

Concentric Double Flanged Butterfly Valve Series S13 DN40-1200 PFA 16 bar - Sewage version



General information

The concentric double flanged butterfly valves Series S13 have been designed, generally, for industrial applications where dimensional problems are important and where the disc needs to be protected.

The vulcanized sleeve system in the body avoids the risk of detachment / dislodgement of the sleeve body in the case of a valve position at the network edge. Their bolting design, on both sides, allows the dismantling of only one part of the installation while maintaining the other one under pressure and operational. They also facilitate the assemblies requiring a temporary isolation of some parts of the network in settlements such as pumping stations, warehouses, naval installations, etc.

Field of use

Different materials and coatings used for butterfly valves and liners can have a large response to many situations in the industrial area of sewage water.

It provides an effective and reliable solution in conditions of work as may be pumping stations, water treatment, desalination, irrigation, etc.

Range

Concentric double flanged butterfly valve Series S13 from DN40 to DN1200 (consult us for other diameters).

- Bodies: flanged type in ductile iron EN GJS-400-15 + epoxy powder 250 microns red (RAL 3009).
- Maximum working pressure:
 - 16 bar
 - PFA 25 bar up to DN300 (consult us for other diameters)

- Flange dimensions:
 - PN10 and 16
 - Consult us for PN25
- Discs:
 - Ductile iron EN GJS-400-15 + Epoxy coating in black 250 microns
 - CF8M Stainless Steel
 - Contact us for other materials
- Sealing materials in the body type vulcanized nitrile. (please consult us for other types)
- Operation:
 - Hand lever type MN : DN40-200mm
 - Hand lever type MR : DN150-300mm
 - Gear-box + handwheel : DN40-1200mm
 - Motorized: Electrical motor (Auma, Bernard, ...), Pneumatic actuators, ...

Given our wide range of materials, coatings and available drives, we remain at your disposal to look for a solution adapted to your requirements.

References

Codification

- Position 6 (disc) : A = St Steel CF8M, F = Ductile Iron + black epoxy
- Position 7 (actuator) : L = hand lever MN, U = hand lever MR, B = gearbox with handwheel, M = motorized
- Position 10 (Elastomer) : M = vulcanized nitrile, N = nitrile

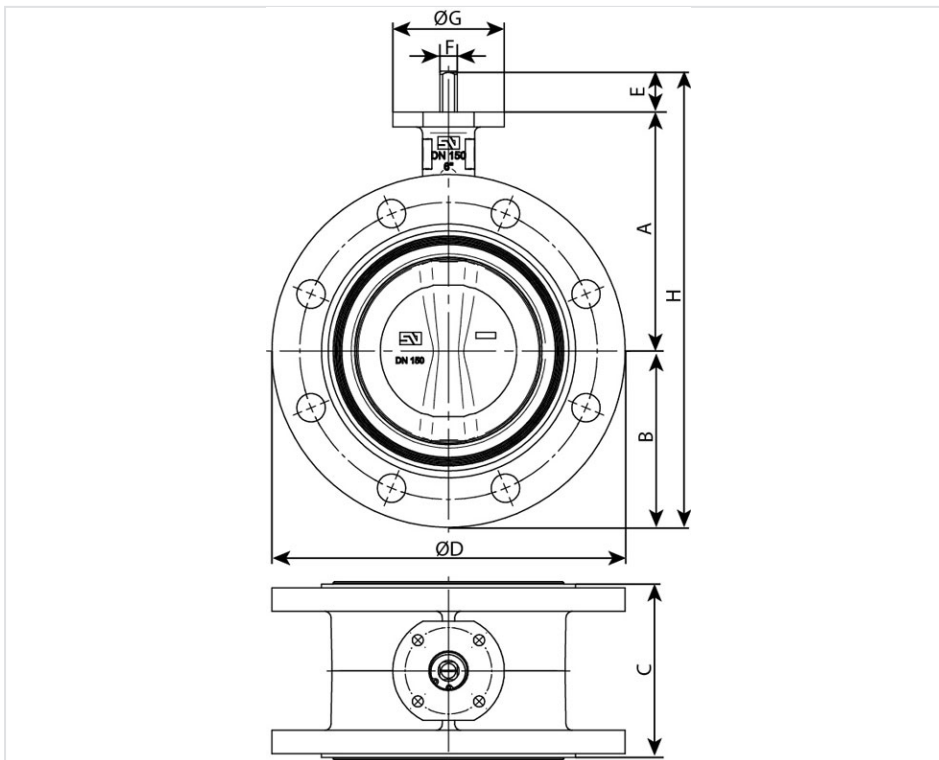
C = distance between flanges

DN mm	DN inch	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	L mm	Mass kg	Reference
40	1.5"	110	75	106	150	30	11	90	215	10	7.33	Consult us
50	2"	120	82.5	108	165	30	11	90	232.5	10	8.42	Consult us
65	2.5"	135	92.5	112	185	30	11	90	257.5	10	9.50	Consult us
80	3"	141	100	114	200	30	11	90	271	10	10.70	Consult us
100	4"	165	114.5	127	229	30	11	90	309.5	10	13.10	Consult us
125	5"	180	127	140	254	33	14	90	340	10	18.69	Consult us
150	6"	193	143	140	285	33	14	90	369	12	20.75	Consult us
200	8"	225	172.5	152	343	33	17	90	430.5	12	33.40	Consult us
250	10"	282.5	210	165	406	23	22	130	515.5	14	48.80	Consult us
300	12"	308	243	178	483	23	22	130	573	14	71.90	Consult us
350	14"	338.5	282.5	190	533	31	22	160	637.5	15	93.40	Consult us
400	16"	380	308	216	597	31	27	160	719	18	122.00	Consult us

