Lycene butterfly valves

DN 32/40 up to 300 mm

Technical manual

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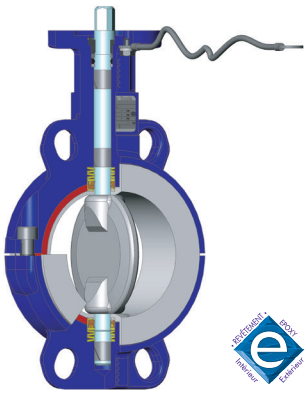
Description

By concentrating the technologies and by integrating technical solutions of the highest levels, Socla fulfils its ambition :

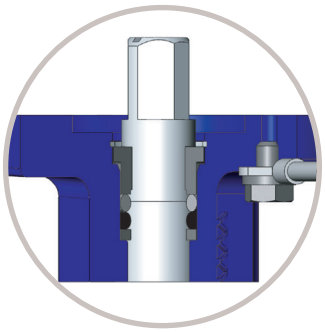
- competitiveness of a standard range,
- reliability,
- comprehensive range thanks to a multiplicity of solutions.



Lycene butterfly valves

DN 32/40 up to 300 mm

- Available in wafer type and lug type
- Two parts body in cast iron 5.3103
- Vertical and horizontal operating position.
- Disc : 316L stainless steel or PFA coated (2,5 mm thick) and PTFE liner (thickness 3 mm).
- Tightness at shaft location with bearing and spring.
- Anti-ejection system of the shaft (even in case of removing of the actuation)
- Downstream removing and mounting at end of the line for lug type version.
- Body : Epoxy coated 80 µm, colour blue RAL 5017.

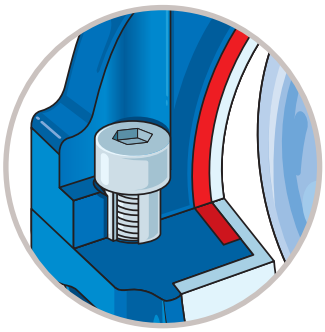


SAFETY

> Safety anti-ejection circlip keeps shaft in place and allows easy maintenance

> Safety reinforced by a secondary water tightness

> An reliable anti-static device, tress in contact between shaft and body, and outside tress for fixation on flanges

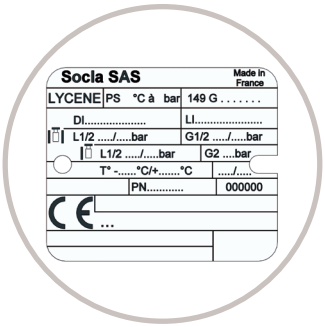


PROTECTION AND RELIABILITY

> Very high level of working safety for chemical and food fluids, and high purity process thanks to quality components :

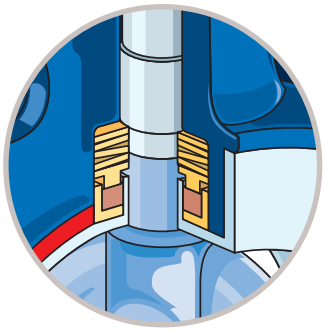
- PTFE liner (3 mm thick)
- 316L stainless steel disc and PFA coated discs in stainless steel 316L (2,5 mm thick)

> Liner back-up enclosed in the body ensures perfect disc tightness



TRACEABILITY

> Identification and traceability ensured by riveted metal tag : see page 14.

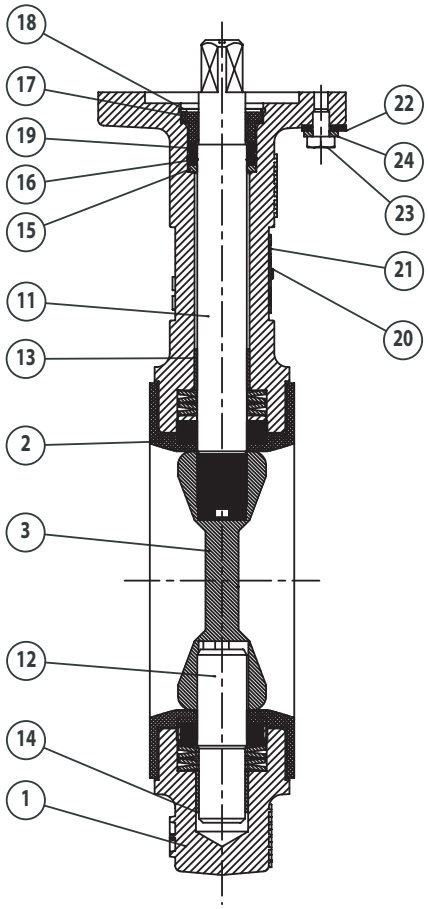


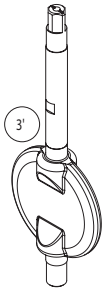
SEAL

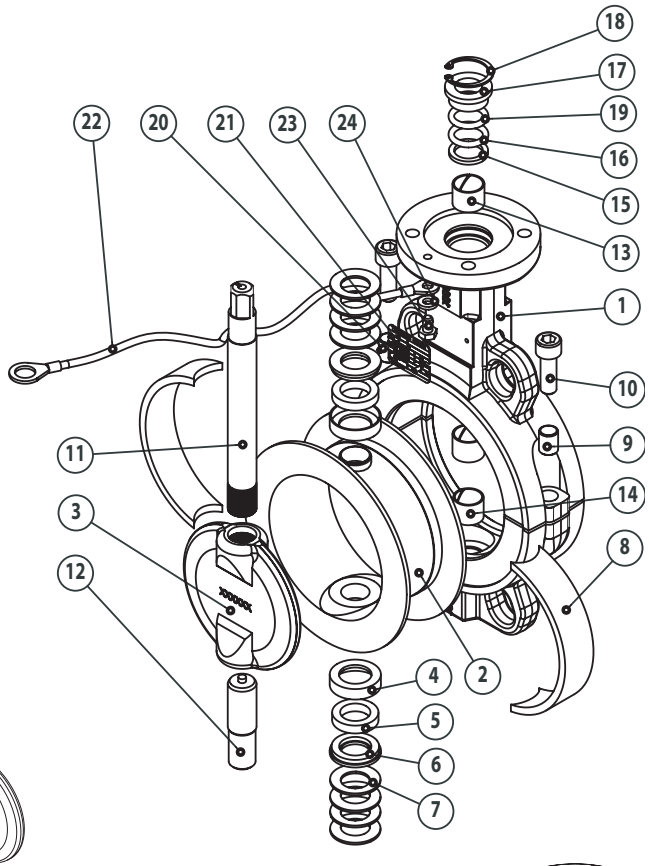
> PFA coated disc version : protection reinforced by a PFA coated stem when tightness is required

