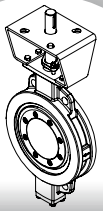


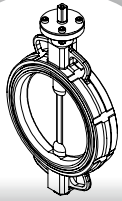
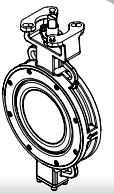


501M series
Triple Eccentric Metal Seated
Butterfly Valves



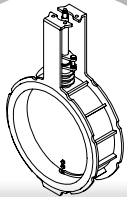
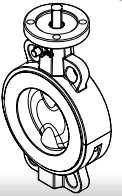
S501M series Triple Eccentric Metal Seated Butterfly Valves

401N series - Double Eccentric Butterfly Valves



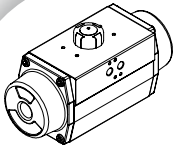
301 / 301E series - Butterfly Valves with rubber seat

301TSS 301TT series - Butterfly Valves with PTFE lined

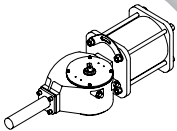


HT600 series - Damper valves for high temperature

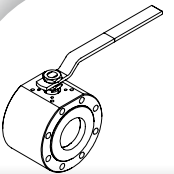
AP / APM series - Pneumatic Rotary Actuators



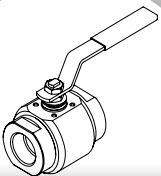
APG series - Schotch Yoke Pneumatic Actuators



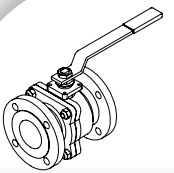
S10 series - Wafer Flat Body Ball Valves



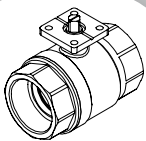
S20 series - Two-pieces 800 p.s.i. Ball Valves



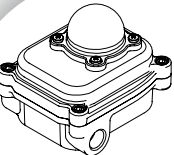
S30 series - Split Body Ball Valves



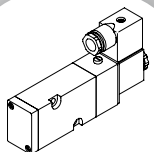
S40, S50, S60, S70, S80 series - Threaded actuated and manual ball valves



MBX Series - Limit Switch Box



SVS Series - Solenoid valve 5/2 or 3/2 way



ACCESSORIES



Sirca International SpA was founded in the late seventies, and started doing business as a manufacturer of complete automation and pneumatic regulation systems.

Our flagship product is rotating pneumatic quarter-turn actuators which are compact, lightweight and highly reliable.

Subsequently, our company entered the Italian market with the production and sale of rubber-seated butterfly valves, double eccentric butterfly valves, ball valves and check valves.

In time at Sirca International we began marketing and producing accessories to actuate, control and regulate valves. These were installed on our own valves and actuators in order to offer our customers complete “assemblies” that are capable of meeting the most varied system requirements.

Beginning in the 1990s, our company began looking at foreign markets and in a short time we started exporting more than 60% of our production.

This type of market development requires continuous product innovation as well as continuous effort to maintain product competitiveness and quality.

With this motivation and these objectives, with the arrival of the new millenium we at Sirca International began designing and producing the triple eccentric butterfly valve metal-seated that are currently top of the range of the valves produced at Sirca.

The main strong points of Sirca International SpA lie in our product quality, competitive price, large warehouse stocks and in the reliability of our services. These confirm our status as a Leading Company on the national and international markets.

METAL SEATED butterfly valve

The metal seated butterfly valve, SIRCA series S501M, has been designed to support extreme operation conditions, either of pressures or temperatures, in the field of fluids interception and control as well as in the applications with corrosive media.

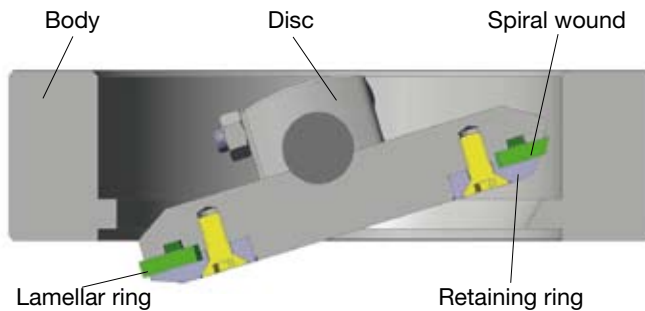
The main feature of this valve is the sealing, consisting in a lamellar ring package mounted on the disc (in the standard version) and held by a bolted shut-off ring. The lamellar ring is made of metal rings intercalated with sealing material (graphoil, AFM, or similar). Such a structure makes it resilient enough to optimize the contact against the seat, that's also made easier by the fact that the lamellar ring is positioned on the disc, in a proper house with wide rooms allowing its self-centering and adaptation to the seat.

This valve is triplecentric execution, which means that the disc rotation features and the seat cone generator are positioned on axis different from those of the sealing area.

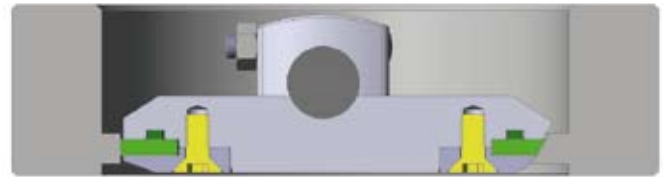
In fact, we first find the shaft in double eccentric position vs. the sealing, while the third eccentricity is given by the cone axis generation of the sealing itself-tilted vs. the valve axis.

This triplecentricity allows the disc movement with no creeps between the seal ring and the seat which get in contact at shut-off only.

OPEN position



CLOSED position

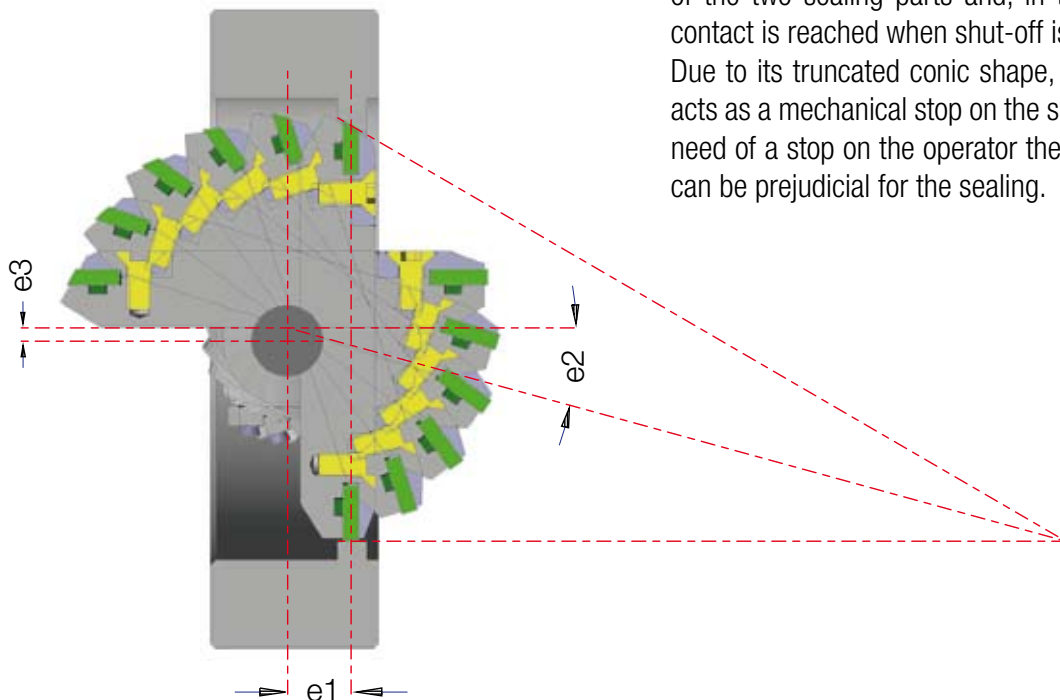


Disc rotation

Thanks to the double eccentricity of the rotation axis, the movement of the disc and, consequently, of the lamellar

ring happens without creep between the moving parts and the seat. In fact, during opening, it occurs a net detachment of the two sealing parts and, in the closing phase, the contact is reached when shut-off is completed.

Due to its truncated conic shape, the seat into the body acts as a mechanical stop on the shut-off, so avoiding the need of a stop on the operator that, on this type of valve, can be prejudicial for the sealing.



Definition of tripleeccentric

The SIRCA metal seated butterfly valve is defined of tripleeccentric execution. But what do we mean for tripleeccentric?

As you can see from the above sketch, the eccentricities are referred to the sealing area; you have a double eccentricity of the shaft which is positioned out of axis vs. the sealing centre line (**e 1**) and vs. the valve axis (**e 2**);

the third eccentricity, less visible but not less important, is the elliptical seat, obtained like a cone portion, the axis of which is tilted vs. the valve axis (**e 3**).

