

# Assembly Instructions for cable gland type

## 753 20R5

Assembly Instructions  
AI 318 (Os - F) / AI 339 (H)  
Issue E - 11/02

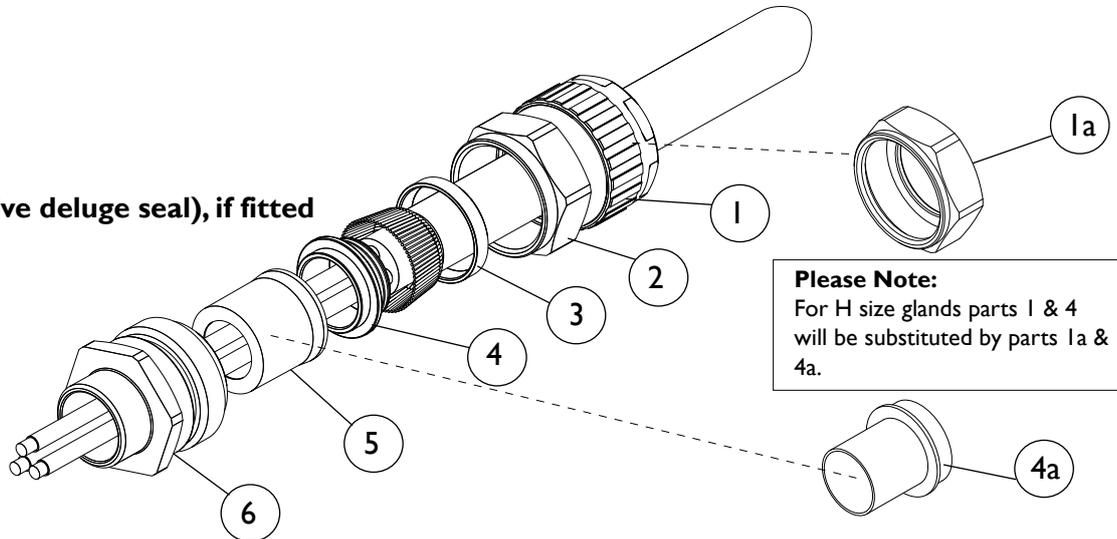
# HAWKE

International

Listing Card No. E84941

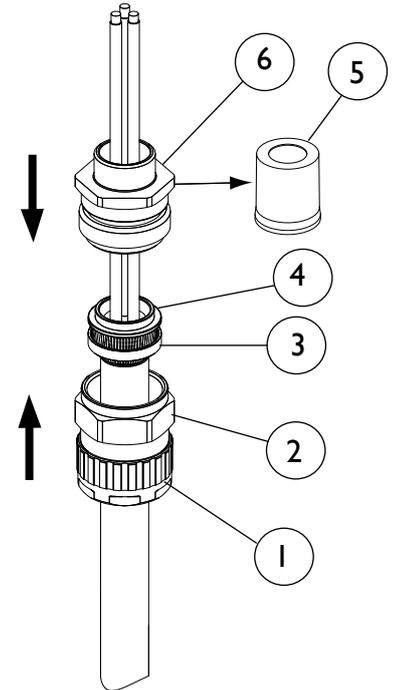
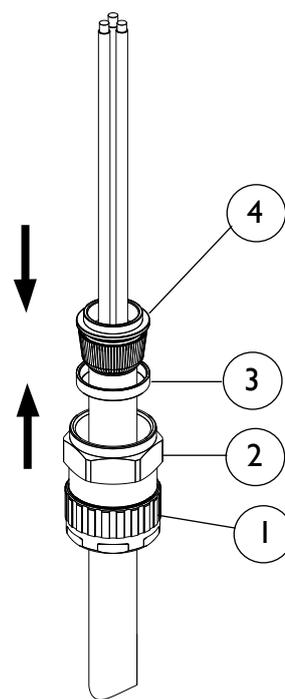
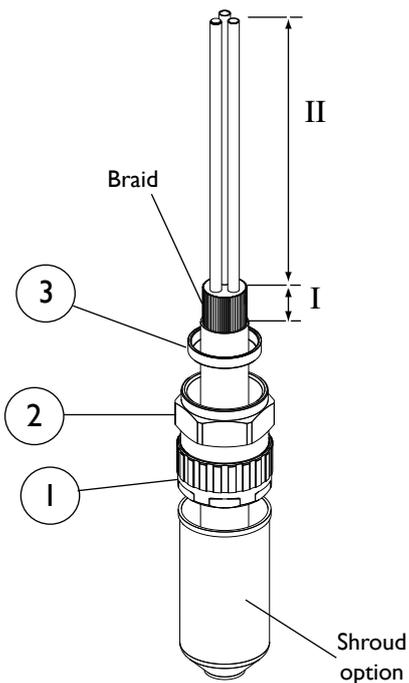
Operating temperature range -50°C +60°C

