

## Butterfly Valve

### Manual Butterfly Valves

#### PRODUCT DATA



### GENERAL

The BS-HWC4 Manual Butterfly Valves is designed for Chilled & Hot Water to be operated by Hand lever or Gear Box (BS-MWC4)

### FEATURES

- Wide Size range (DN40...DN900)
- Operated by Lever or Gear Box.
- 90 deg opening/closing operation.
- Cast iron Body with epoxy powder coating.
- Epoxy Coated Ductile Iron disc.
- Wafer type Connections

### SPECIFICATIONS

Sizes	DN40...DN900
Nominal pressure	PN16, PN25
Medium Temperature	-10°C ~ +110°C Maximum
Body Material	IS: 210, FG 220 CI
Stem Material	ASTM A276, GR SS 410
Disc Material	Epoxy Coated Ductile Iron Disc
Lever	CRCA SHEET
Leakage Rate	No visible leakage
Medium Type	Water
Flange standard	IS 1538
Shell Test pressure	24bar
Seal Test pressure	17bar

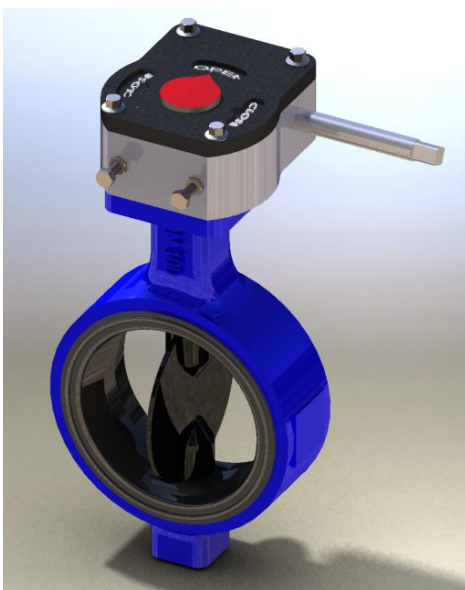


Table (1) Valve Size

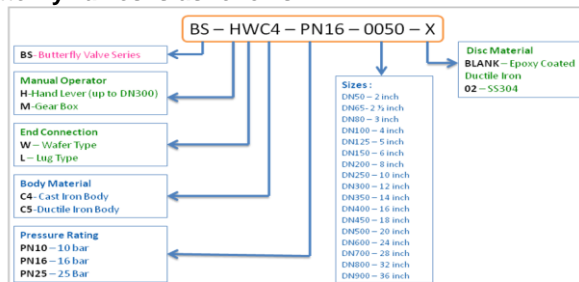
Size	Model Number	Max. Kvs	Torque (Nm)	Manual Operator	Operator Weight (Kg)	Total Weight (Kg)
DN50	BS-MWC4-PN16-0050	115	<30	Gear Box	4.5	6.8
DN65	BS-MWC4-PN16-0065	196	<30	Gear Box	4.5	7.3
DN80	BS-MWC4-PN16-0080	302	<30	Gear Box	4.5	7.8
DN100	BS-MWC4-PN16-0100	600	<35	Gear Box	4.5	9.4
DN125	BS-MWC4-PN16-0125	1,022	<70	Gear Box	4.5	10.9
DN150	BS-MWC4-PN16-0150	1,579	<80	Gear Box	4.5	12.2
DN200	BS-MWC4-PN16-0200	3,136	<120	Gear Box	13	25.9
DN250	BS-MWC4-PN16-0250	5,340	<350	Gear Box	13	32.2
DN300	BS-MWC4-PN16-0300	8,250	<350	Gear Box	15	47.5
DN350	BS-MWC4-PN16-0350	11,917	<800	Gear Box	15	56.3
DN400	BS-MWC4-PN16-0400	16,388	<1200	Gear Box	57	118
DN450	BS-MWC4-PN16-0450	21,705	<1600	Gear Box	57	136
DN500	BS-MWC4-PN16-0500	27,908	<2200	Gear Box	57	185
DN600	BS-MWC4-PN16-0600	43,116	<3100	Gear Box	72	260
DN700	BS-MWC4-PN16-0700	58,696	*****	Gear Box	85	361
DN800	BS-MWC4-PN16-0800	68,250	*****	Gear Box	85	445
DN900	BS-MWC4-PN16-0900	83,375	*****	Gear Box	124	830.8

