

## Concentric WAFER Butterfly Valve Series S20 DN40-1200 - Sewage version



### General information

Non flanged WAFER butterfly valves have been designed, generally, for industrial applications where dimensional problems are important.

### 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 and other fluids as raw water, sea water, etc.

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

### Range

Butterfly valves WAFER type are produced from DN40 up to DN1200.

- Body: WAFER type in ductile iron EN-GJS-400-15 + red epoxy powder 150 microns (RAL 3020).
- Maximum operating pressure:
  - DN40 – DN1200 : PFA 16 bar
  - DN40 – DN300 : PFA 25 bar (please consult us for other diameter)
- Flange dimensions: PN10 and PN16 (contact us for PN25 bar)
- Discs
  - Ductile iron EN GJS-400-15 + Epoxy coating in black 150 microns
  - CF8M Stainless Steel
  - Contact us for other materials
- Sealing materials in the body: type nitrile. Consult us for other types.
- Operation
  - Hand lever type MN: DN40-150 mm
  - Hand lever type MR: DN200-350mm

- 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.

## Reference

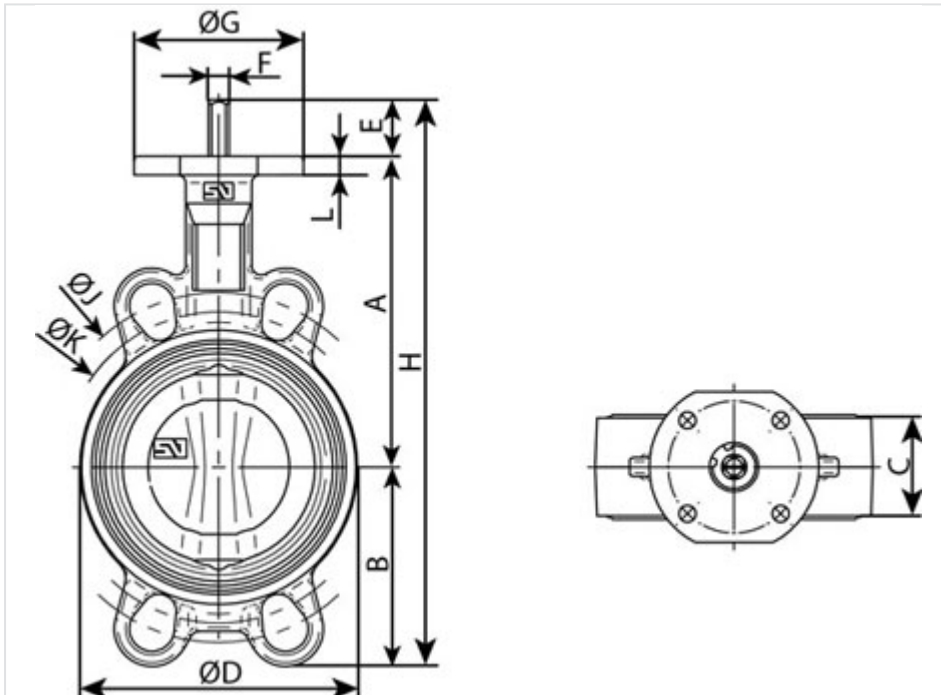
### Codification

- Position 6 (disc): A = Stainless steel CF8M, B = Ductile iron + black epoxy coating
- Position 7 (control system): L = hand lever type MN, B = handwheel with gearbox, M = motorized
- Position 10 (seat): E=EPDM ACS, W=EPDM DVGW, V=EPDM vulcanized, T=EPDM HT, N=Nitrile, F=Viton

