High Performance Butterfly Valves

TIPVALVE INDUSTRIAL GROUP CO.,LTD. is a professional manufacturer of soft seat, metal seat and fire-safe high performance butterfly valves, our unique seat design is advanced and reliable. Under an ISO 9001 Quality Assurance Program, it assures each valve we produce meets or exceeds your application requirements.

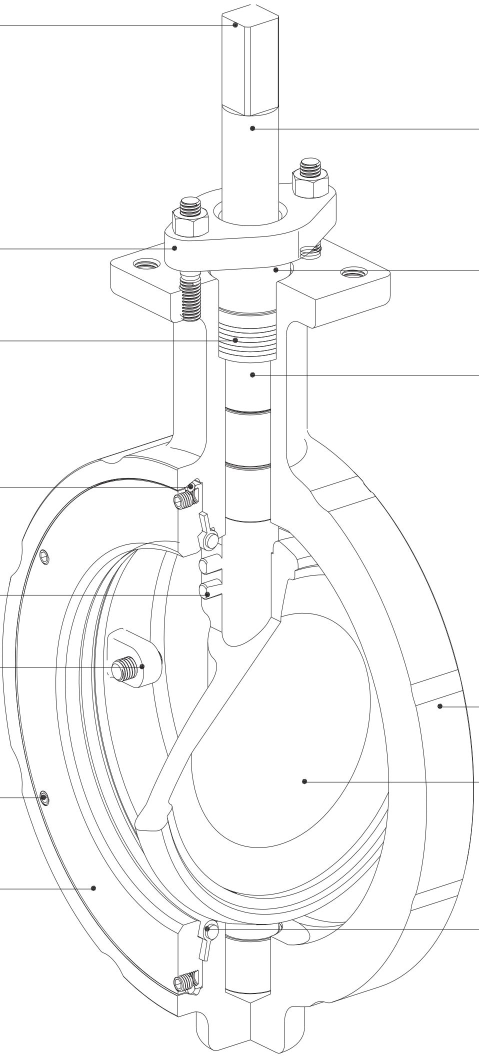
Tipvalve high performance butterfly valves are available in sizes from 2" - 60" in ANSI/ASME, DIN standards etc. and are available with a diverse range of manual and actuated options.

Our high performance butterfly valves are widely used in many industries including heating, ventilating and air conditioning, power generation, hydrocarbon processing, water and waste water treatment, and marine and commercial shipbuilding. Our products are also installed in applications as diverse as food and beverage processing, snowmaking and pulp and paper production.

Configurations are available for harsh conditions as well as applications requiring nominal pressure and temperature ratings

High Performance Applications

Construction
Chemical / Petro-Chemical
Liquified Gas / Refrigeration
Heavy Industrial
Power / Co-Generation Plants
Steel and Iron Works
Commercial
Pulp and Paper Mills
Oil Refineries and Oil Field
Ship Building
Hydrocarbon Processing
Gas Piping
Local Area Energy Supply
Industrial



SQUARE
Square valve-to-operator connection applied to ISO5211 pneumatic actuators and electic actuactors 2"-28" default connection as square, key type is available. 28"-60" default connection is KEY type.

GRAND FLANGE
Applies load against packing gland to prevent external leakage. Fully adjustable.

PACKING
Soft Seat: Chevron design TFE prevents external leakage out valve neck to full ASME hydrostatic shell test pressures (150% of C.W.P.)
Metal Seat: Common materials are TFE for up to 232°C and Graphite for up to 482°C.
Fire-safe: Common material is graphite.

WEDGE RING
Stainless steel band wedged between valve body and retainer ring by set screws to lock seat and retainer ring in position on valve.

WEDGE PINS
Provide positive mechanical attachment of disc to shaft.

OVERTRAVEL STOP
Prevents disc from rotating into the wrong quadrant

SET SCREWS
Cone point screws force wedge ring outward to lock seat retainer in position on the 30" valve size.

RETAINER RING
Retains seat in valve. Standard surface finish is 125 to 200 AARH and is compatible with both standard gaskets and spiral wound gasket designs. Outside diameter is recessed within gasket sealing surface to prevent external leakage.

BLOW OUT PROOF SHAFT
Solid shaft provides alignment and rigid support for disc. 17-4PH and 316 materials are available.

PACKING GLAND
Separate part from gland flange, preventing uneven load distribution against packing.

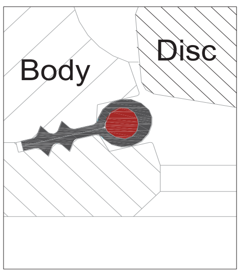
BEARINGS
Soft Seat: Both above and below the disc, bearings are of composite design: PTFE bonded to epoxy-glass filament wound ring.
Used to align shaft, with high capacity, low wear, and low friction coefficient.
Metal Seat: Both above and below the disc, bearings are of composite design: 316 bonded to Dupont PTFE wound ring. used to align shaft, with high capacity, low wear, and low friction coefficient.
Fire-safe: Both above and below the disc, bearings are of composite design: 316 bonded to Dupont PTFE wound ring. Used to align shaft, with high capacity, low wear, and low friction coefficient

BODY
ASME B16.34 design in either wafer or lug configuration.

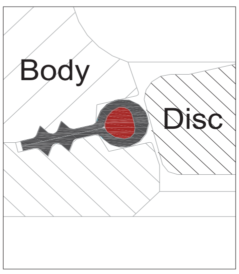
DISC
Soft Seat: 360° uninterrupted spherical edge for sealing. Profile is designed for maximum flow and equal percentage control.

SEAT
Soft Seat: Patented bi-directional seat with encapsulated elastomeric o-ring core for resiliency. Common seat materials include TFE, RTFE and UHMWPE.
Metal Seat: Patented metal seat with metal back-up ring.
Fire-safe: Patented bi-directional soft seat design for zero-leakage in normal operation and a metal-to-metal seal after fire, meeting or exceeding industry "fire-safe" specifications.

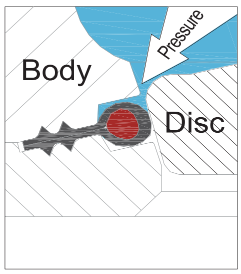
Bi-directional Sealing



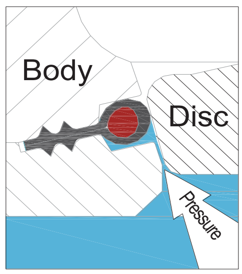
Seat non-compressed as disc approaches.



Disc in close position, with no line pressure.



Disc in close position, line pressure applied from upstream.

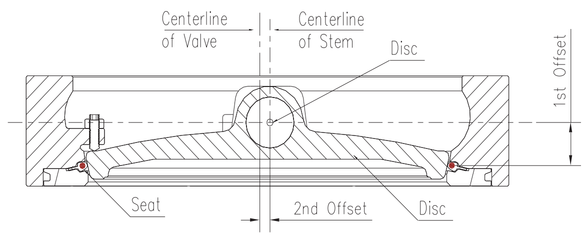


Disc in close position, line pressure applied from downstream.

Double Offset/Eccentric Design

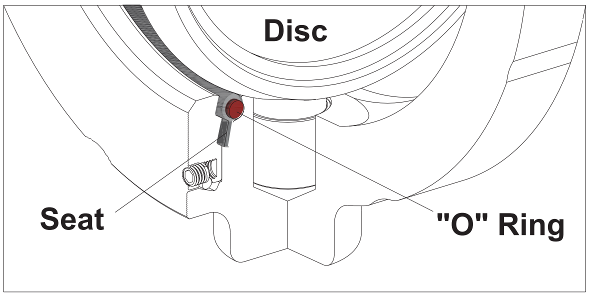
The double offset design of the Tipvalve High Performance Buttefly Valves assures reduced seat wear and bidirectional, zero leakage shut off throughout the full pressure range.

At the initial point of disc opening, the offset disc produces a cam–like action, pulling the disc from the seat. This cam–like action reduces seat wear and eliminates seat deformation when the disc is in the open position. When open, the disc does not contact the seat, therefore seat service life is extended and operating torques are reduced. As the valve closes, the cam–like action converts the rotary motion of the disc to a linear type motion to effectively push the disc onto the seat. The wiping action of the disc against the seat prevents undesirable material build-up from slurries or suspended solids.



Unique Valve Seat Design – Soft Seat

The soft seat structure



The soft seat valve provides a bi-directional bubble tight shutoff (zero leakage) by the use of a patented seat.

This unique seat design creates a self-energized seal in vacuum-to-low pressure applications.

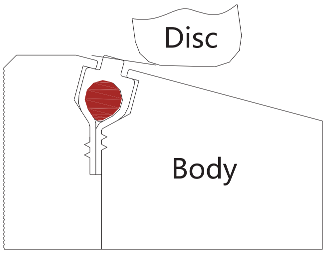
Under higher pressure conditions, the seat is also designed to permit, confine, and direct movement of the soft seat against the disc edge, up to the full ASME Class 150, 300 and 600 Cold Working Pressures.