DN40	BS-HWC4-PN16-0040	70	<25	Lever	0.270	1.8
DN50	BS-HWC4-PN16-0050	115	<30	Lever	0.270	2.6
DN65	BS-HWC4-PN16-0065	196	<30	Lever	0.270	3.1
DN80	BS-HWC4-PN16-0080	302	<30	Lever	0.460	3.8
DN100	BS-HWC4-PN16-0100	600	<35	Lever	0.460	5.4
DN125	BS-HWC4-PN16-0125	1,022	<70	Lever	0.630	7.1
DN150	BS-HWC4-PN16-0150	1,579	<80	Lever	0.630	8.3
DN200	BS-HWC4-PN16-0200	3,136	<120	Lever	0.630	14.7
DN250	BS-HWC4-PN16-0250	5,340	<350	Lever	1.155	20.7
DN300	BS-HWC4-PN16-0300	8,250	<350	Lever	1.155	30

\*More Models please refers to the labeling method in figure.

The labeling system for manual butterfly valves is as follows:

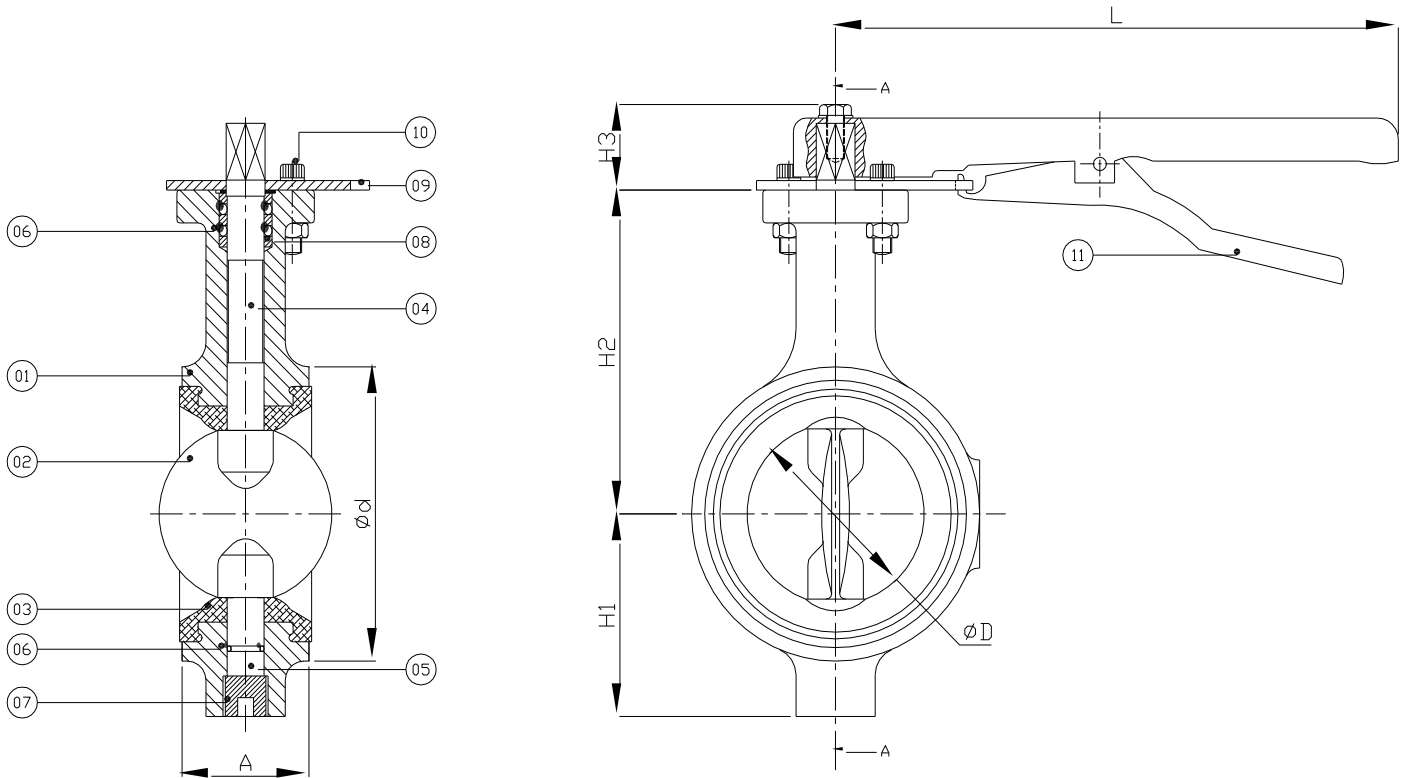


e.g. BS-HWC4-PN16-0050: Butterfly Valve Series, Hand lever Operator, End connection Wafer Type, Cast Iron Body, Nominal Pressure 16 bar, Size DN50-2 inch., Epoxy Coated Ductile Iron Disc.

e.g. BS-MWC5-PN25-0100-02: Butterfly Valve Series, Gear Box Operator, End connection Wafer Type, Cast Iron Body, Nominal Pressure 25 bar, Size DN80-4 inch., SS304 Disc.

