Metal Seated Plug Valves



Plug Valves Specialists

www.3zvalve.com

Design Features

Construction of 3Z Metal Seated Plug Valves

3Z metal seated plug valves are designed to be used for high or low temperature. The plug is contact with raised ribs of the body and create sealing surfaces. These sealing surfaces prevent line leakage, and also prevent stem leakage to assure no external leakage into the atmosphere.





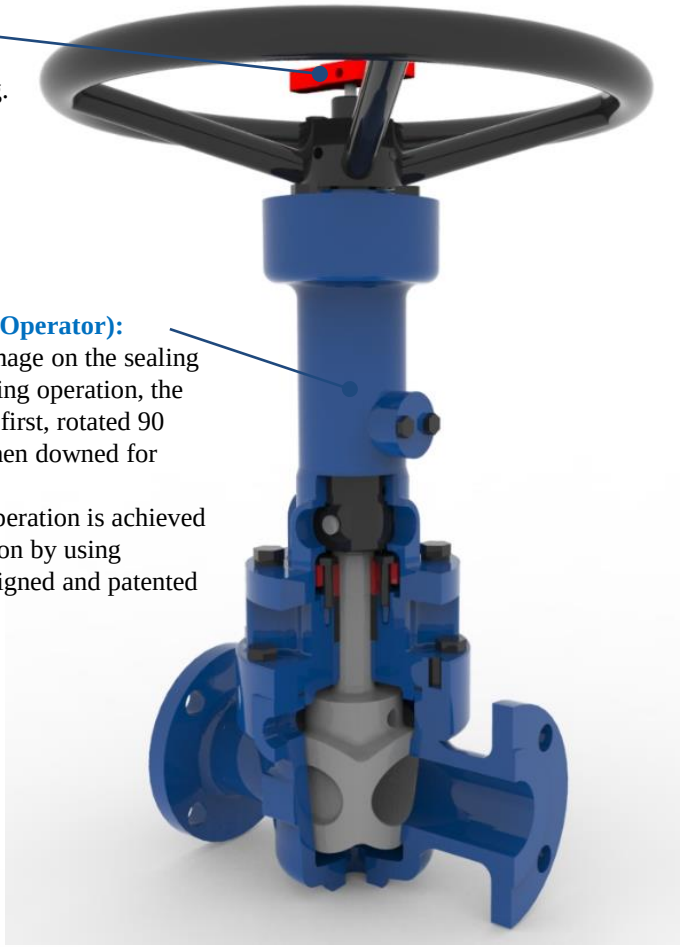
Mechanism(Operator)

Mechanism is very important part for this type of valve. Most of metal seated valve have high friction resulting in high torque. 3Z ball-locking mechanism make the plug away from body seat during opening and closing to provide low torque and smooth, frictionless operation.



Design Features

Indicator:
This indicates
the direction of the plug.



Size: 0.5” - 4” with Handle

Mechanism(Operator):
To avoid damage on the sealing surfaces during operation, the plug is lifted first, rotated 90 degree and then downed for sealing.
The whole operation is achieved with one action by using specially designed and patented mechanism.

Sealing material:
This is designed for high temperature service.



Size: 6” - 24” with Gear Box

Fugitive Emission Packing:
Fugitive emission packing prevents the extrusion of gland packing

Plug & Stem:
This is designed to maintain the correct alignment of the plug during opening and closing.

Metal Seat:
Line sealing is achieved by metal-to-metal contact between the body and plug.

How the 3Z Metal Seated Plug Valve Works

The body and plug contacts directly and seated as metal-to-metal. To prevent the surfaces from galling or abrading, the valve is designed to operate in the following steps:

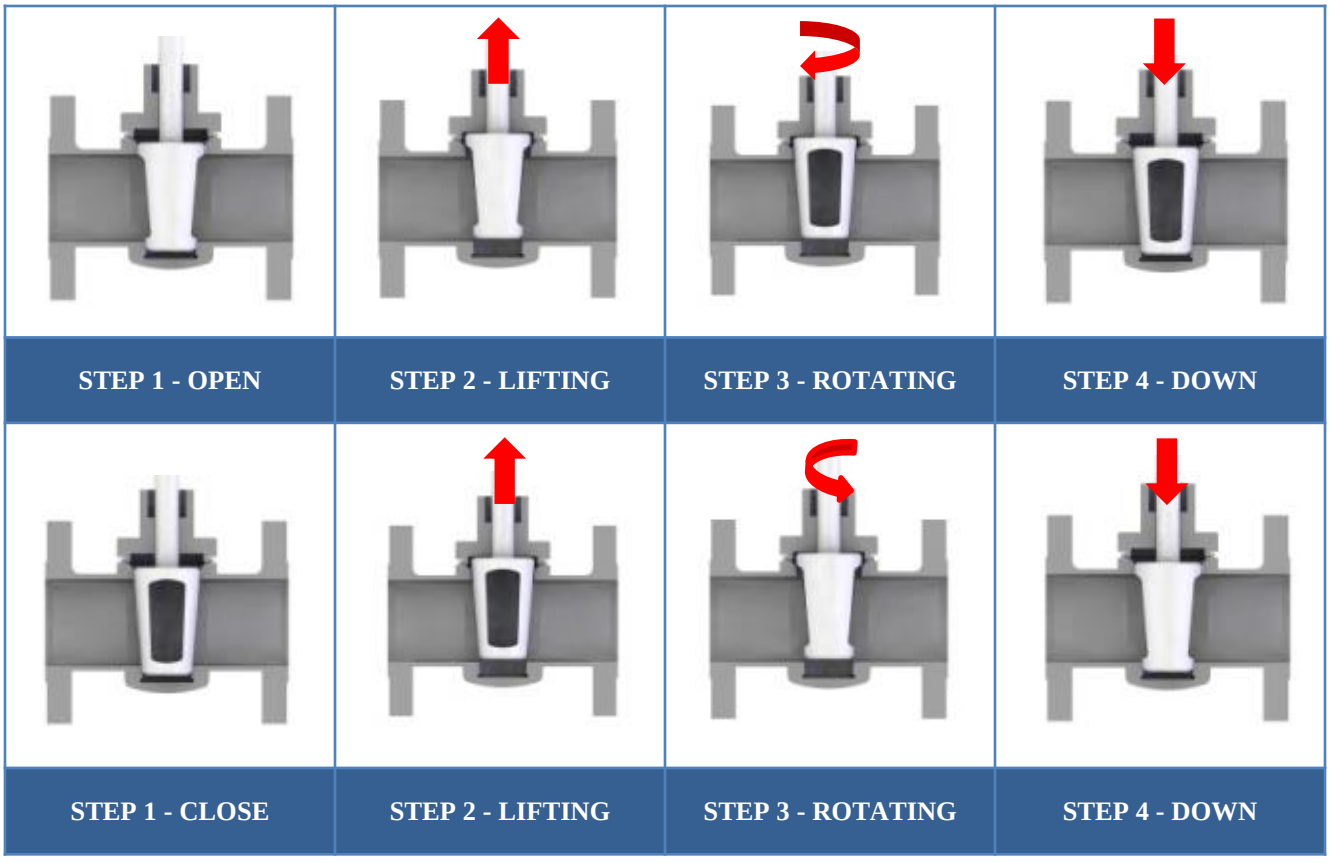
STEP 1 - Lowered & Seated Position: The plug is lowered and seated at fully opened or closed position.

STEP 2 - Lifted Position; The plug is lifted slightly to avoid galling or abrasion during this step.

STEP 3 - 90º Rotated Position; The plug is rotated 90º for opening or closing. No contact between the body and plug during this step. No rubbing, no friction.

STEP 4 - Lowered & Seated Position; The plug is lowered and reseated at fully opened or closed position.

