

## NOVUX™ Fiber Optic System Hardened Terminal

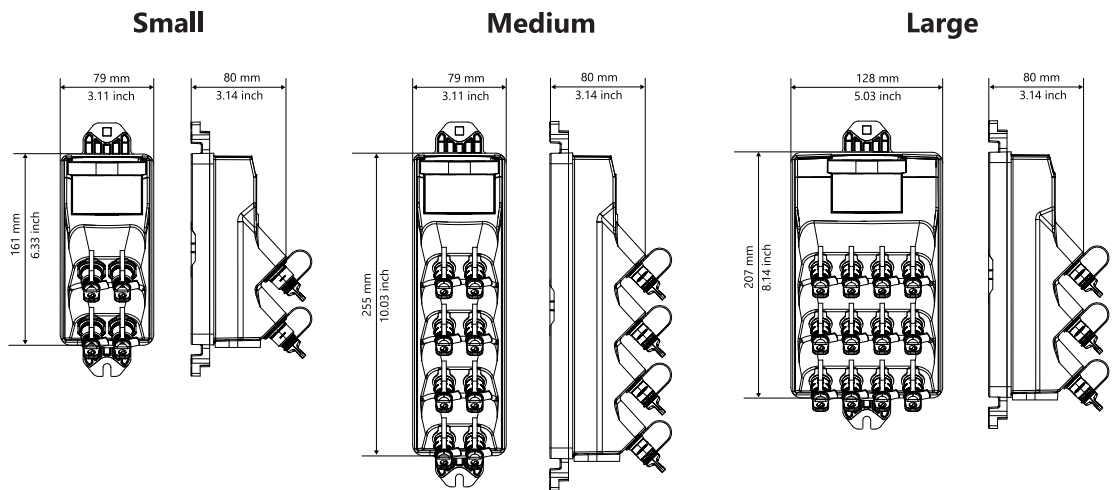
### 1 About this manual

This publication provides user information for the installation of the NOVUX™ Full Size and the NOVUX™ Prodigy™ Hardened Terminals (HT) which include the Small, Medium and Large models. The document starts with providing an overview of the tools required to perform the installation. Also warnings and cautions are indicated, which should be observed before starting the product installation. The topics covered include installation and mounting guidelines, and procedures for using and maintaining the hardened connectors and adapters.

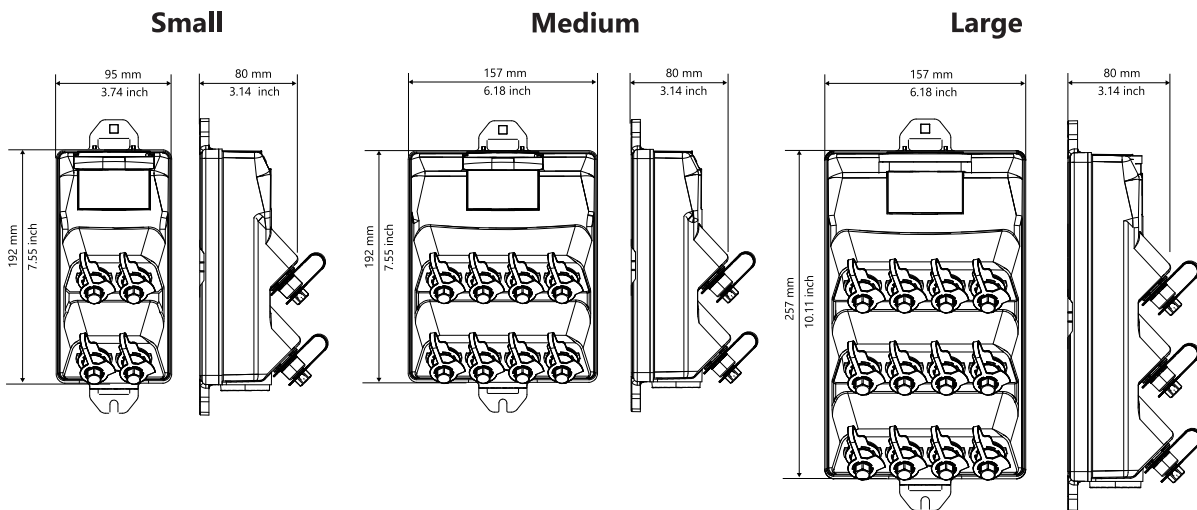
Images in this manual are for reference only and are subject to change.

### 2 Dimensions

#### HT Prodigy



#### HT Full size



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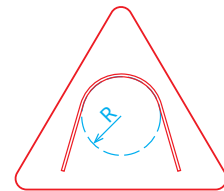
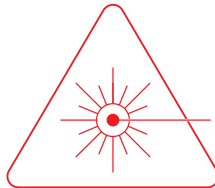
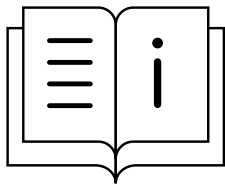
### 3 Tools

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

- Vertical or horizontal roller reel or carousel (if the HT is mounted on a cable spool).
- Cable pulling equipment.
- 216B key tool (used to open optical port dust cap).
- Hardened connector/adaptor cleaning kit.
- Utility knife / cable stripping tools.
- Splicing equipment (HT with stub cable).
- Appropriate fasteners to mount the terminal with or without a 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.