Part Description & outside dimension (mm)

a. Valve size DN40...300 with Lever Operator (PN16)



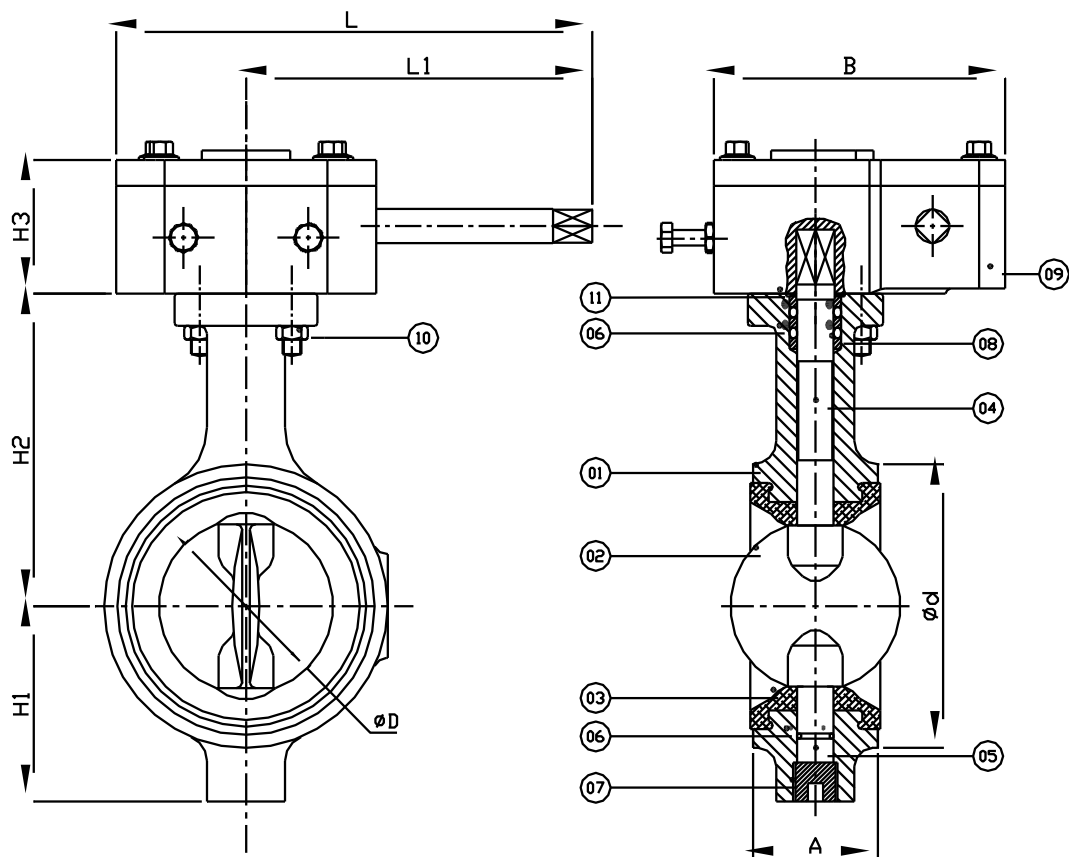
□ Part Descriptions

Part No.	1	2	3	4	5	6	7	8	9	10	11
Description	Body	Disc	Liner	Upper Stem	Lower Stem	O-Ring	Plug	Bush	Notch Plate	Fastener	Hand Lever
Material	IS:210 Gr FG200	D.I (Epoxy Coated)	EPDM 6465	ASTM A 276, Gr SS410	ASTM A 276, Gr SS410	EPDM	M. S (Chrome Plated)	PTFE	M. S. (Powder Coating)	S. S	M. S (Powder Coating)

□ Outside Dimension (mm)

Valve Size	A	H1	H2	H3	L	ØD	Ø d
DN40	33	61	106	28	175	40.5	84
DN50	43	67	110	28	175	50.5	94
DN65	46	75	118	34	216	65	110
DN80	46	82	130	34	216	80	127
DN100	52	100	145	39	267	100	150
DN125	56	114	156	39	267	123	175
DN150	56	135	176	39	267	148.5	205
DN200	60	161	220	45	350	197	265
DN250	68	205	280	45	350	250.5	325
DN300	78	230	305	45	350	299.5	376

b. Valve Size DN40...200 with Gear Box Operator (PN16)



