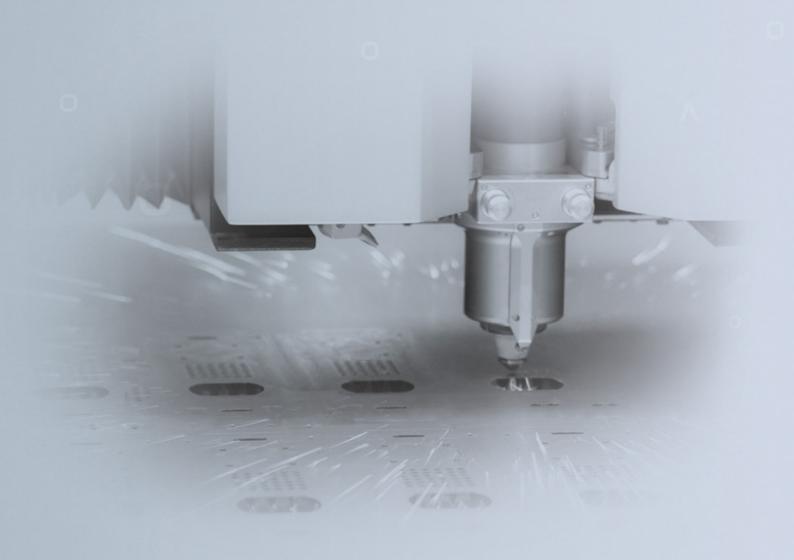




we redefine

General Engineering



We're the UK's leading experts in providing effective and efficient processes, and solutions, for the general engineering industry.

we redefine:

Vibratory Finishing

High Energy Finishing

Consumables

Precision Polishing

Subcontract Services

Why Choose Us?

We're a family run business that pride ourselves on working as a strong, unified team of specialists.

We believe in British

Born in the United Kingdom, we are unique in our product design and the manufacture of our specialist machines and consumables.

We're here for you

Being based in the heart of the country means we have easy access to all of our clients.

We have experience

With five decades of experience and knowledge in the finishing industry, we know what works for you.

We provide options

We have an impressive range of media and compounds to choose from, including one of the best polishing compounds in the market. We also provide a wide range of machinery and subcontract services to meet all of your needs.

We go the extra mile

We'll tailor our services to your needs, not the other way round. Our service is all about you.



What is Mass Finishing?

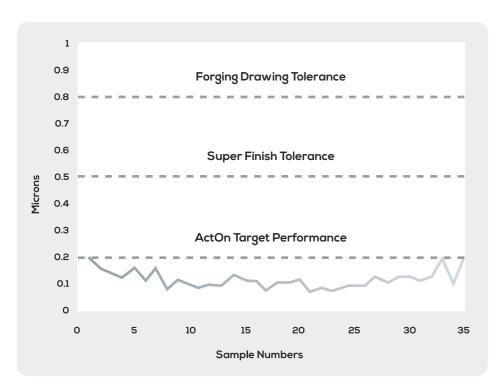
Mass finishing is a process that automates the mechanical and chemical finishing of various shaped parts. This is a stage in the manufacturing process of components, which allows large numbers of parts to be finished simultaneously.

The aim of this process can vary based on the type of application, which include:

- high stock removal
- ✓ deburring
- descaling
- ✓ removal of machining lines
- removal of surface defects
- radius formation
- super-finishing

The processes can be configured as a batch system or a continuous system. Parts that are processed using a batch system will be loaded into the machine, processed and unloaded before the next batch is ready. A continuous system is where the parts are loaded at one end, and come out at the other in the finished condition.

By combining our complete process knowledge with decades of experience, and our all-encompassing range of machinery, we can deliver the most optimum, cost-effective and environmentally friendly finishing solution for your needs.



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Man \times Machine \times Media = M^3

Almost all manufactured components have experienced some surface improvement, to ensure that these are in an acceptable condition for the end-user.