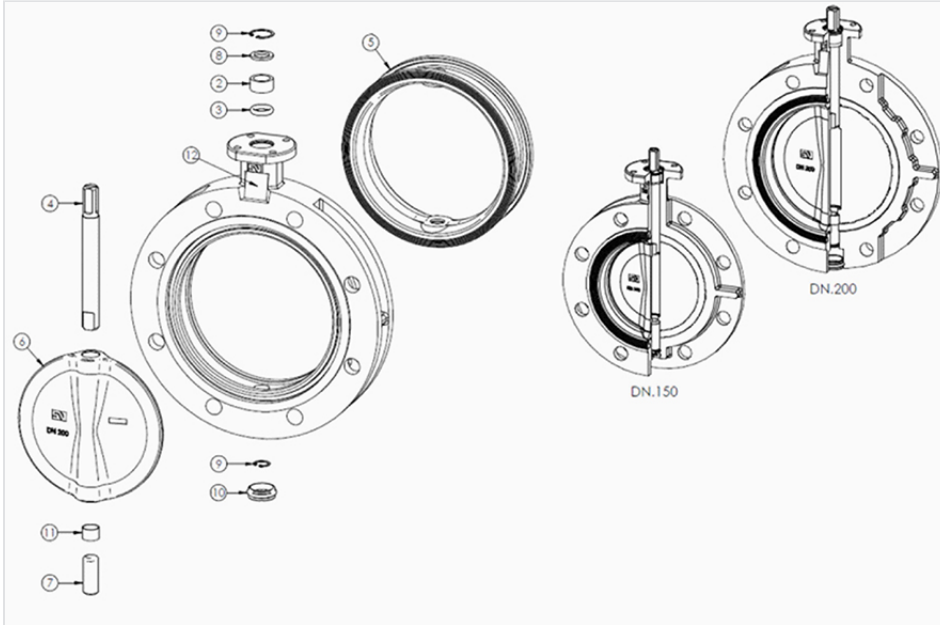
DN mm	DN inch	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	L mm	Mass kg	Reference
450	18"	380.5	340	222	640	38	36	190	758.5	20	172.60	Consult us
500	20"	432.5	380	229	715	38	36	210	850.5	20	207.00	Consult us
600	24"	494	440	267	840	80	60	210	1014	24	311.30	Consult us
700	28"	590	490	292	927	106	65	300	1186	30	448.30	Consult us
750	30"	590	530	318	985	106	80	300	1226	25	485.00	Consult us
800	32"	630	565	318	1060	106	80	300	1301	28	575.00	Consult us
900	36"	695	610	330	1178	110	80	350	1415	32	832.40	Consult us
1000	40"	770	675	410	1290	110	80	350	1555	32	972.60	Consult us
1100	44"	815	733	410	1405	110	80	350	1658	32	1485.60	Consult us
1200	48"	875	818	470	1510	110	100	350	1803	40	1806.00	Consult us

DN (mm)	DN	Version	A (mm)	B (mm)	C dim	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	L (mm)	PN 10 Mass (kg)	References
1000 (*)	40 "	Gearbox	770	675	410 mm	1290	110	80	350	1555	32	1039.00 kg	TBC10ABBFM

(*) Concentric double flanged butterfly valve in stainless steel



Material and coating

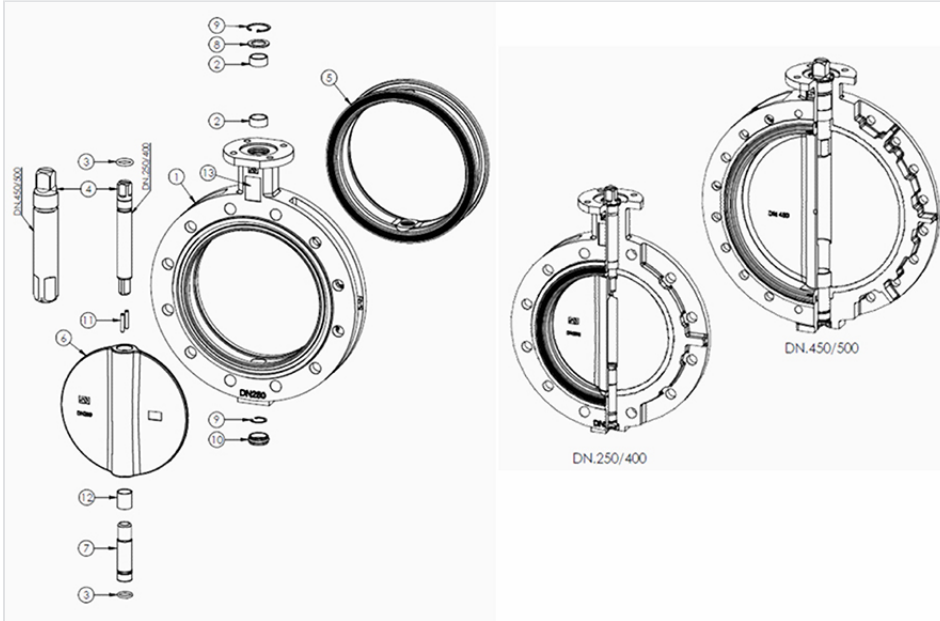


DN40-200

DN40-200

Item	Designation	Material	Coating
1	Valve Body	Ductile Iron EN GJS-400-5	Red Epoxy 250 μ
2	Bushing	Acetal « DELRIN » (POM)	
3	O'ring	Nitrile	
4	Upper shaft	Stainless Steel X20Cr13 according EN10088-3	
5	Seat	Nitrile	
6	Disc	Ductile Iron EN GJS-400-15	Black Epoxy 250 μ
		Stainless Steel CF8M	
7	Lower shaft	Stainless Steel X20Cr13 according EN10088-3	
8	Retaining ring	Zinc plated steel	
9	Circlip	Zinc plated steel	DIN 472
10	Lower Plug	EPDM	
11	Bushing	Steel BZ	PTFE
12	Features TAG	Polyester	

