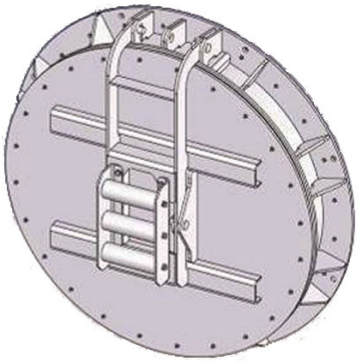
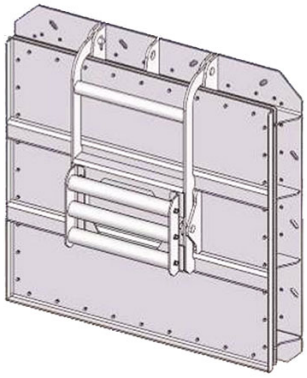
10/06/2026
VSVCH28EXT100

Stainless steel 304L Flap Valve





Description

The stainless steel 304L flap valves are mechanical equipment with an horizontal axis with a gate. They are designed for control downstream and upstream flows.

The range is available in round version and square version. Round version: DN80 to 2000 (on concrete wall or with flanges), square version L=80x80 to L=2000x2000.

The round valve can be installed on flange PN10 or on a concrete wall. The square valve can be installed directly on the concrete wall.

Field of use

These valves are designed for supply of clean water, raw water, sewage and irrigation.

For other dimensions, junctions, material, coatings or fields of use (sea water with special coating and bolts), please consult us.

Saint-Gobain PAM Canalisation
21, avenue Camille Cavallier - BP 129 | 54705 PONT-A-MOUSSON CEDEX | FRANCE
Tel : (33) 03 83 80 67 89 | E-mail : Pamline@saint-gobain.com | pamline.fr

Operation

The flap valves are manufactured starting from a stainless steel plate; it is provided with a horizontal hinge on the higher side. The tightness seal between the gate and the framework is maintained by a bolt flange (see picture 1). It consists of a neoprene strip retained on the framework by a stainless steel ring (see picture 2).

For the higher sections, the valves are manufactured starting from a reinforced stainless steel plate maintained to the framework by means of two adjustable and articulated arms. A tightness seal of extruded soft neoprene is fixed on the framework by means of a stainless steel ring.

Round Flap Valve with universal flange (installation on concrete wall)

DN (mm)	Opening Ø (mm)	ØD (mm)	ØK (mm)	Ød (mm)	N (mm)	A (mm)	B (mm)	C (mm)	J (mm)	R (mm)	Mass (kg)	References
80	80	200	160	10	4	128	170			195	7.50	232179
100	100	220	220	10	4	128	170			215	8.50	232181
150	150	285	240	10	4	128	208			260	15.00	232182
200	200	340	295	10	4	128	208			325	20.00	232183
250	250	395	350	10	6	128	208			355	26.00	232184
300	300	445	400	10	6	128	208			405	32.00	232187
350	350	505	460	10	6	128	208			470	38.00	232188
400	400	565	515	10	6	128	228	50		510	46.00	232190
450	450	615	565	12	8	128	228	50		570	62.00	232192
500	500	670	620	12	8	128	228	50		610	74.00	232193
600	600	780	725	12	8	128	228	50	20	725	84.00	232195
700	700	895	840	12	8	128	228	50	20	815	106.00	232198
800	800	1015	950	12	8	128	228	80	20	920	124.00	232200
900	900	1115	1050	14	12	128	248	80	20	1035	155.00	232203
1000	1000	1230	1160	14	12	128	248	80	20	1125	185.00	232238
1100	1100	1340	1270	14	12	128	248	80	20	1230	225.00	232255
1200	1200	1455	1380	14	12	128	248	100	20	1320	255.00	232767
1300	1300	1565	1485	14	16	148	268	100	20	1445	267.00	232875
1400	1400	1675	1590	14	16	148	268	100	20	1550	297.00	232922
1500	1500	1785	1695	14	16	148	268	120	20	1645	327.00	232923
1600	1600	1915	1820	14	20	148	288	120	20	1750	360.00	232925
1800	1800	2115	2020	14	20	148	288	120	20	1960	429.00	232927
2000	2000	2325	2230	14	20	148	308	120	20	2145	505.00	232929

(*) References include necessary bolts. Counterweights are not included.