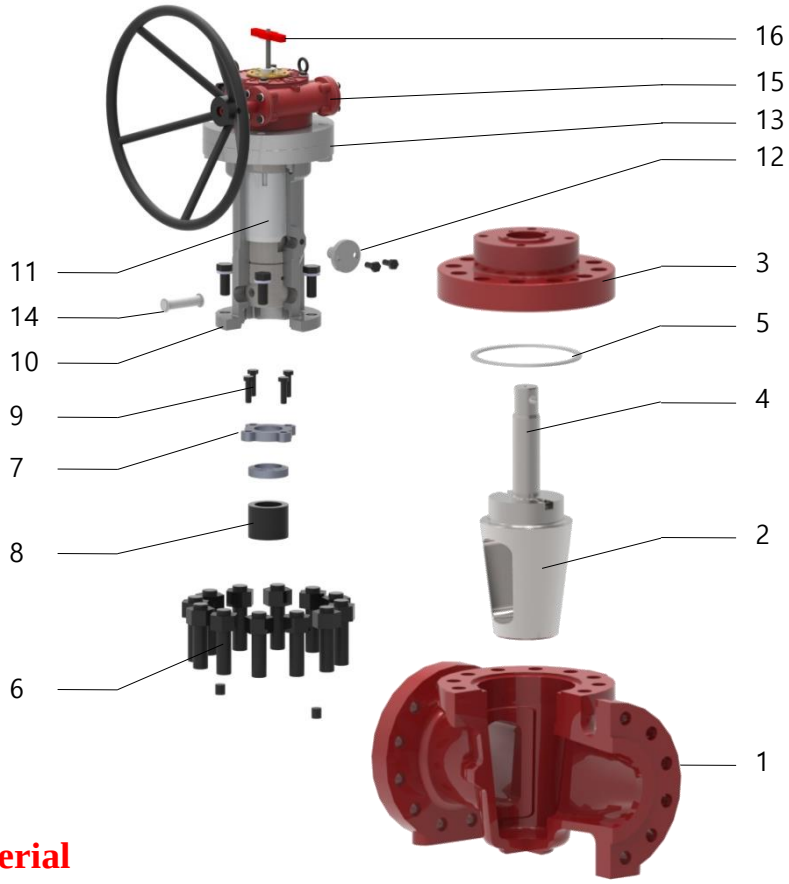
3Z developed a unique patented ball-locking mechanism. The 3Z mechanism provides low torque and smooth, frictionless operation. This mechanism is provided as a standard in 3Z Metal Seated Plug Valves.



Parts and Materials

Construction Materials:

A variety of materials are available such as carbon steel, stainless steel, duplex stainless steel and special alloys. Materials are subject to change without notice .Other materials and combinations are also available.



Sample Construction of Material

Carbon Steel

No	Parts	Specification
1	Body	A216 WCB
2	Plug (Hardened)	A217 CA15
3	Cover	A216 WCB
4	Stem	A276 Type 410
5	Gasket	(Graphite+316) SWG
6	Cover bolt & Nut	A193 B7 & A194 2H
7	Gland	A217 CA15/AISI 410
8	Gland packing	Graphite
9	Gland bolt	A193 B7
10	Housing	A216 WCB
11	MECH operator	A322 4140
12	Guide pin	A322 4140
13	Housing cover	AISI 1045
14	Plug pin	A322 4140
15	Gear operator	Ductile iron
16	Indicator	AISI 1020

316 Stainless

No	Specification
1	A351 CF8M
2	A351 CF8M+STELLITE
3	A351 CF8M
4	316
5	(Graphite+316) SWG
6	A193 B8 & A194 8
7	A217 CA15/AISI 410
8	Graphite
9	A193 B8 Class2
10	A216 WCB
11	A322 4140
12	A322 4140
13	AISI 1045
14	A322 4140
15	Ductile iron
16	AISI 1020

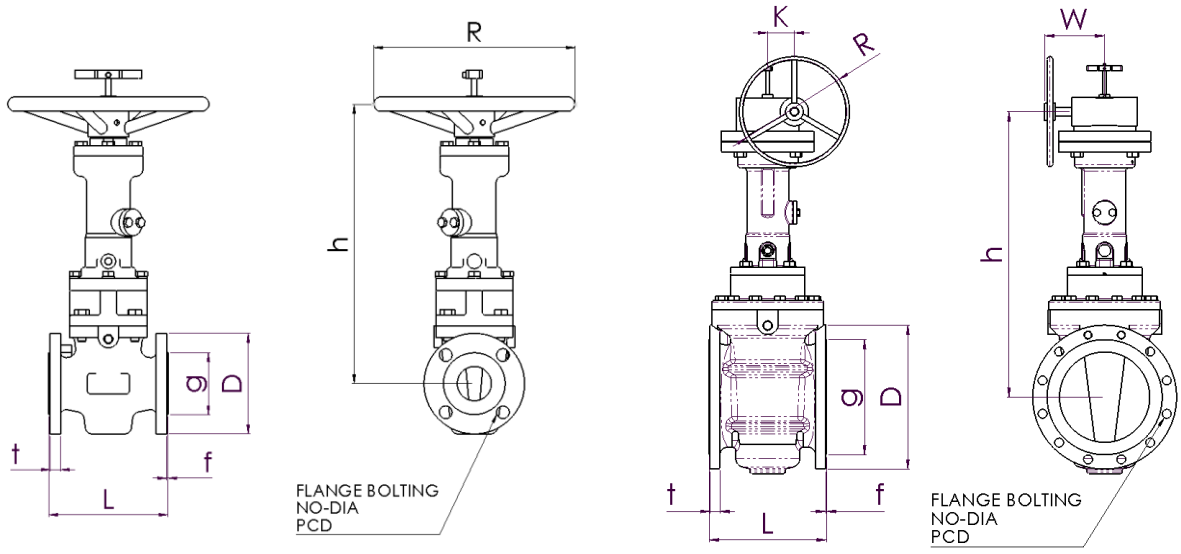
High temperature

No	Specification
1	A217 C12
2	A217 C12
3	A217 C12
4	A276 Type 410
5	(Graphite+316) SWG
6	A193 B16 & A194 7
7	A217 CA15/AISI 410
8	Graphite
9	A193 B16
10	A216 WCB
11	A322 4140
12	A322 4140
13	AISI 1045
14	A322 4140
15	Ductile iron
16	AISI 1020

- If additional materials are required, please consult the factory when ordering.

Standard Type Dimensions – Class 150

Figure No. 123P - Class 150 / Size 0.5” - 24” / 70% Port / Raised Face Flange



Unit: mm

Size	L	D	PCD	NO	DIA	g	t	f	h	R	K	W
+ 0.5	108	89	60.5	4	16	35.1	7.9	1.5	325	250	-	-
+ 0.75	117	99	69.8	4	16	42.9	8.6	1.5	325	250	-	-
+ 1	140	108	79.2	4	16	50.8	9.7	1.5	350	250	-	-
+ 1.5	165	127	98.6	4	16	73	12.7	1.5	370	300	-	-
2	178	152	120.6	4	19	91.9	14.2	1.5	430	300	-	-
2.5	191	178	139.7	4	19	104.6	15.7	1.5	430	300	-	-
3	203	190	152.4	4	19	127	17.5	1.5	435	300	-	-
4	229	229	190.5	8	19	157.2	22.4	1.5	520	400	-	-
6	267	279	241.3	8	22	215.9	23.9	1.5	575	250	57	177
8	292	343	298.4	8	22	269.7	26.9	1.5	710	300	70	230
10	330	406	362	12	25	323.8	28.4	1.5	765	300	70	230
12	610	483	431.8	12	25	381	30.2	1.5	1,000	400	83	260
14	686	533	476.2	12	29	412.8	33.3	1.5	1,140	500	97	294
16	762	597	539.8	16	29	469.9	35.1	1.5	1,200	500	97	294
18	864	635	577.8	16	32	533.4	38.1	1.5	1,300	500	97	294
20	914	698	635	20	32	584.2	41.1	1.5	1,400	500	97	294
24	1,067	813	749.3	20	35	692.2	46.0	1.5	1,620	560	112	324

*** Approx .Weight(kg) and flow characteristics**

Size	2	2.5	3	4	6	8	10	12	14	16	18	20	24
Weight	35	35	45	75	120	210	280	500	720	1,150	1,500	2,100	2,700
CV	200	300	350	650	1,400	2,500	3,700	5,700	7,000	9,500	13,000	16,000	22,000

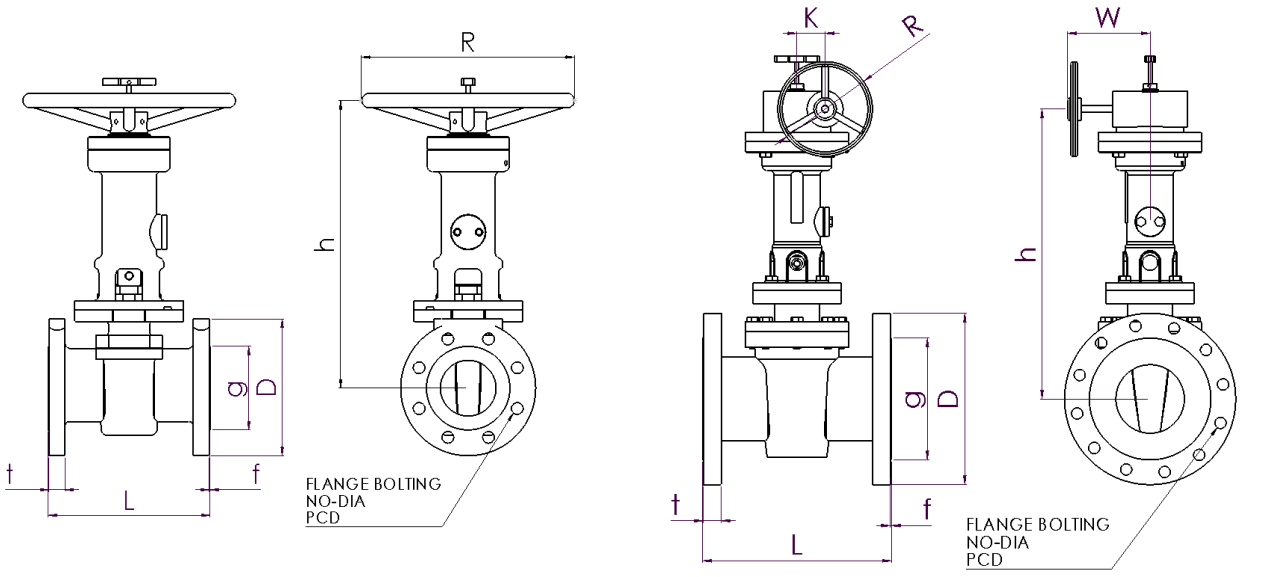
- 0.5”~ 4”(Handle Operated) / 6”~24”(Gear Operated)

+ Port Ratio is less than 70%

- If additional classes and sizes are required, please consult the factory when ordering.

