Petro Valves

Butterfly Valves



Technical information

Features

Application

Pressure Rating		PN6	PN10	PN16	PN25	ANSI CLASS125	ANSI CLASS150
Size		2″-80″	2″ -60″	2″-48″	2″-12″	2″-12″ 14″-48″	2″-12″
Testing Pressure	Shell Test	0.9MPa	1.5MPa	2.4MPa	3.75MPa	2.5MPa 1.9MPa	2.6MPa
	Sealing Test	0.66MPa	1.1MPa	1.76MPa	2.75MPa	1.5MPa 1.1MPa	2.2MPa
Applicable Medium		Potable Water, Fresh Water, Sewage, Sea Water, Air, Vapor, Food, Drink, Medicine, Oil, Coal Gas, Natural Ğas, Acids, Alkalis, Salts, Pulp, Beer, Etc.					
Industry Using		HVAC/ATC, Chemical/Petrochemical, Food and Beverage Industry, Power and Utilities, Pulp and Paper Industry.					
Applicable Temperature		-40°c -180°c					

Features

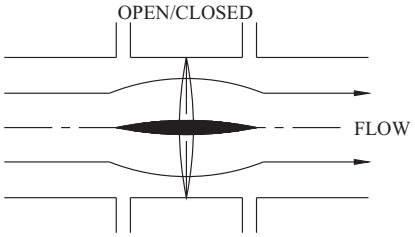
1. Compact construction results in low weight, less space in storage and installation.
2. Central shaft position, 100% bidirectional bubble tight shut off makes installation acceptable at any direction.
3. Full bore body gives low resistance to flow.
4. No cavities in the flow passage, easy to clean and disinfect for potable water system etc.
5. Liner creates seal with mating flanges so no media is in contact with the valve body.
6. ISO 5211 top flange for easy fitting of actuators.
7. Low operating torques results in easy operation and economical actuator sizing.
8. PTFE lined bearing on shaft allows for low friction & wear without using lubricants.
9. 1) Lining bonded to the body to ensure no corrosion between body and lining, longer life, suitable for vacuum service, eg. at the suction side of the pump, suitable for end of line use.

   2) Inserted lining to the body, liner easy to replace, no corrosion between body and lining, suitable for end of line use.

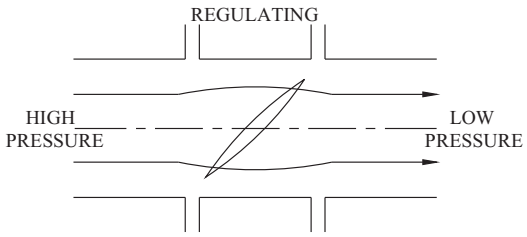
Functions

Butterfly valves are used more and more in piping systems instead of traditional valves due to their general advantages. Petro Valves range is designed strictly in accordance with API609, EN593, MSS SP-67, AWWA C504, and specially designed for the following process functions: Isolating (100% tight shut off; zero leakage) and/or; Flow control regulation or modulating duties.

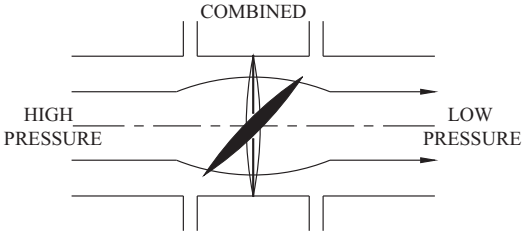
1. Isolating, tight shut off (On/Off)
The butterfly valve is used in the fully open or fully closed position. With an isolating valve part of a piping system can be isolated, thus preventing flow or leakage into the downstream conduit. The advantage of Petro Valves rangeof butterfly valves is its reliable seal when the valve is closed and low flowresistance when the valve is open. Petro Valves range of butterfly valves aredesigned for a minimum of ten thousands operations. The design of a slimand streamlined disc shape results in low pressure losses and reduced energycosts for the end user. The saving of energy costs may be several times theinitial cost of the valve.



2. Regulating Valve
The butterfly valve is used in a partly open position to regulate the pressure, flow, or temperature of a process.Petro Valves range is ideal for regulating dueto the excellent linear flow characteristic and its finely graduated notch plateand locking lever.



3. Combined Regulating and Isolating Valve
Petro Valves range can also be used for a combined function because the valves are 100% tight shut off in the closed position as well as being suitable for regulating duties in the open position



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Dimensions

Face to Face

Butterfly valves are designed with face to face dimensions according to international standard.

		Wafer valve types PN6/10/16/25 Basic series 20					Double flanged valves Basic series 13			
DN	NPS	EN 558-1/20	ISO 5752/20 DIN 3202 K1	GB 12221-89	API609	ASME B16.10. tab.8 col.3/4	EN 558-1/13	ISO 5752/13 DIN 3202, F16	GB 12221-89	API609
40	1 1/2	33	33	33	-	33	106	106	106	-
50	2	43	43	43	43	43	108	108	108	-
65	2 1/2	46	46	46	46	46	112	112	112	-
80	3	46	46	46	46	46	114	114	114	114
100	4	52	52	52	52	52	127	127	127	127
125	5	56	56	56	56	56	140	140	140	-
150	6	56	56	56	56	56	140	140	140	140
175	7	-	-	-	-	-	-	140	-	-
200	8	60	60	60	60	60	152	152	152	152
250	10	68	68	68	68	68	165	165	165	165
300	12	78	78	78	78	78	178	178	178	178
350	14	78	78	78	78	78	190	190	190	190
400	16	102	102	102	102	79	216	216	216	216
450	18	114	114	114	114	102	222	222	222	222
500	20	127	127	127	127	111	229	229	229	229
600	24	154	154	154	154	154	267	267	267	267
700	28	165	165	165	-	-	292	292	292	-
750	30	-	-	-	165	165	-	-	-	-
800	32	190	190	190	-	-	318	318	318	-
900	36	203	203	203	200	200	330	330	330	-
1000	40	216	216	216	-	-	410	410	410	-
1050	42	-	-	-	251	251	-	-	-	-
1100	44	-	-	-	-	-	-	-	-	-
1200	48	254	254	254	276	276	470	470	470	-
1400	56	279	-	279	-	-	530	530	530	-
1600	64	318	-	318	-	-	600	600	600	-
1800	72	356	-	356	-	-	670	670	670	-
2000	80	406	-	406	-	-	760	760	760	-

Mating Flange

International Flange Standard

	EN	ANSI	GB	JIS	BS
PN6	1092-1, 1092-2		9113		4504
PN10	1092-1, 1092-2		9113		4504
PN16	1092-1, 1092-2		9113		4504
Class 125		B16.1			
Class 150		B16.5, B16.47			
JIS 5K				B 2211	
JIS 10K				B 2212	
JS 16K				B 2213	

Flange

Size		EN1092-1 PN6			EN1092-1 PN10			EN1092-1 PN16		
DN	NPS	OD	PCD	Bolt	OD	PCD	Bolt	OD	PCD	Bolt
40	1 1/2	130	100	4XM12	150	110	4XM16	150	110	4XM16
50	2	140	110	4XM12	165	125	4XM16	165	125	4XM16
65	2 1/2	160	130	4XM12	185	145	4XM16	185	145	4XM16
80	3	190	150	4XM16	200	160	8XM16	200	160	8XM16
100	4	210	170	4XM16	220	180	8XM16	220	180	8XM16
125	5	240	200	8XM16	250	210	8XM16	250	210	8XM16
150	6	265	225	8XM16	285	240	8XM20	285	240	8XM20
200	8	320	280	8XM16	340	295	8XM20	340	295	12XM20
250	10	375	335	12XM16	395	350	12XM20	405	355	12XM24
300	12	440	395	12XM20	445	400	12XM20	460	410	12XM24
350	14	490	445	12XM20	505	460	16XM20	520	470	16XM24
400	16	540	495	16XM20	565	515	16XM24	580	525	16XM27
450	18	595	550	16XM20	615	565	20XM24	640	585	20XM27
500	20	645	600	20XM20	670	620	20XM24	715	650	20XM30
600	24	755	705	20XM24	780	725	20XM27	840	770	20XM33
700	28	860	810	24XM24	895	840	24XM27	910	840	24XM33
800	32	975	920	24XM27	1015	950	24XM30	1025	950	24XM36
900	36	1075	1020	24XM27	1115	1050	28XM30	1125	1050	28XM36
1000	40	1175	1120	28XM27	1230	1160	28XM33	1255	1170	28XM39
1100	44	-	-	-	1340	1270	32XM33	1355	1270	32XM39
1200	48	1405	1340	32XM30	1455	1380	32XM36	1485	1390	32XM45
1400	56	1630	1560	36XM33	1675	1590	36XM39	1685	1590	36XM45
1500	60	-	-	-	1785	1700	36XM39	1820	1710	36XM52
1600	64	1830	1760	40XM33	1915	1820	40XM45	1930	1820	40XM52
1800	72	2045	1970	44XM36	2115	2020	44XM45	2130	2020	44XM52
2000	80	2265	2180	48XM39	2325	2230	48XM45	2345	2230	48XM56

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Mating Flange

ASME Flanges

Size		NPS24: ASME B16.5 Class 150 NPS24: ASME B16.47 Class 150 Series A			ASME B16.47 Class 150 Series B			ASME B16.1 Class 125		
DN	NPS	OD	PCD	Bolt	OD	PCD	Bolt	OD	PCD	Bolt
40	1 1/2	127	98.5	4X 1/2				127	98.5	4X 5/8
50	2	152	120.6	4X 5/8				152	120.65	4X 3/4
65	2 1/2	178	139.7	4X 5/8				178	139.7	4X 3/4
80	3	191	152.4	4X 5/8				191	152.4	4X 3/4
100	4	229	190.5	8X 5/8				229	190.5	8X 3/4
125	5	254	215.9	8X 3/4				254	216	8X 7/8
150	6	279	241.3	8X 3/4				279	241.3	8X 7/8
200	8	343	298.5	8X 3/4				343	298.5	8X 7/8
250	10	406	362	12X7/8				406	362	12X1
300	12	483	431.8	12X7/8				483	432	12X1
350	14	533	476.3	12X1				533	476	12X1 1/8
400	16	597	539.8	16X1				597	539.75	16X1 1/8
450	18	635	577.9	16X1.1/8				635	578	16X1 1/4
500	20	699	635	20X1.1/8				699	635	20X1 1/4
600	24	813	749.3	20X1 1/4				813	749.3	20X1 3/8
700	28	927	863.6	28X1 1/4	837	795.3	40X 3/4			
750	30	984	914.4	28X1 1/4	887	846.1	44X 3/4	984	914.4	28X1 3/8
800	32	1060	977.9	28X1 1/2	941	900.2	48X 3/4			
900	36	1168	1085.8	32X1 1/2	1057	1009.6	44X 7/8	1168	1086	32X1 5/8
1000	40	1289	1200.2	36X1 1/2	1175	1120.6	44X1			
1050	42	1346.2	1257.3	36X1 1/2	1225.5	1171.4	48X1	1346	1257.3	36X1 5/8
1100	44	1403	1314.4	40X1 1/2	1276	1222.2	52X1			
1200	48	1511	1422.4	44X1 1/2	1392	1335	44X1 1/8	1511	1422.4	44X1 5/8

GB Flanges

Size		GB9113 PN6			GB9113 PN10			GB9113 PN16		
DN	NPS	OD	PCD	Bolt	OD	PCD	Bolt	OD	PCD	Bolt
40	1 1/2	130	100	4XM12	150	110	4XM16	150	110	4XM16
50	2	140	110	4XM12	165	125	4XM16	165	125	4XM16
65	2 1/2	160	130	4XM12	185	145	4XM16	185	145	4XM16
80	3	190	150	4XM16	200	160	8XM16	200	160	8XM16
100	4	210	170	4XM16	220	180	8XM16	220	180	8XM16
125	5	240	200	8XM16	250	210	8XM16	250	210	8XM16
150	6	265	225	8XM16	285	240	8XM20	285	240	8XM20
200	8	320	280	8XM16	340	295	8XM20	340	295	12XM20
250	10	375	335	12XM16	395	350	12XM20	405	355	12XM24
300	12	440	395	12XM20	445	400	12XM20	460	410	12XM24
350	14	490	445	12XM20	505	460	16XM20	520	470	16XM24
400	16	540	495	16XM20	565	515	16XM24	580	525	16XM27
450	18	595	550	16XM20	615	565	20XM24	640	585	20XM27
500	20	645	600	20XM20	670	620	20XM24	715	650	20XM30
600	24	755	705	20XM24	780	725	20XM27	840	770	20XM33
700	28	860	810	24XM24	895	840	24XM27	910	840	24XM33
800	32	975	920	24XM27	1015	950	24XM30	1025	950	24XM36
900	36	1075	1020	24XM27	1115	1050	28XM30	1125	1050	28XM36
1000	40	1175	1120	28XM27	1230	1160	28XM33	1255	1170	28XM39
1200	48	1405	1340	32XM30	1455	1380	32XM36	1485	1390	32XM45
1400	56	1630	1560	36XM33	1675	1590	36XM39	1685	1590	36XM45
1600	64	1830	1760	40XM33	1915	1820	40XM45	1930	1820	40XM52
1800	72	2045	1970	44XM36	2115	2020	44XM45	2130	2020	44XM52
2000	80	2265	2180	48XM39	2325	2230	48XM45	2345	2230	48XM56

