CORNING

MiniXtend® and MiniXtend® HD Cable with Binderless* FastAccess® Technology Jacket and Buffer Tube Removal Procedures

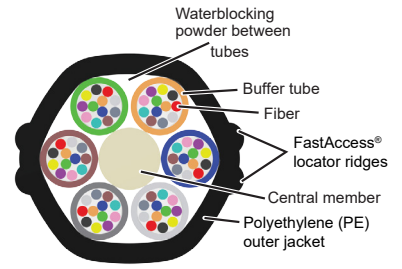
P/N 004-273-AEN, Issue 8

1. General

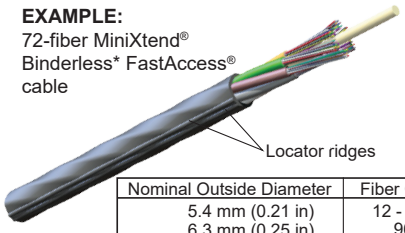
This document provides recommended jacket and buffer tube removal procedures for MiniXtend® and MiniXtend® HD cable with Binderless* FastAccess® Technology.

MiniXtend® Binderless* FastAccess® cable

Nominal OD 5.4 mm (0.21 in)



EXAMPLE:
72-fiber MiniXtend® Binderless* FastAccess® cable



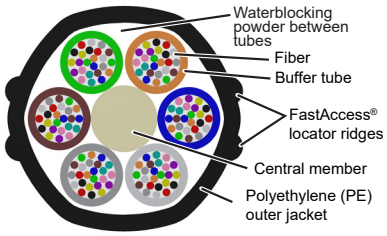
Nominal Outside Diameter	Fiber Count
5.4 mm (0.21 in)	12 - 72
6.3 mm (0.25 in)	96
8.1 mm (0.32 in)	144

12 fibers/1.4 mm Buffer Tube

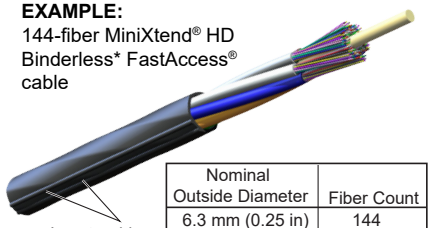
TPA-6165

MiniXtend® HD Binderless* FastAccess® cable

Nominal O.D. 6.3 mm (0.25 in)



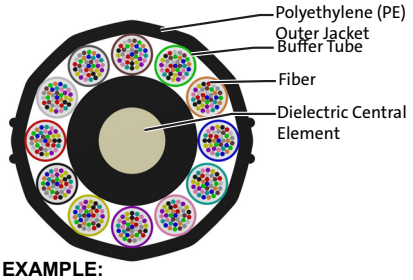
EXAMPLE:
144-fiber MiniXtend® HD Binderless* FastAccess® cable



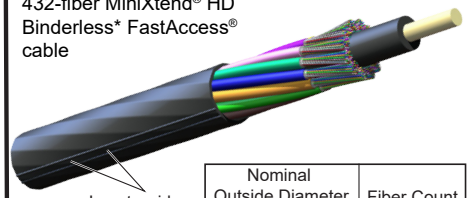
Nominal Outside Diameter	Fiber Count
6.3 mm (0.25 in)	144
7.5 mm (0.30 in)	192
8.0 mm (0.31 in)	216
9.7 mm (0.38 in)	288

24 fibers/1.7 mm Buffer Tube

Nominal O.D. 10.8 mm (0.43 in)



EXAMPLE:
432-fiber MiniXtend® HD Binderless* FastAccess® cable



Nominal Outside Diameter	Fiber Count
8.1 mm (0.32 in)	288
10.8 mm (0.43 in)	432

36 fibers/1.95 mm Buffer Tube

Fiber coloring
1-12: blue, orange, green, brown, slate, white, red, black, yellow, violet, rose, aqua
13-24 (all with one black ring mark): blue, orange, green, brown, slate, white, red, natural, yellow, violet, rose, aqua
25-36 (all with two black ring marks): blue, orange, green, brown, slate, white, red, natural, yellow, violet, rose, aqua
Buffer tube color coding
blue, orange, green, brown, slate, white, red, black, yellow, violet, rose, aqua
Outer jacket material
Polyethylene (PE)

Figure 1

*Corning's proprietary binderless FastAccess® technology refers to the combination of a Corning FastAccess technology jacket with an innovative technology used to bind cable construction through the manufacturing process, eliminating the use of binder yarns and waterblocking tapes.

2. Precautions

2.1 Cable Handling Precautions

	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.

	CAUTION: This cable is intended to be jetted or blown into a microduct. If pulled ensure breakaway swivel is used that is attached with a basket grip to the central strength member (GRP). Adhere to the minimum bend radius of the cable; do not exceed the cable's specified maximum allowed installation tension.

2.2 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.

2.3 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 fiber. Pieces of glass fiber are very sharp and have the potential to damage the eye.

2.4 Safety Gloves

	CAUTION: The wearing of cut-resistant safety gloves to protect your hands from accidental injury when using sharp-bladed tools and armored cable is strongly recommended. Use extreme care when working with severed armor. There will be a sharp edge where armor is cut. To minimize the chance of injury from the cut armor, cover the exposed edge with a wrap of electrical tape. To minimize the chance of injury from sharp-bladed tools, always cut away from yourself and others. Dispose of used blades and armor scrap properly.

3. Tools and Materials

Tools for end- and mid-span cable access are available from two different companies: Ripley and Jonard. These companies also offer buffer tube access tools. The list of tools is provided in this section.

