CENTRIC SHUT-OFF BUTTERFLY VALVE

L 32.1

I.B.C. PRAHA spol. s r.o.

Technical description

Shut-off butterfly valves are designed and manufactured in a way, assuring their maximum service life and reliability. They meet the requirements of API 609, BS 5155 and MSS SP 67 Standards.

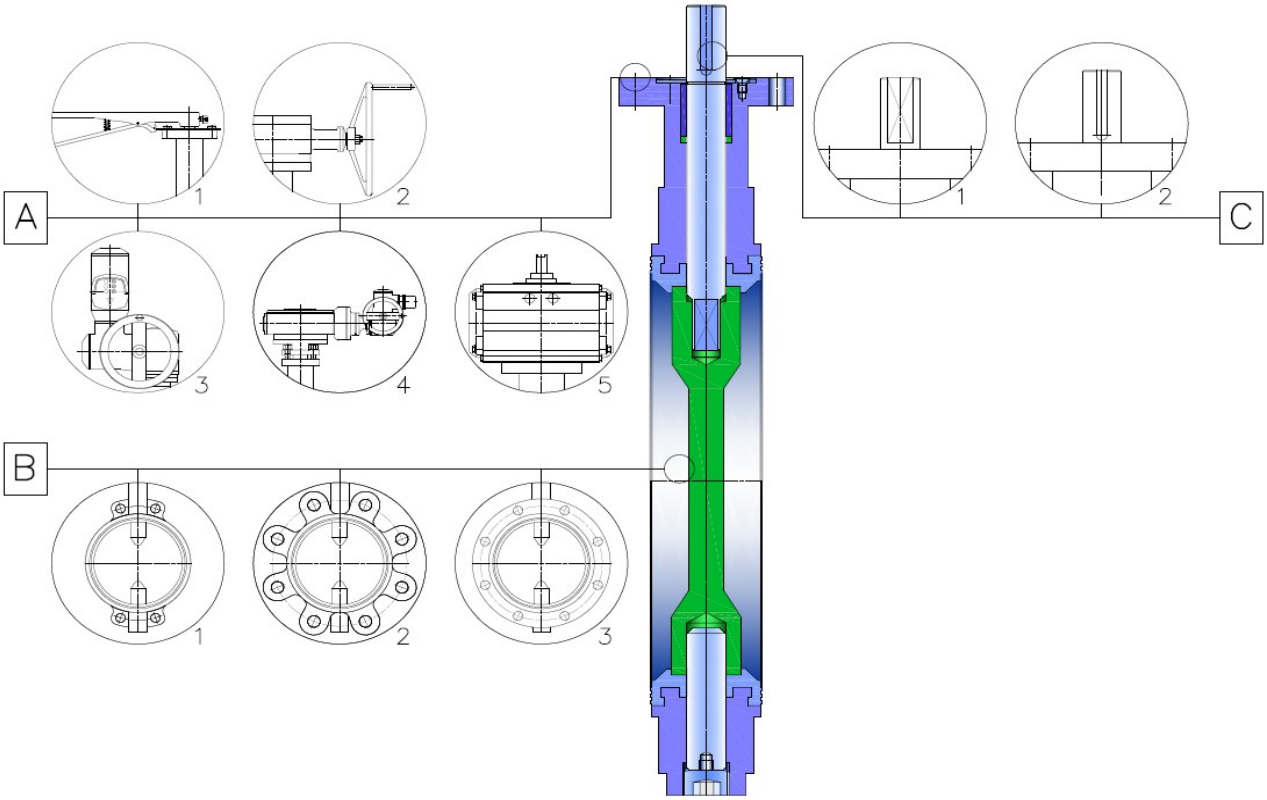
Material executions

Shut-off butterfly valves are made from cast iron, nodular iron, carbon steels and stainless steels. Material execution of the valve is chosen to comply with the wishes of the client and to suit best the working conditions of the valve.

Application

Shut-off or regulating butterfly valves are applied for non-aggressive and aggressive liquids, vapors and gases.

