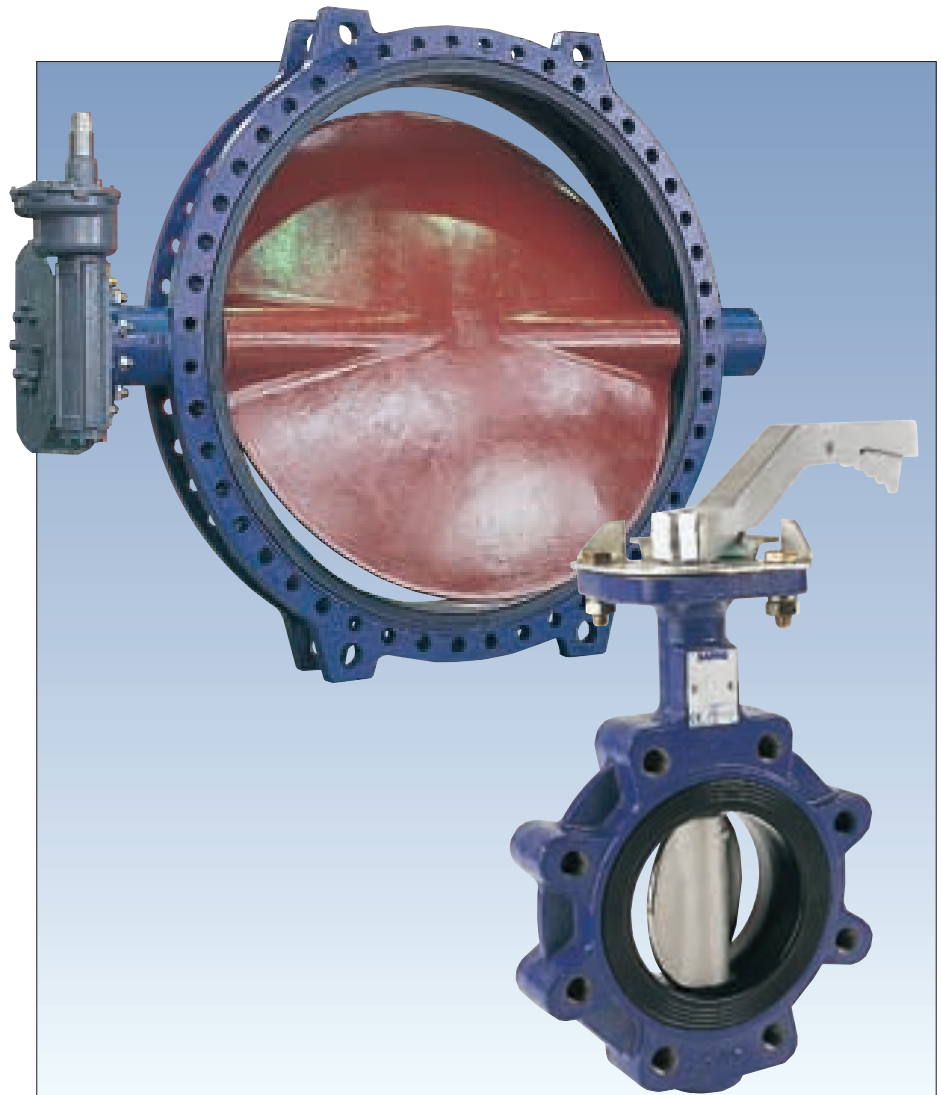




## The multi-purpose industrial butterfly valve.

### Features and Benefits

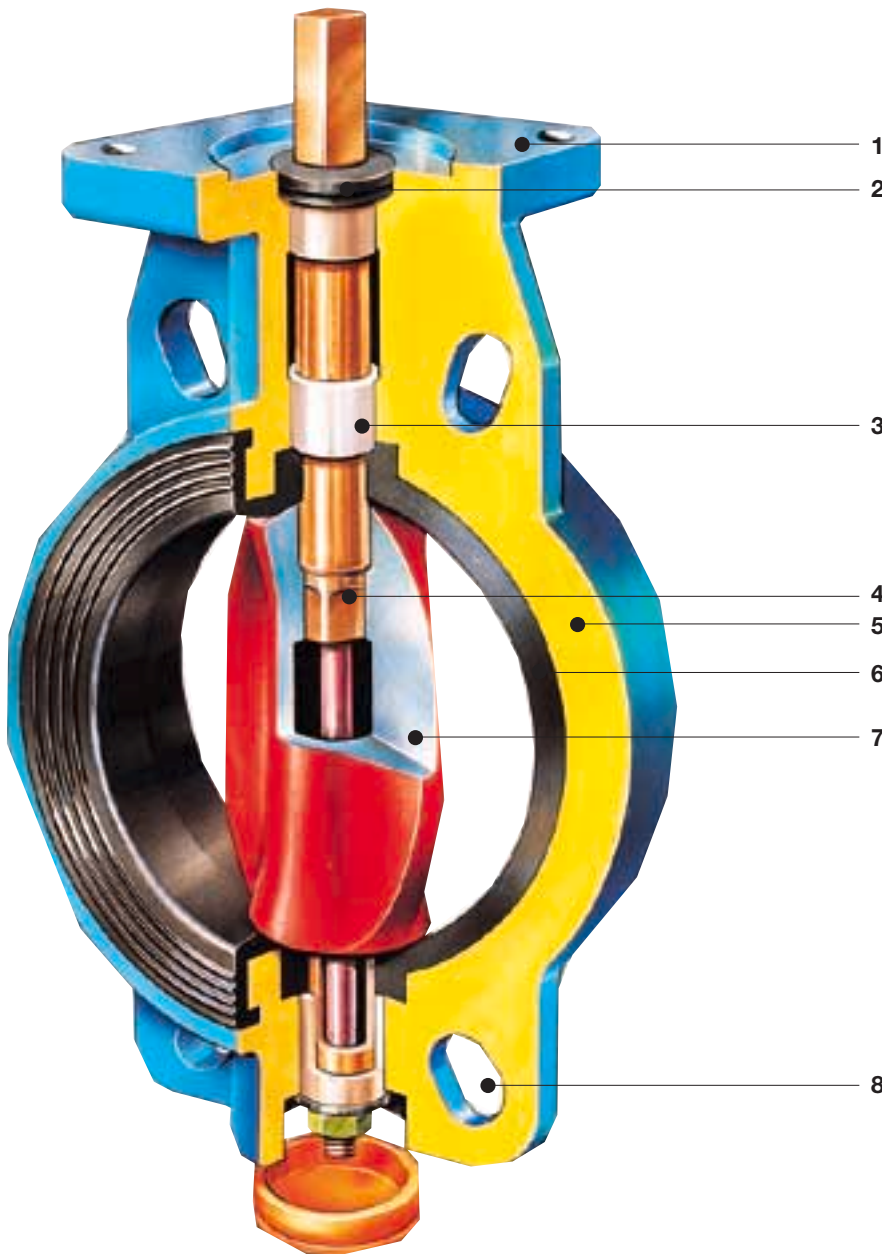
- Due to its robust design, the JMC is a PN25 rated butterfly valve.
- Top flange standardized to adapt any type of actuator, conform to ISO 5211 standard.
- Chevron seal made in nitrile, avoiding atmospheric contamination.
- Self lubricating bearings made of PTFE reinforced on a metallic support. These bearings provide a true shaft guide and ensure absolute shaft rigidity during operation.
- Shaft inside the disc, it is completely insulated from the liquid being conveyed.
- Standard ductile iron body, providing higher mechanical properties.
- Removable elastomer seat, completely covering the inside of the body.
- Lenticular shape disc, improving the flow capacity. It has no internal attachments or pins to avoid corrosion and internal leakage. The centered disc allows bi-directional shut-off.
- Centering lugs enable the disassembly of the downstream pipeline, and maintenance of the valve at the end of the pipe. The full lugged type ensures the mounting at the end of the pipe under maximum pressure.
- All valves are in accordance with international standards such as ATEX, PED and TPED.