1.  Backnut
2.  Middle Nut
3.  Clamping Ring
4.  Spigot
5.  Brass Pot
6.  Entry (with captive deluge seal), if fitted



### Cable Preparation

### Cable Gland Preparation



- A**  
Strip Cable to suit equipment as shown above and expose the braid 'I' removing all cable fillers.  
'I' = 13/16" (20mm) for cable gland sizes Os to A  
'I' = 1" (25mm) for cable gland sizes B to C2  
'I' = 1 1/4" (32mm) for cable gland sizes D to H  
'II' to suit equipment.  
If required, fit shroud.

- B**  
Push the cable through the spigot ④. Spread braid over the spigot ④ until the end of the braid is up against the shoulder of the spigot. Position the clamping ring ③.

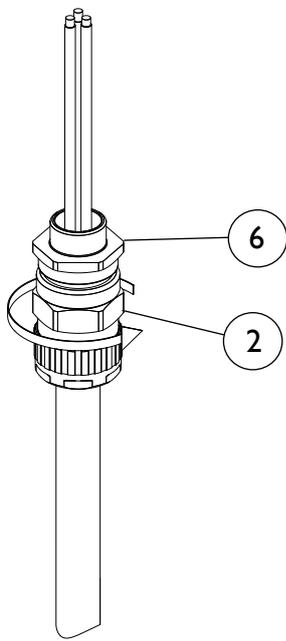
- C**  
Remove the brass pot ⑤ from the entry ⑥. Place the entry ⑥ over the spigot ④. Move the sub-assembly ① and ② up to meet the entry ⑥.

- Note:  If the equipment has a threaded  
  entry it may be advisable to screw  
  the entry component into the  
  equipment to prevent twisting of  
  the cable after step D

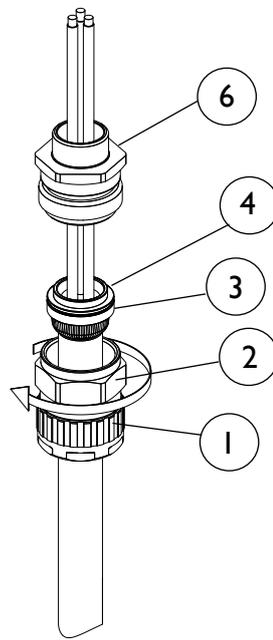
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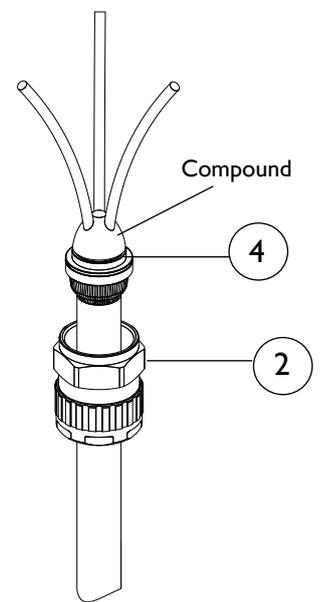
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**D**  
Unless already screwed into the equipment hold the entry ⑥ in position with a spanner / wrench to prevent rotation. Hand tighten the middle nut ② onto the entry ⑥ and turn a further 1/2 to 3/4 of a turn with a spanner / wrench.



**E**  
Unscrew the middle nut ② and visually inspect that the braid has been successfully clamped between the spigot ④ and the clamping ring ③.  
If braid is not clamped repeat assembly.

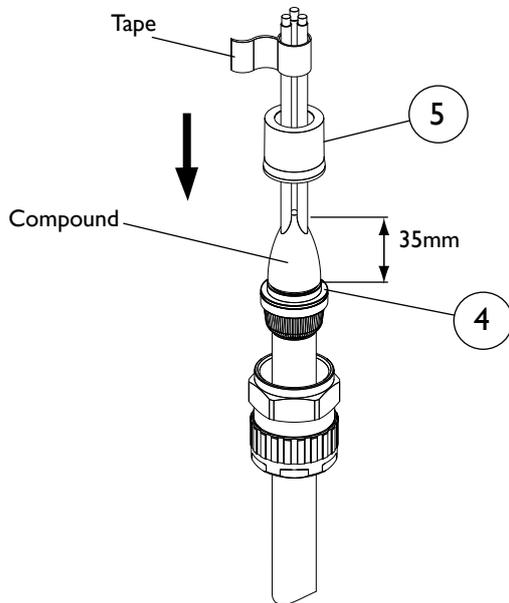


**F**  
Remove the entry ⑥, spread out the cable cores and the individual strands of uninsulated conductors for the compound packing. Pack the compound between the cores and strands shown. See notes below and Fig. 7 for compound preparation.