Material and coating

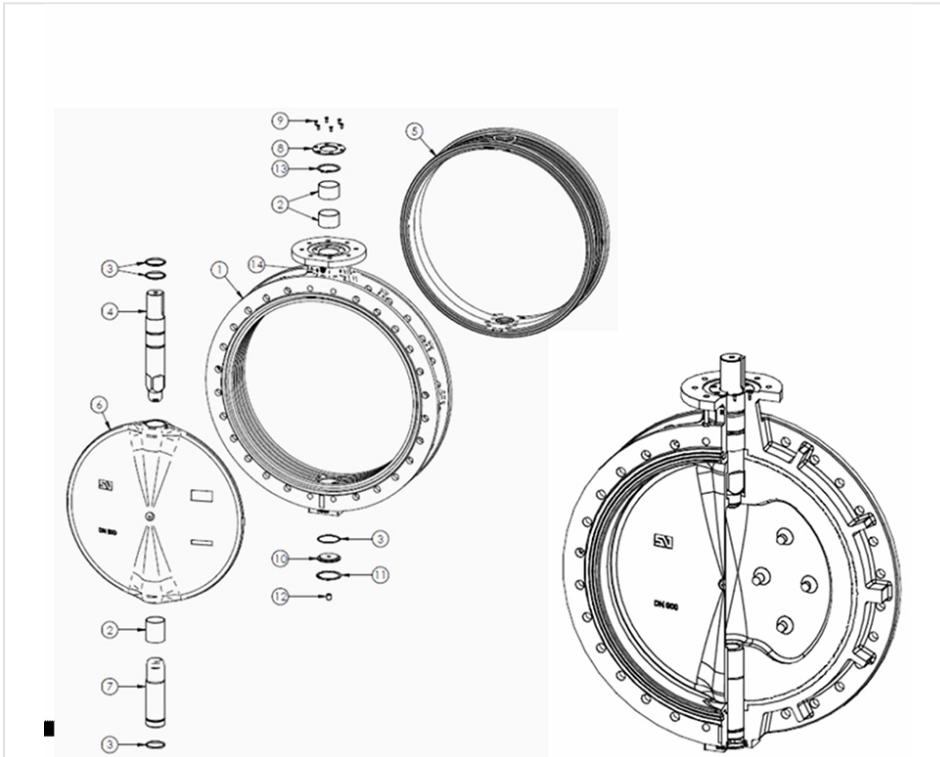


DN250-500

DN250-500

Item	Designation	Material	Coating
1	Valve Body	Ductile Iron EN GJS-400-15	Red Epoxy 250 μ
2	Bushing	Steel BZ	PTFE
3	O'ring	Nitrile	
4	Upper shaft	Stainless Steel X20Cr13 according EN10088-3	
5	Seat	Nitrile	
6	Disc	Ductile Iron EN GJS-400-15	Black Epoxy 250 μ
		Stainless Steel CF8M	
7	Lower shaft	Stainless Steel X20Cr13 according EN10088-3	
8	Retaining ring	Zinc plated steel	
9	Circlip	Zinc plated steel	DIN 472
10	Lower Plug	Nitrile	
12	Bushing	Steel BZ	PTFE
13	Features TAG	Polyester	

Material and coating



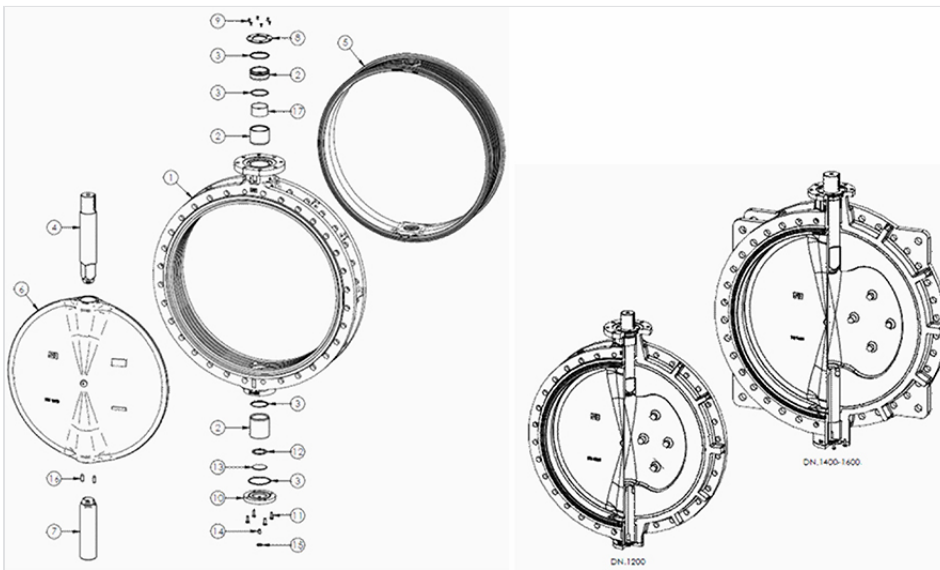
DN600-1200

DN600-1100

Item	Designation	Material	Coating
1	Valve Body	Ductile Iron EN GJS-400-15	Red Epoxy 250 μ (RAL 3009)
2	Bushing	Steel BZ	PTFE
3	O'ring	Nitrile	
4	Upper shaft	Stainless Steel X20Cr13 according EN10088-3	
5	Seat	Nitrile	
6	Disc	Ductile Iron EN GJS-400-15	Black Epoxy 250 μ
		Stainless Steel CF8M	
7	Lower shaft	Stainless Steel X20Cr13 according EN10088-3	
8	Upper cover	Carbon steel	Black Epoxy powder
9	Bolt of upper cover	Zinc plated steel	DIN 472
10	Lower cover	Zinc plated steel	
11	Zegi ring Body	Zinc plated steel	
12	Screw (DN800/1100)	Zinc plated steel	DIN 913

