CORNING

Corning OptiSheath™ Advantage Sealed Multiport Terminals Installation Instructions

p/n 206-427, Issue 2

related literature |

1. GENERAL

This document has been compiled by Corning Cable Systems and SHALL be referred to for the mandatory requirements when installing the plant described in this document.

This procedure describes a general method for the installation of the multiport terminal outside plant components associated with both the RPX® FlexNAP™System and Underground cabling solutions. The multiport terminals are available in 4, 8 and 12 OptiTap® connector port configurations (Figure 1).

The terminal has a flat profile SST-Ribbon™ fibre optic cable, factory installed, into one end of the terminal with an MT connector for plugging into the distribution cable.

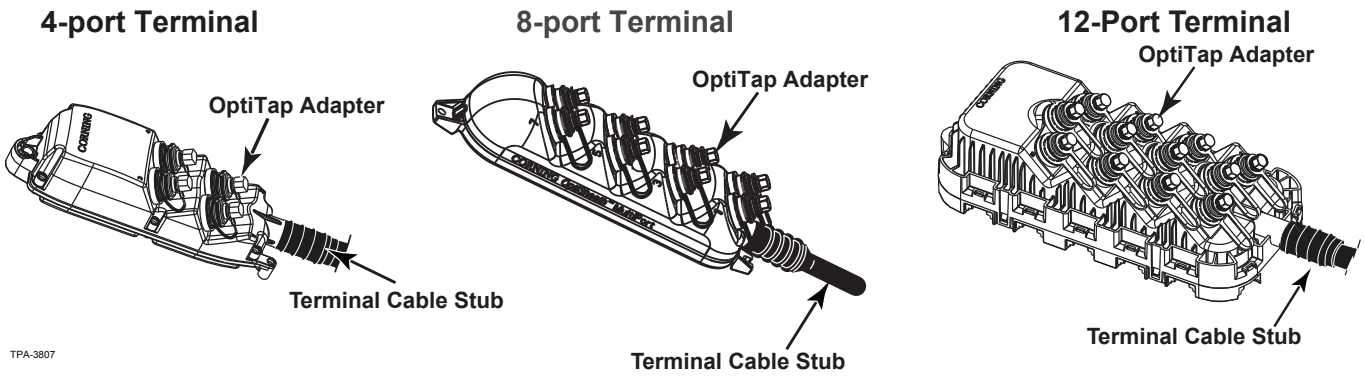


Figure 1

2. PRECAUTIONS

2.1. General Precautions

CAUTION: Before commencing any aerial or underground cable installation, all personnel must be thoroughly familiarized with all applicable Occupational Health and Safety (OH&S) regulations, local regulations and your company safety practices and policies.

Failure to do so can result in life threatening injury to employees or the general public.

WARNING: To reduce the change of accidental injury.

- Before work begins, all personnel must be thoroughly familiar with the operation of all equipment and procedures to be used during the installation.
- Before use, all equipment, especially safety gear, must be inspected and tested for proper operation. Replace and repair as necessary.
- Arrange or secure any loose articles to be taken aloft so that they cannot fall.
- Personnel going aloft must wear a safety harness or body belt and safety strap at all times. Additional safety gear, including linesman's gloves, eye protection, hard hats and other protective clothing should be worn as necessary.
- Before climbing a pole, it should be inspected for significant deterioration, insect nests, and other potential safety hazards. If work near power lines is required, appropriate caution should be exercised.
- Read the entire procedure before starting a multiport terminal installation. Thoroughly understand the procedure, its precautions, and the tools and equipment required before starting work.

2.2. Laser Precautions

WARNING: Never look directly into the end of a fiber that may be carrying laser light. Laser light can be invisible and can damage your eyes. Viewing it directly does not cause pain. The iris of the eye will not close involuntarily as when viewing a bright light. Consequently, serious damage to the retina of the eye is possible. Should accidental eye exposure to laser light be suspected, arrange for an eye examination immediately.

3. CABLE HANDLING PRECAUTIONS

CAUTION: Like any fibre optic cable, the multiport terminal tail is sensitive to damage during handling and installation. Such damage can degrade the cable's performance to the extent that replacement is necessary. In order to avoid damaging the cable, the following precautions should be observed during handling and installation.

3.1. Minimum Bend Radius

Excessive sharp bends can damage the fibres within fibre optic cable and render the cable unserviceable. The minimum bend radii for both tensioned and non-tensioned conditions are stated on the Corning Cable Systems data sheet.

NOTE: During all phases of installation it is crucial that the minimum bend radius not be violated. Carefully select equipment and procedures which will maintain this radius throughout the multiport terminal installation.

3.2. Rated Crush Strength

The rated crush strength for multiport terminal flat SST-Ribbon™ cable tail cable is stated on its respective cable data sheet. The rated crush strength must not be exceeded as damage may be caused to the cable.

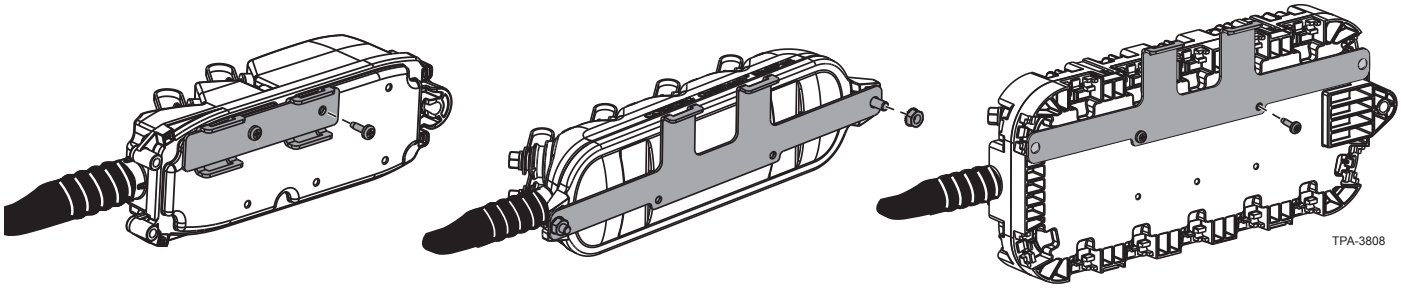
3.3. Equipment Inspection

All equipment to be used during handling and installation should be inspected for features which might damage the cable.

