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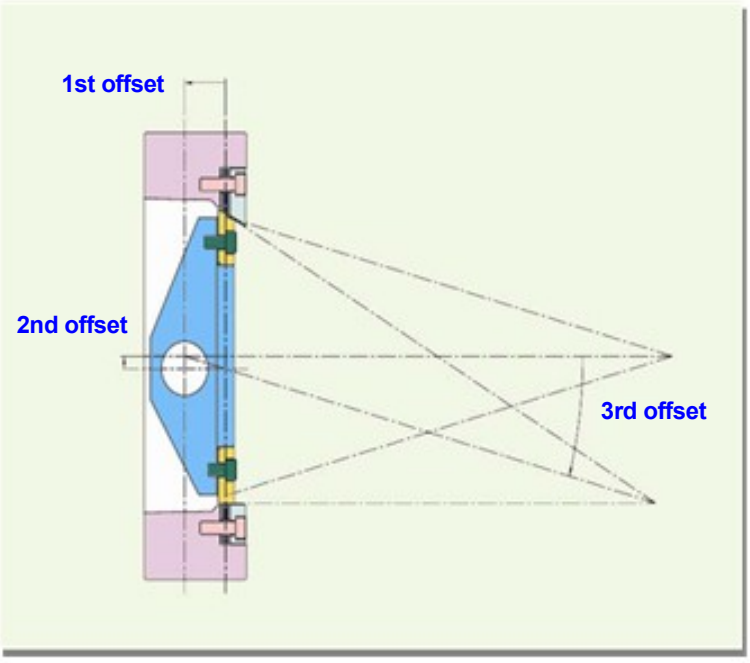
SERIES 425A TRIPLE

TRIPLE OFFSET METAL SEATED BUTTERFLY VALVE

Principle of triple offset Valve Design



1st Offset

To have positive sealing and increase sealing capacity, the axis of the shaft is placed behind The center line of sealing point.

2nd Offset

To reduce running torque and friction between disc and Seat, the axis of the shaft is eccentric to the center of the valve and piping line.