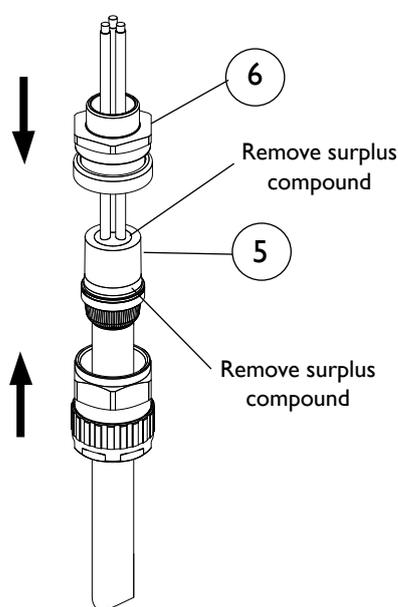
### EPOXY COMPOUND PREPARATION

When handling this material, the gloves supplied must be worn. The epoxy compound is supplied in the form of a two part package. These should be mixed into the ratio of 1:1 until both colours have blended into one, without any streaks. Rolling and folding is the most effective method of obtaining an even blend. Once mixed, the compound must be used within 30 minutes. After this time it will begin to stiffen. The compound should be kept at an ambient temperature of no less than 20°C prior to using. At lower temperatures it becomes difficult to mix. Should any compound come into contact with the skin it should be cleaned off with skin cleaner and not allowed to dry on the skin. Only compound for immediate terminations should be mixed.

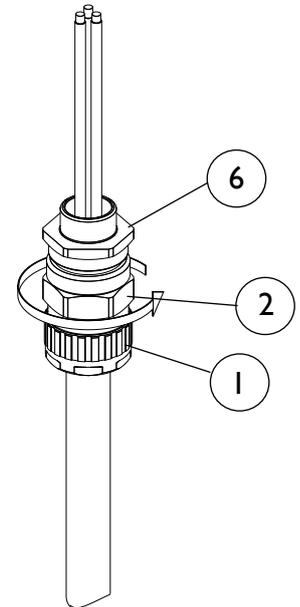
The mixing and installation of the compound at an ambient temperature below 5°C is not recommended due to extended curing periods.



**G**  
With all gaps and voids filled, bring the conductors back together and pack more compound around the outside of the conductors. Tape the conductors together to prevent disturbance of the compound seal. Pass the brass pot ⑤ over the spigot ④ and remove any surplus compound from the top of brass pot ⑤ and the joint face as indicated.

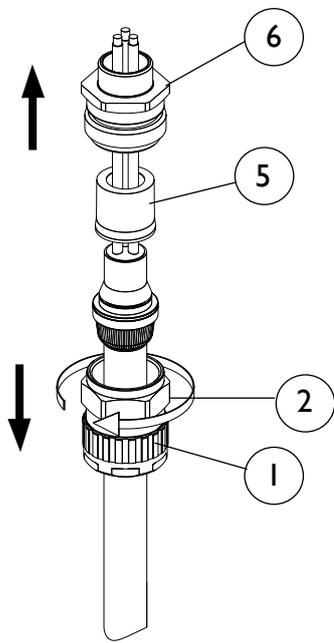


**H**  
Replace the entry ⑥ over the brass pot ⑤ ensuring that compound does not cover the end of ⑤.

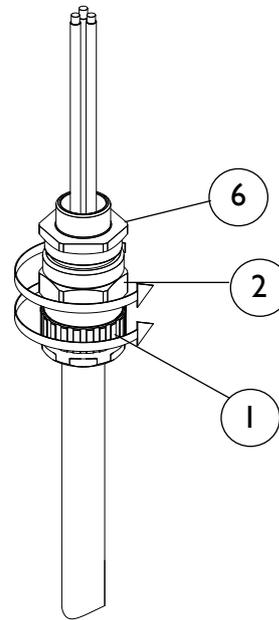


**I**  
Locate and hand tighten the sub-assembly ① and ② onto the entry ⑥.  
Unscrew the sub-assembly ① and ② from the entry ⑥ then remove any surplus compound from the gland components.  
Again locate and hand tighten the sub-assembly ① and ② onto the entry ⑥.

