



1. Operating square
2. Stem bearing
3. V-Ring
4. Sealing Ring
5. Gasket
6. Thrust Plate
7. Body
8. Ball Seat
9. Bottom Cover
11. Pressure Screw
12. Bottom Screw
13. Nuts
- 13a. Stud
14. Retaining Ring
15. Diaphragm
16. Plug
17. Equalizer Ring
18. Operating Stem
20. Stop
21. Check Valve
22. Parallel Key
23. Nut for stem
24. Lubricant Screw
25. Snap Ring
26. Spring
27. Ball
28. Diaphragm
41. Fireseal
47. Spring
48. Ball

The PR lubricated taper plug valve group 5 is the ideal shut off device for almost any medium, even under the most severe operating conditions.

It can be used in most places where fast, trouble-free and efficient sealing is required. The design is very compact, it requires little space to install and can be mounted in any position required. Since the only moving parts are the plug and the stem, the basic operation of the PR valve is very simple. When the plug is turned 90°, the valve moves from closed to open position - and vice versa.

The plug is tapered 1:6 and is individually fitted to the valve body with very close tolerances. It incorporates Metal to Metal sealing, which means that no soft seal will be damaged by the flowing medium.

As a secondary seal, the valve is provided with a lubrication system which allows feeding a special lubricant into the valve while the valve is in operation.

Besides sealing, the purpose of the lubricant is to protect the internals of the valve against corrosion and wear as well as reducing the valve torque.

The valve is manufactured in the "Pressure Balanced Design", this means that the plug is provided with pressure balance holes which ensure that the plug is always in axial balance and consequently prevents the plug from taper locking. Furthermore, in order to reduce the valve torque, the surface of the (tapered) plug is coated with P.T.F.E.

The plug and the operating stem are two separate parts which are connected by means of an equalizer ring acting as universal joint. The stem is Blowout-proof. This means the only way to remove it is from the bottom after valve is disassembled.

With three independent seals the sealing of the PR valve is unique. This is made up of a reinforced P.T.F.E. thrust plate (6) followed by a 100% pure graphite seal with a stainless steel back-up ring (41).

The graphite seal is very efficient at extremely high temperatures and meets the most strict demands of several different standards

relative to fire safe design.

At the top of the stem, the primary seal is placed (4). This sealing ring is a P.T.F.E. (teflon) sealing ring with an embedded spring of Hasteloy C. The ring can be replaced from the outside. The sealing ring is kept in place by the stem bearing (2) and the snap ring/ locking ring (25).

In addition to the stemseals mentioned, the wrench operated valve has a weatherproof seal (3) to prevent penetration of water and dirt into the stem.

The bottom cover (9) is bolted on the valve body with the studs (13a) and the nuts (13). Two flexible plates or diaphragms (15) + 28) are placed in a recess between the valve body and the bottom cover. They function as a metal seal between the valve body and the bottom cover and also prevent the medium from leaking at the adjustment arrangement consisting of the pressure screw (11), the retaining ring (14) and the bottom screw (12). The plug is adjusted within the valve body by means of the pressure screw (11) and is kept in place by the retaining ring (14) when the bottom screw (12) is tightened. All adjustments to the plug are accomplished by a "flexing" of the two diaphragms.

As mentioned, the valve is provided with a lubrication system which allows penetration of special lubricant into the valve through lubricant screws (24) and check valves (21 + 48). The lubricant is injected into a network of grooves by means of a special high pressure lubricant gun. This network system ensures that all seal faces are supplied with a thin coat of lubricant and by so doing becomes an efficient secondary seal.

The PR valves can be supplied as wrench operated or gear operated valves.

Moreover the valves can be supplied with top-flange and stem for mounting of any kind of actuator.

If the valve is supplied with such a top flange, the lubrication injection system is moved from the stem to the side of the valve body.