

## LUG TYPE BUTTERFLY VALVE SERIE 20

### APPLICATION:

Water, HVAC installations, pressurized air, industry, etc.

### WORKING CONDITIONS (EPDM):

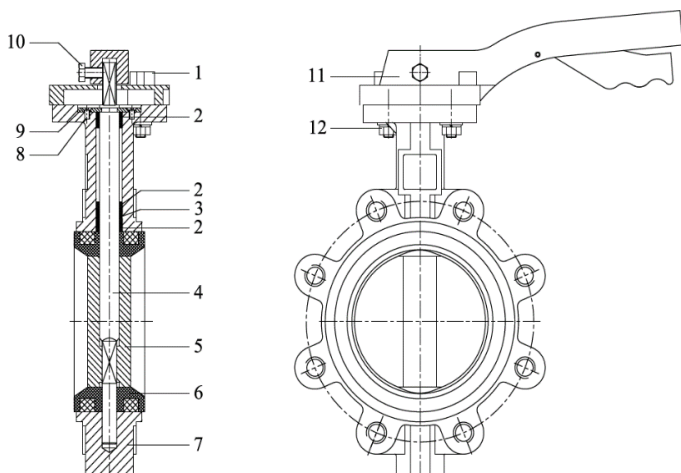
Maximum Working Pressure: 16 bar.  
Maximum Working Temperature: -10 °C / +120 °C.  
Peak Temperature: -15 °C / 130 °C.

### GENERAL CHARACTERISTICS:

Concentric Disc Valves.  
Range from ND40 up to ND1200.  
Tightness in both ways.  
Long neck for heat-insulated installations.  
One-piece shaft. Avoid breakage due to water hammer.  
Cartridge Seat for easy replacement.  
Does not need joints for installation.  
Low load loss.  
Top Flange according to ISO 5211.  
10 positions's lever.

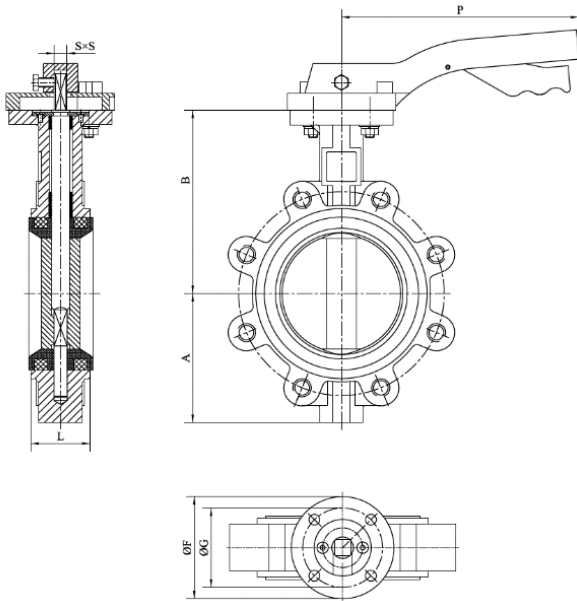
### STANDARDS:

Design: BS EN 593.  
Face to Face: EN 558-1 Serie 20, ISO 5272 Serie 20, DIN 3202.  
Mounting between flanges: PN10 / PN16 EN 1092-2, BS450, ANSI B16.1-5  
Pressure Test: EN 12266-1, DIN 3230, BS6755 y ISO 5208:  
Body: 24 bars. Seat: 17,6 bars.  
Manufacture acc. to the requirements of the EU directive 2014/68/EU Equipements under pressure: mod. H.



