

Technical manual

Sylax Gas butterfly valves DN 200 - 300 mm

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Applications and main characteristics

Industrial processes and general services

Applications :

- Designed for domestic or industrial gas networks. NF ROB-GAZ, and DVGW (N° DG-4313BS0449, FGS-version only) approved.



- In case of applications for gas with special temperatures, please ask our technical department.

Main characteristics :

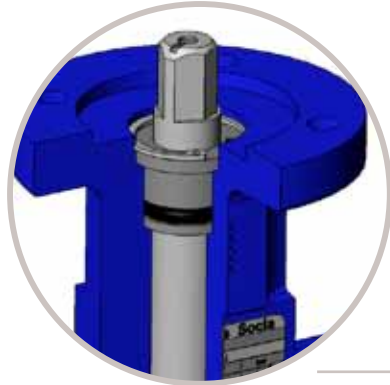
- Multiple connections : centering lugs, tapped lugs, and ring shaped type body.
- Vertical and horizontal operating position.
- High power transmission with robust grooved connection between the shaft and the disc.
- Easy maintenance by removing the circlips
- Interchangeable disc and liner.
- Body in ductile iron EN-GJS-400-15 (5.3106)
- Body epoxy coated 80 μ m colour blue RAL 5017 (a lot of other coatings on option, please ask our sales department)
- Wide choice of actuators.

Mounting instructions specifying the installation characteristics and the commission of the Sylax Gas DN 200 - 300 are available on our web site www.socla.com or on request by our sales department.

Sale leaflet

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.

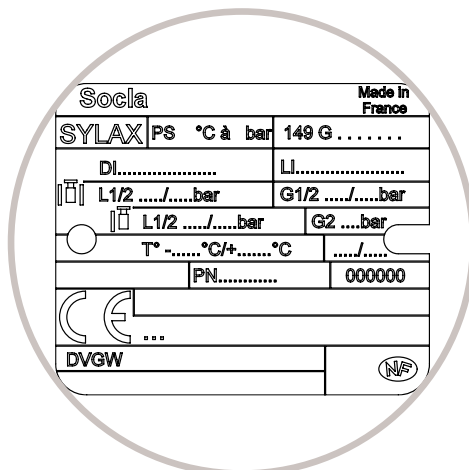


- Safety anti-ejection circlip keeps shaft in place and allows easy maintenance (FM version only)
- Safety reinforced by a secondary water tightness
- Spline driven one piece shaft connected to floating disc :

high reliability of tightness and torque transmission in the long term. better torque values

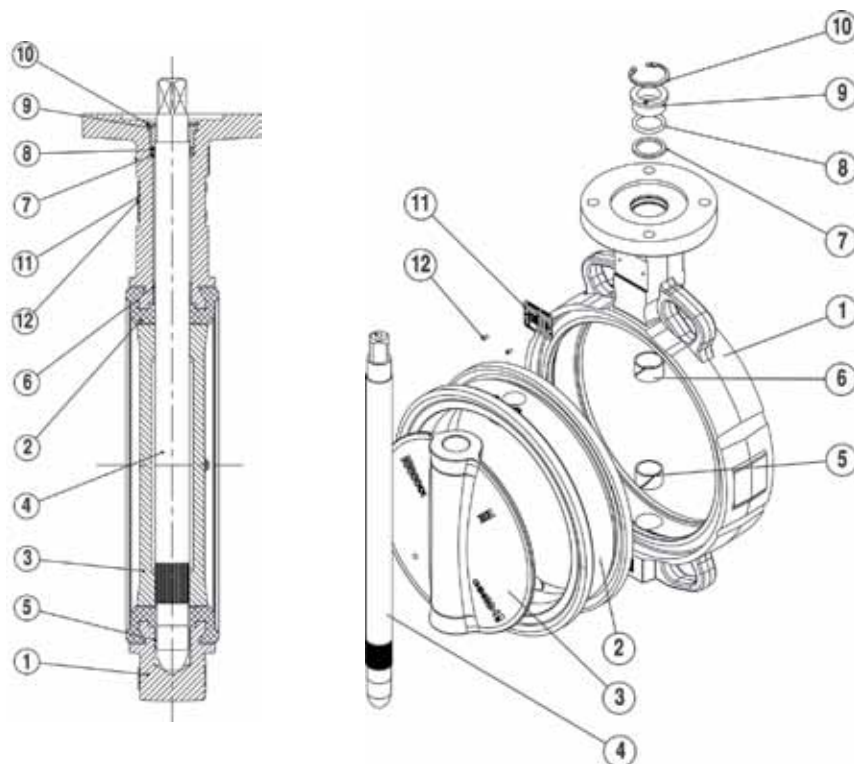


- High power transmission with robust grooved connection between the shaft and the disc.
- Complete protection of the shaft and valve body from fluids.
- Reliability of movements with self-lubricating bearings.



