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Installation Guide for the TKT-UNICAM Tool Kit

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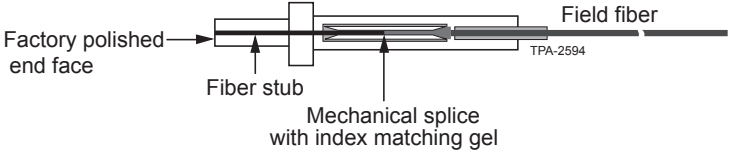
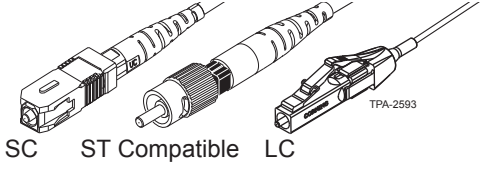
Table of Contents

Introduction

This manual describes how to install Corning Cable Systems UniCam® LC, SC, and ST® Compatible connectors. This document describes installation of both multimode and single-mode connectors.





Please become familiar with the entire manual before starting to install a connector.

Visit www.corning.com/cablesystems/unicam for more information and videos showing this procedure.

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Safety Precautions

Safety Glasses

	**CAUTION:** Recommend the use of safety glasses (spectacles) conforming to ANSI Z87, for eye protection from accidental injury when handling chemicals, cables, or working with fiber. Pieces of glass fiber are very sharp and have the potential to damage the eye

Chemical Precautions - Fiber Optic Cleaning Fluid

	**CAUTION:** Fiber Optic Cleaning Fluid can cause irritation to eyes on contact. In case of eye contact, immediately flush eyes with water for at least 15 minutes. Inhaling fumes may be harmful. Use with adequate ventilation. In case of ingestion, consult a physician..

Glass Fiber Safety

	**CAUTION:** Cleaved or broken glass fibers are very sharp and can pierce the skin easily. Do not let these pieces of fiber stick to your clothing or drop in the work area where they can cause injury later. Use tweezers to pick up cleaved or broken pieces of glass fibers and place them on a loop of tape kept for that purpose alone. **Good housekeeping is very important.**

Cable Handling

	**CAUTION:** Fiber optic cable is sensitive to excessive pulling, bending, and crushing forces. Consult the cable specification sheet for the cable you are installing. Do not bend the cable more sharply than the minimum recommended bend radius. Do not apply more pulling force to the cable than specified. Do not crush the cable or allow it to kink. Doing so may cause damage that can alter the transmission characteristics of the cable; the cable may have to be replaced.

Laser Safety

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.

Magnifier Safety

WARNING: DO NOT use magnifiers in the presence of laser radiation. Diffused laser light can cause eye damage if focused with optical instruments. Should accidental eye exposure to laser light be suspected, arrange for an eye examination immediately.

For additional safety information, please visit www.corning.com/cablesystems/safety.

1. GETTING STARTED

1.1. TKT-UNICAM Contents

1.1.1 Tools and Materials

The following tools and materials are required for the basic installations described in this guide.

- 2-inch scissors (Corning Cable Systems p/n 100294-01)
- Tweezers (p/n 100312-01)
- FBC-002 fiber cleaver (p/n FBC-002)
- Medium black marker
- Tape (p/n 2104047-01)
- UniCam Installation Tool (p/n TL-UC01)
- UniCam length gauge (p/n 2104282-01)
- UniCam crimp tool (p/n 3201007-01)
- Dual-hole stripping tool (p/n 2104502-01)
- Jacket stripper (p/n 3206001-01)
- Continuity Test System (CTS)
- CLEANER-PORT-2.5 (purchased separately)
- CLEANER-PORT-LC (purchased separately)
- Lint-free wipes (p/n FCC-WIPES) (purchased separately)
- Fiber Optic Cleaning Fluid (p/n FCC-CLEANER-FIBER) (purchased separately)
- VFL-350 - Visual Fault Locator for use with CTS system (purchased separately)

1.2. Ordering Information - Corning Cable Systems UniCam® Connectors

	Part Number	Description
SC	95-000-40	SC Standard Performance Multimode (OM1)
	95-000-41	SC High Performance Multimode (OM1)
	95-050-40	SC Standard Performance Multimode (OM2)
	95-050-41	SC High Performance Multimode (OM2)
	95-050-41-X	SC High Performance Multimode (OM3, OM4)
	95-200-41	SC Single-Mode UPC (OS2)
	95-200-44	SC Single-Mode APC (OS2)
ST® Compatible	95-000-50	ST Compatible Standard Performance Multimode (OM1)
	95-000-51	ST Compatible High Performance Multimode (OM1)
	95-050-50	ST Compatible Standard Performance Multimode (OM2)
	95-050-51	ST Compatible High Performance Multimode (OM2)
	95-050-51-X	ST Compatible High Performance Multimode (OM3, OM4)
	95-200-51	ST Compatible Single-Mode UPC (OS2)
LC	95-000-99	LC High Performance Multimode (OM1)
	95-050-99	LC High Performance Multimode (OM2)
	95-050-99-X	LC High Performance Multimode (OM3, OM4)
	95-200-99	LC Single-Mode UPC (OS2)

NOTE: To order an organizer pack containing 25 connectors, add -Z to desired part number above (e.g., 95-000-50-Z)

Keyed LC solutions are also available. Visit www.corning.com/cablesystems and enter “LAN-701-EN” into the search engine for detailed information.

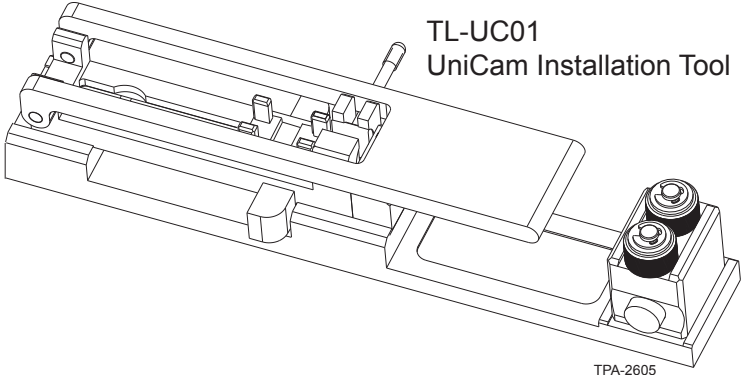
2. OVERVIEW OF INSTALLATION TOOLS

2.1. TL-UC01 UniCam®

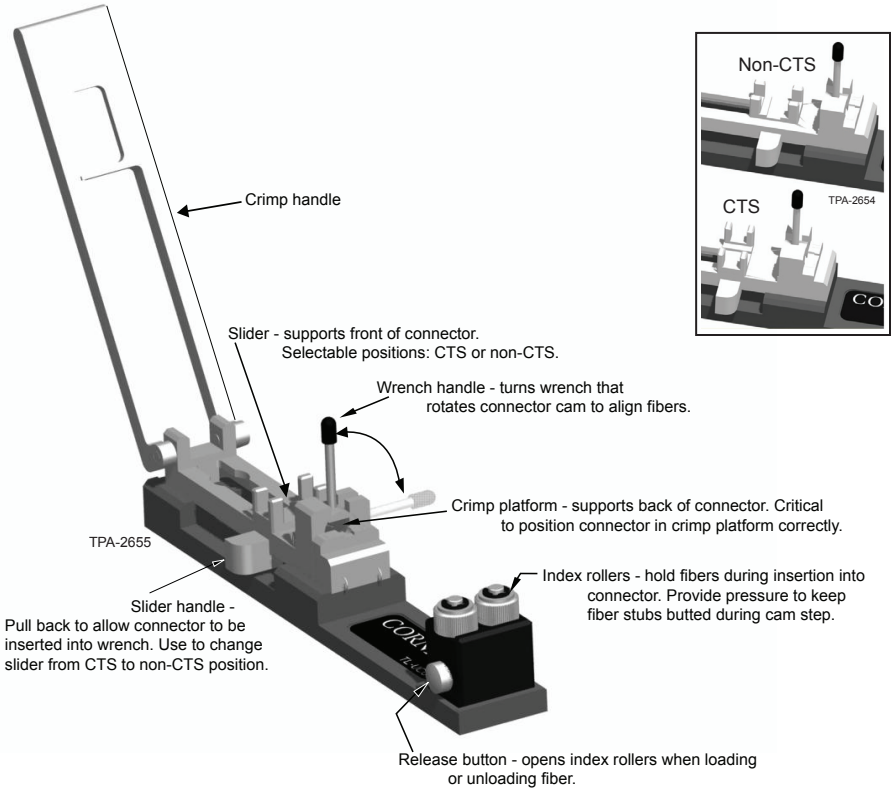
This section describes the components and maintenance of the TL-UC01 UniCam Installation Tool. As use of the tool is connector-specific, refer to the connector section of this manual for installation instructions.

The TL-UC01 UniCam Installation Tool is designed to install SC, ST® Compatible, and LC UniCam connectors on a variety of fiber types. It can be used for both multimode and single-mode connectors.

Please read through this entire chapter and the relevant connector installation section before using the UniCam tool to install UniCam connectors.