Mating Flange

JIS Flanges

Size		JIS B 2211 5K			JIS B 2212 10K			JIS B 2213 16K		
DN	NPS	OD	PCD	Bolt	OD	PCD	Bolt	OD	PCD	Bolt
40	1 1/2	120	95	4xM12	140	105	4xM16	140	105	4XM16
50	2	130	105	4xM12	155	120	4xM16	155	120	8XM16
65	2 1/2	155	130	4xM12	175	140	4xM16	175	140	8XM16
80	3	180	145	4xM16	185	150	8xM16	200	160	8XM20
100	4	200	165	8xM16	210	175	8xM16	225	185	8XM20
125	5	235	200	8xM16	250	210	8xM20	270	225	8XM22
150	6	265	230	8xM16	280	240	8xM20	305	260	12XM22
200	8	320	280	8xM20	330	290	12xM20	350	305	12XM22
250	10	385	345	12xM20	400	355	12xM22	430	380	12XM24
300	12	430	390	12xM20	445	400	16xM22	480	430	16XM24
350	14	480	435	12xM22	490	445	16xM22	540	480	16XM30
400	16	540	495	16xM22	560	510	16xM24	605	540	16XM30
450	18	605	555	16xM22	620	565	20XM24	675	605	20XM30
500	20	655	605	20XM22	675	620	20XM24	730	660	20XM30
600	24	770	715	20XM24	795	730	24XM30	845	770	24XM36
700	28	875	820	24XM24	905	840	24XM30	960	875	24XM39
750	30	945	880	24XM30	970	900	24XM30	1020	935	24XM39
800	32	995	930	24XM30	1020	950	28XM30	1085	990	24XM45
900	36	1095	1030	24XM30	1120	1050	28XM30	1185	1090	28XM45
1000	40	1195	1130	28XM30	1235	1160	28XM36	1320	1210	28XM52
1100	44	1305	1240	28XM30	1345	1270	28XM36	1420	1310	32XM52
1200	48	1420	1350	32XM30	1465	1380	32XM36	1530	1420	32XM52

BS Flanges

Size		BS4504 PN10			BS4504 PN16		
DN	NPS	OD	PCD	Bolt	OD	PCD	Bolt
40	1 1/2				150	110	4XM16
50	2				165	125	4XM16
65	2 1/2				185	145	4XM16
80	3				200	160	8XM16
100	4				220	180	8XM16
125	5				250	210	8XM16
150	6				285	240	8XM20
200	8	340	295	8XM20	340	295	12XM20
250	10	395	350	12XM20	405	355	12XM24
300	12	445	400	12XM20	460	410	12XM24
350	14	505	460	16XM20	520	470	16XM24
400	16	565	515	16XM24	580	525	16XM27
450	18	615	565	20XM24	640	585	20XM27
500	20	670	620	20XM24	715	650	20XM30
600	24	780	725	20XM27	840	770	20XM33
700	28	895	840	24XM27	910	840	24XM33
800	32	1015	950	24XM30	1025	950	24XM36
900	36	1115	1050	28XM30	1125	1050	28XM36
1000	40	1230	1160	28XM33	1255	1170	28XM39
1200	48	1455	1380	32XM36	1485	1390	32XM45

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Wafer Butterfly Valve

Size & Quantity of Bolts

Size		PN10					PN16				
		Stud Bolt			Hexagon Head Bolt		Stud Bolt			Hexagon Head Bolt	
DN	NPS	Qty	Dia	Length	Qty	Dia x L	Qty	Dia	Length	Qty	Dia x L
50	2	4	M16	130	4X2	M16X40	4	M16	130	4X2	M16X40
65	2 1/2	4	M16	140	4X2	M16X45	4	M16	140	4X2	M16X45
80	3	8	M16	140	8X2	M16X45	8	M16	140	8X2	M16X45
100	4	8	M16	150	8X2	M16X50	8	M16	150	8X2	M16X50
125	5	8	M16	150	8X2	M16X50	8	M16	150	8X2	M16X50
150	6	8	M20	165	8X2	M20X50	8	M20	165	8X2	M20X50
200	8	8	M20	175	8X2	M20X55	12	M20	175	12X2	M20X55
250	10	12	M20	185	12X2	M20X60	12	M24	185	12X2	M24X60
300	12	12	M20	195	12X2	M20X65	12	M24	200	12X2	M24X65
350	14	16	M20	195	16X2	M20X65	16	M24	200	16X2	M24X65
400	16	16	M24	220	16X2	M24X75	16	M27	230	16X2	M27X75
450	18	20	M24	250	20X2	M24X80	20	M27	254	20X2	M27X80
500	20	20	M24	290	20X2	M24X90	20	M30	294	20X2	M30X99
600	24	20	M27	324	20X2	M27X100	20	M33	334	20X2	M33X100
700	28	24	M27	334	24X2	M27X100	24	M33	341	24X2	M33X100
800	32	24	M30	364	24X2	M30X100	24	M36	375	24X2	M36X100
900	36	28	M30	388							
1000	40	28	M33	411							

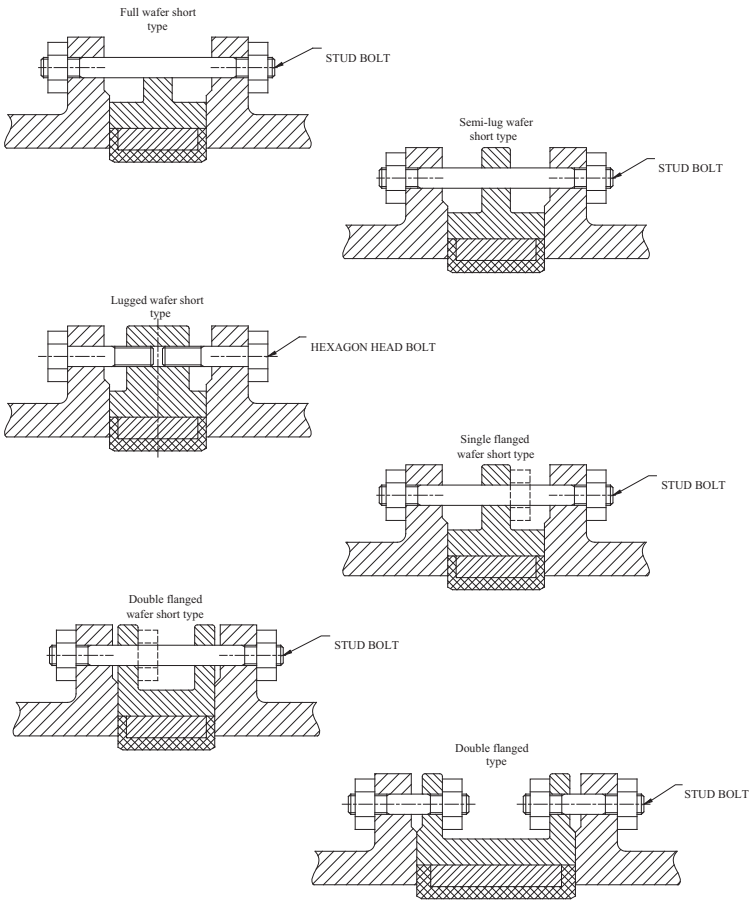
Size		ANSI 125/150, MSS-SP44				
		Stud Bolt			Hexagon Head Bolt	
DN	NPS	Qty	Dia	Length	Qty	UNCXL
50	2	4	5/8"	120	4X2	5/8"X35
65	2 1/2	4	5/8"	130	4X2	5/8"X40
80	3	4	5/8"	133	4X2	5/8"X40
100	4	8	5/8"	139	8X2	5/8"X45
125	5	8	3/4"	152	8X2	3/4"X45
150	6	8	3/4"	155	8X2	3/4"X45
200	8	8	3/4"	165	8X2	3/4"X50
250	10	12	7/8"	183	12X2	7/8"X60
300	12	12	7/8"	196	12X2	7/8"X65
350	14	12	1"	214	12X2	1"X70
400	16	16	1"	241	16X2	1"X85
450	18	16	1 1/8"	265	16X2	1 1/8"X90
500	20	20	1 1/8"	284	20X2	1 1/8"X100
600	24	20	1 1/4"	305	20X2	1 1/4"X110
700	28	28	1 1/4"	350	28X2	1 1/4"X110
750	30	28	1 1/4"	355	28X2	1 1/4"X110
800	32	28	1 1/2"	410	28X2	1 1/2"X110
900	36	32	1 1/2"	450		
1000	40	36	1 1/2"	490		

Installation Type

Petro butterfly valves are designed for installation between flanges. They are easily installed or removed from the pipeline system. It is important the correct body style is selected for the designed installation requirements.

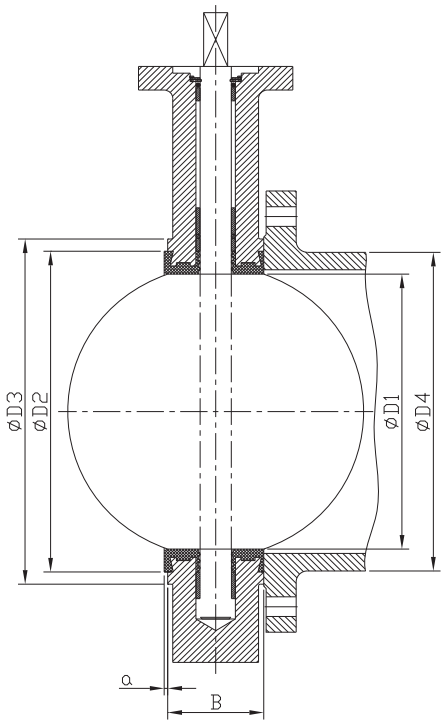
Body types / Valve installation requirements	Full wafer short type	Semi-lug wafer short type	Lugged wafer short type	Single flanged wafer short type	Double flanged wafer short type	Double flanged type
Clamping between flanges	OK	OK		OK	OK	
Installation between flanges and possibility for downstream pipe dismantling			OK	OK	OK	OK
Valve bolted at end of the line flange			OK	OK	OK	OK
Bolting directly to hull				OK		OK
Suitable for insulation of pipes	OK	OK	OK	OK	OK	OK

Installation for Different Body Types



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Installation Dimensions of Wafer Type Butterfly Valve



Size		D1 Chord Dimension of Protruding Part of Disc	D2 Outer Diameter of Seat	D3 Outer Diameter of Body	B Face to Face Dimension of the valve when Mounted	a Projecting Dimension of Seat	D4 Outer Diameter of Pipe
DN	NPS						
50	2	45	76.3	89	42	1.5	60.32
65	2 1/2	57	89	108	44.7	1.5	73.02
80	3	73	103.9	120	45.2	2.0	88.90
100	4	96	135	150	52.1	1.3	114.30
125	5	116	159	181	54.4	1.75	141.30
150	6	147	188.4	208	55.8	1.4	168.28
200	8	194	238.2	260	60.0	1.4	219.08
250	10	242	292.4	320	65.6	2.2	273.05
300	12	292	344	375	76.9	1.5	323.85
350	14	324	375.4	405	76.5	1.5	355.60
400	16	378	439.2	470	86.5	1.75	406.40
450	18	426	489	521	105.6	1.7	457.20
500	20	478	534	565	131.8	1.6	508.00
600	24	578	653.7	693	152	2.0	609.6
700	28	673	744	800	163	3.0	711.2
800	32	772	850	906	188	3.5	812.0
900	36	842	947	1015	203	4	914.4
1000	40	940	1053	1123	216	4	1016.0

Installation and Maintenance Instructions

1. Storage

Valves must be stored with the disc in the semi open position for protection of liner. If valves have to be installed long before scheduled commissioning of the system, it is advisable to lubricate the liner with suitable lubricant. If valves are to be stored for long periods it is essential they are kept away from direct sunlight, heat or damp conditions to prevent ageing of the liner. When storing or transporting large butterfly valves (above DN800), please place shaft horizontally so that the disc weight can be balanced.

2. Installation

Never weld pipe work with valves installed as the heat transfer could damage valve liners. Before final installation ensure all foreign objects are removed from inside the pipe work to avoid valve damage and flow problems.

In installations with high viscous media it is strongly advised to install the valves with the shaft in the horizontal position to allow unrestricted flow of the media in the lower areas of the piping system. It is strongly advised valves greater than 200mm are fitted with gearboxes to ease valve operation. When installing the valve allow sufficient clearance between the flanges to insert the valve without cutting or damaging valve liners.

Do not use gaskets between flanges and valve. After centering, before tightening bolts, open and close the valve to check disc has free movement. Tighten the bolts in a cross way method until flanges touch valve body.

3. End of Line Service

Single flanged wafer type, double flanged wafer type and lugged type butterfly valves can be installed as end of line valves. In this case maximum pressure is 50% of the normal pressure rating.

4. Removal and Maintenance

To remove the valves isolate the line upstream. Position the valve disc so it is almost in the closed position, unscrew and remove all bolts to allow clearance to remove valve. If the valve requires maintenance it is advised you contact the sales office for advice as not all models are easily dismantled.

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Valve Seating Torques

Size		Standard disc, maximum differential pressure					
DN	NPS	6bar	10bar	200LBF/IN²	13bar	285LBF/IN²	25bar
50	2	14	14	15	15	15	15
65	2 1/2	14	14	17	17	20	20
80	3	19	19	22	22	40	40
100	4	33	33	34	34	50	50
125	5	46	46	48	48	70	70
150	6	72	72	73	73	95	95
200	8	145	145	155	155	220	220
250	10	230	230	236	236	320	320
300	12	320	320	330	330	421	421
350	14	560	570	720	790		
400	16	770	850	1000	1180		
450	18	1210	1220	1380	1520		
500	20	1420	1430	1780	1930		
600	24	2820	2830	3530	3670		
700	28	4860	4970				
750	30	5230	5280				
800	32	6500	6600				
900	36	7620	8010				
1000	40	8540	10810				
1100	44	9760	15110				
1200	48	13700	21200				

Torque in Nm

All torque values shown on chart are for “wet” (water and other non-lubricating media) on-off service. For “dry” service (non-lubricating, dry gas media), multiply values by 1.15. For “lubed” service (clean, non-abrasive media) multiply values by 0.85. When sizing actuators for single valve applications, multiply the above torques by 1.25. Under certain conditions, hydrodynamic torque can meet or exceed seating and unseating torques. When designing valve systems hydrodynamic torques multiply above torques by 0.85.

