

PU – Plastic Overmoulding Technology

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15 Sep 2020

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- A blue-tinted photograph of a server room with rows of server racks and visible cables, positioned on the left side of the slide.
- 1. Applications**
 - 2. Product features and process**
 - 3. Solution and technical advantages**

Applications

- Soft-touch and leather-like appearance on rigid base layer



Door panel



Switch panel



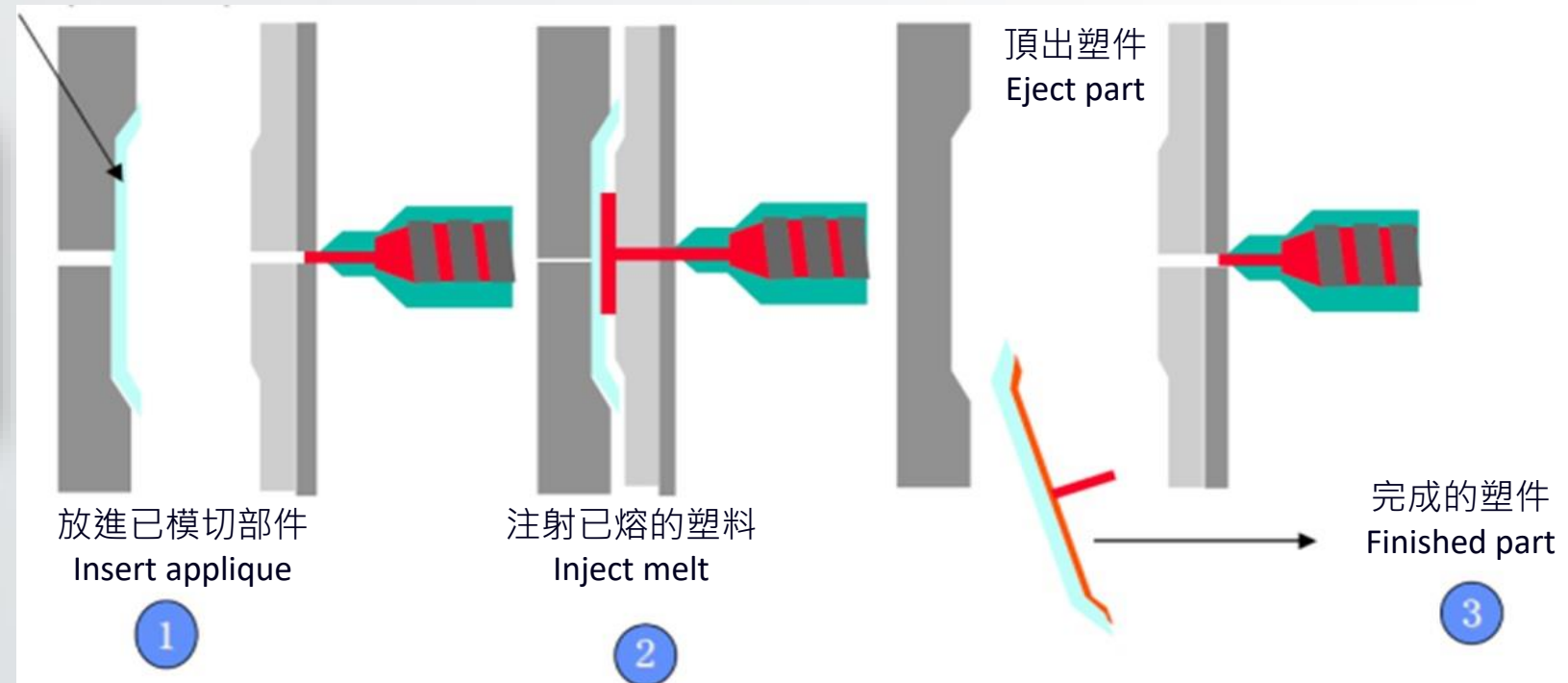
Instrument panel



Head rest

Existing Problems and Limitations

- Leather mounting or in-mould decoration
 - Poor yield rate
 - Wrinkles at the corners, post processing work is required to fix it



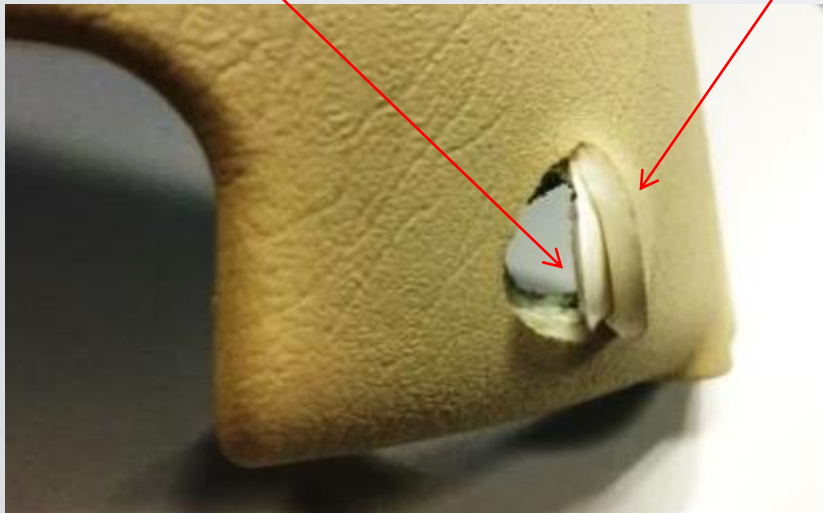
PU-thermoplastic Overmoulding Product Features

- **PU top layer:** soft-touch leather-like feeling and appearance
- **ABS base layer:** rigid support
- **Various colour choices**



