

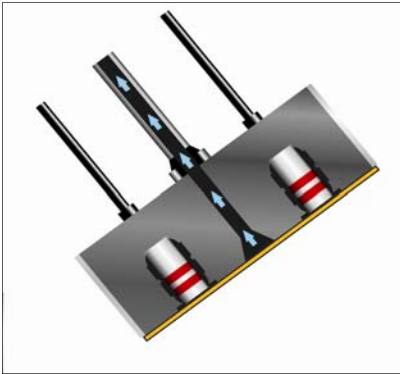
# Static Generation In Mould Labelling - IML

*In IML a static charge is used to hold the label to the inside of the injection moulding tool. There are 2 ways of doing this.*

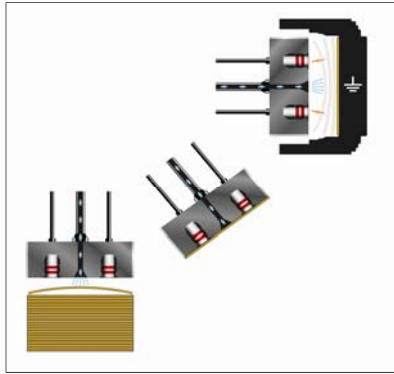
*Many users of IML find that the use of a high voltage semi-conductive pad to hold the label and transfer the charge is a better method than conventional electrodes. Both methods are described below.*

## Conventional

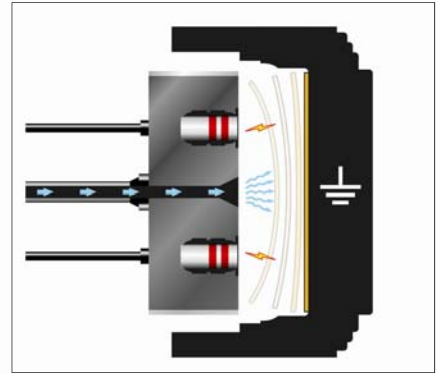
For conventional IML the customer needs small electrodes or charge Bars integrated into the label holder, the general process is shown below:



The jig has integrated static charge bars and a vacuum system.



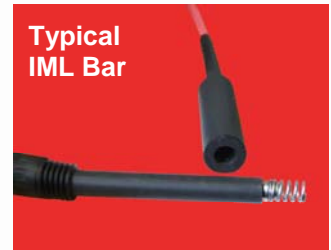
Label is picked up by vacuum and transported inside the tool.



The vacuum is changed to blow and at the same time as the static is turned on. The label is pinned by static to the inside of the tool.

The small Bars can be as made to suit the customers requirement. Our standard IML Bars are 40mm long x 15mm diameter, but can be made smaller if required.

The cable is 40kV flexible Sumitomo. Its length is specified by the customer to suit the application. There is a strain relief sleeve on the bar and on the connector as this part will move a lot in operation.



4 - Way IML Connector Box

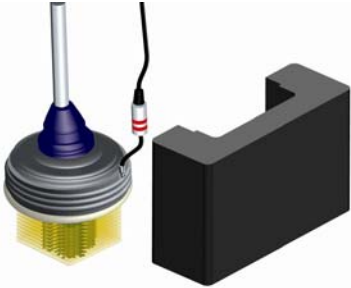
The IML bars are connected to an IML Connector Box (E70-IML-SC) . The Connector Box is resistively coupled to the High Voltage Generator for safe and spark-free operation.

The Bars can be hard-wired into the Connector Box, if the injection moulding machine is dedicated to one job (E70-IML-HW).

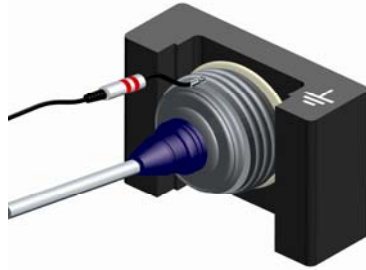
For more versatility the Bars have connectors to the Connector Box, as photo on left. The E70-IML-SC can be 4-Way or 6-Way. The case is the same size.

## Contact Charge Pad Method

Isolated from a path to earth the Conductive Charge Plate is designed, supplied and built by the customer to accommodate label vacuum pick up and release cups. It is typically 15mm all-round smaller than the crushable IML contact pad. This conductive charge pad is linked directly to the DC HV supply of the 7324 Static Generator, or to a connector box which has an in-line resistor to prevent sparking (shorting) to the injection moulding tool.



Pad picks up label and holds with suction.

