

Butterfly Valve EUROSTOP NGL2 Epoxy seat - Manual Version



Field of application

Butterfly valves are isolating valves used on water supply networks, hydroelectric plants, industrial plants, pumping stations, fire protection networks.

Butterfly valves can be used both for drinking water and for untreated or irrigation water where a suitable filtering system is present.

Butterfly valves have limited head losses when the valve is fully open and ensure perfect tightness when the valve is fully closed in both directions. They can also be used as safety valves.

Range

Butterfly valve EUROSTOP epoxy seat is available in manual version for DN150-800 with PN10 and 16 operating pressures (other versions or diameters are available upon request).

DN	Closing direction	PN10	PN16
mm			
150	Clockwise	(refer to PN16)	265565
200	Clockwise	265566	265567
250	Clockwise	265569	265571
300	Clockwise	265572	265574
350	Clockwise	265577	265578
400	Clockwise	265579	265583
450	Clockwise	265584	265586
500	Clockwise	265587	265588
600	Clockwise	265589	265590
700	Clockwise	265592	265593
800	Clockwise	265594	-

EUROSTOP BUTTERFLY VALVES

DN 150-800

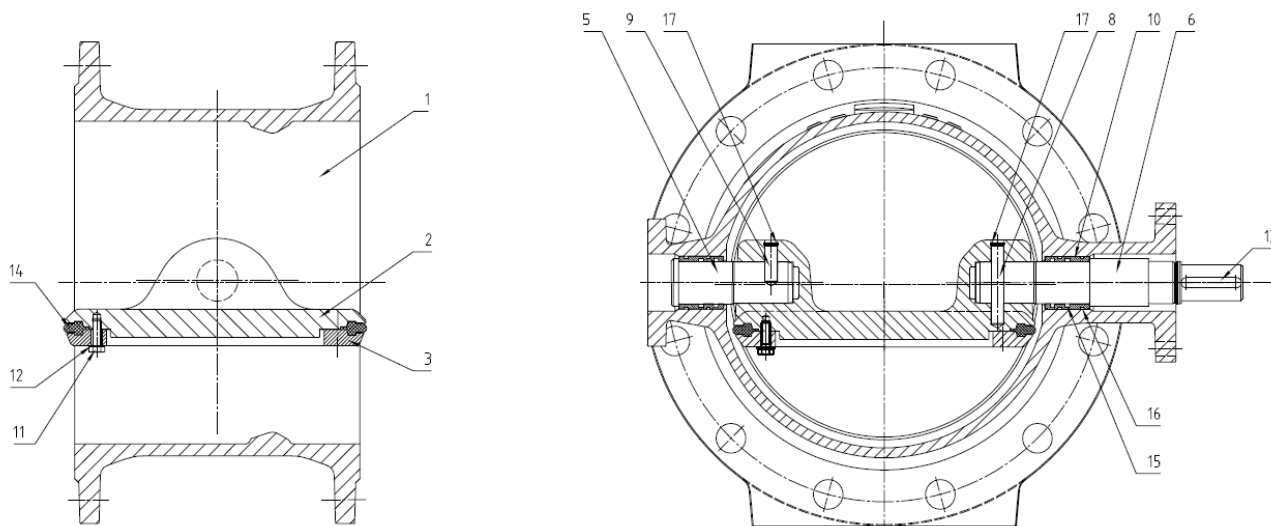


22/05/2020

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Materials and coating

DN150-800 PN10 and 16 manual version



Item	Description	Materials	Coating
1	Body	Ductile iron GJS 500-7	Epoxy powder, minimum thickness 250 micron, RAL 5005, according to EN 14901
2	Disc	Ductile iron GJS 500-7	
3	Spring clip (*)	Carbon steel SR235JR	
5	Rear shaft	STAINLESS steel EN 10088 X30Cr13 (420)	-
6	Drive shaft	STAINLESS steel EN 10088 X30Cr13 (420)	-
8	Cylindrical ring (rear shaft)	STAINLESS steel EN 10088-3 X5CrNiCuNb 16-4 (630)	-
9	Cylindrical ring (drive shaft)	STAINLESS steel EN 10088-3 X5CrNiCuNb 16-4 (630)	-
10	Bush	Bronze EN 1982 CuSn12	-
11	Screw	STAINLESS steel A2	-
12	Spring washer	STAINLESS steel A2	-
13	keyfeather	Steel C40	-
14	Gasket	EPDM	-
15-16	O-ring	EPDM	-
17	Circlips	STAINLESS steel EN 10088-3 X5CrNi 18-10	-