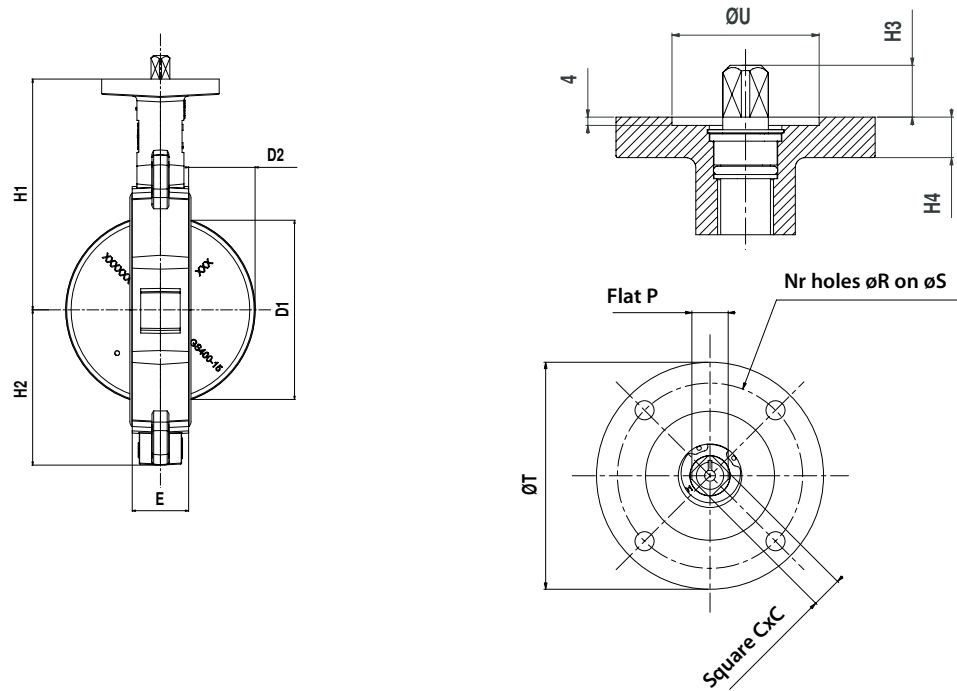
- Identification and traceability ensured by riveted metal tag : see on page 12.

Spare parts list



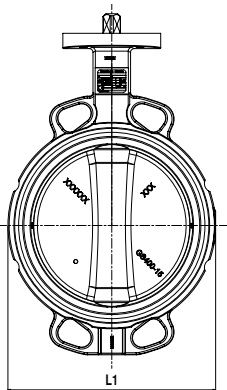
Nb.	DESCRIPTION	Qty	MATERIALS ACCORDING TO NORMS			
			Materials	EN	ASTM	JIS
1	Body	1	Ductile iron	EN GJS 400-15 (5.3106)	-	FCD40
2	Liner	1	High Content Nitrile	-	-	-
3	Disc	1	Ductile iron	EN GJS 400-15 (5.3106)	-	FCD40
			Stainless steel	GX5 CrNiMo 19-11-2 (1.4408)	316	SUS 316
			Alu-bronze	CuAl10Fe5Ni5 (CC333G)	-	-
4	Shaft	1	Stainless steel	X30 Cr13 (1.4028)	420	SUS 420 J2
5 - 6	Anti-friction bearing	1	Zinc coated steel/PTFE	-	-	-
7	Sealing washer and anti-extrusion bush	1	Plastic	IXEF 50 FV	-	-
8	O-ring	1	Nitrile	-	-	-
9	Circlips	1	Steel	XC 75	-	-
10	Identification plate	1	Aluminium	EN AW - AL995 (EN AW - 1050A)	-	-
11	Rivet	2	Alu/Stainless steel			

Overall dimensions



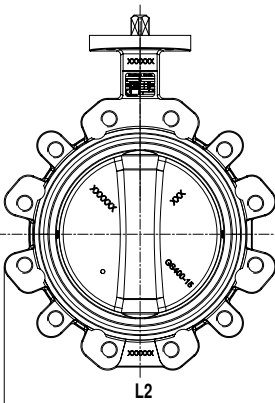
• 4 Centring lugs

Diameter		Face to face		Overall dimensions				ISO top according to 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	
200	8	60	265	245,5	164	155,5	4	10,5	102	125	71	F10	17	24	20	192	71	15.4
250	10	68	317	271	200	16	4	10,5	102	125	71	F10	22	24	26	242	91.5	19
300	12	78	370	296	235	16	4	12,5	125	150	87	F12	22	29	26	291	112	30.2

