

Z-TRACK

USER GUIDE





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Introduction

Z-TRACK

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EXTREMELY VERSATILE,
MEDIUM DUTY,
EXTRUDED INTERLOCK

Z-TRACK

The Z-Track closure is a medium size Arrowhead & Channel interlock design approximately .150" wide and is the most versatile closure offered for zip-on jacket applications. It should always be considered as the first closure choice when designing a wrap-a-round jacket system.



Z-Track is extruded in three different flame retardant polymer compounds. When combined with our PVC compound jacketing materials, Z-Track can accommodate Round, Flat and Rectangular Cable jacket configurations.



Track Closure vs Bend Location

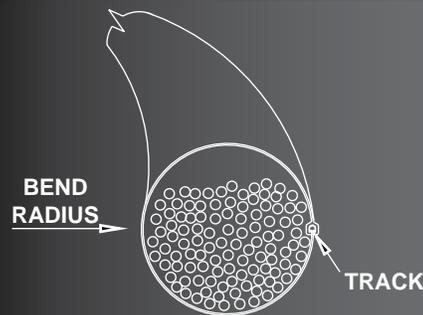
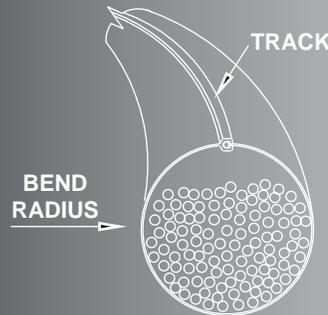
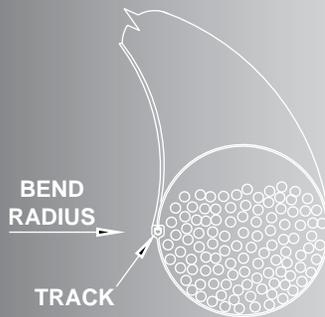
ALL ZIPPERTUBING TRACKS



AVOID
Worst Possible Condition
.....

ACCEPTABLE
90 OR 270
Degrees Off
(not optimal condition)
.....

BEST
Track on
Outside of
Bend
.....



INSTALLATION NOTES

1. Always size the Zippertubing jacket at least 1/8 inch larger than the maximum cable diameter. If severe cable bending is anticipated, increasing jacket diameter beyond the 1/8 inch requirement is advisable.
2. Always install Zippertubing jackets so that the track faces the outside of the bend radius. Failure to position the jacket in this manner may result in the track "popping open" due to track distortion.
3. If the design does not call for re-opening the jacket periodically, it may be desirable to seal the track closed using ZT-TAPE. You can download the sealing procedure from www.zippertubing.com
4. The most common causes of tracks "popping open" are:
 - Improperly closed track
 - Incorrectly sized jacket, less than 1/8 inch oversize
 - Track located other than on the outside of the bend radius





ZTZ-SP PLIER

The ZTZ-SP tool is a Stainless Steel plier tool designed for closing Zippertubing Z-Track products. The small hand-held plier tool utilizes small finger lips to spread the channel cavity of the Z-Track extrusion. At the same time the arrowhead side of the extrusion is forced into the open channel cavity. As the tool slides along the cable run the channel cavity closes behind the tool which traps the arrowhead barbs within. The tool makes closing Z-Track fast and easy while minimizing operator fatigue. As the tool slides along the cable run, it will form the jacket material into a continuous tube. Use the ZTZ-SP tool for all production line and field installations.



“ZTZ-SP” Plier Tool Instructions

The following procedure describes the installation of a Zippertubing jacket which has the Z-Track extruded inter-lock closure using the Zippertubing “ZTZ-SP” plier tool. The procedure defines the basic closing procedure and provides several hints and tricks that will make installation easier. Keep in mind that a written procedure alone will not make you an expert. Only repeated experience with varying installation situations will tell you the best way to handle the unexpected. Learning to close Zippertubing’s Z-Track is much like learning to ride a bicycle. Initially you will be wobbly and will probably have the tool fall off the tubing repeatedly. There is a “feel” to using the plier tool, just like there is a balance point that must be learned before riding a bicycle becomes second nature. The key word for success is; practice, practice and more practice.

To correctly learn the “feel” of a properly closed Zippertubing Z-Track jacket, it is suggested that you begin on a practice piece of Zippertubing material. Ideally, this learning piece would be a non-shielded, vinyl material (Type 63 or PVL) approximately two feet in length. Feel free to test Steps 1-5 on your piece until you are completely comfortable with the process. Select a work area that has plenty of light and where you can sit down. Proceed to the installation sequence steps listed below.

STEP
01

Material & Tooling

Examine the piece of Zippertubing jacket material and the plier tool.

Figure 1 illustrates the closure mechanism along each edge of the jacket in both the open (as delivered) and closed (installed) conditions.

