

The Insulation Cutting Tool uses friction to cut into the sheath and is less likely to damage the layers underneath than using a knife. When the instructions call for the knife to be used, be sure not to cut any deeper than instructed.

If the instructions are not followed correctly, or if any of the insulation layers or the copper foil are incorrectly cut, then the integrity of the lightning protection is affected.

Refer to Figure 4 on page 10 for the following instructions (1 to 11)

1. At a distance of 600mm (23⁵/₈ in.) from the end of the cable, carefully cut a shallow notch into the black outer insulation no deeper than 1mm, (³/₄ in.). Then, using the

insulation cutting tool, cut around the circumference of the black outer insulation until the copper screen underneath is exposed.

2. Using a knife, carefully cut the outer insulation of the cable to a depth of no more than 1mm (³/₄ in.), for the full 600mm (23⁵/₈ in.), in the direction of the end of the cable. Be sure not to cut so deep as to expose or damage the copper layer underneath. Starting from the end of the cable, carefully remove the outer insulation and discard.

3. Carefully clean up the friction cut, removing any burrs for a neat finish.

4. Fit the roll spring 20mm (⁶/₈ in.) from the end of the outer insulation over the exposed copper tape.

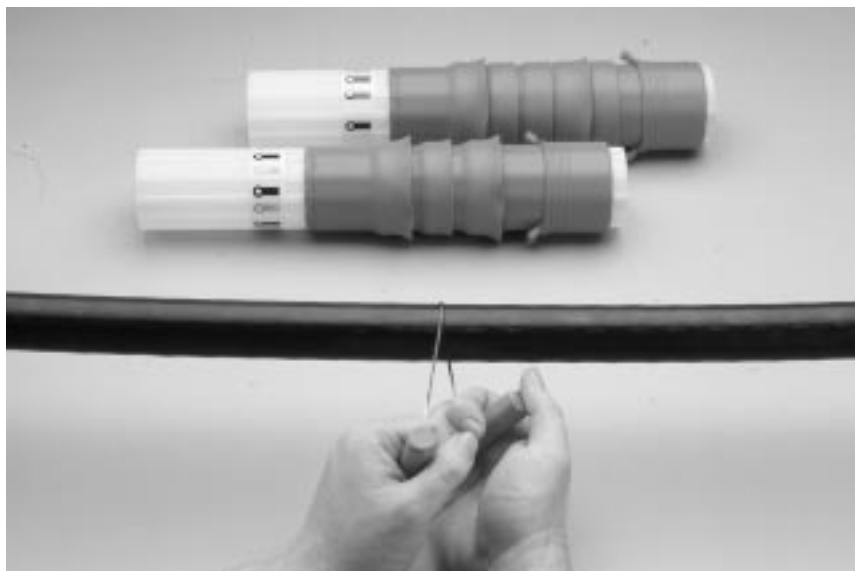


Photo 2: Use of the insulation cutting tool to cut the insulation without damaging the layers beneath.

5. From the end of the cable, remove the copper tape up to the roll spring, exposing the black semi-conductive material by unrolling, then tearing the tape up and back over the edge of the roll spring at about a 45° angle. (If necessary, carefully cut about 6mm of the copper tape up against the roll spring with a knife and then tear over the spring).

6. Carefully remove the roll spring, then tape up the last 6mm ($\frac{1}{4}$ in.) of the copper tape with a piece of PVC tape, to stop further unravelling.

7. Clean and degrease the outer sheath for a distance of 100mm (4 in.) from the cut position. Using slight tension, wrap one layer of sealant tape (red) around the black outer insulation with a small overlap of 5mm ($\frac{1}{5}$ in.) over the copper tape screen. (See photo 4)

8. Place the structure bond braid over the cable so that it sits over the copper screen and up against the sealant tape (red). Ensure that the braid loops are tight around the copper screen. Tape the bond braid into place with PVC tape. (See photo 5). (Ultimately, this braid may require electrical bonding to the structure.)

9. At a distance 70mm ($2\frac{3}{4}$ in.) from the end of the cable, carefully cut a notch in triple layered insulation no deeper than 1mm ($\frac{3}{64}$ in.). Then using the insulation-cutting tool, cut around the circumference of the triple layered insulation until the copper underneath is exposed.