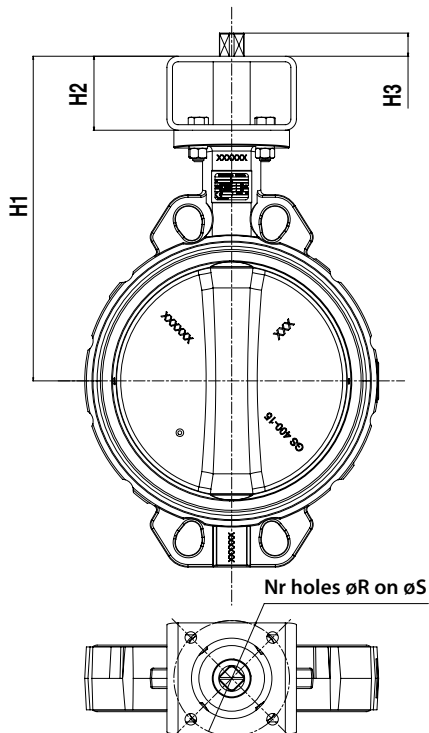


• Tapped lugs

Diameter		Face to face		Overall dimensions				ISO top according to 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	
200	8	60	336	245,5	168	155,5	4	10,5	102	125	71	F10	17	24	20	192	71	15.4
250	10	68	396	271	198	16	4	10,5	102	125	71	F10	22	24	26	242	91.5	19
300	12	78	462	296	227	16	4	12,5	125	150	87	F12	22	29	26	291	112	30.2



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		
200	8	F10/□17					324,5	80	324,5	80	324,5	80	324,5		334,5		334,5		90	
250	10	F10/□22					350		350	80	350		350		360	90	360		90	
300	12	F12/□22							375			385	90	385	90	385		385		

DN	NPS	Iso top of the valve	Kit	Exceeding length of the shaft H3										
				□9	□11	□14	□17	□22	□27	□36	□46			
200	8	F10/□17	F05											
			F07											
			F10		9	12	15	20	25	34				
			F12											
250	10	F10/□22	F05											
			F07											
			F10			12	15	20	25	34				
			F12											
300	12	F12/□22	F07											
			F10											
			F12			12	15	20	25	34	44			
			F14											
			F16											

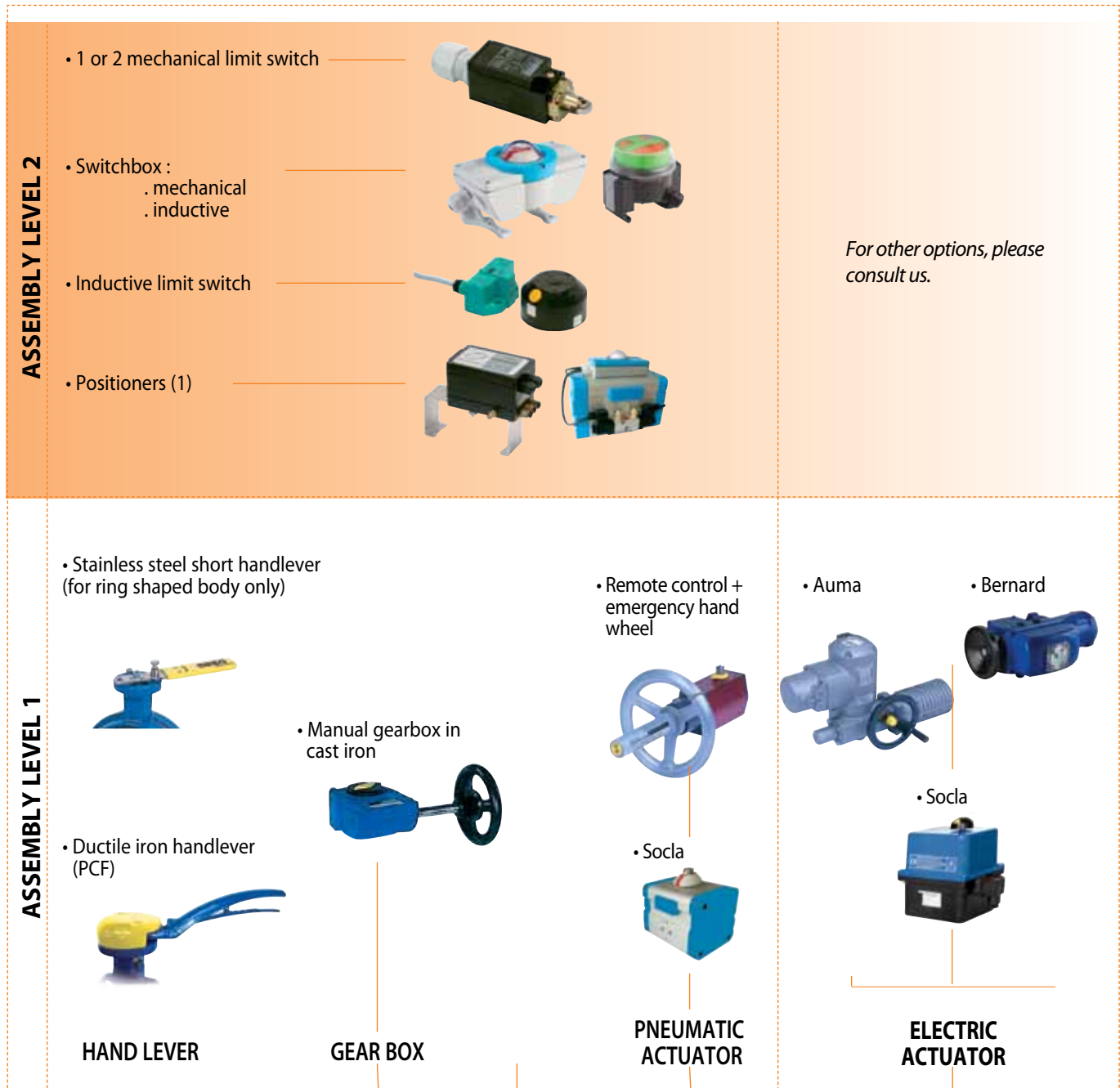
N°	N	øR	øS
F05	4	6,5	50
F07	4	8,5	70
F10	4	10,5	102
F12	4	12,5	125
F14	4	17	140
F16	4	22	165

