

NASA TECH BRIEF

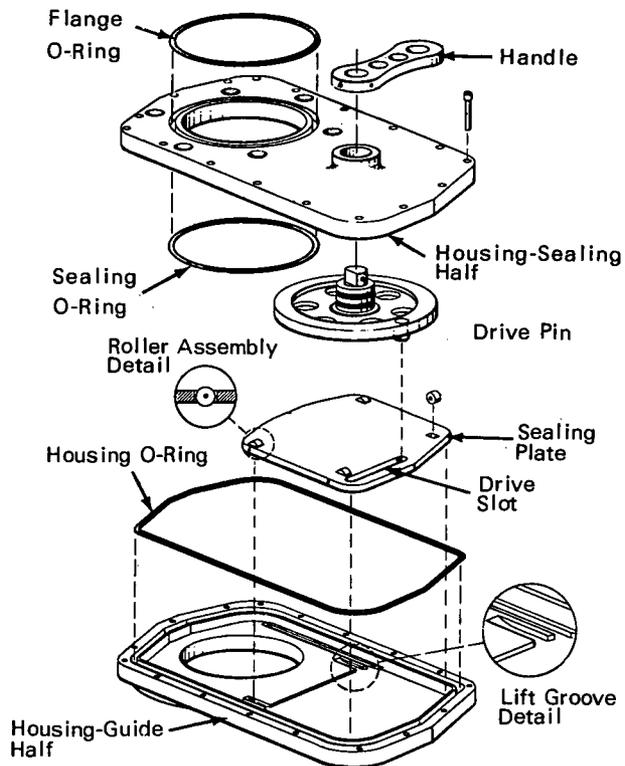
Goddard Space Flight Center



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Ultrathin Gate Valve for High Vacuum Operation

A thin, compact, high-vacuum gate valve with a 5.08 cm diam. port can be used to join two vacuum systems together with a minimal loss of space, and has demonstrated a multiple operation reliability.



Overall valve measurements are 9.02 cm wide, 15.58 cm long, and 3.41 cm deep, and the handle does not protrude beyond the valve width, making the valve usable in confined areas.

The valve is operated by turning the handle clockwise π rad (180°). A pin, attached to both the wheel and the shaft on which the handle is mounted, rides in a sealing plate slot and moves the plate in the direction of the port. At a point near the end of travel, the groove turns upward, raising the plate by means of the rollers on which it rides. The plate comes in contact with the O-ring and the vacuum seal is made. To open the port, the handle is turned counter-clockwise π rad. The return grooves move the plate away from the sealing O-ring, and the drive moves the plate away from the port, thereby opening the port.

Note:

Requests for further information may be directed to:

Technology Utilization Officer
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Reference: B71-10412

Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to:

Patent Counsel
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Category 07