

**Thomas Dudley Foundry**

Complete casting solutions

JANUARY 2018

**QUALITY ASSURED IRON CASTINGS**  
**PRECISION ENGINEERED IN THE UK**  
**TO CUSTOMER SPECIFICATIONS**

## **WORLD CLASS DISAMATIC FOUNDRY EFFICIENCY OF 99.6% IS WELL ABOVE TYPICAL LEVELS**

*"The numbers are truly outstanding and we believe are also unprecedented.  
Efficiency of 99.6% is well above typical levels. It is impressive that your team  
has moved to a world class Disamatic foundry".*

DISA Industries A/S 2014.



THOMAS DUDLEY PROVIDES A TRUE  
SINGLE SOURCE SOLUTION FOR  
CASTINGS IN GREY IRON, SG IRON,  
AUSTEMPERED DUCTILE IRON AND  
SiMo IN BATCH QUANTITIES FROM  
100 TO 100,000 AND BEYOND.



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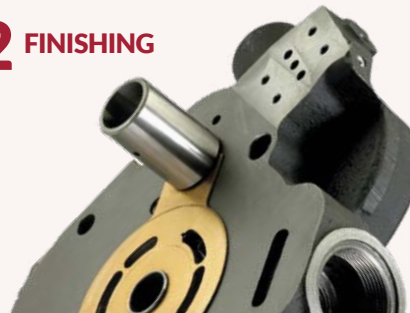
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## THE THOMAS DUDLEY DIFFERENCE A UNIQUELY FLEXIBLE, PEOPLE DRIVEN ORGANISATION

Thomas Dudley provides the complete solution for iron castings up to 120Kg in weight. Backed by the successful Thomas Dudley Group, we are able to call upon unrivalled expertise in the design, development and manufacture of castings.

Our UK foundries and team of engineering specialists are vastly experienced across a broad range of industry sectors and have the capability to produce the most complex cast iron components.



- We have been manufacturing in the UK since 1920
- We are a family owned and managed business
- We have an experienced and award winning management team
- We invest heavily in the latest technology
- Exceptional quality control is employed throughout our business
- We take advantage of advanced processes to offer assured casting integrity
- We provide a financially stable source of supply
- We have full in-house core making, coating and drying capabilities and full in-house pattern making facilities
- Disamatic, Kunkel Wagner and airset moulding lines provide the ability to select the perfect production platform for each casting project
- We have instilled a customer driven culture and approach
- Our Envirofacturing™ initiative ensures we offer an environmentally responsible source of supply

## MARKET-LEADING CASTING SOLUTIONS



### CASTING GRADES

- Grey iron grades BS EN 1561:2011
- SG / ductile iron grades BS EN 1563:2011
- Austempered ductile irons (ADI) and SiMo



### CASTING SIZES

- Disamatic mould sizes up to 750 x 570mm and castings to 30Kg
- Kunkel Wagner mould sizes up to 870 x 650mm and castings to 90Kg
- Airset mould sizes up to 1,400mm x 1,400mm and castings to 120Kg

### CASTING TOLERANCES

- Grey and ductile iron castings to near net shape and within CT9 tolerances

### CORE MAKING

- Full in-house Bianchi shell and Laempe cold box core making, coating and drying

### FINISHING

- Precision drilling, tapping and grinding
- Heat treatment
- Painting, coating, enamelling and other specialist finishes
- Assembly to integrate castings into sub-assemblies
- Bespoke packaging





## THE BENEFITS WE DELIVER

A unique approach that has been proven across thousands of casting projects allows Thomas Dudley to work proactively in partnership with customers to continuously exceed expectations.

As a result, we are able to deliver value-adding benefits that are beyond less flexible foundries.