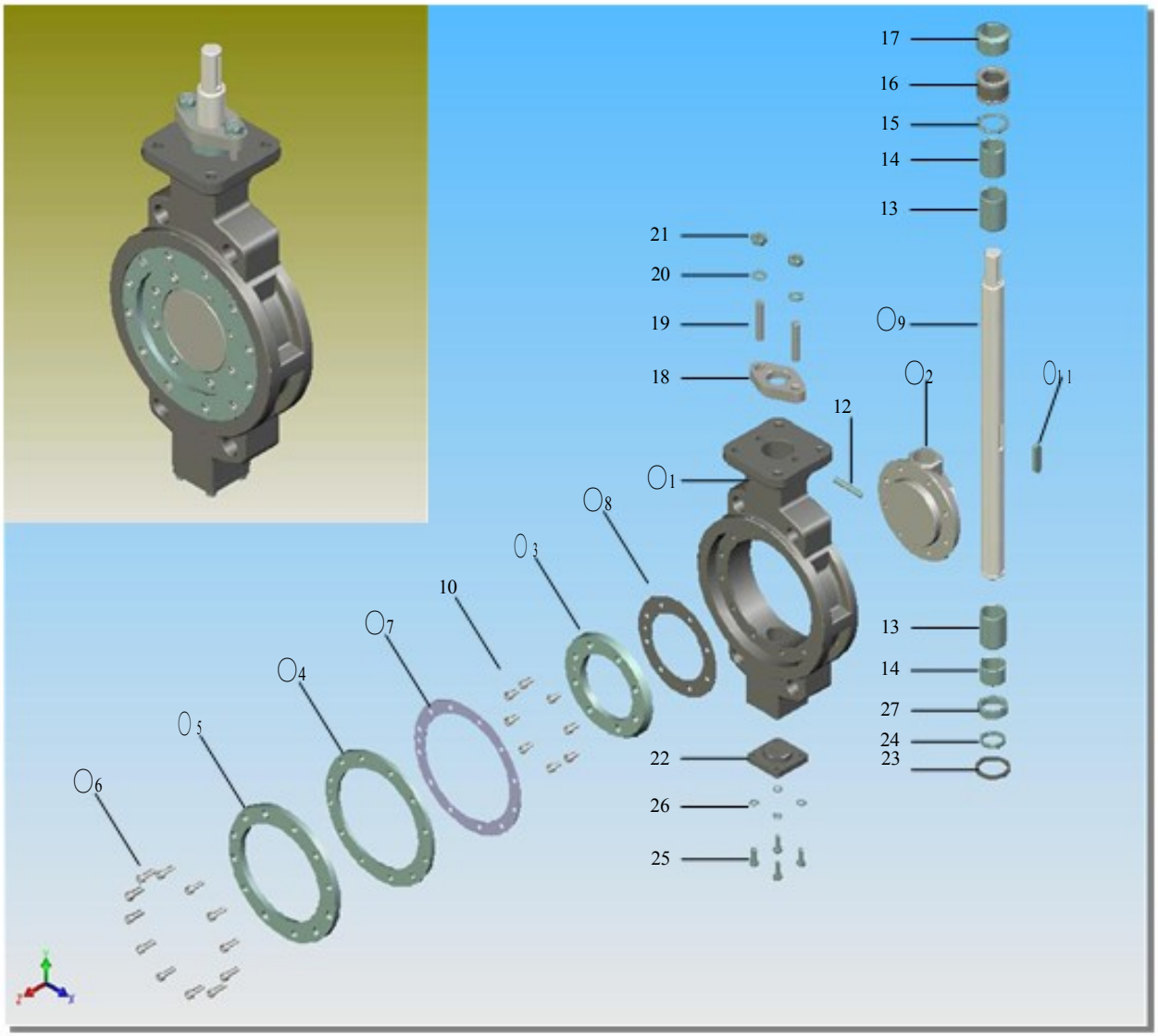
3rd Offset

Cone shaped disc seat and body seat is inclined around the axis of the seat and center line to remove abrasion of the seats.

Features

- Triple eccentric design and the cone shaped sealing mechanism.
- Zero leakage and tight shut-off.
- Fire safe.
- Advantage of the geometric construction.
- Low friction between a disc and a seat.
- Low Torque enables the compact actuator and long lifetime.
- Sealing mechanism is designed for heat-expansion.
- Wide range of application from the cryogenic to high temperature.
- Unique packing material provides fugitive emission packing.

Construction



No.	Description	No.	Description	No.	Description
1	Body	10	Disc Seal Screw	19	Stud Bolt
2	Disc	11	Key	20	Spring Washer
3	Disc Seal	12	Disc Pin	21	Nut
4	Body Seat	13	Shaft Bearing	22	End Cap
5	Seat Retainer	14	Collar	23	End Gasket
6	Seat Retainer Screw	15	Packing Retainer	24	Shaft Retainer
7	Body Seat Gasket	16	Packing	25	End Cap Screw
8	Disc Seal Gasket	17	Packing Gland	26	Spring Washer
9	Shaft	18	Gland Flange	27	Thrust Bearing

Design Standards

Design	API Std 609, ANSI/ASME B16.34
Classes	Class 150 - Class 600
Size	3”(80mm) - 48”(1200mm)
Body Style	Lugged, Wafer, Flanged
Flange Drilling	ANSI/ ASME B16.5, ANSI/ASME B16.47, ISO 7005, DIN2501
Face to Face Dimensions	ANSI/ ASME B16.10, API 609, ISO5752, BS5155
Applicable Temperature Range	~ +1000°F(538°C) for Standard*
Pressure Tests	API Std 598, ISO 5208
Operator	Manual, Electric, Pneumatic, Hydraulic

*1.Applicable Temperatures varies with material. 2. 750°F(400°C) or less in an oxidized atmosphere.