We understand the importance of surface finishing for components, and have worked closely with major manufacturers in the general engineering industry to adapt and develop finishing solutions that meet their stringent requirements. It has been proven that the solutions we've developed have benefited the industry by reducing processing times and producing a repeatable and quality product.

Surface Finishing is Critical in Keeping Manufactured Components Repeatable.

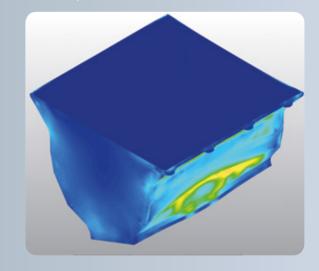
Manufacturing companies usually implement mass finishing techniques in their processes for the economic advantages, and the consistent results achieved. Manual finishing processes are known to be labour intensive, with the disadvantages of rework and high rejection rates, and inconsistent results. Having identified the issues, we offer a wide range of unique solutions that improve current processes, achieving the repeatability and quality desired by general engineering companies.

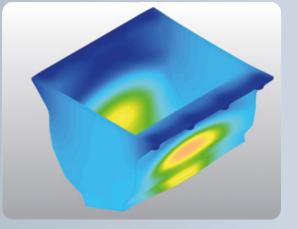
ActOn Research and Development

We are continually evolving our processes and machines, making them more effective. We also have academic connections throughout the United Kingdom and around the world, who help facilitate our Research and Development department, where we house various metrological equipment to ensure that our customers' requirements are met and exceeded.

With projects involving modal and dynamic FEA analysis of our finishing machines, and the persistent gathering of empirical data on our various compounds, media and machines, we strive to design and optimise everything we do to a high standard.

FEA Analysis

























 $Man \times Machine \times Media = M^3$

Products we redefine

Here are just a handful of products that we can help to perfect.

Click <u>here</u> to request your Free Trial today!







Component	Output Required	Machine Type	Deburring Media	Media Type Polishing Media	Drying Media	Compou Deburring	und Type Polishing	Typical Process Time
Aluminium Petrol Pump Cover	Deburring		0			0		90 mins
Mild Steel Buckle	Deburring and Polishing		0	0	0	0		150 mins
Steel Fastner	Cleaning and Deburring		0			0		240 mins
Copper Tubes	Remove Oxides and Polish			0			0	120 mins
Steel Bore Head	Deburring		0			0		90 mins
Steel Ander Gauge	Deburring, Descaling and Achieve an Ra Value Between 0.28µm and 0.26µm		0			0		35 mins
Steel Collet	Remove Sharp Edges Between Component's Slots		0			0		240 mins
Diamond Cutters	Remove Stains and Mirror Finish			0			0	30 mins
Stainless Steel Scissor Blade	Deburring and Polishing		0		0	0		300 mins
Brass Lock Cover	Scratch Free and Bright Finish			0	0		0	120 mins
Stainless Steel Latch Plate	Remove Heavy Burrs		0		0	0		15 mins
Stainless Steel Shelf Bracket	Deburring and Bright Finishing		0	0		0	0	200 mins
Aluminium Annulus Filler	Deburring and Surface Improve		0			0		30 mins
Stainless Steel Textile Reed	Deburring		0					15 mins
Aluminium Upper and Lower Receiver	Removal of Scale and Polishing			0	0		0	45 mins
Brass Stampings	Graphite Removal and Polishing			0	0	0	0	35 mins

Bowls

Each of our Bowls are simple to operate and highly efficient, manufactured in classic designs and sizes to meet your unique applications.

Key Features

- ✓ Wear resistant casted hot cured polyurethane lining✓ Acoustic lid for noise reduction

Key Benefits

- ✓ British high-quality product
 ✓ Durable machine due to design, good quality materials and workmanship knowledge
 ✓ Very quiet machine in operation due to the acoustic lid
 ✓ Wear-resistant lining
- ✓ Wear-resistant lining✓ Easy to operate✓ Low maintenance

Troughs

of length and width combinations, making them one of our most versatile. These are particularly useful for larger components.