10. With a knife, carefully cut along the 70mm ($2\frac{3}{4}$ in.) length triple layered insulation of the cable to a depth of no more than 1mm



Photo 3: Using the roll clip to cut and remove the copper screen.

($\frac{3}{64}$ in.). Be sure not to cut too deep, as to expose the copper layer underneath. Starting from the end of the cable, carefully remove the triple layered insulation and discard.

11. Remove one release foil from the stress control patch (green) and apply it level with the outer insulation cut, against the red sealant tape (see photo 7). Wrap the entire patch around the cable as shown and remove the release foil during installation. Avoid air pockets, wrinkles or creases.

12. Wrap one layer of sealant tape (red) with a small overlap and slight tension over the braid wire and previously applied sealant tape, below and level with the (green) stress control patch (see photo 7).

13. Take apart the DYNASPHERE ERICORE coupling, ensuring there are 4 pieces. There should be:

- A Compression Nut
- A Compression Ring
- A Compression Cone
- A Main Coupling Piece

14. Place the compression nut and compression ring of the coupling set over the strands and copper tape layer. Check the order and orientation of the nut and ring against Figure 5 on page 10.

15. Unwrap the material double tape layer back to the compression ring. Place the compression cone between the filler core and the copper strands as shown in Figure 5. The cone should be "pushed on" until it is flush with the end of the filler core. Neatly form the copper strands back over the cone in their original order.



Photo 4: Red sealant tape applied over overlap.



Photo 5: Bonding braid secured in place.



Photo 6: Applying the stress control patch. In line with initial outer layer cut and over the bonding braid.



Photo 7: Apply the sealant tape below the stress control patch.

16. Rewrap the outer double layer of copper tape into place over the copper strands. Push the compression ring back up over the wrapped copper strands and up against the cone (see Figure 6 on page 10).

17. Fit the main coupling piece from the coupling set carefully over the end of the cable ensuring the cable is pushed up as far as it will go into the coupling. Ensure the copper strands are kept in place and order. Screw the compression nut into the coupling piece and tighten, using the correct size spanners/wrenches.

18. At a distance of 100mm (4 in.) from the end of the cable, wrap one half-lapped layer of semi-conductive tape around the triple layer insulation with an overlap towards the copper tape/copper strand center conductor up to, but not over, the compression coupling.

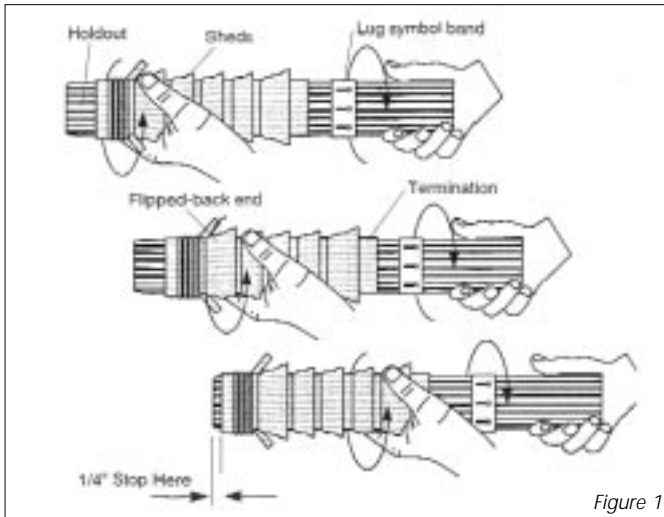


Figure 1

19. Loosening Termination

This operation is vital to the simple installation of the product.

There are two terminations in this kit (one with three sheds, the other with five). Loosen both in the manner shown opposite. Install the five shed termination first.

Hold the termination in one hand and the holdout in the other. Gripping firmly, twist the termination and holdout in opposite directions. Repeat twisting the termination and holdout, moving the hand in short increments up the termination until the entire termination is felt to move on the holdout. Slide the termination until it lines up with the end of the holdout tube as shown. Note: Take care not to slide the termination off the end of the holdout. Stop the termination about 1/4" (6mm) from the end of the holdout.

20. Installing the termination.

Position the holdout over the cable until it meets the jacket cutback. Twist the termination and slowly push it to the end of the holdout.

Slide the termination off the holdout with a twisting motion, holding the termination that is on the holdout in one hand and pulling the holdout with the other.

Note: Do NOT stretch the termination.

Do NOT hold the termination that is partially installed and attempt to pull the remaining termination off the holdout, as this will stretch the termination and generate an improperly installed termination if not repositioned.

