

Valve assembly, body DN 10 to 50 (Fig.4)

DN	N	8	12	15	20	25	32	40	50
V		15	20	25	32	40	50	65	
Torque N.m		10	10	10	22	22	40	40	60

Except otherwise specified, welding of the end connections should be done prior to assembly of the valve body. Failing to do so might result in the damage of the seats and body gaskets.

1. Insert body flanges (11) into the pipe.
2. Weld the ends (10) on pipe.
3. Insert screws (13), spacers (12) and nuts in the body flanges (11). ONLY insert 3 in order to further allow valve body positioning.
4. Insert valve body between ends (ball should be in the open position). Make sure that the sealing surfaces (ends and sealings) are free of particles prior to assembly.

CAUTION : Match the position of the ball vent hole relative to the arrow printed on the valve body. The vent hole must be on upstream. The arrow is turned onto downstream.

5. Put on the 4th screw (13), spacer (12) and nut (17).
6. Orientate the valve body as required around the pipe and tighten screws (13) and nuts (17) according to the above torque values. In case of valves with stainless steel threaded spacers, make sure the spacers (12) are evenly tightened and positioned in the middle (Fig. 9)

Valve assembly, body DN65 to 150 (Fig.5)

DN	N	65	80	100
V		80	100	125
Torque N.m		80	80	80

Except otherwise specified, welding of the end connections should be done prior to assembly of the valve body. Failing to do so might result in the damage of the seats and body gaskets.

1. Insert body flanges (11) into the pipe.
2. Weld the ends (10) on pipe.
3. Insert screws (13), spacers (12) and nuts in the body flanges (11). NOTE to keep some screws apart in order to further allow valve body positioning.
4. Insert the valve body between ends (ball should be in the open position). Make sure that the sealing surfaces (ends and sealings) are free of particles prior to assembly.

CAUTION : Match the position of the ball vent hole relative to the arrow printed on the valve body. The vent hole must be on up stream. The arrow is turned onto downstream.

5. Put on the last screws (13), and nuts (17).
6. Guide the valve body as required around the pipe and tighten screws (13) and nuts (17) according to the above torque values. In case of valves with stainless steel threaded spacers, make sure the spacers (12) are evenly tightened and positioned in the middle (Fig. 9)

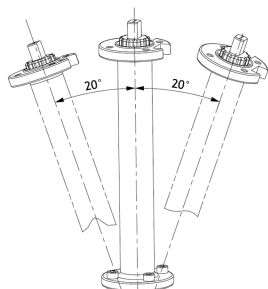


Fig.1

CAUTION: Do not install the cryogenic valves with an inclination of the extension of more than 20° from the vertical. (see Fig.1)

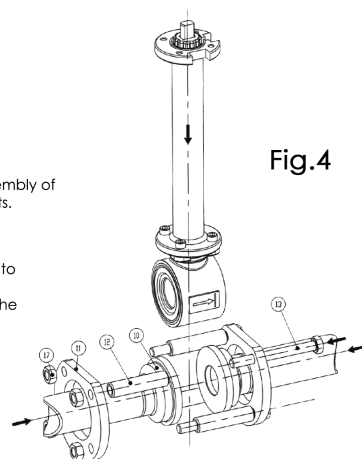


Fig.4

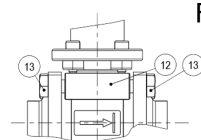


Fig.9

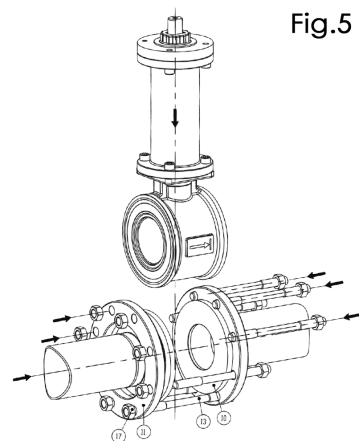


Fig.5

Valve maintenance, body DN 10 to 50 (Fig.4 & Fig.6)

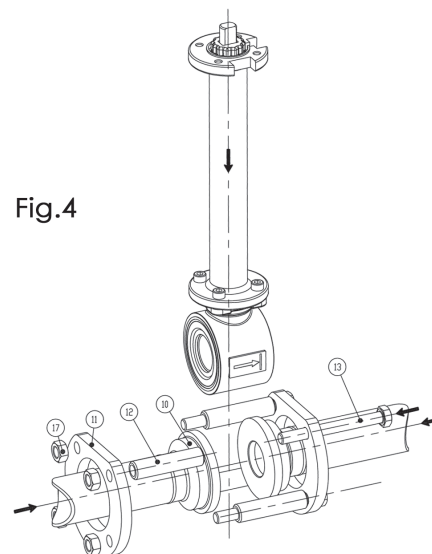


Fig.4

Seats (08), body seals (14) and ball (09) replacement

1. Unscrew one screw (13) and take it out with the spacer (12) and the nut (17) to allow valve body to be taken out
2. Take out valve body. Ball must be in the open position.
3. Operate 90° to allow the ball (09) to be in the close position
4. Push the ball (09) outside of the body. Seats (08) will be pushed as well
5. Remove the body seals (14)
6. Change damaged components
7. Re assemble all components following opposite instructions from 5. to 1.

