CORNING

Sheath Removal of 48-864 Fiber RocketRibbon®
250 µm Armor Cable

P/N 004-293-AEN, Issue 6

1.   General

This document describes handling practices for armor 48-864 fiber gel-free ribbon cable. Cable-end and mid-span access procedures are outlined in this document. Links to other reference material are provided in the "related literature" table. The cable illustrated in this procedure is an armored cable manufactured with routable sleeve around ribbons, or with ribbon subunits. Two wires provide tensile strength for the cable (Figure 1).
NOTE: *48 is also available with 24 or 36 fibers.*

48, 144, 288 and 432 Fiber RocketRibbon® 250 µm Armor Cable
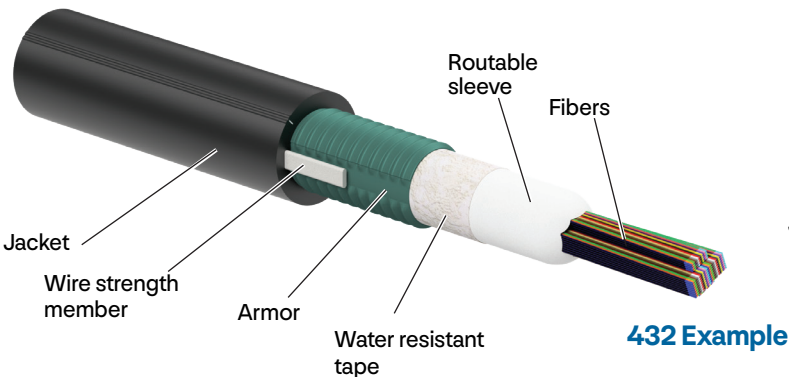
576, 864 Fiber RocketRibbon® 250 µm Armor Cable
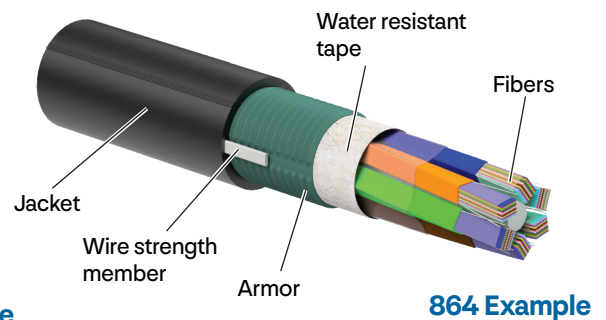

Figure 1

2. Ribbon Stack Info for RocketRibbon® 250 µm Armor Cables

144f Cable:
12 - 12f Ribbons
Ribbons are printed 1 - 12

288f Cable:
4 - 12f Ribbons
8 - 24f Ribbons
4 - 12f Ribbons
Ribbons are printed 1 - 24

48f Cable:
4 - 12f Ribbons
Ribbons are printed 1 - 4

864f Cable:
6-144f Subunits
Subunit:
12-12f Ribbons
Ribbons are printed 1 - 12

432 f Cable:
4 - 12f Ribbons
14 - 24f Ribbons
4 - 12f Ribbons
Ribbons are printed 1 - 36

576f Cable:
4-144f Subunits
Subunit:
12-12f Ribbons
Ribbons are printed 1 - 12

3. Precautions

3.1 Cable and Fiber Handling Precautions

NOTE: *Fiber optic cables are 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.*

3.2 Laser Handling 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.

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

3.3 Safety Gloves

	CAUTION
⚠	The wearing of cut-resistant safety gloves to protect your hands from accidental injury is strongly recommended when using sharp-bladed tools.

4.   Tools and Materials

The following tools and materials are required for the cable stripping sections of this procedure:

- Gloves
- Diagonal cutting pliers (side cutters) (P/N 100300-01)
- Ribbon splitting tool (P/N RST-000)
- Straight blade utility knife *
- Cable sheath knife
- Ideal 45-164 Tool
- Needle nose pliers

- Friction tape-wrapped screwdriver
- Scissors (P/N 100294-01)
- Tape measure (P/N 100305-01)
- Permanent marking pen (P/N 2102003-01)
- Hook blade utility knife
- Large screw driver

* NOTE: *Ripley-Miller MB11-7002* or *Jonard RRS-1222* *can be used instead of open blade knife.*

5.   48-864 Fiber RocketRibbon® 250 µm Armor Cable

Diagram A - **Method Using Two Bond Clamps.**

Diagram of cable end prepared for installation into a splice closure. Wires are secured in 3M bond clamps. **PN: 4460 D/FO**
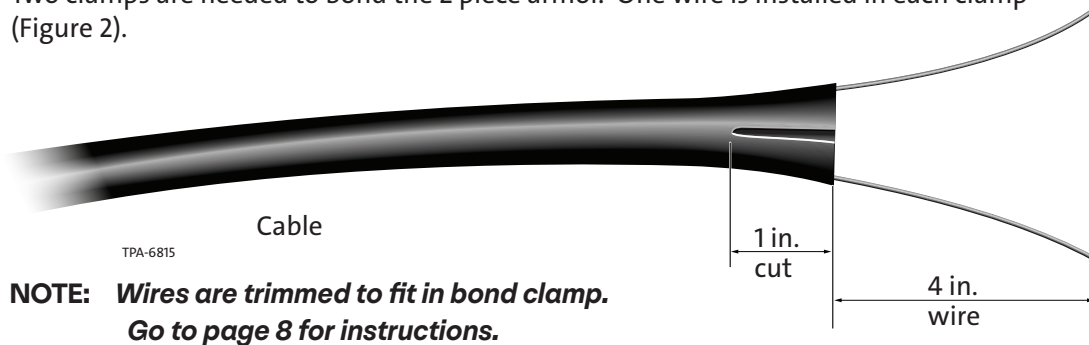Two clamps are needed to bond the 2 piece armor. One wire is installed in each clamp (Figure 2).

Cable

TPA-6815

1 in.
cut

4 in.
wire

NOTE: *Wires are trimmed to fit in bond clamp.*
             Go to page 8 for instructions.

Figure 2

Diagram B - **Method Using One Bond Clamp.**

Cable

TPA-6815B

1/4 in.
cut

4 in.
wire

Figure 3

NOTE: *Wires are trimmed to fit in bond clamp.*
             Go to page 9 for instructions.
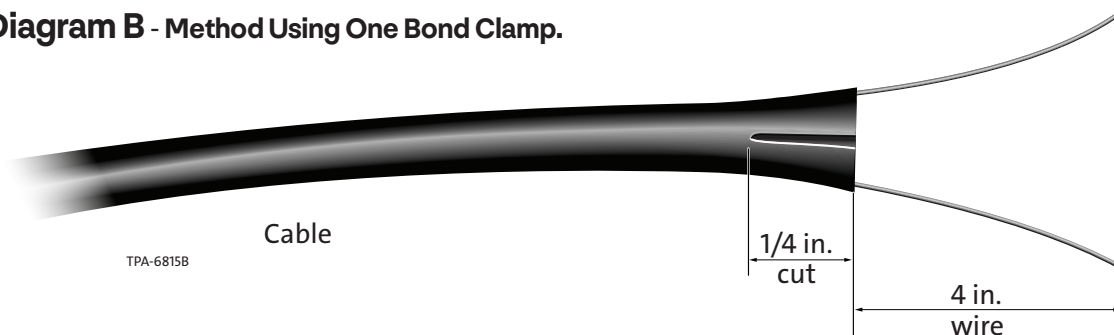
6.   Cable-End Sheath Removal

Step 1:   Determine the proper sheath removal length for the hardware being used. Mark a point at this distance from the end of the cable with a wrap of tape (Figure 4).

NOTE: *First, practice on a scrap piece of cable and calibrate any blades.*
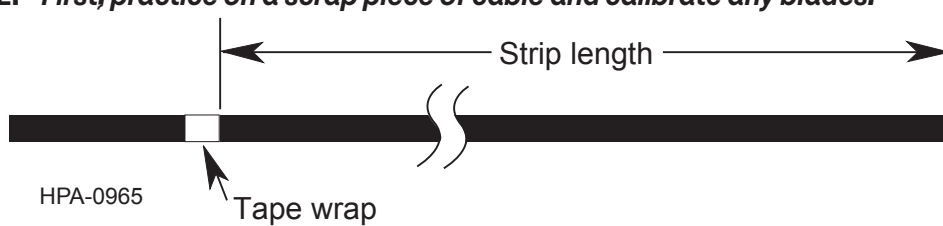

HPA-0965   Tape wrap

Figure 4

Step 2:   At the start of tape mark, remove 7 inches of jacket material over the wires and pry up each wire. Make a cut leaving 4 inches of wire from the end of the jackets at taped location to allow bonding in clamp (Figure 5). *See Diagram A and B on page 3.*

NOTE: *Ripley-Miller MB11-7002 or Jonard RRS-1222 can be used instead of open blade knife. (See page 17).*

