INSTALLATION INSTRUCTIONS

Upper Termination Instructions for UTERMKIT-Mk3 (Heatshrink) for *HVSC Plus*.

Note: This document is to be used in conjunction with the UTERMKIT-MK3 on *HVSC Plus* cable only. Using the following guide, check the cable first prior to performing the termination to ensure the use of the correct upper termination kit.

HVSC Plus cable has an outer diameter of approximately 35 mm and has an aluminium stranded centre conductor and copper tape screen (this can be easily seen from the end of the cable).

This termination kit will not work with any other type of cable.

Tools and parts required for the completion of the HVSC Plus upper termination include:

- Compression or mechanical crimping tool (for 50 mm² crimp lug)
- Sharp knife
- Scissors
- #2 Phillips head screwdriver
- Shifting spanner (or 17 mm A.F. spanner/socket)
- Heat gun or gas torch (LPG)
- Tape measure (metric)
- Marker or pen
- Combination pliers/cutters
- Mast base assembly (supplied with the Stormaster/Guardian CAT terminal)

Upper Termination Kit consists of:

- Instructions
- 1 x roll of semi-conductive tape
- 1 x 50mm² crimp lug
- 2 heatshrink tubes (1 x 1200 mm & 1 x 600 mm length)

Upper Termination Instructions

The diagram below shows the different layers of the HVSC Plus cable and indicates their names as referred to in the following instructions:

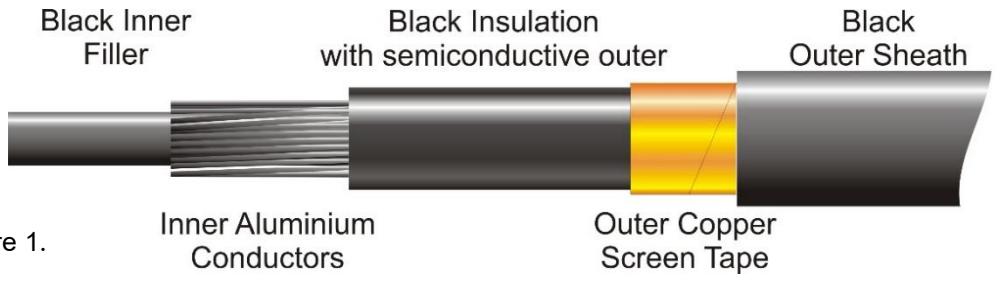


Figure 1.

INSTALLATION INSTRUCTIONS

1. First, remove the black outer sheath for a length of 160 cm by cutting radially round the HVSC Plus cable with a sharp knife. The lengthwise cut is also performed with a knife, but take great care not to score the black insulation under the copper tape as well as the 1st 3 cm of copper tape against the outer sheath. Cut and remove the material lining over the copper tape. (Fig 2)

2. With a knife, cut and remove the fabric tape material over the copper tape up to the outer sheath. Measure and mark with a pen the outer copper screen tape at 3 cm along from the end of the outer sheath. (Fig 2) With a knife or scissors, carefully cut and remove the copper tape, again without damaging the black insulation below. If using a knife, carefully score the tape without cutting through it and use this score line to tear the tape along the line.

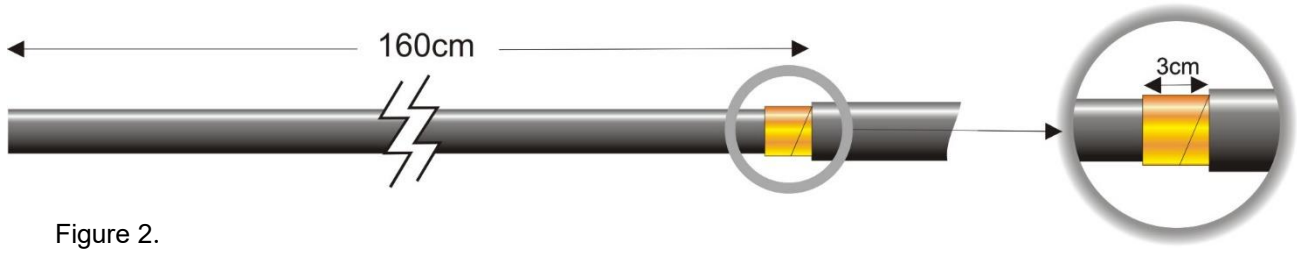


Figure 2.

3. Using a sharp knife, remove the black insulation to expose the inner aluminium conductors for a length of 5 cm from the top end of the HVSC Plus (Fig 3). Also remove the black fabric material lining over the aluminium conductors. Be careful not to damage the conductor strands during this process. Note: There are many valid ways of removing this layer, but it is very important that the aluminium conductor strands are not scored or damaged in any way as this will decrease their strength and may lead to breakage when bending them for insertion into the crimp lug.

4. Remove at least 3 cm of the black inner filler core under the inner aluminium conductors by carefully bending back the conductors to expose the filler core then cut and remove the core with a knife. Carefully bend the conductors back to allow them to be fed into the lug. (Fig 3)

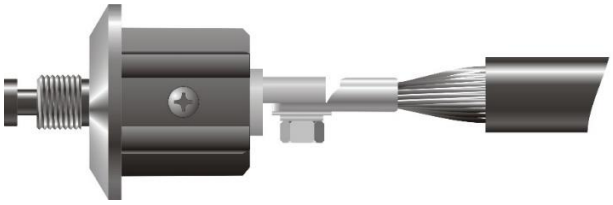
Figure 3.