### 4 Warnings and Cautions

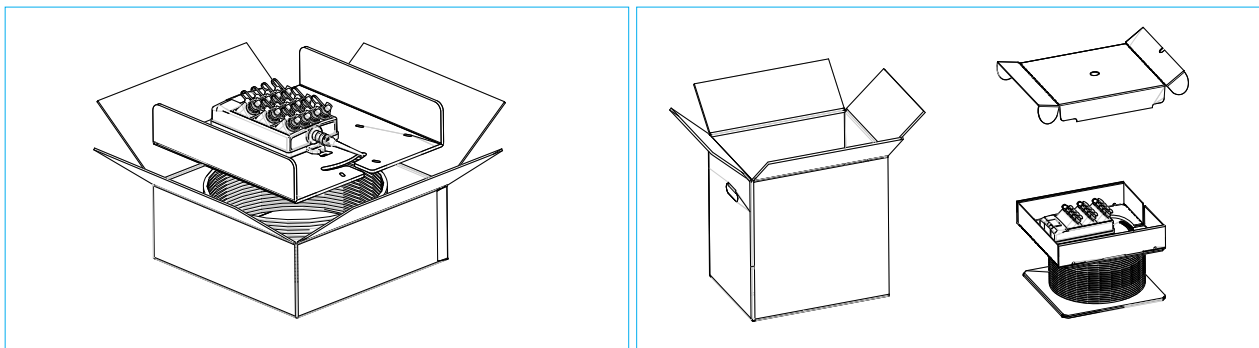


- Follow the installation instruction steps to ensure the performance of the closure. It is necessary to take precautions and keep the working space clean to protect the closure sealing materials and splices.
- Exposure to laser radiation can seriously damage the retina of the eye. Do not look into the ends of any optical fiber. Do not assume the laser power is turned off or that the fiber is disconnected at the other end. Looking into the ends of any optical fiber is entirely at your own risk. A protective cap or hood **MUST** be immediately placed over any radiating adapter or optical fiber connector to avoid the potential of dangerous amounts of radiation exposure. This practice also prevents dirt particles from entering the connector and adapter.
- 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, subunits and patch cords.

### 5 General product information

#### 5.1 Cable handling recommendations

Most HT's are equipped with a cable stub. Depending on the length of the cable and the number of ports on the HT, the HT cable may be coiled up and placed in box or it may be wound on a spool.

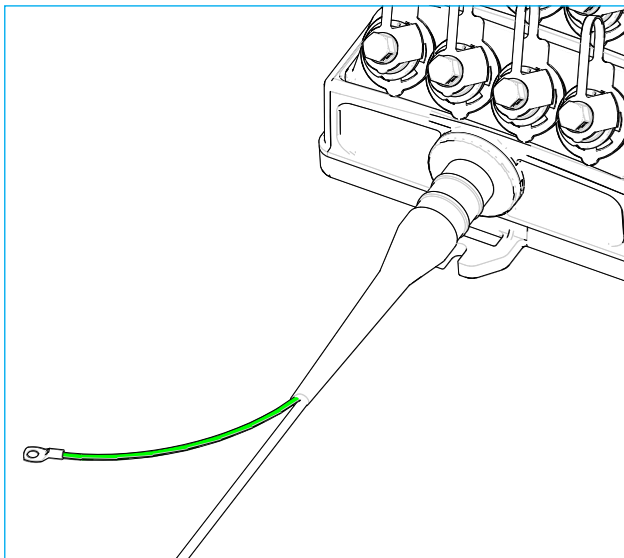


Observe the following minimum bend radius limits and pull force limits when routing and installing the HT cable:

Cable		Minimum Bend Radius		Tensile Load	
Symbol	Cable	Loaded	Un-Loaded	Long Term	Short Term
A	Standard Flat Dielectric	9.0 cm (3.5 in)	8.1 cm (3.2 in)	400 N (90 lbf)	1334 N (300 lbf)
B	Standard Flat Tone-able / Locatable	9.0 cm (3.5 in)	8.1 cm (3.2 in)	400 N (90 lbf)	1334 N (300 lbf)
C	Round Armored	12.0 cm (7.7in)	8.0 cm (3.1 in)	400 N (90 lbf)	1334 N (300 lbf)
G	Round Dielectric	2.5 cm (1.0in)	2.5 cm (1.0 in)	1500 N (330 lbf)	1500 N (330 lbf)

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

## 5.2 Grounding the armored cable



The round armored cable is provided with a bond wire to the cable shield as an access point to ground the cable shield. All ground connections should meet company guidelines and should conform to local and national electrical codes and regulations.

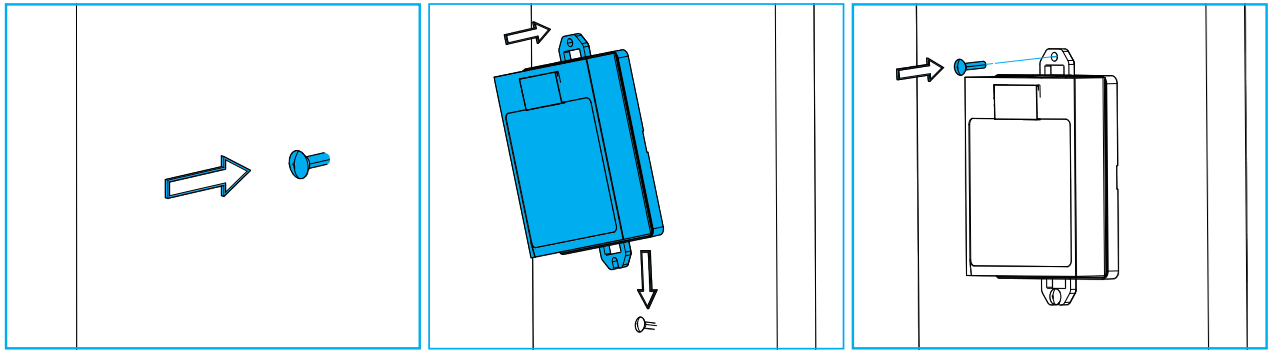
## 5.3 Standard fiber and port configuration

Depending on the option ordered, the HT is equipped with 2 to 12 optical ports. The number of each port is indicated on the lanyard. The fibers in the distribution cable are color-coded to correspond to the optical ports. The figure below lists the port number and the color of the associated optical fiber for the various versions of the HT.