Key Features

- ✓ Single and variable speed drive
- ✓ Single and variable speed arrive
 ✓ Powerful drive system with sealed bearings for maintenance-free running
 ✓ Unload door for complete discharge of media and parts

Key Benefits

- ✓ Simple to operate and highly efficient
 ✓ Durable machine due to design, good quality materials
 and workmanship knowledge. and workmanship knowledge

 Very quiet machine in operation due to the acoustic lid

 Wegg-resistant lights

- ✓ Low maintenance
 ✓ Suited to small and large volumes of parts
 ✓ Accessible process chamber
- ✓ Accessible process chamber
 ✓ Large systems can be built for continuous operation
 ✓ Easily automated











Duals

Key Features

Key Benefits

Driers

Key Features

Key Benefits







Man \times Machine \times Media = M^3

Vibrota Finishing Range

We offer a range of Vibratory machines, including: Bowls, Troughs, Duals and Driers. These machines are suited for processing both small and large parts.

Man x Machine x Media = M³

High Energy Finishing Range

Our Centrifugal High Energy machines are part of our High Energy (HE) series which are made with the latest HE technology.

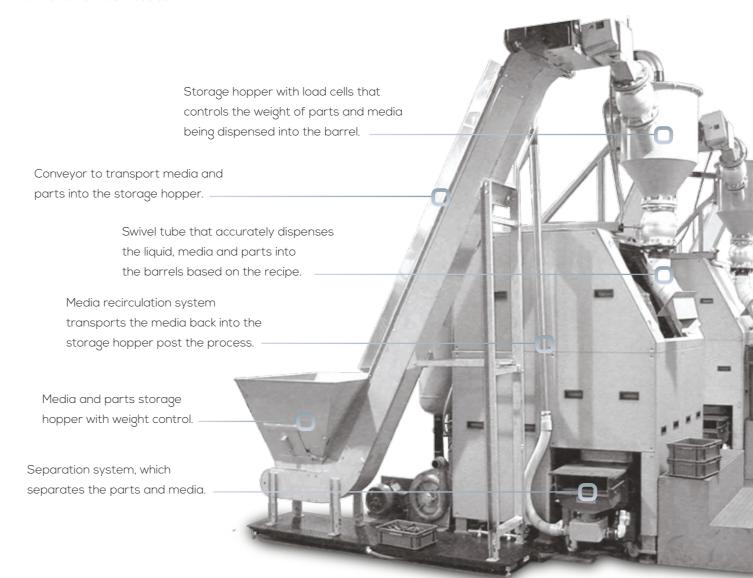
Automation for Vibratory Finishing Machines

The below system was designed to deburr components with 100% separation of the media and parts. The system is PLC operated, ensuring the least amount of operator intervention and guaranteeing consistent results. The main features of the system have been highlighted below.



Automation for High Energy Finishing Machines

The system is PLC controlled ensuring measurements of media, parts and compound are precise and accurate. The system delivers consistent results in short cycle times. The HMI allows the operator to choose the desired recipe and have access to the maintenance schedules.



SPU-1 Vibratory Finishing System

A Single Portable Unit ideally suited for small batch works and delicate components, which can be used as either a batch or a continuous system.

This vibratory finishing system is perfect for deburring, descaling, degreasing, cleaning, smoothing, radiusing, polishing and drying. This is both an excellent and economical finishing option.

VB10P

Vibratory Finishing System

System Benefits and Features

- Portable unit.
- Built in compound recirculation system.
- Water/compound can be filled from the side of the
- Available in 3 phase and 1 phase.

- Compact design
- British built high-quality product
- Efficient in operation

Quiet in operation Operator friendly controls

VB1S Vibratory Bowl Control System Designed with automatic separation system to separate parts from media at the end of finishing process. Components are then discharged to the next sequence of the process to be dried. **VBD1** Drier Components are loaded in the drier via a side loading chute. Design includes heating elements provided to heat the drying media (maizorb) which acts as an absorbent and removes any moisture from the parts **Parts Collection Tray** Independent recirculation system and integrated water filtration. The tank maximum capacity is 30L. Storage Area