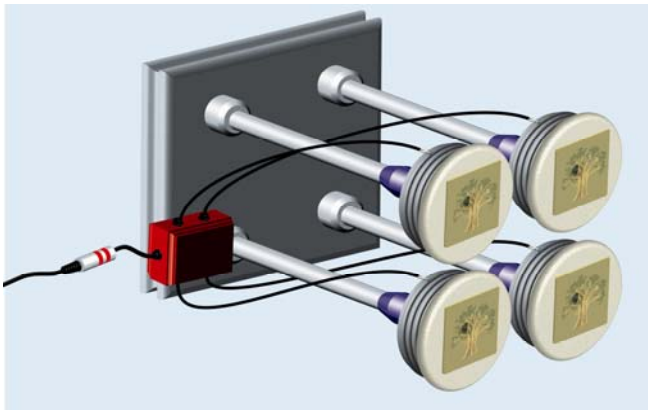


Moves inside tool and presents label to toolface.



The vacuum is released at the same time as the static is turned on passing through the foam pad, charging the label and pinning it to the tool.

For multi-impression tools a multiple connector box is available. The E70-IML-HW-RT has an integrated 100MΩ resistor and connector points for up to 6 ring terminal leads. A single HT lead connects back to the 7324 Generator. This provides a flexible system dependent upon the number of cavities in the mould being used. All HT cable lengths must be specified together with the number of impressions required to be served.



Typical Arrangement for a multi-impression tool



An E70-IML-HW-RT Hard Wired Connector Box

## Static Generator Connector Boxes

*A range of Connector Boxes which allows multiple connections to a single Static Generator.*

### Connector Box: Standard

For use with 7080 Bars, 7090 and 7095 Pinners which have a built-in safety resistance.

Available with 4 or 6 connectors.

2m of HT cable in protective conduit is standard - longer lengths can be specified.

Product Code - 4 way: E70-Conn-4  
6 way: E70-Conn-6

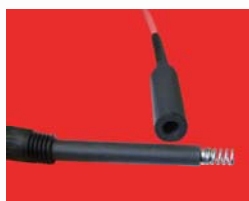


### Connector Box: IML

As Standard Connector Box, above, but with built-in 100MOhm resistance for safe operation of IML charging heads.

6m of HT cable in protective conduit is supplied unless otherwise specified.

Product Code - 4-way: E70-IML-SC-4  
6-way: E70-IML-SC-6



Use with: Compact Discharge Heads  
40mm x Ø15mm with 1m cable unless otherwise specified.

Product Code: E70-IML-CDH

Or



Ring Terminal with 1m of cable  
unless other length specified.

Product Code: E70-IML-RingTerm

### Connector Box: IML Hard Wired Connector Box

As IML Connector Box above, with built-in resistance, but with up to 8 hard-wired Compact Discharge Bars or Ring Terminals.

It is important that the customer carefully specifies the correct cable lengths.

Product Code: E70-IML-HW

Further details and option please see next page.



With Compact Discharge Bars



With Ring Terminals

# IML Products

## E70-IML-HW-RT

*Used for supplying a charge to labels and IML Contact Pads for use with a multi impression tool*



### Features and Benefits

- Connector Box with hard wired HV cables to be connected to conductive pads.
- High voltage is with integrated 100MΩ resistance for safe and spark free operation.
- HT cable to Generator protected by plastic conduit. 6m unless otherwise specified.
- Max load 8 heads and 14m cable in total.
- Customer to specify cable length to Generator and number of connectors & cable lengths.

## E70-IML-HW-CDH

*Connector Box, as above but with IML Bars for conventional IML.*

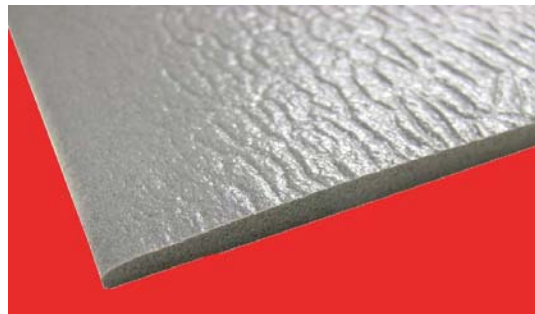


### Features and Benefits

- Connector Box with hard wired IML Charge Bars.
- High voltage is with integrated 100MΩ resistance for safe and spark free operation.
- HT cable to Generator protected by plastic conduit. 6m unless otherwise specified.
- Max load 8 heads and 14m cable in total.
- Customer to specify cable length to Generator and number of IML Bars & cable lengths.

## Crushable IML Contact Pad

*Used for delivering the label to the tool cavity*



### Features and Benefits

- 10mm thick Crushable IML Contact Pad is used as a facing plate for the label pick up tool.
- Cushioning protective quality with a 100% crush proof memory return.
- Can be cut to size to suit the label.
- Fits to the HV charge plate (with 15mm overhang).
- Holes can be machined into the foam to allow vacuum pick up cups to penetrate and contact the label.
- Easy wipe clean surface.
- Extreme heat resistance.
- Resistance from  $1 \times 10^9 \Omega$  to  $1 \times 10^{10} \Omega$
- Sold in sections 0.9m wide and 0.5/1/2/3/4-8.

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