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*We fully appreciate the response and energy that Thomas Dudley has put into satisfying our requirements which has enabled us to satisfy our customer schedules. We look forward to a continued and growing relationship that will benefit both companies.*

**DYNAMATIC LIMITED UK**





- We offer a technologically advanced, UK based source of supply
- We can work as a strategic engineering partner and extension of our customers' own capabilities
- We can design, engineer and manufacture castings to very short deadlines
- We provide the complete end-to-end service
- We provide a convenient one-stop-shop for castings up to 90Kg (medium to high volume) and 120Kg (low volume and one-offs)
- We manufacture castings in all grades of grey and SG iron alongside ADI and SiMo
- We can provide a comprehensive range of finishing and bespoke packaging services
- We can dispatch castings within 24 hours from stock
- We can provide any required level of engineering support including in-house pattern and core making

## DESIGN AND DEVELOPMENT

Thomas Dudley has established a reputation for providing customers with outstanding design and developmental support.

For each and every project, our engineers will begin by taking time to thoroughly understand the castings that need to be manufactured and any special performance criteria that has to be achieved. If required, they will then develop designs using our in-house facilities.



### DESIGN AND DEVELOPMENT CAPABILITIES

- Advanced Centre for Engineering providing full in-house pattern making and control over the entire development process
- Five seats of SolidWorks
- Four CNC machining centres
- Steinbichler 3D scanning
- Stratasys 3D prototype printing
- Unrivalled expertise in formulating casting designs that optimise customer production efficiencies
- Spectrometer, sand testing, metallographic and physical integrity testing

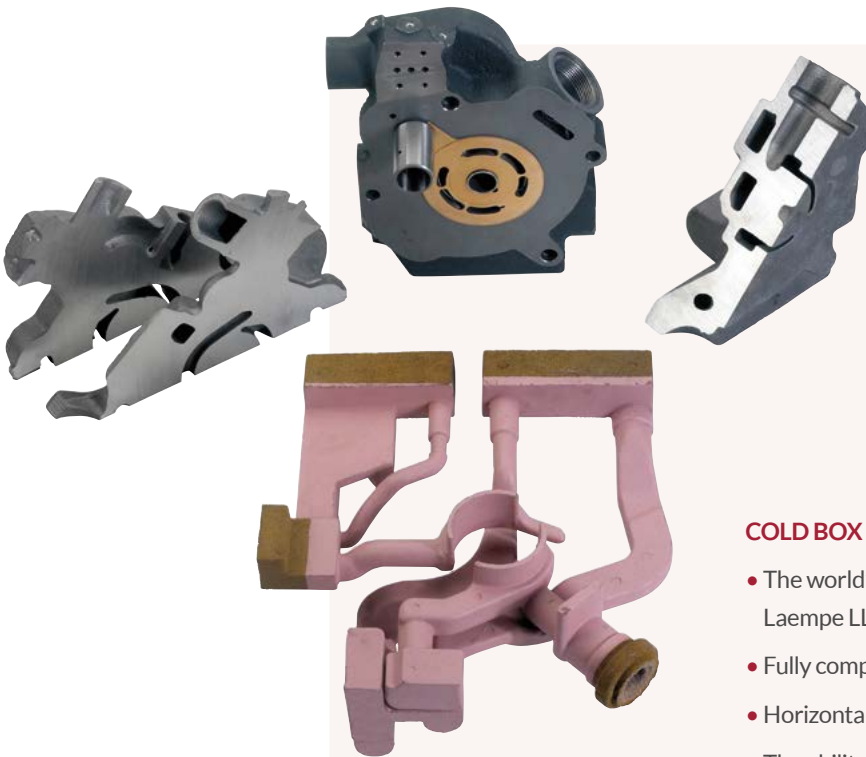




## CORE MAKING

Our core making facilities have been specifically designed to support the production of intricate casting cores to exceptionally tight tolerances.

Robust, market-leading technology is linked directly to our CAD/CAM pattern making capabilities and allows us to produce cores that are used to cast complex and non machinable shaped components.



In addition, we offer customers the reassurance of knowing that we have developed the expertise in automatic venting, low expansion sand, refractory core coating and core drying required to produce quality assured casting cores.

Our detailed understanding of refractory core coating also enables us to engineer castings that are free from sand particles and contaminants. This is an essential requirement for hydraulic spools and other moving components.