Figure 2 illustrates the plier tool construction and the end view of the tool

Figure 1

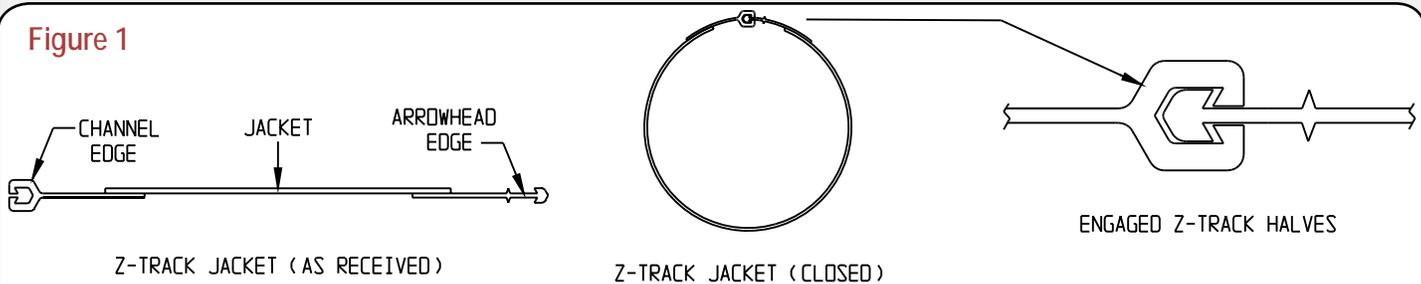
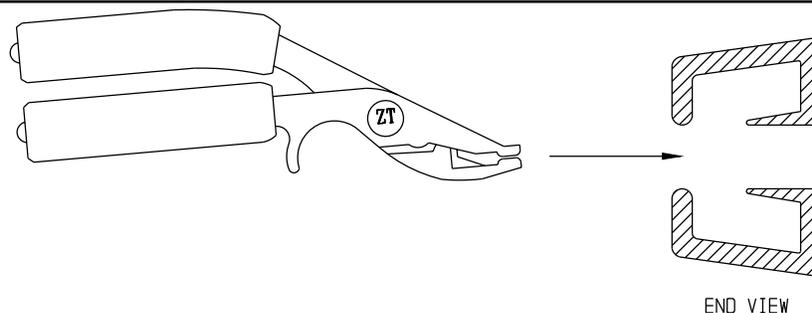


Figure 2



STEP

02

Installing the Tool (right handed installer)

Hold the end of the jacket in your left hand with the channel extrusion facing up. Hold the tool in your right hand and spread the handles so the jaws open. Insert the top knife-edge (Figure A) tang of the tool tip into the slit of the channel approximately 1/2 to 1 inches back from the end of the material. With the fingernail of your left thumb spread (Figure B) the channel just ahead of the tool tip and twist the channel open so that the lower knife-edge (Figure C) tang of the tool enters the channel extrusion.

Figure A

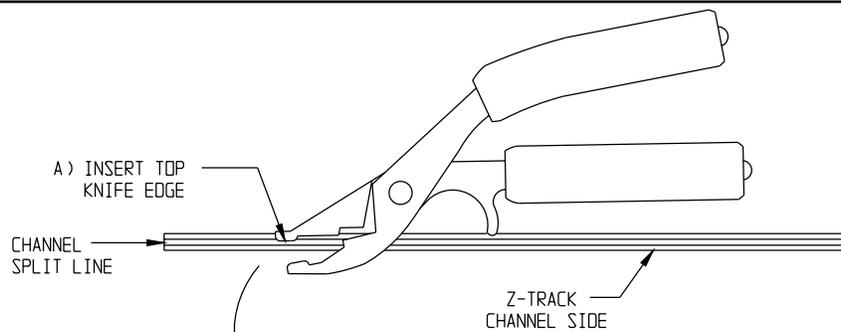


Figure B

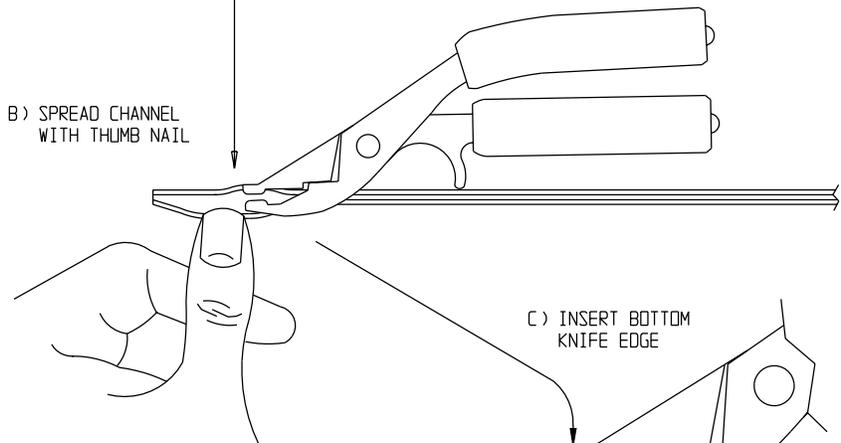
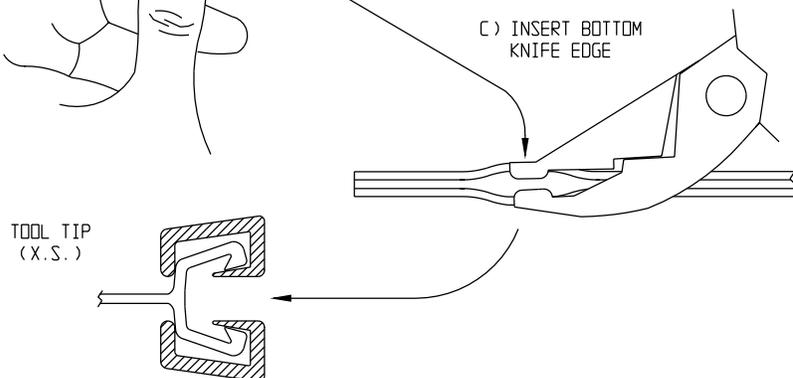


