Butterfly Valves

API 609/BS5155

Rubber Lined Body
Center Line Disc
Wafer, Wafer Lug

V-FLO®

V-FLO Pumps & Systems

Butterfly Valves

Standards:
Design & Manufacture: API 609, BS5155
Face to Face: API 609, BS5155, DIN3202, ISO 5752
Flanged Ends: ASME B16.1, BS4504, DIN, ISO
Test: AIP 598
Actuator Mounting Flange: ISO 5211

Features:
1. Small in size and light in weight and easy installation and maintenance. It can be mounted wherever needed.
2. Simple, compact structure, quick 90 deg. On-Off operation.
3. Disc has two-way bearing, perfect seal, without leakage under the pressure test.
4. Flow curve tending to straight-line. Excellent regulation performance.
5. Various kinds of materials, applicable to different medium.
6. Strong wash and brush resistance, and can fit to bad working condition.
7. Center plate structure, small torque of open and close.
8. Long service life. Standing the test of ten thousands operating and closing operation.
9. Can used in cutting off and regulating medium.

Temperature Suitable for Seat:

Material	Code	Temperature Range (Deg. C)
Natural Rubber	X1	-20 ~ +85
Hypalon	X2	-18 ~ +135 Short Time -18 ~ +149
EPDM	X3	-45 ~ +135 Short Time –30 ~ +149
Neoprene	X4	-7 ~ +93 Short Time –7 ~ +107
NBR	X5	-12 ~ +82 Short Time –12 ~ +93
Abrasion Resistance Rubber	X6	-10 ~ +50
Viton	X7	-12 ~ +135 Short Time –12 ~ +149
Heat Resistance EPDM	X8	-20 ~ +150

Performance Data:

Nominal Diameter DN		50 ~ 300				350 ~ 600			
Nominal Pressure PN		1.0 MPa	1.6 MPa	ANSI 125#	ANSI 150#	1.0 MPa	1.6 MPa	ANSI 125#	ANSI 150#
Test Pressure	Shell	1.5 X PN							
	Sealing	1.1 X PN							
Working Temperature		-10℃ ~ 150℃							
Suitable Medium		Water, Sewage, Sea Water, Air, Foodstuff, Oil etc							

Actuators:

Handles: DN50 ~ DN300
Worm Gear
Electric Actuator
Pneumatic Actuator

Butterfly Valves
One Piece Shaft with Pin

Type:	Wafer, Lugged, U-flanged
Face to Face:	API609, BS5155, DIN3202, ISO 5752
Flange:	DIN, BS, UNI, ISO, ANSI, AS, JIS
Mounting Flange:	ISO5211

Working Pressure:	DN40 – 300: PN16 (200PSI) DN350 & above:PN10 (150PSI)
Application:	HVAC, Water Supply & Sewage, Chemical/Petrochemical/Processing, Power and Utilities, Paper and Pulp, Ship Building

Features:

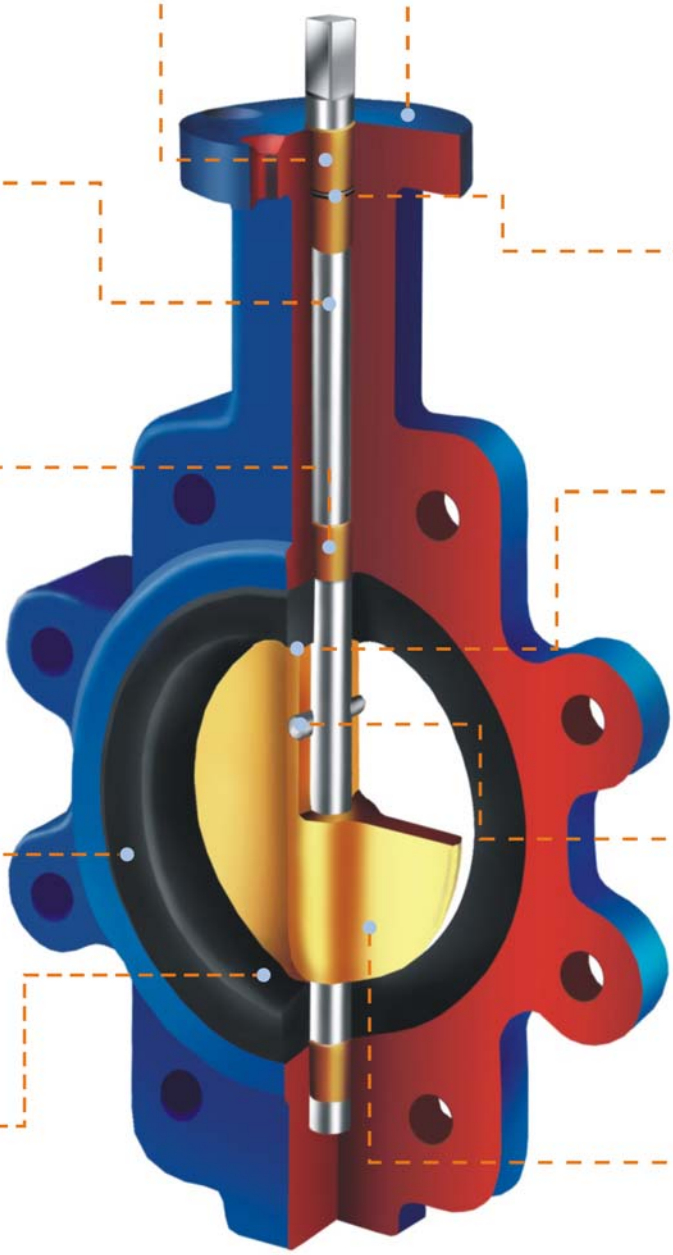
Weather Seal
Top bushing keeps dust and moisture from entering the upper shaft journal.

Shaft
One-piece through shaft ensures dependability and positive disc positioning.

Bushings (4-5)
Shaft bushings reduce torque and isolate the shaft from the valve body, preventing seizure of the shaft due to corrosion in the shaft journal.

Seat Face
Seat to flange seal eliminates the need for flange gaskets.

Seat
Phenolic-backed seat is non-collapsible, stretch resistant, blow out proof, and field replaceable.



Mounting Flange
ISO 5211 mounting flange accommodates direct mounting of all types of actuators, including:handles, gear operators, electric and pneumatic.

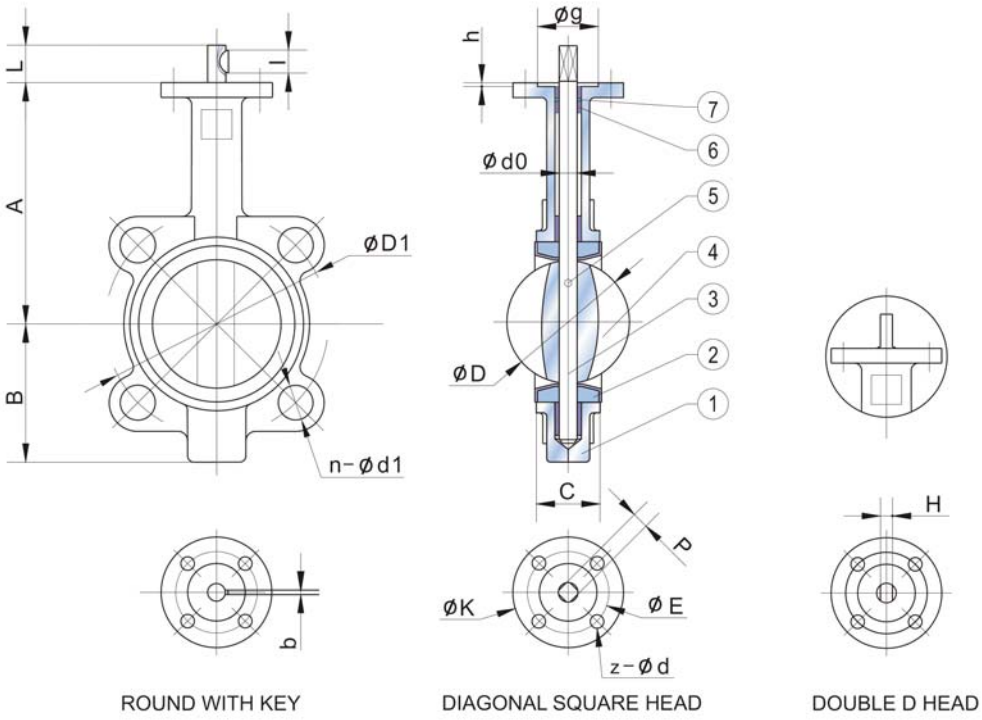
O-Ring (1-2)
Shaft seal provides further assurance against stem leakage.

Flats Seal
Smooth finished disc flats mate with seat flats to give a highly efficient primary seal that prevents leakage into the shaft area.

Taper Pin (1-3)
Precision taper pin ensure positive, vibration proof, shaft to disc connection. Field replaceable.

Disc
Precision profile provides bubble-tight shut-off, assures minimum torque and longer seat life.

