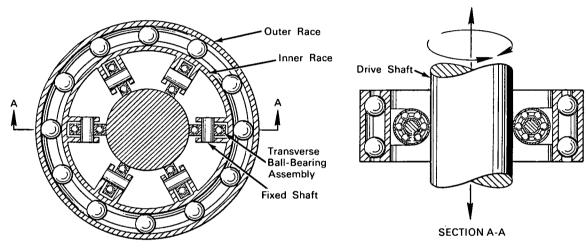
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## NASA TECH BRIEF



This NASA Tech Brief is issued by the Technology Utilization Division to acquaint industry with the technical content of an innovation derived from the space program.

## **Bearing Transmits Rotary and Axial Motion**



**The problem:** Providing a low-friction bearing that transmits rotary and axial motion.

The solution: A two-component bearing comprising a pair of ball-bearing races for transmitting rotary motion and an inner series of ball-bearing assemblies for transmitting axial motion.

How it's done: A series of transverse ball-bearing assemblies extends inwardly from the inner race. The larger race in each of these assemblies is free to rotate about a small fixed shaft when an axial thrust or pull is applied to the drive shaft. The drive shaft is thus permitted to move axially with a minimum of friction. When torque is applied to the drive shaft, tangential forces are transmitted through the transverse bearing assemblies to the inner ball-bearing race, which permits essentially friction-free rotation of the shaft.

## Notes:

1. This bearing should be especially useful in mechanisms that permit only extremely close tolerances, such as in stress-strain testing machines.

Inquiries concerning this invention may be directed to:

> Technology Utilization Officer Langley Research Center Langley Station Hampton, Virginia, 23365 Reference: B64-10130

Patent status: NASA encourages the commercial use of this invention. It has been patented by NASA (U.S. Patent No. 2,903,307), and royalty-free license rights will be granted for its commercial development. Inquiries about obtaining a license should be addressed to NASA Headquarters, Washington, D.C., 20546.

Source: Roger W. Peters and Norris F. Dow (Langley-27)

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