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OmniReach®

FTTX Solutions Multiport Service Terminal

User Manual
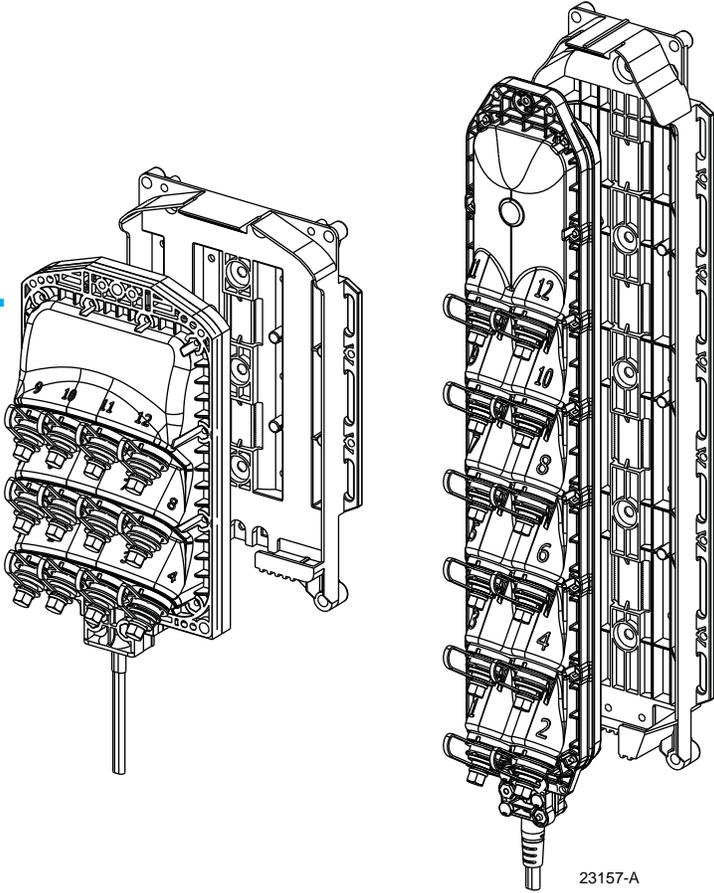
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REVISION HISTORY

ISSUE	DATE	REASON FOR CHANGE
1	07/2005	Original release
2	03/2006	New product references and additional product information
3	11/2008	Release of 4x3 MST and universal mounting bracket
4	05/2011	Updated to include the Rapid MST and rebranding information
5	July 2016	Updated to CommScope format.

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ABOUT THIS MANUAL

This publication provides user information for the OmniReach Multiport Service Terminal (MST) which includes the models designated MST-2, MST-4, MST-6, MST-8 and MST-12. The topics covered include a basic description of the MST; installation and mounting guidelines; and procedures for using and maintaining the hardened connectors and adapters.

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/Description	Publication Number
MST Internal Connector Replacement Instructions	**ADCP-96-045**
MST Hardened Connector and Adapter Cleaning Instructions	**ADCP-96-067**
Universal Mounting Bracket Strand-Mount Installation Instructions	**ADCP-96-124**
Rapid MST Instruction Sheet	**ADCP-96-168**

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.*

⚠ **Caution:** *Fiber optic cables may be damaged if bent or curved to a radius that is less than the recommended minimum bend radius. Always observe the recommended bend radius limit when installing fiber optic cables and patch cords.*

⚠ **Danger:** *Exposure to laser radiation can seriously damage the retina of the eye. Do not look into the ends of any optical fiber. Do not assume the laser power is turned-off or that the fiber is disconnected at the other end.*

⚠ **Warning:** *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. Before digging, check with all local utilities for the presence of buried cables or pipes.*

STANDARDS CERTIFICATION

Telcordia: This equipment complies with the applicable sections of GR-771-CORE (Test Plan for ADC Fiber Optic Splice Enclosures), GR-326-CORE, and GR-3120-CORE.

LIST OF ACRONYMS AND ABBREVIATIONS

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

ATS	Advanced Termination System
AWG	American Wire Gauge
C	Centigrade
F	Fahrenheit
FDH	Fiber Distribution Hub
FTTP	Fiber To The Premises
HMFOC	Hardened Multi-Fiber Optical Connector
MST	Multiport Service Terminal
OSP	Outside Plant
RMA	Return Material Authorization
UMB	Universal Mounting Bracket

1 DESCRIPTION AND APPLICATION

1.1 Multiport Service Terminal

The OmniReach Multiport Service Terminal (MST) is an environmentally-sealed, Outside Plant (OSP) fiber optic terminal that provides a point for connecting subscriber drop cables to the network. Designed for Fiber To The Premises (FTTP) applications, the MST consists of a two-piece plastic housing equipped with multiple optical ports. An attached optical cable assembly is connected internally to the optical ports. The MST may be ordered with two, four, six, eight, or twelve fiber ports and with a 2xN or 4x3 style housing. The four and eight port versions of the MST may also be ordered with internal 1x4 and 1x8 splitters so that a single optical fiber input can feed all the optical ports. Figure 1 shows the various types of MST's that are available.
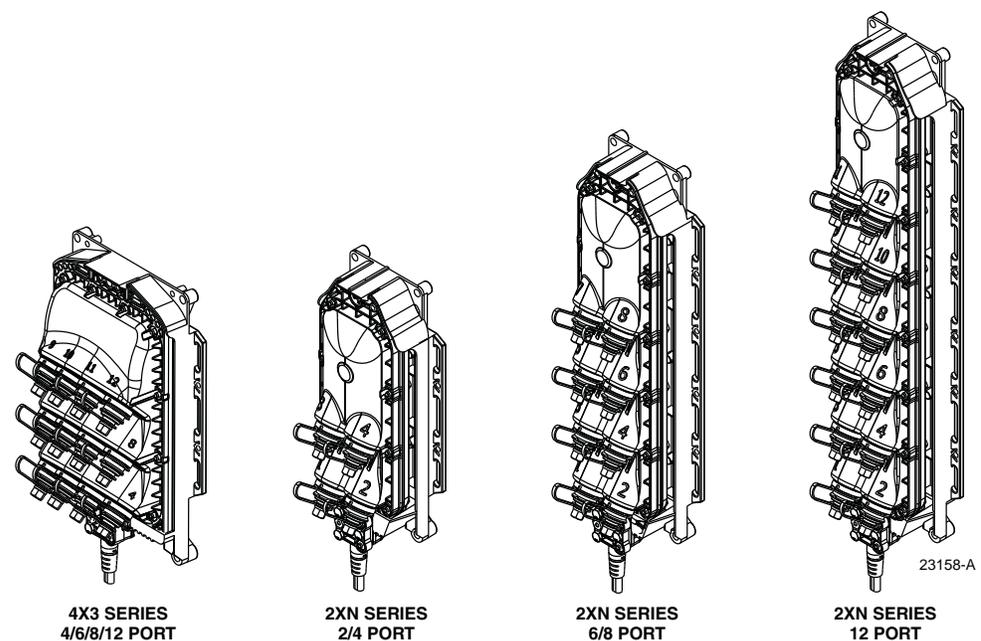
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4X3 SERIES	2XN SERIES	2XN SERIES	2XN SERIES
4/6/8/12 PORT	2/4 PORT	6/8 PORT	12 PORT

Figure 1. Typical Mulitport Service Terminals

The MST uses hardened adapters for the optical ports. A hardened adapter consists of a standard SC adapter that is enclosed within a protective housing. The housing provides sealed environmental protection for the adapter. The opening to each optical port is sealed with a threaded dust cap that prevents the entry of dirt and moisture. A standard 216B security tool (accessory) can be used to remove the dust cap.