Wafer Type



ROUND WITH KEY | DIAGONAL SQUARE HEAD | DOUBLE D HEAD

Material of Main Parts:

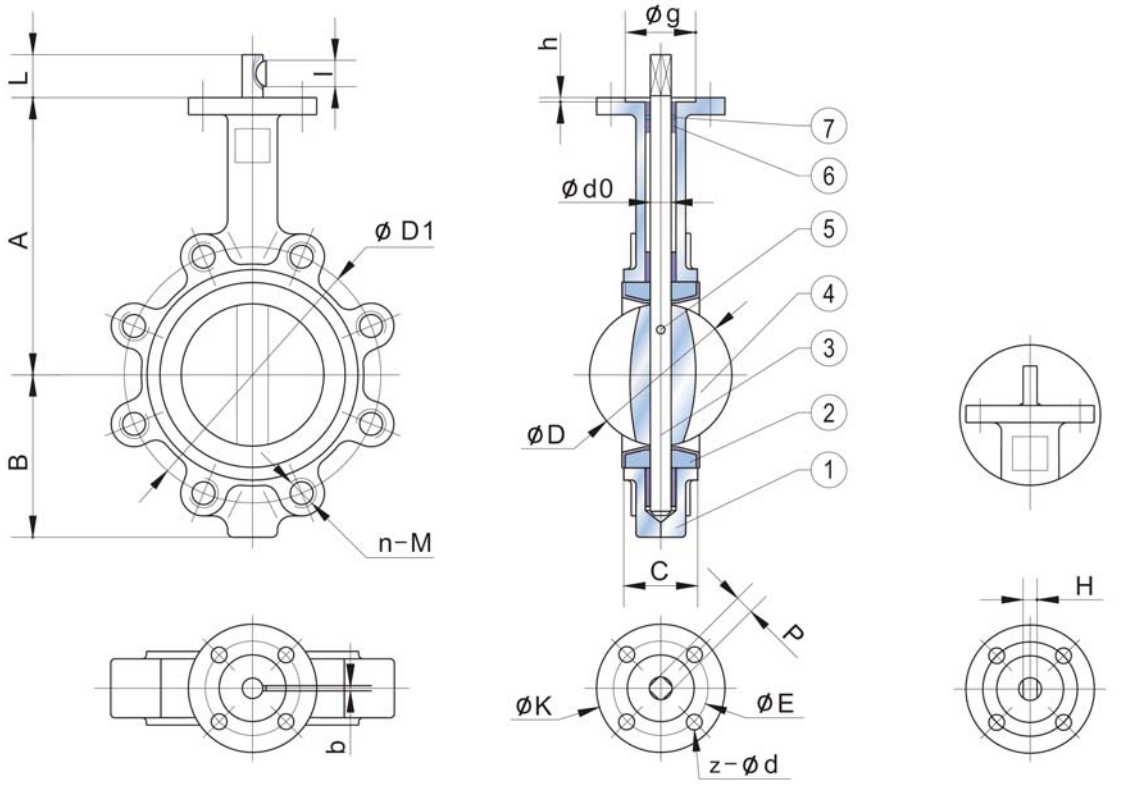
ITEM	PART NAME	MATERIAL
1	Body	Cast Iron, Ductile Iron, Carbon Steel, Stainless Steel
2	Seat	NBR, EPDM, Viton, Neoprene, Hypalon, Silicon
3	Shaft	Stainless Steel 416, 316
4	Disc	Ductile Iron+Ni, CF8, CF8M, Bronze
5	Pin	Stainless Steel
6	Bushing	PTFE, Bronze
7	O Ring	NBR, EPDM

Dimensions & Weights:

SIZE		A	B	C	D	L	d0	P	H	KEY	UPPER FLANGE					ANSI 150		DIN PN10/16		Weight
in	DN									bXl	K	E	z-d	g	h	D1	n-d1	D1	n-d1	(kg)
1-1/2	40	145	75	33	42.4	32	12.6	9	10	3X16	77	50	4-7	35	3	98.5	4-16	110	4-18	2.2
2	50	161	80	42	52.6	32	12.6	9	10	3X16	77	50	4-7	35	3	120.5	4-19	125	4-18	2.5
2-1/2	65	175	89	44.7	64.5	32	12.6	9	10	3X16	77	50	4-7	35	3	139.5	4-19	145	4-18	3.2
3	80	181	95	45.2	78.8	32	12.6	9	10	3X16	77	50	4-7	35	3	152.5	4-19	160	4/8-18	3.6
4	100	200	114	52.1	104	32	15.77	11	12	5X19	90	70	4-9	55	3	190.5	8-19	180	8-18	4.9
5	125	213	127	54.4	123.3	32	18.92	14	14	5X19	90	70	4-9	55	3	216	8-22	210	8-18	7.0
6	150	226	139	55.8	155.6	32	18.92	14	14	5X19	90	70	4-9	55	3	241.5	8-22	240	8-23	7.8
8	200	260	175	60.6	202.5	45	22.1	17	17	5X19	125	102	4-12	70	3.5	298.5	8-22	295	8/12-23	13.2
10	250	292	203	65.6	250.5	45	28.45	22	22	8X28	125	102	4-12	70	3.5	362	12-25	350/355	12-23/27	19.2
12	300	337	242	76.9	301.6	45	31.6	22	24	8X28	140	102	4-12	70	3.5	432	12-25	400/410	12-23/27	32.5
14	350	368	267	76.5	333.3	45	31.6	22	24	8X28	140	102	4-12	70	3.5	476	12-29	460/470	16-23/27	41.3
16	400	400	309	86.5	389.6	51.2	33.15	24	24	10X50	197	140	4-18	100	4	540	16-29	515/525	16-27/30	61
18	450	422	328	105.6	440.5	51.2	38	27	27	10X50	197	140	4-18	100	4	578	16-32	565/585	20-27/30	79
20	500	480	361	131.8	491.6	64.2	41.15	36	32	10X50	197	140	4-18	100	4	635	20-32	620/650	20-27/33	128
24	600	562	459	152	592.5	70.2	50.65	36	36	2-16X60	276	165	4-23	130	5	749.5	20-35	725/770	20-30/36	188
28	700	624	520	163	695	66	55	-	-	2-18X63	300	254	8-18	200	5.5	863.5	28-35	840	24-30	284
30	750	660	539	165	744.3	66	55	-	-	2-18X63	300	254	8-18	200	5.5	914.5	28-35	-	-	328
32	800	672	591	188	794.7	66	55	-	-	2-18X63	300	254	8-18	200	5.5	978	28-41	950	24-33	368
36	900	720	656	203	864.7	118	75	-	-	2-20X100	300	254	8-18	200	5.5	1086	32-41	1050	28-33	713
40	1000	800	721	216	965	150	85	-	-	2-22X140	300	254	8-18	200	5.5	1200	36-41	1160	28-36	864

Note: 14” to 24” max. working pressure with 1.6MPa can be supplied as special requirements.

Lug Type



ROUND WITH KEY DIAGONAL SQUARE HEAD DOUBLE D HEAD

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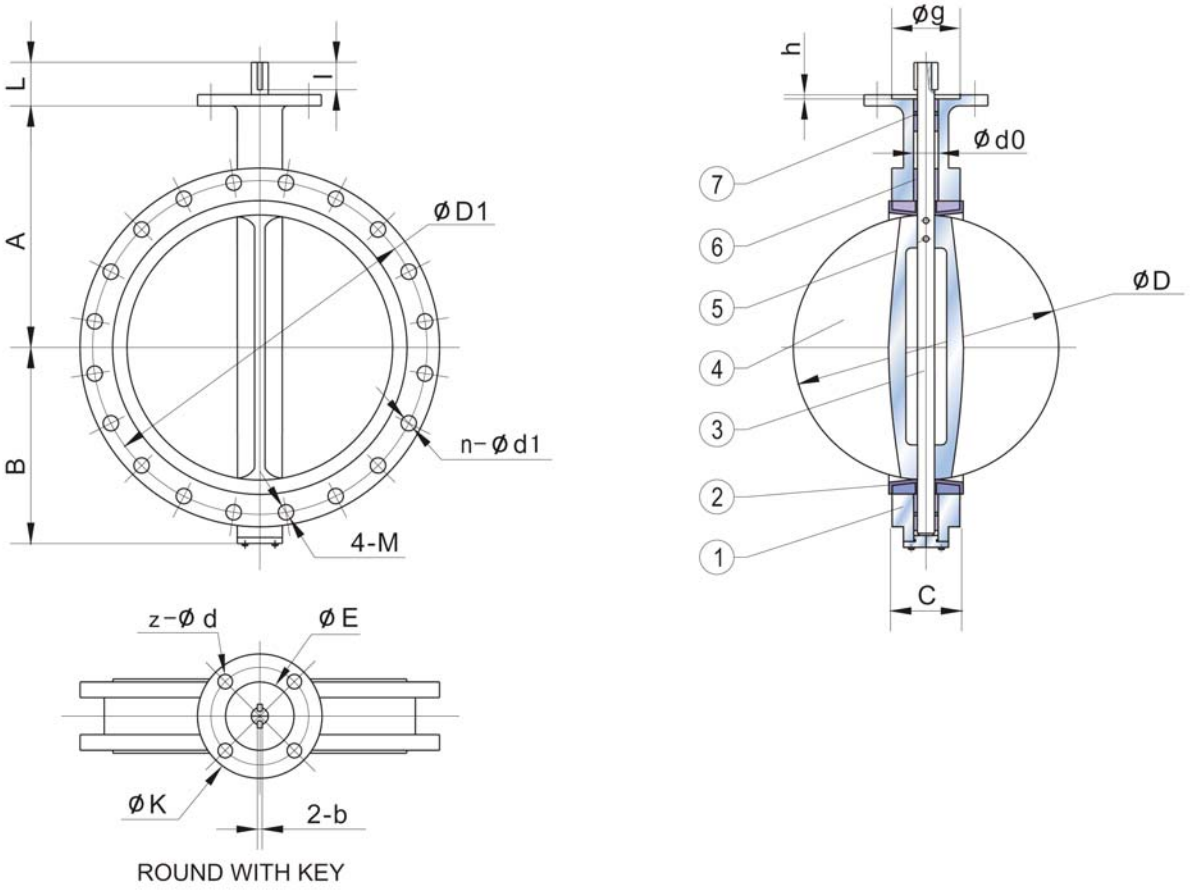
3	Shaft	Stainless Steel 416, 316
4	Disc	Ductile Iron+Ni, CF8, CF8M, Bronze
5	Pin	Stainless Steel
6	Bushing	PTFE, Bronze
7	O Ring	NBR, EPDM

