



BUTTERFLY VALVE

BOLLEBEKKE AVGAE



Product Features

- Small in size & light in weight and maintenance, It can be mounted wherever needed.
- Simple, compact structure, quick 90 degree on-off operation.
- Disc has two-way bearing, perfect seal, without leakage under the pressure test.
- Flow curve tending to straight-line. Excellent regulation performance.
- Various kinds of materials, applicable to different medium.
- Strong wash and brush resistance, and can fit to bad working condition.
- Center plate structure, small torque of open and close.
- Long service life. Standing the test of ten thousands opening and closing operation.
- Can be used in cutting off and regulating medium.



Typical Application

- Water works and water resources project
- Environment protection
- Public facilities
- Power and public utilities
- Building industry
- Petroleum, Chemical
- Steel, Metallurgy
- Paper making industry
- Food, Beverage



• Driving Device Flange

Available with handles, gear operators, electric or pneumatic actuators.

• Strong Precision Key

Applicable to handle and other control device installation.

• Body

Available in wafer and full lug style.

• O-Ring

Primary and secondary stem seal.

• Taper Pin

Precision taper pins connecting stem with disc, to ensure vibration proof and ease of access for maintenance

• Bushing

Reduce driving torque, support stem, separated with body, reduce wear of stem.

• Integral Stem Design

Ensures the dependable and positive disc control.

• Side Seal

Without flange gasket.

• Disc

High precision External disc profile. Reach the requirement of bubble-tight, small start and stop torque, longer usage life of seat.

• Double "D" or Square Cross

Convenient to connect with various actuators, delivering more torque.

• Set Screw

Ensures precise stem position

• Two-Piece Stem Square Driver

No-specie connection applies to any scenario

• Body Without Frame Structure

The seat can separate the body and fluid medium in a precise manner and convenient connection with pipe flange.

• Slim Disc

The longitudinal section area of slim with disc is small, Strong flow capacity.

2"-8" Available with handle.

• Disc Covered Rubber

The disc part which has high medium contact, is rubber covered to ensure high corrosion resistance

• Positioning Screw

To ensures the seat is in the right position

Alignment features of lugged body allow easy installation between pipeline flanges, which is a real installation cost saving, and can be installed in the pipe end.

Technical Data

Series	HD	MD	MDS	PD	BD	AD	ED	KD	UD	FD			
DN Nominal Diameter	DN50 ~ 600 (2" ~ 24")	DN25 ~ 1200 (1" ~ 48")						DN25 ~ 600 (1" ~ 24")					
PN Nominal Pressure	2.0MPa (285PSI)	1.0MPa (150PSI)						1.6MPa (200PSI)					
Testing Pressure	Shell	3.0MPa (428PSI)						1.5MPa (225PSI)			2.4MPa (300PSI)		
	Sealing	2.2MPa (314PSI)						1.1MPa (165PSI)					
Working Temperature		-45 ~ + 150											
Suitable Mediums		Fresh water, Sewage, Sea Water, Air, Vapour, Food, Medicine, Oils, Acids, Alkalies, Salts ect.											

Product Introduction

Series AD



DN50 ~ 300
2" ~ 12"

PN1.0/1.6 MPa
150/200PSI

Series BD



DN50 ~ 600
2" ~ 24"

PN1.0 MPa
150PSI

Series ED



DN25 ~ 600
1" ~ 24"

PN1.0/1.6 MPa
150/200PSI

Series FD



DN40 ~ 300
1.5" ~ 12"

PN1.0 MPa
150PSI

Series HD



DN40 ~ 600
1.5" ~ 24"

PN1.0/1.6 MPa
150/200PSI

Series KD



DN50 ~ 300
2" ~ 12"

PN1.6 MPa
200PSI

Series MD



DN40 ~ 1000
1.5" ~ 40"

PN1.0/1.6 MPa
150/200PSI

Series MDS



DN700 ~ 1200
28" ~ 48"

PN1.0 MPa
150PSI

Series PD



DN50 ~ 300
2" ~ 12"