Item	Designation	Material	Coating
13	Retaining ring shaft (only DN600/800)	Zinc plated steel	DIN 471
14	Features TAG	Polyester	

Material and coating

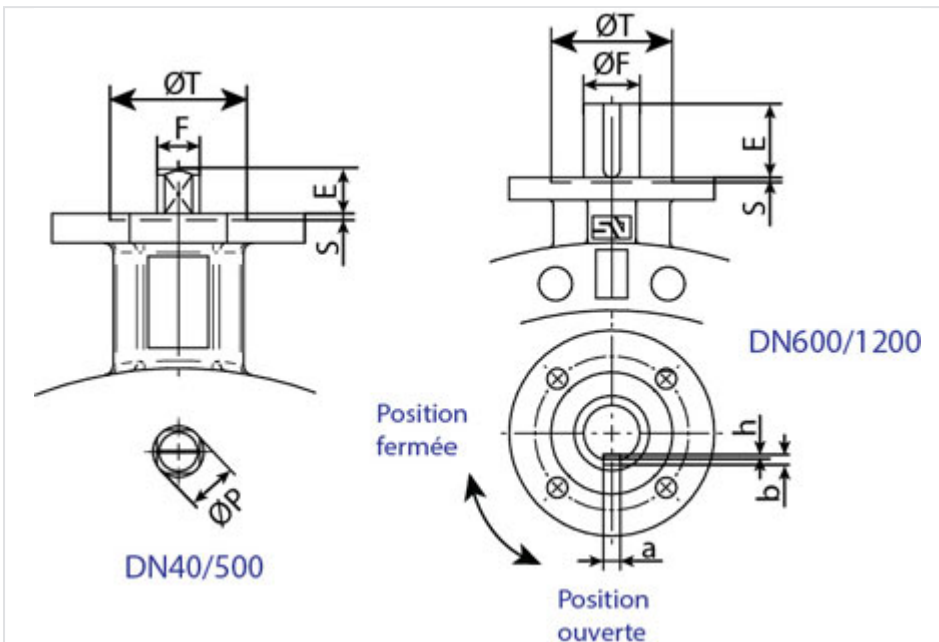


DN1200

Item	Designation	Material	Coating
1	Valve Body	Ductile Iron EN GJS-400-15	Red Epoxy 250 µ (RAL 3009)
2	Bushing	Bronze	
3	O'ring	Nitrile	
4	Upper shaft	Stainless Steel X20Cr13 according EN10088-3	
5	Seat	Nitrile	
6	Disc	Ductile Iron EN GJS-400-15 Stainless Steel CF8M	Black Epoxy 250 µ
7	Lower shaft	Stainless Steel X20Cr13 according EN10088-3	
8	Upper cover	Carbon steel	Black Epoxy powder
9	Bolt of upper cover	Zinc plated steel	DIN 7991
10	Lower cover	Zinc plated steel	
11	Lower bolt	Zinc plated steel	DIN 931
12	Lower ring	Bronze/brass	

Item	Designation	Material	Coating
13	Disc	Zinc plated steel	
14	Screw	Zinc plated steel	DIN 913
15	Nut	Zinc plated steel	DIN 934
16	Keyway	Stainless steel X20Cr13 according EN10088-3	
17	Bushing	Steel-Bz	PTFE

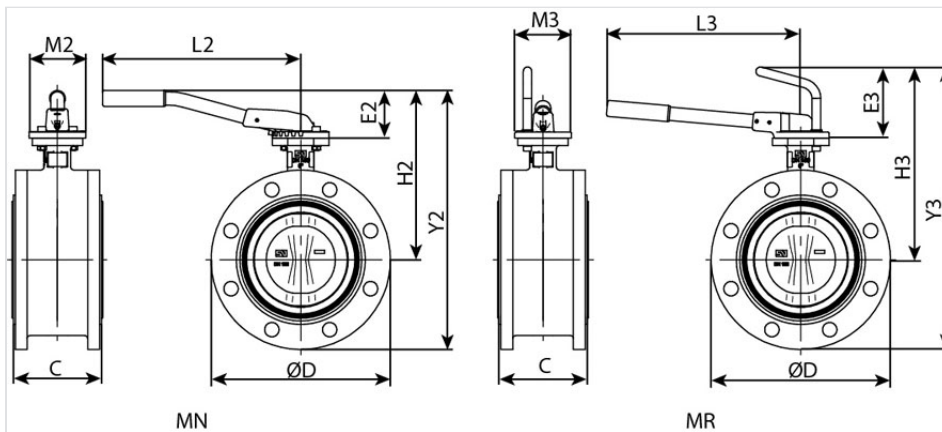
Upper flange



DN mm	DN inch	ISO mm	P mm	E mm	F mm	S mm	T mm	axb mm	H mm
40	1.5"	F-07	13						
50	2"	F-07	13						
60	2.5"	F-07	V						
80	3"	F-07	13						
100	4"	F-07	13	30	11				
125	5"	F-07	17	33	14				
150	6"	F-07	17	33	14				
200	8"	F-07	20.3	33	17				
250	10"	F-10	26.2	23	22	3	70		

