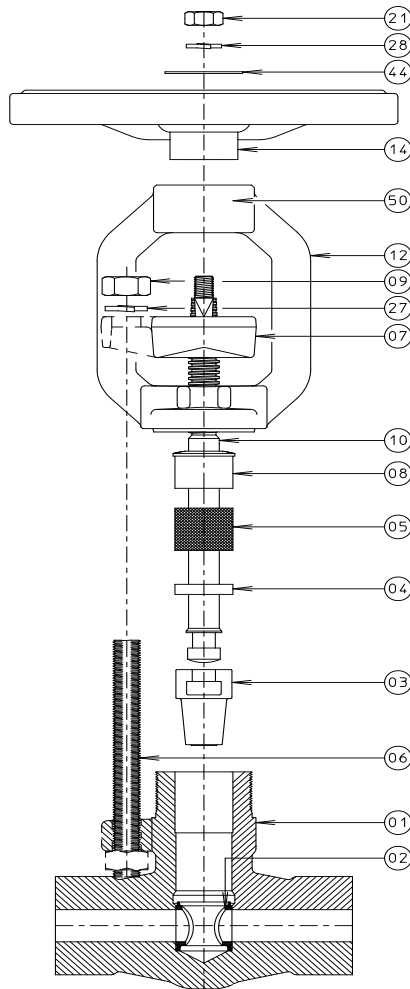


**DISASSEMBLY & ASSEMBLY GATE VALVE
WITH FLOATING BACKSEAT (½" - 1")**



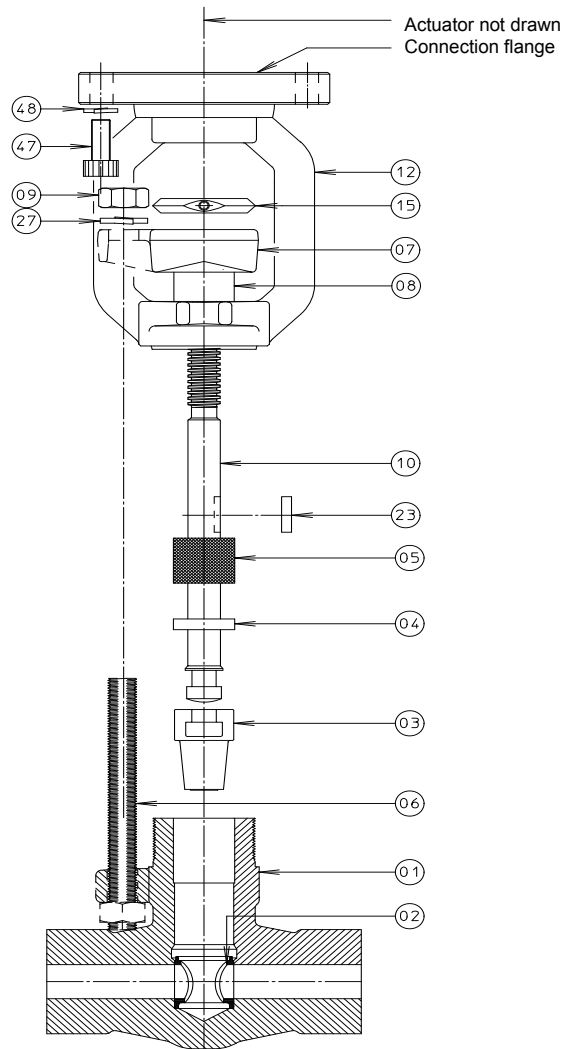
1. Caution, before any attempt is made to disassemble, verify that the valve is sufficiently cooled down, depressurised, isolated from system pressure and secured against accidental pressurisation.
2. Unscrew the nuts (09) from the gland bolts (06) and remove the gland bolts from the gland flange (07).
3. Operate the valve to the open position.
4. Loosen the yoke (12) by rotating it in a counter clockwise direction and unscrew it partly from the body (01) :
 - 7 revolutions for 3/8" - 1/2" valves
 - 10 revolutions for 3/4" - 1" valves
5. Rotate the handwheel (14) counter clockwise, past the fully open position to force the packing (05) and the floating backseat (04) out of the stuffing box.
6. Unscrew the yoke (12) and pull it together with the remaining parts out of the valve body (01).
7. Remove the handwheel nut (21) and rotate the handwheel (14) clockwise to unscrew the stem (10) from the yoke sleeve (50) until the handwheel disengages from the stem (10).
8. Continue unscrewing the stem (10) from the yoke (12) by hand gripping it below the yoke (12).
9. Remove the gland flange (07), the gland (08), the packing (05) and the floating backseat (04) from the stem (10) by pressing down on the floating backseat (04) whilst holding the stem (10) upside down.