Ripley Tools:

Ripley Part Number	Tool Name	Function	Tool Manufacturer
MB01-7001	MSAT® 16	Buffer tube removal – mid-span, long cut	Ripley Tools
80990	FTS-005	Buffer tube removal – ring cut for end of tube	Ripley Tools
MB01-7500 (1 pair of blades) MB01-7501 (5 pack)	MSAT® 16 replacement blade	Replacement blades	Ripley Tools
MB02-7001	MiniXtend® access tool	Midspan and end access & outer jacket removal - ring and long cuts, use 0.6mm insert	Ripley Tools
MB02-7500	Replacements blades Kit for MB02 - 7001	Replacement Blades for MB02-7001	Ripley Tools

NOTE: *For more information or to locate the nearest authorized Ripley® distributor, please visit www.ripley-tools.com or call 1 (800) 528-8665 to speak to a customer service representative.*

Jonard Tools:

Jonard Part Number	Tool Name	Function	Tool Manufacturer
Tools by Jonard for MiniXtend® Cable with Binderless* FastAccess® Except 36 F/tube 288 F and 432 F cables:			
MS-326	MS-326	Mid-span and end outer jacket removal – ring and long cuts	Jonard
MSB-5010	MS-326 Replacement blades	Replacement blades for MS-326	Jonard
MS-6	MS-6	Buffer tube removal – mid-span, long cut	Jonard
MSB-1533	MS-6 Replacement blades	Replacement blades for MS-6	Jonard
MS-306	MS-306	Buffer tube removal – ring and long cuts	Jonard
MS-306RB	MS-306RB Replacement blades	Replacement blades for MS-306	Jonard
Tools by Jonard for MiniXtend Cable with Binderless* FastAccess with 36 F/tube 288 F and 432 F cables:			
MS-336	MS-336	Mid-span and end outer jacket removal – ring and long cuts	Jonard
MS-336RB	MS-336RB	Replacement Blades for MS-336	Jonard
MS-6	MS-6	Buffer tube removal – mid-span, long cut	Jonard
MSB-1533	MS-6 Replacement blades	Replacement blades for MS-6 tool	Jonard
MS-306	MS-306	Buffer tube removal - ring and long cuts	Jonard
MS-306RB	MS-306RB Replacement blades	Replacement blades for MS-306	Jonard

NOTE: *To locate where to buy Jonard Tools products please visit their website www.jonard.com*

3.1 Cable Jacket Removal

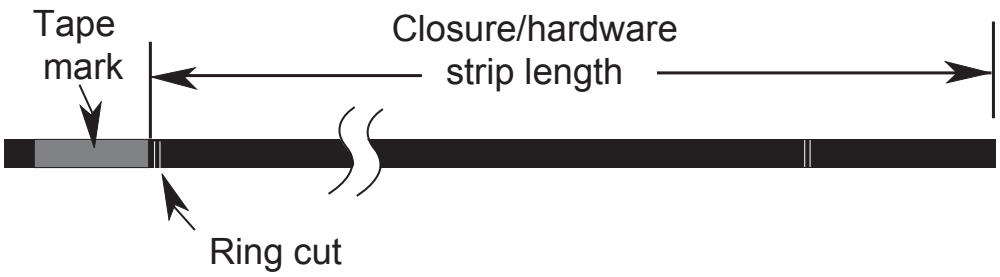
Other commonly used and available tools and materials include:

- Sharpie Pen (silver)
- Can of compressed air (to clean tools)
- Small scissors and snips
- Ruler
- Electrical tape

4. Cable End Access

4.1 Jacket Removal

Step 1: Based on the closure/hardware documentation being used, measure and use a wrap of vinyl tape to mark the required jacket removal length (Figure 2).



Not to scale

TPA-4937

Figure 2

4.1.1 Using Standard Tools:

Step 1: Use needle-nose pliers or side-cutters to start tear (Figure 3).

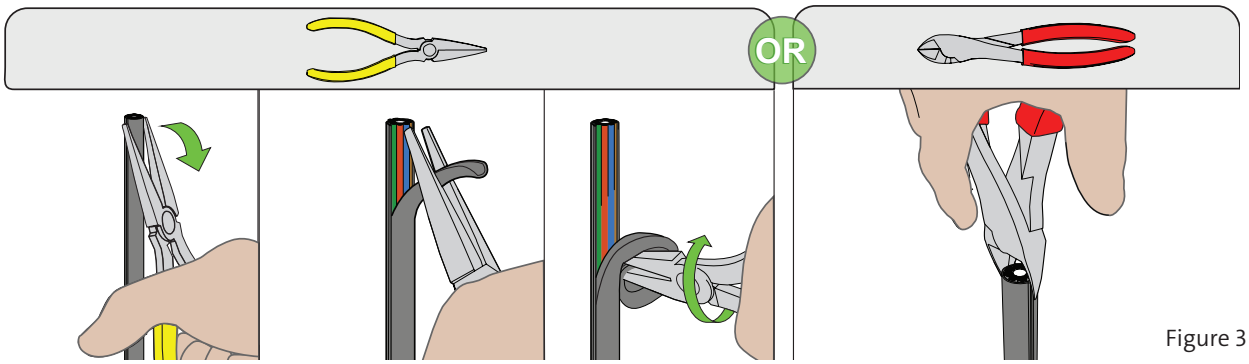


Figure 3

Step 2: With your fingers (Figure 4A), needle-nose pliers (4B), or sheath knife (4C), begin to peel back the split pieces of outer jacket at the end of the cable (Figure 4).

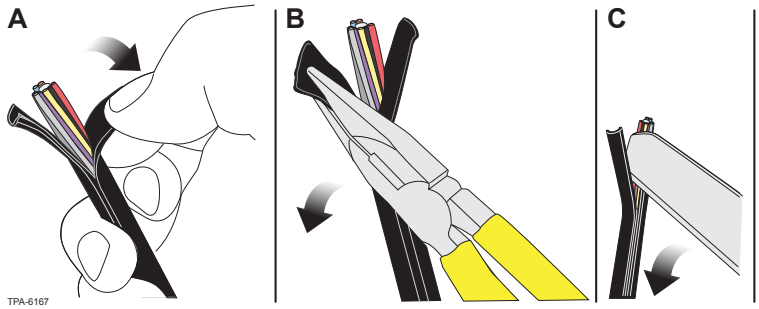


Figure 4

Step 3: Continue to remove the jacket by pulling both sides down to the tape mark and remove the jacket with side-cutter or small snips (Figure 5).