These are the reasons because the valve is defined as tripleeccentric execution with the shaft in double eccentric position.

Constructive versions

The **S501M** valve, is available in the following constructive versions: wafer, lug, flanged and butt welding.

The **wafer** version is much lighter than the previous two and, even if it has the same face-to-face dimensions of the lug, it only has four holes which are used for the valve centering when fixing it to the pipeline flanges.

The **lug** version, more compact and with face-to-face dimensions lower than the flanged one, can also be used as pipeline terminal with the difference that the holes in the body are threaded; such holes can be used for a half with semi rods for connection to the pipeline and for other half left free.

The double **flanged** version, having at the edges two flanges with through holes, can be used as pipeline terminal since everyone of its flanges can be fixed with separate rods to a piece of pipeline.

The **butt welding** version has face to face dimensions bigger than the other versions; it is presents at its edges two welding bevels made either in accordance with the regulating standard or as customer's request.

Design standards:

DESIGN: ASMEB16.34 / EN12516-2 / EN593

Face to Face DIMENSION

Wafer and **Lug** type - class ANSI150 and ANSI300:

3" ÷ 24" complying with API 609 tab 2 (B)

28" ÷ 40" complying with EN558 basic series 16

Double Flanged type:

3" ÷ 40" Class ANSI150 complying with:

3" ÷ 24" Class ANSI300 complying with:

API std 609Table 3, Double Flanged Short Pattern Class ANSI150-300

Double Flanged Long Pattern type:

3" ÷ 40" Class ANSI150 complying with EN558 basic series 3

3" ÷ 24" Class ANSI300 complying with EN558 basic series 4

Butt-Weld type - class ANSI150 and ANSI300:

3" ÷ 24" complying with EN558 basic series 14

FLANGEDRILLING:

ASMEB16.5 - ASMEB16.47 - EN1092-1

TESTING:

API 598 -API 6D -EN12266-1 / 2

FIRE TEST:

API 607 - ISO 10497M-5 - API 6FA

MARKING:

MSS-SP-25 -EN19

TEMPERATURERANGE:

From -196°C to +700°C (from -320 °F to +1292 °F) selectioning the suitable materials.

Upon request designs for temperatures different from those indicated can be carried out.

For employments at high and low temperatures valves can have the stem with extension.

In compliance with the European directives:

Pressure Equipment Directive 97/23/CE - PED

Constructive features

Body:

It can be electrowelded to optimize the compactness and the execution versatility. The constructive versions are those mentioned on page 3.

Seat in the body:

The seat in the valve body is obtained executing a carryover of 21 degree Stellite, through welding. This carryover is executed both on the bodies of steel to the carbon and those of stainless steel. The place of business is worked at digital control machine with CAD-CAM technology to obtain his special elliptical form which marries exactly the estate ring.

This particular shape, together with the stem double eccentricity, allows it not to be subject to creeps, during the disc rotation, with the relevant sealing ring.

Disc:

It is compact and shaped in such a way to offer the lowest possible resistance to the medium passage as well as a low dynamic torque.

The construction is suitable for housing both the shaft in double eccentric position vs. the seat and the sealing ring with its retaining ring held on the disc by means of screws.

The fixing to the shaft is carried out using conic pins and keys; the first for small sizes, both for bigger sizes.

Seal lamellar ring:

It is built intercalating metal rings with gasket materials (graphoil, AFM, or similar) absolutely free of elastomers and PTFE.

It is positioned on the disc in a loose housing and held by a bolted ring; nevertheless it has the possibility to move for centering and fitting itself to the body seat.

Its elliptical shape, obtained by machining, perfectly fits the seat in the body and, joined to a suitable shut-off torque, the perfect sealing, also bi-directional, is reached.

Shaft:

The shaft is made of one-piece and passes across the whole valve.

This allows the better distribution, all over the disc, of the shut-off torque. It is mounted on wide-band bushings and has a bottom of an adjustable thrust bearing that the perfect disk centering allows in axial sense.

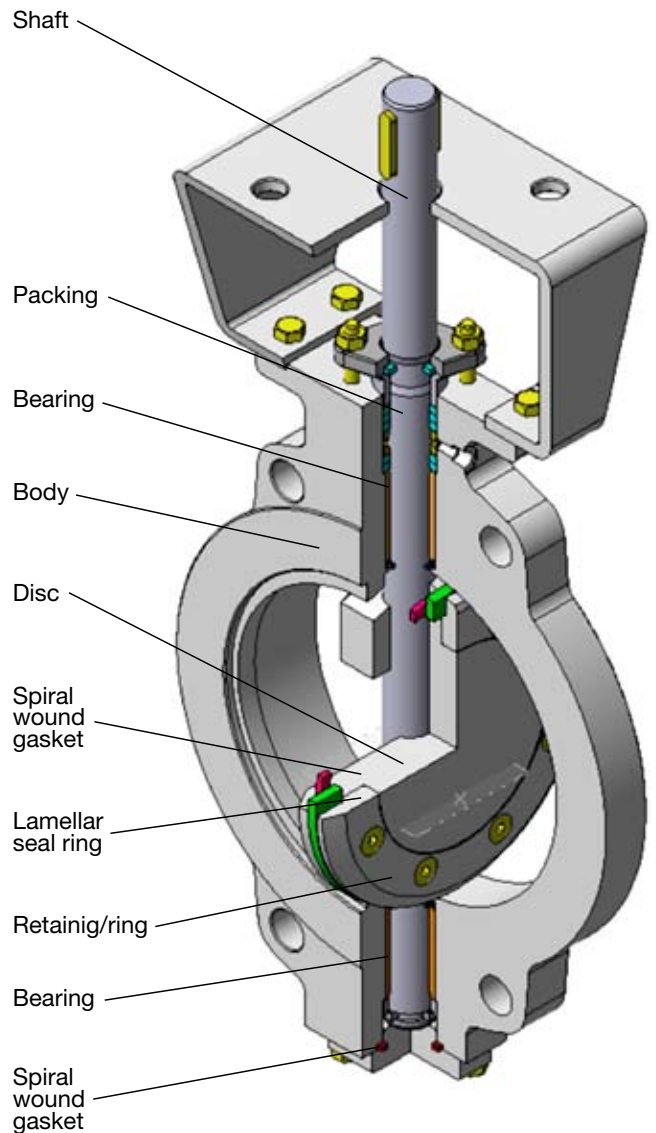
Bushings:

In standard version they are made of stainless steel with an surfacing anti-friction hardening; for more exacting applications they are made of high quality alloys.

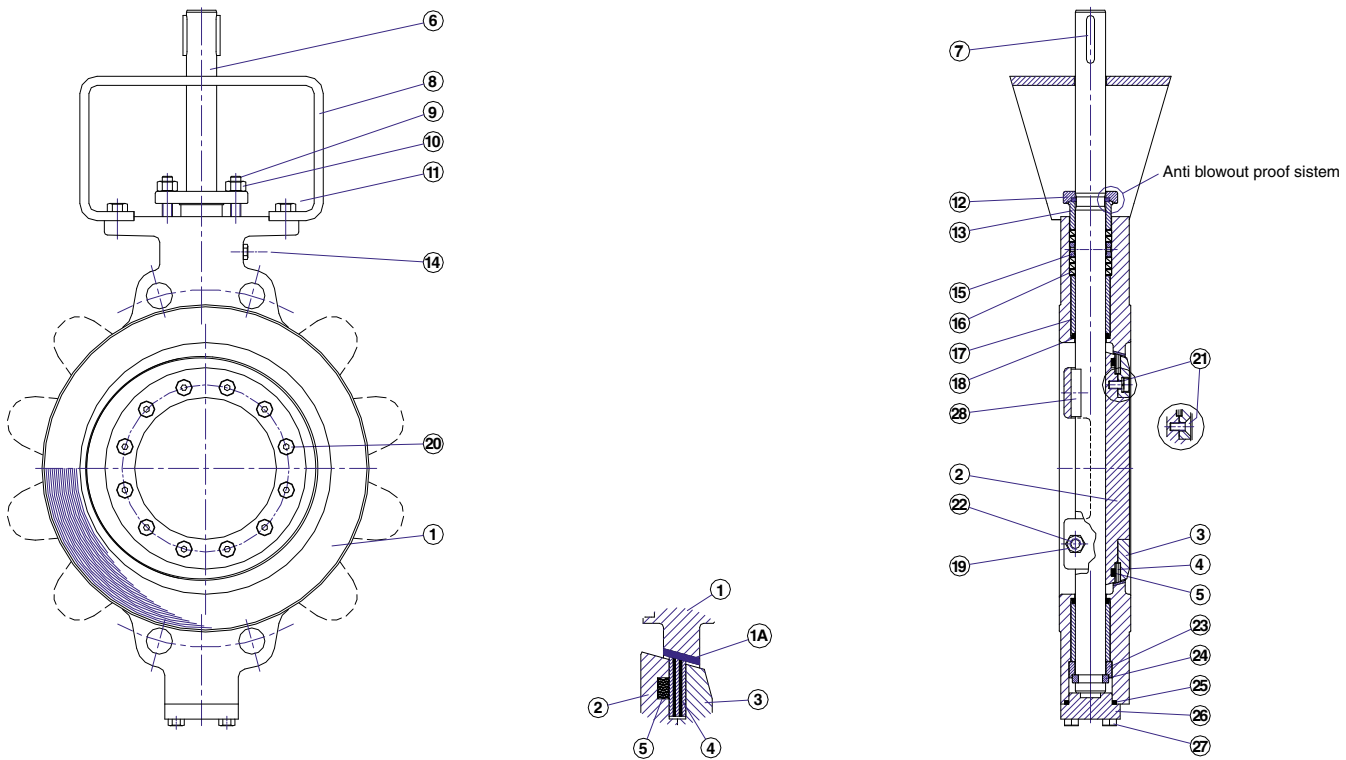
Packing:

In the most cases it is made of graphoil pre-compressed rings inserted into a stuffing box in the body and kept under compression by a gland with adjustment rods. For particular operating conditions other materials can be used.

Construction



Exploded view



Standard materials

Item	Description	CONFIGURATION			Q.ty
		Carbon steel	316 Stainless steel	Al / Bronze	
1	Body	P355 NH DIN EN10028-3	ASTM A 182 Gr. F 316	Br/Al ASTM B148 C95800	1
1A	Body seat	Stellite Gr.21 Weld Overlay	Stellite Gr.21 Weld Overlay	/	
2	Disc	P355 NH DIN EN10028-3	ASTM A 351 CF8M	Br/Al ASTM B148 C95800	1
3	Ring	P355 NH DIN EN10028-3	ASTM A 182 Gr. F 316	Br/Al ASTM B148 C95800	1
• 4	Lamellar seal ring	DUPLEX + Graphite	DUPLEX + Graphite	DUPLEX + Graphite	1
• 5	Spiral wound gasket	AISI 316 + Graphite	AISI 316 + Graphite	AISI 316 + Graphite	1
6	Shaft	AISI 420	NITRONIC 50	G-CuAl11Fe4	1
7	Key	AISI 410	NITRONIC 50	AISI 410	2
8	Braking	CARBON Steel	CARBON Steel	CARBON Steel	1
9	Stud bolt	A2 (AISI 304)	A2 (AISI 304)	A2 (AISI 304)	2
10	Nut	A2 (AISI 304)	A2 (AISI 304)	A2 (AISI 304)	2
11	Screw	A2 (AISI 304)	A2 (AISI 304)	A2 (AISI 304)	4
12	Plate	ASTM A 105 nickel plated	ASTM A 182 Gr. F 316	ASTM A 182 Gr. F 316	1
13	Ring	AISI 420 nickel plated	ASTM A 182 Gr. F 316	ASTM A 182 Gr. F 316	1
14	Grease nipples	Stainless Steel	Stainless Steel	Stainless Steel	1
15	Lantern Ring	ASTM A 182 Gr. F 316	ASTM A 182 Gr. F 316	ASTM A 182 Gr. F 316	1
• 16	Paking	Graphoil	Graphoil	Graphoil	5
17	Bearing	ASTM A 182 Gr. F 316 nitr.	ASTM A 182 Gr. F 316 nitr.	ASTM A 182 Gr. F 316 nitr.	2
18	Bearing protector ring	Graphite	Graphite	Graphite	2
19	Nut	A4 (AISI 316)	A4 (AISI 316)	A4 (AISI 316)	2
20	Screw	A4 (AISI 316)	A4 (AISI 316)	A4 (AISI 316)	2
21	Spring lock washer	Stainless Steel	Stainless Steel	Stainless Steel	6÷16
22	Taper pin	AISI 420	NITRONIC 50	AISI 630	2
23	Thrust bearing	ASTM A 182 Gr. F 316	NITRONIC 50	ASTM A 182 Gr. F 316	1
24	Thrust washer	ASTM A 182 Gr. F 316	AISI 316	ASTM A 182 Gr. F 316	1
• 25	Spiral wound gasket	AISI 316 + Graphite	AISI 316 + Graphite	AISI 316 + Graphite	1
26	Bottom flange	ASTM A 105	ASTM A 182 Gr. F 316	Br/Al ASTM B148 C95800	1
27	Screw	A2 (AISI 304)	A2 (AISI 304)	A2 (AISI 304)	4
28	Disc Key	AISI 410	NITRONIC 50	AISI 410	1

• Suggested spare parts list for maintenance.

NOTE:

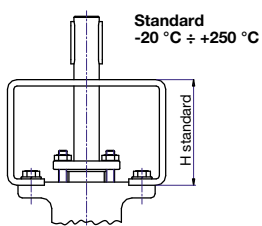
Standard valves are constructed with equal or equivalent materials to those indicated in the table.

In the case the valve is onerous particular job conditions (high temperatures, low temperatures, high pressure, particular fluid), could be uses other suitable materials for such applications.

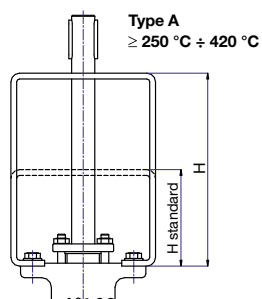
Temperature limits of constructive materials

Description	Materials	Temperature limits				
		(°C)		(°F)		
		min	max	min	max	
Body - Disc	ASTM A 216 WCB	-30	+427	-22	800	
	ASTM A 217 WC6	-30	+539	-22	1100	
	ASTM A 217 WC9	-30	+539	-22	1100	
	ASTM A 352 LCB	-45	+350	-50	662	
	ASTM A 351 CF8	-196	+538	-320	1000	
	ASTM A 351 CF8M	-196	+538	-320	1000	
	ASTM A 351 CF8C	-196	+538	-320	1000	
	ASTM A 352 CA6NM	-73	+427	-99	800	
	ASTM B 148 C9 5500 (Al-Bz)	-196	+315	-320	600	
	MONEL	-196	+481	-320	896	
	HASTELLOY	-30	+538	-22	1000	
Stem - Pins	INCONEL 600	-30	+650	-22	1202	
	ASTM A 182 F316 N	-196	+315	-320	600	
	ASTM A 182 F316 L	-196	+315	-320	600	
	ASTM A 564 type 630		+315	-50	600	
	NITRONIC 50	-196	+505	-320	941	
	ASTM 453 Gr. 660		+593	-22	1100	
	MONEL K 500	-196	+481	-320	896	
	ASTM B148 C6 3000 (Al-Br)	-196	+315	-320	600	
	INCONEL 600	-30	+650	-22	1202	
	Lamellar seal ring	SS / ARAMIDIC	-45	+538	-50	1000
		SS / CHEMOTERM	-196	+538	-320	1000
MONEL / CHEMOTERM		-196	+481	-320	896	
CUPRO NIKEL / CHEMOTERM		-196	+315	-320	600	
Packing	ARAMIDIC / TEFLON	-45	+240	-50	464	
	ARAMIDIC / GRAPHITE	-45	+538	-50	1000	
	GRAFOIL	-196	+650	-320	1202	

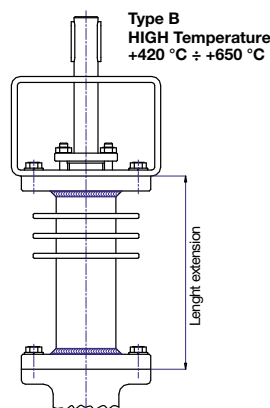
Stem extension



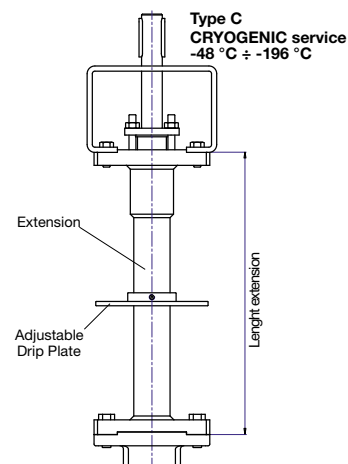
This standard configuration is used for temperature fields: -20 °C ÷ +250 °C



This configuration is provided for used valves at temperatures: +250 °C ÷ +420 °C.
For valves DN80 ÷ DN200 dimension H= H standard +100 mm.
For valves beyond the dimension DN200, H= H standard +150mm



This configuration is supplied for used valves at high temperature: +420 °C ÷ +650 °C.
For valves DN80 ÷ DN300 the length of the extension is +150mm.
For valves beyond DN300 the length of extension is +250mm.
For such high temperature some lamellars are welded on the stem extension to disperse the heat (see above drawing).