Standard Type Dimensions – Class 300

Figure No. 323P - Class 300 / Size 0.5” - 24” / 70% Port / Raised Face Flange



Unit: mm

Size	L	D	PCD	NO	DIA	g	t	f	h	R	K	W
+ 0.5	140	95	66.5	4	16	35.1	12.7	1.5	325	250	-	-
+ 0.75	152	117	82.6	4	19	42.9	14.2	1.5	325	250	-	-
+ 1	165	124	88.9	4	19	50.8	15.7	1.5	350	250	-	-
+ 1.5	190	155	114.3	4	22	73	19.0	1.5	370	300	-	-
2	216	165	127	8	19	91.9	20.6	1.5	430	300	-	-
3	282	210	168.1	8	22	127	26.9	1.5	445	400	-	-
4	305	254	200.2	8	22	157.2	30.2	1.5	530	500	-	-
6	403	318	269.7	12	22	215.9	35.1	1.5	670	300	70	230
8	419	381	330.2	12	25	269.7	39.6	1.5	860	400	83	260
10	457	444	387.4	16	29	323.8	46.0	1.5	1,080	500	97	294
12	502	521	450.8	16	32	381	49.3	1.5	1,150	500	97	294
14	762	584	514.4	20	32	412.8	52.3	1.5	1,210	500	97	294
16	838	648	571.5	20	35	469.9	55.6	1.5	1,300	560	97	294
18	914	711	628.6	24	35	533.4	58.7	1.5	1,380	560	97	294
20	991	775	685.8	24	35	584.2	62.0	1.5	1,520	560	112	324
24	1,143	914	812.8	24	41	692.2	68.3	1.5	1,710	610	112	324

*** Approx .Weight(kg) and flow characteristics**

Size	2	3	4	6	8	10	12	14	16	18	20	24
Weight	40	55	115	245	310	500	780	1,000	1,300	1,700	2,300	3,000
CV	200	350	650	1,400	2,600	4,000	5,600	7,000	10,000	14,000	16,000	24,000

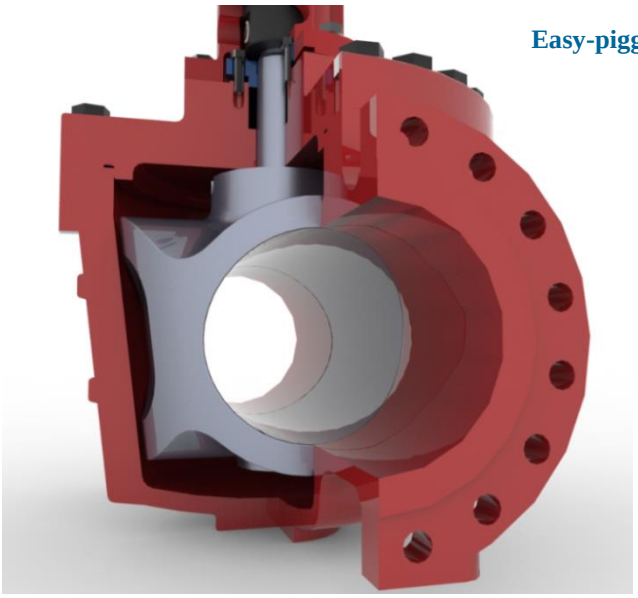
- 0.5”~ 4”(Handle Operated) / 6”~24”(Gear Operated)

+ Port Ratio is less than 70%

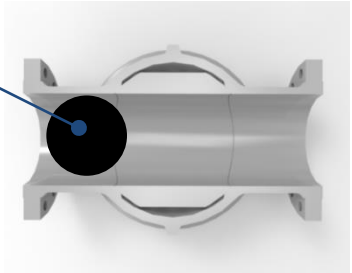
- If additional classes and sizes are required, please consult the factory when ordering.

Full Port Metal Seated Plug Valves

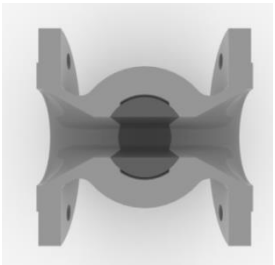
Feature: There is no diminished flow with the full bore port, and also easy to pigging. For application such as high viscosity condensable media, high efficiency is demonstrated with full bore port.



Easy-pigging



100% Full bore



70% Reduced bore

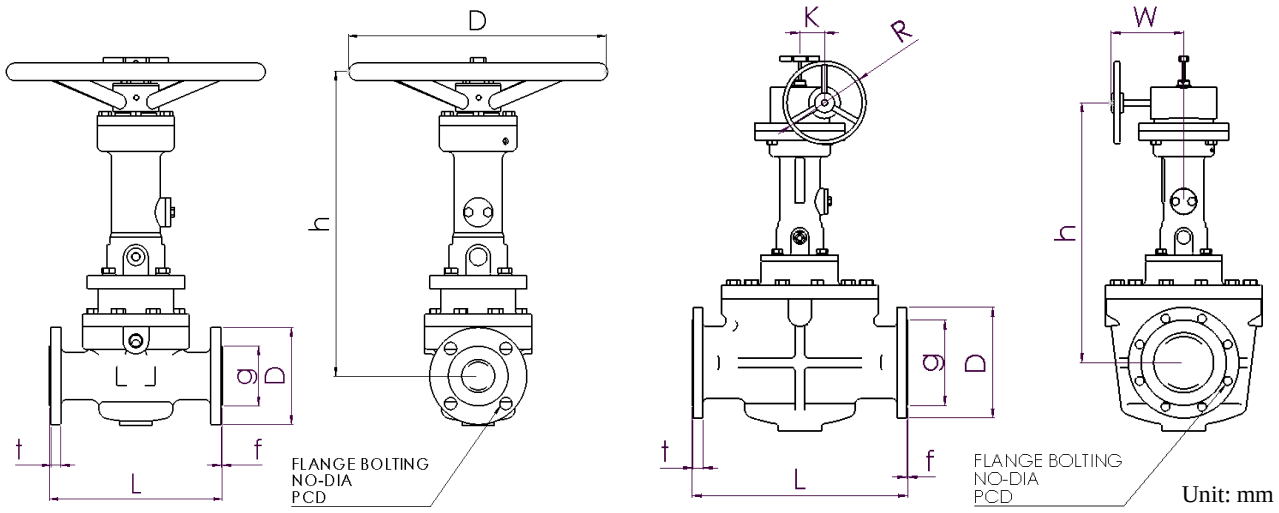
3Z metal seated full bore valves are designed to meet the requirement to minimize pressure drop in chemical plant, such as hydrocarbons, ammonia, ethylene etc... within high or low temperature range.





