

NASA TECH BRIEF



NASA Tech Briefs are issued to summarize specific innovations derived from the U. S. space program and to encourage their commercial application. Copies are available to the public from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151.

Intermediate Rotating Ring Improves Reliability of Dynamic Shaft Seal

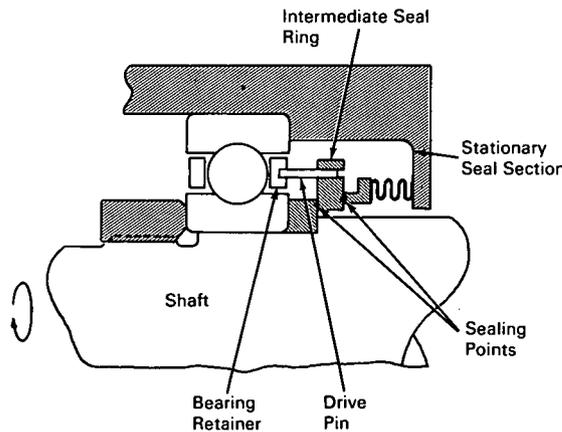


FIGURE 1

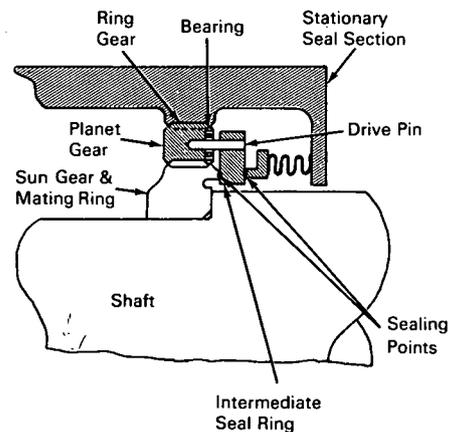


FIGURE 2

The problem:

To improve the reliability of dynamic shaft seals. At high shaft speeds, the seal rubbing surfaces wear down rapidly.

The solution:

An intermediate rotating ring placed between the rotating shaft sealing surface and the stationary surface, and driven at approximately one half the shaft speed, reduces wear on the rubbing surfaces.

How it's done:

There are a number of practical methods for driving the intermediate ring at a speed of 40% to 45% of shaft speed. In Figure 1 the intermediate ring is driven by the retainer of an adjacent ball bearing; in Figure 2 the intermediate ring is driven by a planetary gear sys-

tem. Other methods of driving the ring will depend on the configuration of surrounding drive mechanisms.

Note:

Inquiries concerning this innovation may be directed to:

Technology Utilization Officer
Marshall Space Flight Center
Huntsville, Alabama, 35812
Reference: B66-10197

Patent status:

No patent action is contemplated by NASA.

Source: Phillip R. Mesny
of North American Aviation
under contract to
Marshall Space Flight Center
(M-FS-575)
Category 05