

CORNING

Evolv[®] Drop Assemblies with Pushlok[®] Technology

P/N 009-236-AEN, Issue 9

related literature Search www.corning.com/opcomm . Click on “Resources/Standard Recommended Procedures.”	
009-237-AEN	Evolv[®] Port Cleaner (with Pushlok[®] technology)
CRR-041-AEN	Visual Installation Instructions ROC[™] Dielectric Drop Cables with FastAccess[™] Technology
004-180	Installation Guide for ROC Drop Dielectric and Toneable Cable with FastAccess Technology
009-235-AEN	Evolv[®] Terminals with Pushlok[®] Technology
005-066	Access Tool for SST-Drop[™] Cables

1. Planning

This procedure describes a general method for installing Pushlok[®] drop cable assemblies. Pushlok drop cable assemblies are outside plant drop cables with a Pushlok connector on one end. The other end could be a pigtail, Pushlok connector, inline OptiTap[®] connector or a SC APC connector. The Pushlok connector features a protective cap, which can accommodate a pull line. The SC APC connector can be captured inside a pulling grip to accommodate a pull line and protect the connector during installation.

Cable Type	Installation Methods	Max Cable Tension Short-Term	Minimum Bend Radius-Loaded	Minimum Bend Radius-Installed
ROC Drop	Aerial, Duct, Direct Buried	1350 N (300 lbf)	63 mm (2.46 in)	63 mm (2.46 in)
Dual Drop	Aerial, Duct, Direct Buried	1000 N (225 lbf)	50 mm (1.97 in)	25 mm (0.98 in)
Clearcurve [®] Rugged Drop	Duct, Indoor	450 N (100 lbf)	4 mm (0.16 in)	4 mm (0.16 in)
SST Drop	Aerial, Duct, Direct Buried	1350 N (300 lbf)	80 mm (3.15 in)	80 mm (3.15 in)
Round ROC	Aerial, Duct, Direct Buried	1350 N (300 lbf)	63 mm (2.46 in)	63 mm (2.46 in)
Long Span ROC	Aerial, Duct, Direct Buried	1560 N (350 lbf)	117 mm (4.61 in)	135 mm (5.31 in)

TPA-6938C

2. Components

Figure 1 provides a pictorial description of the components of a drop cable preconnectorized with a Pushlok connector.

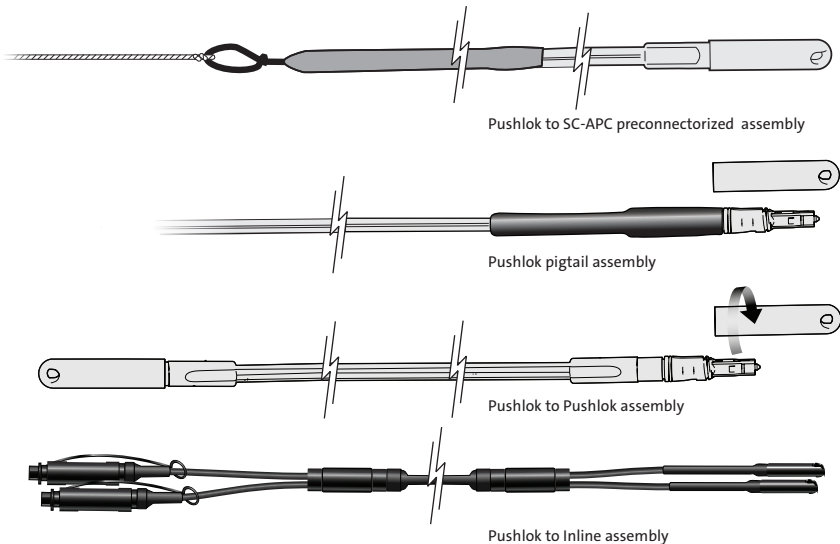


Figure 1


TPA-7064

3. Storage and Unpacking

a: Storage of drop assemblies:

- Pushlok® to SC APC preconnectorized assemblies should not be stored outdoors. The SC APC end of the drop assembly is not an outdoor, rugged connector and is indoor only rated. Exposure to the elements (heat, moisture, etc.) can cause damage to the connector or furcation portion of the assembly.
- Pushlok to Pushlok assemblies, and Pushlok to inline assemblies can be stored outdoors due to having outdoor, ruggedized connectors on each end of the assembly.

b: Unpacking flat-profile drop cables:

	<p>WARNING: Unrestrained cable ends may cause injury to your eyes or body and can damage the cable, fitting, or fibers if suddenly released from a coil. Wear eye protection and use extreme care when handling a coiled cable assembly that uses flat-drop cable — gently release the energy stored in the cable coil to avoid possible personal injury or damage to the cable or fitting components.</p>
---	---

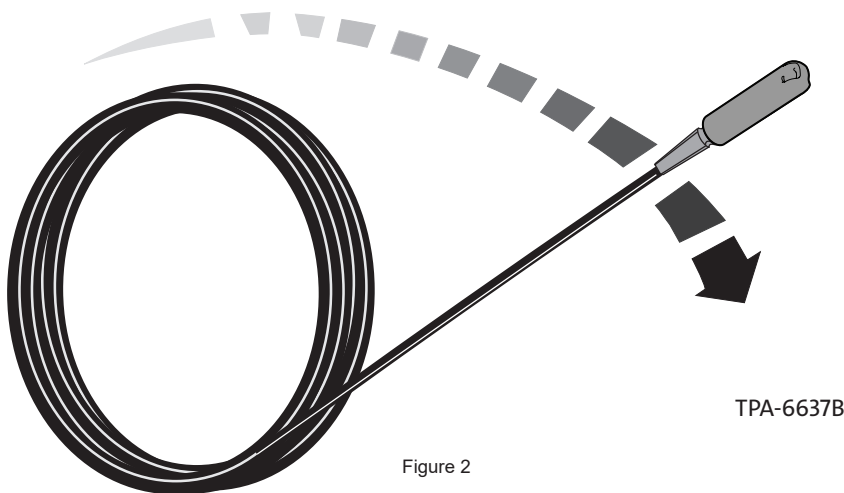
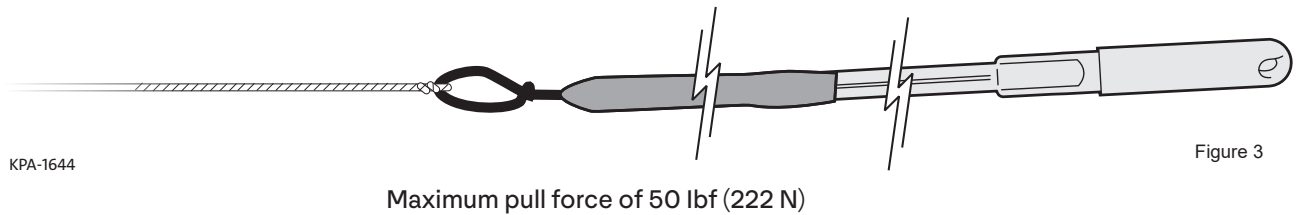


Figure 2

4. Pulling Drop Cable through Duct to Premises

Step 1a: When pulling through a duct, it is recommended to pull the drop cable from the network access point (NAP) toward the optical network terminal (ONT). Attach the pulling rope to the eye of the protective pulling grip of the cable and pull the cable through the duct to the ONT. Ensure that you do not exceed 50 lbf (pounds force) on the cable. The SC protective pulling grip is designed to be pulled in a 1 inch (25 mm) duct or larger (Figure 3).