NOTE: *Place knife blade flat against wire for an easier cut.*
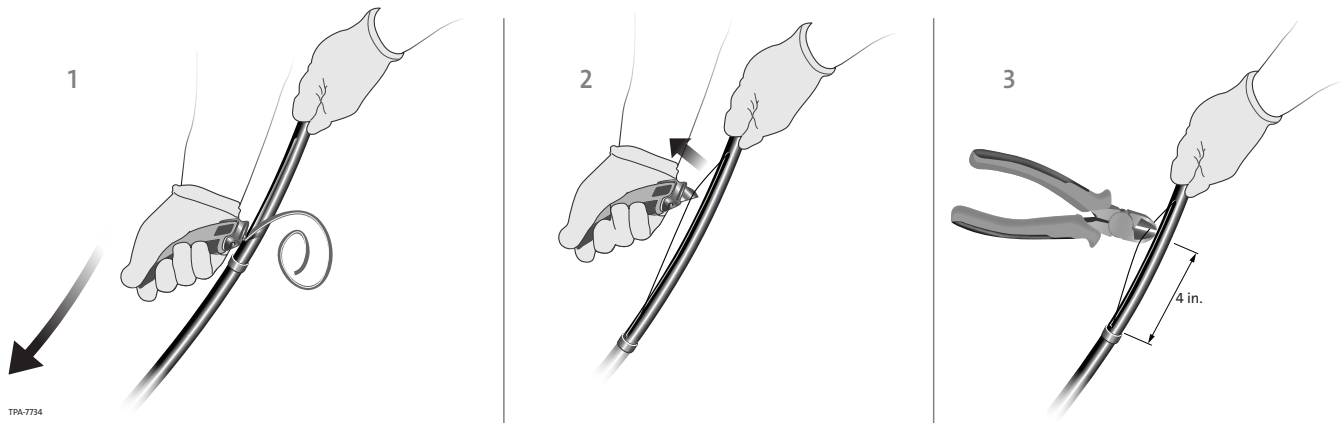

1

2

3

TPA-7734

4 in.

Figure 5

Step 3: Insert a screwdriver or needle nose pliers into the end of the cable and rock back and forth to break open at the FastAccess® technology ridges (Figure 6). Use needle nose pliers to wind down cable jacket and armor for about 6 inches, then use hands to pull jacket/armor to 2 inches past the end of the cable opening at tape mark (Figure 7).
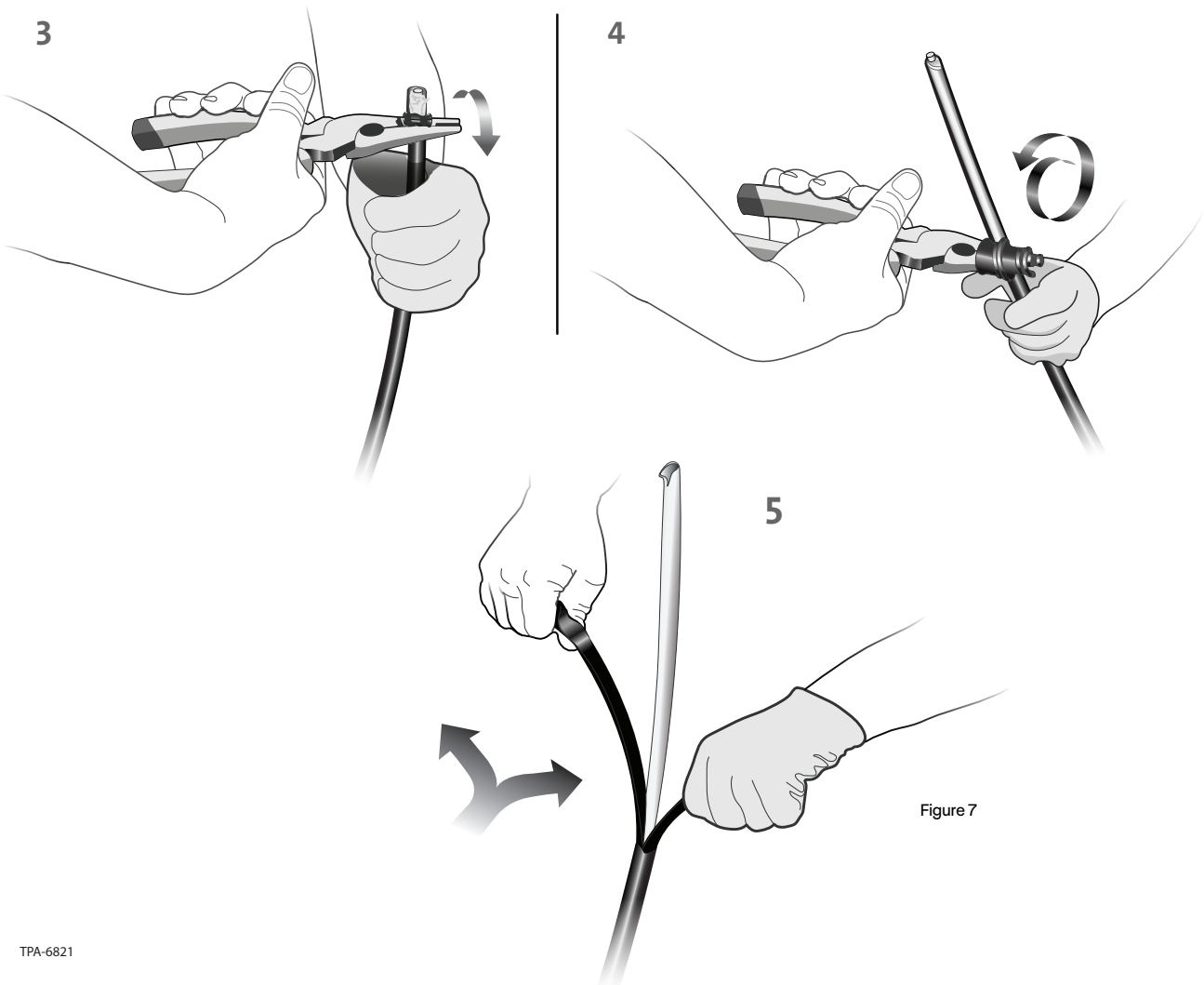
1