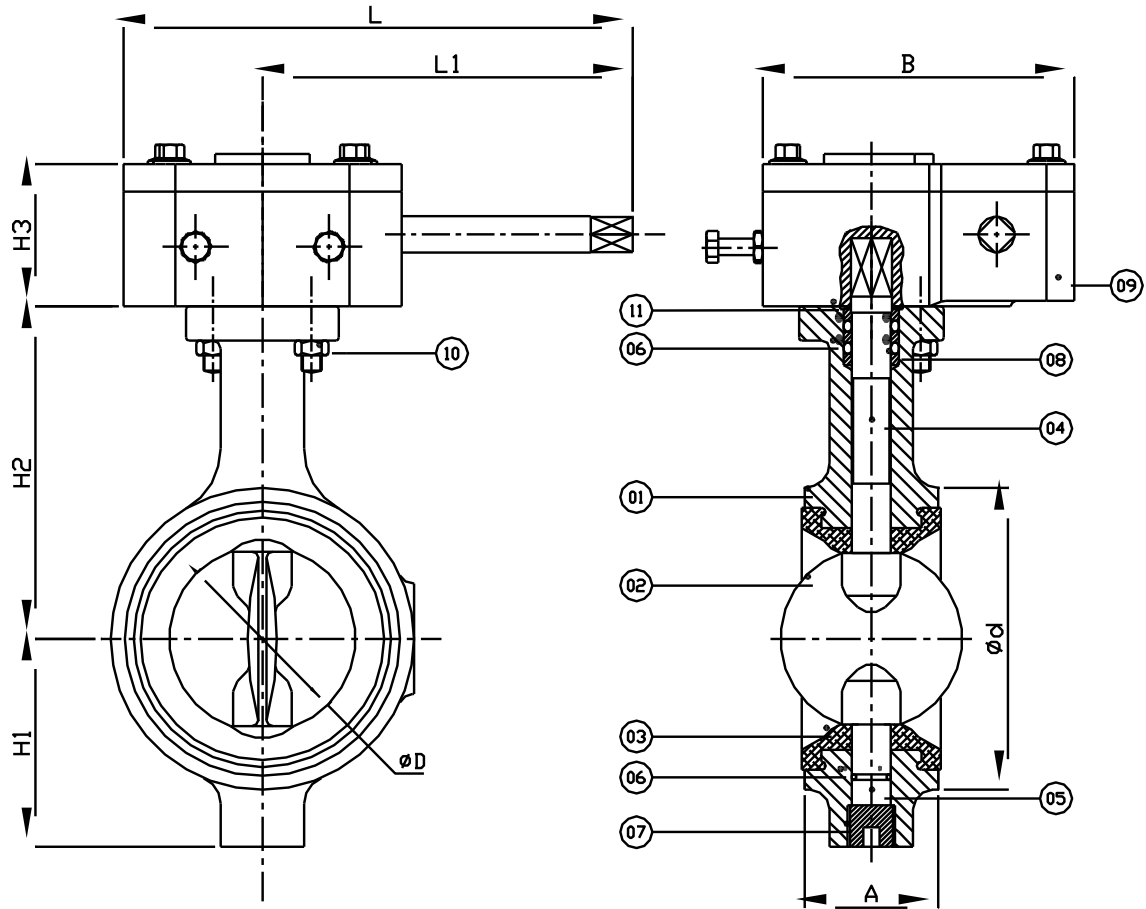
□ Part Descriptions

Part No.	1	2	3	4	5	6	7	8	9	10
Description	Body	Disc	Liner	Upper Stem	Lower Stem	O-Ring	Plug	Bush	Gear Box	Fastener
Material	IS:210 Gr FG200	D.I (Epoxy Coated)	EPDM 6465	ASTM A 276, Gr SS410	ASTM A 276, Gr SS410	EPDM	M. S (Chrome Plated)	PTFE	Cast Iron	S. S

□ Outside Dimension (mm)

Valve Size	A	H1	H2	H3	L	L1	B	ØD	Ø d
DN50	43	67	110	60	182	115	112	50.5	94
DN65	46	75	118	60	182	115	112	65	110
DN80	46	82	130	60	182	115	112	80	127
DN100	52	100	145	60	182	115	112	100	150
DN125	56	114	156	60	182	115	112	123	175
DN150	56	135	176	60	182	115	112	148.5	205
DN200	60	161	220	60	182	115	112	197	265

b. Valve Size DN250...400 with Gear Box Operator (PN16)