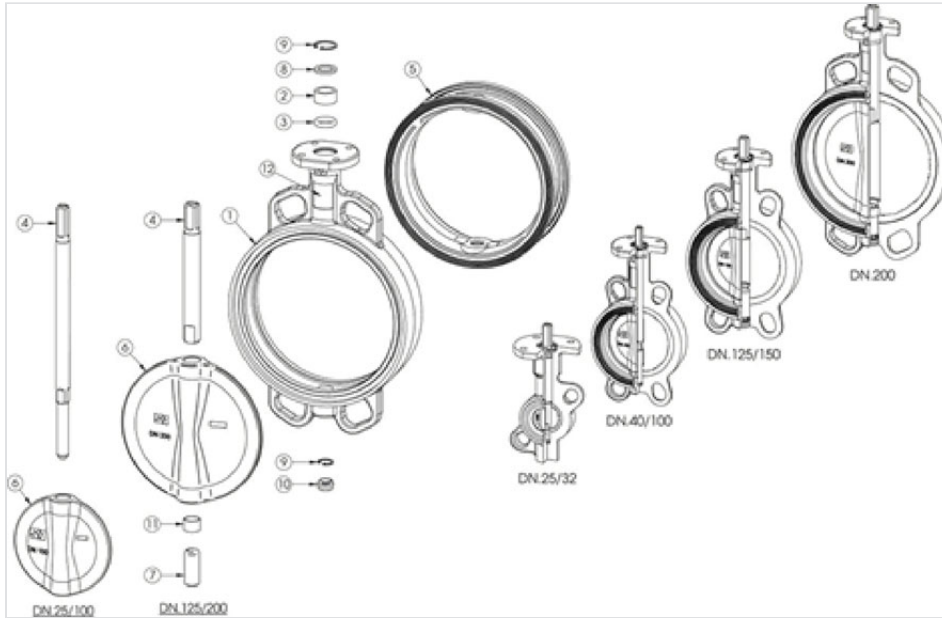
C = dimension between flanges

DN	DN	A	B	C	D	E	F	G	H	J	K	L	Mass	Reference
mm	inch	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg	
40	1 ½"	110	56	33	76	30	11	90	196	110	95	10	2.7	Contact us
50	2"	120	61.5	43	100	30	11	90	211.5	123	120.6	10	2.4	Contact us
65	2 ½"	135	69	46	108	30	11	90	234	145	127	10	2.6	Contact us
80	3"	141	94	46	124	30	11	90	265	160	145	10	3.1	Contact us
100	4"	165	106	52	147	30	11	90	301	185.5	165	10	4.0	Contact us
125	5"	180	126.5	56	180	33	14	90	339.5	225	206	12	6.1	Contact us
150	6"	193	133	56	206	33	14	90	359	241.3	229	12	7.3	Contact us
200	8"	225	170	60	257	33	17	90	428	305	280	12	11.0	Contact us
250	10"	282.5	210	68	324	23	22	130	515.5	362	335	14	20.5	Contact us
300	12"	308	240	78	376	23	22	130	571	431.8	394	14	29.5	Contact us
350	14"	338.5	263	78	430	31	22	160	632.5	476.3	445	15	35.4	Contact us
400	16"	380	308	102	485	31	27	160	719	540	510	18	55.7	Contact us
450	18"	380.5	340	114	536	38	36	190	758.5			20	80.8	Contact us
500	20"	432.5	380	127	593	38	36	210	850.5			20	113.6	Contact us
600	24"	494	440	154	690	80	60	210	1014			24	170.6	Contact us
700	28"	590	490	165	830	106	65	300	1186			30	252.0	Contact us
800	32"	630	565	190	902	106	80	300	1301			28	347.0	Contact us
900	36"	695	610	203	1010	110	80	350	1415			32	457.0	Contact us
1000	40"	770	675	216	1116	110	80	350	1555			32	580.0	Contact us
1100	44"	815	733	216	1215	110	80	350	1658			32	701.0	Contact us
1200	48"	875	818	254	1334	110	100	350	1803			40	959.0	Contact us

**Warning:** no flanged joint must be installed on this valve. The concentric valves should not be assembled with large tolerance flange adapters (type Ultraquick).



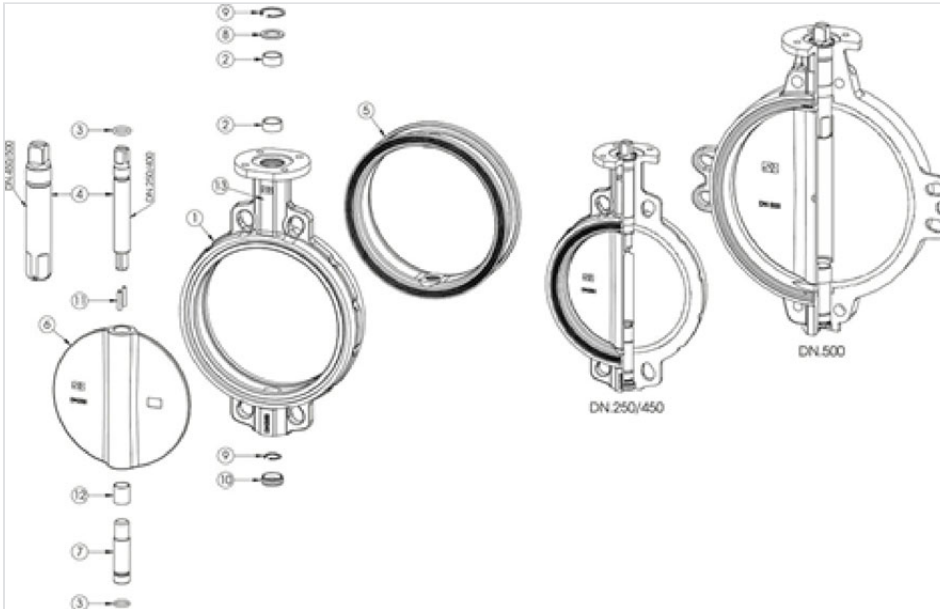
## Material and coating



### DN40-200

Item	Designation	Material	Coating
1	Valve Body	Ductile Iron EN GJS-400-5	Red Epoxy 150 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 Stainless Steel CF8M	Black Epoxy 150 µ with ACS
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	
11	Bushing	Steel BZ	PTFE
12	Features TAG	Polyester	

