

## Butterfly Valve EUROSTOP - Motorized type



Flanged Butterfly Valve (flange-flange) with joint in the automatic butterfly (JPA) with double eccentricity and long spacing between the flanges.

Ductile iron body and butterfly covered with blue epoxy powder thickness 250 microns mini average according prescriptions of EN 14901-1 (PECB).

Range from DN150 to DN2000mm for pressures of PFA10 to 25 bar.

The EUROSTOP butterfly valve is available in different configuration: manual, buried service, motorized and motorizable (for this three last configuration see the specific TDS).

DN (mm)	PN 10		PN 16		PN 25	
	Mass (kg)	References	Mass (kg)	References	Mass (kg)	References
150	54.64	RPB15NECH	54.64	RPB15NECH	62.22	RPB15NEDH
200	66.43	RPB20NEBH	67.00	RPB20NEAH	85.00	RPB20NDDH
250	86.00	RPB25NDBH	85.00	RPB25NDAH	109.00	RPB25NEDH
300	104.00	RPB30NDBH	111.00	RPB30NEAH	144.00	RPB30NDDH
350	132.00	RPB35NEBH	156.00	RPB35NDAH	189.00	RPB35NDDH
400	161.00	RPB40NDBH	185.00	RPB40NDAH	250.00	RPB40NEDH
450	181.00	RPB45NDBH	248.00	RPB45NEAH	321.00	RPB45NDDH
500	230.00	RPB50NDBH	294.00	RPB50NEAH	374.00	RPB50NDDH
600	303.00	RPB60NEBH	400.00	RPB60NDAH	593.00	RPB60NEDH
700	472.00	RPB70NDBH	540.00	RPB70NDAH	975.00	RPB70MEDH

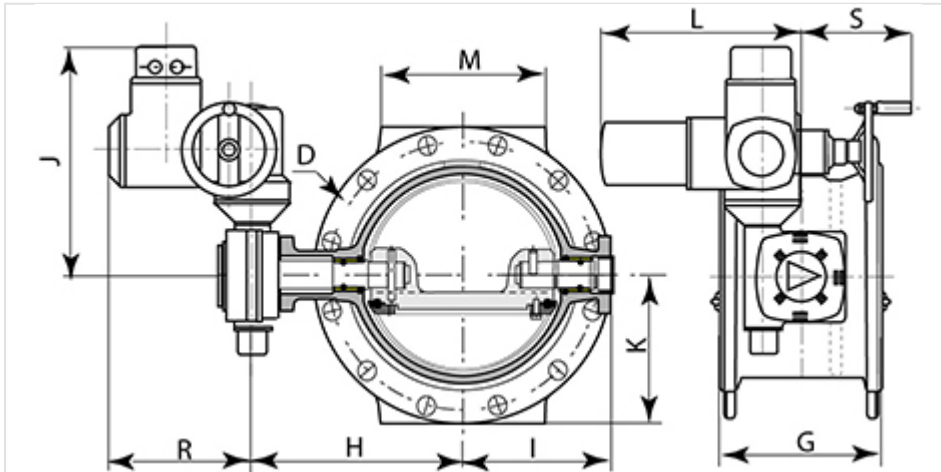
DN (mm)	PN 10		PN 16		PN 25	
	Mass (kg)	References	Mass (kg)	References	Mass (kg)	References
800	665.00	RPB80NEBH	986.00	RPB80MEAH	1243.00	RPB80MEDH
900	861.00	RPB90MEBH	1044.00	RPB90MDAH		
1000	1249.00	RPC10MEBH	1290.00	RPC10MEAH	2123.00	RPC10MEDH
1200	1856.00	RPC12MEBH	2389.00	RPC12MEAH	3430.00	RPC12MEDH
1400	2544.00	RPC14MEBH	3622.00	RPC14MEAH	4600.00	203209
1500	2905.00	RPC15MEBH	5607.00	RPC15MEAH	6117.00	203215
1600	3520.00	RPC16MEBH	4948.00	RPC16MEAH	6265.00	203224
1800	4997.00	RPC18MEBH	7039.00	RPC18MEAH		
2000	6590.00	RPC20MEBH	8418.00	RPC20MEAH		