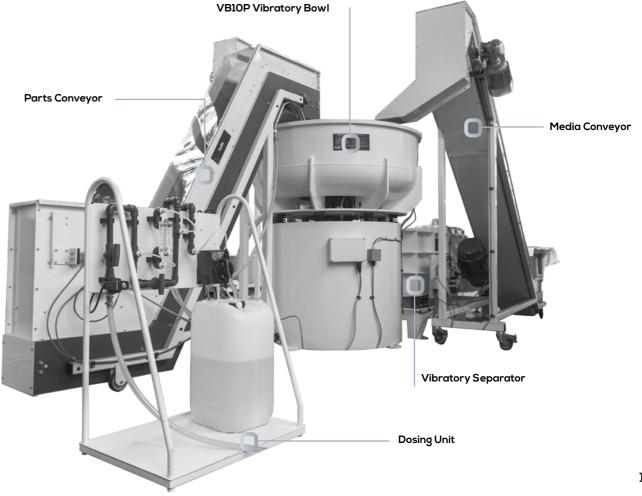
System Description

This vibratory system allows the operator to set up the process parameters and easily control the process. Once the process starts, a set batch of parts are loaded into the vibratory finishing bowl via a conveyor.

At the end of the process the bowl's pneumatic media door opens allowing the parts and media to be discharged in a storage hopper. This stage ensures 100% unload of media and parts from the finishing machine. After the parts and media

have been unload the pneumatic door closes to allow a new finishing process to begin.

The system also includes a vibratory separator which enables the separation of parts from media. The undersized media falls through a separation grid and is filtered from the system, while the rest of the media returns into the vibratory bowl through a conveyor. The finsihed components are transferred from the vibratory separator to a conveyor and discharged in the packing area.



Centrifugal Barrel Machines

Built with the latest High Energy technology, the drive mechanism is designed to produce high g-forces, resulting in shorter process times.

Key Features

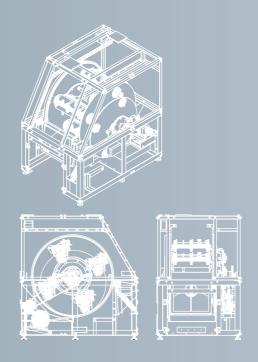
- Media separation system
 Compound and water dosing
- Over temperature detectionUnbalanced weight detection
- ✓ Pressure release valves
- ✓ Reinforced liners

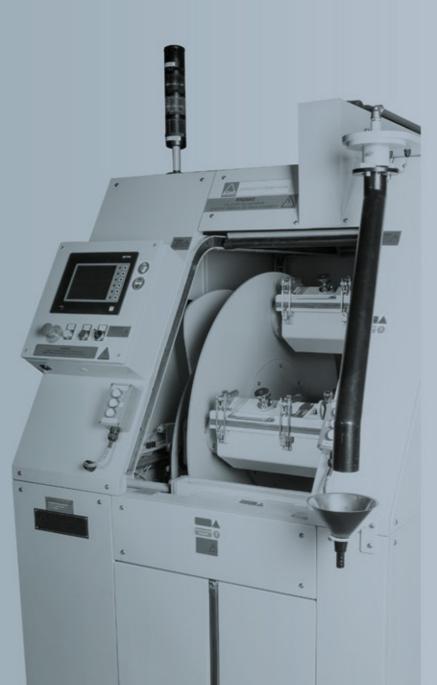
- ✓ Programmable recipes

Key Benefits

- ✓ High polishing efficiency
- ✓ High or low rate of stock removal

- ✓ No need for fixturing or tooling
- ✓ Easy to maintain
- Click <u>here</u> to request a **Quotation today!**





Centrifugal Polishing Machines

Key Features

- ✓ Single phase✓ Portable

Key Benefits



Centrifugal Disc Finishing Machine

The Centrifugal Disc machine is perfect for processing small and thin components as well as larger parts with a length of 150mm. These machines are recommended for processing small to medium batches of parts. One of the main advantages of Centrifugal Disc machines is the reduced processing times for most applications.