Dimensions & Weights:

SIZE		A	B	C	D	L	d0	P	H	KEY	UPPER FLANGE					ANSI 150		DIN PN10/16		Weight
in	DN									bXl	K	E	z-d	g	h	D1	n-M	D1	n-d1	(kg)
1-1/2	40	145	75	33	42.4	32	12.6	9	10	3X16	77	50	4-7	35	3	98.5	4-1/2"	110	4-18	3.2
2	50	161	80	42	52.6	32	12.6	9	10	3X16	77	50	4-7	35	3	120.5	4-5/8"	125	4-18	3.8
2-1/2	65	175	89	44.7	64.5	32	12.6	9	10	3X16	77	50	4-7	35	3	139.5	4-5/8"	145	4-18	4.2
3	80	181	95	45.2	78.8	32	12.6	9	10	3X16	77	50	4-7	35	3	152.5	4-5/8"	160	4/8-18	4.7
4	100	200	114	52.1	104	32	15.77	11	12	5X19	90	70	4-9	55	3	190.5	8-5/8"	180	8-18	9.0
5	125	213	127	54.4	123.3	32	18.92	14	14	5X19	90	70	4-9	55	3	216	8-3/4"	210	8-18	10.9
6	150	226	139	55.8	155.6	32	18.92	14	14	5X19	90	70	4-9	55	3	241.5	8-3/4"	240	8-23	14.2
8	200	260	175	60.6	202.5	45	22.1	17	17	5X19	125	102	4-12	70	3.5	298.5	8-3/4"	295	8/12-23	18.2
10	250	292	203	65.6	250.5	45	28.45	22	22	8X28	125	102	4-12	70	3.5	362	12-7/8"	350/355	12-23/27	26.8
12	300	337	242	76.9	301.6	45	31.6	22	24	8X28	140	102	4-12	70	3.5	432	12-7/8"	400/410	12-23/27	40
14	350	368	267	76.5	333.3	45	31.6	22	24	8X28	140	102	4-12	70	3.5	476	12-1"	460/470	16-23/27	56
16	400	400	309	86.5	389.6	51.2	33.15	24	24	10X50	197	140	4-18	100	4	540	16-1"	515/525	16-27/30	96
18	450	422	328	105.6	440.5	51.2	38	27	27	10X50	197	140	4-18	100	4	578	16-1 1/8"	565/585	20-27/30	122
20	500	480	361	131.8	491.6	64.2	41.15	32	36	10X50	197	140	4-18	100	4	635	20-1 1/8"	620/650	20-27/33	202
24	600	562	459	152	592.5	70.2	50.65	36	36	2-16X60	276	165	4-23	130	5	749.5	20-1 1/4"	725/770	20-30/36	270

NOTE: 14"-24" maximum working pressure with 1.6MPa (200PSI) can be supplied as per specified order requirement.

U Type



Material of Main Parts:

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4	Disc	Ductile Iron+Ni, CF8, CF8M, Bronze
5	Pin	Stainless Steel
6	Bushing	PTFE, Bronze
7	O Ring	NBR, EPDM

Dimensions & Weights

SIZE		A	B	C	D	L	d0	KEY	UPPER FLANGE					ANSI 150			DIN PN10/16			Weight
in	DN							2-bXl	K	E	z-d	g	h	D1	n-d1	4-M	D1	n-d1	4-M	(kg)
16	400	400	309	86.5	389.6	51.2	33.15	1-10X50	197	140	4-18	100	4	540	16-29	-	515/525	16-27/30	-	83
18	450	422	328	105.6	440.5	51.2	38	1-10X50	197	140	4-18	100	4	578	16-32	-	565/585	20-27/30	-	120
20	500	480	361	131.8	491.6	64.2	41.15	1-10X50	197	140	4-18	100	4	635	20-32	-	620/650	20-27/33	-	170
24	600	562	459	152	592.5	70.2	50.65	2-16X60	276	165	4-23	130	5	749.5	20-35	-	725/770	20-30/36	-	245
28	700	624	520	163	695	66	55	2-18X63	300	254	8-18	200	5.5	863.5	24-35	4-1 1/4"	840	20-30	4-M27	406
30	750	660	539	165	744.3	66	55	2-18X63	300	254	8-18	200	5.5	914.5	24-35	4-1 1/4"	-	-	-	426
32	800	672	591	188	794.7	66	55	2-18X63	300	254	8-18	200	5.5	978	24-41	4-1 1/2"	950	20-33	4-M30	566
36	900	720	656	203	864.7	118	75	2-20X100	300	254	8-18	200	5.5	1086	28-41	4-1 1/2"	1050	24-33	4-M30	728
40	1000	800	721	216	965	142	85	2-25X140	300	254	8-18	200	5.5	1200	32-41	4-1 1/2"	1160	24-36	4-M33	815
42	1050	858	757	251	1030.5	150	95	2-25X140	300	254	8-18	200	5.5	1257.5	32-41	4-1 1/2"	-	-	-	976
48	1200	941	844	276	1161.2	150	105	2-28X140	350	298	8-22	230	5.5	1422.5	40-41	4-1 1/2"	1380	28-39	4-M36	1529

Butterfly Valves — Two Stud Shaft without Pin

Type:	Wafer, Lugged
Face to Face:	API609, BS5155, DIN3202, ISO 5752
Flange:	DIN, BS, UNI, ISO, ANSI, AS, JIS
Mounting Flange:	ISO5211

Working Pressure:	PN16 (200PSI)
Application:	HVAC, Water Supply & Sewage, Food & Beverage, Chemical/Petrochemical/Processing, Power and Utilities, Paper and Pulp, Ship Building

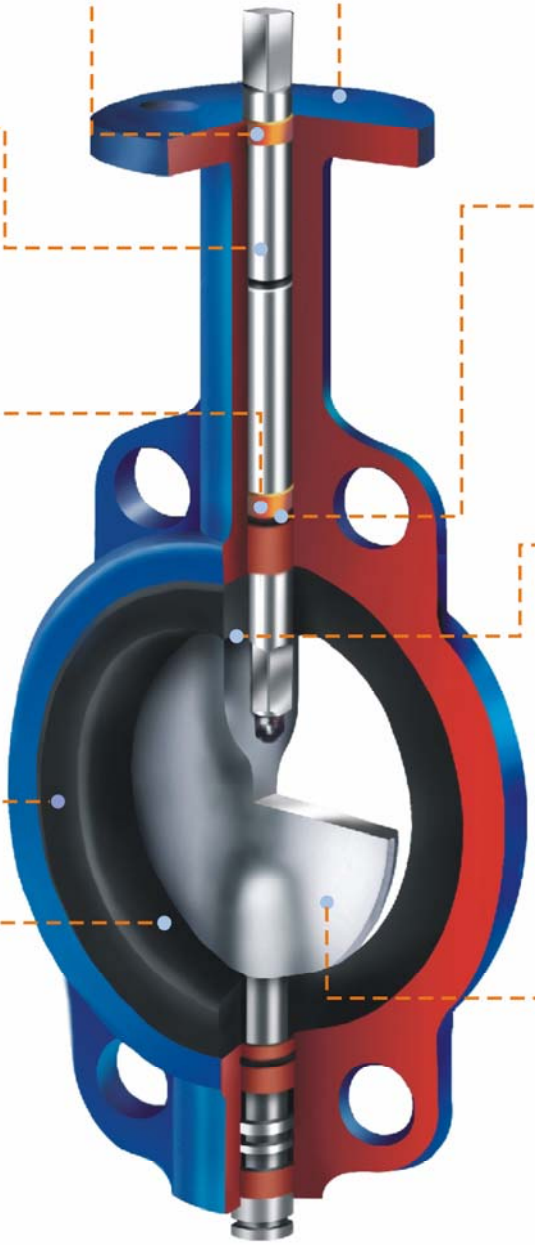
Weather Seal
Top bushing keeps dust and moisture from entering the upper shaft journal.

Shaft
Two stub shaft design allows the disc to float within the flow-way increasing cycle life.

Bushings (6)
Shaft bushings reduce torque and isolate the shaft from the valve body, preventing seizure of the shaft due to corrosion in the shaft journal.

Seat Face
Seat to flange seal eliminates the need for flange gaskets.

Seat
Phenolic-backed seat is non-collapsible, stretch resistant, blow out proof, and field replaceable.



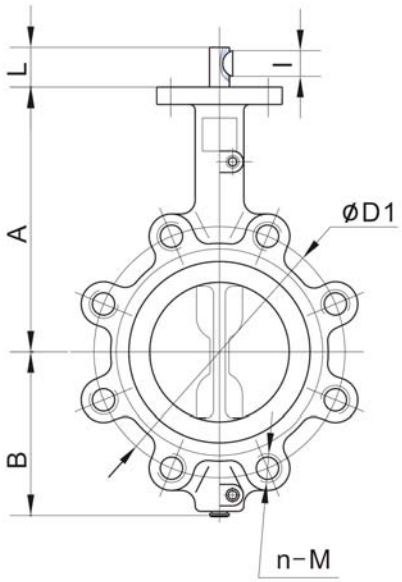
Mounting Flange
ISO 5211 mounting flange accommodates direct mounting of all types of actuators, including: handles, gear operators, electric and pneumatic.

