

## Concentric LUG Butterfly Valve Series S20 DN40-1000 - Sewage version



### General information

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

The LUG butterfly valve is connected to flanged pieces of the network by means of screws located on each side of the valve and which are screwed in the tapped/threaded parts body of the valve. This design allows removal of one side of the installation while the other side is under pressure. It offers easy assembling in facilities where temporary line isolation is necessary: pump outputs, tanks, boat hulls, 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 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 valve type LUG DN40 to DN1000 (contact us for other diameters).

- Body: LUG type ductile iron EN-GJS-400-15 + red epoxy powder 250 microns (RAL 3020).
- Maximum operating pressure:
  - DN40 – DN1000 : PFA 16 bar
  - DN40 – DN300 : PFA 25 bar (please consult us for other diameter)
- Flange dimensions
  - DN40 – DN1000 : PN10 and 16 bar, ASA 150, JIS 10K and JIS 16K
  - DN40 – DN300 : PN25 bar (please consult us for other diameter)
- 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 nitrile. Consult us for other types.
- Operation
  - Hand lever type MN: DN40-150 mm
  - Hand lever type MR: DN200-350mm
  - Gear-box + handwheel: DN40-1000mm
  - 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

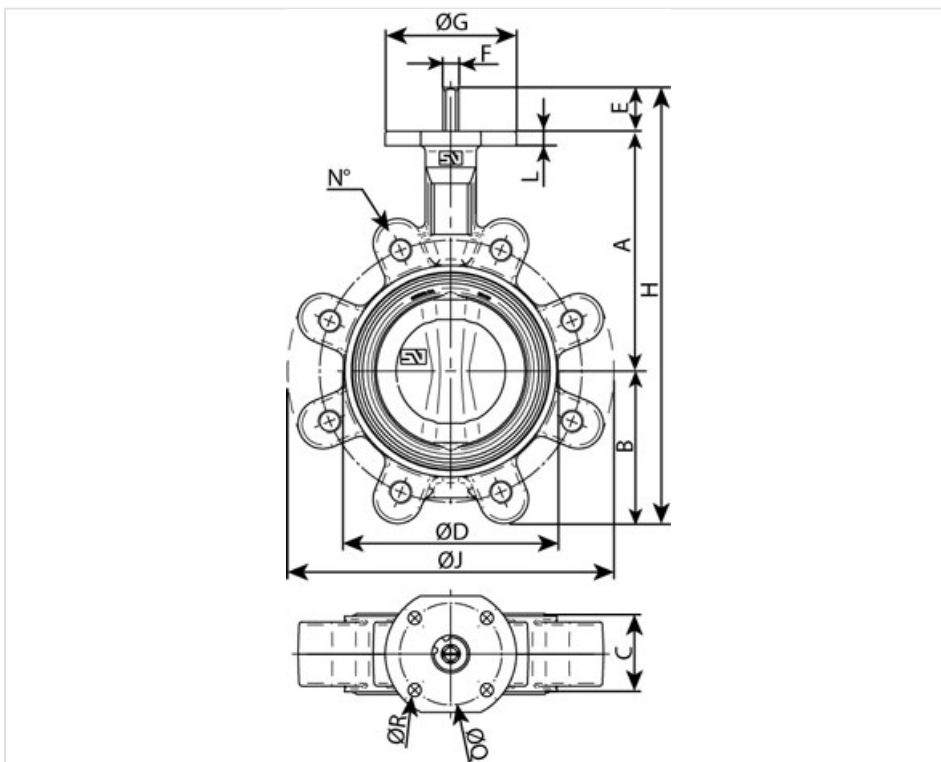
C = dimension between flanges

DN mm	DN inch	Number	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	L mm	Mass kg	Reference
40	1 ½"	4	110	54	33	76	30	11	90	194	140	10	2.0	*
50	2"	4	120	59.5	43	100	30	11	90	209.5	156	10	2.9	*
65	2 ½"	4	135	66.5	46	108	30	11	90	231.5	175	10	3.3	*
65	2 ½"	8	135	82	46	108	30	11	90	247	175	10	4.0	*
80	3"	8	141	91	52	124	30	11	90	262	194	10	4.8	*
80	3"	4	141	75	56	124	30	11	90	246	185	10	3.5	*
100	4"	8	165	105	56	147.3	30	11	90	300	224	10	6.3	*
125	5"	8	180	125	60	180	33	14	90	338	267	12	9.8	*
150	6"	8	193	136.5	68	206.5	33	14	90	362.5	292	12	10.5	*
200	8"	8	225	156	78	257	33	17	90	414	334	12	13.9	*
200	8"	12	225	171	78	257	33	17	90	429	352	12	17.5	*
250	10"	12	282.5	210	102	324	23	22	130	515.5	409	14	26.6	*
300	12"	12	308	240	114	383	23	22	130	571	480	14	39.5	*
350	14"	16	338.5	263	127	437	31	22	160	632.5	522	18	56.0	*
350	14"	12	338.5	263	154	437	31	22	160	632.5	522	18	55.5	*
400	16"	16	380	308	165	486	31	27	160	719	595	17	73.6	*
450	18"	20	380.5	340	190	538	38	36	190	758.5	633	20	103.0	*
450	18"	16	380.5	340	203	538	38	36	190	758.5	633	20	96.3	*

