

Precision with vision



PRECISION WITH VISION

For more than six decades the Barden name has been synonymous with quality, precision and excellence.

From its outset the company has specialised in the manufacture of bearings that provide rotational precision and tolerance control beyond the scope of accepted technology and standards.

Barden continues to meet this challenge today, manufacturing bearings to super precise levels for critical applications ranging from aerospace and turbomolecular pumps to specialised medical equipment and state-of-the-art production machinery.

Aerospace | Medical | Dental | Nuclear | Canning | Vacuum pumps | Defence



The Barden Corporation is part of the Schaeffler Group, a world leader in bearing technology and precision automotive components with over 60,000 employees at 180 locations round the world.

Barden, operating from a purpose-built and equipped facility at Plymouth in the UK, employs over 400 specialist staff. A sister Barden plant is located in Danbury, USA.

Barden produces thousands of bearing variations – predominantly single and double row, super precision angular contact and deep groove ball bearings with tolerances measured in microns – for a wide range of precision applications for highly demanding market segments.

A wide variety of seals, shields, metallic and non-metallic cage designs and calibration options are available together with speciality lubricants where required.



- Gothic arch aerospace bearing, manufactured from Cronidur 30[®] steel with ceramic balls for high temperature, high speed operation. Barden products can incorporate bespoke design features, such as flanges, direct lubricant injection slots and fixings, as shown here.



Aerospace & Defence

Custom designed and manufactured aerospace bearings are the cornerstone of the Barden product line. Manufactured to ISO P4/P2 (ABEC 7/9) standards and fully certified, Barden has supplied bearings for applications including pneumatic and electric starters and generators, fans and blowers and a variety of auxiliary aircraft positions.

Precision remains paramount across the product range; raceway roundness of better than $0.5\mu\text{m}$ ($20\mu''$) can be attained. Similarly, these raceways can be finished to a high standard with surface roughness less than $0.025\mu\text{m}$ Ra ($1\mu''$ Ra).

Full traceability is available on all bearings supplied to the aerospace and defence sectors. Bespoke features, such as custom geometries, calibrated fitting diameters and partially or fully integrated shafts and housings, can be accommodated. Speciality materials selected for operation in extreme environments and innovative lubrication systems complete the picture.



Vacuum Pumps & Industrial

Super precision bearings excel in the harsh environments experienced in many industrial applications, where high reliability and long operating life make them the bearing of choice.

Using high performance materials and lubrication systems, bearings can be designed to meet the demands of the sector. Applications in industry include canning machinery, turbomolecular pumps, dry pumps and emergency touchdown