> Tightness at shaft location with bearing and spring

Spare parts list and materials

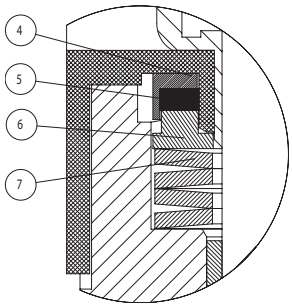




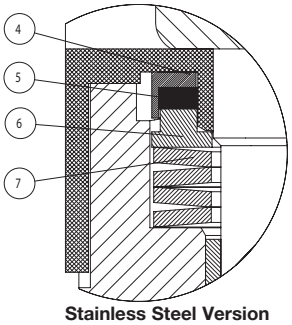


N°	Designation	Qty	Material	IN	ASTM	JIS
1	Body	1	Ductile iron	EN GJS 400-18 LT (5.3103)	-	-
2	Liner	1	PTFE 3 mm thick mini	-	-	-
3	Disc (1) - (2)	1	Stainless steel	X2 CrNiMo 17-12-2 (1.4404)	316L	SUS 316L
3'	PFA coated disc / one piece shaft (1)	1	Stainless steel	X2 CrNiMo 17-12-2 (1.4404)	316L	SUS 316L
		1	PFA 2,5 mm thick mini	-	-	-
4	Packing guidance	2	Steel	S300 Pb (1.0737)	12 L 14	-
5	Safety packing	2	Silicone	-	-	-
6	Packing pressure ring	2	Steel	S300 Pb (1.0737)	12 L 14	-
7	Spring washer	8	Steel	50 CV 4 (1.8159)	6145/6150	SUP 10
8	Seal	2	Silicone	-	-	-
9	Spacer	2	Stainless steel	X5 CrNi 18-10 (1.4301)	304	SUS 304
10	Screw	2	Stainless steel	A2 -70	304	SUS 304
11	Upper shaft	1	Stainless steel	X2 CrNiMo 17-12-2 (1.4404)	316L	SUS 316L
12	Lower shaft	1	Stainless steel	X2 CrNiMo 17-12-2 (1.4404)	316L	SUS 316L
13	Guide bushes	1	Galvanized steel + PTFE	-	-	-
14	Guide bushes	1	Galvanized steel + PTFE	-	-	-
15	Anti-extrusion bush	1	Stainless steel	X5 CrNi 18-10 (1.4301)	304	SUS 304
16	O'ring seal	1	FKM	-	-	-
17	Ring	1	Stainless steel	X5 CrNi 18-10 (1.4301)	304	SUS 304
18	Circlips	1	Stainless steel	X30 Cr13 (1.4028)	420	SUS 420 J2
19	Braid	1	Tinned copper	-	-	-
20	Rivet	2	Alu / Stainless steel	-	-	-
21	Identification plate	1	Aluminium	EN AW - AL995 (EN AW - 1050A)	-	-
22	Anti-static tress	1	Tinned copper	-	-	-
23	Screw	1	Stainless steel	A2 -70	304	SUS 304
24	Stop washer	1	Stainless steel	X5 CrNi 18-10 (1.4301)	304	SUS 304

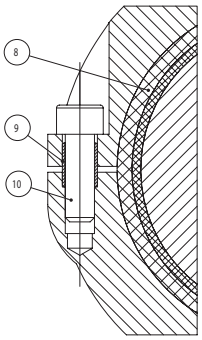
(1) - NB : DN32/40 : one piece disc shaft for both PFA and stainless steel disc versions
(2) - optional : mirror polished disc



PFA Version



Stainless Steel Version



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Normalisation

DESIGN
According to EN 593 and marking according to EN 19.

ISO TOP CONNECTION
ISO top connection according to EN ISO 5211

FACE TO FACE
According to EN 558-1 series 20
ISO 5752 series 20
API 609 table 1

TESTS
According to EN12266-1
tightness of the body (directive PED 2014/68/UE) : Test P11 (1,5 x permissible operating pressure)
tightness of the seat : test P12 rate A (1,1 x permissible operating pressure).

According to EN12266-2
anti-static device : test F21

CONNECTING FLANGE (see page 13)
According to EN 1092-1 and EN 1092-2
ASME/ANSI B16.5 Class 150
BS10 Table D and Table E
JIS B 2238 et JIS B 2239

EUROPEAN DIRECTIVES
Our butterfly valves are in accordance to the safety requirements of the following directives. :

· Directive 2014/68/UE : Equipments under pressure PED (Pressure Equipment Directive)

Applies to the design, manufacturing and the assessment of the conformity of pressure equipment, the maximum allowable pressure of which is 0.5 bar.

Pressure equipment for water supply, distribution, and disposal of water is excluded. Depending on the type of pressure equipment, maximum allowable temperature (PS), DN, physical nature of the fluid (liquid, gas or vapour) and the degree of danger of the fluid (group1/2)*, the directive classifies this same equipment into different categories (article 3.3, I, II, III, IV), required for the assessment of conformity with CE marking. The equipment defined in article 3.3 of the directive must not bear the CE marking.

(*) Group 1 : according to rule CE 1272/2008.

Group 2 : all other fluids.

Important notice : the indicated pressure for the different categories of fluids (L1/L2/G1/G2) is under no condition a guarantee of use.Therefore, it is essential to validate the use of products under given operating conditions. Socla is not responsible for alteration of the products to working conditions not previously specified by the customer.

Directive 2014/34/UE : ATEX (EXplosive ATmospheres)

This directive is only applicable for the following atmospheric conditions : -20°C < T < +60°C ; 0,8 bar ≤ P ≤ 1,2 bar.
In this risk analysis, the fluid which passes through the valve is not taken into account. It is under the responsibility of the user to take into consideration the risks generated by the fluid like : heating of the surface of the valve, internal chocks generated by granulates, wave of chocks due to the installation (water hammering), or the risks due to foreign bodies which are inside the installation.

Classification of the bare shaft valve : The marking of the bare shaft valve is : Ex II 2 DG.

Classification of the set valve + actuation :

- Valve with a hand lever : The use of hand levers produced by Socla within a ATEX area do not represent additional risks. The valve with a hand lever is in conformity to the marking : Ex II 2 DG.
- Valve with other actuations : The classification of the valve + actuation supplied by Socla is similar to the lowest classification of the components which composed the assembly.

No additional marking will be used to indicate the classification of the assembly.
If a single element of the combination does not carry the ATEX mark, then the entire valve/control combination does not conform to the ATEX directive The classification of the equipment allows its use in a determinate area; an use in another area is under the responsibility of the user.

Directive 2006/42/CE : Machinery Directive

In its Appendix I it sets a certain number of Essential Health and Safety Requirements which must be met. It applies to motorised butterfly valves, (with electric, pneumatic or hydraulic actuators). According to this Directive, these sets are “Partly Completed Machineries” designed for being integrated into a machine.

“Partly Completed Machinery” means an assembly which is almost machinery but which cannot in itself perform a specific application. A drive system is partly completed machinery. Partly completed machinery is only intended to be incorporated into or assembled with other machinery or other partly completed machinery or equipment, thereby forming machinery to which this Directive applies.

An instruction notice specifying the installation characteristics and the commission of the Lycene is added to every product; It is available on our web site www.socla.com or on request by our sales department.

Pressure

DIRECTIVE 2014/68/UE EQUIPMENTS UNDER PRESSURE

Products manufactured in conformity with the requirements of the directive, according to pressure, DN and fluid (see on the precedent page).