Standard version with intermittent servomotor S2-15 min, 400 V -3Ph – 50Hz, IP68.8, protection corrosion KS

## General dimensions

DN (mm)	PN	G (mm)	H (mm)	I (mm)	J (mm)	K (mm)	L (mm)	M (mm)	D (mm)	R (mm)	S (mm)	References
150	10 16	210	215	142.9	390	143	315	150	285	238	199	RPB15NECH
150	25	210	217	147.9	390	150	315	150	300	238	199	RPB15NEDH
200	10	230	240	171	390	170	315	180	340	238	199	RPB20NEBH
200	16	230	240	171.9	390	170	315	180	340	238	199	RPB20NEAH
200	25	230	272	190.3	390	180	315	180	360	238	199	RPB20NDDH
250	10	250	292	215.3	390	200	315	230	400	238	199	RPB25NDBH
250	16	250	292	215.3	390	200	315	230	400	238	199	RPB25NDAH
250	25	250	297	214.3	415	213	328	230	425	238	186	RPB25NEDH
300	10	270	319	239.3	390	228	315	250	455	238	199	RPB30NDBH
300	16	270	321	239.3	415	228	328	250	455	238	186	RPB30NEAH
300	25	270	321	260.4	417	243	346	250	485	238	191	RPB30NDDH
350	10	290	340	258.3	415	253	328	260	505	238	186	RPB35NEBH
350	16	290	340	280.4	417	260	346	260	520	248	191	RPB35NDAH
350	25	290	376	290.4	422	278	363	310	555	248	174	RPB35NDDH
400	10	310	371	311.4	417	283	346	310	565	248	191	RPB40NDBH
400	16	310	407	322.4	422	290	363	310	580	248	174	RPB40NDAH
400	25	310	425	321.4	548	310	363	310	620	238	149	RPB40NEDH
450	10	330	427	342.4	422	308	363	340	615	248	174	RPB45NDBH
450	16	330	445	342.4	549	320	365	340	640	238	149	RPB45NEAH
450	25	330	471	371.4	549	335	365	340	670	238	149	RPB45NDDH
500	10	350	452	367.4	422	335	363	320	670	248	174	RPB50NDBH

