splitters. The splitters specified for use with the FDH 3000 cabinet are equipped with reduced bend radius (RBR) fibers and 54-inch output fibers.

Exterior Grounding Lug – Provides a means for connecting a #6 solid copper grounding cable (from an approved earth ground source) to the cabinet.

Interior Grounding Studs – Provide a connection point for grounding OSP cables with metallic strength members.

All-Splice Cabinet

Feeder Splice Tray – Provides a means for splicing feeder cable fibers to the splitter input fibers. The rectangular universal splice tray accommodates both stranded and ribbon cable splices and can hold twelve stranded fiber splices or one mass fusion ribbon splice (12-fibers).

Distribution Splice Trays (1 - 6) – Provide a means for splicing distribution cable fibers to the distribution port fibers. Each rectangular universal splice tray accommodates both stranded and ribbon cable splices and can hold twelve stranded fiber splices or one mass fusion ribbon splice (12-fibers).

All-MPO Connector Cabinet

Feeder MPO Connector/Adapter – Provides a means for connecting a pre-terminated feeder cable (terminated with a male MPO connector) to the splitter input fiber assembly. An 8-fiber MPO connector provides the feeder cable interface.

Distribution MPO Connectors/Adapters – Provide a means for connecting pre-terminated distribution cables (terminated with male MPO connectors) to the distribution port fibers. Both an 8-fiber and a 12-fiber MPO connector option is available for the distribution cable interface.

Combination Splice/MPO Connector Cabinet

Feeder Splice Tray – Provides a means for splicing feeder cable fibers to the splitter input pigtails. The rectangular universal splice tray accommodates both stranded and ribbon cable splices and can hold twelve stranded fiber splices or one mass fusion ribbon splice (12-fibers).

Distribution MPO Connectors – Provide a means for connecting pre-terminated distribution cables (terminated with male MPO connectors) to the distribution pigtail assemblies.

The feeder and distribution cables enter/exit the cabinet from the bottom. Compression fittings are provided for securing each cable to the **outside** of the cabinet. The compression fitting grips the cable sheath and also prevents dirt and moisture from entering the cabinet at the cable entry/exit point. For cables that will be spliced, additional clamps are provided for securing the cable to the inside of the cabinet.

Accessory kits are available separately for OSP cables that require grounding. Most grounding kits provide a terminal connection to the metallic elements within the cable. Cables may then be grounded by connecting a #6 wire (terminated with ring terminals) between the grounding terminal on the cable and one of the three grounding studs provided within the cabinet. The cabinet itself may be grounded by connecting a #6 solid copper grounding cable (from an approved earth ground source) to a lug on the outside of the cabinet.

The exterior shell of the outdoor cabinet is constructed of heavy gauge aluminum and is coated with an almond-colored finish. The cabinet is equipped with one front door that provides full access to the optical components. The cabinet door is equipped with stainless steel hinges, a door catch that prevents accidental closing, and two tamper-resistant door keepers that may be fitted with padlocks. Access to the cabinet requires a 216B key tool (accessory) to release the door keeper screws. A screen vent allows any moisture that may accumulate within the cabinet to be released.

The Mini FDH 3000 cabinet is designed to be installed in either an indoor or an outdoor environment. When used indoors, it is the installer's responsibility to ensure that all cables used in the installation are rated for indoor use.

The cabinet specifications are provided in Table 1.

Table 1. Mini FDH 3000 Cabinet Specifications

PARAMETER	SPECIFICATION
Cabinet	
Nominal cabinet dimensions (H x W x D) (See Figure 4 for exact dimensions)	19 x 13 x 8 x inches (48.3 x 33.0 x 20.3 cm)
Weight (fully loaded)	20.5 lbs (9.3 kg)
Certification (pending)	Applicable sections of GR-3123-CORE and GR-3125-CORE. UL safety listed.
Distribution ports	Up to 72
Distribution port adapters/connectors	SC/APC,
Splitter compartment splitter capacity	4 splitters
Splitter compartment feeder input capacity	8 adapters
Storage panel capacity	32 connectors
Splitter Modules	
Splitter module input and output pig-tails	Reduced bend radius fiber terminated with SC/APC connectors

Table 1. Mini FDH 3000 Cabinet Specifications, continued

PARAMETER	SPECIFICATION
Test bandpass	1260–1360 nm, 1480–1500 nm, 1550–1560 nm
Overall bandpass	1260–1625 nm
Return loss at test bandpass	≥55 dB
Maximum insertion loss at test bandpass 1 x 2 1 x 4 1 x 8 1 x 16 1 x 32 1 x 64 2 x 16 2 x 32	Note: Specification includes the signal loss from the input and output connectors 4.3 with APC 7.8 dB with APC 10.9 dB with APC 14.1 dB with APC 17.3 dB with APC 21 dB with APC 14.7 dB with APC 18 with APC

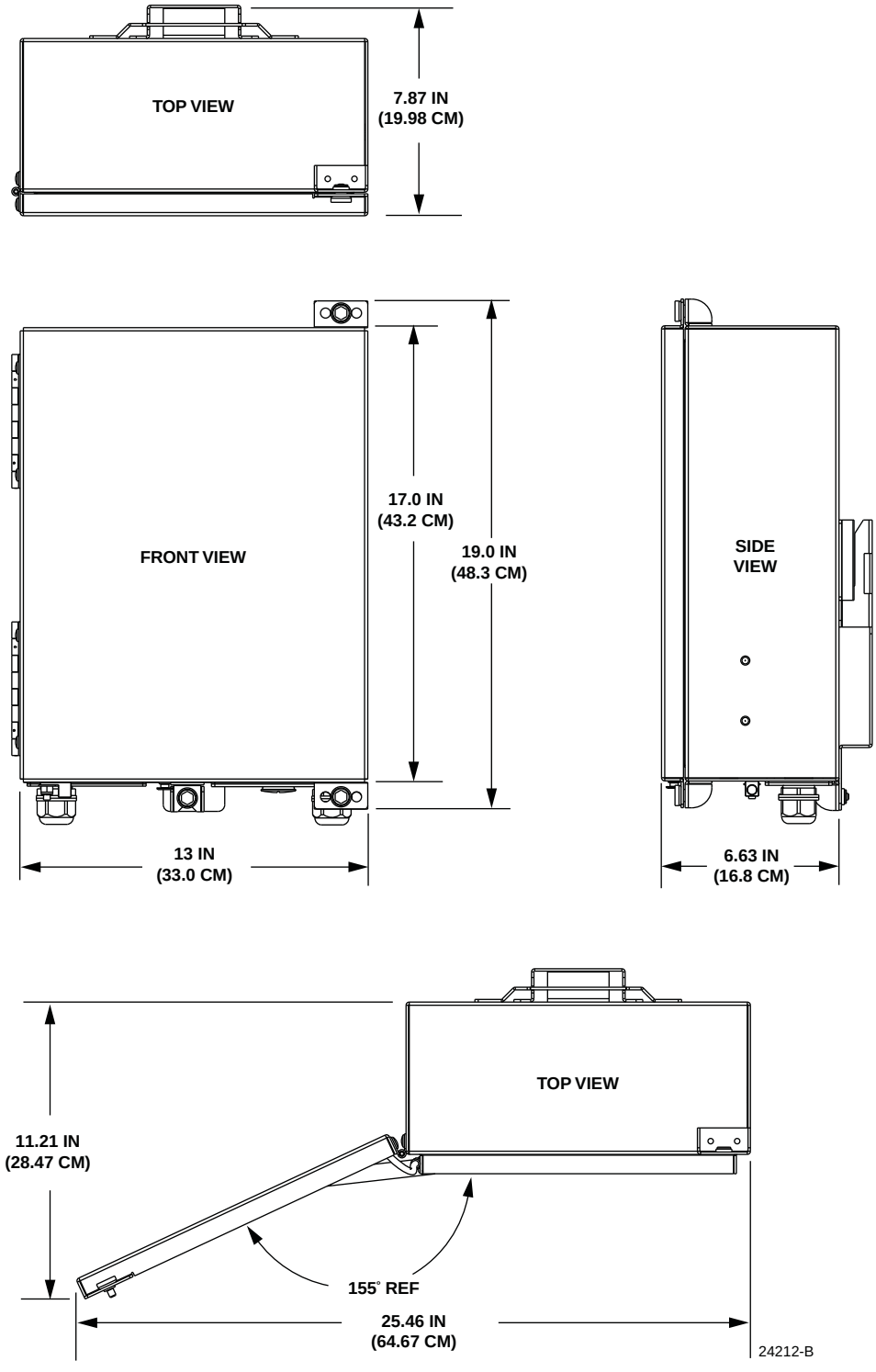

Figure 4. Mini FDH 3000 Indoor/Outdoor Cabinet Dimensions

2 BEFORE STARTING THE INSTALLATION

This section provides general installation considerations, unpacking and inspection procedures, and lists the tools and materials required for installing the Mini FDH 3000 Cabinet.

2.1 Installation Overview

Installation of the mini FDH 3000 indoor/outdoor cabinet involves the following main tasks:

Mounting the Cabinet – The cabinet must be mounted on a vertical surface that is sufficiently strong to support the weight of the cabinet plus any additional loads that may be intentionally or accidentally applied to the cabinet. Typical mounting methods include pole-mounting and wall-mounting.

Feeder Cable Installation – The feeder cable must be routed to the cabinet and secured at the cable entry/exit point. Cables that will be spliced must be stripped back and the fibers must be routed to the feeder splice tray for splicing. Cables that are terminated with an MPO connector must be routed to the MPO bulkhead adapter panel and connected to the feeder MPO adapter. Use only cables that are specifically rated (indoor versus outdoor) for the application.

Distribution Cable Installation – The distribution cables must be routed to the cabinet and secured at the cable entry/exit point. Cables that will be spliced must be stripped back and the fibers routed to the distribution splice trays for splicing. Cables that are terminated with MPO connectors must be routed to the MPO bulkhead adapter panel and connected to the appropriate distribution MPO adapters. Use only cables that are specifically rated (indoor versus outdoor) for the application.

Splitter Installation – The splitter modules must be ordered separately and must be installed in the splitter compartment. When the splitters are inserted into the splitter compartment, the input connectors are mated with the feeder cable fibers.

Splitter Output Fiber Connections – Service is enabled by connecting the splitter output fiber connectors to the subscriber distribution ports. Unused output fibers are temporarily “parked” in the storage panel until they are needed for service.

2.2 Unpacking and Inspection

This section provides instructions for opening the shipping boxes, verifying that all parts have been received, and verifying that no shipping damage has occurred.

Use the following procedure to unpack and inspect the cabinet and all accessories:

1. Open the shipping carton(s) and carefully unpack the cabinet and any accessories from the protective packing material.
2. Open the cabinet door (requires 216B key tool) and check for missing ship-along parts (see installation drawing included with cabinet) or broken parts. If there are damages, contact CommScope (see Section 12) for an RMA (Return Material Authorization) and to reorder if replacement is required.

3. For shipping purposes, a corrugated pad is placed between the swing frame and the right interior side of the cabinet. Remove the pad by first sliding it towards the top of the cabinet as shown in Figure 5; then pull on the top end of the pad to separate it from the cabinet.

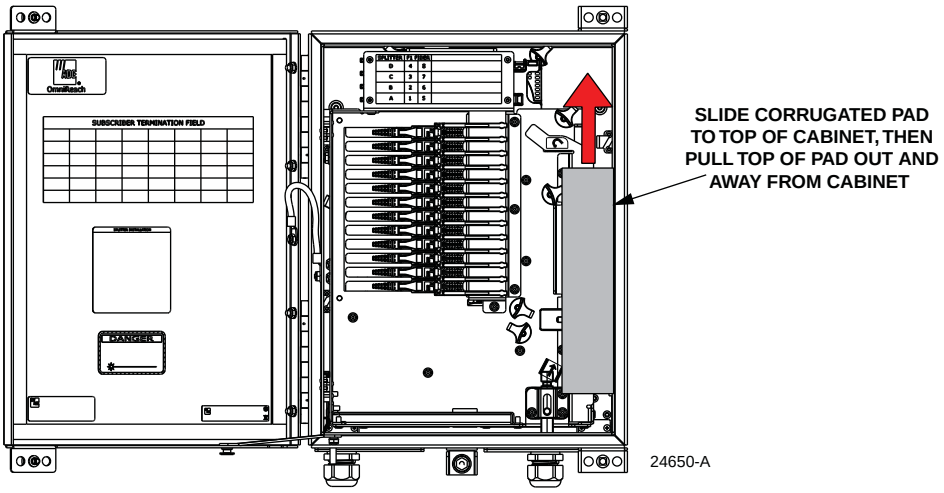

Figure 5. Removing Corrugated Pad

2.3 Cabinet Installation Hardware

The cabinet is shipped with various loose parts (see Table 2) that are provided for mounting the cabinet and installing the cables. Verify that the specified parts are received.

Table 2. Cabinet Installation Hardware

ITEM	QUANTITY
Cabinet mounting bracket	1
Cable clamp assembly (consists of two 6-32 x 1.375 screws, two yokes, and one cover plate)	2 (all-splice cabinets) 1 (splice/MPO cabinets)
Grommet (0.3 ID)	2 (all-splice cabinets) 1 (splice/MPO cabinets)
Grommet (0.4 ID)	2 (all-splice cabinets) 1 (splice/MPO cabinets)
Grommet (0.5 ID)	2 (all-splice cabinets) 1 (splice/MPO cabinets)
Grommet (0.6 ID)	2 (all-splice cabinets) 1 (splice/MPO cabinets)
Grommet (0.7 ID)	2 (all-splice cabinets) 1 (splice/MPO cabinets)
Hose clamp	2 (all-splice cabinets) 1 (splice/MPO cabinets)

2.4 Grounding the Cabinet and OSP Cables

The cabinet may be connected to an earth ground source when required by local practice. A grounding lug is provided on the underside of the cabinet for attaching a #6 solid copper grounding wire. The cabinet interior is equipped with three studs that may be used to bond OSP cables (with metallic elements) to the cabinet shell. Information on grounding is provided in the sections that cover cabinet mounting and cable installation.

2.5 Tools and Materials Required for Installation

The following basic tools and materials are required for all cabinet installations. The specific tools and materials required for the various mounting methods are listed in the sections that provide cabinet mounting instructions.

- Utility knife
- 216B key tool (accessory - used to open cabinet door)
- Tape measure
- Pen or marker
- Lifting equipment for hoisting the cabinet into position for mounting
- External grounding system with #6 copper wire (per local requirements)
- Wire cutter
- Torque wrench with flat screwdriver bit
- #2 Phillips screwdriver (splicing cabinets only)
- 3/8-inch nut driver (for securing cable strength member)
- Splicing equipment for splicing feeder and distribution cables (splicing cabinets only)
- OSP cable grounding kit (for OSP cables with metallic elements)
- APC SC connector cleaning kit
- MPO connector cleaning kit (MPO cabinets only)
- Padlock (optional)

2.6 Outdoor and Indoor Applications

The Mini FDH 3000 cabinet and all the components provided with the cabinet are designed to be installed in either an indoor or an outdoor environment and will meet the applicable standards for both applications. It is the installer’s responsibility to ensure that all cables and external components used in the installation are also appropriate for the environment and will meet any standards requirements (including grounding, flammability, temperature, humidity, corrosion, etc.) that may apply.

2.7 Craft Requirements

The Mini FDH 3000 Indoor/Outdoor Cabinet may be assembled, mounted, and installed by one trained craftsperson.

2.8 Cabinet Mounting

The next two sections provide instructions for the mounting the cabinet on either a utility pole or a wall. Use whichever procedure is appropriate for the installation.

3 MOUNTING THE CABINET ON A WOODEN UTILITY POLE

This section provides recommendations and procedures for mounting the Mini FDH 3000 Cabinet on a wooden utility pole.

3.1 General Recommendations for Pole-Mounting the Cabinet

The site chosen for the installation must conform to all local codes and any permits required must be obtained prior to the start of installation. The location must be accessible and provide adequate parking for worker and vehicle safety. The installed cabinet must not create a visual or physical obstruction to vehicular or pedestrian traffic. Sufficient space must be provided on all sides to facilitate cabinet installation and maintenance. The top of the installed cabinet must be a minimum of 72-inches above the ground when the cabinet is mounted on the pole.

Install a grounding system (not provided) that meets all local electrical codes. Check local codes for grounding system installation, use of clamps, wire size, and any other grounding requirements. Typically, a #6 AWG solid copper wire is used for the ground wire.

3.2 Pole-Mounting Procedure

Use the following procedure to mount the cabinet on a wooden utility pole:

⚠ **Warning:** *Use appropriate lifting equipment when moving or installing the cabinet. Do not stand under a cabinet as it is being hoisted into position for mounting. A failure of the lifting equipment could result in serious personal injury.*

1. Obtain the following fasteners and tools:
   - 3/8-inch x 2 inch lag screw suitable for **exterior** application (2)
   - Drill
   - 9/32-inch drill bit
   - 1/2-inch drill bit (optional depending on pole condition)
   - 9/16-inch wrench
   - 216B key tool (accessory)

   The following fasteners are optional depending on the condition of the pole:
   - 1/2-inch through-bolt (1), 1/2-inch nut (1), 1/2-inch flat washer (2)
   - 1/2-inch threaded rod (1), 1/2-inch nut (1), 1/2-inch flat washer (2), 1/2-inch lock washer (2)
2. Using the mounting bracket as a guide, mark the location of the bracket mounting holes on the pole as shown in Figure 6.
3. Drill a 9/32-inch hole in the pole at each of the locations marked in step 2.
4. Secure the mounting bracket to the pole using the two 3/8-inch x 2-inch lag screws. Tighten lag screws securely.

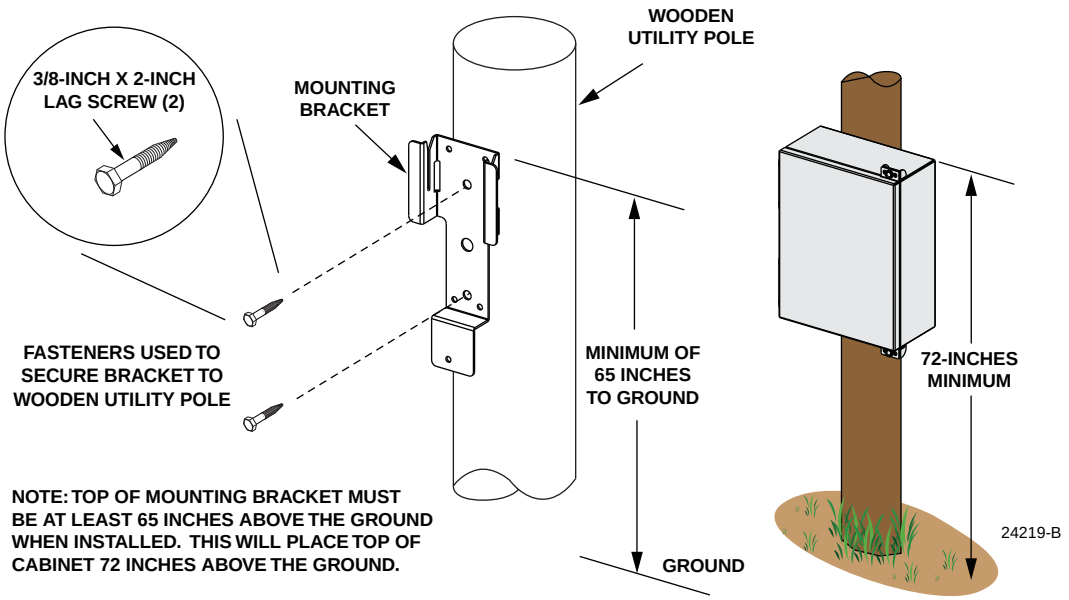

Figure 6. Installing Mounting Bracket on a Wooden Utility Pole

Note: If the utility pole is in good condition, the two 3/8-inch lag screws will provide sufficient strength and holding power to permanently attach the cabinet to the pole. If the utility pole is in poor condition, it is recommended that **in addition** to the lag screws, a 1/2-inch threaded rod or through-bolt be used to secure the mounting bracket to the pole. Refer to Figure 7 for the recommended installation procedure.

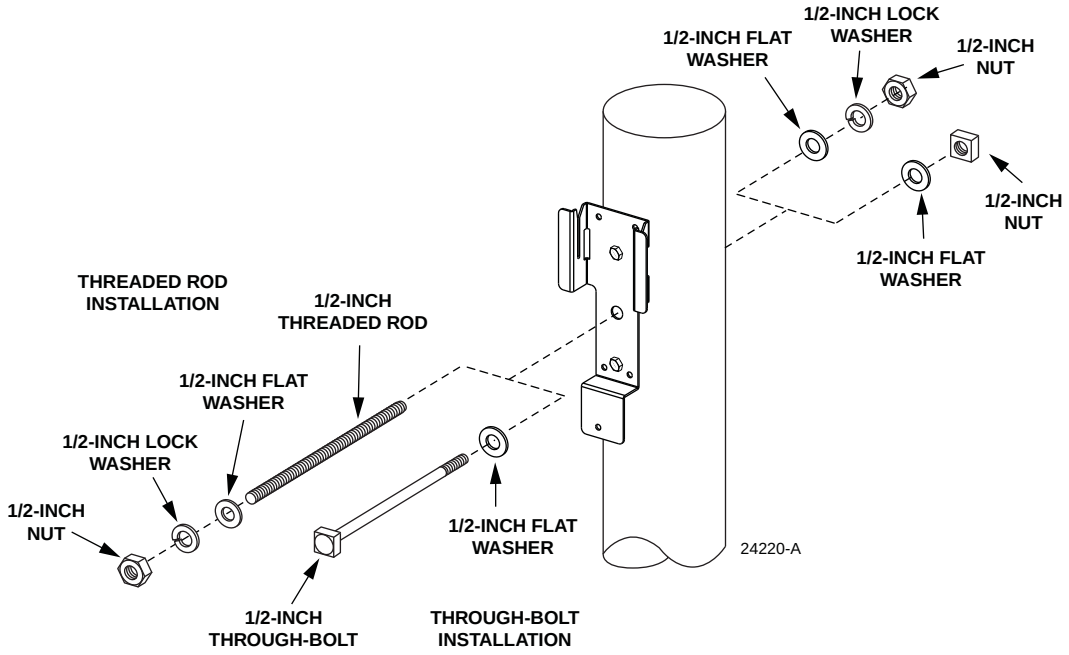

Figure 7. Threaded Rod or Through-Bolt Installation

5. Using appropriate lifting equipment, hoist the cabinet into position for attachment to the mounting bracket.

⚠ **Danger:** *Do not stand directly under the cabinet as it is being hoisted into position for mounting. A failure of the lifting equipment could result in serious personal injury.*

6. Hang the cabinet from the installed mounting bracket. The welded bracket on the back of the cabinet, shown in Figure 8, fits into the two slots at the top of the mounting bracket. The partially installed cap screw at the bottom of the mounting bracket fits into the slotted tab at the bottom of the cabinet.
7. Tighten the partially installed cap screw at the bottom of the cabinet using the 216B key tool.