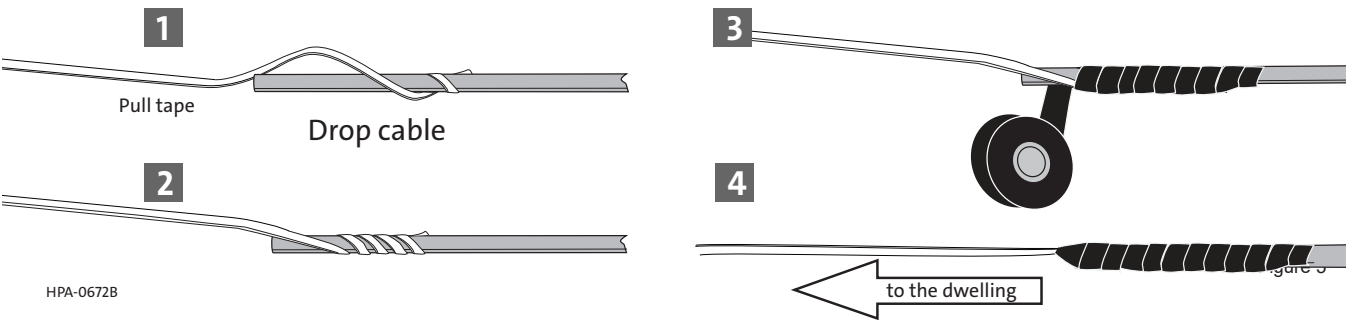
Step 1b: The dust cap on the Pushlok® connector has a pulling eye built in. Connect this eye to the pull string to install the cable into the duct. Ensure that you do not exceed 100 lbf tension on the cable. It is also recommended to use a swivel between the pull string and connector assembly, or apply tape around the connector, from the pull string to the boot. The Pushlok connector is designed to be pulled in a 3/4 inch duct or larger (Figure 4).



Step 1c: If the cable assembly is a pigtail, pulling or pushing the bare end can allow for use of a smaller duct. See the table below for the duct sizes you can install your cable into. ROC drop cable can be pushed into duct as small as 8mm ID. To pull the bare-cable end of the pigtail, tightly wrap the free end of the pull tape around end of the cable and secure the pull tape in place with vinyl tape (Figure 5).

Cable Type	Minimum Duct ID Pushing	Minimum Duct ID Pulling	Max Tensile Load Short-Term
ROC Drop	8 mm	10 mm	1350 N (300 lbf)
Dual Drop	8 mm	10 mm	1000 N (225 lbf)
SST Drop	14 mm	16 mm	1350 N (300 lbf)
Round ROC	8 mm	10 mm	1350 N (300 lbf)

TPA-6939A



HPA-0672B

5. Aerial Drop Installation

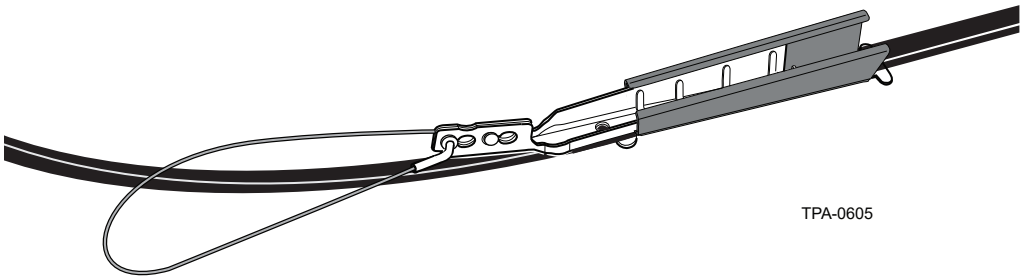
Step 1: Pull the jumper to the exterior of the dwelling, ensuring that you do not exceed 50 lbf (222 Newtons) of force on the cable. Coil any excess of the outdoor portion of the cable at the multipoint terminal's pole.

Step 2: NESC heavy loading conditions limit drop cable spans to 150 feet (46 m) for ROC, SST and Round ROC, and 164 feet (50 m) for dual drop. Long span ROC is rated for 400 feet (120 m) pole spans under NESC heavy loading. Contact Corning Optical Communications for other applications. It is acceptable to use mid-span clamps on a messenger to support the drop cable where spans will exceed this length.

Step 3: Slack loops may be added as required by local practices. To add slack loops, place one or more 6-inch (15 cm) diameter loops on the slack-end of the cable before routing the cable to the termination hardware. Secure the slack loops with cable ties.