The MST optical ports accept subscriber drop cables that are terminated with APC/SC hardened connectors. The MST optical ports are also compatible with OptiTap® connectors manufactured by Corning Cable Systems Brands, Inc. A hardened connector consists of a standard SC connector that is enclosed within a protective housing. The housing provides sealed environmental protection for the connector.

Within the MST enclosure, the MST optical cable assembly is connected internally to the optical ports.The cable assembly exits the MST enclosure through a sealed

opening located at the bottom of the enclosure. A clamp is used to secure the cable to the enclosure. The 2xN style MST may be ordered with either a flat dielectric cable (toneable or non-toneable) or a round armored cable. The 4x3 style MST may be ordered with flat dielectric cable (toneable or non-toneable) only. Depending on the option ordered, the cable end may be stubbed for splicing or terminated with a hardened multi-fiber optical connector (HMFOC).

The length of the MST cable may range from 50 to 2,000 feet (15.2 to 609.6 meters). When the cable is over 250 feet in length, the cable is coiled on a spool and the MST enclosure is secured to the top of the spool. The cable may be unreeled from the spool using a roller reel with a vertical arbor. Normally, the cable is spooled so that the stub or connector end of the cable must be unwound first. As an ordering option, the cable may also be reverse spooled so that the MST end of the cable must be unwound first. The specifications for the MST are provided in Table 1.

Table 1. Multiport Service Terminal Specifications

PARAMETER	SPECIFICATION

2xN Dimensions (LxWxD) – See Figure 2
   MST-2, MST-4
   MST-6, MST-8
   MST-12
	Note: Includes universal mounting bracket
	11.12 x 5.1 x 3.31 Inches (28.24 x 12.95 x 8.41 cm)
	16.32 x 5.1 x 3.31 Inches (41.45 x 12.95 x 8.41 cm)
	21.53 x 5.1 x 3.31 Inches (54.69 x 12.95 x 8.41 cm)

2xN Weight (without cable)
   MST-2, MST-4
   MST-6, MST-8
   MST-12
	Note: Includes universal mounting bracket
	1.9 lbs (0.86 kg)
	3.0 lbs (1.36 kg)
	5.1 lbs (2.31kg)

4x3 Dimensions (LxWxD) – See Figure 2	Note: Includes universal mounting bracket 11.26 x 7.4 x 3.625 Inches (28.60 x 18.80 x 9.21 cm)
4x3 Weight (without cable)	Note: Includes universal mounting bracket 3.0 lbs (1.36 kg)
Number of optical ports MST-2, MST-4, MST-6, MST-8, MST-12	2, 4, 6, 8, 12 (MST-2 not offered with 4X3 style housing)
Optical port connector	APC/SC hardened connector
Certification	GR-771-CORE, GR-326-CORE, and GR-3120-CORE
Cable lengths (all versions)	50, 100, 200, 250, 500, 750, 1000, 1250, 1500, 1750, and 2000 feet (additional lengths available)
Cable types	Flat drop cable with dielectric strength members (with or without toneable tracer). Armored cable with metallic strength members (2xN only)
Environmental	Complies with GR-771-CORE
Temperature	–40º F (± 3.6º) to 150º F (± 3.6º) –40ºC (± 2º) to 65º C (± 2º)
Humidity	0% to uncontrolled
Water Resistance	NEMA 6 (10-foot water head for 7 days without leakage)
Flammability	UL94-5VA
Color	Black

3.625 INCHES
(9.21 CM)

11.26 INCHES
(28.60

7.4 INCHES
(18.8 CM)

4X3 - 4/6/8/12 PORT

3.31 INCHES
(8.41 CM)

11.12 INCHES
(28.24 CM)

5.5 INCHES
(12.95 CM)

2XN - 2/4 PORT

3.31 INCHES
(8.41 CM)

16.32 INCHES
(41.45 CM)

5.5 INCHES
(12.95 CM)

2XN - 6/8 PORT

3.31 INCHES
(8.41 CM)

21.52 INCHES
(54.69 CM)
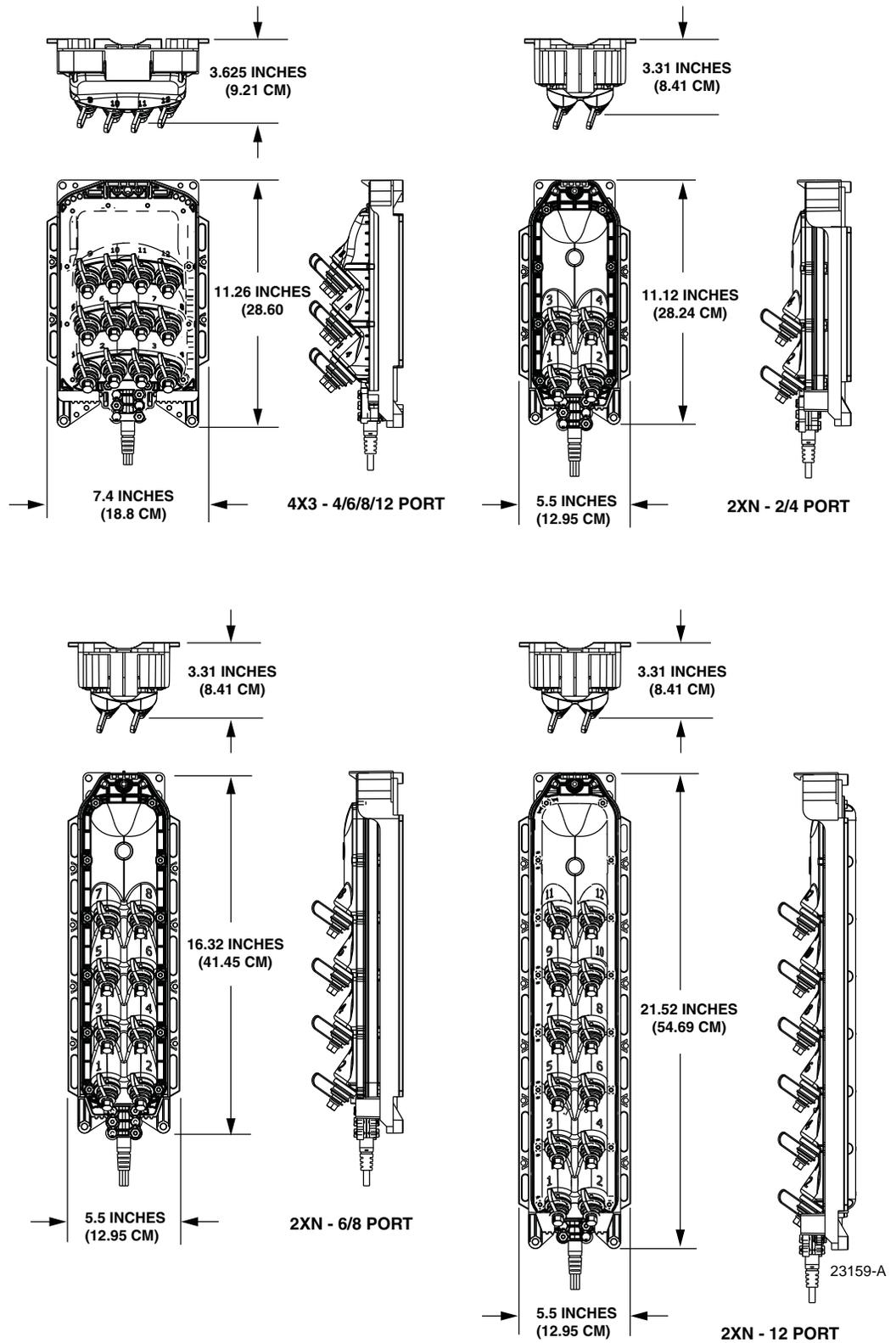
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5.5 INCHES
(12.95 CM)

2XN - 12 PORT

Figure 2. Multiport Service Terminal Dimensions (shown with UMB Installed)