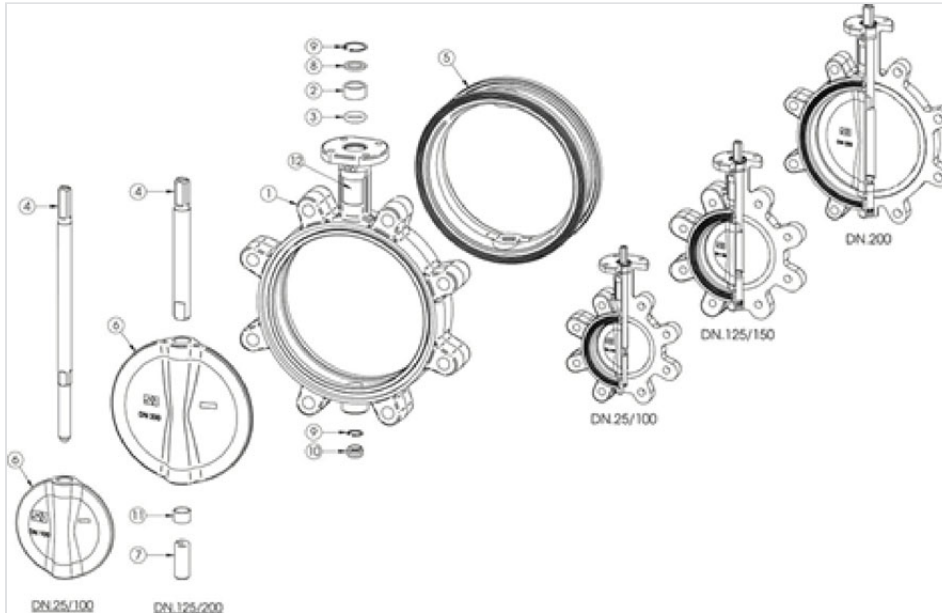
DN mm	DN inch	Number	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	L mm	Mass kg	Reference
500	20"	20	432.5	380	216	586	38	36	210	850.5	717	20	149.0	*
600	24"	20	494	440	216	690	80	60	210	1014	833	24	215.0	*
700	28"	24	590	490	254	832	106	65	300	1186	904	30	287.0	*
800	32"	24	630	565	190	902	106	80	300	1301	1020	28	406.0	*
900	36"	28	695	610	203	1010	110	80	350	1415	1120	32	519.0	*
1000	40"	28	770	675	216	1116	110	80	350	1555	1246	32	672.0	*

(\*) 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).