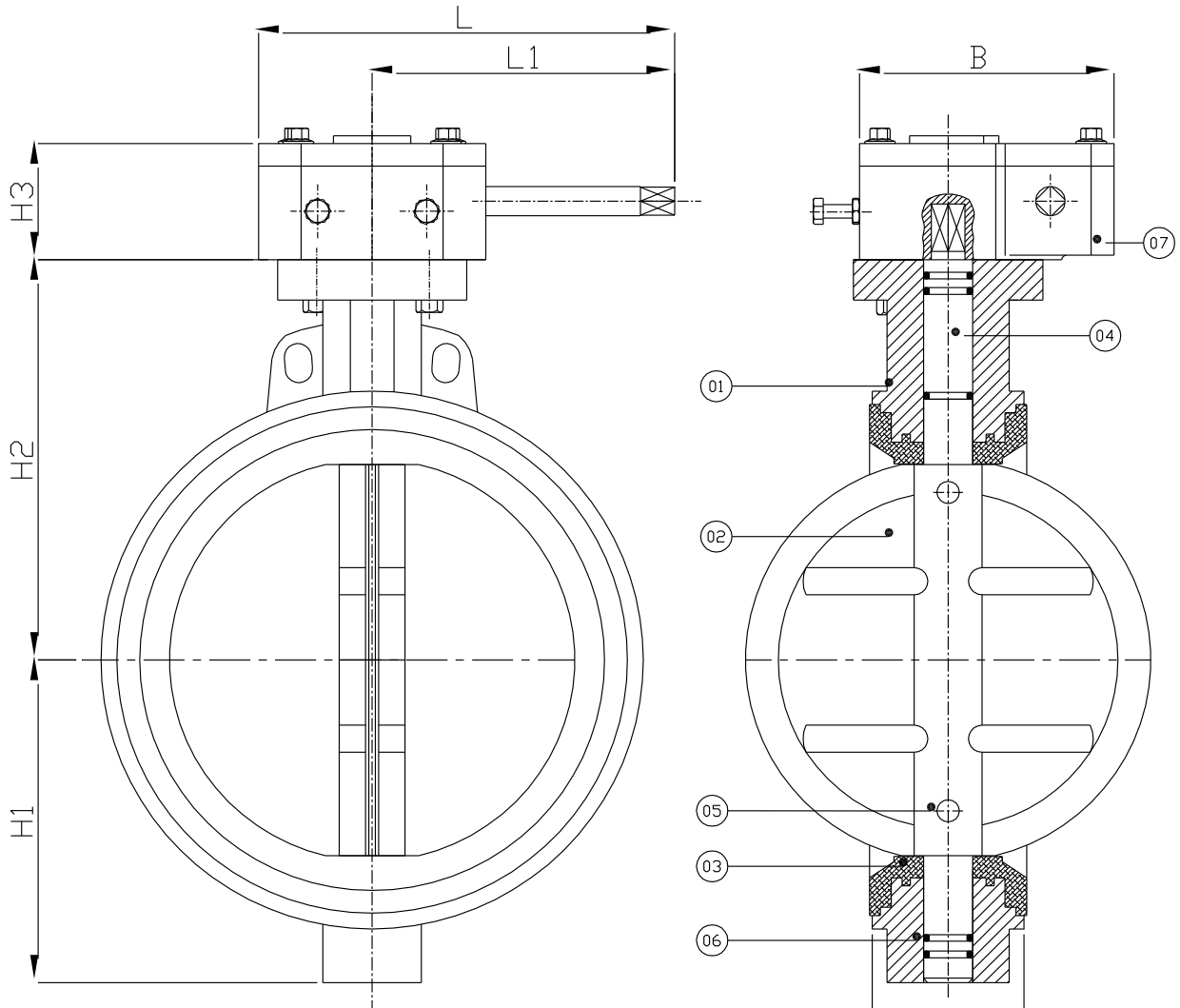
□ Part Descriptions

Part No.	1	2	3	4	5	6	7	8	9	10
Description	Body	Disc	Liner	Upper Stem	Lower Stem	O-Ring	Plug	Bush	Gear Box	Fastener
Material	IS:210 Gr FG200	D.I (Epoxy Coated)	EPDM 6465	ASTM A 276, Gr SS410	ASTM A 276, Gr SS410	EPDM	M. S (Chrome Plated)	PTFE	Cast Iron	S. S