2

TPA-6820

Figure 6

3

4

5
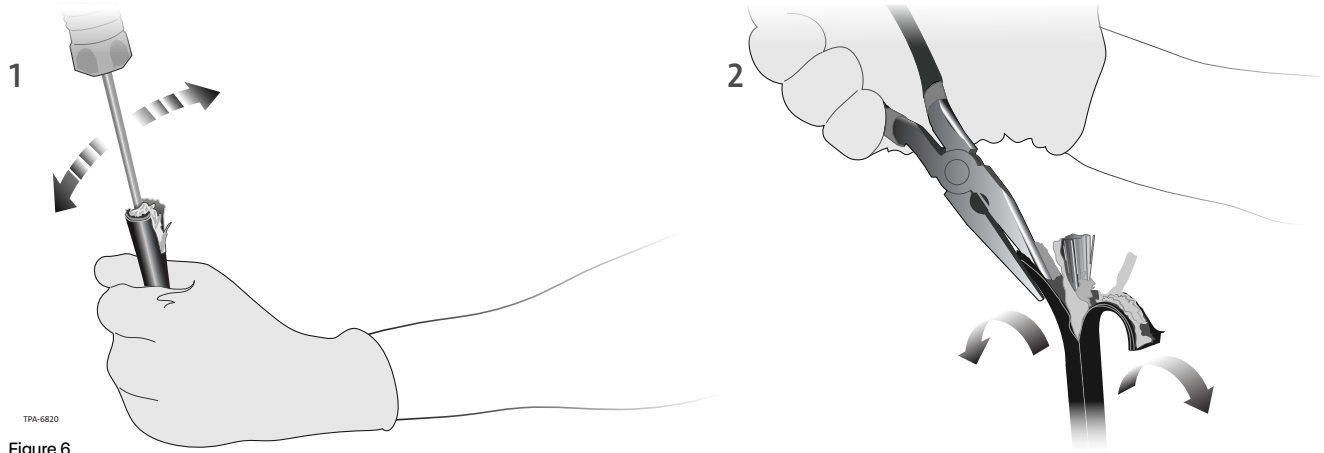
Figure 7

TPA-6821

Step 4: At the taped location, bend back jacket/armor and then cut it off. Make sure that 1 inch of opened jacket/armor remains to allow installation of bond clamps (Figure 8).
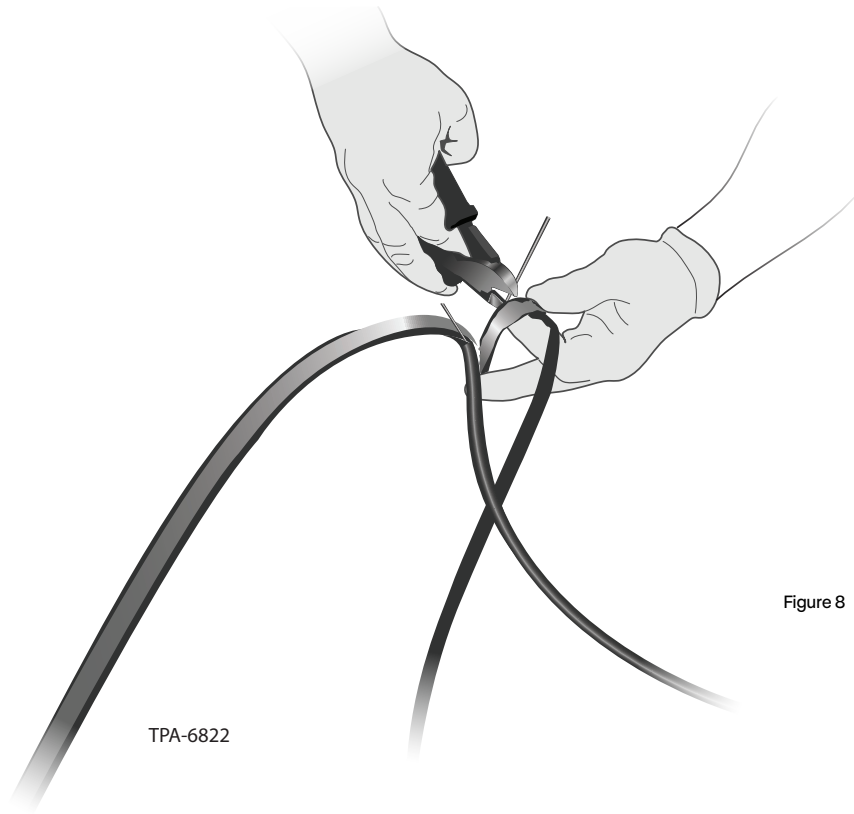
Figure 8

TPA-6822

Step 5: Cut off and remove water blocking tape (Figure 9).

Scissors

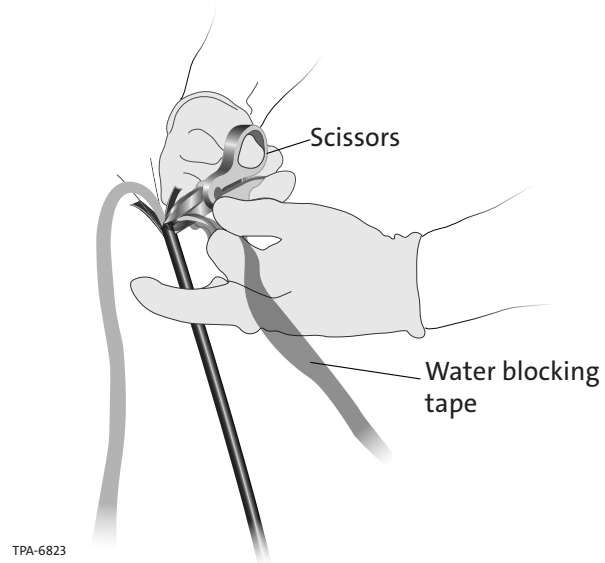Water blocking tape

TPA-6823

Figure 9

Step 6: Remove routable sleeve (48F-432F) or thin film (576 and 864) peeling by hand on end to locate ripcord. Then pull to opposite end leaving 6 inches of routable sleeve covering ribbons. Thin film on the 576 and 864F can be completely removed. (Figure 10).
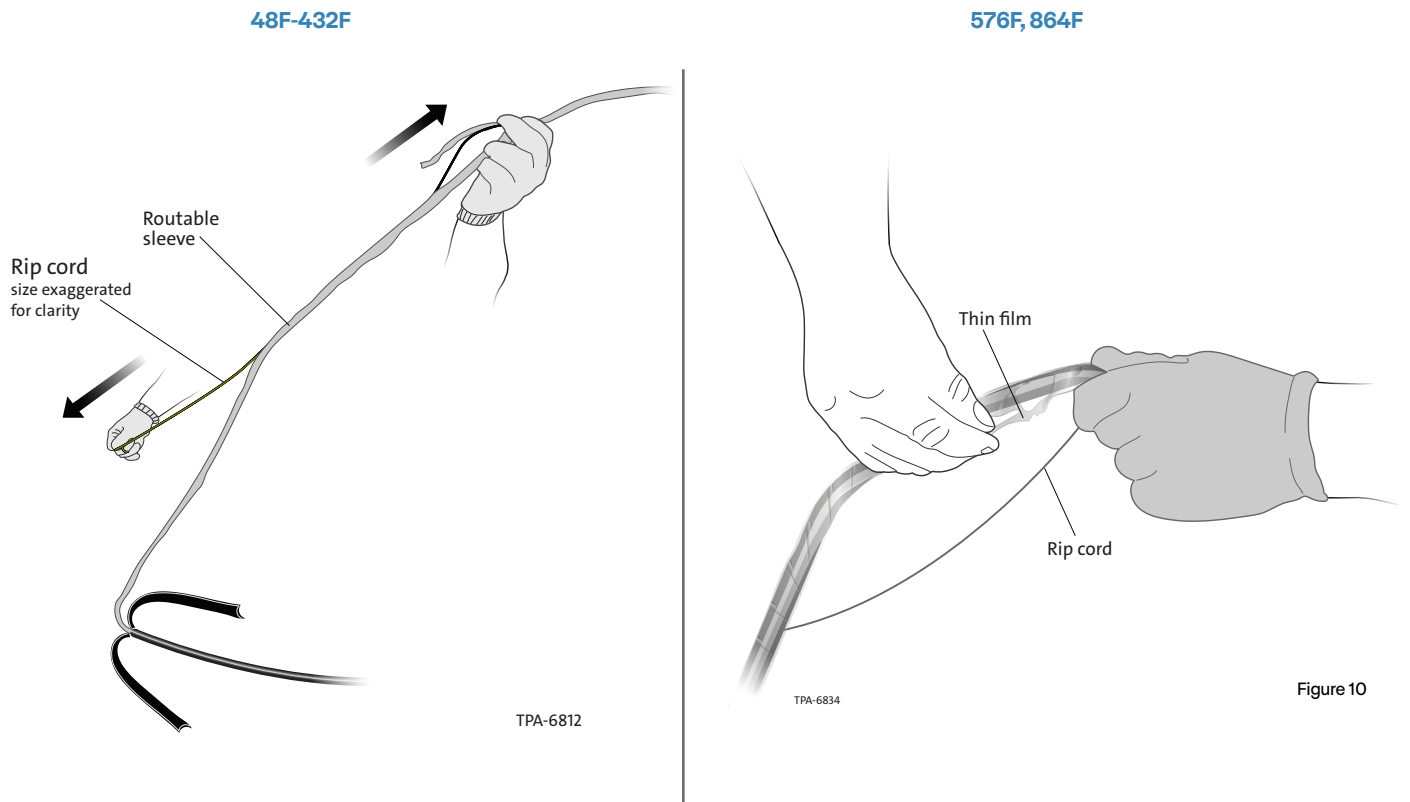
48F-432F

576F, 864F

Routable sleeve

Rip cord
size exaggerated for clarity

Thin film

Rip cord

TPA-6812

TPA-6834

Figure 10

Step 7: Trim off rip cord, center foam filler, and water blocking strings as applicable for each cable design. (Figure 11). Access is now complete.
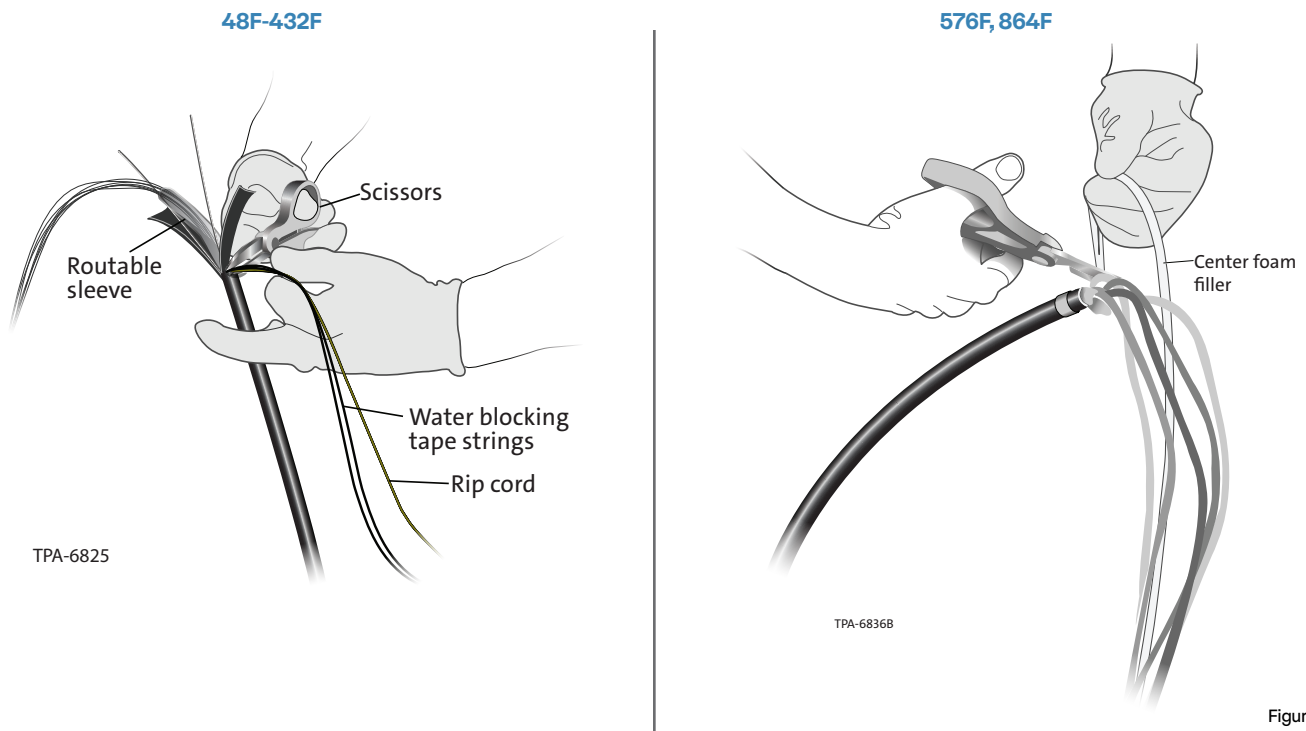
48F-432F