DN (mm)	PN	G (mm)	H (mm)	I (mm)	J (mm)	K (mm)	L (mm)	M (mm)	D (mm)	R (mm)	S (mm)	References
500	16	350	470	367.4	549	358	365	320	715	238	148	RPB50NEAH
500	25	350	498	398.5	551	365	383	300	730	248	154	RPB50NDDH
600	10	390	524	421.4	549	390	365	300	780	238	149	RPB60NEBH
600	16	390	550	451.5	551	420	383	300	840	248	154	RPB60NDAH
600	25	390	581	474.5	632	423	443	350	845	248	94	RPB60NEDH
700	10	430	594	495.5	551	448	383	440	895	248	154	RPB70NDBH
700	16	430	627	521.5	556	455	408	420	910	248	129	RPB70NDAH
700	25	430	665	552	618	480	442	420	960	247	94	RPB70MEDH
800	10	470	675	569.5	556	508	408	480	1015	248	129	RPB80NEBH
800	16	470	713	602	618	513	442	450	1025	247	94	RPB80MEAH
800	25	470	713	645	748	543	482	450	1085	247	54	RPB80MEDH
900	10	510	724	623	618	558	442	570	1115	247	94	RPB90MEBH
900	16	510	724	623	618	558	442	570	1115	247	94	RPB90MDAH
1000	10	550	815	707	618	615	442	600	1230	247	94	RPC10MEBH
1000	16	550	815	748	748	628	482	600	1255	247	54	RPC10MEAH
1000	25	550	856	756	844	660	634	620	1320	285	79	RPC10MEDH
1200	10	630	909	842	748	728	482	750	1455	247	54	RPC12MEBH
1200	16	630	950	852	844	743	634	750	1485	285	79	RPC12MEAH
1200	25	630	1024	872	962	765	597	760	1530	247		RPC12MEDH
1400	10	710	1051	953	842	838	634	850	1675	285	79	RPC14MEBH
1400	16	710	1125	973	1000	843	597	850	1685	247		RPC14MEAH
1400	25	710	1126	1016	1000	878	699	850	1755	285	14	203209
1500	10	750	1102	1004	842	893	634	900	1785	285	79	RPC15MEBH
1500	16	750	1156	1077	1001	933	597	900	1865	247		RPC15MEAH
1500	25	750	1186	1078	1081	933		900	1865	285		203215
1600	10	790	1154	1056	842	958	634	950	1915	285	79	RPC16MEBH
1600	16	790	1229	1119	1041	965	699	950	1930	285	14	RPC16MEAH
1600	25	790	1328	1169	1081	988	784	950	1975	285		203224
1800	10	870	1331	1179	962	1058	597	1000	2115	247		RPC18MEBH
1800	16	870	1431	1272	1141	1065	784	1000	2130	285		RPC18MEAH
2000	10	950	1526	1367	1077	1173	784	1050	2345	285		RPC20MEBH
2000	16	950	1526	1367	1141	1173	784	1050	2345	285		RPC20MEAH



## Field of application

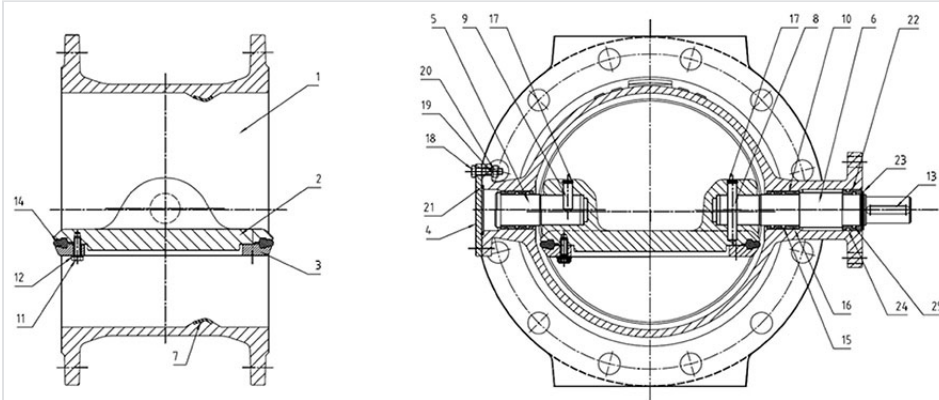
Butterfly valves are isolating valves used on water supply networks, in the interconnections of network, in the factories, in pumping stations, on the general networks and on the fire protection networks in the industrial sites.

Butterfly valves are compatible with drinking water and raw water with grid filtration. They will be installed on water networks in factories, in valves chambers or buried.

Their main advantages are:

- Low pressure loss
- Good performance thanks to the choice of the materials, the coatings and the design
- Easy operation per mechanism of the worm type/without end
- Mechanisms equipped with a standardized flange carry-accessory for buried version and motorizable version