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

## 6 Mounting the Hardened Terminal

### 6.1 Flat surface mounting

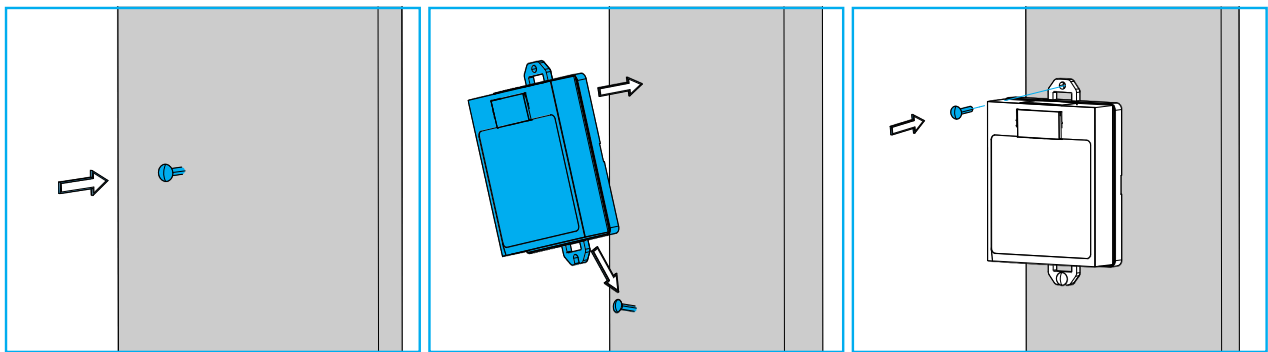



 **Note:** Wall mounting is not allowed in USA due to lack of UL Listing.

 **Note:** Flat surface mounting hardware (screws) not included.

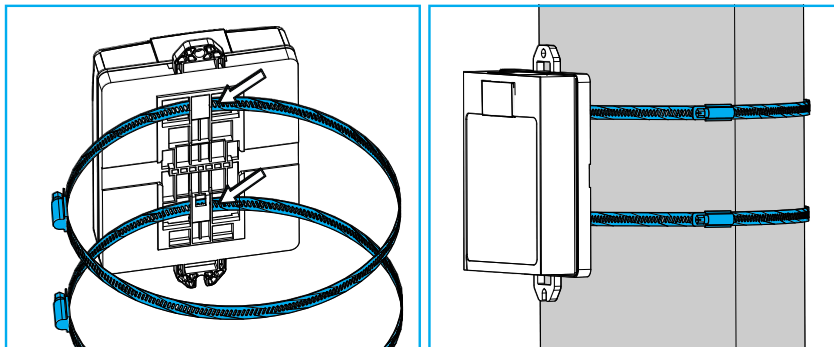
### 6.2 Pole mounting


#### 6.2.1 Pole mounting with screws



 **Note:** Pole mounting hardware (screws) not included.

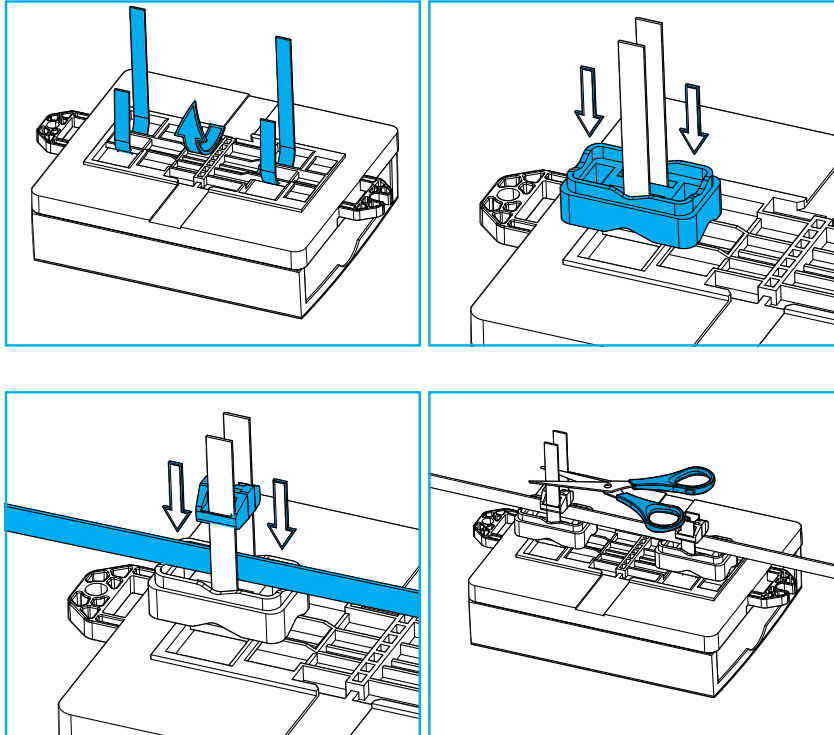
#### 6.2.2 Pole mounting with straps




 **Note:** Pole mounting straps not included.

## 6.3 Strand mounting

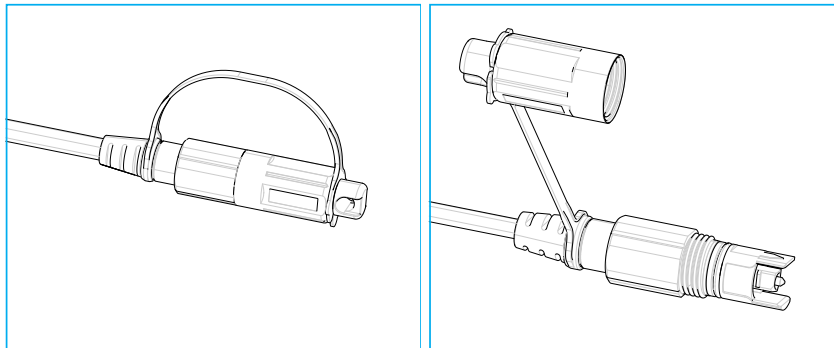
### 6.3.1 Strand mounting with cable spacers




 **Note:** Cable spacer, locking head and cable straps are not supplied by CommScope.

## 7 Full Size connector Installation

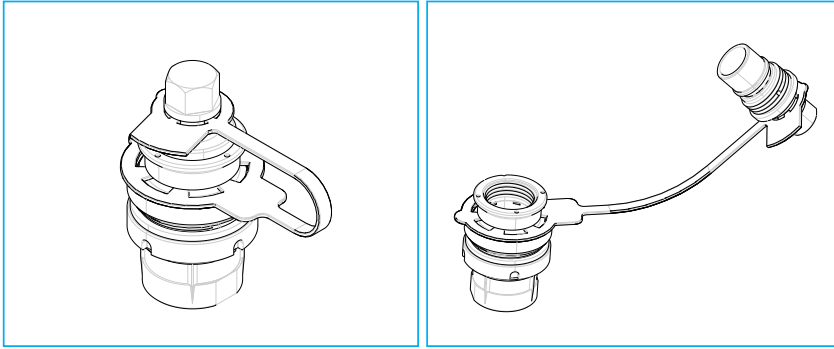
### 7.1 Connector components



The full size hardened connectors and adapters provide sealed environmental protection. The basic components of the drop cable connector are shown in the figure above. The dust cap threads onto the connector coupling nut. The O-ring on the connector body provides 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.