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

Other versions on request

Actuations

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



(1) Pneumatic actuator only

Connecting flanges

The Sylax Gas DN 200 - 300 butterfly valve can be mounted with the following connections (other types on request)

- ✓ : possible mounting
- : possible mounting with re-machining
- : impossible mounting

• 4 Centring lugs

DN	NPS	EN1092-1 & EN1092-2					ASME/ANSI B16.1 Class 125	ASME/ANSI B16.5 Class 150	ASME/ANSI B16.5 Class 300	BS10		JIS B2238 et JIS B2239		
		PN6	PN10	PN16	PN25	PN40				Table D	Table E	5K	10k	16k
200	8	✓	✓	✓	●	●	✓	✓	●	●	●	●	●	
250	10	✓	✓	✓	●	●	✓	✓	●	✓	✓	✓	●	
300	12	✓	✓	✓	●	●	✓	✓	■	✓	✓	●	●	

• Lug type

DN	NPS	EN1092-1 & EN1092-2					ASME/ANSI B16.1 Class 125	ASME/ANSI B16.5 Class 150	ASME/ANSI B16.5 Class 300	BS10		JIS B2238 et JIS B2239		
		PN6	PN10	PN16	PN25	PN40				Table D	Table E	5K	10k	16k
200	8	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
250	10	✓	✓	✓	✓	✓	✓	✓	■	✓	✓	✓	✓	
300	12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Attention : the 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.

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
- **Connecting flange :** see page 7
According to EN1092-1 and EN1092-2
ASME/ANSI B16.5
BS10-d and BS10-e
JIS B2238 and JIS B2239
- **Tests :**
According to EN12266-1
 - tightness of the body : 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
- **European Directives :**
Our butterfly valves are in accordance to the safety requirements of the following directives.

Directive 97/23/CE : 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 (group 1/2), 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 : hazardous fluids (directive 67/548/EEC) / explosive / highly flammable / easily flammable / flammable / very toxic / toxic / combustion agents.*

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 modifications of the products to working conditions not previously specified by the customer.

In order to facilitate your choice regarding these new regulatory requirements, Socla has put the necessary information concerning products with CE marking, specification sheets and product identification plates at your disposal in the price list.

Mounting instructions specifying the installation characteristics and the commission of the Sylax Gas DN 200 - 300 are available on our web site www.socla.com or on request by our sales department.

Pressure

DIRECTIVE 97/23/CE Équipements 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
6 bar NITRILE	32 to 100	I	Flanges	6			6	6
			End of line	4			4	
	125 to 300	II	Flanges	6			6	6
			End of line	4			4	
8 bar NITRILE	32 to 100	I	Flanges	8			8	8
			End of line	6			6	
	125 to 300	II	Flanges	8			8	8
			End of line	6			6	

PS : Maximum allowable pressure(bar) according to Directive 97/23/CE - PFA : Allowable operating pressure (bar) for supply distribution and disposal of water

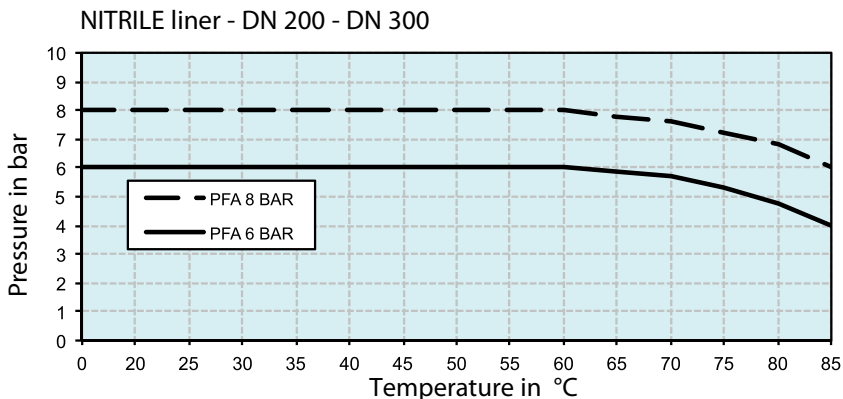
NOTE : Butterfly valves of category II used as «end of line», please consult us.

