

Emaris butterfly valves - DN 65 up to 250 mm

emaris®

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Applications and main characteristics

Performances and reliability in industrial applications with strict conditions of use.

Applications :

- Any application requiring the use of butterfly valve with double off set disc and fluid controls up to 50 bar pressure and -50°C till $+220^{\circ}\text{C}$ temperatures.

• Application fields :

Steam, district heating, geothermal, industrial processes and refrigeration, pumping, offshore, ship buildings, sugar processing industry, petrochemical, nuclear, paper industry, etc...

Main characteristics :

- Numerous applications.
- Vertical and horizontal mounting of the shaft.
- Full range of mounting thanks to centring lug with multiple connections.
- Availability of connections thanks to standardised fittings.
- Available in tapped lug version.
- Double off set disc design, reliability of the closing system and low torque.
- Easy access to the packing gland without removing the actuator.
- Direct connection of the actuators on an integrated arcade.
- Tightness seal in PTFE 50% stainless steel loaded.
- Multi-direction mounting (DN 65 up to 125) and single-direction mounting (DN 150 up to 250).
- Reliable technology : no need of spring or tightness bearing .
- The standard version is conformed to the ATEX directive 94/9/CE

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

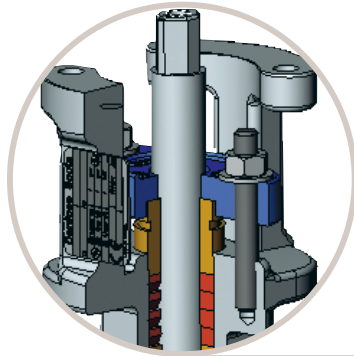
Sale leaflet



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.

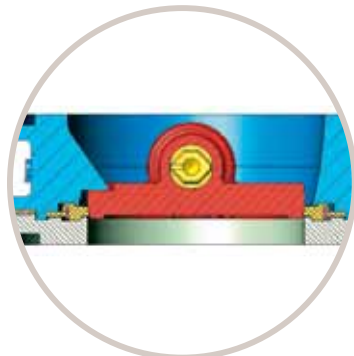
• Identification and traceability ensured by riveted metal tag : see page 12.



- Body with long neck and integrated arcade, designed to allow insulation.
- Easy access to the packing gland without removing the actuator.
- Excellent dynamic tightness due to easy adjustment of the packing gland.
- Direct mounting of the actuators on an integrated arcade with large normalised surface.
- Identification and traceability ensured by riveted metal tag.

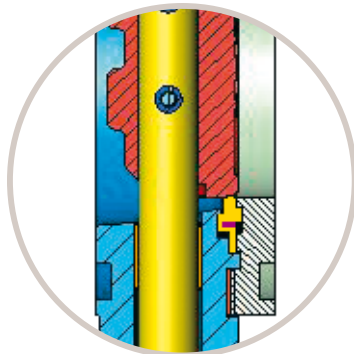
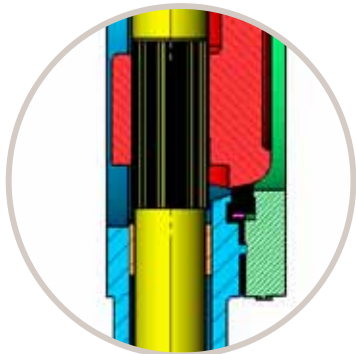


DN 200 - 250

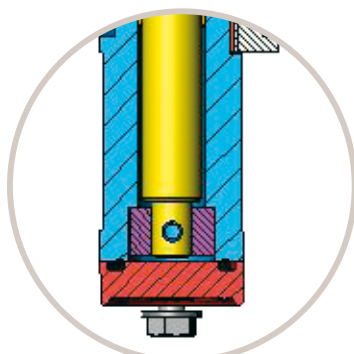
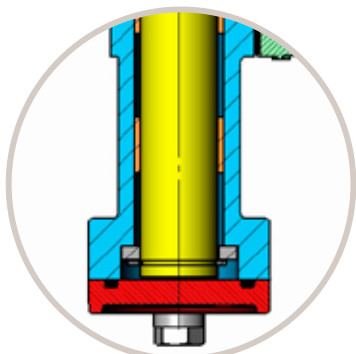


DN 65 - 150

- Body : Full range of mounting thanks to centring lug with multiple connections
- Fixation of the the guide plate outside of the seal bearing which guarantees an optimal tightness on the flange.
- Disc : long life durability due to double off set disc operating principle minimizing seat wear.
- Low torque values
- Tightness zone extended out of the shaft way.

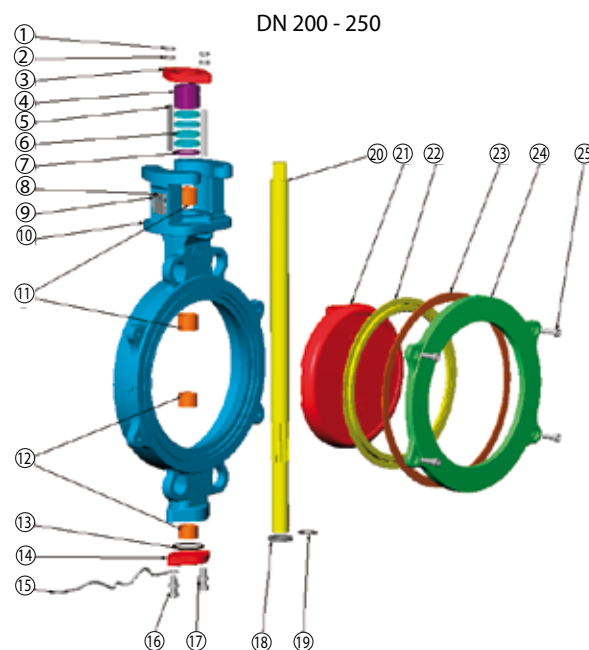
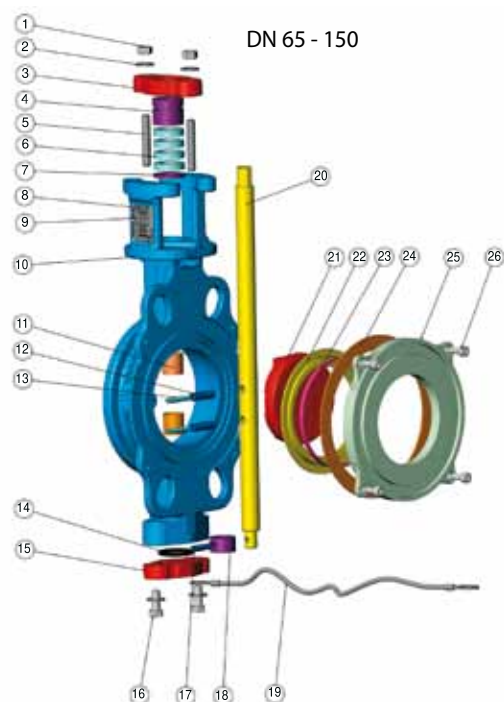