INSPECTION PRIOR TO RE-ASSEMBLY

1. Thoroughly clean all parts with solvent and a clean cloth.
2. Examine the following parts for signs of damage, i.e. pitting, erosion or scratches:
 - A. SEAT (02) - Sealing surface
 - B. STEM (10) - Packing area
 - C. WEDGE (03) - Sealing surface
 - D. BACKSEAT (04) - Sealing surface
3. Lubricate all threaded parts with high temperature grease, i.e. Molykote HSC.
4. Insert the stem (10) in the designated slot located in the wedge (03)
5. Insert the stem/wedge assembly into the valve body (01).
6. Insert the floating backseat (04) (with radius down) into the valve body (01).
7. Insert the packing (05) (markings facing down) into the valve body (01).
8. Place the gland (08) over the stem (10).
9. Put the yoke (12) together with the gland flange (07) over the stem (10).
10. Screw the yoke (12) clockwise on to the valve body (01), while rotating the stem (10) counter clockwise.
11. Fixate the gland flange (07) with the gland bolts (06) and gland nuts (09).
12. Fixate the handwheel (14) and nameplate (44) to the stem (10) with the nut (21) and washer (28).
13. Tighten the gland bolting (06/09) to compress the packing.
14. Loosen the gland nuts (09). Then carefully retighten the gland nuts (09) again.
15. Pressurise the system and check the packing (05) for signs of leakage.
16. In case leakage is observed, tighten the gland nuts (09) carefully until the leaking stops.
17. The valve is now ready for use.



DISASSEMBLY & ASSEMBLY GATE VALVE
WITH FLOATING BACKSEAT AND ELECTRIC ACTUATOR (½" - 1")



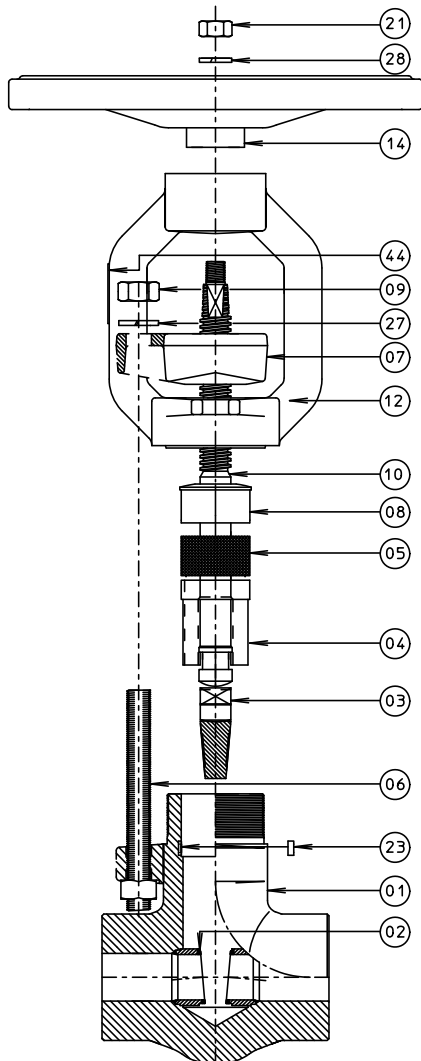
1. Caution, before any attempt is made to disassemble, verify that the valve is sufficiently cooled down, depressurised, isolated from system pressure and secured against accidental pressurisation.
2. Unscrew the nuts (09) from the gland bolts (06) and remove the gland flange (07).
3. Remove the hexagon socket screw from the position indicator (15). Operate the valve to the open position, using the actuator emergency handwheel rotating it counter clockwise. Now rotate it past the fully open position to force the packing (05) and the floating backseat (04) out of the stuffing box.
4. Unscrew the bolting (47) to loosen the actuator from the yoke (12).
5. Rotate the actuator clockwise in order to unscrew it from the stem (10).
6. Grind off the tack weld and unscrew the yoke (12) from the valve body (01) and remove the position indicator (15), gland flange (07), gland (08) and parallel key (23) from the stem (10).
7. Pull the stem (10) together with the remaining parts out of the valve body (01).
8. Remove the packing (05) and the floating backseat (04) from the stem (10) by pressing down on the floating backseat (04) whilst holding the stem (10) upside down.