ITEM	DESCRIPTION	MATERIAL
1	Locking Plate	ALUMINUM
2	Bushing	PTFE
3	O-Rings	EPDM
4	Stem	SS420
5	Disc	GJS400 / CF8M
6	Seat	EPDM
7	Body	GJS400
8	Screw	A2
9	Thrust Washer	C.STEEL
10	Screw	A2
11	Lever	ALUMINUM
12	Bolt & Nut	A2

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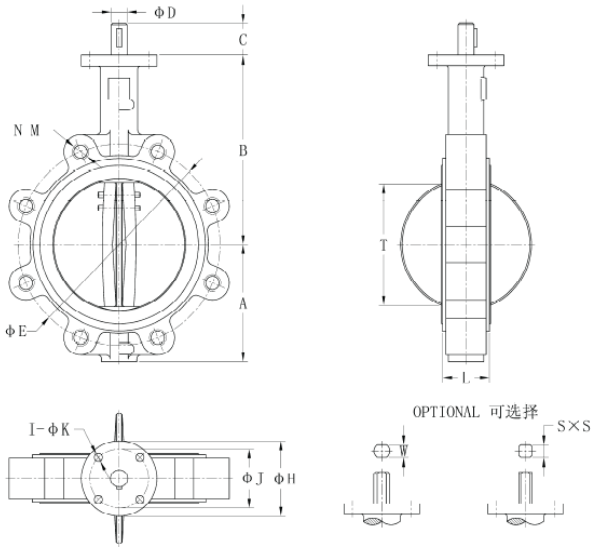


**DIMENSION TABLE**

DN	A	B	ØD	N-M	ØF	ØG	ØH	L	SxS	P
40	70	124	110	4-M16	65	50	7	33	9x9	198
50	76	129	125	4-M16	65	50	7	42	9x9	198
65	89	136	145	4-M16	65	50	7	45	9x9	198
80	95	144	160	8-M16	65	50	7	45	9x9	198
100	114	162	180	8-M16	90	70	95	52	11x11	270
125	127	188	210	8-M16	90	70	95	54	14x14	270
150	139	204	240	8-M20	90	70	95	56	14x14	270
200	177	238	295	12-M20	90	70	95	60	17x17	270
250	203	282	355	12-M24	125	102	115	66	22x22	540
300	242	311	410	12-M24	125	102	115	77	22x22	540



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mm	inch					E				N-M				H	J	I-K	L	T	S	W
		A	B	C	D	ANSI 125/150	PN10	PN16	10K	ANSI 125/150	PN10	PN16	10K							
40	1½	70	145	32	12.7	98.4	110	110	105	4-½"-12	4-M16	4-M16	4-M16	65	50	4-7	33	27	9	10
50	2	76	162	32	12.7	120.7	125	125	120	4-¾"-11	4-M16	4-M16	4-M16	65	50	4-7	42	32	9	10
65	2½	89	174	32	12.7	139.7	145	145	140	4-¾"-11	4-M16	4-M16	4-M16	65	50	4-7	45	47	9	10
80	3	95	181	32	12.7	152.4	160	160	150	4-¾"-11	4-M16	8-M16	8-M16	65	50	4-7	45	65	9	10
100	4	114	200	32	15.9	190.5	180	180	175	8-¾"-11	8-M16	8-M16	8-M16	90	70	4-9.5	52	90	11	12
125	5	127	213	32	19.1	215.9	210	210	210	8-¾"-10	8-M16	8-M16	8-M20	90	70	4-9.5	54	111	14	14
150	6	139	225	32	19.1	241.3	240	240	240	8-¾"-10	8-M20	8-M20	8-M20	90	70	4-9.5	56	145	14	14
200	8	177	260	38	22.2	298.5	295	295	290	8-¾"-10	8-M20	12-M20	12-M20	125	102	4-11.5	60	193	17	17
250	10	203	292	38	28.6	362	350	355	355	12-7/8"-9	12-M20	12-M24	12-M22	125	102	4-11.5	66	241	22	22
300	12	242	337	38	31.8	431.8	400	410	400	12-7/8"-9	12-M20	12-M24	16-M22	125	102	4-11.5	77	292	22	24
350	14	277	368	45	31.8	476.3	460	470	445	12-1"-8	16-M20	16-M24	16-M22	125	102	4-11.5	77	325	22	24
400	16	308	400	51	33.3	539.8	515	525	510	16-1"-8	16-M24	16-M27	16-M24	210	165	4-22	86/102	380	27	27
450	18	342	422	51	38.1	577.9	565	585	565	16-1½"-7	20-M24	20-M27	20-M24	210	165	4-22	105/114	428	27	27
500	20	374	479	64	41.3	635	620	650	620	20-1½"-7	20-M24	20-M30	20-M24	210	165	4-22	130	474	27	32
600	24	459	562	70	50.8	749.3	725	770	730	20-1¼"-7	20-M27	20-M33	24-M30	210	165	4-22	152	575	36	36
700	28	520	624	72	55	—	840	840	840	—	24-M27	24-M33	24-M30	300	254	8-18	165	674	—	—
750	30	545	650	72	55	914.4	900	900	900	28-1¼"-7	24-M30	24-M33	24-M30	300	254	8-18	167	726	—	—
800	32	575	672	72	55	—	950	950	950	—	24-M30	24-M36	28-M30	300	254	8-18	190	771	—	—
900	36	635	768	77	75	1085.9	1050	1050	1050	32-1½"-6	28-M30	28-M36	28-M30	300	254	8-18	207	839	—	—
1000	40	685	823	85	85	—	1160	1170	1160	—	28-M33	28-M39	28-M36	300	254	8-18	216	939	—	—
1050	42	765	858	85	85	1257.3	—	—	—	36-1½"-6	—	—	—	300	254	8-18	256	997	—	—
1200	48	839	940	150	92	1422.4	1380	1390	1380	44-1½"-6	32-M36	32-M45	32-M36	350	298	8-22	276	1125	—	—



