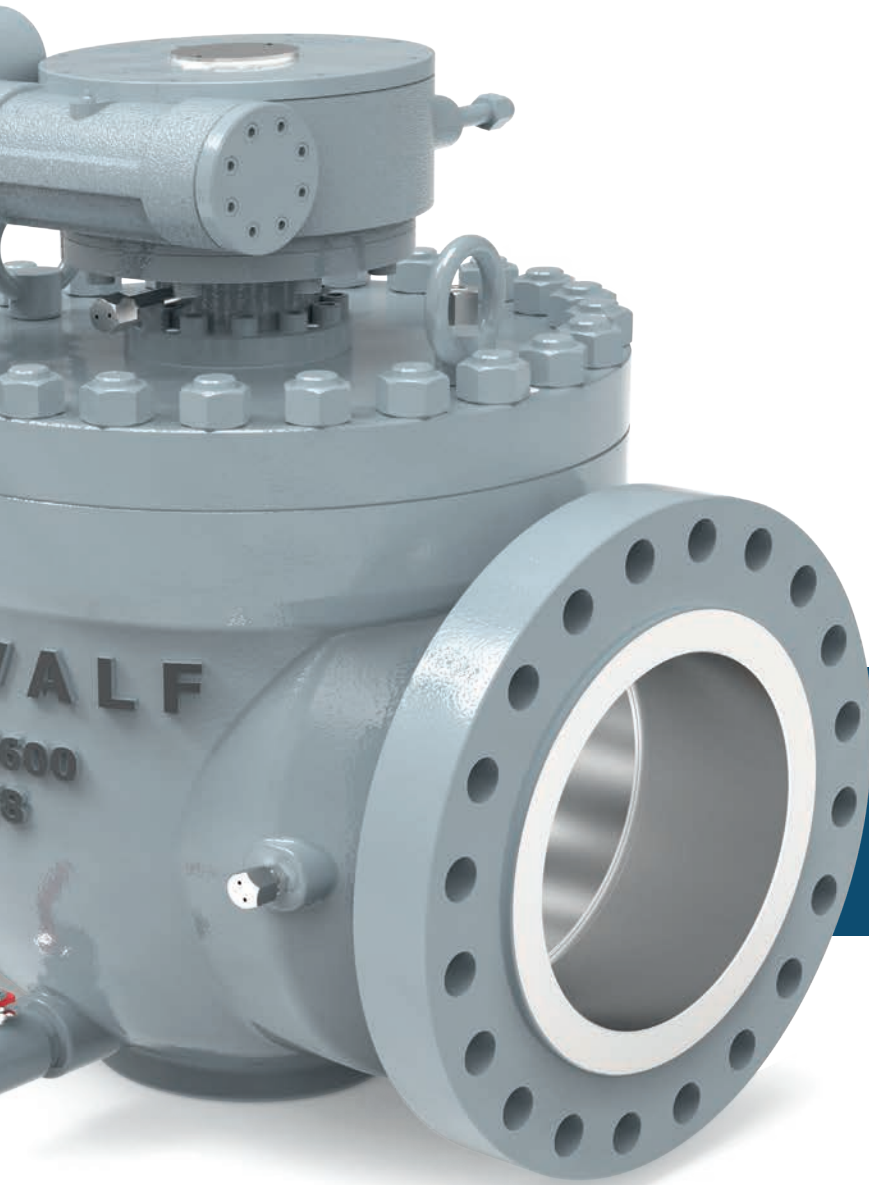


KURVALF

Pipeline Valves



TOP ENTRY
BALL VALVES

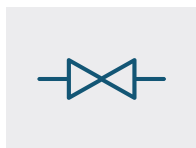


When you need to decrease down time of critical service pipeline you should select top entry design ball valves for in line maintenance and quick repair-ability. It allows to remove ball and seats easily at site without disassembly whole valve for maintenance or repairing purpose. At Kurvalf you can order Top Entry Ball Valves with following features;



WHERE TO USE

- On/Off Shore Oil and Gas Production
- Subsea Oil and Gas Production
- Oil and Gas Storage
- Oil and Gas Transportation
- Oil and Gas Gathering Systems
- Gas Re-injection Plants
- Gas Treatment Plants
- LPG and LNG Production
- LPG and LNG Storage
- LPG and LNG Transportation
- Petrochemical Industry
- Metering Systems
- Refining Industry



SIZE RANGE

6" - 42"
(DN150mm - 1400mm)