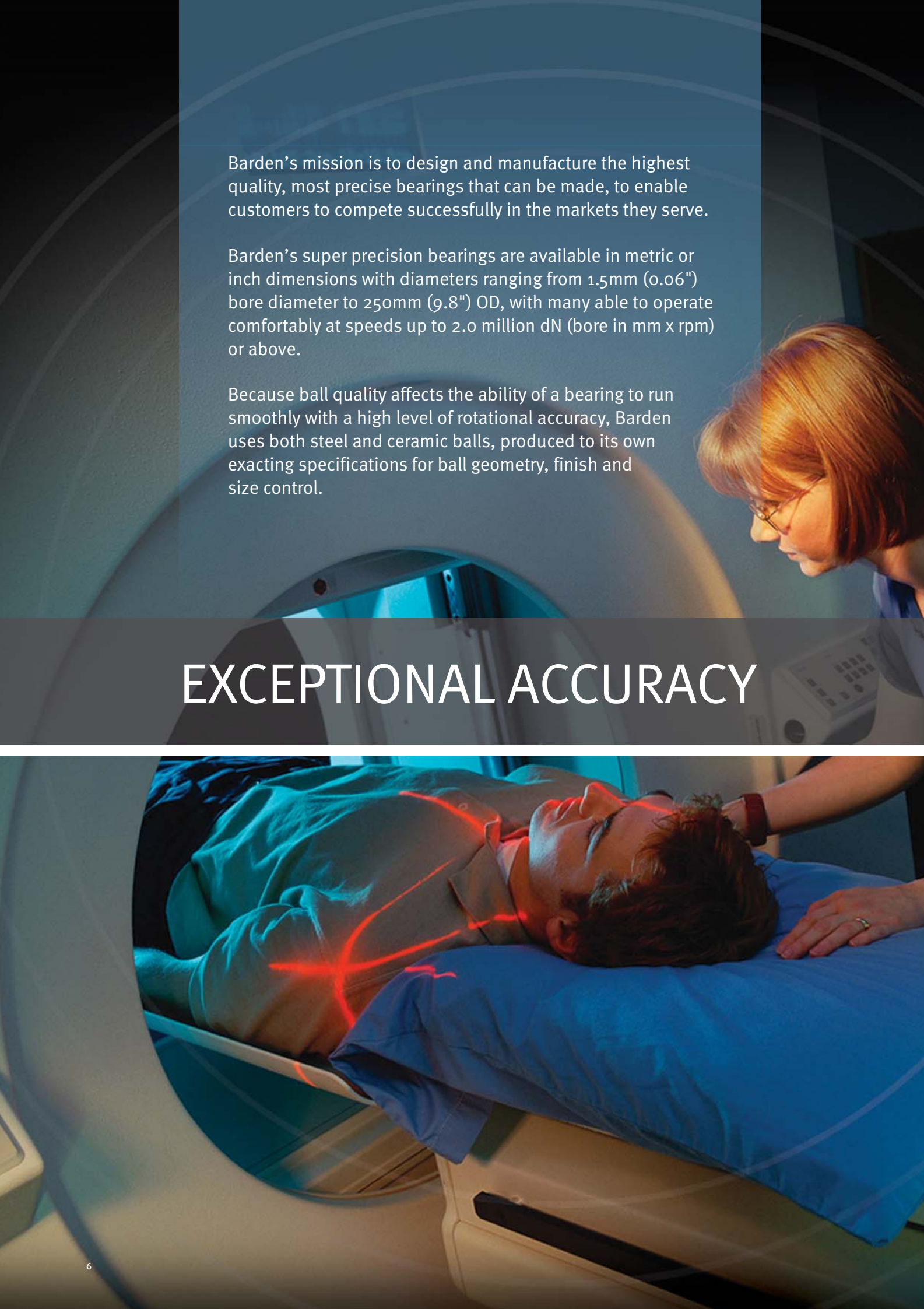
bearings for magnetically supported spindles. Barden also offers a complete machine tool bearing range, precision bearings that provide exceptional quality for optimum running conditions. Improved machine performance means improved parts, longer operation life and more productivity.

Barden's high performance pump bearings are specially designed for optimised performance in vacuum environments. Their hybrid design incorporates ceramic balls and Cronidur 30[®] stainless steel, reducing wear and increasing life.



OPTIMUM PERFORMANCE



A woman with short brown hair and glasses, wearing a blue lab coat, is looking down at a male patient lying on a table inside a medical scanner. The patient is wearing a blue shirt and a blue blanket. The scanner is a large, circular machine with a blue light emanating from the opening. The background is dark and out of focus.

Barden's mission is to design and manufacture the highest quality, most precise bearings that can be made, to enable customers to compete successfully in the markets they serve.

Barden's super precision bearings are available in metric or inch dimensions with diameters ranging from 1.5mm (0.06") bore diameter to 250mm (9.8") OD, with many able to operate comfortably at speeds up to 2.0 million dN (bore in mm x rpm) or above.

Because ball quality affects the ability of a bearing to run smoothly with a high level of rotational accuracy, Barden uses both steel and ceramic balls, produced to its own exacting specifications for ball geometry, finish and size control.

EXCEPTIONAL ACCURACY

Dental & Medical

Advances in modern medical and dental technology mean component precision has never been more vital. Barden bearings are used in applications ranging from X-Ray tubes and high speed dental handpiece turbines, to CT scanners and robotic arms used in cosmetic surgery.

Barden has been at the forefront of dental bearing design for over 25 years. Operating at speeds of up to 500,000 rpm, Barden bearings can withstand repeated sterilisation and extend turbine life significantly. All Barden dental bearings have super finished raceways with strict controls on component geometry.

With the exacting requirements of the medical and dental sectors in mind, Barden ensures all assembly, testing and packing operations takes place in fully equipped, onsite cleanrooms.



Speciality

In addition to meeting the needs of traditional markets, Barden's engineering expertise has been called on to design bearings for a number of specialist applications and clients have included NASA and the autosport and nuclear industries.

In these types of application, Barden engineers work closely with customers to develop unique bearing designs with specialised features to meet application requirements and solve functional problems. In many instances the overall cost of a piece of equipment can be reduced by incorporating special or customised bearings.

Performance and installation benefits provided by speciality bearings include improved assembly reliability, enhanced system rigidity, reduced handling operations and contamination, improved alignment of the rotating assembly, reduced weight and improved resistance to temperature extremes.

An example of Barden speciality products are turbo and supercharger bearings. These are designed to extract maximum power whilst virtually eliminating turbo lag and compressor whine.