Material and Specifications

Part No.	Description	Standard	
1	Body	A216-WCB	A351-CF8M
2	Disc	A216-WCB	A351-CF8M
3	Disc Seal	Stainless Steel 316	Stainless Steel 316
4	Body Seat	Laminated Stainless Steel 316/ Graphite	Laminated Stainless Steel 316/ Graphite
5	Seat Retainer	Steel	Stainless Steel 316
6	Seat Retainer Screw	Stainless Steel 304	Stainless Steel 316
7	Body Seat Gasket	Graphite	Graphite
8	Disc Seal Gasket	Graphite	Graphite
9	Shaft	A564-630 H1100	A564-630 H1100
10	Disc Seal Screw	Stainless Steel 304	Stainless Steel 316
11	Key	630 SS	630 SS
12	Disc Pin	Stainless Steel 316	Stainless Steel 316
13	Shaft Bearing	Stainless Steel 304 + Nitr. or Hcr.	Stainless Steel 316 + Nitr. or Hcr.
14	Collar	Stainless Steel 304	Stainless Steel 316
15	Packing Retainer	Stainless Steel 316	Stainless Steel 316
16	Packing	Graphite	Graphite
17	Packing Gland	Stainless Steel 304	Stainless Steel 316
18	Gland Flange	Stainless Steel 304	Stainless Steel 316
19	Stud Bolt	Stainless Steel 304	Stainless Steel 316
20	Spring Washer	Stainless Steel 304	Stainless Steel 316
21	Nut	Stainless Steel 304	Stainless Steel 316
22	End Cap	Steel	Stainless Steel 316
23	End Gasket	Graphite	Graphite
24	Shaft Retainer	Stainless Steel 316	Stainless Steel 316
25	End Cap Screw	Stainless Steel 304	Stainless Steel 316
26	Spring Washer	Stainless Steel 304	Stainless Steel 316
27	Thrust Bearing	Stainless Steel 304	Stainless Steel 316
Option			
Body Seat		Laminated Duplex Stainless Steel/ Graphite	
		Laminated Incontinent/ Graphite, Laminated Monet/ Graphite, Laminated Hastelloy/ Graphite	
Disc Seal Surface		Satellite	

** Other materials are available on request.

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Comparison of valves

Features	Triple offset valve	Globe valve	Gate valve	Ball valve
Body Connection	**Wafer, Lugged, Flanged Buttweld End**	Flanged, Screwed Welded	Flanged, Welded	Flanged, Welded
Weight	**Light**	Heavy	Heavy	Heavy
Space	**small**	Large	Large	Large
High Temperature	**High**	High	High	High
Sealing Performance	**Tight shut off**	Tight shut off or Class IV	Tight shut off or Class IV	Tight shut off or Class IV
Seat Friction	**No**	Yes	Yes	Yes
Bi-directional	**Yes**	No	Yes	Yes
Fire Safe	**Yes**	Yes	Yes	Yes
Torque	**Low**	High	High	High
Ease of Maintenance	**Good**	Poor	Poor	Poor

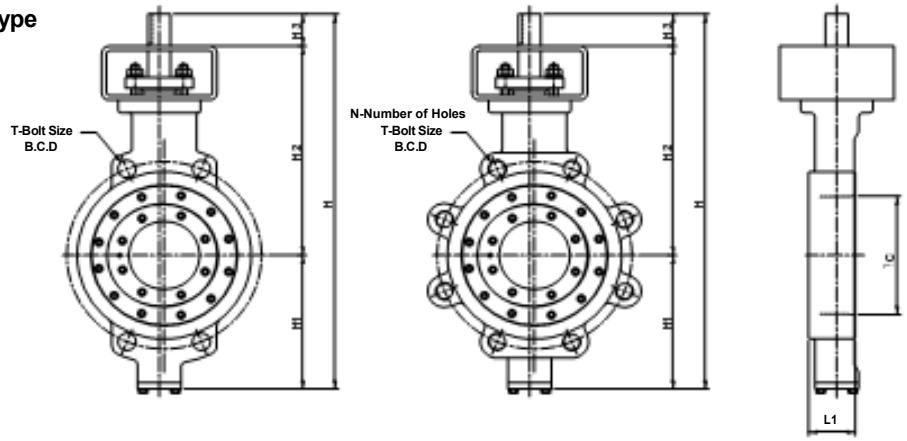
Applications

- Power Plants
- Hydrogen
- Pulp and Paper
- Oxygen Service
- Chemical Plants
- Steam
- Oil and Gas Processing
- Refinery