Full Port Type Dimensions – Class 150

Figure No. 123P FB - Class 150 / Size 0.5” - 24” / 100% Port / Raised Face Flange



Size	L	D	PCD	NO	DIA	g	t	f	h	R	K	W
0.5	*176	89	60.5	4	16	35.1	7.9	1.5	380	300	-	-
0.75	*176	99	69.8	4	16	42.9	8.6	1.5	380	300	-	-
1	176	108	79.2	4	16	50.8	9.7	1.5	390	300	-	-
1.5	222	127	98.6	4	16	73	12.7	1.5	410	300	-	-
2	267	152	120.6	4	19	91.9	14.2	1.5	440	300	-	-
3	343	190	152.4	4	19	127	17.5	1.5	550	400	-	-
4	432	229	190.5	8	19	157.2	22.4	1.5	610	300	70	230
6	546	279	241.3	8	22	215.9	23.9	1.5	660	300	70	230
8	622	343	298.4	8	22	269.7	26.9	1.5	780	400	83	260
10	660	406	362	12	25	323.8	28.4	1.5	920	500	97	294
12	762	483	431.8	12	25	381	30.2	1.5	950	560	97	294
14	*980	533	476.2	12	29	412.8	33.3	1.5	980	560	97	294
16	*1,100	597	539.8	16	29	469.9	35.1	1.5	1,150	560	112	324
18	*1,200	635	577.8	16	32	533.4	38.1	1.5	1,260	610	112	324
20	*1,300	698	635	20	32	584.2	41.1	1.5	1,410	610	153	370
24	*1,400	813	749.3	20	35	692.2	46.0	1.5	1,510	710	153	370

*** Approx .Weight(kg) and flow characteristics**

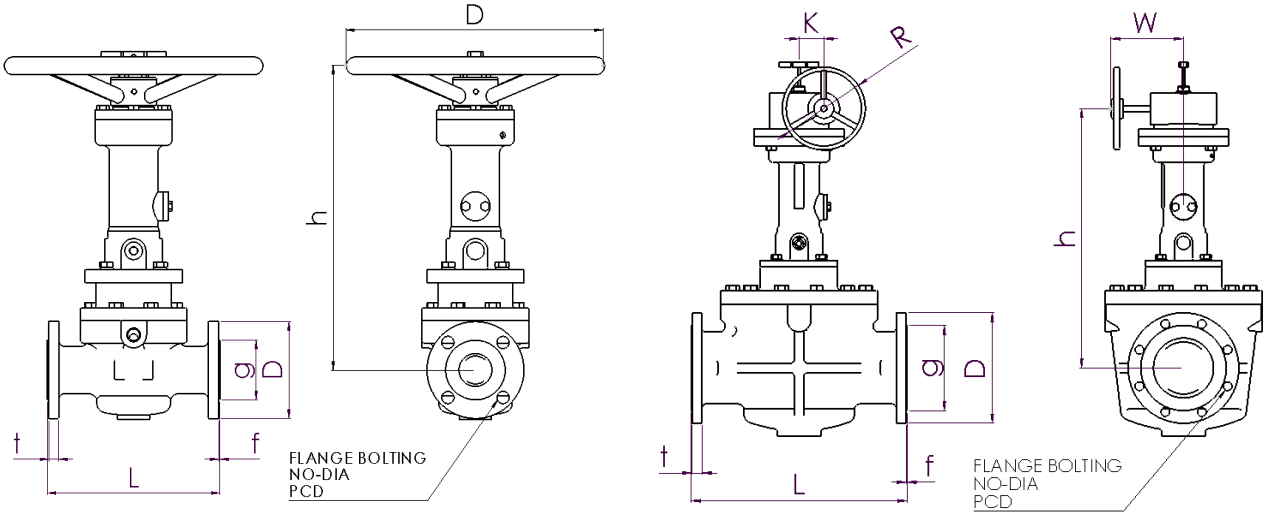
Size	1.5	2	3	4	6	8	10	12	14	16	18	20	24
Weight	35	60	90	150	280	465	750	1,050	1,300	1,800	2,500	4,000	7,000
CV	290	520	1,100	2,100	5,000	9,700	14,600	21,500	28,000	35,000	52,000	59,000	85,000

* Manufacturing Standard

- 0.5”~ 3”(Handle Operated) / 4”~24”(Gear Operated)
- If additional classes and sizes are required, please consult the factory when ordering.

Full Port Type Dimensions – Class 300

Figure No. 323P FB - Class 300 / Size 0.5” - 24” / 100% Port / Raised Face Flange



Unit: mm

Size	L	D	PCD	NO	DIA	g	t	f	h	R	K	W
0.5	*190	95	66.5	4	16	35.1	12.7	1.5	390	300	-	-
0.75	*190	117	82.6	4	19	42.9	14.2	1.5	390	300	-	-
1	190	124	88.9	4	19	50.8	15.7	1.5	390	300	-	-
1.5	241	155	114.3	4	22	73	19.0	1.5	410	300	-	-
2	283	165	127	8	19	91.9	20.6	1.5	440	300	-	-
3	387	210	168.1	8	22	127	26.9	1.5	550	400	-	-
4	457	254	200.2	8	22	157.2	30.2	1.5	620	300	70	230
6	559	318	269.7	12	22	215.9	35.1	1.5	740	400	83	260
8	686	381	330.2	12	25	269.7	39.6	1.5	870	500	97	294
10	826	444	387.4	16	29	323.8	46.0	1.5	930	560	97	294
12	965	521	450.8	16	32	381.0	49.3	1.5	1,125	610	112	324
14	*980	584	514.4	20	32	412.8	52.3	1.5	1,200	610	112	324
16	*1,100	648	571.5	20	35	469.9	55.6	1.5	1,280	610	112	324
18	*1,200	711	628.6	24	35	533.4	58.7	1.5	1,380	610	112	324
20	*1,300	775	685.8	24	35	584.2	62.0	1.5	1,480	710	153	370
24	*1,400	914	812.8	24	41	692.2	68.3	1.5	1,710	710	153	370

*** Approx .Weight(kg) and flow characteristics**

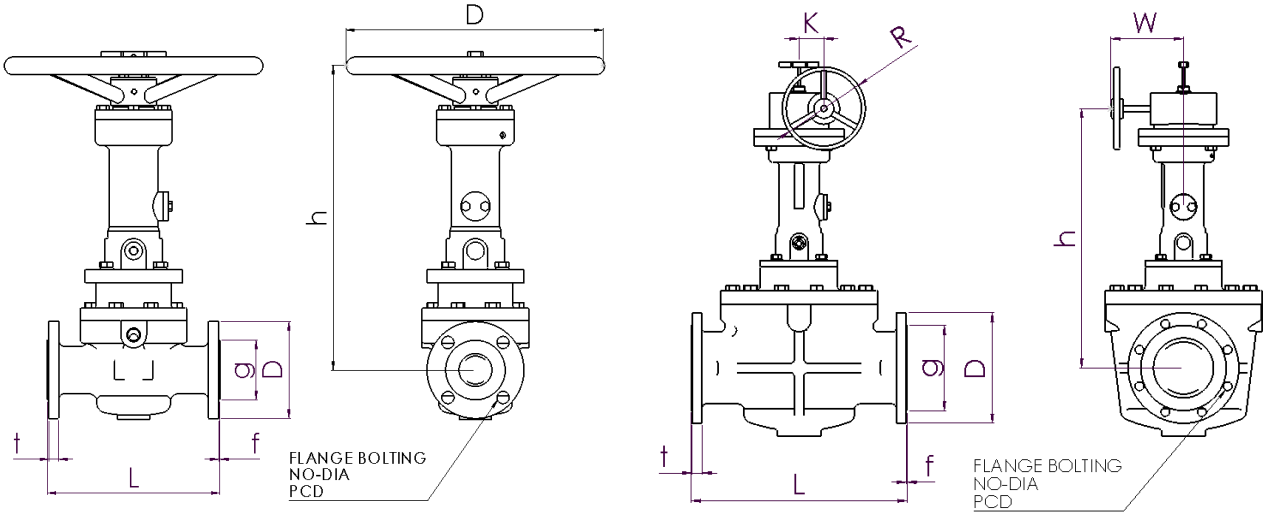
Size	1.5	2	3	4	6	8	10	12	14	16	18	20	24
Weight	40	65	100	200	340	650	890	1,450	1,700	2,500	3,200	4,500	8,000
CV	290	520	1,100	2,100	5,000	9,700	14,600	21,500	28,000	35,000	52,000	59,000	85,000

* Manufacturing Standard

- 0.5”~ 3”(Handle Operated) / 4”~24”(Gear Operated)
- If additional classes and sizes are required, please consult the factory when ordering.

Full Port Type Dimensions – Class 600

Figure No. 623P FB - Class 600 / Size 0.5” - 16” / 100% Port / Raised Face Flange



Unit: mm

Size	L	D	PCD	NO	DIA	g	t	f	h	R	K	W
0.5	*254	95	66.5	4	16	35.1	14.2	6.4	390	300	-	-
0.75	*254	117	82.6	4	19	42.9	15.7	6.4	400	300	-	-
1	254	124	88.9	4	19	50.8	17.5	6.4	400	300	-	-
1.5	318	155	114.3	4	22	73	22.4	6.4	400	300	-	-
2	330	165	127.0	8	19	91.9	25.4	6.4	550	400	-	-
3	444	210	168.1	8	22	127.0	31.8	6.4	640	300	70	230
4	508	273	215.9	8	25	157.2	38.1	6.4	730	400	83	260
6	660	356	292.1	12	29	215.9	47.8	6.4	820	500	97	294
8	794	419	349.2	12	32	269.7	55.6	6.4	1,090	560	112	324
10	940	508	431.8	16	35	323.8	63.5	6.4	1,160	560	112	324
12	1,067	559	489.0	20	35	381.0	66.5	6.4	1,320	610	153	370
14	*1,219	603	527.0	20	38	412.8	69.8	6.4	1,440	610	153	370
16	*1,402	686	603.2	20	41	469.9	76.2	6.4	1,570	710	153	370