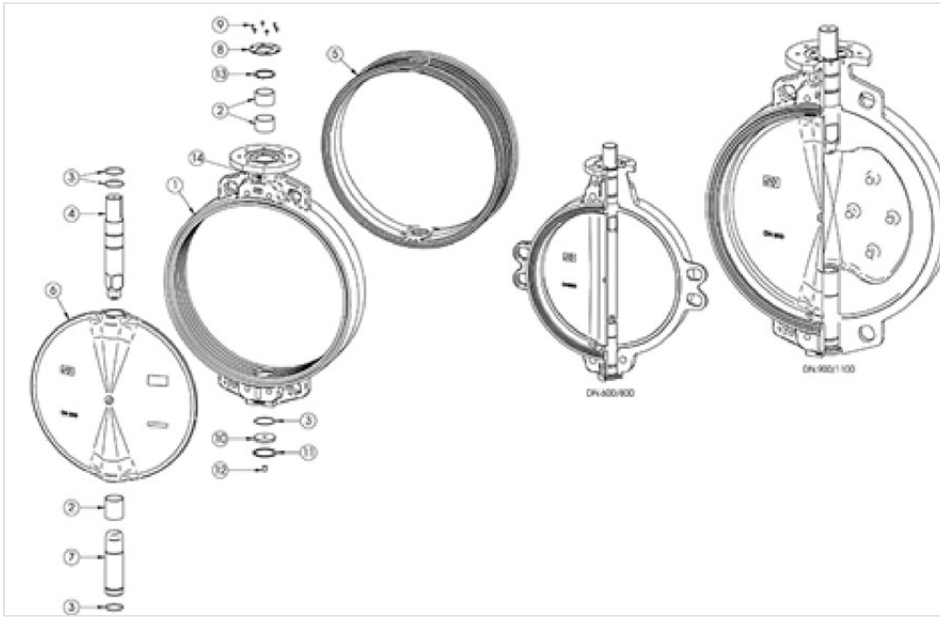
## Material and coating



DN250-500

Item	Designation	Material	Coating
1	Valve Body	Ductile Iron EN GJS-400-15	Red Epoxy 150 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 150 μ with ACS
		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	

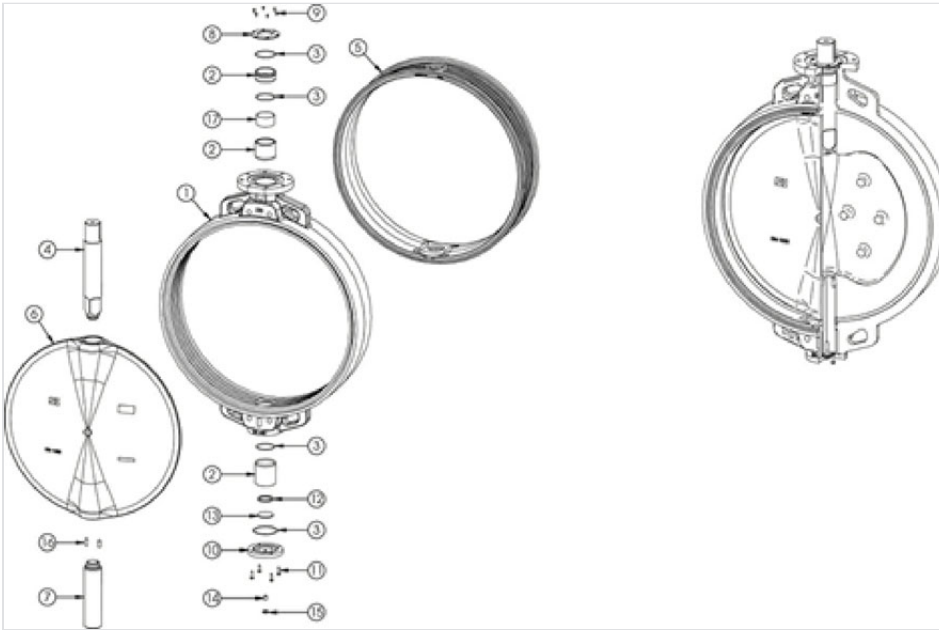
## Material and coating



### DN600-1100

Item	Designation	Material	Coating
1	Valve Body	Ductile Iron EN GJS-400-15	Red Epoxy 150 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 Stainless Steel CF8M	Black Epoxy 150 µ with ACS
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	Zepi ring Body	Zinc plated steel	
12	Screw (DN800/1100)	Zinc plated steel	DIN 913
13	Retaining ring shaft (only DN600/800)	Zinc plated steel	DIN 471
14	Features TAG	Polyester	

