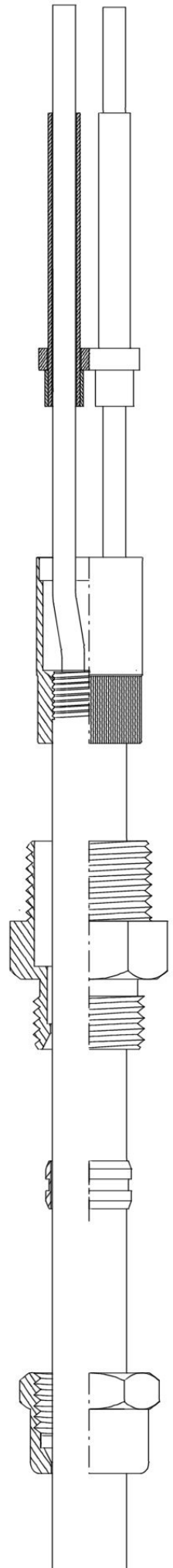
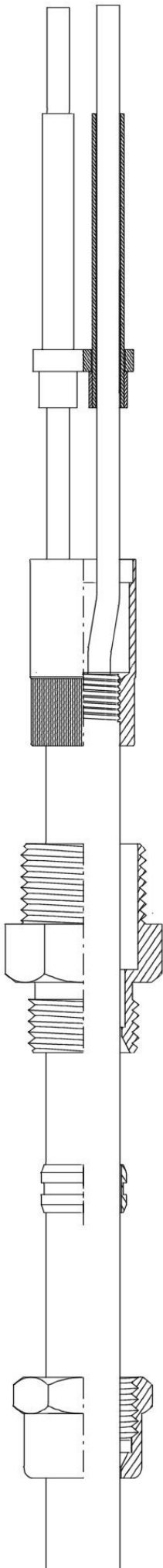
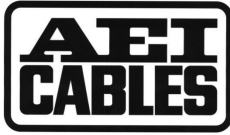


**INCREASED
SAFETY
SEAL
PROCEDURE**



**Technical Data Sheet 4 - A4
Mar 2010**



AEI Cables Ltd
Durham Road
Birtley
Co Durham

INCREASED SAFETY SEALS

This seal is for use on Mineral Insulated Cables used to supply Increased Safety equipment (Type of Protection 'e') in potential explosive atmospheres.

This is a type of protection in which additional measures are taken to give the apparatus increased protection against excessive temperatures and against the occurrence of arcing. It applies only to equipment that, in normal service, is not, itself, a source of arcing or excessive temperatures.

The seal uses a standard brass pot (with or without an earth wire as required) but the sealing compound, disc and conductor sleeving are special.

This seal assembly has the solvent resistant properties previously required in BS 4683:Part 4 ie resistant to acetone, benzene, hexane, methanol, carbon disulfide and ethyl acetone vapours. It is suitable for use within an ambient temperature range of -20°C to 105°C .

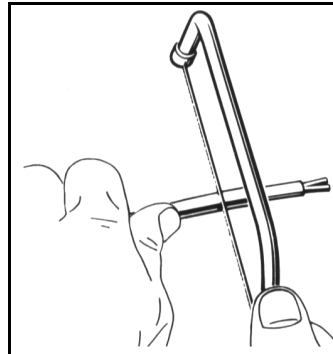
An ATEX certified compression-ring gland is used with this seal and where cables with a plastic covering are used, a standard gland shroud.

The AEI Increased Safety Seal shown in this leaflet is suitable for use with increased safety, type of protection 'e' equipment to BSEN 60079-7.

IP RATINGS (Index of Protection)

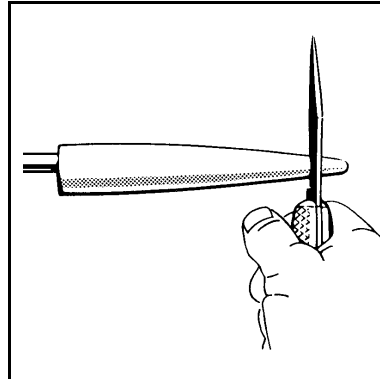
For Increased Safety Equipment an IP Rating of at least IP54 should be achieved.

When the equipment has a clearance hole for the gland entry a suitable sealing washer should be fitted to the gland between the gland hexagon and the equipment or box. For equipment with a threaded entry it may be necessary to apply an approved sealant to the gland entry thread to achieve this IP rating.



