



**Atlas MDT Detector**

**Procedures for connecting AMP plugs on  
HV cables type HCT-50-1-1**

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These procedures describe how to connect AMP two-position receptacles type MODU II, part number 280358, to the CERN standard HV cable with partial discharge screen type HCT-50-1-1, in order to produce **3,400** cables to be used in the Atlas MDT chambers for connecting hedgehog boards to SHV connectors.

CERN will provide the following components and materials:

- 2.5 km of HV cable, subdivided in 13 reels
- 7,000 AMP two-position receptacles part number 280358
- 11,000 AMP receptacle contacts part number 181270-3, reel form
- 200 m heat-shrinkable tubing  $\varnothing$  5 mm

A crimping tool for AMP contacts is available, and it can be borrowed for the necessary time, if needed.

Cables must be cut in length of 70 cm (+0 –5 cm). Both ends must be stripped for approximately 4 cm, and copper screen must be separated from the inner cable. Fig. 1 shows the cable at one end, called SHV end, and Fig. 2 shows the other end, called Hh end.

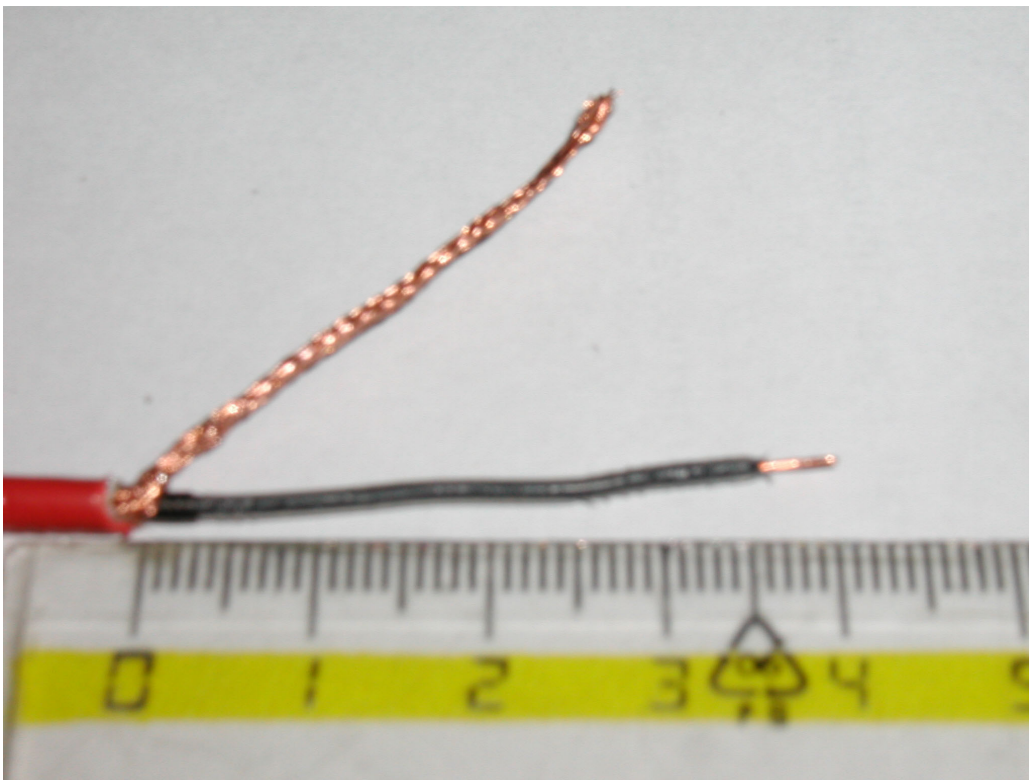


Fig. 1 – SHV end of cable

The carbon discharge screen, on both ends, must be stripped off for at least 3.5 cm, as shown in the pictures. It can be stripped off with a stripping tool like the one shown in Fig. 3.



Fig. 2 – Hh end of cable

On the Hh end, copper screen must be subdivided in two parts for at least 1 cm (Fig. 2). After this, one AMP contact can be crimped on the Hh end, and 5 cm of shrinkable tube, 5 mm diameter, has to be inserted on the copper screen, to protect against short-circuits close to the hedgehog boards (Fig. 4).