□ Outside Dimension (mm)

Valve Size	A	H1	H2	H3	L	L1	B	ØD	Ø d
DN250	68	205	110	60	182	115	112	250.5	325
DN300	78	230	118	60	182	115	112	299.5	376
DN350	92	280	130	72	308	195	155	351	444
DN400	102	305	145	72	308	195	155	403	501

c. Valve Size DN450...600 with Gear Box Operator (PN16)



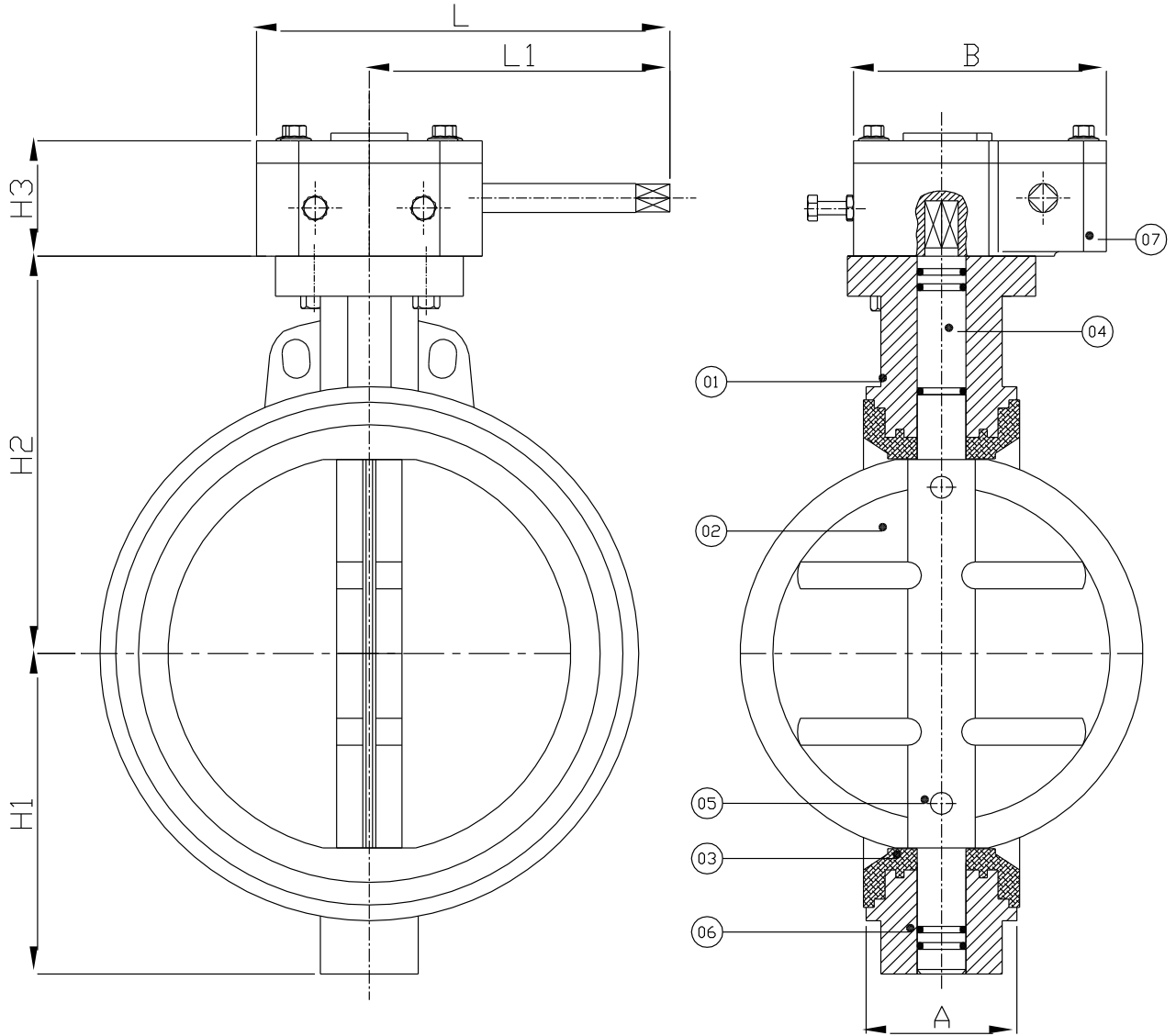
□ Part Descriptions

Part No.	1	2	3	4	5	6	7	8
Description	Body	Disc	Liner	Stem	Pin	O-Ring	Gear Box	Fastener
Material	IS:210 Gr FG200	D.I (Epoxy Coated)	EPDM 6465	ASTM A 276, Gr SS410	SS 410	EPDM	Cast Iron	S. S