Design of shut-off butterfly valves



A - Control

- by hand lever for DN 40 up to DN 200
- by hand gear-box for DN 250 up to DN 1200
- by electric actuator
- by electric actuator with gear-box
- by pneumatic actuator

B – Execution

- Wafer type
- Lug type
- Flanged type "U"

C – Stem execution

- the upper stem with 2 contact surfaces for valves up to DN 200 inclusive
- the upper stem with feather for valves DN 250 and above

Advantages

- Excellent both-sides tightness of the closure
- Cheep option in comparison with gate-, ball- or globe valve
- Very good corrosion resistance, body and stems are not in the contact with working medium
- Outside surface protection secured by epoxy paint coating
- Self-centering of the disc due to its floating embedding
- No need for flange gaskets for installation, their function is replaced by the seat
- Low weight
- Anti blow out stem - upper control stem is secured against forcing out of the body by means of thrust collar
- Easy replaceable seat without need of any special tools
- Easy installation of each type of actuators
- Wide range of material executions suitable for various working conditions
- Self cleaning function
- Low pressure drop and small turbulence of the flow
- Possibility of regulation of the flow

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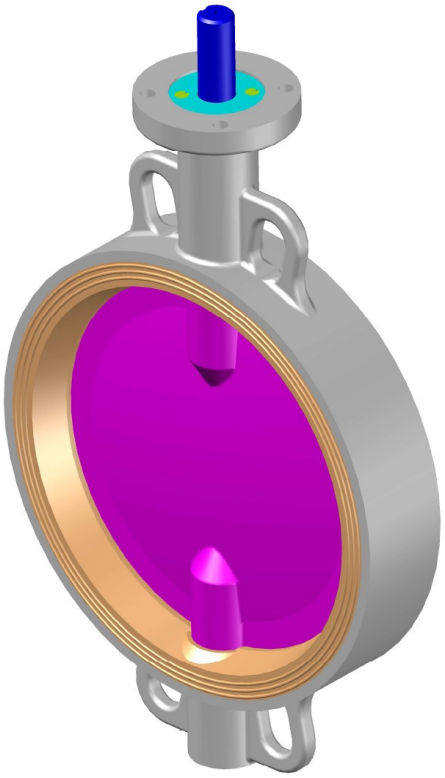
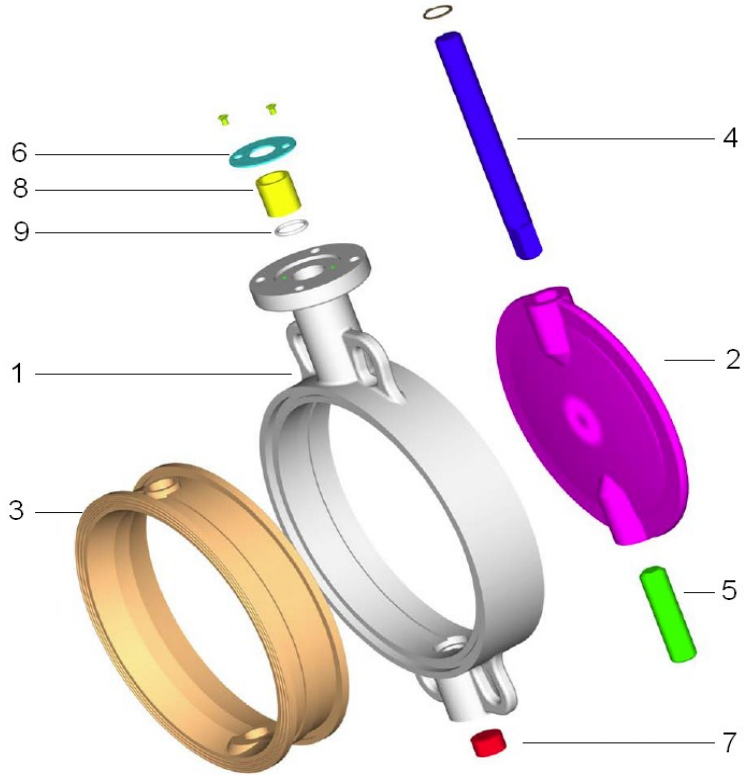
Basic standards for construction