## Material and coating



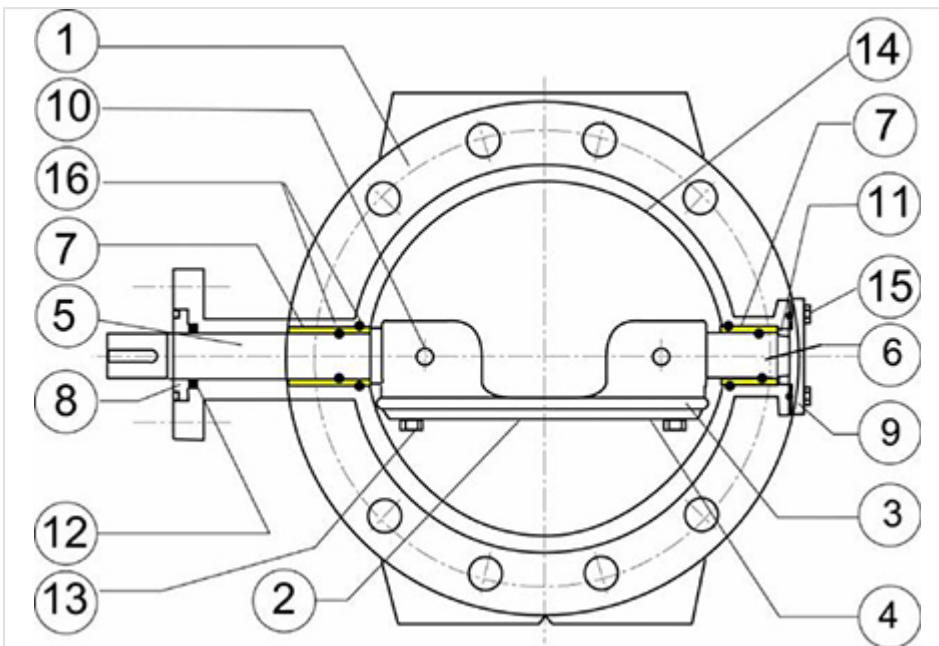
Versions DN150-800 PN10 - DN150-700 PN16 - DN150-600 PN25

Item	Description	Material	Coating
1	Body	Ductile iron GS500-7	Blue epoxy powder thickness 250 microns mini average according prescriptions of EN 14901-1
2	Disc	Ductile iron GS500-7	
3	Retaining ring (*)	Carbon Steel SR235JR	-
4	Cover	Stainless steel X2CrNiMo17-12-2	-
5	Rear shaft	Stainless steel EN 10088 X30Cr13 (420)	-
6	Drive shaft		-
7	Seat ring	Stainless steel EN 10088-2 X2CrNiMo 17,12,2 (316L)	-
8	Cylindrical pin (rear shaft)	Stainless steel EN 10088-3 X5CrNiCuNb 16-4 (630)	-
9	Cylindrical pin (drive shaft)		-
10	Bearing	Bronze EN 1982 CuSn12	-
11	Screw	Stainless steel A2	-
12	Spring washer	Stainless steel A2	-
13	Feather key	Steel C40	-
14	Gasket	EPDM	-
15-16	O-ring	EPDM	-
17	Circular circlips	Stainless steel EN 10088-3 X5CrNi 18-10	-
18	Screw	Stainless steel EN 10088-3 X5CrNi 18-10	-

Item	Description	Material	Coating
19	Spring washer	Stainless steel EN 10088-3 X5CrNi 18-10	-
20	Nut	Stainless steel EN 10088-3 X5CrNiMo 17-12	-
21	O-ring	EPDM	-
22	Bush	POM-C	-
23	External circlip	Stainless steel EN 10088-3 X5CrNi 18-10	-
24-25	O-ring	EPDM	-

(\*) DN150-200 : Stainless steel AISI 316L

## Material and coating



### Versions DN900-2000 PN10 - DN800-2000 PN16 - DN700-2000 PN25

Item	Description	Material	Coating
1	Body	Ductile Iron GS500-7	Blue epoxy powder thickness 250 microns mini average according prescriptions of EN 14901-1
2	Disc	Ductile Iron GS500-7	
3	Sealing ring	EPDM	-
4	Retaining ring	Carbon Steel SR235JR	-
5	Shaft	Stainless steel EN 10088 X30Cr13 (420)	-