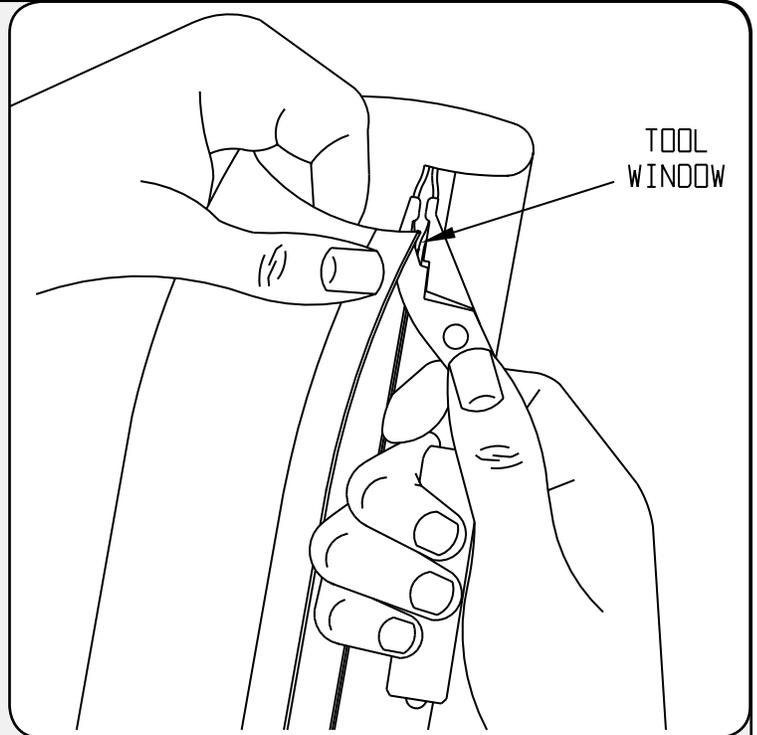
Figure C



STEP
03

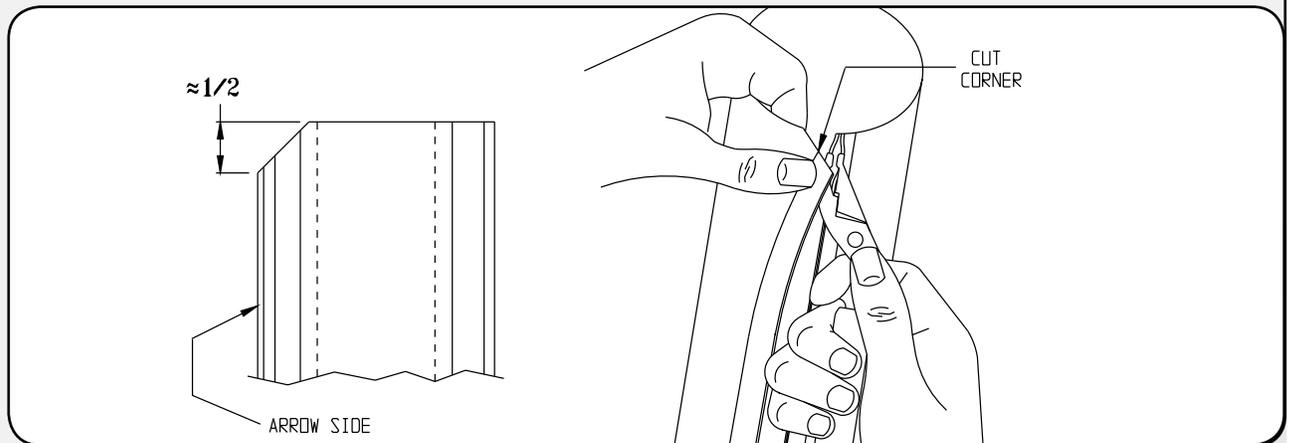
Inserting the Arrow

While continuing to hold the tool in your right hand (jaws are not spread), grasp the end of the arrowhead side of the jacket with your left hand and bring the two jacket edges close together. This will create a tubular shaped jacket near the tool end. The tool should be set back from the jacket end approximately 1/2 to 1 inch. Pull the arrowhead end back so that it can be inserted into the tool window opening. The tool will have spread the two halves of the channel extrusion open enough in this area to allow the end of the arrow to enter the channel cavity. Pull the arrow end into the channel and continue until both halves of the Z-Track extrusion are even at the tube end.



Note:

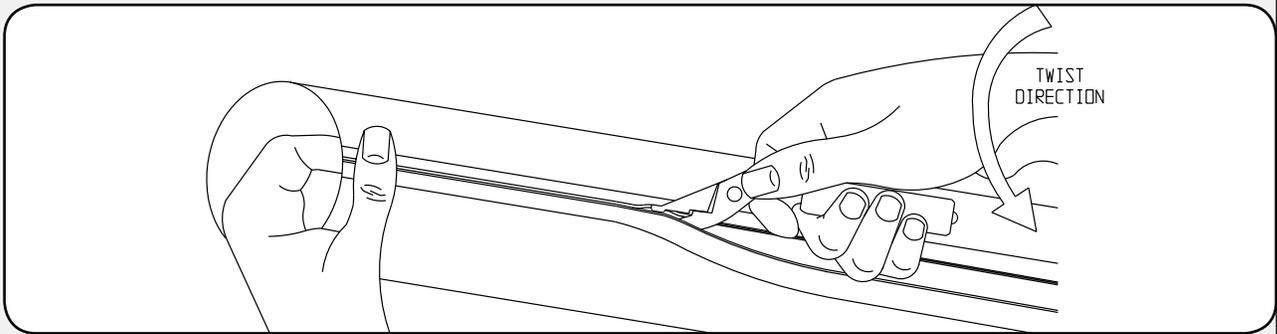
You may find that with some types of shielded Zippertubing the jacket stiffness or just the snug fit of a non-shielded jacket around the cable will not allow the arrow end of the jacket to be pulled back far enough to be easily inserted into the channel. To ease this problem, use a pair of scissors and make a 45-degree cut, approximately 1/2-inch back from the end of the jacket on the arrowhead side. This will allow the end of the arrow to be closer to the tool window while not distorting the jacket material very much. You will discover that this will make inserting the arrow easier.



