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WHERE VISION TAKES SHAPE

www.mayoengineering.com

Mayo Engineering Ltd

Excellence in Investment Casting Solutions for Over

S O H

Founded in 1994, Mayo Engineering Ltd is a UK-based leader in providing equipment and services tailored to the investment casting industry. For more than three decades, we have been recognised worldwide for our commitment to quality, innovation, and customer service.

We specialise in designing and manufacturing a diverse range of cutting-edge investment casting equipment. While our website highlights our standard product offerings, we also excel in creating **custom-built machinery**. If you require specialised equipment not featured online, our expert design team, using the latest CAD software, can deliver bespoke solutions tailored to your needs.

Supported by a flexible and experienced manufacturing team, we can handle projects of any scale—from small, specialised units to large, complex systems. Our dedication doesn't end at delivery; we provide **comprehensive after-sales service and support** from our Mansfield, UK office. Whether you need spare parts, maintenance, or technical assistance, our global support network ensures timely and reliable help.

In addition to new and used machinery, Mayo Engineering offers **full consultancy services** for the design and construction of precision foundry facilities, guiding clients from concept through to implementation.

At Mayo Engineering, our mission is clear: to deliver the **highest quality equipment** with **unmatched service and support**, setting the industry standard for excellence in investment casting technology.

OUR HISTORY

A Legacy of Innovation in Investment Casting

Mayo Engineering's story begins with **Raymond Nelson Mayo**, affectionately known as Ray, whose pioneering work left an indelible mark on the investment casting industry. Ray's journey started in 1946, shortly after World War II, when he entered the field as a design engineer. During his early career, he had the privilege of working alongside **Sir Frank Whittle**, the renowned inventor of the jet engine.

Ray was among the first engineers in the UK to embrace the **investment casting process**, which had recently been introduced from the USA. Over the years, he gained invaluable experience working in various foundries before taking leadership at the **Grubber Lost Wax Foundry** in Hemel Hempstead in 1958. In 1967, driven by his passion and vision, Ray went on to establish his own foundry: **Maycast Precision Products Ltd.**

Continuing his father's legacy, Peter R. Mayo, born in December 1963, grew up immersed in the world of investment casting. With a career spanning more than 37 years, Peter has become a globally recognised authority in the field, particularly in wax and ceramic core injectors. His unparalleled expertise in investment casting machinery, valuations, and foundry asset disposals has positioned him as one of the industry's most respected figures.

The Mayo Engineering story, however, is not just about individuals. Our success is built on the dedication and skill of the entire team. Alongside Peter, valued colleagues including **Rajesh Patel, Tim Whittaker, Stuart Virgo, and Tracy Bialecki** contribute their unique expertise, strengthening our reputation and driving innovation forward.

Together, we honour the legacy of **Ray Mayo** while continuing to shape the future of investment casting through excellence, innovation, and a commitment to our customers worldwide.



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CERAMIC & SOLUBLE CORE

Mayo - C type Ceramic and Water-Soluble Injectors

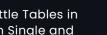
Ceramic or Soluble Wax Tank Between the Frame Type are primarily designed for two purposes, firstly, to have a very short wax injection path, which enables the injection of all wax types, including the very latest high filled water-soluble waxes, and secondly to be as compact as possible, meaning smaller overall footprint size, thus taking up less space in the ceramic/wax shop.

In this format, we also offer the Mayo All-Rounder, a ceramic/water soluble wax injector that can inject both wax carrier ceramic materials, as well as all wax types.

In all cases, these machines are available in clamping forces from 10 to 100 tonnes.

These include...

Various wax
Tank Size Options



Shuttle Tables in ←→ both Single and Double Acting



Auto Die Auto Die Clamping

Wax Tanks

Hot Swappable





CERAMIC & SOLUBLE CORE

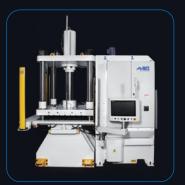
Mayo - 4 Column Ceramic and Water-Soluble Injectors

Our 4 column machines are designed to be as small as is possible and utilize our new and improved Ceramic or Water-Soluble injection system, developed by us over many years, which on our smaller 4 post machines, features a very short path from the Ceramic or Soluble Wax tank base to the tip of the nozzle, this enables the machines to inject all ceramic/wax types.

Our smaller 4 column machines are often available from stock, also designed to be as compact as possible, simple to set up, featuring state of the art controls, and user-friendly operational features.