Basic construction ..... BS 5155, API 609, MSS SP67
Face to face lenght ..... BS 5155, ISO 5752, MSS SP67, API 609
Flange dimensions ..... BS 4504 (PN 6, PN 10, PN 16), DIN 2501 (PN 6, PN 10, PN 16), ANSI B16.5, JIS (10K, 16K), EN 1759-1
Testing ....API 598, EN 12266-1
Pressure-temperature characteristic.....ASME B16.34, EN 12516-1
Connecting of actuator ..... EN ISO 5211

Material executions





Item	Description	Material		
		EN	ČSN	ASTM
1.	Body	EN-JL 1040 EN-JS 1030 1.0619 (P240GH) 1.4308 (GX5CrNi19-10) 1.4408 (GX5CrNiMo19-11-2)	42 2425 42 2304 42 2643 42 2930 42 2940	A 278 No. 35 A 536 60-40-18 A 216 WCB A 351 CF8 A351 CF8 M
2.	Disc	EN-JS 1030 1.4308 (GX5CrNi19-10)	42 2304 42 2930	A 536 60-40-18 A 351 CF8
3.	Seat-cup	EPDM (od -35°C do +120°C) NBR (od -20°C do +90°C) WMQ (od -20°C do +160°C) VITON (od -10°C do +160°C) TFE (od -35°C do +160°C) CR (od -35°C do +90°C)		
4.	Control upper stem	1.4301 (X5CrNi18-10)	41 7240	A 479 TYPE 304
5.	Bottom stem	1.4301 (X5CrNi18-10)	41 7240	A 479 TYPE 304
6.	Retainer plate	Silicon iron		
7.	Plug	Silicon iron		
8.	Bushing	DELRIN		
9.	Seal	NBR VITON		

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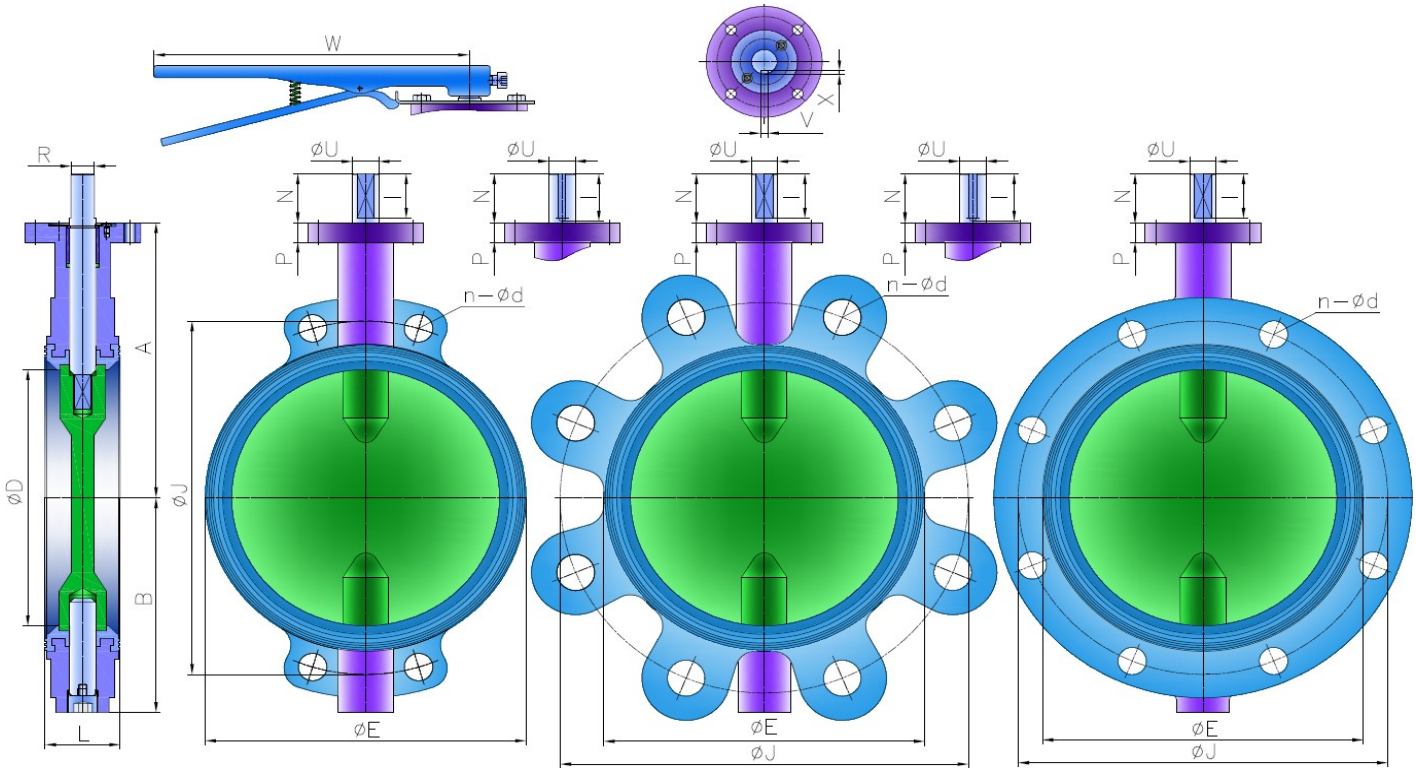