Torque values

Torques for dry fluids (Nm) NBR	200	250	300
PS6	275	350	550
PS8	385	570	750

NOTE :
One actuation/month minimum .

Pressure/temperature diagram



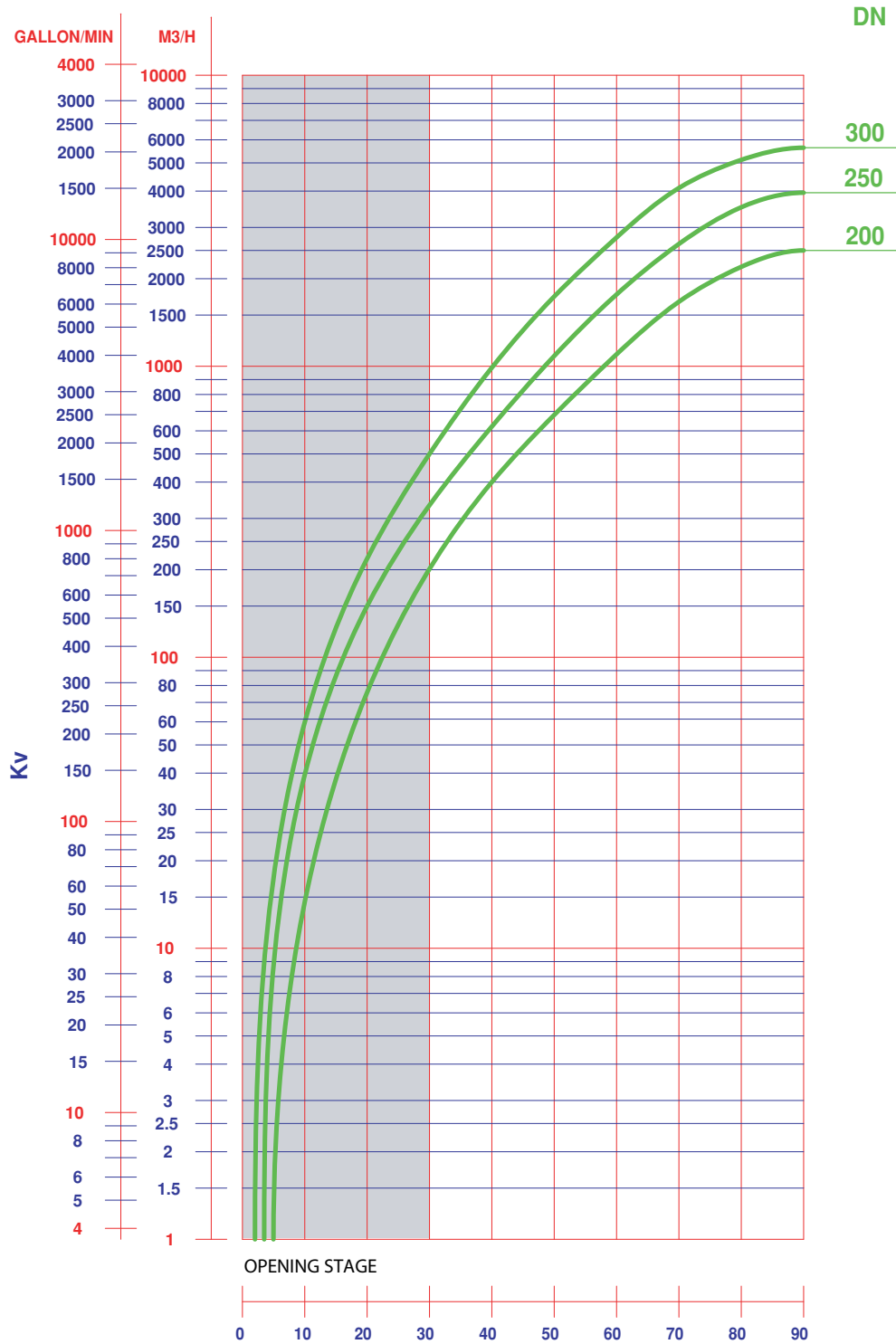
Flow rate (Kv)