Our larger 4 column machines are custom built to suit a customer's application and can feature wax tanks up to 500 litres capacity, and up to 100 litre maximum single shot size.







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WAX ROOM

Mayo - C type Wax Injector

Are available in two main configuration types...

Wax Tank Between the Frame Type are primarily designed for two purposes, firstly, to have a very short wax injection path, which enables the injection of all wax types, including the very latest high filled water-soluble waxes, and secondly to be as compact as possible, meaning smaller overall footprint sizes, thus taking up less space in the wax shop.

In this format, we also offer the Mayo All-Rounder, a wax injector that can inject both wax carrier ceramic materials, as well as all wax types. In all cases, these machines are available in clamping forces from 10 to 100 tonnes.

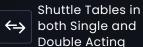
Wax Tank Outside the Frame Type are designed to give greater flexibility, this enables the machine to be more flexible in terms of design and what features the machines are fitted with.

These machines are available from 10 to 100 tonnes clamping force, with various optional features available,

These include...

Various Wax

Tank Size Options





Auto Purge :: Nozzles

Wax Tanks

Multiple Fixed



Auto Die Clampina

Wax Tanks

Hot Swappable



Auto Wax Delivery Systems



WAX ROOM

Mayo - 4 Column type Wax Injector

Our 4 column machines are designed to be as compact as is possible, and utilize our new and improved wax injection system, developed by us over many years, which on our smaller 4 post machines, features a very short path from the wax tank base to the tip of the nozzle, this enables the machines to inject all wax types, including the very latest high filled water-soluble waxes.

Our smaller 4 column machines are often available from stock. designed to be as compact as possible, simple to set up, featuring state of the art controls, and user-friendly operational features.

Our larger 4 column machines are custom built to suit a customer's application and can feature wax tanks up to 500 litres capacity, and up to 100 litre maximum single shot size.







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MAYO - WAX MELTING & CONDITIONING TANKS

Mayo Engineering Ltd manufacture a range of small to large capacity wax melting and conditioning tanks, our large wax tanks provide a scaled-up solution for customers in need of substantial melting capacity.

Available in capacities ranging from 20 Litre to 500 Litre, these freestanding melters are designed to be as efficient as is possible. Equipped with a heated tap/wax drain valve for easy pouring, our Large Capacity Melters streamline the wax melting and conditioning process, saving time and effort.

The strategic positioning of the tanks heater elements, ensures flexible use at different capacities, without the risk of overheating, guaranteeing consistent performance and reliable operation. As well as our fixed tanks, we also offer a range of Mobile Wax Tanks, with pumps and heated wax delivery hoses.







MAYO - WAX MELTERS & WAX TRANSFER SYSTEM

Mayo Engineering also provide a range of Rapid Wax Melters, and Wax Transfer Systems including Mobile Wax Tanks with heated hoses and wax pumps, to Factory Fitted Fixed Wax Distribution Systems.

We also now provide the Mayo designed dedicated add on Rapid Soluble Wax Melter, which utilises a unique system for creating an even flow of melted water-soluble waxes of all types.











MAYO - HOT PLATES

Mayo Engineering Hot Plates provide a solution to wax heating during the wax assembly process. These are engineered with solid state controls, thick heat distribution plates, and insulated frames and covers.

The Mayo Hot Plates are designed to provide many years of trouble-free service.







SHELL ROOM

MAYO - Robotic Shelling System

We offer a range of automated shelling systems supplied as a full turn key solution.

Every system is tailer made to meet our customers precise needs, and can include single or multiple robots, drying systems, environmental control, and a complete range of slurry tanks and stucco application equipment.

Our team can design a system to fit even the smallest of spaces.

We also offer upgrades to existing systems from any manufacturer, so if you shelling control is outdated, we can upgrade it to the latest Mayo shelling software and control



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SHELL ROOM - MAYO - HIGH SHEAR MIXERS

We provide a wide range of Slurry Pre-Mixing High Shear Mixers; these are designed for the stabilisation and premixing of investment casting slurries. Our High Shear Mixers are available in a range of designs, with various tank sizes available. All our High Shear Mixers are electronic variable speed, with various impellor designs available, explosion proof electrics also can be provided as an option Slurry plays a vital role in the investment casting process, and it must be mixed correctly or it can affect the efficiency and effectiveness of the shell manufacturing process. With this in mind, all Mayo High Shear Mixers are engineered for dependable, efficient, and consistent mixing.