1.2   MST Application

In a typical FTTP network, the MST is installed between the Fiber Distribution Hub (FDH) and the subscribers as shown in Figure 3. Network feeder cables transport the optical signals from the signal source to the FDH. At the FDH, optical splitters are used to divide the optical signals for distribution to the subscribers. Distribution cables transport the optical signals to the MST's which are located at points that allow service to be provided to several subscribers. Drop cables transport the optical signals from each MST to the individual subscribers.
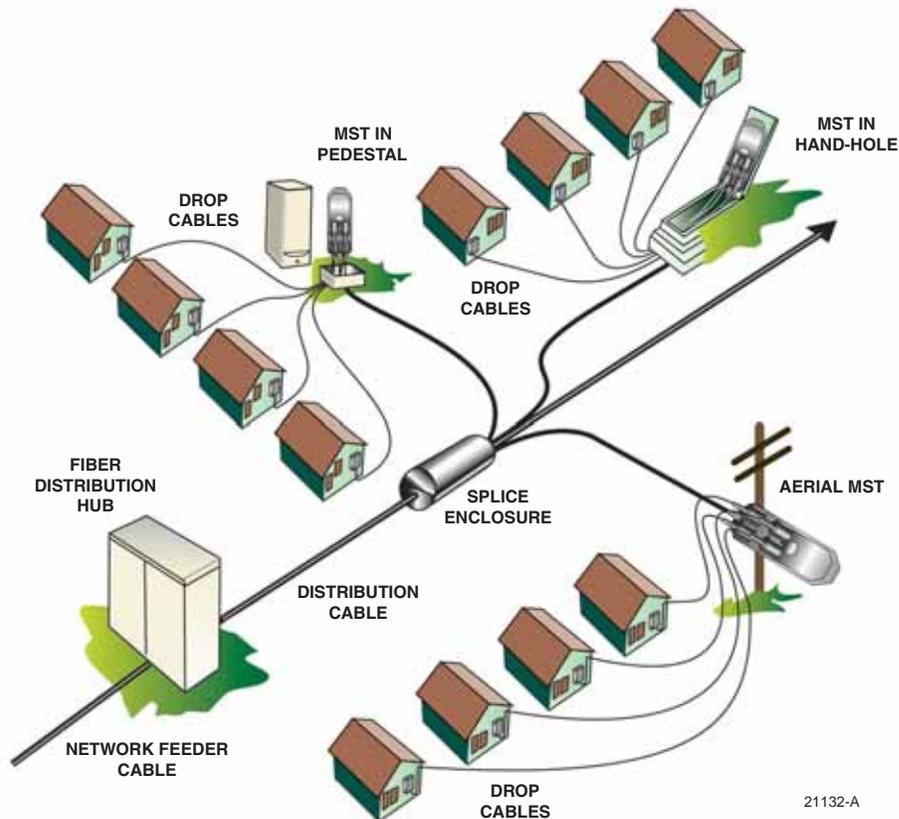
Figure 3. Typical FTTP Network

The MST is designed for outdoor applications and can be installed in a hand-hole or pedestal; mounted on a utility pole or over-head cable; or secured to any flat surface. A universal mounting bracket is included with each MST. The MST meets the environmental criteria specified in the referenced specifications and can withstand direct exposure to extreme temperatures and humidity, is resistant to water penetration during flood conditions or heavy rains, and is also chemical and corrosion resistant. Under normal conditions, the MST enclosure should never require disassembly. However, a kit and instructions are available if it is necessary to open the enclosure to replace a broken internal optical connector.

2 BEFORE STARTING THE INSTALLATION

This section provides general installation considerations, lists the tools and materials required for MST installation, and provides unpacking and inspection procedures.

2.1 Installation Overview

Installation of the MST enclosure involves the following main tasks:

Mounting the MST – The MST must be mounted on or within a suitable support base or enclosure. Each MST is shipped with a Universal Mounting Bracket (UMB) which allows the MST to be mounted in a variety of applications including the following:

- **Hand-Hole** (below ground) – Secure UMB to mounting system provided with hand-hole.
- **Pole-Mount** (aerial) – Secure UMB directly to pole.
- **Strand-Mount** (aerial) – Secure UMB to strand. Requires a strand-mount bracket kit which must be ordered separately.
- **Pedestal** (at final grade) – Secure UMB to mounting system provided with pedestal.

HMFOC Cable Installation – MST cables may be terminated with an HMFOC for interconnection with the Rapid outside plant family of products. Refer to the appropriate equipment manual for complete information about routing and connecting HMFOC cables.

Stub Cable Installation and Splicing – Stubbed MST cables must be routed to a separate splice enclosure (not provided) and spliced to the network distribution cable. Refer to Section 3 for general cable pulling guidelines and cable installation recommendations.

Drop Cable Installation – A drop cable must be installed between the subscriber and the MST. Follow local practice for pulling and installing drop cables. Refer to the instructions provided with the mounting system for drop cable entry and routing.

Drop Cable Connection – Service is enabled by connecting the drop cable connector to the subscriber distribution port on the MST enclosure. Refer to Section 5 for instructions.

2.2 Tools and Materials Required for Installation

The following basic tools, auxiliary equipment, and materials are required for MST installation:

- Vertical roller reel or carousel (if the MST is mounted on a cable spool)
- 216B key tool (used to open optical port dust cap)
- Hardened connector/adapter cleaning kit
- Utility knife
- Cable pulling equipment

- Splicing equipment (MST with stub cable)
- Appropriate fasteners to mount the UMB and tools to install the fasteners
- Note: If using an enclosure such as a hand-hole or pedestal, refer to the instructions provided with the enclosure for any additional tools or equipment required

2.3   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 MST and all accessories:

1. Open the shipping carton(s) and carefully inspect the MST and the attached cable.

2. If there are damages, contact CommScope (see Topic 8 on page 20) for an RMA (Return Material Authorization) and to reorder if replacement is required.

3   GENERAL INSTALLATION INFORMATION

This section provides general installation information for all versions of the MST.

3.1   Cable Handling Recommendations

Each MST is equipped with a cable. Depending on the length of the cable and the number of ports on the MST enclosure, the MST cable may be coiled up and placed in box or it may be wound on a spool. Use the following cable handling procedures when removing the cable from the packaging materials:

MST In a Box: If the MST is placed in a box with other MST's, carefully remove the packaging material to expose the cable coil and the MST as shown in Figure 4. Leave the MST on top and in the center of the coil. If the MST was ordered with the **standard** coiled cable option, uncoil the cable starting with the **stub or connector**. If the MST was ordered with the **reverse** coiled cable option, uncoil the cable starting with the **MST**.

MST on a Spool: If the MST is mounted on a spool, remove the spool assembly from the box as shown in Figure 5. Leave the MST on top of the spool and place the spool on a vertical arbor or carousel. If the MST was ordered with the **standard** coiled cable option, uncoil the cable starting with the **stub or connector**. If the MST was ordered with the **reverse** coiled cable option, uncoil the cable starting with the **MST**.

