

BUTTERFLY VALVE - type V22/23J

DOUBLE AND TRIPLE ECCENTRIC

PN10-100
DN50-700



GENERAL CHARACTERISTICS

This Butterfly valve with patented design with several unique solutions which reduces the problems with both external and internal leakage. The patents also decrease the wear of the stem and stem packing and reduces the open/close torque.

FEATURES

- Wafer and lug-type butterfly valve
- Body in casted stainless steel and carbon steel
- Double offset design
- Self tighten, flexible seat
- Metal or soft seat
- Fire-safe seat
- Patented Radical bearing gland
- Patented coaxial ring
- Patented Unloaded stem with dynamic flexible compensation
- Anti-static device
- Blow-out proof stem

Standards	
Design	API 609/ASME B16.34 EN 12516
Face to face	API 609
Flanges	ANSI B16.5, EN 1092-1,
Labeling	EN 19
Pressure test	API 598, EN 12266-1
CE-marked	acc. to PED93/23, category 3

Table 1 - Technical data	
Design	API609, EN12516
Dimension	DN50 - DN700
Material	Carbon steel, stainless steel, Monel
Seat	Soft seat PTFE, R-PTFE, 316 lined PTFE Metal seat, SS316, Incoloy825
Pressure	PN 10 - PN 100 ANSI class 150 to class 600
Face to Face	API609
Pressure test	EN 12266-1/AP 2598

Zero leakage after 1 000 000 cycles

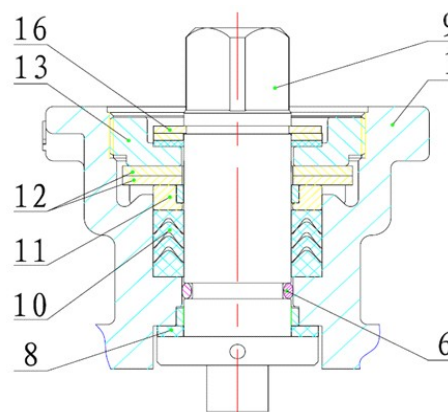


Table 2 - Patented Unloaded Stem with Dynamic Flexible Compensation	
Pos.	Detail
1	BODY
6	O-ring
9	Stem bearing
10	Stem packing
11	Gland
12	Belleville washer
13	Gland nut
16	C-ring

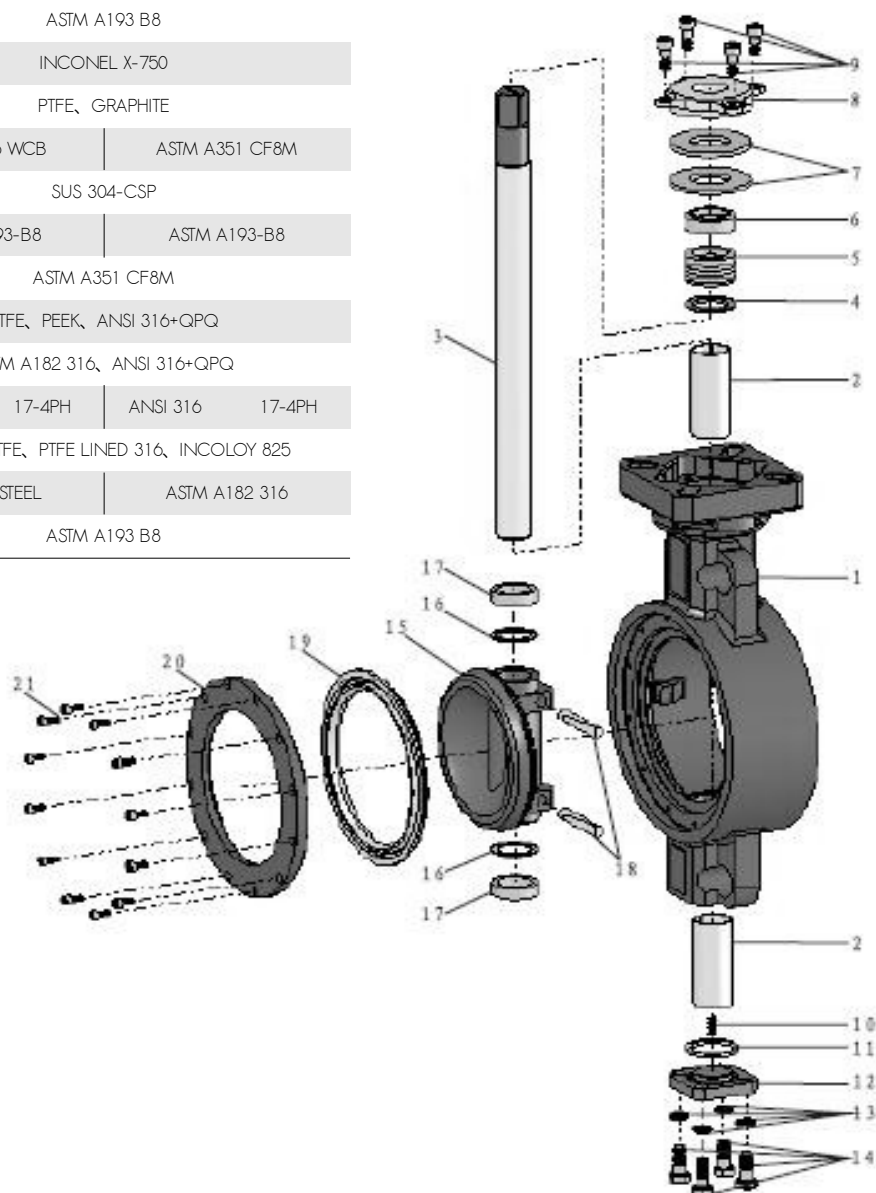
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Table 2. Material