INSPECTION PRIOR TO RE-ASSEMBLY

1. Thoroughly clean all parts with solvent and a clean cloth.
2. Examine the following parts signs of damage, i.e. pitting, erosion or scratches:
 - A. SEAT (02 - Sealing surface
 - B. STEM (10) - Packing area
 - C. WEDGE (03) - Sealing surface
 - D. BACKSEAT (04) – Sealing surface
3. Lubricate all threaded parts with high temperature grease, i.e. Molykote HSC.
4. Insert the stem (10) in the designated slot located in the wedge (03)
5. Insert the stem/wedge assembly into to valve body (01).
6. Insert the floating backseat (04) (with radius down) and the packing (05) (with markings down) into the valve body (01).
7. Place the parallel key (23) in the stem (10) and lubricate it with high temperature grease, i.e. Molykote HSC.
8. Place the yoke (12) together with the gland flange (07) and position indicator (15) over the stem (10) and screw the yoke (12) on the valve body (01) by rotating it clockwise.
9. Align the gland flange (07) to the correct position whilst sliding the parallel key (23) in the designated slot, provided in the gland flange (07). Now fixate the gland flange (07) with the gland bolts (06).
10. Tighten the gland bolting (06/09) to compress the packing.
11. Loosen the gland nuts (09). Then carefully retighten the gland nuts (09) again.
12. Mount the actuator on top of the connection flange (12) by rotating it counter clockwise and tighten the bolts (47). Adjust the limit switches of the actuator.
 - 3/8" - 1/2" valve 12mm travel
 - 3/4" - 1" valve 22mm travel
13. Operate the actuator in manual mode, until the valve is in closed position and adjust the switch setting according the actuator manufacturers manual. Now fixate the yoke (12) to the valve body (01) by means of a tack weld.
14. Pressurise the system and check the packing (05) for signs of leakage.
15. In case leakage is observed, tighten the gland nuts (09) carefully until the leaking stops.
16. Adjust the position indicator (15) and fixate it with the hexagon socket screw.
17. The valve is now ready for use.



**DISASSEMBLY & ASSEMBLY GATE VALVE
WITH FLOATING BACKSEAT (1¼" - 2")**



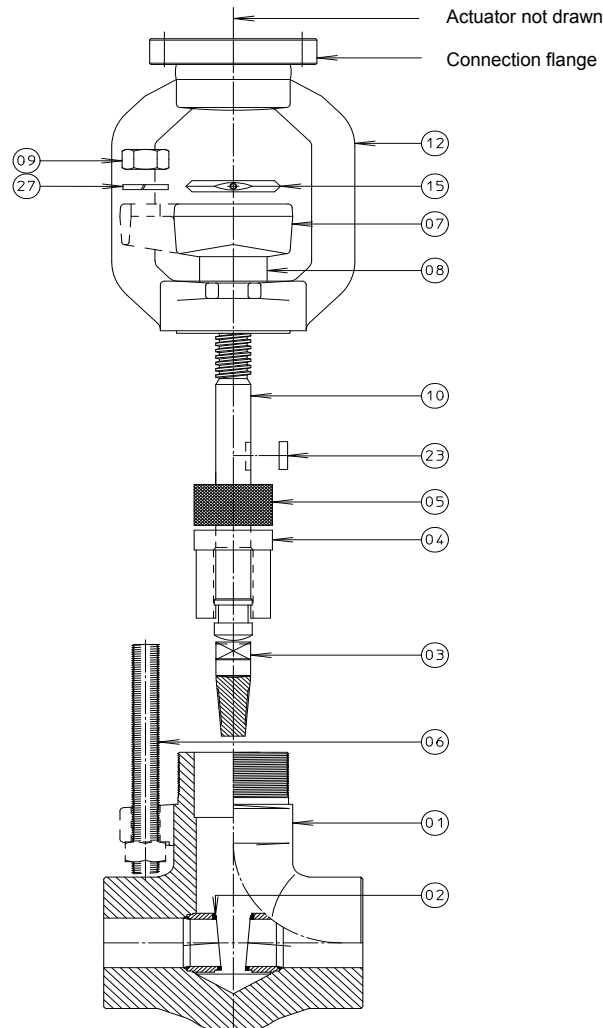
1. Caution, before any attempt is made to disassemble, verify that the valve is sufficiently cooled down, depressurised, isolated from system pressure and secured against accidental pressurisation.
2. Unscrew the nuts (09) from the gland bolts (06) and remove the gland bolts from the gland flange (07).
3. Operate the valve to the open position.
4. Loosen the yoke (12) by rotating it in a counter clockwise direction and unscrew it partly from the body (01) :
 - 17 revolutions for 1¼" - 2" valves
5. Rotate the handwheel (14) counter clockwise, past the fully open position to force the packing (05) and the floating backseat (04) out of the stuffing box.
6. Unscrew the yoke (12) and pull it together with the remaining parts out of the valve body (01). Special attention should be paid to removal of the parallel key (12) located inside the valve body (01).
7. Remove the handwheel nut (21) and rotate the handwheel (14) clockwise to unscrew the stem (10) from the yoke sleeve (50) until the handwheel disengages from the stem (10).
8. Continue unscrewing the stem (10) from the yoke (12) by hand gripping it below the yoke (12).
9. Remove the gland flange (07), the gland (08), the packing (05), the floating backseat (04) from the stem (10) by pressing down on the floating backseat (04) whilst holding the stem (10) upside down.