**IMPORTANT NOTE:**  
**THE CONDUCTORS MUST NOT BE MOVED FOR A MINIMUM OF FOUR HOURS**



**J**  
 Allow the compound to cure.  
 (See Fig. 7 for Curing Times).  
 Untighten the sub-assembly ① and ②  
 from the entry ⑥. Check that the  
 compound has cured.



**K**  
 Hand tighten the sub-assembly ① and ② onto the  
 entry ⑥ and add half a turn with a spanner / wrench.  
 Tighten the backnut ① to form a seal around  
 the cable, then tighten a further full turn using  
 a wrench / spanner. Ensure that the middle nut ②  
 does not rotate when tightening the backnut.  
 Ensure that the deluge seal is pulled down into  
 position, if fitted. Locate the shroud over the  
 cable gland, if applicable.

**The following instructions are the approved methods of passing drain wires etc. through the compound barrier and should be followed if permitted by cable installation specifications.**

### UNINSULATED EARTH OR DRAIN WIRE PREPARATION

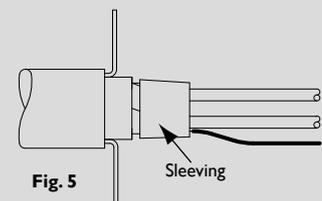
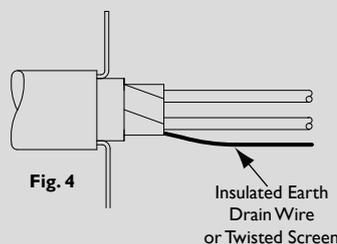
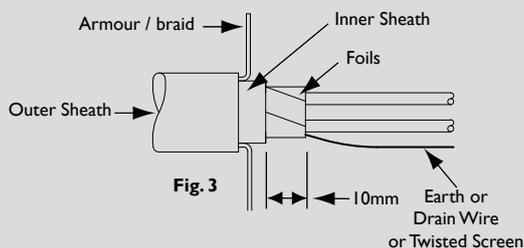
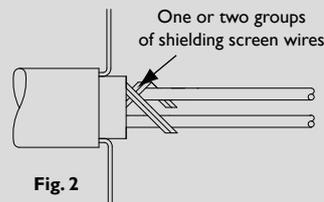
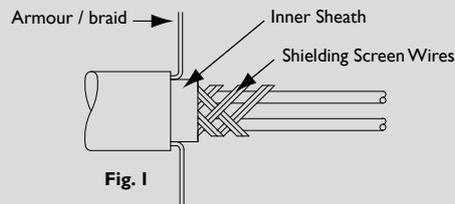
#### 1.0 INSULATING EARTH OR DRAIN WIRES WITH HEAT SHRINK OR COLD SHRINK TUBING

- 1.1  Fold back the armour / braid and bend it to right angles from the inner sheath.
- 1.2  Remove foils and tape level with the outer sheath, exposing the uninsulated earth or drain wires and insulated conductors. Cut back a further 10mm of inner sheath.
- 1.3  Pass 100mm length of heat shrink or cold shrink tubing over the uninsulated earth or drain wire until it comes into contact with the foils, then shrink the tubing evenly down onto the uninsulated earth or drain wire so that no air pockets occur.
- 1.4  To insulate the joint between the foils and the tubing a suitable piece of 10mm long shrink tubing or neoprene stretch tubing or a 10mm wide lap of PVC tape may be used.
- 1.5  After completing 1.1 to 1.4 on each earth or drain wire, lay the armour / braid parallel to the cable, if applicable, then carry out instruction B.
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### INDIVIDUAL SHIELDING OR SCREEN PREPARATION

#### 2.0 INSULATING SCREENS WITH HEAT SHRINK OR COLD SHRINK TUBING

- 2.1  Fold back the armour / braid and bend to right angles from the inner sheath.
- 2.2  Remove a further 15mm of inner sheath (See Fig. 1).
- 2.3  Unravel one or two groups of wires from the individual shielding or screen wires, then remove the remainder of the individual shielding or screen wires (See Fig. 2) and twist the wires along their full length.
- 2.4  Pass 100mm length of heat shrink or cold shrink tubing over the individual shielding or screen until it comes into contact with the foils, then shrink the tubing evenly down onto the individual shielding or screen so that no air pockets occur.
- 2.5  To insulate the joint between the individual shielding or screen wires and the tubing, place one lap of PVC insulating tape over the exposed metallic joint.
- 2.6  After completing 2.1 to 2.5 on each individual shielding or screen, lay the armour / braid parallel to the cable. Then carry out instruction B.