Examples of dangerous features are nails, broken flanges on cable reels, and damaged blocks.

4. INSTALLING MULTIPORTS (AERIAL PLANT)

NOTE: Prior to an aerial plant installation, remove the factory-installed pit mounting brackets (Figure 2).



4-port Terminal 8-port Terminal 12-port Terminal

Figure 2

4.1. Mount 4- or 12-port Multiports

The 4-port multiport is illustrated in this installation instruction, but the procedure for installing the mounting adapter is the same for 4-Port and 12-Port Multiport Terminal variants. Refer to the instructions provided with the terminal for details concerning the cabling to and from the multiport.

4.1.1 On a Wall or Wooden Pole

Step 1: Using a 6.35mm threaded fastener (not provided) appropriate for the mounting surface (Figure 3), secure the bottom adapter to the wall or pole through the hole in the center of the adapter. Tighten the fastener securely.

NOTE: Do not use fasteners that are not threaded, such as nails.

Step 2: Thread a cable strap through the bottom adapter and around the cable at the base of the terminal. Secure the cable strap with a locking head.

Step 3: Secure the top of the terminal to the wall or pole through the mounting hole at the top of the terminal using a 6.35mm threaded fastener (not provided).

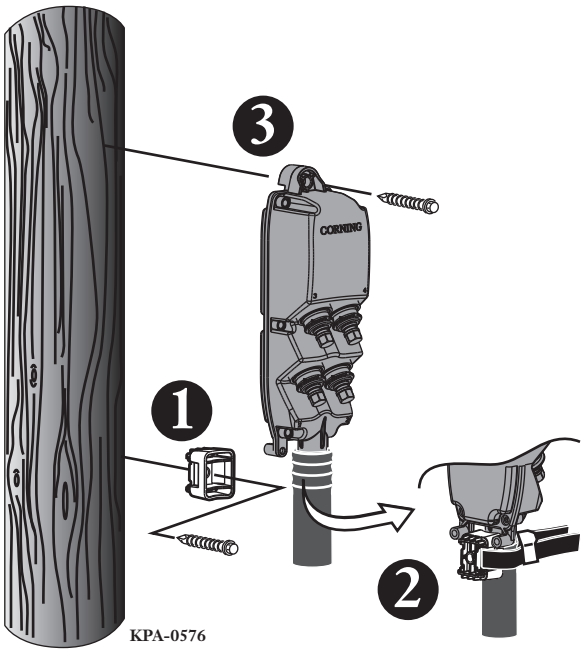


Figure 3

4.1.2 On a Metal or Concrete Pole Using Plastic Bands

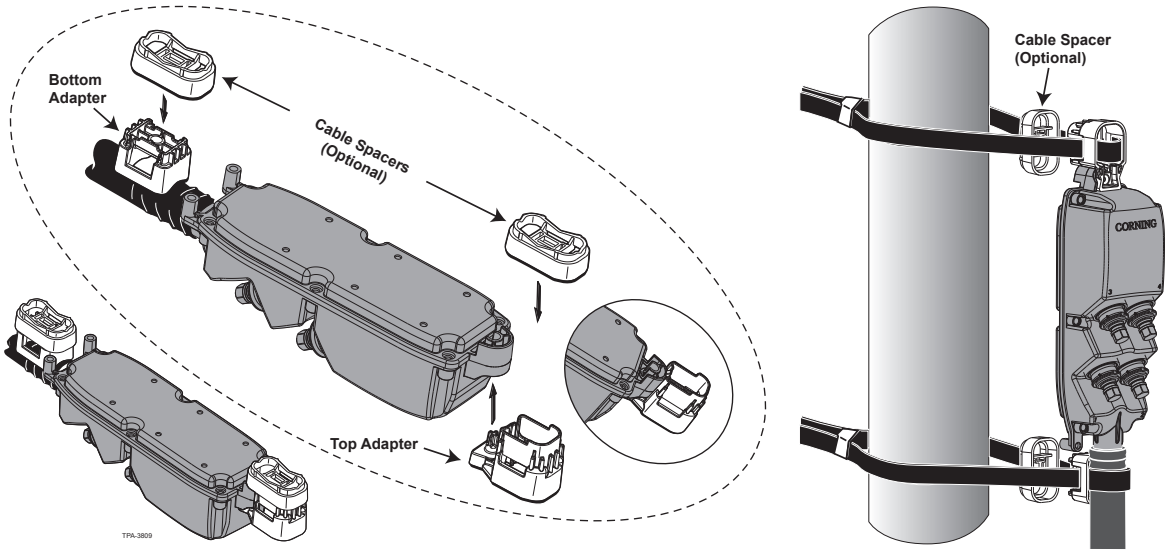


Figure 4

Step 1: Insert stud on top adapter into the mounting hole at the top of the multiport terminal as shown (Figure 4).

Step 2: Run cable straps through one side of the adapter and back through the other side of the adapter.