The soft seat is designed for high services with minimal wear and low torque. Seat replacement is a simple operation, requiring no special tools.

Principle of soft seat sealing

Disc open

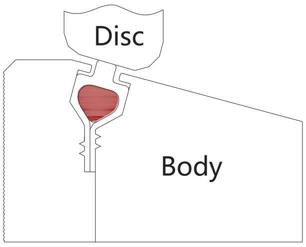
The disc and seat are not engaged. In this position, the shoulders of the seat are forced against the cavity shoulders by the compression of the o-ring.



The seat is recessed inside the seat cavity and acts as a gasket in the anchoring groove area. The seat cavity is sealed from exposure from the process fluid and protects the seat from abrasion and wear. The o-ring, which is completely encapsulated by the seat, is also isolated from exposure to the process fluid.

Disc closed, Self-energized seal

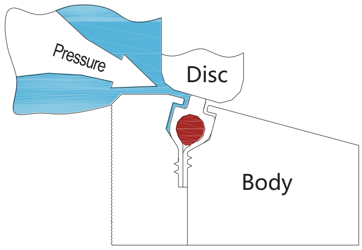
The Tipvalve disc and seat are engaged, and the process fluid is under low pressure. The edge of the disc, with a larger diameter than the seat tongue, directs movement of the seat radially outward, causing the seat to compress against the convergent sidewalls of the cavity. The elastomeric o-ring imparts a mechanical pre-load between the disc and seat tongue as it is compressed and flattened by the disc; this is the self-energized mode for sealing at vacuum-to-60 psi.



As the seat moves radially outward, the seat shoulders move away from the cavity shoulders and open the cavity to the process media.

Disc closed, Pressure-energized seal
(Seat upstream)

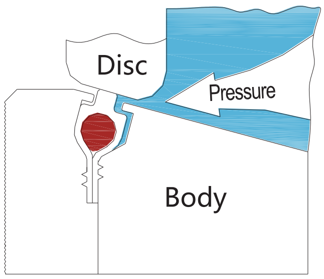
As line pressure increases, the process fluid enters the sidewall area and applies a load against the parallel-spaced sidewall and convergent sidewall of the seat. The seat and cavity design permits the seat to move axially to the downstream sidewall, but confines the movement and directs the movement radially inward towards the disc; the higher the line pressure, the tighter the seal between the disc and seat. Because the o-ring is elastic, it is able to flex and deform under loads and return to original shape after removal of the load; it is the rubber which deforms, not the thermoplastic material. This dynamic seal, patented by Tipvalve, is totally unique among high performance butterfly valves.



Disc closed, Pressure-energized seal
(Seat downstream)

The soft seat valve is bi-directional (in some instances, modifications may be required to operate this arrangement for dead end service).

The cavity and seat sidewalls are symmetrically designed to permit, confine, and direct movement of the seat to the disc to dynamically seal with line pressure in the reverse direction. The disc edge is the segment of a sphere, and the seat is angled towards the disc edge to seal with pipeline pressure in either direction.



Recommended installation direction is seat upstream.

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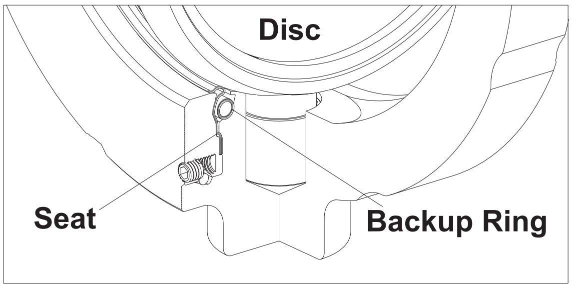
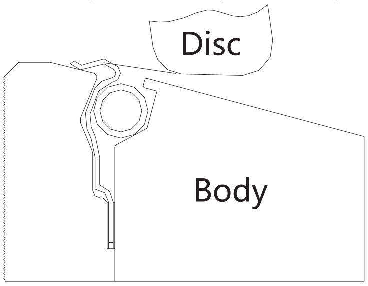
The metal seat structure



The Inconel/SS316L seat, by its dynamic and flexible design, applies enough force per linear inch against the disc edge (Rockwell Hardness of C66 to C70) to obtain an optimum sealing characteristic while controlling the loads between the metal surfaces.

The metal seat valve is utilized for temperatures up to 482°C in compliance with ASME B16.34 pressure/temperature specifications. Leakage is rated at Class IV per ASME FCI 70-2.

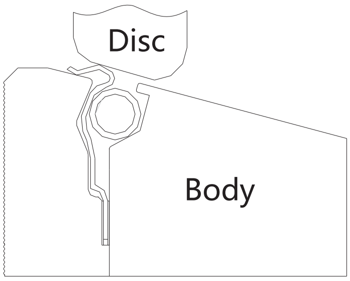
Metal-to-metal sealing is accomplished by the "line contact" between a spherical surface and conical surface. illustrates a typical globe control valve seat and plug. The plug seating surface is the segment of a sphere; when engaged against the seat ring, a line contact seal is achieved.



In a metal seat design, it is necessary to apply enough force per linear inch to maintain a tight metal-to-metal contact between the sealing members; however, high linear thrust can cause a collapse of the seating members ("bearing failure").

Disc closed, Self-energized seal

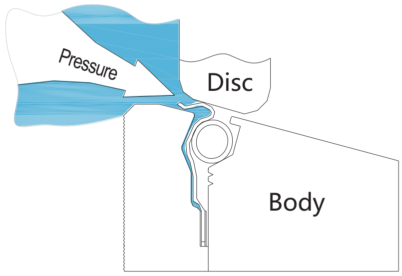
The Tipvalve disc and seat are engaged, and the process fluid is under low pressure. The spherical edge of the disc, with a larger diameter than the conical seat tongue, imparts a thrust of approximately 600 pounds per linear inch against the seat. The mechanical properties and shape of the Inconel seat allow it to both flex and maintain a constant thrust against the disc.



This controlled loading prevents the occurrence of bearing failure and reduces the leakage and wear between the components.

Disc closed, Pressure-energized seal
(Seat upstream)

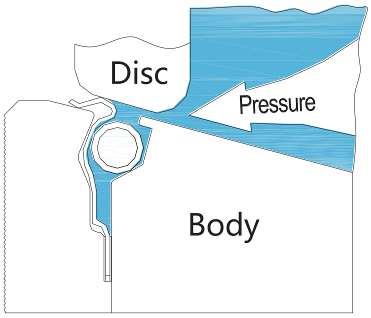
As line pressure increases, the process fluid enters the sidewall area and applies a load against the parallel-spaced sidewall and convergent sidewall of the metal seat. The seat moves towards the downstream sidewall while being supported axially by the support ring, The cavity shape confines the seat movement and directs the movement radially inward towards the disc; the higher the line pressure, the tighter the line contact between the disc and seat. The Inconel seat, shaped by a special hydroforming process, is able to flex under these loads and return to its original shape after removal of the loads.



This dynamic seal, patented by Tipvalve, is totally unique among high performance butterfly valves.

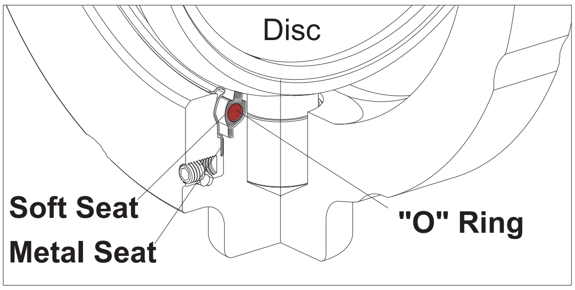
Disc closed, Pressure-energized seal
(Seat downstream)

The Tipvalve valve is bi-directional (in some instances, modifications may be required to operate this arrangement for dead end service). The cavity and seat sidewalls are symmetrically designed to permit, confine, and direct movement of the seat to the disc to dynamically seal with line pressure in the seat downstream direction, Recommended installation direction is seat upstream.



The stainless steel back-up ring interacts dynamically with the metal seat for axial support in seat sealing. Additionally, this ring effectively restricts corrosion and particulate build-up in the cavity.

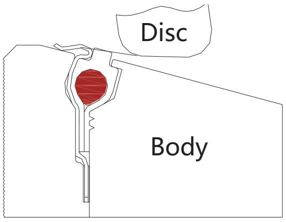
The fire-safe structure



With little or no pressure, the fire-safe seat creates a self-energized seal against the disc. Higher line pressures act on the geometry of both seats to dynamically load them against the disc, creating higher sealing forces in either direction.

The fire-safe metal seat is made of Inconel material which is shaped by a proprietary hydroforming process into its unique, patented design. Stainless steel outer bearings are included for post-fire disc and shaft alignment. Fireproof packing is used to prevent external shaft leakage.

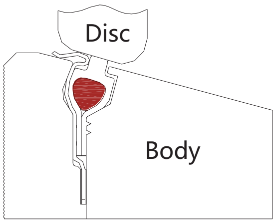
Disc open, Normal Operation



The disc and seat assembly are not engaged. In this position, the metal seat acts to keep the soft seat inside the seat cavity while the soft seat shoulders seal the cavity from exposure to the process fluid. (The o-ring is under tension and imparts a load against the soft seat.)

