



J H Richards

Precision White Metal Bearings

MANUFACTURING

Working from either customer drawings or using reverse engineering techniques, J H Richards has the capability to manufacture a range of bearings from 10mm to 1,700mm diameter, using bronze, steel or cast iron as a backing material. Bearings manufactured include split pair journal bearings, bushes, thrust pads and tilting pad assemblies. Customers are also encouraged to meet with us to investigate if the bearing details can be changed to improve performance.

Our flexible workforce and range of conventional and CNC machines means that J H Richards can manufacture large batch numbers or “one-offs”.

SPEED/RESPONSE

Once the job has arrived and been assessed, our flexible workforce is able to work outside the restrictions of normal working hours, thus minimising delays. Staff are available to take customers calls out of hours and be on hand to give updates on progress.

All refurbished bearings are fully inspected on receipt. Customers are then informed of any problems that were not foreseen at the quotation stage and recommendations discussed. A full contract review is carried out for each bearing before work is started.

PRECISION

The latest CAD/CAM software is used to offer the most modern manufacturing service. Completed bearings are measured on our CMM equipment and full inspection and material reports are supplied as part of the package on request.

QUALITY

Whitemetal is manufactured on our own premises and each batch given a unique number, analysed for conformity in our laboratory and recorded on our inspection sheets.

All bearings are Ultrasonic and Dye Penetrant tested by approved operators twice, firstly at the proof machine stage and finally as part of final inspection. Full dimensional checks are recorded throughout the repair process and full certification is provided to the customer on completion of the work.

DELIVERY

Situated at the heart of the Midland’s motorway network system and usually using our own transport, we offer a speedy collection and delivery service.





Our customers often require a rapid response in order to minimise downtime.

J H Richards' systems are designed to provide such a service. Situated at the heart of the Midland's motorway network system and usually using our own transport, we offer a speedy collection and delivery service.

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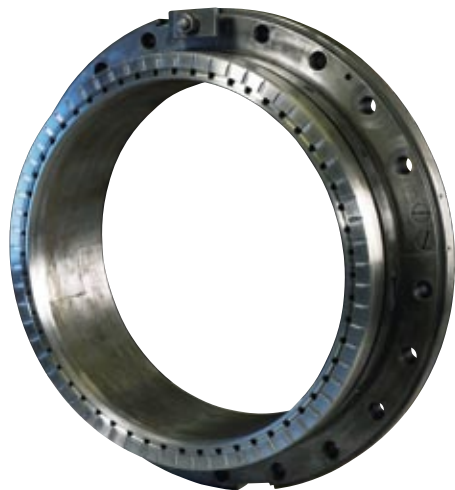
A premium rate charge is applicable for this service which is negotiated before work commences.



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HYDROGEN SEALS



Hydrogen Seals are some of the most complex and critical items to be found in power generation plant. J H Richards is proud that both Original Equipment Manufacturers and end users entrust us with their seals, both for refurbishment and complete supply.

Full inspection on receipt is carried out and recommendations made to the customer.

The manufacturing processes carried out by J H Richards enable the tight tolerances demanded for these items to be achieved. All seals are inspected on our CMM equipment and full certification provided.

The restoration of 'O' Ring Grooves on certain types of seal can also be carried out using an advanced ceramic steel reinforced polymer system.



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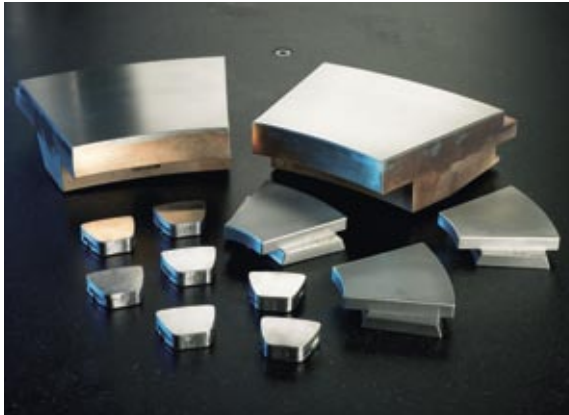
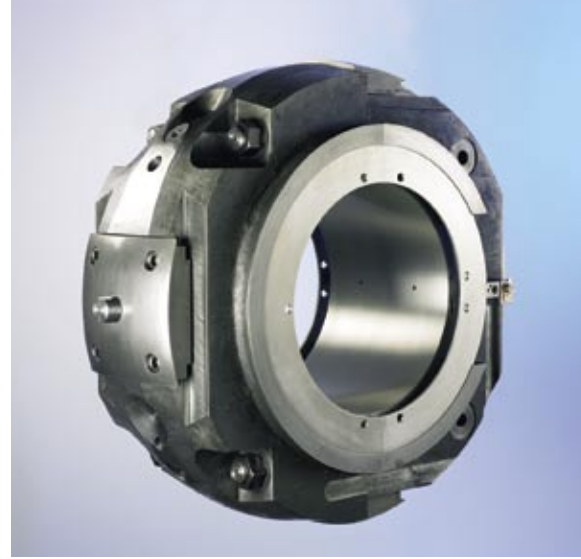
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J H Richards uses PC based software that has the capability of evaluating all types of fluid film bearings, (plain journal, fixed profile or tilting pad thrust) in any of their complex forms.