Valve Flow Rate

KV-Values-Valve Rated Flow Coefficients (M^3/H At 1 Bar ΔP)

Size		Opening Angle								
DN	NPS	10°	20°	30°	40°	50°	60°	70°	80°	90°
50	2		0.9	6.3	14	29	53	94	116	118
65	2 1/2		2.5	11	28	50	92	168	245	258
80	3		5.3	22	50	90	157	282	460	510
100	4		9.8	40	90	158	268	485	823	926
125	5		16	70	150	263	430	766	1350	1500
150	6		84	113	230	395	640	1096	1850	2170
200	8		112	212	405	678	1084	1785	3045	3842
250	10	20	155	309	590	989	1590	2716	4765	5014
300	12	48	283	384	745	1253	2058	3742	6820	9230
350	14	125	314	660	1185	2005	3222	5196	9300	10790
400	16	162	413	863	1545	2622	4200	6772	12140	14081
450	18	198	512	1070	1915	3249	5216	8416	15150	17842
500	20	248	630	1325	2365	4015	6440	10400	18624	22030
600	24	356	905	1899	3408	5778	9273	14985	26758	31780
700	28	485	1236	2580	4640	7862	12628	20358	36482	43200
750	30	556	1586	3420	7280	12300	18624	29372	40050	49780
800	32	630	2012	5080	9700	15000	22205	34508	47580	55000
900	36									
1000	40									
1100	44									
1200	48									

90°=fully open. Flow in gallons/min at 1 lbs/in² pressure drop, multiply Kv by 0.963 for UK gpm, or multiply Kv by 1.156 for US gpm.

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Materials

Body Materials

As the body is internally fully rubber lined, the body material is protected from corrosion by the medium.

Type of material	Material standard	Example for application
Cast iron	HT250,EN1561:GJL250 GG25, DIN 1691 Class B, ASTM A126 Grade 250, BS 2789	General application,not suitable for pressure shocks or rapid closing valves.
Ductile iron	QT400,EN1563:GJS400-15/18; GJS500-7 GGG40, DIN 1693 60-40-18,ASTM A536 400-18, BS 2789	General application
Ductile iron(Heat treated)	GGG40.3 DIN 1693 EN1563:GJS400-18	Heavy applications, Cold applications, petrochemical industries, power stations, alternative for cast steel
Cast carbon steel	GS-C 25, DIN 17245 WCB, ASTM A216 161-430A,BS 1504	Heavy applications, petrochemical industries.
Cast stainless steel	CF8, ASTM A351 CF8M, ASTM A351	Medicine, food, drink
Bronze	C-CuSn10Zn, DIN 1705(RG 10) C90500, ASTM B584 LG1, BS 1400	Marine service

Disc Materials

As the disc is in contact with medium, the material should be carefully selected.

Type of material	Material standard	Example for application
Ductile iron nickel plated	QT400,EN1563:GJS400-15/18 GGG40, DIN 1693 60-40-18, ASTM A536 400-18, BS 2789	Air, non corrosive hot or cold water
Ductile iron, 340μm nylon coated	QT400,EN1563:GJS400-15/18 GGG40, DIN 1693 60-40-18, ASTM A536 400-18, BS 2789	(PH 4.5-9,70°C) Potable water, water(max. 70°C, PH value between 4.5 and 9)
Ductile iron, PTFE coated	QT400,EN1563:GJS400-15/18 GGG40, DIN 1693 60-40-18, ASTM A536 400-18, BS 2789	Acids, alkalis, oil, water, air
Cast stainless steel	CF8M, ASTM A351	Potable water, demineralized water, solvents, industrial water, not recommended for sea water, gas
Duplex stainless steel	1.4408, 1.4462, 1.4581, EN 10088 A181, Grade F51 SAF 2507	Potable water, cooling water, sea water, demineralized water, solvents, foodstuff
Aluminum bronze	G-CuAl10Ni, DIN 1714 C95400, ASTM B148 AB2, BS 1400	Sea water, potable water, gas
Hastelloy	A494, CW-12MW, Hastelloy-C22, Hastelloy-C276, Hastelloy-C-4, Hastelloy-F, Hastelloy-N	Phosphoric, hypochloric, acetic, formic, sulfurous

Body Lining Materials

It is essential for each individual case, that the selection of the type of rubber complies with medium characteristics.

Type of material	Material standard	Temperature range	Example for application
Nitrile rubber	NBR	0°C - 90°C	Aliphatic hydrocarbons(fuels, low aromatic containing oils, gases), sea water, compressed air, powders, granular, gas supply
Ethylene-propylene rubber	EPDM	-20°C - 110°C	Water in general (hot-, cold-, sea-, ozone-, swimming-, industrial-, etc). Weak acids, weak salt solutions, alcohols, ketones, sour gases, sugar juice
Special ethylene-propylene rubber	Special EPDM	-10°C - 70°C	Potable water, foodstuffs, unchlorined drinking water
Special ethylene-propylene rubber	Special EPDM	-30°C - 120°C	HVAC, chilled water, food stuffs & sugar juice
Viton	Viton	0°C - 200°C	Many aliphatic, aromatic and halogen hydrocarbons, hot gases, hot water, steam, inorganic acid, alkali
Special viton	Special viton	0°C - 130°C	Concentrated acids
PTFE	PTFE	10°C - 155°C	Fit for acids, alkalis, oil, not fit for low temperature

Shaft Materials

Materials for shafts are selected on the basic of disc materials

Type of material	Material standard	In combination with disc material
Carbon steel zinc plated	ASTM A105	Ductile iron, non corrosive hot or cold water, economical valve
Stainless steel	SS410	Stainless steel, ductile iron
High strength stainless steel	1Cr17Ni2 ASTM A431	Stainless steel, ductile iron
Stainless steel	SS316	Stainless steel, ductile iron, aluminum bronze
Aluminum bronze	CuA10Ni5Fe4, DIN 17665 C63000, ASTM B150	Aluminum bronze
Monel	NA18, BS 3076	Aluminum bronze(high pressure application)
Hastelloy C276	ASTM B574, N10276	Hastelloy

NOTE: For use in fluids containing ammonia, all valve parts should be made from materials with no copper content.

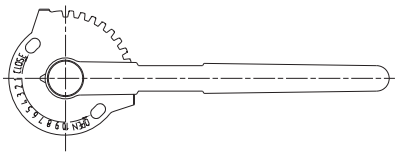
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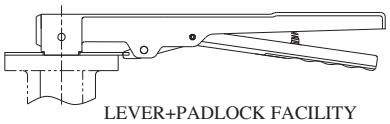
Valve Operation

Petro butterfly valves can be supplied for operation by lever, gearbox or actuator. Bare shaft valves can also be supplied.

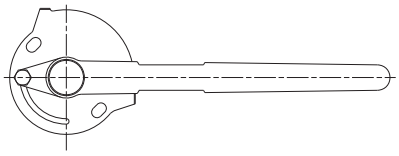
Level Operators

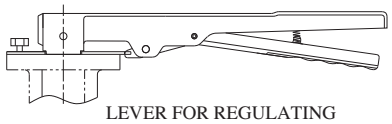
Levers are available for sizes DN50 to DN300 (2" to 12"), but it is recommended that gear operators be used on sizes DN200 (8") and larger size.



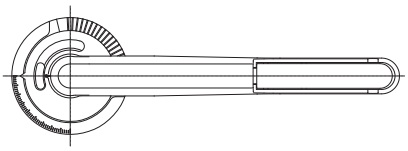


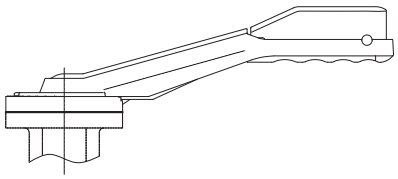
LEVER+PADLOCK FACILITY





LEVER FOR REGULATING





STANDARD LEVER

Gear Operators

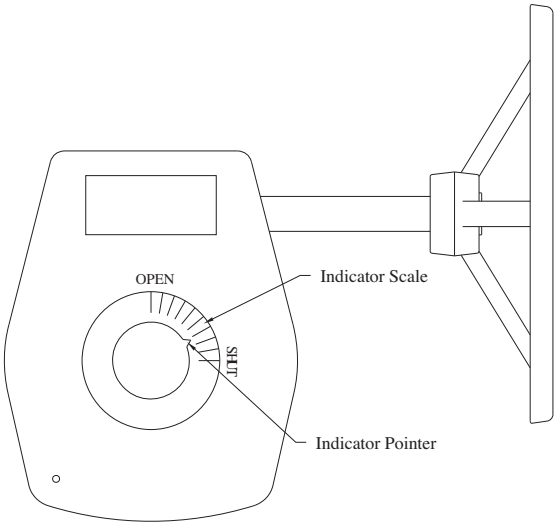
The gear box is available for all sizes from DN50 to DN2000 (2"to 80").

The gear box housing from DN50 to DN300 (2" to 12") is die-cast aluminum. This is aesthetically pleasing and offers a very light weight construction.

It is fitted with an accurate position indicator which is lockable making the gearbox extremely good for controlling and setting memory stops.

The housing for DN350 (14") and above size is cast iron.

For all gear boxes the drive stem and worm stem is made from Carbon steel and the worm gear is ductile iron.



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Actuators

1. Petro butterfly valves top mounting flange is to ISO 5211 direct mount

2. **Petro Valves range of pneumatic actuators**
   - All models factory lubricated for normal life of the actuator.
   - Some aluminium sizes can be converted to 180° rotation actuators.
   - Mounting faces according to ISO 5211 and VDI / VDE 3845.
   - Air Connections according to VDI / VDE 3845.
   - Drive shaft with square ISO 5211 and DIN 3337.
   - All components have high corrosion resistance. (All component parts surpassed the DIN 50021 SS 1000 hours in a SALT spray chamber test).
   - All models are externally adjusted for both Open & Closed positions. (only 90° aluminium versions)
   - All springs are preloaded, to ensure safety when removing end covers.
   - All models easily convert from spring return to double acting or vice-versa.
   - Inner cylinder bore honed to size.
   - Machined shaft and pistons. (Hobbed rack)
   - Shaft has an anti blowout ring.
   - Double sealing at the top and bottom of the shaft.

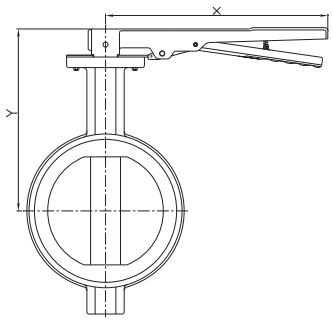
3. **Petro Valves range of electric actuators**
   - Output torques of 40 to 3000Nm.
   - IP67 Weatherproof .
   - Removable Drive Bush.
   - Rugged Cast Aluminium Housing.
   - Constant torque output.
   - Mechanical limit stops.
   - Captive cover bolts.
   - Hard Anodised And Powder Coat for Corrosion Protection.
   - Four limit switches.
   - Torque Switches (HQ15-HQ300).
   - Two M25 Cable Entries.
   - Manual override.
   - Anti-condensation heater (Thermostatically Controlled).
   - Push button terminal strip.
   - Various options, including: 4-20mA and 0-10v control, IP68 and high temp fire protection

4. **Switchboxes**
   Petro valves position monitors are manufactured from aluminium and feature high visibility beacons, IP67 enclosures, 2 off M20 cable entries, easy set cam adjustments and stainless steel mounting brackets.
   - Die cast aluminium body.
   - Stainless steel shaft.
   - IP67 Enclosure.
   - Beacon indicator.
   - Captive cover bolts.
   - 2 off M20 cable entries.
   - Quick set cams.
   - Stainless steel bracket.
   - Powder paint finish.
   - Various switch options.
   - Atex EXD Switchbox also available.

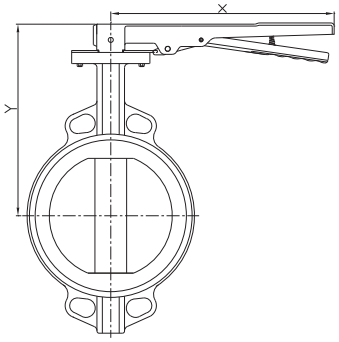
NB contact the sales office for help on sizing and actuator choice.

Butterfly Valve with Hand Lever

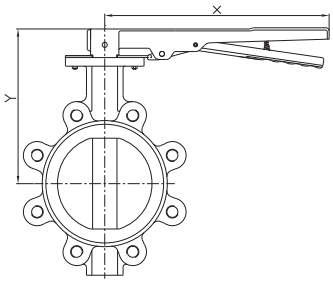
FULL WAFER SHORT TYPE



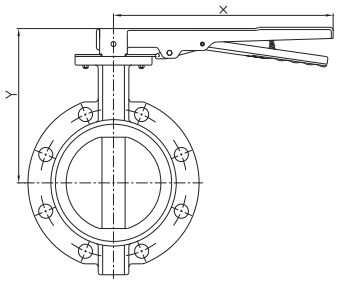
SEMI-LUG WAFER SHORT TYPE



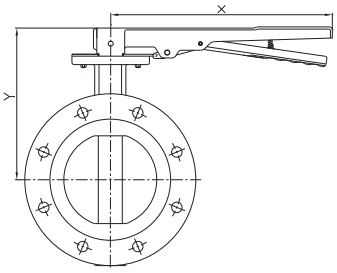
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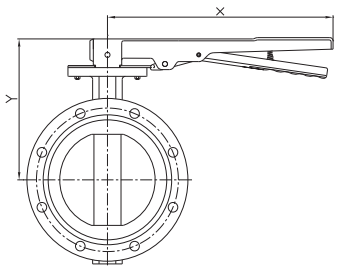
WAFER SHORT TYPE WITH SINGLE FLANGE



WAFER SHORT TYPE WITH DOUBLE FLANGE



DOUBLE FLANGED TYPE



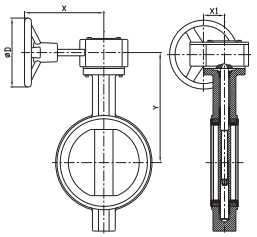
The dimensions shown in the table below are indicative and can be changed without any notice.