2.1.1 Features and Components



2.2. Continuity Test System

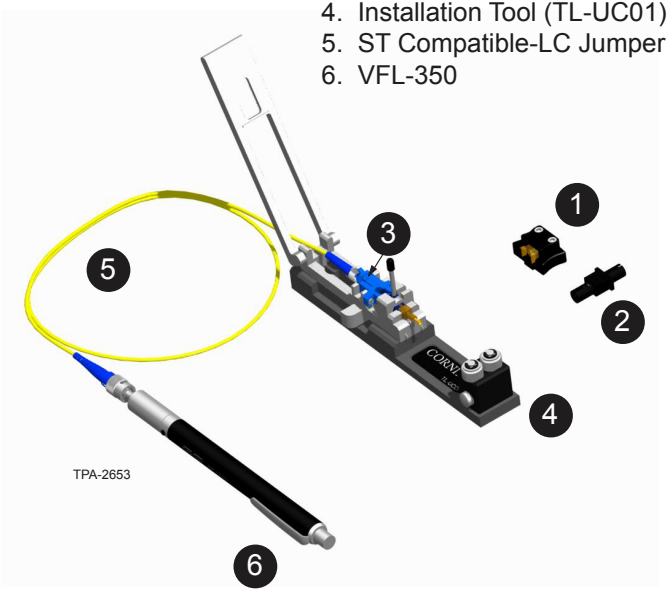
This section describes the Continuity Test System (CTS). The system includes the following:

- SC-ST® Compatible jumper
- ST Compatible-LC jumper
- Couplers for use with SC, LC, and ST Compatible connectors

The CTS jumpers can be used for both single- and multimode connectors.

The separately available VFL-350 locator is the recommended light source for the system, although any Visual Fault Locator that accepts 2.5 mm ferruled connectors may be used. The operation of the VFL-350 locator is fully described in the following section of this chapter.

1. SC Coupler
2. ST® Compatible Coupler
3. LC Coupler
4. Installation Tool (TL-UC01)
5. ST Compatible-LC Jumper
6. VFL-350

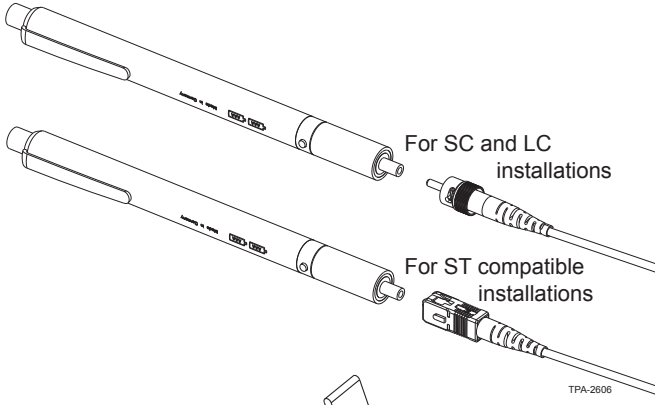


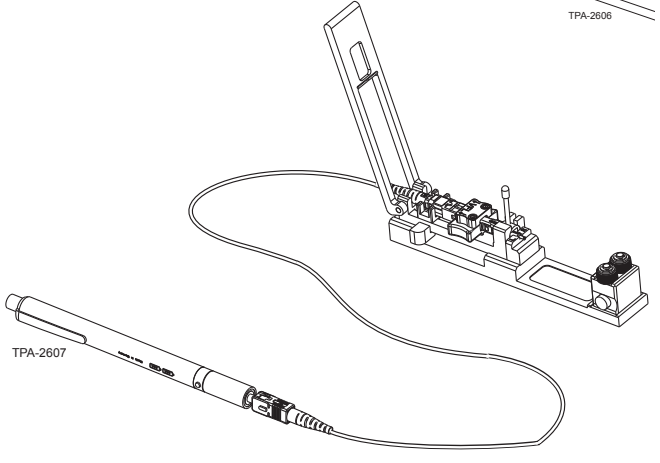
2.2.1 Operating Instructions

Refer to the appropriate connector section of this manual for full instructions on loading connectors and couplers into the TL-UC01 installation tool.

- **SC Connectors:**
  a. Insert the ST® Compatible connector on the end of the SC-ST Compatible jumper into the VFL 350. Skip to step b.
- **LC Connectors:**
  a. Insert the ST Compatible connector on the end of the ST Compatible-LC jumper into the VFL 350. Skip to step b.
- **ST Compatible Connectors:**
  a. Insert the SC connector on the end of the SC-ST Compatible jumper into the VFL-350. Proceed to step b.
  b. Route the other end of the jumper through the open area of the crimp handle of the UniCam® installation tool and plug the connector into the CTS coupler and its UniCam connector.

CRITICAL STEP: Make sure the routing will permit the crimp handle to swing fully down on the tool's crimp platform without damaging the jumper.

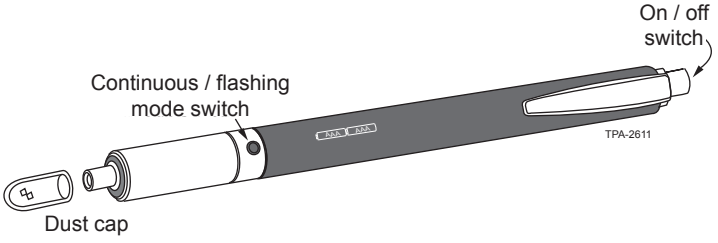




VFL-350 Visual Fault Locator

The Corning Cable Systems VFL-350 emits either continuous or 3 Hz flashing visible laser light at a wavelength of approximately 635 nm to perform continuity checks and locate faults in both single- and multimode fibers and components.

The VFL-350 makes use of a Class 2 laser with a power output of less than 1mW. Under normal operations, the laser light is not dangerous.



The VFL-350 has the following general specifications:

Power requirements: 2 AAA alkaline batteries (provided)

Battery life: Approximately 40 hours in flashing mode

Operating temperature 14° to 104° F (-10° to +40° C)

Storage temperature -40° to +158° F (-40° to +70° C)

DANGER: LASER RADIATION. DO NOT STARE INTO BEAM. CLASS 2 LASER PRODUCT. EN 60825-1/94. P<1 mW; λ= 635 NM

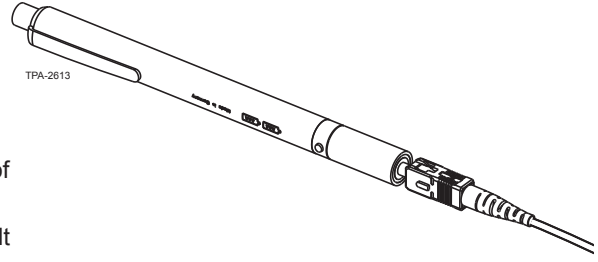
2.2.2 Operating the VFL-350

a. After removing the dust cap, fully insert the connector ferrule into the adapter on the front of the locator.

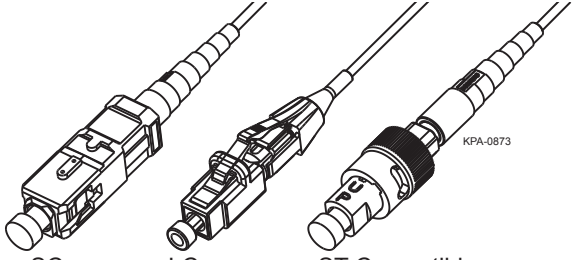
b. Turn the locator on by pressing the on / off switch at the end of the unit.

c. Press the continuous / flashing mode switch on the side of the locator for the continuous setting.

d. Replace the dust cap on the VFL after completing the fault location or continuity check.



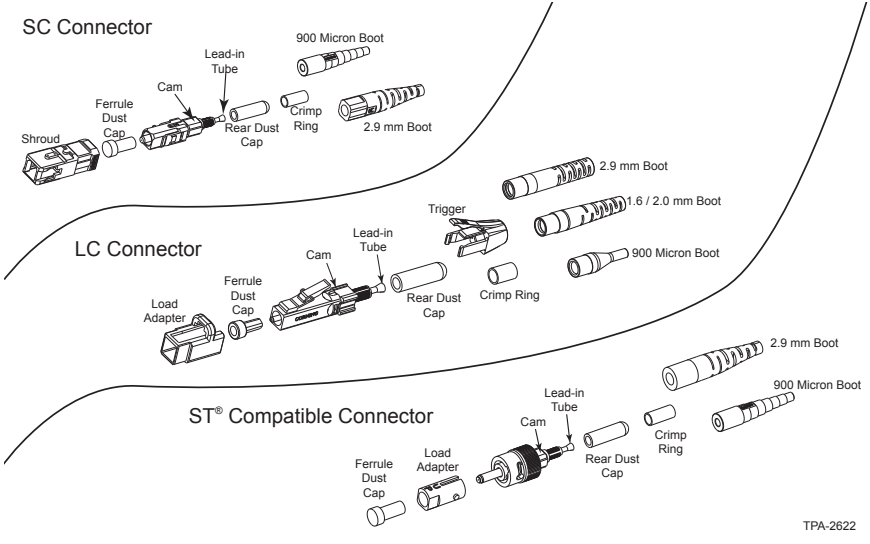
3. TOOL AND CONNECTOR PREPARATION



3.1. Components

Each UniCam® connector package contains the parts shown in this section of the manual.

NOTE: Organizer packs only include materials for 900 micron termination.