## Material and coating

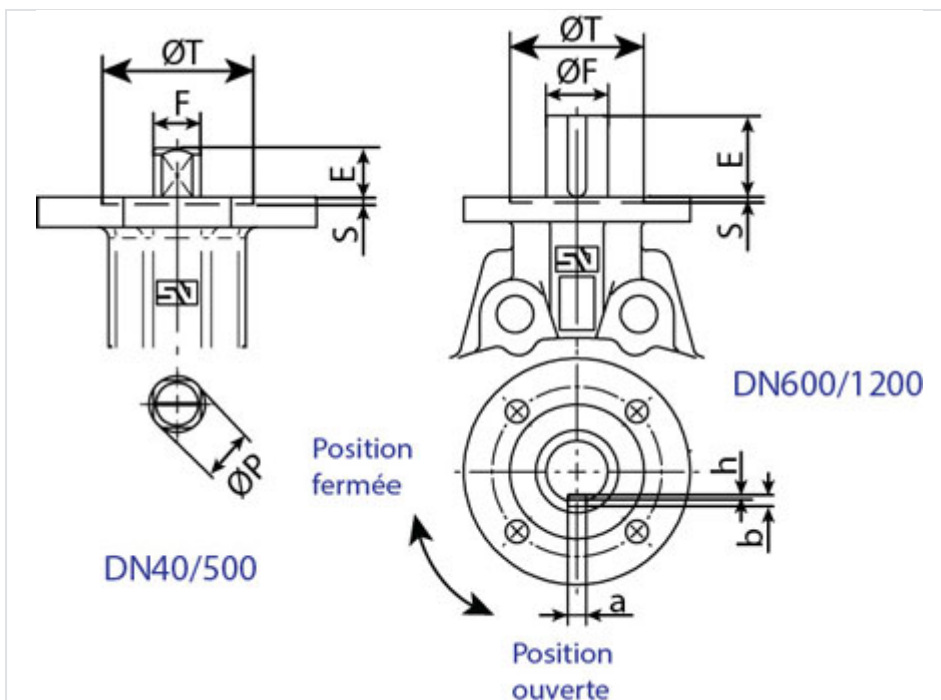


DN1200

Item	Designation	Material	Coating
1	Valve Body	Ductile Iron EN GJS-400-15	Red Epoxy 150 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 150 µ with ACS
		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 7991
10	Lower cover	Zinc plated steel	
11	Lower bolt	Zinc plated steel	DIN 931
12	Lower ring	Bronze/brass	
13	Disc	Zinc plated steel	
14	Screw	Zinc plated steel	DIN 913

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

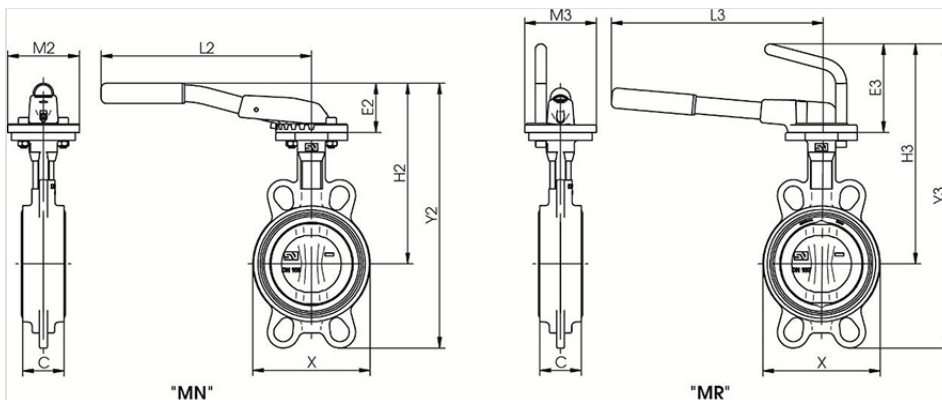
## Upper flange



DN mm	DN inch	ISO mm	P mm	Q mm	R mm	S mm	T mm	axb mm	H mm
40	1 1/2"	F-07	13	70	4x9				
50	2"	F-07	13	70	4x9				
65	2 1/2"	F-07	13	70	4x9				
65	2 1/2"	F-07	13	70	4x9				
80	3"	F-07	13	70	4x9				
80	3"	F-07	13	70	4x9				
100	4"	F-07	13	70	4x9				
125	5"	F-07	17	70	4x9				
150	6"	F-07	17	70	4x9				
200	8"	F-07	20.3	70	4x9				

DN mm	DN inch	ISO mm	P mm	Q mm	R mm	S mm	T mm	axb mm	H mm
200	8"	F-07	20.3	70	4x9				
250	10"	F-10	26.2	102	4x12	3	70		
300	12"	F-10	26.2	102	4x12	3	70		
350*	14"	F-10	28	102	4x12	3	70		
350	14"	F-10	28	102	4x12	3	70		
400	16"	F-12	33	125	4x14	4	85		
450*	18"	F-14	48	140	4x18	4	100		
450	18"	F-14	48	140	4x18	4	100		
500	20"	F-14	48	140	4x18	4	100		
600	24"	F-16		165	4x22	5	130	18x11	7
700	28"	F-25		254	8x18	5	200	18x11	9
800	32"	F-25		254	8x18	5	200	22x14	9
900	36"	F-25		254	8x18	5	200	22x14	9
1000	40"	F-25		254	8x18	5	200	22x14	9
1100		F-25		254	8x18	5	200	22x14	9
1200		F-30		298	8x23	5	230	28x16	10