The soft seat is protected from abrasion and wear because it is recessed inside the seat cavity area. The o-ring is isolated from exposure to the fluid because it is completely encapsulated by the seat tails which act as a (soft) gasket in the anchoring groove area. The metal seat gaskets add further high temperature protection past the anchoring grooves.

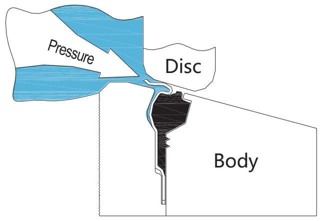
Disc closed, Normal Operation



The disc and seat assembly are engaged; both the metal seat and the soft seat are in contact with the disc. Under little to no pressure conditions, both seats are self-energized. The disc edge, with a larger diameter than the seat tongues, moves the seats radially outward; the metal seat shape, with a mechanical and dynamic flexibility, is designed to be hoop-loaded and impart a spring force against the disc, while the soft seat o-ring is stretched and flattened (without deformation of the material) and imparts a mechanical pre-load against the disc.

With increased line pressure, the process fluid enters the cavity sidewall area and applies loads against the seat sidewalls. The cavity design allows the seats to move toward the downstream sidewalls, but confines and directs the movement radially inward towards the disc; the higher the pressure the tighter the seal. The symmetrical shape and angle of the cavity permit the seal to be bi-directional.

Disc closed, After Fire (Seat Upstream)

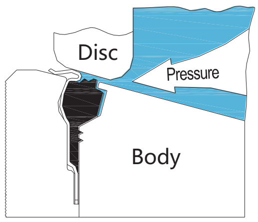


After a fire, with partial or complete destruction of the soft seat, the metal seat maintains metal-to-metal contact with the disc and restricts leakage of the process fluid in conformance to industry fire-safe requirements.

With little or no line pressure, the spring force and hoop load of the metal seat maintain a “line contact” seal against the disc edge. Under higher pressures, the process fluid enters the cavity sidewall areas and applies loads against the seat sidewalls. The geometry of the metal seat permits the seat to move axially, but directs the movement radially inward toward the disc. The higher the pressure, the tighter the line contact seal.

Graphite gaskets, on both sides of the metal seat tail, seal the anchoring groove and prevent leakage of the process fluid.

Disc closed, After Fire (Seat Downstream)



The fire-safe valve is bi-directional; however, modifications are required to operate for bi-directional dead end service. The angle and shape of the cavity and metal seat maintains metal-to-metal contact in the event of partial or complete soft seat destruction with line pressure in the reverse direction.

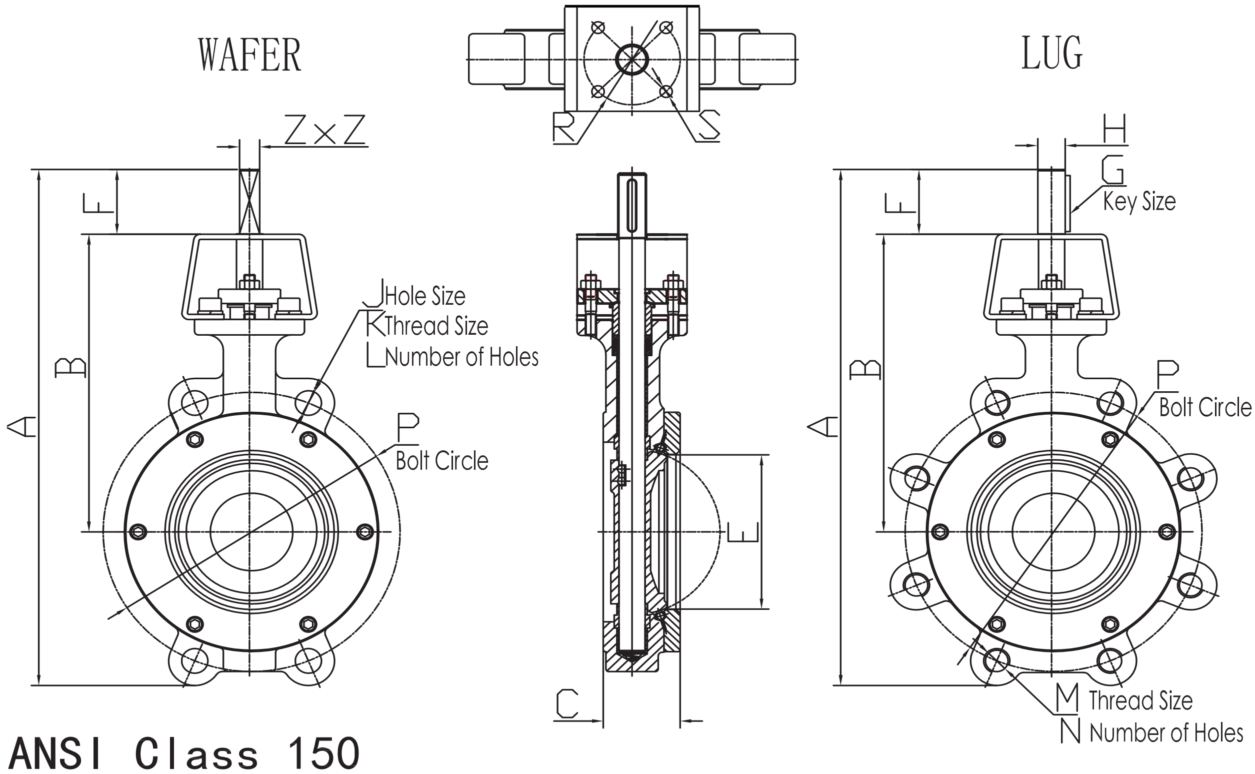
While the preferred flow direction is seat upstream, the bidirectional seat design is both self-energized and pressure-energized if the flow direction is seat downstream.

Standard Production Range			
	ANSI Class 150	ANSI Class 300	ANSI Class 600
Rating-Psi	285	740	1440
Rating-Bar	20	50	100
Size-Inch	2-60	2-48	2-24
Size-mm	DN50-DN1500	DN50-DN1200	DN50-DN600
TESTING Testing	API 598		
Face To Face Specification	ANSI B16.10 / API 609 / MSS-SP-68 / ISO 5752		
End Flange Specifications	ASME B16.5: Class 150, 300, 600 DIN ISO PN10, PN16, PN25, PN40		
Connection	Wafer, Lugged, Double Flanged		
Actuaror-Manual	Lever Handle, Worm Gear Operator		
Actuator-Automatic	Electric Motor, Pneumatic Double Acting, Pneumatic Spring Return		

Main Materials			
	ANSI Class 150	ANSI Class 300	ANSI Class 600
Body	Carbon Steel (A216-WCB), 316 SS (A351-CF8M)		
Disc	316 SS (A351-CF8M)		
Stem	17 / 4PH (A564-630)		
Seat	PTFE, RTFE, 316 SS, Inconel, PTFE + 316 SS, RTFE + 316SS		
Shaft Bearing	316 SS + RTFE Impregnated, 316 SS + Graphite Impregnated		
Packing Seal	PTFE, Graphite		

Seat Materials And Rating	
PTFE	Class VI, Bubble Tight
RTFE	Class VI, Bubble Tight
316 SS	Class V
Inconel	Class V
PTFE+316 SS	Class VI, Bubble Tight, Class V w/ Preferred Flow After Fire
RTFE+316 ss	Class VI, Bubble Tight, Class V w/ Preferred Flow After Fire

