
ELE-3COP-574

Title – Selection and Installation of Packing Pieces.

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 selecting and installing packing pieces. The instructions in this document take preference over IPC/WHMA requirements, as do the drawing and any customer documentation.

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 selecting and installing packing pieces when a cable or harness leg is too small for the moulded part outlet at the cable end when shrunk.

3 Materials and Equipment:

Heat Shrinkable tubing (Packing pieces will be standard length 50mm and this assumes that they will be cut to length at assembly)
Substrate to be Packed
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

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.

5 Procedure

Cutting

There are times when a cable or harness leg is too small for the moulded part outlet when shrunk. 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.

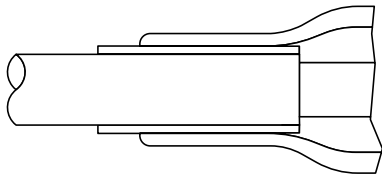
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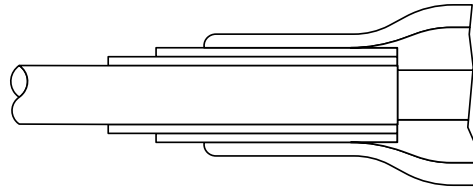
If you are using a heat shrink jacket it may be practical to change the tubing size to increase wall thickness and increase the diameter to fit. This is technically a good option. It keeps the number of bonded joints to a minimum, is less operator sensitive, reduces the number of assembly operations and hence reduces labour times.

If this option is unsuitable and the diameter difference is small, you will need a packing piece. This is a discreet piece of jacket tubing cut to a length that suits the moulded part. If the sizes allow, it is preferable to pack under the cable jacket as this minimises bonded joints. If you are using a multicore cable, packing will go over the jacket. In some cases multiple layers are required. The maximum recommended number of packing pieces is up to three layers. In these cases it is most likely that a combination of under and over jacket packing is required depending upon diameter.

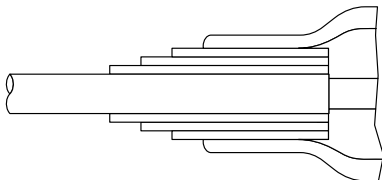
Packing Options



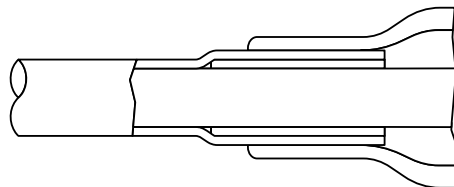
One piece over packing



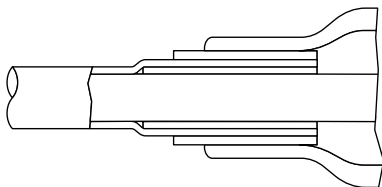
Two pieces over packing



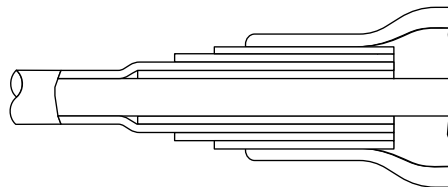
Three pieces over packing



One piece under packing



One piece under,
One piece over packing



One piece under
Two pieces over packing

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

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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 using a dry tissue. **DO NOT** use a solvent wipe. Each subsequent packing piece should be prepared using this method.



The packing piece and each subsequent packing piece should extend from the rear of the moulded part or the previous packing piece by a minimum of 10mm and a maximum of 20mm. The packing piece must be positioned so that it enters the body of the moulded part to prevent necking. Each over packing piece should be bonded using a suitable adhesive.

6 Inspection Requirements

Refer to the following documents:

ELE-3COP-559

Installation of /225 Coated Straight and 90° Moulded Parts using a Hot Air Gun

ELE-3COP-604

Application of S1125 Adhesive

ELE-3COP-608

Installation of -100 and -25 Moulded Parts Pre-coated with /86, /42 or /180 Hot Melt Adhesive.

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

The packing piece must be free from fingerprints and scorch marks.

7 Visual Standards

Not applicable. Refer to the following documents for adhesive standards



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ELE-3COP-608

Installation of -100 and -25 Moulded Parts Pre-coated with /86, /42 or /180 Hot Melt Adhesive

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