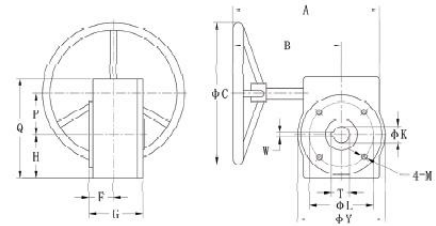
## LUG TYPE BUTTERFLY VALVE SERIE 20

The series 3D gear operator can be used on all resilient butterfly valves. Adjustable end of travel stops is standard, and factory set when the gear box is factory mounted.

### Material of Main Part

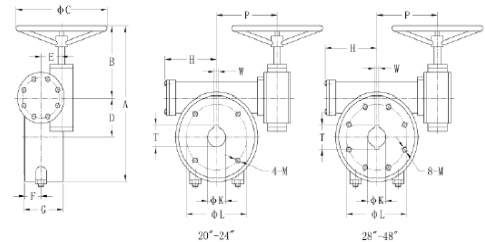
Part	MATERIAL
Housing Body	CI, DI, Aluminum Alloy
Worm Gear	DI, AL-Bronze
Worm	Carbon Steel
Worm Shaft	Carbon Steel, Stainless Steel

### Single-Stage Drive Device



Valves Sizes		Model	Torque (N·M)	Ratio	A	B	C	F	G	H	L	P	Q	M	K	T	W	Y
mm	inch																	
20~80	1~3	3D-15	170	24 : 1	230	178	144	38	62	53	50	45	125	M6	13	14	3	105
100	4	3D-15	170	24 : 1	230	178	144	38	62	53	70	45	125	M8	16	18	5	105
125~150	5~6	3D-15	170	24 : 1	230	178	144	38	62	53	70	45	125	M8	19	21	5	105
200	8	3D-50	750	30 : 1	310	235	208	41	78	76	102	63	174	M10	22	25	8	158
250	10	3D-50	750	30 : 1	310	235	208	41	78	76	102	63	174	M10	29	32	8	158
300~350	12~14	3D-120	1200	50 : 1	305	226	225	42	80	81	102	81	195	M10	32	35	8	170
400	16	3D-250	2500	80 : 1	317	217	291	48	105	125	165	95	255	M20	33	37	10	210
450	18	3D-250	2500	80 : 1	317	217	291	48	105	125	165	95	255	M20	38	41	10	210

