

Low-volume Production

3D printing for end use products

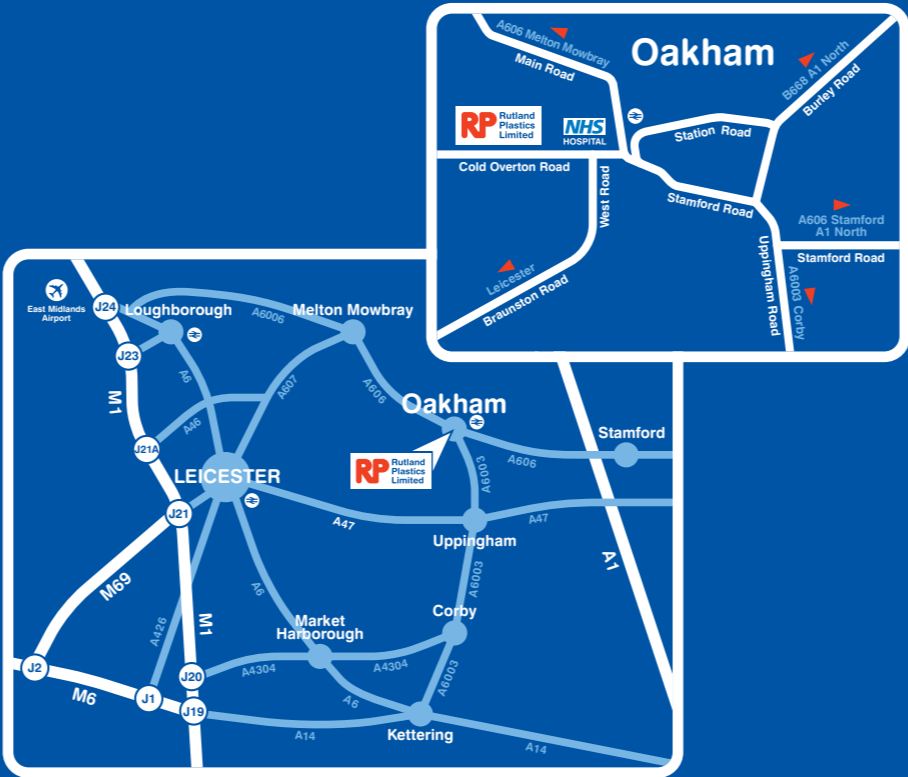
The high resolution 3D print process, using advanced prototyping materials, can be an economically viable method of producing small numbers of parts or products. This depends on the number required and the complexity of the part.



3D printing to create a mould tool cavity

The 3D print process may provide a cost effective solution when a part suitable for injection moulding is to be produced in 10's rather than much larger quantities. Instead of investing in a conventional steel or aluminium mould tool it may be possible to print a mould tool cavity using advanced prototyping materials. The cavity is placed in a Rutland Plastics standard bolster to produce the injection moulded part. If the cavity wears out another can be printed.

This is also an ideal solution for products that require market testing or modification at a later date. The design of temporary 3D print moulds can be refined using CAD and once the product design has been finalised it can be manufactured using traditional tooling.