➧ **Note:** If installing a Rapid MST, refer to the instruction sheet provided with the spool for additional procedures for unwinding and routing the cable, removing the MST from the spool, and storing the excess cable slack.
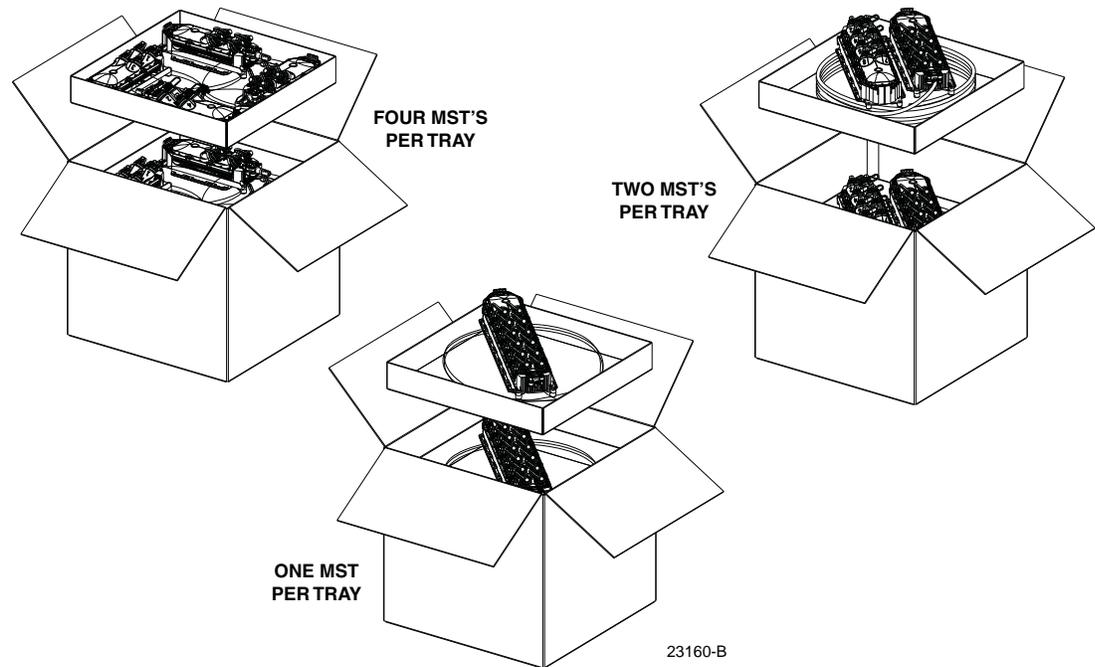
FOUR MST'S
PER TRAY

TWO MST'S
PER TRAY

ONE MST
PER TRAY

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Figure 4. MST Cable Coiled and MST Placed in a Box

MST WITH STANDARD
FLAT DROP CABLE

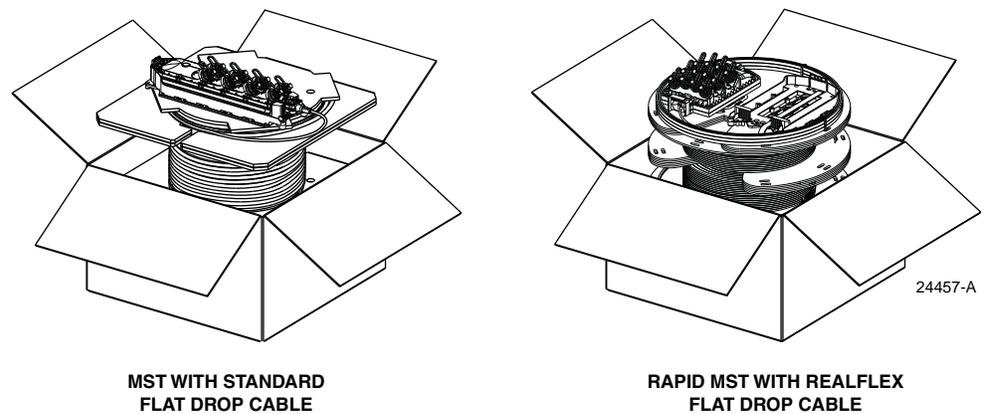RAPID MST WITH REALFLEX
FLAT DROP CABLE

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Figure 5. Distribution Cable on a Spool

The MST may be equipped with **standard** flat drop cable, **armored** round drop cable, or **Realflex** flat drop cable (Rapid MST). Observe the following minimum bend radius limits and pull force limit when routing and installing the MST cable:

Standard Flat Drop Cable: Maintain a minimum bend radius of **15 cm** (6 inches) during installation and **10 cm** (4 inches) when installed.

Armored Round Drop Cable: Maintain a minimum bend radius of **18.2 cm** (7.2 inches) during installation and **9.1 cm** (3.6 inches) when installed.

Realflex Flat Drop Cable: Maintain a minimum bend radius of **5.0 mm** (0.2 inches) during installation and **7.5 mm** (0.3 inches) when installed.

Pulling the Cable: When pulling the MST cable through conduit, do not exceed a pulling force of **100 pounds**.

⚠ **Caution:** Do not pull the MST through conduit by applying pulling force to the attached cable. Internal damage to the MST may result.

3.2   Fiber and Port Configuration

Depending on the option ordered, the MST is equipped with two, four, six, eight, or twelve optical ports. The number of each port is molded into the MST enclosure. The fibers in the distribution cable are color-coded to correspond to the optical ports. Table 2 lists the port number and the color of the associated optical fiber for the various versions of the MST.

Table 2. Typical Fiber Color Code

PORT	FIBER COLOR	PORT	FIBER COLOR	PORT	FIBER COLOR
1	Blue	5	Slate	9	Yellow
2	Orange	6	White	10	Violet
3	Green	7	Red	11	Rose
4	Brown	8	Black	12	Aqua

4   MOUNTING THE MULTIPORT SERVICE TERMINAL

The following sections describe the MST mounting options and provide the installation procedures for the MST.

4.1   MST Mounting Options

The MST may be mounted using anyone of several standard OSP enclosures. However, the MST does not require any type of OSP enclosure and may be mounted in the open from a pole or strand. The following describes the various mounting options for the MST:

- **Hand-Hole Mounting** (below ground) – A hand-hole enclosure (examples shown in Figure 6) is an OSP below-ground mounting system that may be used for the MST and other similar products. When installed, the top of the hand-hole enclosure is flush with the top of the ground. Hand-hole enclosures consist of a base unit and a top cover. The base unit mounts in the ground. Cables and conduit enter the base unit from the bottom.
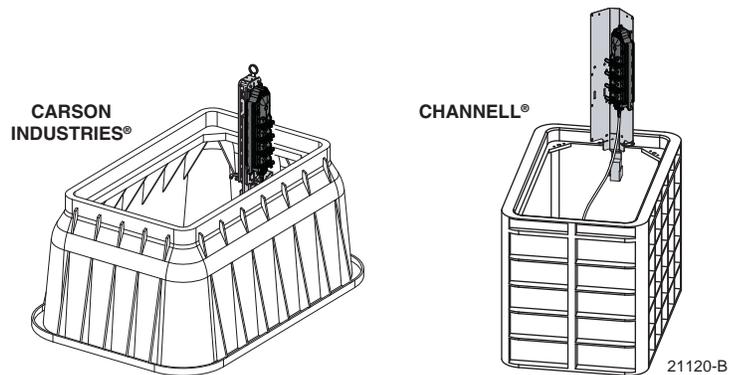
Figure 6. Typical Hand-Hole Mounting

- **Pedestal Mounting** (at final grade) – Pedestal enclosures (examples shown in Figure 7) may be used for mounting the MST at ground level. Pedestal enclosures consist of a base assembly and a top cover. The base assembly mounts partly in the ground. Cables and conduit enter the base assembly from the bottom.
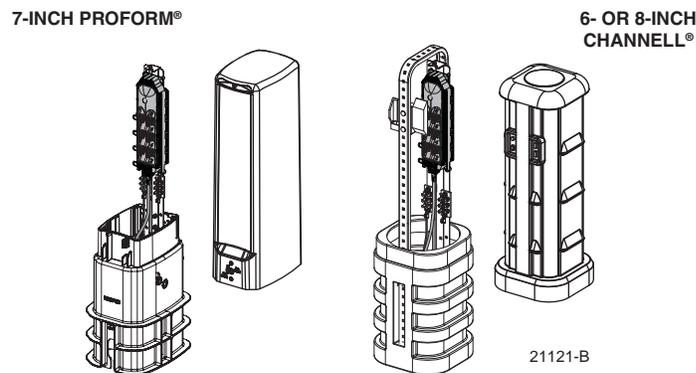

