

As a trusted partner to the aerospace industry, Barden has engineered some of the world's most advanced and innovative components for the global space sector.

Barden's custom-designed super precision bearings and assemblies offer outstanding performance and reliability.

These solutions can include:

- Reliable operation in extreme temperatures (cryogenic to 900°F/482°C).
- Wide range of lubricants available to suit specific applications.
- Low torque at low temperatures.
- Operation in air, most gases and vacuum environments.
- Virtually unlimited storage life.
- 100% inspection and test with full documentation.

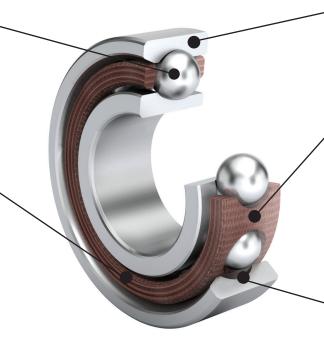




Design Features

Rolling elements: The use of silicon nitride (ceramic) rolling elements can improve operating performance by lowering vibration and wear, reducing internal forces at high speed and extending lubricant life. Rolling elements can also be supplied in steel or with a TiC (Titanium Carbide) coating.

Lubrication: Solid lubricated bearings offer distinct advantages. Their friction varies less with temperature (from cryogenic to extreme high temperature applications), and they do not evaporate or creep in space environments.



Materials: Bearing rings can be fabricated from a number of materials, including:

- AISI 440C
- SAE 52100
- 30X (X30CrMoN15-1)

Cages: Cages can be used to reduce torque and also be vacuum impregnated with oil to provide minimal lubrication. Cage materials include Meldin, PTFE and space applications may also use BarTemp® cages, made from compressed Teflon-coated, super fine glass fibres impregnated with MoS₂ to serve both as a ball separator and as a source of dry lubricant.

Precision: Bearings are manufactured to ABEC 7 (ISO P4) bearing tolerances as a minimum. Bores and outside diameters can be manufactured or selected to specific calibration increments to assist selective fitting to shaft and housing.

Example Applications

- Cardan joint bearings for rocket exhaust adjustment.
- Momentum wheel bearings for three axis stabilisation.
- Bearings for solar array actuators.
- Manipulation arms.
- Unmanned vehicles.
- Radar antenna drives for space vehicles.

Quality Management

Our Quality Management Systems are accredited to Aerospace Standards AS9100 and AS9120. In addition, we are able to satisfy specific customer requirements such as The National Aerospace and Defense Contractors Accreditation Program (Nadcap) for heat treatment and nondestructive testing processes.

Committed to Excellence

Barden aerospace bearings offer the highest level of quality and reliability and has been a market leader in the sector for more than 70 years.

Together with partner company, HQW Precision GmbH, Barden engineers work at the cutting-edge of bearing development. Our products play a critical role in aerospace technologies and we work closely with customers in every area of bearing design, application, testing and development.

Specialist Requirements

All Barden products offer:

- Full lot traceability.
- Assembly, test and packaging of all components in Class 5 cleanroom environments.
- First article or 100% dimensional documentation.
- Failure Mode & Effects Analysis (FMEA).
- Fully customised design service based on application specific requirements.

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