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21, avenue Camille Cavallier - BP 129 | 54705 PONT-A-MOUSSON CEDEX | FRANCE
Tel : (33) 03 83 80 67 89 | E-mail : Pamline@saint-gobain.com | pamline.fr

Round Flap Valve for PN10 flange connection

DN (mm)	Opening Ø	ØD (mm)	ØK (mm)	Bolts	N (mm)	A (mm)	B (mm)	C (mm)	J (mm)	R (mm)	Mass (kg)	References
80	80	200	160	M10x55	4	128	170		20	195	8.00	236139
100	100	220	180	M10x55	8	128	170		20	220	9.00	236140
150	150	285	240	M10x60	8	128	208		22	260	16.00	236151
200	200	340	295	M10x60	8	128	208		24	325	21.00	236152
250	250	395	350	M12x70	12	128	208		26	355	35.00	235838
300	300	445	400	M12x70	12	128	208		26	405	33.00	236154
350	350	505	460	M12x70	16	128	208		28	470	40.00	236155
400	400	565	515	M12x70	16	128	228	60	32	515	48.00	236156
450	450	615	565	M12x80	20	128	228	60	38	570	62.00	236157
500	500	670	620	M12x80	20	128	228	60	38	610	74.00	236158
600	600	780	725	M12x80	20	128	228	60	38	725	84.00	236160
700	700	895	840	M16x90	24	128	228	60	40	815	106.00	236161
800	800	1015	950	M16x90	24	145	245	80	44	920	136.00	236162
900	900	1115	1050	M16x90	28	145	245	80	48	1020	155.00	236163
1000	1000	1230	1160	M16x100	28	145	245	80	50	1120	185.00	236164
1100	1100	1340	1270	M16x100	32	145	245	80	50	1220	225.00	236142
1200	1200	1455	1380	M16x100	32	145	245	100	52	1320	255.00	236143
1300	1300	1565	1485	M16x100	36	145	245	100	52	1420	267.00	236144
1400	1400	1675	1590	M16x100	36	145	245	100	52	1520	297.00	236145
1500	1500	1785	1695	M16x100	36	165	285	120	52	1635	327.00	236146
1600	1600	1915	1820	M18x110	40	165	285	120	52	1735	360.00	236147
1800	1800	2115	2020	M18x110	44	165	285	120	54	1935	429.00	236148
2000	2000	2325	2230	M18x110	48	165	285	120	58	2135	505.00	236149

(*) References do not include necessary bolts. Counterweights are not included.

Square Flap Valve (installation on concrete wall)

DN (mm)	Opening Ø	K (mm)	Ød (mm)	N (mm)	A (mm)	B (mm)	C (mm)	J (mm)	R (mm)	Mass (kg)	References
80	80	15	10	4	130	215			230	25.00 kg	232768
100	100	15	10	4	130	215			250	30.00 kg	232769
150	150	15	10	8	130	215			300	40.00 kg	232770
200	200	15	10	8	130	215			350	45.00 kg	232772
250	250	15	12	8	130	215			400	50.00 kg	232773
300	300	15	12	12	130	215			450	55.00 kg	232775
350	350	15	12	12	130	215			500	60.00 kg	232777