Note: A cup washer is included with the cap screw to provide tamper resistance.

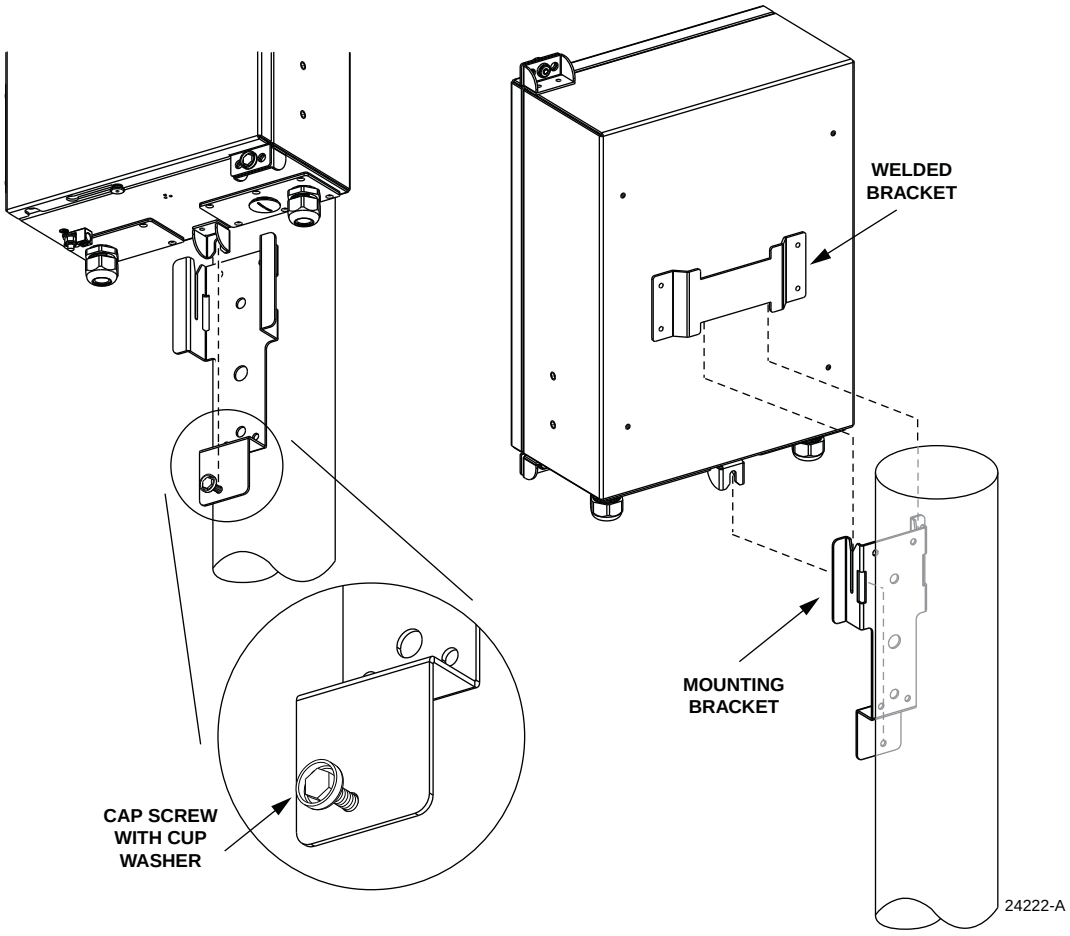

Figure 8. Installing Cabinet on Pole-Mounted Bracket

3.3 Grounding Wire Connection To Cabinet

Use the following procedure to connect the grounding wire to the cabinet:

1. Locate the cabinet grounding lug which is mounted on the underside of the cabinet as shown in Figure 9.

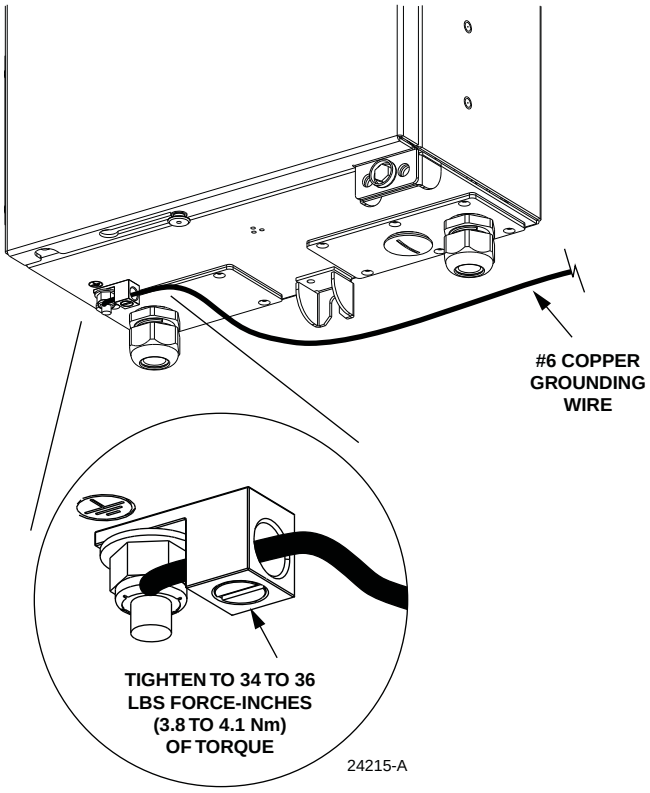

Figure 9. Grounding Wire Connection To Cabinet

2. Obtain a length of #6 AWG copper wire for use as a grounding wire.
3. Insert one end of the grounding wire into the cabinet grounding lug. Tighten the grounding lug set screw to 34 to 36 lbs-force inches (3.8 to 4.1 Nm) of torque.
4. Route the free end of the grounding wire to an approved earth ground source.
5. Cut the grounding wire to length and connect it to the earth ground source as specified by local code or practice.

⚠ **Warning:** *Failure to properly tighten the screw on the grounding lug could result in improper grounding of the cabinet and result in performance or safety issues.*

4 MOUNTING THE CABINET ON A WALL

This section provides recommendations and procedures for mounting the Mini FDH 3000 Cabinet from either a wood-framed wall or a masonry wall. Use whichever procedure is appropriate for the application.

4.1 General Recommendations for Wall-Mounting the Cabinet

The site chosen for the installation must conform to all local codes and any permits required must be obtained prior to the start of installation. The location must be accessible and provide adequate parking for worker and vehicle safety. In addition, the installed cabinet must not create a visual or physical obstruction to vehicular or pedestrian traffic. Sufficient space must be provided on all sides to facilitate cabinet installation and maintenance.

Install a grounding system (not provided) that meets all local electrical codes. Check local codes for grounding system installation, use of clamps, wire size, and any other grounding requirements. Typically, a #6 AWG copper wire is used for the ground wire.

4.2 Wood-Framed Wall Mounting Procedure

Use the following procedure to mount the cabinet on a wood-framed wall:

Warning: *Use appropriate lifting equipment when moving or installing the cabinet. Do not stand under the cabinet as it is being hoisted into position for installation. A failure of the lifting equipment could result in serious personal injury.*

1. Mount a plywood backer (not provided) on the wall in the location where the cabinet will be mounted as shown in Figure 10. Use whatever tools and fasteners are required to firmly secure the backer to at least two (minimum) of the wall's interior 2x4 studs.

Note: It is recommended that pressure-treated plywood with a minimum thickness of 0.75-inch (19.0 cm) be used as a backer board. The backer **must** be firmly secured to the interior framing of the wall to avoid a hazardous condition.

2. Obtain the following fasteners and tools:
   - #10 x 1-1/2-inch wood screws (4)
   - #10 flat washers (4)
   - Drill
   - 3/32-inch drill bit
   - Screwdriver drill bit (for wood screws)
   - 216B key tool (accessory)
3. Using the mounting bracket as a guide, mark the location of the bracket mounting holes on the plywood backer.
4. Drill a 3/32-inch pilot hole in the backer board at each of the locations marked in step 3.

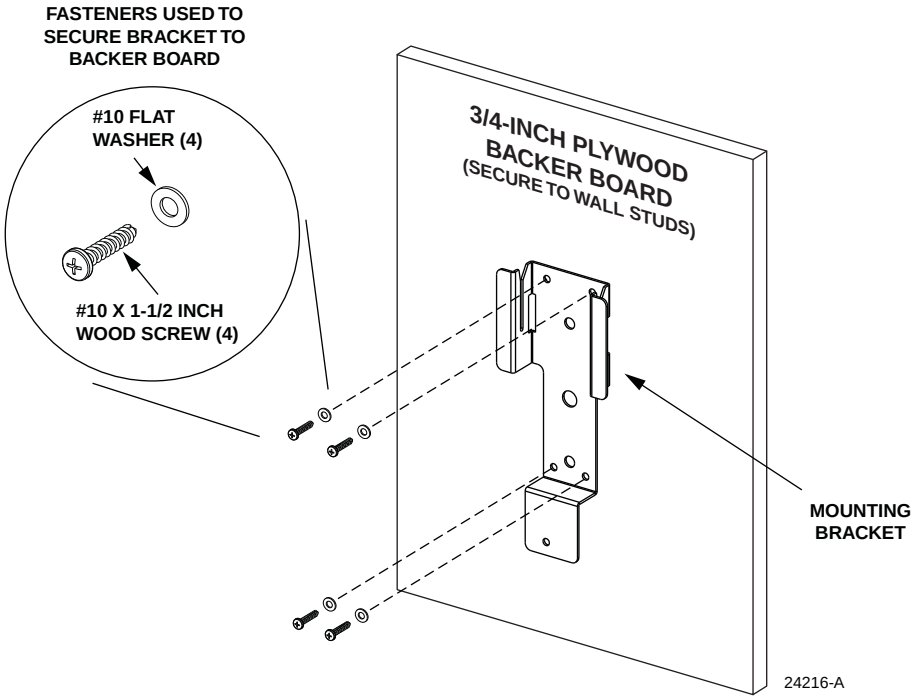

Figure 10. Securing Backer Board to Wall and Installing Mounting Bracket on Backer Board

5. Secure the mounting bracket to the plywood backer using the four #10 x 1-1/2-inch wood screws and four #10 flat washers. Thread the wood screws into the pilots holes and tighten securely.
6. Using appropriate lifting equipment, hoist the cabinet into position for attachment to the mounting bracket.

⚠ **Danger:** *Do not stand directly under the cabinet as it is being hoisted into position for mounting. A failure of the lifting equipment could result in serious personal injury.*

7. Hang the cabinet from the installed mounting bracket. The welded bracket on the back of the cabinet, shown in Figure 11, fits into the two slots at the top of the mounting bracket. The partially installed cap screw at the bottom of the mounting bracket fits into the slotted tab at the bottom of the cabinet.
8. Securely tighten the partially installed cap screw at the bottom of the cabinet using the 216B key tool.

Note: A cup washer is included with the cap screw to provide tamper resistance.

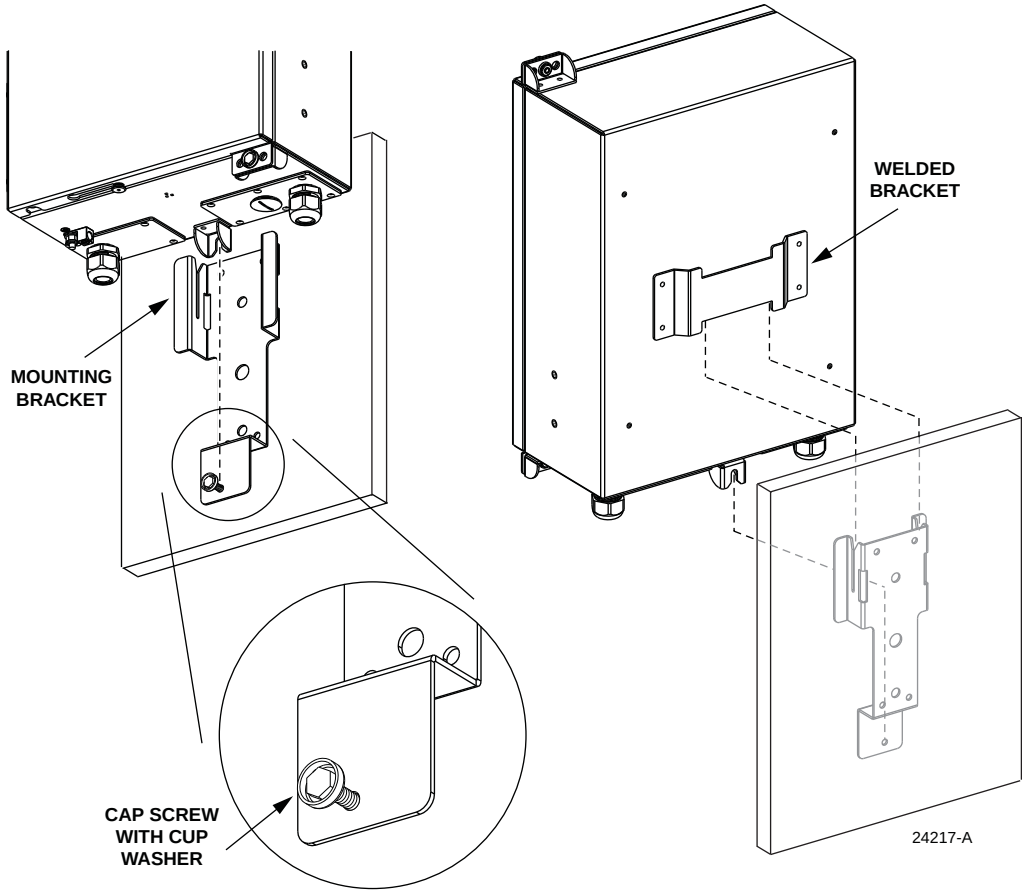

Figure 11. Installing Cabinet on Wall-Mounted Bracket

4.3 Masonry Wall Mounting Procedure

Use the following procedure to mount the cabinet on a masonry wall:

Warning: *Use appropriate lifting equipment when moving or installing the cabinet. Do not stand under the cabinet as it is being hoisted into position for installation. A failure of the lifting equipment could result in serious personal injury.*

1. Obtain the following fasteners and tools:

- 3/8-inch concrete anchor (2)
- 3/8-inch x 1-1/2 inch hex head capscrew (2)
- 3/8-inch flat washer (2)
- 3/8-inch lock washer (2)
- Drill
- 5/8-inch masonry drill bit (check hole size with concrete anchor manufacturer)
- 9/16-inch wrench
- 216B key tool (accessory)

2. Using the mounting bracket as a guide, mark the location of the bracket mounting holes on the masonry wall as shown in Figure 12.

Note: Locate the mounting anchors as close as possible to the center of bricks or blocks.

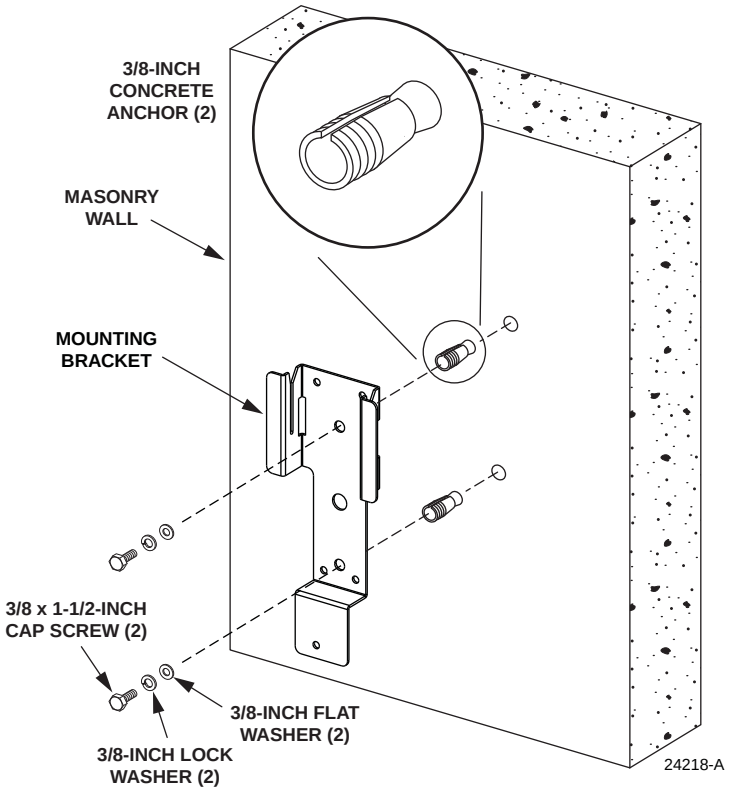

Figure 12. Installing Mounting Bracket on a Masonry Wall

3. Drill a 5/8-inch hole (check hole size with anchor manufacturer) in the wall at each of the locations marked in step 2.
4. Secure the mounting bracket to the masonry wall using the two 3/8-inch x 1-1/2-inch cap screws, two 3/8-inch lock washers, and two 3/8-inch flat washers. Tighten cap screws securely.
5. Using appropriate lifting equipment, hoist the cabinet into position for attachment to the mounting bracket.

Danger: *Do not stand directly under the cabinet as it is being hoisted into position for cable installation. A failure of the lifting equipment could result in serious personal injury.*

6. Hang the cabinet from the installed mounting bracket. The welded bracket on the back of the cabinet (see Figure 11) fits into the two slots at the top of the mounting bracket. The partially installed cap screw at the bottom of the mounting bracket fits into the slotted tab at the bottom of the cabinet.

7. Tighten the partially installed cap screw at the bottom of the cabinet using the 216B key tool.

Note: A cup washer is included with the cap screw to provide tamper resistance.

4.4 Grounding Wire Connection To Cabinet

Use the following procedure to connect a grounding wire to the cabinet:

1. Locate the cabinet grounding lug which is mounted on the underside of the cabinet as shown in Figure 13.

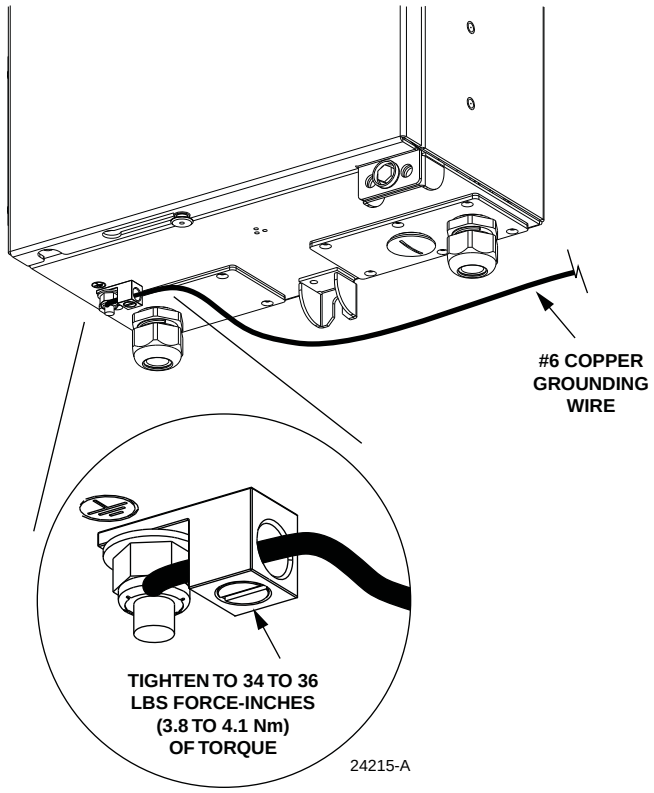

Figure 13. Grounding Wire Connection To Cabinet

2. Obtain a length of #6 AWG copper wire for use as a grounding wire.
3. Insert one end of the grounding wire into the cabinet grounding lug. Tighten the grounding lug set screw to 34 to 36 lbs-force inches (3.8 to 4.1 Nm) of torque.
4. Route the free end of the grounding wire to an approved earth ground source.
5. Cut the grounding wire to length and connect it to the earth ground source as specified by local code or practice.

Warning: *Failure to properly tighten the screw on the grounding lug could result in improper grounding of the cabinet and result in performance or safety issues.*

5 INSTALLING FEEDER CABLES THAT REQUIRE SPLICING

This section provides instructions for installing feeder cables that will be spliced to the splitter input fibers. Use the 216B key tool to release and secure the cabinet door as needed during the feeder cable installation process. This procedure applies to the all-splice and the combination splice/MPO connector versions of the cabinet.

5.1 Feeder Cable Installation

A compression fitting is provided for securing the feeder cable at the entry/exit point to the cabinet. Within the cabinet, a cable clamp is used to secure the cable to a bracket. Beyond the clamp, the outer sheath of the cable is removed to expose the optical fibers. The feeder cable is typically a 12-fiber cable with stranded or ribbon fiber construction. Breakout kits should be installed (subject to local practice) to protect the exposed optical fibers. Grounding kits should be installed on cables with metallic elements. From the clamping point, the optical fibers are routed to a splice tray for splicing to the splitter input fibers.

Use the following procedure to install the feeder cable:

1. Locate the compression fitting (on the bottom of the cabinet) that is specified for feeder cable installation as shown in Figure 14.

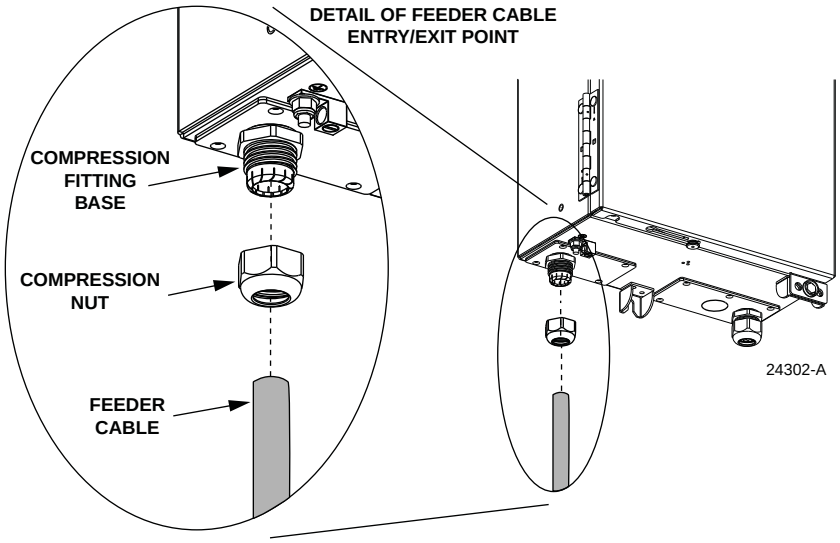

Figure 14. Feeder Cable Compression Fitting

2. Open the cabinet door and swing frame to provide access to the interior of the cabinet.
3. Loosen the compression nut so the feeder cable will slide easily into the cabinet.

Note: The compression fitting provided with the cabinet can be used with feeder cables that are 0.35 to 0.63 inches in diameter. Compression fitting kits are available separately for cables with the following outside diameters: 0.27 – 0.47, 0.51 – 0.71, and 0.71 – 0.98 inches.