□ Outside Dimension (mm)

Valve Size	A	H1	H2	H3	L	L1	B	∅D	∅d	Wheel Diameter
DN450	114	318	443	72	308	195	155	453	555	360
DN500	127	357	472	72	308	195	155	503	620	360
DN550	127	385	500	72	308	195	155	553	665	360
DN600	154	402	517	72	308	195	155	603	705	360

d. Valve Size DN700...900 with Gear Box Operator (PN16)



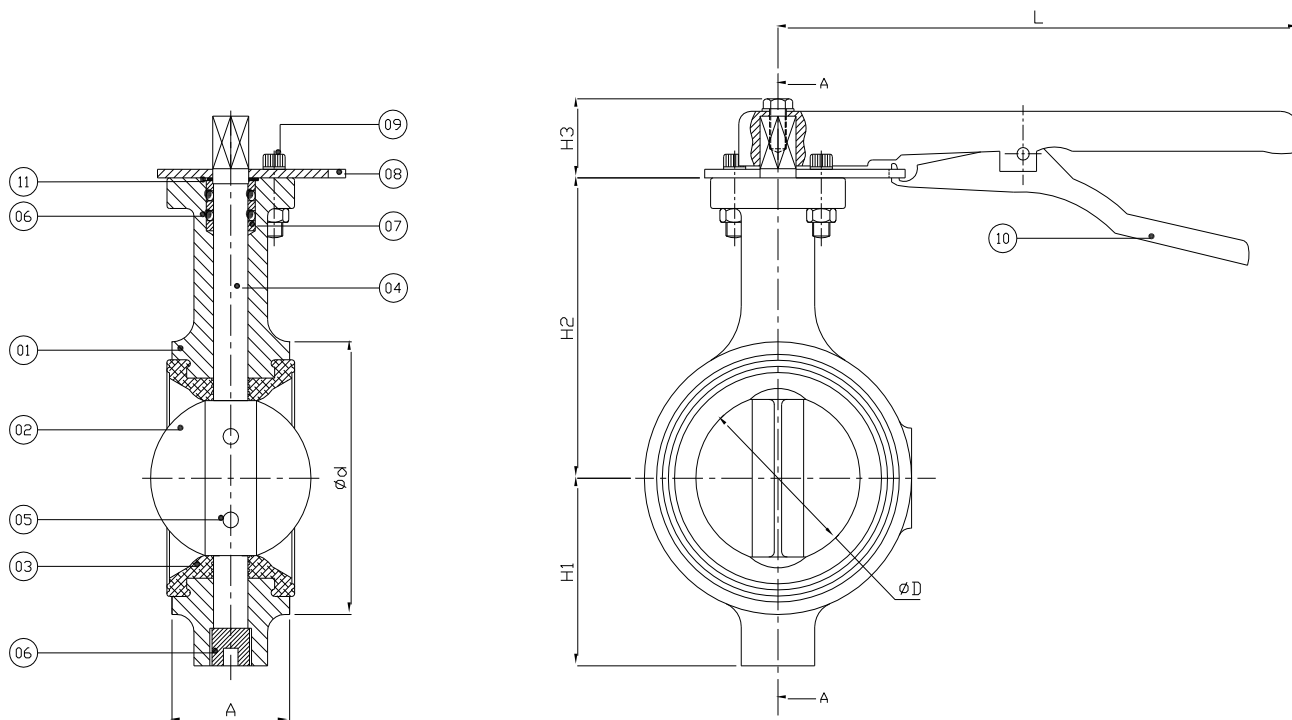
□ Part Descriptions

Part No.	1	2	3	4	5	6	7	8
Description	Body	Disc	Liner	Stem	Pin	O-Ring	Gear Box	Fastener
Material	IS:210 Gr FG200	D.I (Epoxy Coated)	EPDM 6465	ASTM A 276, Gr SS410	SS 410	EPDM	Cast Iron	S. S

□ Outside Dimension (mm)

Valve Size	A	H1	H2	H3	L	L1	B	∅D	∅d	Wheel Diameter
DN700	229	520	625	72	308	195	155	703	805	360
DN800	241	590	670	72	308	195	155	803	914	360
DN900	241	655	720	72	308	195	155	901	1012	360

e. Valve size DN40...200 with Lever Operator (PN25)