INSPECTION PRIOR TO RE-ASSEMBLY

1. Thoroughly clean all parts with solvent and a clean cloth.
2. Examine the following parts for signs of damage, i.e. pitting, erosion or scratches:
 - A. SEAT (02) - Sealing surface
 - B. STEM (10) - Packing area
 - C. WEDGE (03) - Sealing surface
 - D. BACKSEAT (04) - Sealing surface
3. Lubricate all threaded parts with high temperature grease, i.e. Molykote HSC.
4. Insert the stem (10) in the designated slot located in the wedge (03)
5. Insert the parallel key (23) in the key way located inside the valve body (01) and place the stem/wedge assembly into the valve body (01).
6. Insert the floating backseat (04) in the valve body (01) lining it up to the parallel key and install it into the valve body (01).
7. Insert the packing (05) (markings facing down) into the valve body (01).
8. Place the gland (08) over the stem (10).
9. Put the yoke (12) together with the gland flange (07) over the stem (10).
10. Screw the yoke (12) clockwise on to the valve body (01), while rotating the stem (10) counter clockwise.
11. Fixate the gland flange (07) with the gland bolts (06) and gland nuts (09).
12. Fixate the handwheel (14) and nameplate (44) to the stem (10) with the nut (21) and washer (28).
13. Tighten the gland bolting (06/09) to compress the packing.
14. Loosen the gland nuts (09). Then carefully retighten the gland nuts (09) again.
15. Pressurise the system and check the packing (05) for signs of leakage.
16. In case leakage is observed, tighten the gland nuts (09) carefully until the leaking stops.
17. The valve is now ready for use.



DISASSEMBLY & ASSEMBLY GATE VALVE
WITH FLOATING BACKSEAT AND ELECTRIC ACTUATOR (1¼" - 2")