### Applications

- General utilities
- Water treatment and distribution
- Cement plants
- Mechanical engineering
- Mining industries
- Steel and aluminium plants
- Food industries
- Sugar refineries
- Shipbuilding and offshore
- Pulp and paper mills
- Automotive industries
- Chemical - Petrochemical
- Power generation
- Heating, Ventilating and Air conditioning

- Gas process
- Fire protection systems
- Agriculture - Irrigation
- Bulk handling fluids



**1. Top flange**

Conform to ISO 5211 standard, with integrated recess for accurate actuator installation.

**2. Chevron Seal**

This uniquely shaped shaft seal prevents environmental pollution to penetrate to the internals of the valve.

**3. Bearings**

Guarantees perfect shaft stability under all pressure conditions.

**4. Shaft**

The dry shaft design ensures long term, corrosion free, performance.

**5. Body**

Ductile iron, as standard, providing higher mechanical properties.

**6. Seat**

Its unique design results in trouble free installation, and perfect performance in both high pressure as well as vacuum applications.

**7. Disc**

Its smooth profile is extremely suitable for abrasive and hygienic applications.

**8. Lugs**

Enable easy and accurate installation. In addition these lugs ensure bidirectional dead end service. Full threaded lugs are also available for end of line service.

The Sapag plant is ISO 9001 approved



The JMC is in compliance with the latest European directives:

- PED module H, category 3

- TPED module H, category 2

- ATEX :

II 2 G/D EEx c



The JMC range holds the following approvals and certificates:

**Water:**



**ACS**



**WRAS**



**PSB**  
Corporation

**Gas:**



**Marine:**



**Fire protection:**



**ETPSAU**

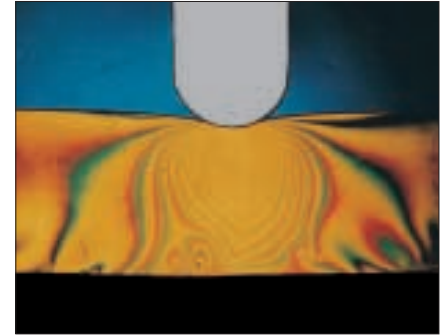


## The thickness provided in the middle of the seat:

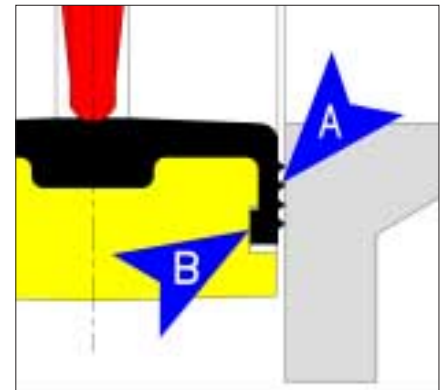
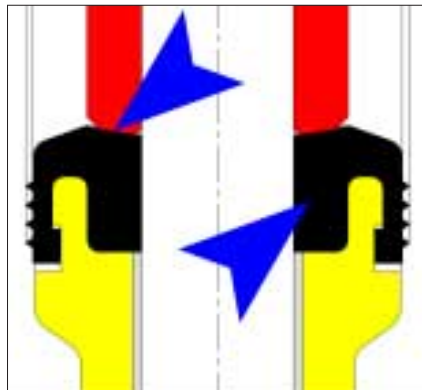
- ensures accurate and mechanical anchorage of the seat,
- ensures excellent endurance and better ageing behavior,
- avoids excessive stresses when the disc is operated
- offers a significant range of angular tightness ( $\pm 5^\circ$ ),
- exhibits a constant geometry of the disc/seat tightness.



JMC butterfly valve



Conventional butterfly valve



## At the shaft and spindle, the elastomeric journals of the seat guarantee tightness:

- on the inside/outside of the valve at the shaft and spindle,
- upstream/downstream, in the area of both shaft and spindle.

It should be noted that the shape of the seat at the shaft passage is spherical, ensuring continuous tightness.

- Ⓐ Concentric grooves on the sides of the seat to ensure tightness on the point of all usual flanges.
- Ⓑ An elastomeric o-ring, encased, ensures complementary tightness and facilitates easy and trouble-free valve installation.

## Face to face

Dimensions conforming to:

EN 558, API 609, MSS SP67, ISO 5752-20, BS 5155, DIN3202-K1, NF E 29305-20.

## Flange standards

ANSI B16.5 class 150, BS 4504, BS 10 Table E, EN 1092, ISO 2084, DIN 2501, MSS SP 44, JIS B 2210, NFE 29203, AWWA C207.

### Flow coefficients ( $K_V$ and $C_V$ )

$K_V$  is the flow in m<sup>3</sup>/h of water, at an average temperature of 20°C, crossing the valve with creating a headloss of 1 bar.

$$C_V = 1.16 K_V$$

### Simplified formula

Headloss	$K_V$	Non compressible fluids	Gas
$\Delta p < \frac{P_1}{2}$	$K_V$	$= \frac{Q}{31,6} \sqrt{\frac{\rho_1}{\Delta p}}$	$= \frac{Q_N}{514} \sqrt{\frac{\rho_N \cdot T}{\Delta p \cdot P_2}}$
$\left( P_2 > \frac{P_1}{2} \right)$			
$\Delta p > \frac{P_1}{2}$			
$\left( P_2 < \frac{P_1}{2} \right)$			

### Definitions

- $K_V$  : Flow coefficient of the valve
- Q : Flow in m<sup>3</sup>/h
- $\Delta p$  : Headloss in the valve in bar
- $P_1$  : Upstream pressure in bar
- $P_2$  : Downstream pressure in bar
- $Q_N$  : Flow in normal conditions (0°C, 760 mm Hg) in m<sup>3</sup>/h
- T : Temperature of the fluid in °K
- $\rho_1$  : Volumic weight of the fluid in kg/m<sup>3</sup>
- $\rho_N$  : Volumic weight in normal conditions