LINERS	DN mm	Cat.	MOUNTING	PFA	PS			
					L1	L2	G1	G2
PTFE / Silicone	40 to 100	I	Flanges	10	10	10	10	10
			End of line	6	6	6		6
	125 to 300	II	Flanges	10	10	10	10	10
		II	End of line	6	6	6		6

NOTE : Butterfly valves of category II used as «end of line», please consult us.

ATTENTION
For butterfly valves of category II, the body minimum temperature are as follow :
• -20°C for ductile iron 5.3106 (EN-GJS-400-18-LT)

Applications

• High corrosion : toxic and highly corrosive fluids which do not allow the use of metallic materials and/or elastomer, and which require the exclusive use of PFA.

• Moderate corrosion : fluids moderately corrosive which require the use of a PFA liner combined with a stainless steel closing system.

• Fluids which require a high level of working safety : food , painting, etc.

Installation

General remarks :

For safety reasons, the installation must take place under the supervision of authorised people taking account of local safety instructions and advice.

The handling of butterfly valves and their controls must be done by staff trained in all technical aspects of their operation.

Before installation the pipes must be depressurised and purged (empty of its fluid) in order to avoid any danger to the operator.

The pipe work must be correctly aligned so that no extra stress is exerted on the valve casing.

In ATEX zone, check that the pipes are connected to the earth. Do not use insulating pipes (PVC....)

Check the compatibility of the connection flanges against the operating pressure : the PN number of the flanges must be greater or equal to the operating pressure.

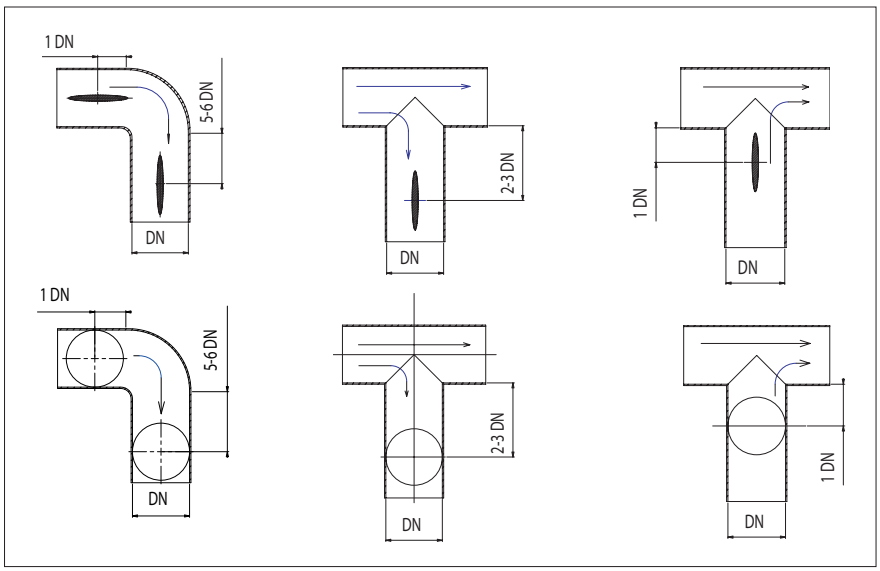
The valve is a machined piece of equipment and must not be used to prise apart the flanges.

An instruction notice specifying the installation characteristics and the commission of the Lycene is added to every product. It is available on our web site www.socla.com or on request by our sales department.

Installation conditions :

It is recommended that the distances mentioned below be respected in order to prolong the life time of the valve.

Mounting the valve close to pipe work junctions places it in turbulent zones which increase its wear.

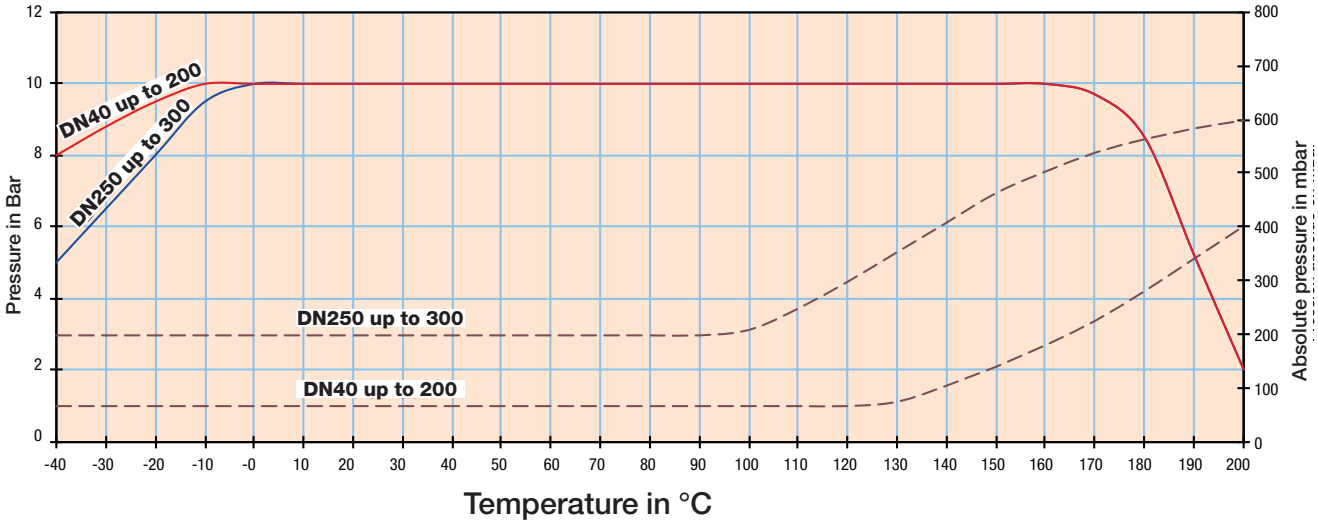


Functionning characteristics

Torque values

Torques for dry fluids (Nm)	32/40	50	65	80	100	125	150	200	250	300
PFA disc	35	35	39	61	74	120	180	350	560	750
Stainless steel disc	44	36	52	61	70	90	183	310	410	560

Pressure / Temperature Diagram



Flow rate (Kv)

The butterfly valve is not the best product for regulating Nevertheless, the Sylax butterfly valve can be used to regulate by an opening stage between 30° and 90°.

