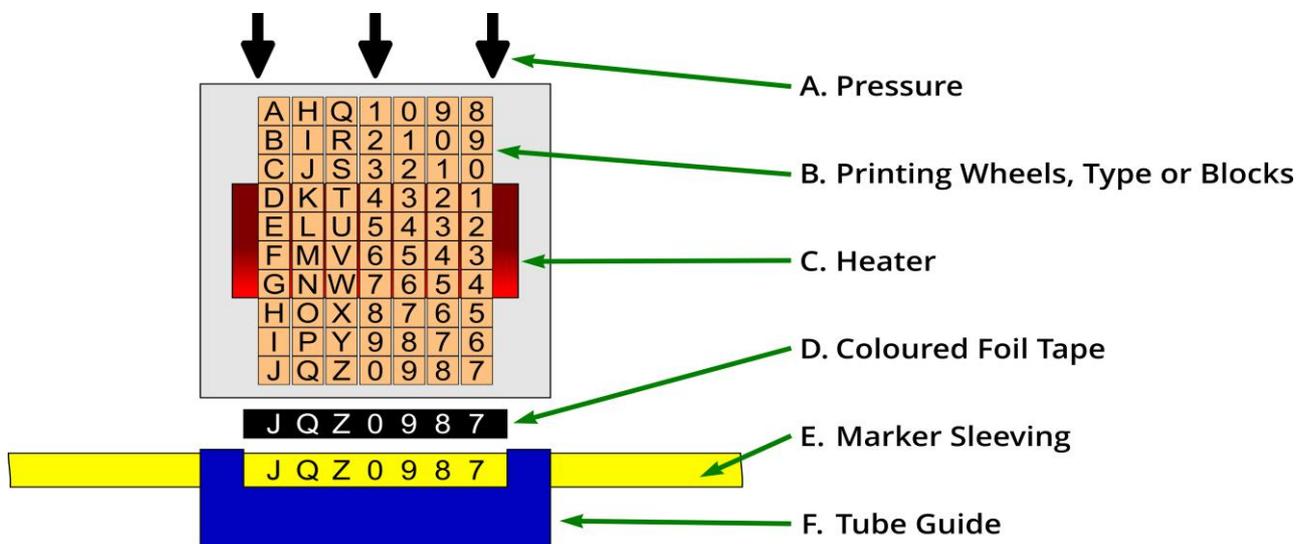


HOT FOIL Printing - as used in the production of Cable Markers.

Here we describe the way Hot Foil printing (sometimes called Hot Stamp printing) is used in the production of cable markers. These may have anything from a single character to multiple lines of complicated texts and logos or bar codes.

Process. The process of Hot-Stamp printing is where an image is deposited through the controlled interaction of temperature [C], pressure [A] and time (dwell). Pigment from a reel of specially formulated colour foil tape [D] is firmly deposited onto the flexible marker sleeving [E] by heated character wheels [B] or engraved blocks etc. The marker sleeving is held in place by a tube guide [F] which incorporate a solid base to take the pressure exerted by the print head assembly.

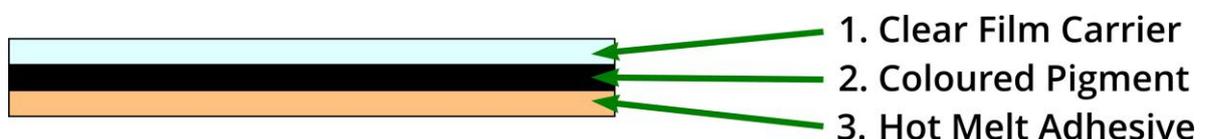


Type & Blocks. The text to be printed will be of zinc, steel or brass in various forms, for example: from individual pieces of type, engraved blocks or “Easy-Dial” character wheels (as shown) with the alpha-numeric characters and signs engraved around the edge of brass wheels, allowing variable texts to be quickly be ‘dialled-up’ or even by computer control.

Flexible Marker Sleeving, tags etc. for cable markers is generally of Polyolefin, Polyurethane or PVC, manufactured for the purpose to the relevant specifications and in various colours.

Colour Foil is an essential element of the Hot Foil printing process; this is where the colour comes from – clean and dry (serving the same purpose as ink or paint but completely dry and without the mess!). The colour foil tape, as shown on the diagram below, is a thin transparent film with a layer of coloured pigment which is transferred onto the product during this process.

Colour Foil tape is composed of 3 layers, each having a specific function:



The components of the colour foil tape are: [1] a transparent film 'Carrier', [2] a layer of coloured pigment and [3] a hot melt adhesive. After printing, the clear outline can be seen to have been removed from the used section of the foil tape. The colour pigment layer could be imagined as the printing ink; and the hot melt adhesive as fixing that ink onto the sleeving - providing a clear, sharp, firmly bonded image on the marker.

Colour foil is available in many colours/shades, in matt or gloss finishes as well as reflective metallic colours, and are available in special formulations designed for best results on flexible sleeving including Polyolefin, Polyurethane and PVC etc.

Benefits of Hot Foil printing in the production of cable markers include the increased level of temperature, pressure and dwell which can enable more rigid tubing and thicker profiles to be successfully printed where other systems cannot. Many more variations of the properties of pigment and adhesive on the colour foil tape are available allowing a thicker layer of print to be deposited on the sleeving. This is important when printing on black or other dark coloured items - providing sharper and deeper images than is possible with some other printing processes. The carrier also prevents colour being deposited on the typeface. This deposit would complicate and necessitate a cleaning action to the process (as happens with liquid or paste inks). Another advantage is where an indentation of the text is made in the surface of the sleeving by the temperature, pressure and dwell involved in the process. This indentation means that the text can usually still be read even if all the colour is removed by the action of aggressive solvents or abrasion.

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