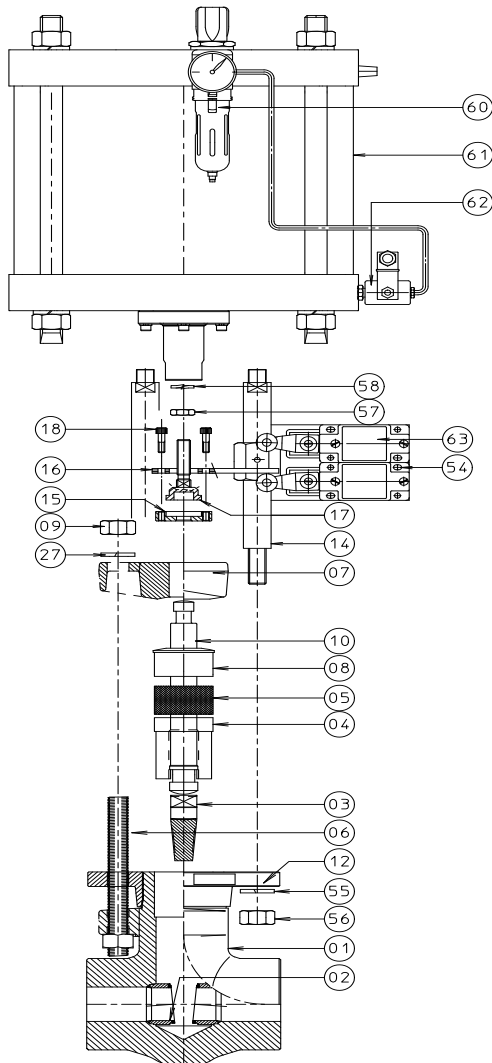
1. Caution, before any attempt is made to disassemble, verify that the valve is sufficiently cooled down, depressurised, isolated from system pressure and secured against accidental pressurisation.
2. Unscrew the nuts (09) from the gland bolts (06) and remove the gland bolts from the gland flange (07).
3. Remove the hexagon socket screw from the position indicator (15). Operate the valve to the open position, using the actuator emergency handwheel rotating it counter clockwise. Now rotate it past the fully open position to force the packing (05) and the floating backseat (04) out of the stuffing box.
4. Unscrew the bolting (47) to loosen the actuator from the yoke (12).
5. Rotate the actuator clockwise in order to unscrew it from the stem (10).
6. Grind off the tack weld and unscrew the yoke (12) from the valve body (01) and remove the position indicator (15), gland flange (07), gland (08) and parallel key (23) from the stem (10).
7. Pull the stem (10) together with the remaining parts out of the valve body (01).
8. Remove the packing (05) and the floating backseat (04) from the stem (10) by pressing down on the floating backseat (04) whilst holding the stem (10) upside down.

INSPECTION PRIOR TO RE-ASSEMBLY

1. Thoroughly clean all parts with solvent and a clean cloth.
2. Examine the following parts signs of damage, i.e. pitting, erosion or scratches:
 - A. SEAT (02 - Sealing surface
 - B. STEM (10) - Packing area
 - C. WEDGE (03) - Sealing surface
 - D. BACKSEAT (04) – Sealing surface
3. Lubricate all threaded parts with high temperature grease, i.e. Molykote HSC.
4. Insert the stem (10) in the designated slot located in the wedge (03)
5. Insert the stem/wedge assembly into to valve body (01).
6. Insert the floating backseat (04) (with radius down) and the packing (05) (with markings down) into the valve body (01).
7. Place the parallel key (23) in the stem (10) and lubricate it with high temperature grease, i.e. Molykote HSC.
8. Place the yoke (12) together with the gland flange (07) and position indicator (15) over the stem (10) and screw the yoke (12) on the valve body (01) by rotating it clockwise.
9. Align the gland flange (07) to the correct position whilst sliding the parallel key (23) in the designated slot, provided in the gland flange (07). Now fixate the gland flange (07) with the gland bolts (06).
10. Tighten the gland bolting (06/09) to compress the packing.
11. Loosen the gland nuts (09). Then carefully retighten the gland nuts (09) again.
12. Mount the actuator on top of the connection flange (12) by rotating it counter clockwise and tighten the bolts (47). Adjust the limit switches of the actuator.
 - 1¼" - 2" valve 42mm travel
13. Operate the actuator in manual mode, until the valve is in closed position and adjust the switch setting according the actuator manufacturers manual. Now fixate the yoke (12) to the valve body (01) by means of a tack weld.
14. Pressurise the system and check the packing (05) for signs of leakage.
15. In case leakage is observed, tighten the gland nuts (09) carefully until the leaking stops.
16. Adjust the position indicator (15) and fixate it with the hexagon socket screw.
17. The valve is now ready for use.