576F, 864F

Scissors

Routable sleeve

Water blocking tape strings

Rip cord

Center foam filler

TPA-6825

TPA-6836B

Figure 11

7. Accessing 144-Fiber Subunits

Step 1: Peel subunit with fingernail to expose ribbons (Figure 12). *Or use rip cord inside each of the subunits.*

Step 2: Continue to peel subunit jacket away from ribbons as indicated in Figure 13. Remove two water blocking strings.

TPA-5952

Figure 12

TPA-6101

Figure 13
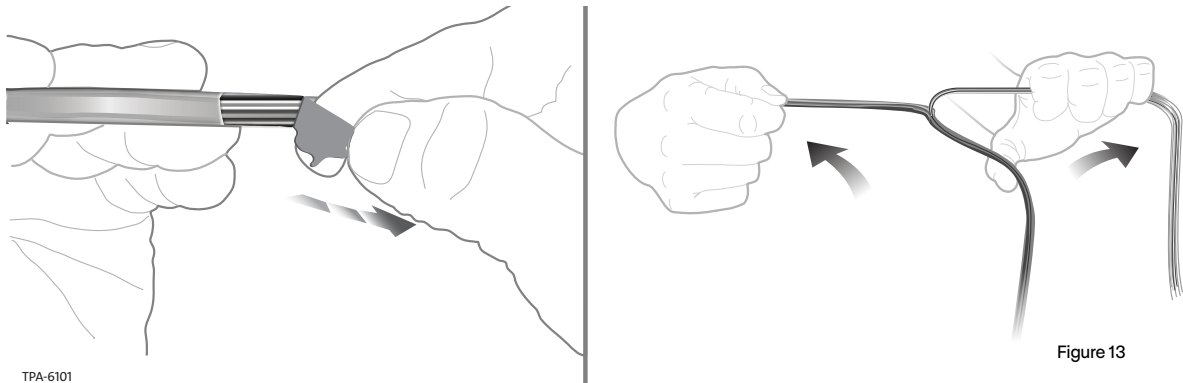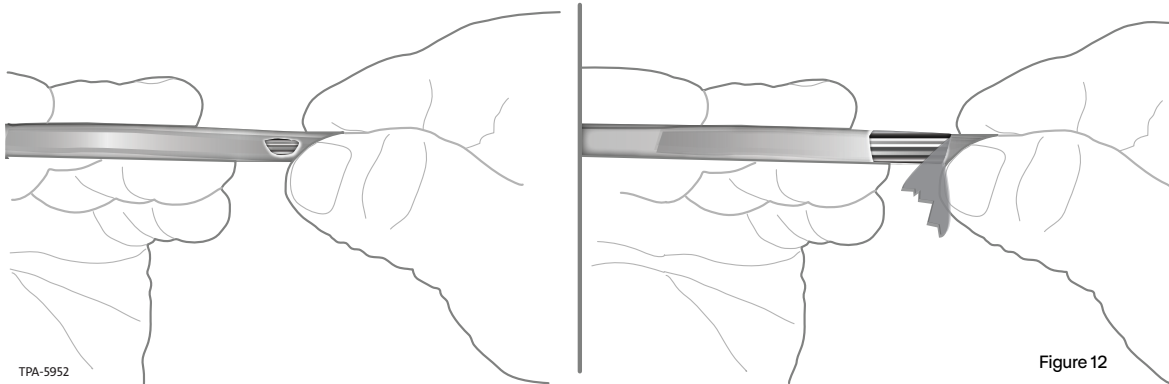
8. Accessing 12-Fiber Ribbons — 250 µm fiber only*

*if 200 µm fiber, separate ribbons by hand into 12 and 4 fiber counts. *See AE Note 171*.

Step 1: Use the RST-000 ribbon splitting tool to start the split on the 24 fiber ribbon.

TPA-6844
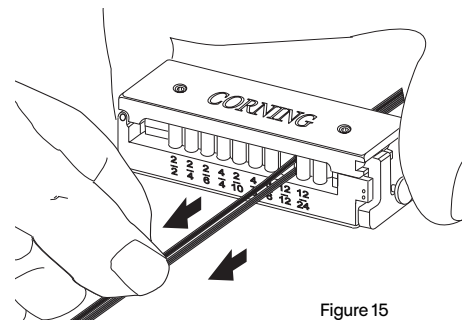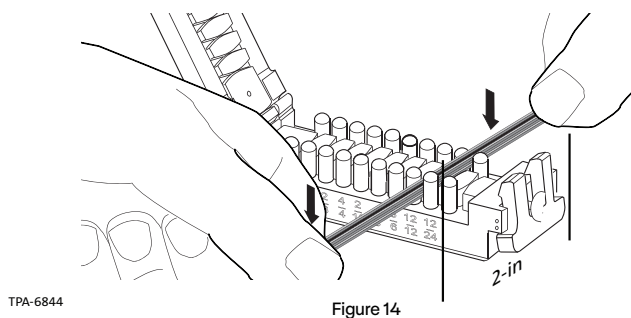
Figure 14

Figure 15

Step 2: Insert the ribbon into the (select split, i.e. 2-6) slot to allow 2 inches to extend out on one side (Figure 14). Close the door, push in and hold the slider button on the end of the tool, then pull ribbon through the tool to split only 2 inches (Figure 15).
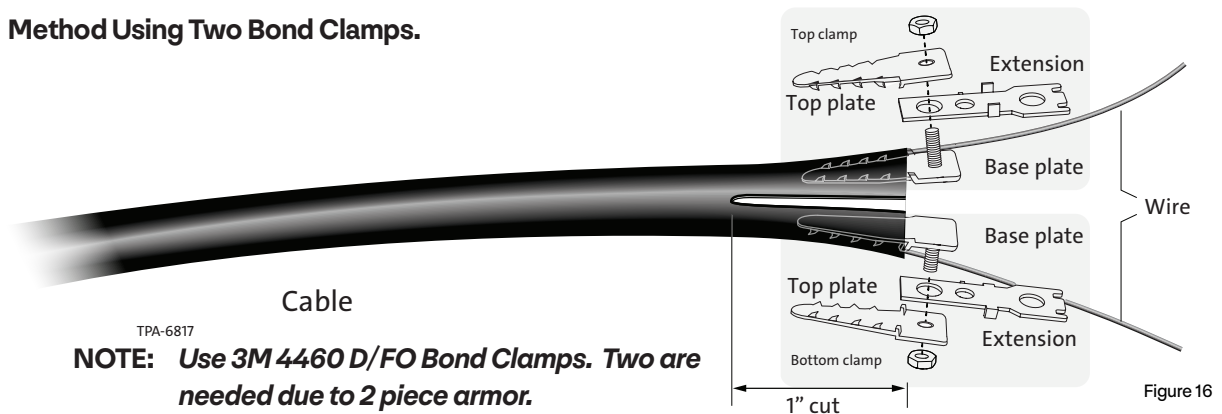
Step 3: Remove the ribbon from the tool.

# Installation of Bond Clamps once access is completed:

Method A - Using two bond clips.

- To ground the armor, carefully pry up the armor and sheath so that the base plate of the grounding clamp can be slid under the armor.

- Slide the base plate under the armor. Be careful not to damage the ribbons. Place the top plate over the base plate with extension to secure wires and tighten with 10 mm locknut. A few light taps on the top plate may help seat the teeth of the grounding clamp. Install one clamp on each side with extension to secure wires (Figure 16).
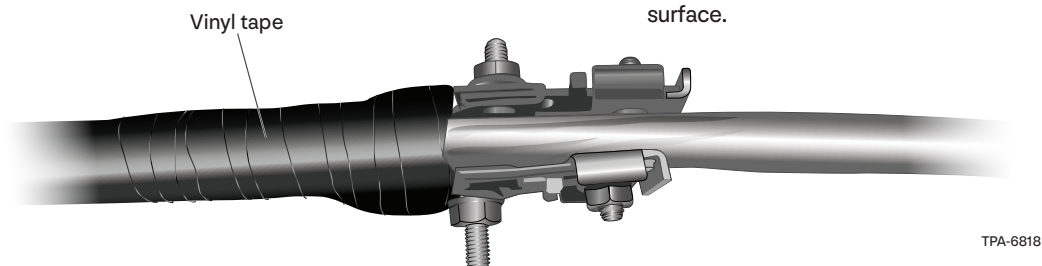
Method Using Two Bond Clamps.