This configuration is provided for valves used in cryogenic environment -48 °C ÷ -196 °C. The length of the extension is in according to BS6364 and MESCSPE77/200.

For the correct lengths of extensions, contact the technical department.

Pressure -Temperature Ratings for Group 1.1 material (A 216 gr. WCB) - Standard Class

[°C - bar]

Temperature (°C)	Working Pressure by Class (bar)				
	150	300	600	900	1500
-29 to 38	19,6	51,1	102,1	153,2	255,3
50	19,2	50,1	100,2	150,4	250,6
100	17,7	46,6	93,2	139,8	233,0
150	15,8	45,1	90,2	135,2	225,4
200	13,8	43,8	87,6	131,4	219
250	12,1	41,9	83,9	125,8	209,7
300	10,2	39,8	79,6	119,5	199,1
325	9,3	38,7	77,4	116,1	193,6
350	8,4	37,6	75,1	112,7	187,8
375	7,4	36,4	72,7	109,1	181,8
400	6,5	34,7	69,4	104,2	173,6
425	5,5	28,8	57,5	86,3	143,8
450	4,6	23,0	46,0	69,0	115
475	3,7	17,4	34,9	52,3	87,2
500	2,8	11,8	23,5	35,3	58,8
538	1,4	5,9	11,8	17,7	29,5

Important:
Upon prolonged exposure to temperatures above 425°C, the carbide phase of steel may be converted to graphite. Permissible, but not recommended for prolonged use above 425°C

Note:
The table shows the maximum pressure of use of the valve raising by the temperature, depending on the constructive class.
The table is in compliance with ASME B16.34 (Table 2-1.1 ratings for group 1.1 materials).

[°F - psi]

Temperature (°F)	Working Pressure by Class (psig)				
	150	300	600	900	1500
-20 to 100	285	740	1480	2220	3705
200	260	980	1360	2035	3395
300	230	655	1310	1965	3270
400	200	635	1265	1900	3170
500	170	605	1205	1810	3015
600	140	570	1135	1705	2840
650	125	550	1100	1650	2745
700	110	530	1060	1590	2665
750	95	505	1015	1520	2535
800	80	410	825	1235	2055
850	65	320	640	955	1595
900	50	230	460	690	1150
950	35	135	275	410	685
1000	20	85	170	2550	430

Important:
Upon prolonged exposure to temperatures above 800°F, the carbide phase of steel may be converted to graphite. Permissible, but not recommended for prolonged use above 800°F

Pressure -Temperature Ratings for Group 2.2 material (A 351 gr. CF8M) - Standard Class

[°C - bar]

Temperature (°C)	Working Pressure by Class (bar)				
	150	300	600	900	1500
- 29 to 38	19,0	49,6	99,3	148,9	248,2
50	18,4	48,1	96,2	144,3	240,6
100	16,2	42,2	84,4	126,6	211,0
150	14,8	38,5	77,0	115,5	192,5
200	13,7	35,7	71,3	107,0	178,3
250	12,1	33,4	66,8	100,1	166,9
300	10,2	31,6	63,2	94,9	158,1
325	9,3	30,9	61,8	92,7	154,4
350	8,4	30,3	60,7	91,0	151,6
375	7,4	29,9	59,8	89,6	149,4
400	6,5	29,4	58,9	88,3	147,2
425	5,5	29,1	58,3	87,4	145,7
450	4,6	28,8	57,7	86,5	144,2
475	3,7	28,7	57,3	86,0	143,4
500	2,8	28,2	56,5	84,7	140,9
538	1,4	25,2	50,0	75,2	125,5
550	1,4	(a)	25,0	49,8	74,8
124,9	575	1,4	(a)	24,0	47,9
71,8	119,7	600	1,4	(a)	19,9
39,8	59,7	99,5	625	1,4	(a)
15,8	31,6	47,4	79,1	650	1,4
(a)	12,7	25,3	38,0	63,3	675
1,4	(a)	10,3	20,6	31,0	51,6
700	1,4	(a)	8,4	16,8	25,1
41,9	725	1,4	(a)	7,0	14,0
21,0	34,9	750	1,4	(a)	5,9
11,7	17,6	29,3	775	1,4	(a)
4,6	9,0	13,7	22,8	800	1,2
(a)	3,5	7,0	10,5	17,4	816
1,0	(a)	2,8	5,9	8,6	14,1

Important:
(a) Flanged end valve ratings terminate at 538 °C
At temperatures above 538°C, use only when the carbon content is 0,04% or higher.

Note:
The table shows the maximum pressure of use of the valve raising by the temperature, depending on the constructive class.
The table is in compliance with ASME B16.34 (Table 2-2.2 ratings for group 2.2 materials).

[°F - psi]

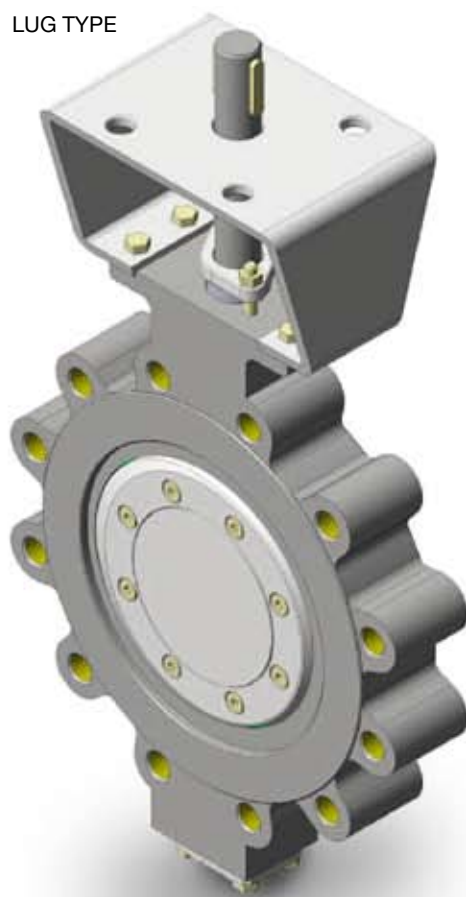
Temperature (°F)	Working Pressure by Class (psig)				
	150	300	600	900	1500
- 20 to 100	275	720	1440	2160	3600
200	235	620	1240	1860	3095
300	215	560	1120	1680	2795
400	195	515	1025	1540	2570
500	170	480	955	1435	2390
600	140	450	900	1355	2255
650	125	440	885	1325	2210
700	110	435	870	1305	2170
750	95	425	855	1280	2135
800	80	420	845	1265	2110
850	65	420	835	1255	2090
900	50	415	830	1245	2075
950	35	385	775	1160	1930
1000	20	365	725	1090	1820
1050	20	360	720	1080	1800
1100	20	305	610	915	1525
1150	20	235	475	710	1185
1200	20	185	370	555	925
1250	20	145	295	440	735
1300	20	115	235	350	585
1350	20	95	190	290	480
1400	20	75	150	225	380
1450	20	60	115	175	290
1500	15	40	85	125	205

Important:
(a) Flanged end valve ratings terminate at 1000 °F
At temperatures above 1000°F, use only when the carbon content is 0,04% or higher.

WAFER TYPE



LUG TYPE



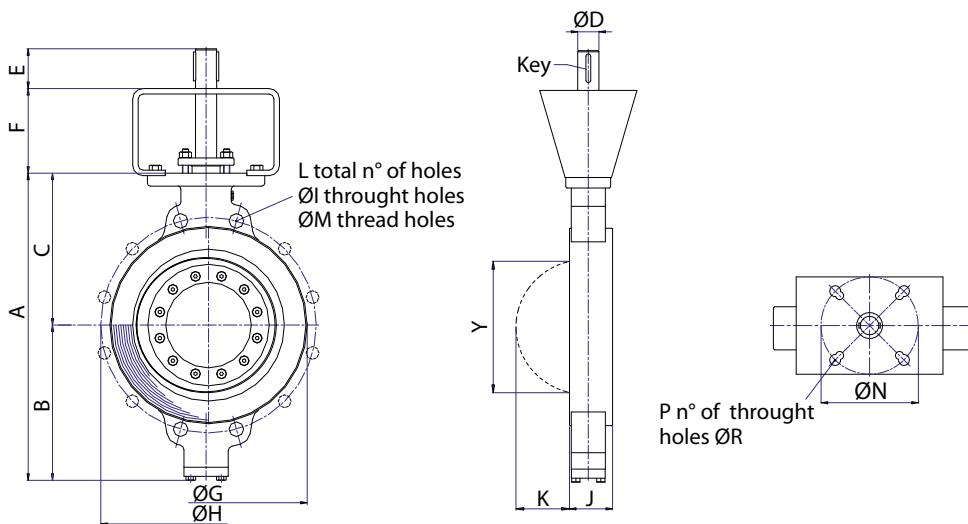
FLANGED TYPE



BUT-WELD TYPE



Wafer type valve



Note:
The stem and adaptor dimension are according to service and to valve working conditions.