Item	Description	Material	Coating
6	Spindle	-	
7	Bearings	Bronze EN 1982 CuSn12	-
8	Ring	Gunmetal EN 1982 CuSn5Zn5Pb5	-
9	Rear cover	Carbon Steel SR235JR	Blue epoxy powder thickness 250 microns mini average according prescriptions of EN 14901-1
10	Taper pin	Stainless steel EN 10088-3 X5CrNiCuNb 16-4 (630)	-
11	Lock nut	Gunmetal EN 1982 CuSn5Zn5Pb5	-
12	Sealing element	PTFE	-
13	Internal Screw	Stainless steel type A2	-
14	Body seat ring	Stainless steel EN 10088-2 X2CrNiMo 17,12,2 (316L)	-
15	External Screw	- up to M20: Stainless steel EN 10088-3 - > M20: Steel class 8.8	-
16	O-ring gasket	EPDM	-

## Gearbox type and handwheel

### Motorized type PN10

DN mm	Gearbox AUMA type	Actuator AUMA Type	ISO 5210	Operating Time	Speed	Operating Torque	Setting torque
				s	turn/ mn	Nm	Nm
150	GS 50.3 – F10	SA 07.6	F10	35	22	8	20
200	GS 50.3 – F10	SA 07.6	F10	35	22	12	20
250	GS 50.3 – F10	SA 07.6	F10	48	16	21	27
300	GS 50.3 – F10	SA 07.6	F10	48	16	30	40
350	GS 63.3 – F12	SA 07.6	F10	70	11	39	51
400	GS 63.3 – F12	SA 10.2	F10	70	11	60	68
450	GS 80.3 – F14	SA 10.2	F10	99	8	70	92
500	GS 80.3 – F14	SA 10.2	F10	99	8	90	117
600	GS 100.3+VZ4.3 – F16	SA 07.6	F10	142	22	35	46
700	GS 100.3+VZ4.3 – F16	SA 10.2	F10	142	22	52	68
800	GS 125.3+VZ4.3 – F25	SA 10.2	F10	142	22	77	100

DN	Gearbox AUMA type	Actuator AUMA Type	ISO 5210	Operating Time	Speed	Operating Torque	Setting torque
mm				s	turn/mn	Nm	Nm
900	GS 160.3+GZ160.3 - F25	SA 10.2	F10	207	32	47	61
1000	GS 160.3+GZ160.3 - F30	SA 10.2	F10	207	32	65	84
1200	GS 200.3+GZ200.3 - F30	SA 10.2	F10	206	63	60	78
1400	GS 250.3+GZ250.3 - F35	SA 14.2	F14	283	45	93	121
1500	GS 250.3+GZ250.3 - F35	SA 14.2	F14	283	45	110	142
1600	GS 250.3+GZ250.3 - F35	SA 14.2	F14	283	45	130	169
1800	GS 315+GZ30 - F40	SA 10.2	F10	404	63	75	98
2000	GS 315+GZ30 - F40	SA 14.2	F14	404	63	102	133