- Spine driven shaft (DN 200 and 250)
- Shaft/disc assembly secured by pins (DN 65 > DN 150)
- Excellent guiding and centring of the shaft due to anti-friction bearings - stainless steel + PTFE.
- A bi-directional tightness seal ensures safty mounting of the butterfly valve in both directions (DN 65 - 125).
- Single-direction butterfly valve (DN 150 > 250).
- Easy-directional maintenance due to a simple design to avoid any mistake by mounting the seal.
- Assembly of the guide plate by screws ensuring an easy access to the seal.



- The external tightness allows a security at the lower shaft way thanks to the o-ring.

Spare parts list



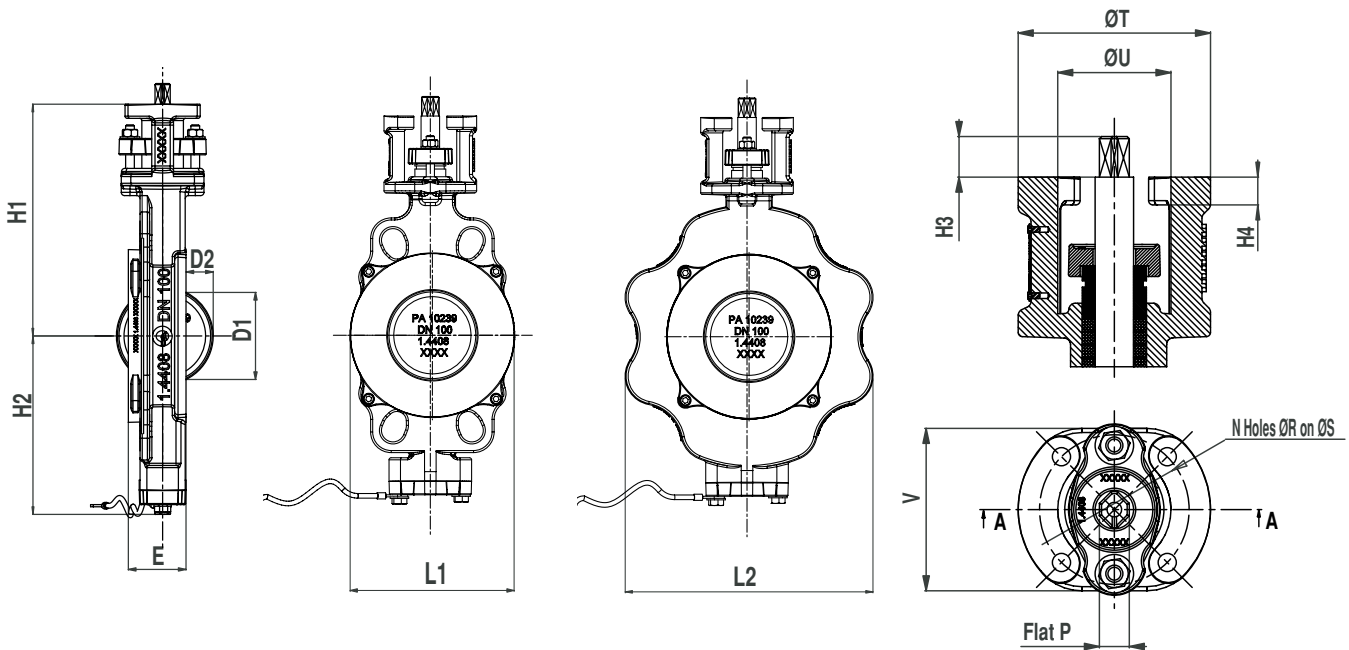
DN 65 - 150

Nb.	DESCRIPTION	Qty	MATERIALS ACCORDING TO STANDARDS			
			Type of materials	EN	ASTM	JIS
1	Nuts	2	Stainless steel	A2 - 70	304	SUS 304
2	Stop washer	4	Stainless steel	A2 - 70	304	SUS 304
3	Plate	1	Stainless steel	GX5CrNiMo 19-11-2 (1,4408)	316	SUS 316
			Steel	-	WCC	-
4	Ring	1	Stainless steel	X3CrNiMo 17-13-3 (1,4436)	316	SUS 316
5	Pin	2	Stainless steel marked	X5CrNiMo17-12-2 (1,4401)	316	SUS 316
6	Braid	4	PTFE graphite loaded	-	-	-
7	Anti-extrusion bush	1	Stainless steel	X3CrNiMo 17-13-3 (1,4436)	316	SUS 316
8	Rivet	2	Aluminium / Stainless steel	-	-	-
9	Identification plate	1	Aluminium	EN AW - AL99,5 (EN AW - 1050A)	-	-
10	Body	1	Stainless steel	GX5CrNiMo 19-11-2 (1,4408)	316	SUS 316
			Steel	-	WCC	-
11	Guide bushes	2	Stainless steel + PTFE	-	-	-
12	Pin	2	Stainless steel	A2-70	304	SUS 304
13	Pin	2	Stainless steel	A2-70	304	SUS 304
14	O-ring	1	FKM	-	-	-
15	Bottom	1	Stainless steel	GX5CrNiMo 19-11-2 (1,4408)	316	SUS 316
			Steel	-	WCC	-
16	Screw	2	Stainless steel marked	A2-70	304	SUS 304
17	Stop washer	4	Stainless steel	A2-70	304	SUS 304
18	Stop guide	1	Stainless steel	X3CrNiMo 17-13-3 (1,4436)	316	SUS 316
19	Anti-static braid	1	Tinned copper	-	-	-
20	Shaft	1	Stainless steel	X5CrNiCuNb 16-14 (1,4542)	630	SUS 630
21	Disc	1	Stainless steel	GX5CrNiMo 19-11-2 (1,4408)	316	SUS 316
22	Seal	1	PTFE loaded 50% stainless steel	-	-	-
23	Insert	1	Stainless steel	X3CrNiMo 17-13-3 (1,4436)	316	SUS 316
24	Seal	1	Graphite	-	-	-
25	Guide plate	1	Stainless steel	GX5CrNiMo 19-11-2 (1,4408)	316	SUS 316
			Steel	-	WCC	-
26	Screw	4	Stainless steel marked	A2 - 70	304	SUS 304