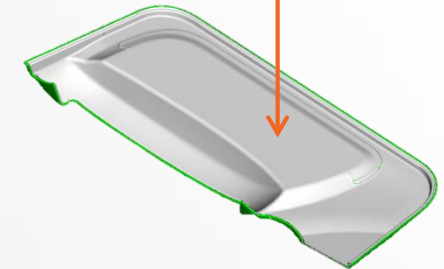
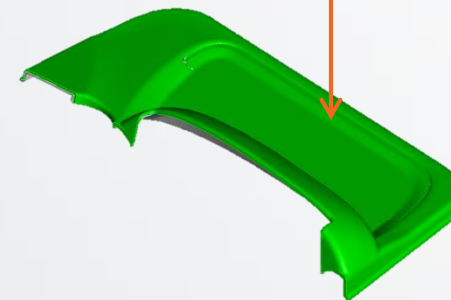
ABS Base Layer

PU Surface Layer



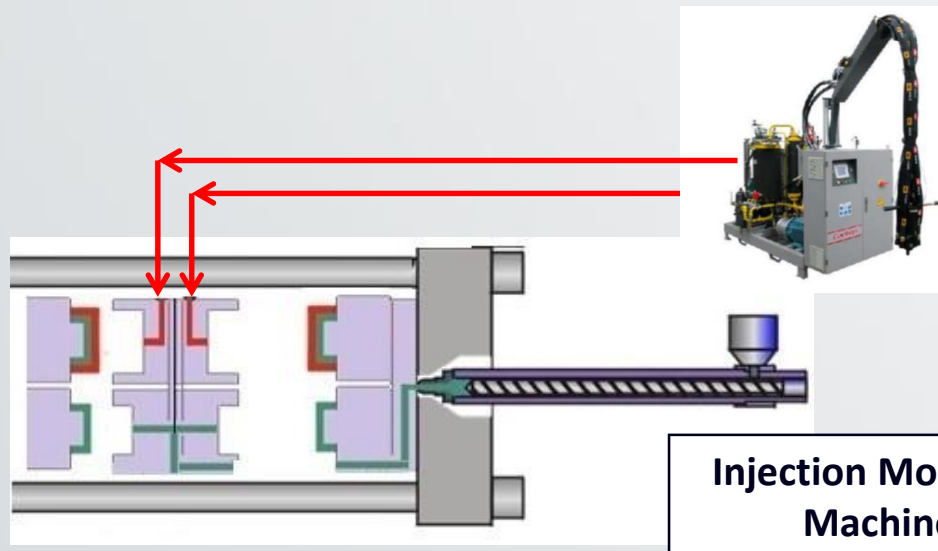
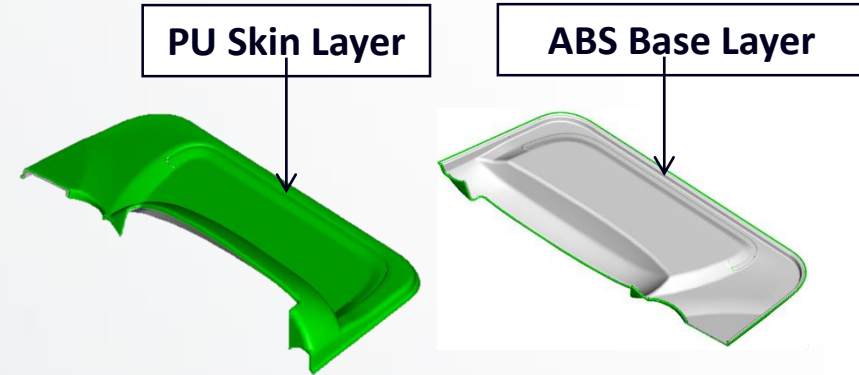
PU Skin Layer