## Gearbox type and handwheel

### Motorized type PN16

DN	Gearbox AUMA type	Actuator AUMA Type	ISO 5210	Operating Time	Speed	Operating Torque	Setting torque
mm				s	turn/mn	Nm	Nm
150	GS 50.3 - F10	SA 07.6	F10	35	22	8	20
200	GS 50.3 - F10	SA 07.6	F10	35	22	17	27
250	GS 50.3 - F10	SA 07.6	F10	48	16	29	38
300	GS 63.3 - F12	SA 07.6	F10	48	16	42	55
350	GS 63.3 - F12	SA 10.2	F10	70	11	59	77
400	GS 80.3 - F14	SA 10.2	F10	72	11	83	108
450	GS 100.3+VZ4.3 - F14	SA 07.6	F10	98	32	26	34
500	GS 100.3+VZ4.3 - F14	SA 07.6	F10	98	32	33	43
600	GS 100.3+VZ4.3 - F16	SA 10.2	F10	142	22	59	76
700	GS 125.3+VZ4.3 - F25	SA 10.2	F10	142	22	84	109
800	GS 160.3+GZ160.3 - F30	SA 10.2	F10	147	45	64	83
900	GS 160.3+GZ160.3 - F30	SA 10.2	F10	207	32	83	108
1000	GS 200.3+GZ200.3 - F30	SA 10.2	F10	206	63	65	85
1200	GS 250.3+GZ250.3 - F35	SA 14.2	F14	202	63	104	135
1400	GS 315+GZ30 - F40	SA 10.2	F10	283	90	65	85
1500	GS 315+GZ30 - F40	SA 10.2	F10	283	90	77	100
1600	GS 315+GZ30 - F40	SA 14.2	F14	283	90	94	123
1800	GS 400+GZ35 - F48	SA 14.2	F14	411	63	126	164

DN mm	Gearbox AUMA type	Actuator AUMA Type	ISO 5210	Operating Time s	Speed turn/mn	Operating Torque Nm	Setting torque Nm
2000	GS 400+GZ35 - F48	SA 14.2	F14	411	63	161	209

## Gearbox type and handwheel

### Motorized type PN25

DN mm	Gearbox AUMA type	Actuator AUMA Type	ISO 5210	Operating Time s	Speed turn/mn	Operating Torque Nm	Setting torque Nm
150	GS 50.3 – F10	SA 07.6	F10	35	22	13	20
200	GS 50.3 – F10	SA 07.6	F10	35	22	28	36
250	GS 63.3 – F12	SA 07.6	F10	48	16	43	57
300	GS 63.3 – F12	SA 10.2	F10	48	16	69	90
350	GS 80.3+VZ4.3 – F14	SA 10.2	F10	72	77	88	114
400	GS 100.3+VZ4.3 – F14	SA 07.6	F10	69	45	32	42
450	GS 100.3+VZ4.3 – F16	SA 07.6	F10	98	32	45	58
500	GS 100.3+VZ4.3 – F16	SA 10.2	F10	98	32	59	77
600	GS 160.3+GZ160.3 – F25	SA 10.2	F10	147	45	47	61
700	GS 160.3+GZ160.3 – F30	SA 10.2	F10	147	45	70	91
800	GS 200.3+GZ200.3 – F30	SA 10.2	F10	144	90	65	85
900	GS 200.3+GZ200.3 – F35	SA 10.2	F10	206	63	84	109
1000	GS 250.3+GZ250.3 – F35	SA 14.2	F14	202	63	115	150
1200	GS 315+GZ30 – F40	SA 10.2	F10	283	90	74	96
1400	GS 315+GZ30 – F40	SA 14.2	F14	283	90	110	143
1500	GS 400+GZ35 – F48	SA 14.2	F14	288	90	133	173
1600	GS 400+GZ35 – F48	SA 14.2	F14	288	90	153	199

## Applicable Standards

### Hydraulic test

Every single butterfly valve is subjected to hydraulic final test with the purpose of verifying the accordance with the prescriptions ISO 5208:

- Body test at 1,5 time the PFA (open valve);
- Seat test at 1,1 time the PFA (closed valve).

### Product test

- Control of manoeuvre torque (MOT and mST) as defined in the EN1074
- Control of coating: test of thickness, holiday test, impact test, MIBK test

### Conformity to the standards

#### Product:

- EN 1074 - 1 and 2
- EN 593
- ISO 10631

#### Plant test:

- ISO 5208

#### Flanges dimension:

- ISO 5752 series 14

#### Flanges drilling:

- EN 1092-2
- ISO 7005-2

#### Suitability for potable water:

- Italian CM 102 of 02/12/78
- Conformity to foreign norms: KTW (Germany), WRC (U.K.), ACS (France)

### Marking



#### On the body like EN19:

- Nominal diameter in mm (DN);
- Nominal pressure in bar (PN);
- Type of ductile iron;
- Manufacturer's logo;
- Model code;
- Fusion date.