Top clamp
Extension
Top plate
Base plate
Wire
Base plate
Top plate
Extension
Bottom clamp

Cable
TPA-6817

NOTE: *Use 3M 4460 D/FO Bond Clamps. Two are needed due to 2 piece armor.*

1" cut

Figure 16

- On both sides, place the grounding braid on top of the lock nut and secure with a second lock nut. (Figure 17).
- Cover the grounding clamp and split portion of the sheath with vinyl tape as shown in (Figure 18).

10 mm locknut
Grounding braid
Extension
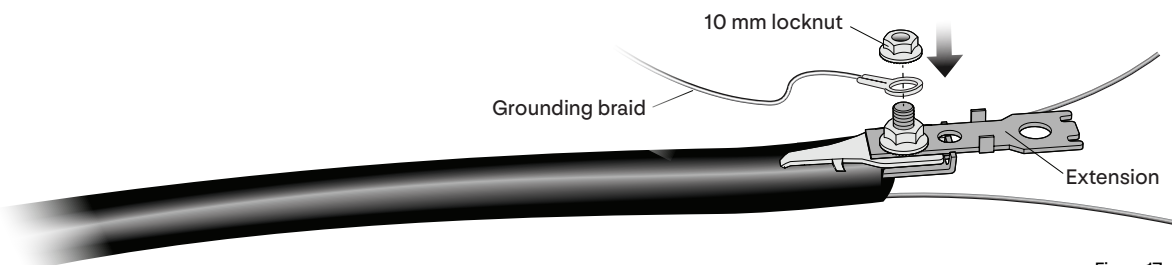
Figure 17

Note: One wire installed in each clamp. Wires must be placed flat on clamp surface.
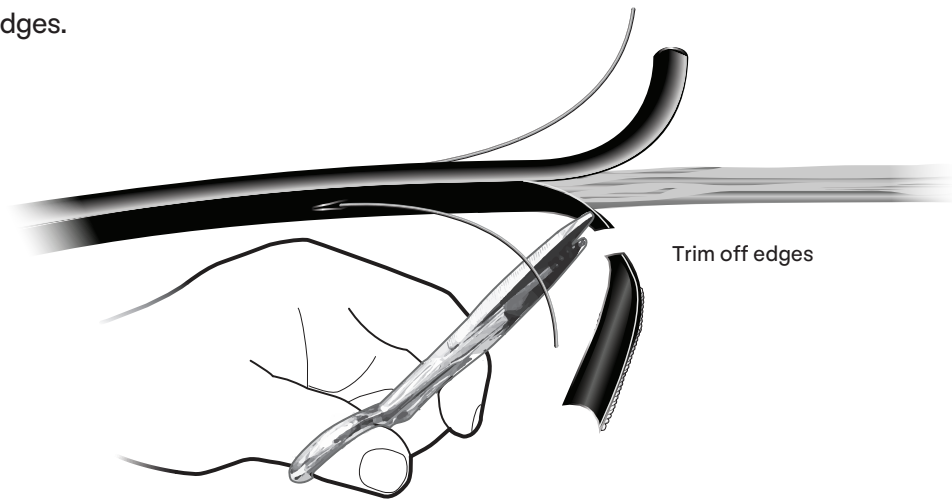
Vinyl tape

TPA-6818

NOTE: *This cable has two pieces of armor and requires installation of two bond clamps. Use 3M 4460 D/FO clamps or see method B.*
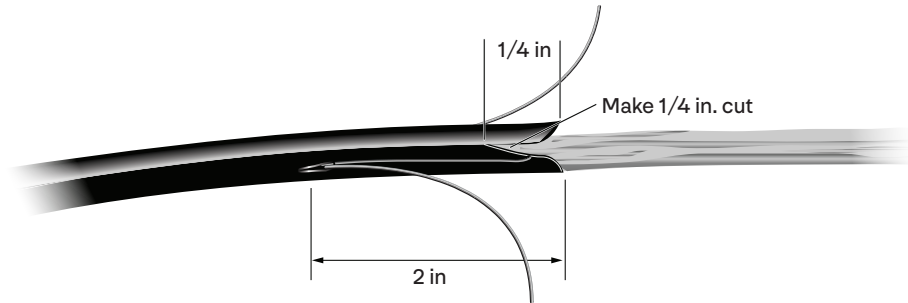
Figure 18

Method B - Using one bond clip.

Step 1:   Trim off the edges.

Trim off edges

**Step 2:**   Make a 1/4" cut on both sides of the cable at the FastAccess® technology location ridges.

NOTE: *If larger than 1/4" the one clamp method will not work. Clamp must be installed in the middle of location where each armor piece meets.*

1/4 in

Make 1/4 in. cut

2 in

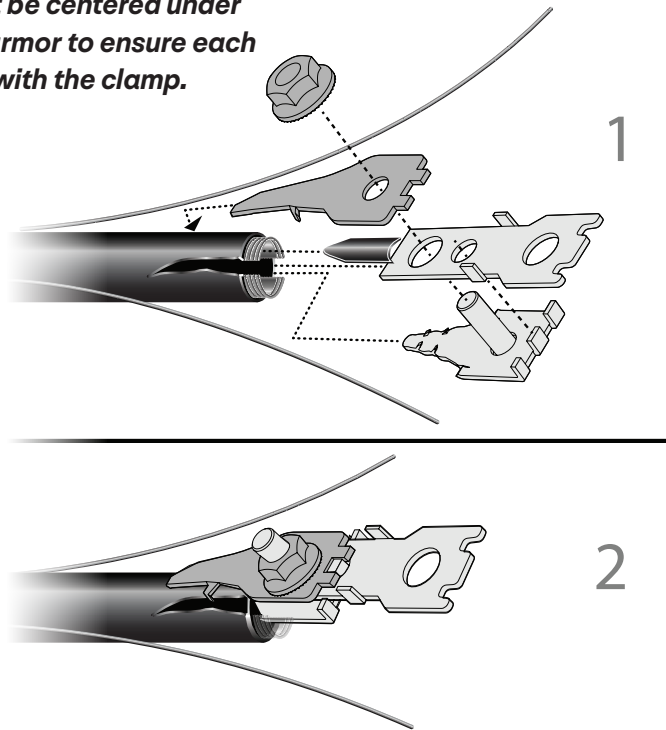**Step 3:**   Cut to fit, then insert plastic protection plate.

Trim out to allow extension to fit.
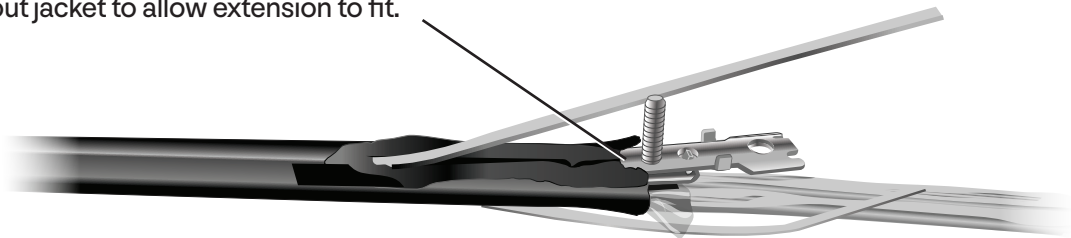
Plastic protection plate

TPA-7054
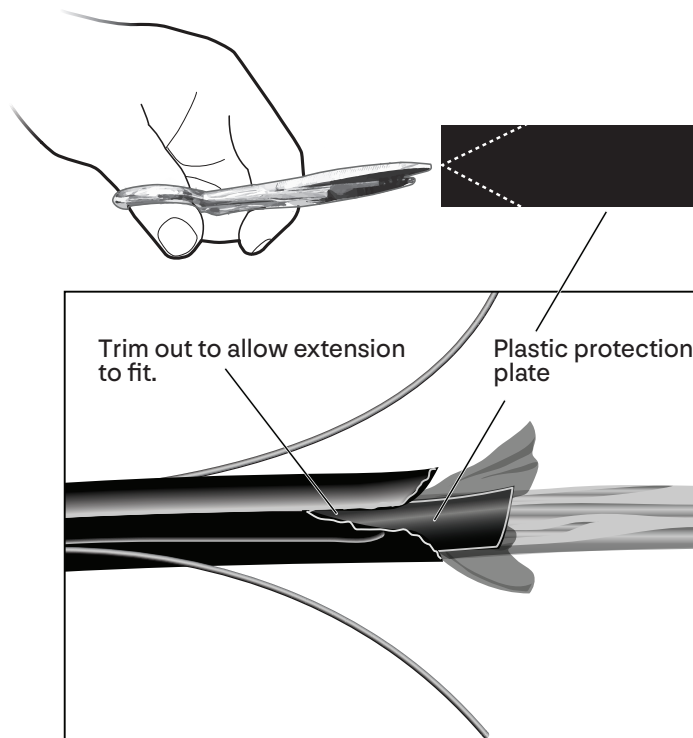
Step 4: Attach bond clamp with extension used to secure wires.

