



Class I

INSTALLATION & RECOVERY OF SMALL TRANSITIONS

ELE-3COP-552

Small Transition Moulded Parts

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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 small transition moulded parts. 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.

Table of Contents

1.	PURPOSE AND SCOPE	2
2.	PERFORMANCE OBJECTIVE.....	4
3.	MATERIALS AND EQUIPMENT	5
4.	HEALTH AND SAFETY	6
5.	PROCEDURE - PREPARATION.....	7
6.	INSPECTION REQUIREMENTS	10
7.	VISUAL STANDARDS	11
8.	REVISION HISTORY	12

Table of Tables

Table 1 - Flex test for different systems.....	10
Table 2 - Revision History.....	12

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 carrying out the installation and recovery of a small transition using a heat gun. It is intended to recover the transition from its supplied shape and size so that it takes up the required shape whilst gripping the harness branches.

Note

It is recommended that the moulded part chosen for the application is the largest size possible to fit the harness.

Best results will be obtained if minimum 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 transition moulded part

Appropriate adhesive

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

Heat Shield HS1 (AD-7-025) for /225 only

Bend Test Fixture 500Z1270 (TE)

Heat Resistant Gloves

Safety Glasses.

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

For this Code of Practice a 382 series transition is used as an example.

To ensure the best possible bond between the moulded part and the cable jacket:

Degrease the cable jackets in the area where the H, J and K ends will recover onto the cable using Isopropyl alcohol. (Approximately 30 mm).

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. (See Figure 1)

For moulded parts without a pre-installed adhesive degrease the inner part of each leg of the transition where the H, J and K ends will recover onto the cable using Isopropyl alcohol.

Abrade the inner part of each leg of the transition ends H, J & K for 20 mm minimum.

Remove loose particles from the abraded area using a dry tissue. **DO NOT** use a solvent wipe.

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

Take care to avoid abrading shield that may be exposed.

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



Figure 1

Installation

Always ensure that the air vent on the rear of the hot air gun is open and 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 within the temperature range stated. Please refer to the Manufacturers guide for Hot Air Gun Calibration and maintenance.

For small transitions set the Hot air gun to 230°C to 250°C.

Position moulded part centrally onto cableform and heat uniformly, starting from the centre moving outwards towards each breakout in turn. (See Figure 2)

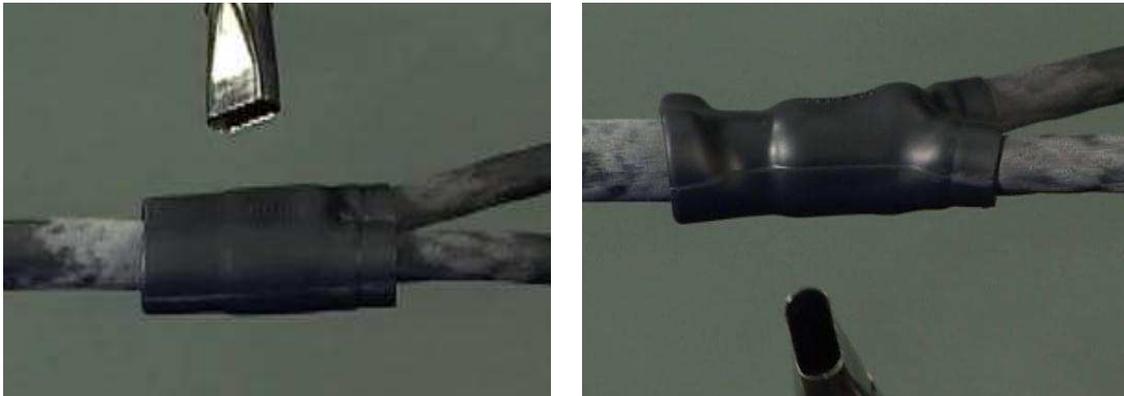


Figure 2

If the moulded part does not have a pre-installed adhesive, before the legs are fully recovered, apply adhesive 360° to both the inner of the moulded part and all cable jackets.

When using /225 moulded parts use the heat shield AD-7-025 below to avoid pre-curing of the other moulded part legs. Ensure heat is not aimed into the inside of the moulded part as this may cause pre curing of the adhesive. (See Figure 3)

When using heat shield please ensure that you use appropriate heat resistant gloves to hold the tool during use.



Figure 3

Continue heating along the moulded part until all ends are fully recovered.