STEP
04

Track Closure

Using the thumb and index finger of your left hand, grasp and pinch the arrow and channel together at the end of the tubing. Twist the tool counterclockwise slightly (about 10 degrees) and begin pulling the tool away from your left hand. As the tool slides along it will pull the arrow into the channel cavity and trap it.



After you have completed closing a few feet of the jacket, use your free hand and pinch the closed track with your fingers starting at the closed end (i.e. as if you were trying to push the arrowhead side into the channel manually). See *Figure 3a*. You may periodically hear a slight pop or click sound. These are areas where only the outer catch of the closure caught the top arrow barb. The click is the inner barb snapping into the channel cavity. This partially closed condition can be caused by excessive tool twisting or pulling the tool along the track too quickly. *Figures 3b* and *3c* illustrate cross section views of the closure with *3b* showing the correct closure and *3c* depicting a partially closed track with only the top arrow barb caught.

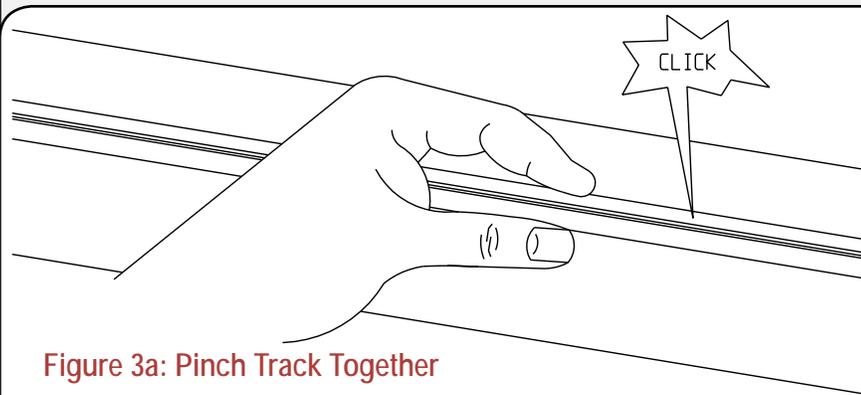


Figure 3a: Pinch Track Together



Figure 3b: Correct Condition

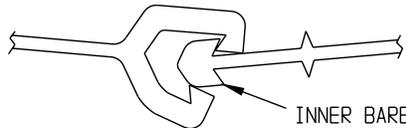


Figure 3c: Incorrect Condition

Note:

Do not impart too much counterclockwise twist into the tool as you pull. An excessive amount of twist will cause the track closure to spiral radially around your cable center, and result in the ends of the jacket not being even. Another negative to imparting too much twist is that it can contribute to the partially closed track condition described above.



STEP
04

(cont.)

Note:

You can ease the tool pull force required by having an assistant preshape the Zippertubing jacket material around the cable and into a tubular shape ahead of the area you are closing (*Figure A*). If you are working alone, you can loosely install a plastic cable tie around the cable jacket and slide it ahead of you to create the pre-shaped jacket effect (*Figure B*).