DN mm	DN inch	ISO mm	P mm	E mm	F mm	S mm	T mm	axb mm	H mm
300	12"	F-10	26.2	23	22	3	70		
350	14"	F-10	28	31	22	3	70		
400	16"	F-12	33	31	27	4	85		
450	18"	F-14	48	38	36	4	100		
500	20"	F-14	48	38	36	4	100		
600	24"	F-16		80	60	5	130	18x11	7
700	28"	F-25		106	65	5	200	18x11	7
800	32"	F-25		106	80	5	200	22x14	9
900	36"	F-25		110	80	5	200	22x14	9
1000	40"	F-25		110	80	5	200	22x14	9
1100	44"	F-25		110		5	200	22x14	9
1200	48"	F-30		110	100	5	230	28x16	10

Operation by hand lever type MN and MR



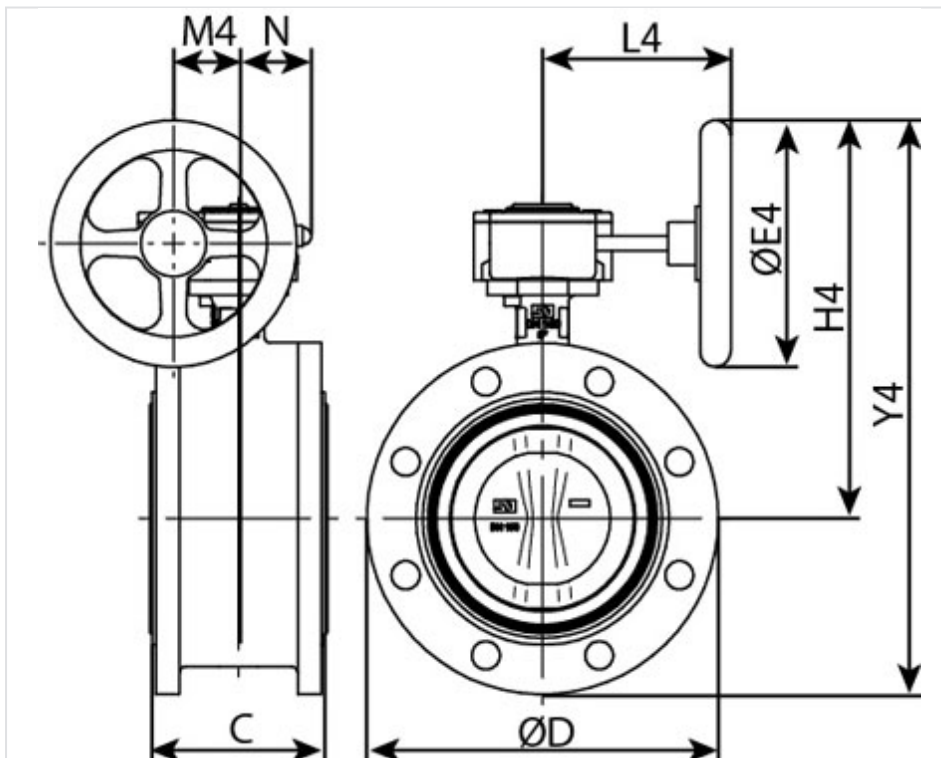
The operation by hand lever allows the disc between 0 and 90°. There are two types of manual control lever, the MN type and type MR.

MN type is the referenced for our range of Wafer and Lug valves. The lever allows seven positions of the butterfly between 0° to 90° with anchorage by spring.

DN		C	D	Hand lever type MN						Hand lever type MR					
mm	inch	mm	mm	E2	H2	Y2	L2	M2	Mass	E3	H3	Y3	L3	M3	Mass
40	1.5"	106	150	49	159	234	220	90	7.73	113	223	298	260	90	7.73

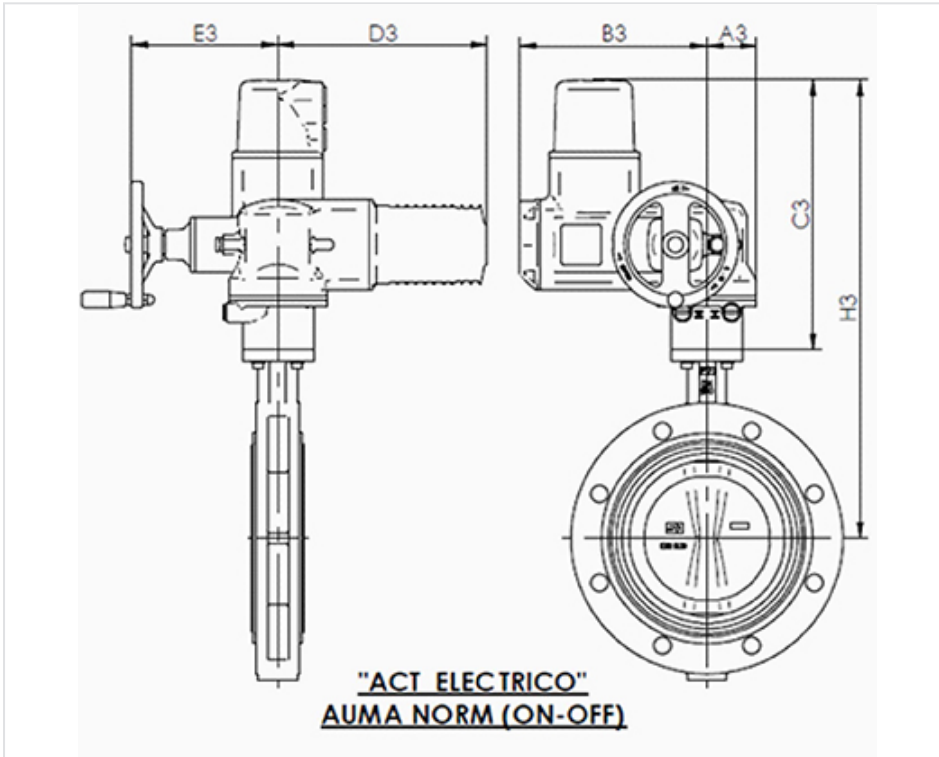
DN mm	inch	C mm	D mm	Hand lever type MN						Hand lever type MR					
				E2	H2	Y2	L2	M2	Mass	E3	H3	Y3	L3	M3	Mass
50	2"	108	165	49	169	251.5	220	90	8.82	113	233	315.5	260	90	8.82
65	2.5"	112	185	49	184	176.5	220	90	9.90	113	248	340.5	260	90	9.90
80	3"	114	200	60	201	301	260	90	11.15	113	254	354	260	90	11.15
100	4"	127	229	60	225	339.5	260	90	13.55	113	278	392.4	260	90	13.55
125	5"	140	254	75	255	381	315	90	19.24	113	293	419.5	310	90	19.24
150	6"	140	285	75	268	411	315	90	21.30	113	306	449	310	90	21.30
200	8"	152	345	75	300	472.5	315	90	34.10	113	338	510.5	310	90	34.10
250	10"	165	406							121	403.5	613.5	500	130	50.50
300	12"	178	480							121	429	669	500	130	73.60
350	14"	190	535							121	459.5	722.5	500	130	96.70