Step 3: **(OPTIONAL)** Place cable spacers (Deltec® modular stackable cable spacers Part No: TCP 5255) between terminal and pole behind the mounting adapters.

Step 4: Place bottom adapter behind the cable at the stubbed end of the terminal and repeat Step 2 and then Step 3, if applicable.

Step 5: Place terminal on the concrete or metal pole and position each cable strap.

Step 6: Install locking heads on each strap and draw tightly. Trim strap with side cutters as needed.

4.1.3 On a Metal or Concrete Pole Using Metal Straps

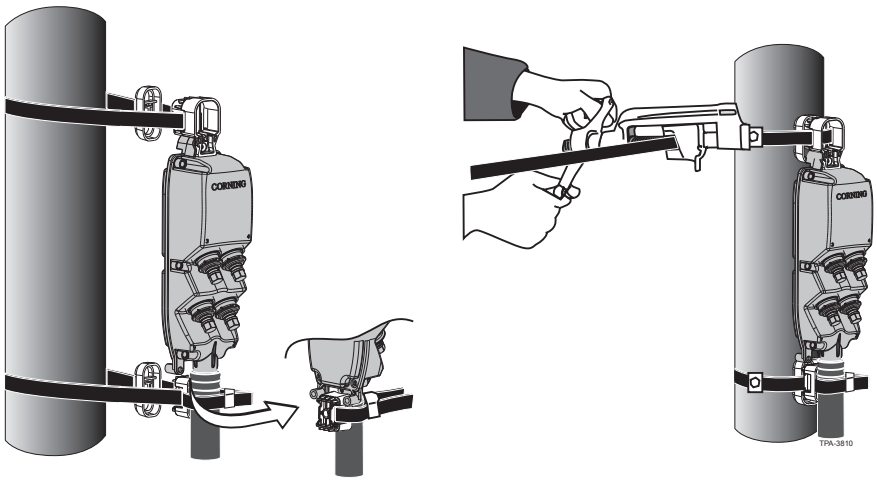


Figure 5

Step 1: Insert stud on top adapter into the mounting hole at the top of the multiport terminal as shown (Figure 5).

Step 2: Thread a cable strap through the bottom adapter and around the cable at the bottom of the terminal. Secure the cable strap with a locking head (Figure 5).

Step 3: Place cable spacers (Deltec® modular stackable cable spacers Part No: TCP 5255) on the adapters between the terminal and pole.

Step 4: Run a metal strap through the top and bottom mounting adapters and back out the other side of the adapters.

Step 5: Place terminal on the concrete or metal pole and position each cable strap around the pole.

Step 6: Using a Band-It®-type tool, tighten the metal straps around the pole (Figure 5).

4.2. 8 PORT MULTIPORTS

4.2.1 On a Wall or Wooden Pole

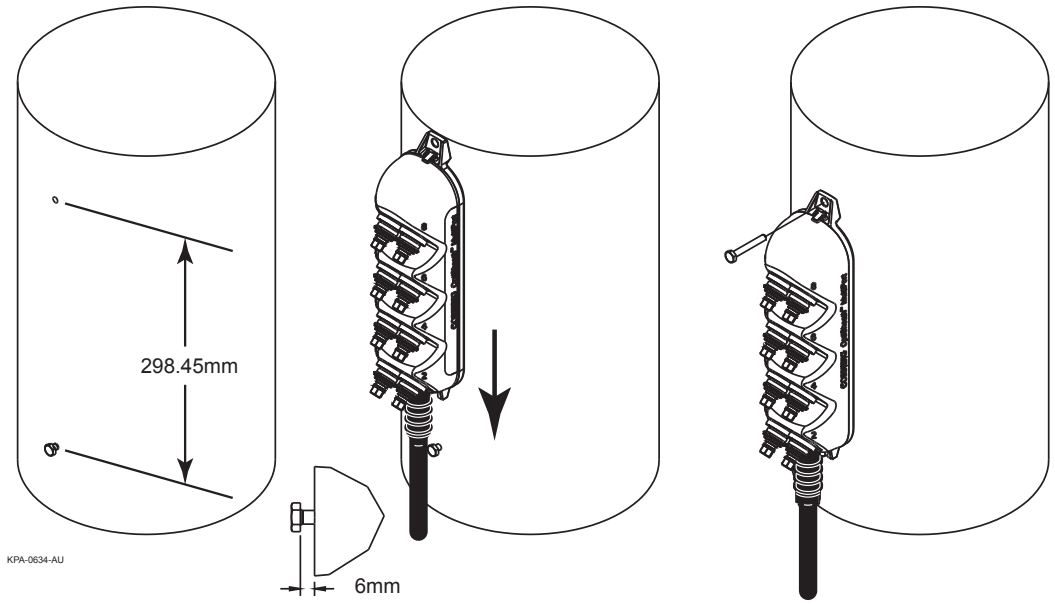


Figure 6

Step 1: Determine the location for the terminal. Insert a6.35mm threaded fastener (not provided) appropriate for the mounting surface at the point where the lower mounting ear will be secured. Leave 6mm space behind the fastener head (Figure 6).

Step 2: Slide the terminal onto the head of the fastener with the cable stub down. Insert another fastener through the mounting hole at the top of the terminal. Tighten the fastener securely.

Step 3: Secure the terminal cable stub within approximately 450mm of the terminal. Route the cable stub to the FlexNAP™ tether and mate terminal cable stub connector to FlexNAP cable tether adapter.

4.2.2 On a Metal or Concrete Pole

Step 1: Determine the location for the terminal.

Step 2: Insert metal bands (Part No: UCNKT-BND or equivalent band of 20mm or less width) through the slots on the back of the terminal. Secure the terminal to the pole with the straps (Figure 7).

