



# Rencol

MANUFACTURING

*YOU DESIGN, WE DELIVER*

Services Overview

Custom Manufacturing

*Rencol's flexible  
manufacturing capabilities,  
engineering expertise,  
global supply chain and  
market knowledge  
allow us to develop  
cost-effective product  
solutions that exceed our  
customers' expectations.*

## Who we are

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Rencol Manufacturing is a hybrid manufacturing business for the 21st century with offices in three continents. Our heritage lies in British engineering innovation, our manufacturing base is sited in China's cutting edge facilities, and our outlook is lean, global and ever evolving.

We're a UK business offering custom manufacturing services to companies in the UK, Europe, US and beyond. Our offices are in Bristol, Brooklyn and Shanghai, with skilled teams in all three locations.

As we evolve, investing in our people is a priority – training and up-skilling our teams in all our offices and locations. This drive to maintain up to date expertise enables us to offer intelligent advice, support and customer service throughout the process of working with you.

## Why choose us

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Exceptional customer service is central to our company philosophy. Our customer service team, on-site engineers, product designers and supply chain experts are here to advise and assist at all stages of the purchase and fulfilment process.

We're proud to offer an outstanding manufacturing service fit for the 21st century. Here's a summary of why you can rely on our services.

- Very competitive prices.
- High quality, extremely low cost tooling.
- Reliable product quality overseen by our own engineering and quality personnel.
- A mature and efficient global supply chain that's been running for over a decade.
- Our own warehouse and distribution network.
- The ability to offer minimum order quantities of as little as 500.
- ISO 9001:2015 quality accreditation.

## You design, we deliver

Intelligent, cost effective custom manufacturing

Our custom manufacturing services are driven by British engineering expertise, produced by trusted Chinese partners, and delivered via our reliable global supply chain. This unique combination is the secret of our outstanding quality and affordability.

At Rencol Manufacturing we offer expert custom manufacturing at superb prices. Our teams in the UK, US and China provide intelligent support throughout your project, from optimising design concepts to prototyping, tooling, mass production and logistics.

We're able to work with a wide range of processes, from plastic injection moulding to die casting and CNC machining. You can depend on us to deliver precisely what you need – on time, on price and on spec.

### What we do

- Plastic injection moulding
- Metal injection moulding
- Die casting
- Stamping & pressing
- CNC machining
- Hot & cold forging
- Prototyping
- Tooling fabrication



## **Plastic injection moulding**

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## Plastic injection moulding

The Rencol name has been synonymous with plastic injection moulding since the 1920's. Rencol Manufacturing specialises in bringing our client's projects to life – from prototyping, mass manufacturing, delivery and project management, our service is comprehensive, cost effective and reliable.

Plastic injection moulding is ideal for large production runs, as most of the cost is incurred in creating the mould tools (something we're particularly competitive at producing).

With our high quality mould tools, plastic injection moulding achieves finished parts with a high degree of accuracy. That means you get consistent quality and the ability to repeat exactly the same product time after time. Often very little finishing is needed.

We're able to offer very competitive pricing and have decades of in-house experience. We serve clients who purchase just hundreds of moulded pieces as well as those who need millions each year.

### Industry sector experience

*Aerospace / Automotive / Construction / Chemical / Electronics / Marine / Military / Medical / Oil and Gas / Catering*

### Why choose plastic injection moulding with us?

- Cost effective and reliable – we have decades of experience in injection moulding and tool making.
- We're able to produce a wide range of plastic parts from small, lightweight multi-cavity plastic components to complex, multi-shot heavyweight products.
- Multi-part assemblies and sub assemblies.
- Part weights from a few grams up to 1.7kg.
- Large range of materials including thermoset (phenolic) and thermoplastic, available in a large range of RAL colours.
- Secondary processes including pad printing, screen-printing, engraving and soft touch/TPE overmoulding.
- Minimum order quantity from 500 pieces.
- Mature and efficient global supply chain.
- Typical lead time 10-12 weeks following sample approval.



## Metal injection moulding

Metal injection moulding makes it possible to produce complicated shapes at high volumes, using a powdered metal mixed with a binder. The resulting product has similar strength to a metal alloy product, yet is faster to make.

Metal injection moulding is a good choice when you need to make large numbers of metal products, particularly smaller and more complex ones. The cost is mainly incurred in tooling the mould, which is more expensive than for casting or plastic injection moulding.

However, the production process is fast and cost effective, with minimal waste of materials, and the end results are precise and tough. The moulded products need little if any finishing.

We offer exceptionally competitive mould tooling costs, and a wealth of tooling and manufacturing experience.