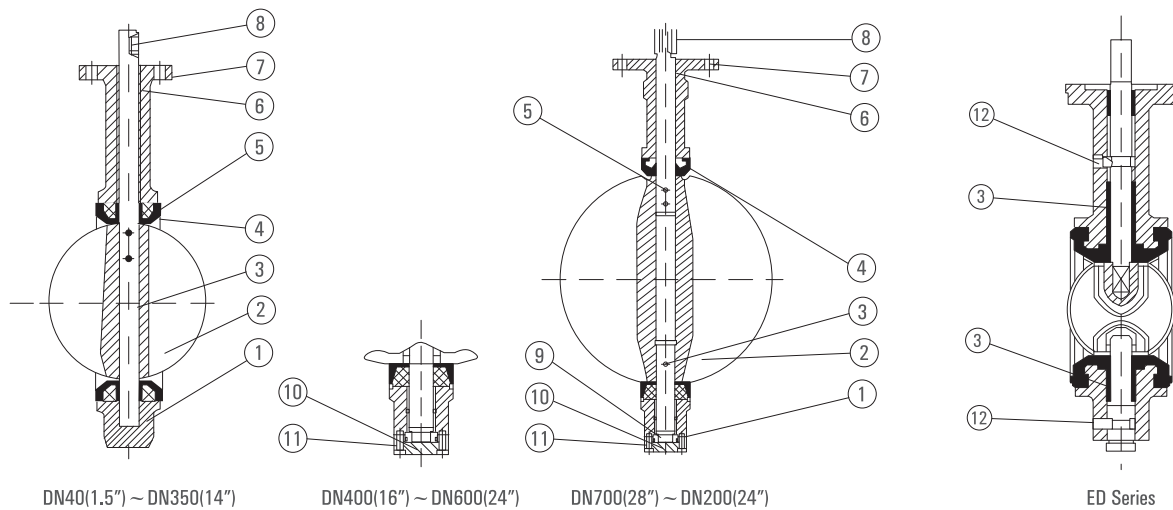
PN1.0/1.6 MPa
150/200PSI

Series UD



DN750 ~ 1200
30" ~ 48"