Step 4: Use the proper fiber optic dead-end clamp to secure the cable in aerial applications (Figure 6).

CAUTION: Do not place drip loops in the cable during installation. Forming a drip loop in the cable will most likely exceed the bend radius or break the cable's strength members, causing fiber damage and attenuation.



TPA-0605

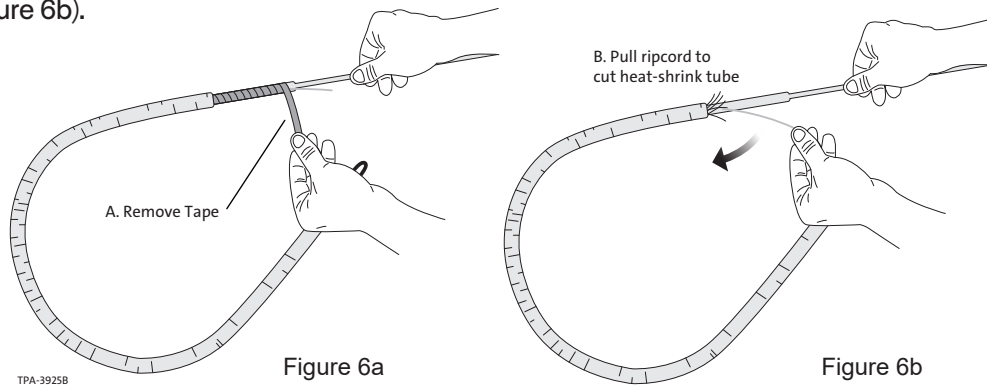
Figure 6

6. Terminating the Drop Cable at the Premises

Step 1: Remove the tape at the base of the grip (Figure 6a).

Step 2: Slide outer mesh up past heat-shrink tube.

Step 3: Remove remaining tape, and pull the ripcord to cut the heat-shrink tube longitudinally (Figure 6b).



Step 4: Remove the pulling grip and heat-shrink tube at the same time to expose the internal cable with the SC APC connector (Figure 7).

Step 5: Remove the water-resistant bag from the connector.

Step 6: Access the ONT.

Step 7: Inspect and clean each adapter and connector per standard company practices before mating.

Step 8: Secure and route the internal cable into the ONT as per the ONT manufacturer's recommendations.

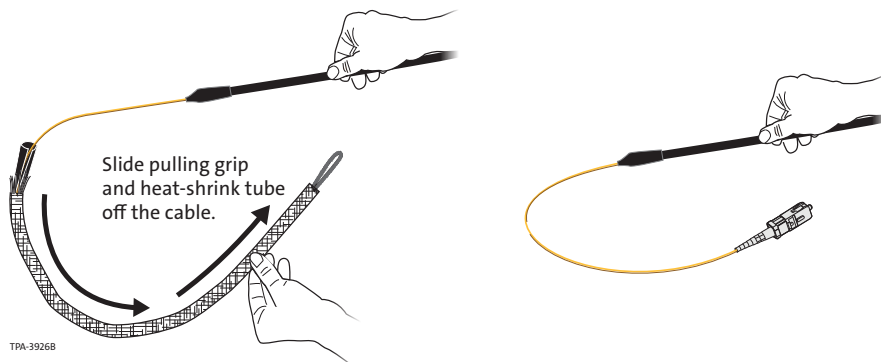


Figure 7

7. Installation

7.1 Connecting a Drop Cable to a Terminal

Clean the connectors with the Optical Connector Cleaning Kit (p/n CLEANER-PUSHLOK), as described in the instructions provided with the kit (Figure 8).