## DN40-600 - Operation by hand lever type MN and MR

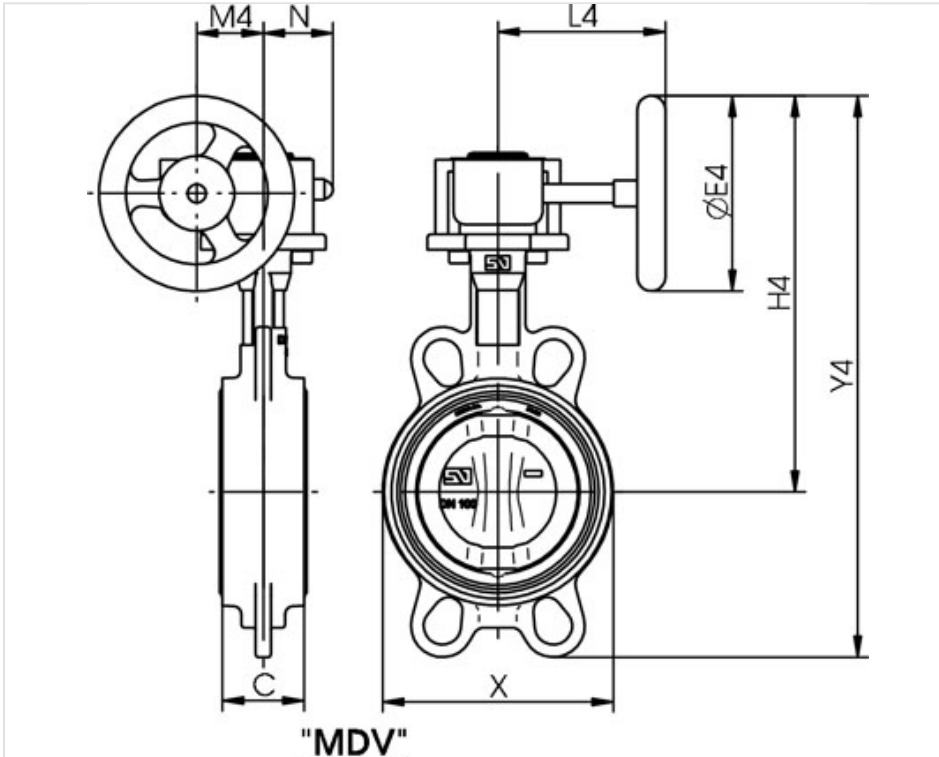


The operation by hand lever allows the disc between 0 and 90°. There are two types of manual control lever, the MN type and type MR.

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	X	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 1/2"	33	76	49	159	215	220	90	2.1	115	225	281	260	90	2.3
50	2"	43	100	49	169	230	220	90	2.9	115	235	296	260	90	3.1
65	2 1/2"	46	108	49	184	253	220	90	3.0	115	250	319	260	90	3.2
80	3"	46	124	60	201	295	260	90	3.6	115	256	350	260	90	3.7
100	4"	52	147	60	225	331	260	90	4.4	115	280	386	260	90	4.5
125	5"	56	180	75	255	381	315	90	6.6	115	295	421	310	90	6.8
150	6"	56	206	75	268	401	315	90	7.6	115	308	441	310	90	7.9
200		60	257	75	300	470	315	90	11.6	115	340	510	310	90	11.7
250	10"	68	324							120	402	612	500	130	22.2
300	12"	78	376							120	428	668	500	130	31.2
350	14"	78	430							120	458	722	500	130	37.1
400	16"	102	485												
450	18"	114	536												
500	20"	127	593												
600	24"	154	690												
700	28"	165	830												
800	32"	190	902												
900	36"	203	1010												
1000	40"	216	1116												
1100	44"	216	1215												
1200	48"	254	1334												

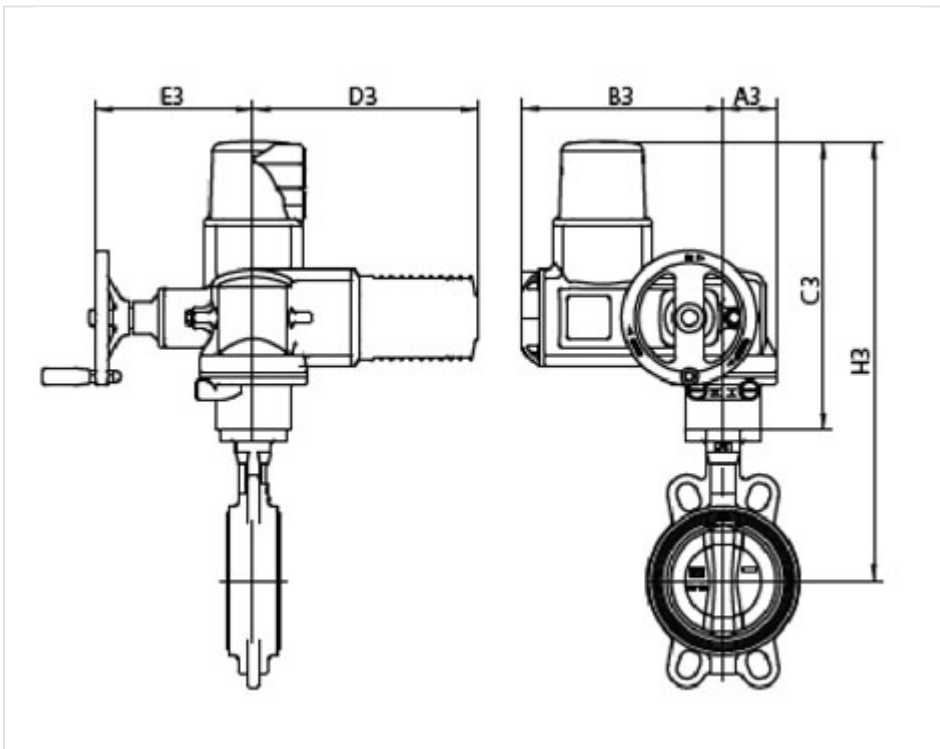
**DN40–600 - Operation by gearbox MDV and Handwheel**



