YARWAY

installation, operation and maintenance of type B and type C seatless blow-off valves

PRINCIPLE OF OPERATION

The seatless blow-off valve is a manually operated sliding plunger type with a non-rising stem. The valve is designed primarily for boiler blow-off service where high temperature fluid, containing dirt, sediment and scale, is encountered.

When the valve is open (Fig. 2) the controlled fluid passes through the ports in the plunger (8) and lower gland (5) and discharges to the valve outlet via the center of the plunger assembly. In the closed position the shoulder of the plunger assembly contacts the upper gland (6). This feature provides additional loading from the handwheel to compress the packing rings (3) (4) and assure leak-tight shut-off. Any packing relaxation during service is accommodated by the heavy compression springs (14) which provide a constant packing load.

VALVE OPERATION

Open the valve quickly and fully. Never use this valve to throttle the flow in the partly open condition as this will reduce the packing life. Close the valve in the same manner. Apply a hard turn at the end of the valve travel. This will assure that the plunger seats against the upper gland which, in turn, will recompress the packing rings.

In operating Yarway Seatless Valves in tandem, the valve next to the boiler should be used as the blowing valve, opened last and closed first. The outside or sealing valve should be opened first and closed last.

If a Yarway Double Tightening Valve is used in tandem with a Yarway Seatless Valve, the Double Tightening Valve is placed next to the boiler and is opened first and closed last. The Seatless or outside valve is the blowing valve and is opened last and closed first.

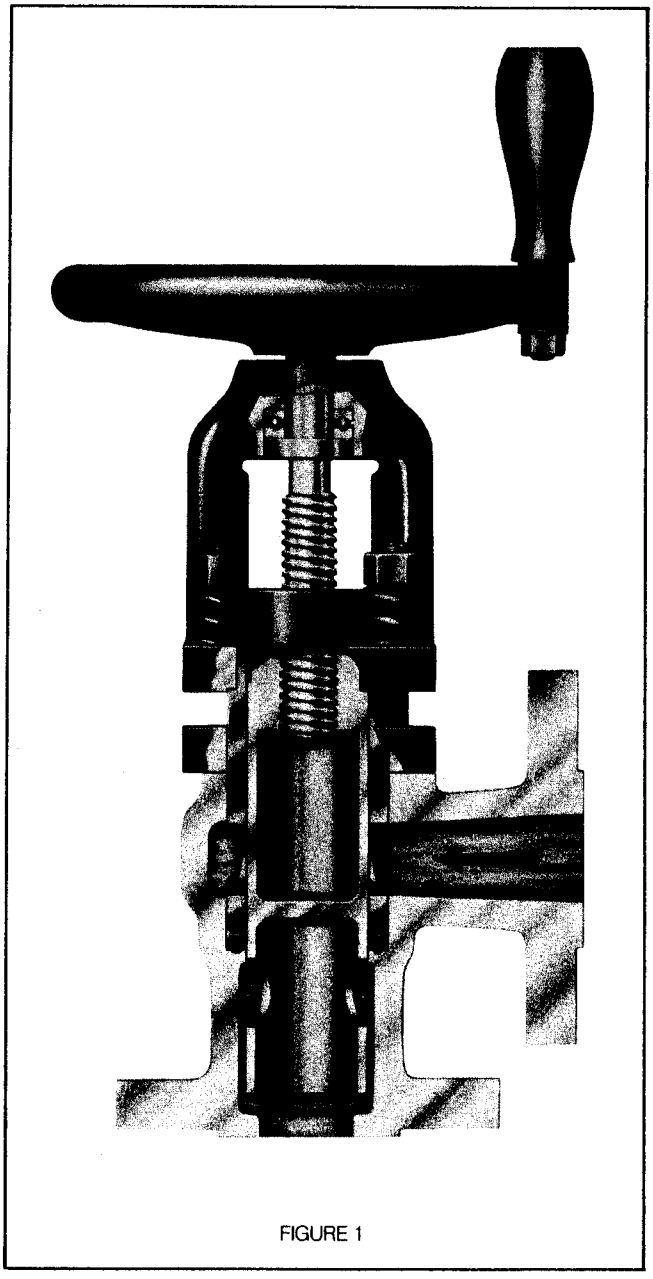


FIGURE 1

VALVE MAINTENANCE AND ADJUSTMENTS

Packing Ring Adjustment

Yoke nuts (15A) should be tightened at regular intervals. The yoke springs (14) will maintain a constant load on the packing. Packing rings will relax slightly during use, however, and an adjustment may be required. To adjust the packing, back the plunger off slightly by turning the handwheel (do not allow flow to occur) and then tighten the yoke nuts. Approximately ¼ to ½ turn should be sufficient. Reseat the plunger against the upper gland. Note: If the valve has not been operated for a long period, the packing nuts should be adjusted prior to blowing down the boiler.