Valve maintenance, body DN 65 to 100 (Fig.5 & Fig.7)

Seats (08), body seals (14) and ball (09) replacement

1. Unscrew nuts (17) and boltings (13)
2. Take out valve body. Ball must be in open position
3. Operate a 90° turn in order to set the ball (09) in closed position
4. Push the ball (09) out of the valve body. Seat supports (20) are also pushed out.
5. Take the seats (08) out of the seat supports (20)
6. Take body seals out (14)
7. Replace damaged components
8. Re assemble all parts following opposite disassembly instructions. When re assembling the seats (08) and seat support (20), make sure it is done as per shown on figure 7.

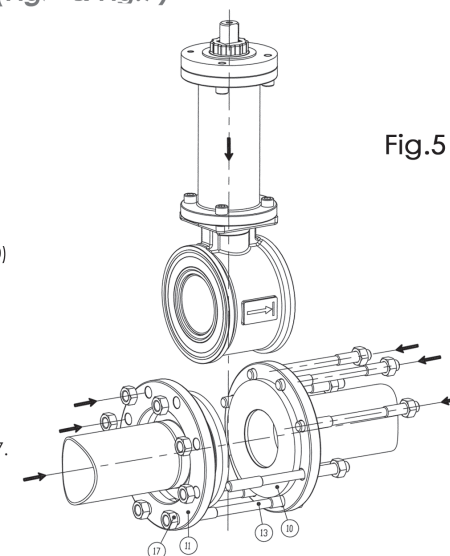


Fig.5

Valve maintenance, body DN 10 to 50 (Fig.4 & Fig.6)

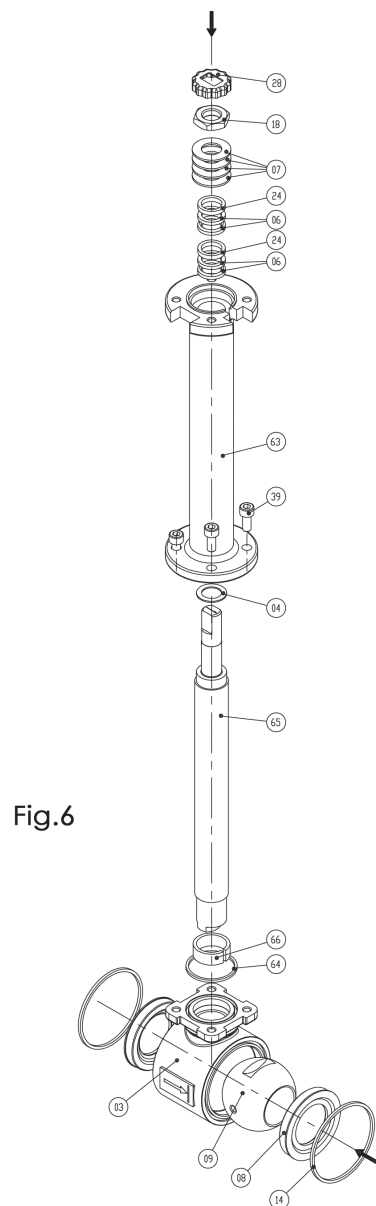


Fig.6

Gland Packing (06), extension's split ring (66), extension's seal (64) thrust stem seal replacement (04)

1. Unscrew one screw (13) and take it out with the spacer (12) and the nut (17) to allow valve body to be taken out.
2. Take out valve body. Ball must be in the open position.
3. Operate 90° to allow the ball (09) to be in the close position.
4. Push the ball (09) outside of the body. Caution Make sure to note the position of the ball relative to the direction of the arrow minted on the body. Seats (08) will be pushed as well.
5. Take out Nut lock (28) and unscrew the nut (18).
6. Remove the extension's body (63) by removing 4 screws (39).
7. Push the stem (65) down the inside of the extension's body (63). Make sure that the stem thrust seal (04) remains on the stem (65).
8. Remove springing washers (07), the gland (24) and the gland packing (06). CAUTION Carefully notice the way of mounting.
9. Remove the stem (65) from the extension's body (63) and replace the stem thrust seal (04).
10. Put the stem (65) inside the extension's body (63).
11. Change the gland packing (06) and put the glands (24). Carefully observe the way of position (gland packing / gland / gland packing / gland).
12. Put the washers (07).
13. On the valve's body (03), remove and replace the extension seal (64) and the extension's split ring (66).
14. Reassembly the extension's body (63) with the stem (65) on the valve's body (03). Tighten the 4 screws (39).