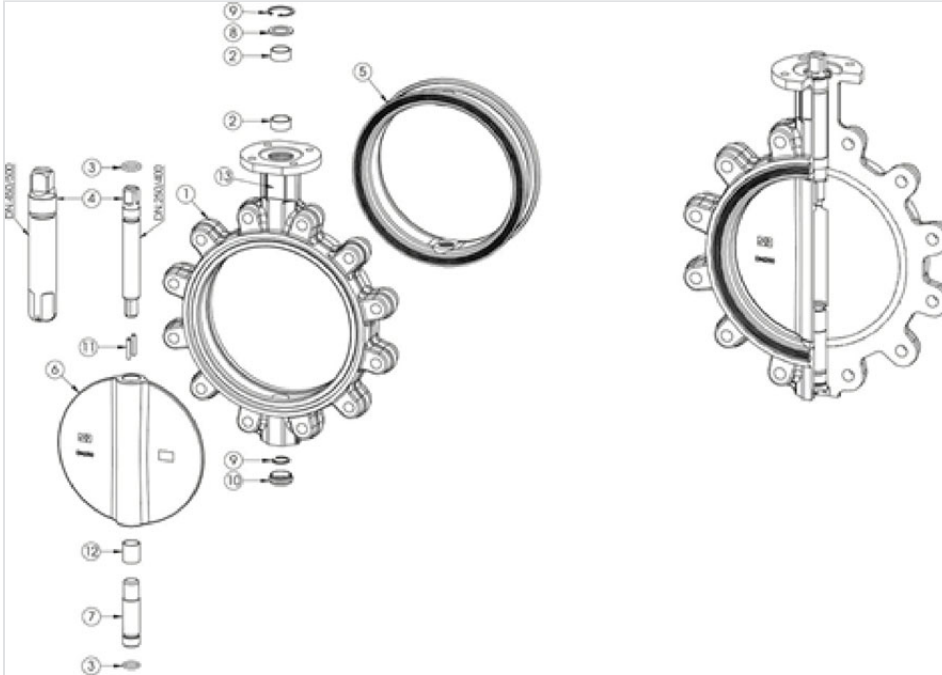
## Material and coating



### DN40-200

Item	Designation	Material	Coating
1	Valve Body	Ductile Iron EN GJS-400-5	Red Epoxy 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 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	
11	Bushing	Steel BZ	PTFE
12	Features TAG	Polyester	

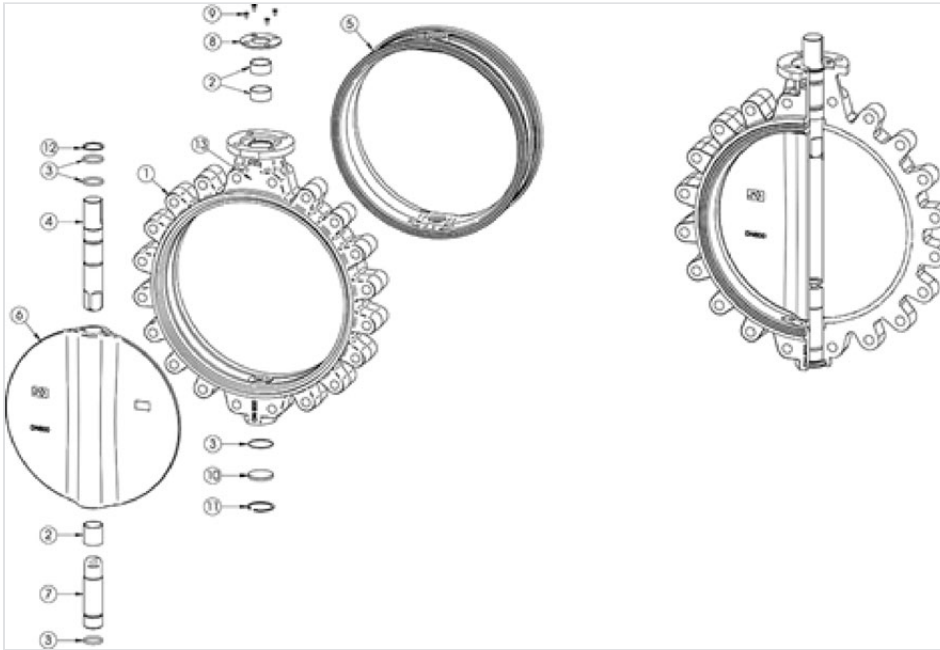
## Material and coating



DN250-500

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

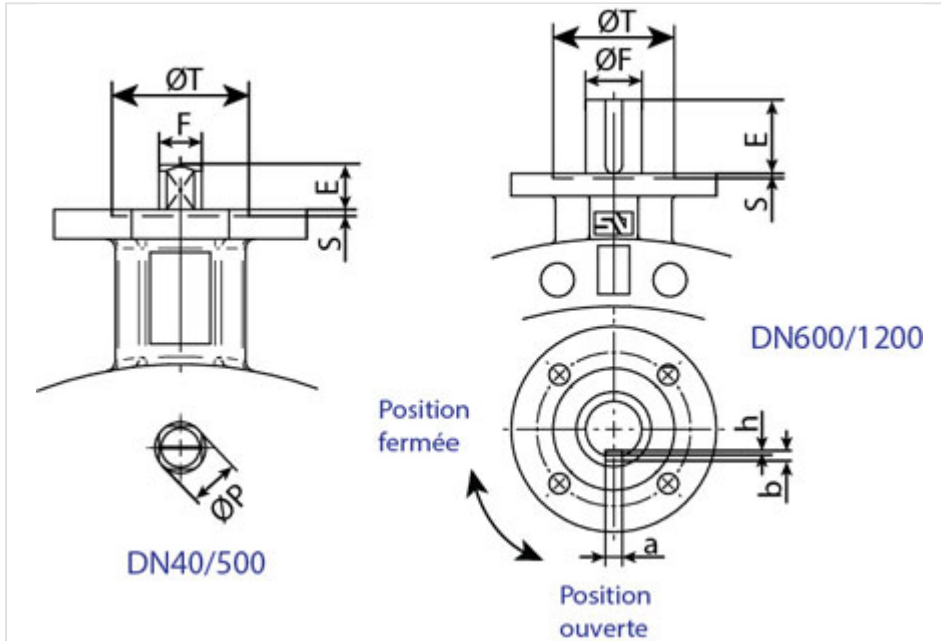
## Material and coating



### DN600-1000

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 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 472
10	Lower cover	Zinc plated steel	
11	Zegi 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	

