

## *Hv Cable assembly.*

### **Procedure**

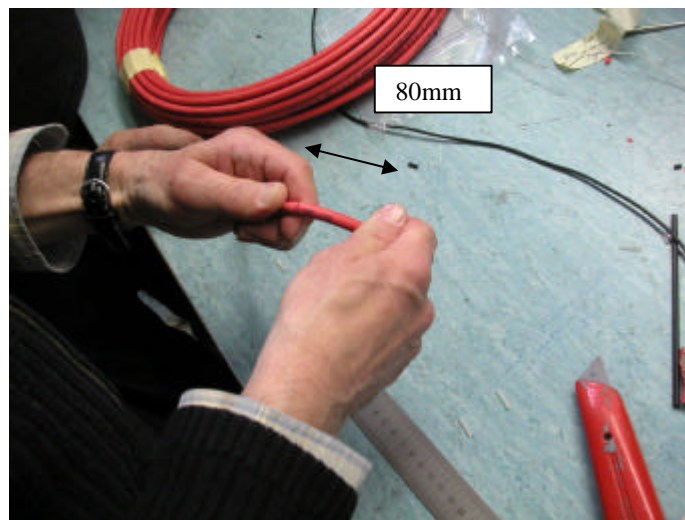
### **Components**

### **Tools**

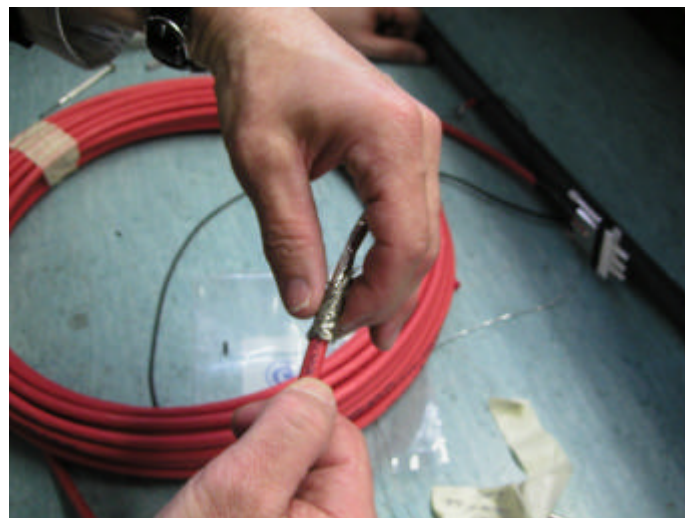
#### Procedure

Denude the red sheath from the cable to a length of 80mm.

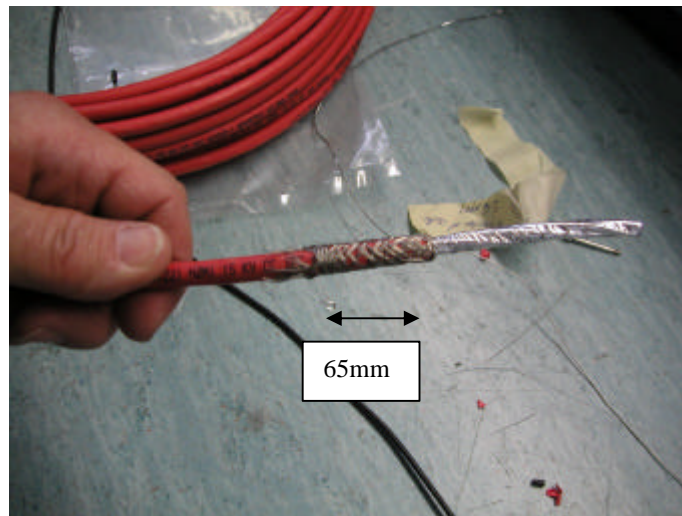
Use a sharp knife to partially section through the external sheath. Do not cut through it , rather break the remaining material by bending as shown below.



Proceed to pull back the braid to a distance of 60mm as shown below



The result must be smooth and clean with no loose ends.



Remove the flame shield from the inner conductors using small sharp snips. Do not damage the insulation on these wires.



Pull out the strands of the shield braid using a scribe . Twist the ends together for soldering to the ground wire connexion.



Place the 2 Thermo-retractable tubes [TRT] on to the assembly as shown .