3.2. Tool and Connector Preparation

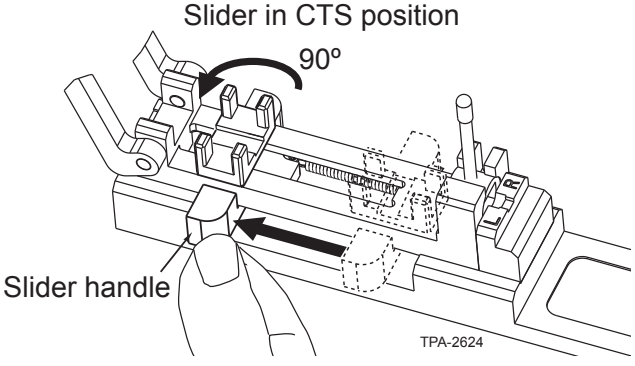
NOTE: Preparation for the connectors varies slightly when using the CTS. Look for the CTS icon and follow those steps when indicated.

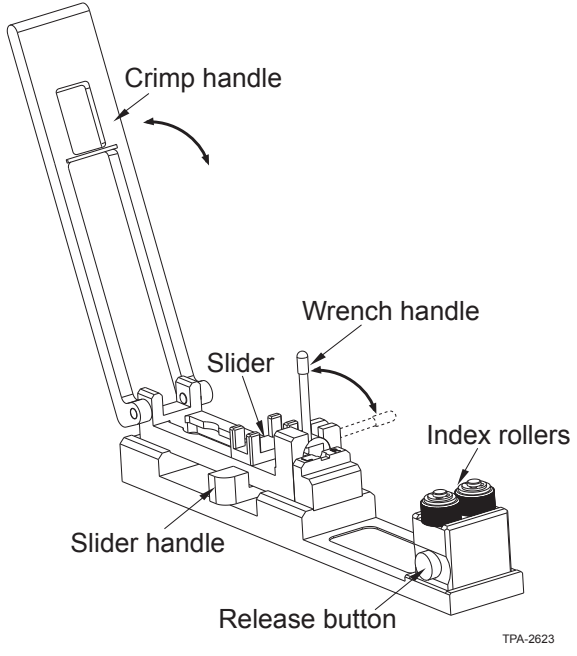
CRITICAL STEP:

Step 1: Flip the crimp handle open and rotate the wrench so that the handle is up.

CTS

For installation using the CTS, rotate the slider to the CTS position by pulling the slider handle fully back, and while holding it, rotating the slider to the desired orientation.



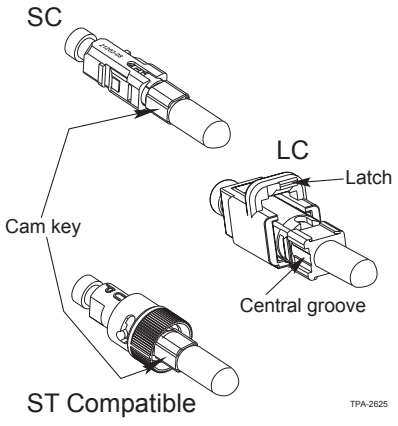


Step 2: Remove the connector from the packaging. Examine the connector to make sure it's in the open position.

NOTE: The SC connector is in the open position when the key on the cam is positioned 90 degrees from the date code printed on top of the connector.

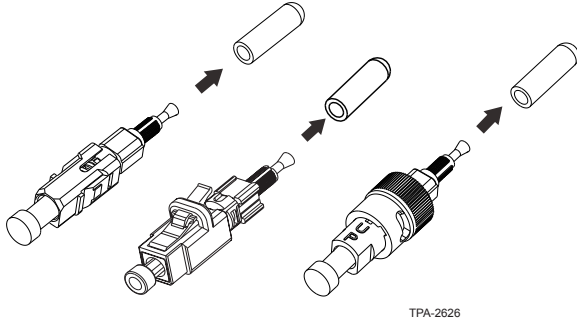
The ST® Compatible connector is in its open position when the key on the cam is positioned 90 degrees from the rounded side of the dust cap with label "UP".

On LC connectors the cam is in its open position when the central groove on the cam is 90 degrees from the latch which secures the front dust cap.



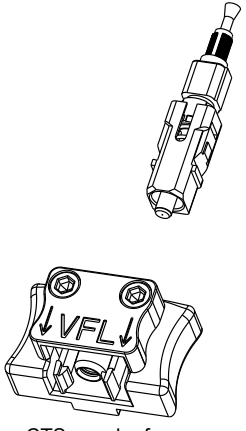
Step 3: Remove the rear dust cap from the connector.

IMPORTANT: Skip to Step 5, if not using the CTS system. Leave the front dust cap ON (and black load adapter for ST Compatible and LC connector).

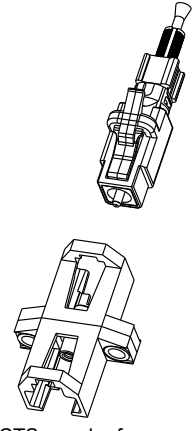


CTS

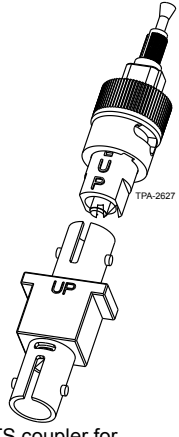
If using the CTS system, also remove the front dust cap from the connectors. Retain them to reinstall later. Also remove and discard the black load adapter from the LC and ST® Compatible connectors. Plug the connector into the appropriate CTS coupler for each connector as shown.



CTS coupler for SC connectors



CTS coupler for LC connectors



CTS coupler for ST Compatible connectors

CTS

With the slider in its CTS position, load the coupler and connector as follows:

a. Guide the CTS jumper through the arm of the crimp handle and plug the CTS jumper into the front of the CTS coupler. Make sure that the jumper's connector is secured into the coupler.

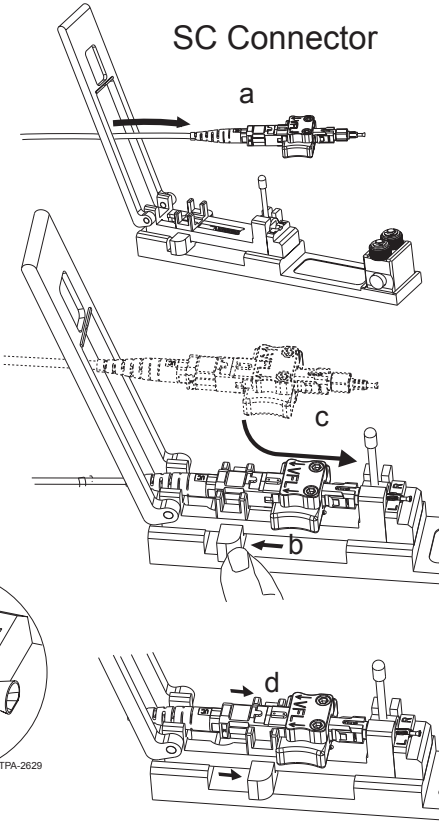
b. Pull back and hold the slider at the end of its travel.

c. Insert the CTS coupler and the UniCam® connector into the slider.

d. Slowly release the slider handle and carefully guide the connector through the wrench until the crimp tube rests on the crimp platform.

NOTE: LC and ST® Compatible connector loading are similar.

CRITICAL STEP: The crimp tube must rest on the crimp platform as shown. If the connector does not slide into the tool when gently pushed, check to make sure the connector is in the open position described in Step 2, the wrench handle is up, and you are inserting the connector with its proper side up.



Step 4: If NOT using a CTS system, place the connector in the installation as follows:

a. Pull back and hold the slider at the end of its travel.

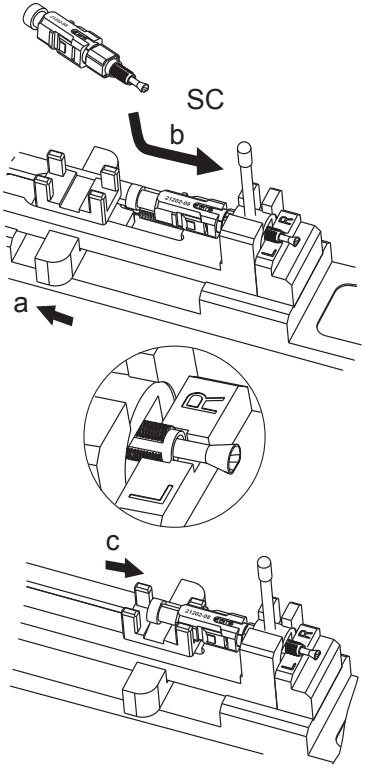
b. With the slider held back, insert the connector into the wrench.

NOTE: A gentle push should be adequate to insert the connector. Do not attempt to force the connector into the tool; doing so could damage the connector.

c. Slowly release the slider handle and guide the slider into position on the connector's dust cap.

NOTE: LC and ST® Compatible connector loading are similar.

CRITICAL STEP: The crimp tube must rest on the crimp platform as shown below. If the connector does not slide into the tool when gently pushed, check to make sure the connector is in the open position described in Step 2, the wrench handle is up, and you are inserting the connector with its proper side up.