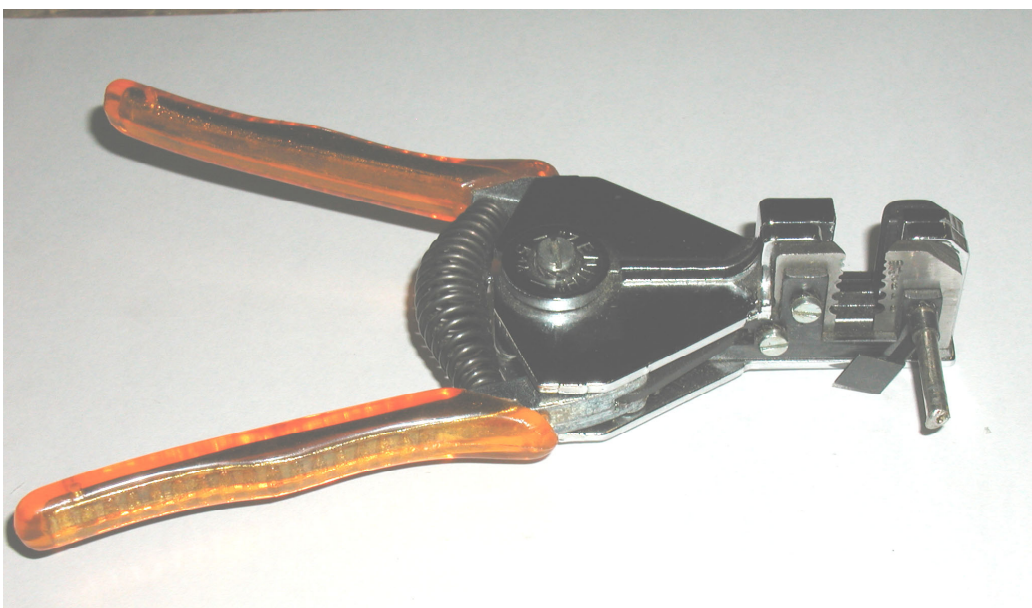


Fig. 3 – Stripping tool for stripping off safely the carbon discharge screen

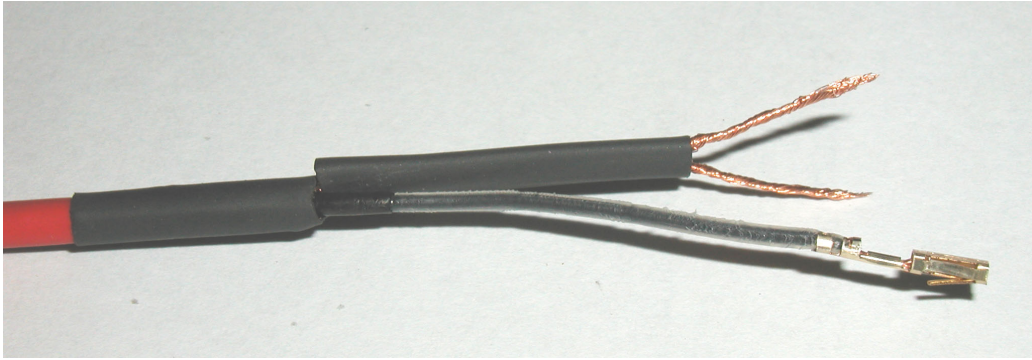


Fig. 4 – Hh end with one contact and the shrinkable tube

The shrinkable tube must then be shrunk with a thermogun tool, and after that the other two contacts can be crimped on the copper screen (Fig. 5).