The result is the maximum performance and highest reliability from the smallest design envelope.





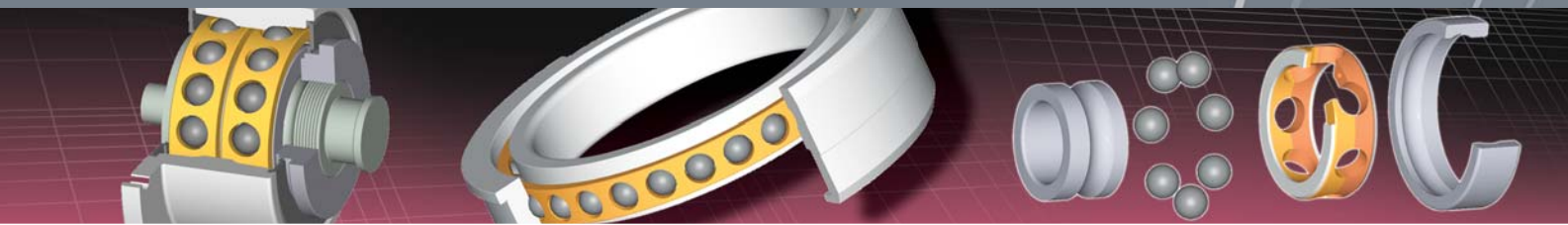
BARDEN SOLUTIONS

INNOVATIVE DESIGN & ENGINEERING

Whilst Barden offers a comprehensive catalogue of standard products, it also prides itself on an innovative, bespoke design and manufacturing service.

Barden's design criteria are based on knowledge, gained over 60 years of specialisation in the field of precision bearings.

The engineering team employ BEARINX® software, developed in-house by Schaeffler as a multi-functional static and dynamic mechanical analysis tool. This software uses the most sophisticated calculation methods to analyse a multitude of factors, including actual stresses, loads and load distribution.



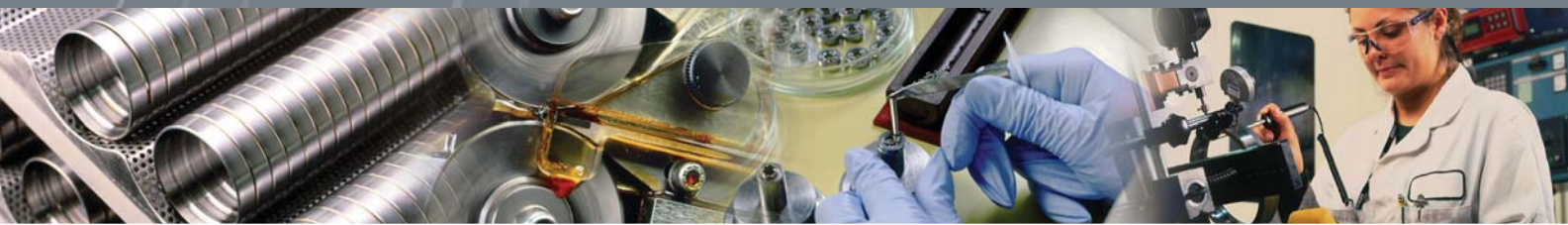
Creativity is central to the Barden ethos, where engineers use imagination and expertise to develop new ideas and conceive solutions never previously thought of.

By working in close partnership with the customer, Barden's engineering team can find the 'perfect-fit' solution for every application and if there is no solution currently available, Barden has the vision to create one.

Barden operates from a purpose built facility in Plymouth on the South West Coast of England. Continual investment in state-of-the-art production machinery and cleanrooms make it one of the finest facilities of its kind in the world.

The plant is certified to ISO9001 and aerospace standards AS9100 and AS9120. It is also certified to ISO14001 and EMAS standards. In addition, Barden applies self-established standards, using proprietary test and measuring equipment to ensure delivery of quiet, smooth running bearings that will perform exceptionally well.

Quality is a key part of the Barden service and is applied to every element of the business from customer interface and design through to production, packaging and delivery of assembled bearings.



Implementation of the Schaeffler Group's 'Fit for Quality' initiative involves every member of staff in the quality regime with the aim of achieving zero defects across each aspect of manufacturing and service.

Barden's people are key to the continuous success of the business and, as an Investor in People, the company has a policy for continuous staff improvement. This covers every member of staff, from the design engineers to the machinery operators on the shop floor.

Barden's distribution and support system enables the company to supply bearings of identical quality at any point they are needed, anywhere in the world.



▶ Barden's purpose built facility in Plymouth





BARDEN SOLUTIONS

UNMATCHED QUALITY





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