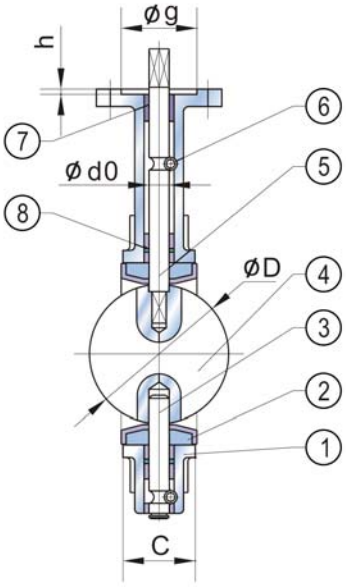
O-Ring (2)
Shaft seal provides further assurance against stem leakage.

Hub Seal
Smooth finished disc flats mate with seat flats to give a highly efficient primary seal that prevents leakage into the shaft area.

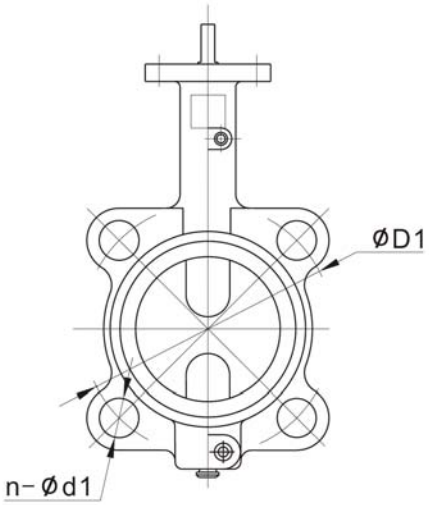
Disc
Precision profile provides bubble-tight shut-off, assures minimum torque and longer seat life. Maximum flow is achieved.

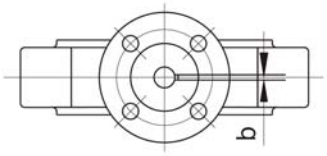
Lug Type





Wafer Type





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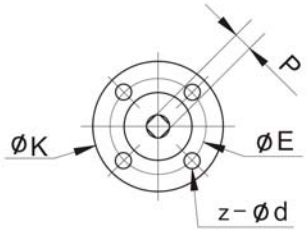
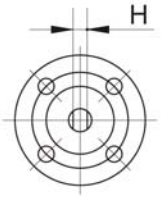


DIAGONAL SQUARE HEAD



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Material of Main Parts:

ITEM	PART NAME	MATERIAL
1	Body	Cast Iron, Ductile Iron, Carbon Steel, Stainless Steel
2	Seat	NBR, EPDM, PTFE, Viton, Neoprene, Hypalon, Silicon
3	Lower Shaft	Stainless Steel 416, 316
4	Disc	Ductile Iron+Ni (Nylon/Epoxy), CF8, CF8+PTFE(PFA), CF8M, CF8M+PTFE(PFA), Bronze
5	Upper Shaft	Stainless Steel 416, 316
6	Locating Pin	Carbon Steel
7	Bushing	PTFE
8	O Ring	NBR, EPDM

Dimensions & Weights

SIZE		A	B	C	D	L	d0	P	H	KEY	UPPER FLANGE					ANSI 150			DIN PN10/16			Weight (kg)	
in	DN									bXl	K	E	z-d	g	h	D1	n-d1	M	D1	n-d1	M	Wafer	Lug
2	50	161	80	42	52.6	32	12.6	9	10	3X16	77	50	4-7	35	3	120.5	4-19	5/8"	125	4-18	M16	2.5	3.8
2-1/2	65	175	89	44.7	64.5	32	12.6	9	10	3X16	77	50	4-7	35	3	139.5	4-19	5/8"	145	4-18	M16	3.2	4.2
3	80	181	95	45.2	78.8	32	12.6	9	10	3X16	77	50	4-7	35	3	152.5	4-19	5/8"	160	4/8-18	M16	3.8	4.7
4	100	200	114	52.1	104	32	15.77	11	12	5X19	90	70	4-9	55	3	190.5	8-19	5/8"	180	8-18	M16	4.9	9.0
5	125	213	127	54.4	123.3	32	18.92	14	14	5X19	90	70	4-9	55	3	216	8-22	3/4"	210	8-18	M16	7	10.9
6	150	226	139	55.8	155.6	32	18.92	14	14	5X19	90	70	4-9	55	3	241.5	8-22	3/4"	240	8-23	M20	7.8	14.2
8	200	260	175	60.6	202.5	45	22.1	17	17	5X19	125	102	4-12	70	3.5	298.5	8-22	3/4"	295	8/12-23	M20	13.2	18.2
10	250	292	203	65.6	250.5	45	28.45	22	22	8X28	125	102	4-12	70	3.5	362	12-25	7/8"	350/355	12-23/27	M20/M24	19.2	26.8
12	300	337	242	76.9	301.6	45	31.6	22	24	8X28	140	102	4-12	70	3.5	432	12-25	7/8"	400/410	12-23/27	M20/M24	32.5	40

Butterfly Valves
One Piece Shaft with Spline or Square Connection

Type:	Wafer, Lugged
Face to Face:	API609, Bs5155, DIN3202, ISO 5752
Flange:	DIN, BS, UNI, ISO, ANSI, AS, JIS
Mounting Flange:	ISO5211

Working Pressure:	PN10 (150PSI)
Application:	HVAC, Water Supply & Sewage, Food & Beverage, Chemical/Petrochemical/Processing, Power and Utilities, Paper and Pulp, Ship Building

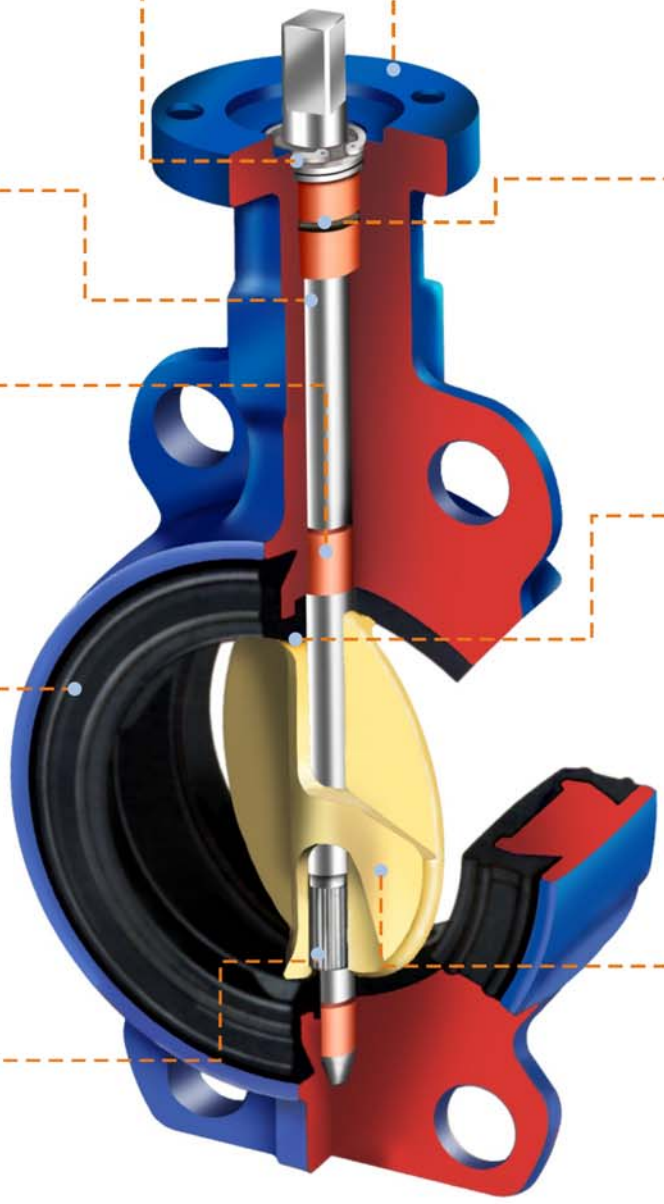
Retaining System
The shaft is retained in the body with a retaining ring, a thrust washer and two C-rings, providing a " blow-out proof " shaft assembly. The retaining ring may be easily removed with a standard hand tool on field disassembly.

Shaft
One-piece through shaft ensures dependability and positive disc positioning.

Bushings (4-5)
Shaft bushings reduce torque and isolate the shaft from the valve body, preventing seizure of the shaft due to corrosion in the shaft journal.

Seat/Body
The tongue-and-groove seat to body retention method make field replacement simple and fast. The resilient seat features lower torque and eliminates the need for flange gaskets.

Disc and Shaft Connection
The spline or square connection eliminates shaft retention components being exposed to the line media, Maximum flow is achieved.



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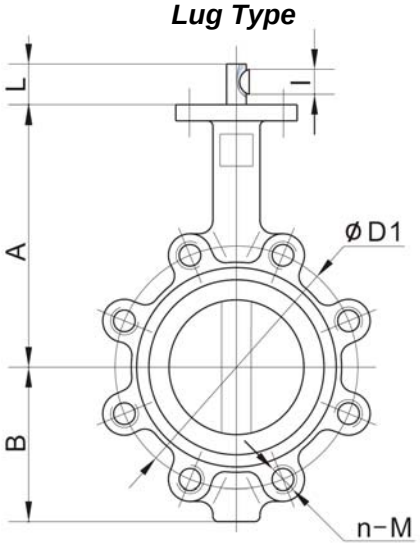
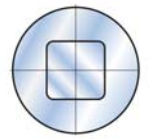
O-Ring (1-2)
Shaft seal provides further assurance against stem leakage.