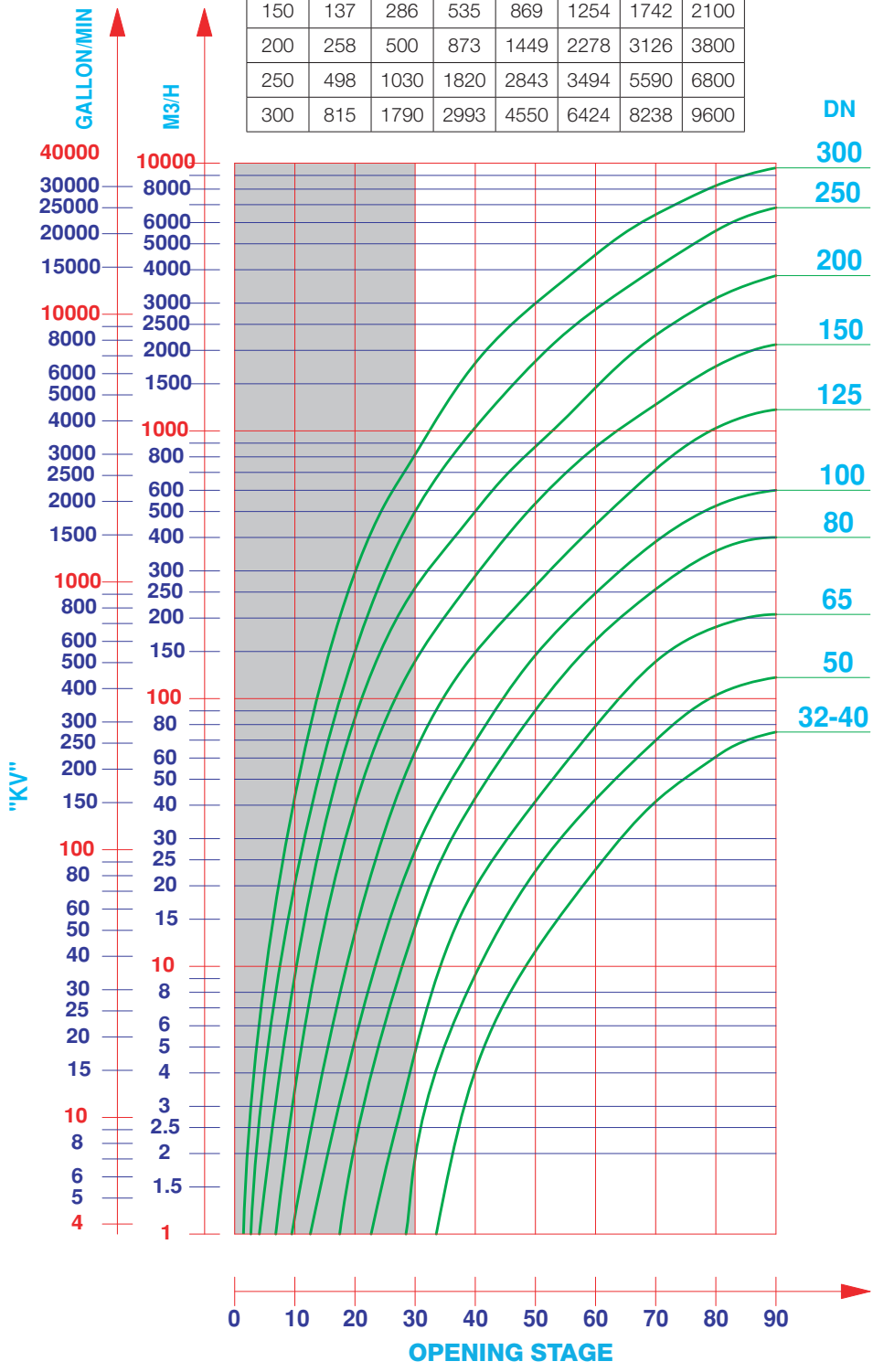
A regulation in the opening stage lower than 30° is not advisable because of over speed, cavitation effect, which could damage prematurely the valve.

The maximum flow velocity of the fluid through the valve must not exceed :

- **3 m/s for liquid fluids.** Between 3 and 5m/s, the use of the Lycene butterfly valve is possible, but the phenomena of cavitation, noise, vibration and water hammering increase.
- **20m/s for gas.** Between 20 and 25m/s, the use of the Lycene butterfly valve is possible, but the phenomena of cavitation, noise, vibration and water hammering increase.
- For gas and and semi-solid or paste fluids : please consult us.

STAINLESS STEEL DISC

Openning stage Stainless steel Disc							
DN	**30°**	**40°**	**50°**	**60°**	**70°**	**80°**	**90°**
40	0,5	4	11,4	23	41	60,6	75
50	1,9	9,3	22,6	42	70	102	120
65	4,8	19,7	41	79	137	185	210
80	14	42	90	165	256	355	400
100	27	69	145	247	385	524	600
125	63	148	263	446	718	1023	1199
150	137	286	535	869	1254	1742	2100
200	258	500	873	1449	2278	3126	3800
250	498	1030	1820	2843	3494	5590	6800
300	815	1790	2993	4550	6424	8238	9600