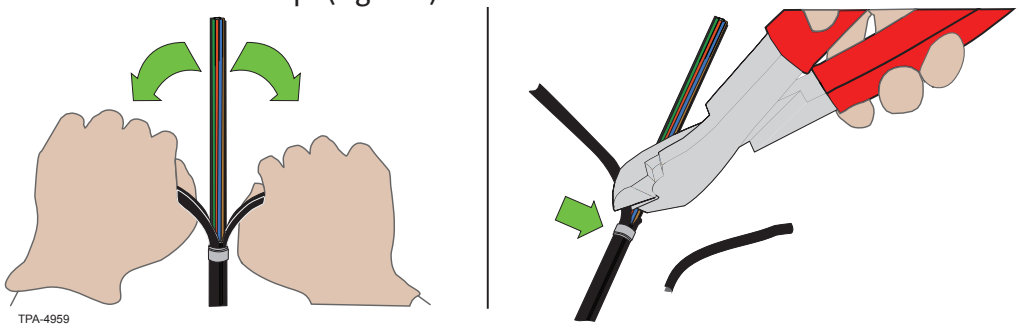


Figure 5

Step 4: Unwind and separate the buffer tubes from the central member. Cut the central member to the appropriate length for strain-relief in the hardware (figure 6).

Step 5: For cable strain-relief hardware which clamps onto the jacket, place three layers of vinyl tape over the area where clamps make contact with the jacket.

Step 6: Load the cable in the respective hardware/closure.

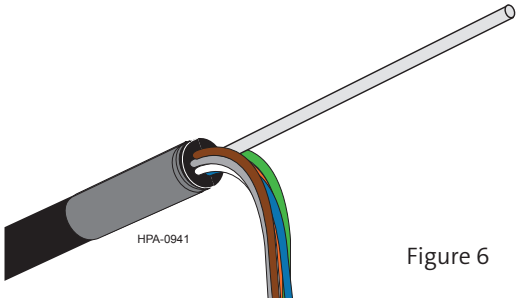


Figure 6

4.1.2 Jacket Removal Using Jonard MS-326 Tool or MS-336 Tool (For 288 F and 432 F cables with 36 F/tube)

NOTE: *MS-326 tool is not compatible with the 288- or 432-fiber count cable with 36 fibers per tube.*

NOTE: *The Jonard MS-326 tool and MS-336 tool are pre-calibrated for ring cut (circumferential cut) and slit cut (longitudinal cut) on the top and bottom of each entry. There is no need to adjust the blades.*

Step 1: Open the ring side of the tool and rotate 360 degrees.

Step 2: To perform a longitudinal cut, open the slit side of the tool and place the cable in the hole suitable for the outside diameter of the cable. Align the blade to the FastAccess® technology ridges.

Step 3: Pull the tool in the direction of the arrow on top of the tool.

Step 4: Open the tool. Remove the cable and pull the jacket apart (Figure 7).

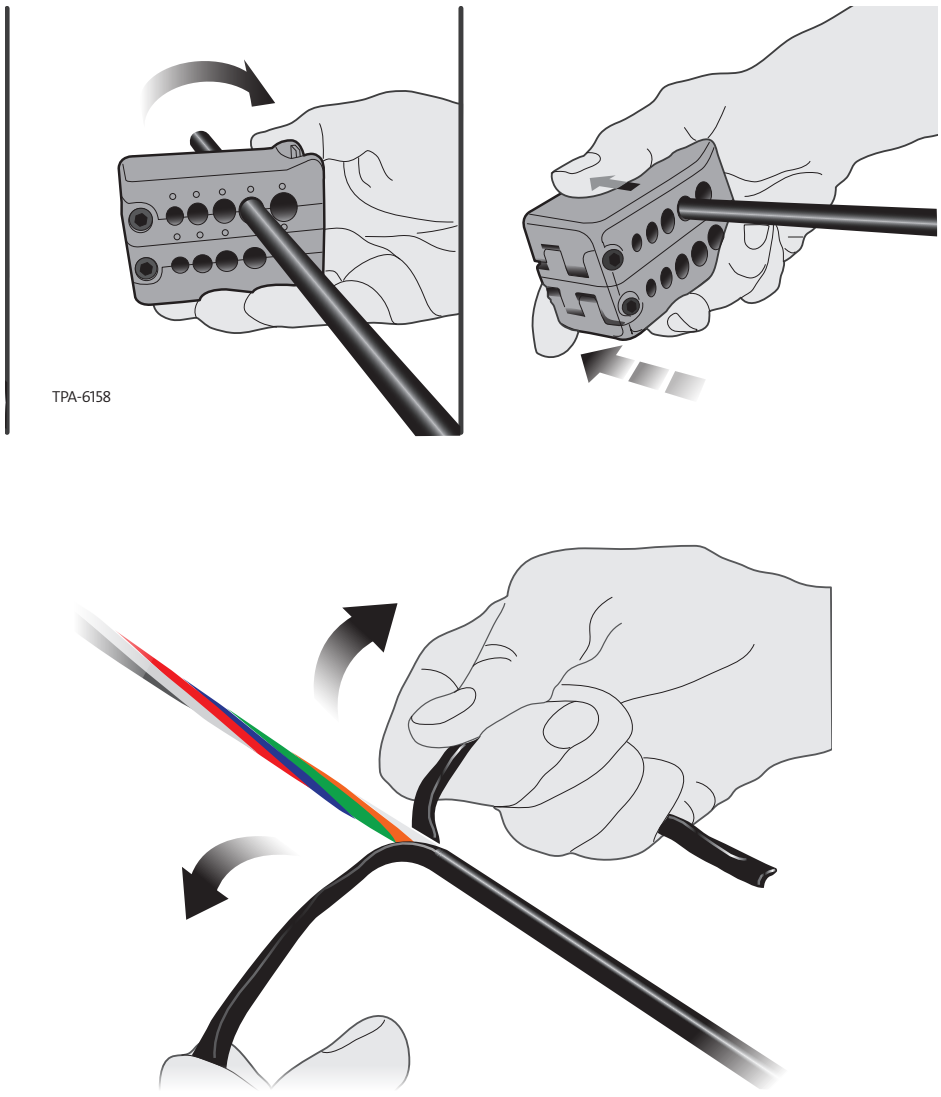


Figure 7

4.1.3 Jacket Removal Using Ripley MB02-7001 Tool with 0.6 mm Insert for all MiniXtend® Cables

NOTE: *Use the 0.6 mm insert to access any MiniXtend cable for ring and long cuts.*

NOTE: *The Ripley MB02-7001 tool is pre-calibrated for ring cut (circumferential cut) and slit cut (longitudinal cut) on top and bottom of each entry. There is no need to adjust the blades, must use 0.6 mm insert.*

Step 1: Position the tool on the cable to perform a rung cut and rotate 360 degrees (Figure 8).