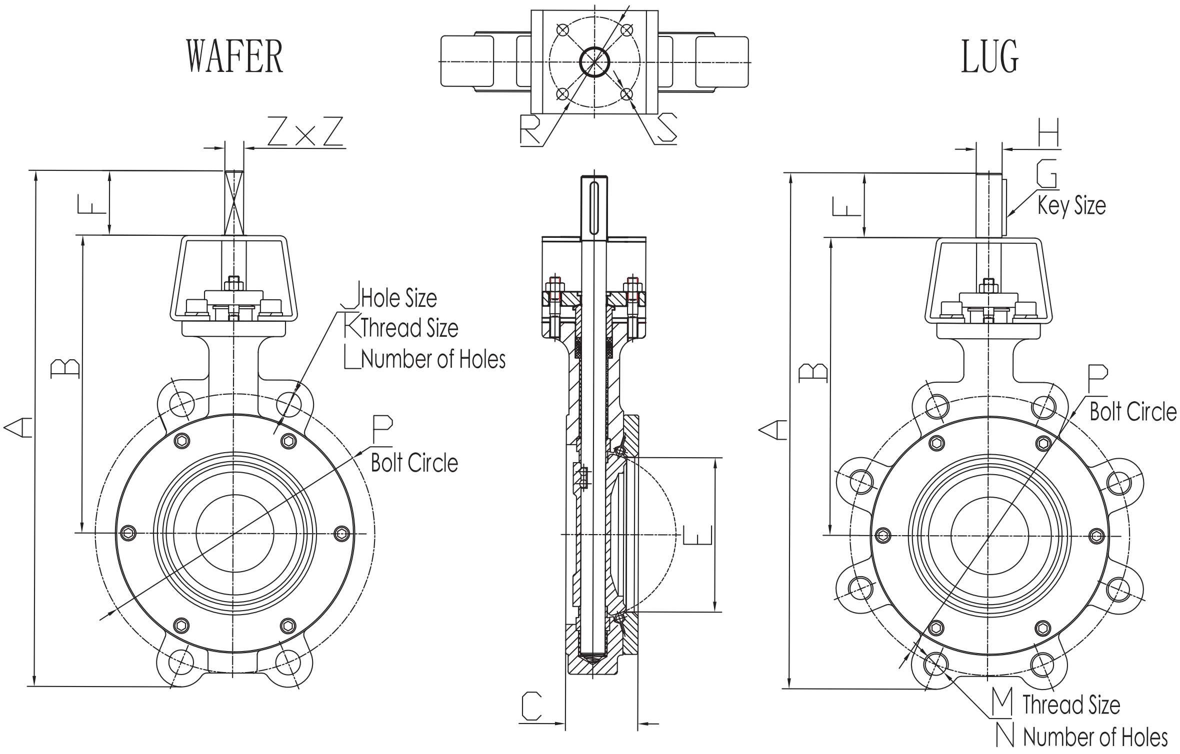
Dimensions ANSI Class 150



ANSI Class 150

VALVE SIZE		WAFER	LUG	B	C	E	F	ZxZ		J	K	L	M x N	P	R	S	WEIGHT (Kg)	
mm	ins	A	A	ins/mm				G	H					ins/mm			WAFER	LUG
50	2"	10.157/258	10.157/258	7.598/193	1.693/43	2.362/60	1.063/27	0.433*0.433 / 11*11					5/8-11X4	4.752/120.7	Φ70	4XΦ9	4.4	4.8
65	2 1/2"	10.315/262	10.315/262	7.598/193	1.811/46	2.756/70	1.063/27	0.433*0.433 / 11*11					5/8-11X4	5.50/139.7	Φ70	4XΦ9	4.9	5.3
80	3"	11.575/294	11.575/294	8.583/218	1.929/49	3.228/82	1.063/27	0.433*0.433 / 11*11					5/8-11X4	6.00/152.4	Φ70	4XΦ9	5.6	6.5
100	4"	13.307/338	13.701/348	9.409/239	2.047/52	4.173/106	1.063/27	0.551*0.551 / 14*14					5/8-11X8	7.50/190.5	Φ70	4XΦ9	8	11.5
125	5"	14.843/377	15.079/383	10.354/263	2.205/56	5.039/128	1.181/30	0.669*0.669 / 17*17					3/4-10X8	8.50/215.9	Φ70	4XΦ9	10.5	13.5
150	6"	15.827/402	16.063/408	10.906/277	2.402/61	5.984/152	1.260/32	0.669*0.669 / 17*17					3/4-10X8	9.50/241.3	Φ70	4XΦ9	13.5	16.5
200	8"	18.465/469	18.622/473	12.480/317	2.500/63.5	7.677/195	1.772/45	0.669*0.669 / 17*17					3/4-10X8	11.750/298.45	Φ70	4XΦ9	20.6	24.5
250	10"	21.063/535	21.260/540	13.701/348	2.795/71	9.646/245	1.969/50	0.866*0.866 / 22*22		oval		2	7/8-9X12	14.250/361.95	Φ102	4XΦ11	39	45.5
300	12"	24.606/625	24.803/630	15.748/400	3.228/82	11.496/292	2.362/60	1.063*1.063 / 27*27		oval		2	7/8-9X12	17.00/431.8	Φ140	4XΦ18	55	67.5
350	14"	27.480/698	27.480/698	16.417/417	3.622/92	13.346/339	2.362/60	1.063*1.063 / 27*27		oval		4	1-8X12	18.750/476.25	Φ140	4XΦ18	68	115
400	16"	31.417/798	31.417/798	18.740/476	4.008/101.8	15.236/387	3.150/80	1.063*1.063 / 27*27		oval		4	1-8X16	21.250/539.75	Φ165	4XΦ21	116	132
450	18"	34.803/884	34.803/884	22.205/564	4.512/114.6	17.130/435	3.543/90	1.417*1.417 / 36*36		oval		4	1 1/8-8X16	22.750/577.85	Φ165	4XΦ21	145	168
500	20"	37.992/965	37.992/965	23.543/598	5.000/127	19.291/490	3.543/90	1.417*1.417 / 36*36			1 1/8-8	4	1 1/8-8X20	25.0/635.0	Φ165	4XΦ21	185	220
600	24"	42.283/1074	42.283/1074	26.457/672	6.043/153.5	23.031/585	4.331/110	1.811*1.811 / 46*46			1 1/4-8	4	1 1/4-8X20	29.50/749.3	Φ165	4XΦ21	290	310
650	26"	46.063/1170	46.063/1170	27.874/708	6.496/165	25.200/640	4.331/110	1.811*1.811 / 46*46			1 1/4-8	4	1 1/4-8X24	31.750/806.45	Φ165	4XΦ21	330	345
700	28"	48.504/1232	48.504/1232	29.055/738	6.496/165	27.165/690	4.331/110	1.811*1.811 / 46*46			1 1/4-8	4	1 1/4-8X28	34.0/863.6	Φ165	4XΦ21	495	579
750	30"	51.260/1302	51.260/1302	30.433/773	7.520/191	28.307/719	4.724/120	0.866/22	3.150/80		1 1/4-8	4	1 1/4-8X28	36.0/914.4	Φ165	4XΦ21	652	773
800	32"	53.425/1357	53.425/1357	31.339/796	7.520/191	30.200/767	4.724/120	0.866/22	3.150/80		1 1/2-8	4	1 1/2-8X28	38.50/977.9	Φ165	4XΦ21	736	922
850	34"	56.850/1444	56.850/1444	33.701/856	7.756/197	32.126/816	4.724/120	0.866/22	3.150/80		1 1/2-8	4	1 1/2-8X32	40.50/1028.7	Φ254	8XΦ17	842	1047
900	36"	59.055/1500	59.055/1500	36.417/925	8.268/210	34.016/864	4.724/120	0.866/22	3.150/80		1 1/2-8	4	1 1/2-8X32	42.750/1085.85	Φ254	8XΦ17	871	1160
1000	40"	64.331/1634	64.331/1634	37.520/953	9.488/241	37.008/940	5.118/130	0.984/25	4.134/105		1 1/2-8	4	1 1/2-8X36	47.250/1200.15	Φ254	8XΦ17	1728	1779
1050	42"	66.535/1690	66.535/1690	38.543/979	9.488/241	39.055/992	5.118/130	0.984/25	4.134/105		1 1/2-8	4	1 1/2-8X36	49.50/1257.3	Φ254	8XΦ17	1905	1930
1200	48"	74.685/1897	74.685/1897	43.386/1102	10.000/254	46.102/1171	5.118/130	1.260/32	4.528/115		1 1/2-8	4	1 1/2-8X44	56.0/1422.4	Φ298	8XΦ22	2074	2548
1350	54"	82.667/2100	82.667/2100	47.598/1209	10.748/273	52.441/1332	5.906/150	1.417/36	5.512/140		1 3/4-8	4	1 3/4-8X44	62.75.0/1593.85	Φ298	8XΦ22	3175	3210