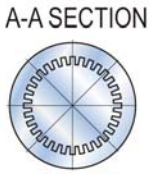
Hub Seal
Smooth finished disc flats mate with seat flats to give a highly efficient primary seal that prevents leakage into the shaft area.

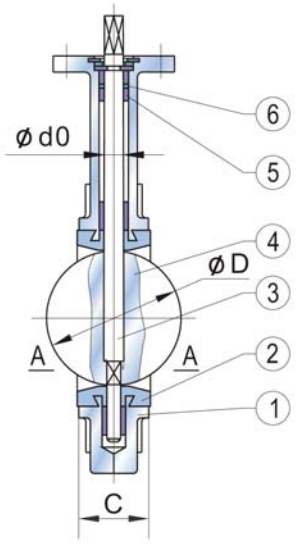
Disc
Precision profile provides bubble-tight shut-off, assures minimum torque and longer seat life.

Lug Type

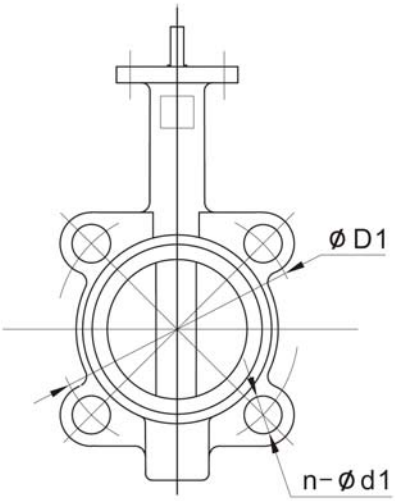


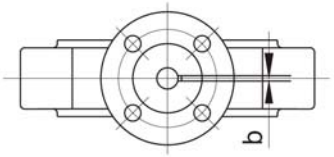




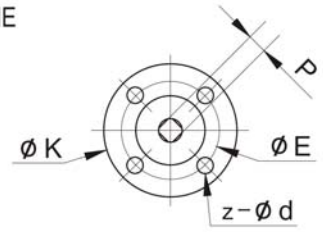


Wafer Type

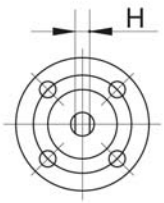




ROUND WITH KEY



DIAGONAL SQUARE HEAD



DOUBLE D HEAD

Material of Main Parts:

ITEM	PART NAME	MATERIAL
1	Body	Cast Iron, Ductile Iron, Carbon Steel, Stainless Steel
2	Seat	NBR, EPDM, Viton, Neoprene, Hypalon, Silicon
3	Shaft	Stainless Steel 416, 316
4	Disc	Ductile Iron+Ni (Nylon/Epoxy), CF8, CF8M, Bronze
5	Bushing	PTFE
6	O Ring	NBR, EPDM

Dimensions & Weights

SIZE		A	B	C	D	L	d0	P	H	KEY	UPPER FLANGE			ANSI 150			DIN PN10/16			Weight (kg)	
in	DN									bXl	K	E	z-d	D1	n-d1	M	D1	n-d1	M	Wafer	Lug
2	50	160	80	42.4	56	32	12.6	11	10	3X16	90	70	4-9	120.5	4-19	5/8"	125	4-18	M16	2.5	3.8
2-1/2	65	175	89	45.8	67.87	32	12.6	11	10	3X16	90	70	4-9	139.5	4-19	5/8"	145	4-18	M16	3.2	4.2
3	80	181	95	45.8	80.5	32	12.6	11	10	3X16	90	70	4-9	152.5	4-19	5/8"	160	4-18	M16	3.8	4.7
4	100	200	114	52	106	32	15.77	11	12	5X19	90	70	4-9	190.5	8-19	5/8"	180	8-18	M16	4.9	9.0
5	125	213	127	55	131	32	18.92	14	14	5X19	90	70	4-9	216	8-22	3/4"	210	8-18	M16	7	10.9
6	150	226	139	55	153	32	18.92	14	14	5X19	90	70	4-9	241.5	8-22	3/4"	240	8-23	M20	7.8	14.2
8	200	260	175	61	204.8	45	22.1	17	17	5X19	125	102	4-12	298.5	8-22	3/4"	295	8-23	M20	13.2	18.2
10	250	292	203	67.2	255.4	45	28.45	22	22	8X28	125	102	4-12	362	12-25	7/8"	350	12-23	M20	19.2	26.8
12	300	337	242	77	306.6	45	31.6	22	24	8X28	140	102	4-12	432	12-25	7/8"	400	12-23	M20	32.5	40

Cv Value — Flow Rate Coefficient:

Definition of Cv Value (Flow Coefficient)

The value Cv is the flow rate of Pure water at 60°F passing through the valve when the disc is fully opened and the differential pressure between the two ends of the valve is 1Lbf/in^2 .

$$Cv = V\sqrt{\frac{G}{\Delta P}}$$

V: Max.flow (in US gal/min)
G: Specific gravity (1 for water)
ΔP: Differential Pressure in valve (Lbf/in2)
Cv = 1.17 Kv

Definition of Kv Value (Flow Coefficient)

The value Kv is the flow rate of Pure water at 15°C passing through the valve when the disc is fully opened and the differential pressure between the two ends of the valve is 1 bar.

$$Kv = Q\sqrt{\frac{G}{\Delta P}}$$

Q: Max.flow (m3/h)
G: Medium density (g/cm3) (1 for water)
ΔP: Differential Pressure in valve (100Kpa) i.e.(bar)
Kv = 0.855 Cv

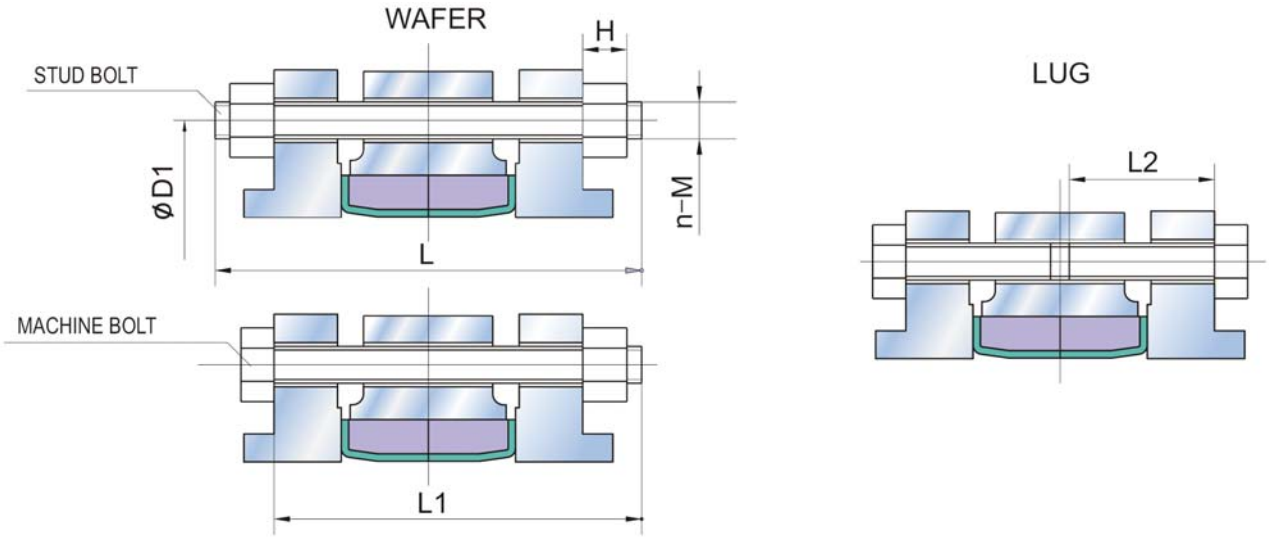
Cv Value — Center Disc, Wafer & Lug Butterfly Valves

Size	Flow in Gpm @ 1PSI P @ Various Disc Angles								
	10°	20°	30°	40°	50°	60°	70°	80°	Full 90°Open
2"	0.1	5	12	24	45	64	90	125	135
2.5"	0.2	8	20	37	65	98	144	204	220
3"	0.3	12	22	39	70	116	183	275	302
4"	0.5	17	36	78	139	230	364	546	600
5"	0.8	29	61	133	237	392	620	930	1022
6"	2	45	95	205	366	605	958	1437	1579
8"	3	89	188	408	727	1202	1903	2854	3136
10"	4	151	320	694	1237	2047	3240	4859	5340
12"	5	234	495	1072	1911	3162	5005	7505	8250
14"	6	338	715	1549	2761	4568	7230	10844	11917
16"	8	464	983	2130	3797	6282	9942	14913	16388
18"	11	615	1302	2822	5028	8320	13168	19752	21705
20"	14	791	1674	3628	6465	10698	16931	25396	27908
24"	22	1222	2587	5605	9989	16528	26157	39236	43116