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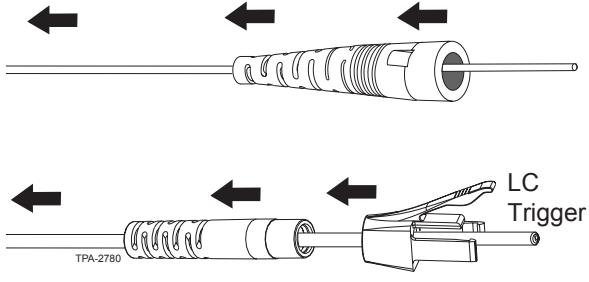
4. FIBER PREPARATION

4.1. All Fiber/Cable Types

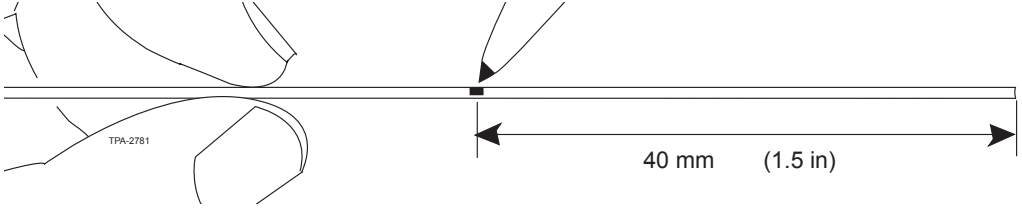
Slide the appropriate boot onto the fiber/cable.

- Use the 900 micron boot for 900 micron Tight-buffered, 900 micron Furcated.
- Use the 1.6, 2.0, or 2.9 mm cable boot for Jacketed Cable applications.
- For LC connectors, also slide the trigger onto the fiber/cable after installing the boot.



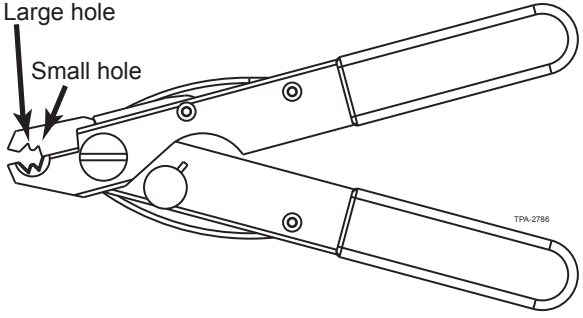
4.2. 900 micron Tight-buffered Fibers

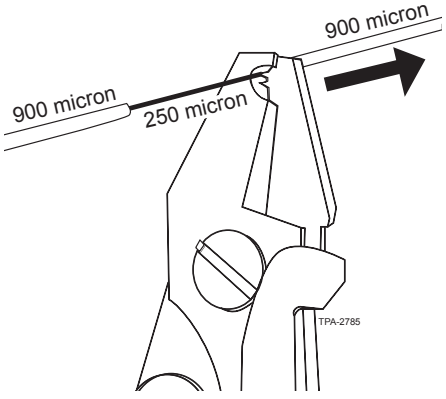
Step 1: Using the Strip Length Gauge and permanent marker, measure and mark 40 mm from the end of the buffered fiber.



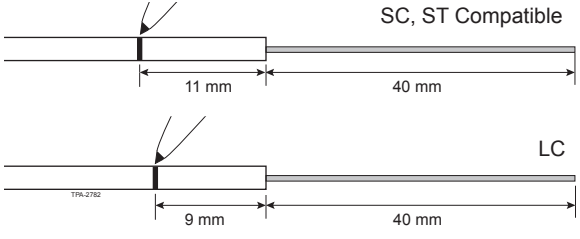
Step 2: To expose bare glass, remove the 40 mm section of buffer and coating in two steps using the Dual-Hole Miller Tool.

- For the 900 micron buffer, use the large hole.
- For the 250 micron coating, use the small hole.



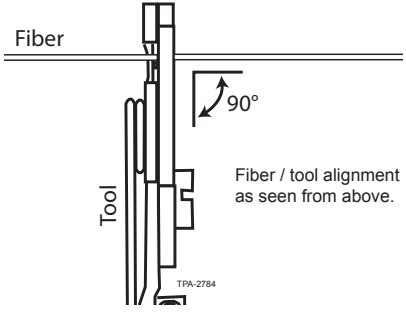


Step 3: For SC and ST® Compatible connectors, measure and place a visual mark on the buffer an additional 11 mm back from the end of the buffer. For LC connectors, measure and mark the buffer 9 mm back.



Step 4: Clean the bare fiber with two passes of a Fiber Wipe dampened with Fiber Optic Cleaning Fluid.

Do not touch the bare fiber after cleaning it. Do not remove the visual mark.

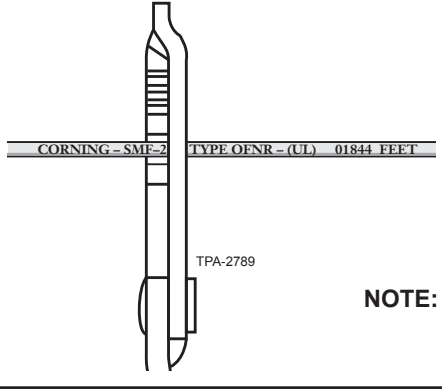


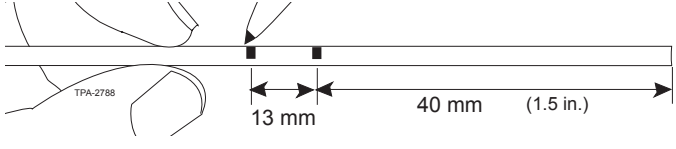
Step 5: Proceed to Chapter 5, Fiber Cleaving.

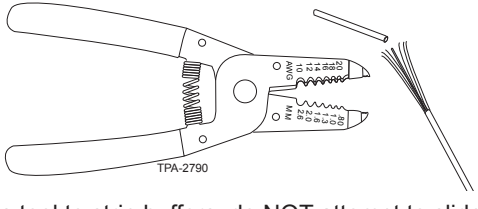
4.3. Jacketed Cable

NOTE: Take your time to do the following four steps correctly. Excessive yarn length will have to be trimmed later. Yarn too short may result in weak strain-relief for the connector.

Step 1: Measure and mark 40 mm and 53 mm points.







NOTE: When using this tool to strip buffers, do NOT attempt to slide severed tube or jacket off the fibers with the sliding motion commonly used to strip copper wire with this tool. Doing so may break the fibers.

Step 2: Refer to table for the correct AWG opening for the cable being used and strip off the 40 mm section of outer jacket with the Jacket Stripping Tool.

Step 3: Use scissors to trim the aramid yarn flush with the end of the outer jacket.

Step 4: Strip off the 13 mm section of outer jacket, exposing 13 mm of aramid yarn using the Jacket Stripping Tool.

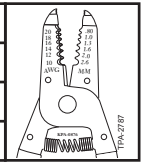
Step 5: Fold the aramid yarn back over the cable jacket and slide the crimp ring about 5 mm down the yarn to hold it out of the way.

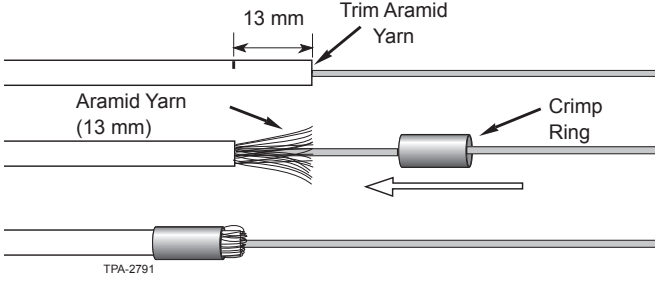
Step 6: Mark the 900 micron buffer:

- For SC and ST® Compatible connectors, mark 900 micron buffer 11 mm from the end of the cable jacket and at the edge of the cable jacket.
- For LC connectors, mark the 900 micron buffer 11 mm and 2 mm from the edge of the cable jacket.

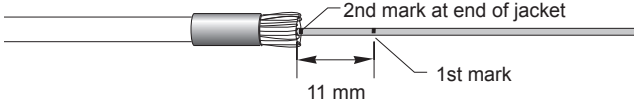
NOTE: The second mark is a visual aid to indicate when the field fiber contacts the fiber stub.

Cable Jacket Diameter	AWG Size
1.6 mm	20
2.0 mm	18
2.9 mm	16

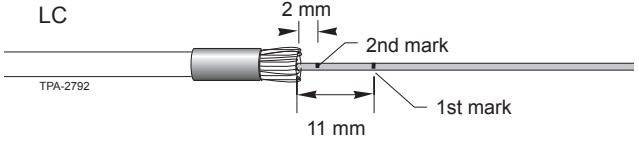




SC and ST Compatible



LC



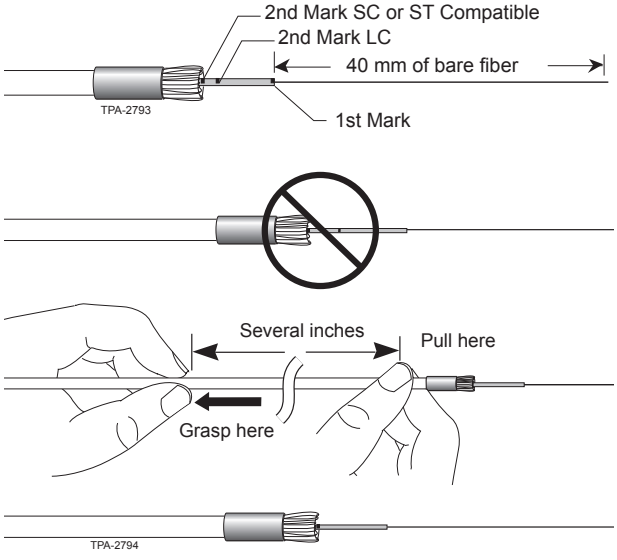
Step 7: Use the Dual-Hole Miller Tool to remove the 40 mm of buffer and coating in two steps: (same as step 3 from section 4.3).