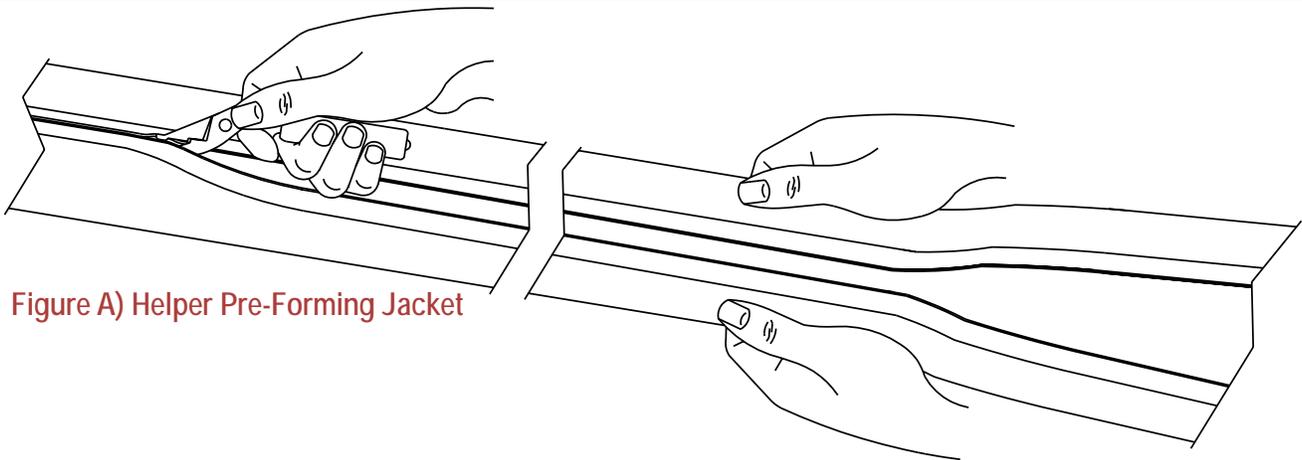


Figure A) Helper Pre-Forming Jacket

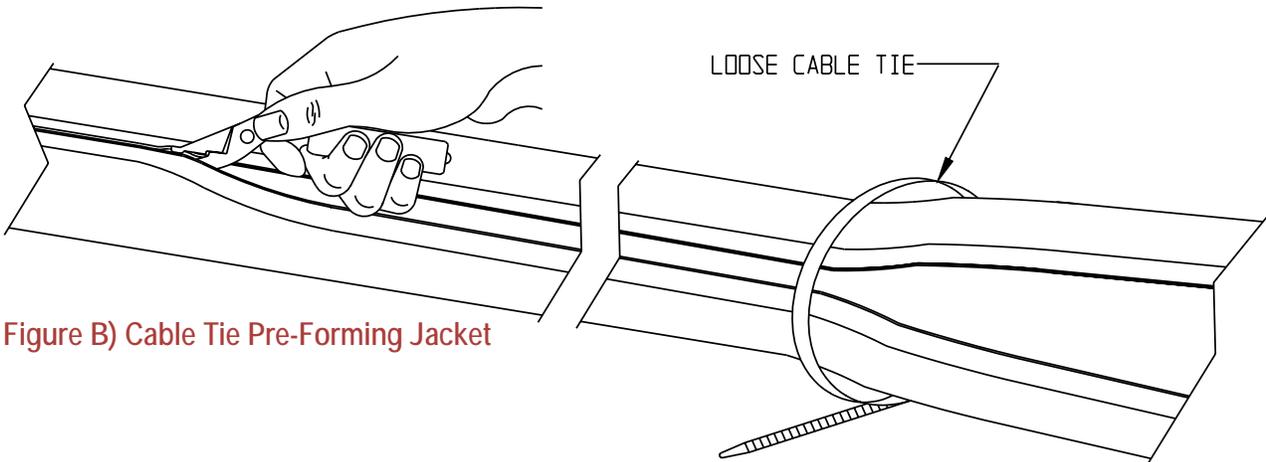


Figure B) Cable Tie Pre-Forming Jacket



STEP
05

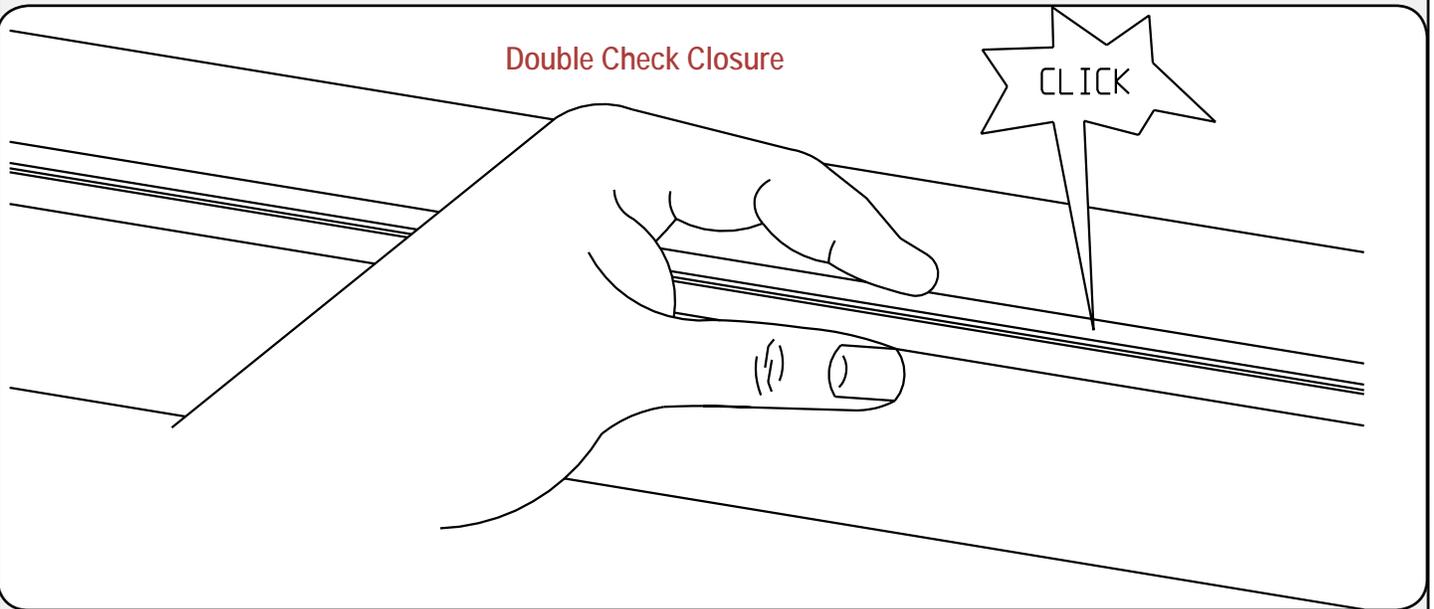
Finished Jacket

Once the Zippertubing has been completely closed and the tool has slid off the end opposite the starting point you will notice that you now have a round tubular jacket from what once was a flat piece of sheet material. Had the jacket been installed around a group of wires and cables you would have a single cable harness that is much easier to route and manage.

