DEMON CAT

A metpro Group Brand

Bespoke Products for OEM Businesses

Issue v1

Innovation & Excellence
in Manufacturing

Learning
from the past.

Manufacturing
for the present.

Innovating
for the future.

About Demon Cato

Beginning operations in 2008, Demon Cato was devised to understand, address and ultimately answer the call for innovation within the construction industry.

The first product introduction was the hugely successful Conlok system, now a staple product used in large scale commercial and infrastructure projects such as; Heathrow Terminal 2, the Sir Chris Hoy Velodrome and the new Tottenham Hotspur Football Club stadium.

Demon Cato became a Metpro Group brand in July 2021. With Metpro's 25 years of manufacturing experience and operating from a 61,000 square feet distribution centre, the acquisition of Demon Cato was a natural extension of the existing product offer. This brand has also enabled us to further enhance our manufacturing capabilities as the legacy Metpro service to OEM customers now falls under the Demon Cato banner. Offering turnkey solutions and expertise within casting, forging, pressing & stamping, turning & milling, and injection moulding; **we manufacture your products, your way**.

With exceptional service levels and a dedicated team on-hand to support, we would welcome the opportunity to discuss how Demon Cato can support you and your business. For more information on our offering or to arrange a no-obligation meeting, please contact our team and we will be happy to help.

Demon Cato | Innovation & Excellence in Manufacturing.

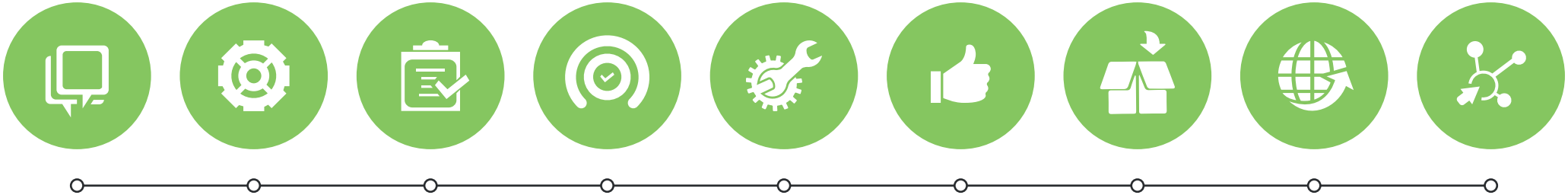
Contents

Our Operation

Your products, your way

We work with OEM customers across a wide variety of industries & sectors. Our Bespoke Manufacturing service aims to become an extension of your business, ensuring **your products** & components are manufactured exactly to **your specifications**.

How it works:



Request for Quotation (RfQ)

Contact our team by phone, email or our website and we will get back to you to discuss your requirements within 24 hours.

Design & Engineering

Send us a sample, a CAD file or both from which we will confirm your specification and how best to proceed.

Quotation

We work closely with our manufacturing facilities to create the most competitive quote for product & tooling where required.

Tooling & Sample Approval

Tooling is manufactured (where required) and samples checked at manufacturing source and in-house at Metpro, ready for your approval.

Manufacturing

Bulk production begins only when **your samples** are approved and in line with **your specifications**.

Quality Assurance

Dedicated in-country Metpro engineers validate finished products prior to shipment to - a further check is made on receipt at Metpro in the UK.

Packing & Assembly

We can provide a product only or fully assembled finished products.

Logistics

We handle all incoming duty, VAT and freight charges.

Warehousing & Distribution

Our 50,000sq/ft warehouse is equipped to hold your stocks, ready for your call off as you require.

Our Manufacturing Capabilities

Working with our manufacturing facilities worldwide, we are fully equipped to support the needs of your business using the manufacturing processes outlined below.