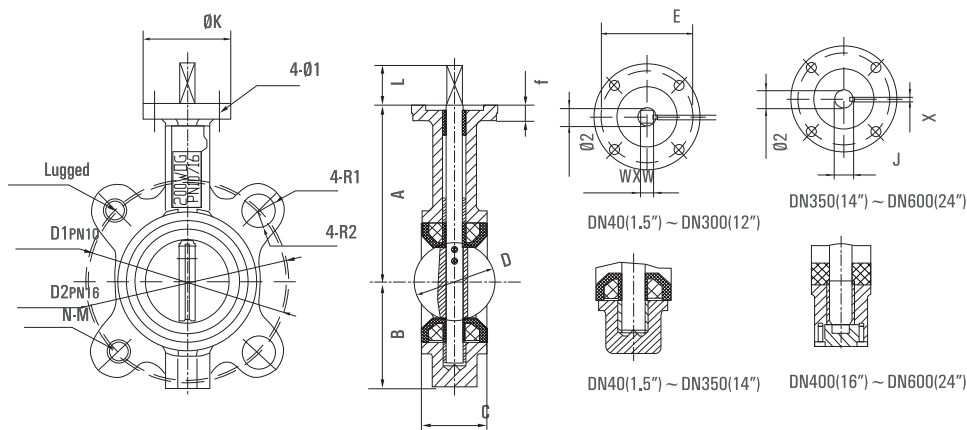
PN1.0 MPa
150PSI



Material of Main Parts

1.Body	Code	4.Seat	Code	°C Temperature	5.Taper Pin	Code
CI	Z	NR	X1	-20 ~ +85	416	
DI	Q				316	
WCB	C	Hypalon	X2	-18 ~ +135	431	
ALB	T				17-4PH	
CF8	P	EPDM	X3	-45 ~ +135 Intermittence -50 ~ +150	6.Bushing	Code
CF8M	R	Neoprene	X4	-7 ~ +93 Intermittence -7 ~ +107	Lubrized Bronze	
2.Disc	Code	NBR	X5	-12 ~ +82 Intermittence -12 ~ +93	PTFE	
DI	B1	Wear-Resistant Rubber	X6	-10 ~ +50	7.O-Ring	Code
ALB	B2	Viton	X7	-23 ~ +150	NBR	
Rubber Lined Disc	B3	Silicon	X8	-40 ~ +200	EPDM	
1.4469/2507 Duplex Stainless Steel	B4	Heat-Resistant EPDM	X9	-20 ~ +150	8.Key	Code
CF8M	B5	White NBR	XA	-12 ~ +82 Intermittence -12 ~ +93	45 1045	
1.4529 Super Austenitic Stainless Steel	B6	White EPDM	XB	-45 ~ +135 Intermittence -50 ~ +150	9.Bearing	Code
CF8	B7	EPDM(NSF)	XC	-45 ~ +135 Intermittence -50 ~ +150	Bearing Steel	
Hastelloy Alloy	B8	Viton B26	XD	-23 ~ +150	10.End Cover	Code
Monel	B9	PTFE	F4	+10 ~ +150	CI	
3.Stem	Code				WCB	
416					CF8	
304					CF8M	
316					11.Bolt	Code
431					Q235 Gr.33 35 1035	
17-4PH					304	
					12.HEX Screw	Code
					Q235-A Gr.33	

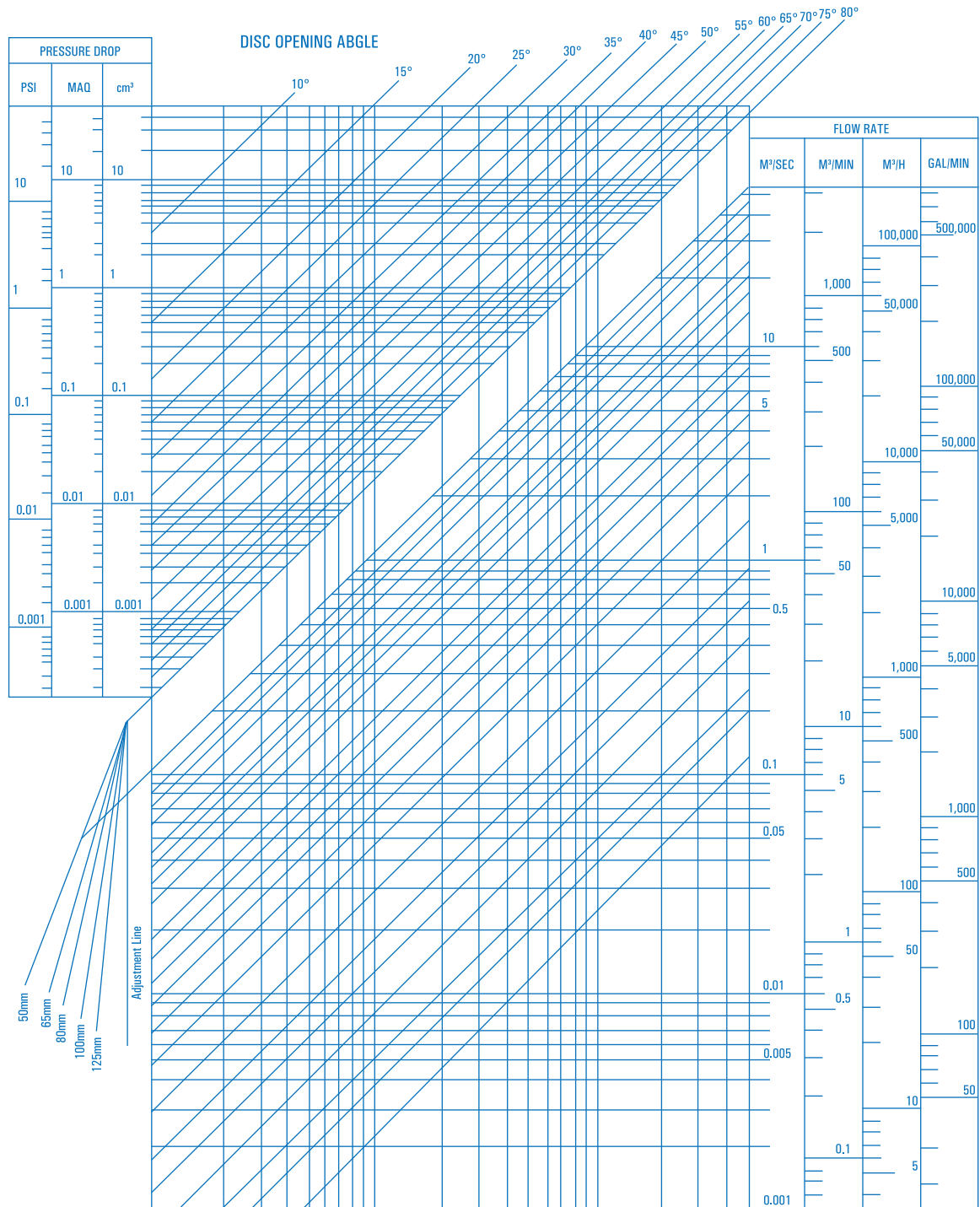
Overall Connection Dimensions & Weight for Wafer Butterfly Valve of Series HD