Dimensions ANSI Class 300



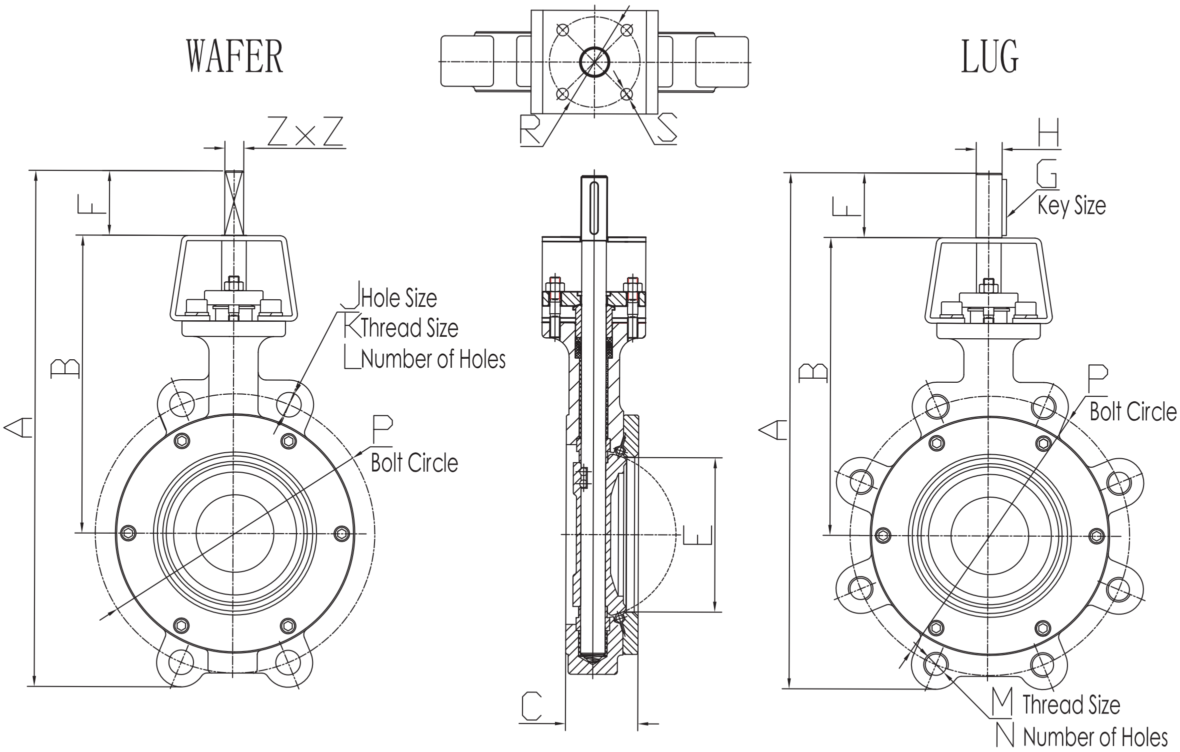
ANSI Class 300

VALVE SIZE		WAFER	LUG	B	C	E	F	Z×Z		J	K	L	M × N	P	R	S	WEIGHT (Kg)	
mm	ins	A	A	ins/mm				G	H					ins/mm			WAFER	LUG
50	2"	10.0/254	10.315/262	7.480/190	1.693/43	2.362/60	1.063/27	0.433*0.433/11*11		oval		4	5/8-11X8	5.00/127	Φ70	4XΦ9	4.5	6.1
65	2 1/2"	10.118/257	11.063/281	7.480/190	1.811/46	2.717/69	1.063/27	0.433*0.433/11*11					3/4-10X8	5.878/149.3	Φ70	4XΦ9	5	7
80	3"	11.496/292	12.165/309	8.504/216	1.929/49	3.228/82	1.063/27	0.433*0.433/11*11					3/4-10X8	6.625/168.28	Φ70	4XΦ9	6.5	9
100	4"	13.150/334	13.740/349	9.252/235	2.047/52	4.173/106	1.063/27	0.551*0.551/14*14					3/4-10X8	7.878/200.1	Φ70	4XΦ9	8	14
125	5"	13.819/351	14.291/363	10.00/254	2.244/57	5.039/128	1.181/30	0.669*0.669/17*17					3/4-10X8	9.250/234.9	Φ70	4XΦ9	10.5	16.5
150	6"	15.669/398	16.693/424	10.945/278	2.402/61	5.984/152	1.260/32	0.669*0.669/17*17					3/4-10X12	10.618/269.7	Φ70	4XΦ9	16.5	22
200	8"	19.252/489	19.843/504	12.756/324	2.835/72	7.677/195	1.970/50	0.866*0.866/22*22					7/8-9X12	13.00/330.2	Φ102	4XΦ11	35	41
250	10"	20.984/533	22.362/568	14.016/356	3.268/83	9.724/247	2.362/60	1.063*1.063/27*27		oval		2	1-8X16	15.250/387.3	Φ102	4XΦ11	53	64
300	12"	25.945/659	26.771/680	16.811/427	3.622/92	11.575/294	2.756/70	1.063*1.063/27*27		oval		2	1 1/8-8X16	17.750/450.8	Φ140	4XΦ18	77	90
350	14"	30.551/776	30.551/776	18.386/467	4.646/118	13.465/342	3.150/80	1.417*1.417/36*36			1 1/8-8	4	1 1/8-8X20	20.250/514.3	Φ165	4XΦ21	124	146
400	16"	35.866/911	35.866/911	23.110/587	5.354/136	15.236/387	3.150/80	1.417*1.417/36*36			1 1/4-8	4	1 1/4-8X20	22.50/571.5	Φ165	4XΦ21	165	220
450	18"	38.189/970	38.189/970	24.646/626	5.984/152	17.322/440	3.543/90	1.417*1.417/36*36			1 1/4-8	4	1 1/4-8X24	24.750/628.6	Φ165	4XΦ21	218	315
500	20"	41.535/1055	41.535/1055	26.535/674	6.339/161	19.370/492	3.937/100	1.811*1.811/46*46			1 1/4-8	4	1 1/4-8X24	27.00/685.8	Φ165	4XΦ21	298	410
600	24"	48.819/1240	48.819/1240	30.709/780	7.165/182	23.110/587	4.724/120	0.866/22	3.150/80		1 1/2-8	4	1 1/2-8X24	32.00/812.8	Φ254	8XΦ17	340	495
750	30"	55.709/1415	55.709/1415	34.252/870	8.858/225	28.425/722	5.118/130	0.984/25	4.134/105		1 3/4-8	4	1 3/4-8X28	39.250/996.95	Φ254	8XΦ17	867	1150
900	36"	65.039/1652	65.039/1652	40.551/1030	10.669/271	34.016/864	5.906/150	1.260/32	4.528/115		1 3/4-8	4	1 3/4-8X32	46.00/1168.4	Φ298	8XΦ22	1230	1540
1050	42"	68.189/1733	68.189/1732	43.189/1097	11.496/292	39.291/998	6.299/160	1.417/36	5.512/140		1 5/8-8	4	1 5/8-8X32	47.50/1206.6	Φ298	8XΦ22	1760	2390
1200	48"	75.866/1927	75.866/1927	47.441/1205	12.520/318	46.457/1180	7.087/180	1.575/40	6.299/160		1 7/8-8	4	1 7/8-8X32	54.00/1371.6	Φ356	8XΦ32	2270	2890

NOTE:

The drawing only for reference,please contact sales@tipvalve.com for separate drawing. TIPVALVE industrial reserves the right to change the demensions.

Dimensions ANSI Class 600



ANSI Class 600

VALVE SIZE		WAFER	LUG	B	C	E	F	Z x Z		J	K	L	M x N	P	R	S	WEIGHT (Kg)	
mm	ins	A	A	ins/mm				G	H					ins/mm	mm	mm	WAFER	LUG
50	2"	10.748/273	10.748/273	7.835/199	1.929/49	2.126/54	1.063/27	0.551*0.551 / 14*14		oval		4	5/8-11X8	5.00/127	Φ70	4XΦ9	7.5	8.5
65	2 1/2"	10.748/273	11.142/283	7.835/199	2.047/52	2.598/66	1.063/27	0.551*0.551 / 14*14					3/4-10X8	5.878/149.3	Φ70	4XΦ9	8.2	9.5
80	3"	12.205/310	12.598/320	8.898/226	2.205/56	3.031/77	1.181/30	0.669*0.669 / 17*17					3/4-10X8	6.618/168.1	Φ70	4XΦ9	10.5	13
100	4"	14.173/360	14.370/365	9.724/247	2.756/70	4.016/102	1.181/30	0.669*0.669 / 17*17					7/8-9X8	8.50/215.9	Φ70	4XΦ9	18.5	25
150	6"	18.622/473	18.622/473	11.811/300	3.346/85	5.748/146	2.165/55	1.063*1.063 / 27*27			1-8	2	1-8X12	11.50/292.1	Φ102	4XΦ11	35	53
200	8"	222.99/584	22.992/584	13.937/354	4.213/107	7.401/188	2.362/60	1.063*1.063 / 27*27			1 1/8-8	4	1 1/8-8X12	13.75/349.3	Φ102	4XΦ11	67	101
250	10"	26.229/668	26.229/668	15.433/392	4.803/122	9.252/235	2.362/60	1.260*1.260 / 32*32			1 1/4-8	4	1 1/4-8X16	17.00/431.8	Φ165	4XΦ21	120	175
300	12"	30.315/770	30.315/770	18.307/465	5.512/140	11.260/286	2.362/60	1.260*1.260 / 32*32			1 1/4-8	4	1 1/4-8X20	19.250/489.0	Φ165	4XΦ21	170	230
350	14"	35.276/896	35.276/896	22.362/568	6.103/155	12.835/326	2.953/75	1.417*1.417 / 36*36			1 3/8-8	4	1 3/8-8X20	20.750/527.1	Φ165	4XΦ21	231	327
400	16"	39.528/1004	39.528/1004	24.843/631	7.008/178	14.843/377	3.543/90	1.811*1.811 / 46*46			1 1/2-8	4	1 1/2-8X20	23.750/603.3	Φ165	4XΦ21	325	482
450	18"	45.551/1157	45.551/1157	29.685/754	7.756/197	16.654/423	3.937/100	0.866/22	3.150/80		1 5/8-8	4	1 5/8-8X20	25.750/654.1	Φ254	8XΦ17	480	652
500	20"	49.331/1253	49.331/1253	31.732/806	8.504/216	18.465/469	4.724/120	0.984/25	4.134/105		1 5/8-8	4	1 5/8-8X24	28.50/723.9	Φ254	8XΦ17	605	815
600	24"	58.780/1493	58.780/1493	31.260/794	9.134/232	22.283/566	5.906/150	1.260/32	4.528/115		1 7/8-8	4	1 7/8-8X24	33.00/838.2	Φ298	8XΦ22	950	1285