ABS Base Layer

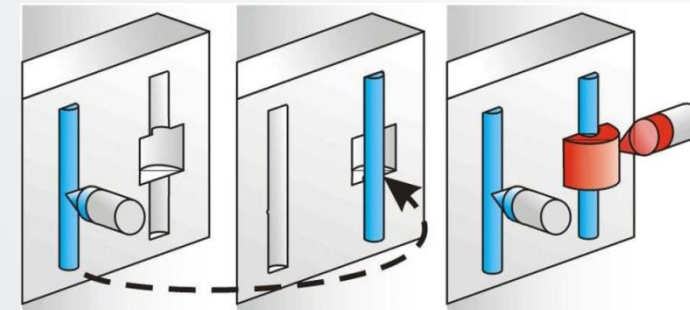


PU-thermoplastic Overmoulding Injection Moulding Process

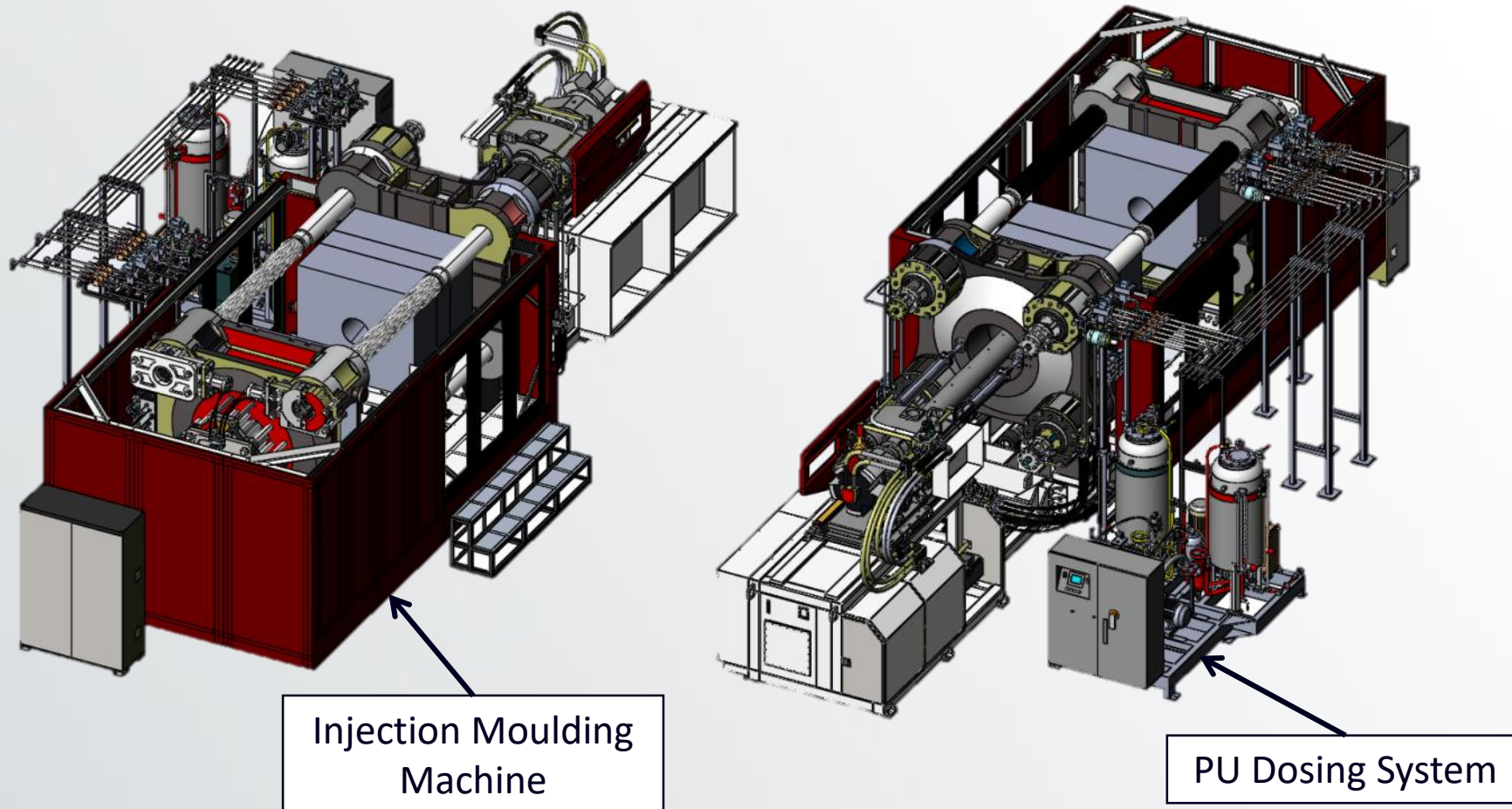
1. Manufacture ABS base layer by injection moulding
2. Transfer the ABS base layer to another mould cavity
3. Inject PU on top of the ABS base layer