DN	40	50	65	80	100	125	150	200	250	300
NPS	1 1/2	2	2 1/2	3	4	5	6	8	10	12
X	165	165	165	165	165	249	249	354.5	354.5	354.5
Y	163	172	185	191	210	223	235	300	332	376

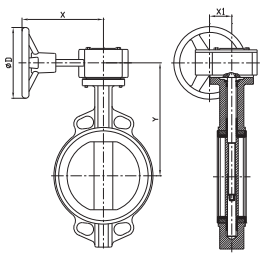
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Butterfly Valve with Gearbox

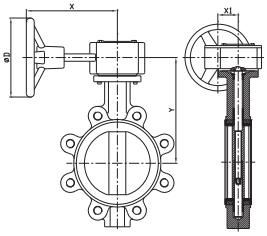
FULL WAFER SHORT TYPE



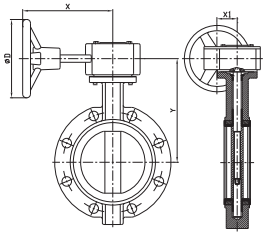
SEMI-LUG WAFER SHORT TYPE



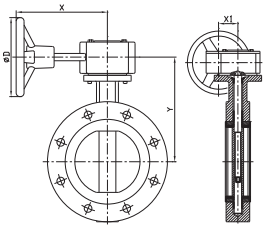
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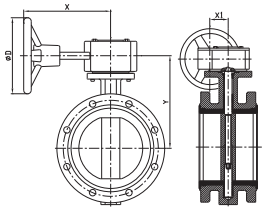
WAFER SHORT TYPE WITH SINGLE FLANGE



WAFER SHORT TYPE WITH DOUBLE FLANGE



DOUBLE FLANGED TYPE

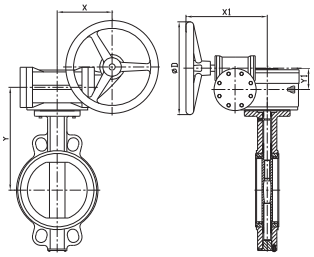


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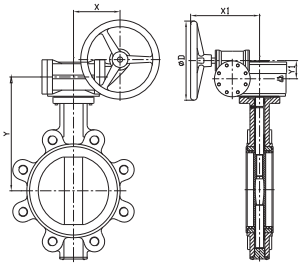
DN	40	50	65	80	100	125	150	200	250	300
NPS	1.1/2	2	2.1/2	3	4	5	6	8	10	12
X	140	140	140	140	140	140	140	222	222	222
X1	45	45	45	45	45	45	45	76	76	76
Y	161	170	183	189	208	221	233	284	316	360
D	133	133	133	133	133	133	133	215	215	215

Butterfly Valve with Gearbox

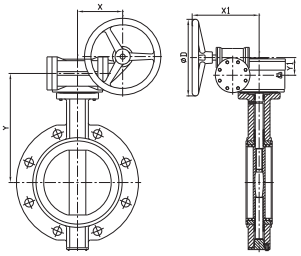
SEMI-LUG WAFER SHORT TYPE



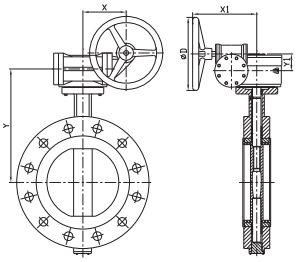
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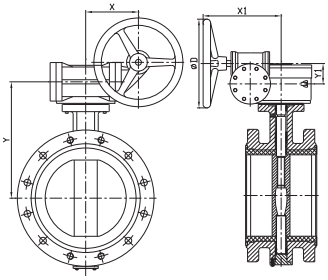
WAFER SHORT TYPE WITH SINGLE FLANGE



WAFER SHORT TYPE WITH DOUBLE FLANGE



DOUBLE FLANGED TYPE



The dimensions shown in the table below are indicative and can be changed without any notice.

DN	400	450	500	600	700	750	800	900	1000	1200	1400	1600	1800	2000
NPS	16	18	20	24	28	30	32	36	40	48	56	64	72	80
D	300	300	300	386	386	386	386	386	386	386				
X	186	186	186	243	243	243	243	278	278	320				
X1	270	270	270	350	350	350	350	450	450	490				
Y	466	488	546	640	702	738	750	855	935	1076				
Y1	66	66	66	95	95	95	95	126	126	126				

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Wafer Type Replaceable Seat

2″-12″ DN50-DN300

Full Wafer Short Type



Size	2"-12" DN50-DN300
Temperature	-40°C-210°C
Rating	PN6/10/16/25, 200PSI, 285PSI
Body	Cast iron, Ductile iron, Cast steel, Stainless steel
Disc	Ductile iron, Cast steel, Stainless steel, Aluminum bronze, Nickel plated, Nylon coated
Stem	Carbon steel nickel plated, Stainless steel, High temperature alloy, Aluminum bronze
Seat	NBR, EPDM, CSM, FPM, VSL, AU, CR, PTFE
Feature	Bubble tight, zero leakage in both directions, replaceable seat,maintenance free, easy installation
Medium	Potable water, Dirty water, High pure water, Sea water, Air, Gas, Steam, Oil, Pulp, Beer, Powder

Semi-Lug Wafer Short Type



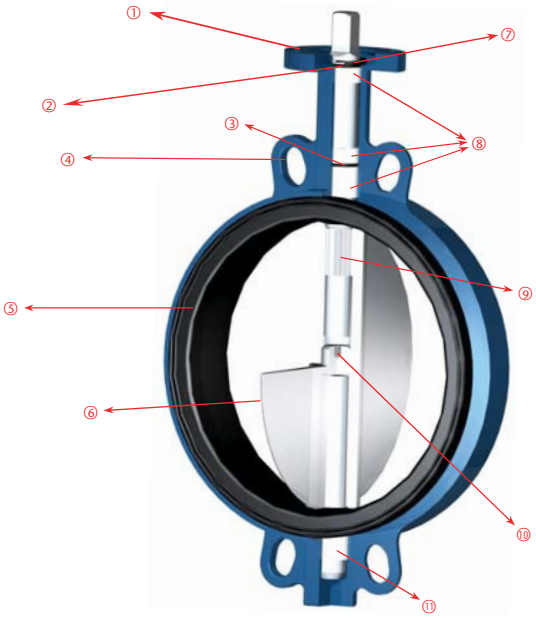
Size	2″-12″ DN50-DN300
Temperature	-40°C -210°C
Rating	PN6/10/16/25, 200PSI, 285PSI
Body	Cast iron, Ductile iron, Cast steel, Stainless steel
Disc	Ductile iron, Cast steel, Stainless steel, Aluminum bronze, Nickel plated, Nylon coated
Stem	Carbon steel nickel plated, Stainless steel, High temperature alloy, Aluminum bronze
Seat	NBR,EPDM, CSM, FPM, VSL, AU, CR, PTFE
Feature	Bubble tight, zero leakage in both directions, replaceable seat,maintenance free, easy alignment
Medium	Potable water, Dirty water, High pure water, Sea water, Air, Gas, Steam, Oil, Pulp, Beer, Powder

Lug Wafer Short Type

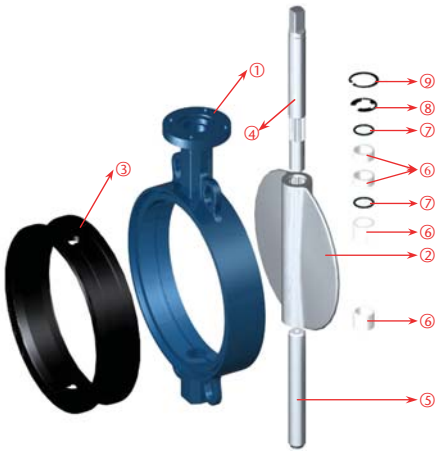


Size	2″-12″ DN50-DN300
Temperature	-40°C-210°C
Rating	PN6/10/16/25, 200PSI, 285PSI
Body	Cast iron, Ductile iron, Cast steel, Stainless steel
Disc	Ductile iron, Cast steel, Stainless steel, Aluminum bronze, Nickel plated, Nylon coated
Stem	Carbon steel nickel plated, Stainless steel, High temperature alloy, Aluminum bronze
Seat	NBR,EPDM, CSM, FPM, VSL, AU, CR, PTFE
Feature	Bubble tight, zero leakage in both directions, replaceable seat,maintenance free, fixed installation, suitable for end of line
Medium	Potable water, Dirty water, High pure water, Sea water, Air, Gas, Steam, Oil, Pulp, Beer, Powder

Features



1	ISO5211 Actuator Mount Flange
2	Anti Dust Seal Ring
3	O-Ring
4	Multi standard alignment holes: For connection between ANSI, EN or ISO standard flanges.
5	Replaceable Seat
6	High tolerance machined disc surfaces gives high efficient seat, low operating torque and long seal life
7	Cotter pin retaining ring: Anti blow out of the shaft
8	Three bearings: To ensure smooth shaft turning and centralise shaft
9	Precision spline shaft and disc: To ensure positive connection of shaft and disc Give convenience to replacement
10	Threaded hole in lower shaft: For easy extraction of lower shaft.
11	Lower bearing

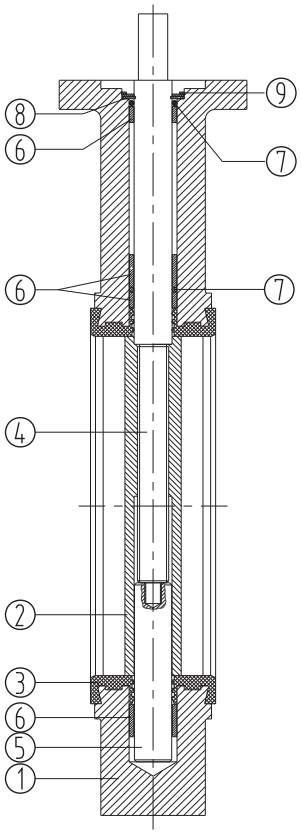


1	Body
2	Disc
3	Elastomer Seat
4	Upper Shaft
5	Lower Shaft
6	Bearing
7	O Ring
8	Split Pin
9	Retaining Ring

This data sheet is designed as a guide and should not be regarded as wholly accurate in every detail. We reserve the righ to amend the specification of any product without notice.

Wafer Type Replaceable Seat

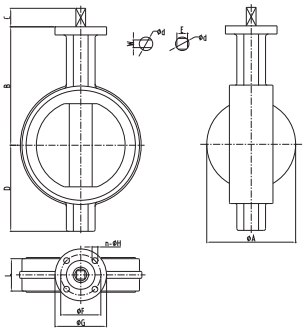
Parts List



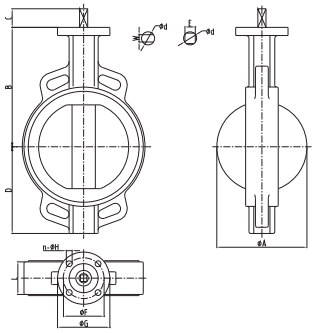
No	Parts	Qty	Material
1	Body	1	ASTM A126 CLASS B Ductile Iron GGG40 ASTM A216 WCB ASTM A351 CF8M Bronze
2	Disc	1	ASTM A351 CF8M ASTM B148 C95800 GGG40
3	Seat	1	NBR EPDM FPM (Viton) PTFE
4 5	Upper shaft Lower shaft	1 1	SS316 SS410 ASTM A431 Aluminum bronze
6	Bushing	4	PTFE
7	O ring	2	NBR PTFE FPM
8 9	Split pin Retainer ring	1 1	Carbon steel Stainless steel

Dimensions

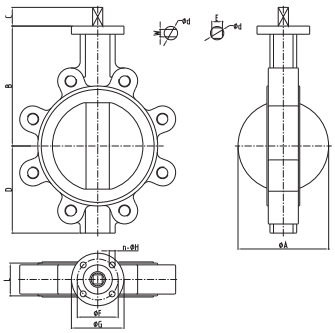
BODY: FULL WAFER SHORT TYPE



BODY: SEMI-LUG WAFER SHORT TYPE



BODY: LUGGED WAFER SHORT TYPE



Flange Connection:
PN6/10/16/25, ANSI CLASS125/150, JIS5/10/16K

Pressure Rating:
PN6, PN10, PN16, PN25, 200PSI, 285PSI

Face To Face:
ISO5752, EN558 basic series 20 (wafer short), API609, GB12221-89

Design To:
API609, EN593, BS5155, GB12238, BS3952, MSS-SP-67, JIS B2032

Function:
Isolating valve(on/off), regulating valve Lugged type valve can be used at end of pipe line, maximum pressure not larger than 50% of the rated pressure

PN25 ASTM A431 For PN25, the strength of shaft is not less than ASTM A431

DN	NPS	A	B	C	D	E	F	G	nXH	ISO5211	L	W	d
50	2	52.6	142	19	73.5	11	70	90	4X10	F7	43	10	12.6
65	2.1/2	64.4	155	19	80.5	11	70	90	4X10	F7	46	10	12.6
80	3	78.9	161	19	93	11	70	90	4X10	F7	46	10	12.6
100	4	104.1	180	19	110	11	70	90	4X10	F7	52	12	15.77
125	5	123.4	193	19	122.8	14	70	90	4X10	F7	56	14	18.92
150	6	155.96	205	19	139	14	70	90	4X10	F7	56	14	18.92
200	8	202.87	250	25	175	17	102	125	4X12	F10	60	17	22.1
250	10	250.88	282	40	208	22	102	125	4X12	F10	68	22	28.45
300	12	301.9	326	40	244	22	102	125	4X12	F10	78	24	31.6

This data sheet is designed as a guide and should not be regarded as wholly accurate in every detail. We reserve the righ to amend the specification of any product without notice.