 **Note:** Do not exceed a pulling force of 445 N (100 lbf) and when connected, don't exceed cable pull of 111 N (25 lbf).

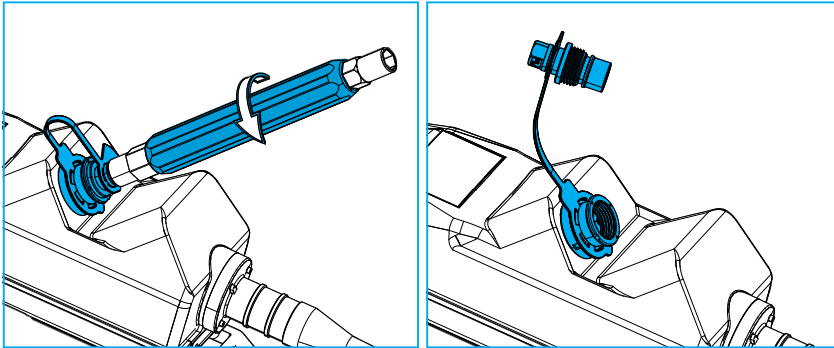
## 7.2 Adapter components



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.

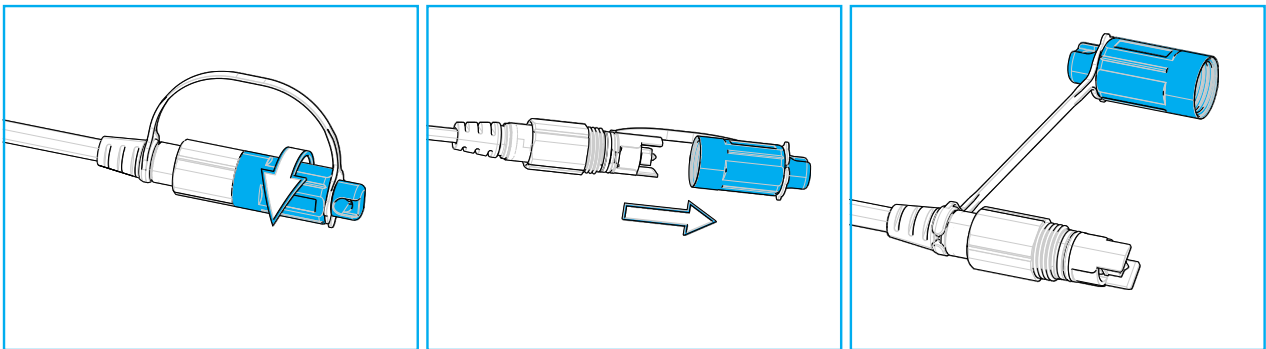
## 7.3 Connecting the Full Size connector

### 7.3.1 Remove dust cap




1 Use a 216B key tool to unscrew the dust cap from the HT optical port.

 **Note:** The 216B key tool is not included.

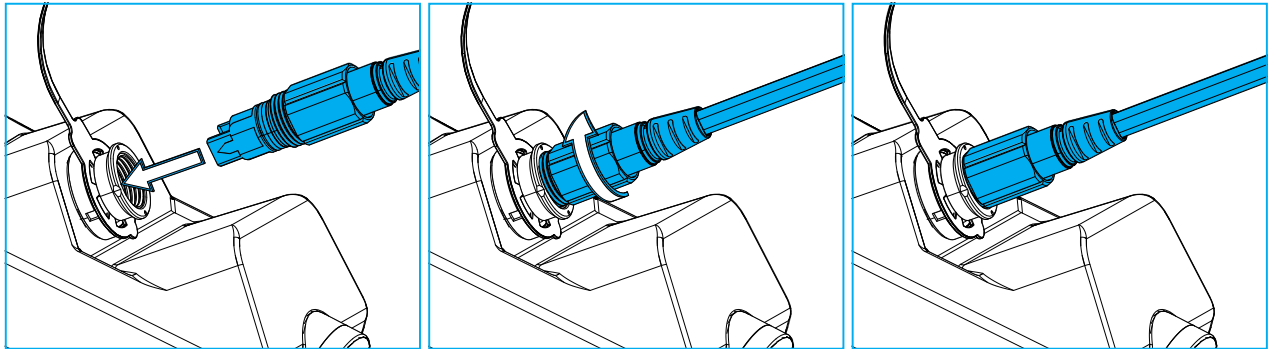


2 Unscrew the dust cap from the cable connector.

3 Pull the dust cap off.

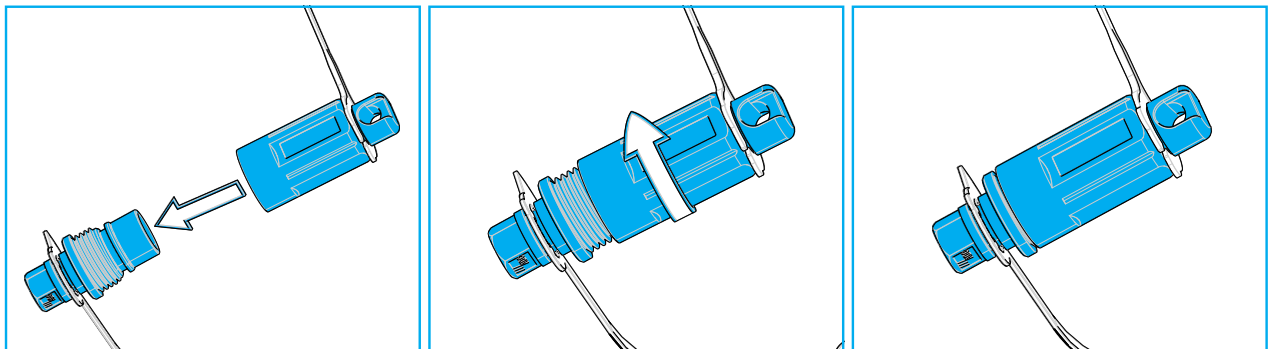
 **Note:** Field personnel must take care when proceeding to remove dust caps on the full size connector and adapter, to prevent contaminant particles entering to the adapters or connector end-face.