**DISASSEMBLY & ASSEMBLY GATE VALVE
WITH FLOATING BACKSEAT AND PNEUMATIC ACTUATOR**



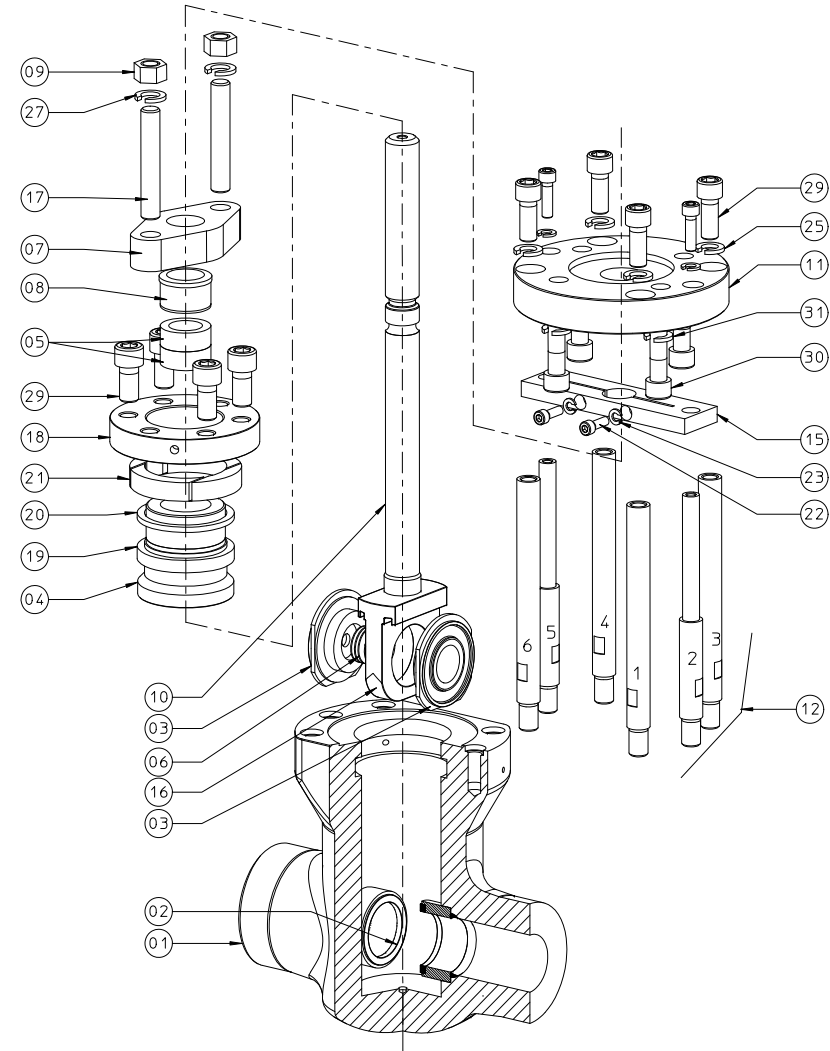
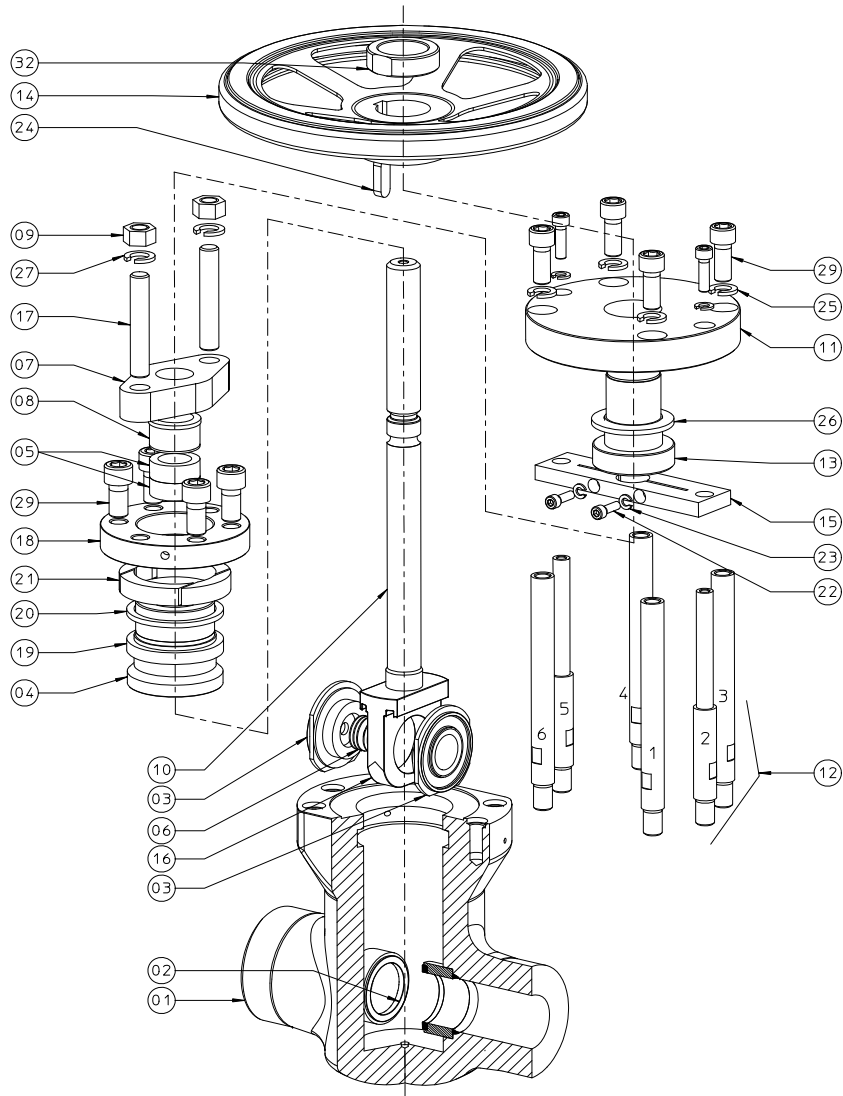
1. Caution, before any attempt is made to disassemble, verify that the valve is sufficiently cooled down, depressurised, isolated from system pressure and secured against accidental pressurisation.
2. Switch the pneumatic actuator to the closed position. Unscrew bolts (18) out of the coupling (15/17) to disconnect the upper coupling (17) from the lower coupling (15).
3. Switch the pneumatic actuator to the open position. Loosen the nut (57) of the upper coupling (17) and unscrew the upper coupling (17) together with the position indicator (16) out of the pneumatic actuator (61).
4. Unscrew the nuts (56) from the spacer columns (14) and disconnect the air feed line together with the electrical connections. Now remove the pneumatic actuator (61), spacer columns (14) and limit switches (63) from the pneumatic mounting flange (12). Unscrew the gland nuts (09) from the stud bolts (06) and remove them.
5. Pull the stem (10) together with wedge (03), coupling (15), gland flange (07), gland (08), packing (05) and floating backseat (04) out of the valve body (01).
6. Remove the coupling (15) and the gland flange (07) from the stem (10).
7. Remove the packing (05) and the floating backseat (04) from the stem (10) by pressing down on the floating backseat (04) whilst holding the stem (10) upside down.