4. Insert the end of the feeder cable into the compression fitting and pull through about 10 feet (3 meters) of cable.
5. Strip back the feeder cable sheath **103 inches** (260 cm) to expose the fiber subunits/ribbons and the cable strength members.
6. Install breakout and cable grounding kits as specified by local practice. Follow the installation instructions provided with each kit.

Note: A breakout kit is recommended when installing OSP ribbon cable. The breakout kit includes plastic tubes that protect the fiber ribbons and prevent damage. Instructions for trimming the protective tubes to length are provided in Section 5.3. A grounding kit is required if the cable is equipped with a metallic shield or strength member. Install the cable grounding kit prior to securing the cable to the cabinet.

7. Locate the cable clamp and the assorted grommets that are provided separately.
8. Determine the correct size grommet by first measuring the **outside** diameter of the cable and then measuring the **inside** diameter of the grommets.

Note: Grommets are sized according to their inside diameter. Five different size grommets (0.3, 0.4, 0.5, 0.6, or 0.7 inches) are provided with the cabinet.

9. Select the grommet whose inside diameter is the next size smaller than the diameter of the cable. For example, if the cable is 0.57 inches in diameter, select the 0.5 inch grommet.
10. Adjust cable to remove any excess slack from the cabinet interior and then loosely assemble the cable clamp and grommet on the cable as shown in Figure 15. Leave 7/8-inches (± 1/8-inch) of the cable sheath showing above the grommet.

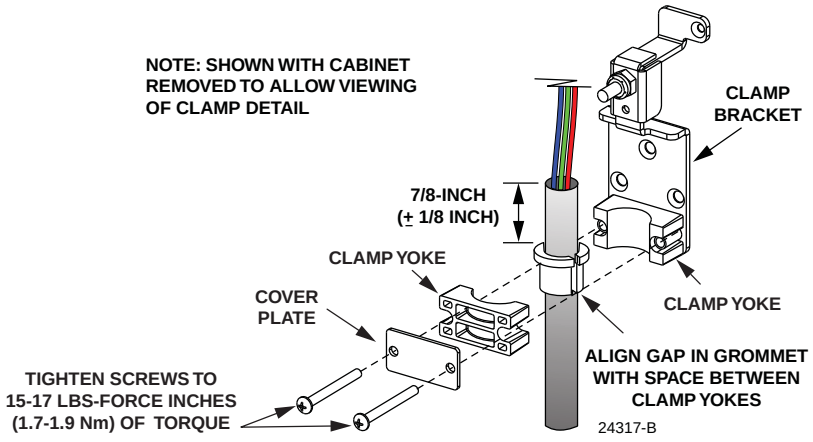

Figure 15. Feeder Cable Clamp Installation

11. If the feeder cable is an OSP cable, or an IFC cable with a central strength member, install a hose clamp (shipped with loose parts) over the end of the cable as shown in Figure 16.

12. Align the gap in the grommet with the space between the clamp yokes and then tighten the clamp screws evenly to 15 to 17 lbs-force inches (1.7 – 1.9 Nm) of torque.

13. If a hose clamp was placed over the cable in step 11 (see Figure 16), tighten the hose clamp to 17 to 19 lbs-force inches (1.7 – 2.1 Nm) of torque.

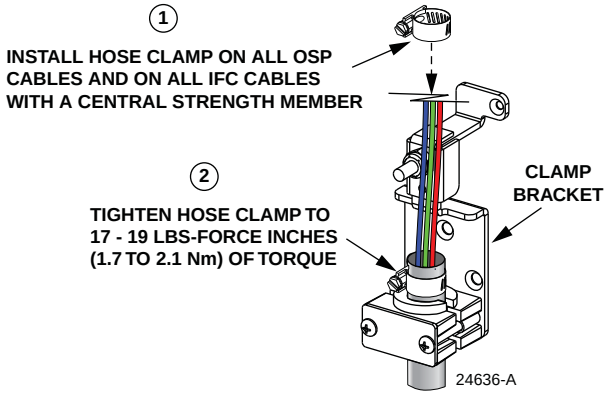

Figure 16. Hose Clamp Installation

14. Tighten the compression nut on the outside of the cabinet to secure the feeder cable at the entry point into the cabinet.

15. Disassemble the cable strength member clamp as shown in Figure 17. For stranded cable, the strength member will usually consist of a single element. For ribbon cable, the strength member may consist of a stranded fiberglass sheath or yellow synthetic fiber yarn.

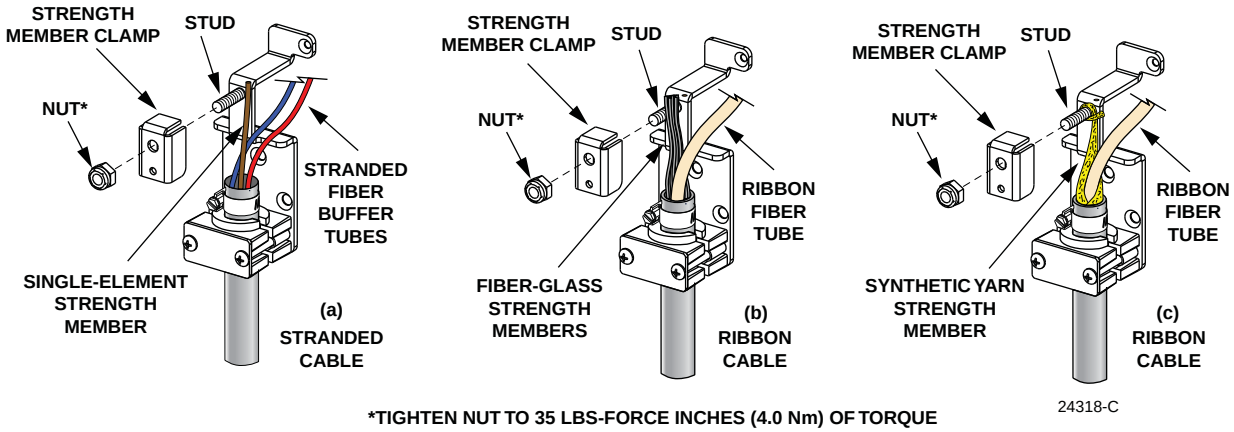

Figure 17. Strength Member Clamp Installation

16. If installing cable with a single-element strength member (a), place the strength member alongside the mounting bracket stud and cut the strength member so it is flush with the top of the mounting bracket. If installing cable with a stranded fiberglass sheath (b), gather the sheath together, place it alongside the mounting

bracket stud, and cut it so it is flush with the top of the mounting bracket. If installing cable with yellow synthetic yarn (c), wrap the yarn around the mounting bracket stud.

17. Use the strength member clamp to secure the cable strength member to the mounting bracket. Tighten the strength member clamp nut to 35 lbs-force inches (4.0 Nm) of torque.
18. Carefully route the exposed feeder cable fiber subunits around the inside perimeter of the cabinet where they will be out of the way until ready to begin splicing.
19. If a grounding kit was installed on the feeder cable, refer to Section 5.2 for instructions on installing the cabinet grounding block kit and for connecting the grounding cable to the cabinet ground block. If a grounding kit was not required, proceed to Section 5.3.

5.2 Grounding Feeder Cables with Metallic Members

If a feeder cable is constructed with a metallic shield or other metallic components, then a grounding kit must be installed on the cable. The grounding kit should provide a stud for attaching a #6 AWG copper jumper wire to the feeder cable. Use the following procedure for grounding a feeder cable that has been fitted with a grounding kit:

1. Connect a #6 AWG stranded copper jumper wire (terminated with ring terminals) to the feeder cable grounding stud.
2. Remove the lock nut and star washer from the feeder cable grounding stud located in the lower left corner of the cabinet as shown in Figure 18.

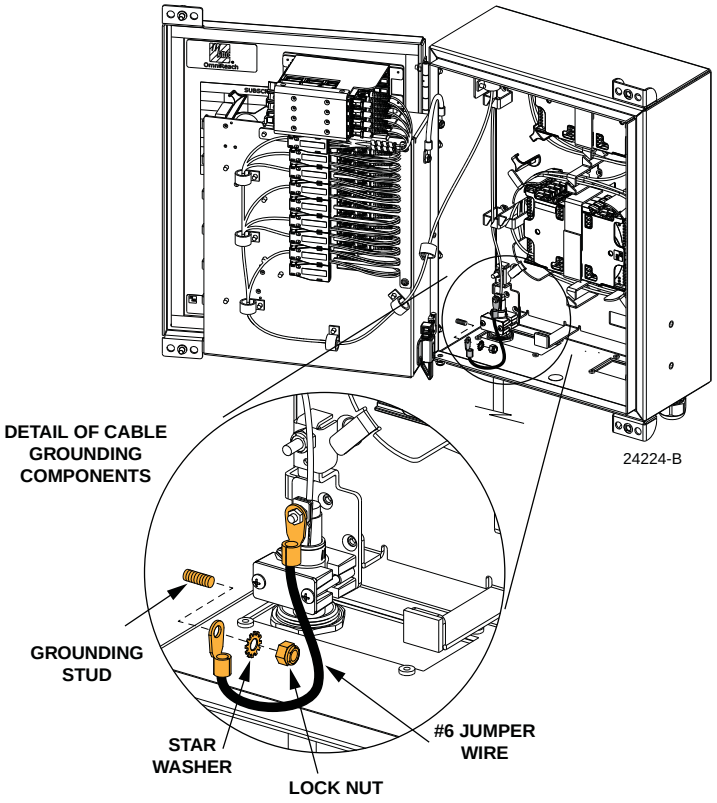

Figure 18. Feeder Cable Grounding

3. Place the jumper wire ring terminal over the grounding stud and then reinstall the star washer and lock nut.
4. Tighten the grounding stud lock nut to 30 to 35 lbs force-inches (3.4 to 4.0 Nm) of torque.

Warning: *The feeder cable is connected to the cabinet grounding system through the grounding stud. Failure to properly tighten the nut on the grounding stud could result in improper grounding of the cable and result in performance or safety issues.*

5.3 Routing and Preparing the Feeder Cable Subunits for Splicing

A universal splice tray for splicing the feeder cable fibers to the splitter input fibers is provided with the cabinet. Use the following procedure to route and prepare the feeder cable fibers for splicing:

1. Locate the feeder cable splice tray which is mounted at the top of the cabinet, as shown in Figure 19, and locate the splitter input fibers which are routed to the feeder splice tray.

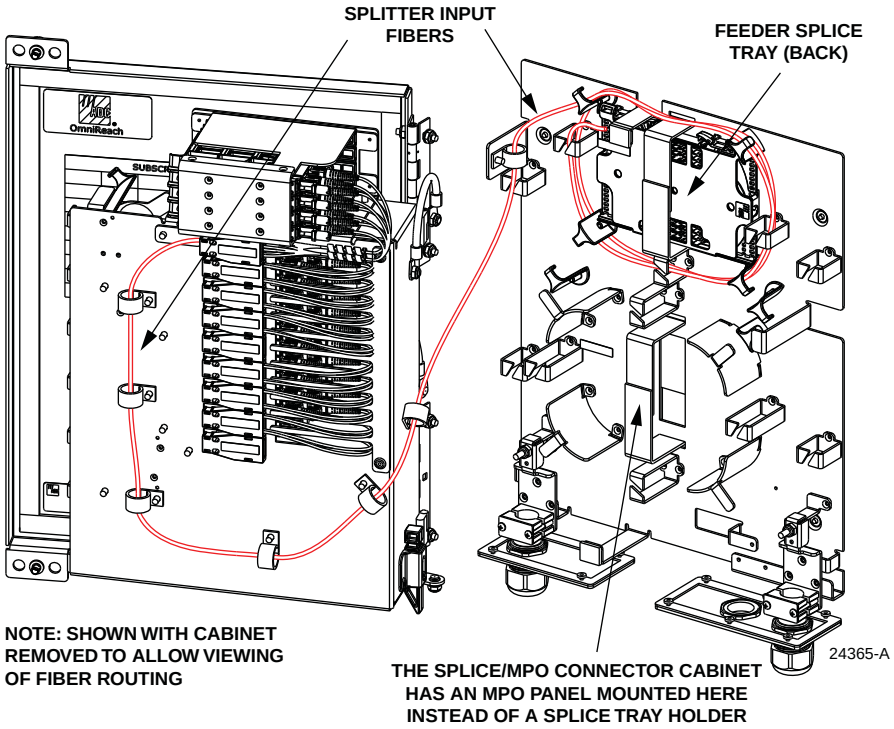

Figure 19. Feeder Splice Tray and Splitter Input Fiber Routing

2. Unfasten the hook and pile strips that secure the tray in place and unwind the attached splitter input fibers from around the splice tray holder.

Note: Three splice trays are mounted in the splice tray holder at the top of the cabinet. Splice trays 1 (top) and 2 (middle) are distribution cable trays. The bottom splice tray is the feeder cable splice tray.

3. Beginning at the feeder cable clamping point shown in Figure 20, route the feeder cable fiber subunits to the point where they intersect with the splitter input fibers.

Caution: *Always allow sufficient fiber length to permit routing without severe bends. Non reduced bend radius fibers may be permanently damaged if bent/curved to a radius of less than 1.5 inches (3.81 cm).*

4. Create a common tie point by securing the feeder cable fibers (use lacing or cable ties) to the splitter input fibers at the intersect point.

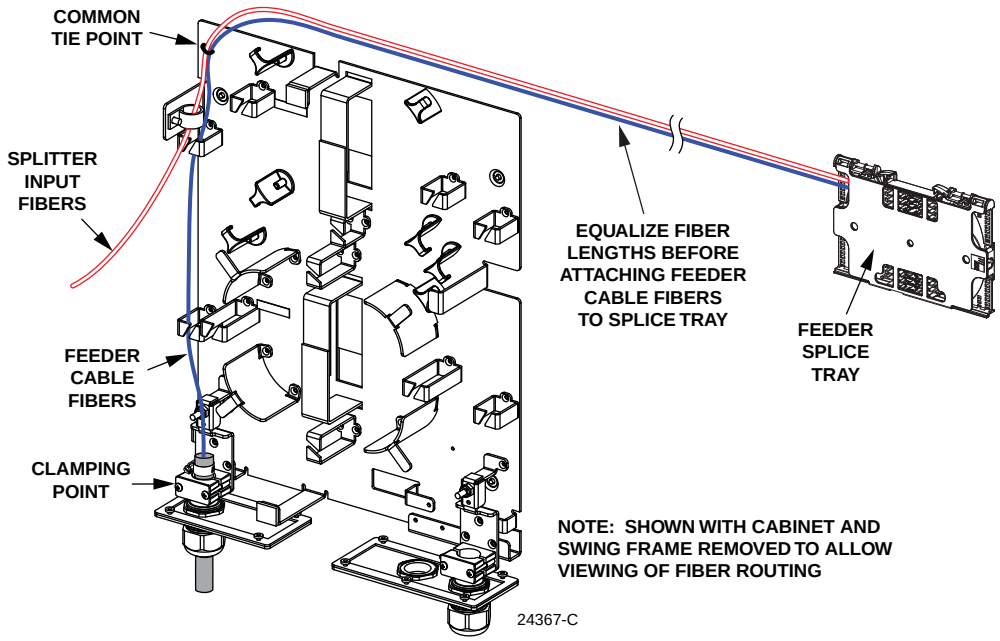

Figure 20. Feeder Cable Fiber Routing to Splice Tray

5. Use lacing or cable ties to secure the feeder cable fiber subunits to the splice tray. Verify that the feeder cable subunits are the same length as the attached splitter input fibers. Adjust as needed to make the lengths equal.

Caution: *Improper handling can damage fiber optic cables. Do not over tighten cable ties or lacing as this can cause damage or attenuation. Do not compress the fibers or allow them to kink.*

6. From the tie point on the splice tray, trim the **feeder cable fiber subunits** to a cut length of 36 inches (92 cm). Discard excess fiber length.
7. The correct procedure to use for splicing the feeder cable fibers to the splitter input fibers is dependent on the cable type. If splicing **stranded** cable, refer to Section 5.4 to complete the feeder cable installation. If splicing **ribbon** cable, refer to Section 5.5 to complete the feeder cable installation.

5.4 Splicing Stranded Fiber Feeder Cables

The universal splice tray can hold up to 12 stranded fiber splices. Use the following procedure to splice the stranded feeder cable fibers to the splitter input fibers and to re-install the feeder splice tray in the cabinet:

1. Starting at the tie-off point on the splice tray, remove the subunit tubes from the feeder cable fibers to expose the bare individual optical fibers. The bare fibers should be approximately 36 inches (92 cm) long.
2. Splice the feeder cable fibers to the appropriate splitter input fibers following local policies and procedures. Refer to Table 3 and Figure 21 identify the splitter input fiber designations.

Table 3. Splitter Input Fiber Designations

SPLITTER POSITION	FIBER COLOR INPUT 1	SPLITTER POSITION	FIBER COLOR INPUT 2
A1	Blue	A5	Slate
B2	Orange	B6	White
C3	Green	C7	Red
D4	Brown	D8	Black

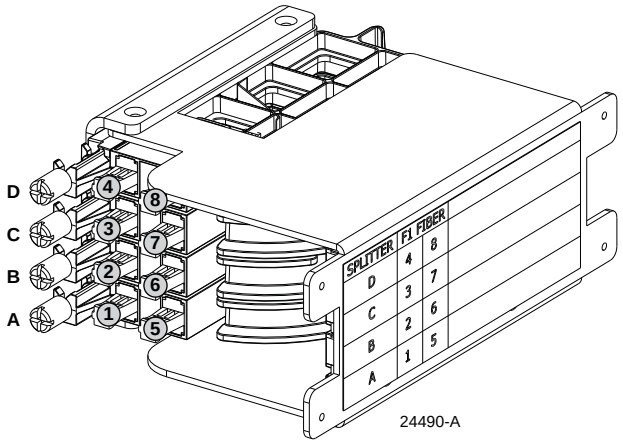

Figure 21. Splitter Input Port Designations

3. Adjust and route the individual fibers within the splice tray as each splice is completed as shown in Figure 22.

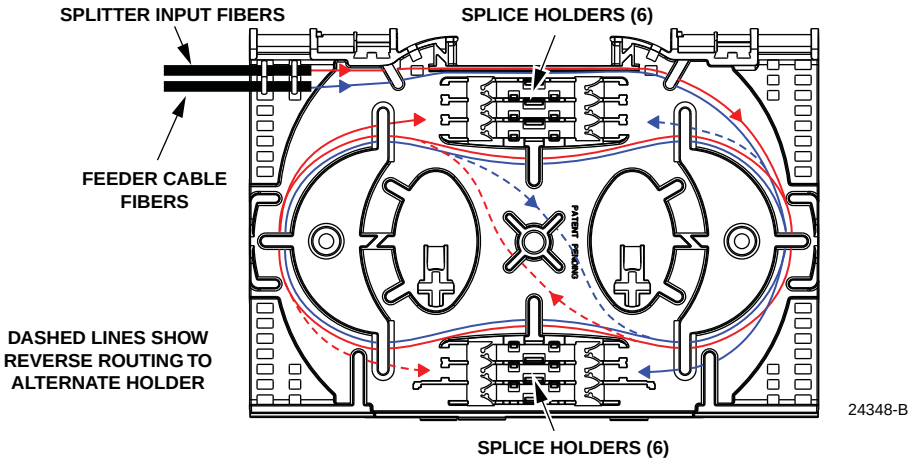

Figure 22. Splicing Stranded Feeder Cable

4. Mount the splice chips within the splice tray as shown in Figure 23.

Note: Two splice chips may be mounted in each splice holder.

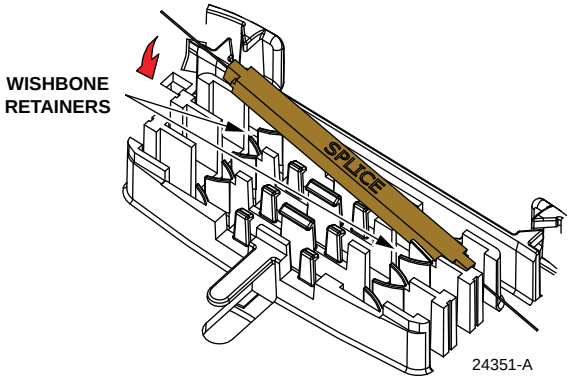

Figure 23. Mounting Splice Chips

5. After splicing is complete, close the clear plastic cover on the splice tray.
6. Re-install the splice tray in the cabinet as shown in Figure 24. Avoid twisting or kinking the fiber subunit tubes. Maintain a 1.5-inch (3.81 cm) minimum bend radius for all non reduced bend radius fiber.

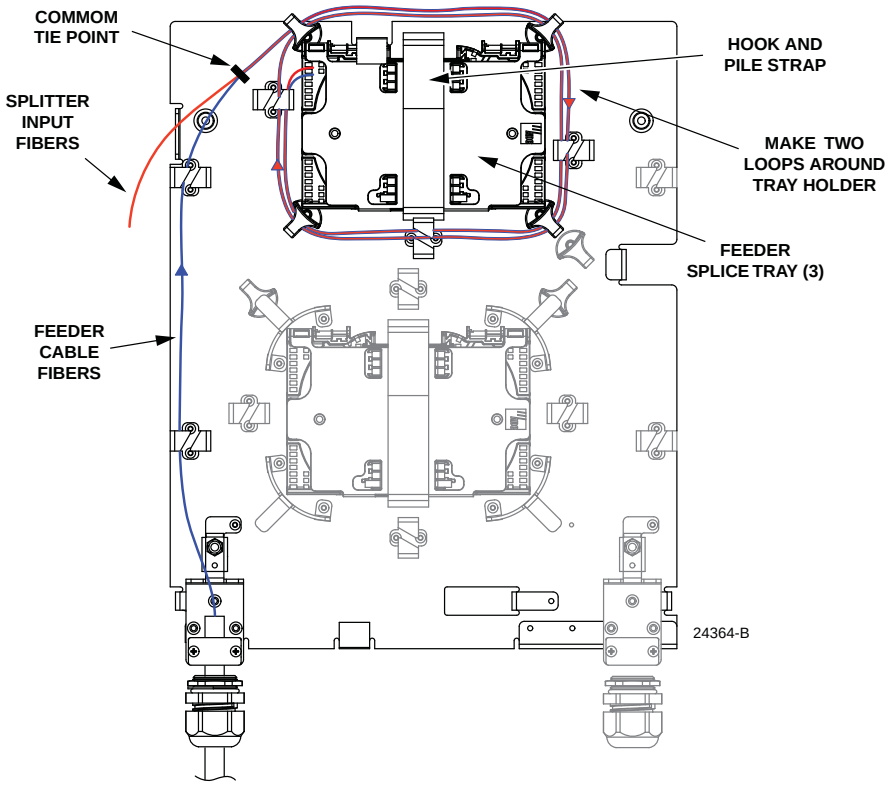

Figure 24. Feeder Splice Tray Installation

7. Secure the feeder splice tray (and the top two distribution cable splice trays) to the splice tray holder using the hook and pile strips.
8. Close the swing frame and the cabinet door when feeder cable splicing is finished.