Typ „Wafer“ **Typ „Lug“** **Typ „U“**

Diameter		ØD	L	A	B	ØE	P	Control pin							Top flange ISO 5211	W	Weight (kg)		
NPS	DN							ØU	N	I	R	X	V	Key			Type of valve		
																	„Wafer“	„Lug“	„U“
1 1/2	40	40	40	120	60	85	10	14	33	30	9,5	-	-	-	F07	265	2,7	3,7	6
2	50	50	43	130	75	92	11	14	33	30	9,5	-	-	-	F07	265	2,9	4,2	6,5
2 1/2	65	63	46	137	80	107	11	14	33	30	9,5	-	-	-	F07	265	4,1	5,7	9
3	80	77	46	156	95	122	11	16	33	30	11,8	-	-	-	F07	265	4,4	8,7	10
4	100	100	52	170	110	150	11	16	33	30	11,8	-	-	-	F07	265	4,7	9,2	14
5	125	125	56	185	123	179	12	19	33	30	14,5	-	-	-	F07	265	6,3	12,7	16,5
6	150	147	56	203	143	206	12	19	33	30	14,5	-	-	-	F07	265	7,9	13,7	19
8	200	198	60	238	168	257	13	19	33	30	14,5	-	-	-	F07	315	12,3	22	32
10	250	245	68	270	203	316	15	22	65	60	-	4	8	8 x 7	F10	450	19,2	28	46
12	300	295	78	310	242	370	15	28	65	60	-	4	8	8 x 7	F10	450	30,2	45	58
14	350	332	78	330	280	410	17	28	65	60	-	4	8	8 x 7	F10	-	55	74	94
16	400	384	102	375	320	468	20	38	75	70	-	5	12	12 x 8	F14	-	80	113	130
18	450	434	114	400	350	527	20	38	75	70	-	5	12	12 x 8	F14	-	110	145	160