Now grasp the closed tubular jacket on either side of the track near the middle of the tube length and try to pull the jacket open. You will find that it takes a significant amount of force to pull the track apart. Vinyl based Z-Track typically requires 30-35 pounds per inch width of force to cause the track to separate. Other materials will vary in strength, but a properly closed Z-Track does not open easily! The easiest place to pull a Zippertubing jacket apart will be near the ends. If your jacket does open easily, then the area you pulled on was probably not closed correctly and had only one barb of the arrowhead properly engaged. Insure that you always go back and squeeze the track together with your fingers.

Double Check Closure

CLICK



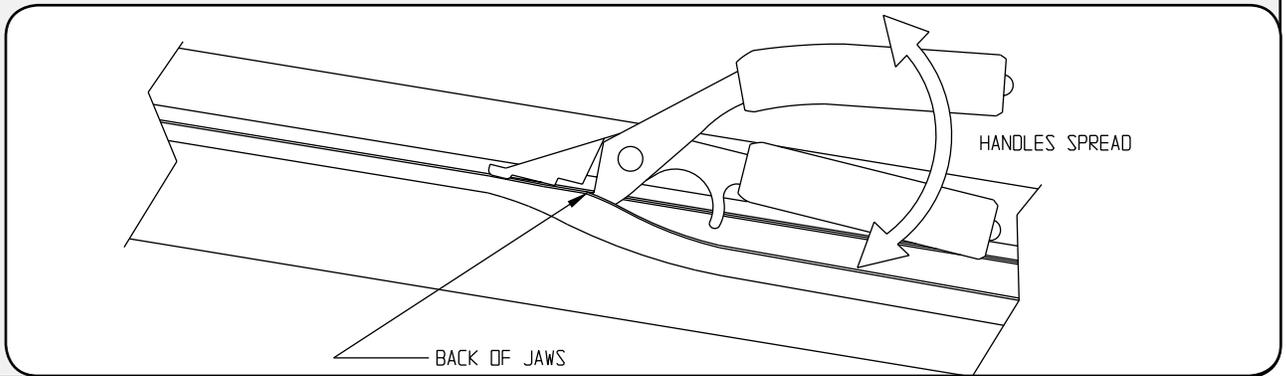
Note: If you need to unzip your closure, use your thumbnail and lift the outer catch of the channel side near the tubing end while pulling the arrow barb out and separate the jacket over its entire length.



STEP
06

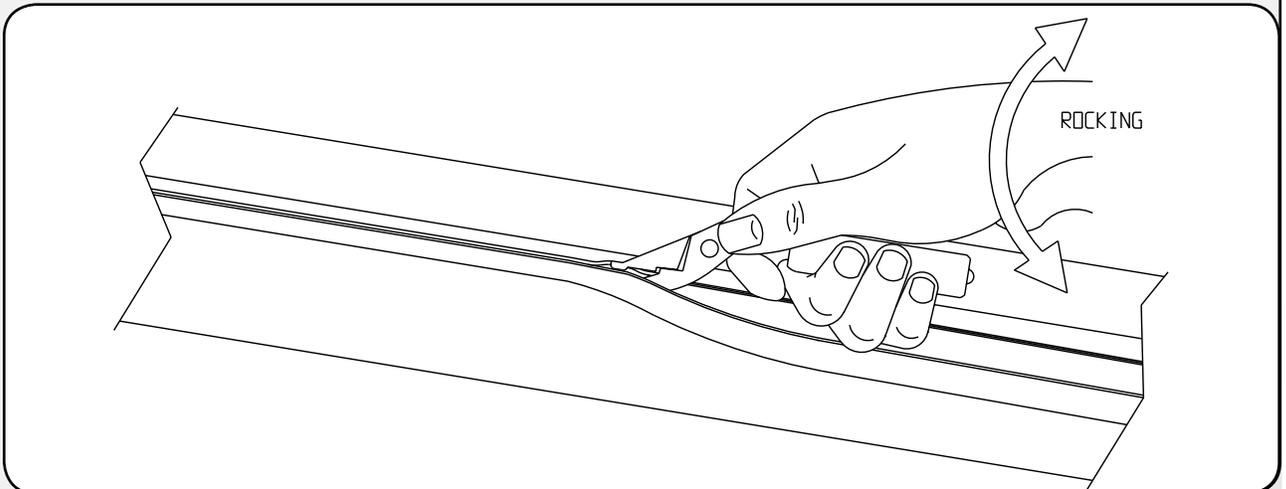
Starting & Stopping Mid Run

Some installations require intermittent starting and stopping, depending on your application. You may stop anytime by spreading the plier tool handles while rocking the tool slightly back and forth to pull the tool off the track. The condition you see before you will occur on production assemblies for a variety of reasons. To re-engage your tool, there is no need to unzip the entire tubing length. Finish re-closing a jacket in this condition simply by spreading the plier tool handles and pushing the tool back over the area where the track begins to open. Insure that the back of the tool jaws are up against the closed track area.