5.5 Spicing Ribbon Fiber Feeder Cables

The universal splice tray can hold one mass fusion ribbon splice (12-fibers). Use the following procedure to splice the ribbon feeder cable fibers to the splitter input fibers and to re-install the feeder splice tray in the cabinet:

1. Starting at the tie-off point on the splice tray, remove the subunit tube from the fiber ribbon to expose the bare fiber ribbon. The ribbon should be approximately 36 inches (92 cm) long.
2. The splitter input fibers are stranded and must be ribbonized for mass fusion splicing. Install a ribbonizing kit as specified by local practice. Follow the installation instructions provided with the kit. Refer to Table 3, Section 5.4, to identify the splitter input fiber designations.
3. Mass fusion splice the feeder cable ribbon to the ribbonized splitter input fibers following local policies and procedures.
4. Adjust and route the two fiber ribbons within the splice tray and mount the splice chip as shown in Figure 25.

Note: The fiber ribbon must not cross over itself within the splice tray.

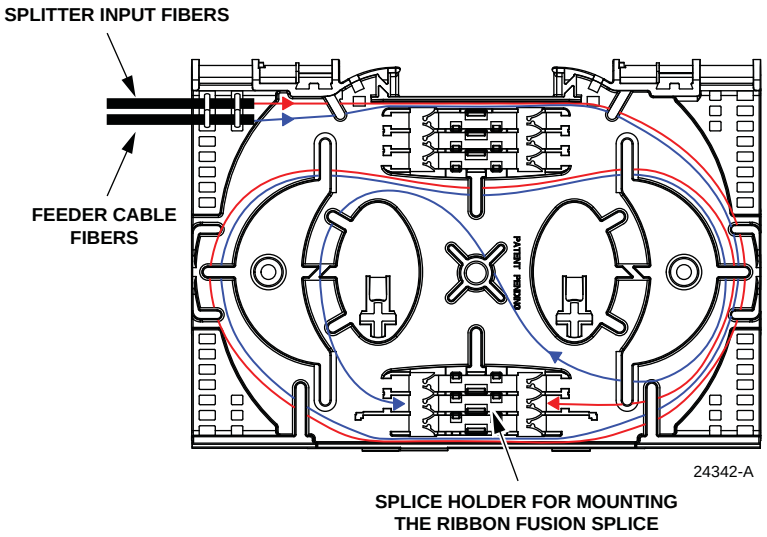

Figure 25. Splicing Ribbon Feeder Cable

5. After splicing is complete, close the clear plastic cover on the splice tray.
6. Re-install the splice tray in the cabinet (see Figure 24). Avoid twisting or kinking the fiber subunit tubes. Maintain a 1.5-inch (3.81 cm) minimum bend radius for all non reduced bend radius fiber.
7. Secure the feeder splice tray (and the two distribution cable splice trays) to the splice tray holder using the hook and pile strips.
8. Close the swing frame and the cabinet door when feeder cable splicing is finished.

6 INSTALLING DISTRIBUTION CABLES THAT REQUIRE SPLICING

This section provides instructions for installing distribution cables that will be spliced to the distribution port fibers. Use the 216B key tool to release and secure the cabinet door as needed during the distribution cable installation process. This procedure applies to the all-splice version of the cabinet.

6.1 Distribution Cable Installation

A compression fitting is provided for securing the distribution cable at the entry/exit point to the cabinet. An accessory kit is available for installing a second distribution cable if required by the application. Within the cabinet, a cable clamp is used to secure the cable to a bracket. Beyond the clamp, the outer sheath of the cable is removed to expose the optical fibers.

The distribution cable is typically a 36-, 48-, 60-, or 72-fiber cable with stranded or ribbon fiber construction. Breakout kits should be installed (per local practice) to protect the exposed optical fibers. Grounding kits should be installed on cables with metallic elements. From the clamping point, the optical fibers are routed to a splice tray for splicing to the distribution port fibers.

Use the following procedure to install the distribution cable:

1. Locate the compression fitting (on the bottom of the cabinet) that is specified for distribution cable installation as shown in Figure 26.

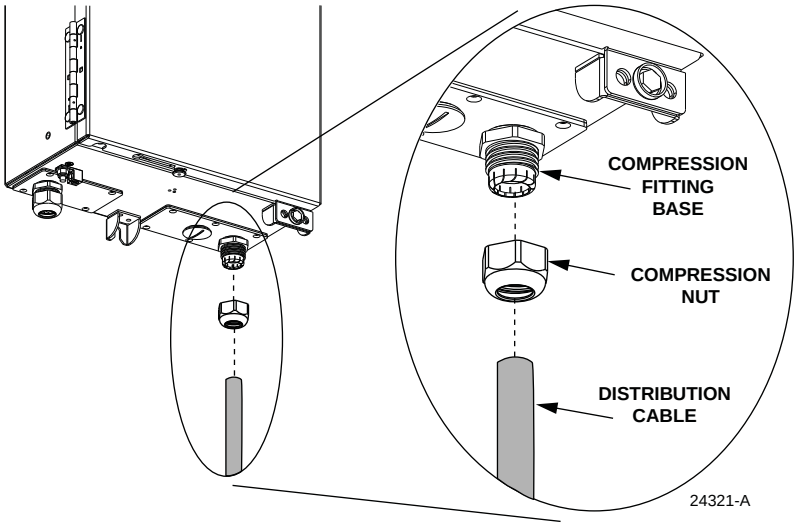

Figure 26. Distribution Cable Compression Fitting

2. Open the cabinet door and swing frame to provide access to the interior of the cabinet.

3. Loosen the compression nut so the distribution cable will slide easily into the cabinet.

Note: The compression fitting provided with the cabinet can be used with distribution cables that are 0.35 to 0.63 inches in diameter. Compression fitting kits are available separately for cables with the following outside diameters: 0.27 – 0.47, 0.51 – 0.71, and 0.71 – 0.98 inches.

4. Insert the end of the distribution cable into the compression fitting and pull through about 10 feet (3 meters) of cable.
5. Strip back the distribution cable sheath **106 inches** (269 cm) to expose the fiber subunits/ribbons and the cable strength members.
6. Install breakout and cable grounding kits as specified by local practice. Follow the installation instructions provided with each kit.

Note: A breakout kit is recommended when installing OSP ribbon cable. The breakout kit includes plastic tubes that protect the fiber ribbons and prevent damage. Instructions for trimming the protective tubes to length are provided in Section 5.3. A grounding kit is required if the cable is equipped with a metallic shield or strength member. Install the cable grounding kit prior to securing the cable to the cabinet.

7. Locate the cable clamp and assorted grommets that are provided separately with the cabinet.
8. Determine the correct size grommet by first measuring the **outside** diameter of the cable and then measuring the **inside** diameter of the grommets.

Note: Grommets are sized according to their inside diameter. Five different size grommets (0.3, 0.4, 0.5, 0.6, or 0.7 inches) are provided with the cabinet.

9. Select the grommet whose inside diameter is the next size smaller than the diameter of the cable. For example, if the cable is 0.57 inches in diameter, select the 0.5 inch grommet.
10. Adjust cable to remove any excess slack from the cabinet interior and then loosely assemble the cable clamp and grommet on the cable as shown in Figure 27. Leave 7/8-inches (± 1/8-inch) of the cable sheath showing above the grommet.

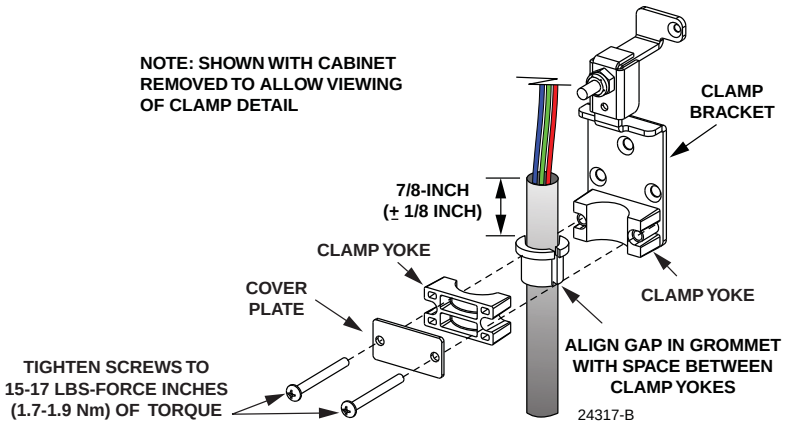

Figure 27. Distribution Cable Clamp Installation

11. If the feeder cable is an OSP cable, or an IFC cable with a central strength member, install a hose clamp (shipped with loose parts) over the end of the cable as shown in Figure 28.
12. Align the gap in the grommet with the space between the clamp yokes and then tighten the clamp screws evenly to 15 to 17 lbs-force inches (1.7 – 1.9 Nm) of torque.
13. If a hose clamp was placed over the cable in step 11 (see Figure 28), tighten the hose clamp to 17 to 19 lbs-force inches (1.7 – 2.1 Nm) of torque.

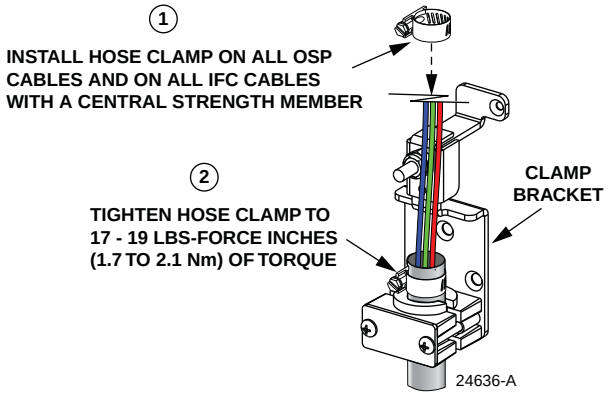

Figure 28. Hose Clamp Installation

14. Tighten the compression nut on the outside of the cabinet to secure the distribution cable at the entry point into the cabinet.
15. Disassemble the cable strength member clamp as shown in Figure 29. For stranded cable, the strength member will usually consist of a single element. For ribbon cable, the strength member may consist of a stranded fiberglass sheath or yellow synthetic fiber yarn.

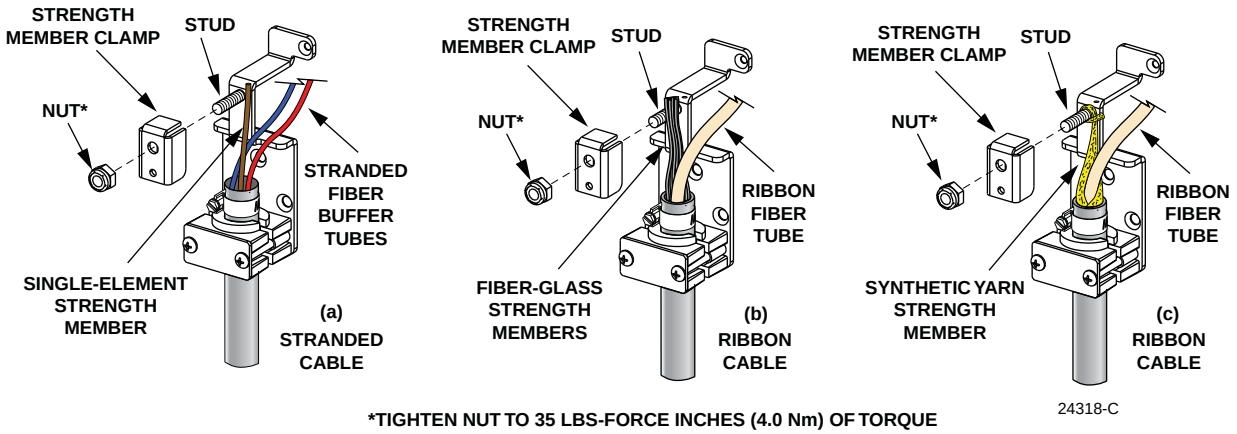

Figure 29. Strength Member Clamp Installation

16. If installing cable with a single-element strength member (a), place the strength member alongside the mounting bracket stud and cut the strength member so it is flush with the top of the mounting bracket. If installing cable with a stranded fiberglass sheath (b), gather the sheath together, place it alongside the mounting bracket stud, and cut it so it is flush with the top of the mounting bracket. If installing cable with yellow synthetic yarn (c), wrap the yarn around the mounting bracket stud.
17. Use the strength member clamp to secure the cable strength member to the mounting bracket. Tighten the strength member clamp nut to 35 lbs-force inches (4.0 Nm) of torque.
18. Carefully route the exposed distribution cable fibers around the inside perimeter of the cabinet where they will be out of the way until ready to begin splicing.
19. If a grounding kit was installed on the distribution cable, refer to Section 6.2 for instructions on installing the cabinet grounding block kit and for connecting the grounding cable to the cabinet ground block. If a grounding kit was not required, proceed to Section 6.3.

6.2 Grounding Distribution Cables with Metallic Members

If a distribution cable is constructed with a metallic shield or other metallic components, then a grounding kit must be installed on the cable. The grounding kit should provide a stud for attaching a #6 AWG copper jumper wire to the distribution cable. Use the following procedure for grounding a distribution cable that has been fitted with a grounding kit:

1. Connect a #6 AWG stranded copper jumper wire (terminated with ring terminals) to the distribution cable grounding stud.
2. Remove the lock nut and star washer from the distribution cable grounding stud located in the lower left corner of the cabinet as shown in Figure 30.

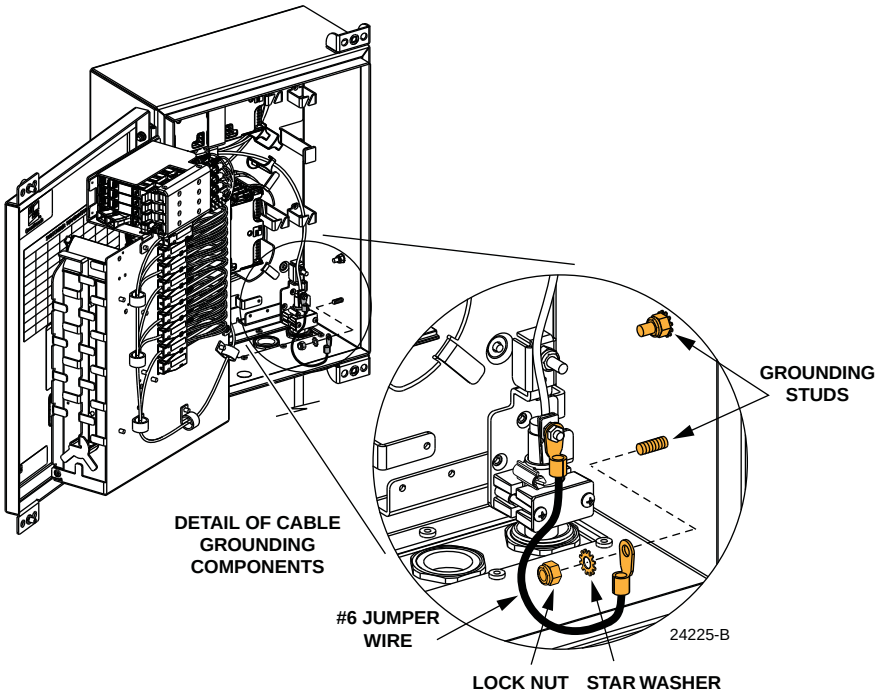

Figure 30. Distribution Cable Grounding

3. Place the jumper wire ring terminal over the grounding stud and then reinstall the star washer and lock nut.
4. Tighten the grounding stud lock nut to 30 to 35 lbs force-inches (3.4 to 4.0 Nm) of torque.

Warning: *The distribution cable is connected to the cabinet grounding system through the grounding stud. Failure to properly tighten the nut on the grounding stud could result in improper grounding of the cable and result in performance or safety issues.*

6.3 Routing and Preparing the Distribution Cable Subunits for Splicing

Several universal splice trays for splicing the distribution cable fibers to the distribution port fibers are provided with the cabinet. Use the following procedure to route and prepare the distribution cable subunits for splicing:

1. Locate the distribution cable splice trays which are mounted against the back of the cabinet in two locations, as shown in Figure 31, and locate the distribution port fibers which are routed to the distribution splice trays.

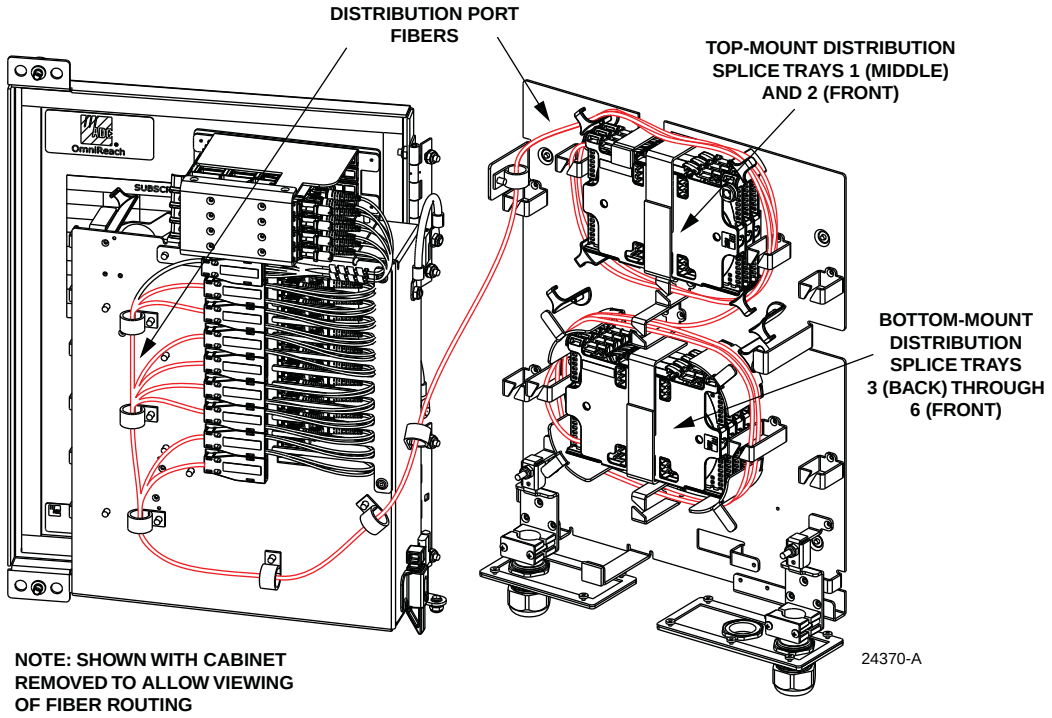

Figure 31. Distribution Splice Trays and Distribution Port Fiber Routing

2. Unfasten the hook and pile strips that secure the trays in place and unwind the attached distribution port pigtails from around the splice tray holder.

Note: Three splice trays are mounted in the splice tray holder at the top of the cabinet. Splice trays 1 (middle) and 2 (front) are distribution trays. The tray at the back is the feeder splice tray. The four splice trays mounted in the splice tray holder at the bottom of the cabinet are distribution trays. These trays are numbered 3 (back) through 6 (front).

3. Beginning at the distribution cable clamping point, route the distribution cable subunits to the point where they intersect with the distribution port fibers. The routing for top-mounted splice trays is shown in Figure 32. The routing for bottom-mounted splice trays is shown in Figure 33.

Caution: *Always allow sufficient fiber length to permit routing without severe bends. Non reduced bend radius fibers may be permanently damaged if bent/curved to a radius of less than 1.5 inches (3.81 cm).*

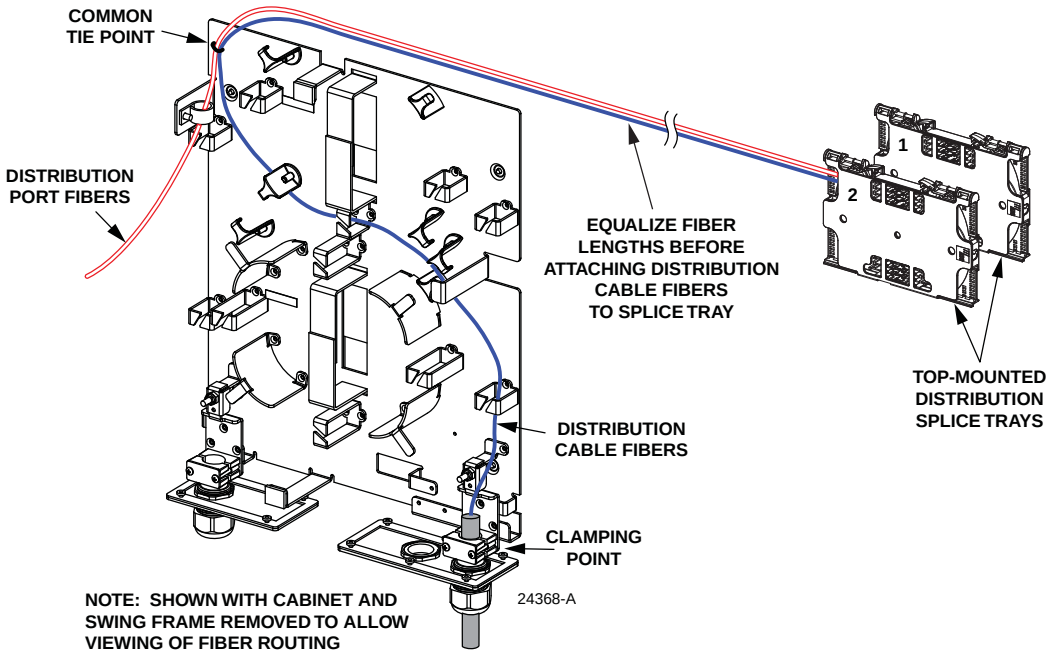

Figure 32. Distribution Cable Fiber Routing for Top-Mounted Splice Trays

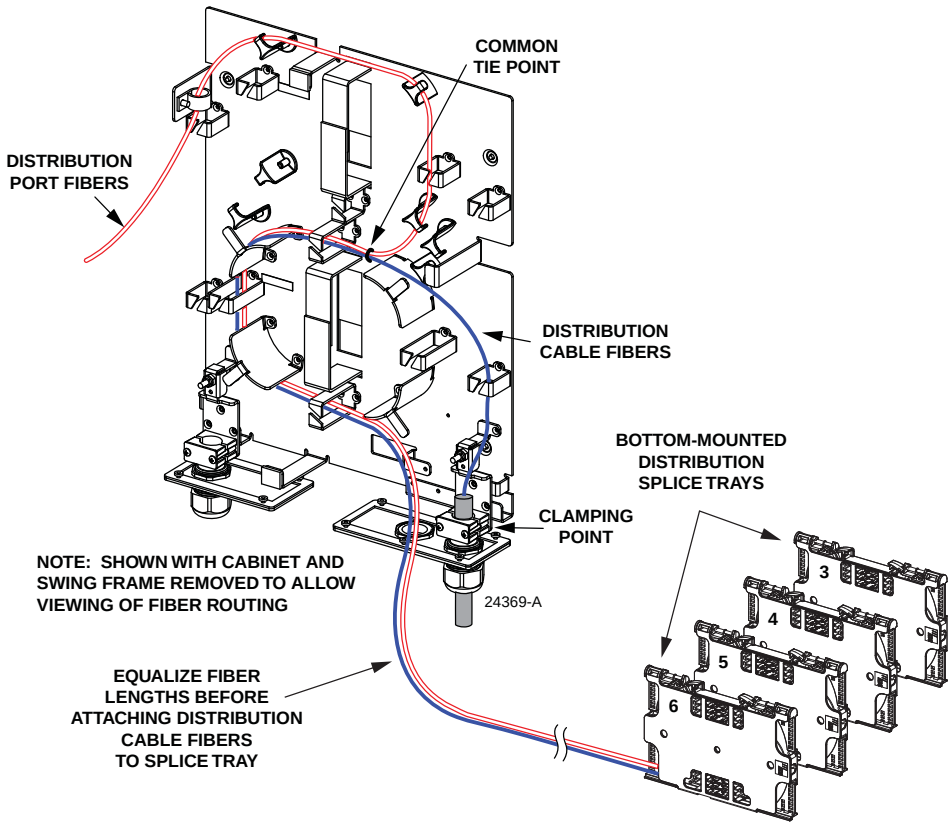

Figure 33. Distribution Fiber Routing for Bottom-Mounted Splice

4. Create a common tie point by securing the distribution cable subunits (use lacing or cable ties) to the distribution port fibers at the intersect point.
5. Use lacing or cable ties to secure a distribution cable subunit to each splice tray. Verify that the distribution subunit is the same length as the attached distribution port fibers. Adjust as needed to make the lengths equal.