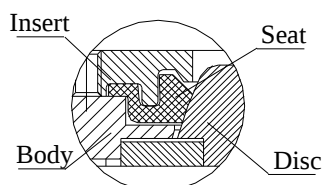
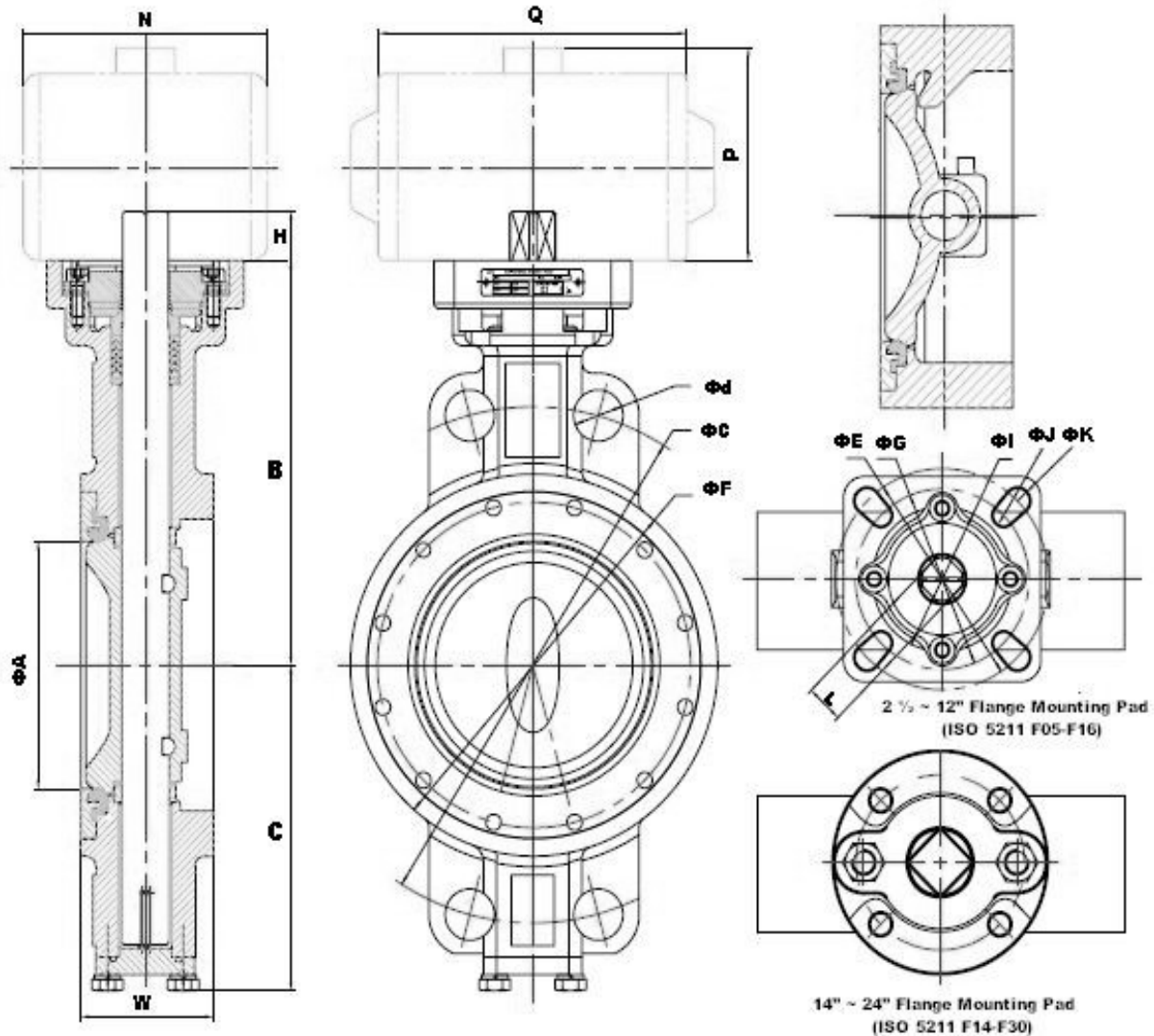
Pos.	Detail	Material			
1	BODY	ASTM A216 WCB		ASTM A351 CF8M	
2	BEARING	ANSI 316 LINED PTFE, ANSI 316+QPQ			
3	SHAFT	ANSI 316	17-4PH	ANSI 316	17-4PH
4	PACKING WASHER	ASTM A182 316, ANSI 316+QPQ			
5	STEM PACKING	PTFE, GRAPHITE			
6	COMPRESS RING	ASTM A276 304, ANSI 304+QPQ			
7	BELLEVILLE WASHER	SUS 304-CSP			
8	PLATE	ASTM A351 CF8			
9	FEMALE HEX SCREW	ASTM A193 B8			
10	ANTI-STATIC SPRING	INCONEL X-750			
11	GASKET	PTFE, GRAPHITE			
12	COVER PLATE	ASTM A216 WCB		ASTM A351 CF8M	
13	SPRING WASHER	SUS 304-CSP			
14	CAP SCREW	ASTM A193-B8		ASTM A193-B8	
15	DISC	ASTM A351 CF8M			
16	THRUST BEARING	PTFE, PEEK, ANSI 316+QPQ			
17	THRUST BEARING	ASTM A182 316, ANSI 316+QPQ			
18	PIN	ANSI 316	17-4PH	ANSI 316	17-4PH
19	SEAT	PTFE, R PTFE, PTFE LINED 316, INCOLOY 825			
20	INSERT	CARBON STEEL		ASTM A182 316	
21	FEMALE HEX SCREW	ASTM A193 B8			