DN 200 - 250

Nb.	DESCRIPTION	Qty	MATERIALS ACCORDING TO STANDARDS			
			Type of materials	EN	ASTM	JIS
1	Nuts	2	Stainless steel	A2 - 70	304	SUS 304
2	Stop washer	4	Stainless steel	A2 - 70	304	SUS 304
3	Plate	1	Stainless steel	GX5CrNiMo 19-11-2 (1,4408)	316	SUS 316
			Steel	-	WCC	-
4	Ring	1	Stainless steel	X3CrNiMo 17-13-3 (1,4436)	316	SUS 316
5	Pin	2	Stainless steel marked	X5CrNiMo17-12-2 (1,4401)	316	SUS 316
6	Braid	4	PTFE graphite loaded	-	-	-
7	Anti-extrusion bush	1	Stainless steel	X3CrNiMo 17-13-3 (1,4436)	316	SUS 316
8	Rivet	2	Aluminium / Stainless steel	-	-	-
9	Identification plate	1	Aluminium	EN AW - AL99,5 (EN AW - 1050A)	-	-
10	Body	1	Acier inoxydable	GX5CrNiMo 19-11-2 (1,4408)	316	SUS 316
			Acier	-	WCC	-
11-12	Guide bushes	2	Stainless steel + PTFE	-	-	-
13	O-ring	1	FKM	-	-	-
14	Bottom	1	Stainless steel	GX5CrNiMo 19-11-2 (1,4408)	316	SUS 316
			Steel	-	WCC	-
15	Anti-static braid	1	Tinned copper	-	-	-
16	Screw	2	Stainless steel marked	A2-70	304	SUS 304
17	Nuts	2	Stainless steel	A2-70	304	SUS 304
18	Ring	1	Stainless steel	X3CrNiMo 17-13-3 (1,4436)	316	SUS 316
19	Elastic ring	1	Stainless steel	A2-70	304	SUS 304
20	Shaft	1	Stainless steel	X5CrNiCuNb 16-14 (1,4542)	630	SUS 630
21	Disc	1	Stainless steel	GX5CrNiMo 19-11-2 (1,4408)	316	SUS 316
22	Seal	1	PTFE loaded 50% stainless steel	-	-	-
23	Seal	1	Graphite	-	-	-
24	Guide plate	1	Stainless steel	GX5CrNiMo 19-11-2 (1,4408)	316	SUS 316
			Steel	-	WCC	-
25	Screw	4	Stainless steel marked	A2 - 70	304	SUS 304

Overall dimensions



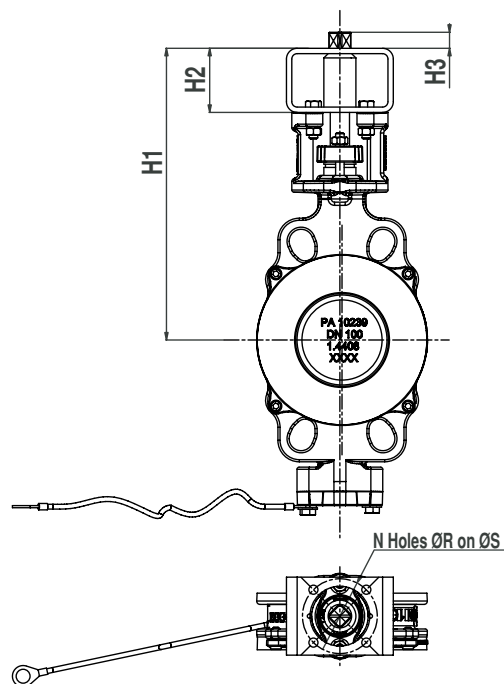
• Centring lugs

Diameter		Face to face	Overall dimensions				Iso top according to EN ISO 5211						Square drive outlet			Travel of the disc		Weight Kg	
DN	NPS		E	L1	H1	H2	H4	N	øR	øS	øT	øU	V	N°	C	H3	Flat P		D1
65	2" 1/2	47	146	175	138	12	4	8,5	70	90	50	76	F07	11	16	11	48	13	6,76
80	3"	47	160	196	149	12	4	8,5	70	90	50	76	F07	14	19	14	56	16	6,96
100	4"	53	160	213	162	13	4	8,5	70	90	50	76	F07	14	19	14	80	25	9,43
125	5"	57	185	243	180	18	4	10,5	102	125	79	85	F10	17	24	20	113	40	13,51
150	6"	57	217	272	197	15	4	10,5	102	125	79	85	F10	17	24	20	140	53	16,44
200	8"	61	287	311	233	14	4	10,5	102	150	81	85	F10	17	29	20	188	77	25,7
250	10"	69	333	345	265	18	4	12,5	125	150	81	104	F12	22	29	26	237	98	38,49