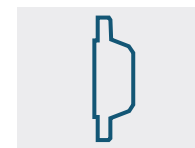
PRESSURE RATINGS

ANSI Classes:
150 - 2500



BORE

Full bore & reduced bore



END CONNECTIONS

Flanged or welded

FEATURES

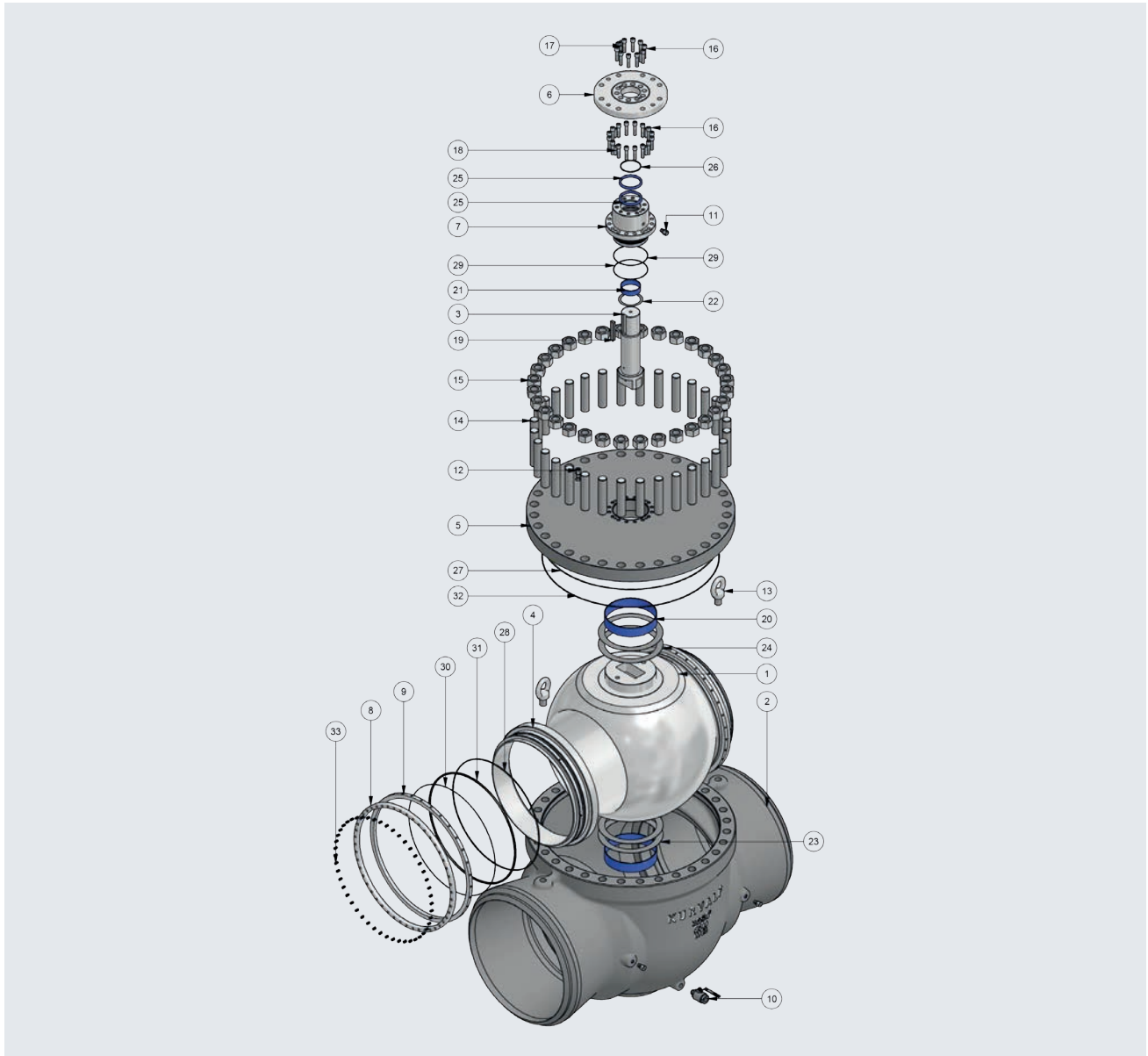
- Trunnion mounted (low operating torque)
- Bubble-tight sealing from zero to full rated pressure.
- Metal-to-metal primary seal – protected o-ring secondary seal.
- Double stem seals – can be replaced with pipeline under pressure.
- Integral mechanical stops.
- Both upstream and downstream seat seals capable of sealing upstream pressure.
- Full block and bleed capability.
- Seal integrity can be checked by pressurising the body cavity only.
- Piggable.