Overall dimensions

WAFER TYPE - Class ANSI 150

DN	A	B	C	ØD	Key (2x)	E	F	ØG	ANSI 150 ASME B16.5				ISO 5211						
									ØH	ØI	L	M	ØN	P	ØR	J	K	Y	Kg
65	252	125	127	18	6x6x40	45	100	105	139,7	19	4	/	70-102	4	9-11	46	14	50	9,5
80	270	133	137	18	6x6x40	45	100	127	152,4	19	4	/	70-102	4	9-11	48	16	57	15
100	313	156	157	20	6x6x40	60	100	157	190,5	19	8	/	70-102	4	9-11	54	28	84	22
125	340	170	170	20	6x6x40	60	100	186	215,9	22,2	8	/	70-102	4	9-11	57	38	108	25
150	374	188	186	24	8x7x40	60	100	216	241,3	22,2	8	/	102-125	4	9-11	57	52	134	28
200	416	209	207	28	8x7x40	60	120	270	298,5	22,2	8	/	125-140	4	13-17	64	71	179	35
250	502	255	247	30	8x7x40	60	120	325	362,0	25,4	12	/	125-140	4	13-17	71	96	225	56
300	583	298	285	35	10x8x40	60	120	376	431,8	25,4	12	/	125-140	4	13-17	81	113	274	80
350	677	344	333	40	12x8x50	70	150	414	476,3	/	12	1"	140-165	4	17-21	92	138	316	92
400	762	382	380	45	14x9x63	80	150	470	539,8	/	16	1"	140-165	4	17-21	102	156	363	130
450	837	426	411	50	14x9x63	80	150	532	577,9	/	16	1.1/8"	140-165	4	17-21	114	174	404	178
500	911	461	450	50	14x9x63	80	150	584	635,0	/	20	1.1/8"	254	8	17	127	198	460	225
600	1077	538	539	60	18x11x90	120	150	692	749,3	/	20	1.1/4"	254	8	17	154	228	538	356
700	1200	605	595	75	20x12x110	140	150	800	836,6	/	28	1.1/4"	254	8	21	229	238	614	626

WAFER TYPE - Class ANSI 300

DN	A	B	C	ØD	Key (2x)	E	F	ØG	ANSI 300 ASME B16.5				ISO 5211						
									ØH	ØI	L	M	ØN	P	ØR	J	K	Y	Kg
80	279	142	137	18	6x6x40	45	100	127	168,3	/	8	3/4"	70-102	4	9-11	48	16	57	15
100	317	160	157	20	6x6x50	60	100	157	200	/	8	3/4"	70-102	4	9-11	54	28	84	24
125	350	175	175	24	8x7x50	60	100	186	234,9	/	8	3/4"	102-125	4	11-13	59	38	108	30
150	382	192	190,6	28	8x7x50	60	100	216	269,9	/	12	3/4"	102-125	4	11-13	59	50	132	32
200	457	232	225	30	8x7x50	60	120	270	330,2	/	12	7/8"	125-140	4	13-17	73	68	174	50
250	513	265	248	35	10x8x50	60	120	324	387,3	/	16	1"	125-140	4	13-17	83	92	224	82
300	600	310	290	45	14x9x50	60	150	381	450,8	/	16	1.1/8"	125-140	4	13-17	92	112	272	98
350	688	348	340	50	14x9x63	70	150	413	514,3	/	20	1.1/8"	140-165	4	17-21	117	122	305	125
400	763	388	375	60	18x11x70	80	150	470	571,5	/	20	1.1/4"	140-165	4	17-21	133	142	346	210
450	830	430	400	65	18x11x70	80	150	533	628,6	/	24	1.1/4"	140-165	4	17-21	149	161	388	275
500	926	468	458	70	20x12x70	80	150	584	685,8	/	24	1.1/4"	254	8	21	159	181	448	322
600	1062	552	510	80	22x14x90	120	150	692	812,8	/	24	1.1/2"	254	8	21	181	212	519	524

WAFER TYPE - Class ANSI 600

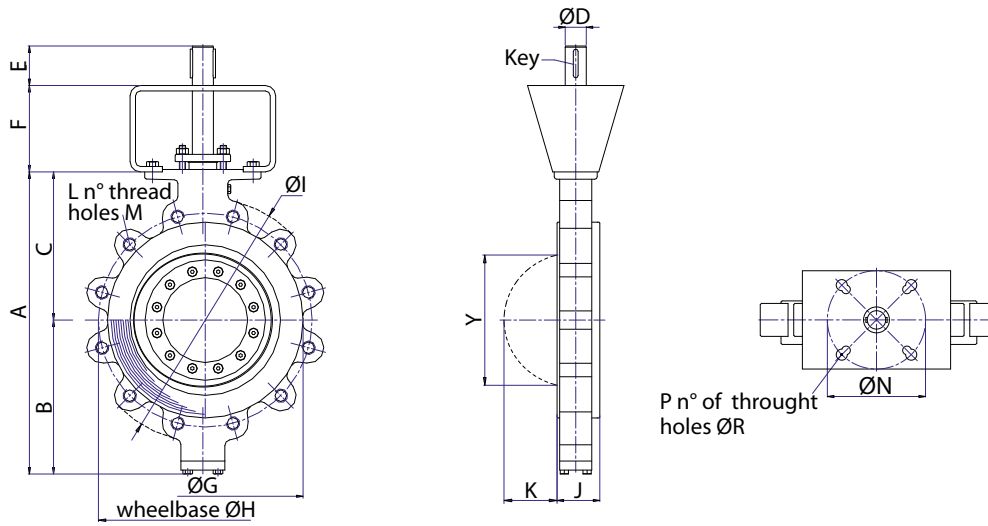
DN	A	B	C	ØD	Key (2x)	E	F	ØG	ANSI 600 ASME B16.5				ISO 5211						
									ØH	ØI	L	M	ØN	P	ØR	J	K	Y	Kg
80	289	152	137	20	6x6x40	50	100	127	168,3	/	8	3/4"	F10-F12	4	9-11	54	14	58	25
100	345	188	157	30	8x7x40	50	100	157	215,9	/	8	7/8"	F12-F14	4	9-11	64	22	77	30
125	390	215	175	35	10x8x50	60	100	186	266,7	/	8	1"	F14-F16	4	11-13	78	36	103	46
150	477	244	233	40	12x8x63	70	100	216	292,1	/	12	1"	F14-F16	4	11-13	78	40	122	63
200	515	290	225	45	14x9x70	90	120	270	349,2	/	12	1.1/8"	F14-F16	4	13-17	102	53	165	108
250	659	324	335	50	14x9x80	100	120	324	431,8	/	16	1.1/4"	F16-F25	4-8	13-17	117	76	210	175
300	714	350	364	60	18x11x90	110	150	381	489	/	20	1.1/4"	F25-F30	8	13-17	140	88	258	221
350	785	395	390	70	20x12x100	120	150	413	527	/	20	1.3/8"	F25-F30	8	17-21	155	103	294	265
400	890	450	440	75	20x12x120	140	150	470	603,2	/	20	1.1/2"	F30-F35	8	17-21	178	127	346	342
450	977	492	485	90	25x14x125	160	150	533	654	/	20	1.5/8"	F30-F35	8	17-21	200	135	382	435
500	1052	524	528	95	25x14x130	180	150	584	723,9	/	24	1.5/8"	F35-F40	8	17-21	216	145	418	532
600	1295	665	630	120	32x18x180	200	150	692	838,2	/	24	1.7/8"	F35-F40	8	17-21	232	228	538	940

Note:

- Dimensions "J" complying with API 609 Tab 2
- Dimensions "øH, øI, L, M" complying with ASME B16.5 flanged ANSI150 and ANSI300
- "M" thread is in accordance to UNC thread ANSI B1.1, >1" use 8-UN thread pitch
- Only on request is possible to have METRIC thread (as shown in the table)
- Pressure/temperature class complying with ASME B16.34

All data in this sheet can be modified without prior notice. For dimensions of valves majors of DN600, contact our Technical Department

Lug type valve



Note:
The stem and adaptor dimension are according to service and to valve working conditions.