### COLD BOX CORE MAKING CAPABILITIES

- The world's most advanced core making technology in two Laempe LL20 machines
- Fully computerised automated production
- Horizontal and vertical box splits for maximum flexibility
- The ability to produce cores with up to five loose pieces that can be automatically withdrawn to eliminate the need to assemble and glue cores
- The use of environmentally friendly binders

### SHELL CORE MAKING CAPABILITIES

- State-of-the-art Bianchi technology
- Fully automated and temperature controlled for complete repeatability
- Specialist expertise in production of thin section, delicate, multi core boxes which are ideally suited to the requirements of the hydraulics and turbocharger castings markets
- Low cost, high volume production
- Rapid grade change for exceptional material flexibility

## MANUFACTURING

Our Disamatic, Kunkel Wagner and airset moulding lines provide a unique production platform that is able to respond rapidly to any casting requirement.

We can manufacture castings in grey iron grades BS EN 1561:2011 and SG / ductile iron grades BS EN 1563:2011 alongside ADI and SiMo. Unlike less experienced foundries, Thomas Dudley can produce the most intricately shaped castings within CT9 tolerances.



Our Disamatic 2110 and 131Z lines were installed in 2010 and 2012 respectively and together, allow up to 750 moulds per hour to be manufactured.

Both Disamatic lines are also fully computerised and capable of holding 9,999 unique pattern recipes. Equipped with automated optical pouring, temperature control and automatic inoculation, they enable casting quality and consistency to be precisely controlled.

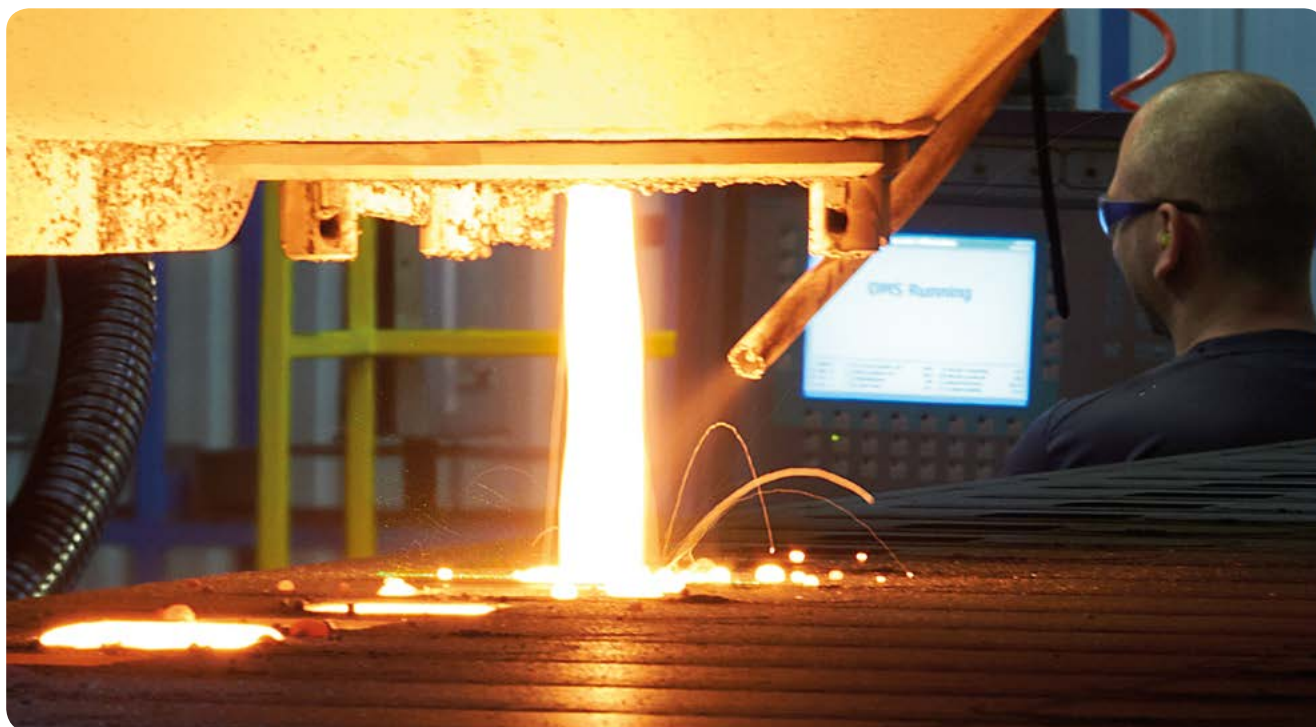


### DISAMATIC 2110 VERTICAL MOULDING

- 500mm x 400mm mould size
- Up to 300 moulds per hour
- Castings to 10Kg in weight
- High pressure +95 Db hardness
- CT9 casting tolerances