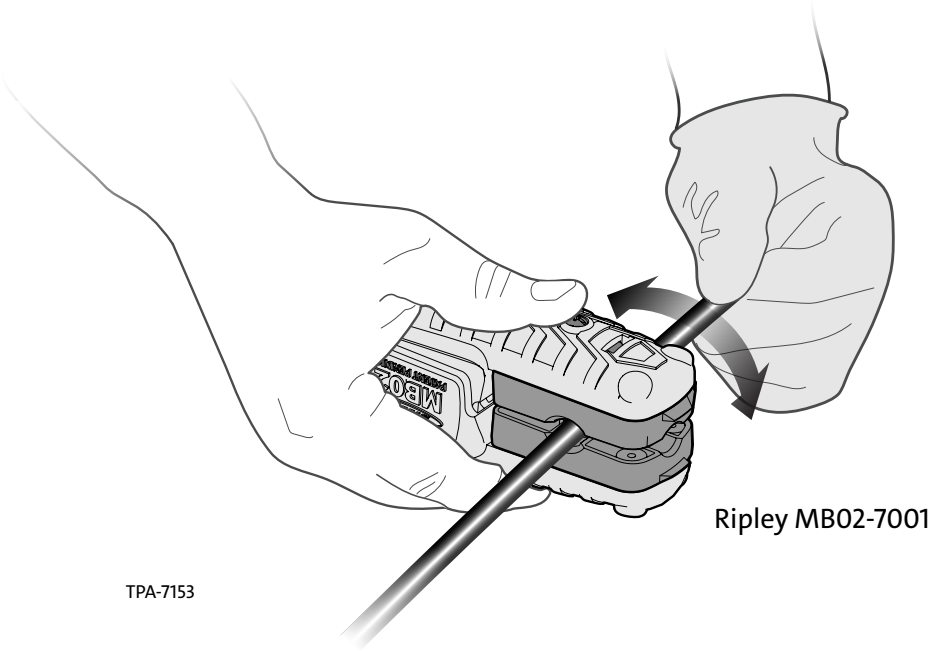


Figure 8

Step 2: To perform a longitudinal cut, open the slit side of the tool and place the cable in the slot. Align the blade to the FastAccess® technology ridges.

Step 3: Pull the tool in either direction (Figure 9).

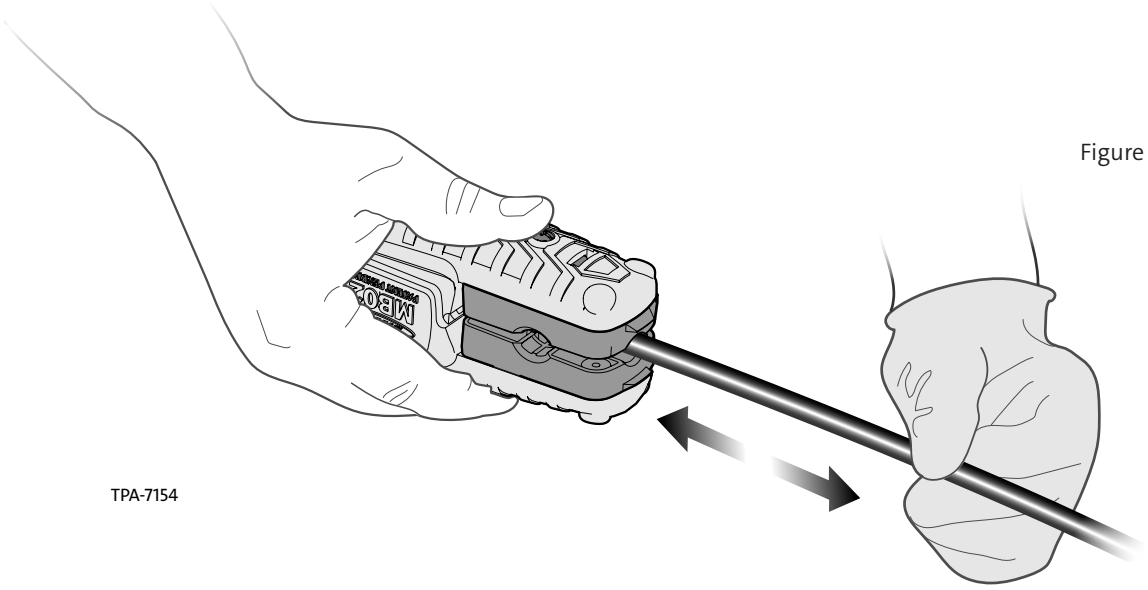


Figure 9

Step 4: Open the tool. Remove the cable and pull the jacket apart (Figure 10).