Lubrication

A fitting (2A) is provided on the yoke for lubricating the ball thrust bearing (11) and the stem collar. This fitting is compatible with an Alemite No. 7585 gun. A high temperature grease equivalent to Texaco Regal AFB2 should be used to lubricate this area. Stem threads should be kept well lubricated. A good grade of anti-seize compound similar to Never-Seez NS165 should be used. Both these areas should be lubricated every six months.

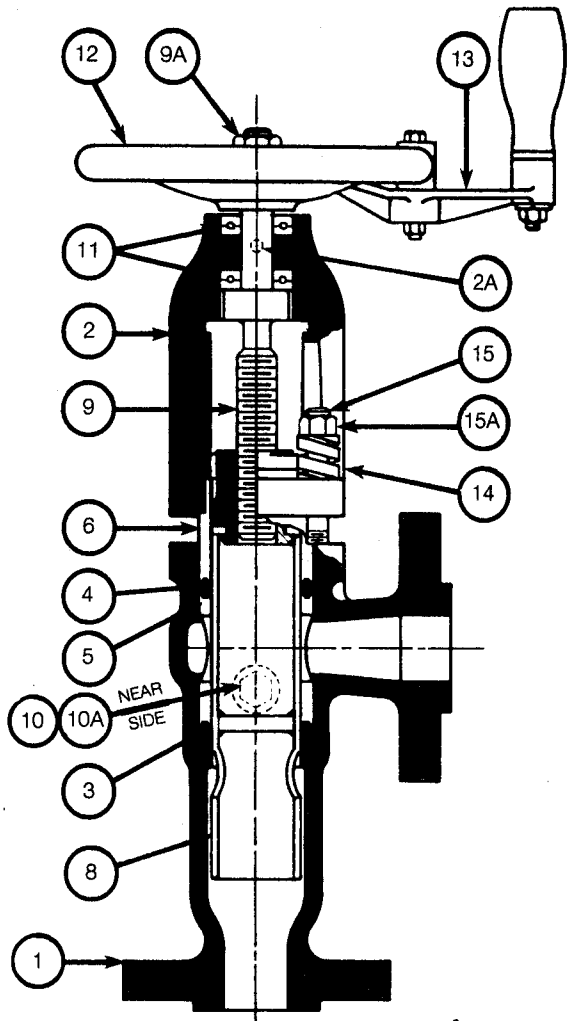
Installation of Packing Rings

Warning: This procedure should not be attempted unless all pressure has been vented from the valve, and its connecting lines, and the temperature of the valve is at or near ambient.

Remove the stopscrew (10) then remove the yoke nuts and springs. Turn the handwheel to open the valve. This will raise the plunger. Turn the handwheel to close the valve. This will raise the yoke. Turn the yoke so that the holes and studs are out of line and turn the handwheel to open the valve. The plunger is thus withdrawn from the valve.

Next, remove the glands and the old packing. This can be done by using a Yarway gland and packing puller or similar tool (Fig. 3) in the following manner: Insert the tool until the pawls engage the ports in the lower gland. Tighten the nut on the top of the puller to draw out the lower gland, upper packing and upper gland. The lower packing can then be removed using a hook tool. Care should be exercised, however, so that the lower packing groove is not damaged. Install new packing rings, (Fig. 4 or 5) glands and stopscrew in the body and replace the yoke, with the plunger screwed all the way up on the stem, in place and using the yoke nuts pull down the yoke assembly. Next, place the springs under the nuts and adjust as previously described.