IMPORTANT: *Base plate must be centered under both pieces of armor to ensure each makes contact with the clamp.*

1

2

Step 5: Trim out jacket to allow extension to fit.
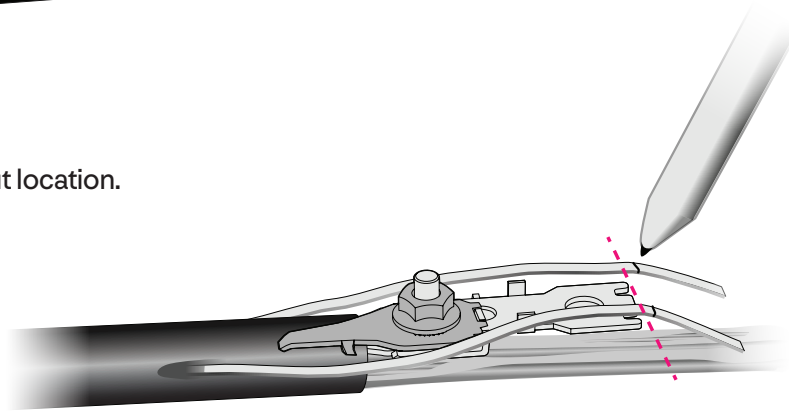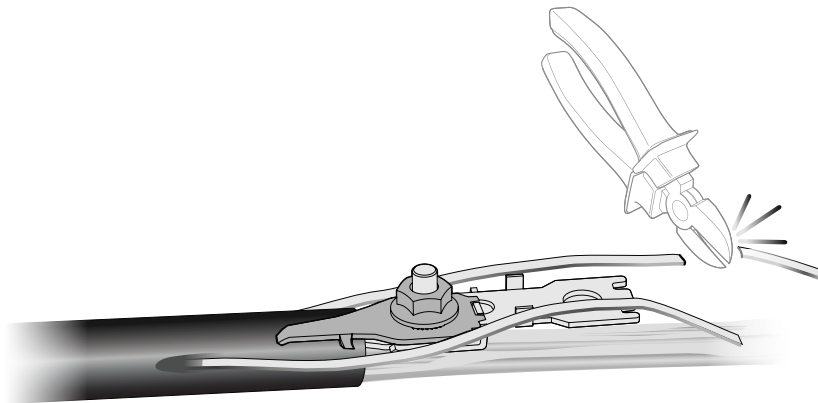
Step 6: Secure with nut.

TPA-7055

Step 7: Check and make sure the bond clamp is centered under both armor pieces. Adjust if necessary.
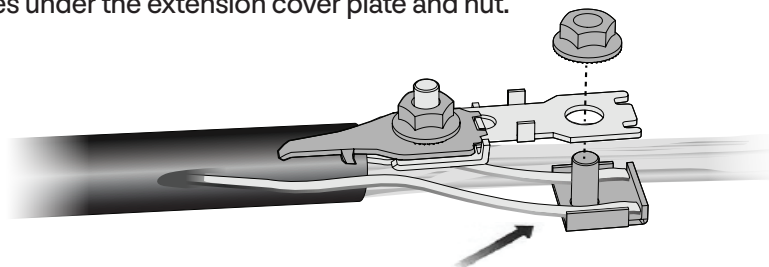
Step 8: Mark wires at cut location.
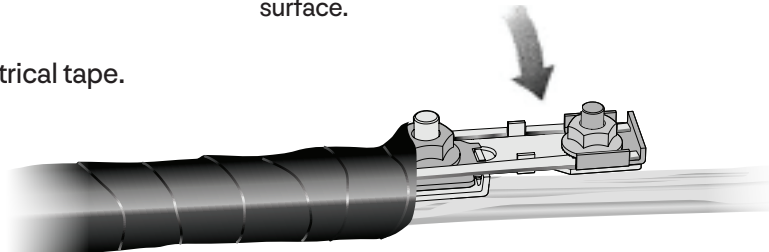
Step 9: Cut the wires.

Step 10: Secure the wires under the extension cover plate and nut.

Note: Wires must be placed flat on clamp surface.

Step 11: Wrap with electrical tape.

TPA-7056

9.   48-864 Fiber RocketRibbon® 250 μm Armor Cable, Mid-Span Access

Step 1:   Mark two locations on the cable to identify mid-span opening required (Figure 19).
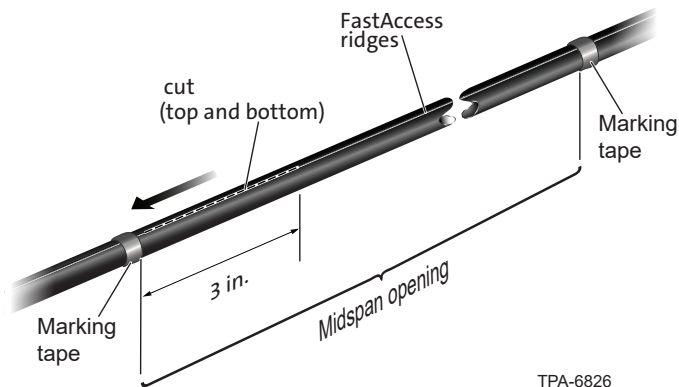
Figure 19

TPA-6826

Step 2:   At each marked location, slice off jacket material 12 inches toward mid-span on top of the wires on each side on both ends (Figure 20). Pry out and cut wires in the center (wires will be trimmed during bond clamp installation).(Figure 21).

NOTE: *Ripley-Miller MB11-7002 or Jonard RRS-1222 can be used instead of open blade knife. (See page 17)*

Note: *Place knife blade flat against wire for an easier cut.*

Figure 20

TPA-6827

12 in.

Cut wires in center of 12 in. opening

TPA-6828

Figure 21

Step 3: Bend back wires on both ends. On one side of the mid-span cut down to the armor in the channel where the wires were located. Repeat on opposite side of cable. Do 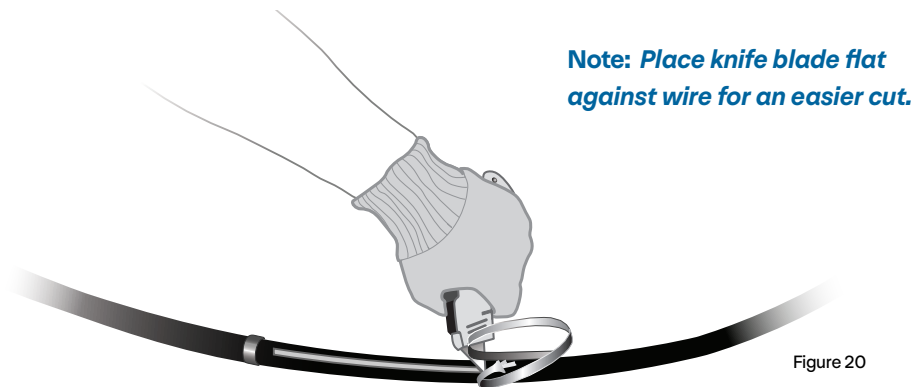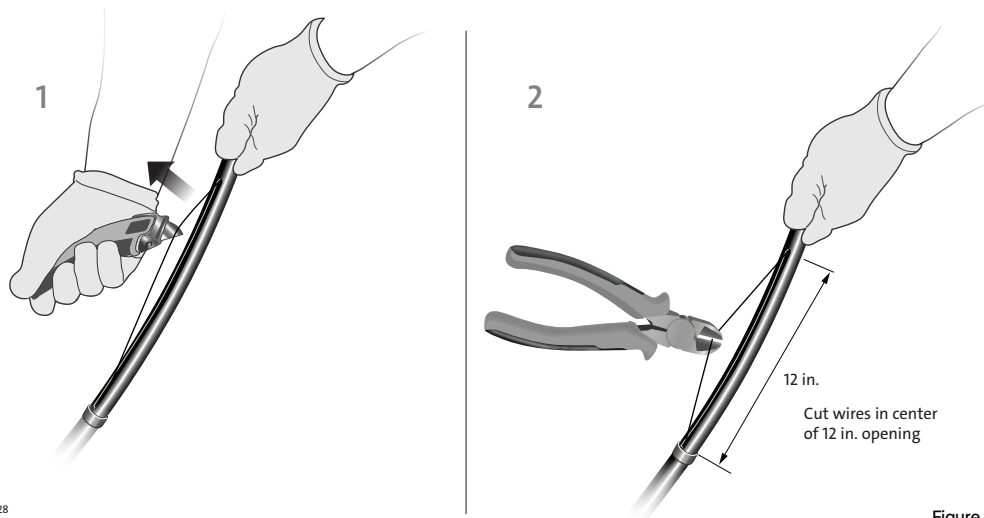not cut through armor. Then cut a 3 inch length between the FastAccess® technology ridges on one end down to the armor but not through the armor. Only cut through the jacket material. These cuts are made on the end toward the mid-span opening and are only done on one side of the mid-span (Figure 22). Perform 3 inch cuts on both sides of the cable.
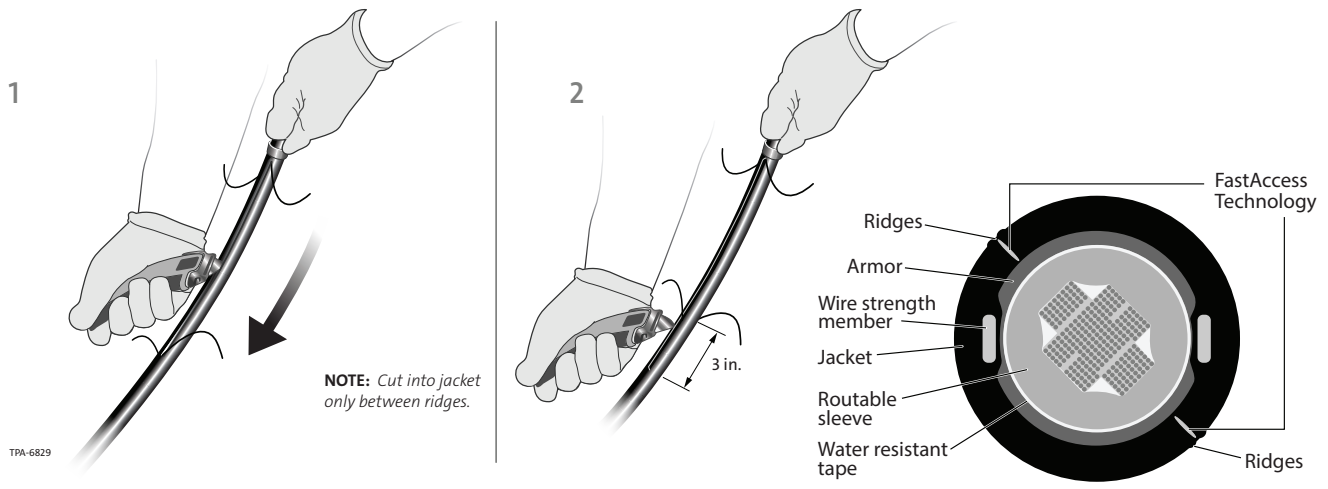