Caution: *Improper handling can damage fiber optic cables. Do not over tighten cable ties or lacing as this can cause damage or attenuation. Do not compress the fibers or allow them to kink.*

6. From the tie point on the splice tray, trim the **distribution cable subunits** to a cut length of 36 inches (92 cm). Discard excess fiber length.
7. The correct procedure to use for splicing the distribution cable fibers to the distribution port fibers is dependent on the cable type. If splicing **stranded** cable, refer to Section 6.4 to complete distribution cable installation. If splicing **ribbon** cable, refer to Section 6.5 to complete distribution cable installation.

6.4 Splicing Stranded Fiber Distribution Cables

The universal splice tray can hold up to 12 stranded fiber splices. Use the following procedure to splice stranded distribution cable fibers to the distribution port fibers and to re-install the distribution splice trays in the cabinet:

1. Starting at the tie-off point on the splice tray, remove the subunit tubes from the distribution cable fibers to expose the bare individual optical fibers. The bare fibers should be approximately 36 inches (92 cm) long.
2. Splice the distribution cable fibers to the appropriate distribution port fibers following local policies and procedures. Refer to Figure 34 and Table 4 to identify the distribution output port fiber designations.

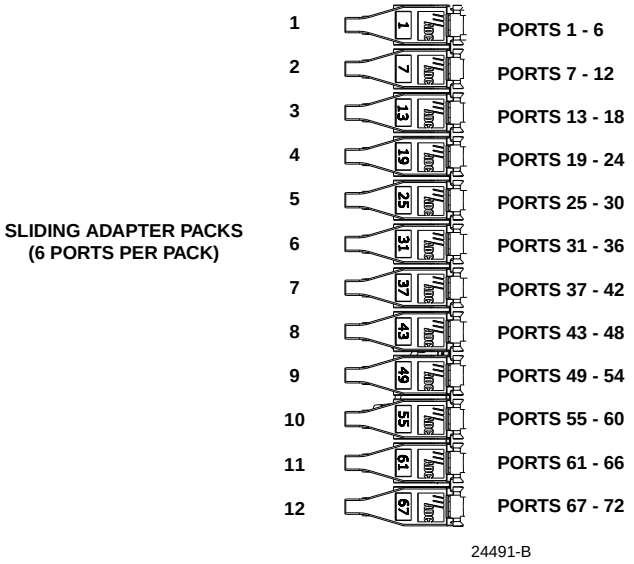

Figure 34. Adapter Pack Distribution Output Port Designations

Table 4. Distribution Output Port Fiber Designations

ADAPTER PACK	DIST PORT	FIBER COLOR	SPLICE TRAY	ADAPTER PACK	DIST PORT	FIBER COLOR	SPLICE TRAY
1	1	Blue	1	7	37	Blue	4
	2	Orange			38	Orange	
	3	Green			39	Green	
	4	Brown			40	Brown	
	5	Slate			41	Slate	
	6	White			42	White	
2	7	Red		8	43	Red	
	8	Black			44	Black	
	9	Yellow			45	Yellow	
	10	Violet			46	Violet	
	11	Rose			47	Rose	
	12	Aqua			48	Aqua	
3	13	Blue	2	9	49	Blue	5
	14	Orange			50	Orange	
	15	Green			51	Green	
	16	Brown			52	Brown	
	17	Slate			53	Slate	
	18	White			54	White	
4	19	Red		10	55	Red	
	20	Black			56	Black	
	21	Yellow			57	Yellow	
	22	Violet			58	Violet	
	23	Rose			59	Rose	
	24	Aqua			60	Aqua	
5	25	Blue	3	11	61	Blue	6
	26	Orange			62	Orange	
	27	Green			63	Green	
	28	Brown			64	Brown	
	29	Slate			65	Slate	
	30	White			66	White	
6	31	Red		12	67	Red	
	32	Black			68	Black	
	33	Yellow			69	Yellow	
	34	Violet			70	Violet	
	35	Rose			71	Rose	
	36	Aqua			72	Aqua	

3. As each splice is completed, adjust and route the individual fibers within the splice tray. Refer to Figure 35 for top-mounted splice trays and Figure 36 for bottom-mounted splice trays.

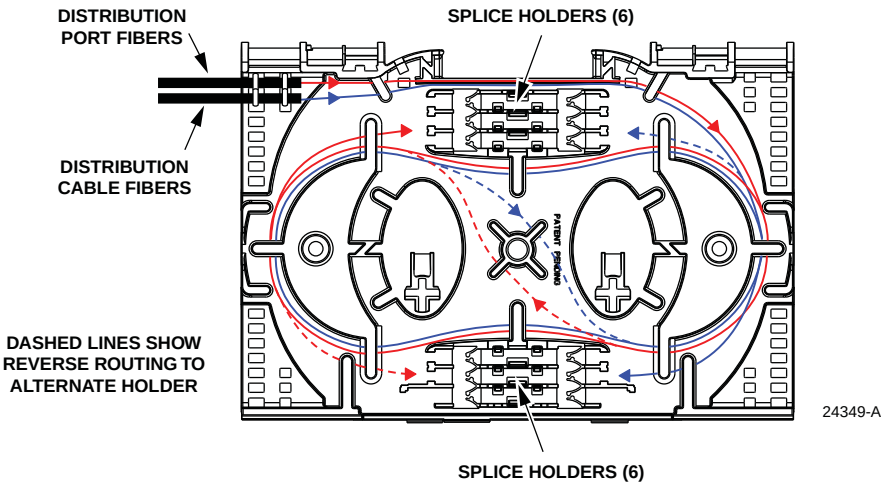

Figure 35. Splicing Stranded Distribution Cable - Top Mounted Trays

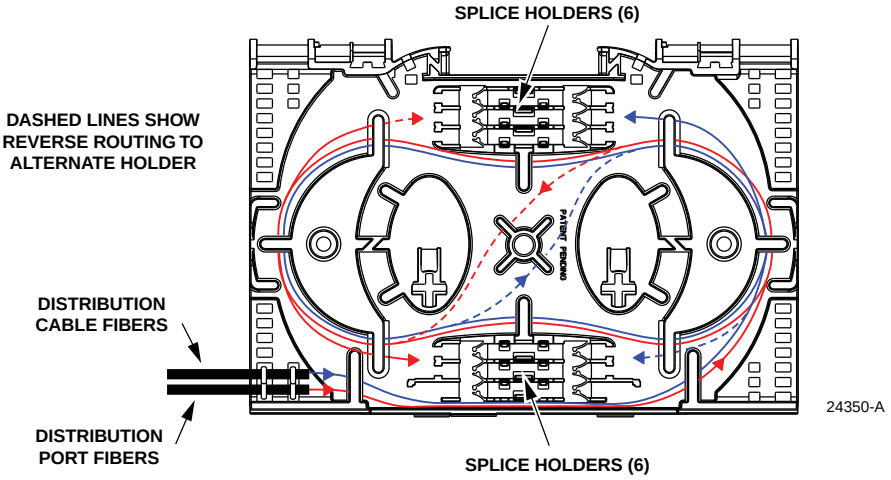

Figure 36. Splicing Stranded Distribution Cable - Bottom Mounted Trays

4. Mount the splice chips within the splice tray as shown in Figure 37.

Note: Two splice chips may be mounted in each splice holder.

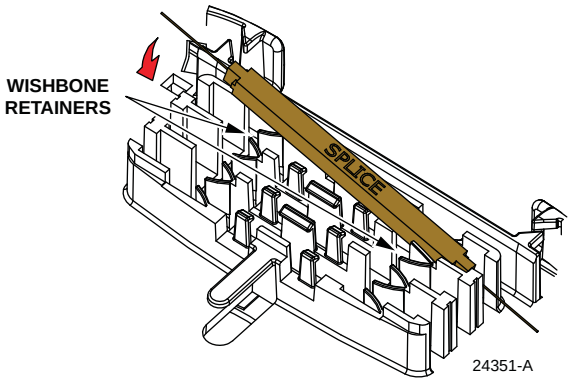

Figure 37. Mounting Splice Chips

5. After splicing is completed, close the clear plastic cover on each splice tray.
6. Re-install the each splice tray in the cabinet. The routing for top-mounted splice trays is shown in Figure 38 and the routing for bottom-mounted splice trays is shown in Figure 39. Avoid twisting or kinking the fiber subunit tubes. Maintain a 1.5-inch (3.81 cm) minimum bend radius for all non reduced bend radius fiber.

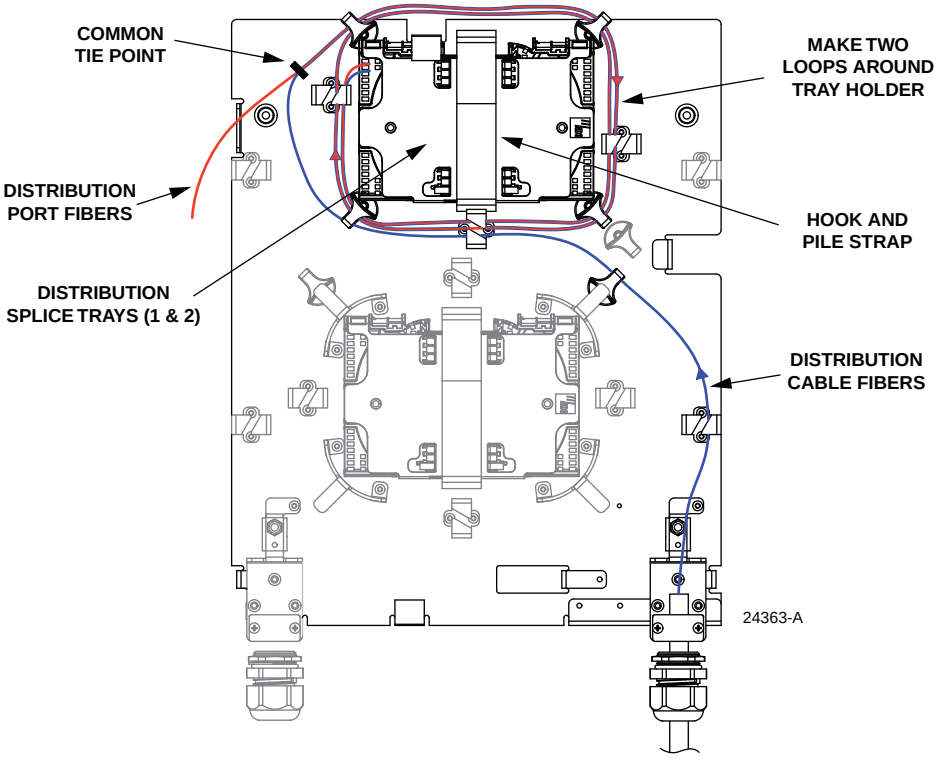

Figure 38. Top-Mounted Distribution Splice Tray Installation

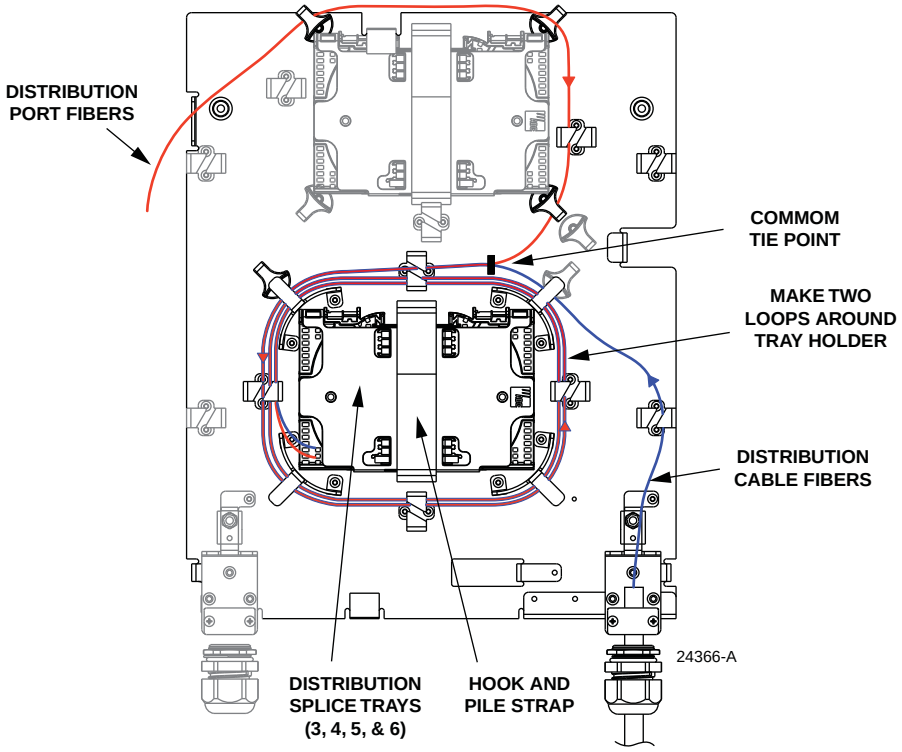

Figure 39. Bottom-Mounted Distribution Splice Tray Installation

7. Secure the distribution splice trays to the splice tray holders using the hook and pile strips.
8. Close the swing frame and the cabinet door when distribution cable splicing is finished.

6.5 Splicing Ribbon Fiber Distribution Cables

The universal splice tray can hold one mass fusion ribbon splice (12-fibers). Use the following procedure to splice the ribbon distribution cable fibers to the distribution port fibers and to re-install the distribution splice trays in the cabinet:

1. Starting at the tie-off point on the splice tray, remove the subunit tube from the fiber ribbon to expose the bare fiber ribbon. The ribbon should be approximately 36 inches (92 cm) long.
2. The distribution pigtail fibers are stranded and must be ribbonized for mass fusion splicing. Install a ribbonizing kit as specified by local practice. Follow the installation instructions provided with the kit. Refer to Table 4 in Section 6.4 to identify the distribution port fiber designations.
3. Mass fusion splice the distribution cable ribbon to the ribbonized distribution port fibers following local policies and procedures.

4. Adjust and route the two fiber ribbons within the splice tray and mount the splice chip. See Figure 40 for top-mounted splice trays. See Figure 41 for bottom-mounted splice trays.

Note: The fiber ribbon must not cross over itself within the splice tray.

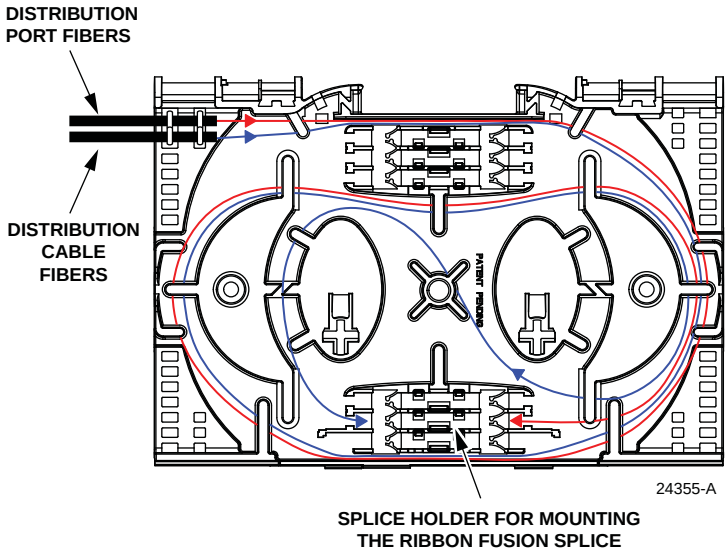

Figure 40. Splicing Ribbon Distribution Cable - Top Mounted Trays

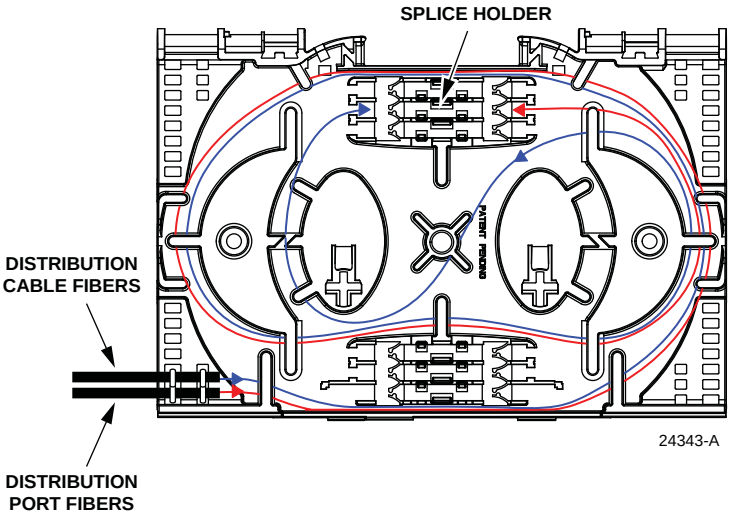

Figure 41. Splicing Ribbon Distribution Cable - Bottom Mounted Trays

5. After splicing is completed, close the clear plastic cover on each splice tray.

6. Route the distribution port fibers and distribution cable subunits (see Figure 38) two times around the splice tray holder and then re-install the each splice tray in the cabinet. Avoid twisting or kinking the fiber subunit tubes. Maintain a 1.5-inch (3.81 cm) minimum bend radius for all non reduced bend radius fiber.
7. Secure the distribution splice trays to the splice tray holders using the hook and pile strips.
8. Close the swing frame and the cabinet door when distribution cable splicing is finished.

7 INSTALLING FEEDER AND DISTRIBUTION CABLES TERMINATED WITH MPO CONNECTORS

This section provides instructions for installing feeder and distribution cables that are terminated with MPO connectors. Use the 216B key tool to release and secure the cabinet door as needed during the MPO cable installation process. This procedure applies to the all MP connector and the combination splice/MPO connector versions of the cabinet.

The cabinet is designed for use with feeder and distribution cables that are terminated with male MPO connectors. Each MPO cable must be a 3 mm, stranded, 8- or 12-fiber cable terminated with a 12-fiber MPO connector. In addition, the MPO cables used with the cabinet must be designed for reduced bend radius applications. MPO cables are typically rated for both indoor and outdoor use.

Two compression fittings are provided for securing MPO cables at the point where they enter the cabinet. Six 3 mm cables may be routed into the cabinet through each entry/exit hole. Within the cabinet, the MPO cables are routed to a bulkhead adapter panel for connection to the feeder adapter and/or the distribution port adapters.

Use the following procedure to install the MPO cables:

1. Locate the compression fittings (at the bottom of the cabinet) that are specified for MPO cable installation as shown in Figure 42.

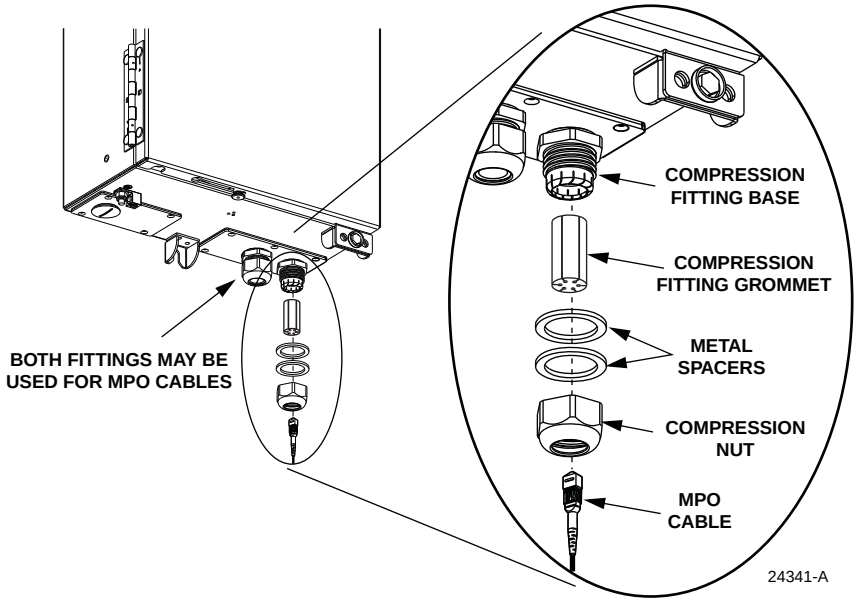

Figure 42. MPO Cable Compression Fittings

2. Remove the compression nut from the first compression fitting and remove the compression fitting grommet from inside the compression fitting.
3. Loosely re-install the compression nut on the compression fitting making sure the two metal spacers remain in place (see Figure 42) inside the compression fitting.

4. Open the cabinet door and swing frame to provide access to the interior of the cabinet.
5. Insert the connectorized end of each MPO cable through the installed compression fitting as shown in Figure 43 and pull through about 36 inches of cable slack into the cabinet.

Note: Up to **six** 3 mm MPO cables may be routed into the cabinet through each designated entry/exit hole. All six cables should be installed at the same time.

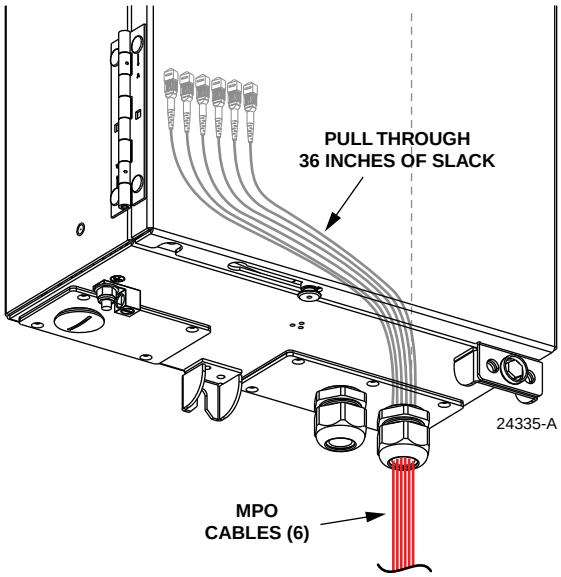

Figure 43. Inserting MPO Cables into Compression Fitting

6. Place each MPO cable into one of the slots in the compression fitting grommet as shown in Figure 44. Place bottom of grommet 36 inches from the end of the MPO connectors.
7. From the inside of the cabinet, insert the compression fitting grommet into the compression fitting.

