

ISOLATING VALVES VALVES

DN 150 to 600



01/20/2021

RSEVP21MOB325

Butterfly Valve EUROSTOP - Motorizable type - PN40



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 250 microns mini.

Range from DN150 to DN600mm for pressures of PFA40 bar.

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

Range

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 valve <i>mm</i>	Closing direction	References PN40
150	Clockwise	RPB15NHEH
200	Clockwise	RPB20NHEH
250	Clockwise	RPB25NHEH
300	Clockwise	RPB30NHEH
350	Clockwise	RPB35NHEH
400	Clockwise	RPB40NHEH
500	Clockwise	RPB50NHEH
600	Clockwise	RPB60NHEH

Material and coating

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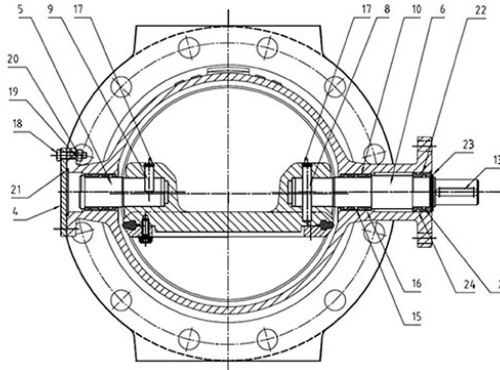
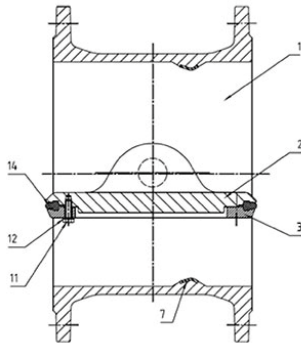
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Version DN150-600 PN40



Item	Description	Material	Coating
1	Body	Ductile iron GS500-7	Epoxy powder minimum thickness 250 micron
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	Stainless steel EN 10088 X30Cr13 (420)	-
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)	Stainless steel EN 10088-3 X5CrNiCuNb 16-4 (630)	-
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	Internal circlips	Stainless steel EN 10088-3 X5CrNi 18-10	-
18	Screw	Stainless steel EN 10088-3 X5CrNi 18-10	-
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

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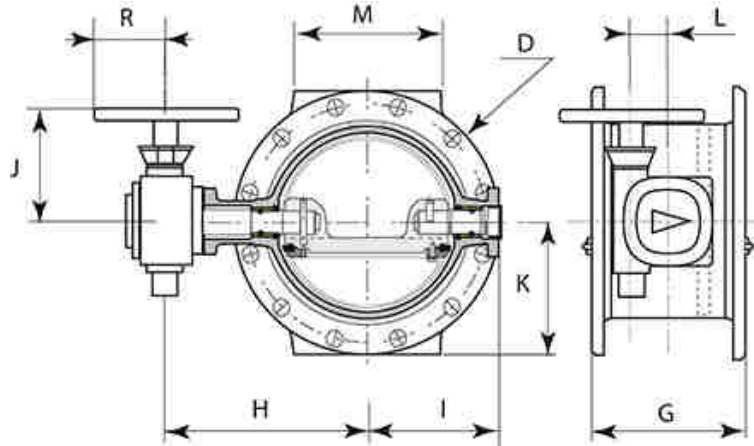
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Dimensions and mass



Motorizable Version PN40

DN	G	H	I	J	K	L	M	D	R	Mass
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
150	210	217	143	136	150	50	150	300	100	47
200	230	271	185	169	187.5	63	180	375	125	74
250	250	299	208	174	225	80	230	450	125	106
300	270	323	253	174	257.5	80	250	515	125	149
350	290	394	283	302	290	100	310	580	175	231
400	310	425	314	302	330	100	310	660	175	293
500	350	498	390	328	377.5	125	350	755	175	415
600	390	581	466	383	445	160	400	890	175	636