Figure 7. Pedestal Mounting

- **Pole-Mounting** (aerial) – The MST may be mounted on a utility pole as shown in Figure 8. The UMB may be attached to the pole with lag screws or construction screws. Other than the fasteners, no additional parts are required for pole mounting.
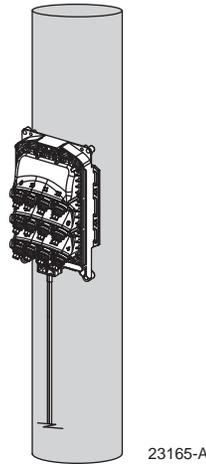
Figure 8. Pole-Mount Installation

- **Strand-Mounting** (aerial) – A strand-mount bracket kit (MST-ACC-M02) is available for aerial mounting the MST from an overhead strand as shown in Figure 9. The brackets mount on the UMB and are then clamped to the strand. The MST snaps into the UMB.
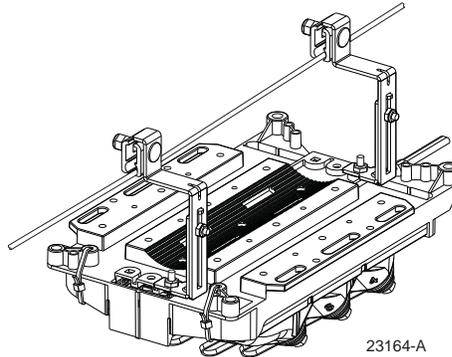

Figure 9. Strand-Mount Installation

4.2   Installing the UMB and MST

The Universal Mounting Bracket (UMB) is included with each MST and is used for mounting the MST. The UMB may be attached to various mounting surfaces using a variety of fasteners as shown in Figure 10. Multiple holes and slots are provided in the UMB to accommodate different fasteners including screws, nails, and cable ties. Secure the UMB to the selected mounting surface using whatever fastening method is preferred.
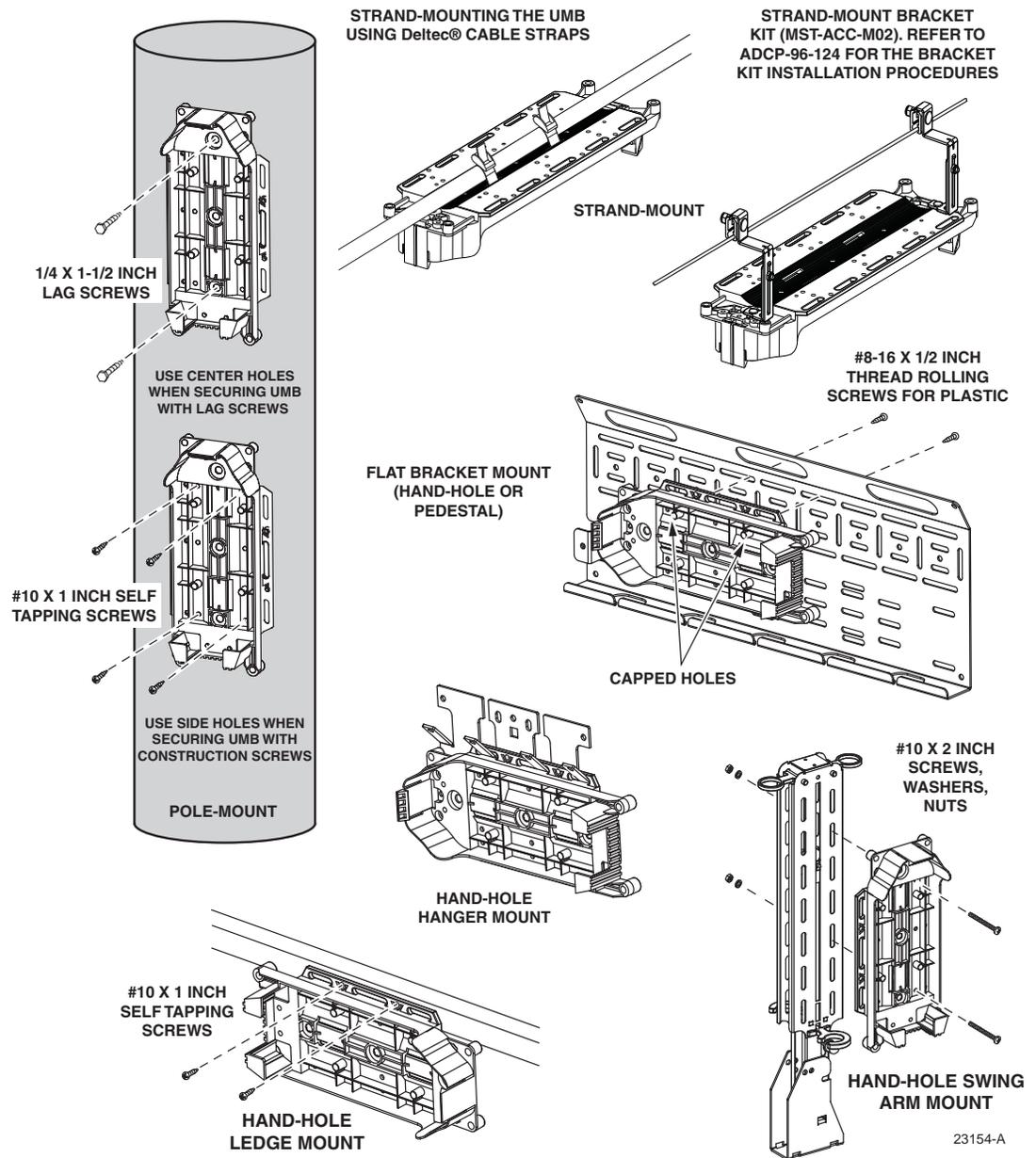
STRAND-MOUNTING THE UMB USING Deltec® CABLE STRAPS

STRAND-MOUNT BRACKET KIT (MST-ACC-M02). REFER TO ADCP-96-124 FOR THE BRACKET KIT INSTALLATION PROCEDURES

STRAND-MOUNT

1/4 X 1-1/2 INCH LAG SCREWS

USE CENTER HOLES WHEN SECURING UMB WITH LAG SCREWS

#8-16 X 1/2 INCH THREAD ROLLING SCREWS FOR PLASTIC

FLAT BRACKET MOUNT (HAND-HOLE OR PEDESTAL)

#10 X 1 INCH SELF TAPPING SCREWS

CAPPED HOLES

USE SIDE HOLES WHEN SECURING UMB WITH CONSTRUCTION SCREWS

POLE-MOUNT

HAND-HOLE HANGER MOUNT

#10 X 2 INCH SCREWS, WASHERS, NUTS

#10 X 1 INCH SELF TAPPING SCREWS

HAND-HOLE LEDGE MOUNT

HAND-HOLE SWING ARM MOUNT

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Figure 10. Installing the Universal Mounting Bracket (UMB)

After the UMB is mounted, install the MST in the UMB as shown in Figure 11. Insert the cable end of the MST into the UMB first and then push the front of the MST into the UMB until the latch snaps closed.