Key Features

- ✓ Manual and auto gap area adjustment functionality
- ✓ Temperature sensor to detect high temperature and protect the gap area

 Stainless steel upper and lower ring for higher wear resistance

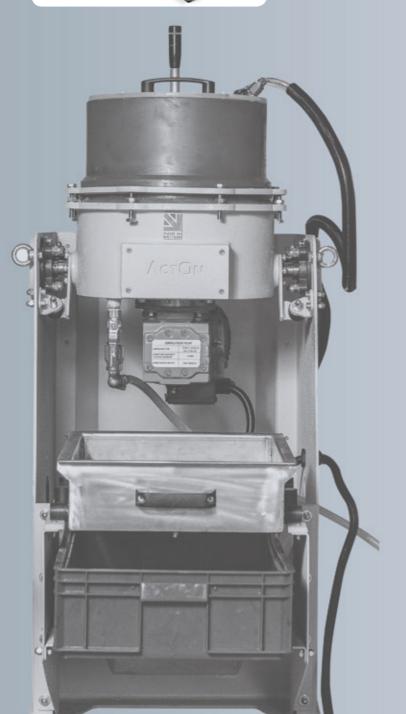
 Manual/ auto functionality

Key Benefits

- ✓ Proudly manufactured in Great Britain



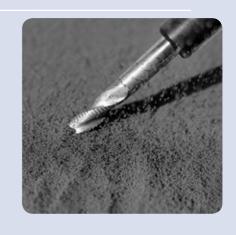




DLyte Polishing Machines

Key Features

Key Benefits









Shot Blasting Range

We offer a wide range of shot blasting machines to help our customers achieve the surface finish they need every time. Whether you require to descale, remove corrosion, mill scale, paint or rust, achieve a smooth finish, deflash, polish or strengthen the metal we will offer you full support every step of the way. Our machinery range includes:

Portable Abrasive Blasting Series

These high quality, robust, user friendly and economical shot blasting machines are hydraulic tested to 250 PSI. The Portable Abrasive Blasting machine can be supplied with or without remote control and dead man

Key Features

- ✓ Automatic filling valve (pop-up valve)
- ✓ Venturi nozzle manufactured out of tungsten carbide
- ✓ High quality blast hose
- ✓ Air filter and pressure gauge

- ✓ Aluminium sand grit valve

ACTON

Wet Blast Cabinets

get when using abrasive shot blasting media.

in which parts are blasted. This is due to the high volume conveying flow.

To clean components in a quick manner, glass beads can be used as blasting media. This will not damage the part's surface, edges and fits.

Key Features

- ✓ Blast nozzle (Tungsten Carbide)
- ✓ 100 Watt light
- ✓ Air filter regulator, pressure gauge
- ✓ Slurry pump and tank
- ✓ Cyclone for mist extraction
- Electrical and pneumatic controlsMechanical ageilator (Anti C104)

- One of the main advantages of these blasting systems is the reduced time

 - ✓ Dust bag housing with manual shaker
 - ✓ A/c drives can be fitted for speed variation

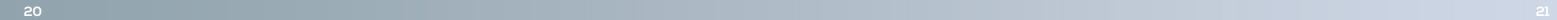
Suction Blast Cabinets

Key Features

Pressure Blast Cabinets

Key Features

Click <u>here</u> to request a Quotation today!



Man x Machine x Media = M³

Consumables

Over the years, we have been at the forefront of the industry, developing a range of specially formulated consumables approved by the general engineering industry.

Working closely with highly skilled manufacturers, our Engineers have understood the numerous challenges faced in the industry and developed suitable consumables.

Choosing the right consumables is crucial in achieving your desired finish, and we endeavour to help you to select the correct media and compounds for your components.

Please refer to our Consumables brochure for more information.



Liquid Compounds

Compounds are very important to the mass finishing process.

An extensive range of specially formulated compounds is manufactured on site, which suit almost any application.

Compounds accomplish cleaning, inhibiting for rust and corrosion of parts, brightening, descaling and degreasing. Often, the compound reduces media costs and reduces process time. All of our compound are biodegradable, too.