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DN 80 - 2000

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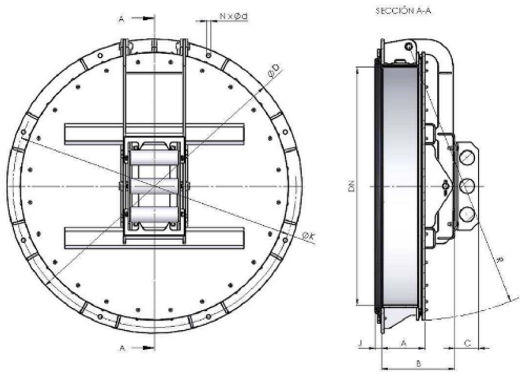
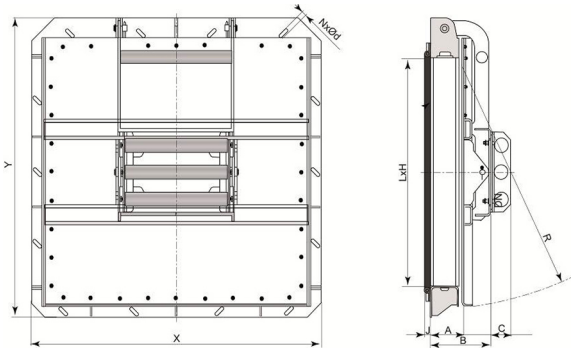
DN (mm)	Opening Ø	K (mm)	Ød (mm)	N (mm)	A (mm)	B (mm)	C (mm)	J (mm)	R (mm)	Mass (kg)	References
400	400	15	12	12	130	215	60		580	65.00 kg	232778
450	450	15	12	12	130	215	60		630	70.00 kg	232779
500	500	25	12	12	130	215	60	20	380	85.00 kg	232780
600	600	25	12	14	130	215	60	20	890	105.00 kg	232781
700	700	25	16	14	130	215	60	20	880	120.00 kg	232782
800	800	25	16	14	150	215	80	20	980	135.00 kg	232783
900	900	25	16	14	150	215	80	20	1080	165.00 kg	232784
1000	1000	25	16	14	150	215	80	20	1180	195.00 kg	232785
1100	1100	25	16	18	150	215	80	20	1280	235.00 kg	232787
1200	1200	25	16	18	150	215	100	20	1380	260.00 kg	232788
1300	1300	25	16	18	150	215	100	20	1480	280.00 kg	232931
1400	1400	25	16	18	150	215	100	20	1580	310.00 kg	232932
1500	1500	25	16	18	170	255	120	20	1700	340.00 kg	232933
1600	1600	25	18	22	170	255	120	20	1800	380.00 kg	232934
1800	1800	25	18	22	170	255	120	20	2000	435.00 kg	232936
2000	2000	25	18	22	170	255	120	20	2200	520.00 kg	232940

(*) References include necessary bolts. Counterweights are not included.



Square Flap Valve (installation on concrete wall)



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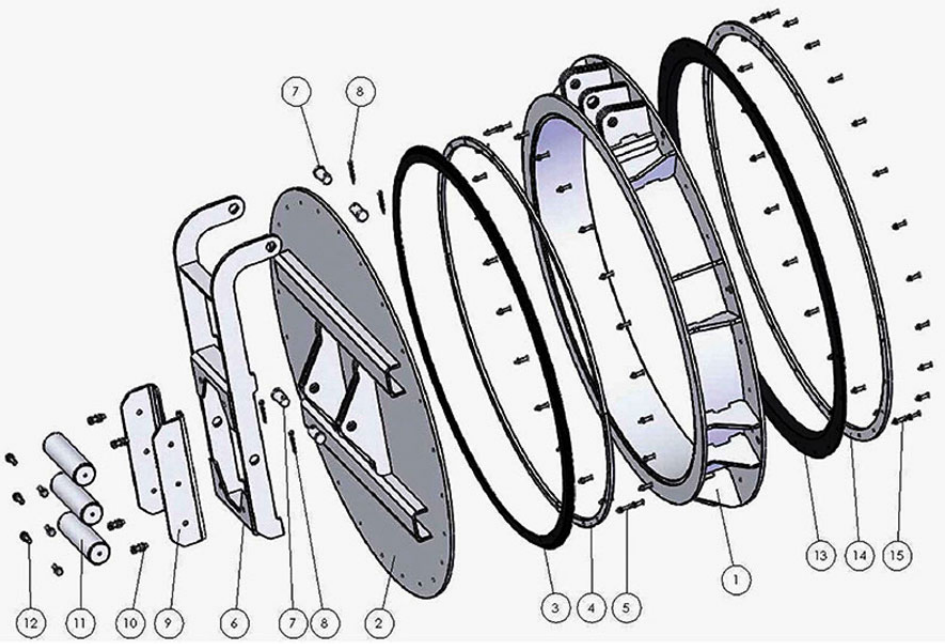
Material and coating