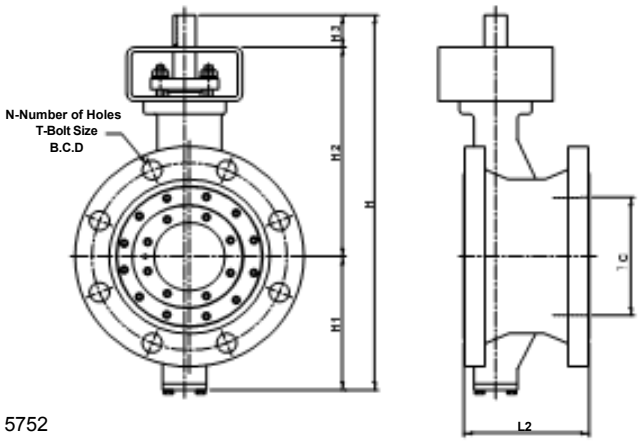
Reference Drawings

Class 150

Wafer & Lugged Type



Flanged Type



Note

1. Valve Design : ANSI B16.34 & API 609
2. Face to Face : API 609 Category B, ISO 5752
3. End Flange Dimensions : ANSI B16.5 Class150

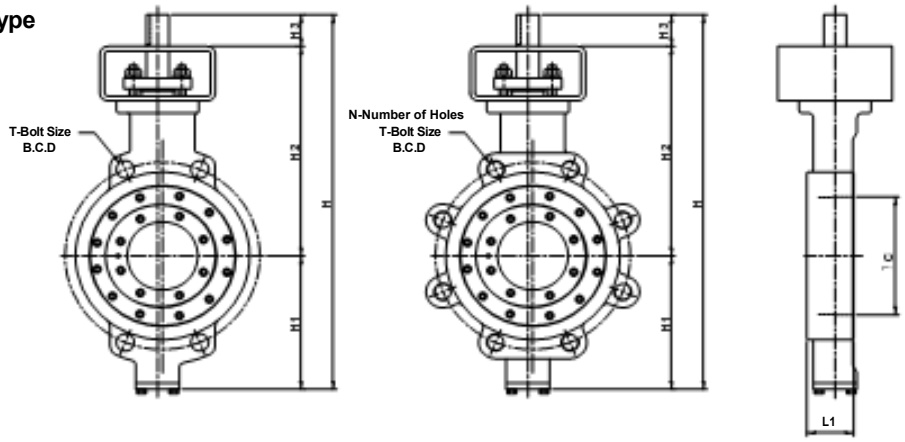
3 - 24 inch (80 - 600mm) Dimension

size								Flange Dimension		
mm inch	H	H1	H2	H3	L1	L2	ØC	B.C.D	T	N
80 3	344 13.54	120 4.72	190 7.48	34 1.34	48 1.89	114 4.49	81 3.19	152.4 6.00	5/8" x 11unc	4
100 4	399 15.71	140 5.51	225 8.86	34 1.34	54 2.13	127 5.00	104 4.09	190.5 7.50	5/8" x 11unc	8
150 6	489 19.26	180 7.09	275 10.83	34 1.34	57 2.24	140 5.51	156 6.14	241.3 9.50	3/4" x 10unc	8
200 8	555 21.85	190 7.48	300 11.81	65 2.56	64 2.52	152 5.98	198 7.79	298.5 11.75	3/4" x 10unc	8
250 10	660 25.98	235 9.25	360 14.17	65 2.56	71 2.83	165 6.50	240 9.45	362.0 14.25	7/8" x 9unc	12
300 12	749 29.49	275 10.83	400 15.75	74 2.91	81 3.19	178 7.01	287 11.30	431.8 17.00	7/8" x 9unc	12
350 14	804 31.65	300 11.81	430 16.93	74 2.91	92 3.62	190 7.48	330 12.99	476.3 18.75	1" x 8unc	12
400 16	909 35.78	335 13.19	500 19.68	74 2.91	102 4.02	216 8.50	368 14.49	539.8 21.25	1" x 8unc	16
450 18	994 39.13	380 14.96	540 21.26	74 2.91	114 4.49	222 8.74	436 17.16	577.9 22.75	1 1/8" x 8un	16
500 20	1039 40.90	400 15.75	565 22.24	74 2.91	127 5.00	229 9.02	485 19.09	635.0 25.00	1 1/8" x 8un	20
600 24	1245 49.02	460 18.11	670 26.38	115 4.53	154 6.06	267 10.51	570 22.44	749.3 29.50	1 1/4" x 8un	20