### DISAMATIC 131Z VERTICAL MOULDING

- 750mm x 570mm mould size
- Up to 450 moulds per hour
- Castings to 30Kg in weight
- High pressure +95 Db hardness
- CT9 casting tolerances



Kunkel Wagner moulding allows us to automate the production of larger castings that are outside the capabilities of our Disamatic lines.

In addition, our airset facility provides the flexibility to engineer prototypes and one off castings.

**KUNKEL WAGNER HORIZONTAL MOULDING**

- 870mm x 650mm mould size
- Up to 120 moulds per hour
- Castings to 90Kg in weight

**AIRSET HORIZONTAL MOULDING**

- 1,400mm x 1,400mm mould size
- Castings to 120Kg





## FINISHING

Once cast iron components have been produced, our in-house engineering department can undertake a range of precision drilling, tapping and grinding to minimise the manufacturing input required by customers.

In addition, our purpose built shot blasting equipment allows even thin section cast iron components to be accurately prepared.



Furthermore, we can produce sub-assemblies to integrate new cast iron components with existing customer parts.

### OUR FINISHING SERVICES INCLUDE

- Machining
- Precision grinding, drilling and tapping
- Heat treatment
- Chemical cleaning
- Painting, coating, enamelling, galvanising, zinc plating and specialist surface finishes
- Bespoke assembly and packing

## QUALITY

Thomas Dudley is accredited to:

- BS EN ISO 9001 (Quality Management Systems)
- BS EN ISO 14001 (Environmental Management Systems)
- OH SAS 18001 (Health & Safety Management Systems)



Cert. No. FM0614



Cert. No. EMS72025



Cert. No. OHS89327



Furthermore, we are working towards accreditation in TS16949 and are embracing proven techniques such as TQM, APQP, PPAP and Lean Manufacturing.

Robust quality management processes are also employed throughout our business and we have invested in technologies such as ATAS (Adaptive Thermal Analysis System) and Steinbichler 3D scanning to offer assured castings integrity.

## WAREHOUSING STOCKHOLDING AND LOGISTICS

Our in-house warehousing capabilities are located within our West Midlands foundries. Spanning in excess of 35,000 square feet and equipped with cutting edge technology, these facilities allow castings to be manufactured in the most cost-effective batch quantities and securely stored on site.

Castings can then be called off in any required volumes and delivered nationwide to support customer production schedules and periods of unusually high demand. This enables cost efficiencies to be realised without having to tie up resources in stockholding and storage.



This unrivalled flexibility provides the assurance of knowing that castings can be dispatched from stock within 24 hours, at weekends and outside normal office hours.



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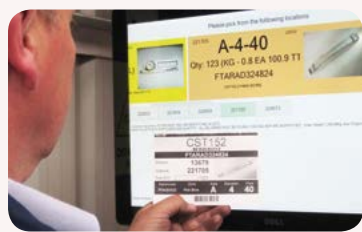
...dispatching castings from stock  
within 24 hours.



## WAREHOUSING CAPACITY & TECHNOLOGY

### WAREHOUSING CAPACITY

- Over 35,000 square feet
- 2,000 individual stock locations



### WAREHOUSING TECHNOLOGY

- State-of-the-art stock control system
- Stock locations individually barcoded
- Computerised picking notes detailing item location, quantity and delivery address
- Dispatches automatically deducted from system to provide 99.9% stock accuracy
- Batch weighing to ensure orders sent out match customer requirements

## HYDRAULIC CASTINGS

Thomas Dudley understands the unique requirements of the hydraulics market. We have developed extensive expertise in casting design and can manufacture patterns and core boxes to the highest industry standards in our Advanced Centre for Engineering.

We also have an unrivalled understanding of sand technology and the use of low expansion silica sand and our core making facilities can produce intricately shaped cores to exacting tolerances. These are supported by on-site core coating and drying.