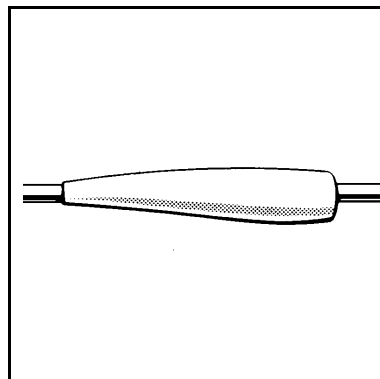
1

Saw the cable to produce a square end



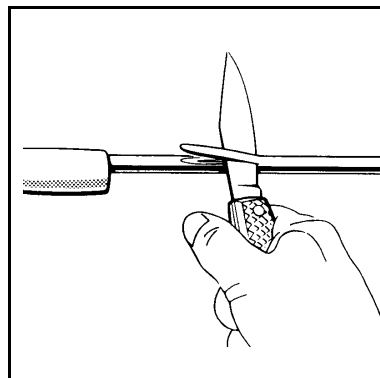
2

Hold the shroud against the cable and cut the taper as shown.



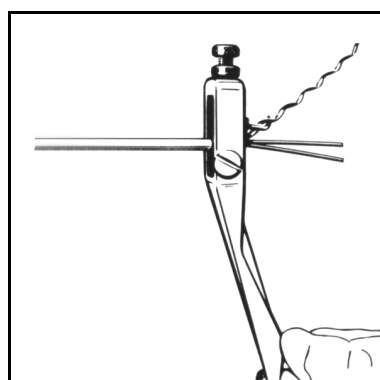
3

Fit the gland shroud



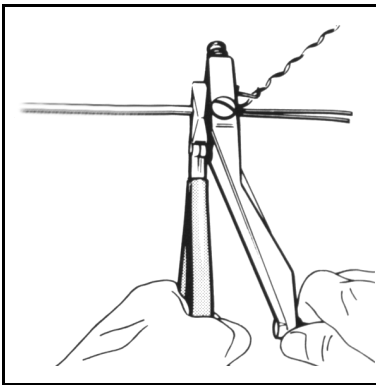
4

Strip the plastic outer covering for the required length

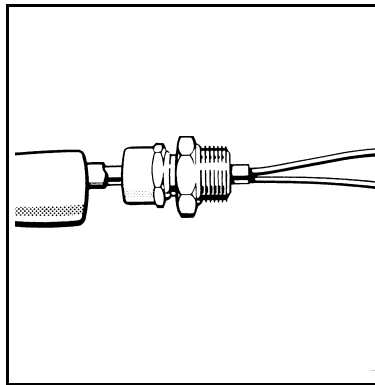


5

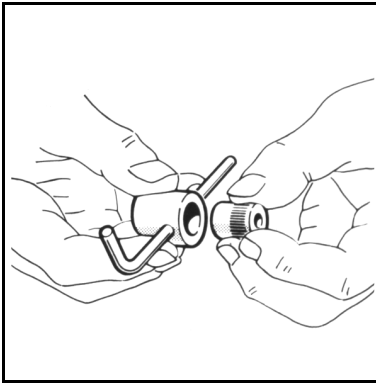
Strip the outer sheath using one of the standard stripping tools (shown) or side cutters

**6**

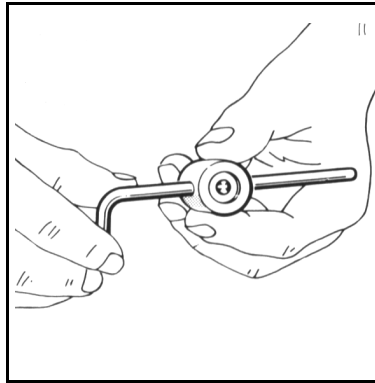
Finish the stripping operation by gripping the cable sheath with pliers as shown, and rotating the tool

**7**

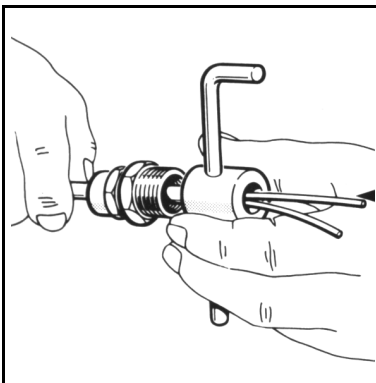
Fit the complete gland as shown but do NOT tighten the back nut at this stage

**8**

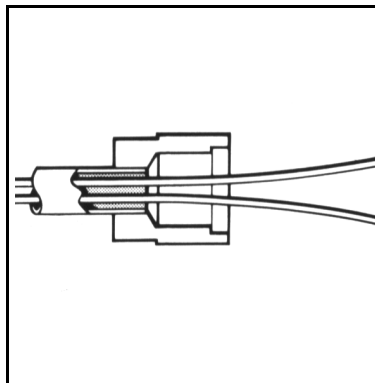
Insert the pot into the Easi-Pot tool as shown.