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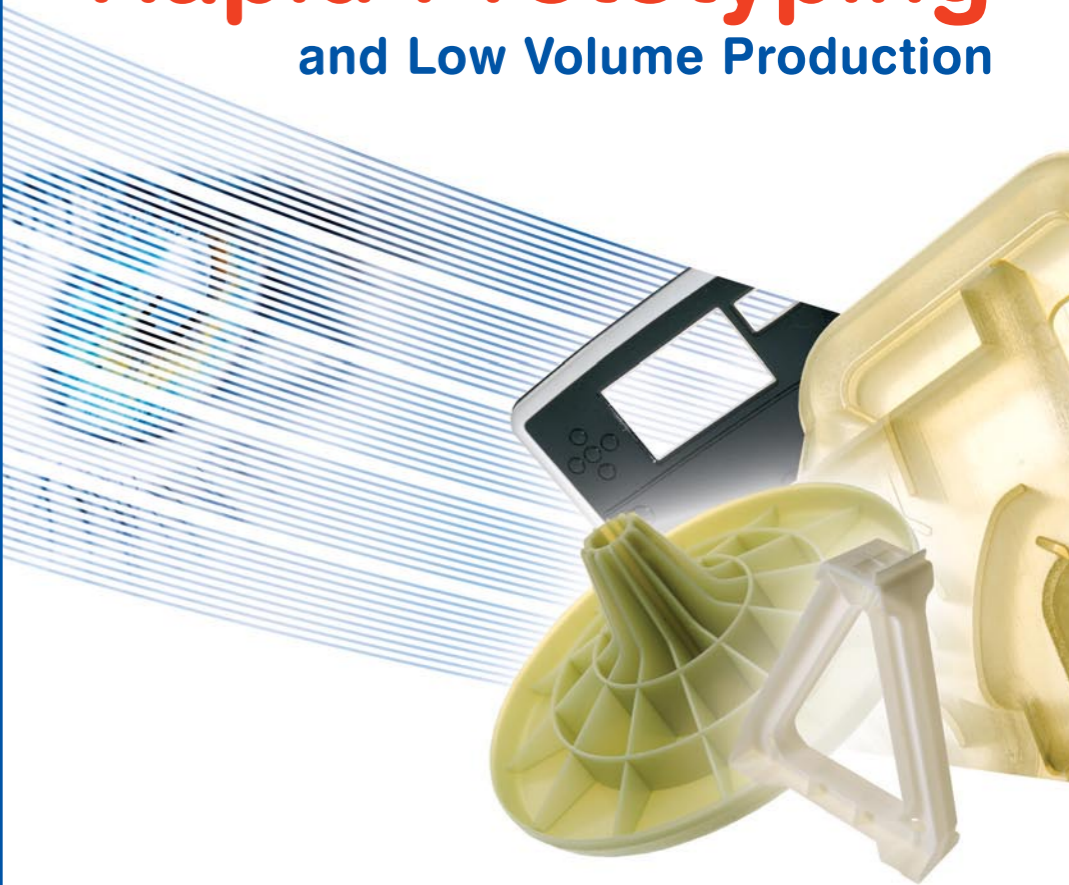
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Rapid Prototyping and Low Volume Production



Innovative Options

At Rutland Plastics we harness the multi-material capability of our in-house Objet Connex350™ 3D printer to create finely detailed functional rapid prototypes. These high quality plastic models can withstand rigorous product testing. This gives you confidence in the final design before investing in an injection mould tool.

For low volume production we can offer cost-effective alternatives and variations to the traditional injection moulding process.

Working Prototypes

The high resolution plastic prototypes printed by the Connex350 are as close as you can get to the final manufactured product. Smooth surfaces, fine details and moving parts enable form, fit and function to be accurately tested. Models are tough enough to withstand machining or drilling and designers can add finishing touches such as paint or chrome plate.

Wall sections from a minimum of 0.6mm are possible with accuracy of parts of 0.1mm – 0.3mm. The maximum build size of any part is 342mm x 342mm x 200mm. Larger prototypes are possible by joining two or more models.

Complex Prototypes

Prototypes can be printed as a complete item or made up of a number of individually printed components. Surfaces on all axis have a smooth finish and any print, branding or barcodes are clearly defined.

Applications

Durable end use parts

Test your design even if it is complex or made from different materials. All materials are REACH compliant.

Over-moulding and two-shot injection moulding prototypes

Get an accurate feel and explore the functionality of parts.

Texture and print simulation

Apply visual effects such as text and images without additional processes.

Transparent parts

Transparent parts can be produced either individually or as part of an assembly.

Translucent parts

Print translucent models showing internal details.

Seals and gaskets

Incorporate seals into the prototype in a single build.

Living hinges

Create parts that include a living hinge able to withstand repeated flexing.

Material Possibilities

An ability to combine two different prototyping materials in varying proportions allows us to economically create realistic prototypes or assemblies that are manufactured from a mixture of materials. The resulting composite materials have specific values that simulate polypropylene, ABS, transparent (similar to acrylic), high temperature (thermal resistance up to 90°C with high impact) and a wide range of rubber-like materials from shore 40A to 95A.

- Eliminate the need to design, print and glue separate parts together
- Print different parts in different materials at the same time
- Combine rigid, flexible, transparent materials to simulate polymer grades
- Combine black and white materials to create a range of grey scales

To find out how Rutland Plastics can help you call **01572 723476** or visit **www.plasticprototypes.co.uk**