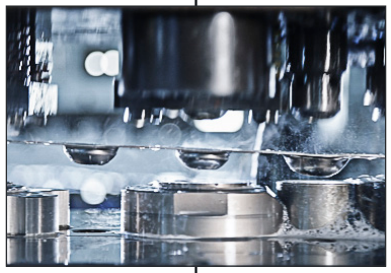
Casting

- Investment Casting
- Gravity Die Casting
- Low Pressure Casting
- High Pressure Casting
- Centrifugal Casting
- Continuous Casting
- Sand Casting

Forging

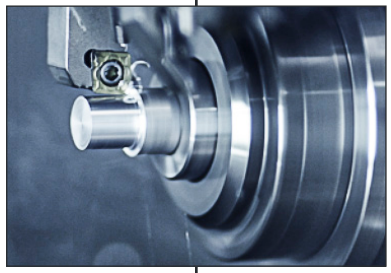
- Open Die/Hand Forging
- Impression Die Forging
- Press Forging
- Upset Forging
- Roll Forging
- Net Shape Forging
- Near-Net Shape Forging

Pressing & Stamping



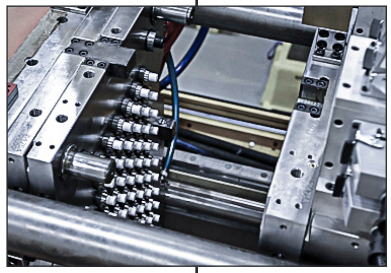
- Press Brake Machine
- Rolling Press Machine
- Punch Machine
- Laser Cutting
- Progressive Punch Machine

Turning & Milling



- Traditional Turning & Milling
- Multi-Axis CNC Turning & Milling
- Gear Cutting
- Broaching
- Cylindrical Turning & Milling
- Surface Turning & Milling
- Grinding

Injection Moulding



- High & Low Pressure Moulding
- Blow Moulding
- Compression Moulding
- Film Insert Moulding
- Gas Assist Moulding
- Rotational Moulding
- Foam Moulding
- Vacuum Forming
- Extrusion Moulding
- Powder Metallurgy

Casting

Why this process?

Part design is highly customisable | Reduce material wastage in the production process | High volumes

Investment Casting

One of the oldest forms of casting dating back centuries, investment casting involves a wax mould being covered in molten metal. As the wax heats and melts, the metal is then poured into the cavity of the mould, replacing it with metal. Once the metal is cooled, the wax is removed from the mould leaving the final casting.

Low Pressure Casting

Molten metal is forced through a riser tube and into a die cavity by introducing low pressure air into a sealed furnace. The air pressure is only released once the casting has solidified, allowing any residual metal to return to the tank for recycling purposes. The casting is then removed following a predetermined cooling period.

Continuous Casting

Predominantly used in the manufacture of tubing and solids which are then cut to size, continuous casting sees molten metal enter a vertical or horizontal mould, often with the ability to cool the metal quickly. Once the metal has solidified, it is then cut to the desired length as per the specifications.

Gravity Die Casting

A relatively simple form of casting, molten metal is introduced into a mould cavity from a dedicated vessel or ladle. No other force or pressure is applied with the mould cavity filled correctly by tilting the die.

Centrifugal Casting

Ideal for products requiring high material strength and soundness, centrifugal casting uses a preheated spinning die. Molten metal is introduced with the die on either a horizontal or vertical axis depending on the component specifications. Forcing the metal through the mould cavity at over 100 times the force of gravity, the pressure continues to build as the die begins to fill. Once the metal has cooled and solidified, it is removed and readied for any additional processes.

High Pressure Casting

Using a high pressure force, molten metal is introduced into a sealed mould cavity and held in place by a compression power until the metal has cooled.

Sand Casting

Tracing back to before 1000 BC, sand casting is the oldest casting process currently known in the world. Despite the centuries of technological advancement since it was first introduced, due to the wide variety of products able to be manufactured using this ancient process, it remains the most commonly used today. Molten metal is poured into a die cavity containing compressed or compacted sand. Following the cooling period, the die is opened with any residual sand being reused for future production.

Forging

Why this process?

Ability to offer truly bespoke outer profiles | Ideal for when mechanical strength is critical | High volumes

Open Die/Hand Forging

Also known as Smith Forging, this process sees the chosen material struck with a hammer which acts as the die, deforming the material into the desired shape. Dies using this process are usually flat with specially shaped areas depending on the component requirements.

Impression Die Forging

The most commonly used forging process, a workpiece is deformed into the desired shape by bringing two dies together called plastic deformation. This process continues until the workpiece material reaches the enlarged sides of the dies. Excess material then flows from each side of the die forming flash, which subsequently becomes part of the tool itself.