### Industry sector experience

*Aerospace / Automotive / Chemical / Medical / Defence / Security hardware*

### Why choose metal injection moulding with us?

- Cost effective for larger runs of complex products.
- High precision finish.
- Small to medium sized metal components.
- Ideal for complex shapes, including multi-cavity.
- Multi-part assemblies and sub assemblies.
- Steel, stainless steel or aluminium.
- Secondary processes including heat treatment, surface coating and plating.
- 10,000 piece minimum order quantity.
- Typical lead time 10-12 weeks following sample approval.





## Die casting

Die casting uses moulds to create often complex shapes in a range of metals. As it has lower tooling costs it's more cost effective for lower production volumes than metal injection moulding.

Die casting is a way of producing complex metal shapes with high precision and with a smooth, accurate finish. Die cast products are of a higher quality than, for example, forged products, but are more expensive to make.

The choice between die casting and metal injection moulding often depends on what materials you need to use. Die casting tends to use materials with lower melting points such as zinc or aluminium and steel alloys.

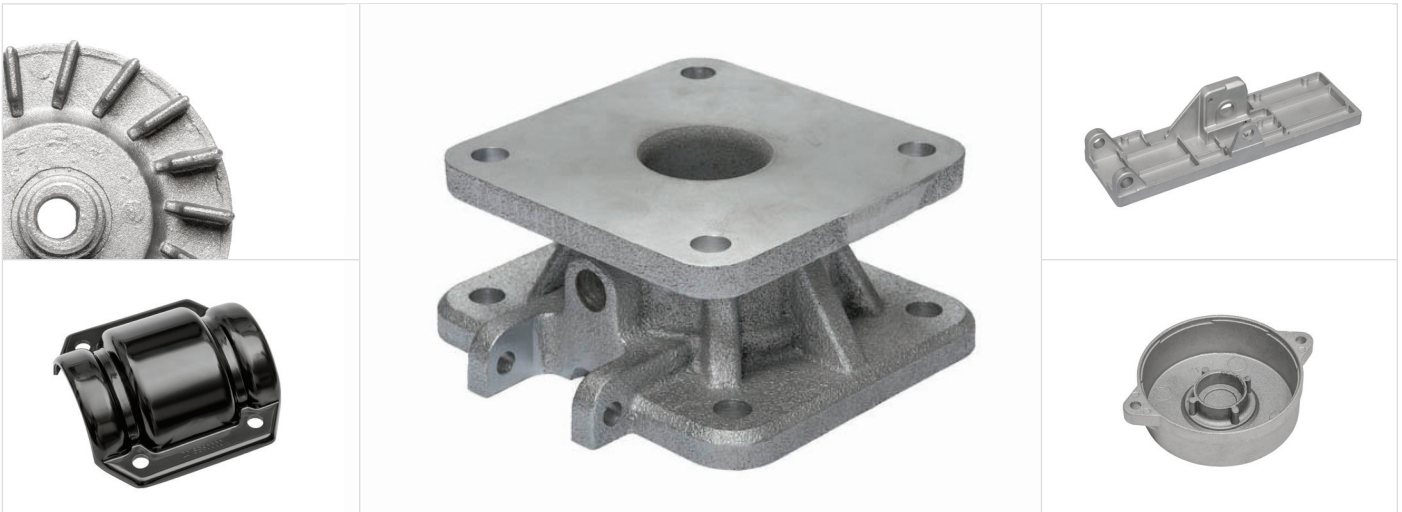
The cost of making the mould is lower than for metal injection moulding, making die casting more suitable for lower volumes. However, we charge very competitive tooling costs whatever process you use.

### Industry sector experience

*Aerospace / Automotive / Construction / Chemical / Marine / Machine building / Defence / Oil and Gas / Catering*

### Why choose die casting with us?

- Cost effective for small production runs of complex products.
- High precision finish.
- Small to medium sized metal components up to 4kg.
- Ideal for complex shapes, including multi-cavity.
- Multi-part assemblies and sub assemblies.
- Alloys including zinc, aluminium, magnesium and steel alloys.
- Range of secondary and finishing processes including CNC machining, turning, coatings, sand blasting, heat treatment, surface coating and plating.
- 500 piece minimum order quantity.
- Typical lead time 10-12 weeks following sample approval.



## CNC machining

CNC machines – or computer numerical controlled machines – are sophisticated metal working tools that can drill, cut and mill metal into complex shapes, with extreme accuracy.