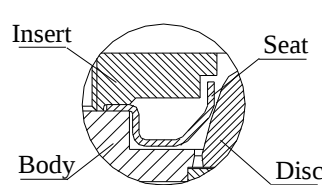
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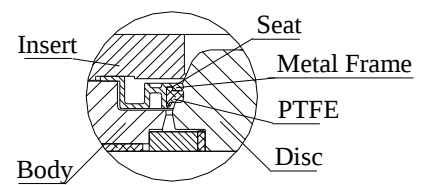
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The soft seat, made of PTFE, R-PTFE and TFM, is self-adjusted when fluctuation of the wear of applied on the sealing surface, the seat thereby providing stable and long-term service



Metal seat in SS316, Incoloy825. QPQ (Quench-Polish-Quench), gives highly perfect wear-resistance and corrosion proof of the seat thus achieving long-term service.



Fire-safe design
The seat is formed by PTFE. When high temperature occurs, the PTFE seat is melted, the disc come in contact with the body directly by the fluid pressure and thus keep sealing

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Table 3 - PN10/16-Class150

Size		ΦA	B	C	ΦF	H	W	PN10/16		Class 150		Actuator flange				ISO 5211	Weight kg
DN	Inch							ΦD	Φd	ΦD	Φd	ΦE	ΦI	ΦK	L		
50-80	2"-3"	See class 300															
100	4"	96	164	126	158	14	54	180	18	190	18	70	52	9,5	11	F07	7
125	5"	On request															
150	6"	144	189	155	216	14	57	240	22	241	22	102	53	12	14	F07	11
200	8"	188	243	192	270	17	64	295	22	298	22	102	71	12	17	F10	21
250	10"	236	270	238	324	22	71	350/355	22/26	362	26	125	77	14	22	F10	35
300	12"	283	319	260	381	27	81	400/410	22/26	432	26	140	96	18	27	F12	50
350	14"	307	455	301	429	34	92	460/470	22/26	476	29,5	165	80	22	32	F14	75
400	16"	364	488	333	480	39	102	515/525	26/30	540	29,5	165	80	22	36	F14	91
450	18"	421	490	344	533	44	114	565/585	26/30	578	32,5	165	92	22	36	F14	115
500	20"	460	528	380	584	48	127	620/650	26/33	635	32,5	165	112	22	46	F16	140
600	24"	577	605	450	692	48	154	725/769	30/36	749	35,5	165	112	22	46	F16	235
>600	>24"	On request															

Table 4 - PN25/40-Class300

Size		ΦA	B	C	ΦF	H	W	PN25/40		Class 300		Actuator flange				ISO 5211	Weight kg
DN	Inch							ΦD	Φd	ΦD	Φd	ΦE	ΦI	ΦK	L		
50	2"	38,6	117	84,2	99	11	51	125	18	127	18	50	41	7	11	F05	2,9
65	2 1/2"	On request															
80	3"	74	139	114	132	11	48	160	18	168	22	70	41	9,5	11	F05	4,3
100	4"	96	164	126	158	14	54	190	22	200	22	70	52	9,5	14	F07	7
125	5"	On request															
150	6"	144	214	169	216	18	59	250	26	270	22	102	71	12	17	F10	18
200	8"	188	250	207	270	23	73	310/320	26/30	330	26	125	78	14	22	F12	30
250	10"	236	280	252	324	27	83	370/385	30/33	387	29,5	125	78	14	22	F14	42
300	12"	283	339	293	409	27	92	430/450	30/33	451	32,5	140	96	18	27	F14	66
>300	>12"	On request															

Table 5 - PN63/100-Class600

Size		ΦA	B	C	ΦF	H	W	PN63/100		Class 600		Actuator flange				ISO 5211	Weight kg
DN	Inch							ΦD	Φd	ΦD	Φd	ΦE	ΦI	ΦK	L		
50	2"	38,6	117	84,2	99	11	51	135/145	22/26	127	18	50	41	7	11	F05	2,9
65	2 1/2"	On request															
80	3"	76	152	117	146	17	54	170/180	22/26	168	22	70	52	9,5	14	F07	7
100	4"	96	188	137	158	18	64	200/210	26/30	216	26	102	71	12	17	F10	11
125	5"	On request															
150	6"	140	228	182	216	28	78	280/290	30/33	292	29,5	125	82	14	22	F12	26,7
200	8"	188	281	240	270	30	102	345/360	33/36	349	32,5	140	98	18	27	F14	37,8
250	10"	236	335	296	324	40	117	400/430	36/39	432	35,5	140	96	18	33	F16	58,4
300	12"	283	365	330	409	49	140	460/500	36/42	489	35,5	165	96	22	46	F16	84,7
>300	>12"	On request															