PU Reaction
Injection
Moulding System



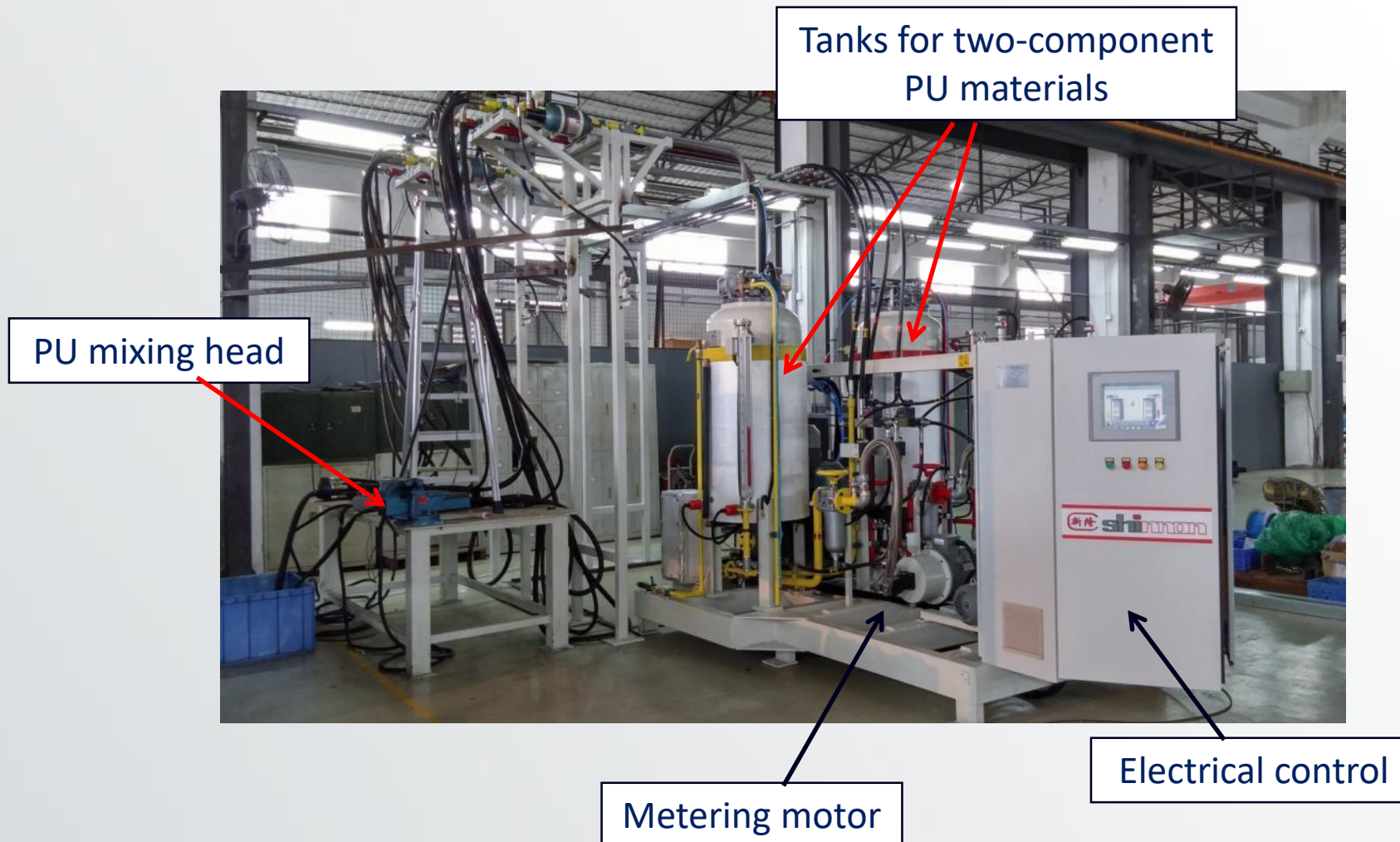
System Setup



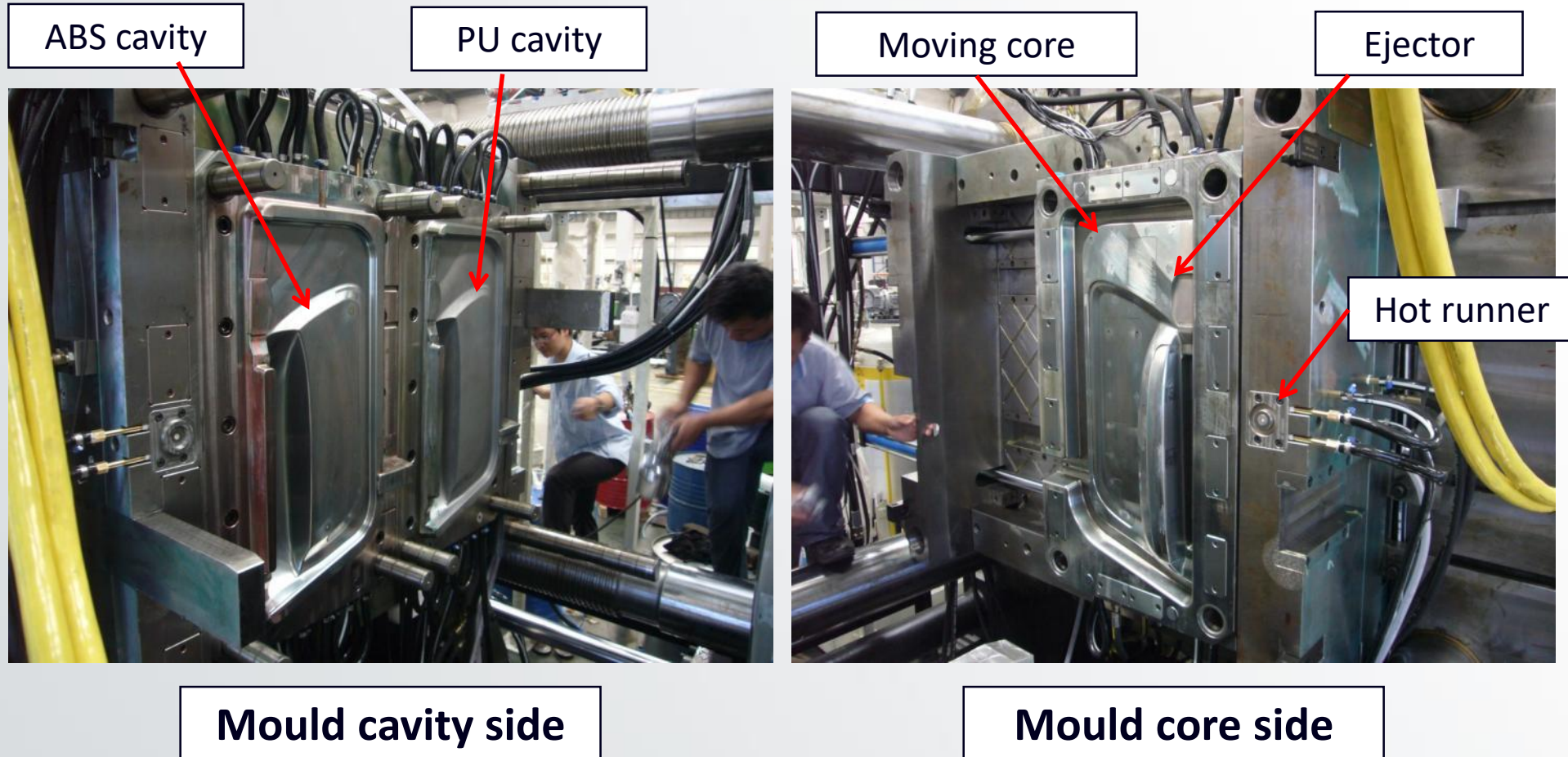
Injection Moulding Machine



PU Dosing System



Injection Mould – Transfer Core



Final Products

PU Skin Layer (White)
Over ABS Base Layer

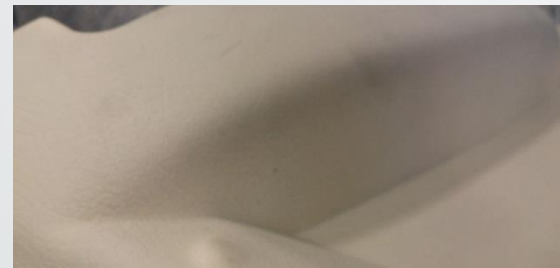
PU Skin Layer (Beige)
Over ABS Base Layer



ABS Base Layer

Technical Advantages

- Quality
 - Comparing with traditional man-made leather mounting method or in-mould decoration method
 - ✓ Soft-touch leather-like parts even with undercut or sharp corner without wrinkles
 - ✓ Flash-free PU products – no post-process to trim excess material



Technical Advantages

- Quality
 - Comparing with traditional man-made leather mounting method or in-mould decoration method
 - ✓ PU layer with variation in wall thickness
 - ✓ Reproduction of mould surface textures



Liquid Silicone Rubber – Plastic Overmould Technology

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- 1. LSR material characteristics**
 - 2. Applications**
 - 3. Solution**