CNC machining is the ideal process for producing small numbers of very complex components or products. It's highly precise and accurate, with the ability to create complicated 3D shapes. The process, being computer controlled, is also perfectly repeatable.

CNC machining can use a very large range of materials, including most metals, composite materials, ceramics and some plastics.

This manufacturing process tends to be a relatively expensive choice, but Rencol Manufacturing is very competitive on price and we offer the benefit of decades of experience. We know when it's best to use CNC machining on a job, and we'll recommend another process if we think that's best.

### Industry sector experience

*Aerospace / Automotive / Construction / Cabinet building / Electronics / Furniture making / Marine / Machine building / Defence / Oil and Gas / Catering / Consumer goods*

### Why choose CNC machining with us?

- Produces complex 3D objects.
- High precision.
- Low to medium volumes.
- Part size – for turning max 300mm  $\varnothing$  x 400mm long, machining max 600 x 400mm.
- A wide range of materials including all steel alloys, aluminium, brass and zinc alloys.
- A range of secondary and finishing processes.
- 250 piece minimum order quantity.
- Typical lead time 10-12 weeks following sample approval.





## Hot & cold forging

During forging, metal is pressed and pounded under high pressure. Forging tools are used to shape the metal. As you'd expect, the results are less precise than many other manufacturing processes, but very strong.

Forging is the best choice when you need large numbers of parts, and precision isn't required but performance and strength is. Aluminium and steel are commonly used forged materials. At Rencol Manufacturing, we offer both hot forging and cold forging.

Cold forging is a faster process and therefore more suitable for high volumes, but is best with softer materials such as mild steel. Hot forging can be a better choice for more complicated shapes, as it's easier to shape heated metal.

### Industry sector experience

*Aerospace / Automotive / Construction / Marine / Machine building / Defence / Oil and gas / Catering / Consumer goods*

### Why choose forging with us?

- Cost effective for high volumes.
- Cost effective tooling fabrication.
- High strength.
- Hot or cold forging.
- Part size: cold forging max 16mm  $\varnothing$  x 160mm long; hot forging, 200mm  $\varnothing$  x 150mm long. 20,000 piece minimum order quantity.
- Typical lead time 10-12 weeks following sample approval.

## Stamping & pressing

Stamping and pressing is the process of forming a metal shape by applying a tool or die under high pressure to a metal sheet. It's a cost effective way of making large numbers of strong products at a consistent quality, but isn't ideal for very small or intricate parts.

Stamping and pressing is an efficient way of producing simpler metal components or products from sheet metal stock. The die is quicker and easier to create than in die casting or metal injection moulding, reducing costs and speeding production.

Once production is under way, large volumes can be produced quickly and at low cost, and at a consistent quality. However, considerable scrap material is produced – it can be recycled, but it adds to costs.

### Industry sector experience

*Aerospace / Automotive / Construction / Cabinet building / Electronics / Furniture making / Marine / Machine building / Defence / Oil and Gas / Catering / Consumer goods*

### Why choose stamping & pressing with us?

- Cost effective for large production runs of simpler products.
- Consistent quality.
- High strength.
- Small to large metal components.
- Simpler or relatively complex.
- Parts up to 10mm thick.
- Ferrous or non-ferrous materials.
- 5000 piece minimum order quantity.
- Typical lead time 10-12 weeks following sample approval.

## Prototyping

Our design and prototyping capabilities can develop your idea rapidly from concept to a product that's ready to be mass manufactured cost effectively and efficiently.

Optimising a new product or component to be made in large numbers at low cost and to the necessary specifications is a specialist skill. Our experts can help refine and perfect your concept quickly and efficiently, testing and improving it and advising on good practice, risk of failure, standards and regulations.

We can prototype for function, to ensure its shape, strength and tolerances are all optimised for the function it will carry out, as well as prototyping for manufacturing, looking for the most cost effective and efficient processes to achieve the required results.

Because we have long experience in these areas, we know what to look for and where the pitfalls typically lie. We'll help you get over the prototyping hurdle quickly so you can move onto the manufacturing stage.

We use CNC machining and additive manufacturing as tools in the process of refining a product and creating prototypes for testing.

### Why choose prototyping with us?

- Prototypes available via CNC machining and additive manufacturing, including 3D printing.
- Ensure you have the most effective design for your function.
- Ensure you choose the most efficient manufacturing processes.
- Get ready for mass manufacturing more quickly.
- Reduce risk.



## Tooling fabrication

Tooling means designing and creating the moulds that are used for plastic and metal injection moulding, stamping and pressing. It's an area in which we have almost a century of experience, and today we offer a highly cost effective and precise service.