Roll Forging

Using two rolls which turn in opposite directions and one or multiple identical die impressions, heated bars or billets are introduced with deformation taking place when these impressions force the raw material into the desired shape.

Upset Forging

Ideal for working with lengths of rod or thick wire, this process was initially designed for the forging of bolt heads which is still how these products are most commonly produced today. The workpiece is held in a pre-heated groove before a die applies pressure creating the desired shape. Upset forging requires great accuracy and typically uses state-of-the-art machinery.

Press Forging

In the press forging process, a workpiece is placed between two dies and deformed into the desired shape through pressure applied by either a mechanical or hydraulic press.

Net/Near-Net Shape Forging

Building on the impression die forging process through continual process development, net shape and near-net shape forgings are able to produce components which require little or no additional further process, effectively creating a ready to use product.

Pressing & Stamping

Why this process?

Parts can be made from plate metal | Suited to thinner material gauge requirements | High volumes

Press Brake Machine

Typically a single die sheet press operation to form precise angle folds.

Laser Cutting

Laser cutting consists of a workpiece being held in place with a laser beam being used to cut away sections of the material to create a desired shape.

Progressive Punch Machine

Building on the punch machine process, a progressive machine consists of multiple punches striking a workpiece as it moves through the machine.
This process is able to create net or near-net shape products, reducing the need for further processing.

Rolling Press Machine

Often used to create circular profiles such as tube, a sequence of rollers sit in alignment with the material strip and are then forced through, resulting in the desired thickness and profile.

Punch Machine

Generally using sheet metal, the workpiece will be placed onto a die before being struck by a punch in order to deform the material into the desired shape.

Turning & Milling

Why this process?

Perfect for where precision is needed | Used in conjunction with other processes | Relatively shorter lead times

Traditional Turning & Milling

Making use of traditional techniques and machinery such as a lathe, these processes are used to create the desired surface finish on a product.

Multi-Axis CNC Milling & Shaping

Utilising a machine with multiple tools, this process manufactures parts by milling the metal using either water jets or lasers.

Gear Cutting

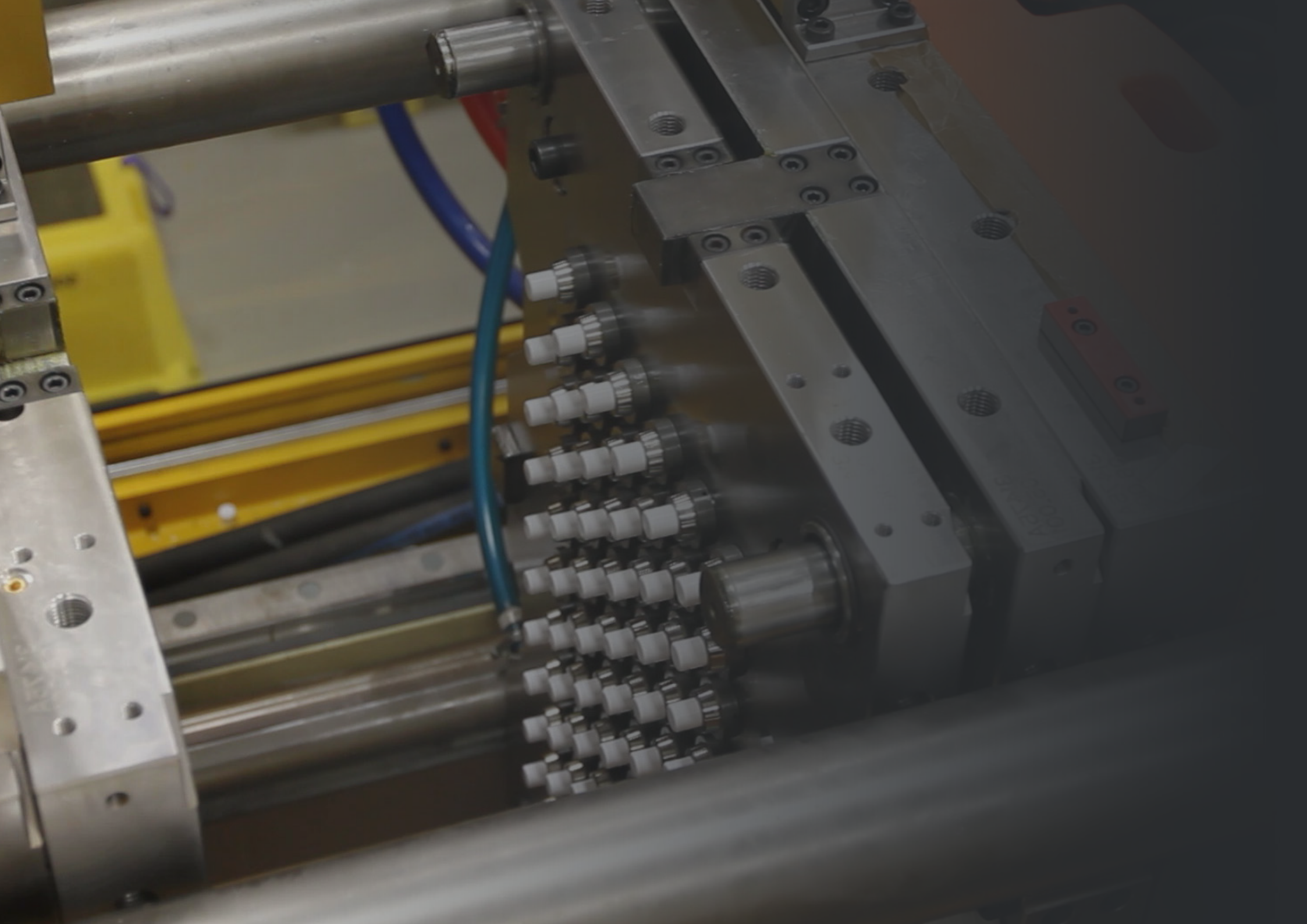
Using common processes such as hobbing, broaching, milling and grinding, these operations may be used either after or instead of other cutting process options such as forging or casting.

