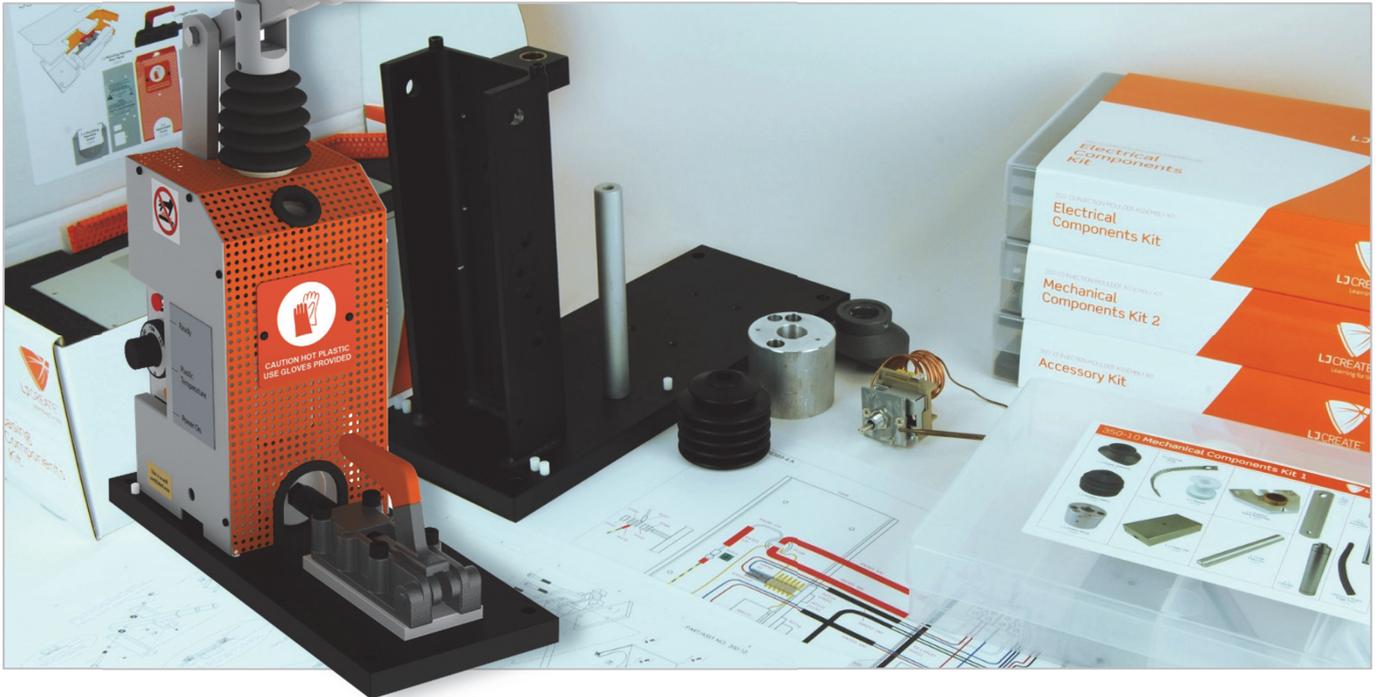


## Product Information Sheet

### Injection Moulder Assembly Kit



The Injection Moulder Assembly Kit contains a set of parts and associated instructions - to provide students with an opportunity to learn and practice the hand skills required for maintenance of mechanical and electrical equipment.

Students are led, via comprehensive instructions, through the process of assembling and testing a working plastics injection moulder. The kit contains all the parts necessary to complete the task, together with spare items where required. The kit contains over 120 separate components.

The instructions are written in accordance with the environment in which they'll be used and the experience of the students that will be asked to complete them. An associated package of digital learning materials to support the required hand skills is also included. These lessons include the following topics:

- Safety and Protective Measures
- Environmental Protection
- Reading Machine Diagrams
- Joining Procedures
- Maintenance Principles
- Maintenance and Accident Prevention
- Maintenance Documentation
- Maintenance Inspection
- Diagnostics and Troubleshooting
- Mechanical Breakdown
- Fault Repair
- Screw Connections
- Joining with Glues
- Joining with Soldering
- Soldering Equipment and Safety
- Joining with Keys and Splines
- Joining with Pins, Bolts and Rivets
- Lapping
- Joining with Threads
- Forces on Threads
- Forces in Threaded Joints
- Formula and Calculation of Tightening Torque
- Measurement Tolerances
- Tolerance Calculations
- Clearances and Fits
- Calculation of Clearances and Fits
- Quality Management
- Statistical Analysis
- Drawing Standards
- Basic Geometric Construction
- Types of View
- Co-ordinate Systems
- Dimensions
- Roughness
- Sectional Views
- Drawing Analysis
- Lubrication
- Characteristics of Materials
- Structure of Metals
- Screws and Threaded Components
- Machine Elements
- Tolerances and Fits
- Drilling and Finishes
- Primary Metal Shaping Processes
- Cutting Metal
- Drilling
- Cutting Speed for Drilling
- Bending
- Bending Operation Calculations
- Finishing Processes

# Product Information Sheet

## Injection Moulder Assembly Kit



There are over 35 steps in the assembly process and these steps include: drilling, reaming, pressing, fastening with screws, use of jigs, fitting of sleeves and gaiters, lubrication, cutting, wiring and soldering.

The completed product is a working moulder capable of melting plastic granules and injecting them under pressure into a mould. The completed machine must incorporate automatic temperature control and shut-off which requires calibration of the transducer.

Once completed and tested it must be possible for students to quickly disassemble the system.

### **Injection Moulder Assembly kit includes:**

- Set of components to assemble Moulder
- Spare parts package
- Lesson pack including detailed assembly, testing and disassembly instructions.
- Plastic granules
- Protective gloves and eyewear
- Mould(s)
- Cleaning kit
- Lubricants

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### **POST-ASSEMBLY ACTIVITIES**

When assembled, the Injection Moulding Trainer offers a classroom-based resource for investigating the techniques used to create thermo-plastic products.

Students can use the trainer to mould a variety of items, including a model car and different designs of door handles.

Students will see how a good grasp of the science of material properties is needed to select appropriate materials and methods for production. They will also gain an understanding of how mathematics is required to develop production costs and propose selling costs.

### **Typical Practical Activities:**

- Injection mould the parts for a model car
- Mould different doorknob designs and test each one for strength
- Investigate why a mould must be securely clamped
- Mould a plastic handled screwdriver with a metal blade
- Adapt an existing mould design to make a corn cob holder
- Explore the benefits of adding a draft angle to a mould
- Investigate the effects of component undercuts and overhangs on mould tool design

**Order Code: 350-10**

P9377-A

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