Gearbox type and handwheel

DN	Gearbox AUMA type	Handwheel Ø	Number of turns at 90°	Operating torque	Input shaft	Flange
mm		mm		Nm	mm	ISO 5210
150	GS 50.3 – F10	200	12,75	18	16	F10
200	GS 63.3 – F10	250	12,75	41	20	F10
250	GS 80.3 – F12	250	13,25	59	20	F10
300	GS 80.3 – F12	250	13,25	94	20	F10
350	GS 100.3+VZ4.3 – F14	350	52	34	20	F10
400	GS 100.3+VZ4.3 – F14	350	52	48	20	F10
500	GS 125.3+VZ4.3 – F16	350	52	85	20	F10
600	GS 160.3+GZ160.3 – F25	350	110,15	69	20	F10

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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 coating: test of thickness, holiday test, impact test, MIBK test

Conformity to the standards

Product:

- 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);

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- 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



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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.

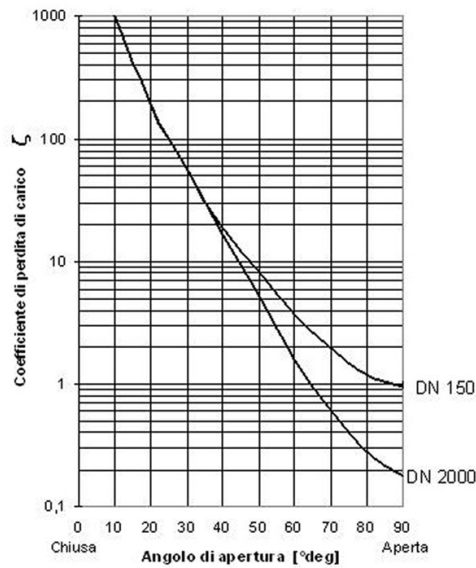
Hydraulic features

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

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

with 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:

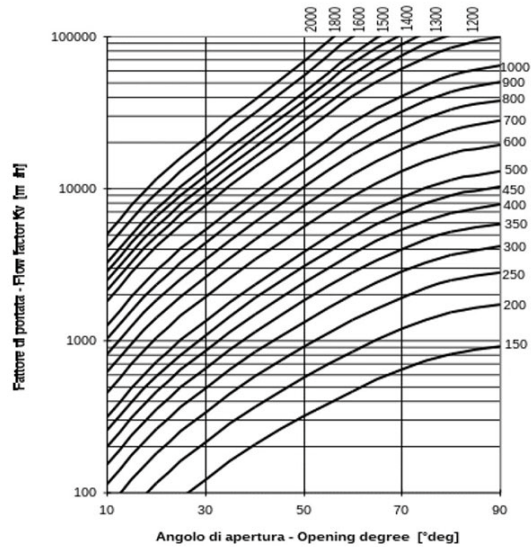


Determinates the head loss Δh it's possible to calculate the flow rate Q in m³/h with the following expression (the same expression can be used to, having the project flow rate Q , to determinate the head loss Δh without using the head loss coefficient):

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

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

VALVOLA A FARFALLA - BUTTERFLY VALVE

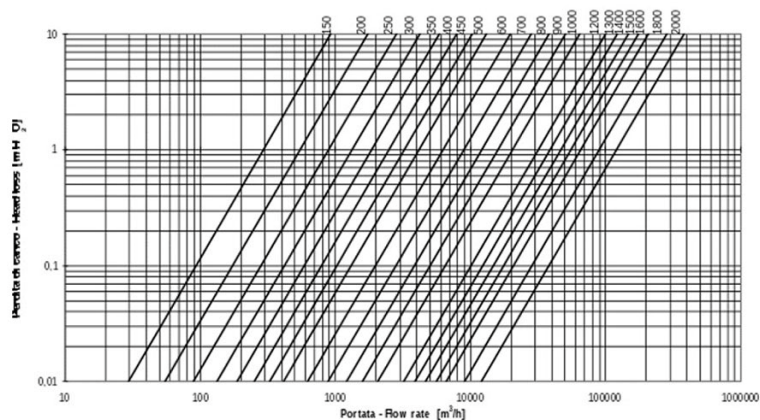


Example: Valve DN600 mm - $\Delta h = 3$ m

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

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

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.

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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.