PN1.0/1.6MPa(150/200PSI)

Size (mm) (inch)	A	B	C	D	D1	D2	N-M	L	$\varnothing 2$	$\varnothing K$	E	R1 (PN10)	R2 (PN16)	n- $\varnothing 1$	f	J	WXW	X	Weight (kg)	
																			Wafer	Lug
DN25	1	-	-	-	-	-	4-M12	-	-	-	-	-	-	-	-	-	-	-	-	-
DN32	1 1/4	-	-	-	-	-	4-M16	-	-	-	-	-	-	-	-	-	-	-	-	-
DN40	1.5	125	73	33	39	110	4-M16	28	12.6	65	50	R9.5	R9.5	4-7	10	-	9x9	-	1.8	2.1
DN50	2	125	73	43	52	125	4-M16	28	12.6	65	50	R9.5	R9.5	4-7	10	-	9x9	-	2.3	2.8
DN65	2.5	136	82	46	64	145	4-M16	28	12.6	65	50	R9.5	R9.5	4-7	10	-	9x9	-	3.3	3.3
DN80	3	142	91	45.21	78	160	8-M16	28	12.6	65	50	R9.5	R9.5	4-7	10	-	9x9	-	3.7	5
DN100	4	163	106	52.07	104	180	8-M16	28	15.77	90	50	R9.5	R9.5	4-10	12	-	11x11	-	5.2	6
DN125	5	176	128	55.5	123	210	8-M16	28	18.92	90	50	R9.5	R9.5	4-10	12	-	14x14	-	7.5	8.6
DN150	6	196	143	55.75	155	240	8-M20	28	18.92	90	70	R11.5	R11.5	4-10	12	-	14x14	-	8.7	11
DN200	8	228	170	60.58	202	295	12-M20 12-M24	38	22.1	125	70	R11.5	R11.5	4-12	15	-	17x17	-	15	25
DN250	10	258	204	68	250	355	16-M20 16-M24	38	28.45	125	102	R11.5	R14	4-12	15	-	22x22	-	23	43
DN300	12	292	239	76.9	301	400	12-M20 12-M24	38	31.6	125	102	R11.5	R14	4-12	15	-	22x22	-	35	46
DN350	14	336	267	76.17	333.3	460	16-M20 16-M24	45	31.6	150	125	R11.5	R14	4-14	18	34.6	-	8	45	77
DN400	16	365	267	85.7	389.6	515	16-M24 16-M27	51 60	33.15	175	140	R14	R15.5	4-18	23	36.15	-	10	65	101
DN450	18	400	315	104.6	440.5	565	20-M24 20-M27	51 60	38	175	140	R14	R14	4-18	23	40.95	-	10	86	139
DN500	20	440	348	130.28	492	650	20-M30 20-M34	57 75	41.14	175	140	R14	R14	4-18	27	44.12	-	10	130.5	179
DN600	24	525	467	151.36	593	770	20-M27 20-M33	70 75	50.65	210	165	R15.5	R15.5	4-22	27	54.62	-	16	190.6	283

Flow Rate-Head Loss Diagram



The curve on the left shows the relationship between valve opening and rate of flow at a constant pressure differential. Generally Butterfly Valves are most suitable for controlling flow but are not recommended for flow control where the valve opening is below 30. (Ideal: 30° to 70°)

Chemical Resistance Guide

Explanation of Ratings

A - Excellent

B - Good

C - Fair

P - Poor

This guide has been prepared to aid in selecting the proper material for various media. This information is intended only as a general guide and should not be taken as guarantee. To insure reliable performance, conduct us for suggested elastomer and the planned media and pressure conditions.