DN		C	X	Gearbox type MDV with handwheel							
mm	inch	mm	mm	Model	E4	H4	Y4	L4	M4	N	Mass
40	1 1/2"	33	76	0	125	198	252	128	43.5	50	2.9
50	2"	43	100	0	125	208	267	128	43.5	50	3.7
65	2 1/2"	46	108	0	125	223	289	128	43.5	50	3.8
80	3"	46	124	0	125	229	304	128	43.5	50	4.3
100	4"	52	147	0	125	253	358	128	43.5	50	5.2
125	5"	56	180	1	160	286	411	135	43.5	50	7.5
150	6"	56	206	1	160	298	434	135	43.5	50	8.7
200		60	257	1A	200	355	526	152	52.5	57	13.6
250	10"	68	324	2	250	442	652	222	61	70	24.0
300	12"	78	383	2	250	468	708	222	61	70	33.0
350	14"	78	437	2	250	498	761	222	61	70	39.0
400	16"	102	486	2A	300	572	880	278	69	72.5	64.6

DN		C	X	Gearbox type MDV with handwheel							
mm	inch			Model	E4	H4	Y4	L4	M4	N	Mass
450	18"	114	538	3	400	630	970	321	96.5	91.5	99.2
500	20"	127	586	3	400	682	1062	321	96.5	91.5	132.0
600	24"	154	690	4	500	799	1239	408	137.5	140	205.0
700	28"	165	830	4	600	945	1435	424	137.5	140	325.0
800	32"	190	902	5	600	985	1550	456	137.5	156	404.0
900	36"	203	1010	6	700	1108	1718	510	180	156	557.0
1000	40"	216	1116	7	700	1183	1858	579	180	156	659.0
1100	44"	216	1215	7	700	1229	1962	579	180	156	786.0
1200	48"	254	1134	8	700	1310	2128	593	252	201	1128.0

## Operation by motor type AUMA



PFA 10 bar

DN		Moteur électrique							
mm	pouce	Type	A3	B3	C3	D3	E3	H3	Masse
40	1½"	SQ 05.2	92	210	207	215	119	320	10.0

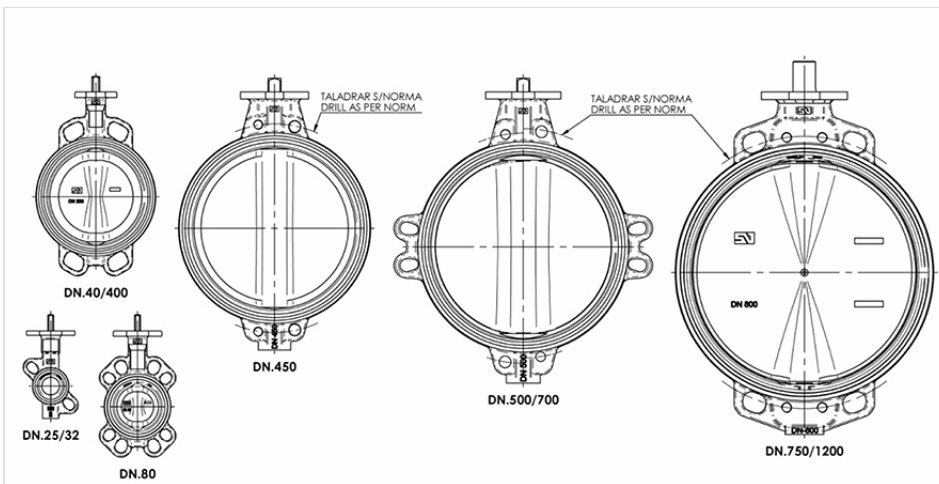
DN		Moteur électrique							
mm	pouce	Type	A3	B3	C3	D3	E3	H3	Masse
50	2"	SQ 05.2	92	210	207	215	119	327	10.7
65	2½"	SQ 05.2	92	210	207	215	119	342	10.9
80	3"	SQ 05.2	92	210	207	215	119	348	11.4
100	4"	SQ 05.2	92	210	207	215	119	372	12.3
125	5"	SQ 05.1	63	238	344	265	186	524	29.1
150	6"	SQ 05.1	63	238	344	265	186	537	30.3
200	8"	SQ 07.1	63	238	344	265	186	569	34.0
250	10"	SQ 10.1	80	248	361	265	191	643.5	47.5
300	12"	SQ 10.1	80	248	361	265	191	669	56.5
350	14"	SQ 10.1	80	248	361	265	191	699.5	62.4
400	16"	SQ 12.1	105	248	385	265	191	765	87.7
450	18"	GS100.3/VZ4.3 SA07.2	112.5	255	447	265	216	827.5	124.0
500	20"	GS100.3/VZ4.3 SA07.2	112.5	255	447	265	216	879.5	157.0
600	24"	GS100.3/VZ4.3 SA07.6	547	189	313	164	287	807	231.0
700	28"	GS125.3/VZ4.3 SA10.2	554	194	323	158	316	913	324.0
750	30"	GS125.3/VZ4.3 SA10.2	554	194	323	158	316	913	366.0
800	32"	GS125.3/VZ4.3 SA10.2	554	194	323	158	316	953	419.0
900	36"	GS160.3/GZ160.3(8:1) SA07.6	628	290	313	165	346	1008	575.0
1000	40"	GS160.3/GZ160.3(8:1) SA10.2	630	290	323	165	351	1093	698.0
1100	44"	GS160.3/GZ160.3(8:1) SA10.2	630	290	323	165	351	1138	819.0
1200	48"	GS200.3/GZ200.3(8:1) SA10.2	760	366	338	208	391	1213	1156.0