*** Approx .Weight(kg) and flow characteristics**

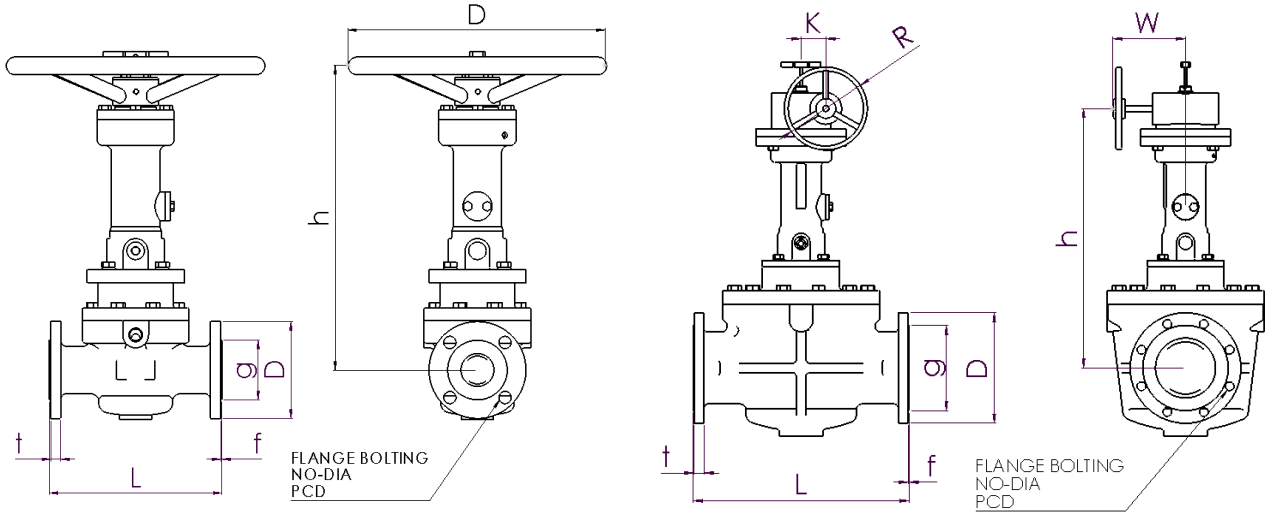
Size	1.5	2	3	4	6	8	10	12	14	16
Weight	50	80	170	350	520	950	1,450	2,200	2,850	3,500
CV	290	520	1,100	2,100	5,000	9,700	14,600	21,500	28,000	35,000

* Manufacturing Standard

- 0.5”~ 2”(Handle Operated) / 3”~16”(Gear Operated)
- If additional classes and sizes are required, please consult the factory when ordering.

Full Port Type Dimensions – Class 900

Figure No. 923P FB - Class 900 / Size 0.5” - 10” / 100% Port / Raised Face Flange



Unit: mm

Size	L	D	PCD	NO	DIA	g	t	f	h	R	K	W
0.5	*305	121	82.6	4	22	35.1	22.4	6.4	410	300	-	-
0.75	*305	130	88.9	4	22	42.9	25.4	6.4	410	300	-	-
1	*305	149	101.6	4	25	50.8	28.4	6.4	420	400	-	-
1.5	356	178	124	4	28	73	31.8	6.4	450	300	-	-
2	381	216	165.1	8	25	91.9	38.1	6.4	590	400	-	-
3	470	241	190.5	8	25	127	38.1	6.4	670	300	70	230
4	559	292	235	8	32	157.2	44.5	6.4	770	400	83	260
6	737	381	317.5	12	32	215.9	55.6	6.4	1,030	500	97	294
8	813	470	393.7	12	38	269.7	63.5	6.4	1,160	560	112	324
10	965	546	469.9	16	38	323.8	69.8	6.4	1,320	610	153	370

*** Weight(kg) and flow characteristics**

Size	1.5	2	3	4	6	8	10
Weight	90	125	220	400	700	1,200	1,800
CV	290	520	1,100	2,100	5,000	9,700	14,600

* Manufacturing Standard

- 0.5”~ 2”(Handle Operated) / 3”~10”(Gear Operated)
- If additional classes and sizes are required, please consult the factory when ordering.

Jacketed Valves

Jacketed Plug Valve: 3Z steam jacketed plug valves are designed to control special chemical service where media has to be required within a specified temperature range. The steam jacketed design prevents the media in the body from cooling down. If cool media become solid, the trim parts, plug and stem will be very hard to operate. The steam jacket keep maintaining required temperature of the valve.



Jacket Connection:
Standard arrangement of jacket connection is located side and bottom



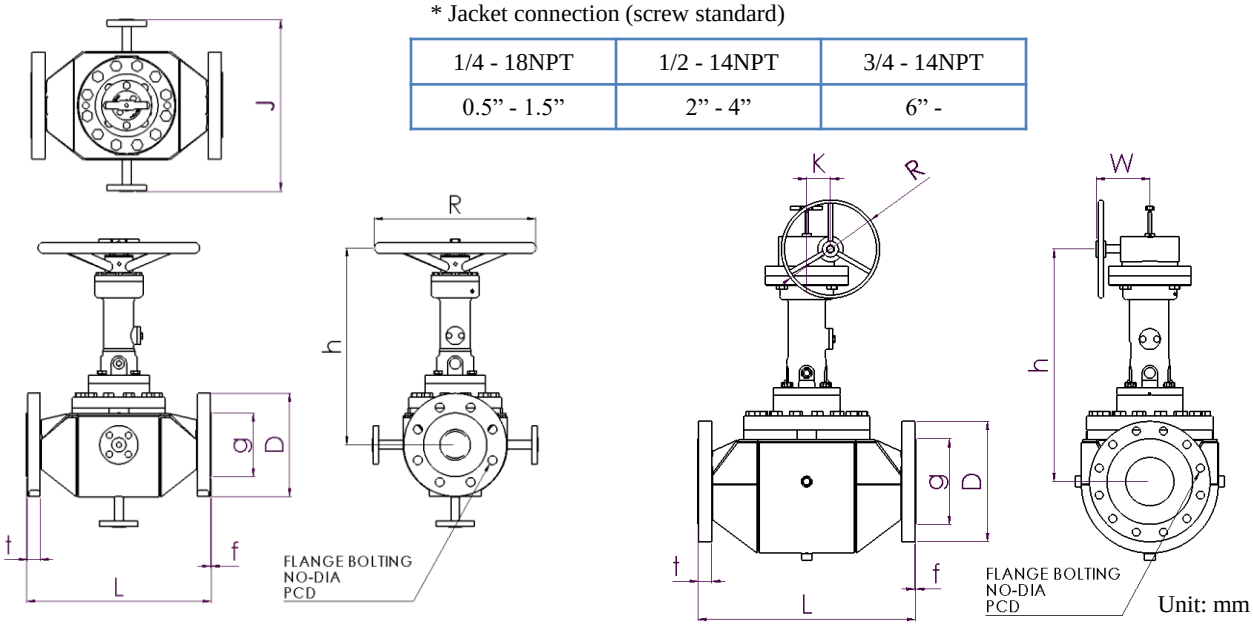




3Z steam jacketed plug valves supply the full jacket and partial type. Full jacket is covered body and flow passage by jacket and partial jacket is covered only body.

Jacketed Valve Dimensions – Class 150

Figure No. 123P FJ - Class 150 / Size 0.5”- 20” / 70% Port / Full Jacket/ Raised Face Flange



* Jacket connection (screw standard)

1/4 - 18NPT	1/2 - 14NPT	3/4 - 14NPT
0.5” - 1.5”	2” - 4”	6” -

Unit: mm

Size (flange * body)	L	D	PCD	NO	DIA	g	t	f	h	R	K	W	J (SC)	J (FL)
+1.5x0.5	165	127	98.6	4	16	73	12.7	1.5	325	250	-	-	110	220
+1.5x0.75	165	127	98.6	4	16	73	12.7	1.5	325	250	-	-	110	220
+2x1	178	152	120.6	4	19	91.9	14.2	1.5	350	250	-	-	135	245
+3x1.5	203	190	152.4	4	19	127	17.5	1.5	370	300	-	-	140	250
3x2	203	190	152.4	4	19	127	17.5	1.5	430	300	-	-	200	300
4x2	229	229	190.5	8	19	157.2	22.4	1.5	430	300	-	-	200	300
4x3	229	229	190.5	8	19	157.2	22.4	1.5	440	300	-	-	210	310
6x3	267	279	241.3	8	22	215.9	23.9	1.5	440	300	-	-	210	310
6x4	267	279	241.3	8	22	215.9	23.9	1.5	540	400	-	-	245	340
8x6	292	343	298.4	8	22	269.7	26.9	1.5	575	250	57	177	325	420
10x8	330	406	362	12	25	323.8	28.4	1.5	705	300	70	230	385	480
12x10	610	483	431.8	12	25	381	30.2	1.5	765	300	70	230	450	545
14x12	686	533	476.2	12	29	412.8	33.3	1.5	820	400	83	260	480	580
16x12	762	597	539.8	16	29	469.9	35.1	1.5	860	400	83	260	540	635
16x14	762	597	539.8	16	29	469.9	35.1	1.5	860	500	97	294	560	650
18x16	864	635	577.8	16	32	533.4	38.1	1.5	1,200	500	97	294	580	670
20x16	914	698	635	20	32	584.2	41.1	1.5	1,200	500	97	294	650	740
24x20	1,067	813	749.3	20	35	692.2	46.0	1.5	1,400	500	97	294	720	810