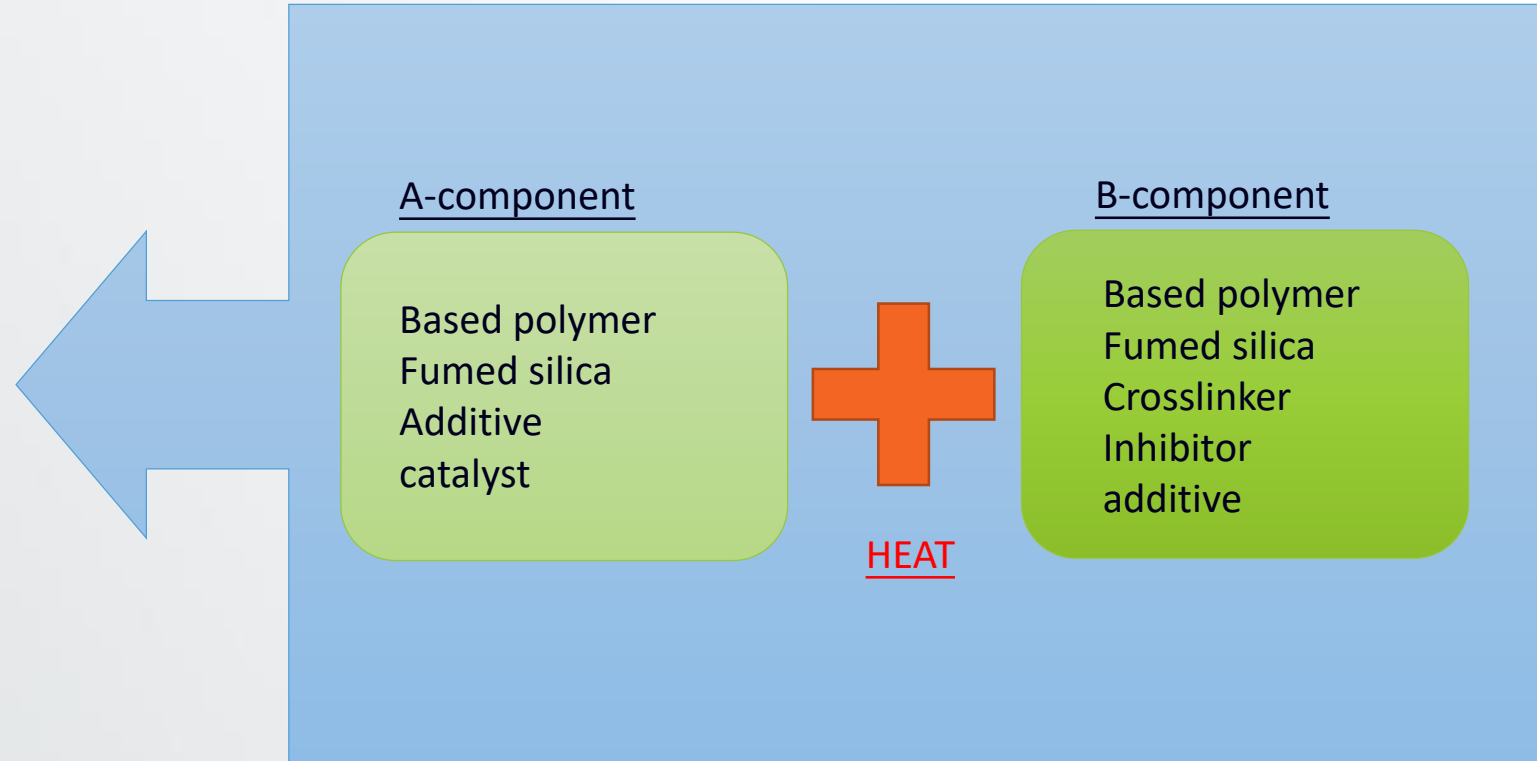
LSR – Plastic Overmould Technology

LSR material characteristics

HTV : high temperature vulcannising

LSR : Liquid silicon rubber

RTV: room temperature vulcanninsing

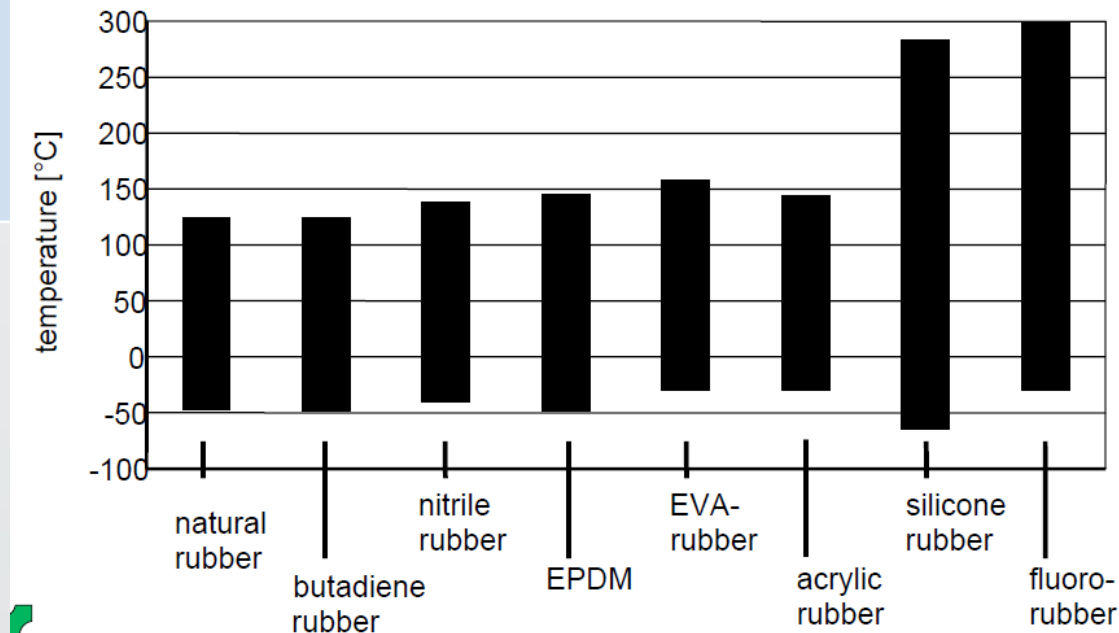


LSR – Plastic Overmould Technology

LSR material characteristics

Characteristics

- Excellent elasticity (elastic limit up to 600%)
- Broad range of operating temperature (-50°C to 280 °C)
- Maintain good properties even at high and low temperature
- Outstanding electrical properties
- Good physiological compatibility
- Excellent environmental compatibility