OPENING STAGE - Stainless steel disc										
DN	10°	20°	30°	40°	50°	60°	70°	80°	90°	
200	15	76	200	399	680	1099	1666	2196	2500	
250	40	150	333	621	1084	1765	2652	3517	3948	
300	60	219	500	989	1736	2770	4097	5118	5635	

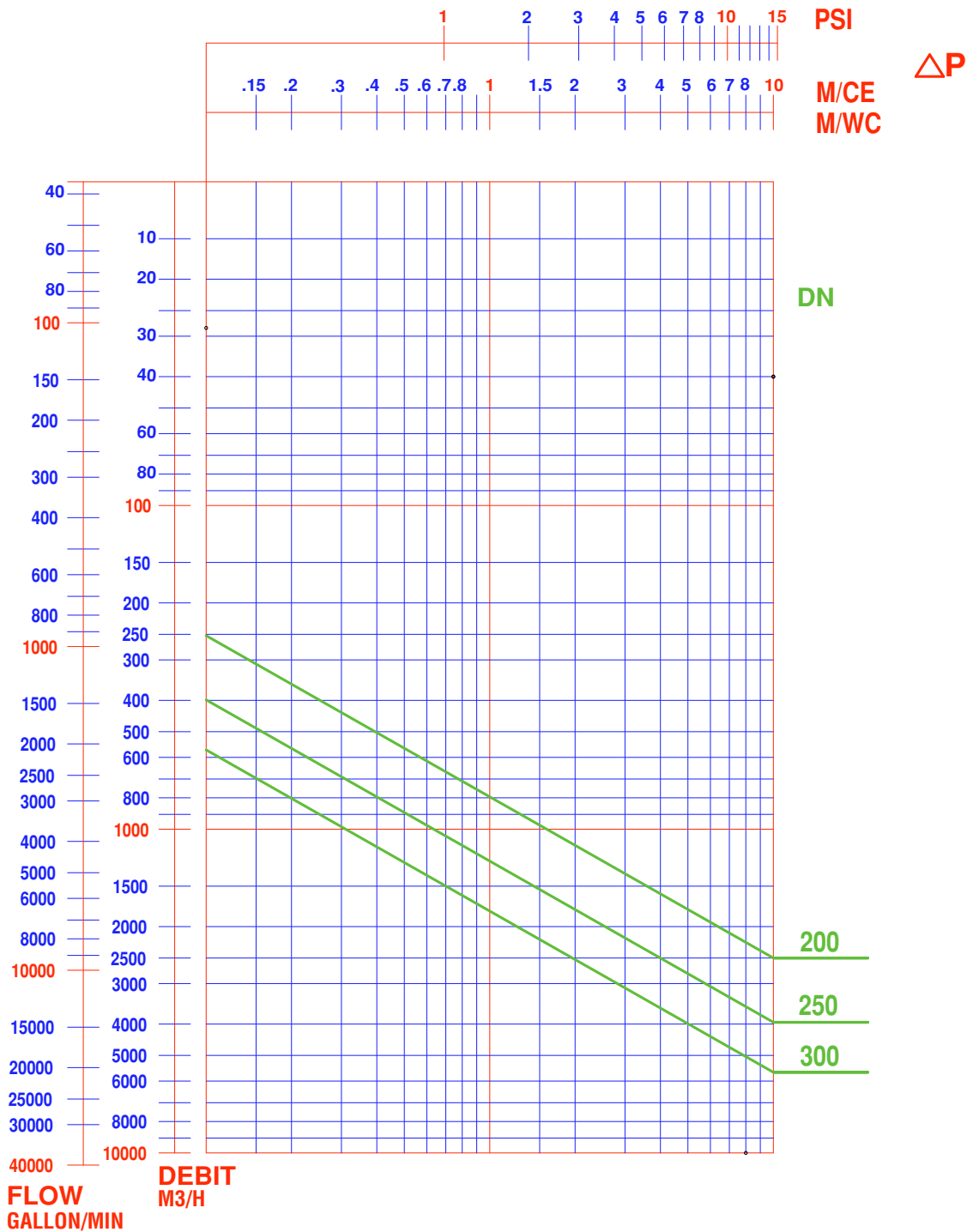
Kv = volume of water in m³/h through a valve at a preset opening stage and under a head loss of 1 bar.

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 Sylax Gas DN 200 - 300 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 Sylax Gas DN 200 - 300 butterfly valve is possible, but the phenomena of cavitation, noise, vibration and water hammering increase.