### Epoxy Compound Cure Time Vs. Temperature

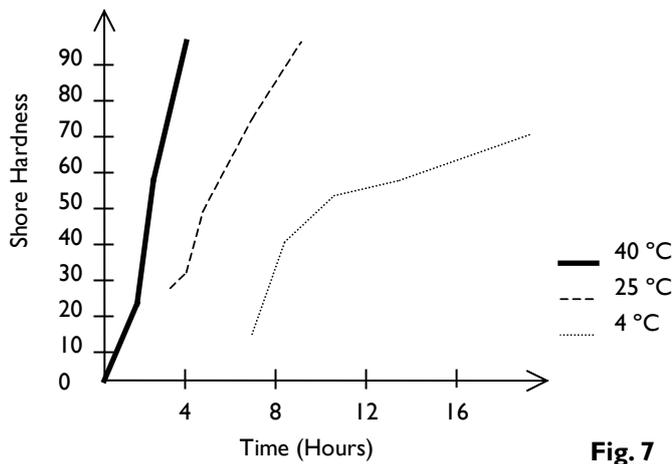


Fig. 7

- The compound may be adversely affected by some
  - solvent vapours. If such vapours are likely to be present in the vicinity of the cable gland in service, suitable precautions may be necessary.
  - (Contact Hawke's Technical Dept).

- The compound cures at a Shore D hardness of 85,
  - when it can be handled. The compound when fully cured is suitable for use at a temperature range of -50°C to +60°C.

CABLE GLAND SELECTION TABLE											
Size Ref.	Entry Thread Size		Cable Acceptance Details						Max Length	Hexagon Dimensions	
			Inner Sheath/ Cores			Outer Sheath		Wire Braid			
	Metric	NPT	Max. Over Cores	Max. Inner Sheath	Max. No. Of Cores	Min.	Max.			Across Flats	Across Corners
Os	M20	½"	0.35"	0.39"	6	0.22"	0.47"	0.008" / 0.013"	3.02"	0.94"	1.09"
O	M20	½"	0.35"	0.39"	6	0.37"	0.62"	0.008" / 0.013"	3.02"	0.94"	1.09"
A	M20	½" - ¾"	0.43"	0.49"	10	0.49"	0.80"	0.008" / 0.013"	3.09"	1.18"	1.36"
B	M25	¾" - 1"	0.64"	0.72"	21	0.66"	1.02"	0.008" / 0.013"	3.24"	1.42"	1.64"
C	M32	1" - 1¼"	0.86"	0.97"	42	0.87"	1.30"	0.008" / 0.013"	3.50"	1.81"	2.09"
C2	M40	1¼" - 1½"	1.04"	1.16"	60	1.10"	1.61"	0.008" / 0.013"	3.71"	2.17"	2.50"
D	M50	1½" - 2"	1.46"	1.64"	80	1.42"	2.07"	0.008" / 0.013"	4.04"	2.56"	2.96"
E	M63	2" - 2½"	1.88"	2.10"	100	1.81"	2.57"	0.008" / 0.013"	4.22"	3.15"	3.64"
F	M75	2½" - 3"	2.32"	2.57"/2.61"	120	2.24"	3.07"	0.008" / 0.013"	4.26"	3.74"	4.31"
H	M90	3½"	3.12"	3.12"	120	3.07"	3.52"	0.008" / 0.013"	4.26"	4.18"	4.84"

#### SCHEDULE OF LIMITATIONS:

1.  The 'Os' and 'O' size cable gland when used with cable with braid is only suitable for use with fixed apparatus,
  - the cable for which must be effectively clamped elsewhere to prevent pulling or twisting.
2.  The Cable Gland has an operating temperature of -50°C to +60°C.
3.  A seal must be formed between the equipment and the cable gland to maintain the appropriate degree of protection against ingress of dust,
  - solid objects and water.

#### ACCESSORIES:

Before carrying out the cable gland assembly or stripping of the cable gland assembly, consideration should be given to any cable gland accessories that may be required, such as:-

- Shroud, to offer additional corrosion protection.
- Locknut, to secure cable glands into position.
- Sealing washer or suitable thread sealant, to offer additional ingress protection of the enclosure at the cable gland entry.
- Earthtag, to provide an external armour / braid bonding point.
- Serrated washer, to dampen any vibrations that may loosen the locknut or cable gland assembly.

Visit our Website at [www.ehawke.com](http://www.ehawke.com)

## Smarter products

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