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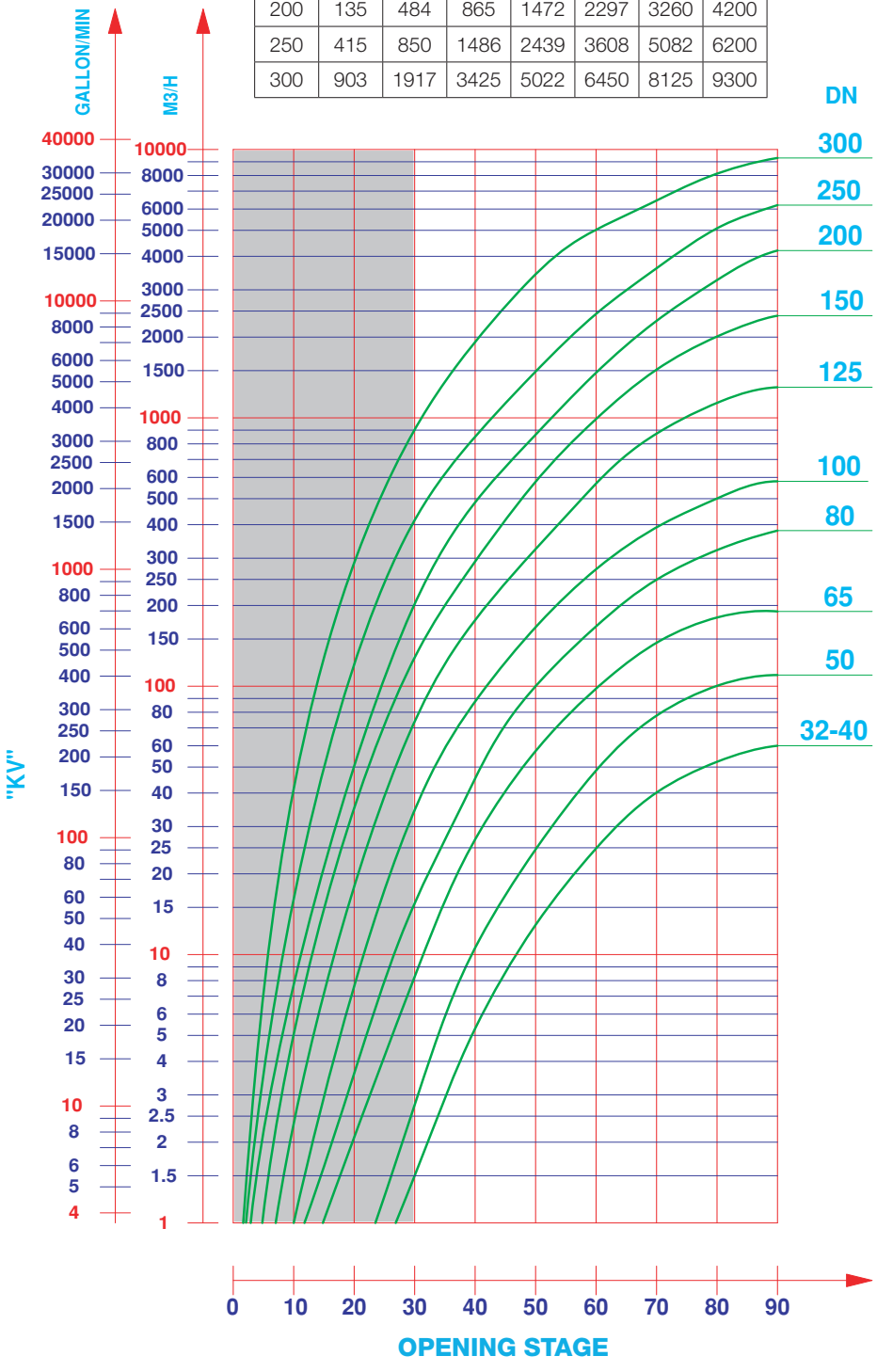
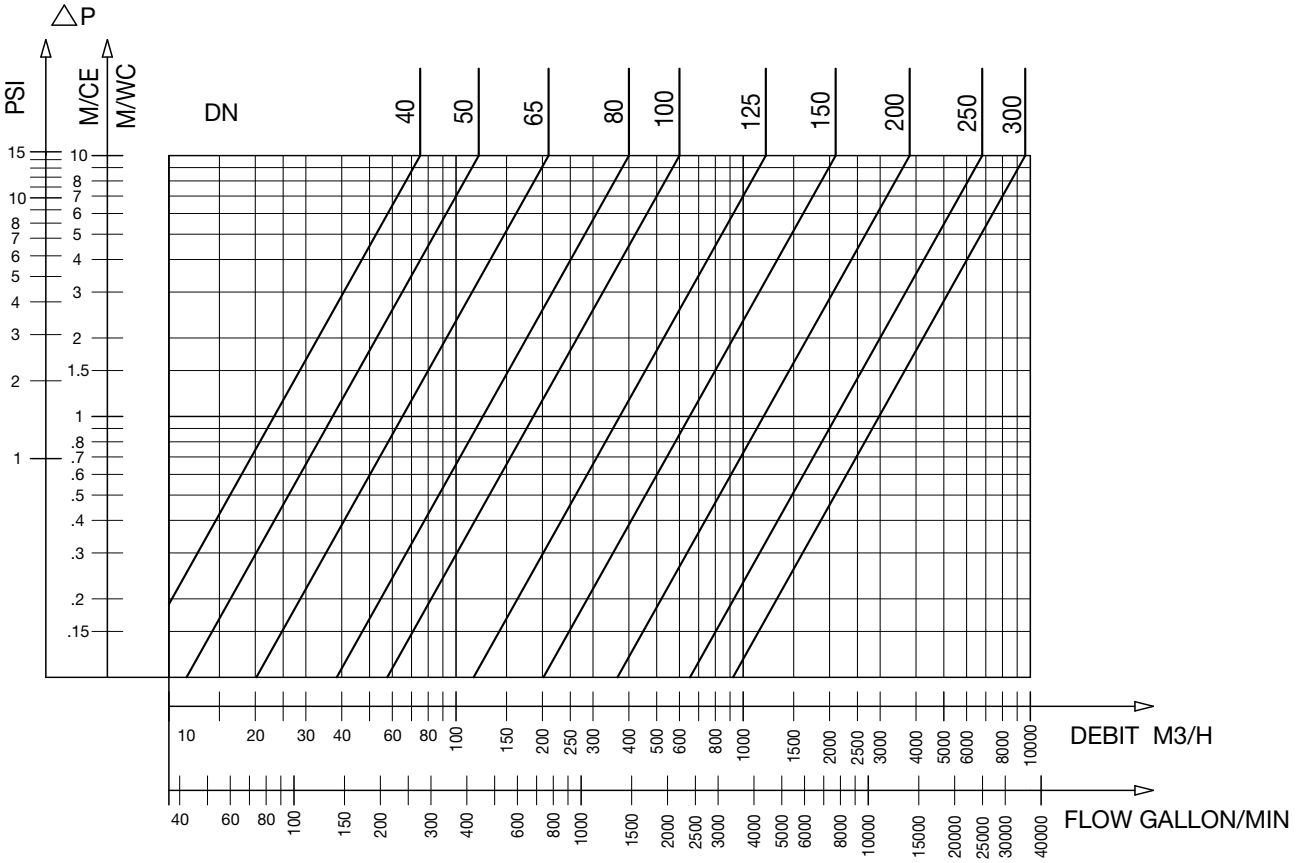
STAINLESS STEEL DISC PFA COATED

Openning stage Stainless steel Disc PFA coated							
DN	**30°**	**40°**	**50°**	**60°**	**70°**	**80°**	**90°**
32/40	1,5	5,3	12,8	25	40	52,6	60
50	2,7	10,5	25	48	77	100	110
65	8	26	57	98	145	180	190
80	15	45	99	167	249	325	380
100	34	88	165	272	390	500	580
125	74	176	324	568	873	1136	1299
150	128	291	577	1150	1500	2009	2400
200	135	484	865	1472	2297	3260	4200
250	415	850	1486	2439	3608	5082	6200
300	903	1917	3425	5022	6450	8125	9300