STEP
07

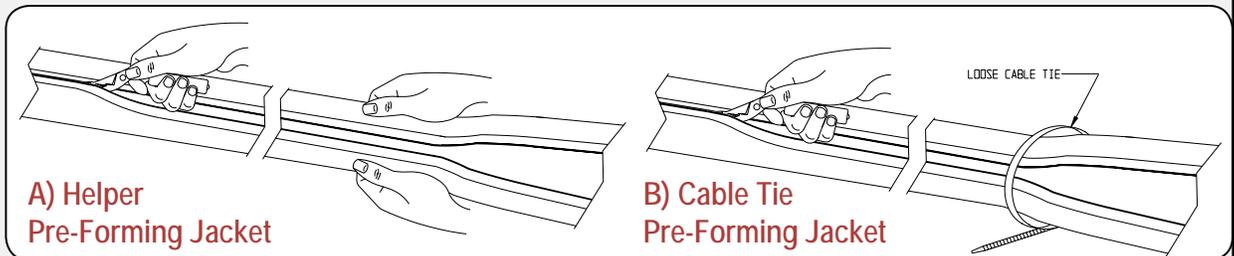
Release the plier tool handles. Grasp the plier handle as you normally would, then rock the tool back and forth as you pull; the tool will re-engage the track and continue closing it.



STEP
08

Zippertubing Facts, Hints & Tricks

- All jacket diameters must be sized a minimum of +1/8" larger than the maximum cable diameter that is to be covered. The extra clearance is required for two reasons. First, the plier tool requires some room because the inner jaw of the tool is sliding down the inside of the closing tube. Second, all the tubing jacket materials are non-elastic and as a result must wrinkle up on the inside of all bend radii. This wrinkling effectively reduces the amount of material available to go around the circumference of the cable bundle in these bend areas. The +1/8" oversize has been found to be sufficient for bundle diameters up to 3-7/8." For cable bundles of 4.0" and larger, this should be +1/8" to +1/4" oversize. The general rule for Zippertubing is: too big may be undesirable, but too small is scrap!
- Some Zippertubing material types cause more tool friction than others and as a result can make the tool hard to pull, especially over long jacket lengths. Pre-shaping the tubing ahead of the tool, as previously described, can help reduce this problem. See **A & B** below. Adding a small amount of talcum powder, Isopropyl Alcohol (IPA) or other non-Silicone lubricant to the channel side of the track can also ease the pull force required for closing the track. Keep in mind however, that this lubricating action will also reduce the overall closure strength of the Z-Track joint. Isopropyl Alcohol (IPA) is preferred since it will evaporate quickly providing the desired short term lubrication while not reducing the long term track strength.



- **Note:**
Always test any lubricant not listed above on a small piece of material to insure that it does not degrade the jacket material.

CAUTION



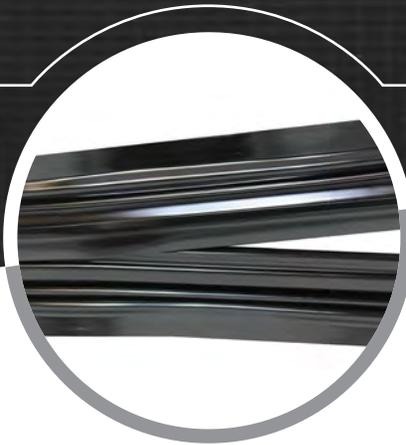
The Isopropyl Alcohol (IPA) material is flammable and may or may not be acceptable in your application situation. Verify with your in-house process engineering department that it is acceptable to use prior to making any installations.



Sealing Zippertubing Extruded Tracks

ALL ZIPPERTUBING TRACKS

pg. 14

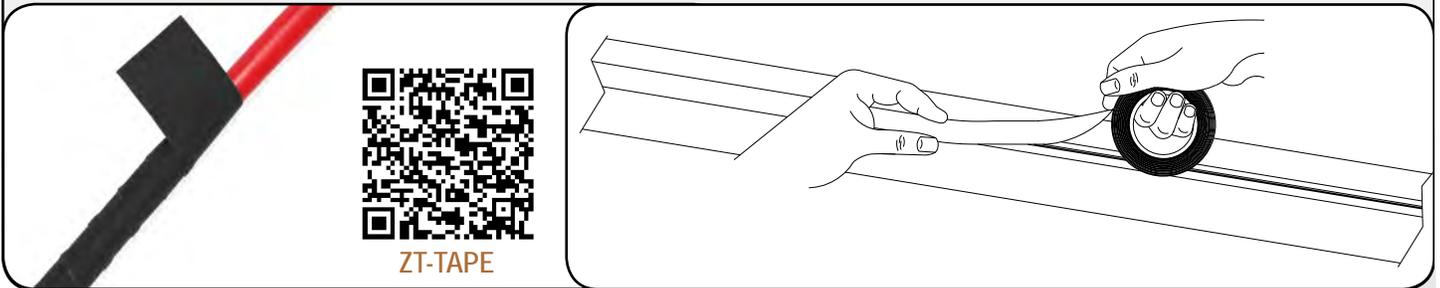


Sealing Zippertubing Extruded Tracks

All Zippertubing products that utilize extruded closure tracks (except type FEP) can be permanently sealed after closure using the following method. Under normal circumstances a properly closed Zippertubing track does not require post closure sealing. However, in some applications where an environmental or tamper proof seal is desired or extreme abuse is anticipated, the post sealing process can insure that the track does not re-open inadvertently.

ZT-TAPE

This method involves placing a 1-inch wide strip of Zippertubing's ZT-Tape down the center of the inter-locking track split line after the track has been closed. The ZT-Tape is a UL-510 recognized, fire retardant, Polyurethane film tape with an Acrylic adhesive backing. The adhesive is compatible with both PVC and PFR track materials and is easily applied. The tape sealing method provides additional closure strength, improves environmental tightness and is an environmentally friendly process.