Step 3: Secure the terminal cable stub within approximately 450mm of the terminal. Route the cable stub to the FlexNAP™ tether and mate terminal cable stub connector to FlexNAP cable tether adaptor.

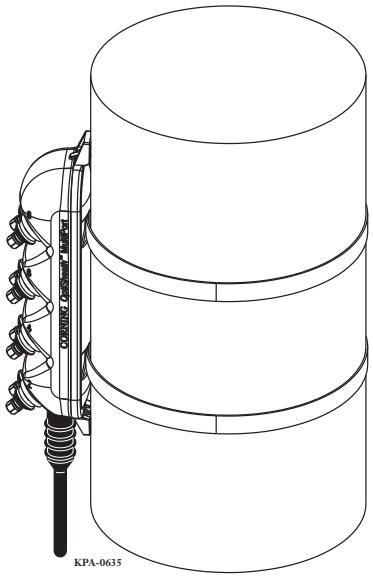


Figure 7

5. MATING A MULTIPORT TERMINAL TO A FLEXNAP TETHER

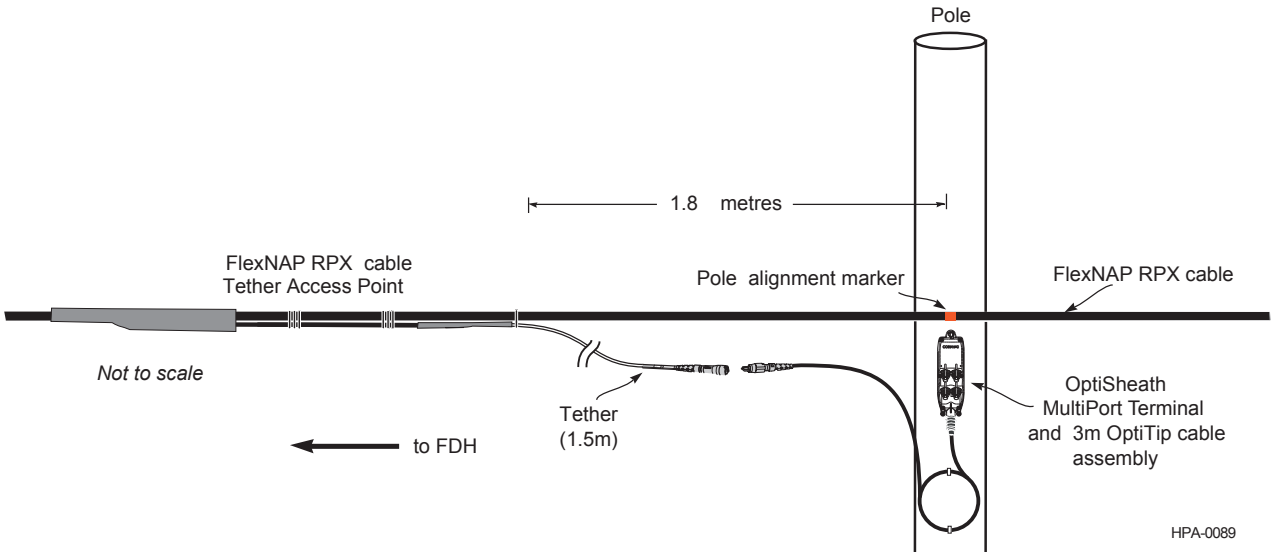


Figure 8

Step 1: Locate the appropriate tether assembly from the FlexNAP distribution cable (Figure 8).

Step 2: Remove the dust cap from the tether assembly by rotating counter-clockwise (Figure 9).

NOTE: The terminal assembly's dust cap has a tamper-proof factory seal which verifies that the connector has been cleaned and tested before shipping. This seal will break during dust cap removal.

If the seal is already broken, visually examine the connector end-face to ensure the end-face has not been exposed to dust or other contaminants. If necessary, clean the connector end-face with an OptiTip® MT cleaning tool as per the instructions provided with the tool.

Step 3: To remove the terminal assembly's dust cap, hold the dust cap with one hand and rotate the coupling nut (Figure 9).

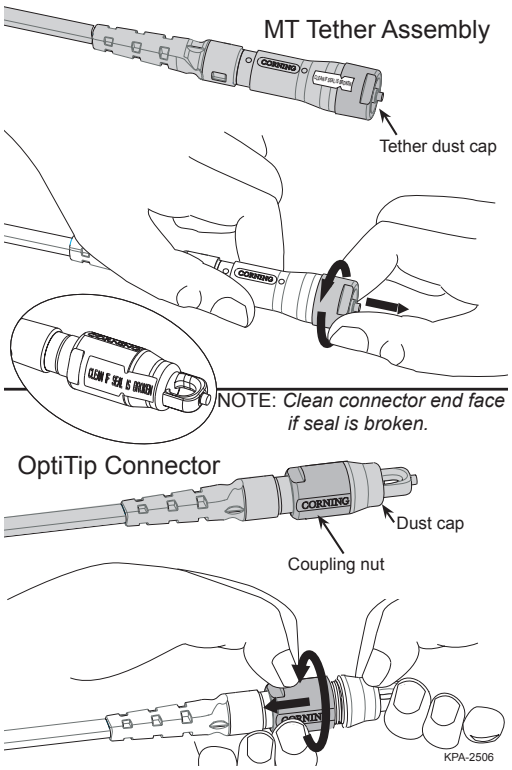


Figure 9

Step 4: Locate the reference keys on each assembly (Figure 10).

Step 5: Align the reference keys and gently rotate the assembly coupling nut onto the tether assembly until the nut is hand tight.