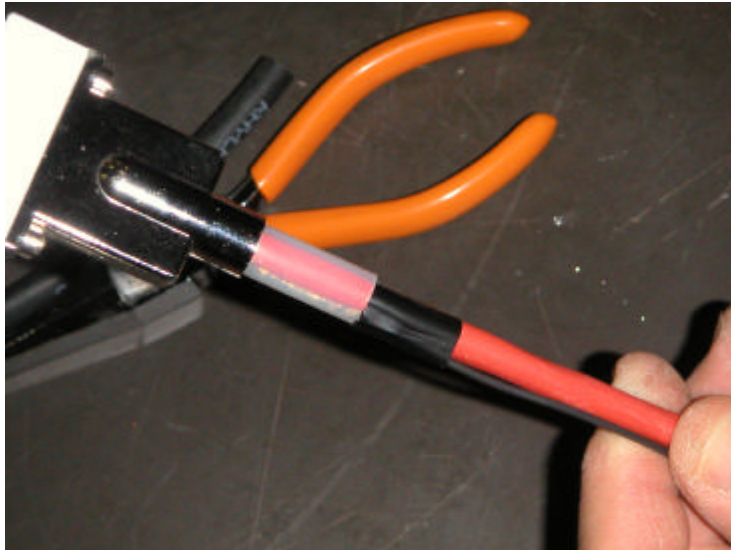
Use TRT 19-6mm internally coated with hot melt EVA  
L = 70mm. SCEM.....

Use TRT 12-6 standard Raychem. L = 40mm. SCEM.....

Solder on the ground wire connexion SCEM ..... L = 200mm.

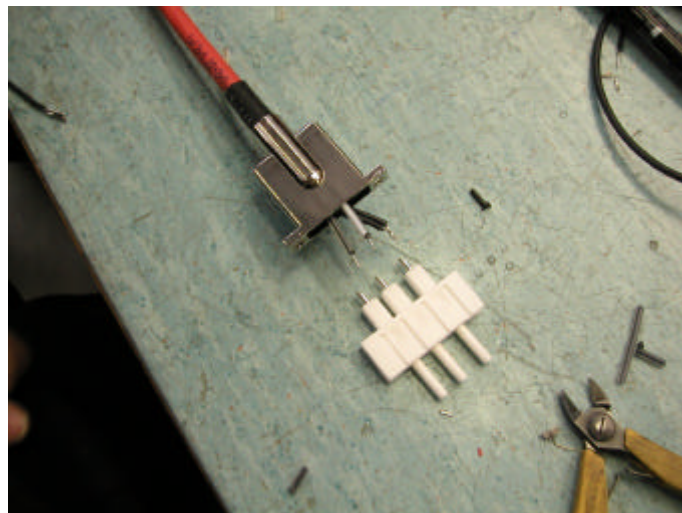


Push the PA pipe Ø 10-8mm cut to 30mm into the metalised connector housing.  
WRONG PICTURE> TAKE ANOTHER.



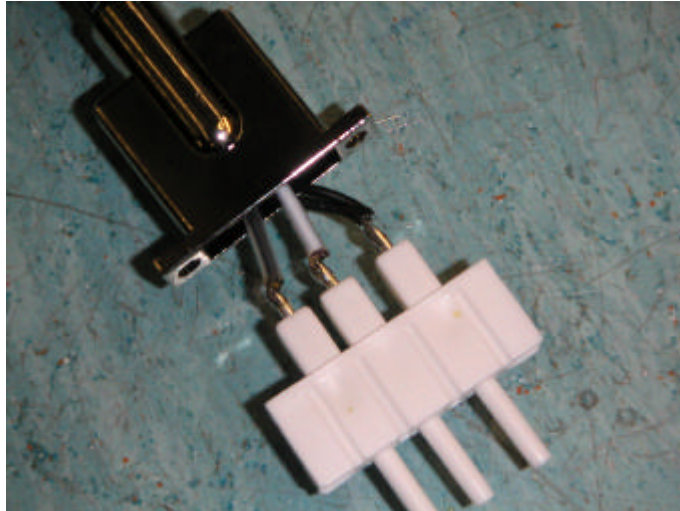
Cut the individual conductors to 27mm in length. Using the Thermo denuder [Hot Weezers] strip the individual wires over a length of 5mm at their ends. Twist the two black thinner wires together. Using soldering iron tip 'ETB' set to 400°C and 2% Ag solder tin all three ends. Thread the white cable through the two black cables as it will connect to the centre pin.

Thread the prepared cable end through the housing as shown below.