2. PUSH ON FRONT OF MST
UNTIL LATCH SNAPS SHUT

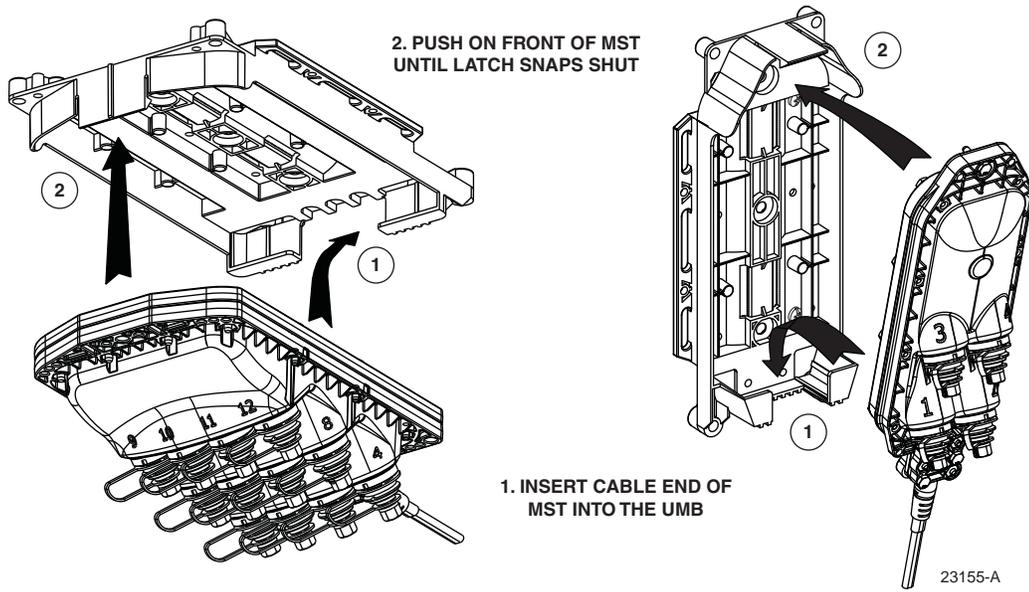1. INSERT CABLE END OF
MST INTO THE UMB

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Figure 11. Installing the MST in the Universal Mounting Bracket

If the MST will be supported from a strand, secure the front of the MST to the UMB with cable ties as shown in Figure 12.
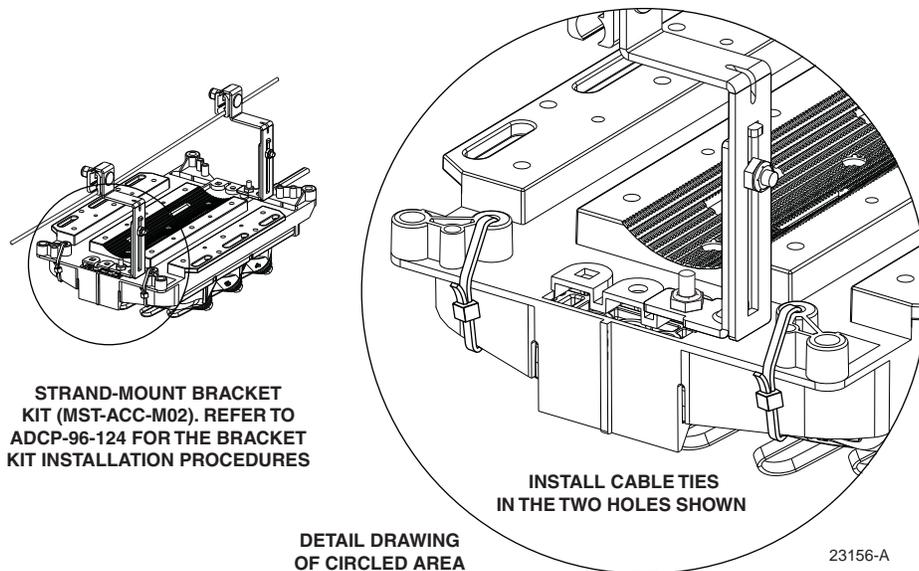

STRAND-MOUNT BRACKET
KIT (MST-ACC-M02). REFER TO
ADCP-96-124 FOR THE BRACKET
KIT INSTALLATION PROCEDURES

INSTALL CABLE TIES
IN THE TWO HOLES SHOWN

DETAIL DRAWING
OF CIRCLED AREA

23156-A

Figure 12. Securing Front of Strand-Mounted MST With Cable Ties

5   USING HARDENED CONNECTORS AND ADAPTERS

Hardened connectors and adapters provide sealed environmental protection for the subscriber drop cable connector and the SC adapter mounted within the MST optical port. The following sections provide a description of the connector and adapter components and provide instructions for connecting or disconnecting the drop cable to/from the optical ports.

5.1   Connector Components

The basic components of the drop cable connector are shown in Figure 13. The dust cap threads onto the connector coupling nut. A pair of O-rings on the connector body provide a tight seal when the dust cap is in place. A pulling eye is provided in the end of the dust cap for pulling the drop cable through conduit.
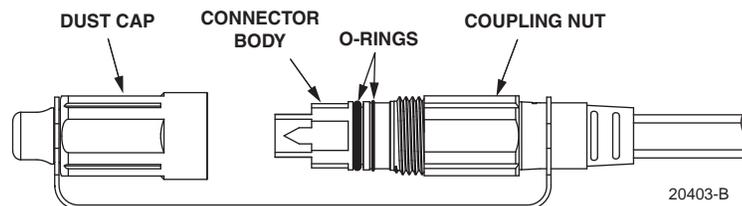

Figure 13. Drop Cable Connector Components

The basic components of the MST optical port hardened adapter are shown in Figure 14. The dust cap threads into the adapter housing. An O-ring on the dust cap provides a tight seal when the dust cap is in place. The 216B key tool is required to remove the dust cap.
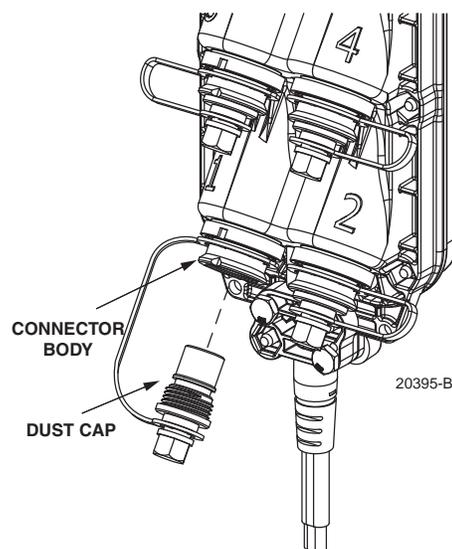

Figure 14. Optical Port Adapter Components

5.2   Connecting Drop Cable to MST Optical Port

⚠ **Danger:** *Exposure to laser radiation can seriously damage the retina of the eye. Do not look into the ends of any optical fiber. Do not assume the laser power is turned-off or that the fiber is disconnected at the other end.*

Use the following procedure to connect a drop cable to an optical port on the MST enclosure:

1. Unscrew the dust cap from the drop cable connector (see Figure 13).

2. Inspect the drop cable connector O-rings for dryness and apply O-ring lubricant (MST-ACC-LUBE1) to each O-ring if dry. Refer to Section 7 for the procedure.

▶ **Note:** The connector O-rings are pre-lubricated by the factory and should not require additional lubrication for the initial assembly.

3. Use the 216B key tool (accessory) to unscrew the dust cap (see Figure 14) from the MST optical port.

4. Clean both the optical port adapter and the drop cable connector (requires accessory kit FHD-ACC-CLNKIT1) as specified in ADCP-96-067.

5. Align the drop cable connector with the optical port as shown in Figure 15. The pointer on the drop cable connector should line up with the notch on the optical port.
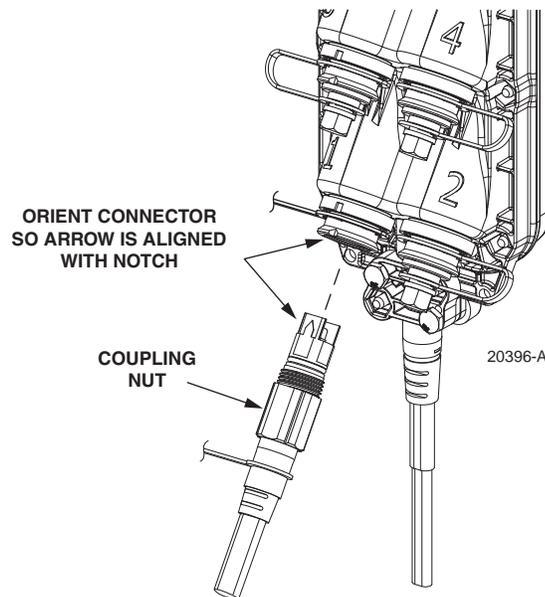

Figure 15. Connecting Drop Cable To MST Optical Port

6. Insert the drop cable connector into the optical port. If the drop cable connector does not insert all the way to the bottom of the port, rotate drop cable connector slightly to either side until it slides freely into place.