### 7.3.2 Install the Full Size connector



- 1 Align the drop cable connector with the optical port. The pointer on the drop cable connector should line up with the notch on the optical port.
- 2 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 the drop cable connector slightly to either side until it slides freely into place.
- 3 Thread the drop cable connector coupling nut into the optical port and tighten coupling nut until finger tight.

### 7.3.3 Secure dust caps



- 1 Thread the optical port dust cap into the drop cable dust cap.
- 2 Tighten both dust caps until finger tight.
- 3 This ensures that both dust caps will stay clean when not in use.

### 7.4 Disconnecting the Full Size Connector

- 1 Unscrew the optical port dust cap from the drop cable dust cap.
- 2 Unscrew the drop cable connector coupling nut from the optical port and pull the connector straight out of the adapter.
- 3 Thread the optical port dust cap into the optical port and tighten using the 216B key tool.
- 4 Thread the drop cable dust cap onto the drop cable connector coupling nut until finger tight.

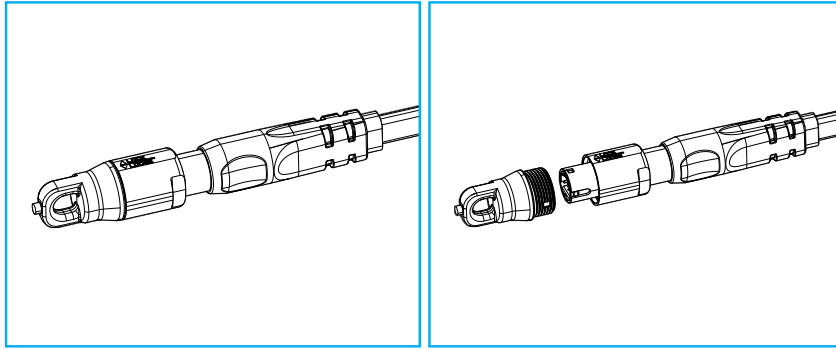
### 7.5 Full Size connector cleaning

The connectors and adapters are cleaned at the factory, however inadvertent contact and/or dust can still occur during transport, storage and installation. CommScope recommends all connector interfaces be cleaned prior to every mating. To clean the connector interface, follow the procedure as described in the installation instruction "cleaning hardened connectors".



## 8 HMFOC connector Installation

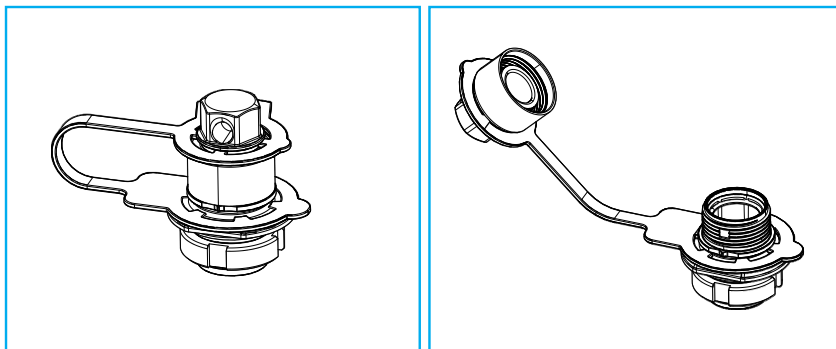
### 8.1 Connector components



The HMFOC connector at the end of the terminal's tail is a hardened 12 fiber connector that can be used for many applications. The primary application is to connect indexing terminals in a cascade or to connect an indexing terminal to the Fiber Distribution Hub (FDH) or Closure, to extend the distribution network. The connector on the tail is the non-pinned female type. The connector is protected by a dust cap. The O-ring on the connector body provides a watertight 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.

**Note:** Do not exceed a pulling force of 445N (100 lbf) and when connected, don't exceed cable pull of 111 N (25 lbf). A properly rated breakaway swivel should be used between the pull rope and the pulling cap.

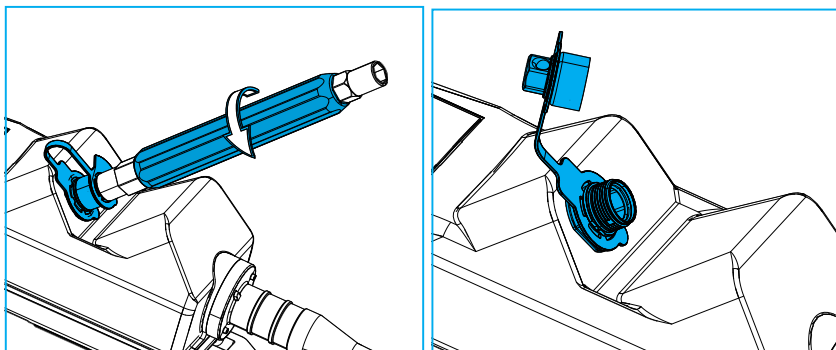
### 8.2 Adapter components



The connector inside the adapter is the pinned, male type. It is a captured Multi-fiber Push On (MPO) connector.

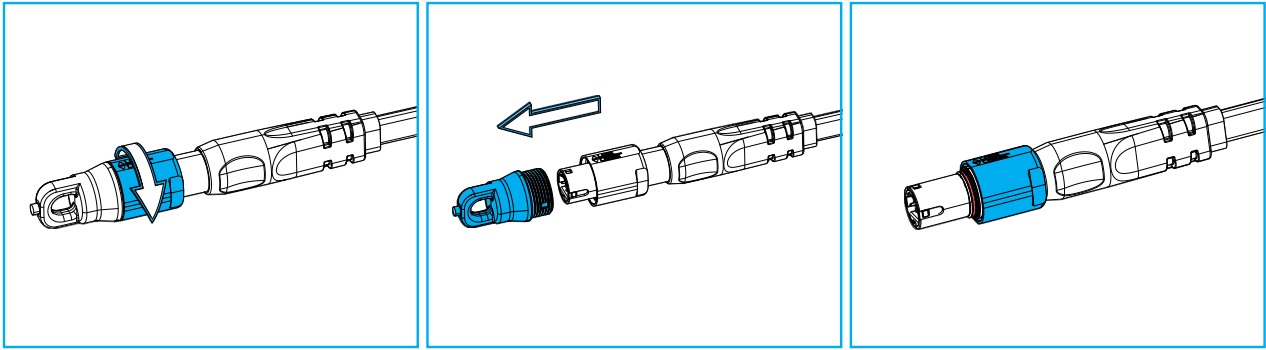
### 8.3 Connecting the HMFOC

#### 8.3.1 Remove dust cap




- 1 Use a 216B key tool to unscrew the dust cap.