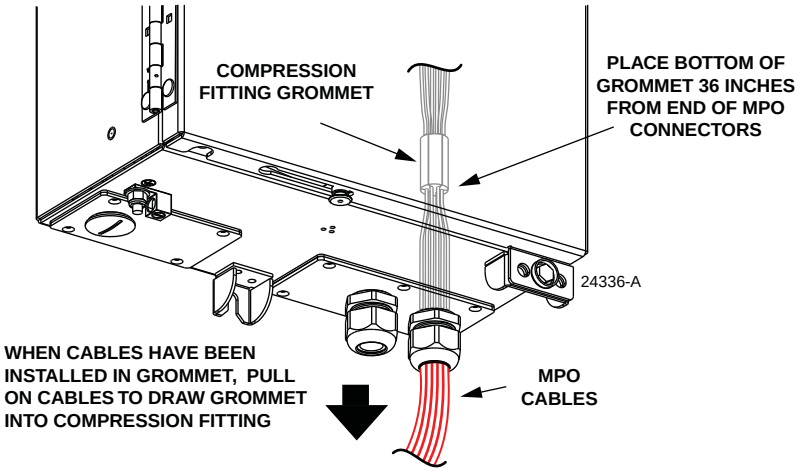

Figure 44. Install MPO Cables in Grommet

8. Pull on the MPO cables from the outside of the cabinet until the end of the grommet is flush with the compression nut opening.
9. Locate the adapters on the bulkhead adapter panel that are designated for the feeder cable and distribution cables. The layout of the bulkhead adapter panel is shown in Figure 45.

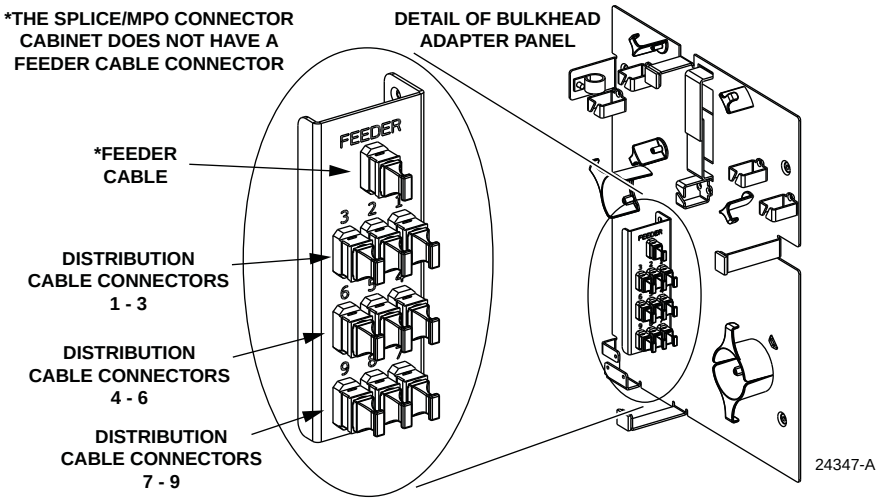

Figure 45. Layout of Bulkhead Adapter Panel

10. Route the first MPO cable to the bulkhead adapter panel as shown in Figure 46. There should be sufficient slack to wind the cable two times around the radius limiters before routing the cable to the bulkhead adapter panel. If necessary, slack may be removed/added by pulling the cable in/out of the cabinet through the grommet.

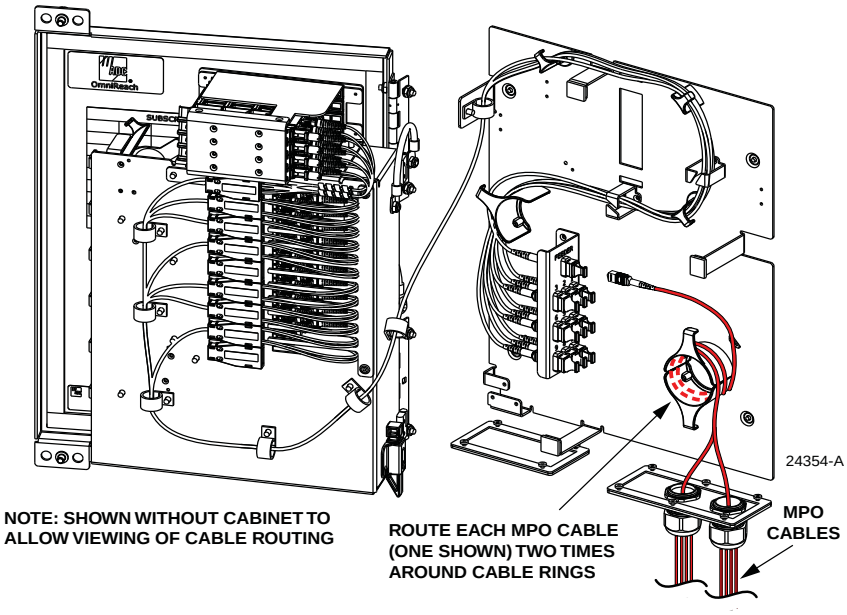

Figure 46. Routing MPO Cables to the Bulkhead Adapter Panel

11. Remove the dust cap from the appropriate bulkhead adapter and the corresponding MPO cable connector as shown in Figure 47.

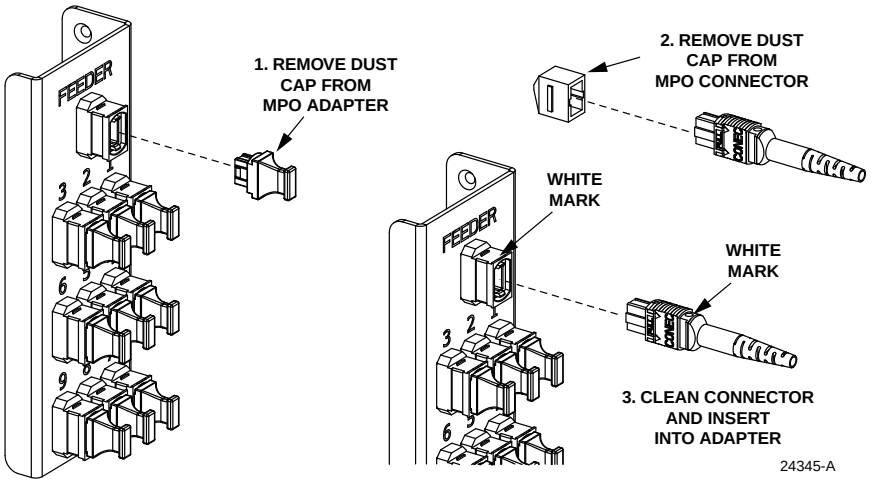

Figure 47. Connecting MPO Connector to MPO Adapter

12. Refer to Figure 48 and Table 5, Table 6, Table 7, or Table 8 to identify the optical ports associated with each MPO adapter.

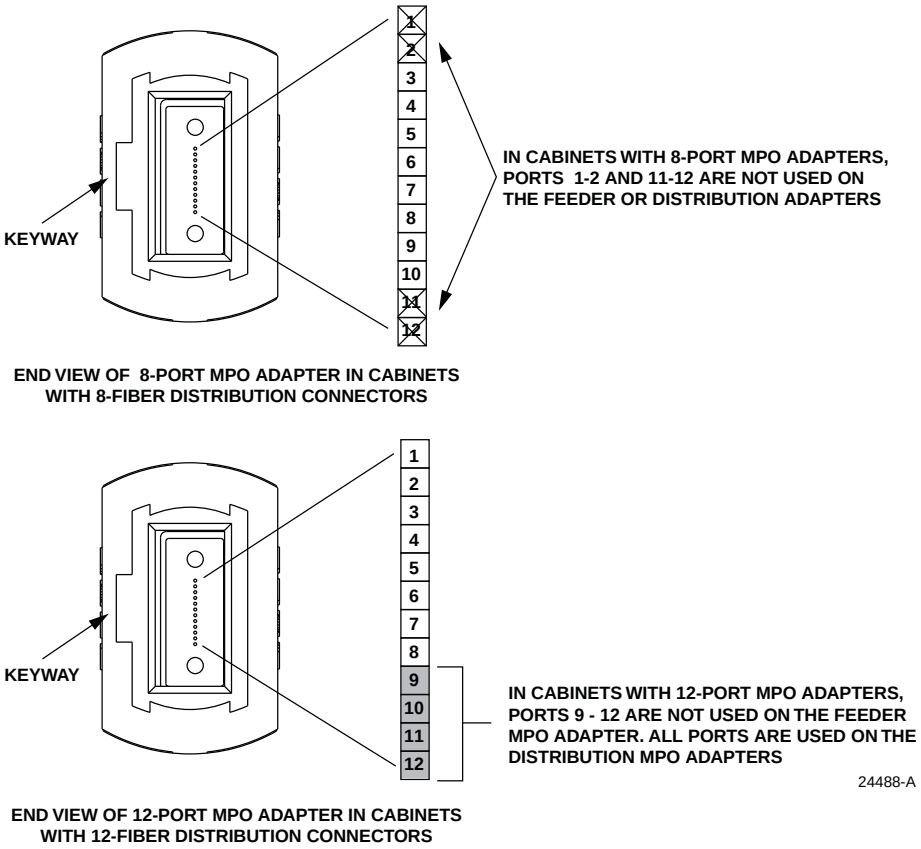

Figure 48. MPO Adapter Port Designations

Table 5. Feeder Input Fiber Designations In Cabinets With 8-Fiber MPO Distribution Connectors

SPLITTER INPUT	*MPO PORT #	SPLITTER INPUT	*MPO PORT #
A1	3	A5	7
B2	4	B6	8
C3	5	C7	9
D4	6	D8	10

*The eight fibers in MPO adapter ports 3 – 10 are used for the splitter inputs. Ports 1 – 2 and 11 – 12 are not used. The splitter input port designations are shown in Figure 49.

Table 6. Distribution Port Designations In Cabinets With 8-Fiber MPO Distribution Connectors

ADAPTER PACK	DIST PORT#	*MPO ADAPTER-PORT #	ADAPTER PACK	DISTPORT#	*MPO ADAPTER-PORT #	ADAPTER PACK	DIST PORT#	*MPO ADAPTER-PORT #
1	1	1-3	5	25	4-3	9	49	7-3
	2	1-4		26	4-4		50	7-4
	3	1-5		27	4-5		51	7-5
	4	1-6		28	4-6		52	7-6
	5	1-7		29	4-7		53	7-7
	6	1-8		30	4-8		54	7-8
2	7	1-9	6	31	4-9	10	55	7-9
	8	1-10		32	4-10		56	7-10
	9	2-3		33	5-3		57	8-3
	10	2-4		34	5-4		58	8-4
	11	2-5		35	5-5		59	8-5
	12	2-6		36	5-6		60	8-6
3	13	2-7	7	37	5-7	11	61	8-7
	14	2-8		38	5-8		62	8-8
	15	2-9		39	5-9		63	8-9
	16	2-10		40	5-10		64	8-10
	17	3-3		41	6-3		65	9-3
	18	3-4		42	6-4		66	9-4
4	19	3-5	8	43	6-5	12	67	9-5
	20	3-6		44	6-6		68	9-6
	21	3-7		45	6-7		69	9-7
	22	3-8		46	6-8		70	9-8
	23	3-9		47	6-9		71	9-9
	24	3-10		48	6-10		72	9-10

*The eight fibers in MPO adapter ports 3 – 10 are connected to the distribution output ports. Ports 1– 2 and 11–12 are not used. The adapter pack distribution output port designations are shown in Figure 50.

Table 7. Feeder Input Fiber Designations In Cabinets With 12-Fiber MPO Distribution Connectors

SPLITTER INPUT	*MPO PORT #	SPLITTER INPUT	*MPO PORT #
A1	1	A5	5
B2	2	B6	6
C3	3	C7	7
D4	4	D8	8

*The eight fibers in MPO adapter ports 1 – 8 are used for the splitter inputs. Ports 9 – 12 are not used. The splitter input port designations are shown in Figure 49.

Table 8. Distribution Output Port Designations In Cabinets With 12-Fiber MPO Distribution Connectors

ADAPTER PACK	DIST PORT #	*MPO ADAPTER-FIBER	ADAPTER PACK	DIST PORT #	*MPO ADAPTER-FIBER	ADAPTER PACK	DIST PORT #	*MPO ADAPTER-FIBER
1	1	1-1	5	25	3-1	9	49	5-1
	2	1-2		26	3-2		50	5-2
	3	1-3		27	3-3		51	5-3
	4	1-4		28	3-4		52	5-4
	5	1-5		29	3-5		53	5-5
	6	1-6		30	3-6		54	5-6
2	7	1-7	6	31	3-7	10	55	5-7
	8	1-8		32	3-8		56	5-8
	9	1-9		33	3-9		57	5-9
	10	1-10		34	3-10		58	5-10
	11	1-11		35	3-11		59	5-11
	12	1-12		36	3-12		60	5-12
3	13	2-1	7	37	4-1	11	61	6-1
	14	2-2		38	4-2		62	6-2
	15	2-3		39	4-3		63	6-3
	16	2-4		40	4-4		64	6-4
	17	2-5		41	4-5		65	6-5
	18	2-6		42	4-6		66	6-6
4	19	2-7	8	43	4-7	12	67	6-7
	20	2-8		44	4-8		68	6-8
	21	2-9		45	4-9		69	6-9
	22	2-10		46	4-10		70	6-10
	23	2-11		47	4-11		71	6-11
	24	2-12		48	4-12		72	6-12

*The twelve fibers in MPO adapter ports 1 – 12 are connected to the distribution output ports. The adapter pack distribution output port designations are shown in Figure 50.

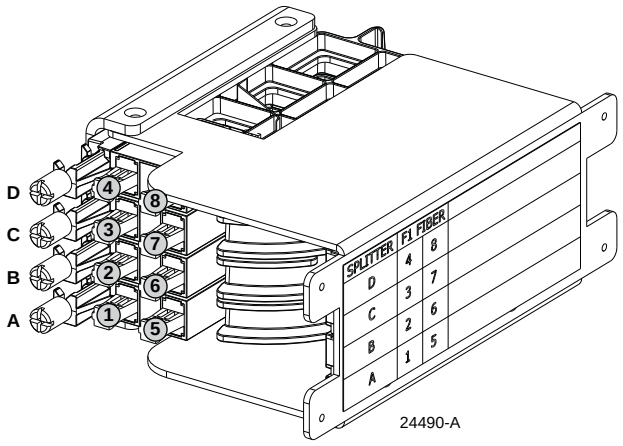

Figure 49. Splitter Input Port Designations

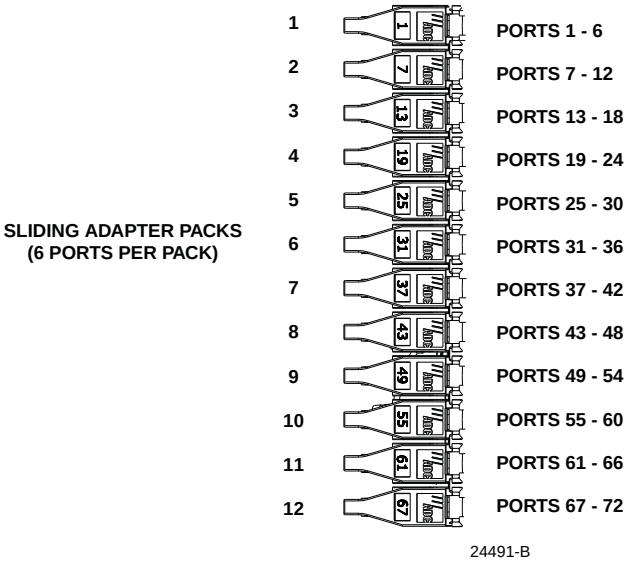

Figure 50. Adapter Pack Distribution Port Designations

13. Clean the MPO connector as specified in the Multifiber-Push On (MPO) Assembly Connector Cleaning Instructions (ADCP-96-150).
14. Repeat steps 11 through 13 for all remaining MPO cables.
15. Use a tie-wrap to hold the cable slack in place around the radius limiters and to prevent cable pull-out as shown in Figure 51. A lance is provided for securing the cable slack to the back of the cabinet.

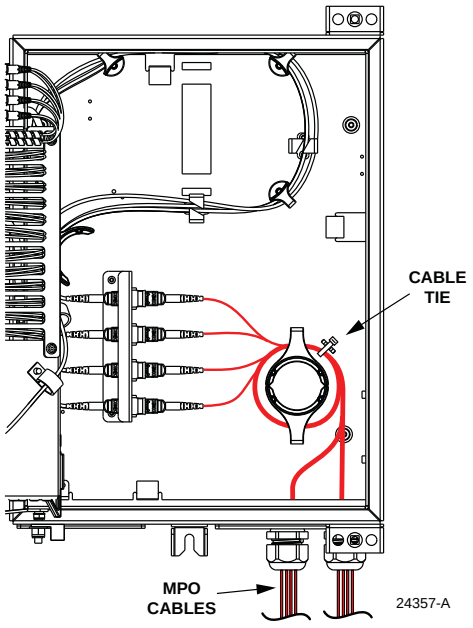

Figure 51. Securing Cable Slack to Cabinet

16. When all the cables are installed, tighten the compression nut to secure the MPO cables at the cable entry/exit hole as shown in Figure 52.

Note: The two metal spacers that are included with the compression fitting will prevent the compression nut from being overtightened.

17. Repeat this procedure as needed for the remaining entry/exit hole.

Note: If the remaining entry/exit hole is not needed, verify that the compression fitting grommet (see Figure 52) is installed in the compression fitting. Then tighten the compression nut until it bottoms against the spacers.

18. Close the swingframe and the cabinet door when all the MPO cables have been installed.

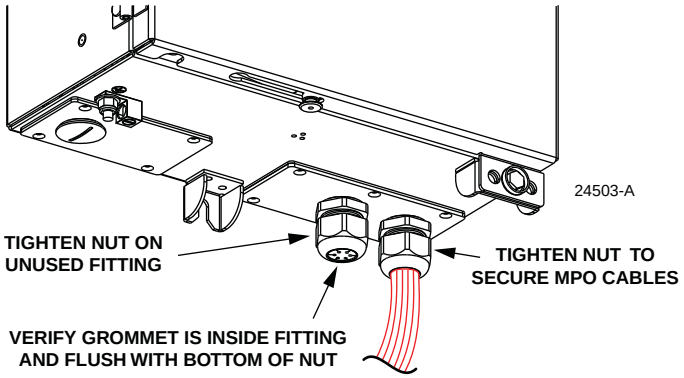

Figure 52. Tighten Compression Nut on Unused Fitting

8 SPLITTER MODULE INSTALLATION

The Mini FDH 3000 cabinet can accommodate up to four splitter modules. Plug and play splitter modules are equipped with either one or two input connectors and up to thirty-two output fibers. Inserting a splitter into a slot connects the splitter input connector(s) to the feeder cable connector(s). The splitter output fiber connectors are stored in connector packs that mount in the storage panel at the bottom of the cabinet.

Use the 216B key tool to un-latch and open the cabinet door as needed during the splitter installation process.

8.1 Installing a Splitter Module in the Splitter Compartment

Use the following procedure to install a splitter module in the splitter compartment:

1. Open the cabinet door and the cabinet swing frame to provide access to the splitter compartment.
2. Locate the next available splitter mounting position as shown in Figure 53.

Note: Install splitters in the order shown, beginning on the bottom of the splitter compartment and then working toward the top.

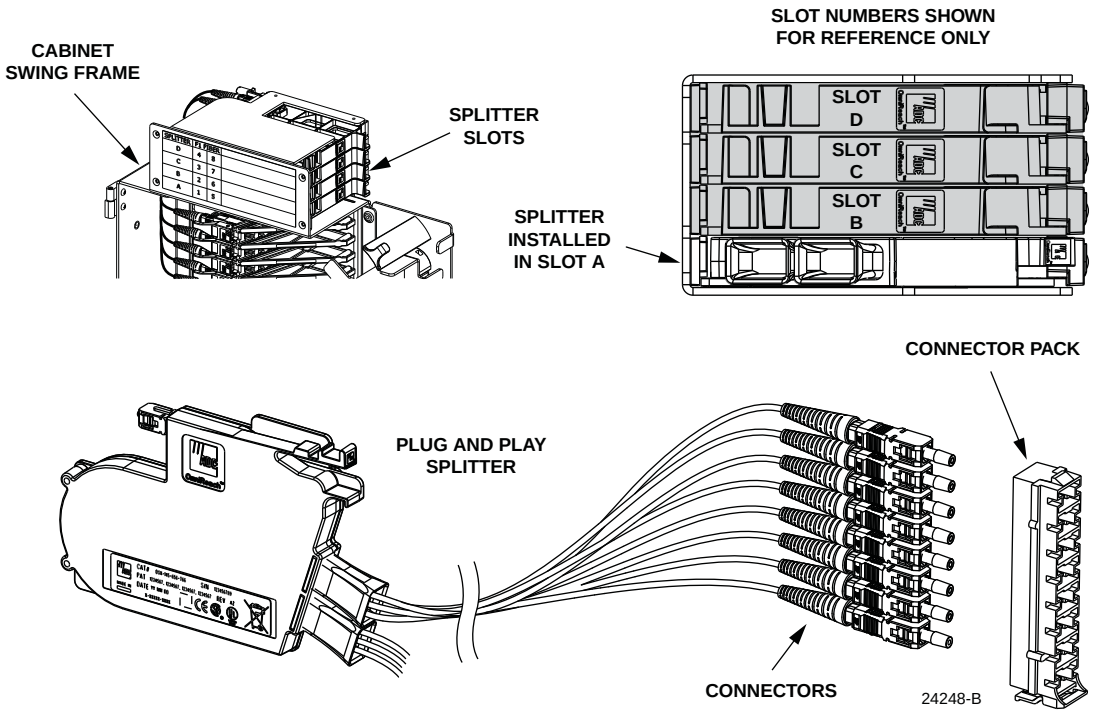

Figure 53. Splitter Module Mounting Slots and Splitter

3. Remove the dust cap assembly from the selected splitter slot.

Note: Packaging tape is used to secure the dust cap assemblies to the splitter compartment for shipping. Remove the packaging tape if it is still in place.