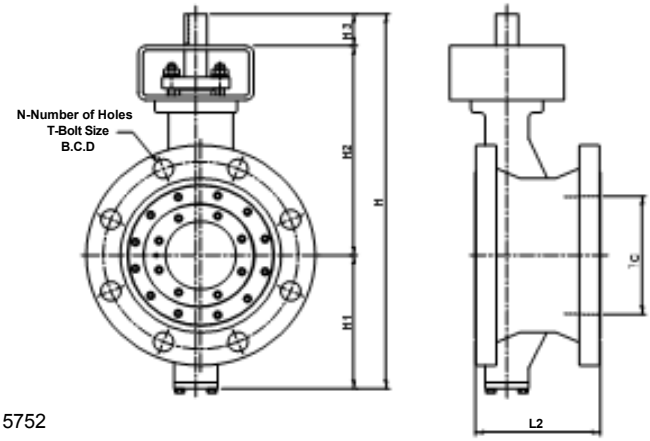
■ Designs are subject to change without notice.

Class 300

Wafer & Lugged Type



Flanged Type



Note

1. Valve Design : ANSI B16.34 & API 609
2. Face to Face : API 609 Category B, ISO 5752
3. End Flange Dimensions : ANSI B16.5 Class300

3 - 24 inch (80 - 600mm) Dimension

size mm / inch	H	H1	H2	H3	L1	L2	ØC	Flange Dimension B.C.D	T	N
80 / 3	344 / 13.54	120 / 4.72	190 / 7.48	34 / 1.34	48 / 1.89	114 / 4.49	81 / 3.19	152.4 / 6.00	5/8" x 11unc	4
100 / 4	399 / 15.71	140 / 5.51	225 / 8.86	34 / 1.34	54 / 2.13	127 / 5.00	104 / 4.09	190.5 / 7.50	5/8" x 11unc	8
150 / 6	489 / 19.26	180 / 7.09	275 / 10.83	34 / 1.34	57 / 2.24	140 / 5.51	156 / 6.14	241.3 / 9.50	3/4" x 10unc	8
200 / 8	555 / 21.85	190 / 7.48	300 / 11.81	65 / 2.56	64 / 2.52	152 / 5.98	198 / 7.79	298.5 / 11.75	3/4" x 10unc	8
250 / 10	660 / 25.98	235 / 9.25	360 / 14.17	65 / 2.56	71 / 2.83	165 / 6.50	240 / 9.45	362.0 / 14.25	7/8" x 9unc	12
300 / 12	749 / 29.49	275 / 10.83	400 / 15.75	74 / 2.91	81 / 3.19	178 / 7.01	287 / 11.30	431.8 / 17.00	7/8" x 9unc	12
350 / 14	804 / 31.65	300 / 11.81	430 / 16.93	74 / 2.91	92 / 3.62	190 / 7.48	330 / 12.99	476.3 / 18.75	1" x 8unc	12
400 / 16	909 / 35.78	335 / 13.19	500 / 19.68	74 / 2.91	102 / 4.02	216 / 8.50	368 / 14.49	539.8 / 21.25	1" x 8unc	16
450 / 18	994 / 39.13	380 / 14.96	540 / 21.26	74 / 2.91	114 / 4.49	222 / 8.74	436 / 17.16	577.9 / 22.75	1 1/8" x 8un	16
500 / 20	1039 / 40.90	400 / 15.75	565 / 22.24	74 / 2.91	127 / 5.00	229 / 9.02	485 / 19.09	635.0 / 25.00	1 1/8" x 8un	20
600 / 24	1245 / 49.02	460 / 18.11	670 / 26.38	115 / 4.53	154 / 6.06	267 / 10.51	570 / 22.44	749.3 / 29.50	1 1/4" x 8un	20