NOTE:

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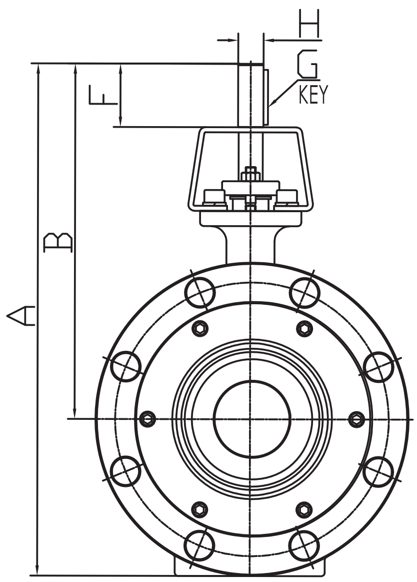
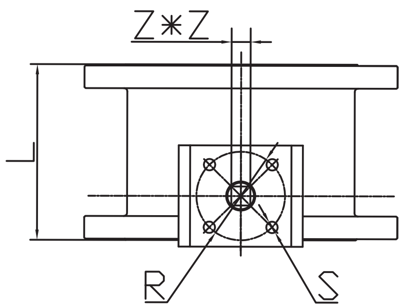
Dimensions   Double Flange

Flanged Valves





ANSI Class 150

VALVE SIZE mm	VALVE SIZE ins	A ins/mm	B ins/mm	L Long	L Short	F ins/mm	Z x Z H	Z x Z G	R mm	S mm	WEIGHT (Kg) Long	WEIGHT (Kg) Short
80	3"	12.717/323	8.976/228	8.071/205	4.488/114	1.063/27	0. 433*0. 433 / 11*11		Φ70	4XΦ9	26	19
100	4"	14.646/372	10.157/258	9.016/229	5.00/127	1.063/27	0. 551*0. 551 / 14*14		Φ70	4XΦ9	34	25
125	5"	15.906/404	10.906/277	10.00/254	5.512/140	1.181/30	0. 669*0. 669 / 17*17		Φ70	4XΦ9	42	30
150	6"	16.969/431	11.457/291	10.512/267	5.512/140	1.260/32	0. 669*0. 669 / 17*17		Φ70	4XΦ9	49	34
200	8"	19.843/504	13.091/332.5	11.496/292	5.984/152	1.772/45	0. 669*0. 669 / 17*17		Φ70	4XΦ9	77	51
250	10"	21.693/551	13.701/348	11.811/300	6.496/165	1.969/50	0. 866*0. 866 / 22*22		Φ102	4XΦ11	102	78
300	12"	25.276/642	15.748/400	14.016/356	7.008/178	2.362/60	1. 063*1. 063 / 27*27		Φ140	4XΦ18	160	112
350	14"	29.055/738	18.150/461	15.00/381	7.520/191	2.362/60	1. 063*1. 063 / 27*27		Φ140	4XΦ18	198	141
400	16"	30.354/771	18.622/473	15.984/406	8.504/216	3.150/80	1. 063*1. 063 / 27*27		Φ165	4XΦ21	233	175
450	18"	35.670/906	23.150/588	17.008/432	8.760/222.5	3.543/90	1. 417*1. 417 / 36*36		Φ165	4XΦ21	272	213
500	20"	38.071/967	24.331/618	17.992/457	9.016/229	3.543/90	1. 417*1. 417 / 36*36		Φ165	4XΦ21	351	262
600	24"	43.189/1097	27.205/691	20.00/508	10.512/267	4.331/110	1. 811*1. 811 / 46*46		Φ165	4XΦ21	493	386
750	30"	50.906/1293	31.535/801	24.016/610	12.520/318	4.724/120	3.150/80	0.866/22	Φ165	4XΦ21	652	598
900	36"	59.409/1509	36.417/925	27.992/711	12.992/330	4.724/120	3.150/80	0.866/22	Φ254	8XΦ17	869	789

ANSI Class 300

VALVE SIZE mm	VALVE SIZE ins	A ins/mm	B ins/mm	L Long	L Short	F ins/mm	Z x Z H	Z x Z G	R mm	S mm	WEIGHT (Kg) Long	WEIGHT (Kg) Short
80	3"	12.717/323	8.976/228	8.071/205	4.488/114	1.063/27	0. 433*0. 433 / 11*11		Φ70	4XΦ9	30	21
100	4"	15.157/385	10.157/258	12.001/305	5.00/127	1. 063/27	0. 551*0. 551 / 14*14		Φ70	4XΦ9	46	25
125	5"	16.457/418	10.906/277	15.00/381	5.512/140	1. 181/30	0. 669*0. 669 / 17*17		Φ70	4XΦ9	59	42
150	6"	17.835/453	11.614/295	15.866/403	5.512/140	1. 260/32	0. 669*0. 669 / 17*17		Φ70	4XΦ9	79	51
200	8"	20.472/520	12.992/330	16.496/419	5.984/152	1. 969/50	0. 866*0. 866 / 22*22		Φ102	4XΦ11	109	83
250	10"	22.953/583	14.212/361	18.701/475	6.496/165	2. 362/60	1. 063*1. 063 / 27*27		Φ102	4XΦ11	135	124
300	12"	27.322/694	17.047/433	19.764/502	7.008/178	2. 756/70	1. 063*1. 063 / 27*27		Φ140	4XΦ18	211	173
350	14"	29.882/759	18.386/467	30.00/762	7.520/191	3.150/80	1. 417*1. 417 / 36*36		Φ165	4XΦ21	330	235
400	16"	35.827/910	23.071/586	32.992/838	8.504/216	3.150/80	1. 417*1. 417 / 36*36		Φ165	4XΦ21	423	329
450	18"	38.622/981	24.646/626	35.984/914	8.858/225	3.543/90	1. 417*1. 417 / 36*36		Φ165	4XΦ21	574	457
500	20"	53.110/1349	26.535/674	39.016/991	9.016/229	3.937/100	1. 811*1. 811 / 46*46		Φ165	4XΦ21	660	522
600	24"	48.740/1238	30.709/780	45.00/1143	10.433/265	4.724/120	3.150/80	0.866/22	Φ254	8XΦ17	862	808

NOTE:

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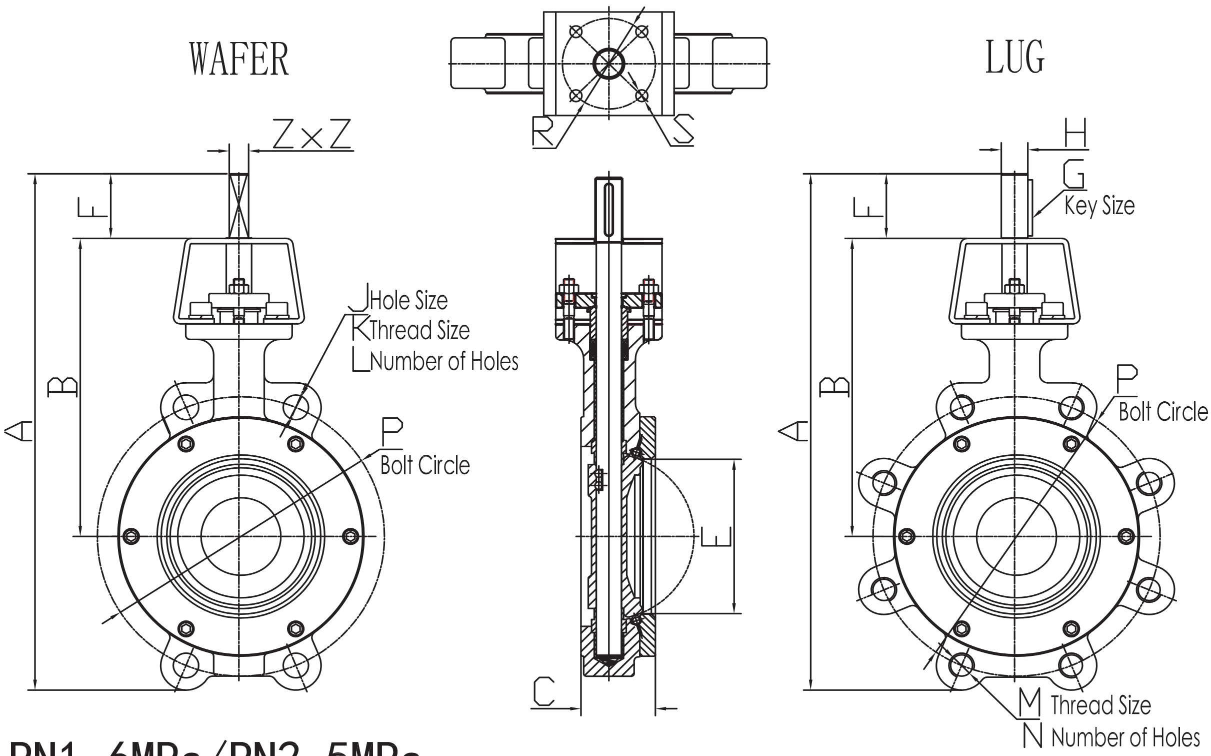
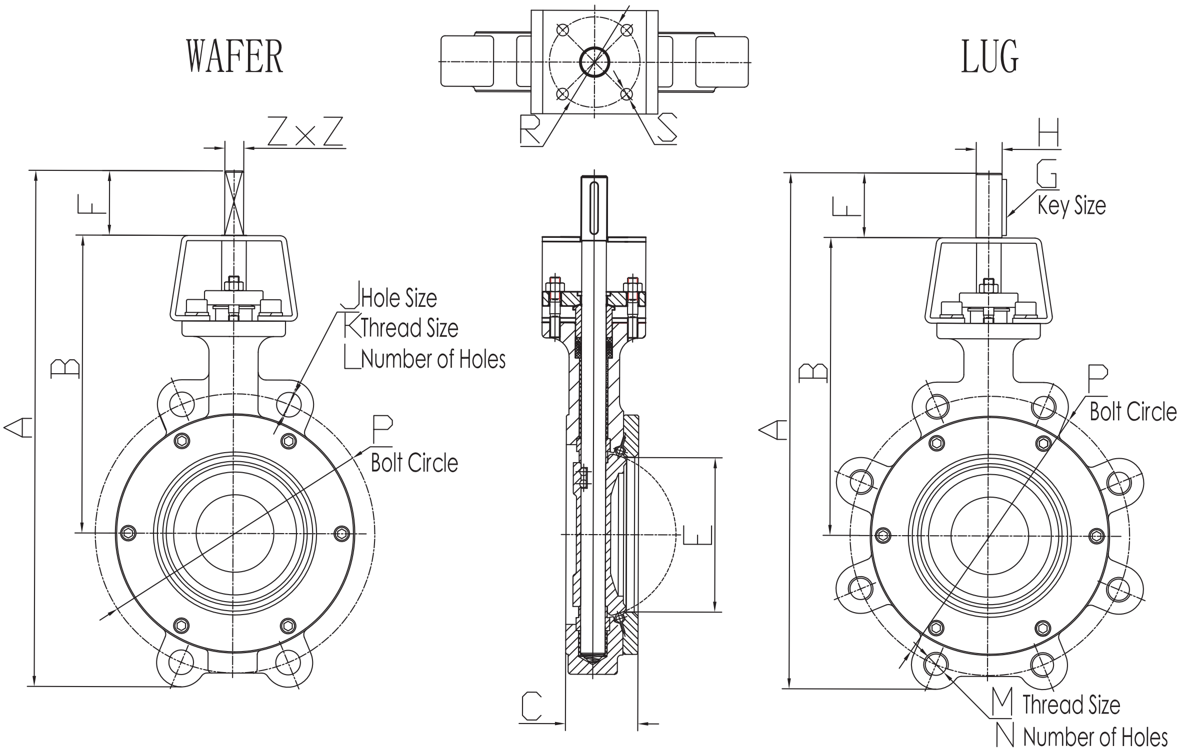
Dimensions PN16/PN25



PN1. 6MPa/PN2. 5MPa

VALVE SIZE		WAFER	LUG	B	C	E	F	Z x Z		J	K	L	M x N	P	R	S	WEIGHT (Kg)	
DN	ins	A	A					G	H				PN1.6 / PN2.5	PN1.6 / PN2.5	mm	mm	WAFER	LUG
50	2"	258	258	193	43	60.12	27	11*11					M16X4 / M16X4	125	Φ70	4XΦ9	4.4	4.8
65	2½"	262	262	193	46	69.5	27	11*11					M16X4 / M16X8	145	Φ70	4XΦ9	4.9	5.3
80	3"	294	294	218	49	82.44	27	11*11					M16X8 / M16X8	160	Φ70	4XΦ9	5.6	6.5
100	4"	338	348	239	52	105.7	27	14*14					M16X8 / M20X8	180 / 190	Φ70	4XΦ9	8	11.5
125	5"	377	383	263	56	128.06	30	17*17					M16X8 / M24X8	210 / 220	Φ70	4XΦ9	10.5	13.5
150	6"	402	408	277	61	151.8	32	17*17					M20X8 / M24X8	240 / 250	Φ70	4XΦ9	13.5	16.5
200	8"	469	473	317	63.5	195.3	45	17*17					M20X12 / M27X12	295 / 310	Φ70	4XΦ9	20.6	24.5
250	10"	535	540	348	71	244.7	50	22*22		oval		2	M24X12 / M21X12	355 / 370	Φ102	4XΦ11	39	45.5
300	12"	625	630	400	82	291.9	60	27*27		oval		2	M24X12 / M27X16	410 / 430	Φ140	4XΦ18	55	67.5
350	14"	698	698	417	92	339.2	60	27*27		oval		4	M24X16 / M30X16	470 / 490	Φ140	4XΦ18	68	115
400	16"	798	798	476	101.8	387.4	70	27*27		oval		4	M27X16 / M33X16	525 / 550	Φ165	4XΦ21	116	132
500	20"	965	965	598	127	489.8	90	36*36			M30 / M33	4	M30X20 / M33X20	650 / 660	Φ165	4XΦ21	185	220
600	24"	1070	1097	672	153.5	585.4	110	46*46			M33 / M36	4	M33X20 / M36X20	770 / 770	Φ165	4XΦ21	290	310
700	28"	1232	1232	738	165	689.9	148.7	46*46			M33 / M39	4	M33X24 / M39X24	840 / 875	Φ165	4XΦ21	495	579
800	32"	1357	1357	796	191	767.1	148.7	22	80		M36 / M45	4	M36X24 / M45X24	950 / 990	Φ165	4XΦ21	736	922
900	36"	1500	1500	925	210	864.0	158.2	22	80		M36 / M45	4	M36X28 / M45X28	1050 / 1090	Φ254	8XΦ17	871	1160
1000	40"	1634	1634	953	241	940.0	158.2	25	105		M39 / M52	4	M39X28 / M52X28	1170 / 1210	Φ254	8XΦ17	1728	1779
1200	48"	1897	1897	1102	254	1171.0	178.2	32	115		M45 / M52	4	M45X32 / M52X32	1390 / 1420	Φ298	8XΦ22	2074	2548
1350	54"	2100	2100	1209	273	1332.0	178.2	36	140		M45 / M56	4	M45X36 / M56X36	1590 / 1640	Φ298	8XΦ22	3175	3210

Dimensions PN40



PN4.0MPa

VALVE SIZE		WAFER	LUG	B	C	E	F	ZxZ		J	K	L	MxN	P	R	S	WEIGHT (Kg)	
DN	ins	A	A					G	H					mm	mm	mm	WAFER	LUG
50	2"	254	262	190	43	60	27	11*11		oval		4	M16X4	125	φ70	4Xφ9	4.5	6.1
65	2½"	257	281	190	46	69	27	11*11					M16X8	145	φ70	4Xφ9	5	7
80	3"	292	309	216	49	82	27	11*11					M16X8	160	φ70	4Xφ9	6.5	9
100	4"	334	349	235	52	106	27	14*14					M20X8	190	φ70	4Xφ9	8	14
125	5"	351	363	254	57	128	30	17*17					M24X8	220	φ70	4Xφ9	10.5	16.5
150	6"	398	424	278	61	152	32	17*17					M24X8	250	φ70	4Xφ9	16.5	22
200	8"	489	504	324	72	195	50	22*22					M27X12	320	φ102	4Xφ11	35	41
250	10"	533	568	356	83	247	60	27*27		oval		2	M30X12	385	φ102	4Xφ11	53	64
300	12"	659	680	427	92	294	70	27*27		oval		2	M30X16	450	φ140	4Xφ18	77	90
350	14"	776	776	467.1	118	342	80	36*36			M33	4	M33X16	510	φ165	4Xφ21	124	146
400	16"	911	911	586.5	136	387	80	36*36			M36	4	M36X16	585	φ165	4Xφ21	165	220
450	18"	970	970	626	152	440	90	36*36			M36	4	M36X20	610	φ165	4Xφ21	218	315
500	20"	1055	1055	674	161	492.1	100	45*45			M39	4	M39X20	670	φ165	4Xφ21	298	410
600	24"	1240	1240	780	182	587	120	22	80		M45	4	M45X20	795	φ254	8Xφ17	340	495
700	28"	1355	1355	840	225	667	130	25	105		M45	4	M45X24	900	φ254	8Xφ17	530	660
900	36"	1652	1651	1030	271	864	150	32	115		M52	4	M52X28	1140	φ298	8Xφ22	1230	1540
1000	40"	1710	1710	1055	292	910	160	36	140		M52	4	M52X28	1250	φ298	8Xφ22	1450	1980
1200	48"	1927	1927	1205	318	1180	180	40	160		M56	4	M56X32	1371.6	φ356	8Xφ32	2270	2890