### Double-Stage Drive Device

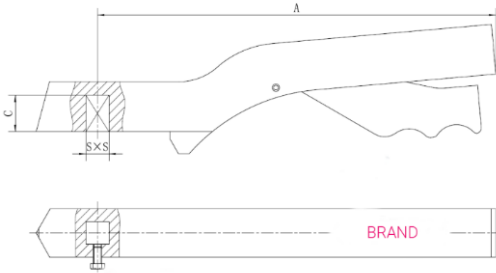


Valves Sizes		Model	Torque (N·M)	Ratio	A	B	C	F	D	E	F	G	H	L	P	M	T	W
mm	inch																	
500	20	3D-30/300	3000	300 : 1	480	210	285	110	63	52	120	160	165	185	M20	41	44.6	10
600	24	3D-30/400	4000	697 : 1	520	210	285	125	63	57	120	160	165	185	M20	51	55.1	16
700-800	28-32	3D-60/800	8000	782 : 1	560	220	360	160	78	62	128	160	254	218	M16	55	63.6	16
900	36	3D-120/1500	15000	782 : 1	660	255	450	192	120	130	218	200	254	282	M16	75	84.8	20
1000	40	3D-120/1500	15000	782 : 1	660	255	450	192	120	130	218	200	254	282	M16	85	95.8	22
1050	42	3D-120/1500	15000	782 : 1	660	255	450	192	120	130	218	200	254	282	M16	85	95.8	22
1200	48	3D-120/1500	26000	768 : 1	825	235	570	300	126	196	322	305	298	418	M20	92	103	25



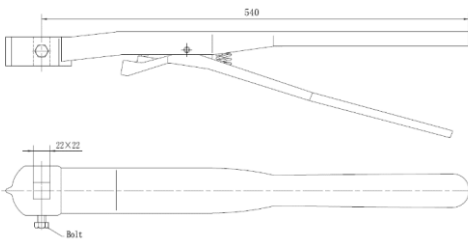
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### ALUMINUM LEVER DN040 TO DN200



DN200	270	17	22
DN125-DN150	270	14	22
DN100	270	11	22
DN40-DN80	198	9	20
	A	S	Cmin

### CAST IRON LEVER DN250/300



DN250-300	540	22	22
	A	S	C min



#### Model HA:

Malleable cast iron handle  
10 position zinc plated steel throttling plate  
Economy utility



#### Model HB:

Malleable cast iron handle  
10 position zinc plated steel throttling plate  
With padlock hole



#### Model HC:

Carbon Steel handle  
10 position zinc plated steel throttling plate  
Beautiful, lower weight



#### Model HD:

Malleable cast iron handle  
10 position ABS throttling plate  
With padlock hole



#### Model HE:

Malleable cast iron handle  
10 position zinc plated steel throttling plate  
High strength, durable



#### Model HF:

Aluminum alloy handle  
10 position aluminum alloy throttling plate  
Resistance corrosive, lower weight

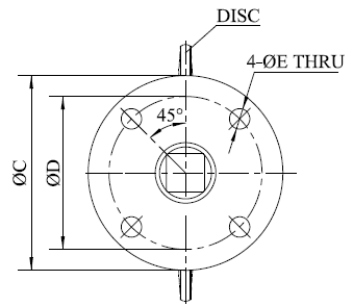
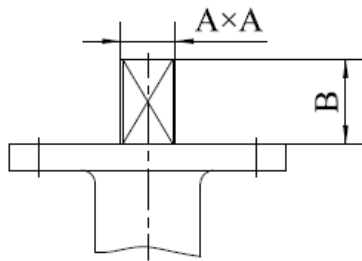
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OD connection bar of hand wheel

DN50-150	16mm
DN200-350	19mm
DN400-450	25mm
DN500-600	20mm
DN700-1000	28mm
DN1200	36mm



### Free shaft square connection details



DN	A	B	C	D	E
40	9	32	65	50	7
50	9	32	65	50	7
65	9	32	65	50	7
80	9	32	65	50	7
100	11	38	90	70	9.5
125	14	38	90	70	9.5
150	14	38	90	70	9.5
200	17	38	90	70	9.5
250	22	38	125	102	11.5
300	22	38	125	102	11.5
350	22	45	125	102	11.5
400	27	51	210	165	22
450	27	51	210	165	22
500	27	64	210	165	22
600	36	70	210	165	22