The program generates complete performance predictions of hydrodynamic, hydrostatic and hybrid lubricated journal, conical and thrust bearings operating in the laminar and / or turbulent regimes.

Results include:

- Load capacity / journal position
- Altitude angle
- Viscous power loss
- Righting moments
- Flow requirements
- Stability (bearing whirl)
- Spring and damping coefficients
- Clearing and pressure distribution
- Recess pressure and flow
- Heat balance and temperature.



J H Richards has always recognised the critical nature of its customers' components and the importance of getting them right first time.

With a view to achieving this, the company gained BS5750 approval in 1987, the first Whitemetalling Company to do so. We have held the equivalent ISO status ever since.

Full inspection on receipt and contract review is carried out on every job, to ensure that all customers' requests and specifications are worked to. Each job is identified with a unique job number and comprehensive job traveller, signed for by each person as the job goes through the factory.

Whitemetal is manufactured on our own premises and each batch given a unique number, analysed for conformity in our laboratory and recorded on our inspection sheets.



Where possible, bearings are centrifugally cast, to enhance the integrity of the bonding.

Every bearing is ultra sonic tested twice, once at proof machine stage and again at final inspection.

Final inspection is carried out by a dedicated inspection team and, where possible, CMM measuring equipment is used. Full certification is provided on request.

Through Continuous Improvement, all employees are involved in the Quality Process and this proves essential in our ability to provide the quality service that our customers require.



Since 1880, J H Richards has been recognised as the leader in the field of Whitemetal bearing refurbishment. The experience gained over this length of time has resulted in an unrivalled reputation for quality and reliability.

Realising the critical nature of our customers' products, J H Richards were the first Whitemetalling company to gain BS5750 approval in 1987. As our customers expect a refurbished bearing to meet the same exacting standards of a new bearing, the same rigorous techniques and controls are employed for repair work as are used in our manufacturing processes.

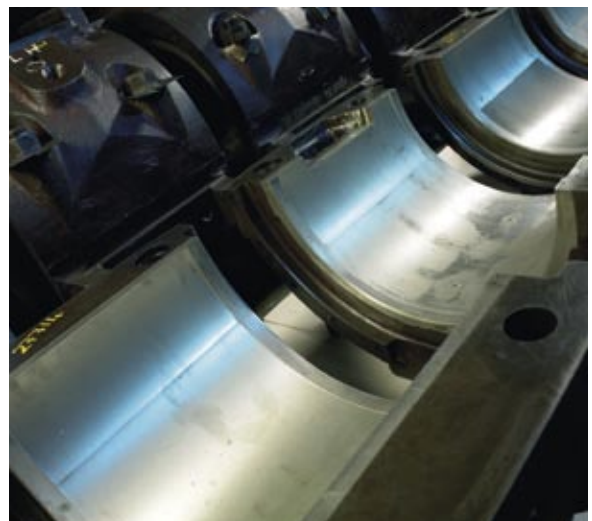
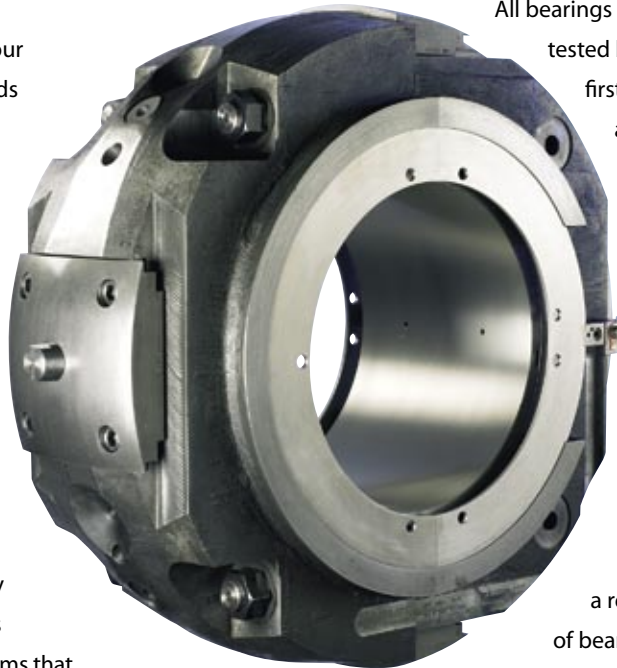
All refurbished bearings are fully inspected on receipt. Customers are then informed of any problems that were not foreseen at the quotation stage and recommendations discussed. A full contract review is carried out for each bearing before work is started.