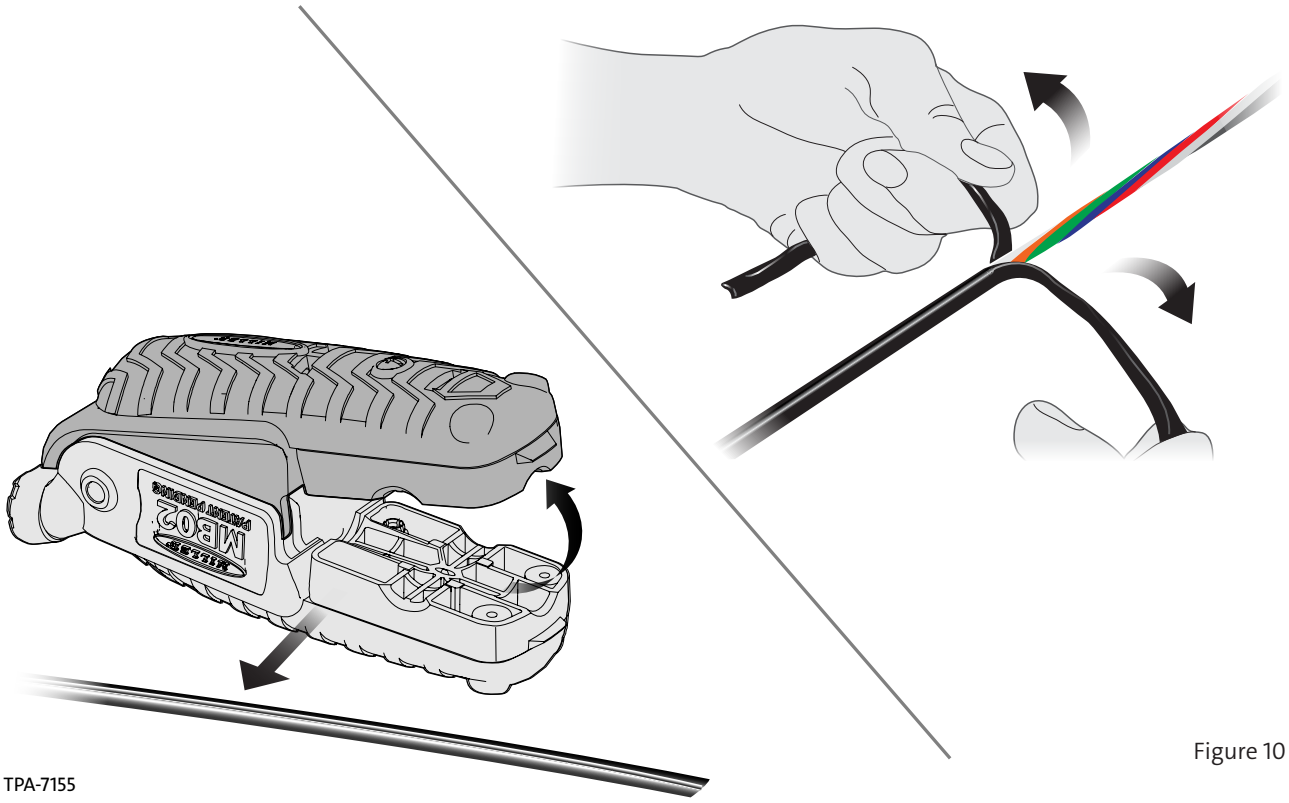


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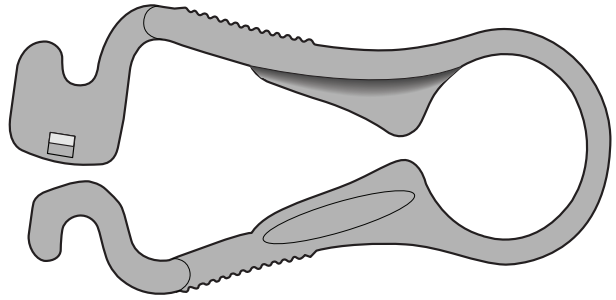
Figure 10

4.2 Buffer Tube Removal: Ripley FTS-005 or Jonard MS-306 – Ring Cuts

NOTE: *If you are unfamiliar with using the Ripley FTS-005 tool (Figure 11) to score buffer tubes, Corning recommends practicing Step 4.2 on a small length of scrap tubing to develop the correct technique.*

Step 1: Insert the buffer tube into the 1.0 mm opening of the Ripley FTS-005 tool (Figure 9) approximately 45 cm (18 in) from the end of the tube as shown in Figure 12.

NOTE: *The Jonard MS-306 can also be used to perform buffer tube ring cuts by inserting buffer tube in correct slot and rotating one revolution. Then remove and snap off tube (same procedure).*



TPA-5589

Figure 11

Step 2: Rotate the FTS-005 tool one revolution (360 degrees), then remove tool.

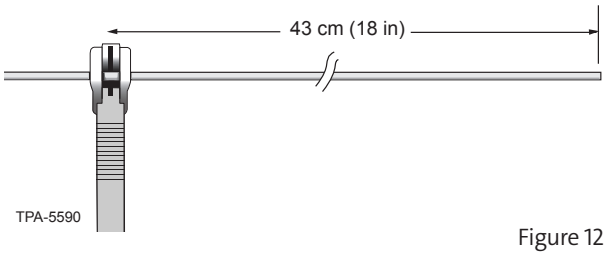


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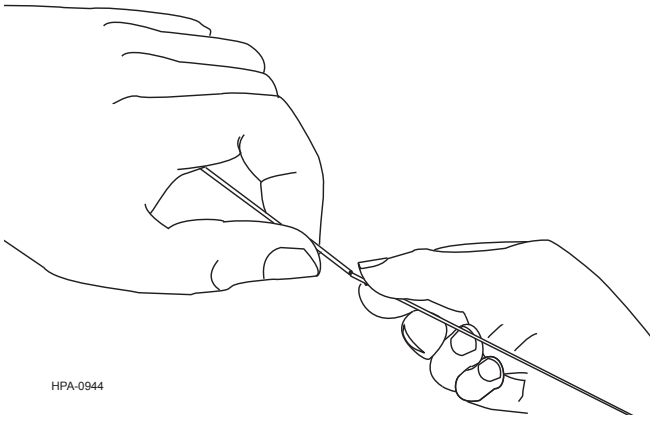
Figure 12

CAUTION: Do NOT use the tool to slide the tube from the fibers. This process can damage and break the fibers.

Step 3: Snap the buffer tube at the score mark by hand and carefully slide the severed section of buffer tube off the fibers (Figure 13).

Step 4: Repeat Steps 1 through 3 to expose the appropriate length of fiber for the splice tray.

Step 5: Clean the fibers with tissue and prepare them for splicing.



HPA-0944

Figure 13

NOTE: *If you need to remove lengths longer than 18 inches, you can opt to make cuts in 18-inch increments or perform a long cut on the buffer tube using one of these tools: Ripley MSAT®-16, Jonard MS-6, or MS-306.*

5. Mid-span Jacket Access

5.1 Mid-span Jacket Removal Using Ripley MB02-7001 Tool

NOTE: *Use 0.6mm insert for all MiniXtend® cables*

Step 1: Identify the location to access the jacket for mid-span cable entry and mark each end with a wrap of tape. Typical access length is 15 ft (Figure 14).