• Tapped lugs

Diameter		Face to face	Overall dimensions				Iso top according to EN ISO 5211						Square drive outlet			Travel of the disc		Weight Kg	
DN	NPS		E	L2	H1	H2	H4	N	øR	øS	øT	øU	V	N°	C	H3	Flat P		D1
65	2" 1/2	47	178	175	138	12	4	8,5	70	90	50	76	F07	11	19	11	48	13	9,35
80	3"	47	192	196	149	12	4	8,5	70	90	50	76	F07	14	19	14	56	16	10,24
100	4"	53	241	213	162	13	4	8,5	70	90	50	76	F07	14	19	14	80	25	16,60
125	5"	57	261	243	180	18	4	10,5	102	125	79	85	F10	17	25	20	113	40	20,64
150	6"	57	311	272	197	15	4	10,5	102	125	79	85	F10	17	25	20	140	53	26,46
200	8"	61	375	311	233	14	4	10,5	102	150	81	85	F10	17	29	20	188	77	39,92
250	10"	69	413	345	265	18	4	12,5	125	150	81	104	F12	22	29	26	237	98	61,45

Connecting kit for actuation



We recommend direct mounting of the actuator, otherwise see table below.

DN	NPS	Iso top of the valve	Iso top of the actuation														
			F04		F05		F07		F10		F12		F14		F16		
			H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	
65	2"1/2	F07/□11	235	60	235	60	235	60	255								
80	3"	F07/□14	256	60	256	60	256	60	276	80	276		276	80			
100	4"	F07/□14	273		273	60	273	60	293		293		293	80			
125	5"	F10/□17			323		323		323		323	80	323		333		333
150	6"				352	80	352		352	80	352		352		362		362
200	8"				391		391		391		391		391		401		401
250	10"		F12/□22					425		435	90	435	90	435		435	

DN	NPS	Iso to of the valve	Exceeding length of the shaft H3							
			Kit	□9	□11	□14	□17	□22	□27	□36
65	2"1/2	F07/□11		6	8	11	15	19	24	
80	3"	F07/□14			8	11	15	19	24	
100	4"									
125	5"	F10/□17			8	11	15	19	24	33
150	6"									
200	8"									
250	10"	F12/□22				12	15	20	25	34












N°	N	øR	øS
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 special executions on request : actuated by par square drive and flat according to EN ISO 5211 , subject to technical feasibility.

Actuations

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

ASSEMBLY LEVEL 2	<ul style="list-style-type: none"> • 1 or 2 mechanical limit switch 		<p><i>For other options, please consult us.</i></p>		
	<ul style="list-style-type: none"> • Switchbox : <ul style="list-style-type: none"> . mechanical . inductive 				
	<ul style="list-style-type: none"> • Inductive limit switch 				
	<ul style="list-style-type: none"> • Positioners (1) 				
ASSEMBLY LEVEL 1	<ul style="list-style-type: none"> • Manual gearbox in cast iron 		<ul style="list-style-type: none"> • Socla 		<ul style="list-style-type: none"> • Auma
	<ul style="list-style-type: none"> • Stainless steel hand lever 		<ul style="list-style-type: none"> • Manual gearbox in stainless steel 		
	<p>HAND LEVER</p>	<p>GEAR BOX</p>	<ul style="list-style-type: none"> • GT 		
	<p>PNEUMATIC ACTUATOR</p>	<p>ELECTRIC ACTUATOR</p>			

Connecting flanges

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

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

• Centring lugs

DN	NPS	EN 1092-1 & EN 1092-2				ASME/ANSI B16.5		BS10		JIS B 2238 & JIS B 2239	
		PN10	PN16	PN25	PN40	Class 150	Class 300	Table D	Table E	10K	16K
65	2 ^{1/2} "	✓	✓	✓	✓	✓	✓	●	●	✓	✓
80	3"	✓	✓	✓	✓	✓	✓	✓	✓	●	●
100	4"	✓	✓	✓	✓	✓	✓	■	✓	●	●
125	5"	✓	✓	✓	✓	✓	✓	✓	✓	●	✓
150	6"	✓	✓	✓	✓	✓	✓	✓	✓	✓	■
200	8"	✓	✓	✓	✓	✓	✓	✓	✓	●	✓
250	10"	✓	✓	✓	●	✓	■	■	●	✓	●

• Tapped lugs

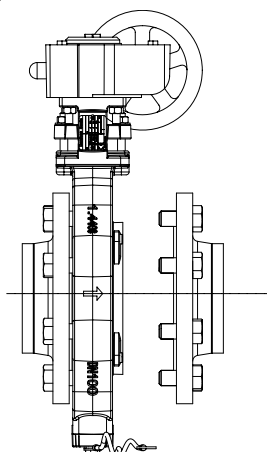
DN	NPS	EN 1092-1 & EN 1092-2				ASME/ANSI B16.5		BS10		JIS B 2238 & JIS B 2239	
		PN10	PN16	PN25	PN40	Class 150	Class 300	Table D	Table E	10K	16K
65	2 ^{1/2} "	✓	✓	✓	✓	✓	✓	●	●	✓	✓
80	3"	✓	✓	✓	✓	✓	✓	●	●	●	✓
100	4"	✓	✓	✓	✓	✓	✓	■	✓	●	✓
125	5"	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
150	6"	✓	✓	✓	✓	✓	✓	✓	✓	✓	■
200	8"	✓	✓	✓	✓	✓	✓	✓	✓	●	✓
250	10"	✓	✓	✓	■	✓	■	■	✓	✓	✓

Attention : the Emaris 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.

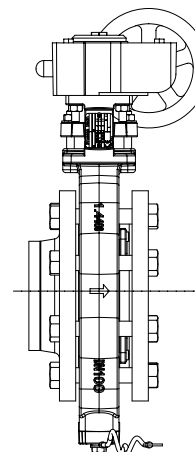
• End of line mounting and downstream removing

The end of line mounting and the downstream removing, at ambient temperature, of the Emaris butterfly valve is limited to the pressure mentioned on page 9 according to the PED directive 97/23/CE . These mountings are only possible on tapped lugs bodies.