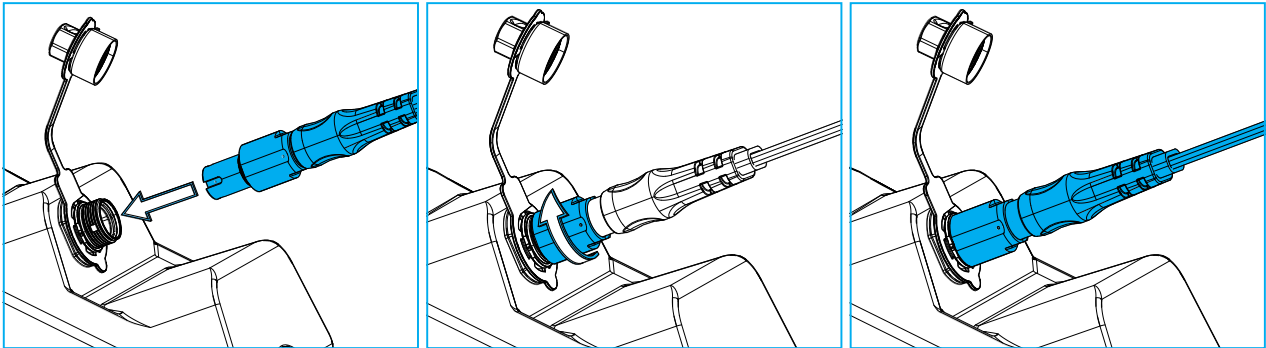
 **Note:** The 216B key tool is not included.



- 2 Unscrew the coupling nut from the cable connector dust cap.
- 3 Pull the dust cap off.

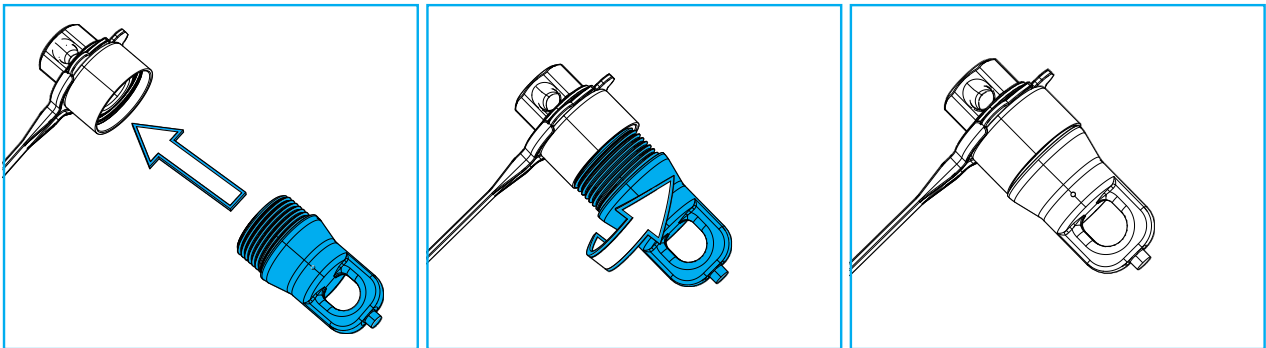
 **Note:** Field personnel must take care when proceeding to remove dust caps on the HMFOC connector and adapter, to prevent contaminant particles entering to the adapters or connector end-face.

### 8.3.2 Install the HMFOC connector



- 1 Find the alignment keys on the adapter port (square notch in the thread area) and on the connector (groove). Push the connector into the adapter port.
- 2 Thread the cable connector's coupling nut onto the thread of the adapter port until it is finger tight.

### 8.3.3 Secure dust caps



- 1 Thread the optical port dust cap into the drop cable dust cap.
- 2 Tighten both dust caps until finger tight.
- 3 This ensures that both dust caps will stay clean when not in use.

## 8.4 Disconnecting the HMFOC

- 1 Unscrew the drop cable connector coupling nut until the thread of the adapter port is completely free.
- 2 Grasp the connector and pull it straight out of the adapter. The pull-out force to remove the connector should be minimal once the coupling nut is fully disengaged.

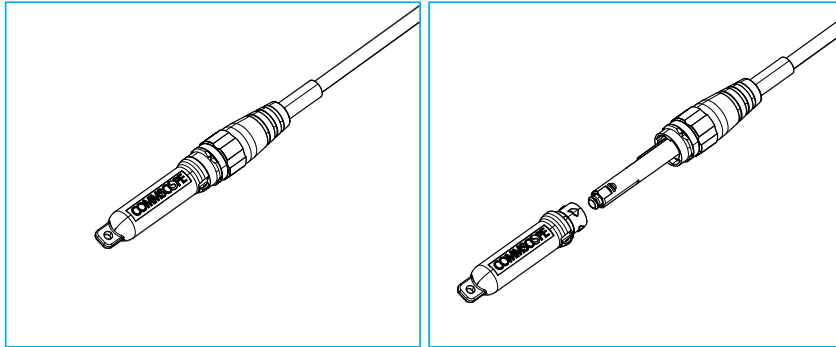
- 3 Uncouple the two dust caps.
- 4 Thread the optical port dust cap into the optical port until finger tight.
- 5 Thread the drop cable connector coupling nut into the drop cable dust cap until finger tight.

## 8.5 HMFOC cleaning


The connectors and adapters are cleaned at the factory, however inadvertent contact and/or dust can still occur during transport, storage and installation. CommScope recommends all connector interfaces be cleaned prior to every mating. To clean the connector interface, follow the procedure as described in the installation instruction "cleaning hardened connectors".