Head loss diagram (Δp)
STAINLESS body



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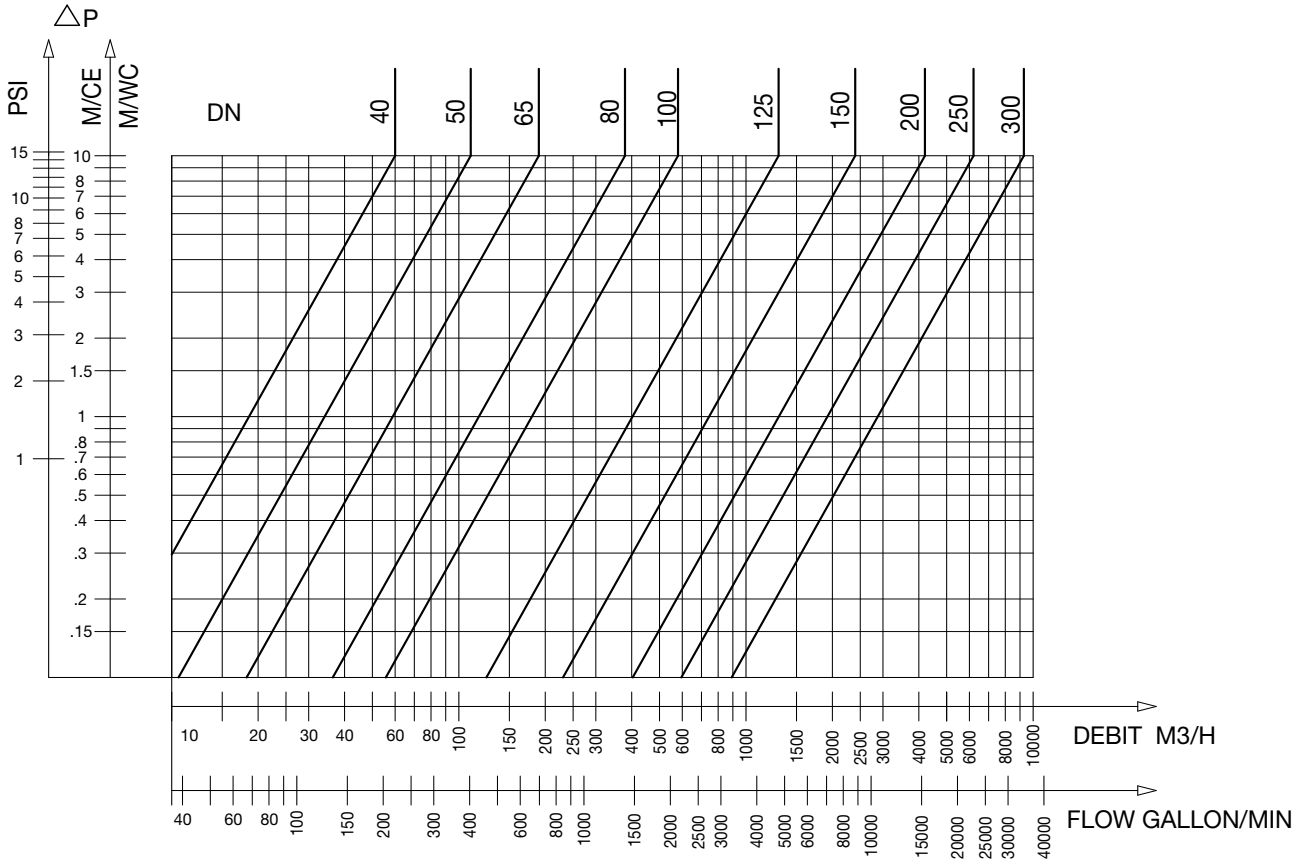
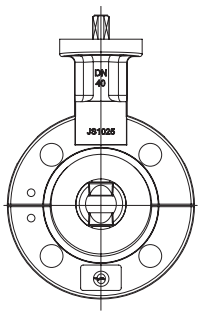
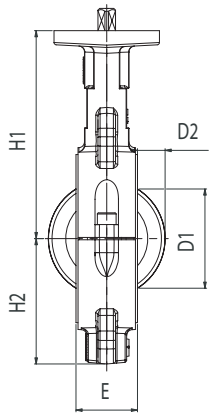
Head loss diagram (Δp)
DRESSED STAINLESS body

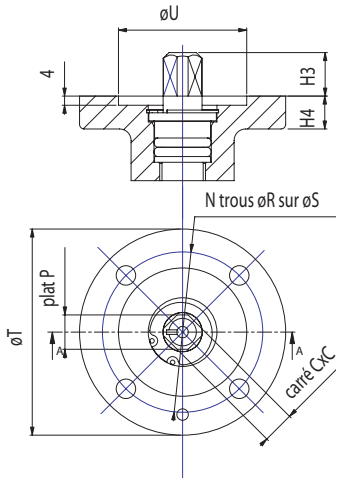


Overall dimensions

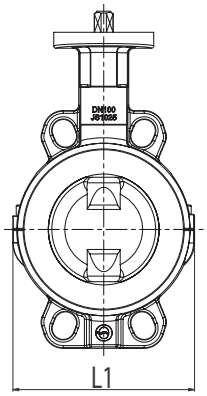


Ring shaped type body only used for DN32 and DN40. In wafer type and lug type versions



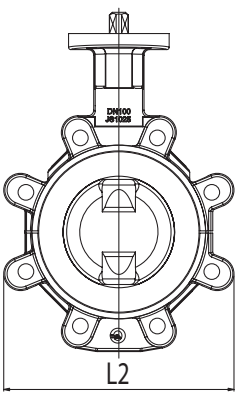


Wafer types



Diameter		Face to face	Overall dimensions				ISO top according EN ISO 5211						Square shaft outlet			Travel of the disc		Weight Kg
DN	NPS	E	L1	H1	H2	H4	N	ØR	ØS	ØT	ØU	N°	□C	H3	Plat P	D1	D2	
32	1 1/4	32,5	147,5	130	73	12	4	6,5	50	65	36	F05	11	16	11	28	5,5	3,2
40	1 1/2	32,5	147,5	130	73	12	4	6,5	50	65	36	F05	11	16	11	28	5,5	3,2
50	2	43,5	122,5	139	69	12	4	6,5	50	65	36	F05	11	16	11	31	5	3,4
65	2 1/2	46,5	136,5	144,5	73	12	4	6,5	50	65	36	F05	11	16	11	49	11	3,8
80	3	46,5	136	150	89	12	4	6,5	50	65	36	F05	11	16	11	68	18,5	4
100	4	52,5	163,5	176,5	106	12	4	8,5	70	90	56	F07	14	19	14	88	25,5	6,2
125	5	56,5	189	189	119,5	12	4	8,5	70	90	56	F07	14	19	14	114	36	8
150	6	56,5	215	202	132	12	4	8,5	70	90	56	F07	14	19	14	141	48,5	9,6
200	8	60,5	270	244,5	164	16	4	10,5	102	125	71	F10	17	24	20	192	71,5	15,8
250	10	68,5	324	270	200	16	4	10,5	102	125	71	F10	22	24	26	242	92,5	22,4
300	12	78,5	374,5	295	235	16	4	12,5	125	150	87	F12	22	29	26	291	112,5	32,4

Lug types



Diameter		Face to face	Overall dimensions				ISO top according EN ISO 5211						Square shaft outlet			Travel of the disc		Weight Kg
DN	NPS	E	L2	H1	H2	H4	N	ØR	ØS	ØT	ØU	N°	□C	H3	Plat P	D1	D2	
32	1 1/4	32,5	147,5	130	73	12	4	6,5	50	65	36	F05	11	16	11	28	5,5	3,2
40	1 1/2	32,5	147,5	130	73	12	4	6,5	50	65	36	F05	11	16	11	28	5,5	3,2
50	2	43,5	161	139	69	12	4	6,5	50	65	36	F05	11	16	11	31	5	3,9
65	2 1/2	46,5	175	144,5	73	12	4	6,5	50	65	36	F05	11	16	11	49	11	4,3
80 PN6	3	46,5	191	150	89	12	4	6,5	50	65	36	F05	11	16	11	68	18,5	5
80 PN16	3	46,5	178,5	150	89	12	4	6,5	50	65	36	F05	11	16	11	68	18,5	5,2
100	4	52,5	206	176,5	106	12	4	8,5	70	90	56	F07	14	19	14	88	25,5	7,7
125	5	56,5	239	189	119,5	12	4	8,5	70	90	56	F07	14	19	14	114	36	10,4
150	6	56,5	265	202	132	12	4	8,5	70	90	56	F07	14	19	14	141	48,5	11,8
200	8	60,5	326,5	244,5	164	16	4	10,5	102	125	71	F10	17	24	20	192	71,5	22,1
250	10	68,5	398,5	270	200	16	4	10,5	102	125	71	F10	22	24	26	242	92,5	29
300	12	78,5	456,5	295	235	16	4	12,5	125	150	87	F12	22	29	26	291	112,5	39,8