Operation by gearbox MDV and Handwheel



DN		C	D	Gearbox type MDV with handwheel						
mm	inch	mm	mm	E4	H4	Y4	L4	M4	N	Mass
40	1.5"	106	150	125	198	273	129	43.5	50.5	102.95
50	2"	108	165	125	208	290.5	129	43.5	50.5	107.85
65	2.5"	112	185	125	223	315.5	129	43.5	50.5	124.21
80	3"	114	200	125	229	329	129	43.5	50.5	129.60
100	4"	127	229	125	253	367.5	129	43.5	50.5	141.78
125	5"	140	254	160	285.5	412	135	43.5	50.5	191.20
150	6"	152	285	160	298.5	441.5	135	43.5	50.5	251.09
200	8"	165	345	200	355	527.5	152	52.5	57	293.24
250	10"	178	406	250	442.5	652.5	222	61.2	70	422.38
300	12"	190	480	250	468	708	222	61.2	70	615.00
350	14"	216	535	250	498.5	761.5	222	61.2	70	852.56
400	16"	216	597	300	572.5	880.5	278	69	72.5	1099.77
450	18"	222	640	400	630.5	970.5	321	96.5	91.5	1712.78
500	20"	229	715	400	682.5	1063	321	96.5	91.5	2056.62
600	24"	267	840	500	798.5	1239	408	137.5	140	2608.29
700	28"	292	927	600	944.5	1435	424	137.5	140	3875.70
750	30"	318	985	600	944.5	1475	456	137.5	140	4340.13
800	32"	318	1060	600	984.5	1550	456	137.5	140	5054.70
900	36"	330	1170	700	1109	1719	510	180	156	7266.18
1000	40"	410	1290	700	1184	1859	579	180	156	9638.01
1100	44"	410	1405	700	1229	1962	579	180	156	11367.49
1200	48"	470	1510	700	1310	2128	593	252	201	14362.75