Flow rate (Kv)



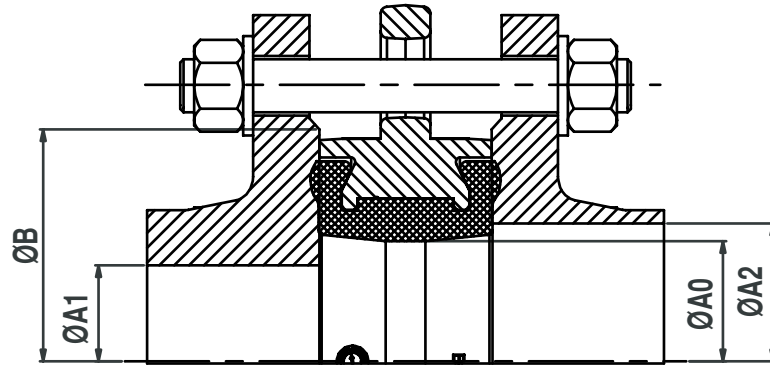
Head loss diagram (ΔP)



Type of flange

The Sylax Gas DN 200 - 300 butterfly valve has been designed to be mounted on normal standard flanges. Only standard flanges type 11, 21 and 34 according to EN 1092 are quite compatible

For other types of flanges, refer to the table below.
Non appropriate connections will cancel our guarantee.

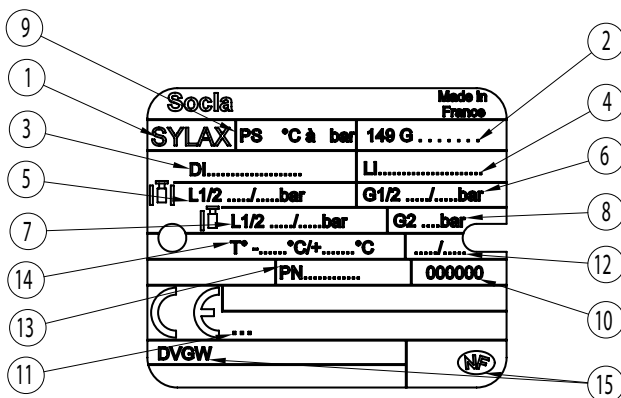


DN		Ø A0	Ø A1 mini	Ø A2 maxi	Ø B mini
200	8	200	196	224	258
250	10	250	246	280	312
300	12	300	296	329	365

NOTA :

The use of compensation joints, as well as flanges elastomer coated, between flange and valve are strictly forbidden.

Tag / traceability



Rep	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 PS end flange for Gas G2
9	Pressure PFA water 20°C
10	Number of manufacturing order
11	Notified Body Number for the Directive PED 97/23/CE
12	Manufacturing date
13	Connecting flanges
14	Limit of use
15	Approvals

Bolts and nuts
Nota : Bolts and nuts are not part of our standard supply.

DN	NPS	a	e	EN 1092 PN6			EN 1092 PN10			EN 1092 PN16			EN 1092 PN25			ASME / ANSI B16.5 Class 150		
				*Nb rods or Nb screw	ØV	c	*Nb rods or Nb screw	ØV	c	*Nb rods or Nb screw	ØV	c	*Nb rods or Nb screw	ØV	c	*Nb rods or Nb screw	ØV UNC**	c
200	8	60	28	8	M16	24	8	M20	26	12	M20	26	12	M24	32	8	3/4»	26
250	10	68	32	12	M16	24	12	M20	26	12	M24	32	12	M27	32	12	7/8»	26
300	12	78	36	12	M20	26	12	M20	26	12	M24	32	16	M27	32	12	7/8»	26

DN	NPS	a	e	BS10-d			BS10-e			JIS2238 & JIS2239 5K			JIS2238 & JIS2239 10K			JIS2238 & JIS2239 16K		
				*Nb rods or Nb screw	ØV UNC	c	*Nb rods or Nb screw	ØV UNC	c	*Nb rods or Nb screw	ØV	c	*Nb rods or Nb screw	ØV	c	*Nb rods or Nb screw	ØV	c
200	8	60	28	8	5/8»	24	8	3/4»	26	8	M20	26	12	M20	26	12	M22	26
250	10	68	32	8	3/4»	26	12	3/4»	26	12	M20	26	12	M22	26	12	M24	32
300	12	78	36	12	3/4»	26	12	7/8»	26	12	M20	26	16	M22	26	16	M24	32

* WAFER TYPE BODY :

Assembly by rods : number of nuts and washer = 2 x Number of rods (above)

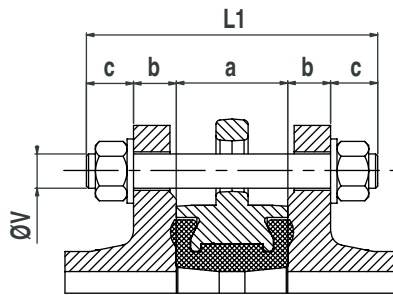
Assembly by bolts : Number of nuts = Number of screws (above) and number of washer = 2 x Number of nuts

* LUG TYPE BODY :

Assembly by screws : Number of screw per face (above) and number of washer is the same