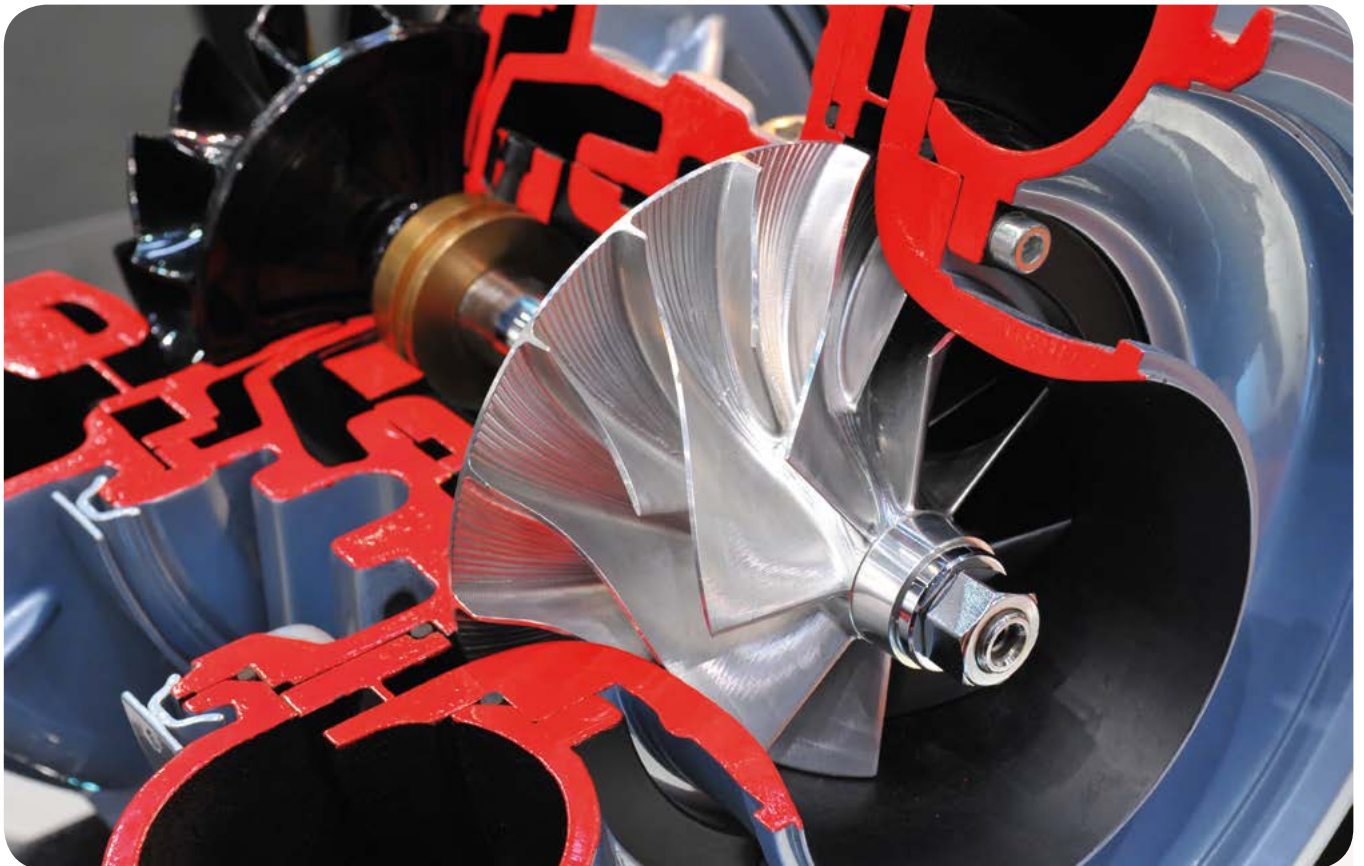
Furthermore, we appreciate the need for hydraulic castings to be free from cracks, sand particles and other unwanted contaminants. As such, our solutions can include thorough salt bath chemical cleaning and visual boroscope inspections before components leave our foundry.