**9**

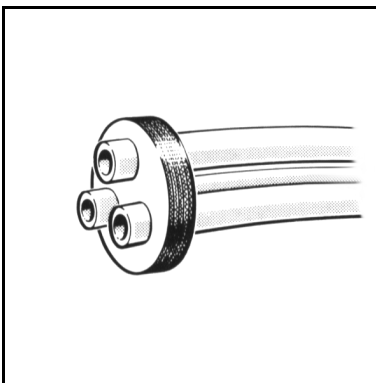
Tighten the Easi-Pot handle to grip the pot

**10**

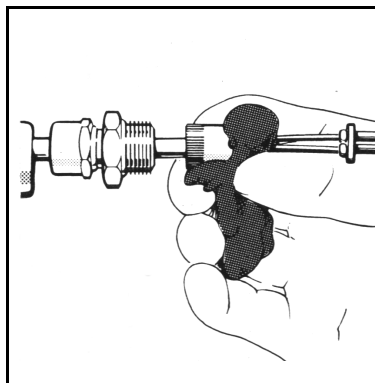
Screw the pot onto the cable as shown. Alternatively, the pot can be screwed on using pliers or grips

**11**

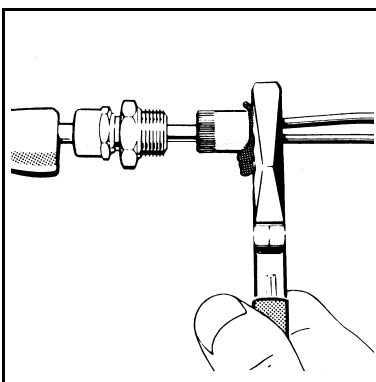
The pot should be screwed onto the cable until it protrudes approx. 1 mm into the pot. Earth tail pots may need screwing further to correctly position the earth wire

**12**

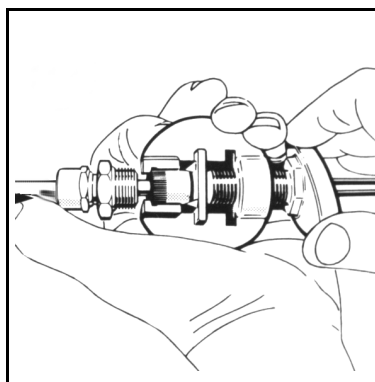
Assemble the headed sleeves into the disc with the heads pulled hard against the disc as shown, the thread this assembly over the conductors.

**13**

Take equal parts of the putty & hardener and thoroughly mix by kneading until the colour is uniform. Fill the pot with compound. Push it from one side only to ensure no air is trapped, until the pot is overfilled

**14**

Push the disc/sleeve assembly firmly into the mouth of the pot using suitable pliers.

**15**

Remove the excess compound and crimp the disc using the hand crimp. The hand crimp is only available for 20 & 25 mm seals. For larger sizes use the 3 point expendable crimping tools.

Testing

INSULATION RESISTANCE

All sizes of AEI Cable have a moisture resistant insulation. No special precautions are therefore required when the cable is cut and the cable can be tested immediately after terminating, This reading could be lower than normally expected until the epoxy compound has fully hardened. This process could take as long as 24 hours depending on the ambient temperature.

The insulation resistance of a correctly terminated cable should be in excess of 100 megohm 24 hours after terminating. In some cases lower values are sometimes observed if the insulation resistance test is carried out immediately after terminating.

For all the above testing, a 500V insulation resistance tester should be used.

EARTH CONTINUITY

The standard gland is usually used to provide earth continuity between the copper sheath of the cable and the equipment. It is therefore important that the gland back nut is correctly tightened and the gland be fitted securely into the equipment. (See Technical Data Sheet 1 for tightening torques)

LIMITATIONS OF USE

The seal is suitable for use within an ambient temperature range of -20°C to 105°C

The user/installer must ensure that the current rating of the cable is compatible with this limitation.

The components must not be subjected to a working voltage in excess of 600 V a.c.

The components shall be installed such that mechanical protection is provided

ORDERING REFERENCES

Seal kit – plain	– RMAA <Cable size>
Seal Kit –earth tail	– RPMKA <Cable size>
Gland	– RGM <Cable size>



HEALTH AND SAFETY

Care should be taken when terminating mineral insulated cable to prevent sharp metal edges from cutting the skin or powdered insulant causing irritation by entering the eyes. Gloves and protective spectacles should be used to prevent this.

HANDLING EPOXY PUTTY

When handling epoxy putties it is recommended that hands are covered, preferably with disposable gloves, or a suitable barrier cream. Hands should be thoroughly washed after handling the compound. Do not eat or drink when handling or before washing hands



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