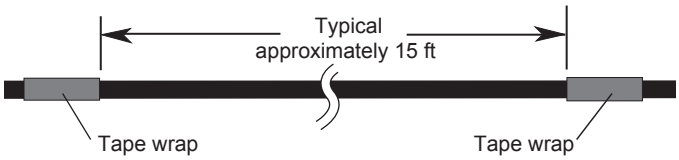


Figure 14

Not to scale

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Step 2: Place the cable in the ring cut position of the tool, make two revolutions on both ends of the wrapped tape.

Step 3: Place tool on the ring cut end of the cable in the position for long cuts and align with fast access ridges (Figure 15).

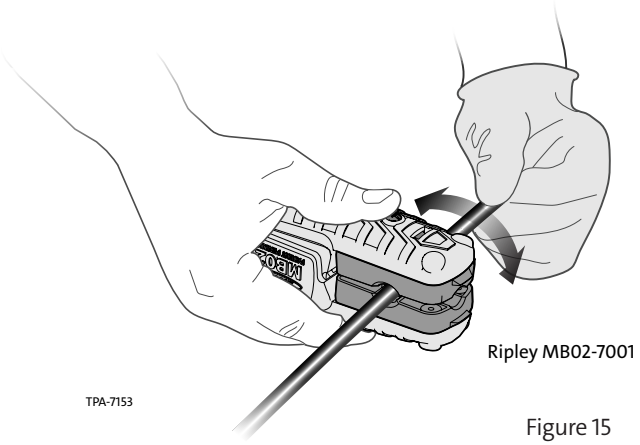

Figure 15

Step 4: Press down on the tool and grasp it to maintain pressure. Slide the tool 2-3 inches for a longitudinal score in the direction of the jacket removal. This will make a long cut on both sides of the cable (Figure 16).

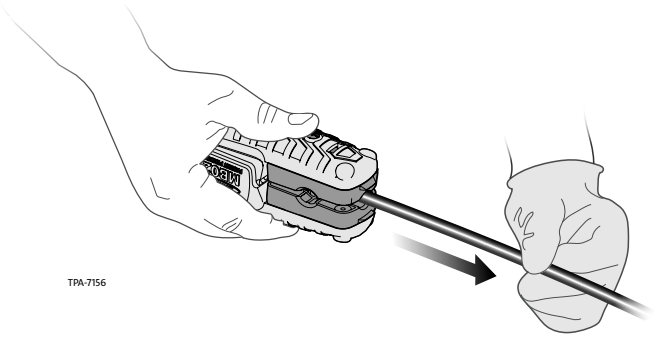

Figure 16

NOTE: *An option is to make one ring cut in center and remove jacket exposing tubes for 7.5 ft on each side of ring cut, and then trim off jacket.*

Step 5: After the last long cut, either use fingers, needle-nose pliers or sheath knife to pull jacket away from cable. See Figure 4 and 5 on page 5.

Step 6: Then continue to remove the jacket by pulling both sides to the second ring cut (Figure 17).

NOTE: *If tear is misaligned, use small cutters to realign with lobes, (ridges on jacket).*

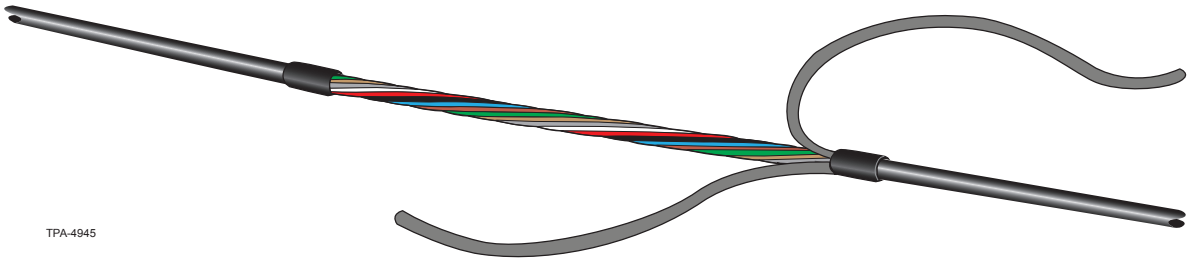

Figure 17

Step 7: Separate the buffer tubes from the central member. Cut the central member at each end of the mid-span (near the tape marks) to the appropriate length for strain-relief. If you will be installing cable strain-relief hardware that clamps into the jacket, place three layers of vinyl tape over the area where the clamps will make contact with the jacket (Figure 18).

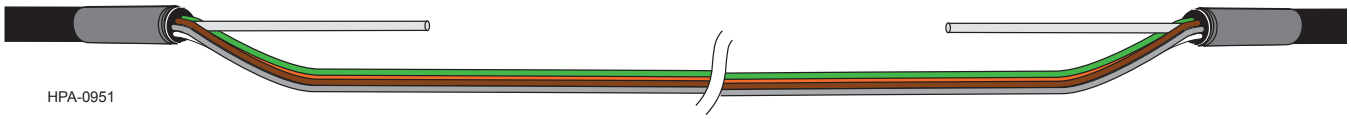

Figure 18

Step 8: Load the cable in the respective hardware/closure using care not to damage the buffer tubes.

5.2 Mid-span Jacket Removal Using Jonard MS-326 Tool or MS-336 Tool (for 288 F and 432 F Cables with 36 F/Tube)

NOTE: *MS-326 tool is not compatible with the 288- and 432-fiber count cable with 36 F/Tube, use the MS-336 tool for 288- and 432-fiber count cable with 36 F/tube.*

NOTE: *The Jonard MS-326 tool and MS-336 tool are pre-calibrated for ring cut (circumferential cut) and slit cut (longitudinal cut) on the top and bottom of each entry. There is no need to adjust the blades.*

Step 1: Identify the location to access and mark each end with a wrap of tape (Figure 19).