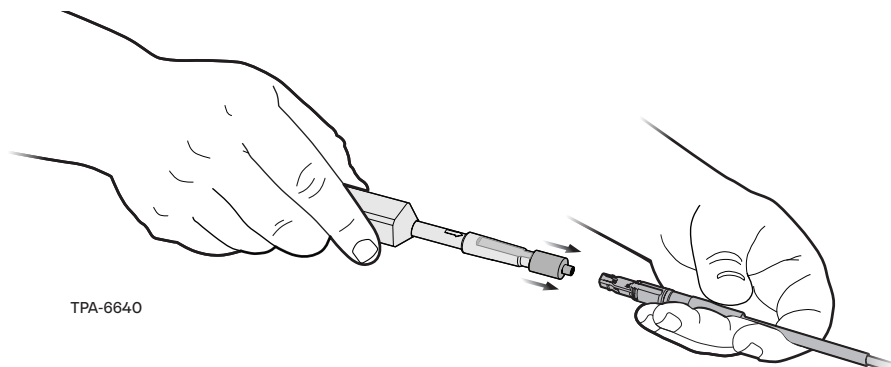


Figure 8

7.2 Cleaning Evolv® Terminal Ports with Pushlok® Technology

NOTE: Use of single-fiber port cleaner (CLEANER-PUSHLOK) is also approved for cleaning connectors and ports.

Step 1: Remove the protective plug from the port where the connector will be mated (Figure 9).

Step 2: Use the Optical Connector Cleaning Kit, as described in the instructions, to clean the connector inside the port.

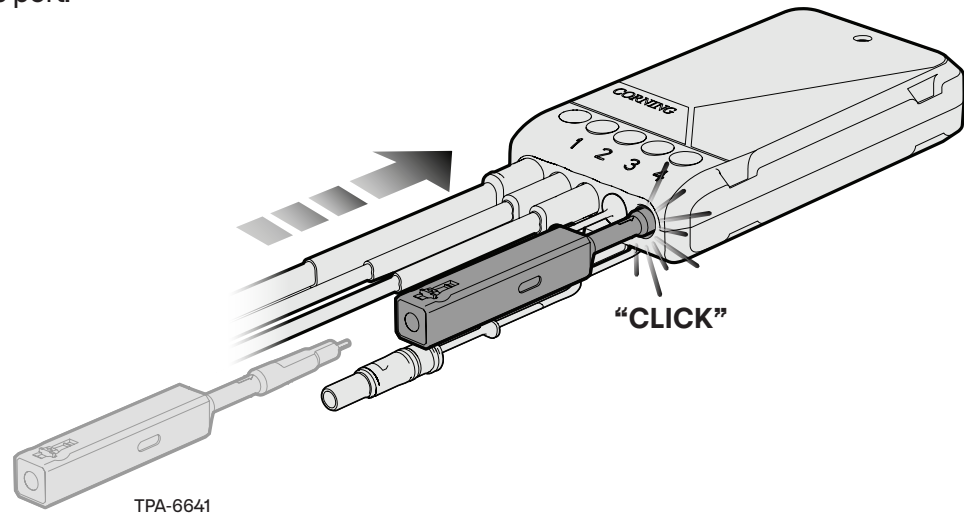


Figure 9

7.3 Mating Evolv Drop Cable Assemblies with Pushlok Technology

Step 1: Depress the button for the port and pull out the dust plug. Remove the dust cap from the connector. (Figure 10)

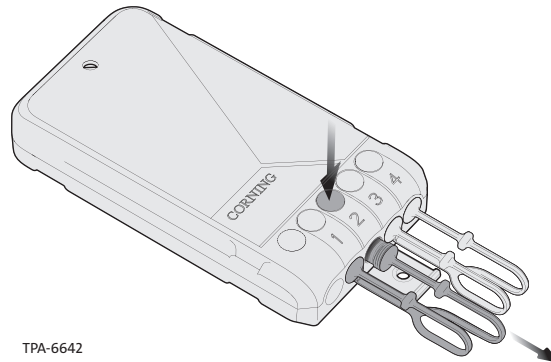


Figure 10

Step 2: Align the notch on top of the connector with the port button on the terminal. (Figure 11)