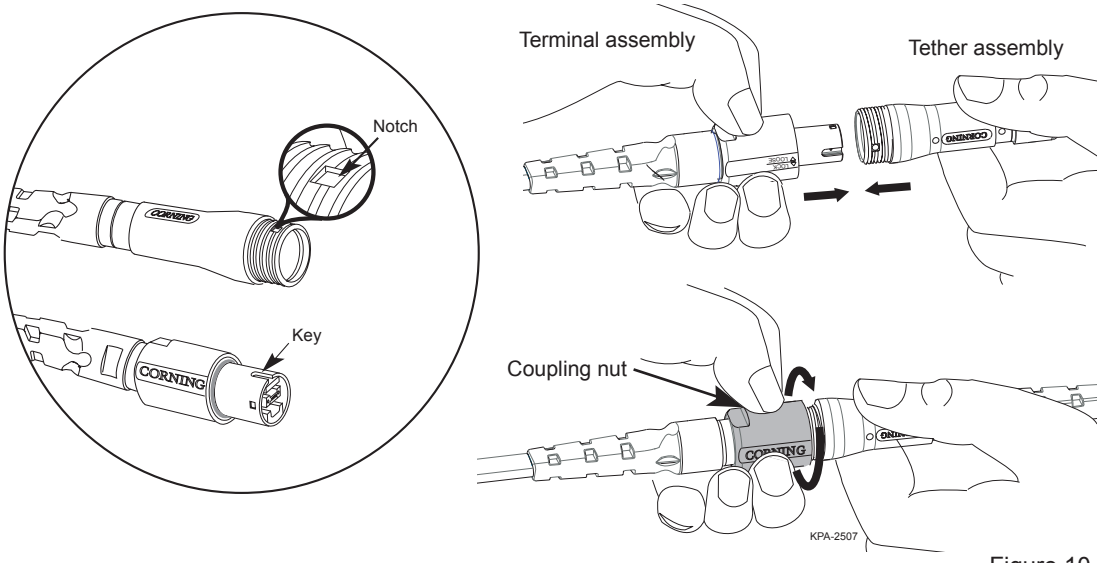


Figure 10

6. INSTALLING MULTIPORT TERMINALS (UNDERGROUND PLANT)

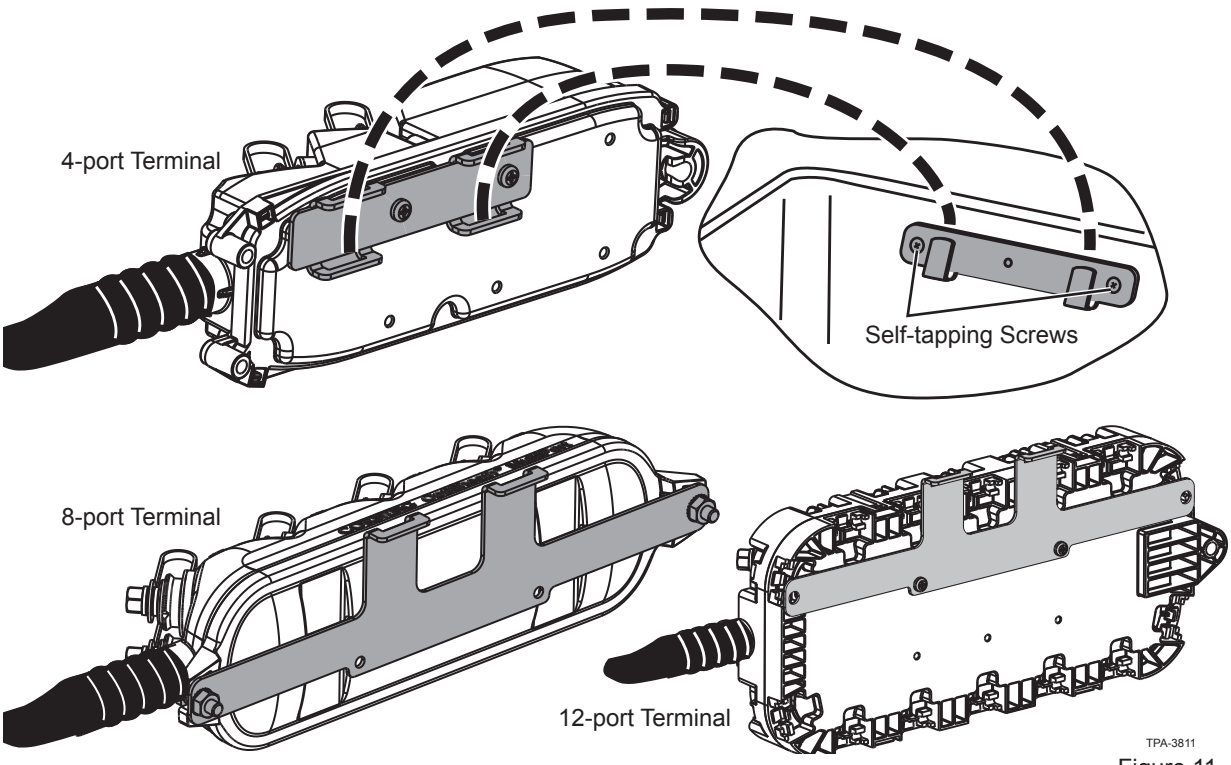


Figure 11

Step 1: Position the terminal on the pit wall in a corner as shown in Figure 11 to allow maximum bend radius in the cable. Drill appropriate size holes in the pit wall and attach the pit mounting bracket using supplied self-tapping screws.

Step 2: Slide the slots on the terminal mounting hardware onto the fingers of the pit mounting bracket as per Figure 11.