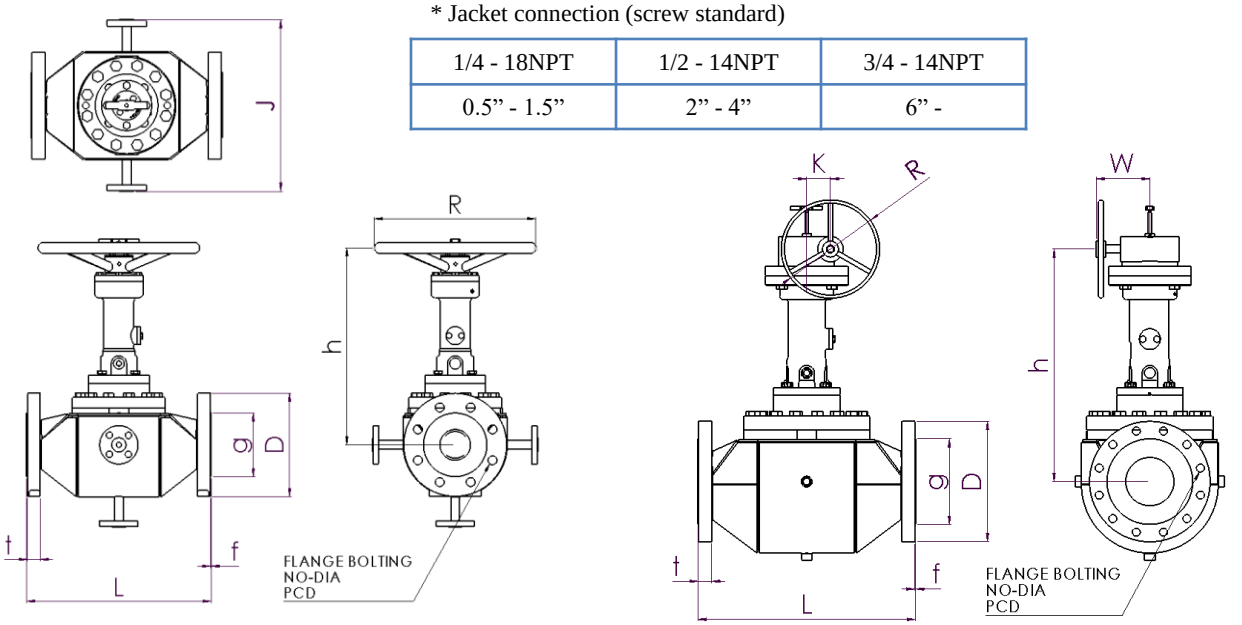
*** Approx .Weight(kg) and flow characteristics**

Size	3x2	4x3	6x3	6x4	8x6	10x8	12x10	14x12	16x12	16x14	18x16	20x18	24x20
Weight	45	55	75	90	155	250	370	600	670	850	1,300	1,700	2,500
CV	215	380	400	700	1,500	2,700	3,600	5,900	7,200	7,500	10,500	11,000	17,000

- 0.5”~ 4”(Handle Operated) / 6”~20”(Gear Operated) / + Port ratio is less than 70%
- If additional classes and sizes are required, please consult the factory when ordering.

Jacketed Valve Dimensions – Class 300

Figure No. 323P FJ - Class 300 / Size 0.5” - 20” / 70% Port / Full Jacket/ Raised Face Flange



* Jacket connection (screw standard)

1/4 - 18NPT	1/2 - 14NPT	3/4 - 14NPT
0.5” - 1.5”	2” - 4”	6” -

Unit: mm

Size (flange * body)	L	D	PCD	NO	DIA	g	t	f	h	R	K	W	J (SC)	J (FL)
1.5x0.5	190	155	114.3	4	22	73	19.0	1.5	325	250	-	-	110	220
1.5x0.75	190	155	114.3	4	22	73	19.0	1.5	325	250	-	-	110	220
2x1	216	165	127	8	19	91.9	20.6	1.5	410	250	-	-	160	280
3x1.5	282	210	168.1	8	22	127	26.9	1.5	380	300	-	-	190	290
3x2	282	210	168.1	8	22	127	26.9	1.5	430	300	-	-	190	290
4x3	305	254	200.2	8	22	157.2	30.2	1.5	445	400	-	-	205	310
6x4	403	318	269.7	12	22	215.9	35.1	1.5	570	400	-	-	215	330
8x6	419	381	330.2	12	25	269.7	39.6	1.5	670	300	70	230	285	390
10x8	457	444	387.4	16	29	323.8	46.0	1.5	860	400	83	260	325	425
12x10	502	521	450.8	16	32	381	49.3	1.5	1,080	500	97	294	355	455
16x12	838	648	571.5	20	35	469.9	55.6	1.5	1,150	500	97	294	370	505
16x14	838	648	571.5	20	35	469.9	55.6	1.5	1,210	500	97	294	440	555
20x16	991	775	685.8	24	35	584.2	62.0	1.5	1,300	500	97	294	520	625
24x20	1,143	914	812.8	24	41	692.2	68.3	1.5	1,520	560	112	324	730	830

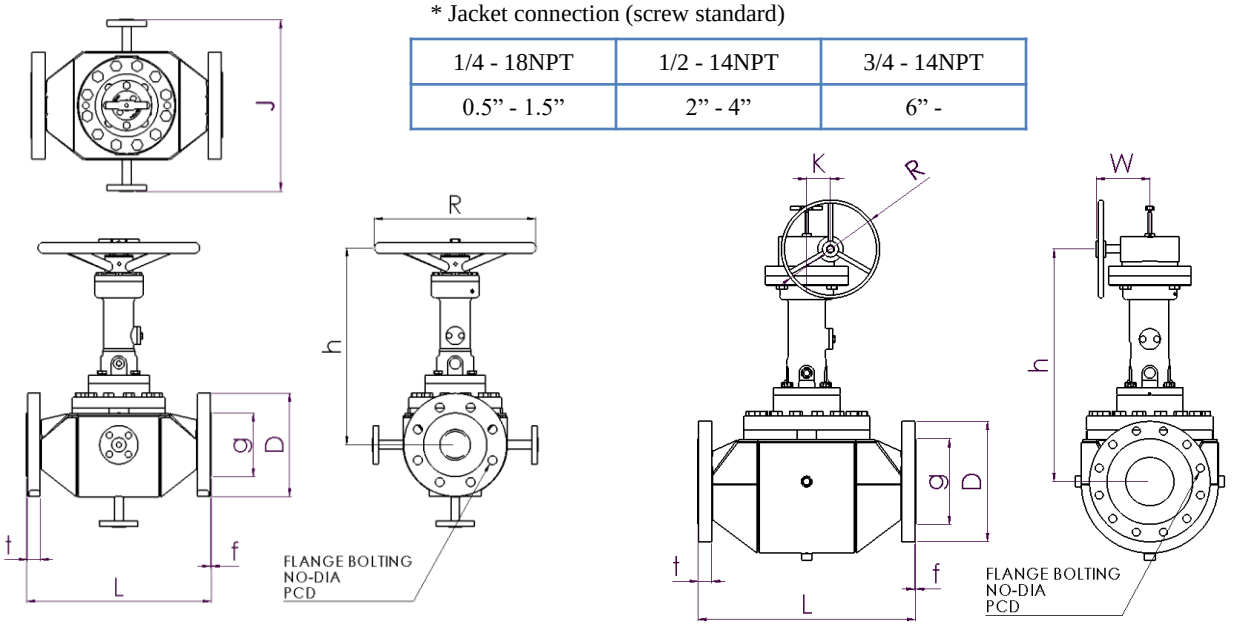
*** Approx .Weight(kg) and flow characteristics**

Size	3x2	4x3	6x4	8x6	10x8	12x10	16x12	16x14	20x16	24x20
Weight	55	70	170	320	400	550	850	1,100	1,800	3,100
CV	220	370	700	1,500	2,800	4,200	6,000	7,500	10,700	17,000

- 0.5”~ 4”(Handle Operated) / 6”~20”(Gear Operated)
- If additional classes and sizes are required, please consult the factory when ordering.