Heat must be applied evenly around the moulded part to recover evenly and prevent scorching.

Ensure the part is fully recovered onto the cable. (See Figure 4)

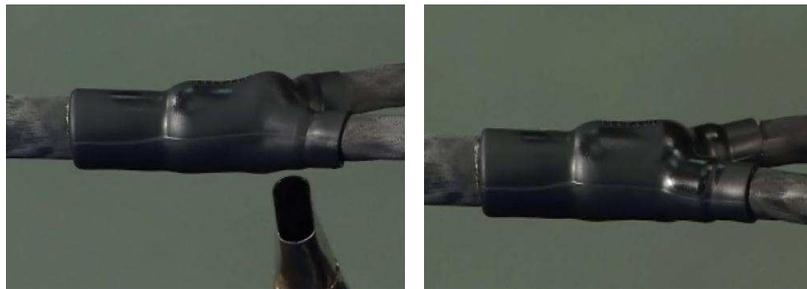


Figure 4

It may be necessary to re-heat the area between outlets until the required shape has been fully formed. For best results the moulded part should be installed as a continuous operation.

Look for evidence that adhesive is present and clean off excess adhesive.

For transitions with pre-installed adhesives refer to the following Codes of Practice for relevant post heat times to ensure the adhesives are activated.

- ◆ ELE-3COP-559 - Installation /225 moulded parts.
- ◆ ELE-3COP-608 - Installation of -100 and -25 Moulded Parts Pre-coated with /86, /42 or /180 Hot Melt Adhesive.

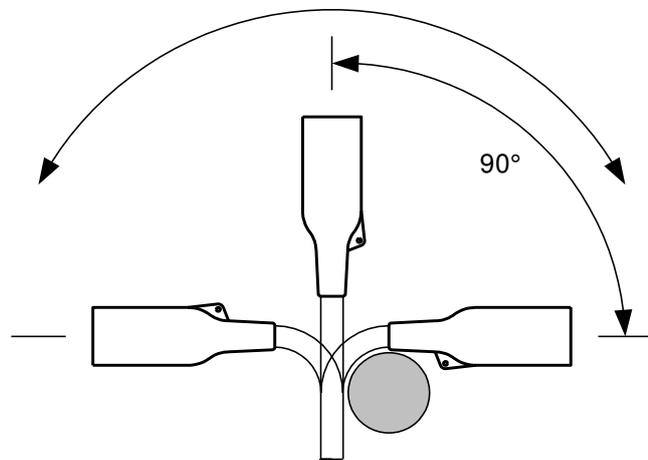
Allow to stand for recommended adhesive curing cycle before any aggressive handling.

6. INSPECTION REQUIREMENTS

The termination should be rotated so it is subjected to a flex test of 90° in each of four planes around a mandrel with a diameter equal to 6 times the cable diameter (Table 1).

System 25	(FDR25 / DR25 / -25 type)	6 x cable diameter
System 100	(Zerohal / -100 type)	10 x cable diameter
System 200	(Fluoroelastomer / -12 type)	6 x cable diameter
System 10	(Thermorad / RNF100 type)	6 x cable diameter
Convoluted system	(HCTE / Convolex type)	6 x cable diameter

Table 1 - Flex test for different systems



There should be no separation between the moulded part H, J and K end and the cable jacket at the adhesive bond line.

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

The Moulded Part shall be fully recovered and free from distortion.

7. VISUAL STANDARDS

Refer to the following documents:

- ◆ ELE-3COP-559 - Installation /225 moulded parts
- ◆ ELE-3COP-607 - Application of Hot Melt tapes
- ◆ ELE-3COP-604 - Use of S1125 adhesive
- ◆ ELE-3COP-608 - Installation of -100 and -25 Moulded Parts Pre-coated with /86, /42 or /180 Hot Melt Adhesive

8. REVISION HISTORY

Author	Approved	Date	Rev	Comments
John Cronin	Ken Wallington	03 May 2006	3	CR06-DM-071
Paul Newman	Neil Dorricott	03 Apr 2009	4	CR09-DM-018
Paul Newman	Neil Dorricott	15 Feb 2010	5	DMTEC
Paul Newman	Neil Dorricott	07 Jun 2011	6	Visual Identity
Pedro Vu	Martin Pope	04 May 2017	7	Added heat resistant gloves comment when using AD-7-025 in 'Installation' section.

Table 2 - Revision History

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