Powder & Pastes

A full range of powders and pastes are available, all of which complement the media and contribute to the grinding, cleaning and polishing of ferrous and non-ferrous materials. These products are suitable in freshwater operations.

Plastic Media

Our range of plastic media comes in various grades, shapes and sizes and is specially designed for smoothing processes and removing light burrs.

This media also reduces the risk of part damage, and gives us a consistent, bright and matte finish.



Our ceramic media comes in a variety of abrasive grades, starting from low abrasive to super finishing. This type of media is suitable for various deburring, radiusing and polishing processes, and is specially formulated to go hand-in-hand with ActOn's compounds.

Agro Media

Part of our agro media range is corncob and walnut shell. Both products come in various grain sizes, which are carefully chosen to suit the specific parts. The corncob grains are known to have high abrasion resistance, good moisture absorption, low specific gravity and are employed mainly for drying in the Rotary Driers and Vibratory Driers. Walnut shell is a hard and fibrous material of medium abrasiveness, and is used in both the polishing and deburring processes, as it leaves no scratches or pitting.

Pre-treated Media

All of our agro media comes in a treated, bovine-free form, which is particularly suitable for high lustre or mirror finishes.



Special Media

Our special media includes steel media, a separation ball media that keeps flat parts separate, ensuring they don't stick together



Value Added Service

On top of our state-of-the-art machinery and media, we also supply a range of support and training services.

Learn more on how you'll benefit:

Subcontract Services

High Energy and Vibratory Finishing Services

Our factory is well equipped with High Energy (HE) and Vibratory machines, which are designed and manufactured by our Engineers. The HE machines provide a speedy finishing solution, as well as a high quality finish to the parts, eliminating any need of fixturing and preventing their impingement. Along with the HE machines we also have Vibrota finishing equipment, which processes parts of variable sizes and batch quantities.



Shot Blasting and Peening Services

We offer shot blasting service from our Coventry facility to our customers in the Architectural, Automotive, Defence, Design, Food Manufacturing, Health and Safety, Marine, Steel Manufacturing and Profiling industries. Our service can achieve the desired Sa standards to ensure that the part's surface is cleaned to the specification. our applications include descaling, removing corrosion, mill scale, paint or rust, achieving a smooth finish, deflashing, polishing, strengthen the metal and more.



Precision Polishing

In order to provide you with complete surface finishing solutions, we offer a precision polishing service for components from various industry sectors. In combination with our barrelling capability, you'll benefit in terms of cost, delivery and quality. Our applications include removal of manufacturing defects on femurs and aerofoils, which are inherent in the casting and forging process.

Inspection

Our trained inspectors ensure every component is inspected to the required specification prior to delivery. The inspections can include visual, dimensional and surface finish measurements. Our document controls ensure that all inspections are recorded for traceability purposes.

Waste Water Treatment

During the finishing operation, the effluent can be polluted with oil, media and metal fines. It is critical that the effluent must be treated before going to drain, or if it is being recycled back into the system. Each area or district has its own discharge consent, hence the effluent must be analysed against this.

The effluent can be recycled, however there are certain applications where it is not possible. In that case, the treated effluent can be transferred directly to the drain.

Recycling can save on the significant amount of water and compounds (greater than 90%) used.

We offer a range of flocculants (powder and liquid) coupled with our Centrifugal technology. Please refer to our waste water treatment brochure for more details.



After-sales, Training and Installation

We hire a number of highly trained staff, including engineers, who are on-call for all of your after-sales requirements. From installation and training, to maintenance and prompt professional advice, our finishing specialists are here for you every step of the way.

Click <u>here</u> to request your Free Trial today!



Results

Knives

Grinding and polishing.

The Aim

- 1. To remove linishing lines
- 2. Polish parts

What we did

The first stage is carried out to remove the linish lines in the bowl finishing machine using polishing media and ActOn's Turbocut compound. This compound is recommended for removal of grinding and linishing marks, giving a rapid metal cut-down and levelling, producing a super smooth surface ready for polishing. One of the main advantage of this compound is that it is near neutral.