Item	Number of pieces	Designation	Material
1	1	Framework stainless steel AISI 304L	X2CrNi19-11 acc. EN 10088
2	1	Gate stainless steel AISI 304L	X2CrNi19-11 acc. EN 10088
3	1	Tightness seal between framework and gate	EPDM 70 Shore
4	4	Stainless steel 304L ring for tightness seal between framework and gate	X2CrNi19-11 acc. EN 10088
5	S/model	Kit of bolts and screw DIN7991 M5x30 with nuts and washers	A2
6	1	Kit of support and rotation of the gate	X2CrNi19-11 acc. EN 10088
7	4	Bolts Ø=25 mm	X2CrNi19-11 acc. EN 10088
8	4	Screw Ø5x40	A2
9	2	Structure for counterweights	X2CrNi19-11 acc. EN 10088
10	S/model	Kit of bolts and screw DIN933 M8x30 with nuts and washers	A2
11	S/model	Stainless steel counterweights various diameters Ø=50 mm	X2CrNi19-11 acc. EN 10088
12	S/model	Kit of bolts and screw DIN 933 M8x25 with nuts and washers	A2
13	1	Tightness seal for frameworks. Lip seal for diameter > 500	EPDM 70 Shore
14	4	Stainless steel washer for tightness seal of framework	X2CrNi19-11 acc. EN 10088
15	S/model	Stainless steel washer for tightness seal of framework	A2

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Standards

The flap valves are in conformity with the American Standard AWWA C561-04 (1,24 L/minute per linear meter of joint) and the European Standard DIN 19569/4 non Return Valves class 3 to 5 for water (the authorized water leakage shall not be higher than 0.01 - 0.05 l per second and per meter of joint).

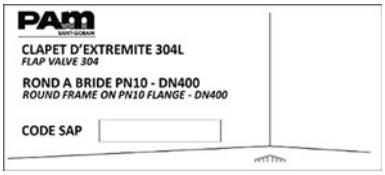
The flap valves supplied by SG PAM comply with the requirements of class 4 for sewage networks conditions.

For clean water, SG PAM flap valves comply with the requirement of class 4.

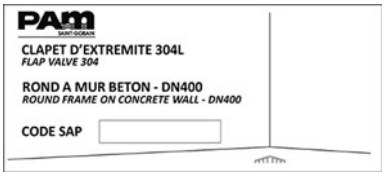
Hydraulic characteristics

One-way sealing with 100% guarantee up to 5 mCE. For different heights, thank you to consult us.

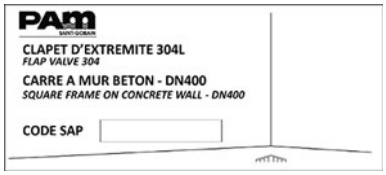
Marking



Flap valve 304 round frame on concrete wall DN400

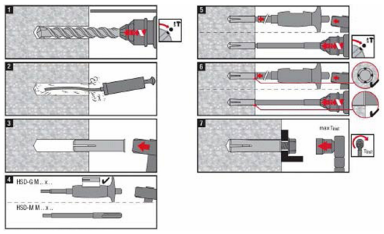


Flap valve 304 round frame on concrete wall DN400



Flap valve 304 square frame on concrete wall DN400

Installation instructions



The installation of the flap valve must be realized in accordance with these instructions. The fitter is responsible for handling, storage and the assembly of the flap valve.

Installation on concrete wall

It is necessary to check the flatness and the verticality of the wall where the tightness seal between the valve and the wall will be placed. All irregularities and lacks of flatness will be removed and repaired.