7. CLEANING MULTIPORT STUB/TETHER MT CONNECTORS

This section describes how to use the OptiTip® MT Cleaning Tool (p/n TKT-OTMT-CLN-002) (Figure 12) to clean the end-faces of MT connectors in FlexNAP™-MT terminal distribution system tether, as well as underground SST-Ribbon™ tether cables, and multiport terminal stub assemblies.

Cleanliness is the key to a high performance fiber optic network. Contaminated connectors are the single biggest cause of poor performance. For this reason, proper handling and cleaning is especially important during installation and optical acceptance testing.

Each time a contaminated connector ferrule is inserted into the connector adapter, some of the debris will inevitably remain inside the adapter. When a mating connector plug is inserted, the contaminants are pushed into the mating surface. At the very least, this will have adverse effects on return loss and attenuation. In the worst case, the contaminants may cause permanent damage to the connectors.

The following cleaning process shall apply to ensure connector performance:

- Always keep dust caps on connectors and adapters when not in use.
- Ensure dust caps are clean before reuse.)
- Clean the connector before every mating, especially for test equipment patch cords.

WARNING: Never look directly into the end of a fiber that may be carrying laser light. Laser light is invisible and can damage your eyes. Viewing it directly does not close involuntarily as when viewing a bright light. Consequently, serious damage to the retina of the eye is possible. Should accidental eye exposure to laser light be suspected, arrange for an eye esamination immediately.

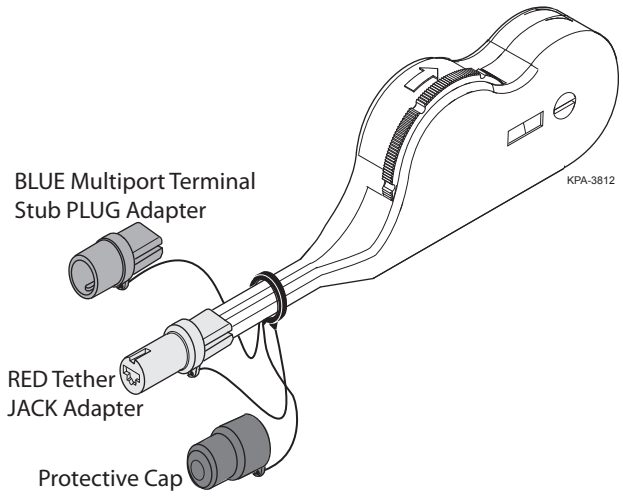


Figure 12

7.1. Precautions

CAUTION: Always keep dust caps installed on OptiTip-MT assemblies when they are not in use. Dust and other contaminats on connector end faces can degrade system performance.

CAUTION: Do not attempt to disassemble and reuse cleaning tape. This can cause damage to the connector end face. Do not pull the clening tape; only use the thumb wheel.

7.2. OptiTip MT Tether Assembly (JACK) Cleaning Tool

Step 1: Select the “JACK”-labelled tether assembly cleaning adaptor from the kit (Figure 13). Note the slot on top of the adapter.

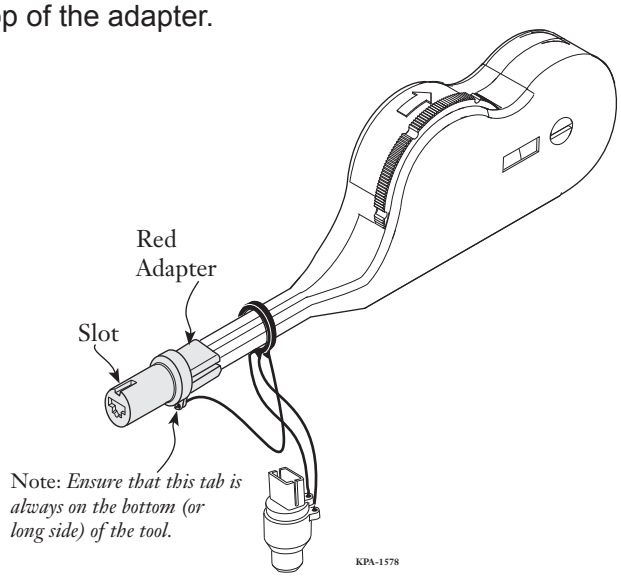


Figure 13

Step 2: Remove the dust cap from the FlexNap-MT tether assembly (Figure 14).

Step 3: Look for the square notch on the threads of the tether for adapter orientation (Figure 15). The slot on the adapter must be aligned with this notch to fit over the connector end-face inside the tether.