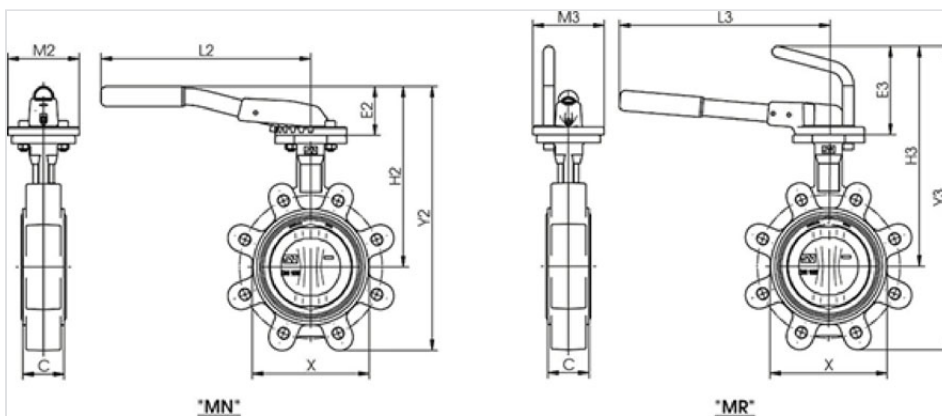
Upper flange



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				
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		

DN mm	DN inch	ISO mm	P mm	Q mm	R mm	S mm	T mm	axb mm	H mm
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

## 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.

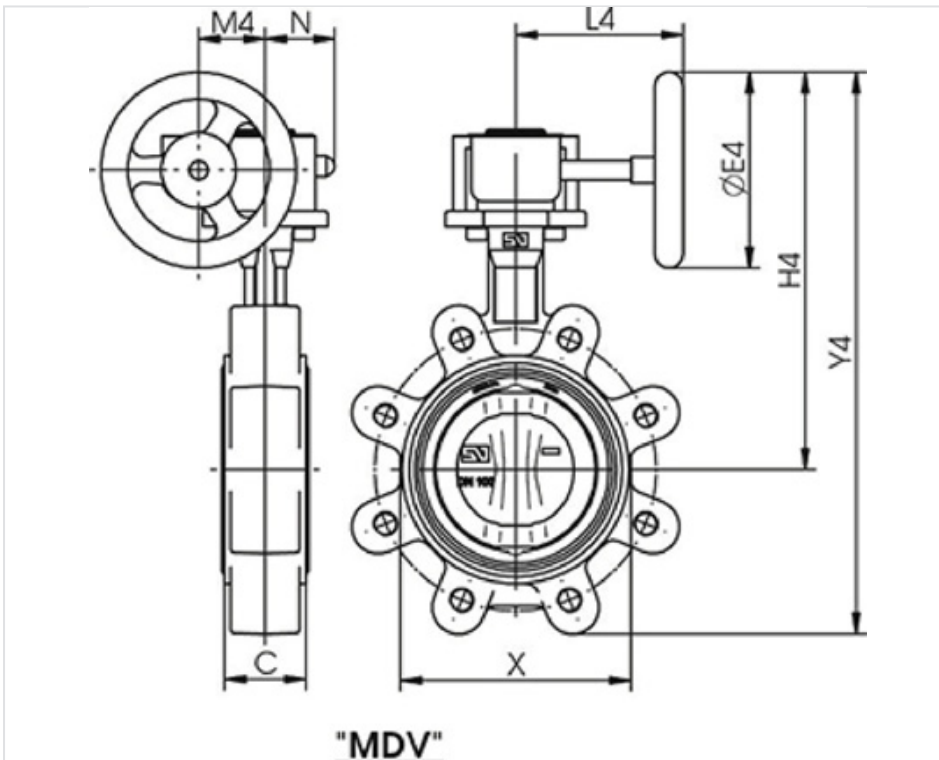
MN type is the referenced for our range of Wafer and Lug valves. The lever allows seven positions of the butterfly between 0° to 90° with anchorage by spring.