Additionally, our slurry transfer and dosing systems provide an efficient solution for slurry transfer and replenishment. If you need a slurry pre-mixer, we offer a mixer tailored to meet your needs.











MAYO - SLURRY TANKS

The Mayo Engineering range of rotary drum Slurry Tanks are designed for reliable, efficient, and consistent mixing of investment casting slurries.

Standard diameters range from 300mm to 2000mm, with depths from 300mm to 2000mm. The tanks and manufactured from stainless steel with a robust mild steel support structure, all our slurry tanks are designed with longevity and reliability in mind. Safety and ease of maintenance are paramount. Our tanks are fully enclosed to ensure secure operation and feature easily detachable cover assemblies which enable convenient access to components during maintenance. Equipped with either single of double mixing blades, depending on the actual tank size, our tanks enable precise control of slurry temperature even under critical process conditions Various options are available, from water cooled mixing blades, to nylon tank liners and built in auto viscosity check systems.









MAYO - SAND RAINERS

Rotary Barrel Type & Tower Type

Mayo Engineering produce two types of Rain Sander, these comprise of Rotary Barrel Type and Tower Type, both designs provide an even stucco coverage during the stucco application process. In both cases, these are available in a wide range of sizes and specifications.

Optional dust extractors and explosion proof electrics are also available.

All Mayo Sand Rainers are engineered for semi or fully automatic operation, and they are all equipped with the Mayo Lump-Gone system which removes unwanted stucco agglomerations.

Our Rotary Sanders are available in standard diameters ranging from 1000mm to 2500mm, and depths from 1000mm to 2500mm, and all our Sand Rainers can be customized to suit your specific production requirements. The variable speed control feature on our rotary sanders allows you to adjust the sand fall to match the needs of each specific mould, ensuring precise application. To minimize dust emission, an optional extraction system is available. For ease of maintenance, removable drip trays are incorporated, facilitating routine upkeep, and ensuring continuous optimal performance.

Our Mayo Tower Type are available with both chain and bucket conveyors or Archimedes screw stucco lift systems, and they are available in a range of sizes from 750mm cubed working area upwards.











MAYO - FLUIDIZED BEDS & BLOWERS

Mayo Fluidized beds represent a solution for rapid and efficient stucco coating in the shell manufacturing process. They facilitate the swift buildup of shell thickness, making them ideal for shells with intricate geometry. Moreover, fluidized beds boast a smaller footprint compared to equivalent rainfall sanders, making them invaluable in environments where space is limited.

Our Fluidised Beds are available in a range of sizes from 300mm diameter and depth, up to 2000mm diameter and depth, with the sizes generally made to match those of the slurry mixers they will be paired with.

All Mayo Fluidized Beds feature multiple plenum zones, the number of which is dependent on the size of the Fluidized Bed, this facilitates the uniform distribution of pressurized air across the entire bed area.

A sensor integrated into the pressure plenum interfaces with the control system to ensure the bed operates at the correct pressure. If conditions are not met, in robotic application, the dipping of the shell is prevented.

Various types of high-volume low-pressure blowers are available, matched to the specific fluidized bed size and media type. The blowers we use are equipped with fixed or variable flow control to optimise fluidisation and minimise temperature build-up in the stucco.

For dust containment, a built-in dust collection hood is a feature on all Mayo Fluidised Beds, and we also supply a wide range of dust extractors as required.

MAYO - AUTO BELT GRINDERS

Mayo High Speed Automatic Belt Grinders are currently under development for the rapid removal of ingates from steel investment castings. Based on the "Speedigrind" and "Power Grinding" designs which have been proven over 40 years, the New Mayo machines features auto tables and clamping, with either the Up-Down or In-Out table system as well as reciprocating system for the abrasive belt, which rapidly increases belt life Our Auto Belt Grinders are available in 25hp, 50hp and 75hp versions.

POST CASTING

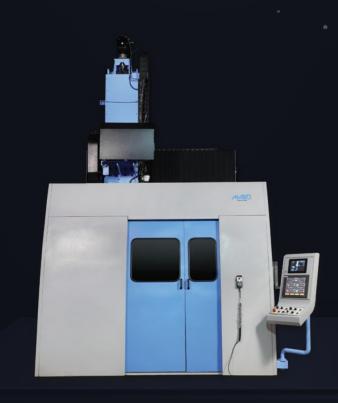
Mayo – Abrasive Disc Cut Off Machines

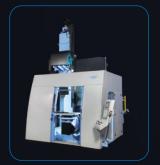
Mayo Abrasive Disc Cut Off Machines have been designed by our engineers to provide an advanced cost-effective solution to the cutting off of a wide range of steel investment castings by the abrasive disc process.