Using the pull tabs, pull the flip-back portion away from the main termination, at the same time working the first two fingers of each hand between the flip-back and main termination. Pull the stretched out flip-back over the cable jacket and sealant.

Make sure the termination length is in accordance with the dimensions shown.

Having positioned the termination, now wrap one layer tape sealant (red) over the end of the termination and 1/4" (6mm) onto the cable insulation as shown.

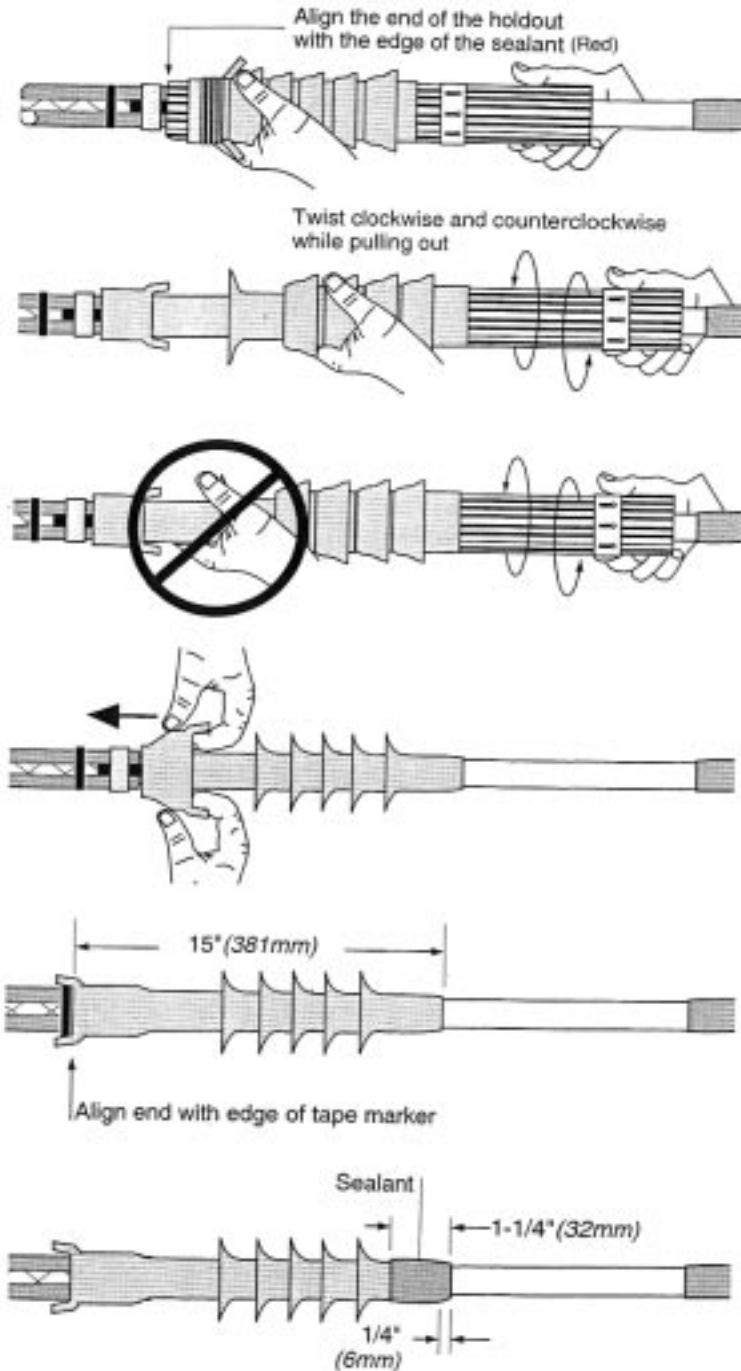
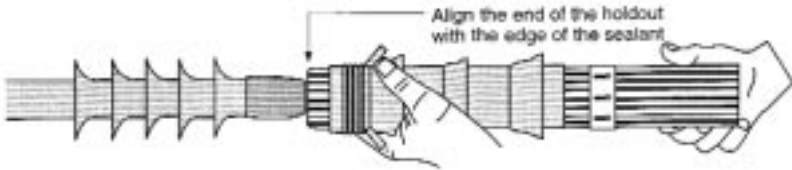