** ASME / ANSI B16.5 Class 150 : ØV UNC threading in inch ; for metric threading, please consult us.

Bolts and nuts



For wafer type body ; assembly by rods :

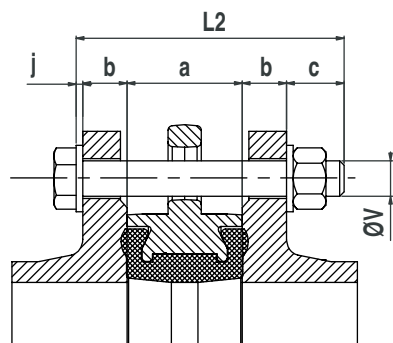
$$L1 = a + 2(b+c)$$

L1 = minimum length of rods

a = width of the butterfly valve (face to face dimension)

b = thickness of the flange (customer)

c = thickness of washer + thickness of nut + exceeding length of the rod.



For wafer type body ; assembly by bolts :

$$L2 = a + 2b + c + j$$

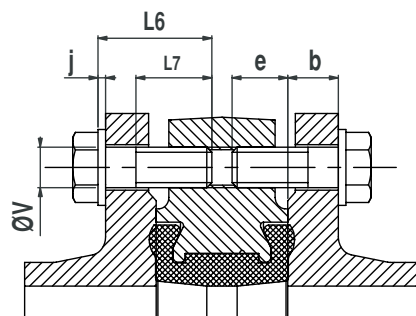
L2 = minimum length under head of screw

a = width of the butterfly valve

b = thickness of the flange (customer)

c = thickness of washer + thickness of nut + exceeding length of the rod

j = thickness of washer at the head of the screw.



For lug type body ; assembly by screws :

$$L6 \leq b + e + j \text{ avec } L7 \geq L6 - (b + j)$$

L6 = maximum length under head of screw

L7 = minimum length of the threading of the screw

a = width of the butterfly valve (face to face dimension)

b = thickness of the flange (customer)

e = maxi depth of screw

j = thickness of washer

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.

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.

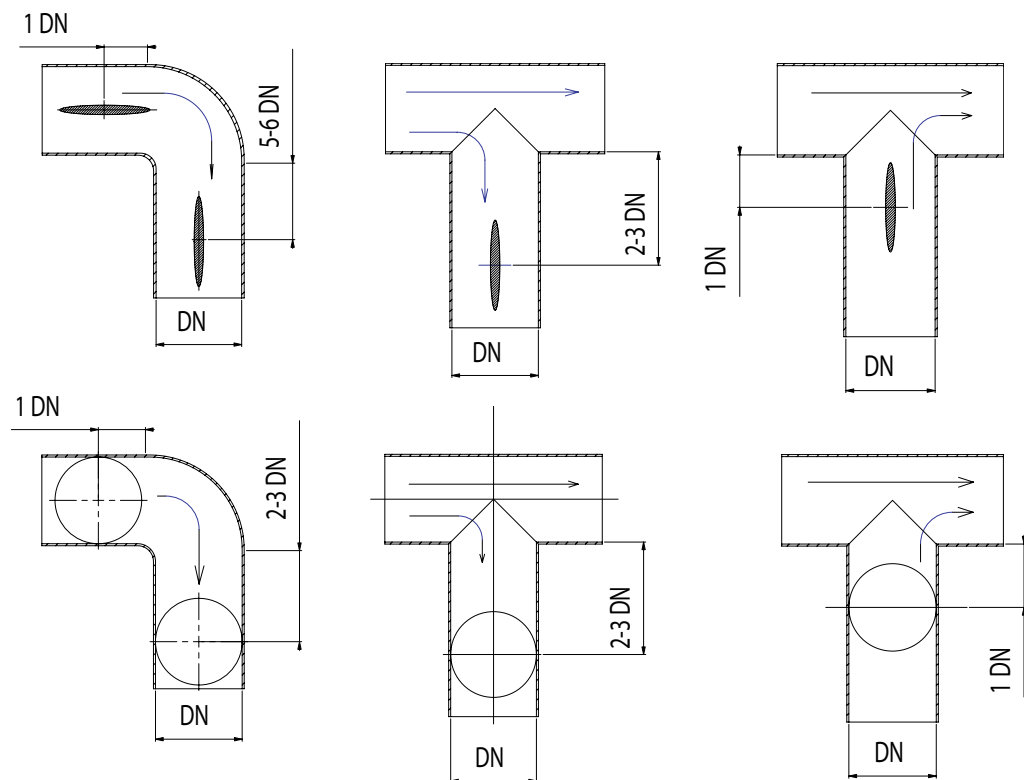
The valve is a machined piece of equipment and must not be used to prise apart the flanges.

An instruction notice specifying the installation characteristics and the commission of the Sylax Gas DN 200 - 300 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.



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