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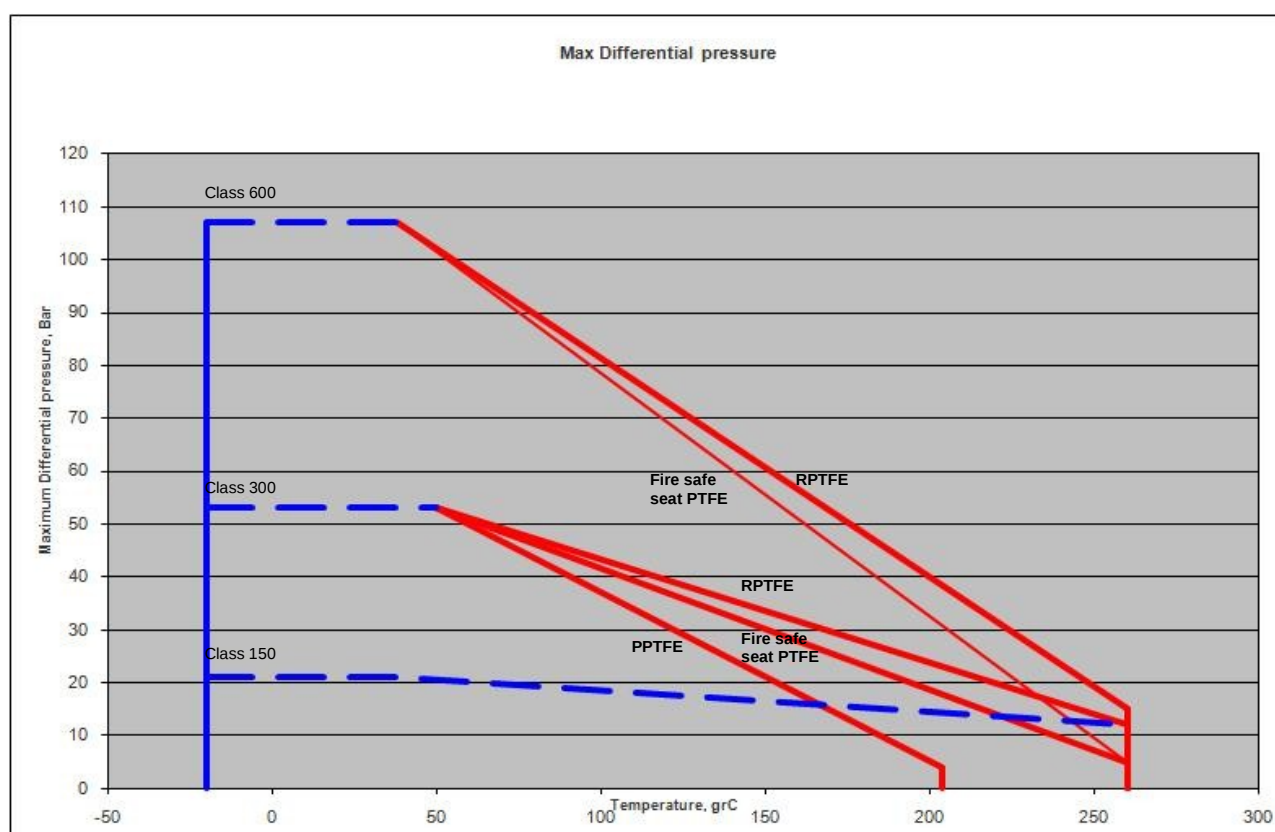
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Table 6 - Pressure/temperature ratio