### $K_V$ values

DN (mm)	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	650	700	750
size (inch)	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"
20°	3	6	10	13	30	45	68	128	197	265	345	449	566	694	828	982	1 161	1 358
30°	9	17	26	37	60	90	162	257	394	531	690	899	1 131	1 395	1 656	1 954	2 323	2 715
40°	21	40	63	86	150	225	270	429	661	880	1 134	1 498	1 881	2 305	2 750	3 275	3 850	4 538
50°	39	73	115	152	249	375	486	772	1 183	1 595	2 070	2 697	3 395	4 164	4 969	5 882	6 969	8 168
60°	65	124	195	268	439	660	756	1 201	1 841	2 479	3 218	4 195	5 280	6 527	7 730	9 207	10 813	12 703
70°	93	178	280	457	747	1 123	1 431	2 273	3 486	4 692	6 096	7 942	9 997	12 396	14 630	17 398	20 515	24 049
80°	105	201	316	573	927	1 393	2 457	3 904	5 985	8 057	10 465	13 636	17 160	21 050	25 124	30 023	35 233	41 290
90°	110	210	330	610	1 000	1 500	2 700	4 300	6 600	8 900	11 500	15 000	18 800	22 767	27 600	32 733	38 600	45 400

DN (mm)	800	850	900	1 000	1 050	1 100	1 200	1 300	1 350	1 400	1 500	1 600	1 650	1 800	2 000	2 100	2 200	2 400
size (inch)	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	66"	72"	80"	84"	88"	96"
20°	1 540	1 750	1 970	2 460	2 847	3 093	3 722	4 099	4 520	4 940	5 504	6 452	6 654	8 165	10 080	11 113	12 197	14 515
30°	3 080	3 500	3 940	4 910	5 684	6 186	7 428	7 613	8 335	9 056	10 287	11 828	12 198	14 969	18 480	20 374	22 361	26 611
40°	5 148	5 812	6 570	8 190	9 482	10 310	12 390	14 202	15 539	16 876	19 190	22 042	22 731	27 897	34 440	37 970	41 672	49 594
50°	9 266	10 511	11 800	14 740	17 063	18 558	22 300	25 770	28 074	30 377	34 818	39 676	40 916	50 213	61 992	68 346	75 010	89 268
60°	14 410	16 244	18 370	22 940	26 556	28 868	34 703	40 016	43 364	47 252	54 067	61 717	63 646	78 110	96 432	106 316	116 683	138 862
70°	27 280	31 045	34 770	43 400	50 241	54 643	65 657	75 640	82 389	89 318	102 198	116 660	120 306	147 647	182 280	200 964	220 559	262 483
80°	46 838	52 712	59 630	74 450	86 186	93 718	112 630	129 815	141 548	153 280	175 396	200 203	206 459	253 381	312 816	344 879	378 507	450 455
90°	51 500	58 777	65 600	81 900	94 809	103 100	123 900	146 240	159 556	172 872	197 830	225 792	232 848	292 572	361 200	398 223	437 052	520 128

### Headloss coefficient ( $K_\alpha$ )

For liquid, the formula of the headloss with a disc opening angle  $\alpha$  is:

$$\Delta P_\alpha = \frac{\rho}{10\,000} K_\alpha \frac{V_\alpha^2}{2g}$$

In the case of water the formula is simplified

$$\Delta H_\alpha = K_\alpha \frac{V_\alpha^2}{2g}$$

### Definitions

- $K_\alpha$  is the headloss coefficient according to the angle to opening in which:
- $\Delta P_\alpha$  : Headloss in a valve opened to an angle  $\alpha$  expressed in bar
- $V_\alpha$  : Velocity of the fluid in a pipeline of diameter equal to the one of the valve expressed in m/s when the valve is opened to an angle  $\alpha$ .
- g : Acceleration of gravity in m/s<sup>2</sup>
- $K_\alpha$  : Headloss according to the angle to opening. Results in the table
- $\rho$  : Volumic weight of the fluid (kg/m<sup>3</sup>)
- $\Delta H_\alpha$  : Headloss on the valve opened to an angle  $\alpha$  expressed in meters of water columns.

### $K_\alpha$ values

DN (mm)	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	650	700	750
size (inch)	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"
20°	1 089	778	642	928	425	392	543	374	327	335	337	319	306	298	297	290	279	269
30°	121	97	95	115	106	98	96	93	82	83	84	80	77	74	74	73	70	67
40°	22	17	16	21	17	16	34	33	29	30	31	29	28	27	27	26	25	24
50°	6.4	5.3	4.9	6.8	6.2	5.6	10.6	10.3	9.1	9.3	9.4	8.8	8.5	8.3	8.2	8.1	7.8	7.4
60°	2.3	1.8	1.7	2.2	2.0	1.8	4.4	4.2	3.7	3.8	3.9	3.7	3.5	3.4	3.4	3.3	3.2	3.1
70°	1.13	0.88	0.82	0.75	0.69	0.63	1.23	1.19	1.05	1.07	1.08	1.02	0.98	0.93	0.95	0.92	0.89	0.86
80°	0.89	0.69	0.64	0.48	0.45	0.41	0.42	0.4	0.35	0.36	0.37	0.35	0.33	0.32	0.2	0.31	0.3	0.29
90°	0.81	0.63	0.59	0.42	0.38	0.35	0.34	0.33	0.29	0.3	0.3	0.29	0.28	0.28	0.27	0.26	0.25	0.24

DN (mm)	800	850	900	1000	1050	1100	1200	1300	1350	1400	1500	1600	1650	1800	2000	2100	2200	2400
size (inch)	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	66"	72"	80"	84"	88"	96"
20°	271	267	265	259	235	240	235	267	255	247	262	247	263	247	247	247	247	247
30°	68	67	66	65	59	60	59	77	75	73	75	73	78	73	73	73	73	73
40°	24	24	24	23	21	22	21	22	22	21	22	21	22	21	21	21	21	21
50°	7.5	7.4	7.4	7.2	6.5	6.7	6.5	6.7	6.6	6.5	6.5	6.5	6.9	6.5	6.5	6.5	6.5	6.5
60°	3.1	3.1	3	3	2.7	2.8	2.7	2.8	2.8	2.7	2.7	2.7	2.9	2.7	2.7	2.7	2.7	2.7
70°	0.86	0.85	0.85	0.83	0.76	0.77	0.75	0.78	0.77	0.76	0.76	0.76	0.8	0.76	0.76	0.76	0.76	0.76
80°	0.29	0.29	0.29	0.28	0.26	0.26	0.26	0.27	0.26	0.26	0.26	0.26	0.27	0.26	0.26	0.26	0.26	0.26
90°	0.24	0.24	0.24	0.23	0.21	0.22	0.21	0.21	0.2	0.2	0.2	0.2	0.21	0.19	0.19	0.19	0.19	0.19

### Maximum allowable torques in Nm for standard shaft material (13% Cr)

DN (mm)	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	650	700	750
Size (inch)	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"
<b>13% Cr</b>	122	122	122	297	297	743	743	2 128	2 128	4 000	4 000	8 693	16 000	16 000	16 000	41 300	41 300	41 300
DN (mm)	800	850	900	1 000	1 050	1 100	1 200	1 300	1 350	1 400	1 500	1 600	1 650	1 800	2 000	2 100	2 200	2 400
Size (inch)	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	66"	72"	80"	84"	88"	96"
<b>13% Cr</b>	41 300	83 210	83 210	83 210	96 830	96 830	96 830	96 830	96 830	96 830	96 830	96 830	206 140	206 140	318 650	318 650	318 650	318 650