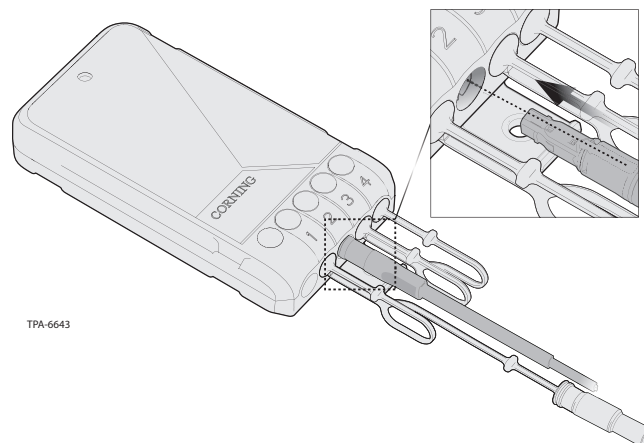
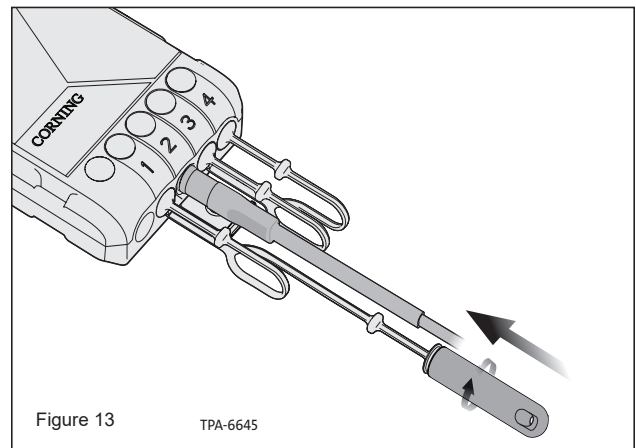
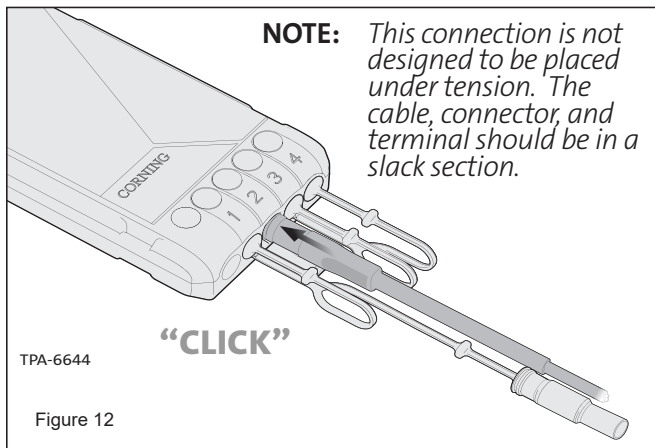


Figure 11

Step 3: Insert the drop connector into the terminal port, until the button clicks and the latch is engaged. (Figure 12)

Step 4: Connect the terminal port dust plug with the connector dust cap (Figure 13).

Step 5: Repeat Section 7.3 for all connectorized drop cables.



8. Mating Drop Cable Assemblies with Pushlok® Technology to an Evolv® Terminal After Initial Installation

After the initial installation, the sealed terminal may become covered with mud and dirt due to normal ground water or flooding. Although these contaminants on the outside of the housing will not affect the performance of the unit, care must be taken when removing the drop port dust plugs for drop cable installation to prevent loose dirt particles from entering the adapter sleeve and contaminating a connector end-face.

NOTE: Only use clean water to wash the outer housing. Do not use any type of solvent.

NOTE: This connection is not designed to be placed under tension. The cable, connector, and terminal should be in a slack section.

Step 1: Remove any cable ties or hardware securing the terminal and stubbed cable.

Step 2: When handling the terminal, support the terminal and its cable stub to prevent kinking the cable stub at the entrance of the terminal.

Step 3: For light dirt and dust, soak a rag or towell with clean water and gently clean the housing. Wipe dry with a clean, dry rag or towel. For heavy, caked-on mud and dirt, spray the terminal with low-pressure water such as from a garden sprayer. A soft-bristled brush may also be used to lightly scrub the housing to loosen the mud and dirt. Remove any remaining dirt with a water-soaked rag or towel and wipe dry with a clean, dry rag or towel.