NOTE: It is IMPORTANT to check the locations of the second mark after stripping. For SC and ST® Compatible connectors, the mark must be near the edge of the jacket; for LC connectors, the mark must be within 2 mm from the edge of the jacket. If necessary, work the buffer back into its original position in the jacket as follows:

- Grasp the cable several inches behind the strip point.
- Pull the cable until the second mark is near its starting position -

  SC and ST® Compatible: near the edge of the jacket.

  LC: within 2 mm of the edge of the jacket.



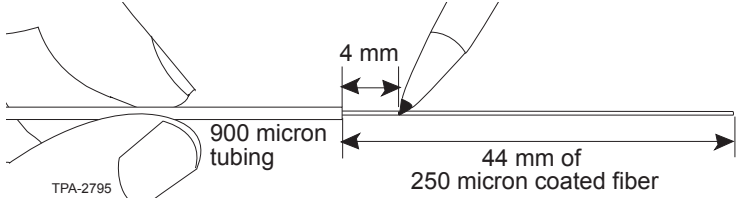
Step 8: Clean the bare fiber with two passes of a Fiber Wipe dampened with Fiber Optic Cleaning Fluid. Do not touch the bare fiber after cleaning it. Do not remove the visual mark.

Step 9: Proceed to Section 5, “Fiber Cleaving” on page 21.

4.4. 900 micron Fan-out Tubing Applications

Step 1: Remove the 900 micron tubing with Dual-Hole Miller Tool or trim back the fiber so that 44 mm of fiber protrudes from the 900 micron tubing.

Step 2: Measure and mark the 250 micron coated fiber 4 mm from the end of the fan-out tubing.



Step 3: Measure and mark the fan-out tube:

- SC and ST® Compatible connectors: 11 mm back from the end of the 900 micron tubing.
- LC connectors: 9 mm back from the end of the 900 micron tubing.

Step 4: Remove the 250 micron coating to the 4 mm mark using the small hole on the Dual-Hole Miller Tool. It is important to leave 4 mm of 250 micron fiber extending beyond the 900 micron tubing to allow the fibers to touch before the 900 micron tubing bottoms out inside the connector and to ensure a good cleave with the FBC-015.

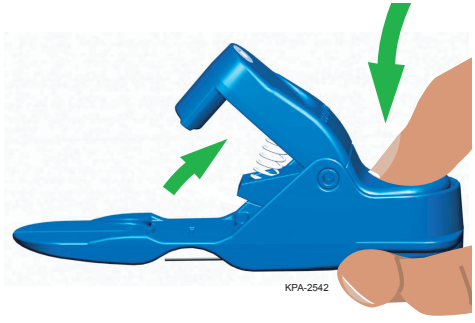
Step 5: Clean the bare fiber with two passes of a Fiber Wipe dampened with Fiber Optic Cleaning Fluid. Do not touch the bare fiber after cleaning it. Do not remove the visual mark.

Step 6: Proceed to Section 5, “Fiber Cleaving” on page 21.

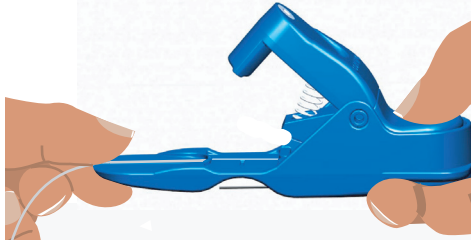
5. FIBER CLEAVING

NOTE: This section describes the use of the FBC-002 cleaver supplied with the TKT-UNICAM Kit.

If you are using any other cleaver, cleave the fibers to 8.5 +1.5/-0.5 mm.

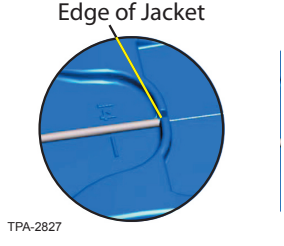


Step 1: Press down on the handle to open the cleaver's fiber clamp.

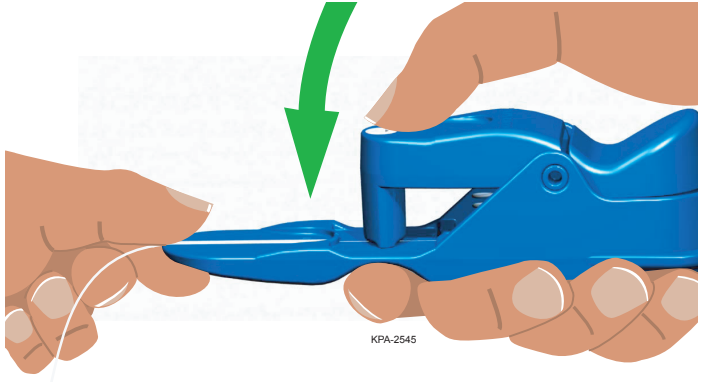


Step 2: With your other hand, place the fiber in the fiber guide so that the end of the fiber is under the fiber clamp and the end of the fiber coating lines up with the stop.

DO NOT FLEX THE FIBER GUIDE AT THIS TIME.



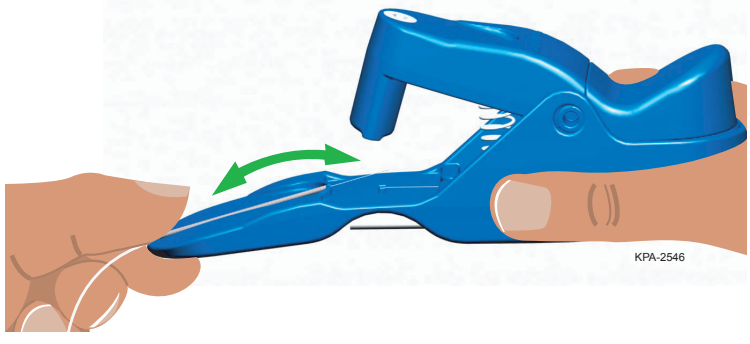
Step 3: Press down the cleaver arm until it just touches the fiber and guide. This will apply enough pressure to properly score the fiber.



CRITICAL STEP: Gently release the cleaver arm.

NOTE: The cleaver arm MUST be fully released before you flex the fiber guide.

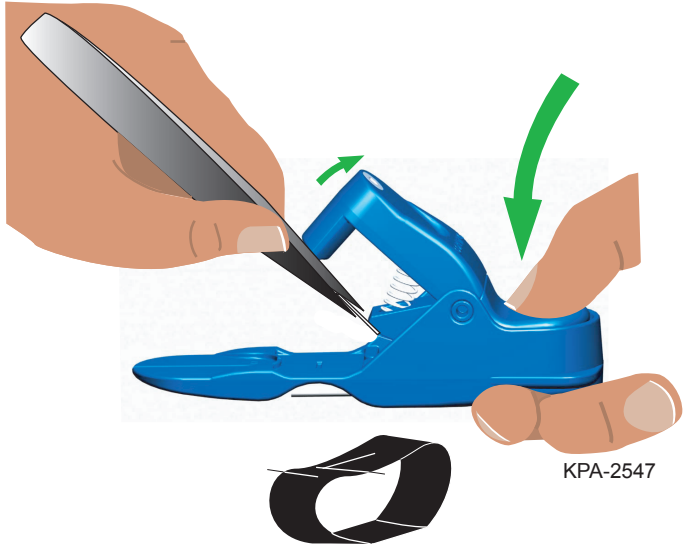
Step 4: Maintain tension in the fiber and flex the fiber guide to snap the fiber. The fiber is now ready to inserted into the connector.



CRITICAL STEP:
Do NOT press the handle while flexing the fiber guide.

Step 5: Press down on the cleaver's handle to once again lift the fiber clamp.

Step 6: Remove the end piece of fiber with tweezers and place the fiber on a loop of tape for proper disposal.



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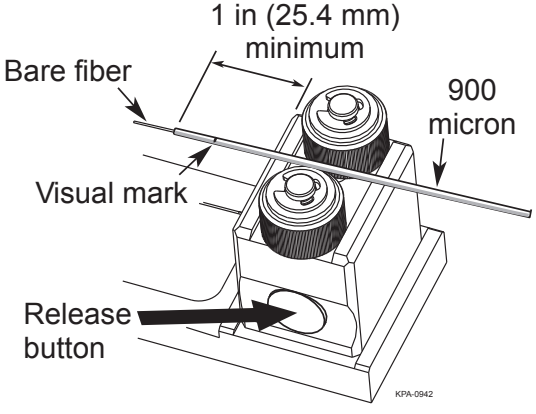
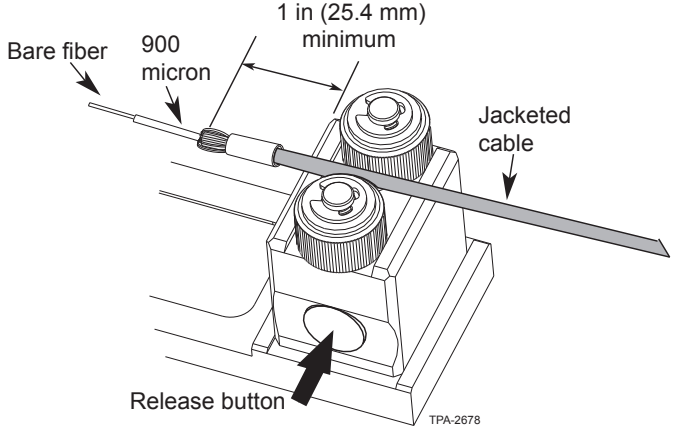
6. CONNECTOR TERMINATION

6.1. Connector Installation

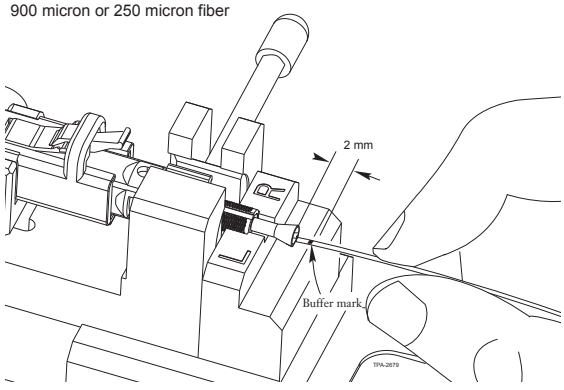
Step 1: Press in the release button on the UniCam® tool, and place the fiber between the rollers. Make sure the fiber is fully seated.