4. Remove the corresponding feeder cable connector(s) from the rear of the splitter compartment as shown in Figure 54.

Warning: *Infrared radiation is invisible and can seriously damage the retina of the eye. Do not look into the ends of any optical fiber. Do not look directly into the optical adapters or connectors. Exposure to invisible laser radiation may result. An optical power meter should be used to verify active fibers. A protective cap or hood MUST be immediately placed over any radiating adapter or optical connector to avoid the potential of dangerous amounts of radiation exposure. This practice also prevents dirt particles from entering the adapter or connector.*

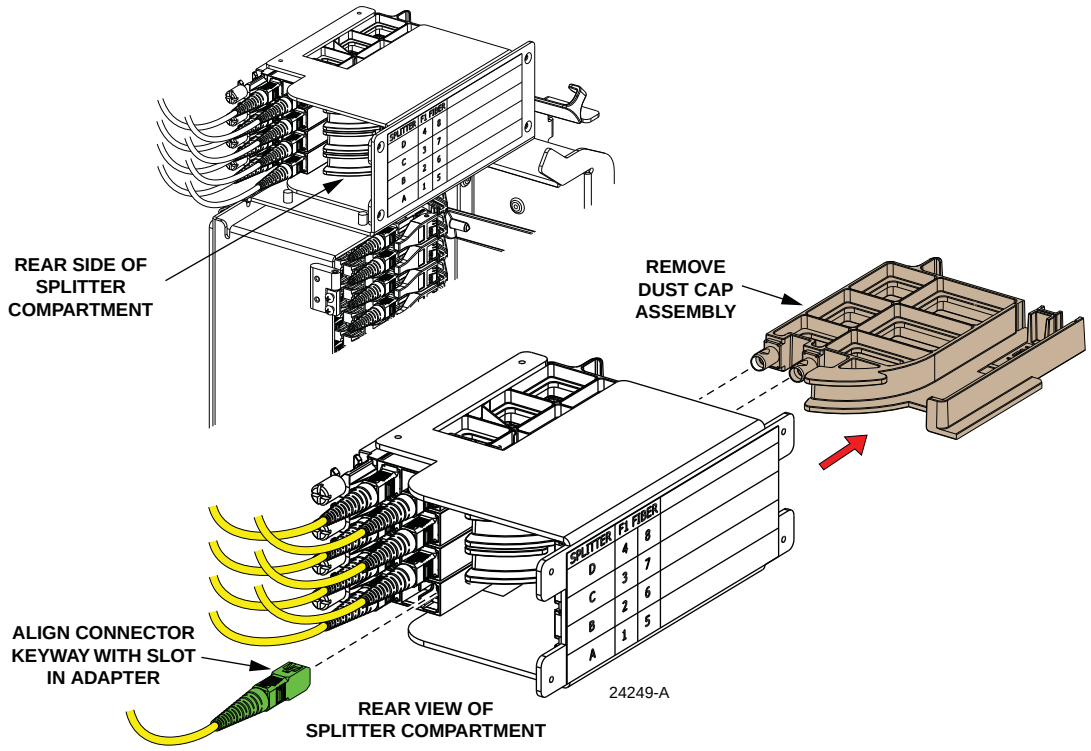

Figure 54. Feeder Cable Connector

5. Clean the feeder cable connector(s) as specified in the Optical Fiber Systems Cleaning and Mating Instructions (ADCP-90-159).
6. Reinstall the feeder cable connector(s) at the rear of the splitter compartment.
7. Remove the protective tape and dust cap from the splitter connector as shown in Figure 55.
8. Clean the splitter connector as specified in the Optical Fiber Systems Cleaning and Mating Instructions (ADCP-90-159).

9. Grasp the splitter using thumb and forefinger (see Figure 55) and gently squeeze the locking tab against the lower tab.

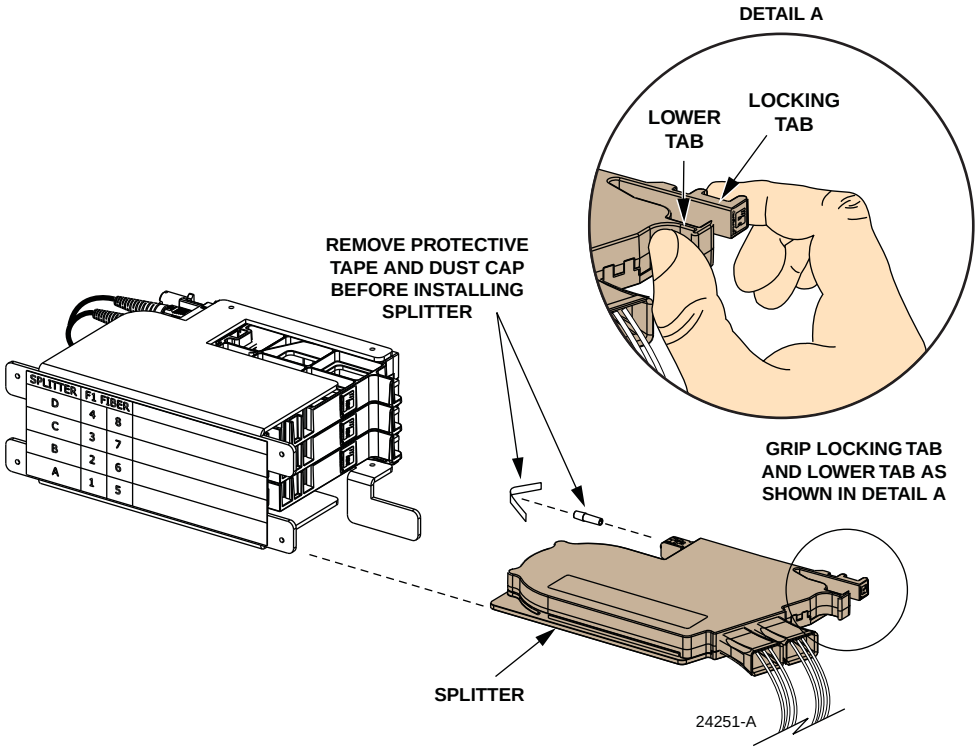

Figure 55. Splitter Installation

10. Carefully slide splitter into the mounting slot. Listen for a click to ensure full engagement.

⚠ **Caution:** *Applying excessive force to the splitter during installation can cause splitter damage. If resistance is encountered when sliding the splitter into the mounting slot, remove the splitter and verify that the splitter dust cap has been removed and that no obstructions are present.*

11. Install the connector packs in the storage panels as described in Section 8.2.

8.2 Installing The Splitter Connector Packs in the Storage Panel

Use the following procedure to install the connector packs in the storage panel at the bottom of the cabinet:

1. Following installation of a splitter module, locate an open connector pack slot in the storage panel at the bottom of the cabinet.
2. Insert the connector pack into the unused slot in the storage panel as shown in Figure 56. The storage panel can accommodate four 8-position connector packs or two 16-position connector packs. Refer to the FDH 3000 Plug and Play Splitter

Installation Guide (ADCP-96-087) provided with splitter modules for additional information on installing connector packs in the storage panel.

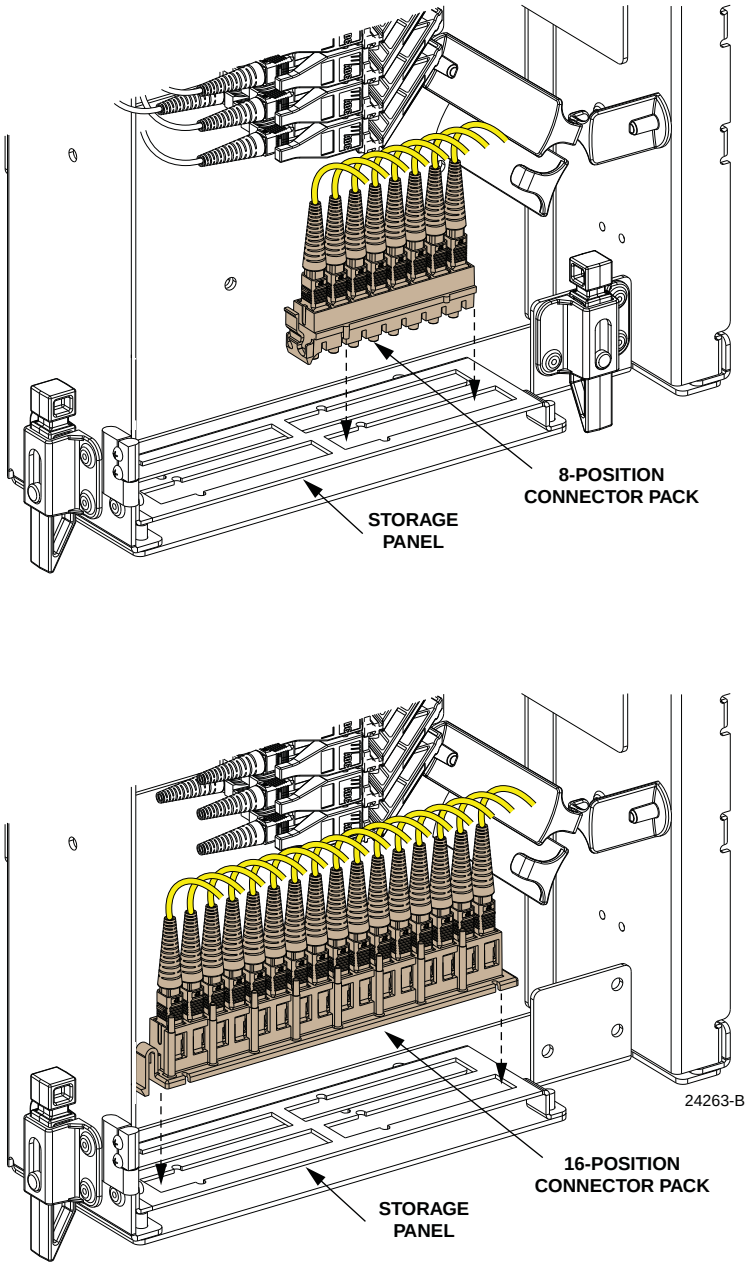

Figure 56. Install Connector Pack Into Storage Panel

3. Use the fiber guideways on the outside and inside of the swing frame to route and store the fiber slack as shown in Figure 57. Labels are provided that show the fiber routing.

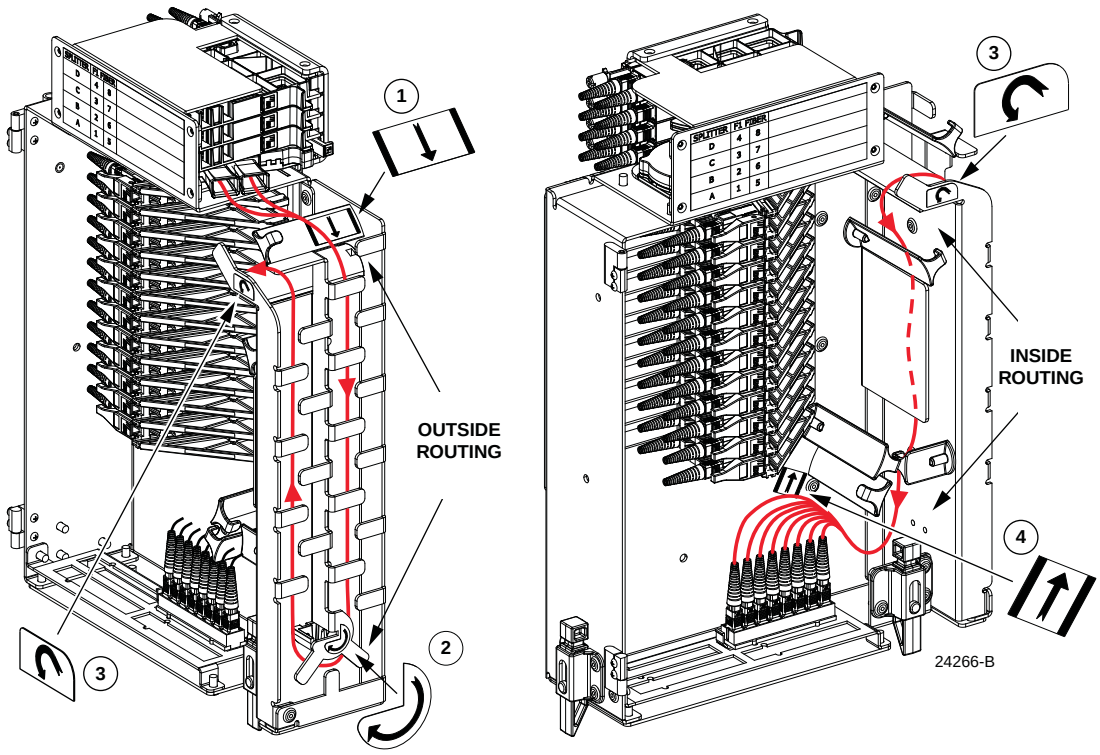

Figure 57. Routing Splitter Output Fibers for Storage

9 ENABLING SUBSCRIBER SERVICE

When a splitter module is initially installed, the connector packs are installed in the storage panel located at the bottom of the cabinet. The output fiber connectors are temporarily “parked” in the storage panel until they are needed. Service to a subscriber is enabled by removing an unused output fiber from the connector pack, routing it to the appropriate adapter pack, and then connecting it to the subscriber port. Use the 216B key tool to un-latch and open the cabinet door as needed when enabling service to a customer.

Use the following procedure to enable service to a subscriber:

1. Check the designation label on the cabinet doors to determine the port number that corresponds to the address of the subscriber.
2. Locate the sliding adapter pack that contains the bulkhead adapter for the subscriber port.
3. Pull upward on the small tab on top of the sliding adapter pack and lift the adapter pack to the raised position as shown in Figure 58.

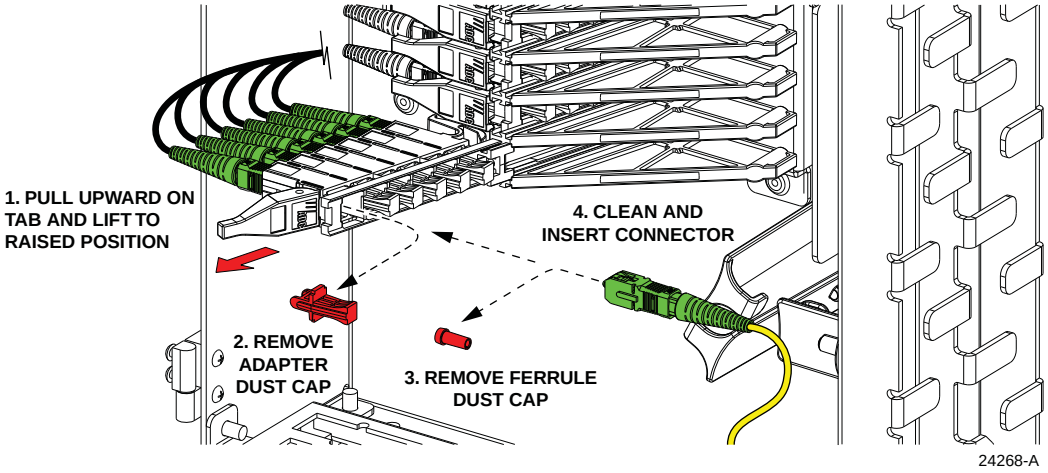

Figure 58. Adapter Pack Raised to Access Position

4. Remove the dust cap from the bulkhead adapter.

Warning: *Infrared radiation is invisible and can seriously damage the retina of the eye. Do not look into the ends of any optical fiber. Do not look directly into the optical adapters or connectors. Exposure to invisible laser radiation may result. An optical power meter should be used to verify active fibers. A protective cap or hood MUST be immediately placed over any radiating adapter or optical connector to avoid the potential of dangerous amounts of radiation exposure. This practice also prevents dirt particles from entering the adapter or connector.*

5. Select and remove an unused splitter output fiber from the storage panel as shown in Figure 59 and carefully work it free of any other fibers.

6. Remove the ferrule dust cap from the connector and then clean the connector as specified in the Optical Fiber Systems Cleaning and Mating Instructions (ADCP-90-159).

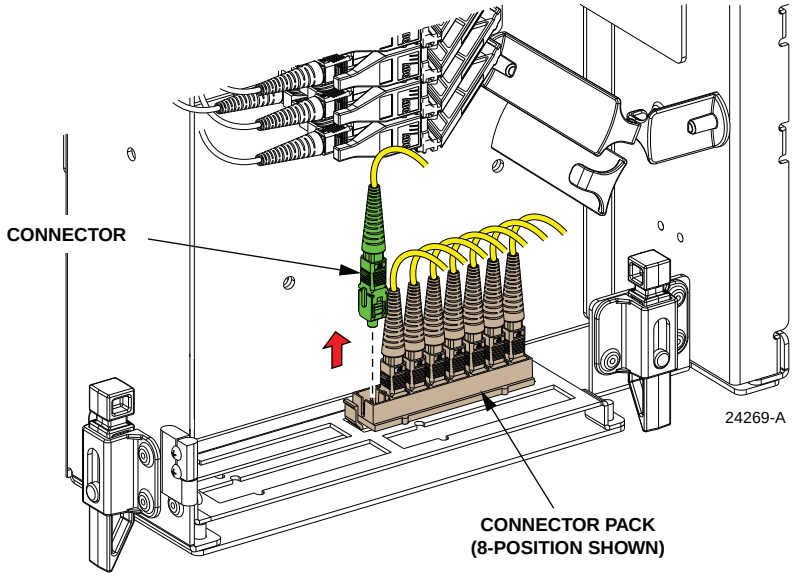

Figure 59. Remove Connector from Connector Pack

7. Insert the splitter output fiber connector into the bulkhead adapter (see Figure 58).
8. Push the sliding adapter pack down to the closed position.
9. Route and dress the fiber slack as shown in Figure 60.

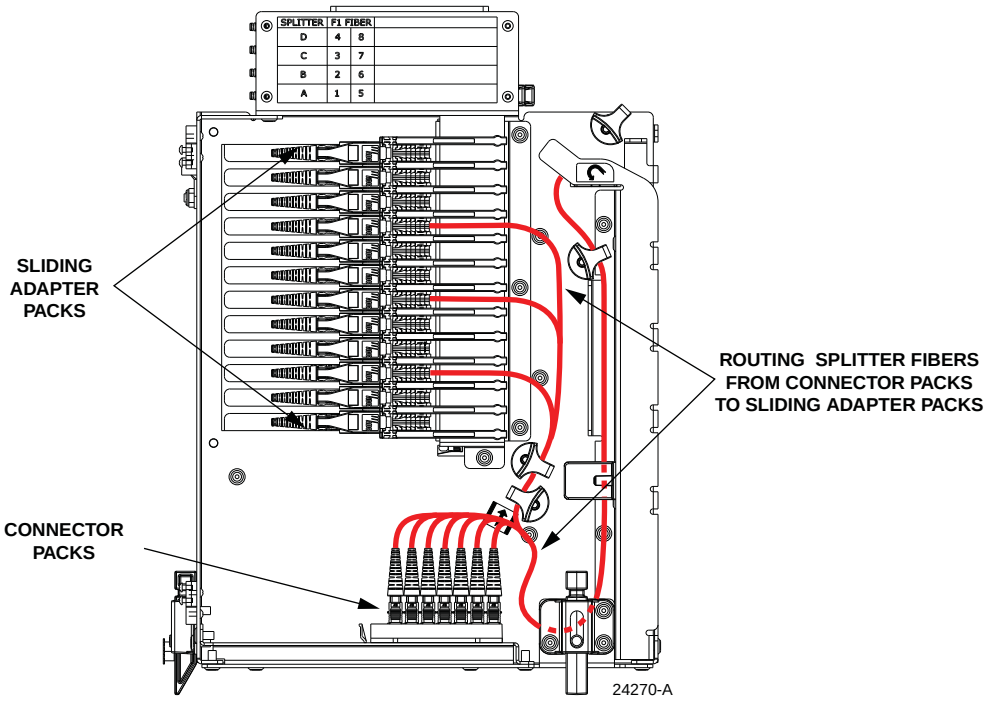

Figure 60. Splitter Output Fiber Routing to Adapter Pack

10 CROSS-CONNECTING DISTRIBUTION PORTS

This section provides instructions for installing a cross-connect patch cord between two distribution ports. Cross-connecting two distribution ports may be required in certain applications where the fibers from two cables need to be patched together. Use the 216B key tool to un-latch and open the cabinet door as needed for this procedure.

Use the following procedure to install a cross-connect patch cord between two distribution ports:

1. Check the designation label on the cabinet doors to determine the port numbers that will be cross-connected.
2. Locate the sliding adapter packs that contain the bulkhead adapters for the ports identified in step 1.
3. Pull upward on the small tab on top of both sliding adapter packs and lift each adapter pack to the raised position as shown in Figure 61.

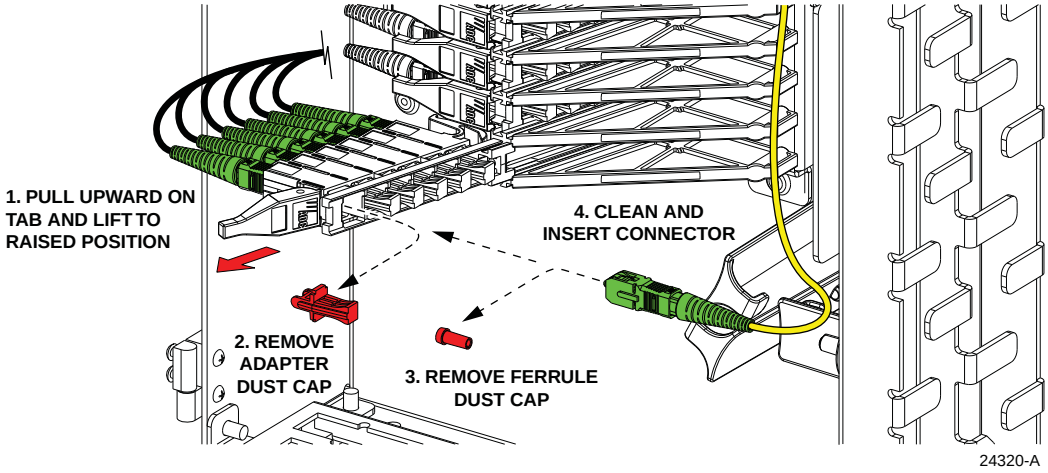

Figure 61. Adapter Pack Raised to Access Position

4. Remove the dust caps from the two bulkhead adapters that required cross-connecting.

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5. Obtain a 1.5 meter (59 inches) reduced bend radius patch cord terminated with APC/SC connectors.

6. Feed one of the patch cord's two connectors through the opening at the top right side of the swingframe, as shown in Figure 62, and pull through about 1 foot of slack.