### Notes

1. The given maximum allowable torques are applicable for standard type valves.

### Actuator sizing torques in Nm

DN (mm)	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	650	700	750
Size (inch)	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"
<b>At full rating</b>	15	26	40	68	115	170	320	480	720	950	1 350	1 700	2 300	2 750	3 200	3 800	4 500	5 200
<b>At 10 bar (1)</b>	10	17	26	44	75	110	208	312	468	660	900	1 130	1 530	1 840	2 130	2 530	3 000	3 800
DN (mm)	800	850	900	1 000	1 050	1 100	1 200	1 300	1 350	1 400	1 500	1 600	1 650	1 800	2 000	2 100	2 200	2 400
Size (inch)	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	66"	72"	80"	84"	88"	96"
<b>At full rating</b>	6 000	6 900	8 000	10 500	11 000	12 000	15 000	22 500	27 000	31 000	38 000	46 000	50 000	65 000	85 000	95 000	105 000	125 000
<b>At 10 bar (1)</b>	4 000	4 600	5 300	7 000	-	-	-	-	-	-	-	-	-	-	-	-	-	-


### Notes


- Torques valid for fresh water at ambient temperature. Please specify differential pressure at ordering.
- Valve torque at lower pressure ratings (1) is reduced in function of disc closing angle being above 0°.
- 1 bar = 14.6 Psi.

**SAPAG**  
 JMC 31100C DN350  
 10bar -10°C/100°C

○ JS 1030 ○  
 PN16

02 / 100000

Cat.III  Cat.3

 0038  
 MADE IN FRANCE

II 2 G D EEx c  
 03ATEXTUV02X

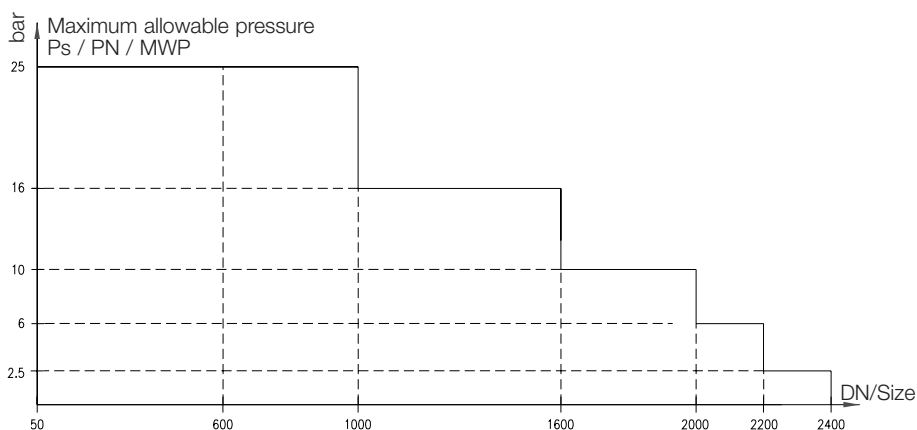
Example identification



## Seats characteristics

Seat materials	Range of temperature				Resistance against ageing (storage)			
	Minimum	Maximum	Minimum	Maximum	Air	Light	Ozone	Heat
EPDM	-15°C	+130°C	+15°F	+266°F	E	E	E	E
White EPDM	-15°C	+130°C	+15°F	+266°F	E	E	E	E
EPDM-S	-15°C	+80°C	+15°F	+176°F	E	E	E	G
Nitrile	-15°C	+80°C	+15°F	+176°F	G	M	N	G
Nitrile DIN	-15°C	+80°C	+15°F	+176°F	G	M	N	G
Carboxyted nitrile	-15°C	+60°C	+15°F	+140°F	G	M	N	G
Fluorated elastomer	-15°C	+160°C	+15°F	+284°F	E	E	E	E
Hypalon®	-15°C	+80°C	+15°F	+176°F	E	E	E	G
Therban®	-15°C	+140°C	+15°F	+284°F	M	M	G	E
Silicone	-40°C	+200°C	-40°F	+356°F	E	E	E	E

E = excellent      G = good  
M = mediocre      N = null



### Note

Vacuum : 1 Torr

### Factory tests

Every JMC valve undergoes hydraulic tests, as per ISO 5208 Standard:

1. For tightness at 1.1. x rating
  2. For body strength at 1.5 x rating
- Other specific tests on request.

Available for any disc in Stainless Steel, Aluminium Bronze and Ductile Iron with Epoxy, Rilsan and Halar coating.

For any other temperature, check behaviors of material according to datasheets.

## Selection table for seat and disc materials

Typical fluids	Suitable seat										Suitable disc												
	EPDM	White EPDM	EPDM-S	Nitrile	Nitrile DIN	Carboxyted Nitrile	Fluorated elastomer	Hypalon®	Therban®	Silicone	Ductile iron + Epoxy	Ductile iron + Rilsan®	Ductile iron + EPDM	Ductile iron + Nitrile	Ductile iron + Natural rubber	Ductile iron + Ebonite	Ductile iron + Halar®	Carbon steel	Stainless steel	Aluminium Bronze	Brass	Uranus B6®	Monel 400®
Cold water	•		•	•	•				•	•	•	•		•	•			•	•	•	•		
Hot water	•						•		•	•	•	•							•	•	•	•	
Demineralized water	•																		•	•	•	•	
Sea water	•		•	•	•								•	•		•			•	•	•	•	•
Drinking water	•		•	•	•							•							•	•	•	•	
Waste water	•		•	•	•							•							•	•	•	•	
Air - Heating - HVAC	•								•			•							•	•	•	•	
Bulkhandling (pneumatic transport)						•								•									
Foodstuff	•	•		•				•		•									•	•	•	•	
Sugar process			•																				
Sulfuric and chlorydric acids	•						•	•									•					•	
Mineral oil				•	•		•		•		•								•	•	•	•	
Petroleum products				•	•				•		•								•	•	•	•	
Natural Gas					•					•	•								•	•	•	•	•