In the case of lack of verticality of the wall, the flap valve will have to be adjusted with the counterweights.

Before the installation on the wall, it is necessary to prepare a gauge of the anchoring flange on the concrete wall. The gauge can be obtained from the flange of the flap valve. All dimensions and drillings of the flange must be strictly identical with the gauge (paperboard, plastic,...). It allows to easily find the position of the flap

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valve (dimensions of the universal flange with drillings) on the concrete wall compared to the end of the pipe to be insulated.

To center the gauge on the wall compared to the pipe to insulate, locate the points of drilling of the flange and to mark them on the wall. It is essential to correctly position the perpendicular and horizontal axes of the valve. The spindle of the hinge must be imperatively horizontal.

SG PAM recommends two types of solutions:
- Chemical Anchoring (with a bi-component epoxydic) or
- Mechanical Anchoring by “impact” (see the instructions of assembly of the various manufacturers).

To drill the concrete wall with the drilling machine (position drilling/hammer) on the points indicated by the gauge. The drill recommended is out of carbide and the diameter is indicated below:

Chemical Solution: M8=Ø14mm. M10=Ø18mm. M12=Ø22mm. M16=Ø28mm. M20=Ø32mm.

To clean the dust and dirt from the drilling (with compressed air).

Installation of the tie-rods:
- For the chemical solution type HIT-RE M:
  - To insert the cartridge in the carry-cartridges and to go up on the gun. To ensure the homogeneity of the mixture by the agitation of the gun.
  - The application must start from the bottom towards outside without creating in-drafts. It is necessary to fill approximately 2/3 the length of the bored hole.
  - To introduce the steel tie-rod and to let dry during one hour (1 H). The steel tie should not be touched or handled during this period!!!
  - Maximum tightening of the nut: M8=10 Nm, M10=20 Nm, M12=40 Nm, M16=80 Nm, M20=150 Nm.

- To ensure the sealing between the valve and the concrete wall it is recommended to apply a special mastic (recommendation Sikaflex PRO 2 HP) on the perimeter of the wall where the tightness seal of the valve will be installed.

To place the flap valve on the tie-rods anchored to the wall and pre-tighten the nuts in circular order. A regular tightening must be carried out in diagonal in order not to deform the framework of the valve.

If the wall is not sufficiently straight, it is necessary to control the tightening torque and to check the framework to avoid its deformation. If a deformation of the framework takes place, it is necessary to loosen the nuts and to repair the wall with expansive mortar. After drying it is necessary to reinstall the valve.

After checking of the assembly and absence of leakage, the final tightening of the nuts and bolts will be done in diagonal.

Installation on flange PN10

It is necessary to check the flatness and the verticality of the flange PN10. In the case of lack of verticality it will be necessary to use counterweights.

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To check the positioning of the drillings of the flange. The holes must be perfectly symmetrical compared to the vertical axis. In case of bad positioning of the flange of the pipe, the horizontality of the hinge axis is not correct. If the asymmetry of the flange of the pipe is important, it is recommended to make again the holes in the flange of the pipe.

To install the valve with two screws to ensure the centering and the positioning of the horizontal axis of the hinge.

To place the tightness seal between the two flanges of the valve and the end of the pipe to be insulated.

To assemble the nuts and bolts (pre-tightening) while following the perimeter of the valve (in circle). The tightening must be done in diagonal.

After checking of the assembly and absence of leakage, the final tightening of the nuts and bolts will be done in diagonal.

Maintenance

Tightness seal
It is recommended to make a visual inspection once a year of the two tightness seals of the flap valve to check the absence of crack. If the joints are in good condition they should only be lubricated with silicone in spray. Otherwise they will have to be changed.

The tightness seals are connected to the body with stainless steel 304L plates and bolts. If the defective tightness seal is changed, plates, bolts and nuts can be re-used.
To guarantee an optimal operation, it is recommended to use the joints certified by SGPAM.

Kit « hinge »
To check that the rotating pieces are in good condition, it is recommended to test the hinge in all the angular amplitude (0° - 180°) at least once a year.

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