Bearings, where possible, are centrifugally cast using Whitemetal made and analysed in our own workshops to International Standards or customers' own specifications.

All bearings are Ultrasonic & Dye Penetrant tested by approved operators twice, firstly at the proof machine stage and finally as part of final inspection.

Full dimensional checks are recorded throughout the repair process & full certification is provided to the customer on completion of the work.

The variety of machines in our Workshops, both CNC & traditional, enables us to offer a repair service for a full range of bearings, from split pair journal bearings to tilting pad bearings & thrust pads. We can refurbish bearings with an inside diameter ranging from 10mm to 1,700mm.



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We offer specialist Whitemetal Bearing fitting courses designed specifically to meet the needs of the electricity supply industry and mechanical engineering fitters. Tuition for up to four students is held on two consecutive days within your own workshops and training facilities.

Benefits

Students will acquire specialist knowledge in rotating plant machinery.

Course Outline

Day One

Whitemetal Bearing - Knowledge

- Basic principles of fluid film bearings
- Identification and description of different Whitemetal Bearing designs
- Bearing materials

Whitemetal Bearing - Practical Fitting Skills

- Safety, including COSHH
- Selection, maintenance and use of specialist hand tools and consumables
- Techniques and skills needed for scraping of Whitemetal

Day Two

Whitemetal Bearing - Knowledge

- Identification of modes of bearing failure
- Recommendations for preventing bearing failure

Whitemetal Bearing - Practical Fitting Skills

- Comprehensive practical training in fitting and scraping of Whitemetal Bearings on our training rigs
- Introduction to appropriate NDT techniques and quality control



Training Outcomes

At the end of the course a successful student should have:

1. Acquired knowledge and understanding of the basic principles and styles of Whitemetal Bearings.
2. An understanding of bearing failures and the ability to make recommendations for improving bearing life.
3. The ability to use appropriate hand tools and consumables for fitting and scraping Whitemetal Bearings.
4. Practical skills required for successful on-site Whitemetal bearing scraping and installation.



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Whitemetal Foundry

Castings – Gravity	Up to 5 tonne
Casting – Centrifugal Ingot Manufacture	60mm bore up to 1m bore
Shot Blasting	1250mm dia table 1500mm door height

Machine Shop

CAD/CAM	Licom Systems APS. R BTS Bearing Analysis Software.
Mazak Intergrex 300 Turning Centre	Up to 300mm swing Z Axis up to 1500mm
CNC Milling	X Axis up to 1000mm Y Axis up to 400mm Z Axis up to 520mm
Electronic Lathes	Up to 600mm swing Z Axis up to 1000mm
Centre Lathe Turning	Up to 999mm swing Up to 3500mm length
Horizontal Boring	Max length spindle to outer support 2400mm
Vertical Boring	Up to 1220mm table
Honing	Up to 500mm bore
Surface Grinding	Up to 1250mm length
Crane Capacity	Up to 5 tonne

Metrology

CMM	X Axis 625mm Y Axis 900mm Z Axis 355mm
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NDT

Ultrasonic	PCN Approved Operators
Dye Penetrant	PCN Approved Operators
Hydraulic Pressure Testing	Approved Operators

Chemical Analysis

Atomic Absorption Spectrophotometer

Other Processes

Welding	Electric Arc; Gas; MIG
Dynamic Balancing	Approved Subcontractors
Wire Eroding	Approved Subcontractors
Metal Spray	Approved Subcontractors
Laser Cutting	Approved Subcontractors
Pipework	Approved Subcontractors
Heat Treatment	Approved Subcontractors
Hard Chrome	Approved Subcontractors
Submerged Arc Welding	Approved Subcontractors



J H Richards was founded in 1880 by Job Richards, but registered in the name of his son, John Hartland Richards, who later took over the running of the company. The premises of the failed Vale of Evesham Brewery in Saltley were secured and some of these buildings remain standing behind our current factory. J H Richards started by manufacturing Whitemetal alloys, which they sold to the railway & rotating machinery industries.