### Note

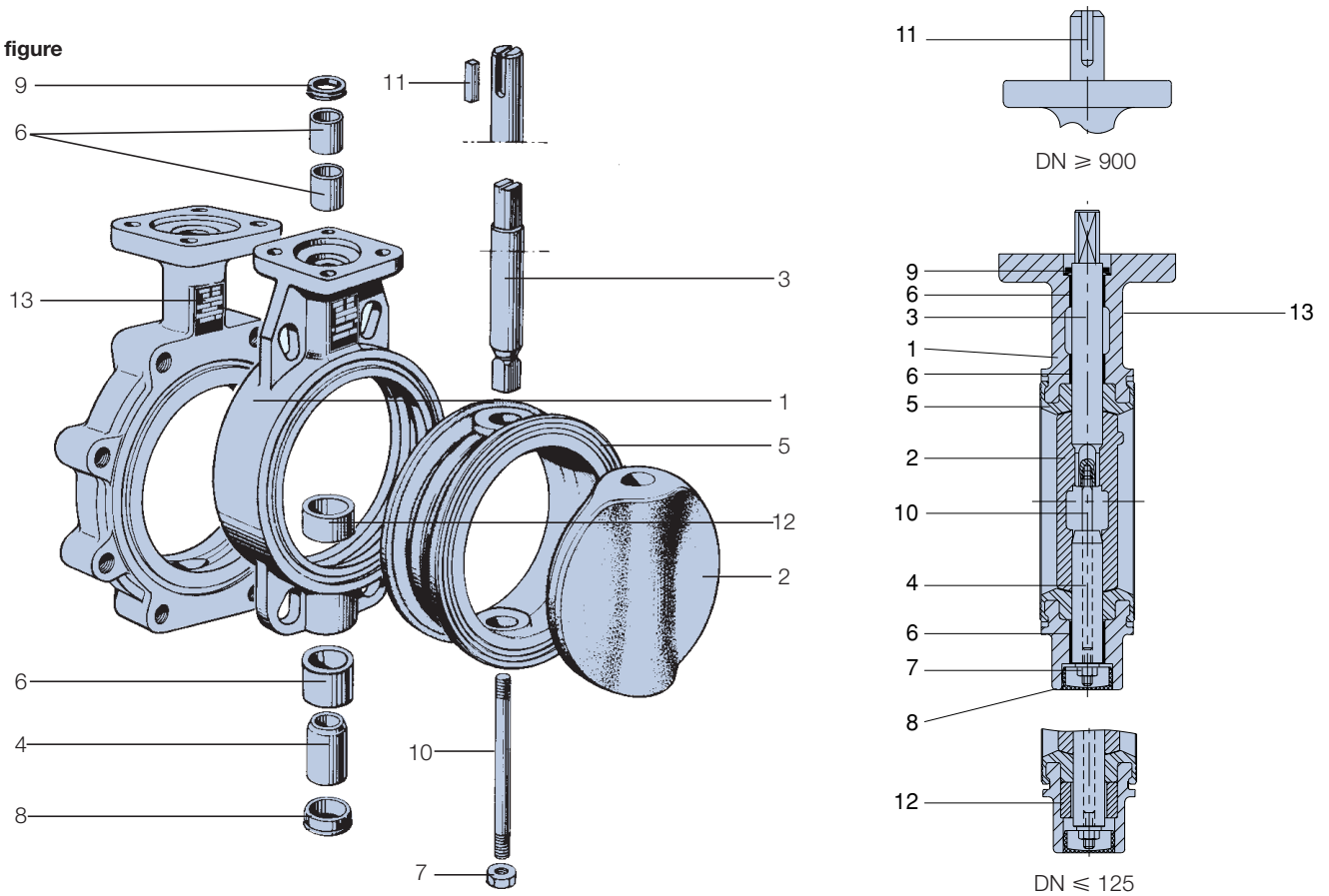
Data are given as a guide. Please check with the factory for confirmation.

• Possible

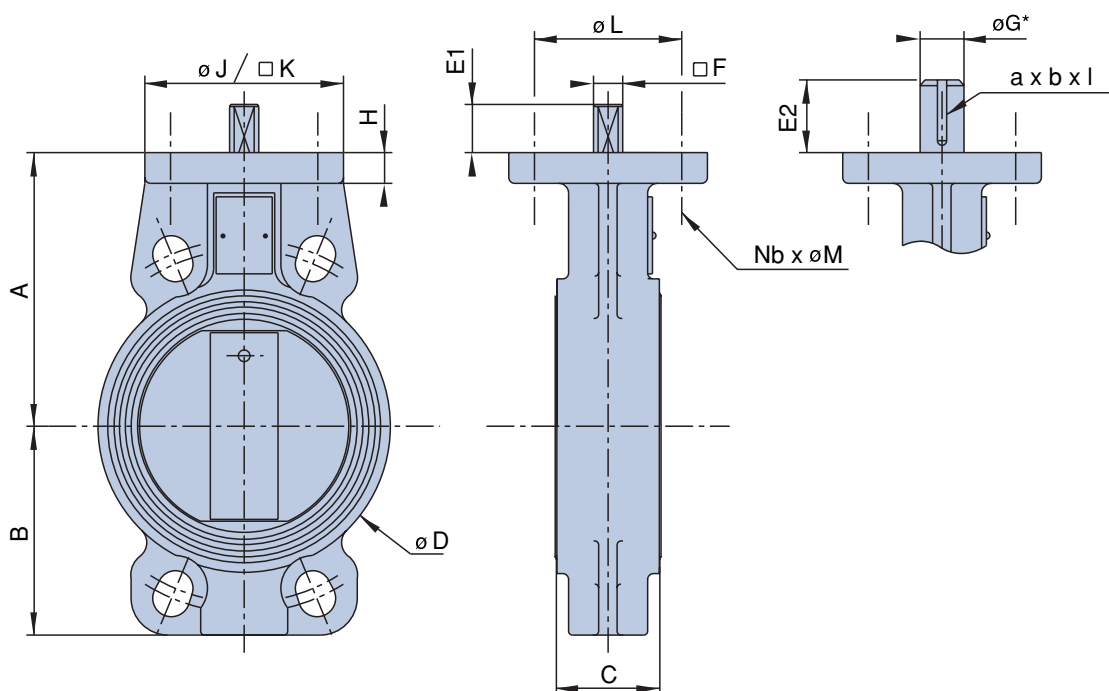
® Registered trade mark



### Basic figure



Rep.	Nb	Designation	Type	Material	Other materials
1	1	Body	Ductile Iron	EN GJS 400-15 + Epoxy	ASTM A536 Gr.60.40.18
			Carbon Steel	EN GP 240 GH + Epoxy	ASTM A216 WCB
			Stainless Steel	EN GX2CrNiMo-19-11-2	ASTM A351 CF3M
			Aluminium bronze	EN CuAl10Ni5Fe5-C	ASTM B148 Gr.958
2	1	Disc	Ductile Iron	EN GJS 400-15	ASTM A536 Gr.60.40.18
			Stainless Steel *	EN GX2CrNiMo-19-11-2	ASTM A351 CF3M
			For DN >300	EN GX5CrNiMo-19-11-2	ASTM A351 CF8M
			Aluminium bronze *	EN CuAl10Ni5Fe5-C	ASTM B148 Gr.958
			Brass	EN CuZn40Pb2	
				Uranus B6®	
				Monel 400®	
			Available coatings:	Epoxy or Rilsan® coated	
	EPDM or Nitrile rubber coated (up to DN300)				
	Natural rubber coated				
	Ebonite coated				
	Halar® coated				
		* Polished on request	Others on request		
3	1	Control shaft	Stainless Steel	EN X20Cr13	ASTM A276 - 420
			Stainless Steel	EN X5CrNiCuNb16-4	ASTM A276 - 630
			Aluminium bronze		
			Monel		
		Inconel	Others on request		
4	1	Spindle	Stainless Steel	EN X20Cr13	ASTM A276 - 420
			Stainless Steel	EN X5CrNiCuNb16-4	ASTM A276 - 630
			Aluminium bronze		
			Monel®		
		Inconel®	Others on request		
5	1	Seat	Elastomer	EPDM	White EPDM
				EPDM S	
				Nitrile	Nitrile DIN
				Carboxyled Nitrile	
				Fluorated elastomer	
				Hypalon®	
		Therban®			
		Silicone	Others on request		
6	3	Bearings	Reinforced PTFE on steel		
7	1	Safety nut	Steel + Polyamid		
8	1	Protection Plug	Polyethylene or steel		
9	1	Chevron seal or o-ring	Nitrile		
10	1	Thru-bolt	Galvanized steel		Stainless Steel
11	1	Key	Steel		
12	1	Coupling	Stainless Steel 13%Cr		
13	1	Identification plate	Stainless Steel		