Wafer Type Phenolic Back Inserted Seat

1 1/2"-14" DN40-DN350

Full Wafer Short Type



Size	1.1/2"-14" DN40-DN350
Temperature	-40°C -210°C
Rating	PN6/10/16/25, 200PSI, 285PSI
Body	Cast iron, Ductile iron, Cast steel, Stainless steel
Disc	Ductile iron, Cast steel, Stainless steel, Aluminum bronze, Nickel plated, Nylon coated
Stem	Carbon steel nickel plated, Stainless steel, High temperature alloy, Aluminum bronze
Seat	NBR, EPDM, CSM, FPM, VSL, AU, CR, PTFE
Feature	Bubble tight, zero leakage in both directions, replaceable seat,maintenance free, easy installation
Medium	Potable water, Dirty water, High pure water, Sea water, Air, Gas, Steam, Oil, Pulp, Beer, Powder

Semi-Lug Wafer Short Type



Size	1.1/2" -14" DN40-DN350
Temperature	-40°C -210°C
Rating	PN6/10/16/25, 200PSI, 285PSI
Body	Cast iron, Ductile iron, Cast steel, Stainless steel
Disc	Ductile iron, Cast steel, Stainless steel, Aluminum bronze, Nickel plated, Nylon coated
Stem	Carbon steel nickel plated, Stainless steel, High temperature alloy, Aluminum bronze
Seat	NBR,EPDM,CSM,FPM,VSL,AU,CR,PTFE
Feature	Bubble tight, zero leakage in both directions, replaceable seat,maintenance free, easy alignment
Medium	Potable water, Dirty water, High pure water, Sea water, Air, Gas, Steam, Oil, Pulp, Beer, Powder

Lug Wafer Short Type



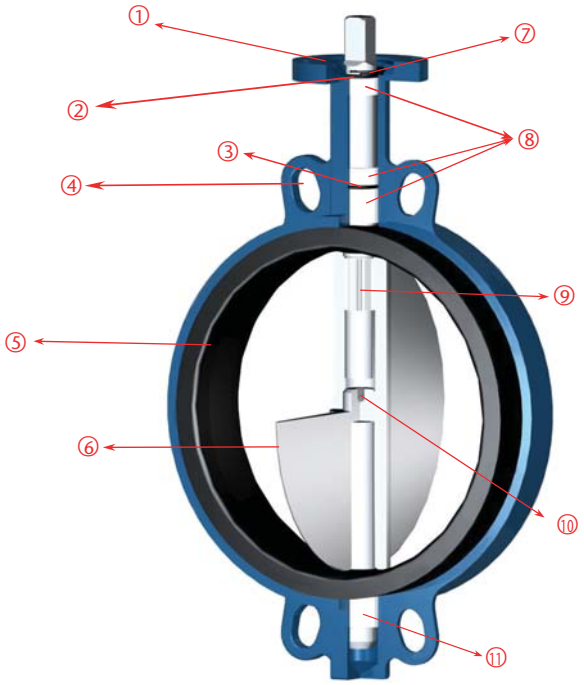
Size	1.1/2" -14" DN40-DN350
Temperature	-40°C -210°C
Rating	PN6/10/16/25, 200PSI, 285PSI
Body	Cast iron, Ductile iron, Cast steel, Stainless steel
Disc	Ductile iron, Cast steel, Stainless steel, Aluminum bronze, nickel plated, Nylon coated
Stem	Carbon steel nickel plated, Stainless steel, High temperature alloy, Aluminum bronze
Seat	NBR, EPDM, CSM, FPM, VSL, AU, CR, PTFE
Feature	Bubble tight, zero leakage in both directions, replaceable seat,maintenance free, fixed installation, suitable for end of line
Medium	Potable water, Dirty water, High pure water, Sea water, Air, Gas, Steam, Oil, Pulp, Beer, Powder

Double Flanged Wafer Short Type

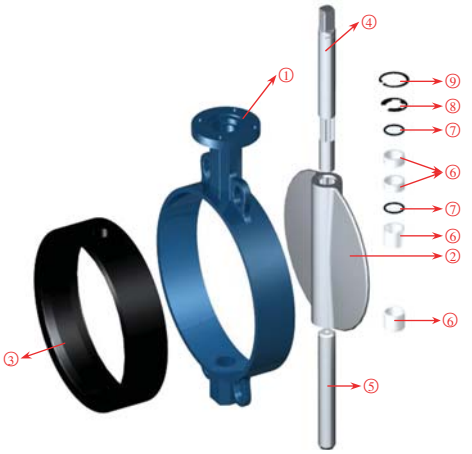


Size	1.1/2" -14" DN40-DN350
Temperature	-40°C -210°C
Rating	PN6/10/16/25, 200PSI, 285PSI
Body	Cast iron, Ductile iron, Cast steel, Stainless steel
Disc	Ductile iron, Cast steel, Stainless steel, Aluminum bronze, Nickel plated, Nylon coated
Stem	Carbon steel nickel plated, Stainless steel, High temperature alloy, Aluminum bronze
Seat	NBR, EPDM, CSM, FPM, VSL, AU, CR, PTFE
Feature	Bubble tight, zero leakage in both directions, replaceable seat, maintenance free, stable for installation, suitable for end of line
Medium	Potable water, Dirty water, High pure water, Sea water, Air, Gas, Steam, Oil, Pulp, Beer, Powder

Features



1	ISO5211 Actuator Mount Flange
2	Anti Dust Seal Ring
3	O-Ring
4	Multi standard alignment holes: For connection between ANSI, EN or ISO standard flanges.
5	Seat: Inserted seat with phenol back
6	High tolerance machined disc surfaces gives high efficient seat, low operating torque and long seal life
7	Cotter pin retaining ring: Anti blow out of the shaft
8	Three bearings: To ensure perfect shaft turning and shaft centric position
9	Precision spline shaft and disc: To ensure positive connection of shaft and disc Give convenience to replacement
10	Threaded hole in lower shaft: For pulling out lower shaft when re-assembly.
11	Lower bearing

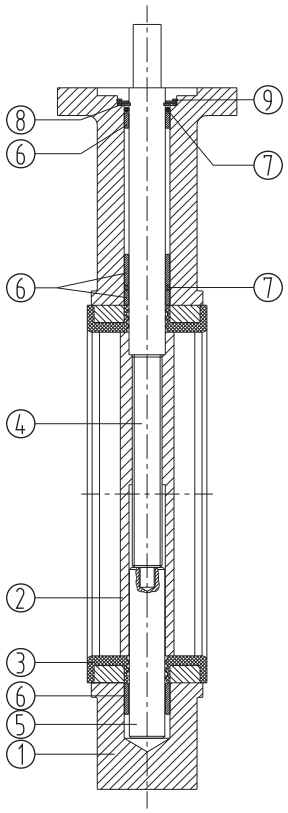


1	Body
2	Disc
3	Seat With Phenol Back
4	Upper Shaft
5	Lower Shaft
6	Bearing
7	O Ring
8	Split Pin
9	Retaining Ring

This data sheet is designed as a guide and should not be regarded as wholly accurate in every detail. We reserve the righ to amend the specification of any product without notice.

Wafer Type Phenolic Back Inserted Seat

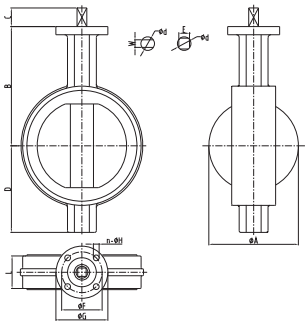
Parts List



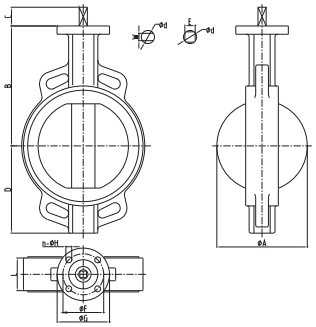
NO.	Parts	Qty	Material
1	Body	1	ASTM A126 CLASS B Ductile iron GGG40 ASTM A216 WCB ASTM A351 CF8M Bronze
2	Disc	1	ASTM A351 CF8M ASTM B148 C95800 GGG40
3	Seat	1	NBR EPDM FPM PTFE
4 5	Upper shaft Lower shaft	1 1	SS316 SS410 ASTM A431 Aluminum bronze
6	Bushing	4	PTFE
7	O ring	2	NBR PTFE FPM
8 9	Split pin Retainer ring	1 1	Carbon steel Stainless steel

Dimensions

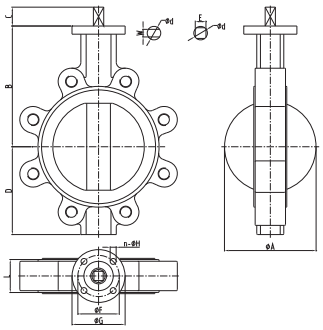
BODY: FULL WAFER SHORT TYPE



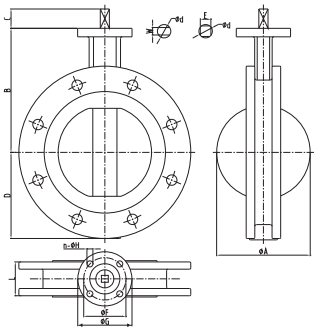
BODY: SEMI-LUG WAFER SHORT TYPE



BODY: LUGGED WAFER SHORT TYPE



BODY: WAFER SHORT TYPE WITH DOUBLE FLANGE



Flange Connection:
PN6/10/16/25, ANSI CLASS125/150, JIS5/10/16K

Pressure Rating:
PN6, PN10, PN16, PN25, 200PSI, 285PSI

Face To Face:
ISO5752, EN558 basic series20(wafer short), API609, GB12221-89

Design To:
API609, EN593, BS5155, GB12238

Function:
Isolating valve(on/off), regulating valve. Lugged type valve can be used at end of pipe line, maximum pressure not larger than 50% of the rated pressure.

PN25 ASTM A431 For PN25, the strength of shaft is not less than ASTM A431

DN	NPS	A	B	C	D	E	F	G	nXH	ISO5211	L	W	d
40	1.1/2	42.6	133	19	70	11	70	90	4x10	f7	33	10	12.6
50	2	52.6	142	19	73.5	11	70	90	4x10	F7	43	10	12.6
65	2.1/2	64.4	155	19	80.5	11	70	90	4x10	F7	46	10	12.6
80	3	78.9	161	19	93	11	70	90	4x10	F7	46	10	12.6
100	4	104.1	180	19	110	11	70	90	4x10	F7	52	12	15.77
125	5	123.4	193	19	122.8	14	70	90	4x10	F7	56	14	18.92
150	6	155.96	205	19	139	14	70	90	4x10	F7	56	14	18.92
200	8	202.87	250	25	175	17	102	125	4x12	F10	60	17	22.1
250	10	250.88	282	40	208	22	102	125	4x12	F10	68	22	28.45
300	12	301.9	326	40	244	22	102	125	4x12	F10	78	24	31.6
350	14	334.01	358	40	270	22	102	125	4x12	F10	78	24	31.6

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Wafer Type Phenolic Back Inserted Seat

16″-24″ DN400-DN600

Semi-Lug Wafer
Short Type



Size	16″ -24″ DN400-DN600
Temperature	-40°C -210°C
Rating	PN6/10/16, 150PSI
Body	Cast iron, Ductile iron, Cast steel, Stainless steel
Disc	Ductile iron, Cast steel, Stainless steel, Aluminum bronze, nickel plated, Nylon coated
Stem	Carbon steel nickel plated, Stainless steel, High temperature alloy, Aluminum bronze
Seat	NBR, EPDM, CSM, FPM, VSL, AU, CR, PTFE
Feature	Bubble tight, zero leakage in both directions, replaceable seat,maintenance free, easy alignment
Medium	Potable water, Dirty water, High pure water, Sea water, Air, Gas, Steam, Oil, Pulp, Beer, Powder

Lug Wafer Short Type



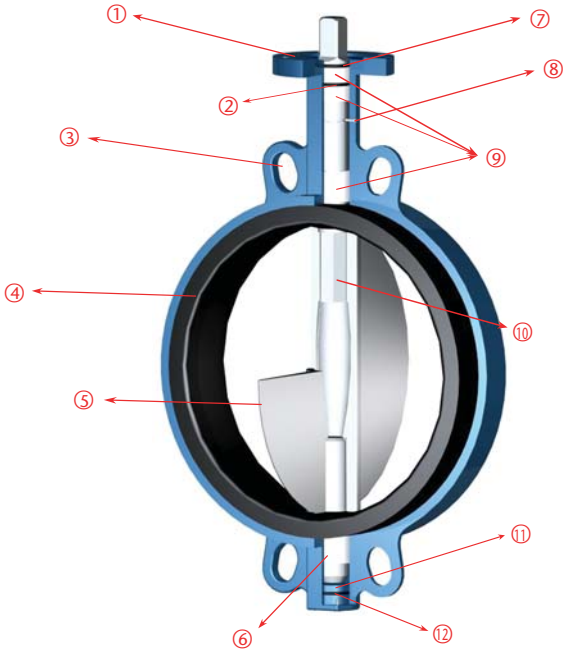
Size	16″-24″ DN400-DN600
Temperature	-40°C -210°C
Rating	PN6/10/16, 150PSI
Body	Cast iron, Ductile iron, Cast steel, Stainless steel
Disc	Ductile iron, Cast steel, Stainless steel, Aluminum bronze, Nickel plated, Nylon coated
Stem	Carbon steel nickel plated, Stainless steel, High temperature alloy, Aluminum bronze
Seat	NBR, EPDM, CSM, FPM, VSL, AU, CR, PTFE
Feature	Bubble tight, zero leakage in both directions, replaceable seat,maintenance free, fixed installation, suitable for end of line
Medium	Potable water, Dirty water, High pure water, Sea water, Air, Gas, Steam, Oil, Pulp, Beer, Powder

Double Flanged
Wafer Short Type

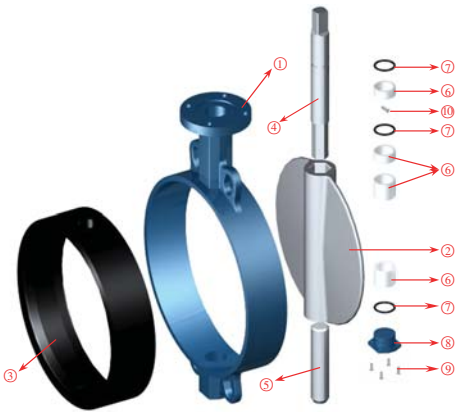


Size	16″ -24″ DN400-DN600
Temperature	-40°C -210°C
Rating	PN6/10/16, 150PSI
Body	Cast iron, Ductile iron, Cast steel, Stainless steel
Disc	Ductile iron, Cast steel, Stainless steel, Aluminum bronze, nickel plated, Nylon coated
Stem	Carbon steel nickel plated, Stainless steel, High temperature alloy, Aluminum bronze
Seat	NBR, EPDM, CSM, FPM, VSL, AU, CR, PTFE
Feature	Bubble tight, zero leakage in both directions, replaceable seat, maintenance free, easy alignment, suitable for end of line
Medium	Potable water, Dirty water, High pure water, Sea water, Air, Gas, Steam, Oil, Pulp, Beer, Powder