Broaching

Using a toothed tool known as a broach, a workpiece will be held in place as the broach is generally run in a linear direction to the workpiece in order to create the desired shape.

Cylindrical & Surface Grinding

Offering the ability to work within extremely high tolerances, both cylindrical and surface grinding are used to create the desired finish on a component. Where surface grinding sees an abrasive wheel rotate and run above the workpiece, surface grinding is more commonly used for the creation of internal and outer diameters.



Injection Moulding

Why this process?

Ideally suited to plastic-based materials | High volumes

High/Low Pressure Mouldings

Molten plastic is injected into a heated plastic mould cavity until cooled.

Rotational Mouldings

Similar to a casting process, rotational moulding or rotomoulding is another option for the creation of hollow products. Powdered plastic is poured into the mould which is then heated. The mould rotates, forcing the powder into all areas of the mould. Cool air is then introduced to solidify the product before moving onto the next phase of manufacture.

Foam Mouldings

Similar to a standard injection moulding, foam mouldings are produced using much less pressure, with this process used mainly for the manufacture of large structural parts. Components produced using this process are likely to have thick walls with a lightweight design.

Blow Mouldings

Designed for creating hollow objects, blow moulding sees molten plastic blown into the cavity of a mould with the air pressure forcing the material to the sides of the cavity forming the desired shape.

Gas Assist Mouldings

Developed to counteract the risk of sink marks following material contraction, gas assist moulding utilises nitrogen which is injected into the molten material centre once it has been poured into a mould cavity.

Vacuum Forming

Using sheets of plastic as the workpiece, each sheet is heated to a set temperature before being stretched onto a mould. A vacuum then forces the plastic against the mould and left to cool.

Compression Mouldings

Ideal for more complex parts and working with advanced composite plastics, the compression moulding process introduces molten plastic into an open die cavity. Closed with a top plug, the mould is then compressed, forcing the material into all areas of the mould and forming the desired shape.

Film Insert Mouldings

Designed to incorporate labelling and graphics into the moulded component, film insert moulding produces products of extremely high durability and offers scratch resistant coats, as seen in car radio fascia's and mobile phone covers.

Powder Metallurgy & Extrusion Moulding

Taking plastic alloy powders, these are mixed together and compacted into a die before being heated and forming the desired shape through the metallurgical bonding of the particles.

Ideal for tube shaped products, molten plastic is forced through a frame or pattern, creating the desired shape as the material works its way through the die.