### Valve dimensions in mm

DN (mm)	DN (inch)	A	B	C	$\phi D$	E1	E2	$\square F$	$\phi G^*$	H	$\phi J$	$\square K$	$\phi L$	Nb	$\phi M$	a	b	l	Mass/ weight (kg)
50	2"	110	74	43	94	26	-	11	-	14	90	-	70	4	9	-	-	-	2,8
65	2 1/2"	118	81	46	107	26	-	11	-	14	90	-	70	4	9	-	-	-	3,3
80	3"	125	93	46	126	26	-	11	-	14	90	-	70	4	9	-	-	-	4
100	4"	140	107	52	150	26	-	14	-	16	-	100	102	4	11	-	-	-	6
125	5"	160	122	56	179	26	-	14	-	16	-	100	102	4	11	-	-	-	8,5
150	6"	175	135	56	204	26	-	19	-	17	-	100	102	4	11	-	-	-	11
200	8"	206	170	60	259	26	-	19	-	17	-	100	102	4	11	-	-	-	15
250	10"	247	200	68	313	36	70	27	35	17	-	132	125	4	14	10	8	60	23
300	12"	277	233	78	369	36	70	27	35	17	-	132	125	4	14	10	8	60	31
350	14"	300	270	78	418	36	70	27	35	17,5	-	132	125	4	14	10	8	60	39
400	16"	345	300	102	467	43	90,5	32	40	21	-	132	140	4	18	12	8	73	69
450	18"	375	330	114	521	49	100	36	50	22	-	140	140	4	18	14	9	60	83
500	20"	425	375	127	571	63	100	46	60	25	210	-	165	4	22	18	11	80	107
550	22"	470	405	154	622	63	100	46	60	25	210	-	165	4	22	18	11	80	123
600	24"	495	430	154	670	63	100	46	60	25	210	-	165	4	22	18	11	80	145
650	26"	545	485	165	753	81	110	55	80	30	300	-	254	8	18	22	14	100	187
700	28"	570	510	165	776	81	110	55	80	30	300	-	254	8	18	22	14	100	217
750	30"	610	531	165	843	81	110	55	80	30	300	-	254	8	18	22	14	100	275
800	32"	640	560	190	882	81	110	55	80	30	300	-	254	8	18	22	14	100	310
850	34"	700	640	203	970	-	110	-	100	30	300	-	254	8	18	28	16	100	370
900	36"	700	665	203	1 000	-	110	-	100	30	300	-	254	8	18	28	16	100	448
1 000	40"	750	715	216	1 105	-	110	-	100	30	350	-	298	8	22	28	16	100	530

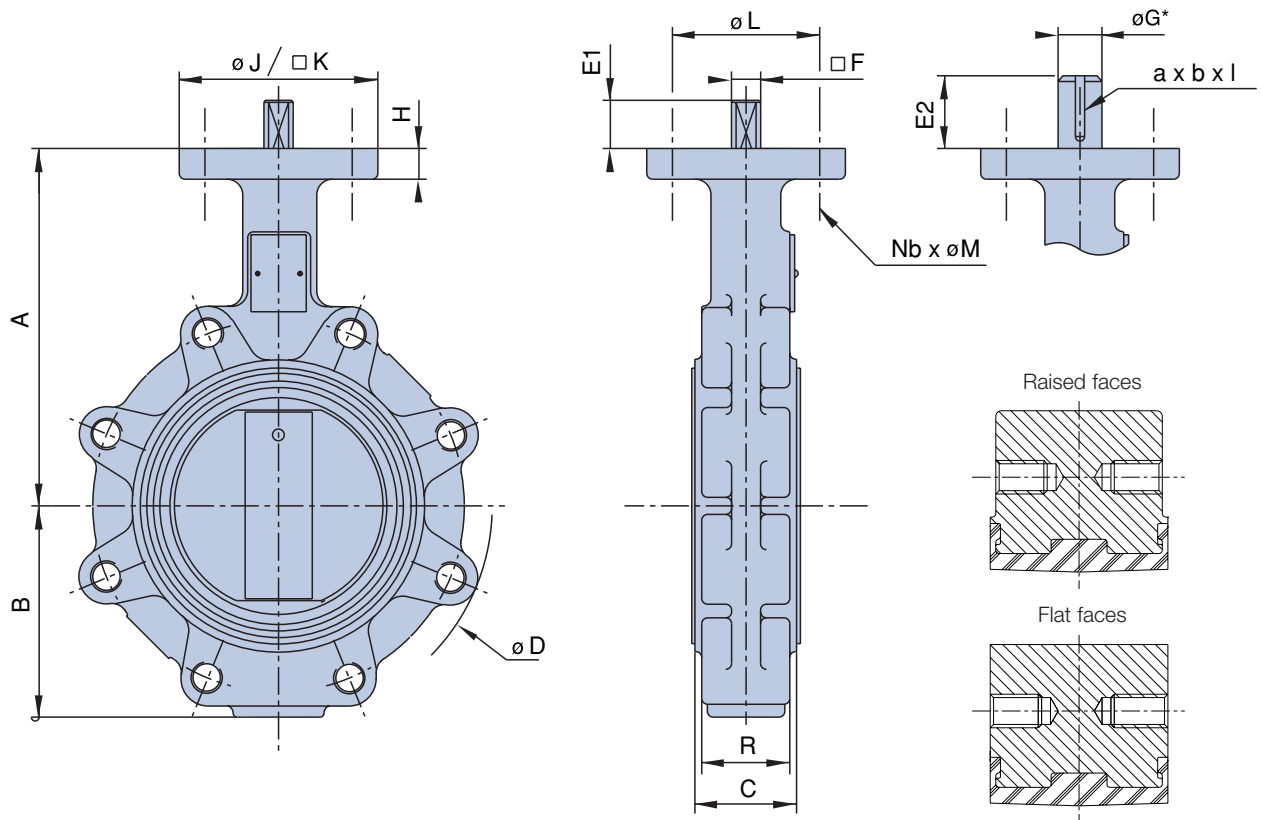
### Notes

- Flange accommodation must be specified when ordering.
- Specify size, product name, part name, material and flange accommodation when ordering spare parts.
- C = FTF ISO 5752 series 20 - NF E 29305 series 20 - MSS SP 67 - API 609 - DIN 3202 - BS 5155 - EN 558 (excl. DN350).
- Outside dimensions of the shafts are standard.
- For other valve sizes, see specific datasheets.
- ( $\phi G^*$ ) Sapag standard is square shafts for DN50-DN800, key drive for DN850-DN1000. Key drive for DN250-DN800 are available on request.
- 1 bar = 14.6 Psi