In the early part of the twentieth century, they secured some machinery and recruited a work force that started supplying bearings for the blossoming motor industry. They could soon list Austin, BSA, Thornycroft, Morris, Rover, Riley & Alvis among their customers. At this time they also started to refurbish Whitemetal Bearings for a wider industrial market. J H Richards maintain their links with the motor trade through their subsidiary company Coventry Boring and Metallurgy, who specialise in vintage car engine refurbishment.

During the Second World War, J H Richards was heavily involved in the production of thick wall Whitemetal Bearings for armoured vehicles and aircraft, although this was severely disrupted when the factory and surrounding area suffered a direct hit during a bombing raid.

After the War, the motor industry, led by America, started mass-producing cars with thin wall bearings. Recognising that work from the motor industry was going to decline, the Company concentrated on securing refurbishment work from the metal processing and power generation industries. As the amount of work steadily grew and the size of bearings increased, it became clear that the original factory was not suitable for such production, so in 1963, a purpose-built factory was set up in front of the original building, on the site of an old church. These are our current premises.

The last quarter of the twentieth century saw a major decline in heavy industry, so the company decided to move into the manufacture of Whitemetal Bearings to complement our more traditional refurbishment work. New manufacture now makes up around 50% of the total turnover.

In 1987, J H Richards became the first Whitemetalling company to achieve BS5750 approval and have maintained ISO approval ever since.

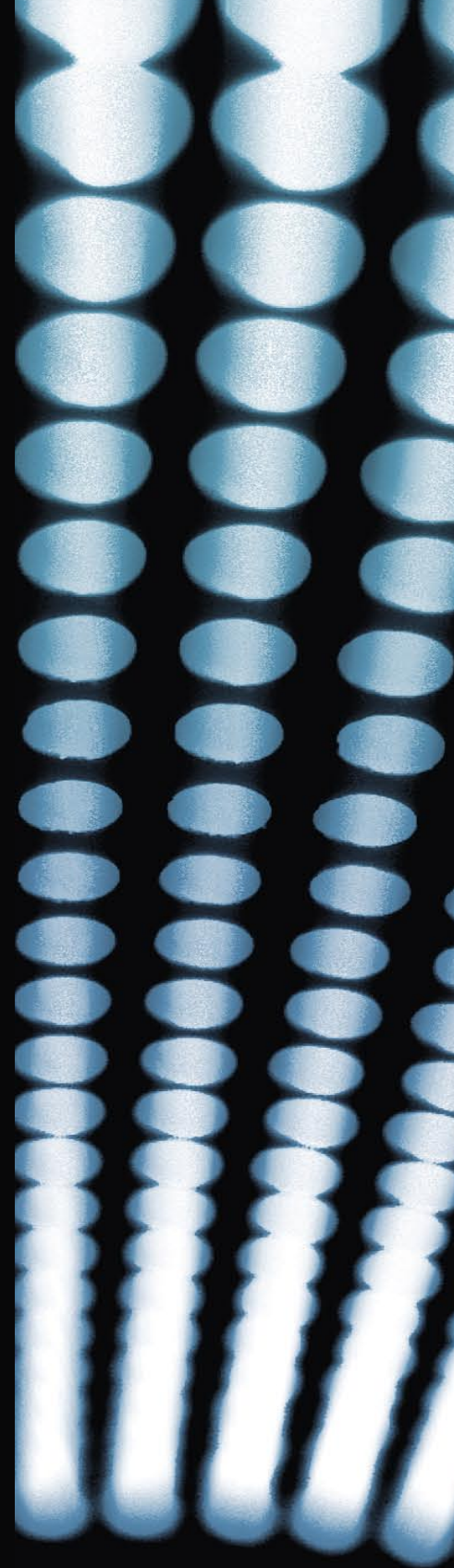
More recent developments have seen the introduction of sophisticated CNC machines and measuring equipment, housed in a new extension to the factory.

While J H Richards is rightly proud of its history, it recognises the needs of industry are constantly changing and that it has to service those needs. The Continuous Improvement programme is designed to meet this challenge.



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