NOTE:

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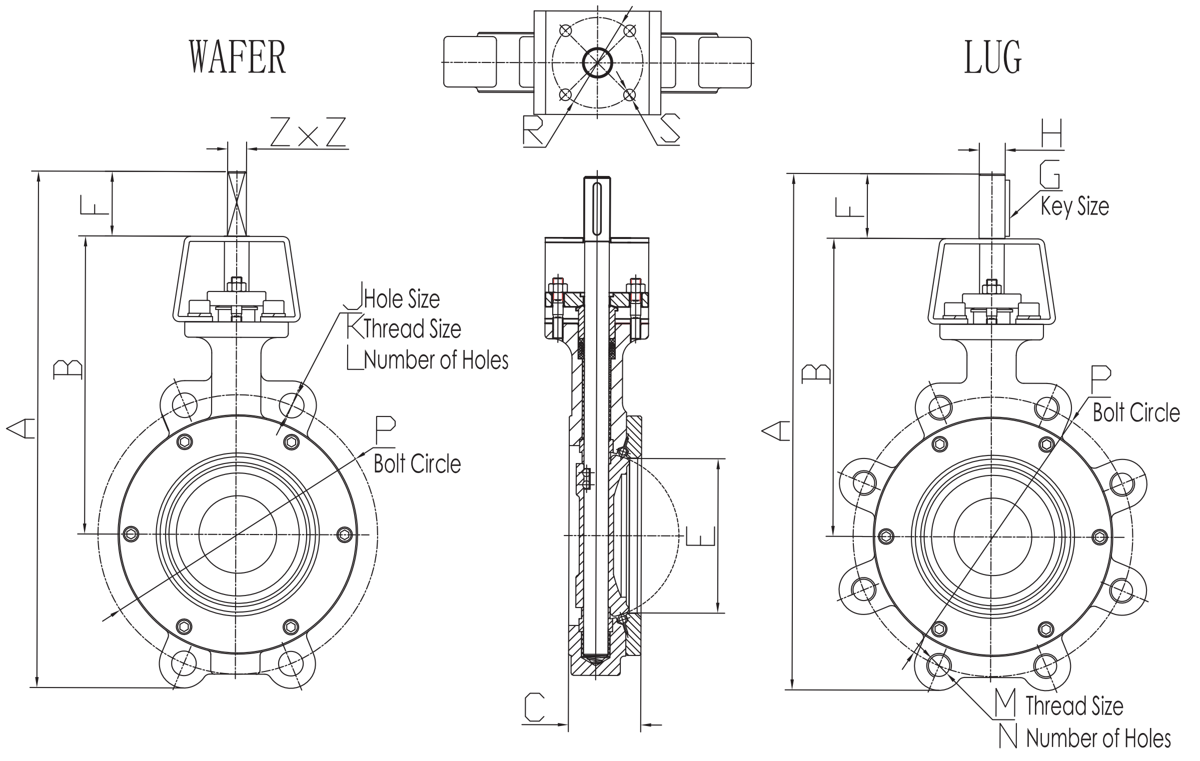
Dimensions PN100



PN10.0MPa

VALVE SIZE		WAFER	LUG	B	C	E	F	Z x Z		J	K	L	M x N	P	R	S	WEIGHT (Kg)	
DN	ins	A	A					G	H					mm	mm	mm	WAFER	LUG
50	2"	273	273	199	49	54.1	27	14*14		oval		4	M24X8	145	Φ70	4XΦ9	7.5	8.5
65	2½"	273	283	199	52	64.6	27	14*14					M24X8	170	Φ70	4XΦ9	8.2	9.5
80	3"	310	320	226	56	77.4	30	17*17					M24X8	180	Φ70	4XΦ9	10.5	13
100	4"	360	365	247	70	101.8	30	17*17					M27X8	210	Φ70	4XΦ9	18.5	25
150	6"	473	473	300	85	145.6	55	27*27			M30	2	M30X12	290	Φ102	4XΦ11	35	53
200	8"	584	584	354	107	188.7	60	27*27			M33	4	M33X12	360	Φ102	4XΦ11	67	101
250	10"	668	668	392	122	235.1	60	32*32			M36	4	M36X12	430	Φ165	4XΦ21	120	175
300	12"	770	770	465	140	285.7	60	32*32			M39	4	M39X16	500	Φ165	4XΦ21	170	230
350	14"	896	896	568	155	326.2	75	36*36			M45	4	M45X16	560	Φ165	4XΦ21	231	327
400	16"	1004	1004	631	178	377.3	90	46*46			M45	4	M45X16	620	Φ165	4XΦ21	325	482
500	20"	1253	1253	806	216	468.6	120	25	105		M52	4	M52X20	760	Φ254	8XΦ17	605	815
600	24"	1493	1493	794	232	565.5	150	32	115		M56	4	M56X20	875	Φ298	8XΦ22	950	1285

NOTE:

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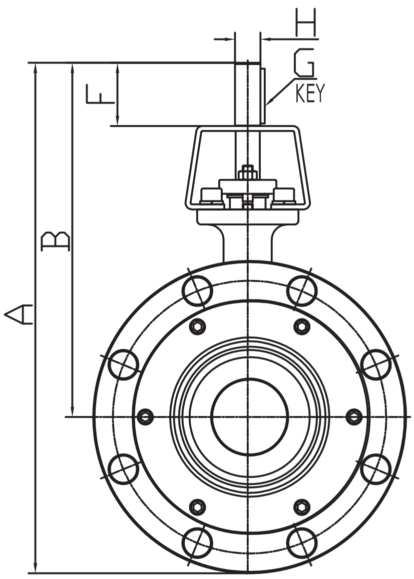
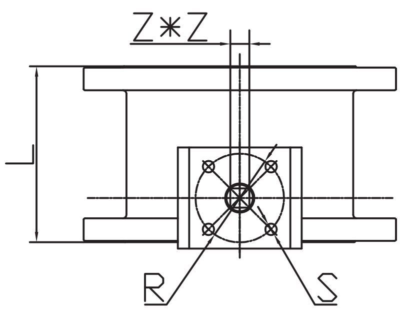
Dimensions   Double Flange

Flanged Valves



PN1.6MP/PN2.5MPa

VALVE SIZE		A	B	L		F	ZxZ		R	S	WEIGHT (Kg)	
DN	ins			Long	Short		H	G	mm	mm	Long	Short
80	3"	323	227	205	114	27	11*11		Ø70	4XØ9	26	19
100	4"	373	259	229	127	27	14*14		Ø70	4XØ9	34	25
125	5"	404	277	254	140	30	17*17		Ø70	4XØ9	42	30
150	6"	431	291	267	140	32	17*17		Ø70	4XØ9	49	34
200	8"	504	332	292	140	45	17*17		Ø70	4XØ9	77	51
250	10"	551	348.2	300	165	50	22*22		Ø102	4XØ11	102	78
300	12"	642	400	356	178	60	27*27		Ø140	4XØ18	160	112
350	14"	738	462	381	191	60	27*27		Ø140	4XØ18	198	141
400	16"	771	473	406	216	80	27*27		Ø165	4XØ21	233	175
450	18"	906	589	432	223	90	36*36		Ø165	4XØ21	272	213
500	20"	968	618	457	229	90	36*36		Ø165	4XØ21	351	262
600	24"	1098	691	508	267	110	46*46		Ø165	4XØ21	493	386
700	28"	1243	736		292	110	46*46		Ø165	4XØ21		420
750	30"	1293	801	610	318	120	80	22	Ø165	4XØ21	652	598
800	32"	1368	820		318	120	80	22	Ø165	4XØ21		660
900	36"	1509	925	711	330	120	80	22	Ø254	8XØ17	869	789



PN4.0MPa

VALVE SIZE		A	B	L		F	ZxZ		R	S	WEIGHT (Kg)	
DN	ins			Long	Short		H	G	mm	mm	Long	Short
80	3"	332	228	202	114	27	11*11		Ø70	4XØ9	30	21
100	4"	385	258	305	127	27	14*14		Ø70	4XØ9	46	25
125	5"	418	277	381	140	30	17*17		Ø70	4XØ9	59	42
150	6"	453	295	403	140	32	17*17		Ø70	4XØ9	79	51
200	8"	520	330	419	152	50	22*22		Ø102	4XØ11	109	83
250	10"	583	361	475	165	60	27*27		Ø102	4XØ11	135	124
300	12"	694	433	502	178	70	27*27		Ø140	4XØ18	211	173
350	14"	759	467	762	191	80	36*36		Ø165	4XØ21	330	235
400	16"	910	586	838	216	80	36*36		Ø165	4XØ21	423	329
450	18"	981	625	914	225	90	36*36		Ø165	4XØ21	574	457
500	20"	1349	674	991	229	100	46*46		Ø165	4XØ21	660	522
600	24"	1238	780	1143	265	120	80	22	Ø254	8XØ17	862	808

NOTE:

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