### PFA 16 bar

DN		Moteur électrique							
mm	pouce	Type	A3	B3	C3	D3	E3	H3	Masse
40	1½"	SQ 05.2	92	210	207	215	119	320	10.0
50	2"	SQ 05.2	92	210	207	215	119	327	10.7
65	2½"	SQ 05.2	92	210	207	215	119	342	10.9
80	3"	SQ 05.2	92	210	207	215	119	348	11.4
100	4"	SQ 05.2	92	210	207	215	119	372	12.3
125	5"	SQ 05.1	63	238	344	265	186	524	29.1
150	6"	SQ 05.1	63	238	344	265	186	537	30.3
200	8"	SQ 07.1	63	238	344	265	186	569	30.0
250	10"	SQ 10.1	80	248	361	265	191	643.5	46.0

DN		Moteur électrique							
mm	pouce	Type	A3	B3	C3	D3	E3	H3	Masse
300	12"	SQ 10.1	80	248	361	265	191	669	55.0
350	14"	SQ 10.1	105	248	385	265	191	723.5	65.0
400	16"	SQ 12.1	105	248	385	265	191	765	85.0
450	18"	GS100.3/VZ4.3 SA07.2	112.5	255	447	265	216	827.5	157.0
500	20"	GS100.3/VZ4.3 SA07.2	112.5	255	447	265	216	879.5	190.0
600	24"	GS100.3/VZ4.3 SA07.6	547	189	313	164	287	807	246.6
700	28"	GS125.3/VZ4.3 SA10.2	554	194	323	158	316	913	341.0
750	30"	GS125.3/VZ4.3 SA10.2	554	194	323	158	316	913	383.0
800	32"	GS160.3/GZ160.3(8:1) SA10.2	630	290	323	165	351	953	481.0
900	36"	GS160.3/GZ160.3(8:1) SA10.2	630	290	323	165	351	1018	591.0
1000	40"	GS200.3/GZ200.3(8:1) SA10.2	760	366	338	208	391	1108	793.0
1100	44"	GS200.3/GZ200.3(8:1) SA10.2	760	366	338	208	391	1153	914.0
1200	48"	GS200.3/GZ200.3(8:1) SA10.2	760	366	338	208	391	1213	1169.0

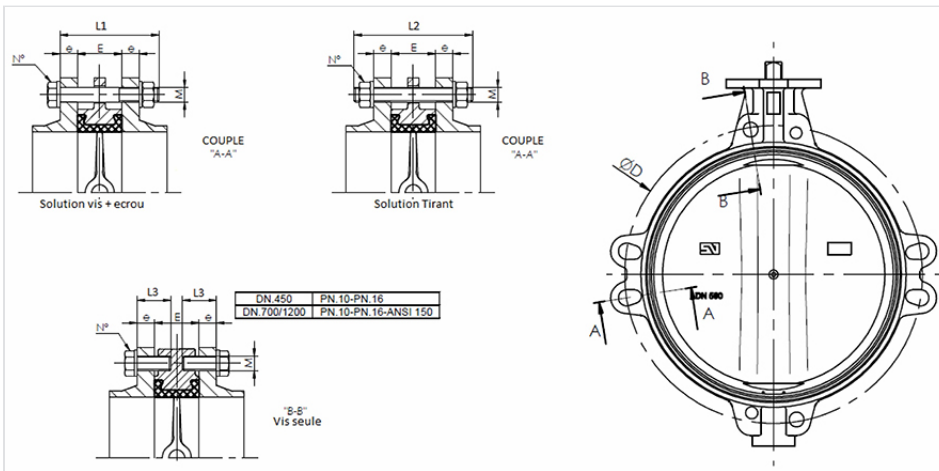
### Assembling main dimensions



DN	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000	1100	1200	
PN6	O	X	X	O	X	X	O	X	X	X	X	X	X	O	O	O			0	0	0	0	0	0
PN10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PN16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PN20	O	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X								

DN	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000	1100	1200
ANSI 150 Lbs	O	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	X	X	0	0	0
AWWA	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	0	0	X	X	0	0	0
BS. cv_D	O	X	X	O	X	X	X	X	X	X	0	X	X	0	0	0				0			X
BS. E	O	X	X	O	X	X	X	X	X	X	X	X	X	0	X	0	0			0			X
JIS 5k	O	X	X	N	X	X	X	X	X	X	X	X	0	O	O	O	X	0	0	0	0	0	0
JIS 10k	O	X	X	X	X	X	X	X	X	X	X	0	X	X	X	X	X	X	0	X	X	X	X
JIS 16k	O	X	X	0	0	X	X	X	0	X	0	0	O	X	X	X	0		X	X	X	X	X
AS 2129 E	O	X	X	O	X	X	X	X	X	X	X	X	X	0	X	0	0	0	0	0	0		X

## Screwing - Main dimensions



DN	E	PN10					PN16					ANSI 150 Lbs				
		D	e	M	L	Number	D	e	M	L	Number	D	e	M	L	Number
40	33	110	16	M16	90	4	110	16	M16	90	4	98.4	17.5	W 1/2"	90	4
50	43	125	18	M16	100	4	125	18	M16	100	4	120.6	19.0	W 5/8"	100	4
65	46	145	18	M16	100	4	145	18	M16	100	4	139.7	22.2	W 5/8"	100	4
80	46	160	20	M16	110	8	160	20	M16	110	8	152.4	23.8	W 5/8"	110	4
100	52	180	20	M16	110	8	180	20	M16	110	8	190.5	23.8	W 5/8"	120	8
125	56	210	22	M16	120	8	210	22	M16	120	8	215.9	23.8	W 3/4"	130	8
150	56	240	22	M20	130	8	240	22	M20	130	8	241.3	25.4	W 3/4"	130	8