Features



1	ISO5211 Actuator Mount Flange
2	O-Ring
3	Multi standard alignment holes: For connection between ANSI, EN or ISO standard flanges.
4	Replaceable seat with phenolic backing ring
5	High tolerance machined disc surfaces gives high efficient seal, low operating torque and long seat life
6	Lower bearing
7	Anti Dust Seal Ring
8	Screw: Anti blow out of the shaft
9	Three bearings: To ensure smooth shaft turning and centralise shaft
10	Hexagonal shaft and disc: To ensure positive connection of shaft and disc
11	Bottom cover: For lower shaft replacement of large size valves
12	Anti Dust Seal ring

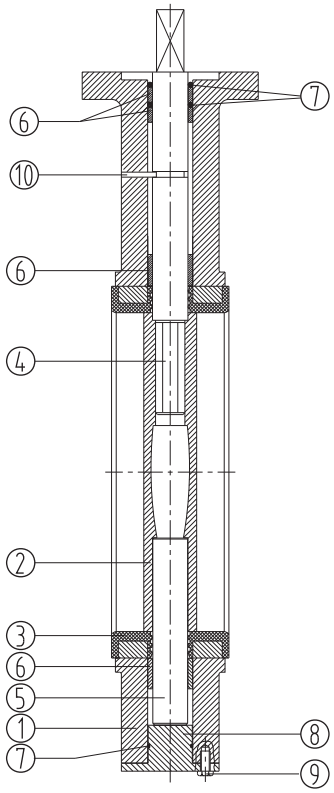


1	Body
2	Disc
3	Seat With Phenol Back
4	Upper Shaft
5	Lower Shaft
6	Bearing
7	O Ring
8	Bottom Cover
9	Bolt
10	Screw

This data sheet is designed as a guide and should not be regarded as wholly accurate in every detail. We reserve the righ to amend the specification of any product without notice.

Wafer Type Phenolic Back Inserted Seat

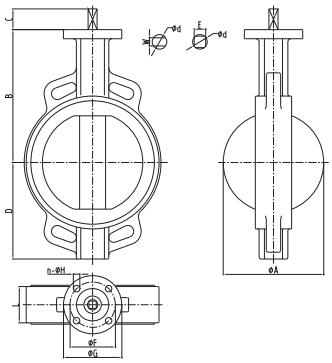
Parts List



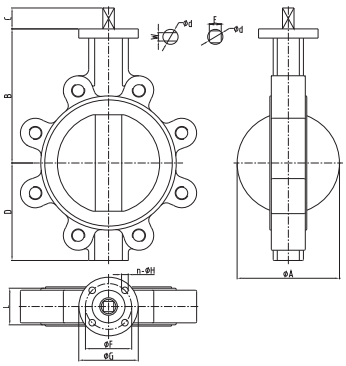
NO.	Parts	Qty	Material
1	Body	1	ASTM A126 CLASS B Ductile iron GGG40 ASTM A216 WCB ASTM A351 CF8M Bronze
2	Disc	1	ASTM A351 CF8M ASTM B148 C95800 GGG40
3	Seat	1	NBR EPDM FPM PTFE
4 5	Upper shaft Lower shaft	1 1	SS316 SS410 ASTM A431 Aluminum bronze
6	Bushing	4	PTFE
7	O ring	3	NBR PTFE FPM
8 9 10	Foot cover Bolt Screw	1 4 1	Same as body Carbon steel black treated Stainless steel

Dimensions

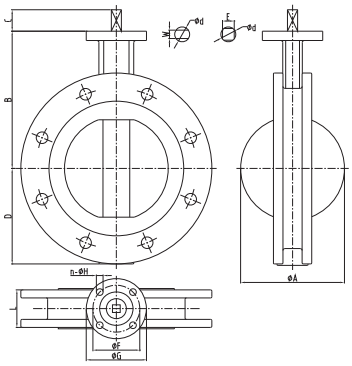
BODY: SEMI-LUG WAFER SHORT TYPE



BODY: LUGGED WAFER SHORT TYPE



BODY: WAFER SHORT TYPE WITH DOUBLE FLANGE



Flange Connection:
PN6/10/16, ANSI CLASS125, JIS5/10/16K

Pressure Rating:
PN6, PN10, PN16, 150PSI

Face To Face:
ISO5752, EN558 basic series 20 (wafer short), API609, GB12221-89

Design To:
API609, EN593, BS5155, GB12238

Function:
Isolating valve(on/off), regulating valve. Lugged type valve can be used at end of pipe line, maximum pressure not larger than 50% of the rated pressure.

DN	NPS	A	B	C	D	E	F	G	nXH	ISO5211	L	W	d
400	16	390.1	400	52	316	22	140	175	4x18	F14	102/88	27	33.15
450	18	441.1	422	52	341	27	140	175	4x18	F14	114/107	27	38
500	20	492.3	480	64	373	27	140	175	4x18	F14	127	32	41.15
600	24	593	562	70	459	36	165	210	4x23	F16	154	36	50.65

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Wafer Type Phenolic Back Inserted Seat

28″-48″ DN700-DN1200

Single Flanged
Wafer Short Type



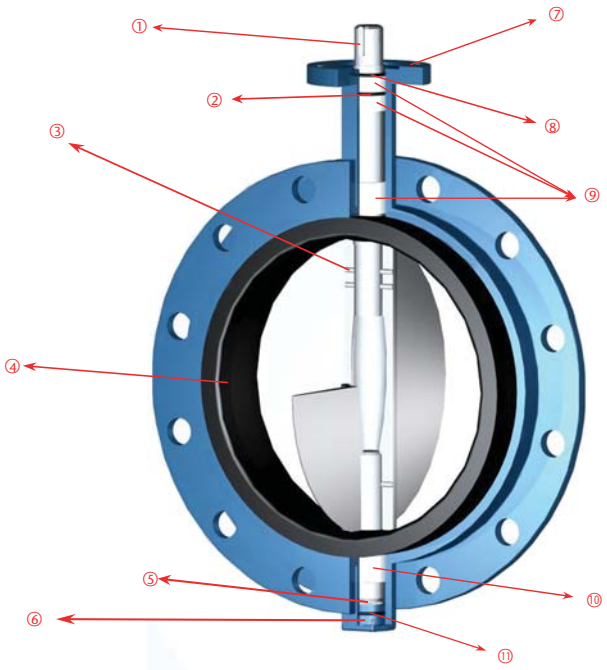
Size	28″-48″ DN700-DN1200
Temperature	-40°C -210°C
Rating	PN6/10, 150PSI
Body	Cast iron, Ductile iron, Cast steel, Stainless steel
Disc	Ductile iron, Cast steel, Stainless steel, Aluminum bronze, Nickel plated, Nylon coated
Stem	Carbon steel nickel plated, Stainless steel, High temperature alloy, Aluminum bronze
Seat	NBR, EPDM, CSM, FPM, VSL, AU, CR, PTFE
Feature	Bubble tight, zero leakage in both directions, replaceable seat, maintenance free, stable for installation
Medium	Potable water, Dirty water, High pure water, Sea water, Air, Gas, Steam, Oil, Pulp, Beer, Powder

Double Flanged
Wafer Short Type

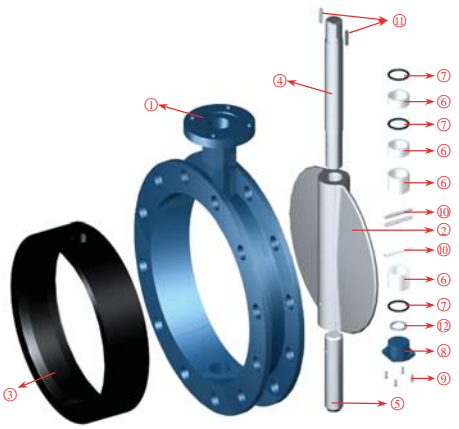


Size	28″-48″ DN700-DN1200
Temperature	-40°C -210°C
Rating	PN6/10, 150PSI
Body	Cast iron, Ductile iron, Cast steel, Stainless steel
Disc	Ductile iron, Cast steel, Stainless Steel, Aluminum bronze, Nickel plated, Nylon coated
Stem	Carbon steel nickel plated, Stainless steel, High temperature alloy, Aluminum bronze
Seat	NBR, EPDM, CSM, FPM, VSL, AU, CR, PTFE
Feature	Bubble tight, zero leakage in both directions, replaceable seat, maintenance free, easy installation, suitable for end of line
Medium	Potable water, Dirty water, High pure water, Sea water, Air, Gas, Steam, Oil, Pulp, Beer, Powder

Features



1	Bare Shaft
2	O-Ring
3	Pinned Shaft: Ensure perfect shaft and disc connection for large size valve.
4	Replaceable Seat with phenolic backing ring
5	Bearing
6	Lower shaft plug: For lower shaft replacement of large size valve
7	ISO5211 Actuator Mount Flange
8	Anti dust O-ring
9	Three bearings: To ensure smooth shaft turning and centralise shaft
10	Lower bearing
11	Anti Dust O- ring

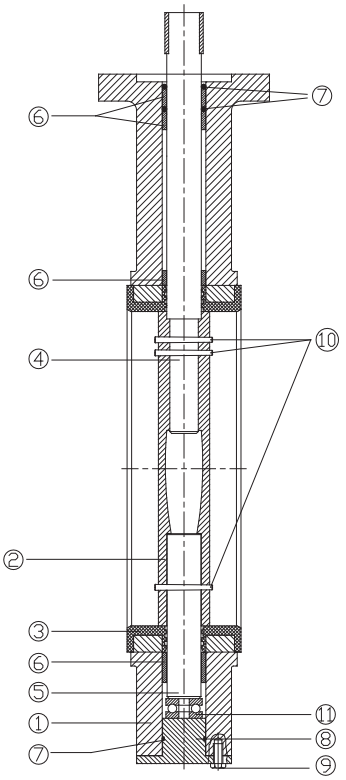


1	Body
2	Disc
3	Seat With Phenol Back
4	Upper Shaft
5	Lower Shaft
6	Bearing
7	O Ring
8	Bottom Cover
9	Bolt
10	Pin
11	Key
12	Bearing

This data sheet is designed as a guide and should not be regarded as wholly accurate in every detail. We reserve the righ to amend the specification of any product without notice.

Wafer Type Phenolic Back Inserted Seat

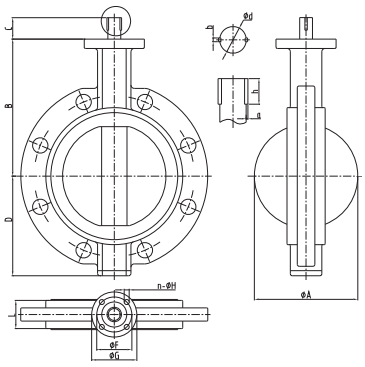
Parts List



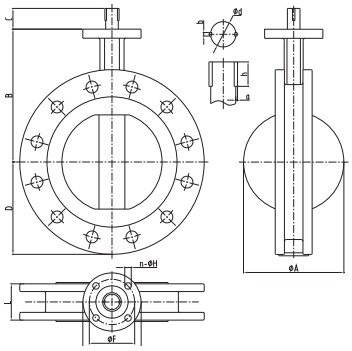
NO.	Parts	Qty	Material
1	Body	1	ASTM A126 CLASS B Ductile iron GGG40 ASTM A216 WCB ASTM A351 CF8M Bronze
2	Disc	1	ASTM A351 CF8M ASTM B148 C95800 GGG40
3	Seat	1	NBR EPDM FPM PTFE
4 5	Upper shaft Lower shaft	1 1	SS316 SS410 ASTM A431 Aluminum bronze
6	Bushing	4	PTFE
7	O ring	3	NBR PTFE FPM
8 9 10 11	Foot cover Bolt Pin Bearing	1 4 3 1	Same as body Carbon steel black treated Stainless steel

Dimensions

BODY: WAFER SHORT TYPE WITH SINGLE FLANGE



BODY: WAFER SHORT TYPE WITH DOUBLE FLANGE



Flange Connection:
PN6/10/16, ANSI CLASS125, JIS5/10/16K

Pressure Rating:
PN6, PN10, PN16, 150PSI

Face To Face:
ISO5752, EN558 basic series 20 (wafer short), API609, GB12221-89

Design To:
API609, EN593, BS5155, GB12238

Function:
Isolating valve (on/off), regulating valve. Lugged type valve can be used at end of pipe line, maximum pressure not larger than 50% of the rated pressure.