(*) DN150-200: STAINLESS steel AISI 316L

EUROSTOP BUTTERFLY VALVES

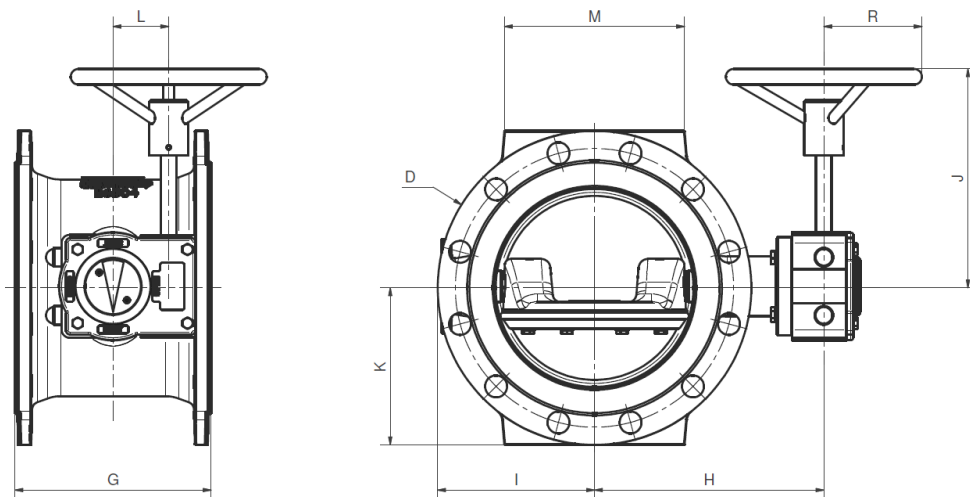
DN 150-800



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Dimensions and weights



Manual version PN 10

DN	G	H	I	J	K	L	M	D	R	Weight
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
150	210	204	136	249	143	52	150	285	100	35
200	230	229	165	249	170	52	180	340	100	46
250	250	293	208	284	200	71	230	400	150	67
300	270	317	232	284	228	71	250	455	150	86
350	290	336	251	284	253	71	260	505	150	111
400	310	367	303	319	283	71	310	565	250	139
450	330	412	330	307	308	86	340	615	250	183
500	350	443	355	348	335	104.5	320	670	250	215
600	390	497	409	348	390	104.5	300	780	350	302
700	430	575	482	350	448	53	440	895	300	453
800	470	655	556	419	508	130	480	1,015	250	640

Manual version PN 16

DN	G	H	I	J	K	L	M	D	R	Weight
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
150	210	204	136	249	143	52	150	285	100	35
200	230	229	165	249	170	52	180	340	100	46
250	250	293	208	284	200	71	230	400	150	67
300	270	317	232	284	228	71	250	455	150	88
350	290	336	272	319	260	71	260	520	250	132
400	310	392	310	307	290	86	310	580	300	170
450	330	418	330	348	320	104.5	340	640	250	207
500	350	451	355	350	358	53	320	715	250	265
600	390	531	438	350	420	53	300	840	350	414
700	430	607	508	419	455	130	440	910	250	543

**EUROSTOP BUTTERFLY
VALVES**
DN 150-800



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Gearbox type and handwheel

Manual type PN10

DN <i>mm</i>	Gearbox ROTORK type	Handwheel Ø <i>mm</i>	Number of turns at 90°	Operating torque <i>Nm</i>	Input shaft <i>mm</i>
150	AB210 (37:1) F10 V200	200	9.3	11	15
200	AB210 (37:1) F10 V200	200	9.3	18	15
250	AB550 (34:1) F10 V300	300	8.5	29	20
300	AB550 (34:1) F10 V300	300	8.5	42	20
350	AB550 (34:1) F12 V300	300	8.5	55	20
400	AB550 (34:1) F12 V500	500	8.5	83	20
450	AB880 (38:1) F14 V500	500	9.5	97	20
500	AB1250 (55:1) F14 V500	500	13.8	86	20
600	AB1250 (55:1) F16 V700	700	13.8	131	20
700	AB2000 106:1 F16 V600	600	26.5	112	20
800	AB1950/PR4 217:1 F25	500	54.3	85	20

Manual type PN16

DN <i>mm</i>	Gearbox ROTORK type	Handwheel Ø <i>mm</i>	Number of turns at 90°	Operating torque <i>Nm</i>	Input shaft <i>mm</i>
150	AB210 (37:1) F10 V200	200	9.3	11	15
200	AB215 (37:1) F10 V200	200	9.3	24	15
250	AB550 (34:1) F10 V300	300	8.5	40	20
300	AB550 (34:1) F12 V300	300	8.5	59	20
350	AB550 (34:1) F12 V500	500	8.5	82	20
400	AB880 (38:1) F14 V600	600	9.5	114	20
450	AB1250 (55:1) F14 V500	500	13.8	96	20
500	AB2000 106:1 F14 V500	500	26.5	71	20
600	AB2000 106:1 F16 V700	700	26.5	126	20

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DN	Gearbox ROTORK type	Handwheel Ø	Number of turns at 90°	Operating torque	Input shaft
<i>mm</i>		<i>mm</i>		<i>Nm</i>	<i>mm</i>
700	AB1950/PR4 217:1 F25	500	54.3	93	20

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

Test in Works:

- EN 12266-1 (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;

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- 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.