Step 2: While pulling the fiber through the rollers, insert the fiber into the connector's lead-in tube until you feel it firmly stop against the connector's fiber stub. The index rollers will rotate, allowing the fiber to pull through.

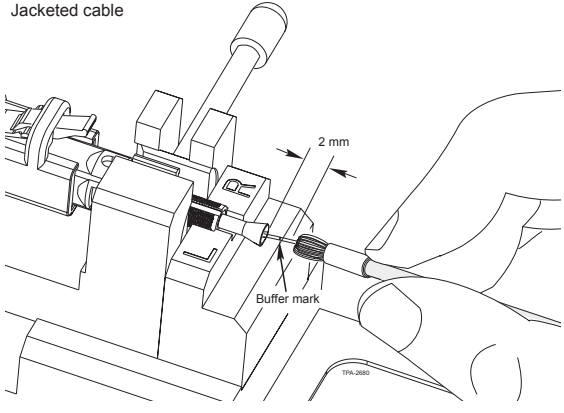
- Guide the fiber in straight. Do not bend or angle it.
- If you feel resistance at the entry funnel, pull the fiber back out a short distance and re-insert it.



CRITICAL STEP: If you have stripped and cleaved the fiber to the correct length, the end of the cable jacket or the visual mark should stop within 2 mm of the lead-in tube.

If this mark is not visible, the fiber may have been broken. Remove the connector, re-strip and recleave the fiber, and begin with a new connector.

For jacketed fibers, the buffer mark must be visible between the lead-in tube and the aramid yarn to assure that the fibers butt together. If you don't see the mark, pull the fiber out of the connector, and start over again with new cable preparation.

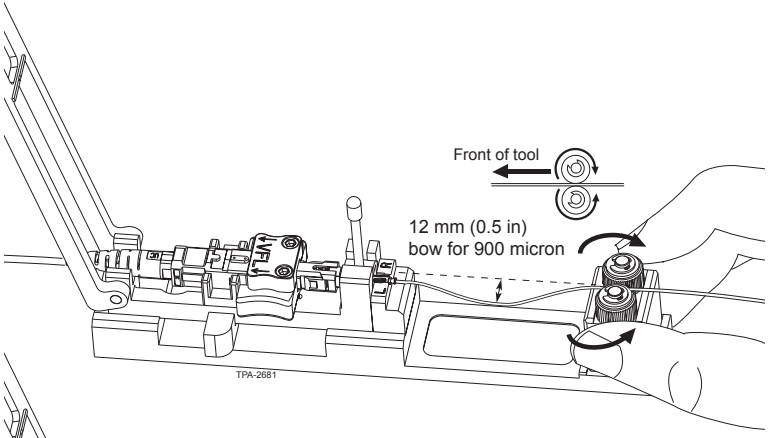


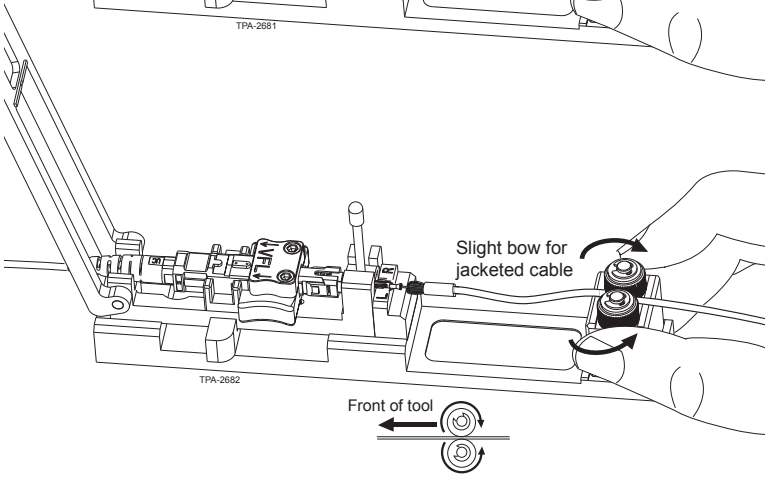
Step 3: For installations on 900 micron – lightly pinch the index rollers on the fiber, and slowly rotate the rollers until a 12 mm (0.5 in) bow forms in the fiber between the connector and the index rollers.

For installation on jacketed cable - lightly pinch the index rollers on the fiber, and slowly rotate the rollers until the cable jacket just begins to bow between the connector and the index rollers.

CRITICAL STEP: The bow created in step 3 is critical. It will ensure the fiber maintains contact with the connector's stub fiber during the next step.

Note that you may chose to maintain inward pressure by hand instead of using the fiber index rollers.





Step 4: Rotate the wrench down until it stops. It is normal for the wrench to rotate beyond 90 degrees.

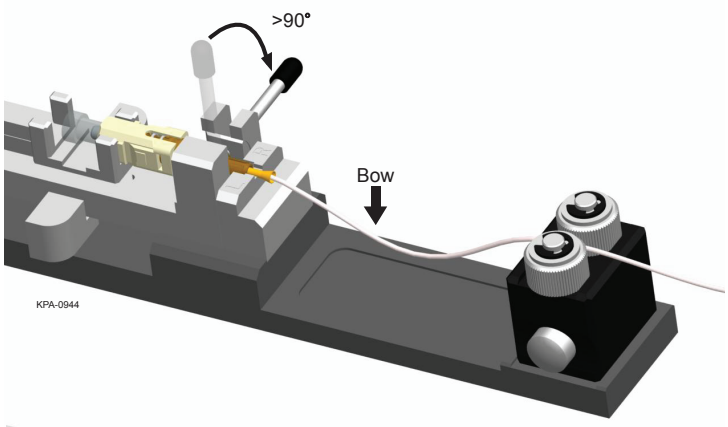
DO NOT ROTATE THE WRENCH BACK UP.

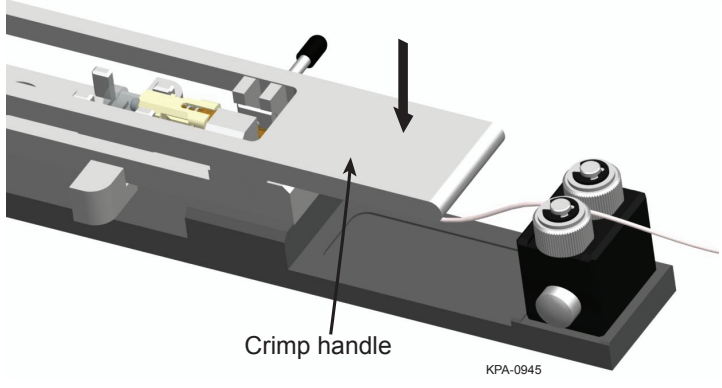
CTS

If you are using the CTS system, the glow from the connector's cam should noticeably dim after the wrench is rotated fully down.

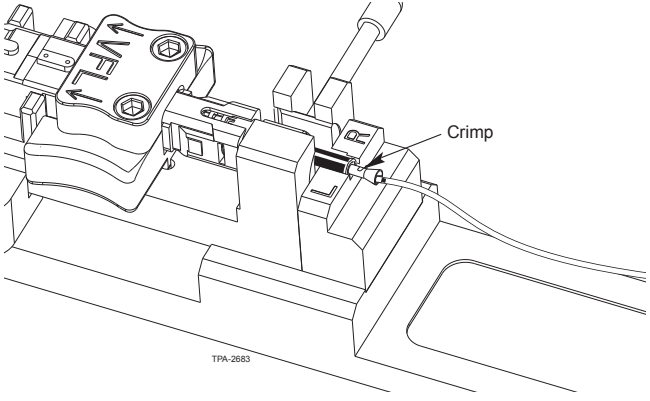
If the glow is not significantly dimmed, rotate the wrench up, remove the fiber from the connector, and repeat the installation.

Step 5: Carefully flip the crimp handle 180 degrees until it contacts the crimp tube. Push down firmly to crimp.

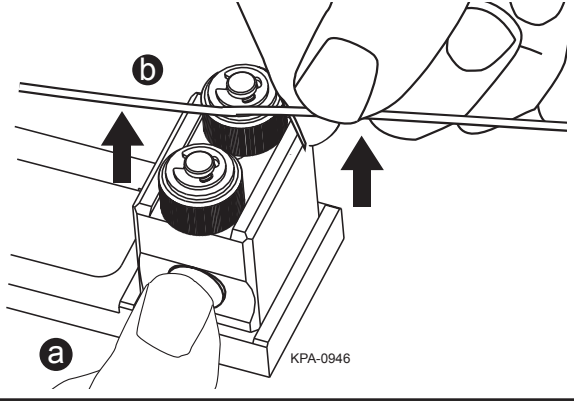




Step 6: Flip the crimp handle back. You should see a flat impression in the crimp tube, indicating a proper crimp.