Step 4: If disconnecting a drop from an installed terminal, there may be dirt particles on the drop connector and around the terminal port. In this instance, use a dampened foam swab inserted shallowly into the port and swabbed to remove debris. For re-mating drops that may have debris accumulation on them, wipe with a dry cloth to remove any debris accumulated around the connector behind the O-ring.

Although the unit should now be generally clean, there may still be dirt particles around the connector port plugs and lanyards. Therefore, before removing a plug, first turn the terminal so that the adapters face downward and then disconnect the selected plug. In this way, any stray dirt particles will fall to the ground instead of into the port.

Use the Corning Optical Connector Cleaning Kit as described in Sections 7.1 and 7.2 to clean the Pushlok drop cable assembly and connector ports.

Keep the ports facing down while inserting and connecting the drop cable assembly.

Insert the connectorized drop cable into the drop connector port. Orient the notch on the connector with the port button in the terminal (Figure 11).

9. Converting an Evolv® Drop Cable with Pushlok® Technology to mate with an OptiTap® Connector

NOTE: To avoid contamination of the connector, it is recommended to install the conversion hardware directly before mating to the OptiTap® port/connector.

Step 1: Make sure coupling nut is assembled on the converter housing. The threads on the coupling nut should be facing towards the tangs on the housing. (Figure 14)

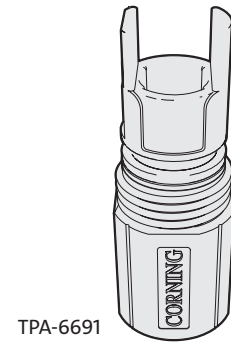


Figure 14

Step 2: Place the converter housing over the Pushlok® connector. Screw the converter onto the connector clockwise, until it hits a hard stop and will not screw on any further. (Figure 15)

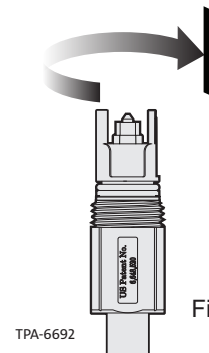


Figure 15

Step 3: After Step 2, the connector may not be perfectly aligned inside the converter body (Figure 16, Left). The flat sides of the connector should be parallel to the flat sides inside the converter. Unscrew the converter housing a fraction of a turn (approximately 5 degrees) until it is in the correct orientation (Figure 16, Right). Do NOT unscrew more than necessary.

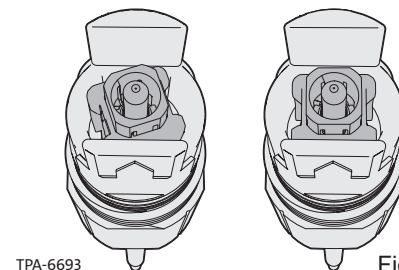


Figure 16

Step 4: Place the retainer clip over the converter housing, ensuring that it clears the front of the connector and snaps in place. Once it is snapped in place it cannot be removed (Figure 17).

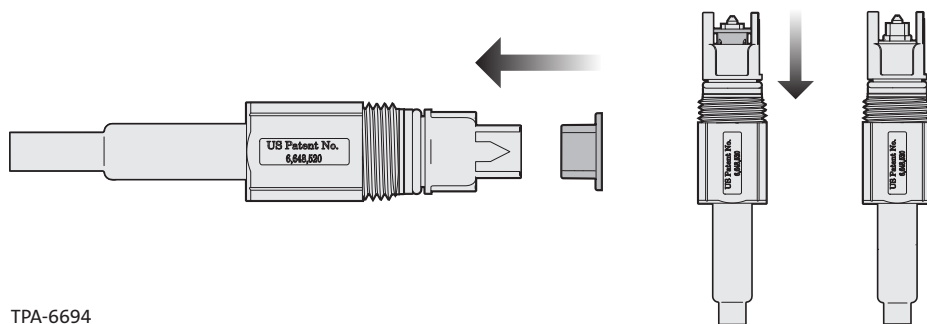


Figure 17