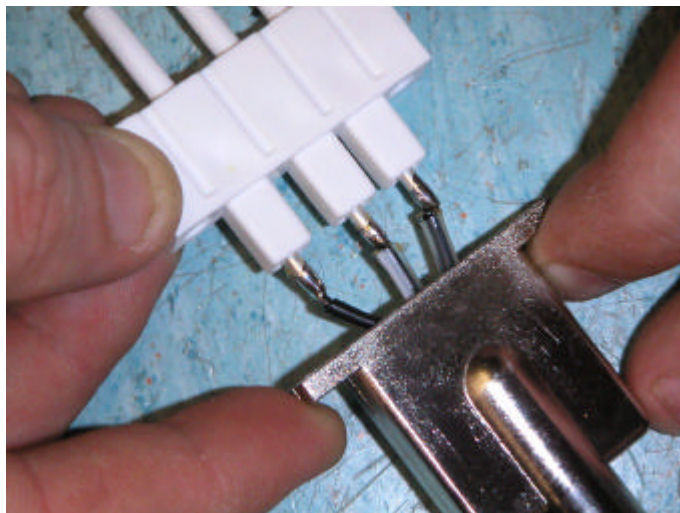




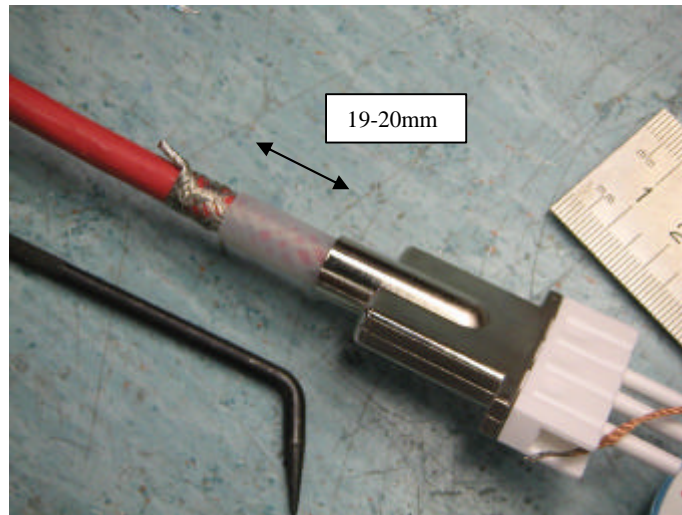
Prepare to solder on the connector. DO NOT tin the pins. Hold the connector gently in a small vise. Heat the bottom of the pin wire location placing the correct cable in its slot and solder using plenty of solder. Heat for a SHORT time to create large rounded solder blobs. Remove the iron asap leaving NO SPIKES. There must be no loose unsoldered wires. Check to see that no solder traces/ blobs have fallen onto the connector base. Slight damage to the wire insulation, as illustrated, is tolerable. If the solder blobs on the pins are not fully rounded and wetting the outside of the pin they can be touched-up.



Gently slid the housing down the cable so to mate the housing and base .



Secure the two elements together using the hollow screws and their flat sided nuts. Do not yet circlip the centre securing screws. Position the PA pipe in the rear of the housing ensuring that there is at least 10mm inside by measuring 19 – 20mm outside.



Position the smaller TRT over the ground wire and up against the housing entry. Do not put in onto the outside of the housing. Heat to full retraction using the hot air gun set to #5 on the Model .....



Position the large internally coated TRT over the ground wire and up against the shoulder of the connectors housing . Using the Hot air gun a s before heat the TRT starting from the connector end. Solder on the ground connection lug SCEM..... After having cut the wire to 120mm ???????



## HV Potting

Set up to inject the potting compound .....

Tools and material required. Have plenty of paper wipes ready to hand Wear fine protective gloves.

Carefully set up the electronic balance with a resolution of 0.1gram.

MIX THOROUGHLY the black Stycast 2651-40. If necessary heat using an infra red light. to obtain a fluidity that will pour readily from the container. It should have a viscosity of 30Pas.

Pour an adequate amount into a PP or PC disposable beaker but at least 40grams. Using a syringe of 40ml and 1.6mm needle remove 20ml of the LV23 catalyser., add 18% of the previously measured component. Mix in to the black component stirring vigorously to ensure a through mix. Heat if necessary. The mixture should become extremely fluid, far more than before. It has a viscosity of 2200cP@25°C.

Remove the needle from the syringe and modify to 25mm in length. Take care not to perforate your epidermis. Remove the plunger from the syringe. Pour sufficient mix into open end the syringe but not filling over the maximum graduation mark, obviously obturating the other end with your paper protected finger !

Place the plunger over the open end and invert holding the plunger securely in place. Push the plunger beyond its initial stop while allowing the air to escape . Catch the few drops with the paper. Place the needle back onto the syringe.

Position the cable and connector vertically



Tape up the interface between the base and housing to ensure no leaks of epoxy. The epoxy must continue to drip easily ( and annoyingly ) from the needle.  
Inject through the 2 holes in the top of the housing , inserting the needle fully but carefully so as not to damage the insulation of the cables. The pressure required is quite firm. Fill completely the housing to the brim and allow any bubbles to escape. Add a few drops more as the epoxy retracts on reticulation.

The 'drying' times are

16-24hrs @20°C

4 hrs @ 65°C

All this procedure has to be carried out while the mix is VERY fluid. Time is short, 20 minutes and temp is  $>20^{\circ}\text{C}$

## **Components**

## **Tools**

Ian Crotty 10 April 05