Step 7: Remove the fiber from the index rollers by (a) pressing the release button and (b) lifting it out.

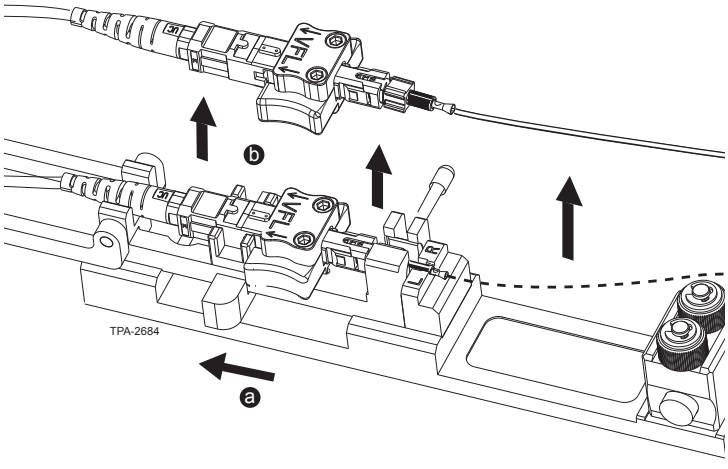


Step 8: Leave the wrench handle down.

a. Pull the slide handle back.

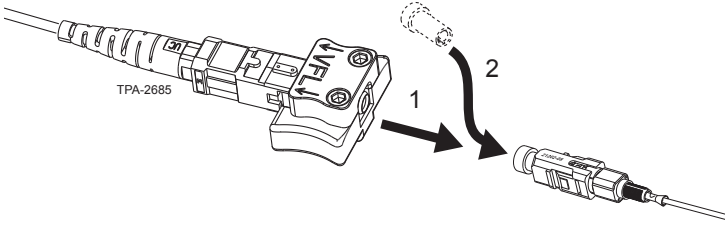
b. Remove the connector by lifting it and its fiber (900 micron) or jacketed cable straight up and out of the tool.

Do not pull the fibers or cable away from the crimped tube. Handle the connector only.



CTS

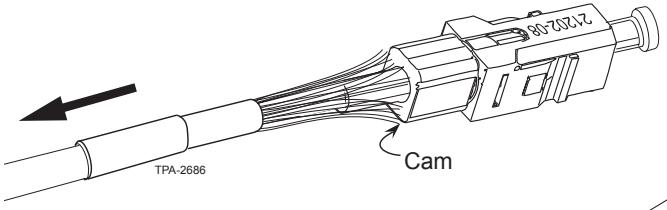
Step 9: If you are using the CTS system, remove the connector from the CTS coupler and replace the front dust cap.



To complete a 900 micron installation, skip to the appropriate connector listing under step 14.

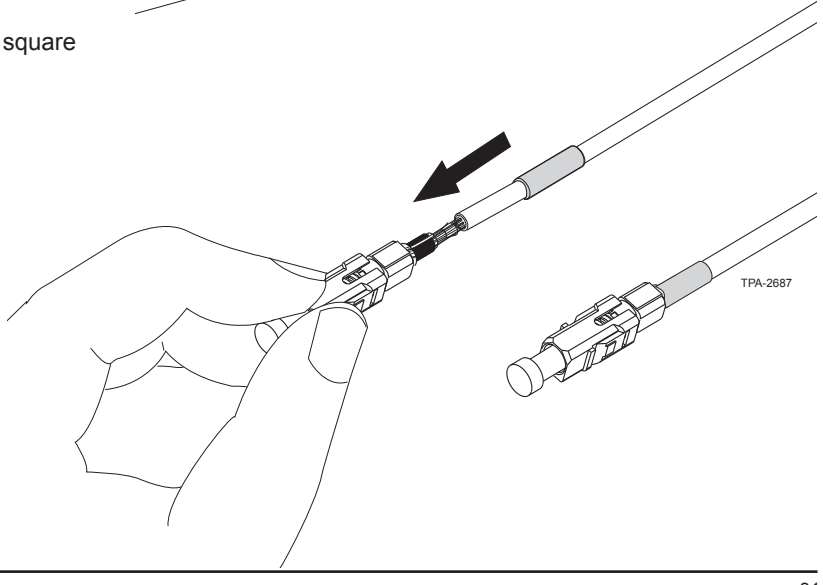
6.2. Jacketed Cables Only:

Step 1: Hold the cable and slide the crimp ring back along the cable jacket to free the aramid yarn. Flare the yarn around the buffered fiber.



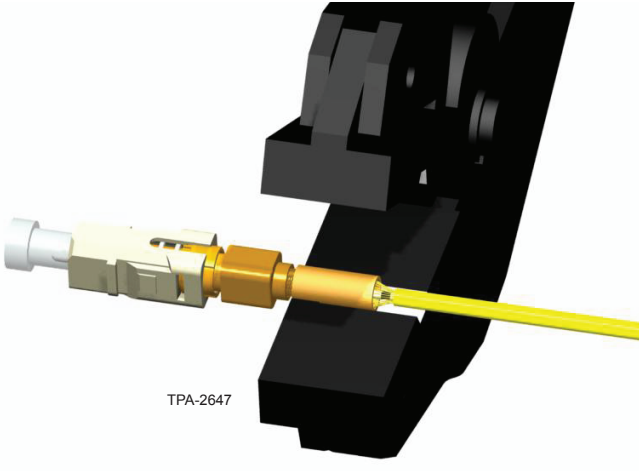
The ends of the yarn should just touch the back of the square cam. If the yarn is too long, trim it now.

Step 2: Hold the connector and push the crimp ring over the aramid yarn and against the back of the connector's cam.



CAUTION: Use only the crimp tool supplied with the UniCam® tool kit (part number 3201007-01). Other similar-appearing crimp tools, e.g., tools with part numbers 3201001-01 and 3201002-01, will over-crimp causing increased attenuation.

Step 3: Place the connector crimp ring into the opening of the crimp tool jaws.



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Step 4: Squeeze the handles shut until they automatically release to crimp the crimp ring onto the connector. Remove the connector and cable from the tool.

Step 5: Complete the connector assembly according to the applicable steps below:

6.3. For ST® Compatible Connectors::

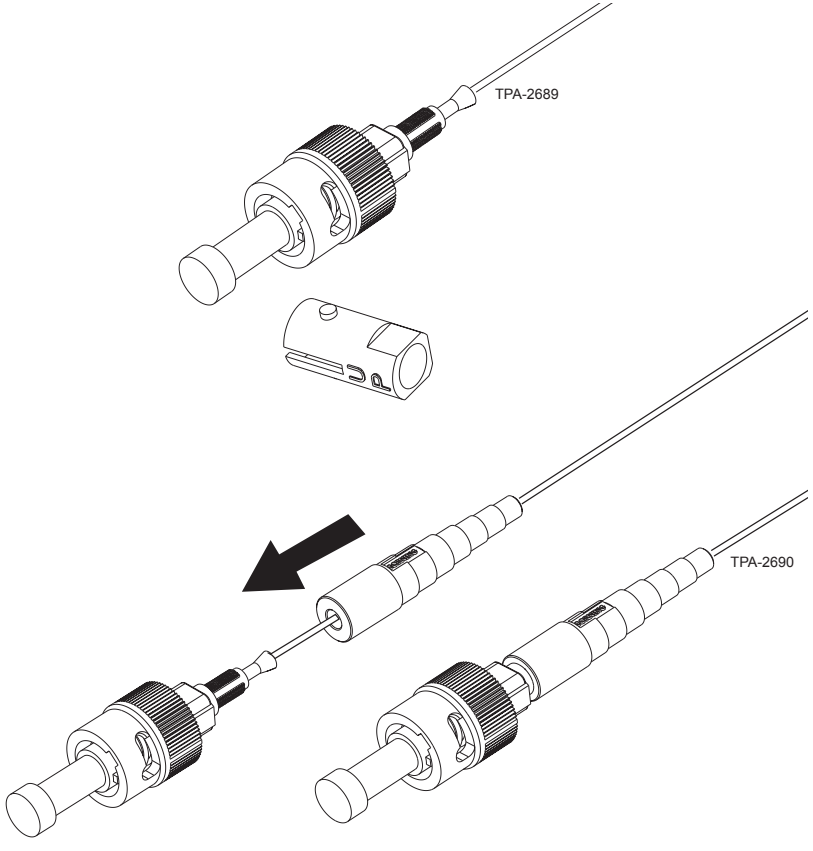
Step 1: Remove the clear dust cap.

Step 2: Remove the black load adapter

Step 3: Replace the clear dust cap.

Step 4: Slide the boot up the back of the connector until it reaches the cam.

Step 5: The connector is now ready to use. Leave the front dust cap on until you are ready to insert the connector into an adapter sleeve.