INSPECTION PRIOR TO RE-ASSEMBLY

1. Thoroughly clean all parts with solvent and a clean cloth.
2. Examine the following parts signs of damage, i.e. pitting, erosion or scratches:
 - A. SEAT (02) - Sealing surface
 - B. STEM (10) - Packing area
 - C. WEDGE (03) - Sealing surface
 - D. BACKSEAT (04) - Sealing surface
3. Lubricate all threaded parts with high temperature grease, i.e. Molykote HSC.
4. Insert the stem (10) and wedge (03) into the valve body (01). Insert the floating backseat (04)(with radius down) into the valve body (01). Insert the packing (05) with markings down into the valve body (01).
5. Place the gland (08) together with the gland flange (07) over the stem (10). Fixate the gland flange (07) with the gland bolts (06).
6. Tighten the gland bolting (06/09) to compress the packing (05).
7. Loosen the gland nuts (09). Then carefully retighten the gland nuts (09) again.
8. Install the coupling (15) to the stem (10). Lubricate stem radius with high temperature grease, i.e. Molykote HSC. Install the upper coupling (17) and place the position indicator (16) on top of it. Secure this assembly by screwing in the hexagon socket screws (18).
9. Place the actuator (61), spacer columns (14) and limit switches (63) on the actuator mounting flange (12). Reconnect the air feed line and electrical connections and switch the pneumatic actuator to the open position. Now secure the spacer columns (14) with the nuts (56) and washers (55).
10. Screw the upper coupling (17) into the pneumatic actuator until the stem contacts the loose backseat (04). Unscrew the threaded end one revolution counter clockwise.
11. Switch pneumatic actuator to the closed position and fasten the upper coupling (17) with the nut (57).
12. Pressurise the system and check the packing (05) for signs of leakage.
13. In case leakage is observed, tighten the gland nuts (09) carefully until the leaking stops.
14. The valve is now ready for use.



DISASSEMBLY & ASSEMBLY PARALLEL SLIDE GATE VALVE
3" - 4" 1500-2500 LBS.



DISASSEMBLY & ASSEMBLY PARALLEL SLIDE GATE VALVE

3" - 4" 1500-2500 LBS.