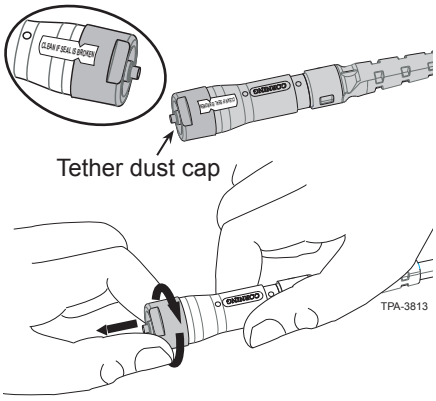


Figure 14

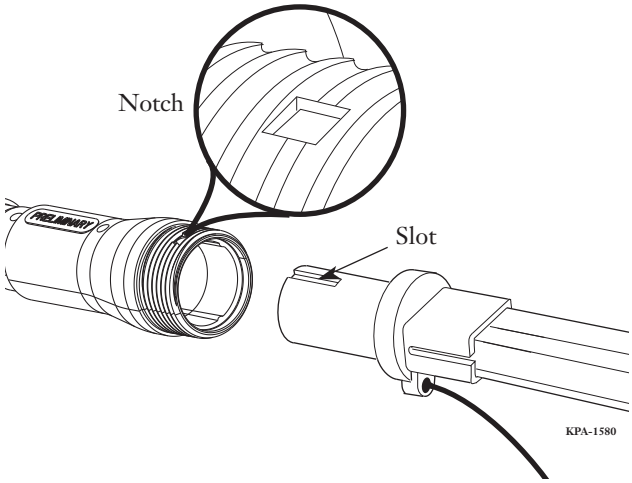


Figure 15

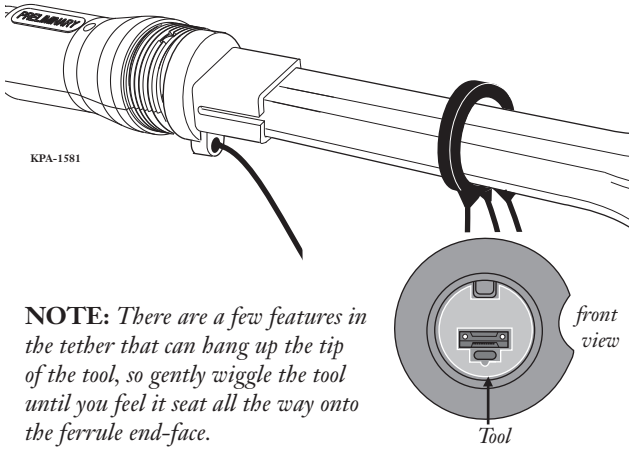
NOTE: If the tamper proof seal on the FlexNAP tether assembly is intact (Figure 14 inset), cleaning of the connector end-face on the tether will not be required as the connector end-face is factory cleaned. If the tamper proof seal be broken, visual inspection of the connector end-face should be conducted, and if required, cleaned, prior to connection with multiport stub assembly.

7.2.1 Cleaning Tether Connector End-Face

Step 1: Gently insert the tip of the adapter into the tether until the adapter butts against the end of the tether (Figure 16).

NOTE: There are a few features in the tether that can hang up the tip of the tool, so gently wiggle the tool until you feel it seat all the way onto the ferrule end-face.

CAUTION: Do not use excessive force during insertion as this may cause damage to both the connector and the tool.



NOTE: *There are a few features in the tether that can hang up the tip of the tool, so gently wiggle the tool until you feel it seat all the way onto the ferrule end-face.*

Figure 16

Step 2: Rotate the thumb wheel two “clicks” as shown in Figure 17.

NOTE: A “click” is visually indicated by the large grooves on the thumb wheel.

Do not attempt to rotate the wheel in the wrong direction. The wheel should not be difficult to turn, if it is, back off on the pressure applied so that the ferrule can still be felt, but the tape turns easily.

Do not attempt to disassemble and re-use cleaning tape. This can cause damage to the connector end-face. Do not pull the cleaning tape, only use the dial.

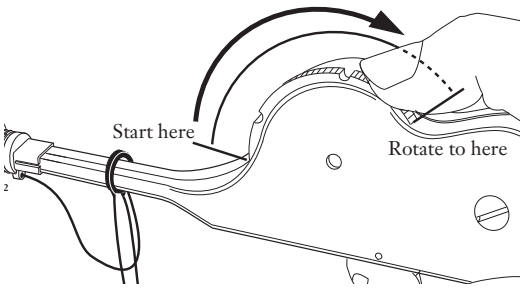


Figure 17

Step 3: The cleaning process is now complete. Remove the tool from the tether. Reinstall the dust cap until you are ready to mate the tether to a terminal stub assembly.

7.3. OptiTip® MT Multiport Stub Assembly (Plug) Cleaning Tool

Step 2: Select the “PLUG”-labelled tether assembly cleaning adapter from the kit. Note the key inside the adapter (Figure 18).

Step 3: Hold the stub assembly’s dust cap with one hand and back off the coupling nut as shown in Figure 19 to access the end of the terminal stub assembly.

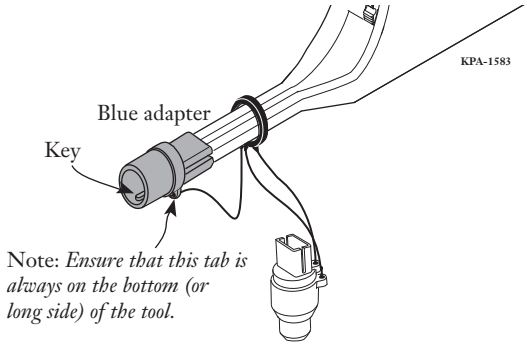


Figure 18

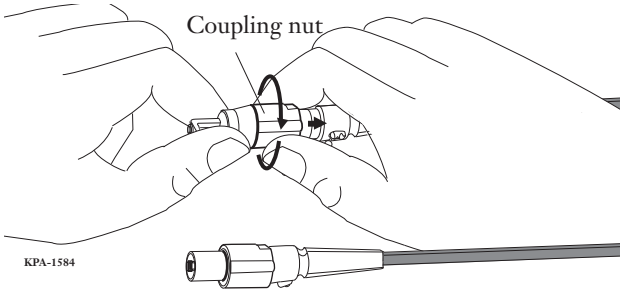


Figure 19

7.3.1 Cleaning Multiport Stub Assembly Connector End-Face

Step 1: Align the keys of the PLUG cleaning adapter and the stub assembly as shown in Figure 20.

Step 2: Slide the end of the adapter over the stub until it stops. Rotate the thumb wheel two“clicks” (Figure 17).