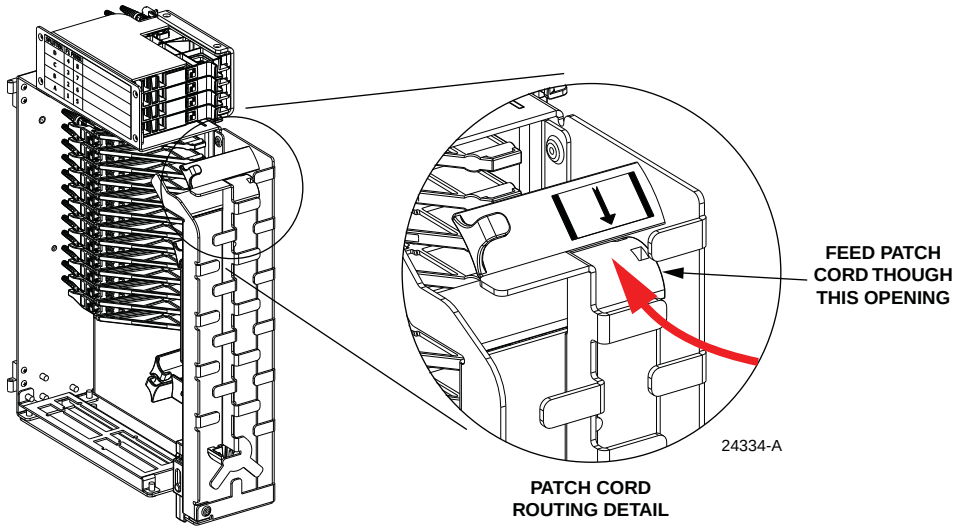

Figure 62. Feed Patch Cord Connector Through Swing Frame

7. Remove the ferrule dust cap from the patch cord connector and then clean the connector as specified in the Optical Fiber Systems Cleaning and Mating Instructions (ADCP-90-159).
8. Insert the patch cord connector into the appropriate bulkhead adapter on the first sliding adapter pack (see Figure 61).
9. Push the first sliding adapter pack down to the closed position.
10. Route the patch cord through the fiber guideways on the outside and inside of the swing frame as shown in Figure 63. Labels are provided that show the fiber routing.

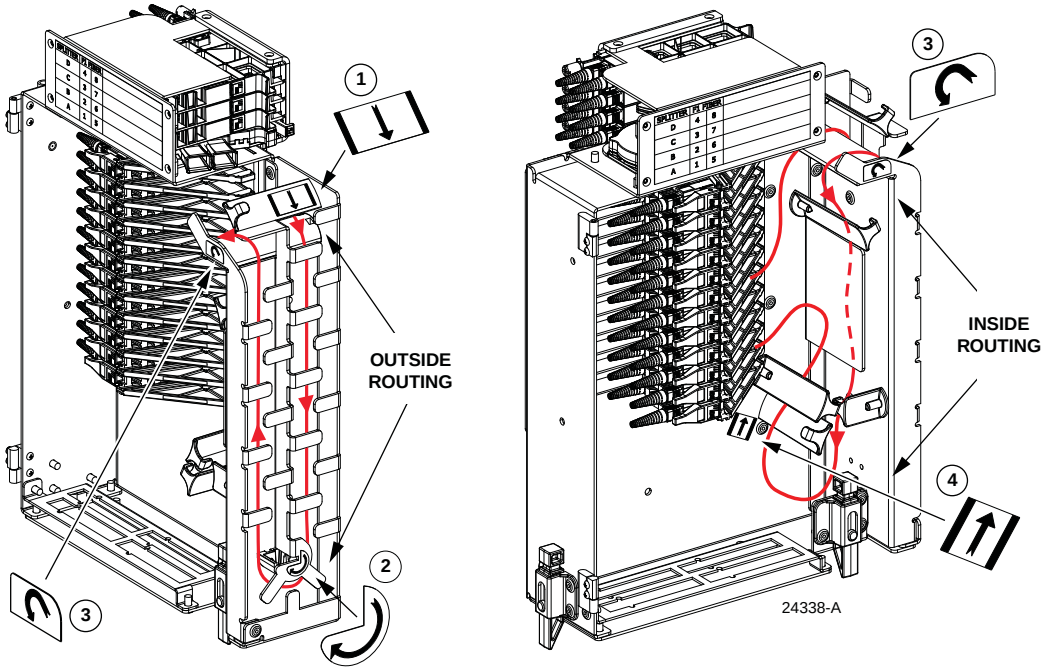

Figure 63. Patch Cord Routing

11. Remove the ferrule dust cap from the second patch cord connector and then clean the connector as specified in the Optical Fiber Systems Cleaning and Mating Instructions (ADCP-90-159).
12. Insert the patch cord connector into the appropriate bulkhead adapter on the second sliding adapter pack (see Figure 61).
13. Push the second sliding adapter pack down to the closed position.
14. Store the patch cord fiber slack as shown in Figure 64.

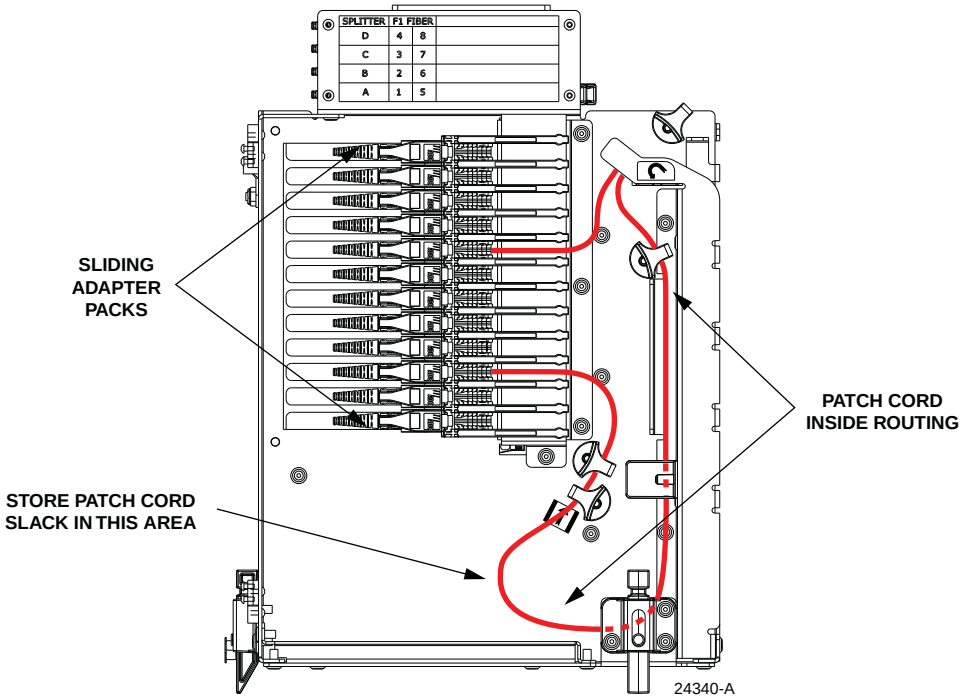

Figure 64. Patch Cord Slack Storage

11 MAINTENANCE AND REPAIR PROCEDURES

The Mini FDH 3000 cabinet requires no regular maintenance to insure continuous and satisfactory operation. Maintenance is limited to repairing or replacing any cabinet components that may be damaged or broken in the course of normal operation. The following sections provide procedures for repairing or replacing common cabinet components.

11.1 Painting

Brush-in-cap type bottles of paint are available for touching-up nicks and scratches in the factory coat of paint. Lightly sand the area to be painted and then clean it thoroughly to remove any dirt, dust, or foreign matter. Shake the paint bottle until thoroughly mixed and then apply a light coat of paint to the damaged area using the small brush attached to the cap. Wait until the paint is dry and then apply a second coat if necessary. When finished painting, replace the paint bottle cap and tighten securely. The catalog number for the paint kit is ACE-ACC-PTALMD.

11.2 Distribution Adapter Pack Replacement

Replacement adapter packs are available for the distribution sliding adapter packs. Use the following procedure to remove and replace an adapter pack with a damaged adapter:

1. Locate the sliding adapter pack with the damaged adapter as shown in Figure 65.

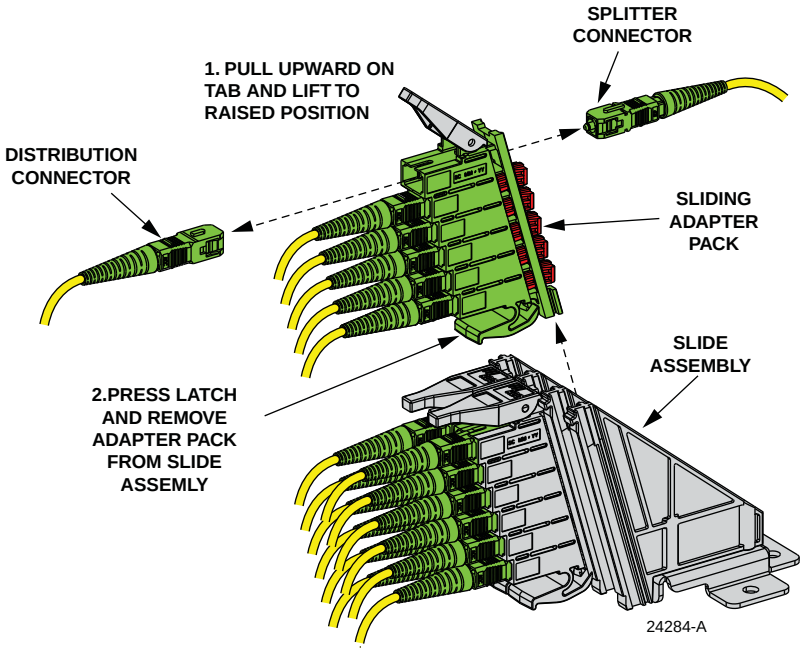

Figure 65. Removing a Damaged Sliding Adapter Pack

2. Pull upward on the small tab on top of the adapter pack and lift the adapter pack to the raised position.
3. While pressing firmly on the latch at the bottom of the sliding adapter pack, carefully withdraw the broken adapter pack (with installed connectors) from the slide assembly.
4. Locate the replacement sliding adapter pack and install it in the slide assembly as shown in Figure 66, leaving it in the raised position.

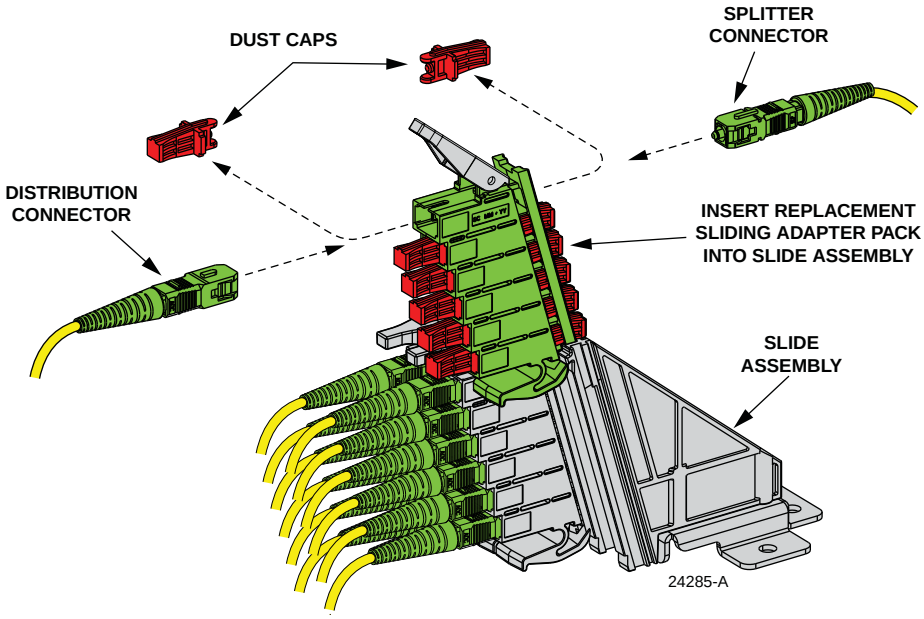

Figure 66. Installing Replacement Sliding Adapter Pack

5. Remove the two dust caps from the first adapter in the replacement sliding adapter pack.
6. Disconnect the first pair of distribution and splitter connectors (see Figure 65) from the broken sliding adapter pack.

Warning: *Infrared radiation is invisible and can seriously damage the retina of the eye. Do not look into the ends of any optical fiber. Do not look directly into the optical adapters or connectors. Exposure to invisible laser radiation may result. An optical power meter should be used to verify active fibers. A protective cap or hood MUST be immediately placed over any radiating adapter or optical connector to avoid the potential of dangerous amounts of radiation exposure. This practice also prevents dirt particles from entering the adapter or connector.*

7. Clean the distribution and splitter fiber connectors as specified in the Optical Fiber Systems Cleaning and Mating Instructions (ADCP-90-159).
8. Connect the distribution connector to the replacement sliding adapter pack (first adapter, left side).

9. Connect the splitter connector to the replacement sliding adapter pack (first adapter, right side).
10. Repeat steps 5 through 9 for all remaining connectors that are installed in the broken sliding adapter pack.
11. Discard the damaged sliding adapter pack after all connectors have been transferred to the new sliding adapter pack.
12. When all connectors have been reinstalled in the replacement sliding adapter pack, push the sliding adapter pack down to the closed position.

11.3 Splitter Compartment Adapter Replacement

Replacement adapter assemblies are available for the splitter compartment. Use the following procedure to remove and replace a damaged adapter assembly:

1. Unlatch and fully open the cabinet swing assembly to provide access to the both the front and rear side of the splitter compartment.
2. Remove the splitter or the dust cap assembly from the front side of the broken adapter assembly.

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3. Remove the feeder cable connector(s) from the rear side of the broken adapter assembly as shown in Figure 67 and install a dust cap on the connector(s).

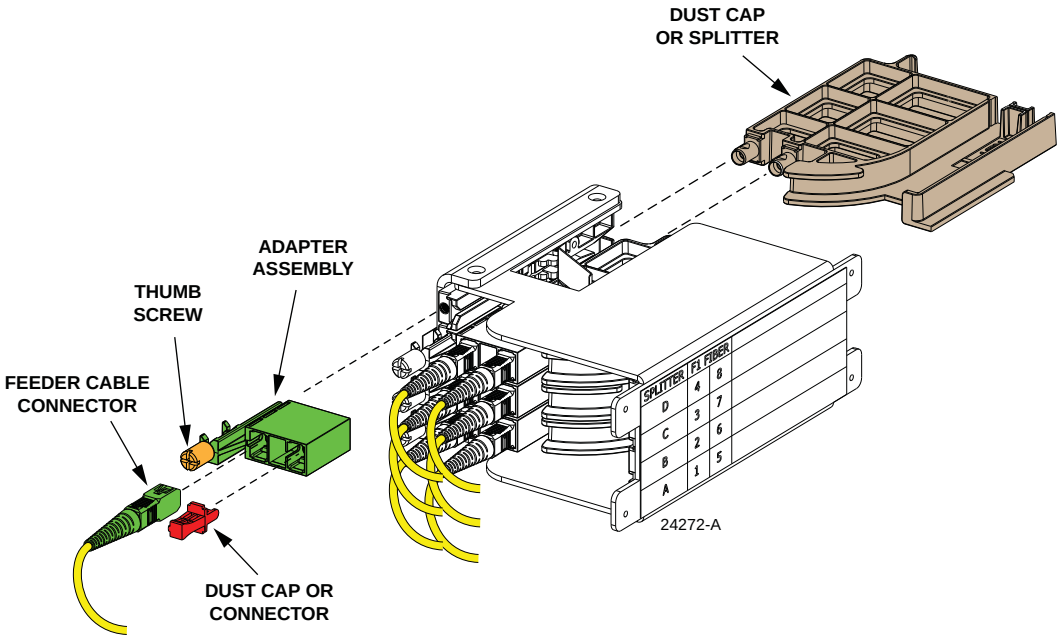

Figure 67. Splitter Compartment Adapter Replacement

4. Turn the thumb screw on the top of the broken adapter assembly clockwise until the adapter assembly detaches from the top of the splitter compartment.
5. Discard the damaged adapter assembly.
6. Install the replacement adapter assembly in the splitter compartment and secure it by turning the thumbscrew counter-clockwise until tight.
7. Clean the feeder cable connector(s) as specified in the Optical Fiber Systems Cleaning and Mating Instructions (ADCP-90-159).
8. Connect the feeder cable connector to the rear side of the replacement adapter assembly.
9. Connect the dust cap or splitter to the front side of the replacement adapter assembly.
10. Close the cabinet swing assembly.

11.4 Replacing a Damaged Connector

A damaged fiber or connector can usually be replaced. Use a field-installable connector replacement kit. Use the following procedure to replace the connector:

1. Disconnect the damaged connector and the good connector from the adapter and install a dust cap on the good connector.

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2. Replace the damaged connector as specified in the procedures provided with the field-installable connector replacement kit.
3. Clean both connectors as specified in the Optical Fiber Connector Wet and Dry Cleaning Instructions (ADCP-90-159) or by locally approved procedures.
4. Reconnect the good connector and the replacement connector to the adapter.

11.5 Door Gasket Replacement

Damaged door gaskets may be replaced using the door gasket kit which includes a roll of gasket material. The ideal installation temperature for the adhesive used on the replacement gaskets is between 60 and 100 ºF (16 and 38 ºC). Installation is not recommended if the temperature is below 50 ºF (10 ºC). Remove any damaged sections of gasket material from the door. If necessary, use a citrus based adhesive cleaner to remove any adhesive that may stay attached to the door. Cut replacement lengths of gasket material from the roll as needed. Remove the paper backing to expose the adhesive and then carefully apply the replacement gasket to the door. Take care not to leave any gaps between the meeting sections of the gasket strips.

11.6 Door Replacement

Damaged cabinet doors may be replaced using the door replacement kit. Use the following procedure to remove and replace the cabinet doors:

1. Open the cabinet doors and lock it in the open position as shown in Figure 68.

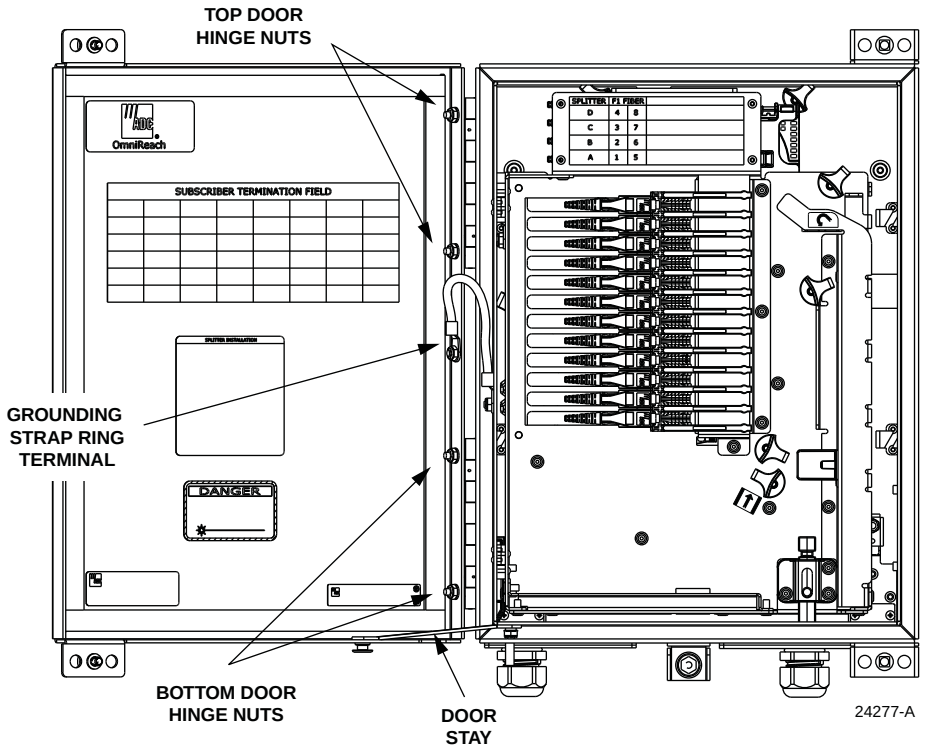

Figure 68. Door Replacement

2. Use a 3/8-inch nut driver to remove the locking nut that secures the grounding strap ring terminal to the door. Save nut for reuse.
3. Use a Phillips screwdriver to remove the screw and bushing/nut that secures the door stay to the bottom of the door as shown in Figure 69. Save the screw and bushing/nut for reuse.
4. Use a 3/8-inch nut driver to remove the locking nuts and flat washers that secure each hinge to the door. Save nuts and flat washers for reuse.

Note: Support the door as the last nuts are removed to prevent the door from falling.

5. Carefully lift the door away from the cabinet.
6. Transfer all designation information that may be recorded on the damaged door to the labels on the replacement door.
7. Place the replacement door in position for installation on the hinges.

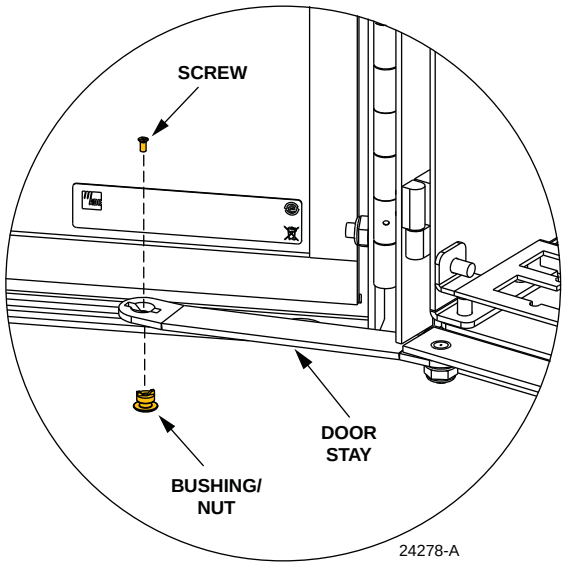

Figure 69. Door Linkage Hardware

8. Reinstall the locking nuts and flat washers (saved in step 4) that secure the hinges to the door.
9. Reinstall the locking nut (saved in step 2) that secures the grounding strap to the door.
10. Reinstall the screw and bushing/nut (saved in step 3) that secure the door stay to the bottom of the door.
11. Close door and check for proper operation.

11.7 Screen Vent Service

A screen vent, shown in Figure 70, allows any moisture that may accumulate within the cabinet to be released. Periodically check the screen vent and remove any debris that may block the vent opening. In addition, wipe dry any moisture that may have accumulated at the bottom of the cabinet.

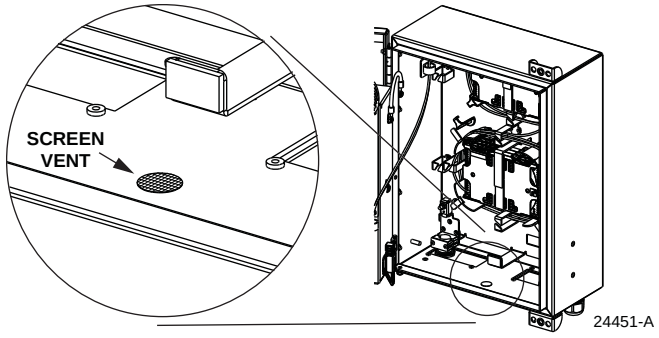

Figure 70. Screen Vent

12 TECHNICAL ASSISTANCE

Contact the Technical Assistance Center (TAC) for technical question. Call 800.830.5056 or send an email to TAC.Americas@commscope.com.