Overall dimensions

LUG TYPE - Class ANSI 150

DN	A	B	C	ØD	Key (2x)	E	F	ØG	ANSI 150 ASME B16.5				ISO 5211				Kg		
									ØH	ØI	L	M	ØN	P	ØR	J		K	Y
65	252	125	127	18	6x6x40	45	100	105	139,7	184	4	5/8"	70-102	4	9-11	46	14	50	11
80	270	133	137	18	6x6x40	45	100	127	152,4	190	4	5/8"	70-102	4	9-11	48	16	57	18
100	313	156	157	20	6x6x40	60	100	157	190,5	230	8	5/8"	70-102	4	9-11	54	28	84	24
125	340	170	170	20	6x6x40	60	100	186	215,9	255	8	3/4"	70-102	4	9-11	57	38	108	28
150	374	188	186	24	8x7x40	60	100	216	241,3	280	8	3/4"	102-125	4	9-11	57	52	134	30
200	416	209	207	28	8x7x40	60	120	270	298,5	345	8	3/4"	125-140	4	13-17	64	71	179	40
250	502	255	247	30	8x7x40	60	120	325	362,0	405	12	7/8"	125-140	4	13-17	71	96	225	65
300	583	298	285	35	10x8x40	60	120	376	431,8	485	12	7/8"	125-140	4	13-17	81	113	274	96
350	677	344	333	40	12x8x50	70	150	414	476,3	535	12	1"	140-165	4	17-21	92	138	316	106
400	762	382	380	45	14x9x63	80	150	470	539,8	595	16	1"	140-165	4	17-21	102	156	363	160
450	837	426	411	50	14x9x63	80	150	532	577,9	635	16	1.1/8"	140-165	4	17-21	114	174	404	205
500	911	461	450	50	14x9x63	80	150	584	635,0	700	20	1.1/8"	254	8	17	127	198	460	268
600	1077	538	539	60	18x11x90	120	150	692	749,3	815	20	1.1/4"	254	8	17	154	228	538	412
700	1200	605	595	75	20x12x110	140	150	800	836,6	925	28	1.1/4"	298	8	21	229	238	614	728

LUG TYPE - Class ANSI 300

DN	A	B	C	ØD	Key (2x)	E	F	ØG	ANSI 300 ASME B16.5				ISO 5211				Kg		
									ØH	ØI	L	M	ØN	P	ØR	J		K	Y
80	279	142	137	18	6x6x40	45	100	127	168,3	210	8	3/4"	70-102	4	9-11	48	16	57	19
100	317	160	157	20	6x6x50	60	100	157	200	254	8	3/4"	70-102	4	9-11	54	28	84	25
125	350	175	175	24	8x7x50	60	100	186	234,9	280	8	3/4"	102-125	4	11-13	59	38	108	36
150	382	192	190,6	28	8x7x50	60	100	216	269,9	317	12	3/4"	102-125	4	11-13	59	50	132	40
200	457	232	225	30	8x7x50	60	120	270	330,2	381	12	7/8"	125-140	4	13-17	73	68	174	68
250	513	265	248	35	10x8x50	60	120	324	387,3	444	16	1"	125-140	4	13-17	83	92	224	114
300	600	310	290	45	14x9x50	60	150	381	450,8	521	16	1.1/8"	125-140	4	13-17	92	112	272	125
350	688	348	340	50	14x9x63	70	150	413	514,3	584	20	1.1/8"	140-165	4	17-21	117	122	305	210
400	763	388	375	60	18x11x70	80	150	470	571,5	648	20	1.1/4"	140-165	4	17-21	133	142	346	316
450	830	430	400	65	18x11x70	80	150	533	628,6	710	24	1.1/4"	140-165	4	17-21	149	161	388	420
500	926	468	458	70	20x12x70	80	150	584	685,8	775	24	1.1/4"	254	8	21	159	181	448	502
600	1062	552	510	80	22x14x90	120	150	692	812,8	914	24	1.1/2"	254	8	21	181	212	519	795

LUG TYPE - Class ANSI 600

DN	A	B	C	ØD	Key (2x)	E	F	ØG	ANSI 600 ASME B16.5				ISO 5211				Kg		
									ØH	ØI	L	M	ØN	P	ØR	J		K	Y
80	289	152	137	20	6x6x40	50	100	127	168,3	210	8	3/4"	F10-F12	4	9-11	54	14	58	28
100	345	188	157	30	8x7x40	50	100	157	215,9	275	8	7/8"	F12-F14	4	9-11	64	22	77	32
125	390	215	175	35	10x8x50	60	100	186	266,7	330	8	1"	F14-F16	4	11-13	78	36	103	53
150	477	244	233	40	12x8x63	70	100	216	292,1	355	12	1"	F14-F16	4	11-13	78	40	122	74
200	515	290	225	45	14x9x70	90	120	270	349,2	420	12	1.1/8"	F14-F16	4	13-17	102	53	165	114
250	659	324	335	50	14x9x80	100	120	324	431,8	510	16	1.1/4"	F16-F25	4-8	13-17	117	76	210	182
300	714	350	364	60	18x11x90	110	150	381	489	560	20	1.1/4"	F25-F30	8	13-17	140	88	258	264
350	785	395	390	70	20x12x100	120	150	413	527	605	20	1.3/8"	F25-F30	8	17-21	155	103	294	320
400	890	450	440	75	20x12x120	140	150	470	603,2	685	20	1.1/2"	F30-F35	8	17-21	178	127	346	410
450	977	492	485	90	25x14x125	160	150	533	654	745	20	1.5/8"	F30-F35	8	17-21	200	135	382	615
500	1052	524	528	95	25x14x130	180	150	584	723,9	815	24	1.5/8"	F35-F40	8	17-21	216	145	418	748
600	1295	665	630	120	32x18x180	200	150	692	838,2	940	24	1.7/8"	F35-F40	8	17-21	232	228	538	995

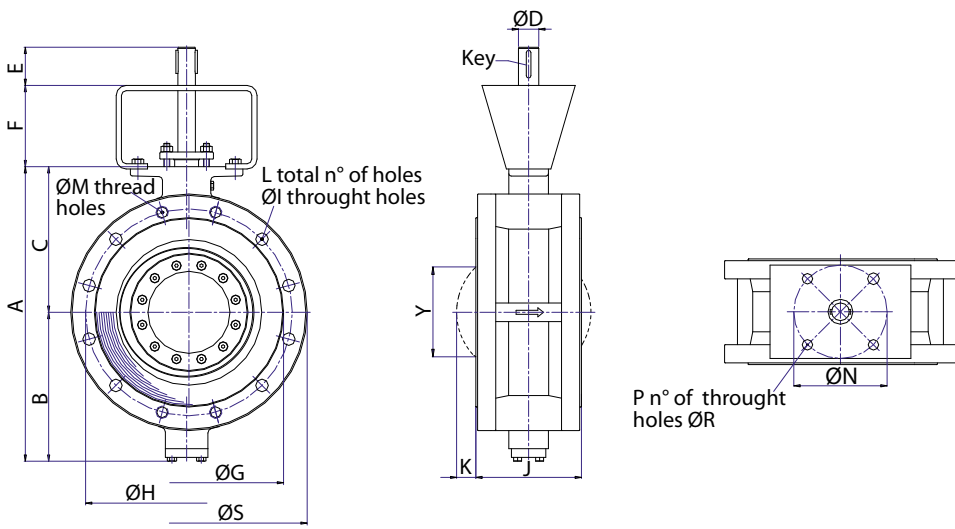
Note:

- Dimensions "J" complying with API 609 Tab 2
- Dimensions "øH, øI, L, M" complying with ASME B16.5 flanged ANSI150 and ANSI300

- "M" thread is in accordance to UNC thread ASNI B1.1, >1" use 8-UN thread pitch
- Only on request is possible to have METRIC thread (as shown in the table)
- Pressure/temperature class complying with ASME B16.34

All data in this sheet can be modified without prior notice. For dimensions of valves majors of DN600, contact our Technical Department

Flanged type valve



Note:
The stem and adaptor dimension are according to service and to valve working conditions.