Downstream removing



End of line mounting



Normalisation

- **Design :**
According to EN 593 and marking according to EN 19
- **Iso top connection for actuations :**
According to EN ISO 5211
- **Face to face :**
According to 558-1 series 20
ISO 5752 series 20
API 609 table 2 Class 300
- **Connecting flanges :** see on page 7
According to EN 1092-1 and EN1092-2 : PN10-16-25-40
ASME/ANSI B16.5 : ASA 150 and 300
- **Tests :**
According to EN12266-1
 - Resistance and tightness of the body (directive PED 97/23/CE) : test P11 (1,5 x allowable operating pressure).
 - Tightness of the seat : test P12 rate A (1,1 x allowable operating pressure).

According to EN12266-2


- Anti-static design : 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 (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 : 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 alteration 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 (+ see additional explanations on the detachable slip).
In addition, the operating instructions are available on our web site www.socla.com or by simple request from our sales department.

Directive 94/9/CE : 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 :  II 2 DG.

Classification of the set valve + actuation :

- Valve with a hand lever :

The use of hand levers produced by Socla within an ATEX area do not represent additional risks. The valve with a hand lever is in conformity to the marking :  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 ATX 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.

Machinery 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 Emaris is added to every product; It is available on our web site www.socla.com or on request by our sales department.

Pressure

DIRECTIVE 97/23/CE Equipments under pressure.

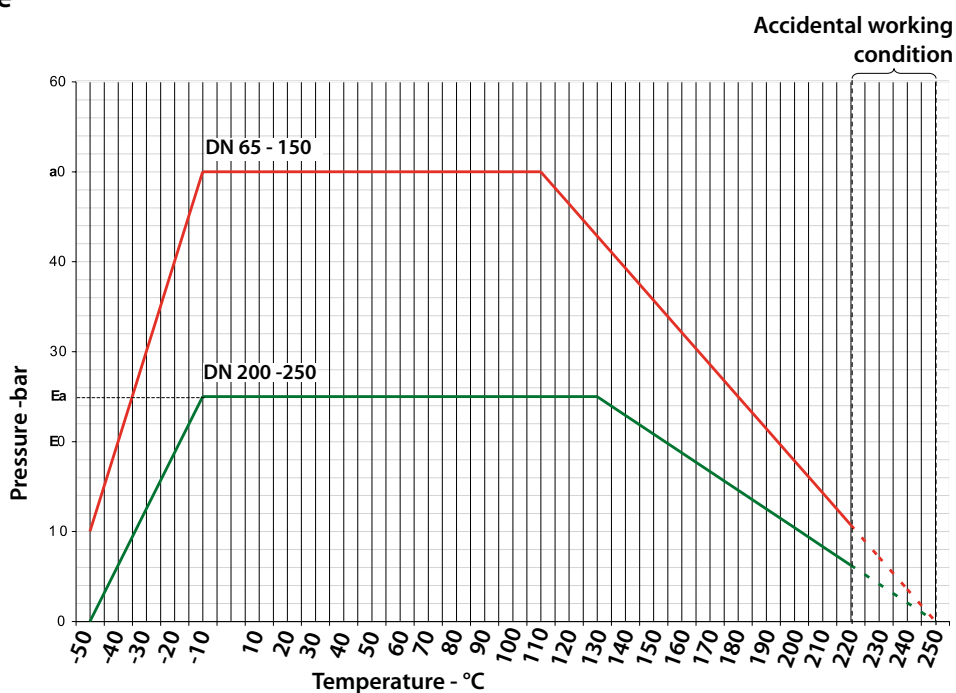
Products manufactured in conformity with the requirements of the directive, according to pressure, DN and fluid (see on the precedent page).

LINERS		DN mm	Cat.	MOUNTING	PFA	PS			
						L1	L2	G1	G2
50 bar	PTFE reinforced	50 to 100	II	Flanges	50	50	50	50	50
				End of line	36	36	36	36	36
		125	II	Flanges	50	50	50	28	40
				End of line	36	36	36		36
		150	II	Flanges	50	50	50	23	33
				End of line	36	36	36		33
25 bar		200	II	Flanges	25	25	25	17,5	25
				End of line	18	18	18		18
		250	II	Flanges	25	25	25	14	20
				End of line	18	18	18		18
		300	II	Flanges	25	25	25	11,5	16,5
				End of line	18	18	18		16,5

PS : Maximum allowable pressure (in bar) according to Directive 97/23/CE

PFA : Allowable operating pressure (in bar) for supply, distribution and disposal of water.

Pressure/temperature diagram



Torque values

DN	Torques for water (Nm)	PS10	PS16	PS20	PS25	PS40	PS50
65	F07/11	37	44	46	50	65	77
80	F07/14	46	50	60	61	77	86
100	F07/14	86	96	101	114	146	165
125	F10/17	145	173	187	209	269	297
150	F10/17	161	176	219	237	359	424
200	F10/17	360	510	525	550		
250	F12/22	550	700	770	800		

NOTE :
One actuation minimum per month.

Flow rate (Kv)

The butterfly valve is not the best product for regulating. Nevertheless, the Emaris butterfly valve can be used to regulate by an opening stage between 20° and 90°.

A regulation in the opening stage lower than 20° is not advisable because of over speed, cavitation effect, which could damage prematurely the valve.