Our Guarantee of Quality

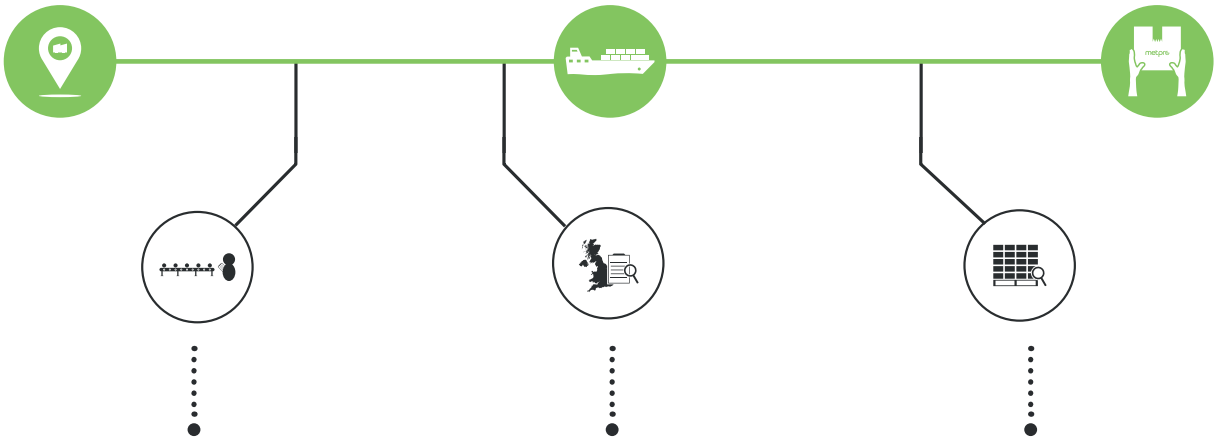
Quality has always been at the top of our agenda.

Working with customers across an ever-expanding array of sectors & industries, we operate to the strictest controls at all times.

Our quality control operation has been designed to offer confidence and security, with our customers only moving forwards on a project when they are 100% happy.

With a dedicated team of engineers based both overseas and at our head office in the UK, we are present at every stage of the manufacturing process to ensure your products are made correctly and in line with the agreed specifications.

How our QC operation works



Quality inspection in country

We directly employ qualified engineers overseas who carry out ongoing inspections during batch production of all Demon Cato manufactured products.

Our on-site employees also ensure that all Demon Cato partner factories are operating ethically and in accordance with the latest global standards.

First quality inspection

Following the production of bulk stock, our on-site engineers produce a quality report and decide whether or not product should be shipped. In the event of no shipment, we will enter a resolution planning scenario, with product only released following customer approval.

Our UK quality team review this report and it is their final decision as to whether product is suitable for shipment.

Final quality inspection

Upon receipt of stock to our UK distribution centre, all products receive a batch inspection in accordance with our ISO9001 approval.

By undertaking rigorous quality checks, we ensure all products maintain the quality standards our customers expect.

Our In-House Quality Equipment

6 Axis Faro Gauge Arm

Portable 3D coordinate measurement system with a working range of 1.2m and measurement accuracy of 0.018mm.

XRF Materials Analyser

Handheld device designed to confirm material specifications, RoHS compliance and more.

Manual Gauges

Vernier calipers, depth gauges, height gauge and gloss meter utilised in a wide variety of our quality control activities

Swift Microscope

Microscope vision system designed to ensure maximum accuracy with the touch of a finger.

Load Testing Facility

Our bespoke apparatus allows us to carry out ongoing internal tests for continued confidence.

Which Metal Is Right For You?

When it comes to your products, choosing the right material is paramount to ensure the desired look and functionality are achieved.

Our material selector below is designed to offer an insight into the features & benefits of the most common materials. If you would like to discuss these options or any alternative materials you have in mind, please do not hesitate to let us know.