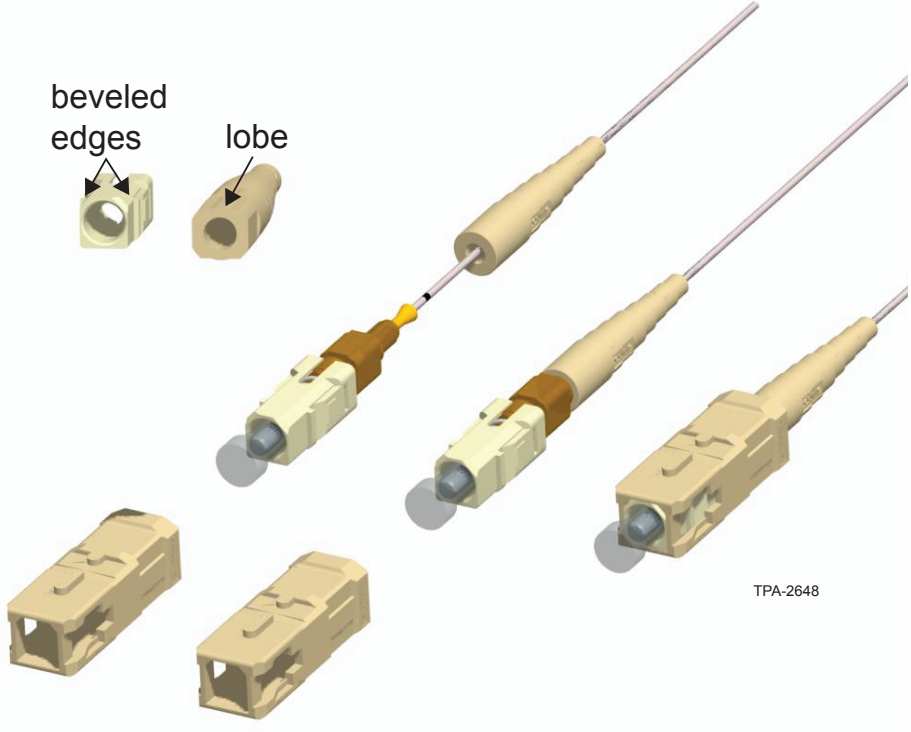
6.4. For SC Connectors:

Step 1: Slide the boot up the back of the connector until it reaches the cam.

Step 2: To install the outer shroud, line up the date code on the inner housing with the key-side of the outer shroud. Using the boot, push the UniCam® assembly into the rear of the outer shroud until it snaps into place.

NOTE: Wiggling the parts while applying pressure will make them snap together easily.

Step 3: The connector is now ready to use. Leave the front dust cap on until you are ready to insert the connector into an adapter sleeve.



6.5. For LC Connectors:

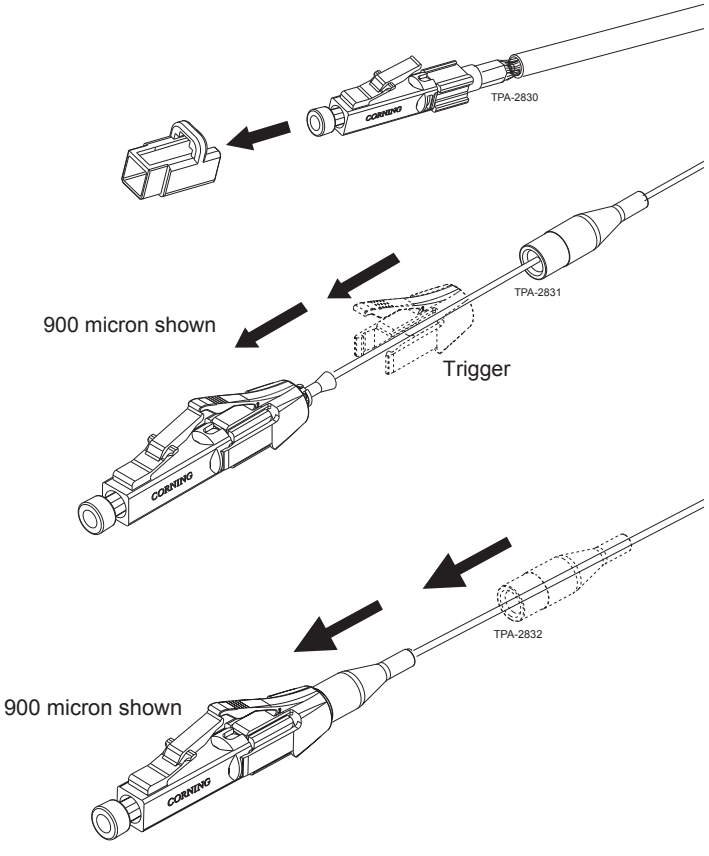
Step 1: Remove the black load adapter.

Step 2: Slide the trigger up to the back of the connector (over the crimp ring for jacketed connectors) and latch its arms into the windows on the housing.

Step 3: While holding the connector by the front dust cap, slide the strain relief boot up the back of the connector and under the trigger until it stops.

NOTE: On jacketed applications, a slight twisting motion may be required to seat the strain relief boot within the trigger.

Step 4: The connector is now ready for use. Leave the front dust cap on until you are ready to insert the connector into an adapter sleeve.



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7. MAINTENANCE AND TROUBLESHOOTING

7.1. General

This section provides information on how to clean the UniCam® connectors described in this manual. It also descrides maintenance of the tools used.

7.2. Connector Cleaning

Connector cleaning and care.

Corning recommends using the CLEANER-PORT-2.5 when cleaning SC and ST® Compatible UniCam® connectors when installed in an adapter or alone. Likewise, when cleaning LC UniCam connectors in adapters or alone, Corning suggests using the CLEANER-PORT-LC.

Always keep a clean dust cap on unused connectors.

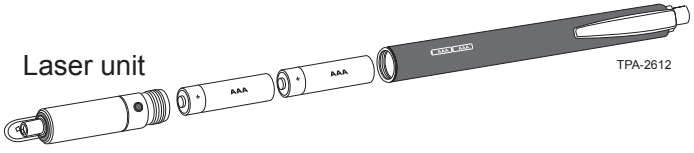
7.3. Tool Maintenance

7.3.1 FBC-002 Cleaver

- Thoroughly clean the cleaver after each use. Small remnants left in the cleaver may cause damage to parts during later use.
- Periodically clean the cleaver's blade, fiber guide, and fiber clamp with an alcohol-soaked wipe, followed by a cleaning with compressed air. ALWAYS WEAR EYE PROTECTION WHEN CLEANING WITH COMPRESSED AIR.

7.3.2 Replacing the Batteries in a VFL-350 Locater

a. After turning the VFL-350 off, unscrew the laser unit on the front of the locator.
b. Insert two AAA alkaline batteries.
c. Screw the laser unit back into place.
d. Properly dispose of the used batteries.



7.3.3 TL-UC01 UniCam Installation Tool

Before using the TL-UC01 UniCam® Installation Tool, inspect the following components:

- Wrench Handle - should rotate freely.
- Crimp Handle - should rotate freely.
- Slider Handle - should pull smoothly to the rear and return to its original position under spring force.
- Index Rollers - roller nearest the release button shuld spin easily in one direction, and immediately lock in the opposite direction. Do not attempt to force the roller to spin in the "locking" direction. The rollers should contact each other until the release button is pressed.
- Index Roller Release Button - should move smoothly against its return spring.

If the Index Rollers become dirty, clean them with a wipe soaked in fiber optic cleaning fluid.

7.4. Troubleshooting

Problem	Possible Causes	Solutions (Actions)
Connector will not load easily.	1) Wrench is not in starting position. 2) Connector cam is not in open position.	1) Move handle to vertical starting position. 2) Check to see that the connector cam is in the open position.
No light or flashing light coming from VFL-350	1) Weak or dead batteries. 2) Wrong set up.	1) Replace batteries according to Section “7.3.2 Replacing the Batteries in a VFL-350 Locater” on page 38. 2) Press the small black button on the side of the VFL | once to create a constant light source.
Cleaver is producing bad cleaves or breaking fibers.	1) Debris in the clamp. 2) Blade is dirty. 3) Blade is worn or damaged.	1) Clean the clamp according to Section ”7.3.1 FBC-002 Cleaver” on page 38. 2) Clean the blade according to “7.3.1 FBC-002 Cleaver” on page 38. 3) Replace cleaver with new one.
Unable to achieve a successful termination. (Light will not dim)	1) Fiber is not inserted correctly into the connector. 2) Improper fiber preparation.	1) Try reseating the fiber so that the visual mark is within 2 mm of the lead-in tube. 2) Ensure that the appropriate section in chapters 4 and 5 of 006-150 were followed. If unsure, rotate the handle back to the vertical starting position, remove the fiber, and start again at Chapter 4.

Problem	Possible Causes	Solutions (Actions)
Unable to achieve a successful termination. (Light will not dim) (continued)	3) Bad cleave due to debris in the clamp.	3) Refer to the “Cleaver is producing bad cleaves…” section above.
	4) Broken fiber while inserting into connector.	4) While holding onto the fiber, rotate the handle back to the vertical starting position and remove the fiber. Get a new connector and re-strip, re-cleave and reseat the fiber.
	5) Wrong fiber type.	5) Ensure that the connector and fiber type match.
	6) Damaged connector.	6) While holding onto the fiber, rotate the handle back to the starting position and remove fiber. Get a new connector, go back to chapter 4, and start over, including re-cleaving the fiber.
Unable to crimp the connector when using CTS	1) CTS jumper routed incorrectly.	1) Ensure jumper is routed through the crimp handle as seen on page 13.

If unable to successfully troubleshoot the installation tool using the table above, please call Corning Cable Systems Technical Support at 1-800-743-2671.

7.5. Testing UniCam® Connectors

If you have questions about proper testing and required equipment, etc., call Corning Cable Systems Technical Support at 1-800-743-2671.