Diameter		BS 4504 PN 6			BS 4504 PN 10			BS 4504 PN 16			ANSI 150 LB			JIS 10K			JIS 16K		
NPS	DN	ØJ	n	Ød	ØJ	n	Ød	ØJ	n	Ød	ØJ	n	Ød	ØJ	n	Ød	ØJ	n	Ød
1 1/2	40	100	4	M12	110	4	M16	110	4	M16	98,5	4	1/2“	105	4	M16	105	4	M16
2	50	110	4	M12	125	4	M16	125	4	M16	120,5	4	5/8“	120	4	M16	120	8	M16
2 1/2	65	130	4	M12	145	4	M16	145	4	M16	139,5	4	5/8“	140	4	M16	140	8	M16
3	80	150	4	M16	160	8	M16	160	8	M16	152,5	4	5/8“	150	8	M16	160	8	M20
4	100	170	4	M16	180	8	M16	180	8	M16	190,5	8	5/8“	175	8	M16	185	8	M20
5	125	200	8	M16	210	8	M16	210	8	M16	216	8	3/4“	210	8	M20	225	8	M22
6	150	225	8	M16	240	8	M20	240	8	M20	241,5	8	3/4“	240	8	M20	260	12	M22
8	200	280	8	M16	295	8	M20	295	12	M20	298,5	8	3/4“	290	12	M20	305	12	M22
10	250	335	12	M16	350	12	M20	355	12	M24	362	12	7/8“	355	12	M22	380	12	M24
12	300	395	12	M20	400	12	M20	410	12	M24	432	12	7/8“	400	16	M22	430	16	M24
14	350	445	12	M20	460	16	M20	470	16	M24	476	12	1“	445	16	M22	480	16	M30
16	400	495	16	M20	515	16	M24	525	16	M27	539,5	16	1“	510	16	M24	540	16	M30
18	450	550	16	M20	565	20	M24	585	20	M27	578	16	1 1/8“	565	20	M24	605	20	M30

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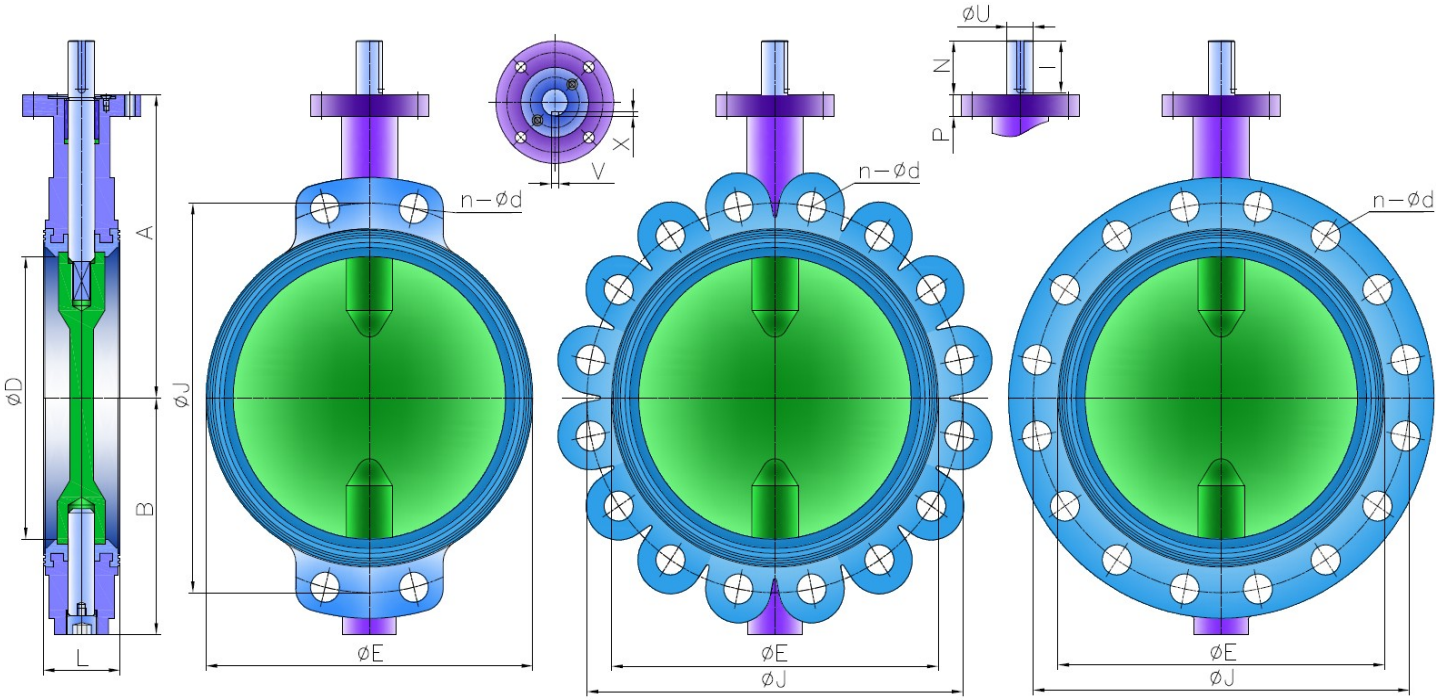