Full Port Jacketed Valve Dimensions – Class 150

Figure No. 123P FB FJ - Class 150 / Size 0.5” - 20” / 100% Port / Full Jacket/ Raised Face Flange



* Jacket connection (screw standard)

1/4 - 18NPT	1/2 - 14NPT	3/4 - 14NPT
0.5” - 1.5”	2” - 4”	6” -

Unit: mm

Size (flange * body)	L	D	PCD	NO	DIA	g	t	f	h	R	K	W	J (SC)	J (FJ)
1.5x0.5	222	127	98.6	4	16	73	12.7	1.5	390	300	-	-	170	280
1.5x0.75	222	127	98.6	4	16	73	12.7	1.5	390	300	-	-	170	295
2x1	267	152	120.6	4	19	91.9	14.2	1.5	390	300	-	-	170	290
3x1	343	190	152.4	4	19	127	17.5	1.5	390	300	-	-	190	290
3x1.5	343	190	152.4	4	19	127	17.5	1.5	410	300	-	-	250	350
3x2	343	190	152.4	4	19	127	17.5	1.5	470	400	-	-	250	350
4x3	432	229	190.5	8	19	157.2	22.4	1.5	550	400	-	-	295	400
6x4	546	279	241.3	8	22	215.9	23.9	1.5	610	300	70	230	370	470
8x6	622	343	298.4	8	22	269.7	26.9	1.5	660	300	70	230	445	545
10x8	660	406	362	12	25	323.8	28.4	1.5	780	400	83	260	560	665
12x10	762	483	431.8	12	25	381	30.2	1.5	920	500	97	294	690	795
14x12	*980	533	476.2	12	29	412.8	33.3	1.5	1,030	560	97	294	720	820
16x14	*1,100	597	539.8	16	29	469.9	35.1	1.5	1,060	560	97	294	790	890
20x16	*1,300	698	635	20	32	584.2	41.1	1.5	1,200	560	112	324	900	1,000
24x20	*1,400	813	749.3	20	35	692.2	46.0	1.5	1,410	610	153	370	1,230	1,330

*** Approx .Weight(kg) and flow characteristics**

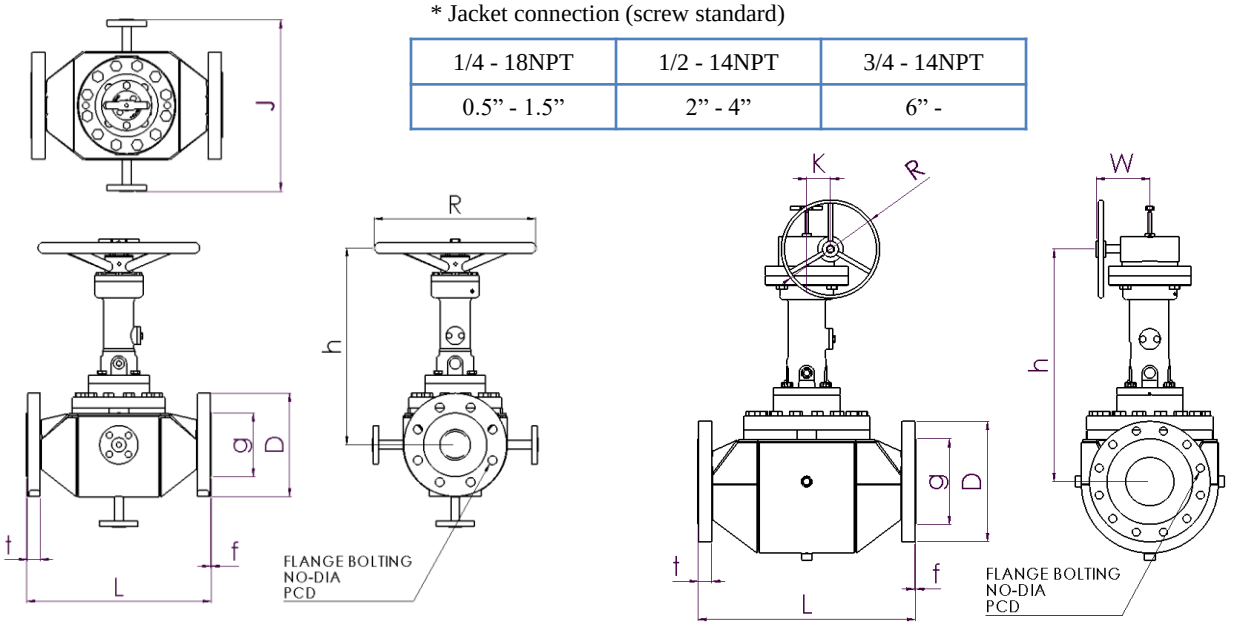
Size	3x1.5	3x2	4x3	6x4	8x6	10x8	12x10	14x12	16x14	20x16	24x20
Weight	50	75	110	220	350	580	850	1,200	1,800	2,800	4,200
CV	290	530	1,100	2,100	5,000	9,700	14,600	21,500	28,000	35,000	59,000

* Manufacturing Standard

- 0.5”~ 3”(Handle Operated) / 4”~24”(Gear Operated)
- If additional classes and sizes are required, please consult the factory when ordering.

Full Port Jacketed Valve Dimensions – Class 300

Figure No. 323P FB FJ - Class 300 / Size 0.5” - 20” / 100% Port / Full Jacket / Raised Face Flange



* Jacket connection (screw standard)

1/4 - 18NPT	1/2 - 14NPT	3/4 - 14NPT
0.5” - 1.5”	2” - 4”	6” -

Unit: mm

Size (flange * body)	L	D	PCD	NO	DIA	g	t	f	h	R	K	W	J (SC)	J (FJ)
1.5x0.5	241	155	114.3	4	22	73	19.0	1.5	390	300	-	-	170	280
1.5x0.75	241	155	114.3	4	22	73	19.0	1.5	390	300	-	-	170	285
2x1	282	165	127	8	19	91.9	20.6	1.5	390	300	-	-	180	290
3x1.5	387	210	168.1	8	22	127	26.9	1.5	410	300	-	-	250	350
3x2	387	210	168.1	8	22	127	26.9	1.5	470	400	-	-	260	370
4x3	457	254	200.2	8	22	157.2	30.2	1.5	500	400	-	-	300	410
6x4	559	318	269.7	12	22	215.9	35.1	1.5	615	300	70	230	360	470
8x6	686	381	330.2	12	25	269.7	39.6	1.5	740	400	83	260	480	570
10x8	826	444	387.4	16	29	323.8	46.0	1.5	870	500	97	294	600	690
12x10	965	521	450.8	16	32	381	49.3	1.5	930	560	97	294	690	800
14x12	*980	585	514.4	20	32	412.8	52.3	1.5	1,060	610	112	324	720	820
16x14	*1,100	648	571.5	20	35	469.9	55.6	1.5	1,130	610	112	324	810	910
20x16	*1,300	775	685.8	24	35	584.2	62.0	1.5	1,280	610	112	324	910	1,010
24x20	*1,400	914	812.8	24	41	692.2	68.3	1.5	1,480	610	112	324	1,280	1,380

*** Approx .Weight(kg) and flow characteristics**

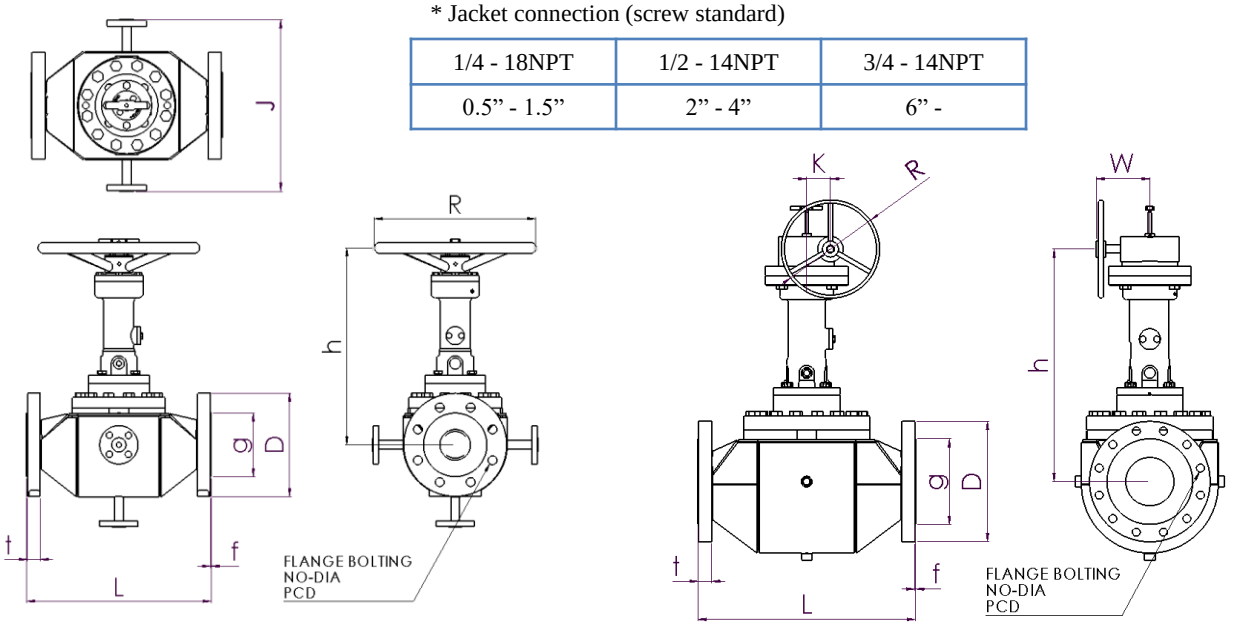
Size	3x1.5	3x2	4x3	6x4	8x6	10x8	12x10	14x12	16x14	20x16	24x20
Weight	60	80	120	240	440	800	1,100	1,600	2,200	3,100	4,800
CV	290	520	1,100	2,100	5,000	9,700	14,600	21,500	28,000	35,000	59,000

* Manufacturing Standard

- 0.5”~ 3”(Handle Operated) / 4”~20”(Gear Operated)
- If additional classes and sizes are required, please consult the factory when ordering.