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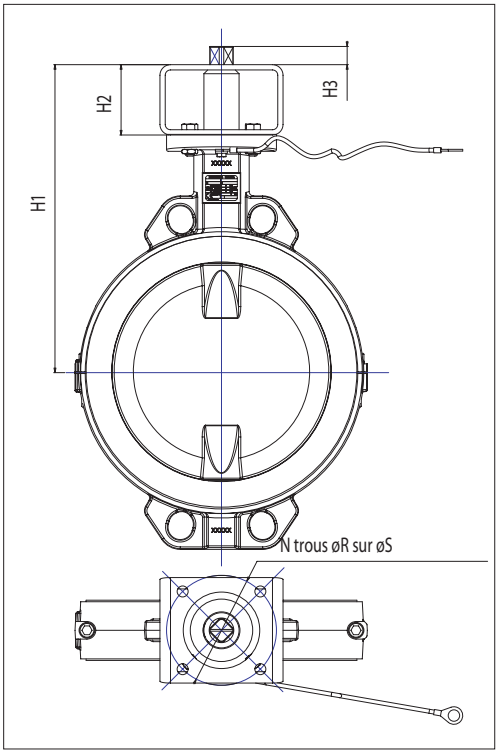
Connection kit for actuations

A direct mounting of the actuation is recommended, otherwise take the dimensions of the kits below

DN	NPS	Iso top of the valve	Iso top of the actuation															
			F03		F04		F05		F07		F10		F12		F14		F16	
			H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
32	1 1/4	F05/□11	190	60	190	60	190	60	190	60	210	80						
40	1 1/2		190		190		190		190		210							
50	2		199		199		199		199		219							
65	2 1/2		204,5		204,5		204,5		204,5		224,5							
80	3		210		210		210		210		230							
100	4	F07/□14			236,5	60	236,5	60	236,5	60	256,5	80	256,5	80	256,5	80		
125	5				249		249		249		269		269		269			
150	6				262		262		262		282		282		282			
200	8	F10/□17					324,5	80	324,5	80	324,5	80	324,5	80	334,5	90	334,5	90
250	10	F10/□22					350		350		350		350		360		360	
300	12	F12/□22							375		385	90	385	90	385		385	

DN	NPS	Iso top of the valve	Exceeding lenght of the shaft H3								
			Kit	□9	□11	□14	□17	□22	□27	□36	□46
32	1 1/4	F05/□11	F03 F04 F05 F07 F10	7	9	12	15	20	25		
40	1 1/2										
50	2										
65	2 1/2										
80	3										
100	4	F07/□14	F04 F05 F07 F10 F12 F14		9	12	15	20	25	34	
125	5										
150	6										
200	8	F10/□17	F05 F07 F10 F12 F14		9	12	15	20	25	34	
250	10	F10/□22	F05 F07 F10 F12 F14			12	15	20	25	34	
300	12	F12/□22	F07 F10 F12 F14 F16			12	15	20	25	34	44

N°	N	ØR	ØS
F03	4	5,5	36
F04	4	5,5	42
F05	4	6,5	50
F07	4	8,5	70
F10	4	10,5	102
F12	4	12,5	125
F14	4	17	140
F16	4	22	165



Reminder of the iso top dimensions EN ISO 5211 (see also the overall dimensions)

Other versions on request

Connecting flanges

The LYCENE butterfly valve can be mounted with the following connections (other types on request) :

✔ : possible mounting
● : possible mounting with re-machining
■ : impossible mounting

Wafer type

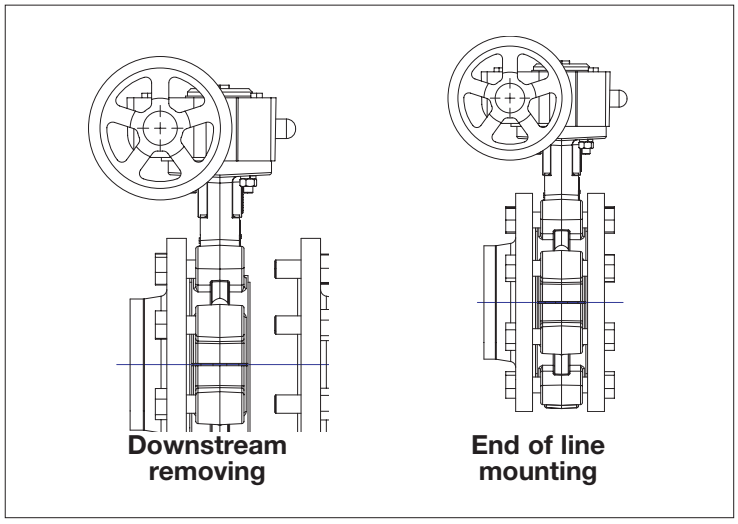
DN	NPS	EN 1092-1 & EN 1092-2				ASME/ANSI B16.5 CLASS 150	BS10		JIS B2238 & JIS B2239	
		PN10	PN16	PN25	PN40		Table D	Table E	10K	16K
32	1 1/4	✔	✔	✔	✔				✔	✔
40	1 1/2	✔	✔	✔	✔	✔	✔	✔	✔	✔
50	2	✔	✔	✔	✔	✔	●	●	●	
65	2 1/2	✔	✔			✔	●	●	✔	
80	3	✔	✔	✔	✔	✔	●	●		
100	4	✔	✔	●	●	✔	✔	✔		●
125	5	✔	✔	●	●	✔	✔	✔	●	●
150	6	✔	✔	●	●	✔	✔	✔	✔	
200	8	✔	✔			✔	✔	●		
250	10	✔	✔	●		✔		✔	✔	
300	12	✔	✔	●		✔	✔	✔	●	●

Lug type

DN	NPS	EN 1092-1 & EN 1092-2				ASME/ANSI B16.5 CLASS 150	BS10		JIS B2238 & JIS B2239	
		PN10	PN16	PN25	PN40		Table D	Table E	10K	16K
32	1 1/4	✔	✔	✔	✔				✔	✔
40	1 1/2	✔	✔	✔	✔	✔	✔	✔	✔	✔
50	2	✔	✔	✔	✔	✔	✔	✔	✔	
65	2 1/2	✔	✔			✔	✔	✔	✔	
80	3	✔	✔	✔	✔	✔	✔	✔	✔	
100	4	✔	✔	✔	✔	✔		✔	✔	✔
125	5	✔	✔	✔	✔	✔	✔	✔	✔	✔
150	6	✔	✔	✔	✔	✔	✔	✔	✔	
200	8	✔	✔			✔	✔	✔	✔	✔
250	10	✔	✔	✔		✔		✔	✔	
300	12	✔	✔			✔	✔	✔		

Attention : the Sylax lug type body is not a multi-connection body (connection to many flanges of different sizes). Generally, every connection relates to a different reference of finished products.

End of line mounting with a flange against and downstream removing



The end of line mounting and the downstream removing, at ambient temperature, of the Lycene butterfly valve is limited to the pressure mentioned on page 5 (pressure/temperature/vacuum) according to the PED directive 2014/68/UE.

These mountings are only possible on tapped lugs bodies.

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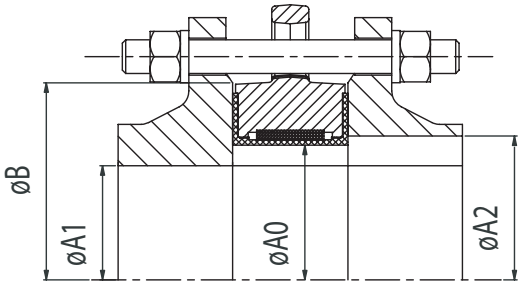
Type of flange

The butterfly valve has been designed to be mounted on standard flanges. Only standard flanges type 11, 21 and 34 according to EN 1092 are quite compatible.