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Specifications EN19		Requirements	Saint-Gobain valves process
Table1-Valve markings			
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



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 50 °C.

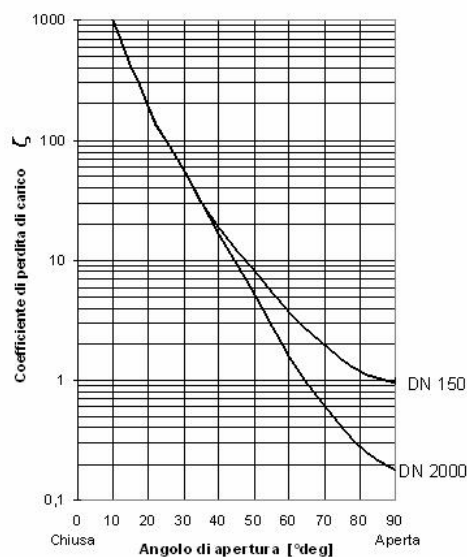
Hydraulic features

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

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

Δh = head loss (m)
 ζ = head loss coefficient (dimensional)
 v = nominal speed (m/s)
 $g = 9,81$ (m/s²)

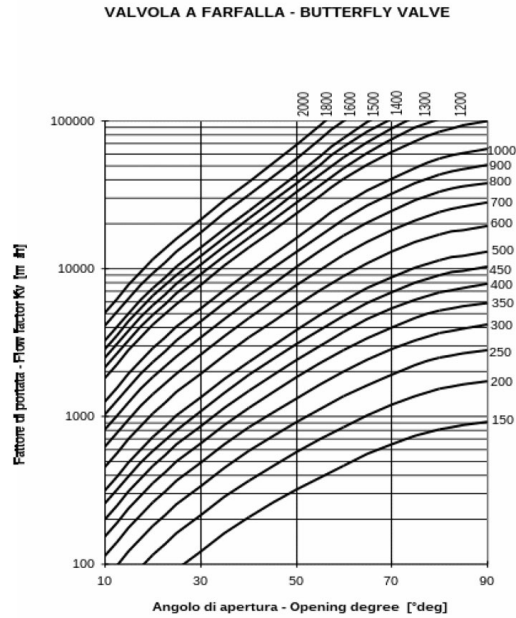
The head loss coefficient can be estimated from this diagram:



Determinates the head loss Δh it's possible to calculate the flow rate Q in m³/h with the following expression (the same expression can be used to, having the project flow rate Q , to determinate the head loss Δh without using the head loss coefficient):

$$Q = K_v \sqrt{\frac{\Delta h}{10.2}}$$

In which 10,2 is a corrective factor in meters, and Kv is the flow rate coefficient in m³/h, determinable from the following diagram in function of valve open degree:

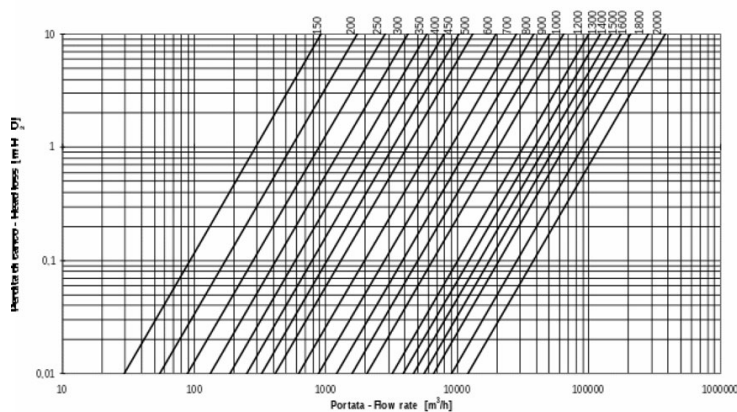


Example: Valve DN600 mm - Δh = 3 m

From the diagram with valve open to 100% the coefficient Kv is 20000 m³/h. Using this date in the flow rate expression:

$$Q = 20000 \sqrt{3/10,2} = 10850 \text{ m}^3/\text{h}$$

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:



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: $P_2 \geq 0,7 \cdot P_1 - 2,8$ with P1 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 (minimum allowable temperature 0°C and 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.

NOTE

Saint-Gobain PAM Italia:

- reserves the right to modify the products anyway fully respecting the Laws in force.
- always use products fully complying with the European Directives to which the products themselves have to comply with.

→ FOR ANY FURTHER POSSIBLE TECHNICAL INFORMATION PLEASE CONSULT SAINT-GOBAIN PAM ITALIA AND/OR OTHER PAM SISTER COMPANIES