We were one of the first companies in the world to experiment with plastics moulding early in the 20th century. Today we offer a cost effective and high precision tooling service, using our own in-house expertise.

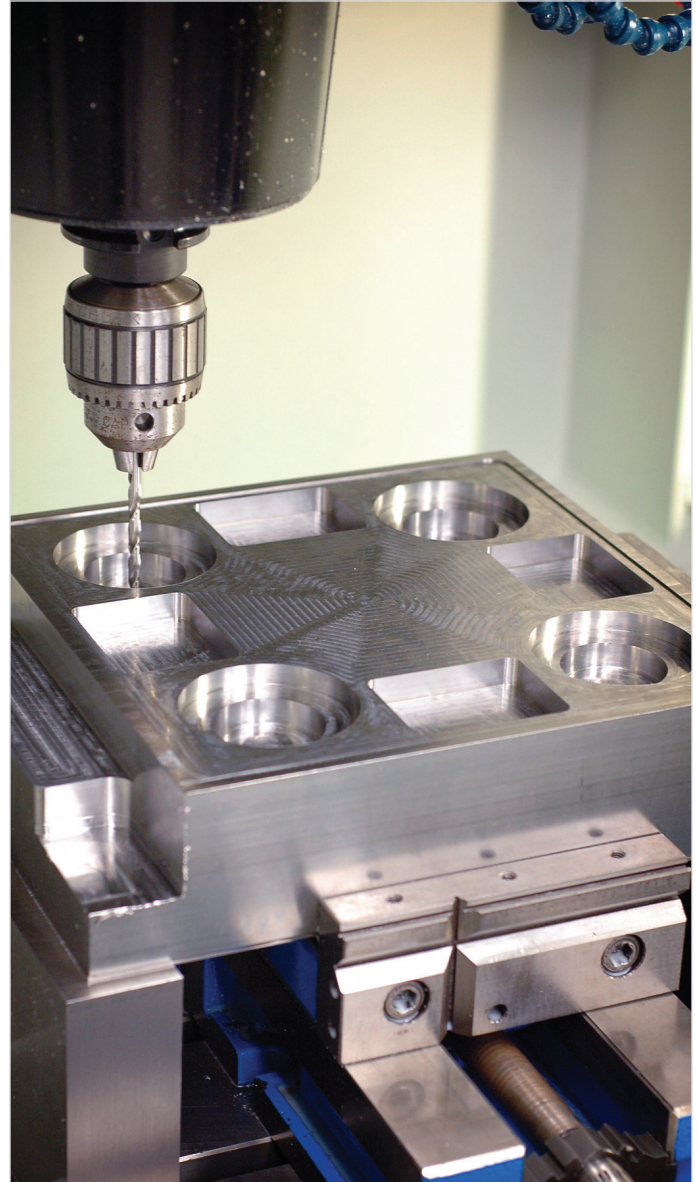
We're able to reverse engineer a product sample or CAD drawing to produce a machine tool that will reproduce your product. Moulds tools are so durable and reliable they will last for many production cycles, so their cost can be considered an investment.

Mould tools will belong to you, but we can maintain, refurbish and repair them when you need us to.

We can also provide tooling as a standalone service where clients require in-house control over their production.

### Why choose prototyping with us?

- Low cost, high precision service.
- The key to cost effective manufacturing.



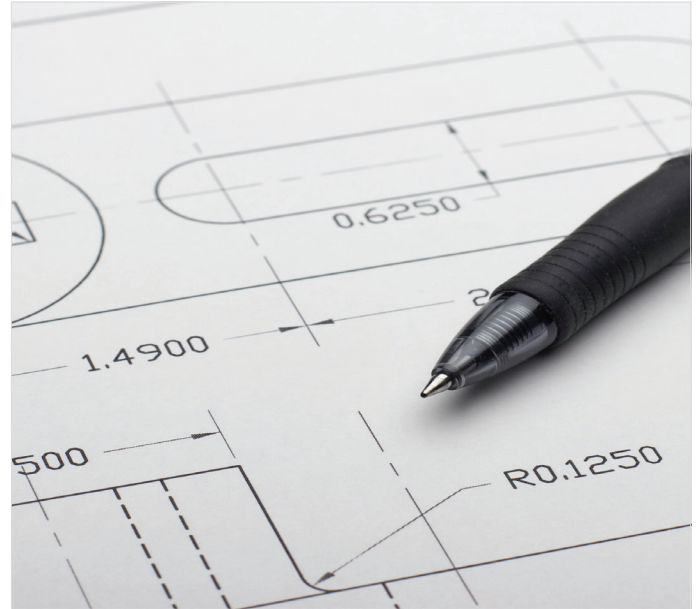
## Quality control

Reliable quality is one of the hallmarks of our business. Every project is meticulously monitored throughout the process of manufacture, shipping and distribution.

