

Precision Spherical Air Bearing

U R Rao Satellite Centre (URSC) of Indian Space Research Organization (ISRO) has designed and developed Precision Spherical Air Bearing to simulate frictionless motion with a virtual pivot. They are used to simulate Zero-G conditions and to provide 3 degrees of freedom. These bearings are finished with high form accuracies to obtain desired measurement parameters.



Salient Features

- ✦ Design to suit varying thrust load capacities.
- ✦ Material for the bearings are selected to maintain differential hardness.
- ✦ Electroless Nickel plating and tribological coatings are provided on the stator to increase its performance.
- ✦ Balancing of the bearing to ensure stable position of the payload during testing.

Major Specifications

✦ Largest Radius of the Bearing Realized	: R 210 mm
✦ Smallest Radius of the Bearing Realized	: R 37.5 mm
✦ Average Air Film Thickness between the bearing elements	: 30-50 μ m
✦ Surface form achieved for the bearing elements	: 10-30 μ m
✦ Maximum thrust capacity for R 210 mm Bearing	: 1500 kgf

Technology Transfer

URSC-ISRO offers to transfer Precision Spherical Air Bearing technology by URSC to industries in India with adequate experience and facilities. Industries interested in obtaining knowhow may write giving details of their present activities, infrastructure and facilities.

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🌐 <https://www.ursc.gov.in/industry/index.jsp>