DN		Standard	Hand lever type MN								Hand lever type MR					
mm	inch		C	X	E2	H2	Y2	L2	M2	Mass	E3	H3	Y3	L3	M3	Mass
40	1 1/2"	PN.10-16-ANSI 150	33	76	49	150	213	220	90	2.4	115	225	279	260	90	2.6
50	2"	PN.10-16-ANSI 150	43	100	49	169	228	220	90	3.3	115	235	294	260	90	3.5
65*	2 1/2"	PN.10-16-ANSI 150	46	108	49	184	250	220	90	3.7	115	520	316	260	90	3.9
65	2 1/2"	PN.16-EN.1092.1	46	108	49	184	200	220	90	4.4	115	250	332	260	90	4.6
80*	3"	PN.10-16	46	124	60	201	292	260	90	5.2	115	256	347	260	90	5.3
80	3"	ANSI 150	46	124	60	201	276	260	90	3.9	115	256	331	260	90	4.0
100	4"	PN.10-16-ANSI 150	52	147	60	225	330	260	90	6.8	115	280	385	260	90	6.9

DN		Standard	Hand lever type MN								Hand lever type MR					
mm	inch		C	X	E2	H2	Y2	L2	M2	Mass	E3	H3	Y3	L3	M3	Mass
125	5"	PN.10-16-ANSI 150	56	180	75	255	380	315	90	10.3	115	295	420	310	90	10.5
150	6"	PN.10-16-ANSI 150	56	206	75	268	404	315	90	10.9	115	308	444	310	90	11.2
200*	8"	PN.10-ANSI 150	60	257	75	300	456	315	90	14.5	115	340	496	310	90	14.6
200		PN.16	60	257	75	300	471	315	90	18.1	115	340	511	310	90	18.2
250	10"	PN.10-16-ANSI 150	68	324							120	402	612	500	130	28.2
300	12"	PN.10-16-ANSI 150	78	383							120	428	668	500	130	41.2
350*	14"	PN.10-16	78	437							120	458	722	500	130	57.7
350	14"	ANSI 150	78	437							120	458	722	500	130	57.2

(\*) Reference

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



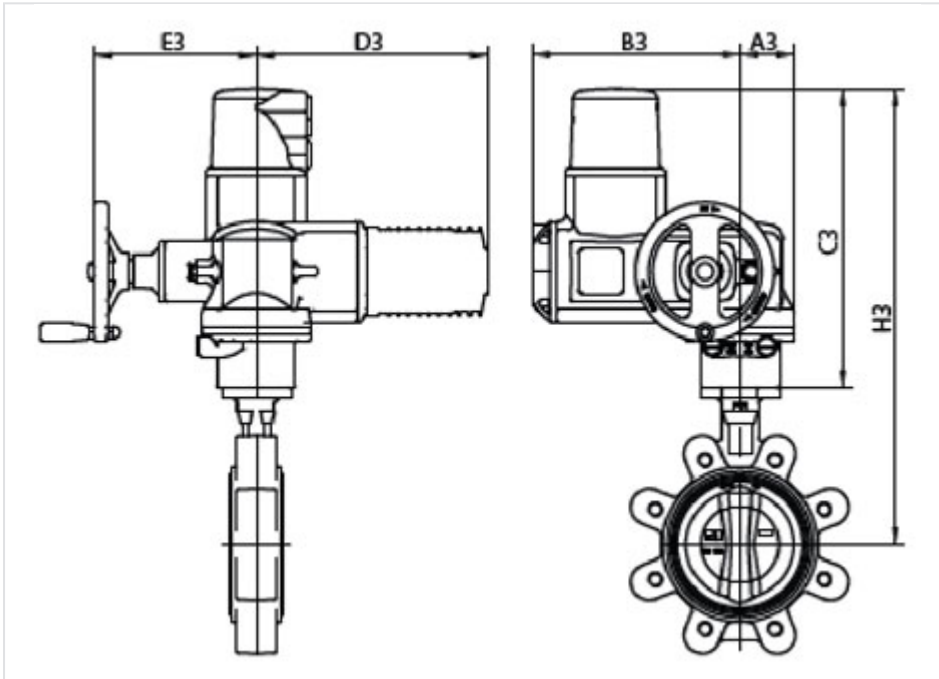
"MDV"

DN		Standard	Gearbox type MDV with handwheel									
mm	inch		C	X	Model	E4	H4	Y4	L4	M4	N	Mass
40	1 1/2"	PN.10-16-ANSI 150	33	76	0	125	198	252	128	43.5	50	3.2

