



## INJECTION MOULDING (RR/TSMA)

# TEST SAMPLE INJECTION MOULDING

### The Ray-Ran **Test Sample Injection Moulding**

**Apparatus** has been specifically designed to produce a wide variety of laboratory test samples such as colour plaques, tensile and impact test specimens as well as small components required for mechanical testing procedures. The unique low-cost moulding machine has a compact design for vertical bench mounting making the apparatus ideal for Research and Development Institutes, Universities, laboratories and small workshops.

The apparatus is pneumatically operated with inlet air pressures up to 10 bar (150 psi) which is adequate for moulding most materials including Polypropylene, Polyethylene and PET with injection pressures up to 450 bar (6500 psi)

Digital temperature controls up to 400°C melts the polymer which is then extruded into the mould. Digital tool block heating is included for more efficient polymer flow into the mould with temperatures up to 200°C to prevent freezing.

The apparatus is supplied with a quick release cam operated tool block which will accept low cost tool inserts machined to any shape that will fit within the standard tool block parameters. This makes the apparatus ideal if different

## TEST SAMPLE PREPARATION

samples are required from the same material with minimal wastage and time. Tool Inserts to suit any international standard, e.g. ASTM, ISO, DIN, JIS, etc., can be supplied for tensile dumbbells, colour plaques, impact bars, etc. For samples that cannot be easily moulded within the standard tool block, optional specialised tooling can be supplied to customers' requirements within the parameters of the machine.

The unique interchangeable cylinder liner and die assembly supplied as standard with the apparatus compliments the simplicity of the equipment during and after the moulding process as it enables the operator to change from one colour or material to another in just a few seconds, increasing production and eliminating the need for purging. Simply remove the cylinder liner being used and replace it with a clean one, wait for it to reach temperature, fill the liner with your new material and continue the moulding process. The used liner can then be cleaned at the operator's convenience using a dedicated cleaning solution or ultrasonic cleaning bath. The 47cm<sup>3</sup> capacity of the cylinder liner ensures multiple moulds can be made saving time and reducing valuable material wastage.

To mould a test sample, polymer is loaded into the top of the liner which is

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heated to the required temperature to plasticise the polymer. When the injection piston is released, the cylinder liner nozzle automatically locks into the injection gate of the tool block and the piston extrudes the polymer into the moulding plate insert. After the polymer has been allowed to set for a few seconds, the tool block cam is released, and the moulding plate insert withdrawn. The moulded test sample is then removed, the injection gate is cleaned of any residual polymer and the moulding plate insert replaced and clamped in the tool block ready for the next sample to be moulded. For a more convenient flow of polymer into the cylinder liner, an optional polymer feeder hopper can be supplied so the liner is always topped up after each mould is produced ensuring a countless moulding process.



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### TECHNICAL SPECIFICATION

- Pneumatically operated
- Maximum air line pressure: 150 psi/10 bar
- Maximum polymer pressure: 6500 psi/450 bar
- Maximum shot size: 47 cm<sup>3</sup>
- Maximum sample sizes 175mm (L) x 45 (W) x 12.7 (T)
- Digital Temperature Control
- Automatic nozzle-to-tool locking device.
- Cam-lock Tool Block
- Quick Change Cylinder, Nozzle & Die
- Visual alarms for tool locking
- 110v 60hz and 240v 50Hz
- Product user manual
- Traceable calibration certificate
- CE declaration certificate
- 1 year return to base warranty

### OPTIONAL ANCILLARIES

- Polymer Feeder Hopper
- Low cost moulding inserts available to all international standards
- Quick Change Cylinder, Nozzle & Die
- Air compressor
- Non standard tool block

### WEIGHTS & DIMENSIONS: RR/T SMA

Net Weight (kg)	55
Width (cm)	52
Depth (cm)	36
Height (cm)	111