NOTE: *Cut into jacket only between ridges.*

3 in.

FastAccess Technology
Ridges
Armor
Wire strength member
Jacket
Routable sleeve
Water resistant tape
Ridges

TPA-6829

Figure 22

Step 4: On the end opposite where the 3-inch cuts were made between the FastAccess technology ridges, make a ring cut down to the armor. Only cut through the jacket material. Flex and pop open the jacket/armor.

NOTE: *The 864F and 576F cable will require the use of a hook blade to make cuts on both sides of the cable through the jacket/armor in the channel where the wires were located. This cut will extend from the ring cut to the end of the channel. Then flex and pop open the jacket/armor.*

Pull the jacket/armor and trim jacket/armor and wires back to achieve the lengths shown in Diagram A. The cable jacket/armor can be removed due to the FastAccess technology feature and the two-piece armor. Refer to Diagram A for the lengths of slit and wires. (Figure 23).

Diagram A
Diagram of cable end prepared for installation into a splice closure. Wires are secured in 3M bond clamps. PN: 4460 D/FO
Two clamps are needed to bond the 2 piece armor. One wire is installed in each clamp (Figure 2).

Cable

TPA-6815

1 in. cut

4 in. wire

Figure 23

SNAP

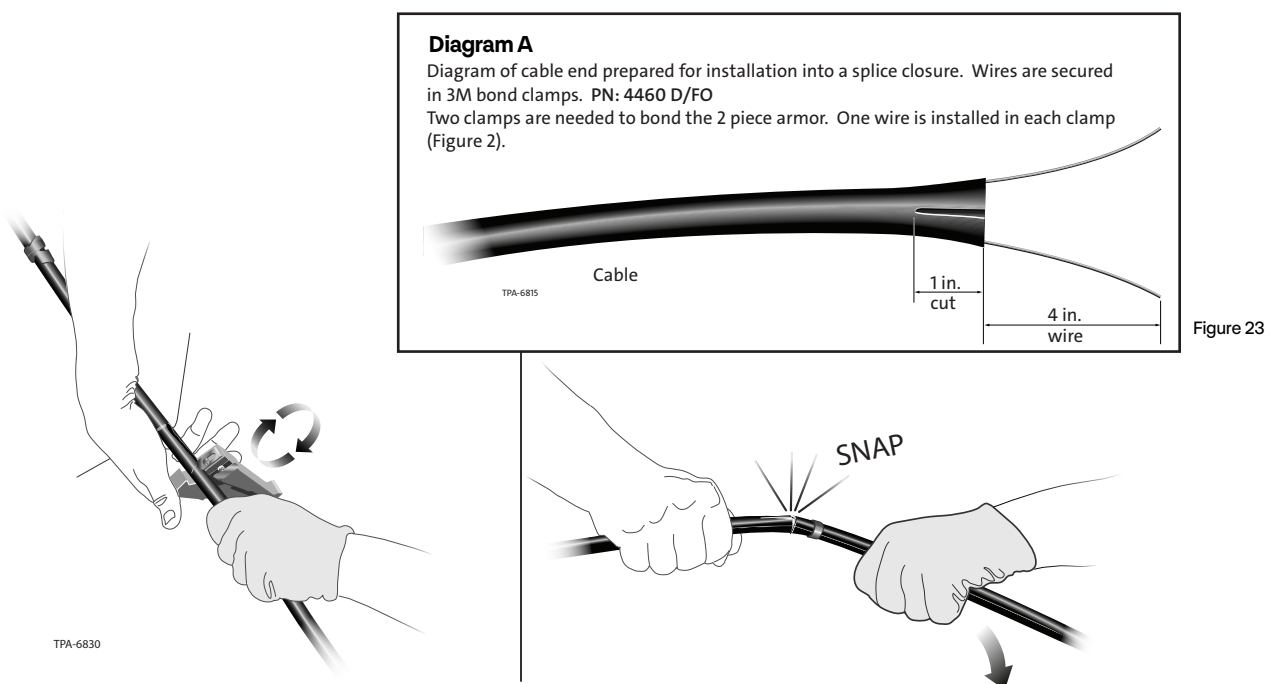TPA-6830

Step 5:   Remove water blocking tape (Figure 24).

Routable
sleeve

Water Blocking
tape

TPA-6831
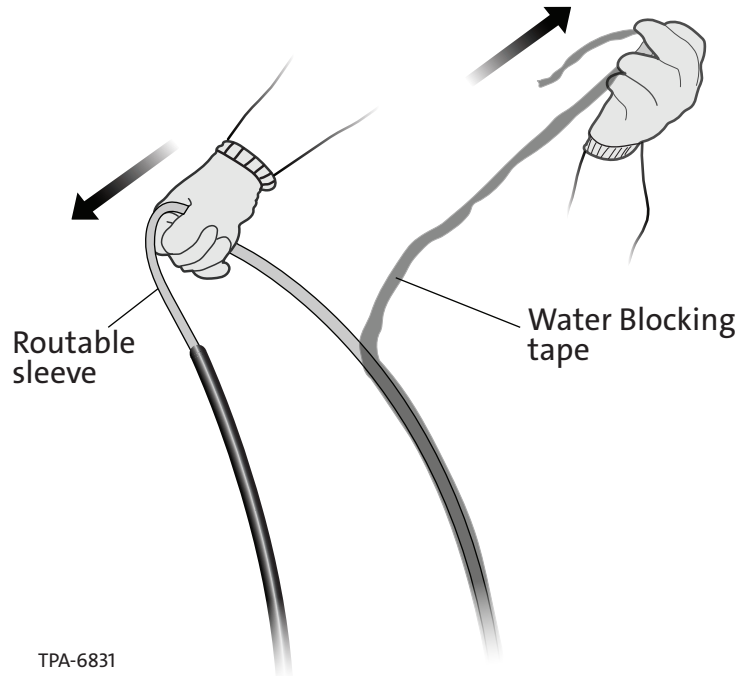
Figure 24

Step 6A: Remove routable sleeve (48F-432F) by tearing a few inches off on one end (leave 6 inches). Locate the rip cord and cut. Then pull to opposite end also leaving 6 inches of routable sleeve or completely removing thin film. Remove water blocking strings (3) from ribbon stacks (Figure 25). This concludes the mid-span access process.
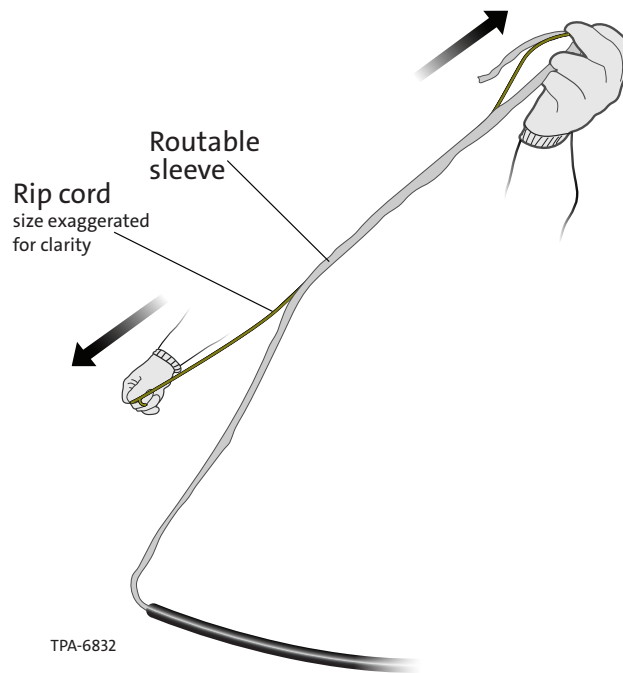
48F -432F

Routable
sleeve

Rip cord
size exaggerated
for clarity

TPA-6832

Figure 25

Thin Film Binder (576 - 864F)

Step 6B: Pull open some thin film by hand on one end of the midspan opening and locate the rip cord. Pull the rip cord to the ring cut location. (Figure 26).

