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Installation of Heatshrink Marker Sleeves

1. SAFETY

Failure to observe safe working practices can result in serious injury.

- Never use the hot air tool in the presence of water.
- Always shrink sleeves in a well ventilated area.
- Surfaces will retain heat after the tool is turned off unless an adequate cool down period is allowed.
- Do not point the tool at anyone.
- Do not use or leave near combustible material.

2. EQUIPMENT

CV-1981 / CV-1983 Thermo gun (or similar controllable heat gun)

PR 26 reflector

Digital temperature meter – for temperature setting

K Type thermocouple – for temperature setting

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3. PROCEDURE

3.1. PLACEMENT

- Remove the sleeve from the carrier.
- 'Open up' the sleeve by pressing across the open end of the sleeve as in Fig.1.
- Do **not** crease the tubing along its complete length to apply to the wire (this may give rise to variable abrasion resistance of the print when in use)

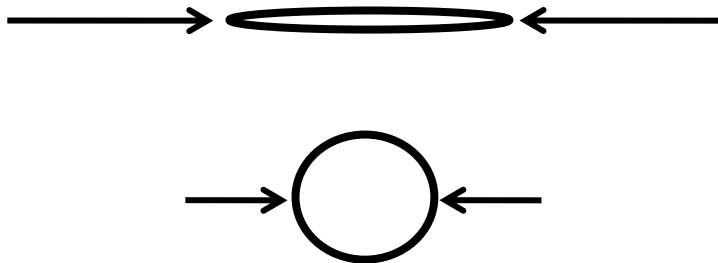


Figure 1 - 'Opening' the sleeve

- To aid the insertion of the wire into the tube, the wire itself or other suitable tool i.e. a small screwdriver, can be inserted into the open end of the sleeve to 'open up' the sleeve.
- Slide the sleeve into position along the wire until it is in its required position.

3.2. RECOVERY (Shrinking)

- Ensure the sleeve is in the final position.
- Switch on the heat gun (typically setting 6) and allow the gun to stabilise. If the gun has not been previously calibrated, calibrate the temperature of the gun (see section 3.3).
- Direct the reflector towards one end of the product- this allows directional control of the heat.
- Apply the heat to the printed side of the product (if possible).
- The reflector typically should be about 20mm from the marker sleeve, and no closer than 5mm.
- Start at one end and move around the circumference of the sleeve if space allows, and then along the product until it is fully recovered.
- Return to the start point.
- It is recommended, to prolong air gun life, that the heat setting is returned to 0 and the gun allowed to cool before turning it off.
- The reflector can be used vertically or horizontally depending on local access.
- **Do not** dwell in one point as this could give a local heat build up / excess stress.
- **Do not** recover the tube on to sharp objects.
- Tube **should not** be recovered on to wires / cables greater than 80% of the minimum supplied diameter, (use a larger identification sleeve if necessary)

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3.3. HEAT GUN SETTINGS - Calibration

Settings are dependant on the heat gun and reflector used. The temperature at the outlet of the PR26 reflector, using a Thermo gun (model CV-1981 / CV-1983), should be set to 215-245 ° C. This is measured using a Type K thermocouple at the outlet of the reflector with temperatures read on a digital temperature meter.

The K Type thermocouple should be placed 5mm from the reflector surface at the central position of the reflector opening (see figure 2). The gun should be allowed to heat up and stabilise before taking measurements. Changing the heat gun setting can alter the temperature. Generally, for the CV-1981 / CV-1983 heat gun with a PR 26 reflector, a setting of 6 gives the required temperature.

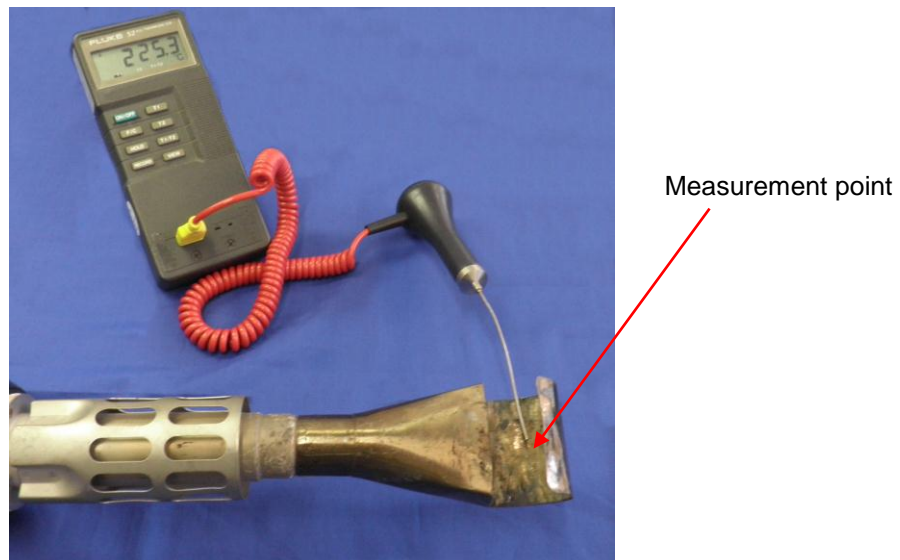


Figure 2 - Thermocouple position within open end of reflector

4. NOTES AND PRECAUTIONS

After product recovery, outer surfaces will be hot and could cause damage to equipment in the local area. To prevent damage ensure that the reflector does not touch other parts or the marker sleeve (the outer wire insulation can be distorted by surface contact with the reflector). When not in use, switch the gun off.