Temp. °C (°F)	PN16			PN25			PN40			PN63			PN100		
	CF8M	CF8	1.0619	CF8M	CF8	1.0619	CF8M	CF8	1.0619	CF8M	CF8	1.0619	CF8M	CF8	1.0619
-30-RT	15,7	15,7	15,6	24,5	24,5	24,4	39,2	39,2	39	61,7	61,7	61,4	98	98	97,4
100(212)	13,3	12,9	13,6	20,8	20,2	21,3	33,3	32,3	34,1	52,5	50,8	53,7	83,3	80,7	85,3
150(302)	12,2	11,7	12,7	19	18,3	19,8	30,4	29,3	31,7	47,9	46,2	49,9	76	73,4	79,2
200(392)	11,3	10,9	11,4	17,6	17	17,8	28,2	27,2	28,4	44,3	42,9	44,8	70,4	68,1	71,1
250(482)	10,5	10,3	10,4	16,5	16	16,2	26,3	25,6	26	41,5	40,4	40,9	65,9	64,1	65
300(572)	10	9,7	9,4	15,6	15,1	14,7	25	24,2	23,5	39,3	38,1	37,1	62,4	60,5	58,9
350(662)	9,6	9,3	8,8	15	14,6	13,7	24	23,3	21,9	37,9	36,7	34,5	60,1	58,3	54,8
400(752)	9,3	9	8,4	14,5	14,1	13,2	23,2	22,6	21,6	36,6	35,6	33,3	58,1	56,4	52,8
425(797)	9,2	8,8	*	14,4	13,7	*	23	22	*	36,2	34,6	*	57,5	55	*

Carbon steel max 400°C



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Table 7 - Pressure/temperature acc. To ASME B16.34

Temp. °C (°F)	cl150			cl300			cl600	
	WCB	CF8M/CF8	Monel	WCB	CF8M/CF8	Monel	WCB	CF8M/CF8
-30-RT	19,7	19	15,8	51	49,6	41,1	102,0	99
100(212)	17,7	16,2	13,5	45,9	41,8	35,9	91,9	84,3
150(302)	15,8	14,8	13,1	45,2	38,5	34,1	91,0	76,8
200(392)	13,8	13,5	12,8	43,9	35,7	33,2	88,2	71,4
250(482)	12,1	12	11,9	41,8	33,5	32,9	83,9	66,9
300(572)	10,2	10,5	10,9	39,7	31,4	32,6	79,4	62,4
350(662)	8,3	9	9,9	37,5	29,2	32,3	74,9	57,9
400(752)	6,4	7,5	8,9	35,4	27,1	32	70,4	53,4

Table 8 - Torque in Nm -vs. dP, PN10-25, CI 150

Dimension		Difference pressure, bar					
DN	Inch	5		10		16	
		Soft	Metal	Soft	Metal	Soft	Metal
50-80	2-3	See class 300					
100	4	54	88	60	95	65	103
125	5	74	125	85	142	96	161
150	6	112	170	120	190	104	216
200	8	189	282	208	319	242	363
250	10	246	424	289	496	354	582
300	12	314	641	432	766	502	918
350	14	480	762	632	913	814	1094
400	16	619	884	804	1092	1044	1338
450	18	798	1166	1054	1559	1365	2031
500	20	1072	1665	1421	2246	1839	2491
600	24	1620	2537	2180	3177	2841	3943

Table 9 -Torque in Nm -vs. dP, PN25-63, CI300

Dimension		Difference pressure, bar									
DN	Inch	5		10		16		25		40	
		Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal
50-80	2-3	See Class 600									
100	4	39	72	43	73	47	75	53	77	65	83
125	5	61	92	69	100	77	110	90	123	114	146
150	6	86	125	89	129	92	137	143	186	244	302
200	8	123	186	146	207	169	235	211	275	282	343
250	10	231	298	279	338	327	386	414	460	559	580
300	12	331	450	413	507	495	576	640	678	885	849
350	14	474	702	583	835	692	994	885	1233	1213	1631
400	16	604	776	813	926	1022	1108	1389	1380	2014	1835
450	18	734	909	981	1124	1228	1383	1666	1774	2407	2422
500	20	967	1267	1280	1718	1593	2260	2149	3075	3094	4431
600	24	1252	1761	1683	2410	2114	3188	3460	4357	4171	6303