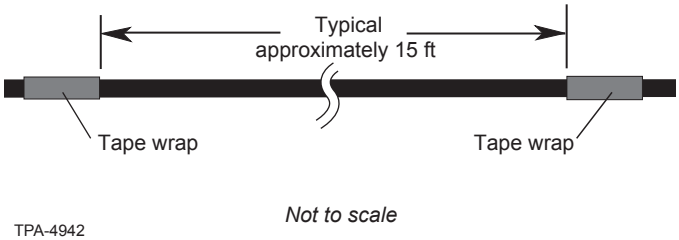

Figure 19

Step 2: Using the Jonard MS-326 or MS-336 tool, select the correct ring cut groove that matches to the outside diameter of the cable.

Step 3: Place the cable close to the tape wrap inside the tool and close it (Figure 20).

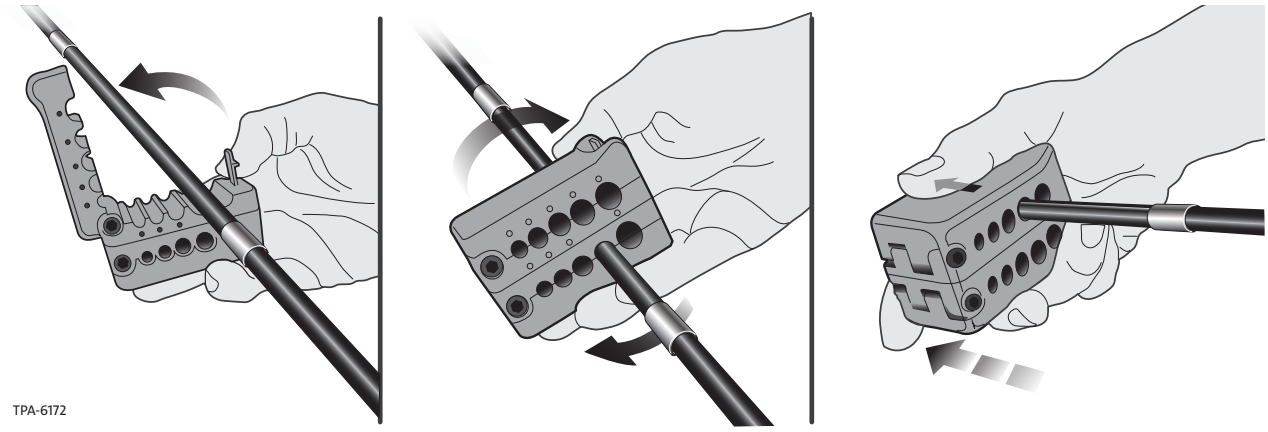

Figure 20

Step 4: Rotate the tool for two revolutions around the cable, then open the tool to remove the cable.

Step 5: Repeat a ring cut on the other end of the wrap of tape.

Step 6: Remove the cable and place it in the correct groove for the longitudinal cut. Use the longitudinal groove on the tool to make a 1-in cut.

Step 7: Flex the cable and pull apart the jacket along the slitting line to peel jacket from cable (Figure 21). Use fingers needle nose pliers, or sheath knife to pull jacket away from cable. See figures 4 and 5 on page 5.

NOTE: *If tear is misaligned, use small cutters to realign with lobes (Ridges on jacket).*

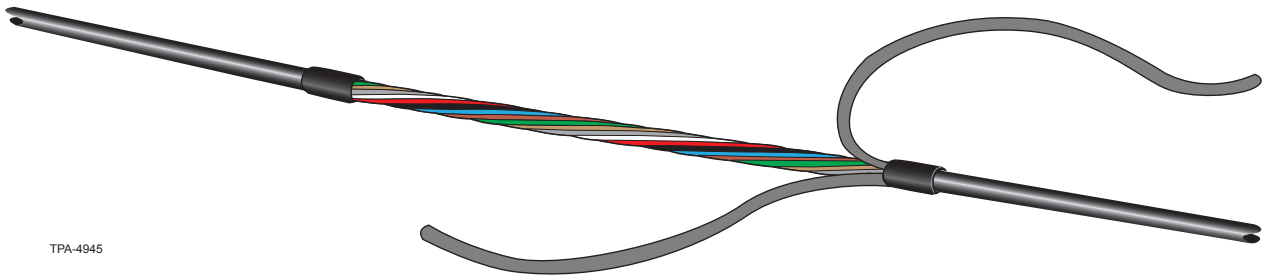

Figure 21

Step 8: Separate the buffer tubes from the central member. Cut the central member at each end of the mid-span (near the tape marks} to the appropriate length for strain-relief. If you will be installing cable strain-relief hardware that clamps into the jacket, place three layers of vinyl tape over the area where the clamps will make contact with the jacket (Figure 22).

Step 9: Load the cable in the respective hardware/closure using care not to damage the buffer tubes.

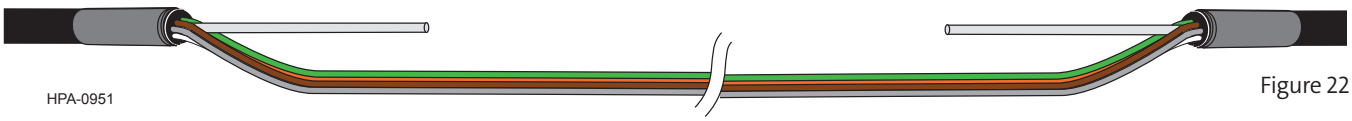

Figure 22

6. Mid-span Buffer Tube Access Using Jonard MS-6 Tool or MS-306 Tool

6.1 JONARD

NOTE: *The Jonard MS-6 and MS-306 tools are pre-calibrated to slit cut (longitudinal cut) on the top or bottom of each entry. There is no need to adjust the blades.*

Step 1: Insert the buffer tube into the correct groove for the buffer tube outside diameter (Figure 23).

Step 2: Pull the tool in the direction of the arrow on top of the tool.

Step 3: After the tool splits the buffer tube, use scissors to carefully cut the tube without damaging the fibers.