REFERENCE STANDARDS

Valves Design Standard :	ISO 17292, API 6D, ISO 14313
Face To Face Std :	ANSI B16.10
End Connection :	ANSI B16.5 / ANSI B.16.25 DIN EN 1092-1
Testing :	API 6D / API 598
Fire safe testing :	API 607 / ISO 10497 / API 6FA
Certificate Acc. to :	10204 3.1 - 3.2

VALVE PART LIST

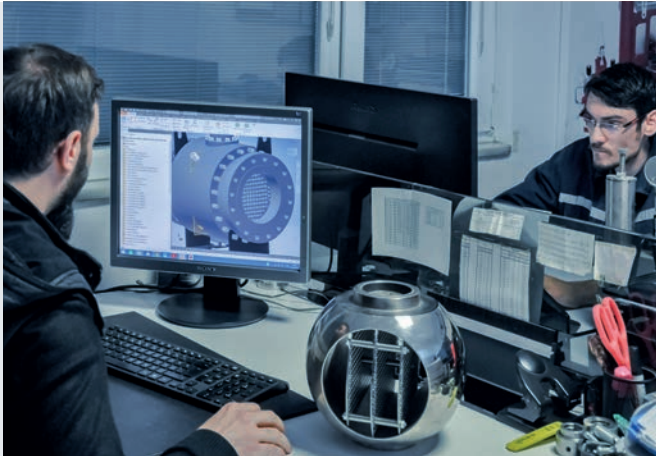
KURVALF



ITEM	PART NAME	QTY	MATERIAL
1	Ball	1	ASTM A350 Gr LF2
2	Body	1	ASTM A216 WCB
3	Stem	1	AISI 4140
4	Seat	2	ASTM A350 Gr LF2
5	Bonnet	1	ASTM A350 Gr LF2
6	Actuator Flange	1	ASTM A350 Gr LF2
7	Gland	1	ASTM A350 Gr LF2
8	Screw Ring	2	ASTM A350 Gr LF2
9	Ring Holder	2	ASTM A350 Gr LF2
10	1" Drain Valve	1	ASTM A105
11	Sealant	5	ASTM A105
12	Drain Plug	1	ASTM A105
13	Lifting Device	2	ASTM A105
14	Stud Bolt	32	ASTM A193 B7
15	Nut	32	ASTM A194 2H
16	Bolt	26	DIN 8.8
17	Pin	2	DIN 8.8

ITEM	PART NAME	QTY	MATERIAL
18	Pin	4	DIN 8.8
19	Key	1	C45
20	Bush	2	C.S
21	Bush	1	C.S
22	Washer	1	STEEL + GRAPHITE
23	Washer	1	STEEL + GRAPHITE
24	Washer	3	STEEL + GRAPHITE
25	Seal	2	EPM
26	Gasket	1	GRAPHITE
27	Gasket	1	GRAPHITE
28	Gasket	2	GRAPHITE
29	O-Ring	2	NBR
30	O-Ring	2	NBR
31	O-Ring	2	NBR
32	O-Ring	1	NBR
33	Springs	96	INCONEL X750

For sour / low gas service material options contact us...



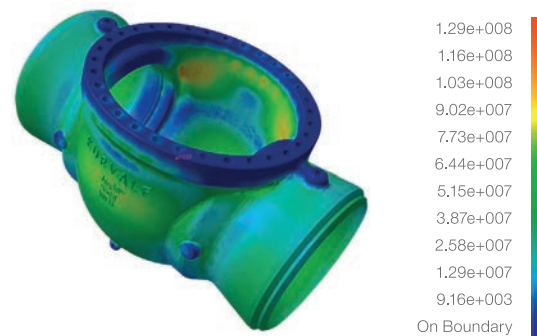
VALVE DESIGN & ANALYSIS

All valve designs, have been asset stress analysis to ensure pressure contained parts performance before manufacturing process.