Typ „Wafer“ **Typ „Lug“** **Typ „U“**

Diameter		ØD	L	A	B	ØE	P	Control pin						Top flange ISO 5211	Weight (kg)		
NPS	DN							ØU	N	I	X	V	Pero		Type of valve		
															„Wafer“	„Lug“	„U“
20	500	487	127	440	380	578	22	45	100	90	5,5	14	14 x 9	F16	145	215	215
22	550	530	142	475	410	636	22	55	100	90	5,5	14	14 x 9	F16	200	275	280
24	600	575	154	510	440	680	22	55	100	90	5,5	14	14 x 9	F16	235	345	335
26	650	625	165	530	455	735	28	60	100	90	5,5	14	14 x 9	F16	310	430	420
28	700	673	165	580	480	785	30	60	100	90	5,5	14	14 x 9	F16	330	475	470
30	750	731	192	585	535	845	30	65	140	100	7,5	20	20 x 12	F25	385	610	585
32	800	767	190	630	570	895	35	75	140	130	7,5	20	20 x 12	F25	460	715	700
34	850	824	200	660	620	945	38	75	140	130	7,5	20	20 x 12	F25	565	760	745
36	900	860	203	700	670	1000	38	75	140	130	7,5	20	20 x 12	F25	630	830	810
40	1000	970	216	750	725	1095	38	90	140	130	9,0	25	25 x 14	F25	825	990	960
42	1050	1010	216	820	750	1154	40	90	140	130	9,0	25	25 x 14	F25	860	1215	1000
48	1200	1173	254	900	860	1310	45	90	140	130	9,0	25	25 x 14	F25	910	1450	1265

Diameter		BS 4504 PN 6			BS 4504 PN 10			BS 4504 PN 16			ANSI 150 LB			JIS 10K			JIS 16K		
NPS	DN	ØJ	n	Ød	ØJ	n	Ød	ØJ	n	Ød	ØJ	n	Ød	ØJ	n	Ød	ØJ	n	Ød
20	500	600	20	M20	620	20	M24	650	20	M30	635	20	1 1/8“	620	20	M24	660	20	M30
22	550	-	-	-	-	-	-	-	-	-	692,2	20	1 1/4“	680	20	M30	720	20	M36
24	600	705	20	M24	725	20	M27	770	20	M33	749,5	20	1 1/4“	730	24	M30	770	24	M36
26	650	-	-	-	-	-	-	-	-	-	806,5	24	1 1/4“	780	24	M30	820	24	M36
28	700	810	24	M27	840	24	M27	840	24	M33	863,6	28	1 1/4“	8440	24	M30	875	24	M39
30	750	-	-	-	-	-	-	-	-	-	914,4	28	1 1/4“	900	24	M30	935	24	M39
32	800	920	24	M27	950	24	M30	950	24	M36	977,9	28	1 1/2“	950	28	M30	990	24	M45
34	850	-	-	-	-	-	-	-	-	-	1028,7	32	1 1/2“	1000	28	M30	1040	24	M45
36	900	1020	24	M27	1050	28	M30	1050	28	M36	1085,9	32	1 1/2“	1050	28	M30	1090	28	M45
40	1000	1120	28	M27	1160	28	M33	1170	28	M39	1200,2	36	1 1/2“	1160	28	M36	1210	28	M52
42	1050	-	-	-	-	-	-	-	-	-	1257,3	36	1 1/2“	-	-	-	-	-	-
48	1200	1340	32	M30	1380	32	M36	1390	32	M45	1422	44	1 1/2“	1380	32	M36	1420	32	M52