### Maximum differential pressure (bar)

Valve size	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	1 000	
Wafer between flanges	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Wafer end of line	10	10	5	5	5	4	4	2	2	2	2	1	1	1	1	-	-	-	-	-	-	-	-





Valve dimensions in mm

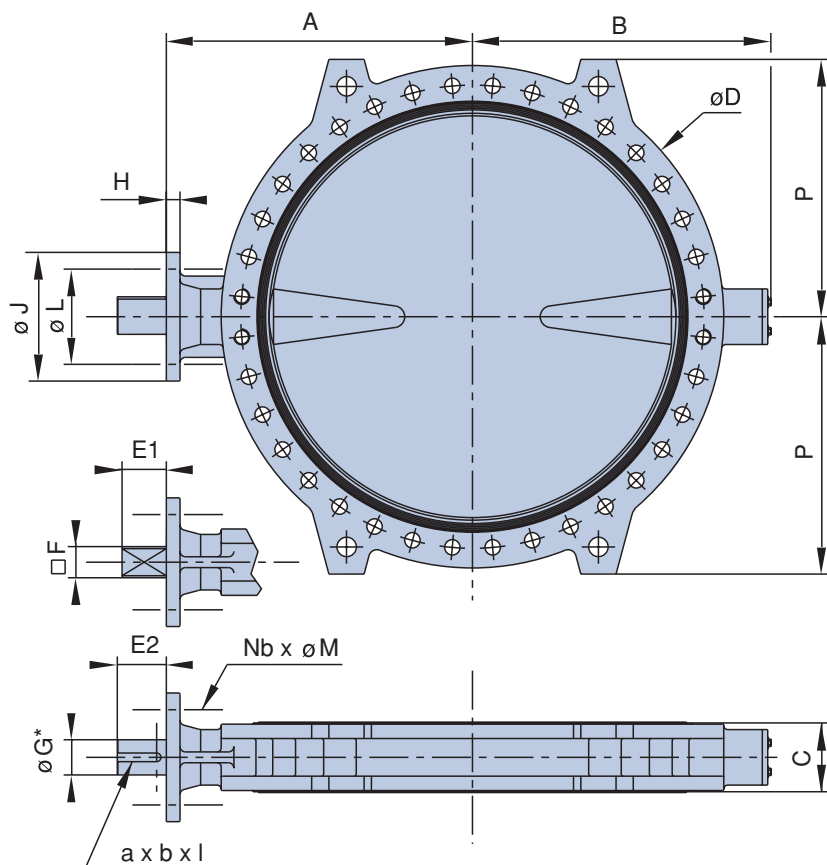
DN (mm)	DN (inch)	A	B	C	øD	E1	E2	□ F	øG*	H	øJ	□ K	øL	Nb	øM	a	b	l	R	Mass/ weight (kg)
50	2"	152	76	43	153	26	-	11	-	14	90	-	70	4	9	-	-	-	38	3,7
65	2½"	159	84	46	173	26	-	11	-	14	90	-	70	4	9	-	-	-	40	4,2
80	3"	166	90	46	188	26	-	11	-	14	90	-	70	4	9	-	-	-	40	7,1
100	4"	182	109	52	219	26	-	14	-	16	-	100	102	4	11	-	-	-	45	8,7
125	5"	193	120	56	252	26	-	14	-	16	-	100	102	4	11	-	-	-	48	11
150	6"	217	140	56	278	26	-	19	-	17	-	100	102	4	11	-	-	-	48	15
200	8"	242	167	60	335	26	-	19	-	17	-	100	102	4	11	-	-	-	52	22
250	10"	280	203	68	400	36	70	27	35	17	-	132	125	4	14	10	8	60	60	33
300	12"	310	228	78	482	36	70	27	35	17	-	132	125	4	14	10	8	60	70	44
350	14"	350	270	78	520	36	70	27	35	17,5	-	132	125	4	14	10	8	60	70	67
400	16"	375	300	102	588	43	90,5	32	40	21	-	140	140	4	18	12	8	73	90	104
450	18"	400	330	114	650	49	100	36	50	22	-	140	140	4	18	14	9	60	100	136
500	20"	425	375	127	704	63	100	46	60	25	210	-	165	4	22	18	11	80	113	180
550	22"	470	405	154	765	63	100	46	60	25	210	-	165	4	22	18	11	80	-	230
600	24"	495	430	154	828	63	100	46	60	25	210	-	165	4	22	18	11	80	140	260
650	26"	545	485	165	870	81	110	55	80	30	300	-	254	8	18	22	14	100	-	270
700	28"	570	510	165	895	81	110	55	80	30	300	-	254	8	18	22	14	100	150	280
750	30"	610	540	165	972	81	110	55	80	30	300	-	254	8	18	22	14	100	150	370
800	32"	640	560	190	1 010	81	110	55	80	30	300	-	254	8	18	22	14	100	170	400
850	34"	700	640	203	1 120	-	110	-	100	30	300	-	254	8	18	28	16	100	-	530
900	36"	700	665	203	1 148	-	110	-	100	30	300	-	254	8	18	28	16	100	190	550
1 000	40"	750	715	216	1 240	-	110	-	100	30	350	-	298	8	22	28	16	100	190	660

Notes

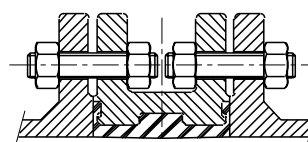
- Flange accommodation must be specified when ordering.
- Specify size, product name, part name, material and flange accommodation when ordering spare parts.
- C = FTF ISO 5752 series 20 - NF E 29305 series 20 - MSS SP 67 - API 609 - DIN 3202 - BS 5155 - EN 558 (excl. DN350).
- Outside dimensions of the shafts are standard.
- For other valve sizes, see specific datasheets.
- Flat face version is available, please contact factory.
- (øG\*) Sapag standard is square shafts for DN50-DN800, key drive for DN850-DN1000. Key drive for DN250-DN800 are available on request.
- 1 bar = 14.6 Psi.