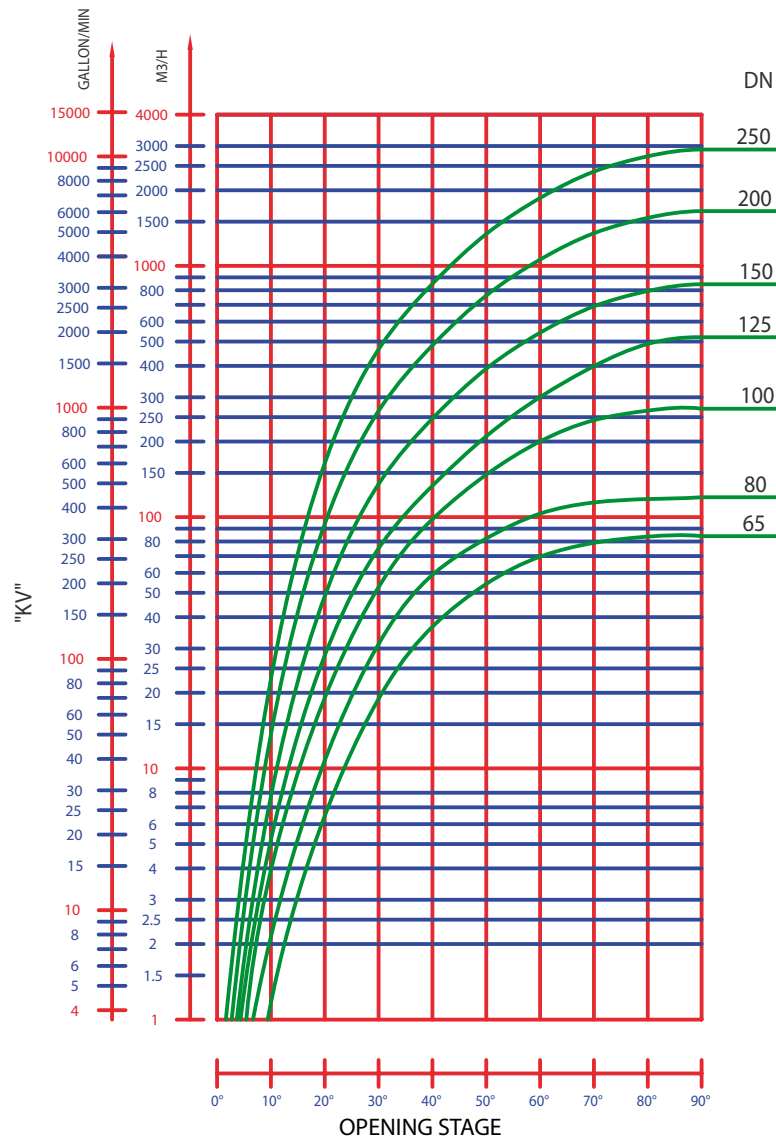
OPENING STAGE

DN	10°	20°	30°	40°	50°	60°	70°	80°	90°
65	-	-	19	36	54	69	79	83	84
80	-	-	31	59	82	103	114	118	120
100	-	-	52	98	147	200	243	265	270
125	-	-	75	133	209	300	398	465	520
150	-	-	135	246	389	541	689	793	845
200	-	-	264	482	761	1058	1348	1552	1652
250	-	-	465	848	1338	1862	2370	2729	2905

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

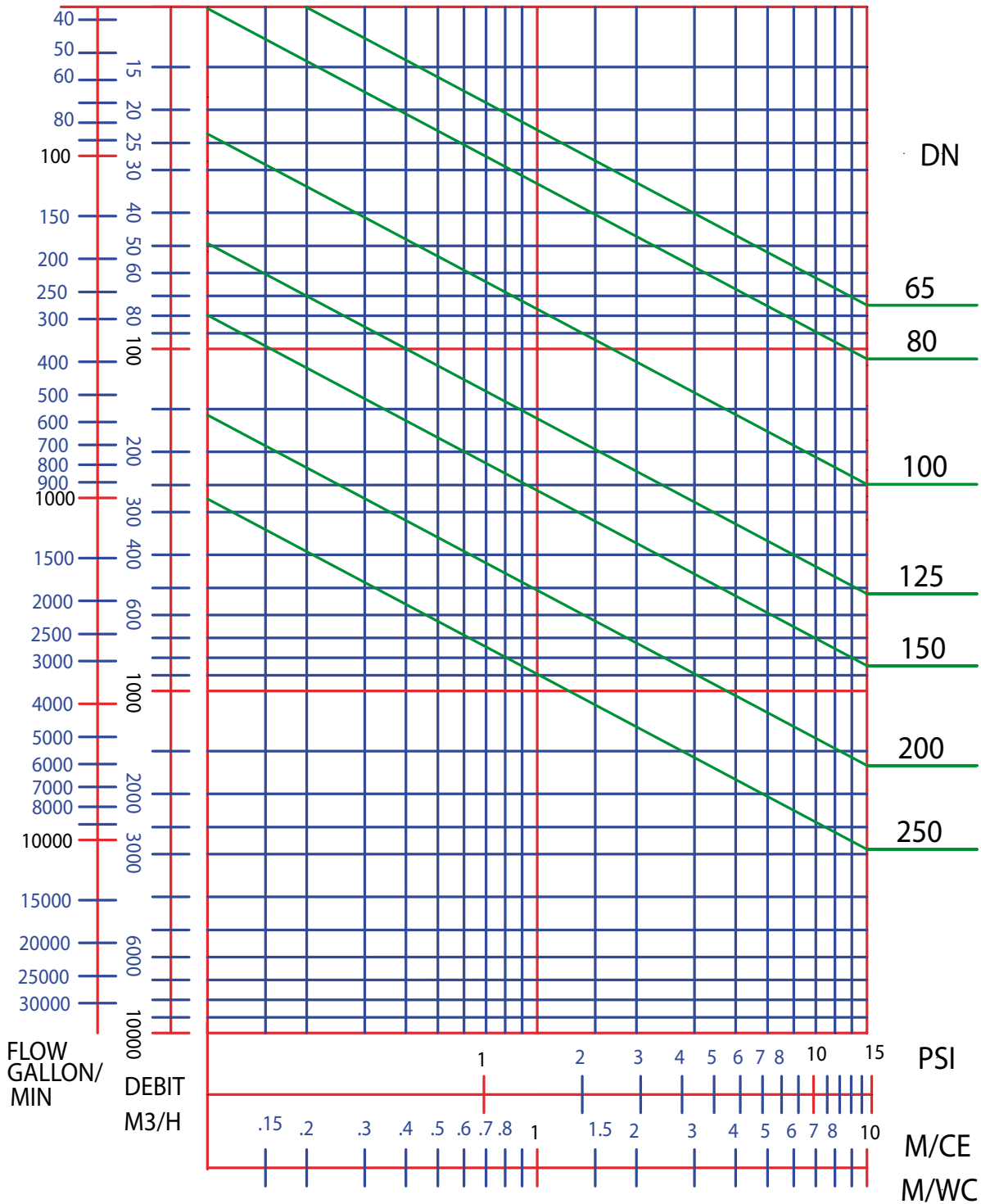
The maximum flow velocity of the fluid through the valve must not exceed :