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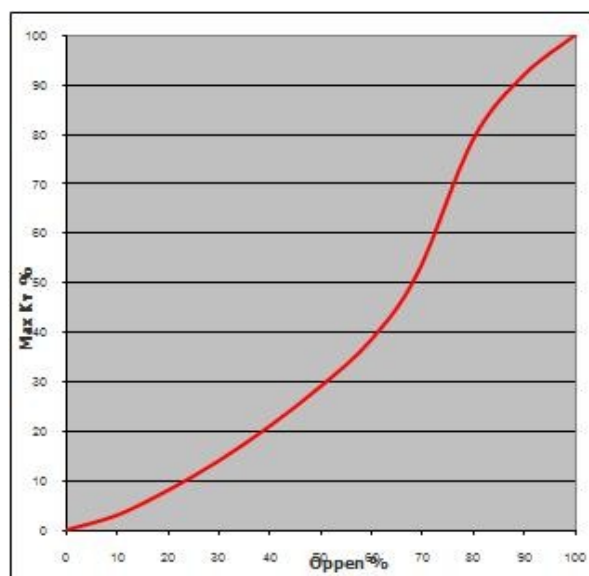


Table 10 - Torque in Nm -vs. dP, PN63/100, CI 600

Dimension		Difference pressure, bar											
DN	Inch	5		10		16		25		40		63	
		Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal	Soft	Metal
50	2	9	15	12	19	15	25	20	33	29	48	38	66
65	2 1/2	33	57	35	58	38	62	43	62	52	74	65	87
80	3	52	99	54	103	56	108	59	115	64	127	75	146
100	4	96	146	109	156	123	168	146	187	183	218	245	266
125	5	121	190	134	208	150	223	173	253	212	284	327	455
150	6	158	274	184	168	207	339	248	392	318	480	422	616
200	8	234	490	280	546	336	613	419	715	557	883	783	1140
250	10	420	705	495	801	593	915	740	1088	985	1374	1366	1812
300	12	675	1125	801	1303	953	1516	1181	1835	1561	2365	2144	3178
350	14	813	1497	972	1733	1162	2016	1448	2441	1925	3149	2661	4233
400	16	1015	1775	1209	2111	1443	2517	1793	3123	2377	4134	3421	5686
450	18	1326	2431	1573	3032	1869	3753	2314	4834	3055	6636	4202	12110
500	20	1622	3263	1966	4099	2378	5102	2997	6605	4029	9112	5626	12957
600	24	3541	4704	3857	5949	4236	7443	4805	9686	5753	13423	7933	19152

Table 11 - Flow data

Size		Kv		
DN	Inch	PN 10-PN25	PN 40	PN63-PN100
		Class 150	Class 300	Class 600
65	2 1/2	67	-	-
80	3	142	142	134
100	4	345	345	224
125	5	560	597	415
150	6	905	905	647
200	8	1897	1552	1164
250	10	2845	2716	1810
300	12	4397	4095	2500
350	14	5000	4483	3448
400	16	6897	5948	4397
450	18	9052	8017	4741
500	20	12069	9741	6853
600	24	18621	15948	9741



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Table 12 - Product code, double ecc.

Material		Body Carbon steel 1.0619			Stainless steel CF8M
PN/class	Conn.	1.0619/17-4PL	Disc/Stem CF8/17-4PH	CF8M/17-4PH	Disc/Stem CF8M/SS316
10/16	WafJr	V2J3X*1W016L** -zzz	V2J3X*3W016L** -zzz	V2J3X*7W016L** -zzz	V2J8X*7W016L** -zzz
	Lug	V2J3X*1L016L** -zzz	V2J3X*3L016L** -zzz	V2J3X*7L016L** -zzz	V2J8X*7L016L** -zzz
cl150	Wafer	V2J3X*1W01L** -zzz	V2J3X*3W01L** -zzz	V2J3X*7W01L** -zzz	V2J8X*7W01L** -zzz
	Lug	V2J3X*1L01L** -zzz	V2J3X*3L01L** -zzz	V2J3X*7L01L** -zzz	V2J8X*7L01L** -zzz
25/40	Wafer	V2J3X*1W040L** -zzz	V2J3X*3W040L** -zzz	V2J3X*7W040L** -zzz	V2J8X*7W040L** -zzz
	Lug	V2J3X*1L040L** -zzz	V2J3X*3L040L** -zzz	V2J3X*7L040L** -zzz	V2J8X*7L040L** -zzz
cl300	Wafer	V2J3X*1W03L** -zzz	V2J3X*3W03L** -zzz	V2J3X*7W03L** -zzz	V2J8X*7W03L** -zzz
	Lug	V2J3X*1L03L** -zzz	V2J3X*3L03L** -zzz	V2J3X*7L03L** -zzz	V2J8X*7L03L** -zzz
63/100	Wafer	V2J3X*1W100L** -zzz	V2J3X*3W100L** -zzz	V2J3X*7W100L** -zzz	V2J8X*7W100L** -zzz
	Lug	V2J3X*1L100L** -zzz	V2J3X*3L100L** -zzz	V2J3X*7L100L** -zzz	V2J8X*7L100L** -zzz
cl600	Wafer	V2J3X*1W06L** -zzz	V2J3X*3W06L** -zzz	V2J3X*7W06L** -zzz	V2J8X*7W06L** -zzz
	Lug	V2J3X*1L06L** -zzz	V2J3X*3L06L** -zzz	V2J3X*7L06L** -zzz	V2J8X*7L06L** -zzz