Figure 2

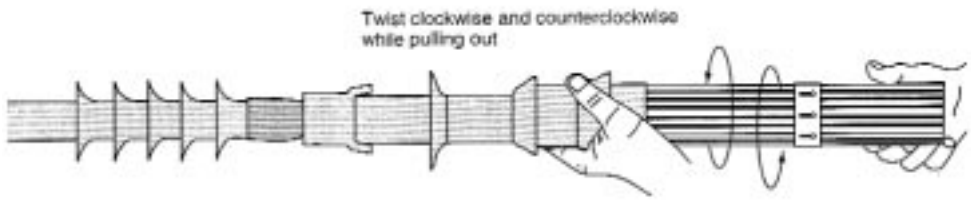


21. Installing the termination (continued).

Slide the three-shedded termination over the cable until it meets the leading edge of the sealant strip as shown. Twist the termination and slowly push it to the end of the holdout.



Slide the termination completely off the holdout using a twisting and pulling motion as shown.



Using the pull tabs, pull the flip-back portion away from the main termination, at the same time working the first two fingers of each hand between the flip-back and main termination. Pull the stretched out flip-back over the sealant.

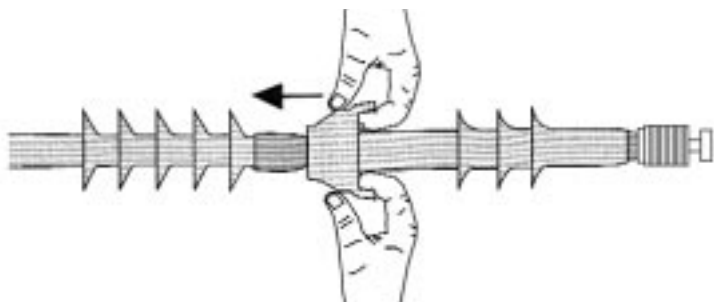


Figure 3

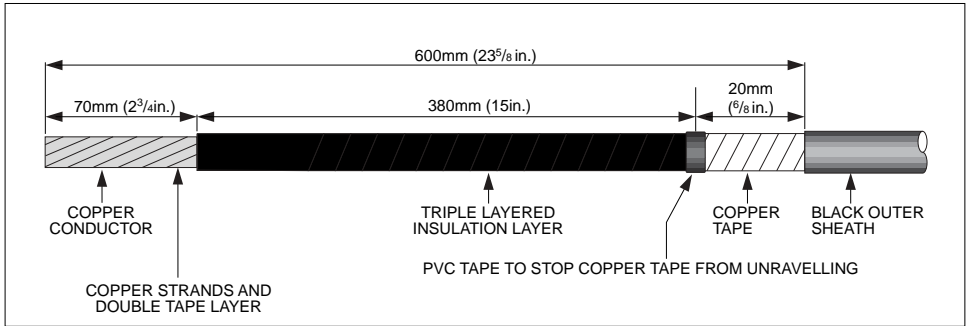


Figure 4: Cutting dimensions

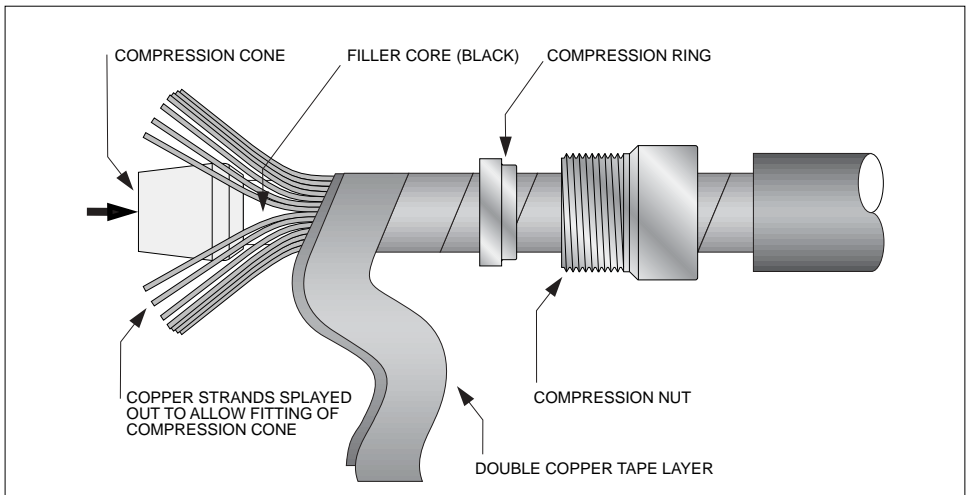


Figure 5: Positioning the compression coupling.