Overall dimensions

FLANGED TYPE - Class ANSI 150

DN	A	B	C	ØD	Key (2x)	E	F	ØG	ØH	ØI	L	M	ISO 5211			ØS	J	K	Y	Kg
													ØN	P	ØR					
80	270	133	137	18	6x6x40	45	100	127	152,4	19	4	/	70-102	4	9-11	190	114	-	-	19
100	313	156	157	20	6x6x40	60	100	157	190,5	19	8	5/8"	70-102	4	9-11	230	127	-	-	32
125	340	170	170	20	6x6x40	60	100	186	215,9	22,2	8	3/4"	70-102	4	9-11	255	140	-	-	34
150	374	188	186	24	8x7x40	60	100	216	241,3	22,2	8	3/4"	102-125	4	9-11	280	140	-	-	40
200	416	209	207	28	8x7x40	60	120	270	298,5	22,2	8	3/4"	125-140	4	13-17	345	152	18	103	55
250	502	255	247	30	8x7x40	60	120	325	362,0	25,4	12	7/8"	125-140	4	13-17	405	165	31	158	88
300	583	298	285	35	10x8x40	60	120	376	431,8	25,4	12	7/8"	125-140	4	13-17	485	178	50	214	130
350	677	344	333	40	12x8x50	70	150	414	476,3	28,6	12	1"	140-165	4	17-21	535	190	61	248	156
400	762	382	380	45	14x9x63	80	150	470	539,8	28,6	16	1"	140-165	4	17-21	595	216	72	282	202
450	837	426	411	50	14x9x63	80	150	532	577,9	31,7	16	1.1/8"	140-165	4	17-21	635	222	95	344	265
500	911	461	450	50	14x9x63	80	150	584	635,0	31,7	20	1.1/8"	254	8	17	700	229	113	396	298
600	1077	538	539	60	18x11x90	120	150	692	749,3	34,9	20	1.1/4"	254	8	17	815	267	141	476	484

FLANGED TYPE - Class ANSI 300

DN	A	B	C	ØD	Key (2x)	E	F	ØG	ØH	ØI	L	M	ISO 5211			ØS	J	K	Y	Kg
													ØN	P	ØR					
80	279	142	137	18	6x6x40	45	100	127	168,3	22,2	8	3/4"	70-102	4	9-11	210	114	-	-	26
100	317	160	157	20	6x6x50	60	100	157	200	22,2	8	3/4"	70-102	4	9-11	254	127	-	-	36
125	350	175	175	24	8x7x50	60	100	186	234,9	22,2	8	3/4"	102-125	4	11-13	280	140	-	-	48
150	382	192	190	28	8x7x50	60	100	216	269,9	22,2	12	3/4"	102-125	4	11-13	317	140	-	-	53
200	457	232	225	30	8x7x50	60	120	270	330,2	25,4	12	7/8"	125-140	4	13-17	380	152	18	103	95
250	513	265	248	35	10x8x50	60	120	325	387,3	28,6	16	1"	125-140	4	13-17	444	165	31	158	155
300	600	310	290	45	14x9x50	60	120	376	450,8	31,7	16	1.1/8"	125-140	4	13-17	520	178	50	214	254
350	688	348	340	50	14x8x63	70	150	414	514,3	31,7	20	1.1/8"	140-165	4	17-21	584	190	61	248	312
400	763	388	375	60	18x11x70	80	150	470	571,5	34,9	20	1.1/4"	140-165	4	17-21	648	216	72	282	380
450	830	430	400	65	18x11x70	80	150	532	628,6	34,9	24	1.1/4"	140-165	4	17-21	710	222	95	344	550
500	926	468	458	70	20x12x70	80	150	584	685,8	34,9	24	1.1/4"	254	8	21	775	229	113	396	598
600	1062	552	510	80	22x14x90	120	150	692	812,8	41,3	24	1.1/2"	254	8	21	914	267	141	476	902

FLANGED TYPE - Class ANSI 600

DN	A	B	C	ØD	Key (2x)	E	F	ØG	ØH	ØI	L	M	ISO 5211			J	K	Y	Kg
													ØN	P	ØR				
80	289	152	137	20	6x6x40	50	100	127	168,3	210	8	3/4"	F10-F12	4	9-11	180	-	-	36
100	345	188	157	30	8x7x40	50	100	157	215,9	275	8	7/8"	F12-F14	4	9-11	190	-	-	63
125	390	215	175	35	10x8x50	60	100	186	266,7	330	8	1"	F14-F16	4	11-13	200	-	-	90
150	477	244	233	40	12x8x63	70	100	216	292,1	355	12	1"	F14-F16	4	11-13	210	-	-	115
200	515	290	225	45	14x9x70	90	120	270	349,2	420	12	1.1/8"	F14-F16	4	13-17	230	53	165	190
250	659	324	335	50	14x9x80	100	120	324	431,8	510	16	1.1/4"	F16-F25	4-8	13-17	250	76	210	320
300	714	350	364	60	18x11x90	110	150	381	489	560	20	1.1/4"	F25-F30	8	13-17	270	88	258	392
350	785	395	390	70	20x12x100	120	150	413	527	605	20	1.3/8"	F25-F30	8	17-21	290	103	294	493
400	890	450	440	75	20x12x120	140	150	470	603,2	685	20	1.1/2"	F30-F35	8	17-21	310	127	346	630
450	977	492	485	90	25x14x125	160	150	533	654	745	20	1.5/8"	F30-F35	8	17-21	330	135	382	765
500	1052	524	528	95	25x14x130	180	150	584	723,9	815	24	1.5/8"	F35-F40	8	17-21	350	145	418	995
600	1295	665	630	120	32x18x180	200	150	692	838,2	940	24	1.7/8"	F35-F40	8	17-21	390	228	538	1440

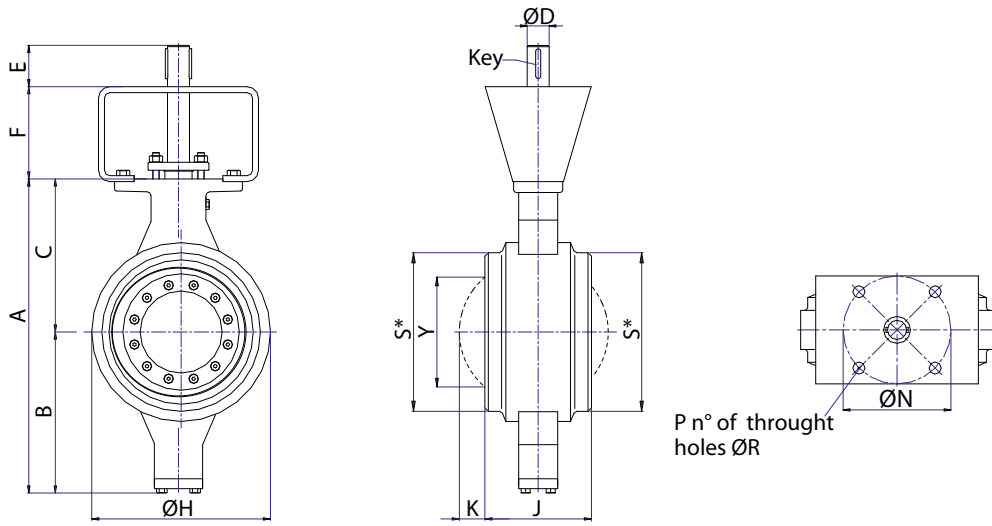
Note:

- Dimensions "J" complying with API 609 Tab 3, FTF Double Flanged Short Pattern class A150-300
- Dimensions "øH, øI, L, M" complying with ASME B16.5 flanged ANSI150 and ANSI300

- "M" thread is in accordance to UNC thread ANSI B1.1, >1" use 8-UN thread pitch
- Only on request is possible to have METRIC thread (as shown in the table)
- Pressure/temperature class complying with ASME B16.34

All data in this sheet can be modified without prior notice. For dimensions of valves majors of DN600, contact our Technical Department

Butt-Weld type valve



Note:
The stem and adaptor dimension are according to service and to valve working conditions.