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Flow Coefficient

Diameter		Disc opening															
		20°		30°		40°		50°		60°		70°		80°		90°	
NPS	DN	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv	Kv	Cv
1 1/2	40	2,6	3	4,3	5	9,5	11	16	18	22	26	39	45	60	70	69	80
2	50	6,7	8	7,8	9	16	18	24	28	48	55	62	72	95	110	116	135
2 1/2	65	8,6	10	13	15	23	27	38	44	73	85	95	110	145	168	181	210
3	80	13	15	20	23	34	39	56	65	112	130	142	165	213	250	267	310
4	100	23	27	35	41	61	71	99	115	198	230	259	300	401	465	466	540
5	125	50	58	74	86	129	150	211	245	414	480	526	610	845	980	948	1100
6	150	83	96	121	140	211	245	345	400	677	785	871	1010	1392	1615	1647	1910
8	200	142	165	211	245	354	410	591	685	1099	1275	1478	1715	2302	2670	2746	3185
10	250	220	255	328	380	560	650	974	1130	1810	2100	2328	2700	3664	4250	4224	4900
12	300	319	370	466	540	819	950	1353	1570	2629	3050	3405	3950	5129	5950	6336	7350
14	350	388	450	647	750	1120	1300	1905	2210	3517	4080	4836	5610	6964	8078	9655	1120
16	400	552	640	776	900	1483	1720	2405	2790	4310	5000	6336	7650	9284	10770	11121	12900
18	450	630	730	1078	1250	1978	2295	3190	3700	6078	7050	7914	9180	11983	13900	15086	17500
20	500	785	910	1375	1595	2457	2850	3991	4630	7414	8600	9914	11500	15121	17540	19310	22400
24	600	1078	1250	1974	2290	3448	4000	5250	6090	10776	12500	14224	16500	20336	23590	24397	28300
28	700	1190	1380	2456	2850	4224	4900	6569	7620	11550	13400	1569	18200	23706	27500	31034	36000
30	750	1224	1420	2905	3370	4913	5700	7534	8740	12840	14900	20431	23700	28448	33000	37758	43800
32	800	1551	1800	3448	4000	5948	6900	9396	10900	15172	17600	24138	28000	33190	38500	42240	49000
36	900	1982	2300	4051	4700	7327	8500	11206	13000	17586	20400	30172	35000	42586	49400	56034	65000
40	1000	2413	2800	4310	5000	7758	9000	12068	14000	19827	23000	34482	40000	50000	58000	62931	73000
42	1050	3190	3700	5517	6400	8706	10100	14655	17000	24137	28000	40948	47500	60344	70000	75000	87000
48	1200	4740	5500	7415	8600	11638	13500	19052	22100	31035	36000	50000	58000	75862	88000	89655	104000

Type designation

L32.1 – 1 Y Z – T / D / M - PN

L32.1 – TYPE OF VALVE – BUTTERFLY VALVE

Y - CONNECTION TO PIPELINE

- 1.....Flanged type "U"
- 4.....„Lug“ type
- 7.....„Wafer“ type

T / D - MATERIAL OF BODY AND DISC

- 0.....Stainless steel (CF8)
- 1.....Nodular cast iron (GGG40)
- 1Ni.. Nodular cast iron with Ni surface
- 5.....Carbon steel (WCB)
- 6.....Grey cast iron
- 7.....Stainless steel (CF8M)
- 8.....Light metals (Aluminum Alloys)
- 9.....Plastic

Z - CONTROL

- 1.....Hand lever
- 2.....Gearbox + hand wheel
- 3.....Electric actuator
- 4.....Pneumatic actuator
- 5.....Bare shaft
- 6.....Gearbox + Electric actuator

M – SEAT CUP MATERIAL

- E.....EPDM
- N.....NBR
- S.....SBR
- V.....VITON
- T.....SILICONE
- F.....NEOPRENE

PN – NOMINAL PRESSURE