FIGURE 2 — TYPE C ANGLE VALVE



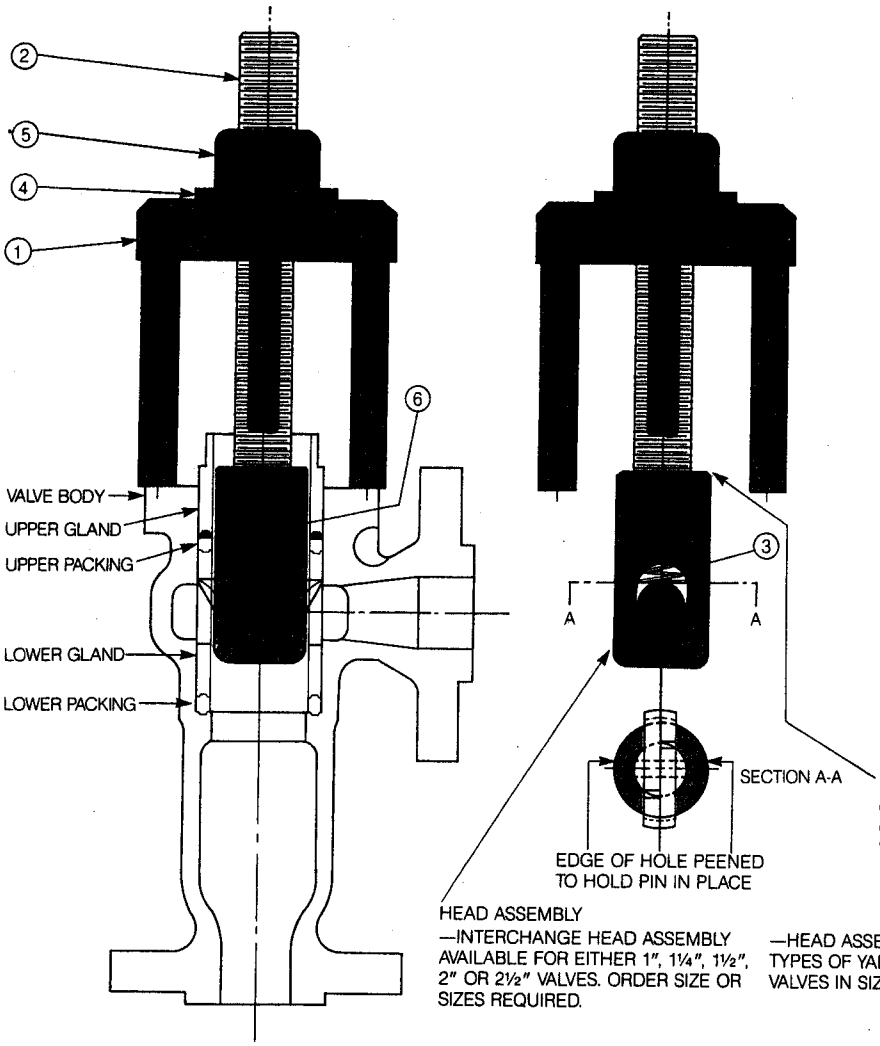
▶ Repair kits include + Packing set

PART NUMBER	PART NAME*
1	Body
2	Yoke
2A	Lubrication fitting
3	Lower Packing Ring Assembly
4	Upper Packing Ring Assembly
5	Lower Gland
6	Upper Gland
8	Plunger Assembly
9	Stem
9A	Stem Nut
10	Stop Screw
10A	Stop Screw Gasket
11	Ball Thrust Bearing (2 Type C; 1 Type B)
12	Handwheel
13	Extension Lever (Type C only)
14	Yoke Springs (4 per set)
15	Yoke Studs (4 per set)
15A	Yoke Stud Nuts (4 per set)

*When ordering parts, use parts numbers and names shown in table, specify size and type of valve, figure number and operating pressure (see nameplate on valve).

Maintenance kits for Type B valves include the following: Cast Iron Valve, 250 psi: Upper & lower glands, packing set, springs, studs, nuts, stop screw, stop screw gasket. Cast Steel Valve, 300 psi & 400 psi: Upper and lower glands, packing set, stem, ball bearing, springs, studs, nuts, stop screw, stop screw gasket.

FIGURE 3 — SEATLESS BLOW-OFF VALVE GLAND AND PACKING PULLER ASSEMBLY



PARTS LIST

PART NO.	DESCRIPTION
1	Bridge Plate Assembly
2	Jack Screw
3	Spring
4	Thrust Washer
5	Nut 1¼" Hex
6	Screw (Spring Mtg.)

GLAND & PACKING PULLER

PART NO.	DESCRIPTION
946458	Packing Puller w/Box*
946459-01	1", 1¼" Head Assembly
946459-02	1½" Head Assembly
946459-03	2" Head Assembly
946459-04	2½" Head Assembly

*Use for all size seatless BO valves. In addition order appropriate size head assembly.

HEAD ASSEMBLY

—INTERCHANGE HEAD ASSEMBLY AVAILABLE FOR EITHER 1", 1¼", 1½", 2" OR 2½" VALVES. ORDER SIZE OR SIZES REQUIRED.

—HEAD ASSEMBLY FITS ALL TYPES OF YARWAY SEATLESS VALVES IN SIZE SPECIFIED.

FIGURE 4 — WITHOUT SUPPORT RING

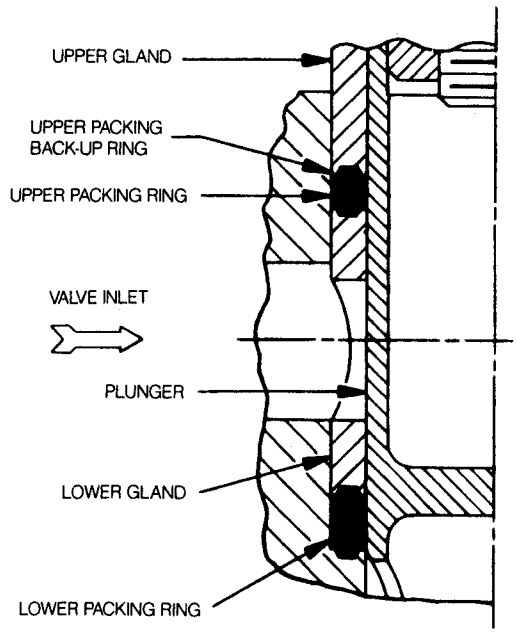


FIGURE 5 — WITH SUPPORT RING