CHEMICALS	BUNA-N	EPDM	HYPALON	NEOPRENE	VITON	BRONZE	DUCTILE IRON	STAINLESS STEEL
Acetone	P	B	P	P	P	A	A	A
Air	A	A	A	A	A	A	A	A
Alcohol, Butyl	B	B	B	B	A	B	A	A
Alcohol, Ethyl	A	A	B	B	-	B	A	B
Alcohol, Methyl	B	A	A	A	A	B	A	A
Asphalt	C	P	-	-	B	A	A	A
Aluminum Acetate	C	B	-	-	C	P	P	A
Ammonia Gas	B	A	P	B	P	A	-	A
Ammonia Liquid	C	A	P	B	P	P	-	A
Aniline Dies	P	B	C	C	B	P	B	A
Barium Nitrate	A	A	B	A	A	P	A	A
Beer	A	A	A	B	A	B	P	-
Beet sugar Liquors	-	A	A	B	C	A	B	A
Benzene(Benzol)	P	P	P	P	B	B	A	B
Brines Saturated	B	B	B	B	B	B	P	B
Butane	P	A	B	B	B	A	A	B
Calcium Chloride	C	A	A	A	A	B	A	B
Carbon Tetrachloride	P	P	-	-	C	P	C	A
Chlorinate (10ppm)	C	B	-	-	B	P	-	B
Citric Acid	B	B	A	A	-	P	P	A
Diesel Oil Fuels	A	P	C	C	A	A	A	A
Dioxane	P	P	B	B	P	A	A	A
Ethylene Glycol	A	A	A	A	A	B	A	B
Freon	B	A	A	A	P	B	B	A
Fructose	A	A	-	-	A	-	A	P
Fule Oil	A	P	C	C	A	B	B	A
Gas Natural	B	P	A	A	A	B	A	A
Gas Sour	C	P	-	-	B	B	B	B
Gasoline Refined	A	P	B	B	A	B	A	A
Glucose	A	B	A	A	-	A	A	-
Grease	A	P	-	-	A	P	A	A
Ink, Newsprint	B	A	-	B	B	P	A	A
JP-4 Fuel	A	P	P	P	A	A	A	A
Kerosene	A	P	C	B	A	A	A	A
Ketones	P	A	P	P	P	A	A	A
Latex	A	C	C	C	B	-	A	A
Linseed Oil	A	C	B	B	A	A	A	A

CHEMICALS	BUNA-N	EPDM	HYPALON	NEOPRENE	VITON	BRONZE	DUCTILE IRON	STAINLESS STEEL
LPG	A	P	P	C	B	A	A	B
Mineral Oils	A	P	B	B	A	A	A	A
Minewater	A	B	C	C	A	C	P	-
Molasses	A	P	A	A	B	A	A	A
Natpha	B	P	P	P	B	B	A	P
Nitric Acid 10%	P	B	A	B	A	P	P	B
Nitric Acid 100%	P	P	-	-	C	P	P	B
Nitrogen	-	A	-	-	-	A	A	A
Oleic Acid	B	C	B	B	C	B	C	B
Oxygen	C	A	A	A	A	A	A	A
Paints, Solvents	P	A	-	-	-	A	A	A
Paraffin	A	P	A	A	A	A	B	A
Phenol Gas	P	C	C	C	B	P	P	A
Tar	C	P	-	C	B	A	A	A
Salt Water	A	A	A	B	A	C	P	A
Sewage	A	B	A	A	A	C	B	B
Soap Solution	A	A	A	A	A	B	B	A
Sugar	A	A	B	B	A	P	B	A
Sulfate Liquor	P	C	B	B	B	P	-	A
Sulfite Liquor	C	A	B	B	B	P	B	B
Sufuric Acid 0-77%	C	B	B	P	B	P	P	B
Sufuric Acid 100%	P	P	B	P	P	P	P	P
Tannic Acid (Tannin)	B	A	A	A	B	B	B	B
Toluol (toluene)	C	P	P	P	B	A	A	A
Trichlorethylene	-	P	P	P	B	A	-	A
Turpentine	C	P	C	C	A	A	A	A
Varnish	B	P	-	-	B	B	-	-
Vinegar	P	A	A	B	A	P	P	A
Water and Lime	A	A	B	B	A	P	P	A