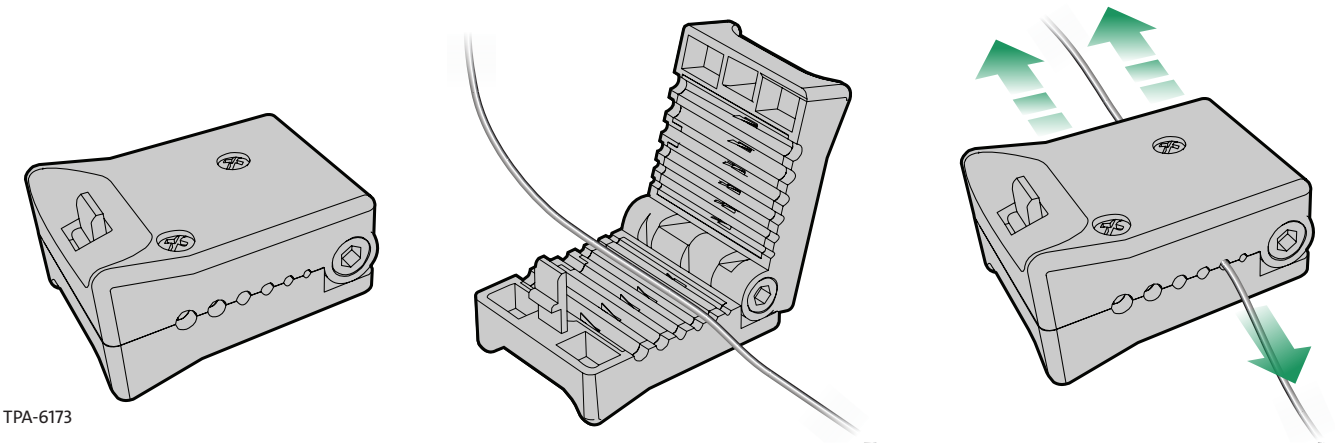

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Figure 23

6.2 Ripley — Mid-span Buffer Tube Access Using Ripley MSAT® 16 Tool:

NOTE: *Ripley MSAT® 16 is adjustable tool that shaves the top of the tube for access to the fibers.*

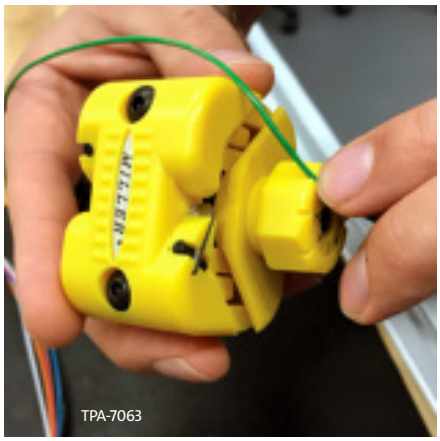
Step 1: Use the sizing guide card or the sizing gage on the knob to determine the correct setting for the tool.

Step 2: Turn the knob to the correct setting.

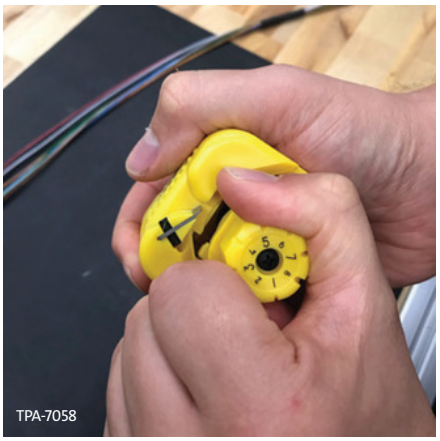
Step 3: Load the tube into the tool

Step 4: Squeeze the tool, and pull the tool down the tube. It is best to pull the tube at an angle away from the tool.

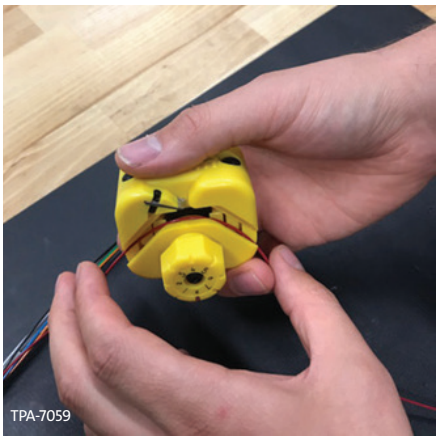
Step 1



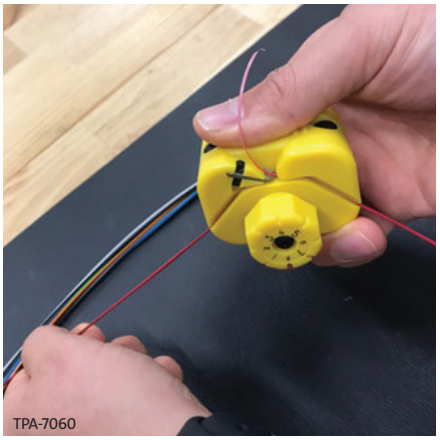
Step 2



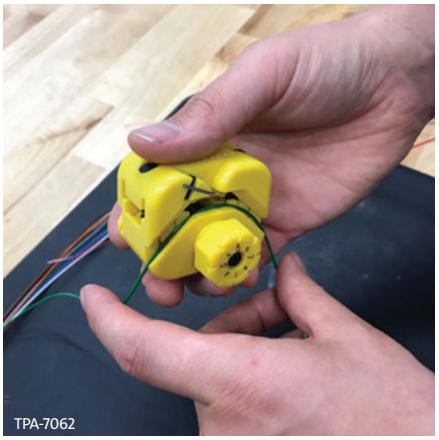
Step 3



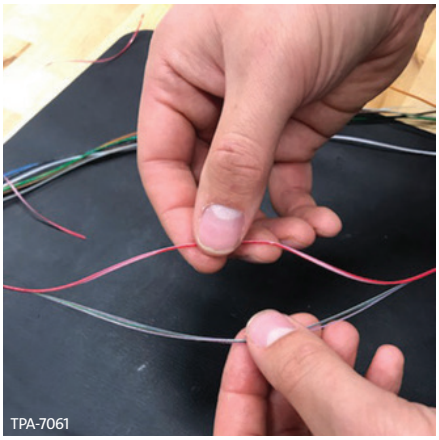
Step 4



Open Tool



Remove Split tube



MSAT 16 Sizing Guide:

Tube Ø (mm)	Setting
1.4	4
1.7	6
1.95	8
2.5	12
3.0	16

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