#### On the label like EN19:

- Nominal diameter in mm (DN);
- Nominal pressure in bar (PN);
- Maximum operating pressure (PFA);

- Closing direction;
- Model code;
- Manufacturing order, Order confirmation;
- Manufacturer's logo.

#### On the disc:

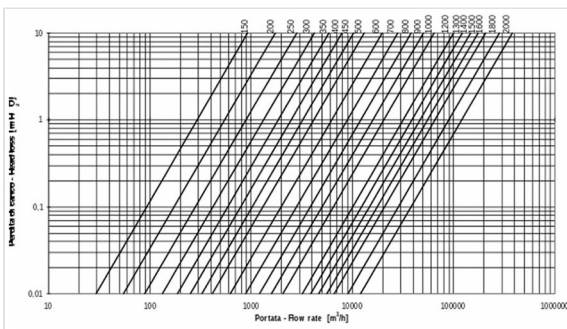
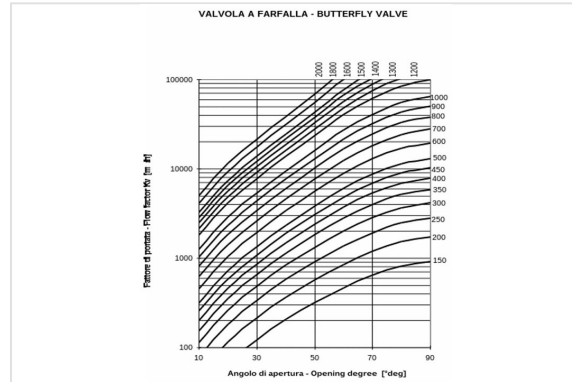
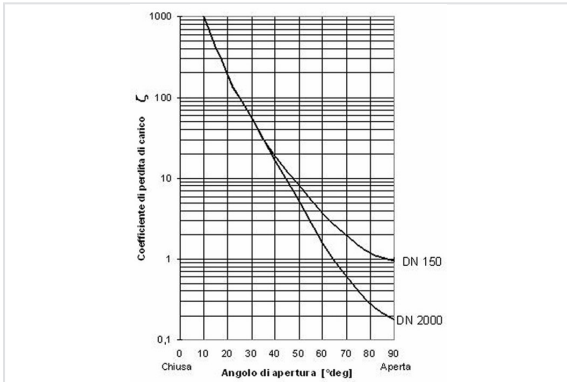
- Nominal diameter in mm (DN);
- Nominal pressure in bar (PN);
- Type of ductile iron;
- Manufacturer's logo;
- Model code.

The marking of the valves manufactured by Saint-Gobain refers to the EN 1074-2 and EN 19 international standards.

Markings are either integral markings, cast in the body, or markings made on plates, securely fixed to the body, in accordance with the EN 19 standard specifications.

Specifications EN19			Saint-Gobain valves process
Table1-Valve markings		Requirements	
1	DN	EN 19 § 4.2.1 Mandatory markings Shall be integral markings or on a marking plate	Integral
2	PN		Integral
3	Material		Integral
4	Manufacturer's name or trade mark		Plate
11	Reference to Standard	EN 19 § 4.3 Supplementary markings Items 7 to 21 in Table 1 are optional	Integral
12	Melt identification		Integral
16	Quality test		Printed on body
18	Manufacturing date		Plate
21	Closing direction		Plate + sticker on body

### Hydraulic features



The head loss  $\Delta h$  are variable in function of valve open degree and can be calculated with the following expression:

with  $\Delta h$  = head loss (m),  $\zeta$  = head loss coefficient (dimensional),  $v$  = nominal speed (m/s),  $g = 9,81$  (m/s<sup>2</sup>)

$$\Delta H = \frac{\zeta \cdot v^2}{2 \cdot g}$$

The head loss coefficient can be estimated from the diagram attached.