Cv Value — Flanged Butterfly Valves

Size	Flow in Gpm @ 1PSI P @ Various Disc Angles								
	10°	20°	30°	40°	50°	60°	70°	80°	Full 90°Open
4"	1.74	18.3	41.1	88.5	133	284	348	569	632
6"	3.40	42.5	83.3	190	325	535	826	1232	1361
8"	4.48	79.3	163	361	632	1055	1655	2450	2696
10"	5.28	140	291	605	1081	1786	2782	4311	4652
12"	6.60	222	435	930	1671	2731	4286	6432	7122
14"	7.08	299	622	1343	2385	3925	6186	9296	10226
16"	8.88	411	865	1852	3271	5380	8518	12756	14121
18"	10.1	543	1215	2431	4321	7135	11273	16893	18653
20"	14.2	686	1482	3160	5541	9176	14510	21728	23920
24"	26.4	1058	2231	4844	8560	14157	22376	33556	36950
28"	51.7	1062	2528	5126	8921	14353	22566	33752	37850
32"	121	1232	2632	5326	9121	15125	22781	33916	39105
36"	282	1383	2816	5629	9533	15635	25783	35126	39927
40"	316	1463	2921	5726	9815	16335	26183	38133	45143
48"	474	2528	3005	5910	10212	16826	27156	39176	48253

Mounting for Butterfly Valves:



Bolting Data:

SIZE		ANSI 150						
inch	mm	D1 mm	n	M-BOLT	H mm	L mm	L1 mm	L2 mm
2	50	120.5	4	5/8"-11UNC	18	125	105	38
2-1/2	65	139.5	4	5/8"-11UNC	18	130	110	40
3	80	152.5	4	5/8"-11UNC	18	130	110	42
4	100	190.5	8	5/8"-11UNC	18	150	125	48
5	125	216	8	3/4"-10UNC	19	155	130	52
6	150	241.5	8	3/4"-10UNC	19	160	135	52
8	200	298.5	8	3/4"-10UNC	19	170	145	58
10	250	362	12	7/8"-9UNC	23	195	165	64
12	300	432	12	7/8"-9UNC	23	205	175	70
14	350	476	12	1"-8UNC	25	215	185	70
16	400	540	16	1"-8UNC	25	230	195	75
18	450	578	16	1-1/8"-7UNC	29	265	230	80
20	500	635	20	1-1/8"-7UNC	29	300	260	85
24	600	749.5	20	1-1/4"-7UNC	32	335	295	100

SIZE		DIN PN16						
inch	mm	D1 mm	n	M-BOLT	H mm	L mm	L1 mm	L2 mm
2	50	125	4	M16	15	125	105	40
2-1/2	65	145	4	M16	15	125	105	40
3	80	160	8	M16	15	130	110	42
4	100	180	8	M16	15	135	115	42
5	125	210	8	M16	15	145	125	45
6	150	240	8	M20	18	150	130	50
8	200	295	12	M20	18	160	135	50
10	250	355	12	M24	22	185	155	60
12	300	410	12	M24	22	200	170	65
14	350	470	16	M24	22	200	170	65
16	400	525	16	M27	24	220	190	70
18	450	585	20	M27	24	245	210	75
20	500	650	20	M30	26	280	245	80
24	600	770	20	M33	28	310	275	90

Materials:

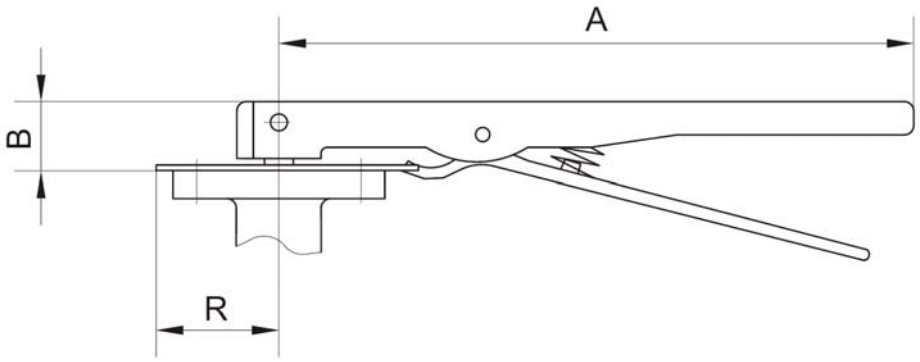
PART NAME	MATERIAL				
	NAME	ASTM		DIN	
BODY	Cast Iron	A126	GR.B	1691	GG-25
	Ductile Iron	A536	GR.65-45-12	1693	GGG-50G
	Carbon Steel	A216	GR.WCB	17245	S-C25
	Stainless Steel	A351	GR.CF8	17445	1.4308
		A351	GR.CF8M	17445	1.4408

PART NAME	MATERIAL				
	NAME	ASTM		DIN	
DISC	Ductile Iron+Ni	A536	GR.65-45-12+Ni	1693	GGG-50+Ni
	AL-Bronze	B148	GR.C954	-	-
	Carbon Steel	A216	GR.WCB+PTFE	17245	GS-C25+PTFE
	Stainless Steel	A351	GR.CF8	17445	1.4308
		A351	GR.CF8M	17445	1.4408
		A351	GR.CF8+PTFE	17445	1.4308+PTFE
		A351	GR.CF8M+PTFE	17445	1.4408+PTFE

PART NAME	MATERIAL				
	NAME	ASTM		DIN	
SHAFT	Stainless Steel	A582	Type.416	-	-
		A276	Type.410	17440	1.4006
		A276	Type.420	17440	1.4021
		A276	Type.304	17440	1.4301
		A276	Type.316	17440	1.4401
		A276	Type.431	17440	1.4057

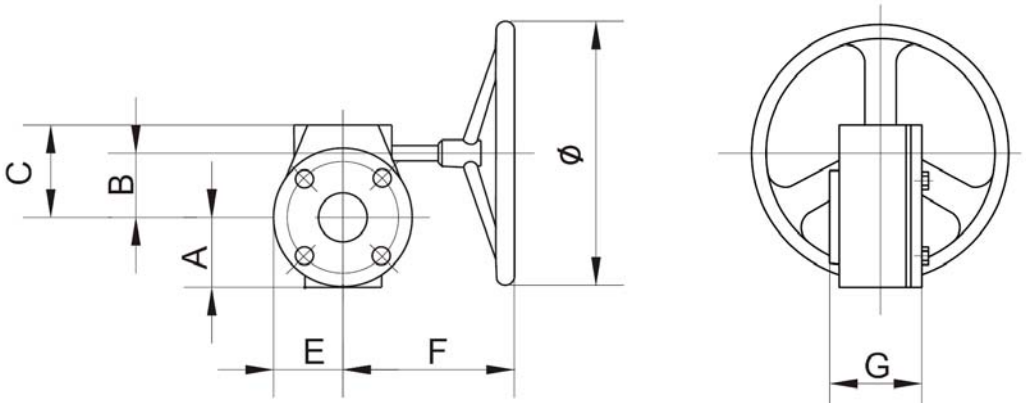
PART NAME	MATERIAL	TEMPERATURE °F	TEMPERATURE °C
SEAT (SOFT SEAL)	Buna-N (NBR)	+10 to 180	-12 to 82
	Buna-N, Food Grade	+10 to 180	-12 to 82
	EPDM	-30 to 250	-35 to 121
	EPDM, Food Grade	-30 to 225	-35 to 107
	EPDM, Heat-Resistant	+30 to 300	-2 to 150
	Viton	+10 to 275	-12 to 135
	Viton, Hign Temp.	+10 to 400	-12 to 204
	Neoprene	+20 to 200	-7 to 93
	Hypalon	0 to 275	-18 to 135
	Silicon	-70 to 425	-57 to 218
	PTFE over EPDM	-20 to 250	-29 to 121
	Pure PTFE	-100 to 400	-74 to 204

Overall Dimensions and Weights of Handles:



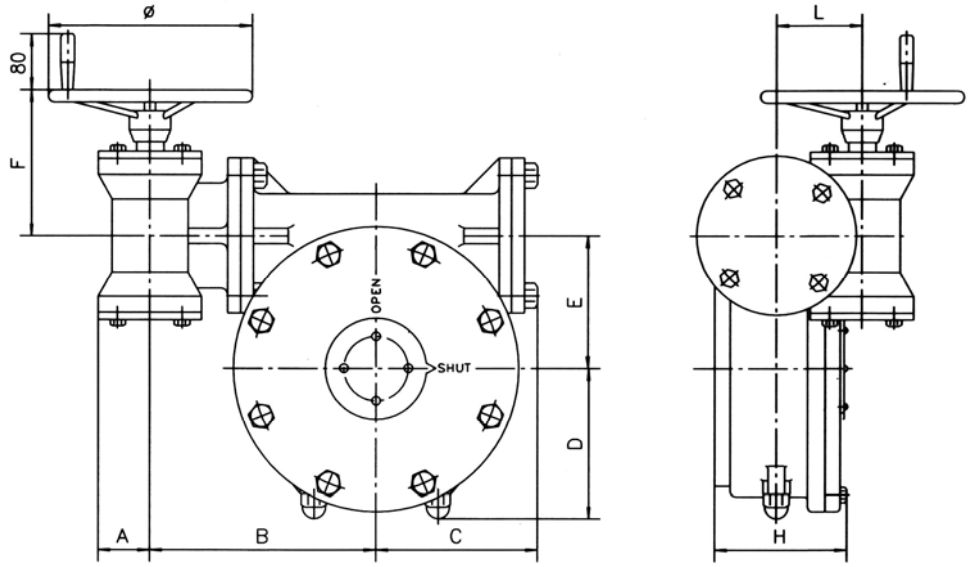
Valve Size	A	B	R	Weight (kg)
DN50 ~ 150	266.7	32	52	0.9
DN200 ~ 300	359	50	75.2	2.3