For other type of flanges, refer to the table below.

Nevertheless, only approved connections will be covered by our guarantee.

DN	Ø A0	Ø A1 mini	Ø A2 maxi	Ø B mini
32/40	40	33	48	88
50	50	36	58	102
65	65	54	73	122
80	80	73	88	138
100	100	93	108	158
125	125	119	133	188
150	150	146	160	212
200	200	196	210	268
250	250	246	260	320
300	300	296	310	370



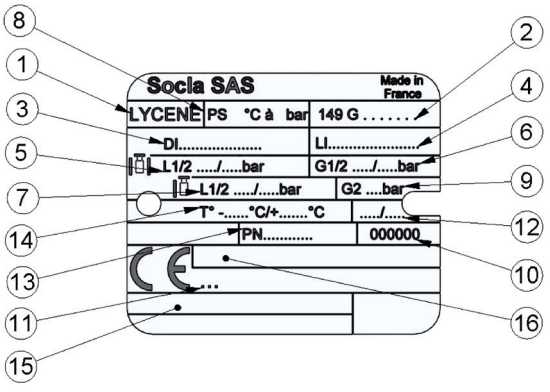
NOTE : The use of expansion seals, as well as the use of elastomer coated flanges, between the flange and the valve are strictly forbidden.

Thread torques

DN	mm	32	40	50	65	80	100	125	150	200	250	300
	inch	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12
Torques	N.m	32	32	35	40	35	45	50	65	80	95	115
	In.lbs	284	284	310	354	310	398	443	575	708	840	1018

Tag and traceability

N°	Description
1	Name of the valve
2	Reference
3	Material of the disc
4	Material of the liner
5	Pressure PS between flanges L1/L2 (liquid)
6	Pressure PS between flanges G1/G2 (gas)
7	Pressure PS end flange L1/L2 (liquid)
8	Pressure PFA water 20°C
9	Pressure PS end flange G2 (gas)
10	Number of manufacturing order
11	Notified Body Number for the Directive PED 2014/68/UE
12	Manufacturing date
13	Connecting flanges
14	Limit of use
15	Approval information zone
16	Marking relating to the Directive ATEX 2014/34/UE



Bolts and nuts

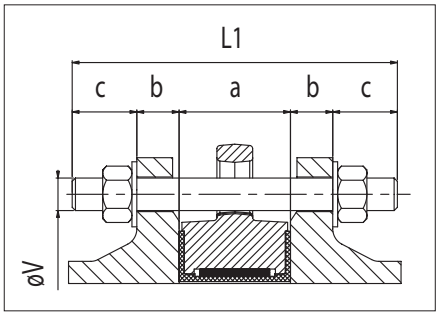
Note : bolts and nuts are not part of our standard supply.

DN	NPS	a	e (1)	EN 1092 PN10			EN 1092 PN16			ASME / ANSI B16.5 Class 150		
				* Nb of rods or nb or screw	ØV	C	* Nb of rods or nb or screw	ØV	C	* Nb of rods or nb or screw	ØV UNC	C
32	1 1/4	32,5	14	4	M16	23	4	M16	23	4	1/2”	19
40	1 1/2	32,5	14	4	M16	23	4	M16	23	4	1/2”	19
50	2	43,5	19	4	M16	23	4	M16	23	4	5/8”	22
65	2 1/2	46,5	19	4	M16	23	4	M16	23	4	5/8”	22
80	3	46,5	22	8	M16	23	8	M16	23	4	5/8”	22
100	4	52,5	22	8	M16	23	8	M16	23	8	5/8”	22
125	5	56,5	25	8	M16	23	8	M16	23	8	3/4”	25
150	6	56,5	25	8	M20	26	8	M20	26	8	3/4”	25
200	8	60,5	28	8	M20	26	12	M20	26	8	3/4”	25
250	10	68,5	31	12	M20	26	12	M24	31	12	7/8”	28
300	12	78,5	38	12	M20	26	12	M24	31	12	7/8”	28

*** WAFER TYPE BODY :**
Assembly by rods : Number of nuts = 2 x Number of rods (above)
Assembly by bolts : Number of nuts = Number of screws (above)

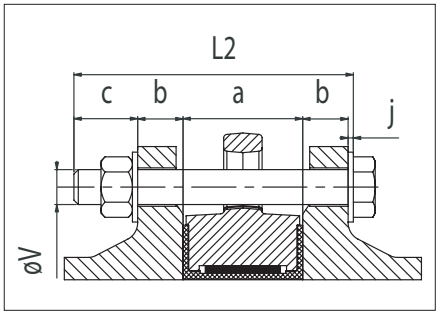
LUG TYPE BODY :
Assembly by screws : Number of screws per face (above)
For other dimensions, please consult corresponding norms and use the table below.

(1) For steel flanges type 11 according to EN1092-1



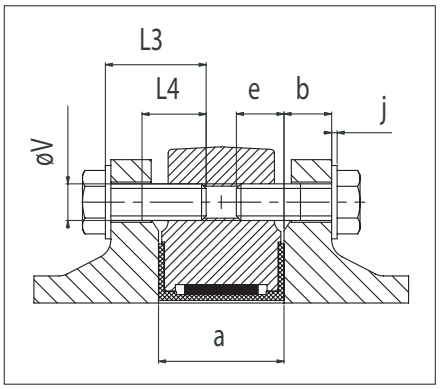
For wafer type bodies ; assembly by rods :

L1 = a + 2(b+c)
L1 = minimum length of rods
a = width of the butterfly valve
b = thickness of the flange (customer)
c = thickness of the washer + thickness of the nut + exceeding length of the rod



For wafer type ; assembly by bolts :

L2 = a + 2b + c + j
L2 = mini length of screws under head
a = width of the butterfly valve
b = thickness of the flange (customer)
c = thickness of the washer + thickness of the nut +exceeding length of the rod
j = thickness of the washer



For lug type ; assembly by screws :

L3 ≤ b + e + j with L4 ≥ L3 - (b + j)
L3 = maximum length under head of screws
L4 = minimum length of the threading of the screws
a = width of the butterfly valve
b = thickness of the flange (customer)
e = maxi depth of screws
j = thickness of the washer

Actuations

Find below the different standard assembly combinations.
For any other information, please ask our technical Department.

ASSEMBLY LEVEL 2

1 or 2 mechanical limit switch

End of race box: mechanical or inductive

Inductive limit switch

Positioners

*Pneumatic actuator only

For other options, please consult us.

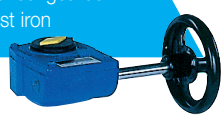
ASSEMBLY LEVEL 1

Adjustable handle Cast iron (PRF)

No level 2 assembly on this handle

Notched ductile iron hand lever (PCF)

Manual gearbox in cast iron



optional : with chain-wheel

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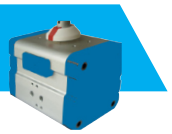

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