Determinates the head loss  $\Delta h$  it's possible to calculate the flow rate  $Q$  in m<sup>3</sup>/h with the following expression (the same expression can be used to, having the project flow rate  $Q$ , to determinate the head loss  $\Delta h$  without using the head loss coefficient):

$$Q = \sqrt[3]{\frac{Kv \cdot \Delta h}{10.2}}$$

in which 10,2 is a corrective factor in meters, and Kv is the flow rate coefficient in m<sup>3</sup>/h, determinable from the following diagram in function of valve open degree:

**Example:** Valve DN600 mm - Δh = 3 m

From the diagram with valve open to 100% the coefficient Kv is 20000 m<sup>3</sup>/h. Using this date in the flow rate expression:

Otherwise it's possible to calculate the head loss with valve completely open, having the project flow rate Q, in function of DN, using the following diagram:

$$Q = 2000 \times \sqrt{\frac{3}{10,2}} = 10850 \text{ m}^3/\text{h}$$

## Cavitation

If the butterfly valve is used only like isolating device there's not cavitation risk.

In the particular case in which it's used like regulating device, this can be possible only respecting the following parameters:

- The valve open degree have to be between 30° and 90° (valve completely open)
- The downstream pressure P2 have to be:  $P \geq 0,7 \cdot P - 2,8$  with P upstream pressure.

## Instructions for use

### Storage

The butterfly valve will have to be held (if possible) in covered places, the most possible protected from the sun (maximum allowable temperature 70°C in accordance to EN 1074), from the rain and generally from the atmospheric agents. Moreover it will have to be avoided that the seal of the same air valves come to contact with powder or earth.

### Installation

The butterfly valves are generally installed with retaining ring mounted in the opposite way respect to the direction of flow rate to permit the substitution of gasket without dismounting the valve from pipeline. In any case it is possible to install the butterfly valve with flow rate in opposite direction and also, if required, in vertical position. We recommend to install the butterfly with the operating device on the hydraulic right side of pipeline. It's possible to install the butterfly valve both in chamber valve that underground (choosing the right configuration).

We recommend to insert a dismounting joint for the operation of maintenance.

### **Maintenance**

The butterfly valve does not require a particular maintenance, all parts subjected to wear are perfectly auto-lubricating. In any case, if for a long time will be not used, it is necessary to evaluate the functioning of valve doing (at least one time for year) some manoeuvre of opening-closing.

All the maintenance operation have to be do after the total emptying of pipeline (no flow rate and pressure) to avoid every risk to the people during this operation.

In presence of particularly exercise condition or damage due to external cause, it will be necessary some maintenance operation. In this case the particular shape of EUROSTOP butterfly valve permits the simple gasket substitution without the dismounting of valve from pipeline (if the dismounting joint is present).

### **Accessories**

To adapt the butterfly valves to the different exercise and installation conditions required, they can be equipped with particular accessories used in combination with control devices: please refer to data sheet for accessories.

The technical features in this document are not contractual and can be changed without preliminary notification due to the continuous technical progress of product.

### **Valve selection**

The butterfly valves are generally used as isolating devices type on/off. In some particular case, in which there's low differences of pressure and low flow rate variation can be used like regulating devices, considering the hydraulic parameters necessary to avoid the cavitation risk.

To do the right dimensioning of butterfly valve it's necessary to know the followings parameters:

- Upstream hydrostatic pressure (that is the hydrostatic pressure with valve in closed position)
- The maximum speed in water pipe (generally expressed in l/s) or the nominal diameter and the project flow rate from which it is gained the speed  $V=Q/A$

Moreover it's necessary to control that the maximum speed in water pipe have to be equal or inferior to 5m/s, and the exercise temperature have to be between 0°C and 40 °C.

## Linked products



Operation and  
maintenance instructions  
for Eurostop butterfly valve

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