Once the component surface has been prepared, they are polished in the HD3000 drier along with pre-treated agro media. This media comes in a treated, bovine-free form, which is particularly suitable for high lustre or mirror finishes.



The result

The process delivered a superior surface finish in a considerably reduced time and the dimensional integrity of the part was maintained. The machines and processes delivers consistent results, all linishing lines being removed and the mirror finish being achieved on all knives. The ActOn solution gave a significant cost saving to the customer as all parts were being hand finished.



Collet

Remove sharp edges between component's slots.

The Aim

Remove sharp edges and burrs without altering the geometry of the component.

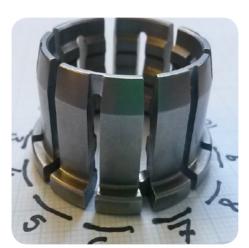
What we did

The finish was achieved in a single stage process, using ActOn's 'I' series bowl finishing machine. The reason for processing the collets in the 'I' series machine was to avoid any part impingement, thus eliminating the risk of damage. Due to the geometry of the part, a combination of two types of abrasive media were used at a 50:50 ratio.

.The size and shape of the media were picked to avoid any media lodgement, whilst ensuring all areas of the component were accessed. Along with the mix of media, an acidic compound was used for obtaining a scale-free and bright finish.



Before



After

The result

The total process time took 4 hours, which was less than what the customer expected. The process delivered a burr free finish while the dimensional integrity of the collet was maintained. The solution delivered by ActOn resulted in a significant cost saving for the customer as all collets were being manually deburred.

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Results

Chain Links

Clean and polish finish.

Diamond Cutter

Stain free mirror finish.

The Aim

- 1. Descale and deburr components
- 2. Uniform polished finish

What we did

To remove the dark stains resulting from the heat treatment process and to remove the burrs from the stamping stage, components were processed using a highly abrasive media along with LQ18 compound which is formulated to remove scale and brighten the component. To achieve a polished finish, parts have been processed with a polishing media and a polishing compound. Due to the geometry of the chain links, the media size used in both stages has been chosen to avoid lodgement.

The result

Finishing the chain links was difficult to achieve in the past by the customer as the burrs were getting folded instead of being removed, and the descaling stage was not always successful. The finishing solution provided by ActOn delivered consistent results in a reduced time, all burrs being removed and the part surface uniformly polished. The customer was pleased with the quality of the machines and consumables that ActOn manufactures.

The Air

- 1. To remove stains resulting from an acidic process, without damaging the diamond.
- 2. To obtain a uniform mirror finish

What we did

To obtain a stain free and polished finish we have carried out a one-stage process, using ActOn's 'I' series bowl finishing machine. The machine dividers enabled processing each diamond cutter separately, avoiding any part impingement. To obtain a highly polished finish and avoid any impingements on the part, a smaller sized polishing media was used in the process, along with a specially formulated polishing compound. The compound is a good cleaner, polisher and corrosion inhibitor.

The result

The processing time was highly improved to 30 minutes, thus eliminating the manual work previously carried out by the customer. The finishing solution provided by ActOn delivered consistent results, removing all stains and obtaining a mirror finish without any damages on the part's surface.







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What Our Customers Say

"It's always been a joy to deal with the team, who are always very thorough and informed."

"Not only do we now have high quality machines and compounds, we also have access to an excellent after-sales service."

"Everyone I've come into contact with has been very responsive and organised."

Quality You Can See

We pride ourselves on our excellence, and over the years we have successfully demonstrated an ongoing compliance with ISO quality and environmental standards.

For ISO, we currently hold:









We're proud members of the 'Made in Britain' campaign.

"The bitterness of poor quality remains long after the sweetness of low price is forgotten."

Benjamin Franklin





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we redefine

ActOn Finishing Limited
213 Torrington Avenue
Tile Hill, Coventry, CV4 9HN.
United Kingdom.

+44 (0) 24 7646 6914

enquiries@acton-finishing.co.uk

www.acton-finishing.co.uk