Steel

- \+ Cheapest material
- \+ Caters for many requirements
- − Easily rusts
- − Can be difficult to cut

Stainless Steel

- \+ Offers the best corrosion resistance in the class
- \+ Ideally suited to specialised environments
- − Very heavy
- − Difficult to work with
- − Expensive

Aluminium

- \+ Versatile & lightweight
- \+ Offers good corrosion resistance
- \+ Easy to work with
- − Can be expensive
- − Difficult to weld for beginners

Brass

- \+ Overall easy to work with
- \+ Very good corrosion resistance
- − Hardens quickly

The four properties: common metals

	Steel	Stainless Steel	Aluminium	Copper
Ductility/ Formability	Medium	High	Low	Very High (if annealed*)
Weldability	Easy	Medium	Hard	Very Hard
Machinability	Medium	Hard	Easy	Very Hard
Tensile Strength	Medium	High	Low	Very Low
Weight	Medium	Heavy	Light	Medium

***Annealing:** a heat treatment designed to alter the physical and on occasion chemical properties of a metal in order to make it more workable.

Additional Services & Support

Full turnkey solutions

We support our customers from enquiry through to stock on their shelves

Tailored solutions

Our offering is designed around you and the needs of your business

Reduce your working capital

By utilising our warehouse & distribution centre with no upfront payments

Global Manufacturing

Working with us gives you instant access to our global manufacturing network

In-house Knowledge

Our team have over 100 years' combined manufacturing experience

Product & Design Support

Our team can offer technical insights & create prototypes of your product

In-depth stockholding

Your stocks are kept healthy with at least 3 months demand readily available

Bespoke Finishing

We are able to offer colour-coded RAL finishes as desired

Fully Accredited

With UKAS calibrated equipment & our ISO9001:2015 certification

Logistics Support

We offer a full end-to-end solution to suit our individual customer requirements

Frequently Asked Questions

Intellectual Property is of the utmost importance to our business. Who would own the product should we decide to work with Demon Cato?

As with all our OEM customers, your products remain just that; yours.

I can currently order my products as I need them and get them within the suppliers normal lead times.

As we manufacture all products in Asia, we work with our customers to determine safe stock levels which cater for average monthly usages as well as potential peaks & troughs. Demon Cato agree to maintain a minimum of 3 months stock on our shelves at any time, so you can be confident that when you need your product, we can supply.

Will Demon Cato be cheaper than our current supplier?

In our experience, even when compared with local UK suppliers, we have been able to offer our customers a cost saving. Demon Cato customers also benefit from utilising our 60,000+sq/ft warehouse, reducing their working capital and meaning they only pay for their products following delivery.

We have concerns regarding intellectual property of our product and security of product and company information, how would this be controlled?

With all our OEM customers, we operate under strict non-disclosure agreements, including with our manufacturing partners to ensure confidentiality is maintained from the very beginning and at all levels of the supply chain.

We have concerns dealing with manufacturers in Asia if problems are found with the product supplied.

Demon Cato are the manufacturer of all products and therefore take full legal responsibility for any issue caused during the manufacturing process, giving 100% piece of mind to our customers.

What if samples are not made to the standard required?

The only commitment we need to start tooling and the sampling process for your parts would be a purchase order. Until samples are submitted and approved, no further commitment is required.

Do you offer design support?

Yes. Our in-house team are able to provide technical drawing, 3D modelling and 3D prototyping services to suit your needs. We are also able to provide feedback and suggestions on your products before moving to the sample stage or for redevelopment purposes.

What software do you use during your design and engineering offering?

We use the latest Solid Works software for all our product design and simulations. An incredibly powerful tool, Solid Works enables our team to create accurate 3D models of your product, as well as photo-realistic renders and stress tests on any critical areas.

Contact Us

We would welcome the opportunity to work with you and if you would like to discuss how Demon Cato can help your business, please contact us using the below information.

0121 552 2100

sales@demoncato.co.uk

Alternatively, if you would like to arrange a face-to-face meeting or visit our premises to see our operation, please let us know and we would be happy to accommodate you.

Sending us an enquiry?

In order to provide you with the most accurate quotation, please provide as much of the below information as possible:

A brief description of what your product/component is

Where your product/component is currently being sourced

The expected annual usage of each product/component

Your desired material

Any industry standards your product must meet

Sending us product files?

We accept most major file formats including:

IGES, DXF, DWG, STEP, ACIS, STL, Parasolid, PDF and VDA.

We are able to work with both 2D and 3D files in order that we can best advise and quote you on your products.