DN					Gearbox type MDV with handwheel							
mm	inch	Standard	C	X	Model	E4	H4	Y4	L4	M4	N	Mass
50	2"	PN.10-16-ANSI 150	43	100	0	125	208	267	128	43.5	50	4.1
65*	2 1/2"	PN.10-16-ANSI 150	46	108	0	125	223	289	128	43.5	50	4.5
65	2 1/2"	PN.16-EN.1092.1	46	108	0	125	223	305	128	43.5	50	5.2
80*	3"	PN.10-16	46	124	0	125	229	320	128	43.5	50	5.9
80	3"	ANSI 150	46	124	0	125	229	304	128	43.5	50	4.6
100	4"	PN.10-16-ANSI 150	52	147	0	125	253	358	128	43.5	50	7.6
125	5"	PN.10-16-ANSI 150	56	180	1	160	286	411	135	43.5	50	11.2
150	6"	PN.10-16-ANSI 150	56	206	1	160	298	434	135	43.5	50	12.0
200*	8"	PN.10-ANSI 150	60	257	1A	200	355	511	152	52.5	57	16.5
200		PN.16	60	257	1A	200	355	526	152	52.5	57	20.1
250	10"	PN.10-16-ANSI 150	68	324	2	250	442	652	222	61	70	30.0
300	12"	PN.10-16-ANSI 150	78	383	2	250	468	708	222	61	70	43.0
350*	14"	PN.10-16	78	437	2	250	498	761	222	61	70	59.6
350	14"	ANSI 150	78	437	2	250	498	761	222	61	70	59.1
400	16"	PN.10-16-ANSI 150	102	486	2A	300	572	880	278	69	72.5	83.6
450*	18"	PN.10-16	114	538	3	400	630	970	321	96.5	91.5	122.0
450	18"	ANSI 150	114	538	3	400	630	970	321	96.5	91.5	115.3
500	20"	PN.10-16-ANSI 150	127	586	3	400	682	1062	321	96.5	91.5	167.0
600	24"	PN.10-16-ANSI 150	154	690	4	500	799	1239	408	137.5	140	250.0

(\*) PN10 standard

**Operation by motor type AUMA**



PFA 10 bar

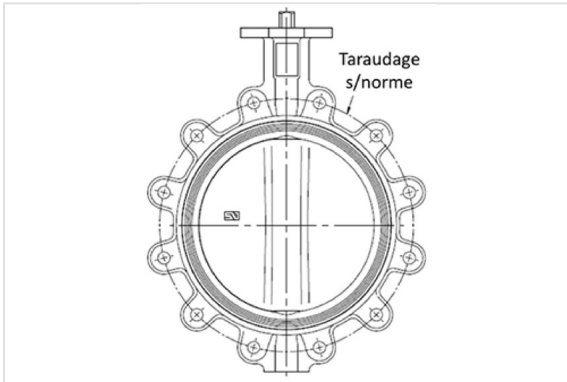
DN		Electric motor Type	A3	B3	C3	D3	E3	H3	Mass
mm	inch								
40	1½"	SQ 05.2	92	210	207	215	119	320	10.3
50	2"	SQ 05.2	92	210	207	215	119	327	10.2
65	2½"	SQ 05.2	92	210	207	215	119	342	11.6
80	3"	SQ 05.2	92	210	207	215	119	348	13.1
100	4"	SQ 05.2	92	210	207	215	119	372	14.6
125	5"	SQ 05.1	63	238	344	265	186	524	27.8
150	6"	SQ 05.1	63	238	344	265	186	537	28.5
200	8"	SQ 07.1	63	238	344	265	186	569	31.9
250	10"	SQ 10.1	80	248	361	265	191	643.5	50.6
300	12"	SQ 10.1	80	248	361	265	191	669	63.5
350	14"	SQ 10.1	80	248	361	265	191	699.5	80.0
400	16"	SQ 12.1	105	248	385	265	191	765	102.6
450	18"	GS100.3/VZ4.3 SA07.2	112.5	255	447	265	216	827.5	170.0
500	20"	GS100.3/VZ4.3 SA07.2	112.5	255	447	265	216	879.5	216.0

DN		Electric motor							
mm	inch	Type	A3	B3	C3	D3	E3	H3	Mass
600	24"	GS100.3/VZ4.3 SA07.6	547	189	313	164	287	807	291.0
700	28"	GS125.3/VZ4.3 SA10.2	554	194	323	158	316	913	376.0
800	32"	GS125.3/VZ4.3 SA10.2	554	194	323	158	316	953	491.0
1000	40"	GS160.3/GZ160.3(8:1) SA10.2	630	290	323	165	351	1093	798.0