Our engineers in the UK and China have many years' experience of delivering close tolerance manufacturing, and they carry out multiple quality control inspections during manufacturing, shipping and arrival at our warehouse.

This careful process ensures reliable quality – saving you time, cost and worry.

1. First article inspection: Soon after production begins (typically when between 1% and 10% of the batch has been produced) we inspect for quality of the product, matching it against your approved samples or specifications.
2. In process quality control: This is a full quality inspection: product appearance, workmanship quality, size measurements, weight check, colour check, functionality, accessories, labelling and logos, and any other special requirements.
3. Pre shipment inspection: This check includes all the elements of stage 2, but is performed as the final components are being produced. It also includes a shipping and packaging inspection.
4. Shipment arrival inspection: We carry out our final inspection when the components arrive at our warehouse in Bristol.



## Design for manufacturing

If you have a product you're ready to mass manufacture, we'll help you identify the best process and materials to use.

Our design for manufacturing service offers you the benefit of our mass manufacturing experience. Small changes at this stage can have a big impact on the ultimate effectiveness of the product, and the cost of manufacturing – and it's better to think things through before you've received a large batch which doesn't meet your expectations.

We can advise on the most appropriate manufacturing process for a range of parameters. We can ensure you achieve the quality you need, the repeatability, the suitability for the product's application, and the maximum cost effectiveness.

We'll also help you choose the right materials and any finishing that's needed.



## Supply chain

We've built our own supply chain during more than a decade of working in China, and by now it's mature, efficient and reliable.

It takes time to cultivate meaningful and dependable commercial relationships in China, as with anywhere. We've spent years working in China, and have developed strong and enduring partnerships with our core network of vendor manufacturers. Our English-speaking Shanghai team who manage our manufacturing facilities are skilled and experienced engineers in their own right, and are well placed to tackle any issues that may arise.

## Logistics

We run fortnightly consolidated sea freight container shipments, and weekly air freight shipments, which arrive at our Bristol warehouse for onward distribution. If you need quick turnaround, we can offer part-shipment or split sea-air delivery.

Our packing and transport experts are based in both China and the UK, so there's end-to-end supervision of our logistics.



## Our working process

1



### **Submit your RFQ with a technical drawing or sample**

Send us a technical drawing of your product along with a description and the estimated quantity you require. If you don't have a technical drawing we can usually reverse engineer from a sample.

2



### **48hr quote from Rencol sales team**

Once you've submitted a technical drawing we'll respond with a detailed quotation in just 48 hours. We'll let you know if we have any queries or suggestions to improve design for manufacturing.

3



### **High quality rapid tooling**

As soon as we've received your approval and a deposit, we'll start on the initial work of fabricating your tooling, creating the stamping die, preparing a CNC machine, and so on. This part of the process can represent a large proportion of the initial cost, but we're confident we can offer a price you won't find elsewhere in the UK.

4



### **Samples to your door in 35 – 40 days**

The next step sees the first samples off the production line, and delivery to your door – but not before they've passed our meticulous quality control checks. We pride ourselves on getting the job done right the first time. If adjustments do need to be made, we'll perform them quickly and efficiently.

5



### **Mass production in 4 weeks from sample approval**

When we reach mass production, our engineers are fastidious in their attention to detail. It's essential that your goods are on spec.

6



### **Packaged, labelled and shipped to your door in 12 weeks from sample approval**

We know how important it is to ensure your products are securely packed and shipped to their destination on time. We'll even manage and monitor all customs, handling fees and insurance.



# Rencol

## COMPONENTS

Founded in Bristol in 1923, Rencol Components has a long-standing history of design engineering and plastic component manufacturing.

Today, an extensive and industry standard range of plastic and metal knobs, handles, hand wheels, hinges, levers, levelling feet, indexing plungers and enclosure hardware are manufactured at our partner facilities in Shanghai, China. We distribute from our warehouse facility in Avonmouth, Bristol, and globally to our network of approved distributors.

### We continue to grow, adapt and innovate:

- Our product range is extensive, industry-standard and growing.
- Our manufacturing partners are in key international locations, each chosen for their expertise, compatibility with our values and cost effectiveness.
- Our distribution network is worldwide and expanding.
- Our global supply chain has been in successful continuous operation for over a decade.

Find out more at [www.rencol.com](http://www.rencol.com).