1. Caution, before any attempt is made to disassemble, verify that the valve is sufficiently cooled down, depressurised, isolated from system pressure and secured against accidental pressurisation.
2. For manual operated valves remove handwheel nut (32), handwheel (14) and parallel key (24).
For valves with a Gearbox or Electric Actuator, remove the actuator by unscrewing the bolts (30) from the lower side of the top flange (11) and remove the actuator from the stem (10) by rotating it clockwise.
3. Unscrew the hexagon socket screws (29) from the top flange (11).
4. For manual operated valves screw the yoke sleeve (13) together with the needle bearing (26) from the stem (10).
5. Loosen the bolts (22) from the guiding plate (15) and remove it. Unscrew the stands (12) out of the valve body (01). Unscrew gland bolting/nuts (17-09) and remove them. Remove the gland (07) and gland-bushing (08).
6. Unscrew the bolts (29) from the retaining ring (18) and unscrew the retaining ring (18) from the bonnet (04), whilst holding up the stem/disc assembly, to secure the bonnet (04) preventing it damaging the stem (10).
7. After the retaining ring (18) has been removed, lower the stem/disc assembly and bonnet (04). Remove the segmental ring (21) out of the valve body (01), by pressing a punch through the provided bore holes. Now remove the ring (20) and gasket (19), together with the bonnet (04) and stem/disc assembly, by pulling the stem/disc assembly out of the valve body (01).
8. Dis-assemble the disc assembly by rotating the first disc (03) 90°, so that the lip will come out of the disc holder (16). Afterwards remove the belleville spring set (06) and pin, see fig.01 and finally remove the second disc (03) by rotating it 90°.

INSPECTION PRIOR TO RE-ASSEMBLY

1. Thoroughly clean all parts with solvent and a clean cloth.
2. Examine the following parts signs of damage, i.e. pitting, erosion or scratches:
 - A. SEAT (02) - Sealing surface
 - B. STEM (10) - Packing area
 - C. DISC(S) (03) - Sealing surface
 - D. BACKSEAT (04) - Sealing surface

3. Place the belleville springs (06) and pin (as indicated in Fig.01) into the first disc (03). Place this disc (03) into the disc holder (16) and rotate it 90° securing the lip in the provided groove located in the disc holder (16). Afterwards install the second disc (03) and rotate it 90° securing the lip in the provided groove located in the disc holder (16) as well.
4. Place the bonnet (04) over the stem/disc assembly. Pull up the stem/disc assembly to avoid the bonnet (04) from dropping in the valve body (01). Install a new gasket (19) in the valve body (01), with the gasket ring (20) on top of it.
5. Place the segmental ring (21) inside the provided groove located in the valve body (01). Make sure there is no split between two segments placed in front of a disassembly hole. Pull up the stem/disc assembly together with the bonnet (04) through the segmental ring (21). Screw the retaining ring (18) on the bonnet (04) and tighten it. Screw the bolts (29) into the retaining ring (18) and evenly tighten them.
6. Place packing (05) (first with markings down, second with markings up) over the stem (10) into the bonnet (04). Place the gland bushing (08) over the stem (10) followed by the gland flange (07) and secure them with the gland bolting (17/09). Tighten the nuts (09) to compress the packing (05). Loosen the nuts (09), then tighten them carefully again.
7. Screw the stands (12) into the valve body (01) as indicated. Place the guiding plate (15) over the stem (10) on top of stand number 2 and 5. Secure the guiding plate (15) with the hexagon socket screws (22/23) through the slot provided in the stem (10).
8. For manual operated valves screw the yoke sleeve (13) together with the needle bearing (26) on the stem (10).
9. Place the top flange (11) on top of the stands (12) and secure them with the hexagon socket screws (29).
10. For manual operated valves rotate the yoke sleeve (13) against the top flange (11), place the parallel key (24), handwheel (14) and secure it with the handwheel nut (32).
11. Pressurise the system and check the packing (05) and gasket (19).

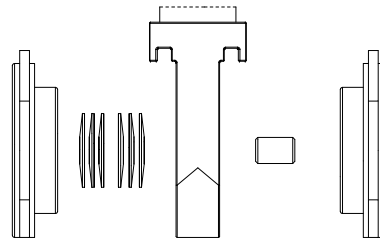


Fig.01



12. In case of leakage through the packing (05) tighten the nuts (09) of the gland bolts (17) carefully until the leaking stops.
13. The valve is now ready for use.