BODY:

CI	85°F ~ 418°F
DI	-34°F ~ 598°F
WCB	-34°F ~ 733°F
CF8	-515°F ~ 1408°F
CF8M	-515°F ~ 940°F

TRIM:

BUNA-N	+10°F ~ 180°F
EPDM	-30°F ~ 275°F
HYPALON	-20°F ~ 275°F
NEOPRENE/FDA	-20°F ~ 200°F
VITON	-20°F ~ 400°F
CF8&CF8M	-450°F ~ 600°F
ALB	-460°F ~ 450°F

Note : If the medium is out of the guide above, please contact us.

Definition of Cv Value

Cv = When valve entirely opened, pressure difference in both sides of valve will be 1 pound/inch², when fluid is 60° F clean water, flow volume of per gallon/min, flowing through valve.

$C_v = Q \sqrt{\frac{G}{\Delta P}}$ Whereas: G = Specific gravity, clean water will be 1.0 Q = Max. flow rate P = pressure difference, 1b/in²

All Series Except Series ED, HD

Size		Flow in Gpm@1PSI P@Various Disc Angles								Full 90° Open
(mm)	(inch)	10°	20°	30°	40°	50°	60°	70°	80°	
DN50	2	0.1	5	12	24	45	64	90	125	135
DN65	2.5	0.2	8	20	37	65	98	144	204	220
DN80	3	0.3	12	22	39	70	116	183	275	302
DN100	4	0.5	17	36	78	139	230	364	546	600
DN125	5	0.8	29	61	133	237	392	620	930	1022
DN150	6	2	45	95	205	366	605	958	1437	1579
DN200	8	3	89	188	408	727	1202	1903	2854	3136
DN250	10	4	151	320	694	1237	2047	3240	4859	5340
DN300	12	5	234	495	1072	1911	3162	5005	7507	8250
DN350	14	6	338	715	1549	2761	4568	7230	10844	11917
DN400	16	8	464	983	2130	3797	6282	9942	14913	16388
DN450	18	11	615	1302	2822	5028	8320	13168	19752	21705
DN500	20	14	791	1674	3628	6465	10698	16931	25396	27908
DN600	24	22	1222	2587	5605	9989	16528	26157	39236	43116
DN700	28	36	1813	3639	6636	10000	14949	22769	34898	49500
DN750	30	47	2357	4731	8627	13000	19434	29600	45367	64350
DN800	32	51	2387	4791	8736	13789	20613	31395	48117	68250
DN900	36	60	3021	6063	11055	17449	26086	39731	60895	86375
DN1000	40	84	4183	8395	15307	24159	36166	55084	84425	119750
DN1050	42	118	5860	11711	21430	33823	50632	77118	11820	167650
DN1200	48	177	8784	17567	32145	50735	75948	11567	17730	251475

Series ED

Size		Flow in Gpm@1PSI P@Various Disc Angles								Full 90° Open
(mm)	(inch)	10°	20°	30°	40°	50°	60°	70°	80°	
DN25	1	0.1	1.1	3.4	6.9	11	17	29	46	52
DN32	1.25	0.1	1.1	3.4	6.9	11	17	29	46	52
DN40	1.5	0.2	1.5	6.5	10	16	25	38	70	95
DN50	2	0.4	2	9	17	28	46	77	139	154
DN65	2.5	0.6	4	13	28	50	84	140	252	280
DN80	3	0.8	7	21	48	86	143	238	428	475
DN100	4	1	11	34	76	137	228	380	684	760
DN125	5	1.5	16	47	104	188	313	522	940	1044
DN150	6	2	31	94	209	376	627	1045	1881	2090
DN200	8	3	62	185	412	742	1236	2060	3708	4120
DN250	10	4	127	380	845	1521	2536	4226	7607	8453
DN300	12	5	157	471	1047	1884	3140	5233	9419	10465

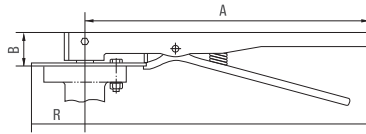
DN350(14")-DN600(24") Cv Value the same with series MD