LSR – Plastic Overmould Technology

Applications

Baby care



Automotive



Electrical appliances



Medical



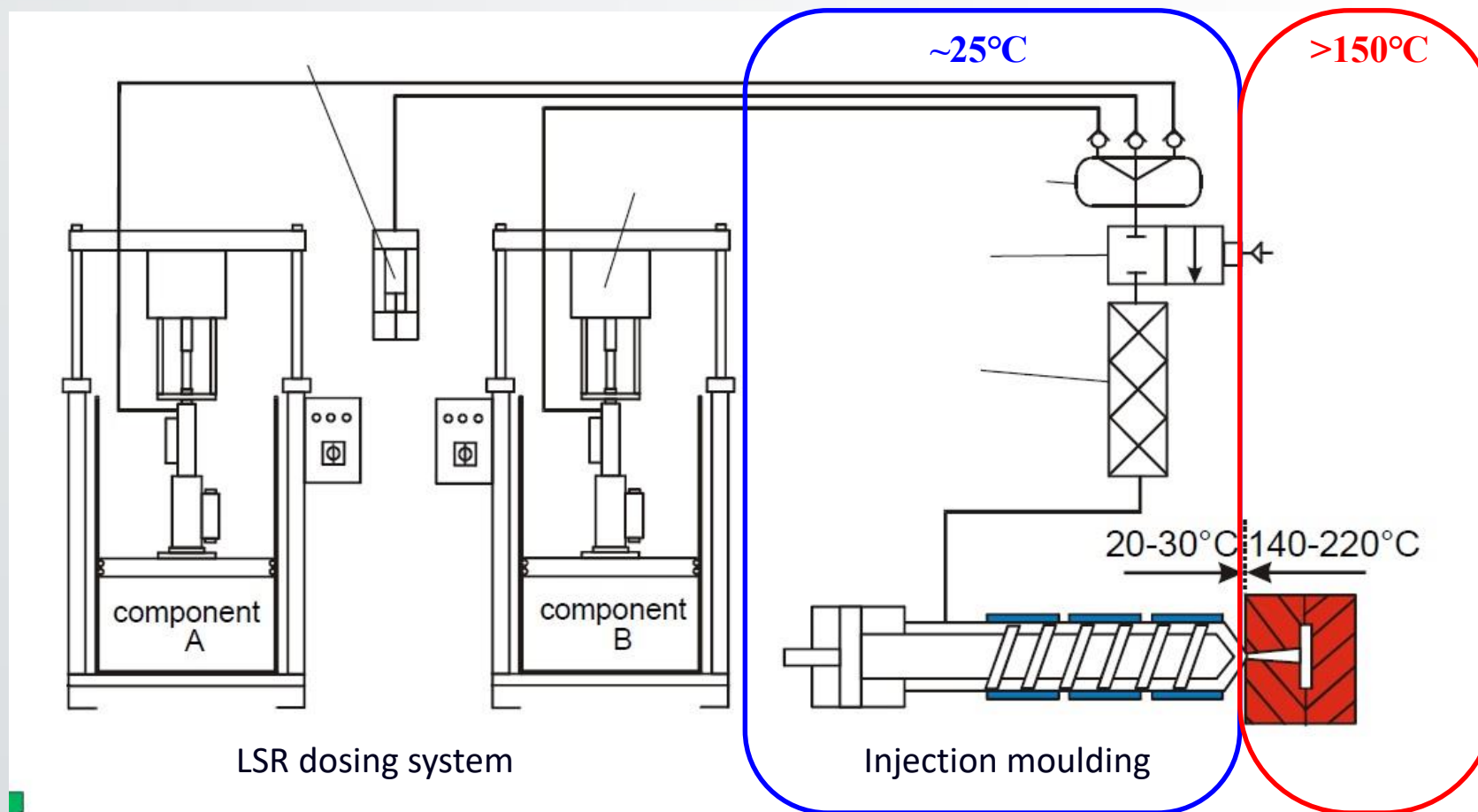
LSR – Plastic Overmould Technology

Applications

Two-component applications



LSR – Plastic Overmould Technology Solution



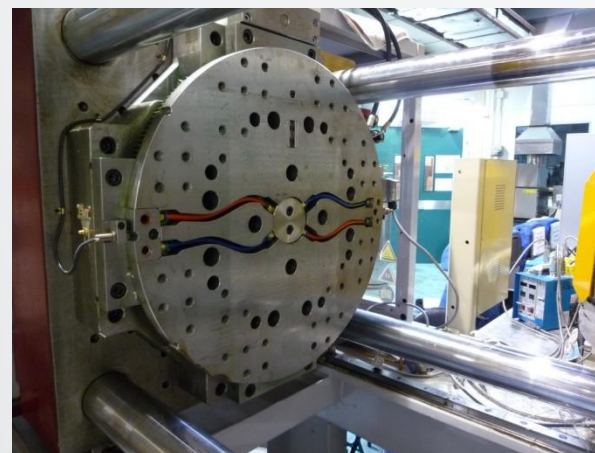
LSR – Plastic Overmould Technology Solution