CAUTION

The ZT-Tape is highly elastic and must be applied to the track in a relaxed condition. Stretching the tape during installation can result in disbonding of the film from the adhesive if the assembly is stored or shipped in a coiled or tightly bent condition.



Informative Videos

Z-TRACK



Scan the QR code with your mobile device to instantly start watching these informative videos.

Z-TRACK (DOWNLOAD)



Z-TRACK (STREAM)



Shelf-Life Recommendations

Z-TRACK



The following table lists the maximum accepted shelf-life period for Zippertubing products from the date of manufacture when stored at a temperature of 72 °F (22 °C), 50 % R.H. and not exposed to direct sunlight. Storage conditions other than those stated above may result in a shorter shelf-life. Materials should only be purchased in quantities such that all materials are consumed prior to the material exceeding its recommended shelf-life.



Shelf life and service life are two different issues and should not be confused. Service life can be expected to be far longer than the shelf life. It is impossible to accurately define service life as it will vary with the material type and severity of the application.

If a material is found to have exceeded the recommended shelf-life date, review the Zippertubing Shelf-Life Re-certification document for procedures to determine if the material life can be extended.

All materials which utilize a (PSA) adhesive closure shall have the base material shelf-life value stated below reduced to 12 months. Refer to the Zippertubing Shelf-life Re-certification procedure for a method to extend shelf life.

Z-TRACK SHELF-LIFE

Z-TRACK 36 Months

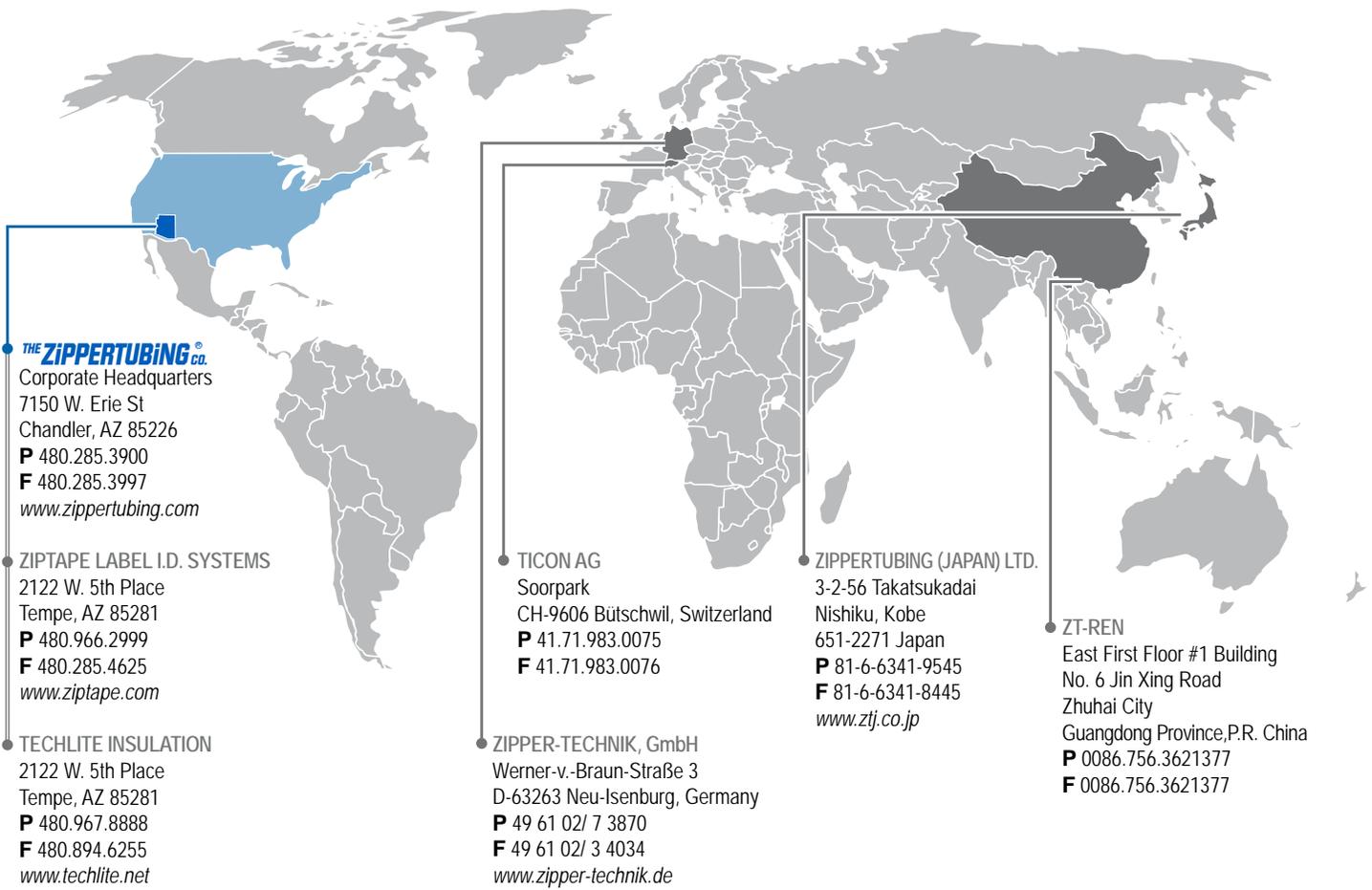
Z-TRACK-FEP 60 Months

Z-TRACK-PFR 60 Months



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