Operation by motor type AUMA

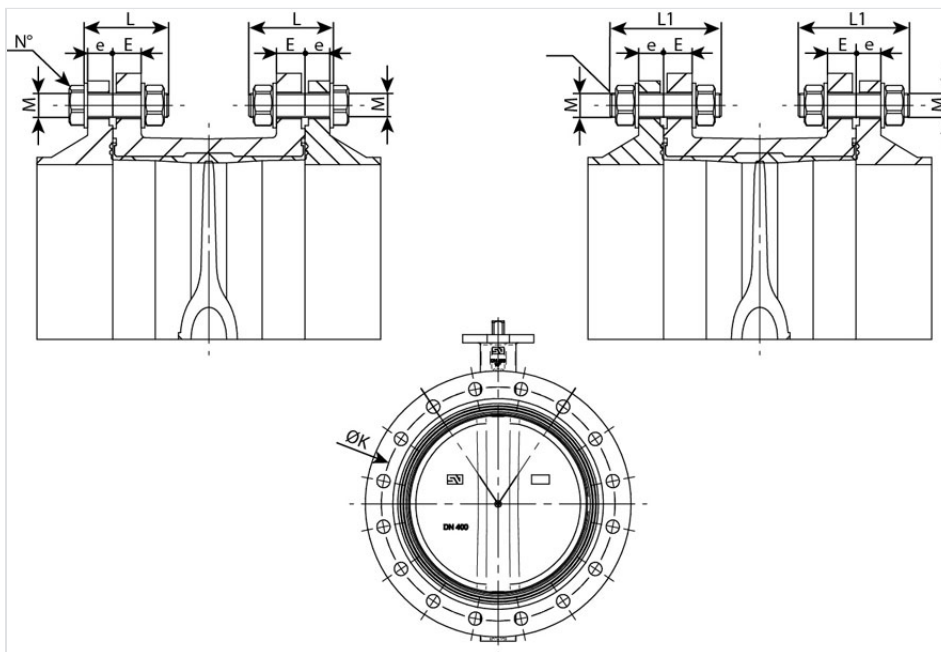


PFA 10 bar

DN		Electric motor							
mm	inch	Type	A3	B3	C3	D3	E3	H3	Mass
80	3"	SQ 05.2	63	238	344	265	186	485	27.8
100	4"	SQ 05.2	63	238	344	265	186	509	27.8
150	6"	SQ 05.2	63	238	344	265	186	537	34.1
200	8"	SQ 07.2	63	238	344	265	186	569	44.2
250	10"	SQ 10.2	80	248	361	265	191	643.5	44.2
300	12"	SQ 10.2	80	248	361	265	191	669	75
350	14"	SQ 12.2	105	248	385	265	191	723.5	88.4
400	16"	SQ 12.2	105	248	385	265	191	765	115
450	18"	SQ 14.2	112.5	255	447	265	216	827.5	152
500	20"	SQ 14.2	112.5	255	447	265	216	879.5	188
600	24"	GS100.3/VZ4.3 SA07.6	547	189	313	164	287	807	284
700	28"	GS125.3/VZ4.3 SA10.2	554	194	323	158	306	913	349
750	30"	GS125.3/VZ4.3 SA10.2	554	194	323	158	316	913	437

DN		Electric motor Type	Electric motor							Mass
mm	inch		A3	B3	C3	D3	E3	H3		
800	32"	GS160.3/GZ160.3(8:1) SA10.2	630	290	323	165	351	953	530	
900	36"	GS160.3/GZ160.3(8:1) SA10.2	630	290	323	165	351	1018	682	
1000	40"	GS200.3/GZ200.3(8:1) SA10.2	760	366	338	208	391	1108	900	
1100	44"	GS200.3/GZ200.3(16:1) SA10.2	760	366	338	208	391	1153	1052	
1200	48"	GS200.3/GZ200.3(8:1) SA10.2	760	366	338	208	391	1213	1283	

Screwing - Main dimensions



DN	E	PN10						PN16						ANSI 150 Lbs					
		K	e	M	L	L1	Number	K	e	M	L	L1	Number	K	e	M	L	L1	Number
40	18	110	16	M16	60	75	8	110	16	M16	60	75	8	98.4	17.5	W 1/2"	55	70	8
50	18	125	18	M16	60	75	8	125	18	M16	60	75	8	120.6	19.0	W 5/8"	60	80	8
65	18	145	18	M16	60	75	8	145	18	M16	60	75	8	139.7	22.2	W 5/8"	65	80	8
80	46	160	20	M16	65	80	16	160	20	M16	65	80	16	152.4	23.8	W 5/8"	70	85	8
100	46	180	20	M16	65	80	16	180	20	M16	65	80	16	190.5	23.8	W 5/8"	70	85	16
125	22	210	22	M16	70	85	16	210	22	M16	70	85	16	215.9	23.8		75	95	16
150	22	240	22	M20	70	95	16	240	22	M20	70	95	16	241.3	25.4	W 3/4"	75	100	16
200	23	295	24	M20	75	95	16	295	24	M20	75	95	16	298.5	28.6	W 3/4"	80	105	16
250	25	350	26	M20	80	100	24	355	26	M24	85	110	24	361.9	30.2	W 7/8"	90	110	24

DN	E	PN10						PN16						ANSI 150 Lbs					
		K	e	M	L	L1	Number	K	e	M	L	L1	Number	K	e	M	L	L1	Number
300	28	400	26	M20	80	105	24	410	28	M24	90	115	24	431.8	31.7	W 7/8"	90	115	24
350	30	460	26	M20	85	105	32	470	30	M24	95	120	32	476.2	34.9	W 1"	100	130	24
400	32	515	26	M24	90	115	32	525	32	M27	100	130	32	539.7	36.5	W 1"	105	135	32
450	34	565	26	M24	95	120	40	585	32	M27	105	130	40	577.8	39.7	W1.1/8"	115	145	32
500	36	620	28	M24	100	125	40	650	34	M30	110	140	40	635.0	46.0	W1.1/8"	125	150	40
600	41	725	28	M27	105	135	40	770	36	M33	120	155	40	749.3	47.6	W1.1/4"	130	165	40
700	44	840	30	M27	110	140	48	840	36	M33	125	155	48	863.5	52.5	W1.1/4"	140	175	56
750	48	900	32	M30	120	150	48	900	38	M33	130	165	48	914.4	54	W1.1/4"	145	180	56
800	48	950	32	M30	120	150	48	950	38	M36	135	170	48	978	57	W1.1/2"	155	195	56
900	51	1050	34	M30	125	160	56	1050	40	M36	140	175	56	1086	60	W1.1/2"	165	200	65
1000	55	1160	34	M33	135	165	56	1170	42	M39	150	190	56	1200	63.5	W1.1/2"	170	210	72
1100	58	1270	38	M33	145	180	64	1270	48	M39	160	195	64	1314.5	101	W1.1/2"	210	250	80
1200	62	1380	38	M36	150	185	65	1390	48	M45	170	215	65	1422	108	W1.1/2"	220	260	88

Tapped holes for the flanges assembly will be :

- Metric for the PN standards
- Whitworth type for the NSI 150 standards

For other tappings, consult us.

Packing

DN mm	Number of valves with hand lever per crate	
	DOUBLE FLANGED S13	Crate dimensions
40	70	
50	70	
65	60	
80	55	1200 x 800 x800
100	50	
125	35	
150	35	
200	25	
250	7	
300	7	

DN mm	Number of valves with gearbox per crate	
	DOUBLE FLANGED S13	Crate dimensions
40	50	
50	50	
65	45	
80	45	
100	40	
125	25	
150	25	
200	17	1200 x 800 x800
250	7	
300	7	
350	7	
400	5	
450	2	900 x 750 x600
500	2	
600	2	1150 x 900 x 800
700	2	1200 x 1100 x 800
800	1	1500 x 1200 x 500
900	1	1500 x 1200 x 500
1000	1	1600 x 1350 x600
1200	1	1950 x 1600 x 700

Added values

A) Bushings

They ensure alignment of the shafts as well as reducing the torque. Together with the shaft packing give additional safety preventing internal leakage and external contamination.