### PFA 16 bar

DN		Electric motor							
mm	inch	Type	A3	B3	C3	D3	E3	H3	Mass
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	37.0
250	10"	SQ 10.1	80	248	361	265	191	643.5	54.1
300	12"	SQ 10.1	80	248	361	265	191	669	66.5
350	14"	SQ 10.1	105	248	385	265	191	723.5	88.0
400	16"	SQ 12.1	105	248	385	265	191	765	106.0
450	18"	GS100.3/VZ4.3 SA07.2	112.5	255	447	265	216	827.5	146.0
500	20"	GS100.3/VZ4.3 SA07.2	112.5	255	447	265	216	879.5	192.0
600	24"	GS100.3/VZ4.3 SA07.6	547	189	313	164	287	807	275.0
700	28"	GS125.3/VZ4.3 SA10.2	554	194	323	158	316	913	360.0
800	32"	GS160.3/GZ160.3(8:1) SA10.2	630	290	323	165	351	953	521.0
1000	40"	GS200.3/GZ200.3(8:1) SA10.2	760	366	338	208	391	1108	869.0

**Assembling main dimensions**

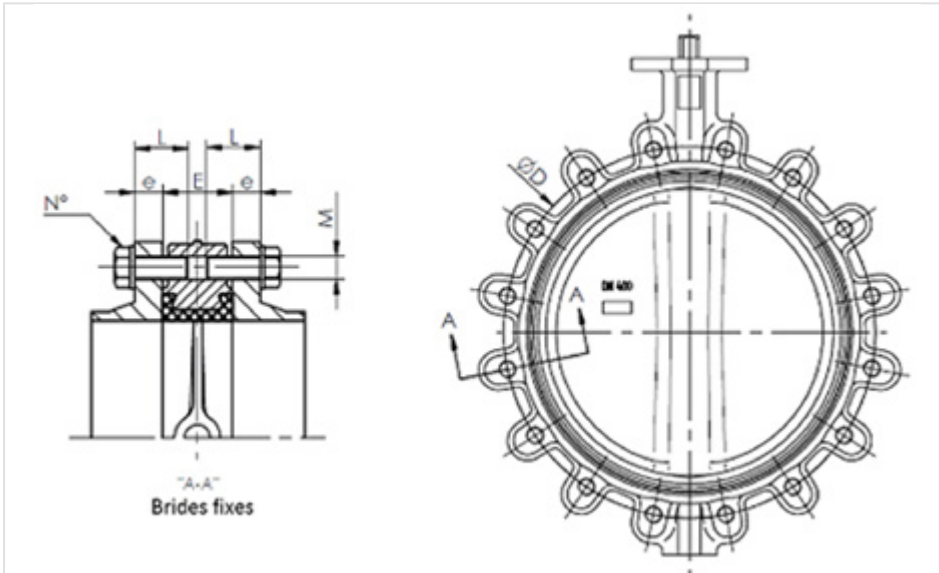


Threaded holes for the assembly between flanges will be:

- metric thread for standard type PN
- whitworth thread for standard type ANSI 150 Other thread on request.

DN	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
PN6	X	X	X	X	X	X	0	X	X	X	X	X	X	X	X	0	0
PN10	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
PN20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANSI 150 Lbs	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
AWWA	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X
BS. cv_D	X	X	X	X	X	X	0	X	X	X	0	X	X	0	0	0	0
BS. E	X	X	X	X	X	X	X	X	X	X	X	X	X	0	X	0	0
JIS 5k	X	X	X	N	X	X	X	X	X	X	X	X	0	X	X	X	X
JIS 10k	X	X	X	X	X	X	X	X	X	X	X	0	X	X	X	X	0
JIS 16k	X	X	X	0	0	X	X	X	0	X	0	0	X	X	0	X	0
AS 2129 E	X	X	X	X	X	X	X	X	X	X	X	X	X	0	X	0	0