VALVE REACTION & PRESSURE TEST

All KURVALF products are tested in accordance with API 598 standards with digitally aided valve test machines which correspond %100 of modern requirements. Each valve is delivered to customers as EN10204 3.1 certified. The types of test performed as follows:

- Shell test
- Low pressure closure test
- Visual examination of casting
- Back-seat test
- High pressure closure test
- High pressure pneumatic shell test



Von Mises stress (nodal values), 1N_m2

LEAKAGE TEST TABLE

API 598 ISO - 5208		HYDROSTATIC SEMI OPEN BODY TEST (Working pressure x 1,5)		HYDROSTATIC SEAT TEST (Working pressure x 1,1)		PNEUMATIC SEAT TEST	
		Pressure (Bar)	Time	Pressure (Bar)	Time	Pressure (Bar)	Time
ANSI 150	Working pressure 20 Bar	30 Bar	Depends on nominal diameter	22 Bar	Depends on nominal diameter	6 Bar	Depends on nominal diameter
ANSI 300	Working pressure 51 Bar	76 Bar		57 Bar			
ANSI 600	Working pressure 102 Bar	153 Bar		113 Bar			
DN 15 - 100 (1/2" - 4")			2 minute		2 minute		2 minute
DN 150 - 250 (6" - 10")		ANSI 150 30 Bar ANSI 300 76 Bar ANSI 600 153 Bar	5 minute	ANSI 150 - 22 Bar ANSI 300 - 57 Bar ANSI 600 - 113 Bar	5 minute	6 Bar	5 minute
DN 300 - 450 (12" - 18")			15 minute				
DN 500 and bigger			30 minute				



TORQUE MEASUREMENT

By making all torque measurements of our valves in the most correct way with torque measurement devices, we provide cost advantage and longevity for our customers on the equipment they chose.

Torque measurement values may show an alteration depending on valve design type and fluid type. Frequently used BTO values are shown in the table. All measurements are BTO torque values and they are for ball valves with soft and hard seat.

It is recommended to add a safety factor of 1.5 times, when selecting an actuator above the torque values.

For MTM seat, hard insert seat and other type valve torque information, please contact with us.

TORQUE TABLE (FULL BORE) (Nm)

CLASS	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"	30"	32"	36"	40"	42"
150	80	120	200	300	440	700	830	1.050	1.460	2.400	3.340	6.890	11.700	17.500	24.000	29.500	35.000	45.000
300	110	190	240	430	700	1.150	1.300	1.550	2.800	3.450	4.520	8.530	17.000	23.000	28.500	36.000	44.000	53.000
600	145	260	275	600	900	1.830	2.100	2.550	3.900	4.500	5.400	13.100	24.500	29.500	35.000	48.000	59.000	68.000

Before selecting proper size, take consideration on factor of safety. Recommended factor of safety for general usage is min. 1,5 times of required torque value.



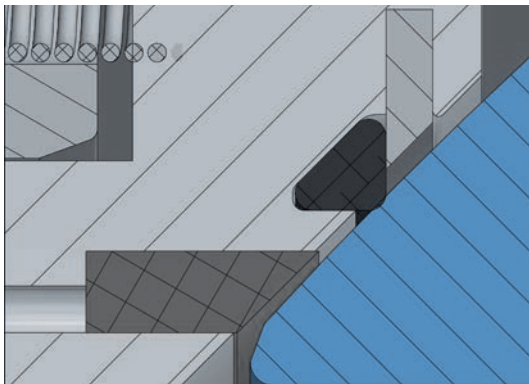
Ball surface plating with 150 micron TCC.

Mainly used abrasive fluids, severe service and corrosive fluids also high temperatures and pressures.

Soft seats are provide excellent sealing performance and for used normal condition and normal temperature and aggressive environments .

METAL COATING TYPES

- Stellite
- Tungsten Carbide
- Nickel Bore
- Special coatings available



SINGLE PISTON EFFECT

This type of seat design can ensure a tight contact with the ball in only single direction. In fact, when the line (so the valve) is under pressure (upstream), the seat is pushed toward the ball normally. It is called single piston effect due to one side seat ring pushed toward the ball.

DOUBLE PISTON EFFECT

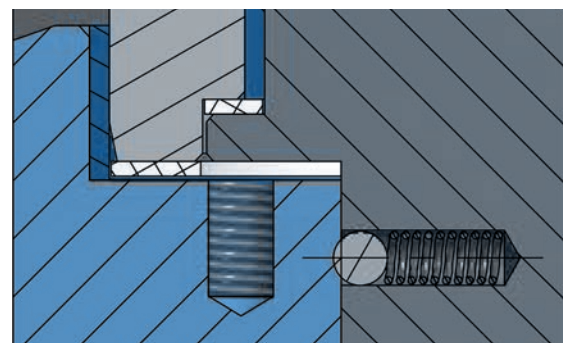
As the name of it indicates, this type of seat design provide a tight contact with the ball in the normal direction, and also in the reverse direction. So, both sides upstream and downstream can be sealed for better leakage proof. Its design allows to use body cavity pressure to push downstream side ring toward the ball also. It is called double piston effect due to both side seat ring pushed toward the ball.