## LUG TYPE BUTTERFLY VALVE SERIE 20

### Valve Torques

### (N·M) Torques for differential pressure

inch	mm	0.4MPa	0.6MPa	1.0MPa	1.4MPa	1.6MPa
1½"	40	10.2	10.8	11.5	12.5	12.9
2"	50	15.7	16.7	17.5	18.5	19.2
2½"	65	23.7	25.8	27.7	29.8	30.9
3"	80	32.6	34.7	36.7	38.5	39.6
4"	100	45.8	51	56.4	61.6	64.8
5"	125	66.8	76	85.4	94.5	101.8
6"	150	94.6	109.2	123.8	138.3	147.8
8"	200	167.6	187	206.6	226.1	240
10"	250	264.2	296.1	328	359.8	380.1
12"	300	406.1	442	478.1	513.8	538
14"	350	417.5	485.5	553.6	627.1	674.9
16"	400	673.8	771.8	870	947	993.4
18"	450	994.4	1145.6	1297	1452.5	1552.9
20"	500	1322.3	1452.1	1581.7	1717.7	1804.6
24"	600	2440.2	2659.4	2878.8	2962.4	3029.9
28"	700	3006.9	3484.6	3978.1	4478	4797.9
30"	750	4320.3	4651.5	4982.6	5303.8	5511.5
32"	800	5695.1	6100.9	6597.6	7102.3	7426
36"	900	8647.1	9021.6	9395.7	9774.4	10020.8
40"	1000	10934	11578.6	12417	13111.3	13555.6
42"	1050	13043.4	13608.7	14172.8		
48"	1200	17085.6	17827.3	18566.4	19313.8	19800.3

All torque values shown on chart are for "wet" (water and other non-lubricating media) on-off service. Under certain conditions, hydrodynamic torque can meet or exceed seating and unseating torques. When designing valve systems, hydrodynamic torque must be considered to help ensure correct selection of application

### Seat Temperature Ratings

Material	NBR	Neoprene	EPDM	Hypalon	Viton	PTFE
°C	-20~100	-40~100	-40~120	-32~135	-12~230	-50~200
°F	-4~212	-40~212	-40~248	-25.6~275	10.4~446	-58~392



## LUG TYPE BUTTERFLY VALVE SERIE 20

### Cv Values-Valve Sizing Coefficients ( US-GPM@1ΔP)

#### Valve Size

#### DEG. OPEN

inch	mm	10°	20°	30°	40°	50°	60°	70°	80°	90°
1½"	40	0.04	1.92	4.1	8.7	15	26	41	65	72
2"	50	0.06	3	7	15	27	44	70	105	115
2½"	65	0.1	6	12	25	45	75	119	178	196
3"	80	0.2	9	18	39	70	116	183	275	302
4"	100	0.3	17	36	78	139	230	364	546	600
5"	125	0.5	29	61	133	237	392	620	930	1022
6"	150	0.8	45	95	205	366	605	958	1437	1579
8"	200	2	89	188	408	727	1202	1903	2854	3136
10"	250	3	151	320	694	1237	2049	3240	4859	5340
12"	300	4	234	495	1072	1911	3162	5005	7507	8250
14"	350	6	338	715	1549	2761	4568	7230	10844	11917
16"	400	8	464	983	2130	3797	6282	9942	14913	16388
18"	450	11	615	1302	2822	5028	8320	13168	19752	21705
20"	500	14	791	1647	3628	6465	10698	16931	25396	27908
24"	600	22	1222	2587	5605	9989	16528	26157	39236	43116
28"	700	31	1703	3605	7813	13961	23037	36459	54689	60102
30"	750	37	2080	4406	9546	17010	28147	44545	66818	73246
32"	800	100	2436	5272	10636	18025	29440	47622	70876	77897
36"	900	260	3050	6730	12740	20220	32500	52500	79600	87500
40"	1000	313	3665	8089	15942	24299	39056	63093	95660	105154
42"	1050	350	4095	9040	17108	27150	43640	70500	106890	117500
48"	1200	455	5365	11840	22400	30600	51200	92300	140000	154000