Our "Small" Auto Cut Off Machines are for cast trees of what we would call standard size commercial type steel castings, with each machine being tailored to suit customer specific applications.

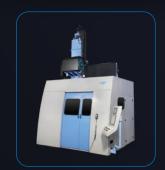
Our "Large" Auto Cut Off Machines are purpose designed for large turbine blade industry applications, featuring multiple axis cutting with advanced mould clamping and manipulation, the state-of-the-art control system is highly sophisticated.

Special build machines are also available for a wide range of applications, including automatic bar stock cutting systems.











MAYO - KNOCK OUT MACHINES

Mayo Knockout Machines have been developed to provide a high frequency vibratory system for the effective removal of ceramic material from cast shells.

Our Knockout Machines utilise a vertical hammer, which is both moved up and down, and held against the cast shell pneumatically. Our Knockout Machines are encased within a purpose designed sound deadening cabinet. Various options are available, including shell loading manipulators, pneumatically raised doors, waste shell conveyors etc.









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MAYO - WATER BLAST CABINETS

Mayo Engineering have used their considerable investment casting process experience to design a range of Water Blast Cabinets for Shell Removal.

These are in the main used by Blade, Turbo Wheel and Aluminium investment casting foundries.

The system comprises of 3 main parts...

Firstly, the Mayo Blast Cabinet, this is a stainless-steel cabinet with a both rotary and 60° tilting table, the actual water blasting operation is via the unique Mayo System 3 Blast Heads.

Whereas in the past this type of cabinet has one gimble mounted manual blast lance, which our latest design cabinets also have, but we have a further two automatic blast lances as well, so 3 water blast positions in all.

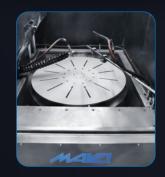
Secondly, the Mayo Pump Unit, this comprises of a skid mounted pump and motor assembly, coupled and tailored to the blast cabinet size, for example our 1500mm x 1200mm x 1200mm Blast Cabinet is coupled with an 11kw 150bar Speck-Triplex Pump.

Thirdly, the Mayo Water Recirculation Module when selected, is designed to enable the Mayo Water Blast System to operate using recirculated water, and thus is both better for the environment, and cheaper to operate water costs wise,

The module comprises of a special designed unit that removes all but the most miniscule of shell particles.









SPARE PARTS

We can provide spares for any machine we have sold new over the past 30 years, regardless of make. We do hold certain common spares in stock at our Mansfield UK headquarters, and if its not a stock item you need, we will work as fast as possible to get you the parts you need.

SERVICE SUPPORT

From our Mansfield UK headquarters, we offer service support for all the new machinery we sell, and all the new machinery we have sold over the past 30 years, regardless of make. Our trained team of technicians can deal with all support requests, from a simple machine service through to machine upgrades.

We also provide a comprehensive range of Service Contracts, tailored to a specific customer requirements.

REMOTE SUPPORT

All new machines we sell, that feature a PLC touch screen, are enabled for 24-7 factory online support, often an issue with a machine is a simple setting, and here this gives our customers the ability to have one of our factory trained technicians online to deal with the issue quickly and effectively.

INVESTMENT CASTING CONSULTANCY

Over the years we have set up many new investment casting facilities on behalf of our customers, from commercial parts through to aerospace, and blades, be its steel, yellow metal or aluminium, if you need process support, we can help, from building to design and layout, equipment supply, process technology, to hand over and ongoing support.

USED EQUIPMENT SALES

Mayo Engineering are widely respected worldwide as the company to go to for used investment casting machinery, we also buy anything investment casting machinery related. In addition to simple buying and selling, we offer to sell any equipment you may have on a commission basis, from a single machine to a complete foundry, and with complete foundry sales, we also sell equipment for all foundry processes.

YALUATIONS

For many years, Mayo Engineering have been widely involved with valuing assets for banks, finance companies, loss adjusters, and accountants Should our asset valuation service be of interest to you, contact us to discuss how we can help.

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