## 9 Prodigy connector installation

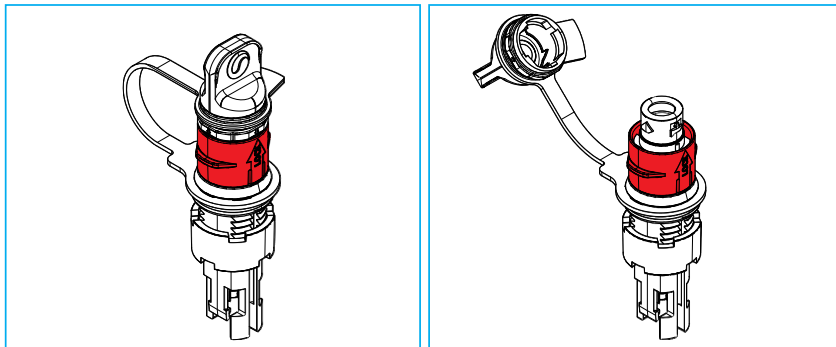
### 9.1 Connector components



The basic components of the drop cable connector are shown in the figure above. The dust cap threads onto the connector. Prodigy connects easily with a 45-degree twist to lock the connector core in the adapter, and provides a self-locking mechanism with an audible click. A pulling eye is provided in the end of the dust cap for pulling the drop cable through conduit.

 **Note:** Do not exceed a pulling force of 445 N (100 lbf) and when connected, don't exceed cable pull of 111 N (25lbf).

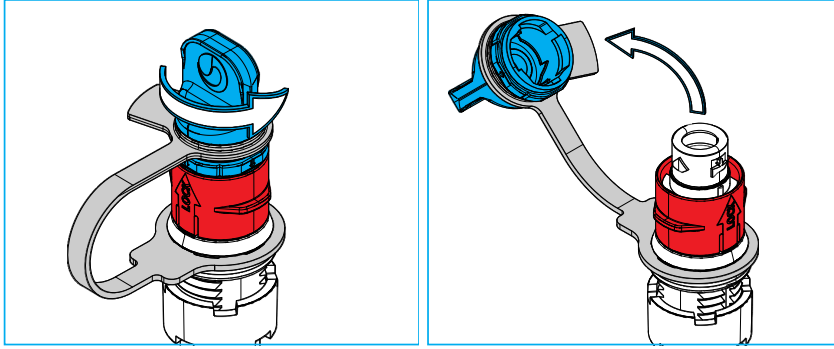
### 9.2 Adapter components



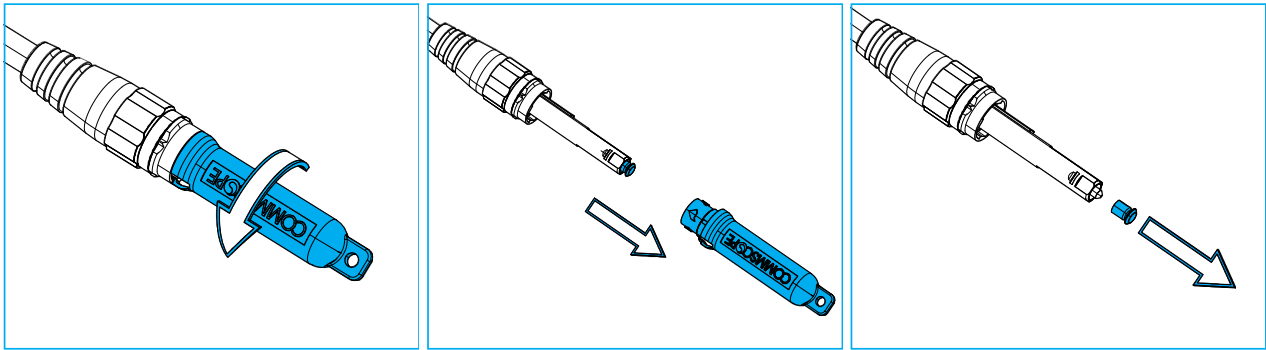
The basic components of the adapter are shown in the figure above. The dust cap threads onto the adapter housing.

## 9.3 Connecting the Prodigy connector

### 9.3.1 Remove dust cap

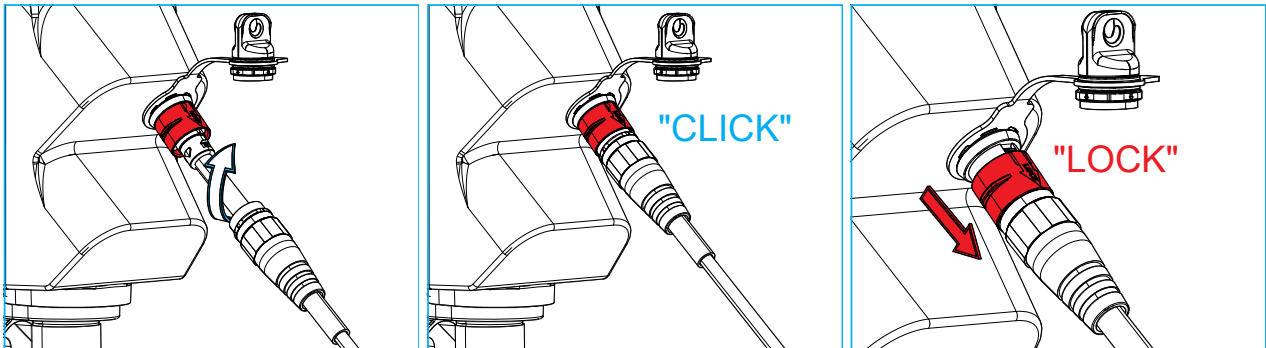


- 1 Unscrew the dust cap from the adapter housing.
- 2 Pull the dust cap off.



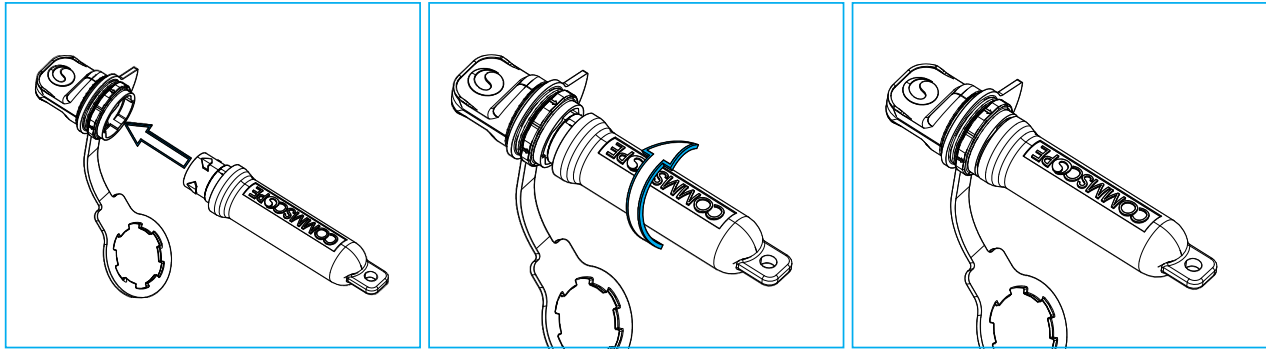
- 3 Unscrew the dust cap from the connector.
- 4 Pull the dust cap off.
- 5 Pull the "small" dust cap off.