## TURBOCHARGER AND HIGH TEMPERATURE ALLOY CASTINGS

The senior management team within Thomas Dudley's foundry division has over 100 years collective experience within the turbocharger and high temperature alloy castings market and calls upon this expertise to provide unique, end-to-end solutions.



Purpose made shell core machines with multi split capabilities allow core boxes encompassing up to five parts to be produced. We also understand the thermal requirements of resin core materials needed to deliver cast iron turbocharger components that are free from retained sand. Once cores have been made, state-of-the-art dipping and drying facilities have the capacity to finish 4,000 cores per hour.

Our Disamatic 2110 moulding line provides the perfect production platform for castings with low ferrositic pressure and no internal penetration. This enables pouring temperature to be maintained to +/- 5°C to minimise subsurface porosity.

We are fully conversant in advanced shotblasting techniques and have the ability to chemically clean castings to conform to exacting industry specifications.



## INDUSTRY EXPERTISE ACROSS MOST MARKET SECTORS



### GENERAL ENGINEERING CASTINGS

Thomas Dudley provides a convenient single source solution for general engineering castings.

Cored and non-cored cast iron components can also be cost-effectively engineered to customer specifications in low, medium and high volume batches.

Stringent quality control procedures and cutting edge moulding facilities allow castings to be manufactured to high dimensional tolerances supported by ATAS capabilities and material traceability.

Full design and development solutions can also be provided and castings can be manufactured in the most cost effective batch quantities, stored on site and delivered to suit customer requirements.

### DECORATIVE THIN SECTION CASTINGS

Thomas Dudley is vastly experienced in engineering decorative castings with sectional thicknesses down to 3.5mm.

ATAS technology and fully controllable, computerised manufacturing enable iron to be optimised for thin section casting production. We are also able to produce castings with exceptionally high quality surface finishes, providing a proven solution where aesthetic appearance is important.

Once castings have been manufactured, we can undertake belt blasting to minimise casting damage.



## INDUSTRY EXPERTISE ACROSS MOST MARKET SECTORS

### COMMERCIAL VEHICLE AND OFF ROAD CASTINGS

We have the know-how to manufacture a diverse range of grey and ductile iron castings for the commercial vehicle and off road sectors.

Castings up to 80Kg in weight can be precision moulded on fully automated machines and integrated with a selection of cores from 0.1 – 60Kg.

Our production lines have been configured to allow castings to cool for as long as required. Customised plant enables larger castings to be thoroughly cleaned and components can be supplied in a choice of specialist paints and finishes.

Thomas Dudley also provides the reassurance of having supplied high quality commercial vehicle and off road castings for over 10 years.



### RAIL INDUSTRY CASTINGS

We manufacture a comprehensive range of railway castings for track, rolling stock, signal and infrastructure applications in ductile iron grades BS EN 1563:2011. These are underpinned by ATAS technology, metallurgical testing and full laboratory certification.



We understand the importance of providing rail industry customers with a cost-effective source of supply and our automated production facilities can manufacture over 1,000 moulds per hour to near net shape in order to minimise casting dressing and the associated costs.

Our in-house Advanced Centre for Engineering and combined shell and cold box core making also enable us to engineer cost-effective patterns and cores respectively.

In addition, when customers choose to work with us, they do so with the reassurance of knowing that we have been successfully supplying castings to the rail sector for over 10 years.





## INDUSTRY EXPERTISE ACROSS MOST MARKET SECTORS

### AUSTEMPERED DUCTILE IRON CASTINGS

We manufacture austempered ductile iron castings in a comprehensive range of hard but not brittle ADI grades to offer components that have the same strength and wear resistance as steel but at a fraction of the cost.



In addition, our advanced design and development capabilities enable us to re-engineer steel and forged components into ADI castings to provide a highly cost-effective alternative.

Austempered ductile iron castings can be produced for cored and non cored parts and are heat treated by one of the leading specialists in Europe. As you would expect from Thomas Dudley, ADI projects are underpinned by stringent quality control processes and exceptional service.



