

SPECIAL APPLICATIONS

Introduction

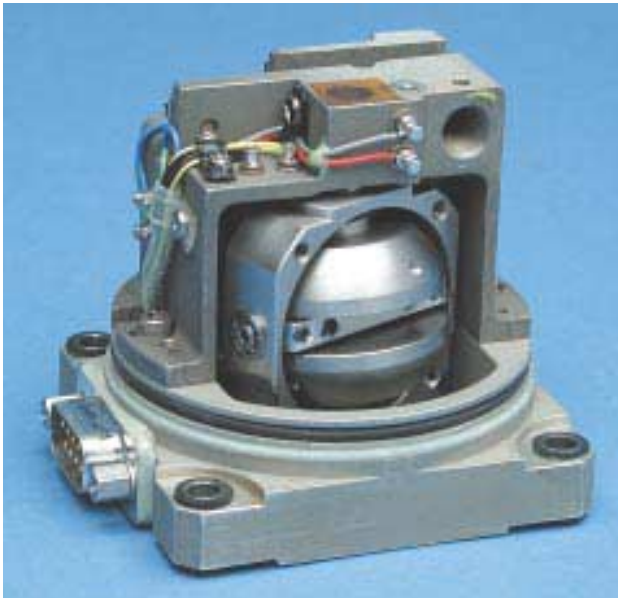
Barden innovations in special bearings range from nearly standard bearings with slightly modified dimensions, to intricate assemblies which integrate the bearing function into a complete mechanism. Our engineers work closely with customers to develop unique bearing designs with specialised features to meet application requirements and solve functional problems.

In many cases the overall cost of a piece of equipment can be reduced by incorporating special or customised bearings particularly when mating components are integrated into the bearing such as mounting flanges, gear teeth, spring carriers and integral O-ring grooves. The performance and installation benefits to be gained from using bearings specifically designed for individual applications are as follows:

- Improved assembly reliability
- Enhanced rigidity or stability of the system
- Better location control through proper bearing orientation
- Reduction in handling operations and contamination
- Improved alignment of the rotating assembly
- Weight reduction
- Improved resistance to temperature extremes
- Reduction in tolerance stack-up

SPECIAL APPLICATIONS

Gyro Bearings



The unique demands placed on gyros makes Barden precision bearings the only option.

For over 45 years the Barden Corporation has been offering precision gyro bearing users an extremely wide range of special design bearings, and assemblies. Increased performance requirements of gyros in terms of drift rate, life and size have created a demand for bearings produced to carefully controlled tolerances of less than half a micrometer. This accuracy, plus close control of contact surface geometry and finish; cleanliness and ball retainer oil impregnation results in a number of benefits:

- Decreased vibration levels
- Longer useful life with fewer lubrication failures
- Greater stability of preload
- Reduced mass shift due to wear
- Greater performance uniformity from unit to unit

These improvements are accomplished by means of unusually close control of raw materials, metallurgy, geometry, runout errors, and all critical dimensions.

Barden can offer many bearing types ranging from conventional bearings with modified dimensions to intricate configurations designed to meet unusual performance or application problems. Many special assemblies include shaft or housing members designed integrally with bearing inner or outer rings to reduce mating part errors

and tolerance build-up, or to simplify component design and assembly. Such integrated designs have enabled gyro manufacturers to greatly improve the performance of their units, often with an overall reduction in production costs.



Rotor bearings are made to precision tolerances for optimum performance.

Gyro Unit

Shown on the opposite page are some of the more common types of special design Barden gyro bearings. They include special bearings now so widely used that they have become virtually standard items. Only basic boundary dimensions are shown. Complete dimensions, specifications, and performance data will be furnished on request of the Barden engineering department.

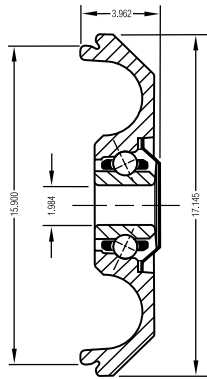


Gimbal bearings are offered in a wide range of design configurations to fit a variety of special needs.

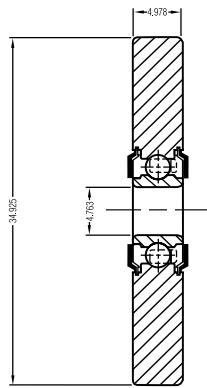
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Gyro Bearings

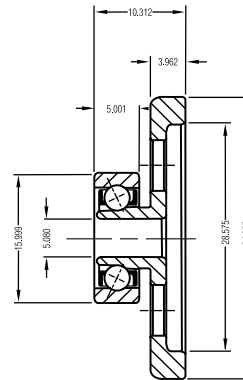
END-BELL BEARINGS



Z155

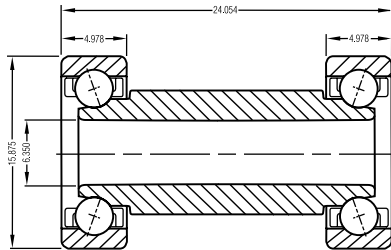


R3AAX483



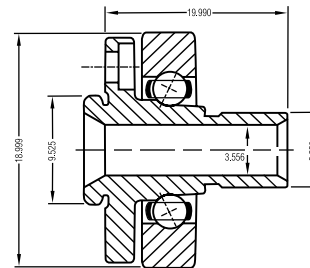
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SHAFT AND OUTER RING ASSEMBLIES



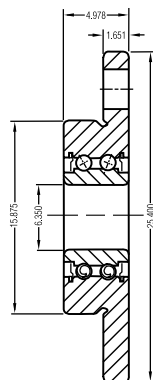
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FLANGED PIVOT AND OUTER RING ASSEMBLIES



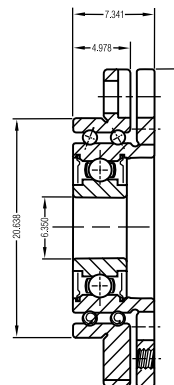
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DOUBLE ROW BEARINGS



Z96

FRICTION-CANCELING BEARINGS



Z224ZAX22

All dimensions in millimeters.