B) Body design

The long-neck construction allows easy installation and provision for insulation, even if the valves are assembled between flanges. The top and bottom alignment lugs make mounting between DIN-ANSI-JIS, etc., flanges very easy.

C) Spherical disc

The disc edge in contact with the seat is completely spherical providing smooth operation and considerable reduction of the valve torque. The combination of the valve tightness and reduced friction, especially around the shafts, gives a three folds increase in the life span of the seat

D) Interchangeability

All valve components can be dismantled and the replaceable parts are interchangeable with concentric flanged butterfly valves.

Compliance with standards

Company: designer and manufacturer works according to ISO 9001 by AENOR n° ES 0780 / 1997

Product: complies to the NF EN1074-1 and DVGW standards (up to DN700). Rest of the range in process.

Dimensions:

- NF EN 593: Metallic butterfly valves
- NF EN 558-1: Face to Face dimensions series 20
- EN ISO 5752: Metal valves for flanged pipe network. Table 5 short series
- API 609: Butterfly valves Flanged, Lugged and Wafer
- NF EN 1092-2: Flange connections to the piping material

Materials: NF EN1503: Valves. Materials for bodies, bonnets and covers

Operation:

- EN ISO 5210 : Multi-turn actuator to valve
- EN ISO 5211 : Part-turn actuator to valve

Assembling between flanges: ISO PN10 or PN16, DIN 2632 PN10 or PN16, EN-1092 PN10 or PN16, NFE 29222 PN10 or PN16

Identification: EN ISO 5209: Marking

Hydraulic Tests:

- EN ISO 5208: Pressure (Ratio A-No leakage)
- EN 12 266-1: Sealing (Ratio A-No leakage)

In accordance with the German rules DVGW n° 6201CM0237.

Traceability



Traceability system for concentric double flanged butterfly valves allows since the departure from the factory to the last day of life of the valve to obtain information relating to the product origin and quality both of coatings and materials, manufacturing, inspection and hydraulic tests results.

From the moment the order is in the computer system, starts the program of manufacturing. A serial number is automatically assigned to this valve. Manufacturing sheet will be marked with this number. This sheet will contain all information about manufacture and inspection of the valve. At the end, two stickers with the number of identification will be placed in the body and in the top flange of the valve.

Assembling

The trial sheet assembly is identified with the internal number. This sheet has as many labels as valves to assemble. This label identifies the person responsible for the mounting and the possible problems during the assembling. The document contains the components of the valve if certification 3.1 is required by the customer.

Hydraulic tests

Label identifying the inspector and the results of the tests. Any remark produced during the tests and the torque is shown.

Foundry marking



Body and disc: manufacturer and type of material.
 and
 Marking (identification/labels)

Hydraulic characteristics

Headloss Δp inside the valve is expressed with the flow coefficient Kv which is the flow going through the valve at a temperature 20°C and generating a headloss of 1 bar.

For the water we obtain the simplified calculation below with Q in m³/h and Kv in m³/h, Δp in bar

$$Kv = \frac{Q}{\sqrt{\Delta P}}$$

Flow coefficient Kv (in m³/h) according to the opening angle of the disc:

DN	Degree of valve opening							
	25	30	40	50	60	70	80	90
40	2.5	4.3	9	15	22	38	60	68
50	5	7.7	14	23	45	60	90	112
60-65	8.6	12.9	22	36	70	90	138	172
80	13	19	33	54	110	138	207	258
100	24	36	63	103	200	260	410	474
150	146	125	215	353	690	890	1420	1680
200	146	215	360	603	1120	1510	2350	2800
250	224	336	580	990	1850	3190	3700	4310
300	327	475	860	1380	2670	3490	5215	6465
350	430	645	1120	1896	3535	4395	6980	8620
400	560	775	1465	2285	4395	5600	9310	10775
450	775	1077	1980	3190	6120	7930	12700	15086
500	970	1380	2415	3965	7500	9900	15085	18965
600	1293	1895	3275	5260	10130	14225	20700	24137
700	1350	1990	3860	5980	10600	17100	25300	36000
800	1600	2200	4500	8200	12500	20000	29000	44000
900	1800	2300	6100	10400	17500	29000	42000	58000
1000	2500	3800	8700	13500	23000	37500	59200	80500
1100	4450	6350	10560	18210	28650	54560	72540	97586
1200	5400	7800	12500	22600	35500	61500	82000	110500

Necessary torque, in Nm, to close the disc at ΔP . These torques have been obtained with the standard range, water at 20°C and Nitrile seats.

bar	DN																			
	40	50	65	80	100	150	200	250	300	350	400	450	500	600	700	800	900	1000	1100	1200
3	5	5	515	17	2	48	90	126	161	245	520	590	840	1000	1650	2300	4700	6500	7000	8500
6	6	7	16	20	29	75	120	210	270	300	624	1120	1390	2200	3300	4600	6800	8500	9000	12000
10	9	13	20	23	42	90	140	270	390	500	897	1450	1800	3450	5000	6500	8500	11500	12000	15500
16	15	17	25	28	50	110	215	350	560	950	1400	1950	2500	3800	5860	9500	11500	15000	16000	22000

The information on this sketch is, to the best of our knowledge correct at the time of printing. However Saint-Gobain are constantly looking at ways of improving their products and services therefore reserve the right to change without prior notice, any of the data shown. Any orders placed will be subject to our Standard Conditions of Sale, available on request.