ANTI STATIC DEVICE

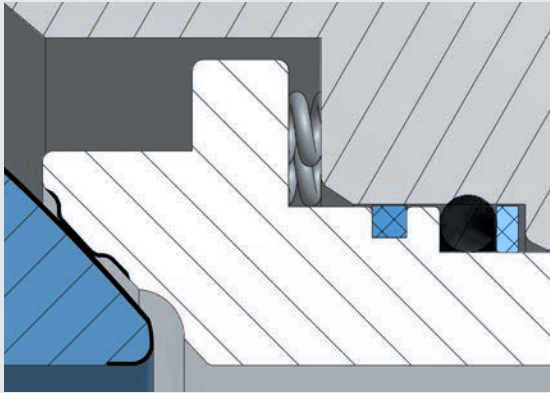
Spring plus graphite type antistatic device are applied between the ball, stem, gland flange and body, to keep the electrical continuity between all the metallic components, and ensure the resistance lower then the most severe service requirement.

BLOW-OUT PROOF STEM

This design ensures the valve stem cannot blown out of the body in the event of the gland being removed while the valve is under pressure. To prevent stem blow out from body, the stem has a shoulder in the lower part and so constructs that it may not blow out upwards.

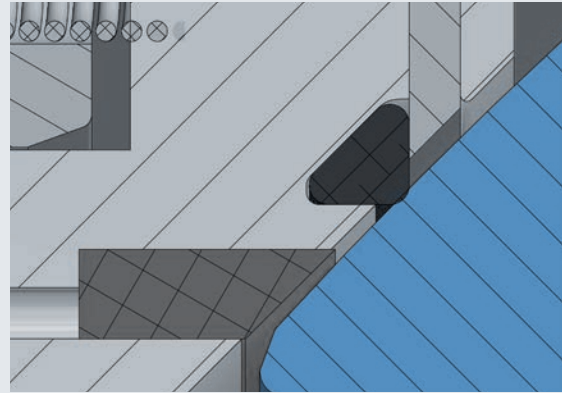


METAL TO METAL SEAT

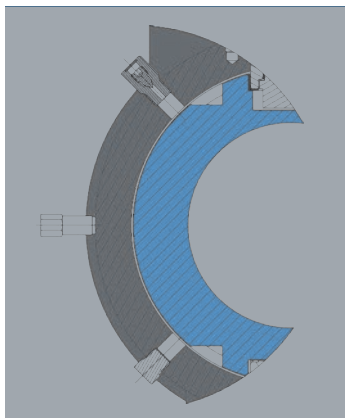


- Ball
- Seat

SOFT SEAT



- Sealing (H-NBR)
- Ball
- Seat

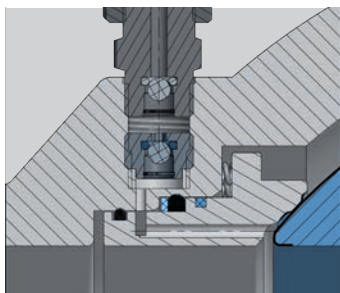


DOUBLE BLOCK AND BLEED

When the ball is in the closed position, each seat seals off the process medium independently at the same time between the up/down stream and body cavity; it allows bleeding of the trapped cavity pressure (DBB) through drain or vent valve. The double block and bleed function makes it possible to flush the valve under pressure and verify that the seats are sealing properly.

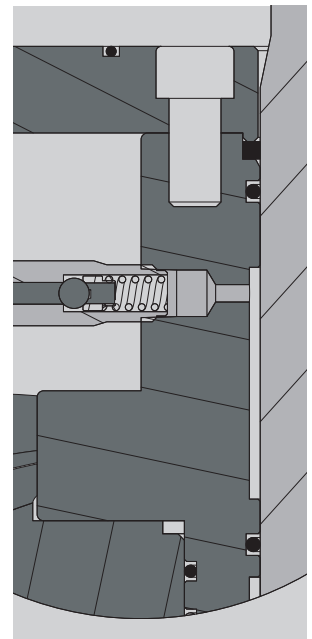
STEM SEAL

For high pressure or large size valves, double o-rings located in the upper stem area are used to ensure positive sealing. And upon request, additional stem seal injection fittings are provided to be utilized in the case of emergencies, o-ring damage, or if stem leakage occurs.



EMERGENCY SEAT SEAL

In the event of damage to the valve seat, sealant can be injected to temporarily seal the valve until maintenance can be performed. It provides high integrity shut-off. On request, secondary seat sealant injection fittings are installed.





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