864F

Thin film

Rip cord

TPA-6842

Thin film
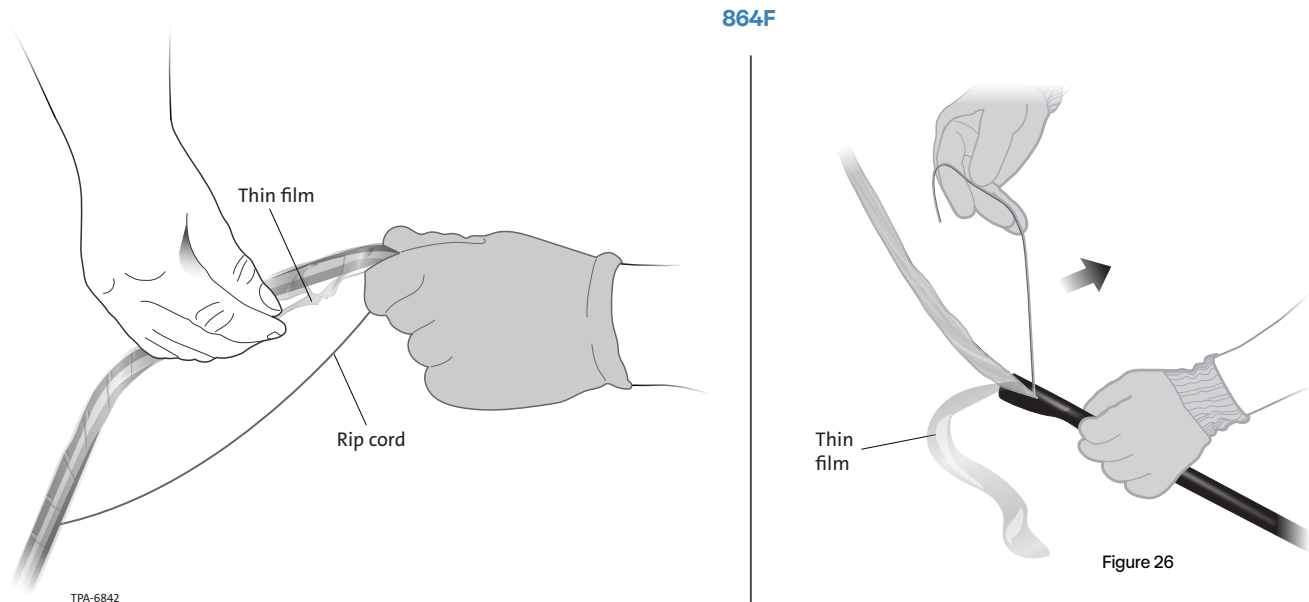
Figure 26

Step 7:   Remove center foam filler and water blocking strings. Cut each off at the ring cut location (Figure 27). Access is complete.

Center foam filler

TPA-6836B

Figure 27

MILLER®
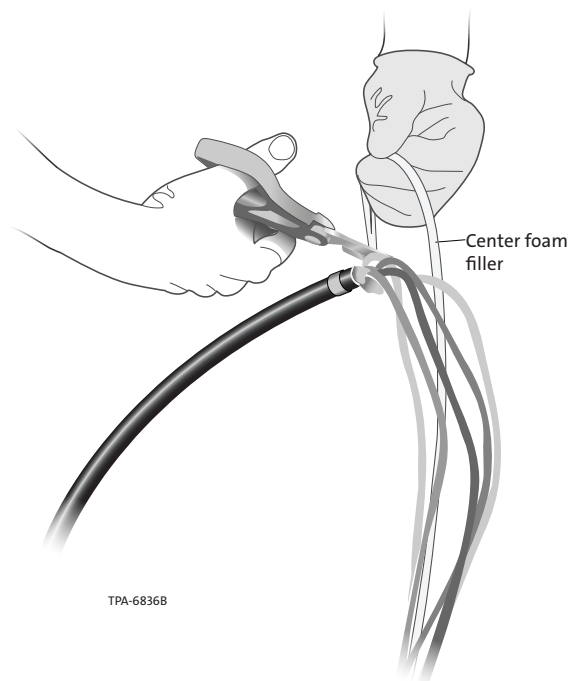
MB11-7002

WARNING! THIS TOOL SHOULD NOT BE USED ON LIVE ELECTRICAL CIRCUITS. IT IS PROTECTED AGAINST ELECTRICAL SHOCK!

Always use OSHA/ANSI/CE or other industry approved eye protection when using tools. This tool is not to be used for purposes other than intended. Read carefully and understand instructions before using this tool.

Warranty: Ripley warrants its products against materials and workmanship for a period of two years from date of shipment from the Ripley factory provided is utilized in accordance with instructions and specified ratings.

Product Overview

The MB11 series tool is designed to shave the jacket from the surface of the strength members on armored cables. This is necessary to expose the strength members for connection to mounting cleats on end-strip applications. It is also necessary to expose the strength members for mid-span operations. Compatible with OFS, Corning and comparable cable types.

Features

• Ergonomic handle for reduced fatigue and easier force generation

• L-Bracket to apply clamping force on cable, ensuring a reliable cut

• Large yellow wing knob for easy adjustments and reliable hold

• Tool-free blade replacement with captive hardware

• Offset block allows blade to be reversed for double blade life

• Compatible with standard Utility Knife Blades

Operation Instructions

1. Locate the strength members inside the cable

2. Open tool bracket by loosening the yellow wing-knob

3. Place tool on cable, with blade directly on the strength member location

4. Close tool on cable, squeezing directly behind the block and under the bracket

5. Tighten wing-knob to set the tool for the cable diameter

6. Pull the tool down the cable for the length of the desired strip

7. Repeat steps on opposite side of cable for the other strength member

A. To swap the blade, use the black knob to release the pressure on the blade

B. Slide the blade out of the side marked with the arrow

C. Flip blade to use the undamaged portion of the blade edge
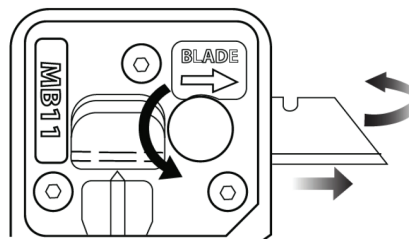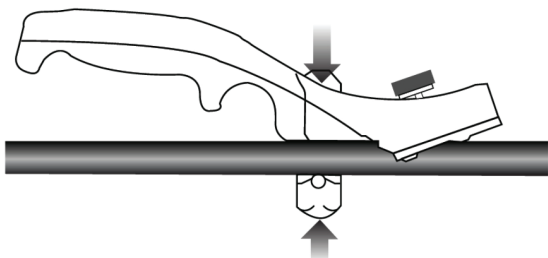
For more information or to locate your nearest authorized Ripley® distributor, visit **www.ripley-tools.com** or call **1 (800) 528-8665** to speak with a customer service representative.

HUBBELL® A proud member of the Hubbell family.

INTRODUCTION

The RRS-1222 has been designed to shave thick jacketed cable, such as Corning's armored and non-armored RocketRibbon® cable, and is perfect for making access windows on cables 0.47" to 0.87" (12 - 22 mm) in diameter.

HOW TO USE ON ROCKETRIBBON® CABLE

1. Using a Phillips head screwdriver, loosen the screw of the cable holder, and adjust it to fit the size of the cable you are working on.

    a. For 144f RocketRibbon® cable, set the screw of the cable holder to the lowest position.

    b. For 288f RocketRibbon® cable, set the screw of the cable holder to the middle position.

    c. For 432f and 864f RocketRibbon® cables, set the screw of the cable holder to the highest position.

2. Locate the strength members of the cable you are working on by looking for the flat, inflexible sections of the cable.

3. Place the RRS-1222 over the cable, with the blade positioned over the jacket of the strength member you want to shave.

4. Angle the tool downwards, so the blade is contacting the jacket, and pull the RRS-1222 towards you to shave the cable jacket.