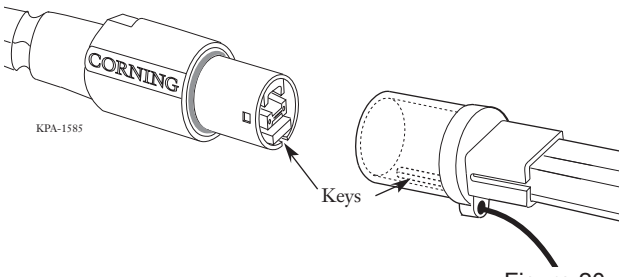


Figure 20

NOTE: A “click” is visually indicated by the large grooves on the thumb wheel.

Do not attempt to rotate the wheel in the wrong direction. The wheel should not be difficult to turn, if it is back off on the pressure applied so that you can still feel the end-face but the tape turns easily.

Step 3: The cleaning process is now complete. Remove the tool from the multiport stub assembly. Reinstall the dust cap until you are ready to mate the terminal stub assembly to a tether.

8. MATING AN OPTITAP® CONNECTOR TO AN OPTITAP ADAPTER

8.1. Clean OptiTap Connector

WARNING: Never look directly into the end of a fiber that may be carrying laser light. Laser light is invisible and can damage your eyes. Viewing it directly does not close involuntarily as when viewing a bright light. Consequently, serious damage to the retina of the eye is possible. Should accidental eye exposure to laser light be suspected, arrange for an eye esamination immediately.

8.2. Clean OptiTap® Adapters

Step 1: Remove the protective plug from the OptiTap adapter where the connector will be mated (Figure 21).

Step 2: Use the Corning IBC™ Brand Cleaner (Corning p/n CLEAN-PORT-OTAP) to clean the connectors and adapters before mating. Follow the instructions provided with the cleaning tool.

Step 3:

8.3. Mate Connectorized OptiTap Drop Cable

Step 1: Insert the connectorized drop cable into the OptiTap adapter. Orient the arrow on the connector tang with the notch in the adapter (Figure 21).

Step 2: Screw the connectorized drop cable connecting hardware into the OptiTap adapter.

Step 3: Screw the OptiTap adapter plug into the connectorized drop cable protective cap.

Step 4: Repeat Section 8.3 for all connectorized drop cables.

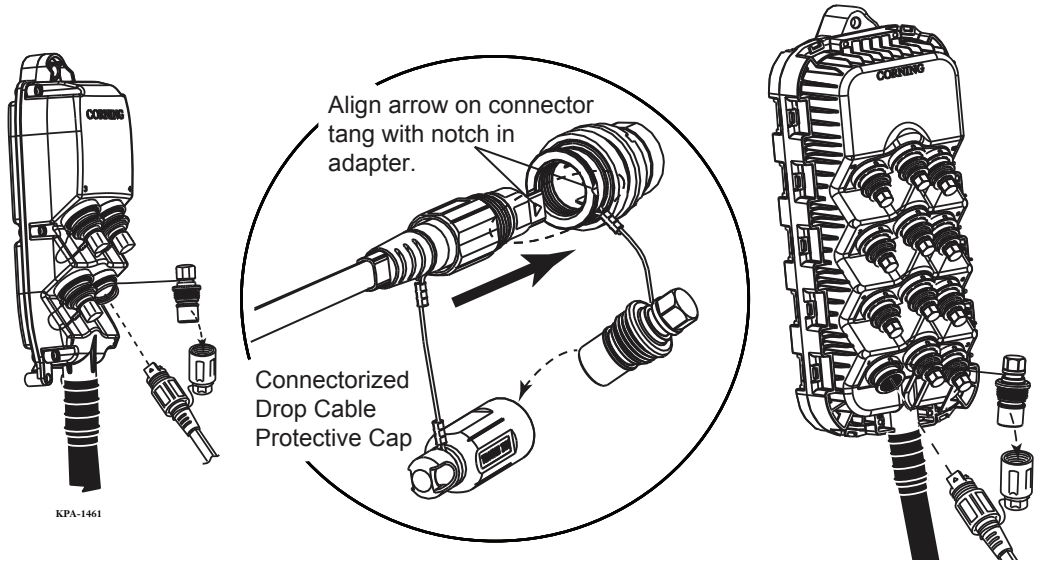


Figure 21

This publication has been prepared and written by Corning Cable Systems. Other than for the purposes of and subject to the conditions prescribed under the Copyright Act, no part of it may in any form or by any means (electronic, mechanical, microcopying, photocopying, recording or otherwise) be reproduced, stored in a retrieval system or transmitted without prior written permission from the document controller. Product or company names are trademarks or registered trademarks of their respective holders.

The contents of this publication are subject to change without notice. All efforts have been made to ensure the accuracy of this publication. Notwithstanding, Corning Cable Systems does not assume responsibility for any errors nor for any consequences arising from any errors in this publication.

Corning Cable Systems Pty. Ltd • 74-84 Main Road • Clayton, Victoria 3168 Australia
+61 3 9538 2300 • FAX: +61 3 9538 2316 • http://www.corning.com/cablesystems

Corning Cable Systems reserves the right to improve, enhance, and modify the features and specifications of Corning Cable Systems' products without prior notification. OptiTap, OptiTip, and RPX are registered trademarks of Corning Cable Systems Brands, Inc. FlexNAP, OptiSheath, and SST-Ribbon are trademarks of Corning Cable Systems Brands, Inc. IBC is a trademark of USConec Ltd. All other trademarks are the properties of their respective owners. Corning Cable Systems is ISO 9001 certified.

© 2011 Corning Cable Systems. All rights reserved. Published in the USA.