Overall dimensions

BUTT-WELD TYPE - Class ANSI 150

DN	A	B	C	ØD	Key (2x)	E	F	ØH	ØS*	ISO 5211						
										ØN	P	ØR	J	K	Y	Kg
80	270	133	137	18	6x6x40	45	100	120	Dimensions complying with ASME B 36.10	70-102	4	9-11	180	-	-	15
100	313	156	157	20	6x6x40	60	100	148		70-102	4	9-11	190	-	-	22
125	340	170	170	20	6x6x40	60	100	176		70-102	4	9-11	200	-	-	25
150	374	188	186	24	8x7x40	60	100	206		102-125	4	9-11	210	-	-	32
200	416	209	207	28	8x7x40	60	120	362		125-140	4	13-17	260	-	-	42
250	502	255	247	30	8x7x40	60	120	312		125-140	4	13-17	250	-	-	56
300	583	298	285	35	10x8x40	60	120	366		125-140	4	13-17	270	6	77	90
350	677	344	333	40	12x8x50	70	150	398		140-165	4	17-21	290	11	116	102
400	762	382	380	45	14x9x63	80	150	458		140-165	4	17-21	310	25	178	138
450	837	426	411	50	14x9x63	80	150	520		140-165	4	17-21	330	42	244	188
500	911	461	450	50	14x9x63	80	150	568		254	8	17	350	54	293	212
600	1077	538	539	60	18x11x90	120	150	675		254	8	17	390	80	385	365

BUTT-WELD TYPE - Class ANSI 300

DN	A	B	C	ØD	Key (2x)	E	F	ØH	ØS*	ISO 5211						
										ØN	P	ØR	J	K	Y	Kg
80	279	142	137	18	6x6x40	45	100	120	Dimensions complying with ASME B 36.10	70-102	4	9-11	180	-	-	15
100	317	160	157	20	6x6x50	60	100	148		70-102	4	9-11	190	-	-	22
125	350	175	175	24	8x7x50	60	100	176		102	4	11	200	-	-	31
150	382	192	190	28	8x7x50	60	100	206		102	4	11	210	-	-	35
200	457	232	225	30	8x7x50	60	120	362		140	4	17	230	-	-	64
250	513	265	248	35	10x8x50	60	120	312		140	4	17	250	-	-	101
300	600	310	290	45	14x9x50	60	120	366		140	4	17	270	6	77	115
350	688	348	340	50	14x9x63	70	150	398		165	4	21	290	11	116	164
400	763	388	375	60	18x11x70	80	150	458		165	4	21	310	25	178	248
450	830	430	400	65	18x11x70	80	150	520		165	4	21	330	42	244	318
500	926	468	458	70	20x12x70	80	150	568		254	8	17	350	54	293	402
600	1062	552	552	80	22x14x90	120	150	675		254	8	17	390	80	385	672

BUTT-WELD TYPE - Class ANSI 600

DN	A	B	C	ØD	Key (2x)	E	F	ØH	ØS*	ISO 5211						
										ØN	P	ØR	J	K	Y	Kg
80	289	152	137	20	6x6x40	50	100	120	Dimensions complying with ASME B 36.10	F10-F12	4	9-11	180	-	-	31
100	345	188	157	30	8x7x40	50	100	148		F12-F14	4	9-11	190	-	-	48
125	390	215	175	35	10x8x50	60	100	176		F14-F16	4	11-13	200	-	-	75
150	477	244	233	40	12x8x63	70	100	206		F14-F16	4	11-13	210	-	-	80
200	515	290	225	45	14x9x70	90	120	362		F14-F16	4	13-17	230	-	-	105
250	659	324	335	50	14x9x80	100	120	312		F16-F25	4-8	13-17	250	-	-	202
300	714	350	364	60	18x11x90	110	150	366		F25-F30	8	13-17	270	6	77	305
350	785	395	390	70	20x12x100	120	150	398		F25-F30	8	17-21	290	11	116	400
400	890	450	440	75	20x12x120	140	150	458		F30-F35	8	17-21	310	25	178	504
450	977	492	485	90	25x14x125	160	150	520		F30-F35	8	17-21	330	42	244	600
500	1052	524	528	95	25x14x130	180	150	568		F35-F40	8	17-21	350	54	293	740
600	1295	665	630	120	32x18x180	200	150	675		F35-F40	8	17-21	390	80	385	980

Note:

- Dimensions "J" complying with UNI EN 558 basic series 14

- Pressure/temperature class complying with ASME B16.34

All data in this sheet can be modified without prior notice. For dimensions of valves majors of DN600, contact our Technical Department

Valve selection based on Flow Coefficient

To select the butterfly S501/M to be used valve correctly, it is necessary to hold in consideration, besides to operation conditions (pressure, temperature, type of fluid) also condition of passage offered by the valve itself, towards the considered fluid, to optimize the process conditions.

This passage is defined by the coefficient of flow (CV or KV) which is a pure number and allows to calculate the range which can cross the valve and/or the load loss depending on the operation conditions and on the used fluids.

CV represents, the water range, in American units in U.S gallons. At the minute that the valve crosses causing the loss of 1 p.s.i. load at the temperature of 68th F.

KV represents, the range, in metrical units in m³/h which crosses the valve causing the loss of load of 1 bar at the 20 degreeCtemperature.

American unit

$$Q = Cv \sqrt{\frac{\Delta p}{\gamma}}$$

Q = valve flow rate in (gpm)

Δp= pressure drop through the valve (psi)

γ = specific gravity in (kg/dm³) - for water = 1 at 68° F

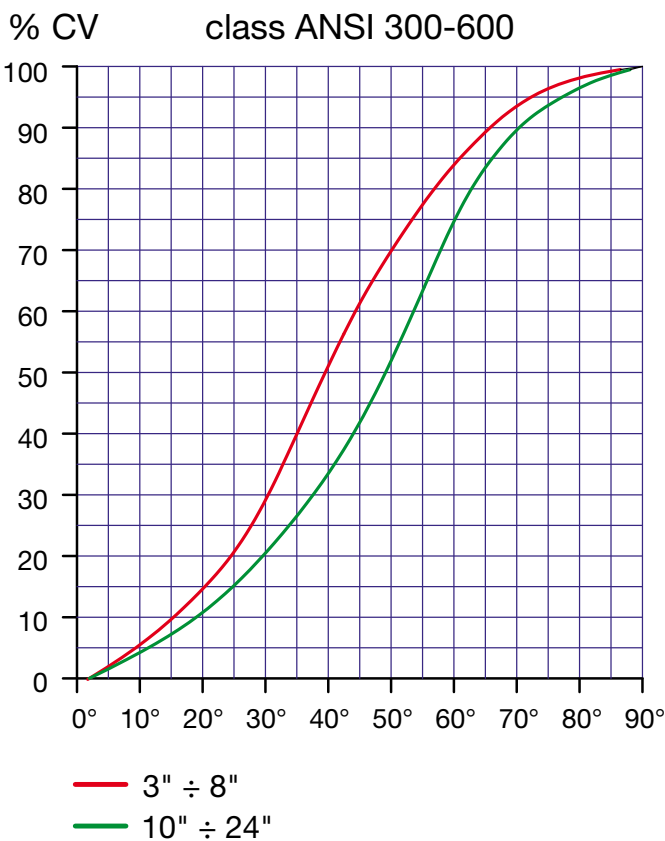
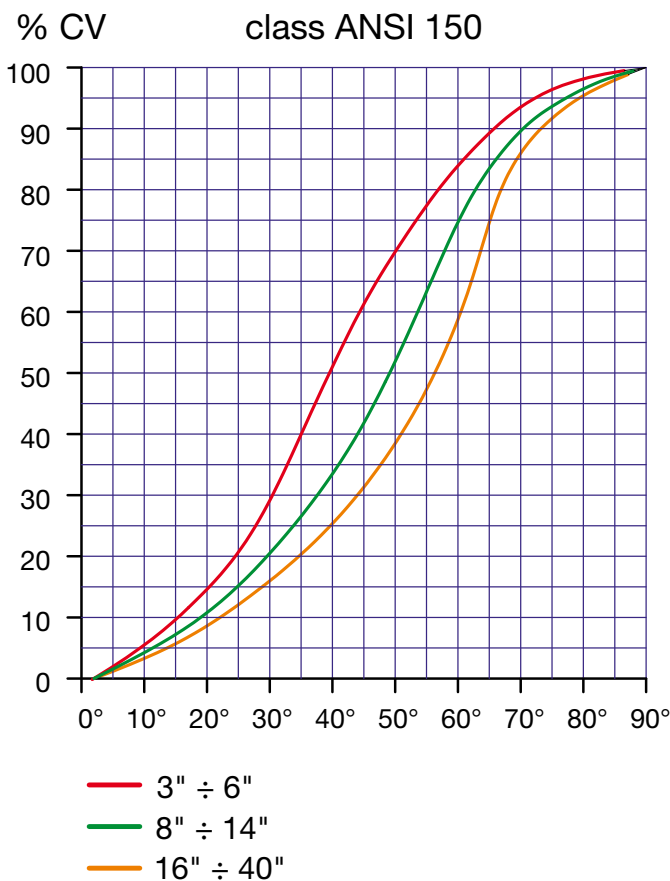
Metric unit

$$Q = Kv \sqrt{\frac{\Delta p}{\gamma}}$$

Q = valve flow rate (m³/h)

Δp= pressure drop through the valve (bar)

γ = specific gravity in (kg/dm³) - for water at 20°C= 1



“CV” flow coefficient with valve open at 90°

CLASS	VALVE SIZE															
	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"	32"	36"	40"
ANSI 150	152	285	535	760	1490	2520	4010	5390	7250	9740	12650	19050	28000	36000	45000	56000
ANSI 300	152	285	484	690	1410	2390	3850	4840	6340	8810	11050	17100	/	/	/	/
ANSI 600	152	240	400	620	1015	1790	2780	3760	5400	7500	9800	15000	/	/	/	/



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