### OTHER INDUSTRY CASTINGS

We have successfully overcome most casting challenges that are likely to be encountered and have worked closely in partnership with customers within the following sectors:

- DOMESTIC AND INDUSTRIAL CATERING
- ENTERTAINMENT AND HOSPITALITY
- HORTICULTURE AND AGRICULTURE
- AUTOMOTIVE AND MOTORSPORT
- ALTERNATIVE ENERGY
- CIVIL ENGINEERING
- CONSTRUCTION
- UTILITY
- OIL AND GAS
- COOKWARE
- HIGHWAYS
- NUCLEAR
- HEATING
- MARINE
- LEISURE
- VALVES





## AWARDS AND ENDORSEMENTS

Thomas Dudley is a multi-award winning organisation. In 2013, we were named Business of the Year by the Black Country Chamber of Commerce and received the Cast Metals Federation's Company Achievement Award in 2014.

In addition, testimonials from a small selection of our customers are provided below.

“

*Although we needed to find a new less labour intensive method of production, it was essential to retain the original characteristics. Thomas Dudley understood this and identified a design that could be easily moulded out of cast iron. We are delighted with the results of the project which has helped us keep pace with growing demand.*

**Hotpod LLP**



*When we needed to source bespoke cast iron railing stanchions for a major new build contract, Thomas Dudley provided the perfect solution. They worked with us to complete the project in eight weeks and the service they provided throughout was exceptional.*

**Pudsey Diamond Engineering Limited**



*We are three quarters through machining the latest batch of castings and we haven't had a single reject. You have managed to do what no one else has which is excellent news.*

**Falcon Engineering and NV Tools**

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## ENVIROFACTURING™ FOR A GREENER SOURCE OF SUPPLY

Our unique Envirofacturing™ initiative underpins our operations and offers an environmentally responsible source of supply.



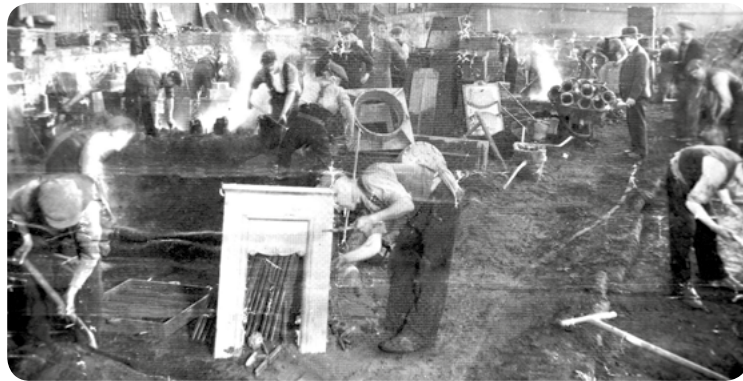
- **WE HAVE ATTAINED BS EN ISO 14001**, THE RECOGNISED STANDARD FOR ENVIRONMENTAL MANAGEMENT SYSTEMS
- **WE EMPLOY BEST PRACTICE** AND LEAN MANUFACTURING PRINCIPLES THROUGHOUT THE ORGANISATION TO MAXIMISE MANUFACTURING EFFICIENCY
- **WE INVEST HEAVILY IN TECHNOLOGY** DESIGNED TO REDUCE OUR EMISSIONS AND ENERGY CONSUMPTION
- **WE RECYCLE OUR WASTE PAPER** BY SHREDDING IT ON-SITE AND RE-USE IT FOR PACKING PURPOSES
- **OUR FOUNDRIES CONVERT SCRAP IRON** INTO VALUE ADDED PRODUCTS TO PROVIDE THE ULTIMATE RECYCLING SERVICE
- **OUR PLASTICS DIVISION RECYCLES** WASTE PLASTIC PRODUCED DURING PRODUCTION
- **WATER AND ENERGY SAVING TECHNOLOGY** IS INSTALLED THROUGHOUT OUR PREMISES





# UNRIVALLED QUALITY EXCEPTIONAL SERVICE

Thomas Dudley is committed to providing unrivalled casting solutions underpinned by exceptional service. We are proud to remain a family owned business that is driven by the same values as when we started our business in 1920. As a result, we are able to forge long term relationships with each and every customer.



## ENQUIRIES

Please call **0121 530 7000** or email **foundrysales@thomasdudley.co.uk**



**Thomas Dudley Foundry**  
Complete casting solutions

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