7. Thread the drop cable connector coupling nut into the optical port and tighten coupling nut until finger tight.

8. Inspect the optical port dust cap O-ring (see Figure 16) for dryness and apply O-ring lubricant (MST-ACC-LUBE1) to the O-ring if dry. Refer to Section 7 for the procedure.

▶ **Note:** The optical port dust cap O-ring is pre-lubricated by the factory and should not require additional lubrication for the initial assembly.

9. Thread the optical port dust cap into the drop cable dust cap as shown in Figure 16 and then tighten both dust caps finger tight. This ensures that both dust caps will stay clean when not in use.

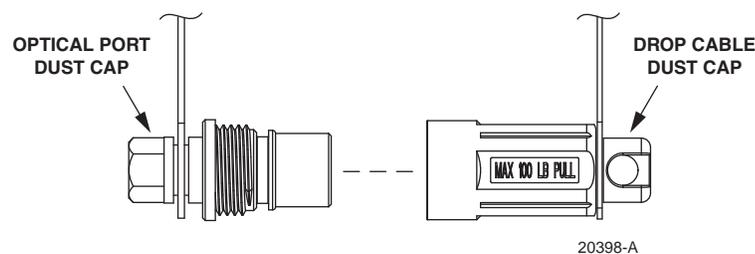**Figure 16. Dust Caps**

5.3   Disconnecting Drop Cable From MST Optical Port

⚠ **Danger:** *Exposure to laser radiation can seriously damage the retina of the eye. Do not look into the ends of any optical fiber. Do not assume the laser power is turned-off or that the fiber is disconnected at the other end.*

Use the following procedure to disconnect a drop cable from an optical port on the MST enclosure:

1. Unscrew the optical port dust cap from the drop cable dust cap (see Figure 16).

2. Unscrew the drop cable connector coupling nut from the optical port (see Figure 15).

3. Inspect the optical port dust cap O-ring for dryness and apply O-ring lubricant (MST-ACC-LUBE1) to the O-ring if dry. Refer to Section 7 for the required procedure.

4. Thread the optical port dust cap into the optical port and tighten using the 216B key tool (see Figure 14).

5. Inspect the drop cable connector O-rings for dryness and apply O-ring lubricant (MST-ACC-LUBE1) to each O-ring if dry. Refer to Section 7 for the required procedure.

6. Thread the drop cable dust cap onto the drop cable connector coupling nut and tighten until finger tight (see Figure 13).

6 GROUNDING (ARMORED CABLES ONLY)

MST's that are equipped with an armored distribution cable are also equipped with a 1/4-20 copper grounding stud. Within the MST, the grounding stud is connected to the distribution cable's metallic strength members and metal sheath. The grounding stud must be connected to a grounding system (not provided). Install a grounding system that meets all local electrical codes. Check local codes for grounding system installation, use of clamps, wire size, and any other grounding requirements. Typically, #6 AWG stranded copper wire is used for the grounding wire. Leave sufficient slack in the grounding wire to allow it to be routed to the MST following installation and mounting.

Use the following procedure to connect a grounding wire to the MST grounding stud:

1. Obtain a compression-type single-hole ring terminal (not provided) to use for terminating the grounding wire. The ring terminal must be the appropriate size for the gauge of the grounding wire and the hole must be at least 1/4-inch in diameter.

2. Trim the grounding wire to the appropriate length and terminate it with the ring terminal (requires crimper).

3. Remove the nut with captive locking washer from the grounding stud.

4. Assemble the nut and grounding wire on the grounding stud as shown in Figure 17.

NOTE: USE A TORQUE WRENCH WITH 7/16-INCH SOCKET TO TIGHTEN NUT TO 30 POUND-FORCE INCHES OF TORQUE.

HOLD STUD FLATS WITH A 1/2-INCH OPEN-ENDED WRENCH WHILE TIGHTENING STUD NUT

COMPRESSION-TYPE RING TERMINAL

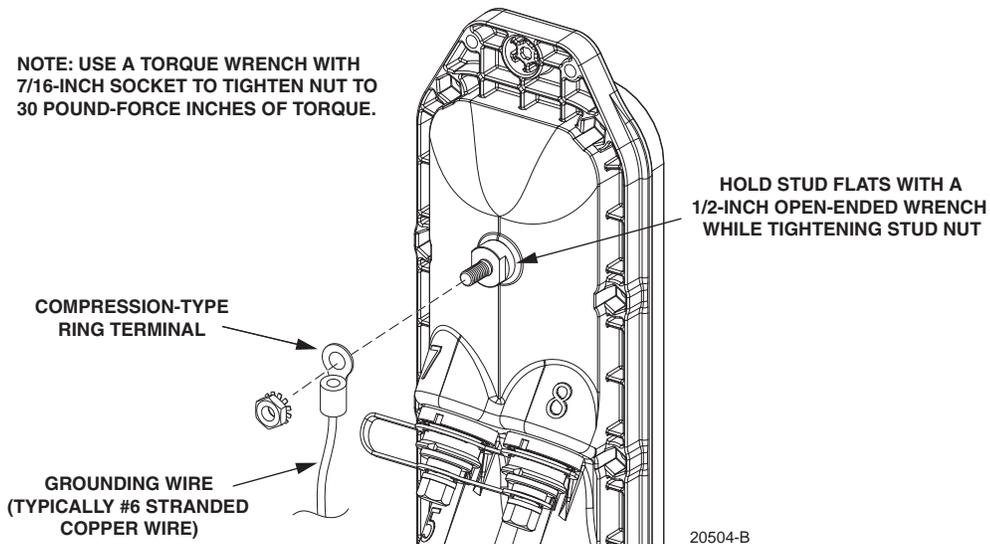GROUNDING WIRE (TYPICALLY #6 STRANDED COPPER WIRE)

20504-B

Figure 17. Grounding Lug Connection

5. Use a torque wrench (with a 7/16-inch socket) to tighten the grounding stud nut to 30 pound-force inches (3.4 Newton meters) of torque.

> ▶ **Note:** When tightening the grounding stud nut, use a 1/2-inch open-ended wrench to hold the flat spots on the base of the grounding stud. This prevents the grounding stud from turning when the nut is tightened,

7 MAINTENANCE PROCEDURES

Maintenance for the MST enclosure is limited to cleaning the hardened adapters as needed to maintain optimal performance, lubricating O-rings that may become dry, or replacing a damaged optical connector.