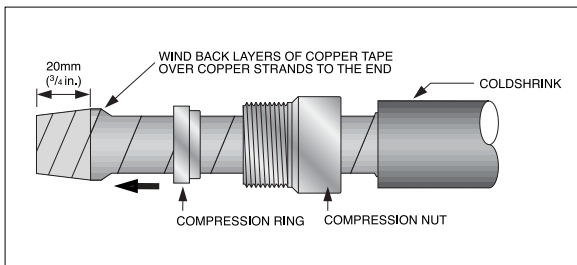


Figure 6: The termination coupling is fitted to the downconductor ready for the main coupling body to be fitted.





The coupling must be tightened using spanners/wrenches, as tightening by hands will not be adequate.

22. Using the roll of silicone tape (grey), overwrap half layers from 20mm (3/4 in.) over the end of the coldshrink to 30mm (1 1/8 in.) over the coupling so that it covers the joint between the main coupling and compression nut. Refer to Figure 7 on page 12.

Wrap with moderate tension (10 to 100% stretch). Apply one final layer with no stretch. Press down, to avoid the end lifting before fusion of the tape takes place.



The finished termination must be protected against any abrasion and sharp edges during transport or installation, as the coldshrink tubes are susceptible to ripping or tearing if nicked or scuffed.

23. If use of the structure bonding braid is required, as detailed in the ERITECH System 3000 Installation, Operation & Maintenance Manual (See the section on SECURING to determine the requirement), then this **MUST**



Photo 8: Installed compression coupling.

be electrically connected via a 6mm² (8 AWG) length of insulated copper cable to the specified conductive structural point, as described in the manual. Otherwise the use of the structure bonding braid can be disregarded.

Connecting the DYNASPHERE

24. Feed the downconductor (and structure bonding cable if required) through the FRP mast so that the entire termination is protruding from the top of the mast. Remove the lock screw in the base of the DYNASPHERE terminal, then screw the terminal all the way onto the termination coupling thread. Replace the lock screw back into position so that it locks the thread into place and will stop the terminal from unscrewing.

25. Carefully pull the downconductor (and structure bonding cable if used) back down through the FRP mast so that the terminal base sits correctly in the top of the mast. Twist the FRP mast at least one complete turn at the base of the terminal to remove any stress on the termination sheds (flanges) and to seat the terminal correctly.

Note: *It may be necessary to pull back any slack of ERICORE downconductor through the FRP support mast to achieve a properly seated fit for the DYNASPHERE.*

The DYNASPHERE must not be skewed and the base of the terminal must be fully inserted into the top of the mast.

26. If required, connect the 6mm² (8AWG) structure bonding cable as detailed in the ERITECH System 3000 Installation, Operation and Maintenance Manual. After bonding the cable, ensure that the connection is waterproof and resealed if required.

27. Place the Vital Warning Label in a prominent position at the base of the mast, or beside the downconductor at eye level, if the installation is in an area where it is possible for persons to gain access.



These termination procedures should be strictly adhered to since an incorrect termination will result in failure of the system.

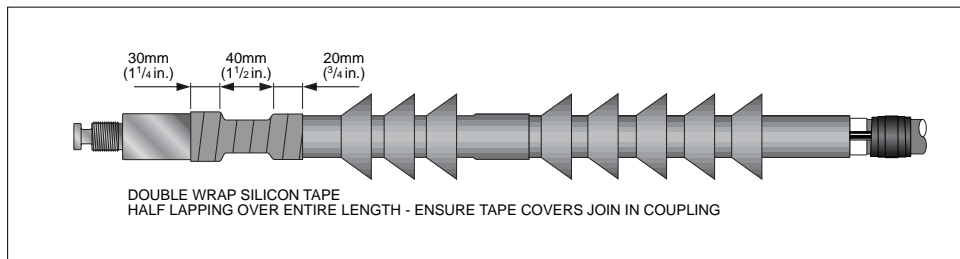


Figure 7



Photo 9: Completed termination.



Photo 10: Once the DYNASPHERE has been fitted to the termination coupling, ensure the locking screw is tightened securely.