### 9.3.2 Install the Prodigy connector



- 1 Prodigy connects with a 45-degree twist to lock the connector core in the adapter.
- 2 The connector provides a self-locking mechanism with an audible "click".
- 3 Pull the locking ring up as shown in the figure.

### 9.3.3 Secure dust caps



- 1 Thread the drop cable dust cap into the adapter dust cap.
- 2 Tighten both dust caps until finger tight.
- 3 This ensures that both dust caps will stay clean when not in use.

### 9.4 Disconnecting the Prodigy connector

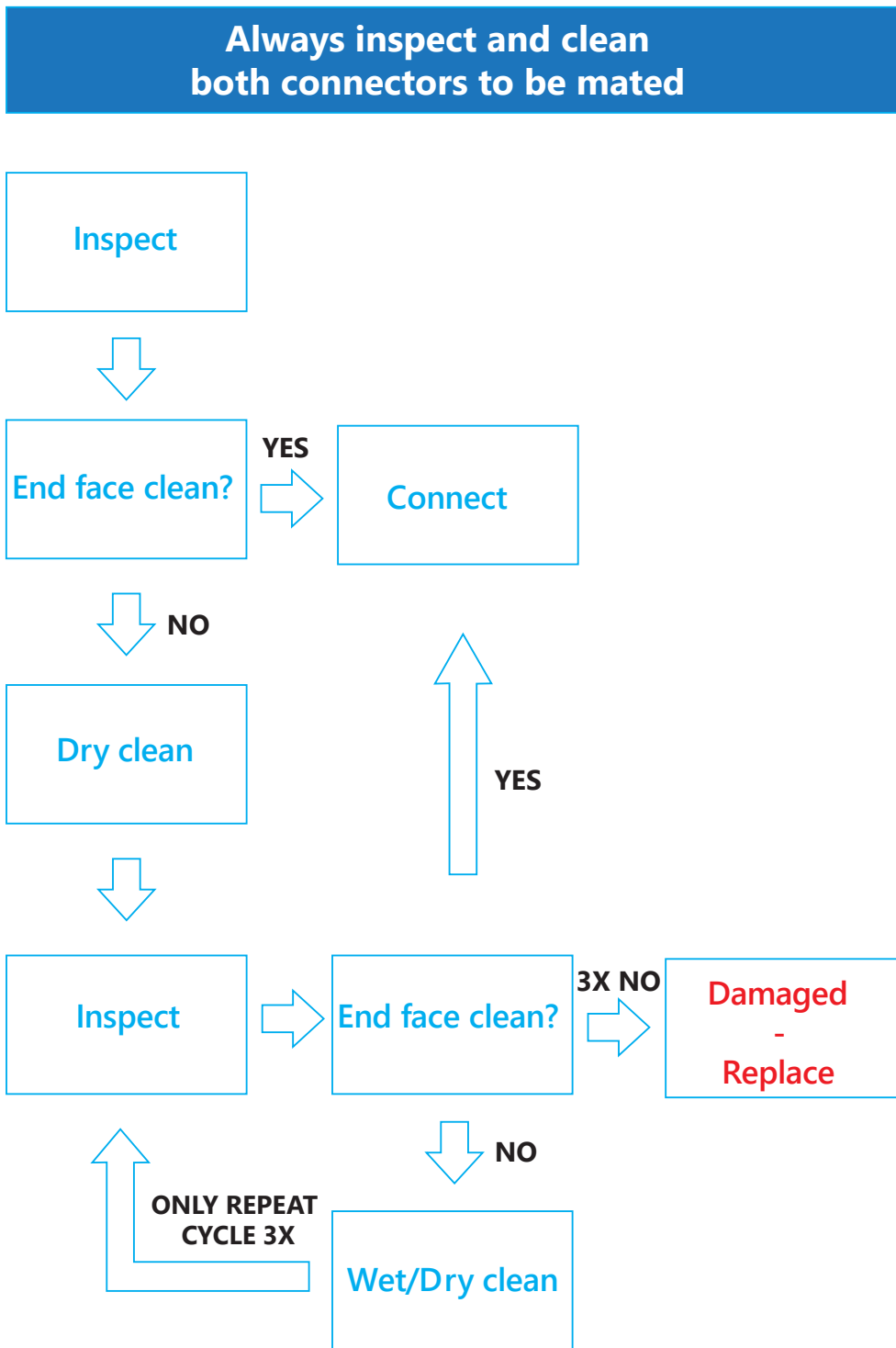
- 1 Unscrew the drop cable dust cap from the adapter dust cap.
- 2 Pull the locking ring down to "unlock" the connector.
- 3 Grasp the connector and pull it out with a "45-degree twist to unlock" out of the adapter.
- 4 Thread the adapter dust cap into the optical port until finger tight.
- 5 Thread the drop cable connector into the drop cable dust cap until finger tight.

### 9.5 Prodigy connector cleaning

The connectors and adapters are cleaned at the factory, however inadvertent contact and/or dust can still occur during transport, storage and installation. CommScope recommends all connector interfaces be cleaned prior to every mating. To clean the connector interface, follow the procedure as described in the installation instruction "cleaning hardened connectors". To clean the connector interface, follow the procedure as described in the installation instruction "cleaning hardened connectors".

## 10 Maintenance

Follow specific cleaning instructions outlined for each specific connection type using the below Inspect/Clean Cycle.



CommScope® is not responsible for damage caused by cleaning.

## **11 Disclaimer**

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## **12 Contact information**

Visit our website or contact your local CommScope representative for more information. [www.commscope.com](http://www.commscope.com)

For technical assistance, customer service, or to report any missing/damaged parts, visit us at:

<http://www.commscope.com/SupportCenter>