CAUTION : Make sure that the arrow on the top of the stem has the same direction as the arrow minted on the valve body (03).

15. Tighten the gland nut (18) according the torque value below. Do not forget the nut stop (28).

16. Reassemble the complete body valve according the process "Cryogenic VALVE ASSEMBLY".

DN	N	8	12	15	20	25	32	40	50
V		15	20	25	32	40	50	65	
Torque N.m		4	4	4	8	8	12	12	16

Valve maintenance, body DN 65 to 100 (Fig.5, Fig.7 & Fig.8)

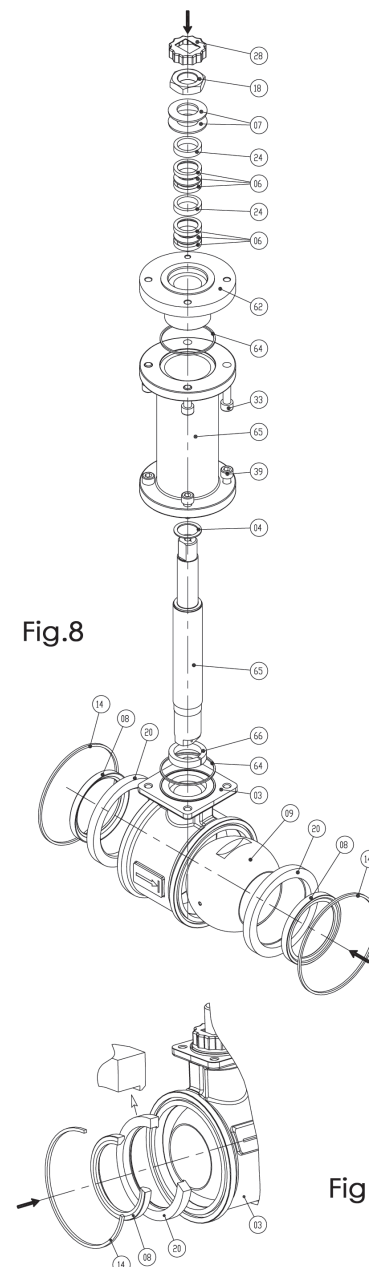


Fig.8

Gland Packing (06), extension's split ring (66), extension's seal (64) thrust stem seal replacement (04)

1. Unscrew nuts (17) and boltings (13).
 2. Take out the valve body. The ball must be in open position.
 3. Operate a 90° turn to get the ball (09) in the closed position.
 4. Push the ball (09) out of the valve body. Caution Make sure to note the position of the ball relative to the direction of the arrow minted on the body. Seat supports (20) are also pushed out.
 5. Remove the nut lock (28) and unscrew the nut (18).
 6. Remove the extension's body (63) by removing 4 screws (39).
 7. Push the stem (65) down the inside of the extension's body (63). Make sure that the stem thrust seal (04) remains on the stem (65).
 8. Loosen the 4 screws (33) and remove the upper ISO Flange (62).
 9. Replace the worn extension's seal (64) by a new one, and re assembly the upper ISO flange (62) sur on the extension (63). Tighten the 4 screws (33).
 10. Remove springing washers (07), the gland (24) and the gland packing (06). CAUTION Carefully notice the way of mounting.
 11. Remove the stem (65) from the extension's body (63) and replace the stem thrust seal (04).
 12. Put the stem (65) inside the extension's body (63).
 13. Change the gland packing (06) and put the glands (24). Carefully observe the way of position (gland packing / gland / gland packing / gland).
 14. Put the washers (07).
 15. On the valve's body (03), remove and replace the extension seal (64) and the extension's split ring (66).
 16. Reassemble the extension's body (63) with the stem (65) on the valve's body (03). Tighten the 4 screws (39).
- CAUTION : Make sure that the arrow on the top of the stem has the same direction as the arrow minted on the valve body (03).
17. Tighten the gland nut (18) according the torque value below. Do not forget the nut stop (28).

Fig.7

DN	N	65	80	100
V		80	100	125
Torque N.m		35	35	35