Overall Dimensions and Weights of Worm Gear:



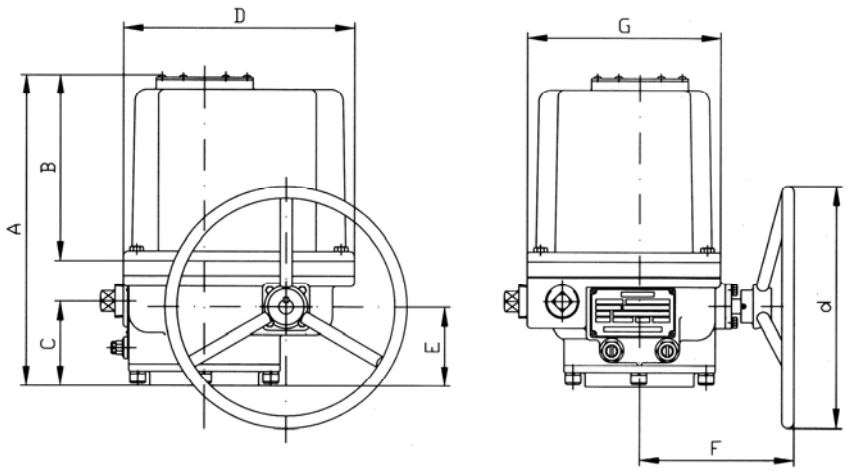
Model	Valve Size	A	B	C	E	F	G	Φ	Weight (kg)
3D-15	DN50 ~ 150	52	45	74	52	152.5	75	150	5.2
3D-50	DN200 ~ 250	75	62.75	101	75	250	86	300	13
3D-120	DN300 ~ 350	81	80	118	81	227	83	300	15

Overall Dimensions and Weights of Double-Stage Gear Actuators:



Model	Valve Size	A	B	C	D	E	F	H	L	Φ	Weight (kg)
3D-30/250	DN400 ~ 500	56.5	178.5	121	115	104	174	125.5	66	300	56.9
3D-30/400	DN600	56.5	197.5	142	144	130	174	145.5	66	300	72.37

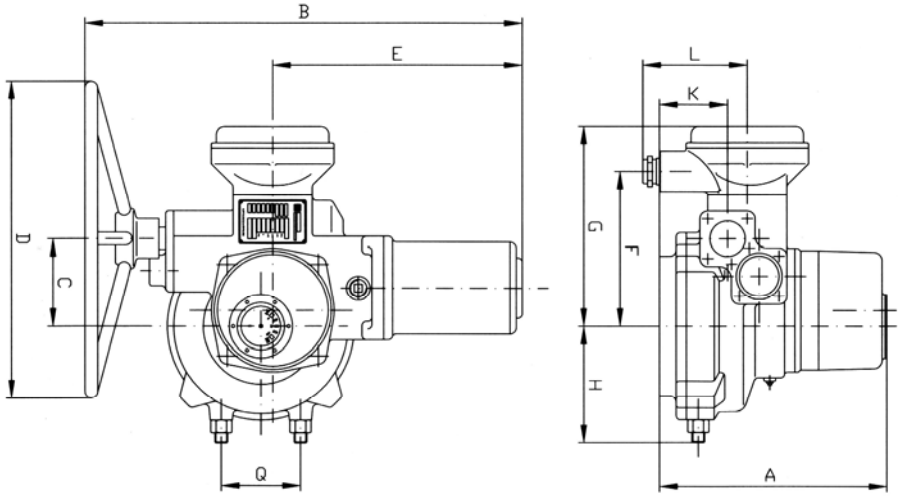
LQA Series Electric Actuator:



Model	Valve Size (PN10/16)	Max. Torque Output (Nm)	Output Speed (r/min)	Motor Power (W)	Time for 90° Turn (S)	A	B	C	D	E	F	G	d	Weight (kg)
LQA5-1	DN50~80	50	1	16	15	255	154	70	191	65	126	160	200	17
LQA10-1	DN100	100	1	30	15									
LQA20-1	DN125~150	200	1	60	15									
LQA40-1	DN200	400	1	90	15	302	171	96	240	86	175	198	300	35
LQA80-1	DN250~300	800	1	180	15									

Note: The enclosure class of LQA series electric actuator is IP54 (GB4208-1998) without flame-proof capability.

802 Series Electric Actuator:

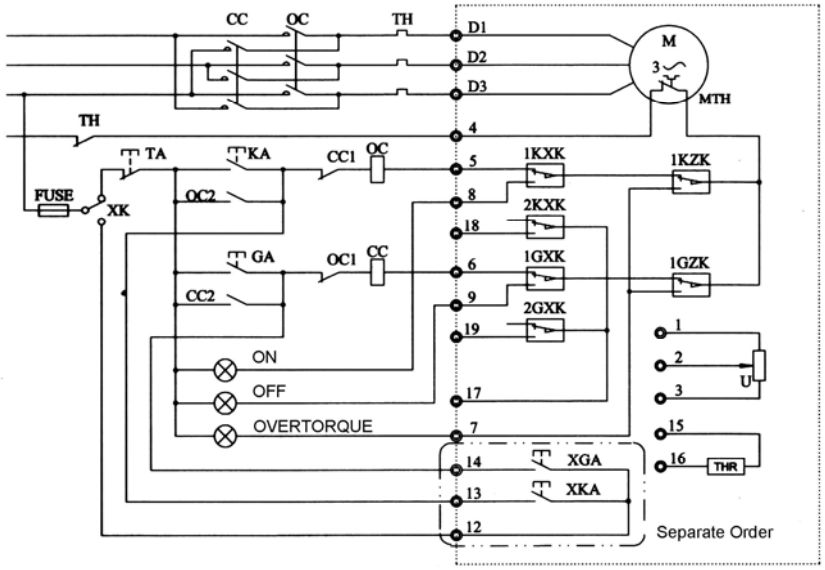


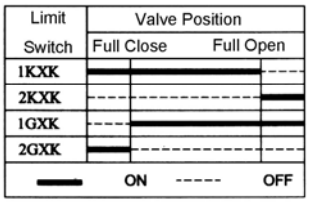
Model	Valve Size (DN)	Max. Torque Output (Nm)	Motor Power (W)	Time for 90° Turn (S)	A	B	C	D	E	F	G	H	L	K	Φ	Weight (kg)
802.10-1	50~100	100	30	15	250	420	79	82	253	156	213	110	132	62	220	35
802.20-1	125~150	200	60	15												
802.60-1	200 ~300	600	180	15	287	552	110	101	330	196	254	156	134	86	360	55
802.120-1	350	1200	370	15												
802.105-0.5	400~450	1500	370	30												
802.250-1	500	2500	750	15	330	625	140	152	365	230	288	185	134	120	500	100
802.500-0.5	600	5000	750	30												

Note: 1. 802.120-1 is for PN16 & DN300.

2. Basic type of 802 series electric actuator can be used outdoors, protective class is IP65(GB4208-1998). Also have flame proof type, please ask for relevant technical information if necessary.

Diagram of Electric Principle for 802 & LQA Series Electric Actuators:



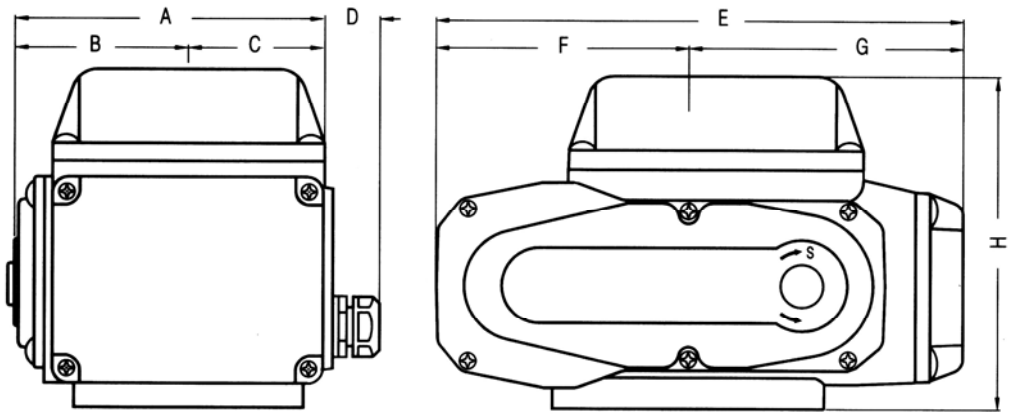


KXK、GXK Limit Switch

KZK、GZK Toque Switch

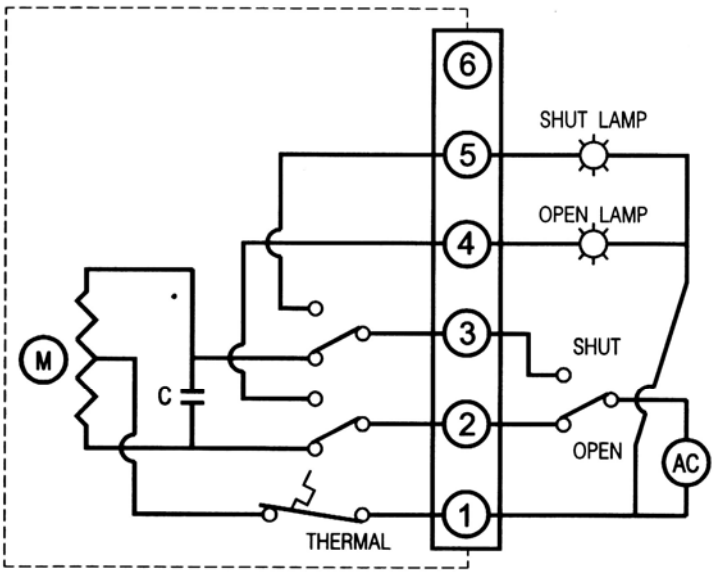
XKA、XGA Local Operating Button

Technical Data for ulli Series Actuators:



Model	Valve Size (DN)	Max. Torque Output (Nm)	Motor Power (W)	Time for 90° Turn (S)	A	B	C	D	E	F	G	H	Weight (kg)
ulli-5	50(2")-80(3")	50	10W/F	20	101	56	45	20	155	86	69	115	2.6
ulli-10	100(4")-125(5")	100	23W/F	30	115	63	52	26	208	98	110	115	3.7
ulli-25	150(6")-200(8")	250	45W/F	30	153	90	63	26	256	123	133	141	6.7
ulli-50	250(10")	500	90W/F	30	153	90	63	26	256	123	133	141	7.3

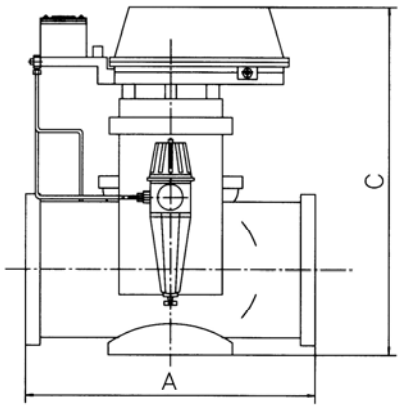
Diagram of Electric Principle for ulli Series Electric Actuators:

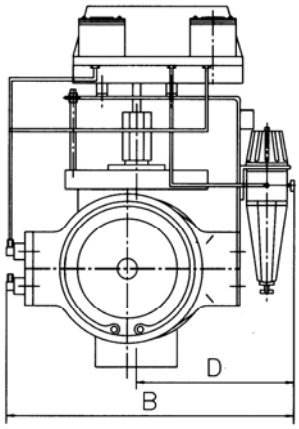


Warning:

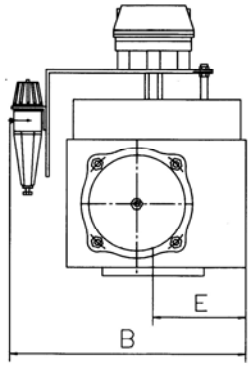
Can not paralleled power cable for two or more sets of electrical actuators. Moreover, one same contact point can not control several electrical actuators. Otherwise, will cause runaway and motor overheated.

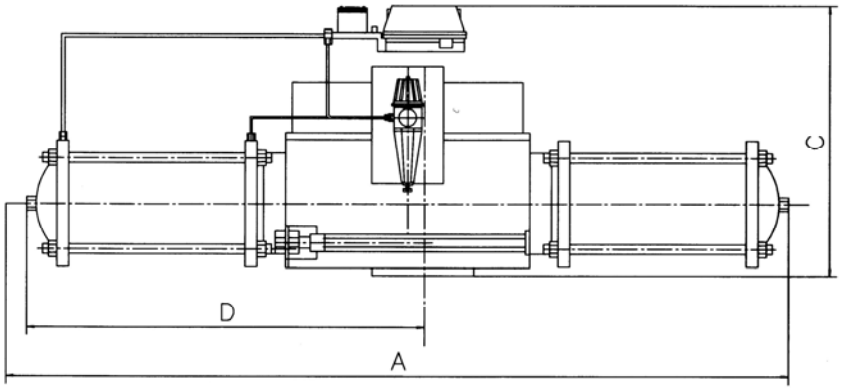
Technical Data for QZ series Pneumatic Actuators:





QZ5-15





QZ45-300

Model		Valve Size (DN)	Air Connection of Cylinder	Air Connection of Solenoid Valve	Air Connection of Electropneumatic Positioner	Air Supply Connection	Max. Output Torque (Nm)	Output turn Angle	Air Supply Pressure (MPa)
QZ5	On-Off	50 ~ 80	2-M10 Depth10	G1/4”	M10X1 Depth10	G1/4”	50	90°±2°	0.5
	Regulating			—					
QZ15	On-Off	100 ~ 150	2-M10 Depth10	G1/4”		G1/4”	150	90°±2°	0.5
	Regulating			—					
QZ45	On-Off	200 ~ 250	2-M12 Depth15	G1/4”		G1/4”	150	90°±2°	0.5
	Regulating		2-M10 Depth15	—					
QZ85	On-Off	300 ~ 350	2-M12 Depth15	G1/4”		G1/4”	850	90°±2°	0.5
	Regulating		2-M10 Depth15	—					
QZ150	On-Off	400 ~ 450	2-M14 Depth15	G3/8”		G1/4”	1500	90°±2°	0.5
	Regulating		2-M10 Depth15	—					
QZ300	On-Off	500 ~ 600	2-M14 Depth15	G3/8”		G1/4”	3000	90°±2°	0.5
	Regulating		2-M10 Depth15	—					

Overall Dimensions & Weights for QZ series Pneumatic Actuators:

Model		A	B	C	D	E	Weight (kg)
QZ5	On-Off	235	295	180	130	—	8
	Regulating	320	265	325			
QZ15	On-Off	250	325	205	170	—	15
	Regulating	320	290	345			
QZ45	On-Off	610	280	380	410	80	35
	Regulating	610	280	400			
QZ85	On-Off	610	305	395	420	110	37
	Regulating	610	305	400			
QZ150	On-Off	765	335	435	500	110	68
	Regulating	765	345	400			
QZ300	On-Off	870	405	460	600	150	95
	Regulating	870	415	400			

Note: Pneumatic actuator can be equipped with solenoid valve, filter reducing valve and feed back signal device for valve position, and equipped with protective hood, but it only can be used indoors, 220V AC and 24V DC power supply can be used in solenoid valve. All above requirements must be indicated in your order.

Reference Table for Materials Application:

Material		Applicable Temperature (℃)	Applicable Medium											Features
			Fresh Water	Sea Water	Salt	Strong Alkali	Weak Alkali	Weak Acid	Natural Gas	Alco-hol	Steam	Oil	Food	
Seat	Natural Rubber	-20 ~ +85	■	■	■	■	■						■	High Elasticity
	Hypalon	-18 ~ +135 ST –18 ~ +149	■	■	■	■	■	■		■				Oxidation Resistant
	EPDM	-45 ~ +135 ST –30 ~ +149	■	■	■						■			Aging Resistant
	Neoprene	-7 ~ +93 ST –7 ~ +107	■	■	■	■	■	■						Light-Proof, Aging Resistant
	NBR	-12 ~ +82 ST –12 ~ +93	■		■		■		■			■		Oil Resistant
	Viton	-12 ~ +135 ST –12 ~ +149	■	■	■		■	■	■			■	■	H. Temp. Resistant, Anti-Corrosion
Disc	Electric Plating DI	-30 ~ +350	■			■				■	■	■		Heat Resistant
	Aluminum Bronze	-273 ~ +232	■	▒		■		■	■	■	■	■		Heat Resistant, Anti-Corrosion
	Stainless Steel	-268 ~ +316	■	▒			■	■	■	■	■	■	■	H. Temp. Resistant, Anti-Corrosion

■ Applicable ▒ Not applicable, while flow rate higher than 1.5m/s.

Numbering System:

1	2	3	4	5	6	—	7	8	9
Valve Size	Valve Type	Actuator	Ends	Structure	Seat		Pressure Rating	Body Material	Disc Material

1. Valve Size	**Code**
DN50 (2”)	50 (2)
DN65 (2-1/2”)	65(2-1/2)
……	…
DN600 (24”)	600(24)
2. Valve Type	**Code**
Butterfly Valve	D
3. Actuator	**Code**
Handles	Omission
Worm Gear	3
Electric Actuator	9
Pneumatic Actuator	6
4. Ends	**Code**
Wafer	7
Wafer, Lug	7L
Flanged, Short Body	4A
Flanged, Long Body	4

5. Structure	**Code**
Center Line Disc	1
6. Seat	**Code**
Natural Rubber	X1
Hypalon	X2
EPDM	X3
Neoprene	X4
NBR	X5
Abraion-Proof Rubber	X6
Viton	X7
Heat Resistant EPDM	X8
7. Pressure Rating	**Code**
PN 1.0 MPa	10
PN 1.6 MPa	16
ANSI Class 125	125
ANSI Class 150	150

8. Body Material	**Code**
Cast Iron, CI	Z
Ductile Iron, DI	Q
Aluminum Bronze	T
Stainless Steel CF8	P
Stainless Steel CF8M	R
Cast Steel, WCB	C
9. Disc Material	**Code**
Electric Plating DI	B1
Aluminum Bronze	B2
Stainless Steel, CF8	B7
Stainless Steel, CF8M	B5

Ordering Information:

In order to ensure your requirement for usage, please explain in detail in your order:

Valve Type, Specification, Material, Nominal Pressure, Working Pressure, and Temperature Used, Max. Flow Rate, Pressure Drop, Medium Composition of valve, Actuator Type and standard for connection of the valve with pipes, etc.

For the convenience usage of consumes, our company can provide flange and bolts completed with valves, and will provide wearing parts according to the requirement of consumes. In selection of product types, consumer can present his requirement for product material, connection standard and technical data and give clear declaration in your contract.

Our company also can carry out study and development on new product according to requirement of consumer.