DN	NPS	A	B	C	D	F	G	nXH	ISO5211	L	a	b	d	h
700	28	694.9	624	82	528	254	300	8X18	F25	165	5	16	55	63
750	30	744.3	660	82	560	254	300	8X18	F25	165	5	16	55	63
800	32	795.6	672	82	600	254	300	8X18	F25	190	5	16	55	63
900	36	864	720	130	659	254	300	8X18	F25	203	6	20	75	100
1000	40	964	800	130	726	254	300	8X18	F25	216	7	22	85	125
1200	48	1160	951	150	868	298	350	8X23	F30	254	8	28	105	140
1400	56	1386	955		980	356	415	8X31	F35	279				
1600	64	1586	1079		1096	406	475	8X37	F40	318				
1800	72	1776	1176		1187	406	475	8X37	F40	356				
2000	80	1976	1276		1287	406	475	8X37	F40	406				

56” to 80” (DN1400-DN2000), 6 bar

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Double Flanged Vulcanised Seat

2″-48″ DN50-DN1200

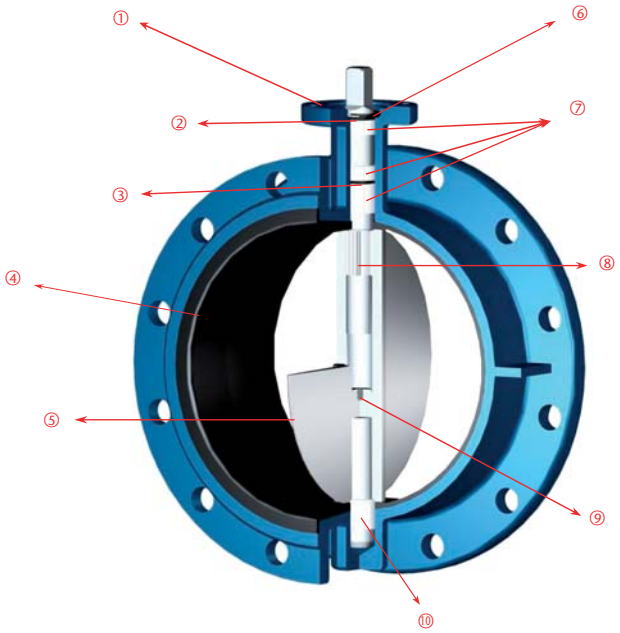
Double Flange Type



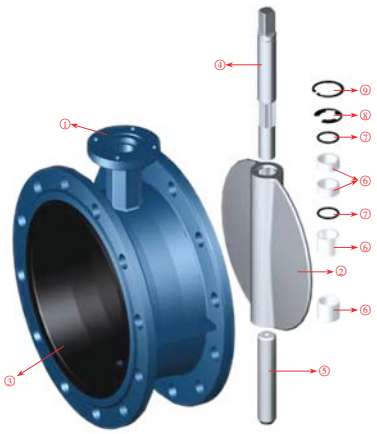
Size	2″-48″ DN50-DN1200
Temperature	-40°C -210°C
Rating	PN6/10/16/25, 200PSI, 285PSI
Body	Cast iron, Ductile iron, Cast steel, Stainless steel
Disc	Ductile iron, Cast steel, Stainless steel, Aluminum bronze, Nickel plated, Nylon coated
Stem	Carbon steel nickel plated, Stainless steel, High temperature alloy, Aluminum bronze
Seat	NBR, EPDM, CSM, FPM, VSL, AU, CR, PTFE
Feature	Bubble tight, zero leakage in both directions, maintenance free, easy installation
Medium	Potable water, Dirty water, High pure water, Sea water, Air, Gas, Steam, Oil, Pulp, Beer, Powder

Features

2″-14″ DN50-DN350



1	ISO5211 Actuator Mount Flange
2	Anti Dust Seal Ring
3	O-Ring
4	Seat: Vulcanized seat
5	High tolerance machined disc surfaces gives high efficient seal, low operating torque and long seat life
6	Cotter pin retaining ring: Anti blow out of the shaft
7	Three bearings: To ensure smooth shaft turning and centralise shaft
8	Precision spline shaft and disc: To ensure positive connection of shaft and disc
9	Threaded hole in lower shaft: For pulling out lower shaft when re-assembling
10	Lower bearing

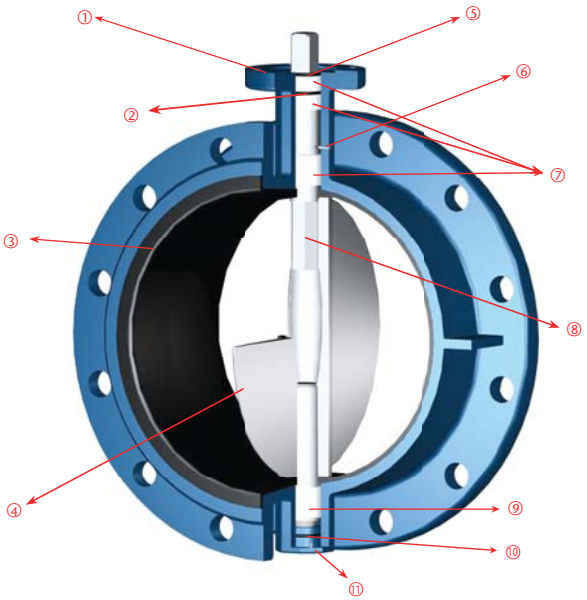


1	Body
2	Disc
3	Vulcanized Seat
4	Upper Shaft
5	Lower Shaft
6	Bearing
7	O Ring
8	Split Pin
9	Retaining Ring

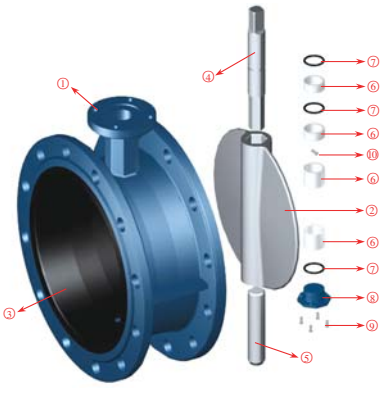
This data sheet is designed as a guide and should not be regarded as wholly accurate in every detail. We reserve the righ to amend the specification of any product without notice.

Double Flanged Vulcanised Seat

Features
16″-24″ DN400-DN600

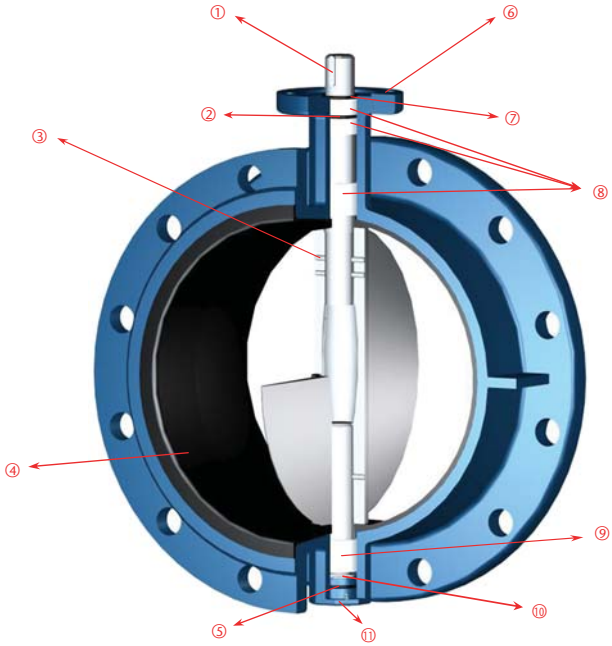


1	ISO5211 Actuator Mount Flange
2	O-ring
3	Seat: Vulcanized Seat
4	High tolerance machined disc surfaces gives high efficient seal, low operating torque and long seat life
5	Anti Dust Seal Ring
6	Screw: Anti blow out of the shaft
7	Three bearings To ensure smooth shaft turning and centralise shaft
8	Hexagonal shaft and disc: To ensure positive connection of shaft and disc
9	Lower bearing
10	Anti Dust Seal Ring
11	Lower Shaft Plug: For lower shaft replacement of large size valve

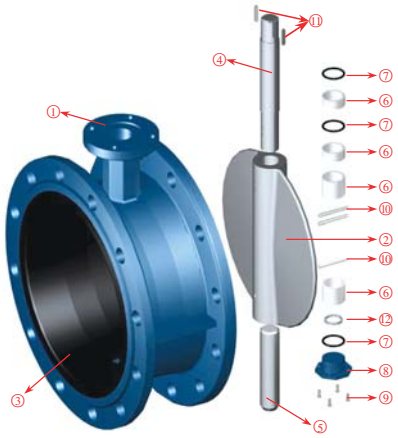


1	Body
2	Disc
3	Vulcanized Seat
4	Upper Shaft
5	Lower Shaft
6	Bearing
7	O Ring
8	Bottom Cover
9	Bolt
10	Screw

Features
28″-48″ DN700-DN1200



1	Key connection: For actuator connection
2	O-ring
3	Pin connection: Ensure perfect shaft and disc connection for large size valve.
4	Seat: Vulcanized seat
5	Anti dust O-ring
6	ISO5211 Actuator Mount Flange
7	Anti dust O-ring
8	Three bearings: To ensure smooth shaft turning and centralise shaft
9	Lower bearing
10	Bearing
11	Lower Shaft Plug: For lower shaft replacement of large size valve

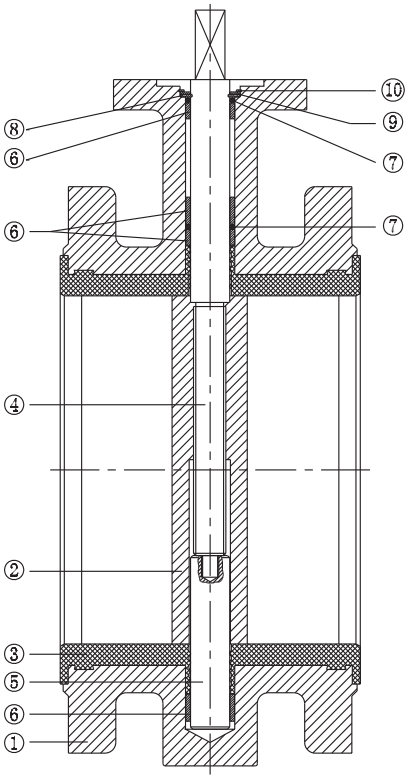


1	Body
2	Disc
3	Vulcanized Seat
4	Upper Shaft
5	Lower Shaft
6	Bearing
7	O Ring
8	Bottom Cover
9	Bolt
10	Pin
11	Key
12	Bearing

This data sheet is designed as a guide and should not be regarded as wholly accurate in every detail. We reserve the righ to amend the specification of any product without notice.

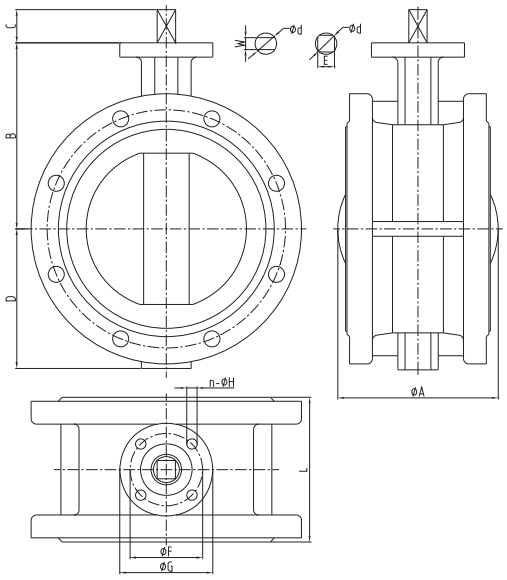
Double Flanged Vulcanised Seat

Parts List
2"-14" DN50-DN350



No.	Parts	Qty	Material
1	Body	1	ASTM A126 CLASS B Ductile iron GGG40 ASTM A216 WCB ASTM A351 CF8M Bronze
2	Disc	1	ASTM A351 CF8M ASTM B148 C95800 GGG40
3	Seat	1	NBR EPDM FPM PTFE
4 5	Upper shaft Lower shaft	1 1	SS316 SS410 ASTM A431 Aluminium bronze
6	Bushing	4	PTFE
7	O ring	2	NBR PTFE FPM
8 9	Split pin Retainer ring	1 1	Carbon steel Stainless steel

Dimensions
2"-14" DN50-DN350



Flange Connection:
PN6/10/16/25, ANSI CLASS125/150, JIS5/10/16K

Pressure Rating:
PN6, PN10, PN16, PN25, 200PSI, 285PSI

Face To Face:
ISO5752, EN558 basic series 13(double flanged short)

Design To:
API609, EN593, BS5155, GB12238

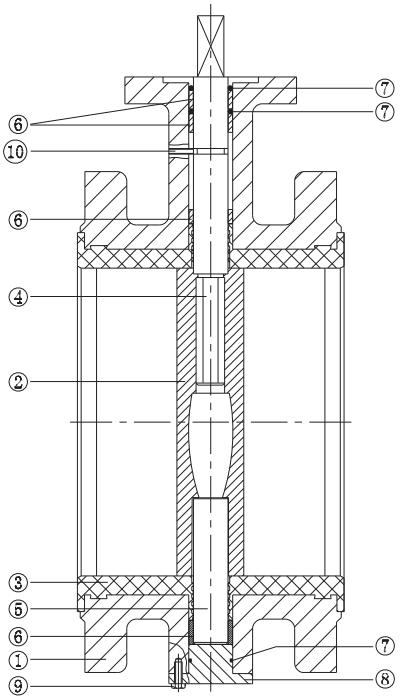
Function:
Isolating valve (on/off), regulating valve. Double flanged butterfly valve can be used at end of pipe line, maximum pressure not larger than 50% of the rated pressure.
PN25 ASTM A431 For PN25, the strength of shaft is not less than ASTM A431

DN	NPS	A	B	C	D	E	F	G	nxH	ISO5211	L	W	d
50	2	52.6	124	19	83	11	70	90	4x10	F7	108	10	12.6
65	2.1/2	64.4	134	19	95	11	70	90	4x10	F7	112	10	12.6
80	3	78.9	141	19	102	11	70	90	4x10	F7	114	10	12.6
100	4	104.1	156	19	124	11	70	90	4x10	F7	127	12	15.77
125	5	123.4	168	19	137	14	70	90	4x10	F7	140	14	18.92
150	6	155.96	184	19	149	14	70	90	4x10	F7	140	14	18.92
200	8	202.87	205	25	170	17	102	125	4x12	F10	152	17	22.1
250	10	250.88	235	40	198	22	102	125	4x12	F10	165	22	28.45
300	12	301.9	280	40	220	22	102	125	4x12	F10	178	24	31.6
350	14	334.01	368	40	265	22	102	125	4x12	f10	190	24	31.6