Series HD

Size		Flow in Gpm@1PSI P@Various Disc Angles								Full 90° Open
(mm)	(inch)	10°	20°	30°	40°	50°	60°	70°	80°	
DN150	6	0.8	34	94	153	257	422	706	1154	1320
DN200	8	2	56	154	251	422	693	1158	1892	2165
DN250	10	3	87	238	385	654	1073	1794	2931	3353
DN300	12	4	153	417	681	1145	1879	3142	5132	5827
DN350	14	6	183	500	816	1372	2252	3765	6150	7037
DN400	16	8	271	740	1208	2031	3333	5573	9104	10416
DN450	18	11	318	867	1417	2382	3909	6535	10676	12215
DN500	20	14	415	1133	1851	3112	5107	8538	13948	15959
DN600	24	22	543	1482	2421	4069	6678	11165	18240	20869

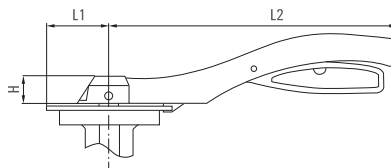
DN50(5")-DN125(5") Cv Value the same with series MD

• Overall Dimension & Weight of Handle Lever



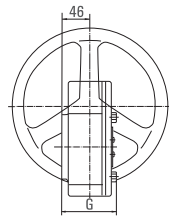
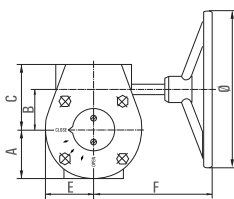
Size mm (inch)	A	B	R	Weight (kg)
50(2") ~ 150(6")	266.7	32	52	0.9
200(8") ~ 300(12")	359	50	75.2	2.3

• Overall Dimension & Weight of Aluminum Handle Lever



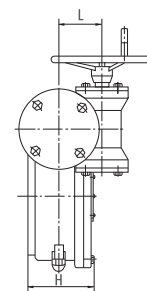
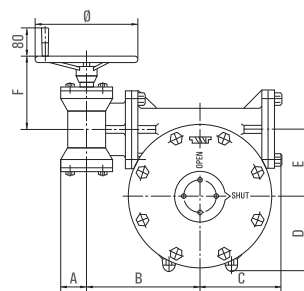
Size mm (inch)	L1	L2	H	Weight (kg)
50(2") ~ 80(3")	47	170	29	0.35
100(4") ~ 150(6")	47	215	33	0.67

• Overall Dimension & Weight of Worm Gearing



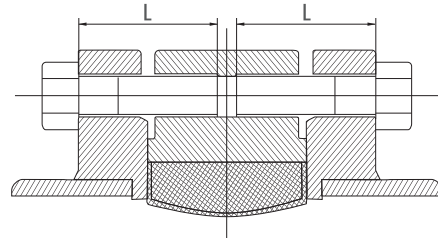
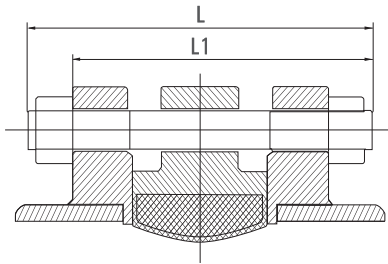
Type	Size mm (inch)	A	B	C	E	F	G	Ø	Weight (kg)
3Da ~ 15	50(2")-150(6")	53	45	71	53	174	70	150	5.2
3Da ~ 50	200(8")-250(10")	76	63	76	76	237	86	300	13
3Da ~ 120	300(12")-350(14")	82	78	86	82	225	88	300	15

• Overall Dimension & Weight of Secondary Worm Gearing



Type	Size mm (inch)		A	B	C	D	E	F	H	L	Ø	Weight (kg)
	PN1.0Mpa	PN1.6/2.0Mpa										
3D ~ 30/250	400(16") ~ 500(20")	400(16") ~ 450(18")	45	181	103.5	103.5	94	160	110	57	300	56.9
3D ~ 30/400	600(24")	500(20")	46	199.5	131	131	125	176	128	66	400	72.37
3D ~ 60/800	700(28") ~ 800(32")	600(24")	55	228	146	146	140	215	157	88	400	124
3D ~ 120/1500	900(36") ~ 1000(40")	600(24") ~ 700(28")	55	243	170	170	162.5	240	170	88	400	158
3D ~ 120/2500	1050(42") ~ 1200(48")	800(32") ~ 1000(40")	70	302	250	180	236	255	209	126	450	370
3D ~ 200/4000	1400(56")	1100(44") ~ 1200(48")	70	414	362	248	345	255	287	150	500	420

