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# ELE-3COP-554

## Title – Installation of Straight Lipped Moulded Parts using a Hot Air Gun.

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Before starting work please read this document carefully and note the guidance given.

### 1 Purpose and Scope

This COP describes the procedure to be used when installing TE straight lipped moulded parts using a hot air gun. The instructions in this document take preference over IPC/WHMA requirements, as do the drawing and any customer documentation.

It is good working practice that where trained operators have not installed this product for over 6 months, a sample installation should be carried out by the operator to refresh installation practice. Performance of the sample can be checked using the inspection standards described within this document.

For the installation of moulded parts with adhesives, refer to ELE-3COP-604 for S1125, ELE-3COP-559 for /225 and ELE-3COP-608 for /42, /86 and /180.

### 2 Performance Objective

This code of practice is produced to support operators already trained in the installation of heat shrinkable and harnessing products. It identifies the procedure to be used when installing straight lipped moulded parts using a hot air gun. It also details the preparation of the cable jacket and adaptor substrates.

#### Note

Best results will be obtained if 10% unresolved recovery (grip) for all outlets of the moulded parts is available. Please check for compliance with this requirement before assembly. Unresolved recovery is defined as the difference between the installed diameter and the fully shrunk (recovered) diameter as given on the SCD expressed as a percentage of the fully shrunk diameter. For example a moulded part fully shrunk with a diameter of 10mm and an installed diameter of 11mm has a 10% unresolved recovery.

### 3 Materials and Equipment:

Appropriate straight moulded part.

Appropriate moulded part adaptor.

100 grit Emery Cloth or equivalent.

Degreasing Agent isopropyl alcohol or isopropanol (IPA) impregnated tissue wipe.

Heavy duty tissues.

Heat Gun CV1981 or equivalent. Other hot air guns may be used but these must be capable of delivering the temperatures required for installation of the moulded part. This also includes hot air guns with temperature displays.

Reflector PR 26 or equivalent.

Bend Test Fixture 500Z1270 (TE)

Heat Resistant Gloves.

Safety Glasses.

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#### 4 Health and Safety

Adhere to local Codes and Regulations relating to Safe Working practices. For the U.K. adhere to requirements of the Health and Safety at Work Act 1974 and subsequent amendments.

The installation should be carried out in a well ventilated area.

Always wear heat resistant safety gloves when handling hot plastics and adhesives.

The use of suitable protective gloves and barrier cream is recommended when using solvents.

Avoid prolonged repeated skin contact with solvents and always wash hands after using solvents.

Care should be taken to wear safety glasses when using and handling chemical solvents. If eyes do become contaminated, flush with water and obtain medical assistance immediately.

Always ensure all equipment is calibrated before use.

#### 5 Procedure - Preparation

To ensure the best possible bond between the moulded part and the adaptor, degrease the adaptor end where the H end of the moulded part will recover onto the adaptor with isopropyl alcohol or isopropanol (IPA) impregnated tissue wipe.

As adaptors are normally plated NEVER abrade the adaptor.

Degrease the inner area of the moulded part at each end thoroughly (Approximately 30mm) using Isopropyl alcohol. Abrade the inner area of the moulded part at each end thoroughly (Approximately 30mm) with 100 grit emery cloth. Moulded parts with pre-coated adhesives should not be degreased or abraded, refer to ELE-3COP-559 for /225 and ELE-3COP-608 for /42, /86 and /180.

To ensure the best possible bond between the moulded part and the cable jacket degrease the cable jacket in the area where the J end will recover onto the cable using Isopropyl alcohol. (Approximately 30mm).

Abrade the cable jacket thoroughly in the same area with 100 grit emery cloth. The whole surface of the cable jacket should be abraded removing any print on the cable jacket.

Remove loose particles from the abraded area on both the moulded part and the cable jacket using a dry tissue.

**DO NOT** use a solvent wipe.

Ensure sufficient cable jacket has been abraded to incorporate the strip length requirement.



Cable Jacket Abrasion



Moulded Part Abrasion

**This part of the cable preparation is very important in ensuring a strong bond to the moulded part.**

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#### Installation

Always ensure that the air vent on the rear of the hot air gun is open and that it is dust free. Always allow the hot air gun to stabilize at the required temperature and setting for two minutes before commencing calibration and installation.

Setting of the gun should be carried out on a regular basis using the following temperatures. Frequency will depend on usage. It is recommended that the heat gun is set daily using a Calibrated thermocouple 25 mm from the end of the reflector, refer to ELE-3COP-711 and the Manufacturers guide for Hot Air Gun Calibration and maintenance.

Where connector / adaptor preheating is judged to be necessary for large and high heat sink terminations, care must be taken to ensure the connector insulation and primary wire insulation are not damaged: Ensure heat is directed to the metal area of the adaptor and all other areas are avoided. TE cannot be held responsible for damage caused during the preheating of connectors.

Refer to ELE-3COP-604 for S1125, ELE-3COP-559 for /225 and ELE-3COP-608 for /42, /86 and /180 for the application of adhesives.

Position the cable ensuring that the required connector keyway position is obtained. Position the Moulded Part so that the lipped H end will recover into the groove on the adaptor. See Figure 1. When recovering, the heat must be applied evenly around the moulded part at the H / adaptor end to enable the part to recover evenly and prevent scorching.



Figure 1



Figure 2

Ensure the part is fully recovered onto the groove on the adaptor. This should take approximately 30 seconds for mid-range parts. See Figure 2. Take care not to scorch the moulded part. Continue heating along the moulded part recovering the J end onto the cable. See Figure 3.

Heat must be applied evenly around the moulded part at the J end to enable the part to recover evenly and prevent scorching. Ensure jacket strip length is sufficient to prevent necking at the cable end of the moulded part.

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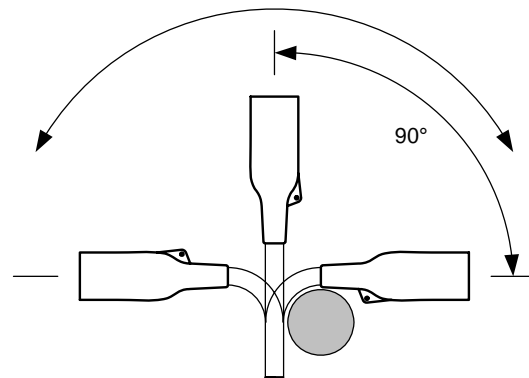
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Figure 3

#### 6 Inspection Requirements

The termination should be subjected to a flex test of 90° in each of four planes around a mandrel with a diameter equal to 6 x the cable diameter.



Refer to ELE-3COP-604 for S1125, ELE-3COP-559 for /225 and ELE-3COP-608 for /42, /86 and /180 for adhesive requirements.

The Moulded Part must be free from fingerprints, external adhesive and scorch marks.

The Moulded Part should be straight and have an even form.

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### 7 Visual Standards



ACCEPTABLE



NOT ACCEPTABLE  
Scorch Marks



NOT ACCEPTABLE  
Necking



NOT ACCEPTABLE  
Under Recovered

Rev No	CR No	Date	Raised	Approved
5	CR06-DM-071	04/04/06	John Cronin	Ken Wallington
6	CR09-DM-018	09/07/09	Paul Newman	Neil Dorricott
7	Visual Identity	07/06/11	Paul Newman	Neil Dorricott

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