5. Straighten the cable back to the black outer sheath as much as possible then crimp the Inner aluminium conductors into the supplied 50 mm² crimp lug using a suitable compression or mechanical crimping tool.(Fig 4)

Figure 4.

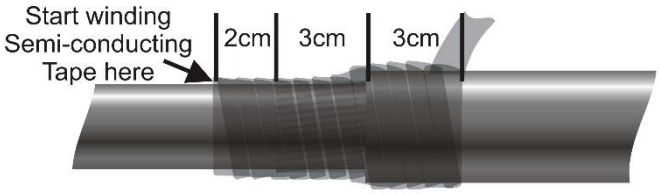
6. Connect the crimp lug to the Stormaster/Guardian CAT mast base assembly using the bolt and washers as supplied with the assembly. Ensure the connection is aligned correctly and tightly secured using a 14 mm spanner, socket or shifting spanner. Note orientation of lug on lower finial connector. (Fig 5)

Figure 5.



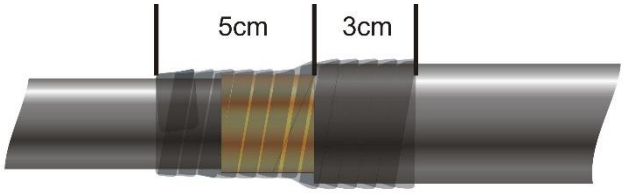
7. Using the semi-conductive tape provided, starting 2 cm in front of the end of the outer copper screen tape (or 5 cm in front of the black outer sheath), stretch and wrap the tape back over the tape and 3 cm over the black with 50% overlap, securing the outer copper screen tape in place. This should use approximately 50 cm of the tape. (Fig 6) **Note: DO NOT cut the tape at this stage**.

Figure 6.



8. Over wrap back towards the crimp end of the cable, again stretching the tape and with 50% overlap, leaving 5 cm covering the outer copper screen tape and black insulation and 3 cm covering the black outer sheath. This should use approximately another 50 cm of the tape. Wrap another 2 layers, again stretched with 50% overlap back up to where the black outer sheath ends, to build up the cable diameter and to smooth out transitions in diameter. (Fig 7). Cut the tape and press down firmly to ensure it amalgamates with the tape below it.

Figure 7.



9. Again using the semi-conductive tape, start stretching and wrapping over the aluminium conductor strands and connection to the lower finial connector to start building up in multiple layers. Continue wrapping the tape over the area shown to cover the last 3 cm of the black insulation, over the lower finial connector and up to the black plastic section of the mast base assembly in multiple layers, completely covering the crimp and achieving as smooth and level a surface as possible, removing all sharp edges. (Fig 8)

Figure 8.

10. Remove the plastic mast butt Adaptor section of the Mast Base Assembly (if fitted) by unscrewing the M6 Phillips head screw on the side. Straighten the cable as much as possible then carefully slip the first 1.2 m length of heatshrink over the cable until the end of the heatshrink tube covers and overlaps the semi-conductive tape (over the black outer sheath) by at least 3 cm. (Fig 9). **Ensure that the semi-conducting tape is not damaged or lifted during this process.** Using a gas torch or heat gun, carefully shrink the lower end of the heatshrink into the correct position and gradually work up towards the top of the heatshrink ensuring there are no pockets of air trapped under the heatshrink.

Note: Ensure that the heat gun or gas torch is not pointed in the same area for too long as this will burn the heatshrink, also be careful around the ends of the tube as too much heat will damage the black PVC outer sheath, semi-conductive tape and black XLPE insulation.

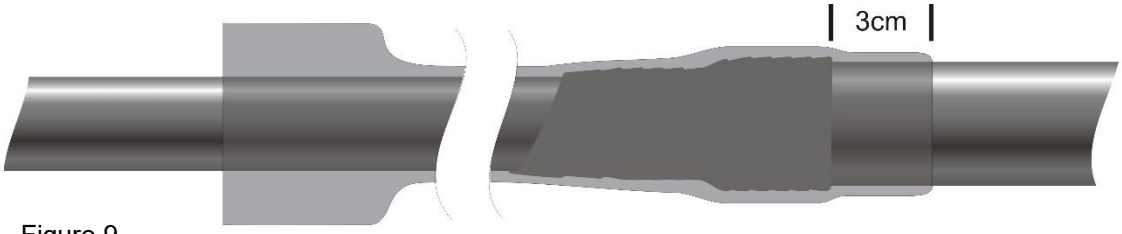


Figure 9.

11. Place the 2nd 600 mm heatshrink tube into place over the cable, again ensuring that the semi-conductive tape is not damaged, overlapping the previous Heatshrink tube by approximately 6cm. Shrink about 7 cm of the upper end of the heatshrink into place so that it will sit flush with the base of the plastic mast butt adaptor when fitted back into place. Note: There is a mark on the lower finial connector indicating where the heatshrink needs to be fitted to. Shrink the rest of the heatshrink from the top down, ensuring that it overlaps the previous piece of heatshrink by at least 6 cm. (Fig 10) Ensure the rest of the heatshrink has a smooth overall finish. **Note: Do not bend the cable while the heatshrink is still hot.**

Note: If required, feed the cable through the mast sections & guying ring prior to refitting the mast butt adaptor. Replace the plastic mast butt adaptor section of the mast base assembly back onto the lower finial connector and ensure that the M6 Phillips head screw is tight and secure.

Figure 10.

12. The lugged HVSC Plus is now ready to be connected to the base of the Stormaster / Guardian CAT terminal. Screw the terminal onto the completed terminal base assembly and secure with the supplied M6 locking grub screw.

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