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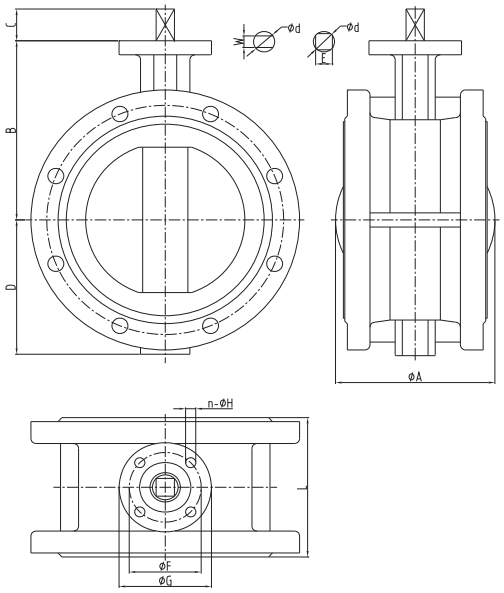
Double Flanged Vulcanised Seat

Parts List
16″-24″ DN400-DN600



No.	Parts	Qty	Material
1	Body	1	ASTM A126 CLASS B Ductile iron GGG40 ASTM A216 WCB ASTM A351 CF8M Bronze
2	Disc	1	ASTM A351 CF8M ASTM B148 C95800 GGG40
3	Seat	1	NBR EPDM FPM PTFE
4 5	Upper shaft Lower shaft	1 1	SS316 SS410 ASTM A431 Aluminum bronze
6	Bushing	4	PTFE
7	O ring	2	NBR PTFE FPM
8 9 10	Foot Cover Bolt Screw	1 4 1	Same as body Carbon steel black treated Stainless Steel

Dimensions
16″-24″ DN400-DN600



Flange Connection:
PN6/10/16, ANSI CLASS125, JIS5/10K

Pressure Rating:
PN6, PN10, PN16, 150PSI

Face To Face:
ISO5752, EN558 basic series 13(double flanged short)

Design To:
API609, EN593, BS5155, GB12238

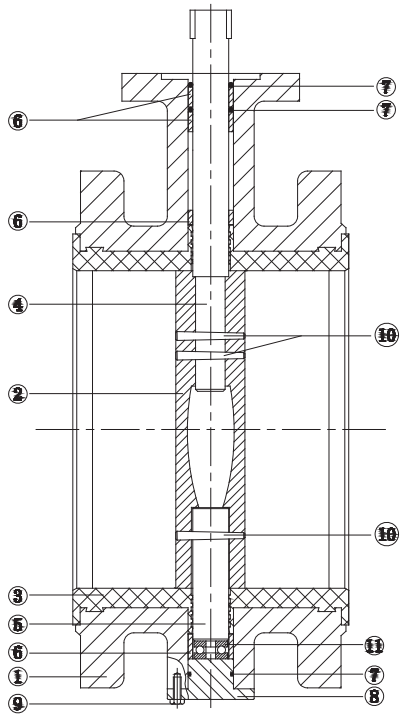
Function:
Isolating valve (on/off), regulating valve. Double flanged butterfly valve can be used at end of pipe line, maximum pressure not larger than 50% of the rated pressure.

DN	NPS	A	B	C	D	E	F	G	nXH	ISO5211	L	W	d
400	16	390.1	340	52	282	22	140	175	4X18	F14	216	27	33.15
450	18	441.1	422	52	315	27	140	175	4X18	F14	222	27	38
500	20	492.3	430	64	348	27	140	175	4X18	F14	229	32	41.15
600	24	593	500	70	390	36	165	210	4X23	F16	267	36	50.65

This data sheet is designed as a guide and should not be regarded as wholly accurate in every detail. We reserve the righ to amend the specification of any product without notice.

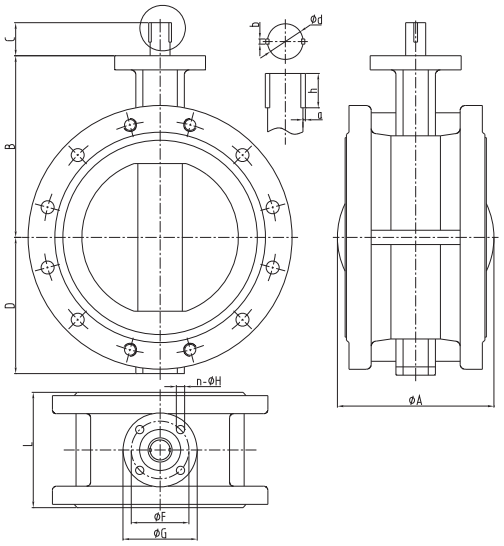
Double Flanged Vulcanised Seat

Parts List
28″-80″ DN700-DN2000



No.	Parts	Qty	Material
1	Body	1	ASTM A126 CLASS B Ductile iron GGG40 ASTM A216 WCB ASTM A351 CF8M Bronze
2	Disc	1	ASTM A351 CF8M ASTM B148 C95800 GGG40
3	Seat	1	NBR EPDM FPM PTFE
4 5	Upper shaft Lower shaft	1 1	SS316 SS410 ASTM A431 Aluminum bronze
6	Bushing	4	PTFE
7	O ring	2	NBR PTFE FPM
8 9 10 11	Foot Cover Bolt Pin Bearing	1 4 3 1	Same as body Carbon steel black treated Stainless Steel Steel

Dimensions
28″-80″ DN700-DN2000



Flange Connection:
PN6/10/16, ANSI CLASS125, JIS5/10K

Pressure Rating:
PN6, PN10, PN16, 150PSI

Face To Face:
ISO5752, EN558 basic series 13(double flanged short)

Design To:
API609, EN593, BS5155, GB12238

Function:
Isolating valve (on/off), regulating valve. Double flanged butterfly valve can be used at end of pipe line, maximum pressure not larger than 50% of the rated pressure.

DN	NPS	A	B	C	D	F	G	nxH	ISO5211	L	a	b	d	h
700	28	649.9	560	82	450	254	300	8x18	F25	292	5	16	55	63
750	30	744.3	640	82	540	254	300	8x18	F25	318	5	16	55	63
800	32	795.6	640	82	540	254	300	8x18	F25	318	5	16	55	63
900	36	864	665	130	540	254	300	8x18	F25	330	6	20	75	100
1000	40	964	735	130	620	254	300	8x18	F25	410	7	22	85	125
1200	48	1160	917	150	760	298	350	8x23	F30	470	8	28	105	140
1400	56	1386	955		980	356	415	8x31	F35	530				
1600	64	1586	1079		1096	406	475	8x37	F40	600				
1800	72	1776	1176		1187	406	475	8x37	F40	670				
2000	80	1976	1276		1287	406	475	8x37	F40	760				

56″ - 80″ (DN1400-DN2000), 6 bar

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Wafer Type (Short Neck) Replaceable Seat

2″-12″ DN50-DN300

Semi-Lug Wafer
Short Type



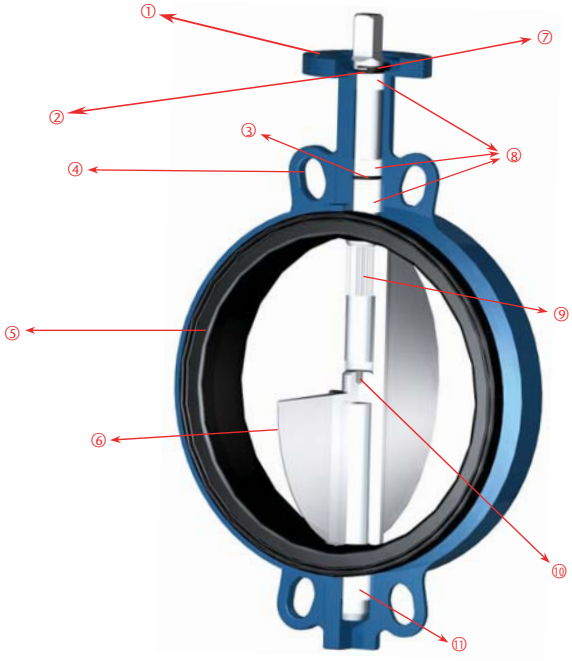
Size	2″-12″ DN50-DN300
Temperature	-40°C -210°C
Rating	PN6/10/16/25, 200PSI, 285PSI
Body	Cast iron, Ductile iron, Cast steel, Stainless steel
Disc	Ductile iron, Cast steel, Stainless steel, Aluminum bronze, Nickel plated, Nylon coated
Stem	Carbon steel nickel plated, Stainless steel, High temperature alloy, Aluminum bronze
Seat	NBR, EPDM, CSM, FPM, VSL, AU, CR, PTFE
Feature	Bubble tight, zero leakage in both directions, replaceable seat,maintenance free, easy alignment
Medium	Potable water, Dirty water, High pure water, Sea water, Air, Gas, Steam, Oil, Pulp, Beer, Powder

Lug Wafer Short Type



Size	2″ -12″ DN50-DN300
Temperature	-40°C -210°C
Rating	PN6/10/16/25, 200PSI, 285PSI
Body	Cast iron, Ductile iron, Cast steel, Stainless steel
Disc	Ductile iron, Cast steel, Stainless steel, Aluminum bronze, Nickel plated, Nylon coated
Stem	Carbon steel nickel plated, Stainless steel, High temperature alloy, Aluminum bronze
Seat	NBR, EPDM, CSM, FPM, VSL, AU, CR, PTFE
Feature	Bubble tight, zero leakage in both directions, replaceable seat,maintenance free, fixed installation, suitable for end of line
Medium	Potable water, Dirty water, High pure water, Sea water, Air, Gas, Steam, Oil, Pulp, Beer, Powder

Features



1	ISO5211 Actuator Mount Flange
2	Anti Dust Seal Ring
3	O-Ring
4	Multi standard alignment holes: For connection between ANSI, EN or ISO standard flanges.
5	Replaceable Seat
6	High tolerance machined disc surfaces gives high efficient seal, low operating torque and long seat life
7	Cotter pin retaining ring: Anti blow out of the shaft
8	Three bearings: To ensure smooth shaft turning and centralise shaft
9	Precision spline shaft and disc: To ensure positive connection of shaft and disc Give convenience to replacement
10	Threaded hole in lower shaft: For easy extraction of lower shaft.
11	Lower bearing

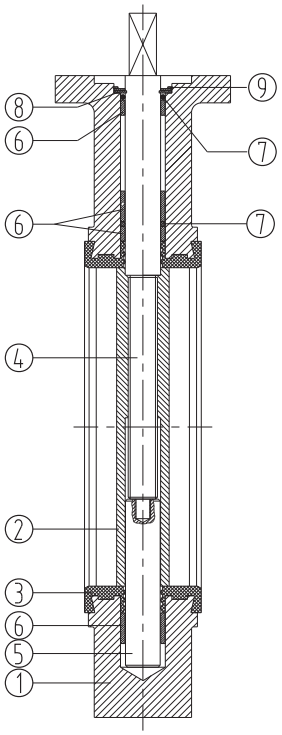


1	Body
2	Disc
3	Elastomer Seat
4	Upper Shaft
5	Lower Shaft
6	Bearing
7	O Ring
8	Split Pin
9	Retaining Ring

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Wafer Type (Short Neck) Replaceable Seat

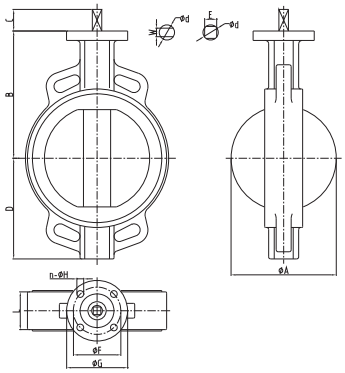
Parts List



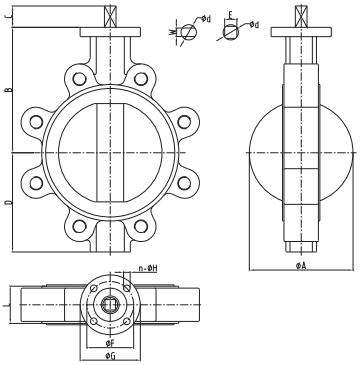
No.	Parts	Qty	Material
1	Body	1	ASTM A126 CLASS B Ductile Iron GGG40 ASTM A216 WCB ASTM A351 CF8M Bronze
2	Disc	1	ASTM A351 CF8M ASTM B148 C95800 GGG40
3	Seat	1	NBR EPDM FPM PTFE
4 5	Upper shaft Lower shaft	1 1	SS316 SS410 ASTM A431 Aluminum bronze
6	Bushing	4	PTFE
7	O ring	2	NBR PTFE FPM
8 9	Split pin Retainer ring	1 1	Carbon Steel Stainless Steel

Dimensions

BODY: SEMI-LUG WAFER SHORT TYPE



BODY: LUGGED WAFER SHORT TYPE



Flange Connection:
PN6/10/16/25, ANSI CLASS125/150, JIS5/10/16K

Pressure Rating:
PN6, PN10, PN16, PN25, 200PSI, 285PSI

Face To Face:
ISO5752, EN558 basic series 20 (wafer short), API609, GB12221-89

Design To:
API609, EN593, BS5155, GB12238

Function:
Isolating valve(on/off), regulating valve
Lugged type valve can be used at end of pipe line, maximum pressure not larger than 50% of the rated pressure.
PN25 ASTM A431 For PN25, the strength of shaft is not less than ASTM A431

DN	NPS	A	B	C	D	E	F	G	nxH	ISO5211	L	W	d
50	2	52.6	142	19	73.5	11	70	90	4X10	F7	43	10	12.6
65	2.1/2	64.4	155	19	80.5	11	70	90	4X10	F7	46	10	12.6
80	3	78.9	161	19	93	11	70	90	4X10	F7	46	10	12.6
100	4	104.1	180	19	110	11	70	90	4X10	F7	52	12	15.77
125	5	123.4	193	19	122.8	14	70	90	4X10	F7	56	14	18.92
150	6	155.96	205	19	139	14	70	90	4X10	F7	56	14	18.92
200	8	202.87	250	25	175	17	102	125	4X12	F10	60	17	22.1
250	10	250.88	282	40	208	22	102	125	4X12	F10	68	22	28.45
300	12	301.9	326	40	244	22	102	125	4X12	F10	78	24	31.6

This data sheet is designed as a guide and should not be regarded as wholly accurate in every detail. We reserve the righ to amend the specification of any product without notice.

Petro Valves

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