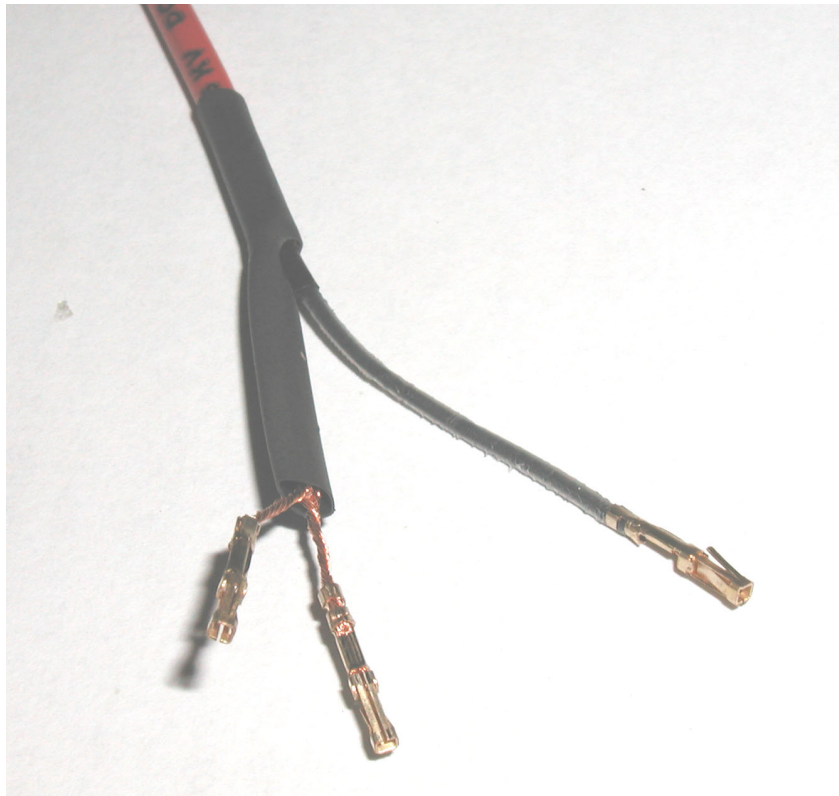


Fig. 5 – Hh end with all three contacts crimped

Finally, the two plastic receptacles can be inserted. Note the position of the receptacle inserted on the central wire contact (Fig. 6): the contact must occupy the position to the right, looking at the receptacle with the locking key on the top.

Fig. 7 shows the finished cable.



Fig. 6 – AMP receptacles inserted on contacts

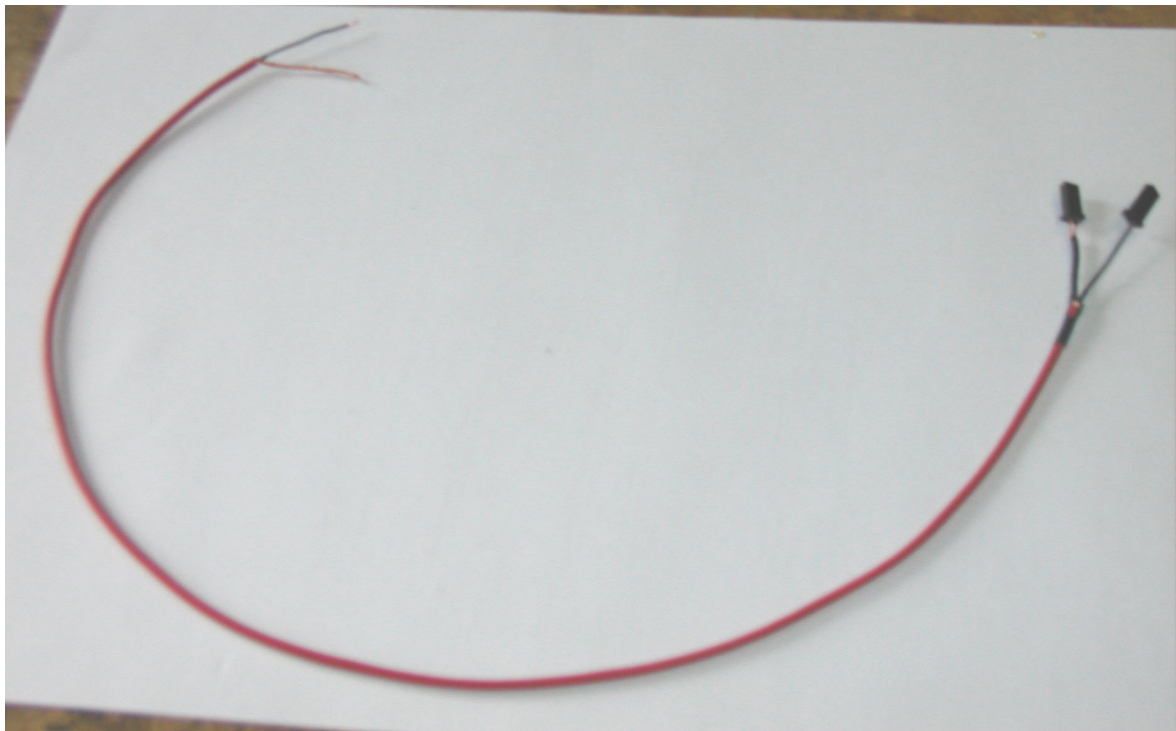


Fig. 7 – Finished cable