DN	E	PN10					PN16					ANSI 150 Lbs				
		D	e	M	L	Number	D	e	M	L	Number	D	e	M	L	Number
200	60	295	24	M20	130	8	295	24	M20	150	120	298.5	28.6	W 3/4"	140	8
250	68	350	26	M20	150	12	355	26	M24	150	12	361.9	30.2	W 7/8"	160	12
300	78	400	26	M20	160	12	410	28	M24	160	12	431.8	31.7	W 7/8"	170	12
350	78	460	26	M20	170	16	470	30	M24	170	16	476.2	34.9	W 1"	180	12
400	102	515	26	M24	180	16	525	32	M27	200	16	539.7	36.5	W 1"	210	16
450	114	565	26	M24	190	16	585	32	M27	210	16	577.8	39.5	W1.1/8"	230	16
450	114	-	-	M24	60	8	-	-	M27	60	8	-	-	-	-	-
500	127	620	28	M24	210	20	650	34	M30	320	20	635.0	46.0	W1.1/8"	250	20
600	154	725	28	M27	240	20	770	36	M33	260	20	749.3	47.6	W1.1/4"	280	20
700	165	840	30	M27	260	20	840	36	M33	270	20	863.5	V	W1.1/4"	310	24
700	165	840	30	M27	80	8	840	36	M33	85	8	863.5	52.5	W1.1/4"	110	8
800	190	950	32	M30	290	20	950	38	M36	310	20	978	57	W1.1/2"	340	24
800	190	950	32	M30	110	8	950	38	M36	80	8	978	57	W1.1/2"	95	8
900	203	1050	34	M30	310	24	1050	40	M36	330	24	1086	60	W1.1/2"	370	28
900	203	1050	34	M30	100	8	1050	40	M36	100	8	1086	60	W1.1/2"	110	8
1000	216	1160	34	M33	325	24	1170	42	M39	345	24	1200	63.5	W1.1/2"	390	32
1000	216	1160	34	M33	95	8	1170	42	M39	100	8	1200	63.5	W1.1/2"	120	8
1100	216	1270	38	M33	330	28	1270	48	M39	360	28	1314.5	101	W1.1/2"	465	36
1100	216	1270	38	M33	100	8	1270	48	M39	110	8	1314.5	101	W1.1/2"	150	8
1200	254	1380	38	M36	375	26	1390	48	M45	395	28	1422	108	W1.1/2"	475	40
1200	254	1380	38	M36	110	8	1390	48	M45	115	8	1422	108	W1.1/2"	165	8

## Packing

DN mm	Number of valves with hand lever per crate	
	WAFER S20	Crate dimensions
32	180	1200 x 800 x800
40	180	
50	160	
65	140	
80	130	
100	120	
125	80	
150	80	

DN mm	Number of valves with hand lever per crate	
	WAFER S20	Crate dimensions
200	60	
250	14	
300	14	

DN mm	Number of valves with gearbox per crate	
	WAFER S20	Crate dimensions
32	110	1200 x 800 x800
40	110	
50	110	
65	100	
80	100	
100	90	
125	60	
150	60	
200	40	
250	14	
300	14	
350	14	
400	10	900 x 750 x750
450	5	
500	5	
600	4	
700	3	
800	2	
900	2	
1000	1	
1200	1	1700 x 1500 x 500 (palette)
1400		
1600		

## Added values



### A) Bushings

Bushings 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 valve is 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 butterfly valve type.

## Compliance with Standards

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

**Product:** complies to the standards NF EN1074-1 and by DVGW (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 12 266-1: (Ratio A-No leakage)

### Traceability



Traceability system for LUG 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  $\Delta p$ : Butterfly valves in conditions for liquids, density = 1 and temperature 20°C for the water:

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

with Q in m<sup>3</sup>/h and Kv in m<sup>3</sup>/h,  $\Delta p$  in bar

Flow coefficient KV in m<sup>3</sup> /h depending on angle of opening disc:

DN	Degree of valve opening							
	25	30	40	50	60	70	80	90
40	2.5	4.3	9	15	22	39	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
125	52	76	133	215	420	540	860	970
150	146	125	215	353	690	890	1420	1680
200	146	215	360	603	1120	1510	2350	2800

DN	Degree of valve opening							
	25	30	40	50	60	70	80	90
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

## Mechanical characteristics

### Operation torque

Necessary torque in Nm to close the disc at  $\Delta P$ . These torques have been obtained with water at 20 ° C, and EPDM seats.

bar	DN	DN	DN	DN	DN	DN	DN	DN	DN	DN	DN	DN	DN	DN	DN	DN	DN	DN	ND	DN
	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000	1200
3	5	5	15	17	22	39	48	90	126	161	245	520	590	840	1000	1650	2300	4700	6500	8500
6	6	7	16	20	29	46	75	120	210	270	300	624	1120	1390	2200	3300	4600	6800	8500	12000
10	9	13	20	23	42	72	90	140	270	390	500	897	1450	1800	3450	5000	6500	8500	11500	15500
16	15	17	25	28	50	85	110	215	350	560	950	1400	1950	2500	3800	5860	9500	11500	15000	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.