- 3 m/s for liquid fluids. Between 3 and 5m/s, the use of the Emaris 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 Emaris butterfly valve is possible, but the phenomena of cavitation, noise, vibration and water hammering increase.
- 2 m/s for DN 900 to 1200
- for gas and pulverulent or paste fluids : please consult us.



Head loss diagram (Δp)

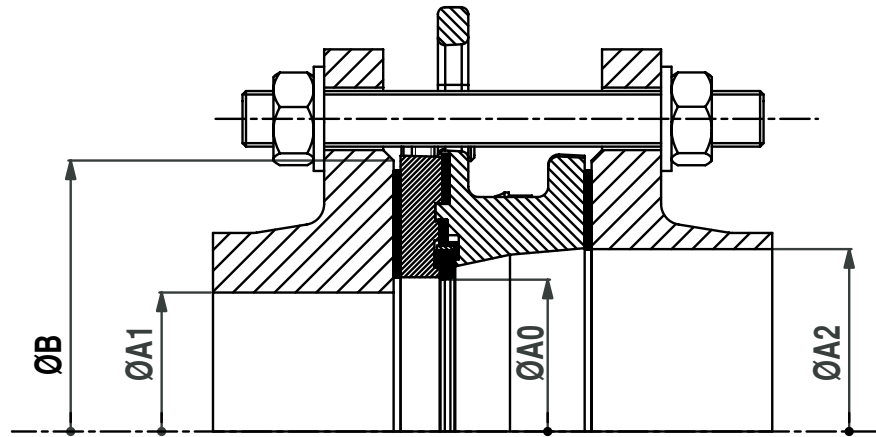
ΔP



Type of flange

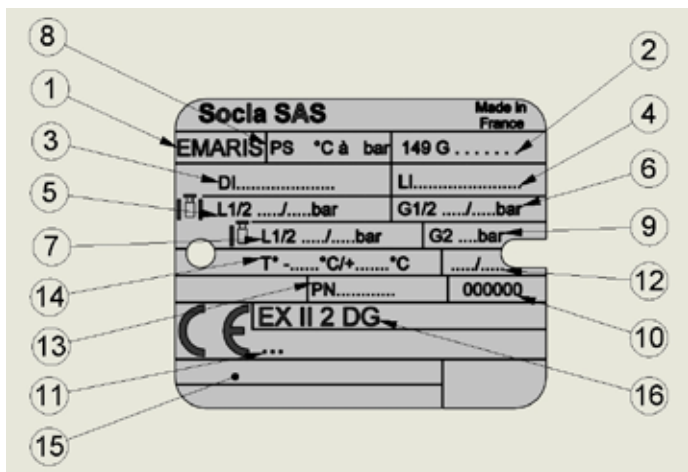
The Emaris butterfly valve has been designed to be mounted on standard flanges. Only standard flanges type 11, 21 and 34 according to EN 1092 are quite compatible.

For other 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
65	54,5	50	75	115
80	64	60	86	127
100	87,4	80	107	158
125	116,6	115	137	181
150	142,5	140	162	216
200	190	192	215,5	230
250	237	242	265	292

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 PFA water 20°C
9	Pressure PS end flange G2 (gas)
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	Approval information zone
16	Marking relating to the Directive ATEX 94/9/CE

Bolts and nuts

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

DN	NPS	a	e	e'	NF EN 1092-1											
					PN10			PN16			PN25			PN40		
					*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
65	2 ^{1/2}	47	18	29	8	M16	18	4	M16	18	8	M16	18	8	M16	18
80	3"	47	18	29	8	M16	18	8	M16	18	8	M16	18	8	M16	18
100	4"	53	20	30	8	M16	18	8	M16	18	8	M20	18	8	M20	18
125	5"	57	20	30	8	M16	18	8	M16	18	8	M24	18	8	M24	18
150	6"	57	20	30	8	M20	22	8	M20	22	8	M24	22	8	M24	22
200	8"	61	30	30	8	M20	22	12	M20	22	12	M24	26	12	M27	30
250	10"	69			12	M20	22	12	M24	26	12	M27	30	12	M30	35

DN	NPS	a	e	e'	NF EN 1092-2											
					PN10			PN16			PN25			PN40		
					*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
65	2 ^{1/2}	47	18	29	4	M16	18	4	M16	18	8	M16	18	8	M16	18
80	3"	47	18	29	8	M16	18	8	M16	18	8	M16	18	8	M16	18
100	4"	53	20	30	8	M16	18	8	M16	18	8	M20	18	8	M20	18
125	5"	57	20	30	8	M16	18	8	M16	18	8	M24	18	8	M24	18
150	6"	57	20	30	8	M20	22	8	M20	22	8	M24	22	8	M24	22
200	8"	61	30	30	8	M20	22	8	M20	22	12	M24	26	12	M27	30
250	10"	69	30	30	12	M20	22	12	M20	22	12	M27	30	12	M30	35

DN	NPS	a	e	e'	ASME / ANSI B16.5					
					Class 150			Class 300		
					*Nb rods or NB screw	ØV UNC	c	*Nb rods or NB screw	ØV UNC	c
65	2 ^{1/2}	47	18	29	4	5/8"	18	8	3/4"	22
80	3"	47	18	29	4	5/8"	18	8	3/4"	22
100	4"	53	20	30	8	5/8"	18	8	3/4"	22
125	5"	57	20	30	8	3/4"	22	8	3/4"	22
150	6"	57	20	30	8	3/4"	22	12	3/4"	22
200	8"	61	30	30	8	7/8"	22	12	1"	27
250	10"	69	30	30	12	7/8"	22	16	1 ^{1/8}	32

* CENTERING LUG TYPE BODY :

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

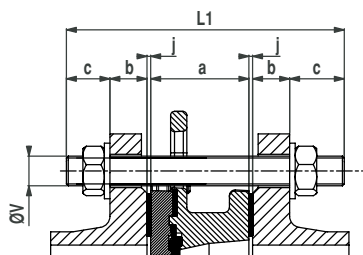
Assembly by bolts : Number of nut = Number of screws (above)

TAPPED LUG TYPE BODY :

Assembly by screws : Number of screws (above)

For any other connecting flanges, please consult the corresponding norms and use the formula below.