□ Part Descriptions

Part No.	1	2	3	4	5	6	7	8	9	10
Description	Body	Disc	Liner	Stem	Pin	Plug	Bush	Notch Plate	Fastener	Hand Lever
Material	D.I	D.I (Epoxy Coated)	EPDM 6465	ASTM A 276, Gr SS304	S.S	M. S (Chrome Plated)	PTFE	M. S. (Powder Coating)	S. S	M. S (Powder Coating)

□ Outside Dimension (mm)

Valve Size		A	H1	H2	H3	L	ØD	Ø d
DN	inch							
40	1.5"	33	61	106	28	175	40.5	84
50	2"	43	67	110	28	175	50.50	94
65	2.5"	46	75	118	34	216	65	110
80	3"	46	82	130	34	216	80	127
100	4"	52	100	145	39	267	100	150
125	5"	56	114	156	39	267	123	175
150	6"	56	135	176	39	267	148.50	205
200	8"	60	161	220	45	350	197	265
250	10"	68	205	280	45	350	250.50	325
300	12"	78	230	305	45	350	299.50	376



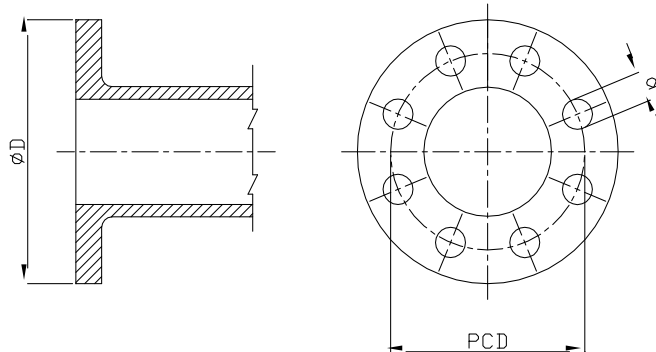
- Piping Connection Flange meets IS:1538
- It can be operated by lever or Gear Box.

**Table (2) Hydraulic Characteristics**

The below table shows the Kvs at different opening angles:

Size	Kvs at Disk Opening Angle								
	10°	20°	30°	40°	50°	60°	70°	80°	90°
40	0.05	1	6	12	20	34	50	55	70
50	0.1	5	12	24	45	64	90	125	115
65	0.2	8	20	37	65	98	144	204	196
80	0.3	12	22	39	70	116	183	275	302
100	0.5	17	36	78	139	230	364	546	600
125	0.8	29	61	133	237	392	620	930	1,022
150	2	45	95	205	366	605	958	1,437	1,579
200	3	89	188	408	727	1,202	1,903	2,854	3,136
250	4	151	320	694	1,237	2,047	3,240	4,859	5,340
300	5	324	495	1,072	1,911	3,162	5,005	7,507	8,250
350	6	338	715	1,549	2,761	4,568	7,230	10,844	11,917
400	8	464	983	2,130	3,797	6,282	9,942	14,913	16,388
450	11	615	1,302	2,822	5,028	8,320	13,168	19,752	21,705
500	14	791	1,674	3,628	6,465	10,698	16,931	25,396	27,908
600	22	1,222	2,587	5,605	9,989	16,528	26,175	39,236	43,116
700	30	1,663	3,522	7,630	12,599	20,036	30,482	46,899	58,696
800	45	2,387	4,791	8,736	13,788	20,613	31,395	48,117	68,250
900	60	3,021	6,063	11,055	17,449	26,086	39,731	60,895	83,375

Table (3) Flange Dimensions (As per IS: 1538) compatible with Butterfly valve



Size	Flange ØiD	Flange ØoD	PCD	Hole Dia (d)	No. Of Holes
50	52.60*	165	125	19	4
65	62.70*	185	145	19	4
80	78.00*	200	160	19	4
100	102.40*	220	180	19	8
125	128.30*	250	210	19	8
150	154.20*	285	240	23	8
200	202.70*	340	295	23	8
250	254.50*	395	350	23	12
300	304.80*	445	400	23	12
350	350**	505	450	23	16
400	400**	565	515	28	16
450	450**	615	565	28	20
500	500**	670	620	28	20
600	600**	780	725	31	20
700	700**	895	840	31	24
800	800**	1015	950	34	24
900	900**	1115	1050	34	28

\* Note: As Per ANSI ASME Flange B16.5 Class150

\*\*Note: As per IS: 1538

**Honeywell**

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