Demon Cato Online

We offer a bespoke online portal for all our Demon Cato customers from which you can review the following information:

Live stock levels

Replenishment stock levels & expected availability date

Your pricing

Pack quantities

Technical documents

Accessing your portal also allows you to place orders online and review your order history with Demon Cato.

We are able to set you up with Demon Cato Online at any time, whether at the beginning of our relationship or further down the line.

If you would like more information on our online offering or for a demonstration, please do not hesitate to contact us and we would be happy to assist.

Demon Cato Innovations:

An Overview

In addition to our bespoke OEM service, we also conceive, design and manufacture innovations designed for the construction industry.

Working exclusively with our electrical wholesale Demon Cato Partners, these new & exciting products are designed for the contractor, offering significant labour savings and greater on-site safety, as well as much more.

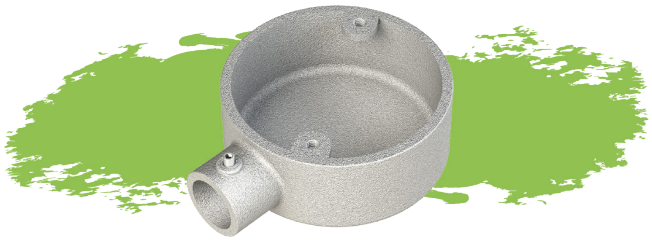
To understand more about our Demon Cato innovations, please see an overview to the right and feel free to contact us for more information at any time.

If you would like any further information on any of these products or our services, please contact us on **0121 552 2100** or at **sales@demoncato.co.uk**.

We look forward to hearing from you and understanding how Demon Cato can support your business.

Demon Cato Innovations:

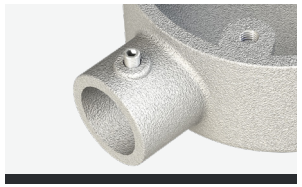
Our Products



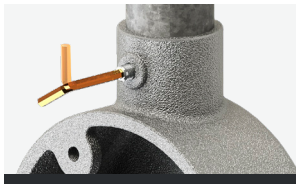
CONLOK

Up to **90%** labour savings

No need to thread conduit tube
With Conlok's unique built-in grub screw



The only fully galvanised system
Offering greater corrosion resistance

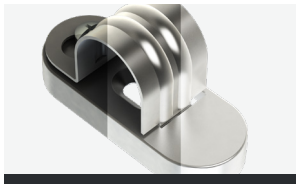


Fast-fix solution
Ideal for major projects where cost & safety are critical

Full range of accessories
Offering all the essential items for quick installations

RAPID SADDLE

Up to **90%** labour savings

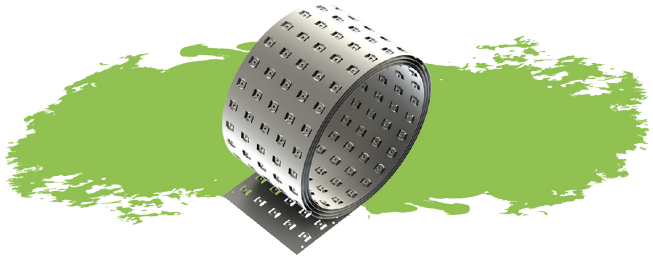


Finishes for all environments
Delta Protekt® 120, BZP, and Clean Room

Greater on-site safety
No dropped screws or straps, ideal for working at height

Holds conduit tube in situ.
Making installations simple, even for a single installer

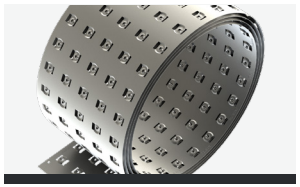
Single screw fixing
Locate the saddle strap & quarter turn to secure



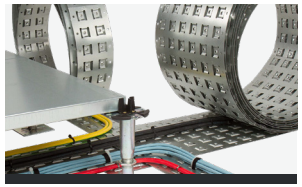
ROLLATRAY

Up to **90%** labour savings

No couplers or brackets required
Easily installed anywhere with a solid surface



15 metre coils roll out in 15 seconds
Available in 3 widths; 150mm, 300mm, 450mm



Flexible fixing arrangement
With Rollatray's innovative raised nipples & snail thread

Simple bends, tees & 4-ways
Crossover Rollatray units & secure with an M6 screw