* Seat material, see table 14, ** L=lever, G=Gearbox, F=ISO-top flange for actuator, X see table 14,, zzz=dimension

Table 13 - Product code triple ecc.

Material		Body Carbon steel 1.0619			Stainless steel CF8M
PN/class	Conn.	1.0619/17-4PL	Disc/Stem CF8/17-4PH	CF8M/17-4PH	Disc/Stem CF8M/17-4PH
10/16	WafJr	V3J3X*1W016L** -zzz	V3J3X*3W016L** -zzz	V3J3X*7W016L** -zzz	V3J8X*7W016L** -zzz
	Lug	V3J3X*1L016L** -zzz	V3J3X*3L016L** -zzz	V3J3X*7L016L** -zzz	V3J8X*7L016L** -zzz
cl150	Wafer	V3J3X*1W01L** -zzz	V3J3X*3W01L** -zzz	V3J3X*7W01L** -zzz	V3J8X*7W01L** -zzz
	Lug	V3J3X*1L01L** -zzz	V3J3X*3L01L** -zzz	V3J3X*7L01L** -zzz	V3J8X*7L01L** -zzz
25/40	Wafer	V3J3X*1W040L** -zzz	V3J3X*3W040L** -zzz	V3J3X*7W040L** -zzz	V3J8X*7W040L** -zzz
	Lug	V3J3X*1L040L** -zzz	V3J3X*3L040L** -zzz	V3J3X*7L040L** -zzz	V3J8X*7L040L** -zzz
cl300	Wafer	V3J3X*1W03L** -zzz	V3J3X*3W03L** -zzz	V3J3X*7W03L** -zzz	V3J8X*7W03L** -zzz
	Lug	V3J3X*1L03L** -zzz	V3J3X*3L03L** -zzz	V3J3X*7L03L** -zzz	V3J8X*7L03L** -zzz
63/100	Wafer	V3J3X*1W100L** -zzz	V3J3X*3W100L** -zzz	V3J3X*7W100L** -zzz	V3J8X*7W100L** -zzz
	Lug	V3J3X*1L100L** -zzz	V3J3X*3L100L** -zzz	V3J3X*7L100L** -zzz	V3J8X*7L100L** -zzz
cl600	Wafer	V3J3X*1W06L** -zzz	V3J3X*3W06L** -zzz	V3J3X*7W06L** -zzz	V3J8X*7W06L** -zzz
	Lug	V3J3X*1L06L** -zzz	V3J3X*3L06L** -zzz	V3J3X*7L06L** -zzz	V3J8X*7L06L** -zzz

* Seat material, see table 14, ** L=lever, G=Gearbox, F=ISO-top flange for actuator, X see table 14,, zzz=dimension

Table 14 Seat material (X=)

Rubber	PTFE	RPTFE	EPDM	PEEK	Incoloy825	SS304	SS304 i	PTFE	SS316
C	P	R	E	N	Y	2	7		8

EF Valves AB

Teknikringen 1F,
583 30 Linköping
Sweden

info@efvalves.se
www.efvalves.se
+46 (0) 703 22 56 36