7.1 Drop Cable Connector Cleaning Procedure

Cleaning kit (FHD-ACC-CLNKIT1) is required for this procedure. Use the following procedure to clean the drop cable connector:

1. Unscrew the drop cable connector dust cap from the end of the drop cable connector.

2. Examine the end of the drop cable connector and determine which is the high side which is the low side of the connector end-face as shown in Figure 18.
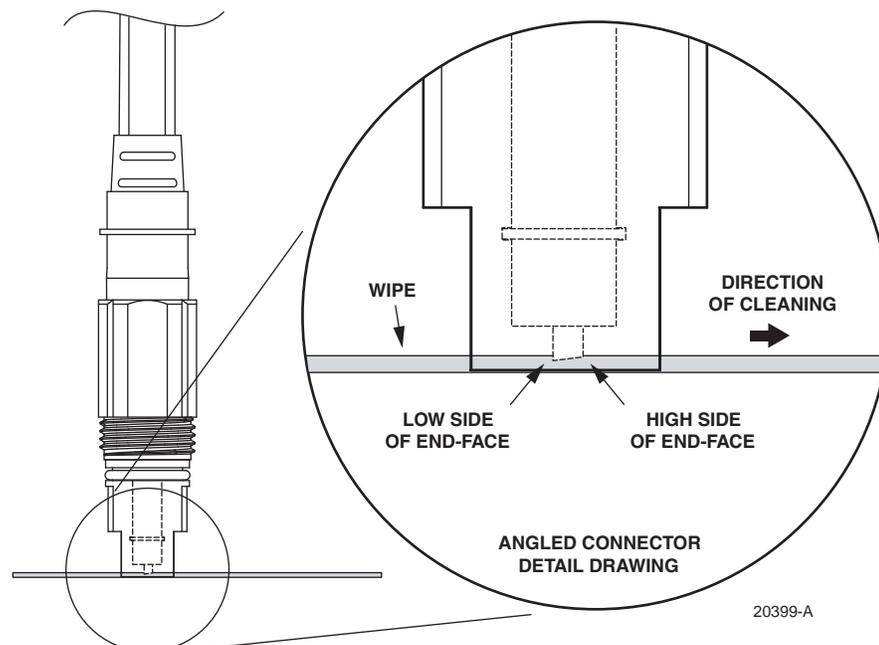

Figure 18. Angled Connector End-Face Detail

3. Locate the cleaning tape cassette that is provided with the cleaning kit.

4. Open the tape shutter by squeezing the lever on the underside of the cassette and then keep the shutter open by continuing to squeeze the lever.

5. Hold the end-face of the drop cable connector perpendicular to the cleaning tape and with the **high side** of the connector pointing in the direction of cleaning as shown in Figure 19.

▶ **Note:** The drop cable connector uses angled SC type connectors. Make sure the high side of the connector end-face is pointing in the direction of the cleaning motion.
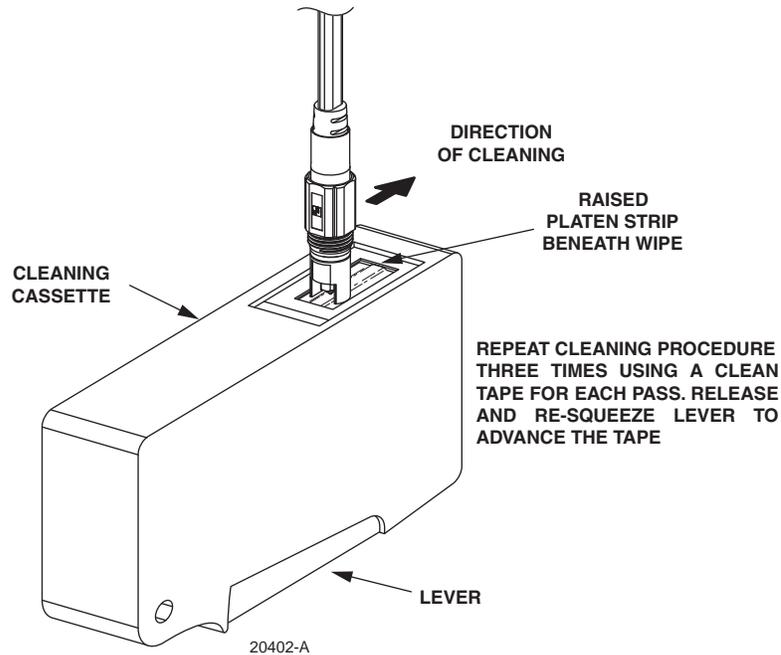

DIRECTION
OF CLEANING

RAISED
PLATEN STRIP
BENEATH WIPE

CLEANING
CASSETTE

REPEAT CLEANING PROCEDURE
THREE TIMES USING A CLEAN
TAPE FOR EACH PASS. RELEASE
AND RE-SQUEEZE LEVER TO
ADVANCE THE TAPE

LEVER

20402-A

Figure 19. Cleaning Drop Cable Connector

6. With **light pressure**, slide the connector end-face once across the tape in the direction shown using a smooth linear motion. Do not press too hard and do not repeat the cleaning motion with the same tape.

7. Release the lever on the underside of the cassette to close the tape shutter.

8. Repeat steps 3 through 6 until the connector has been cleaned three times.

9. When the connector is clean, reinstall the drop cable dust cap and tighten until finger tight.

7.2   MST Adapter/Connector Cleaning Procedure

Cleaning kit (FHD-ACC-CLNKIT1) is required for this procedure. Use the following procedure to clean the MST optical port adapters and the internal connectors:

1. Using a 216B key tool, unthread the optical port dust cap from the optical port adapter.

2. Locate the dry swabs that are provided with the connector/adapter cleaning kit.

3. Insert a dry swab into the adapter as shown in Figure 20.

▶ **Note:** Do not apply alcohol to the swab or the adapter.

4. While applying **light pressure** against the connector end-face, rotate the dry swab 360º three times.

5. Dispose of the dry swab after use.

6. When the connector end-face and adapter ferrule are clean, reinstall the optical port dust cap and tighten using the 216B key tool.
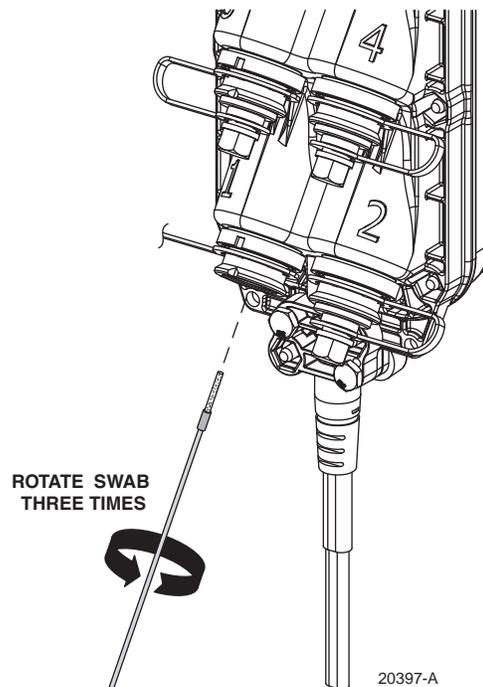

ROTATE SWAB
THREE TIMES

20397-A

Figure 20. Cleaning Optical Port Connector and Adapter

7.3 O-Ring Lubrication

The O-rings used on the hardened connector and on the optical port dust cap are lubricated when shipped from the factory to prevent damage during installation. If the O-rings become excessively dry, they may require additional lubrication to prevent damage. Remove the O-rings from the connector or dust cap and apply a small amount of lubricant directly to each ring. Then reinstall the O-rings on the connector or dust cap. Apply only the recommended O-ring lubricant (MST-ACC-LUBE1).

7.4 Internal Connector Replacement - 2xN Style MST

Opening the MST enclosure is not recommended except to replace a damaged optical connector. If an internal repair is required to a 2xN style MST, order the MST Connector

Repair Kit (MST-ACC-RKIT1). Refer to ADCP-96-045 (provided with the kit) for instructions for replacing a damaged internal optical connector.

8 CUSTOMER INFORMATION AND ASSISTANCE

Contact **Customer Service** to order kits listed in this TSB. Call 800.366.3891 (main Customer Service number), or contact a specific Customer Service team directly.

Contact the **Product Return Group** to obtain an RMA if product is deemed defective per this TSB. Call 800.366.3891 extension 73748 or 952.917.3748, or send an email to Telecom.returns@te.com.

Contact the **Technical Assistance Center (TAC)** for technical questions per this TSB (cable routing and installation of the kits). Call 800.830.5056 or send an email to TAC.Americas@commscope.com.

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