Overall configuration



LSR Injection unit

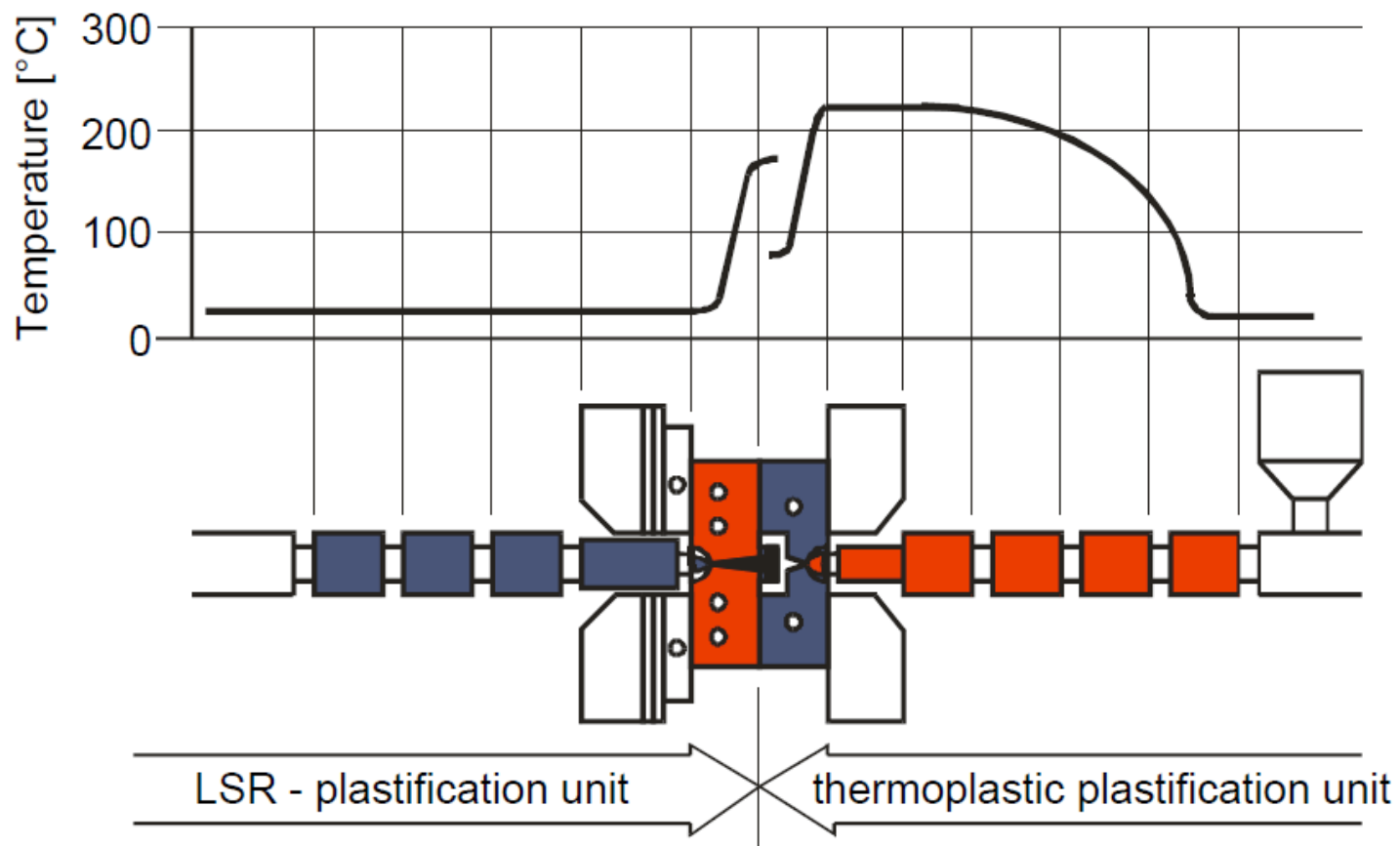


Turn-table

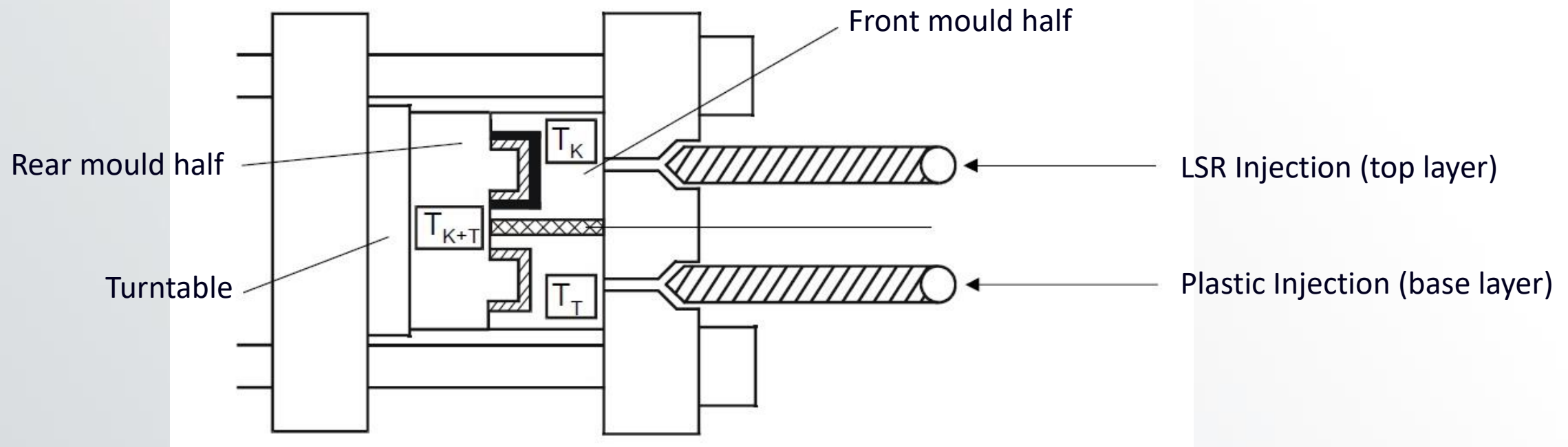


Aux. plastic
injection unit

LSR – Plastic Overmould Technology Solution

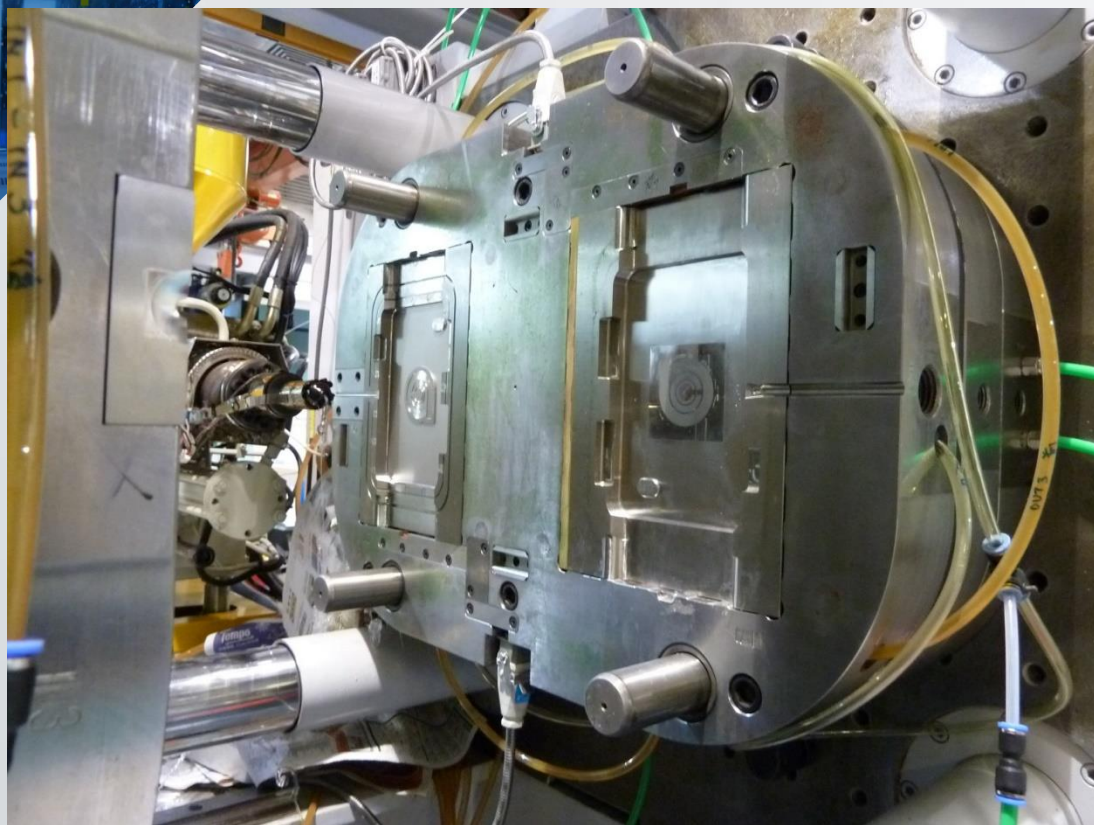


LSR – Plastic Overmould Technology Solution

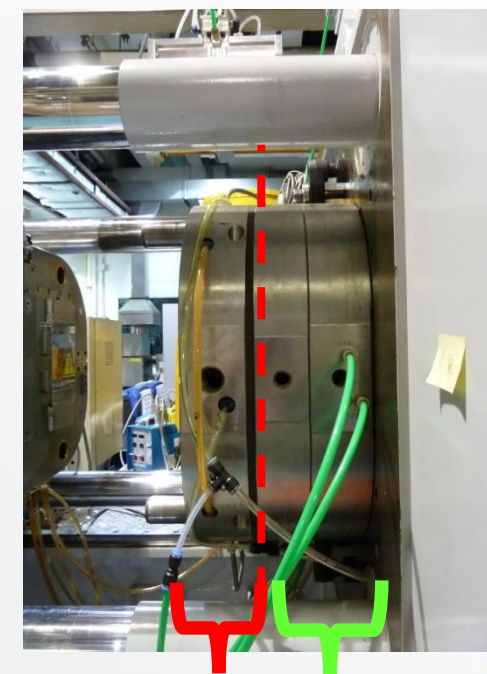
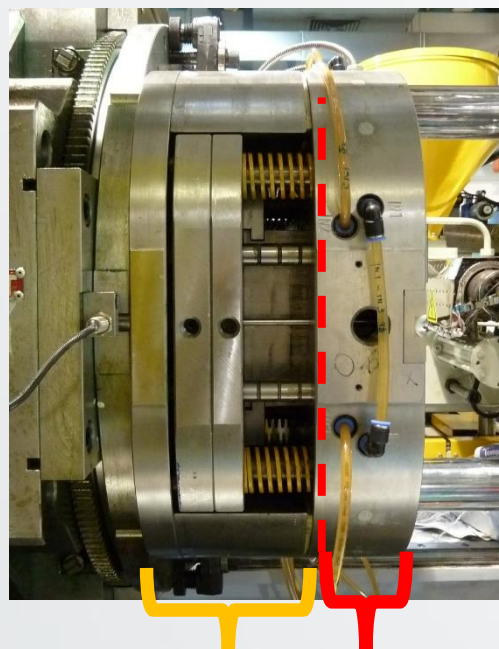


T_K : High temperature- LSR
 T_T : low temperature- plastic
 T_{K+T} : integrated mould temperature

LSR – Plastic Overmould Technology Solution



Overmoulding LSR on plastic



Technical Support and Technology Transfer Services

One-stop consultancy service

- Injection moulding machine and auxiliary equipment
- Product design
- Mould design and fabrication
- Injection process technique
- Training

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