**Screwing - Main dimensions**



For fixed flange

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	30	8	110	16	M16	30	8	98.4	17.5	W 1/2"	30	8
50	43	125	18	M16	35	8	125	18	M16	35	8	120.6	19.0	W 5/8"	35	8
65	46	145	18	M16	40	8	145	18	M16	40	8	139.7	22.2	W 5/8"	45	8
80	46	160	20	M16	40	16	160	20	M16	40	16	152.4	23.8	W 5/8"	45	8
100	52	180	20	M16	45	16	180	20	M16	45	16	190.5	23.8	W 5/8"	45	16
125	56	210	22	M16	50	16	210	22	M16	50	16	215.9	23.8	W 3/4"	50	16
150	56	240	22	M20	50	16	240	22	M20	50	16	241.3	25.4	W 3/4"	50	16
200	60	295	24	M20	50	16	295	24	M20	50	24	298.5	28.6	W 3/4"	55	16
250	68	350	26	M20	60	24	355	26	M24	60	24	361.9	30.2	W 7/8"	60	24
300	78	400	26	M20	65	24	410	28	M24	65	24	431.8	31.7	W 7/8"	70	24
350	78	460	26	M20	65	32	470	30	M24	65	32	476.2	34.9	W 1"	70	24
400	102	515	26	M24	75	32	525	32	M27	80	32	539.7	36.5	W 1"	85	32
450	114	565	26	M24	75	32	585	32	M27	80	32	577.8	39.5	W1.1/8"	85	32
450	114	-	-	M24	60	8	-	-	M27	60	8	-	-	-	-	-
500	127	620	28	M24	90	40	650	34	M30	65	40	635.0	46.0	W1.1/8"	105	40
600	154	725	28	M27	100	40	770	36	M33	110	40	749.3	47.6	W1.1/4"	120	40

Threaded holes for the assembly between flanges will be:

- metric thread for standard type PN
- whitworth thread for standard type ANSI 150

Other thread on request.

### Screw for fixed flange and mobile flange

The table below presents the name and the type of screws to use depending on the type of flange. SGPAM works with two types of flanges: fix and mobile.

The number of screws is given by flange unit, so to set the total number of screws is the sum of the two flanges. The information in the table is given for a single flange.

Three cases must be considered:

- Two fix flanges
- Two adjustable clamps
- One flange fix and one adjustable

DN	PN	One fix flange		One rotatable flange	
		Type of screw	Number of screw	Type of screw	Number of screw
40	10-16	M16x35	4	M16x35	4
50	10-16	M16x40	4	M16x40	4
60	10-16	M16x40	4	M16x45	4
65	10-16	M16x40	4	M16x45	4
80	10-16	M16x40	8	M16x45	8
100	10-16	M16x45	8	M16x45	8
125	10-16	M16x45	8	M16x45	8
150	10-16	M20x45	8	M20x50	8
200	10	M20x50	8	M20x50	8
200	16	M20x50	12	M20x50	12
250	10	M20x50	12	M20x60	12
250	16	M24x50	12	M24x60	12
300	10	M20x50	12	M20x70	12
300	16	M24x50	12	M24x70	12
350	10	M20x50	16	M20x70	16
350	16	M24x60	16	M24x70	16
400	10	M24x60	16	M24x70	16
400	16	M27x80	16	M27x90	16
450	10	M24x60	20	M24x90	20
450	16	M27x80	20	M27x90	20

DN	PN	One fix flange		One rotatable flange	
		Type of screw	Number of screw	Type of screw	Number of screw
500	10	M24x60	20	M24x90	20
500	16	M30x80	20	M30x90	20
600	10	M27x80	20	M27x110	20
600	16	M33x80	20	M33x110	20

## Packing

DN mm	Valves with hand lever per crate LUG S20	Crate dimensions
32	150	1200 x 800 x800
40	150	
50	140	
65	120	
80	110	
100	100	
125	70	
150	70	
200	50	
250	14	
300	14	

DN mm	Valves with gearbox per crate LUG S20	Crate dimensions
32	95	1200 x 800 x800
40	95	
50	100	
65	90	
80	90	
100	80	
125	55	
150	55	
200	35	
250	14	
300	14	

DN mm	Valves with gearbox per crate	
	LUG S20	Crate dimensions
350	14	
400	10	
450	5	900 x 750 x750
500	5	
600	4	1150 x 900 x 900
700	3	1200 x 1100 x 700
800	2	1500 x 1200 x 650
900	2	1500 x 1200 x 650
1000	1	1600 x 1350 x 400

## 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 valves 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
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
1400	5680	8568	15256	28950	45685	85700	145800	170500
1500	5680	9755	18850	34230	54560	101675	176450	195400
1500	5680	10952	20568	37850	59452	110325	198450	220350

## Mechanical characteristics

### Operating 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																		
	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
3	5	5	15	17	2	39	48	90	126	161	245	520	590	840	1000	1650	2300	4700	6500

bar	DN																		
	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000
6	6	7	16	20	29	46	75	120	210	270	300	624	1120	1390	2200	3300	4600	6800	8500
10	9	13	20	23	42	72	90	140	270	390	500	897	1450	1800	3450	5000	6500	8500	11500
16	15	17	25	28	50	85	110	215	350	560	950	1400	1950	2500	3800	5860	9500	11500	15000

*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.*