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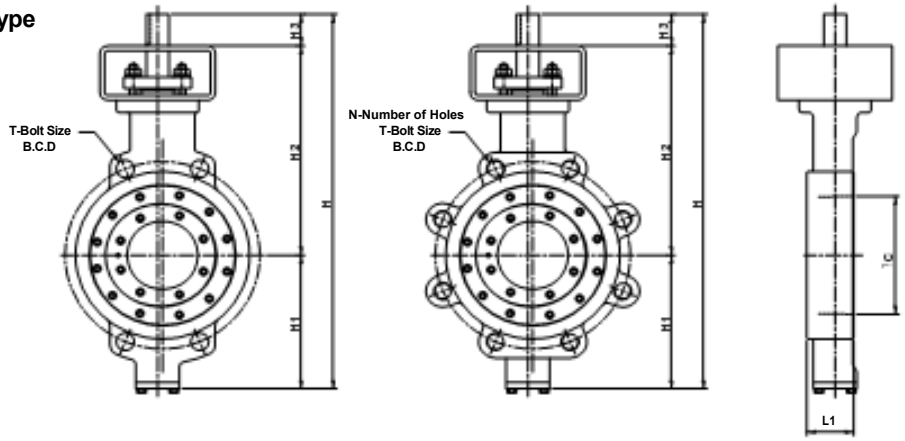
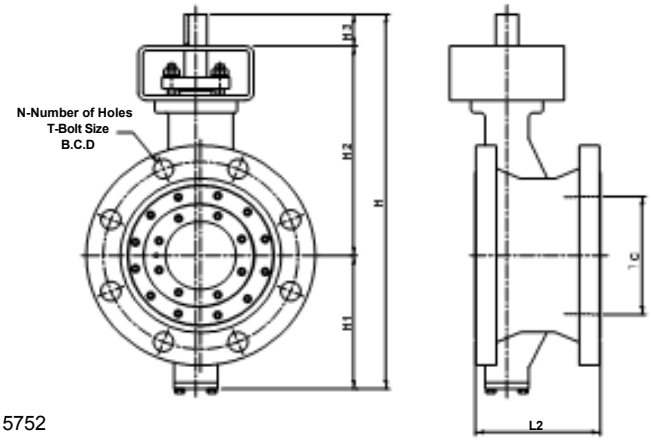
Class 600

Wafer & Lugged Type



Flanged Type



Note

1. Valve Design : ANSI B16.34 & API 609
2. Face to Face : API 609 Category B, ISO 5752
3. End Flange Dimensions : ANSI B16.5 Class600

3 - 24 inch (80 - 600mm) Dimension

size								Flange Dimension		
mm inch	H	H1	H2	H3	L1	L2	ØC	B.C.D	T	N
80 3	344 13.54	120 4.72	190 7.48	34 1.34	48 1.89	114 4.49	81 3.19	152.4 6.00	5/8" x 11unc	4
100 4	399 15.71	140 5.51	225 8.86	34 1.34	54 2.13	127 5.00	104 4.09	190.5 7.50	5/8" x 11unc	8
150 6	489 19.26	180 7.09	275 10.83	34 1.34	57 2.24	140 5.51	156 6.14	241.3 9.50	3/4" x 10unc	8
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250 10	660 25.98	235 9.25	360 14.17	65 2.56	71 2.83	165 6.50	240 9.45	362.0 14.25	7/8" x 9unc	12
300 12	749 29.49	275 10.83	400 15.75	74 2.91	81 3.19	178 7.01	287 11.30	431.8 17.00	7/8" x 9unc	12

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