Full Port Jacketed Valve Dimensions – Class 600

Figure No. 623P FB FJ - Class 600 / Size 0.5” - 14” / 100% Port / Full Jacket / Raised Face Flange



* Jacket connection (screw standard)

1/4 - 18NPT	1/2 - 14NPT	3/4 - 14NPT
0.5” - 1.5”	2” - 4”	6” -

Unit: mm

Size (flange * body)	L	D	PCD	NO	DIA	g	t	f	h	R	K	W	J (SC)	J (FL)
1.5x0.5	318	155	114.3	4	22	73	22.4	6.4	390	300	-	-	190	300
1.5x0.75	318	155	114.3	4	22	73	22.4	6.4	390	300	-	-	190	300
2x1	330	165	127	8	19	91.9	25.4	6.4	400	400	-	-	210	320
3x1.5	444	210	168.1	8	22	127	31.8	6.4	430	300	-	-	250	350
3x2	444	210	168.1	8	22	127	31.8	6.4	550	400	-	-	260	360
4x3	508	273	215.9	8	25	157.2	38.1	6.4	640	300	70	230	295	400
6x4	660	356	292.1	12	29	215.9	47.8	6.4	730	400	83	260	355	460
8x6	794	419	349.2	12	32	269.7	55.6	6.4	830	500	97	294	490	590
10x8	940	508	431.8	16	35	323.8	63.5	6.4	1,090	560	112	324	580	680
12x10	1,067	559	489	20	35	381	66.5	6.4	1,160	560	112	324	710	810
14x12	*1,200	603	527	20	38	412.8	69.8	6.4	1,320	610	153	370	770	870
16x14	*1,300	686	603.2	20	41	469.9	76.2	6.4	1,440	610	153	370	840	940

*** Approx .Weight(kg) and flow characteristics**

Size	3x1.5	3x2	4x3	6x4	8x6	10x8	12x10	14x12	16x14
Weight	100	120	250	430	640	950	1,500	2,300	3,800
CV	290	520	1,100	2,100	5,000	9,700	14,600	21,500	28,000

* Manufacturing Standard

- 0.5”~ 2”(Handle Operated) / 3”~14”(Gear Operated)
- If additional classes and sizes are required, please consult the factory when ordering.

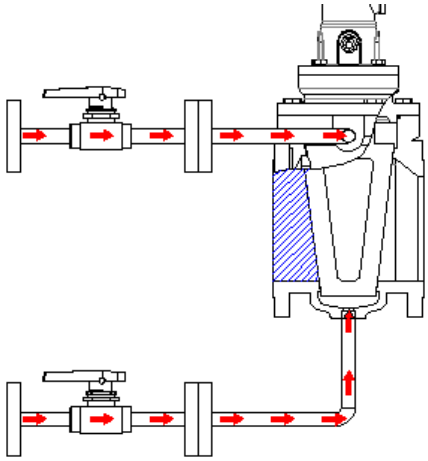
Purging Process

Whenever opening or closing the valve, the plug is lifted, rotated, lowered and seated. When the plug starts being lifted and rotated, purge media, which has higher pressure than line media is provided from the side and bottom port into the space between the body and plug for flushing inside of the valve.

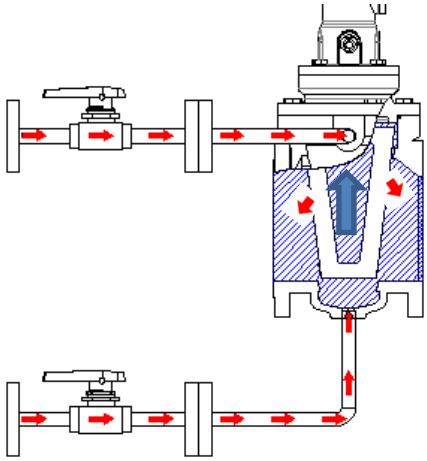
When the plug is lowered and seated, the purging action stops automatically.

Therefore, the valve can be maintained clean inner surfaces and spaces.

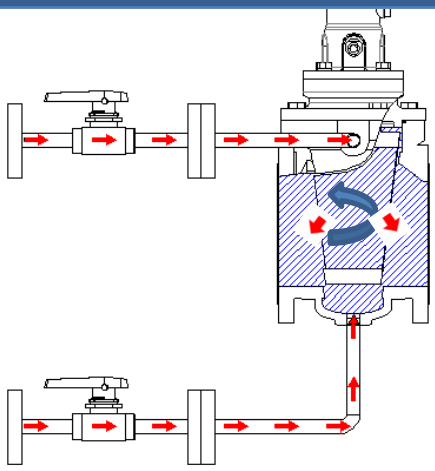




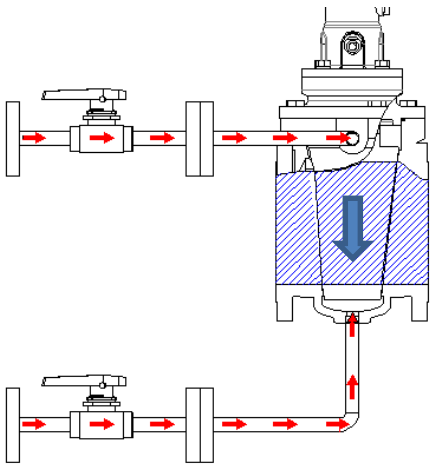
STEP 1 - PLUG CLOSED



STEP 2 – PLUG LIFTING



STEP 3 - PLUG ROTATING



STEP 4 – PLUG OPENED

Operators

3Z Operation: 3Z Metal seated plug valves are designed to operate by hand wheel, gear or actuator. 3Z valves can supply variable operators as per customer`s requirements.



Valve with Handwheel



Valve with Gear Operator



Valve with Motor Actuator

How to Order

FIG

123P: Class 150 2-way Metal Seated Valve
323P: Class 300 2-way Metal Seated Valve
623P: Class 600 2-way Metal Seated Valve
133P: Class 150 3-way Metal Seated Valve
333P: Class 300 3-way Metal Seated Valve
633P: Class 600 3-way Metal Seated Valve
123P FB: Class 150 2-way Full Bore Metal Seated Valve
323P FB: Class 300 2-way Full Bore Metal Seated Valve
623P FB: Class 600 2-way Full Bore Metal Seated Valve
923P FB: Class 900 2-way Full Bore Metal Seated Valve

CODE

ANSI / JIS / DIN

JACKET

FJ: Full Jacket
PJ: Partial Jacket

BODY

WCB: ASTM A216 WCB
CF8M: ASTM A351 CF8M
CF8: ASTM A351 CF8
C5: ASTM A217 C5
C12: ASTM A217 C12
CA15: ASTM A217 CA15

PLUG

WCB: ASTM A216 WCB
CF8M: ASTM A351 CF8M
CF8: ASTM A351 CF8
C5: ASTM A217 C5
C12: ASTM A217 C12

LONG STEM

L100: Long Stem 100mm
L150: Long Stem 150mm
L2000: Long Stem 2000mm

123P - DIN - AX - FJ - RTJ - WR – L100 - LD - NACE - WCB – CF8M - STELLITE

PORT

AX / A / C / D

END CONNECTION

RF: Raised Face
RTJ: Ring Type Joint
FF: Flat Face
LTF: Large Tongue Face
LMF: Large Male Face
LFF: Large Female Face
BW: Butt Weld
SW: Socket Weld
SC: Screw

OPERATOR

WR: Wrench
GR: Worm Gear
BA: Bare Stem
AOV: Air Operated Valve
MOV: Motor Operated Valve

LOCKING DEVICE

LD : Locking device

SERVICE

NACE: NACE MR0175/0103

SEAT

N/A: Original

ENP: Electroless Nickel-Phosphorus coating

STELLITE: Hardfacing Stellite

- If additional information is required, please consult the factory when ordering.



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