Size & Quantity of Bolts for Valve Installation



Size		1.0MPa					1.6MPa				
		Stud Bolt (for Wafer Valve)			Hexagon Head Bolt (for Lug Type)		Stud Bolt (for Wafer Valve)			Hexagon Head Bolt (for Lug Type)	
mm	inch	Qty	Dia x L1	Length	Qty	Dia x L1	Qty	Dia x L1	Length	Qty	Dia x L1
40	1.5	4	M16x100	120	4x2	M16x38	4	M16x100	120	4x2	M16x38
50	2	4	M16x110	130	4x2	M16x40	4	M16x110	130	4X2	M16X40
65	2.5	4	M16x120	140	4x2	M16x45	4	M16x120	140	4X2	M16X45
80	3	8	M16x120	140	8x2	M16x45	8	M16x120	140	8X2	M16X45
100	4	8	M16x130	150	8x2	M16x50	8	M16x130	150	8X2	M16X50
125	5	8	M16x130	150	8x2	M16x50	8	M16x130	150	8X2	M16X50
150	6	8	M20x140	165	8x2	M20x50	8	M20x140	165	8X2	M20X50
200	8	8	M20x150	175	8x2	M20x55	12	M20x150	175	12X2	M20X55
250	10	12	M20x160	185	12x2	M20x60	12	M24x160	185	12X2	M24X60
300	12	12	M20x170	195	12x2	M20x65	12	M24x170	200	12X2	M24X65
350	14	16	M20x170	195	16x2	M20x65	16	M24x170	200	16X2	M24X65
400	16	16	M24x190	220	16x2	M24x75	16	M27x200	230	16X2	M27X75
450	18	20	M24x220	250	20x2	M24x80	20	M27x220	254	20X2	M27X80
500	20	20	M24x260	290	20x2	M24x90	20	M30x260	294	20X2	M30X90
600	24	20	M27x290	324	20x2	M27x100	20	M33x290	334	20X2	M33X100
700	28	24	M27x300	334	-	-	20	M33x300	341	4X2	M33X90
800	32	24	M30x330	364	-	-	24	M36x330	375	-	-
900	36	24	M30x350	388	4x2	M30x100	-	-	-	-	-
1000	40	24	M33x370	411	4x2	M33x100	-	-	-	-	-
1200	48	28	M36x425	470	4x2	M36x115	-	-	-	-	-

U-Section

Wafer Type							Lug Type				
750	30	24	1 1/4-7x14.17 UNC	-	4x2	1 1/4-7x3.74 UNC	-	-	-	28x2	1 1/4-7x3.74 UNC
900	36	24	1 1/2-6x16.54 UNC	-	4x2	1 1/2-6x4.13 UNC	-	-	-	28x2	1 1/2-6x4.13 UNC
1050	42	28	1 1/2-6x18.9 UNC	-	4x2	1 1/2-6x4.53 UNC	-	-	-	32x2	1 1/2-6x4.53 UNC
1200	48	36	1 1/2-6x20.47 UNC	-	4x2	1 1/2-6x4.72 UNC	-	-	-	40x2	1 1/2-6x4.72 UNC

Note:

- The stud bolts are in accordance with GB898-88bm=1.25d.
- The hexagon head bolts are in accordance with GB5780-86.
- The hexagon head bolts are used at the two necks of 900(36") 1000(40") PN1.6 MPa. Type Wafer valve body. The quantity is 4x2 and listed in the column of hexagon-headed bolt.
- The length of fastener is based on the flange thickness drawing on page of 24 consumer should modify the length according to the pipe flange standard.



Order Description

Please ensure that your order contains as much information as possible, in particular, the follow information would be very helpful: Valve Type, Material, Nominal Pressure, Working Pressure, Tempareture, Max Flow Rate, Valve Composition And materials Used in each component

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