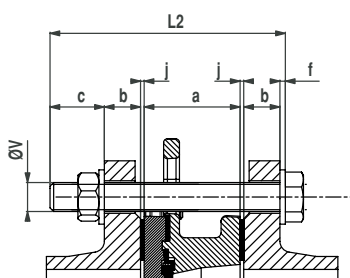
Bolts and nuts



For wafer type body ; assembly by rods :

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

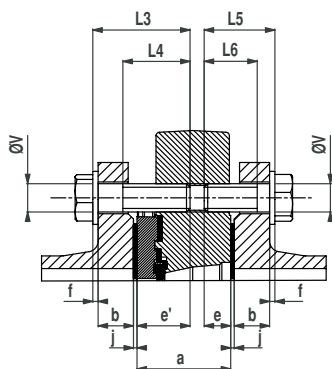
- L1 : minimum length of rods
- a : width of the butterfly valve
- b : thickness of the flange (customer)
- c : thickness of washer + thickness of nut + exceeding length of the rod
- j : thickness of the flange seal.



For wafer type body ; assembly by bolts :

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

- 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 screw
- f : thickness of washer
- j : thickness of the flange seal.

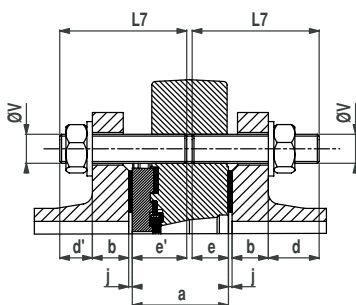


For lug type body ; assembly by screws :

$$L3 = j + b + e' + f \text{ et } L5 = j + b + e + f$$

with $L4 > L3 - b$ and $L6 > L5 - b$

- L3 : maximum length under head of screw
- L4 : minimum length of the threading of the screw
- L5 : maximum length under head of screw
- L6 : minimum length of the threading of the screw
- a : width of the butterfly valve
- b : thickness of the flange (customer)
- e : maxi depth of screw
- e' : maxi depth of screw
- f : thickness of washer
- j : thickness of flange seal



For lug type body ; assembly by rods:

$$L7 = d' + b + j + e' = d + b + j + e$$

- L7 : total length of the rod
- a : width of the butterfly valve
- b : thickness of the flange (customer)
- d : exceeding length of the rod
- d' : exceeding length of the rod
- e : maxi depth of screw
- e' : maxi depth of screw
- j : thickness of the flange seal

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.

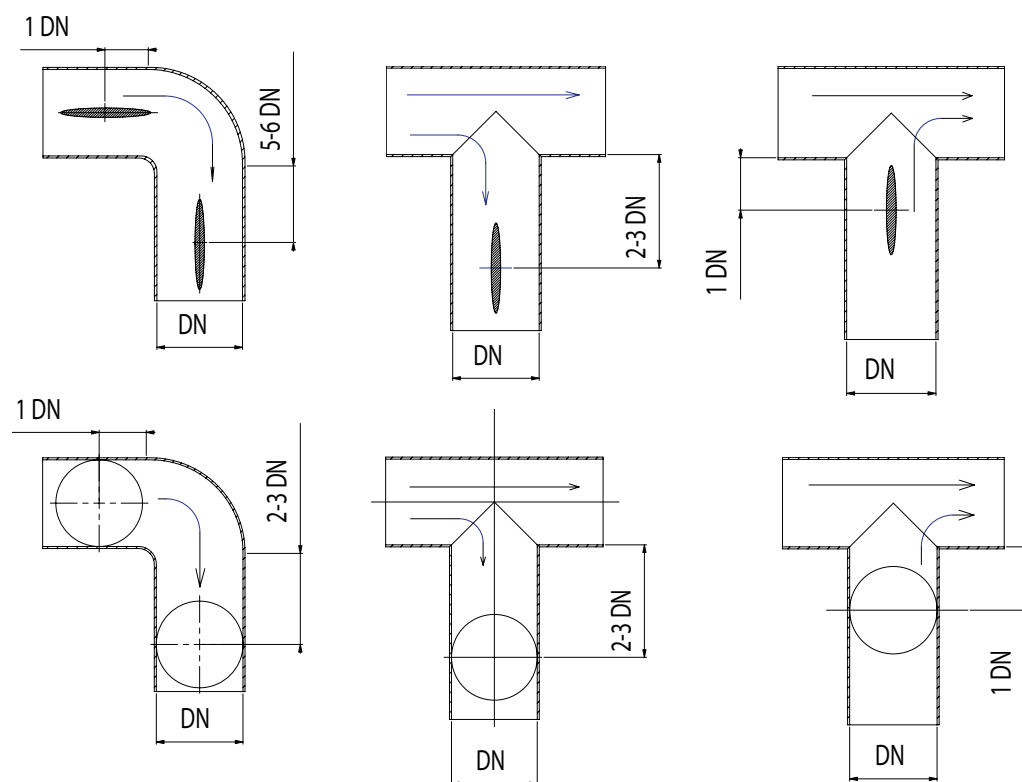
The valve is a machined piece of equipment and must not be used to prise apart the flanges.

An **instruction notice** specifying the installation characteristics and the commission of the Emaris 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.



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