Maximum differential pressure (bar)

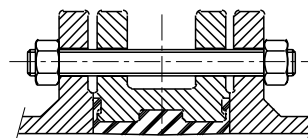
Valve size	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	1 000
Lugged between flanges	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Lugged end of line	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16



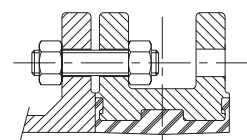
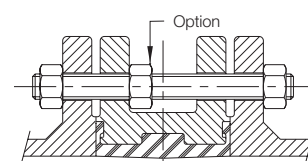
### Double flange installation



### Wafer installation



### End of line service



### Valve dimensions in mm

DN (mm)	DN (inch)	A	B	C	øD	E1	E2	F	øG*	H	øJ	øL	Nb	øM	a	b	l	P	Mass/ weight (kg)
500	20"	425	375	127	730	63	100	46	60	25	210	165	4	22	18	11	80	375	167
550	22"	470	405	154	780	63	100	46	60	25	210	165	4	22	18	11	80	400	230
600	24"	495	430	154	845	63	100	46	60	25	210	165	4	22	18	11	80	432	203
650	26"	545	485	165	890	81	110	55	80	30	300	254	8	18	22	14	100	454	270
700	28"	570	510	165	940	81	110	55	80	30	300	254	8	18	22	14	100	480	292
750	30"	610	540	165	984	81	110	55	80	30	300	254	8	18	22	14	100	505	400
800	32"	640	560	190	1 060	81	110	55	80	30	300	254	8	18	22	14	100	542	403
850	34"	700	640	203	1 168	-	110	-	100	30	300	254	8	18	28	16	100	597	530
900	36"	700	665	203	1 160	-	110	-	100	30	300	254	8	18	28	16	100	597	493
1 000	40"	750	715	216	1 290	-	110	-	100	30	350	298	8	22	28	16	100	660	583
1 050	42"	780	770	254	1 340	-	140	-	100	30	350	298	8	22	28	16	120	695	1 100
1 100	44"	820	805	254	1 400	-	140	-	100	30	350	298	8	22	28	16	120	710	1 199
1 200	48"	870	830	254	1 490	-	140	-	100	30	350	298	8	22	28	16	120	760	1 276
1 300	52"	960	935	254	1 625	-	140	-	120	40	415	356	8	32	32	18	130	835	1 672
1 350	54"	987	965	254	1 685	-	140	-	120	40	415	356	8	32	32	18	130	865	1 716
1 400	56"	1 015	1 000	254	1 690	-	140	-	120	40	415	356	8	32	32	18	130	865	1 749
1 500	60"	1 130	1 090	254	1 855	-	180	-	130	50	475	406	8	38	32	18	160	950	2 134
1 600 (10)	64"	1 170	1 135	254	1 930	-	180	-	130	50	475	406	8	38	32	18	160	980	2 211
1 600 (16)	64"	1 200	1 165	356	1 930	-	200	-	150	50	475	406	8	38	36	20	170	980	3 001
1 650	66"	1 230	1 200	356	2 035	-	200	-	150	55	475	406	8	38	36	20	170	1 040	3 608
1 800	72"	1 290	1 250	356	2 115	-	200	-	150	55	475	406	8	38	36	20	170	1 080	3 839
2 000	80"	1 463	1 390	356	2 340	-	200	-	150	55	560	483	12	38	45	25	170	1 200	4 565
2 100	84"	1 532	1 460	356	2 535	-	200	-	150	55	560	483	12	38	45	25	170	1 290	5 390
2 200	88"	1 566	1 500	356	2 545	-	200	-	150	55	560	483	12	38	45	25	170	1 300	5 060
2 400	96"	1 672	1 590	356	2 755	-	200	-	150	55	560	483	12	38	45	25	170	1 425	5 940

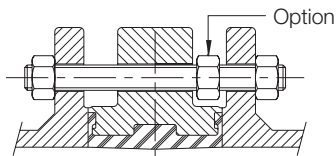
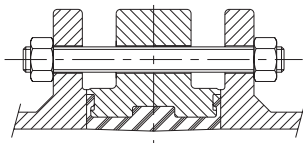
### Notes

- Flange accommodation must be specified when ordering.
- Specify size, product name, part name, material and flange accommodation when ordering spare parts.
- C = FTF ISO 5752 series 20 - NF E 29305 series 20 - MSS SP 67 - API 609 - DIN 3202 - BS 5155 - EN 558.
- Flat face version is available, please contact factory.
- For other valve sizes, see specific datasheets.
- (E2\*) Sapag standard is square shafts for DN500-DN800, key drive for DN850-DN2400. Key drive for DN500-DN800 are available on request.
- 1 bar = 14.6 Psi.

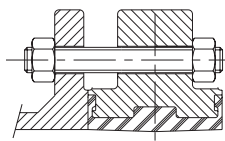
### Maximum differential pressure (bar)

Valve size	500 - 1 000	1 050 - 1 600	1 650 - 2 000	2 100 - 2 400
Double flanged between flanges	25	16	10	6
Double flanged end of line	16	10	6	4

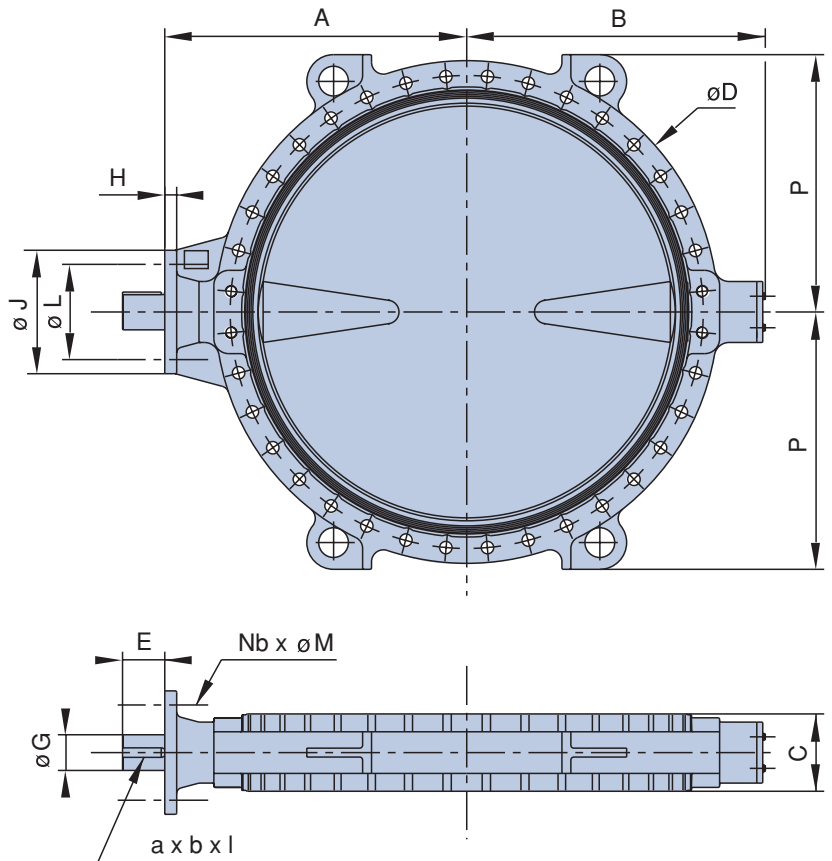
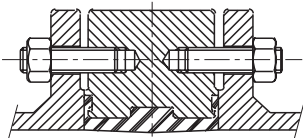
**Monoflange version**



**End of line service**



**Assembling in the threaded holes**



**Valve dimensions in mm**

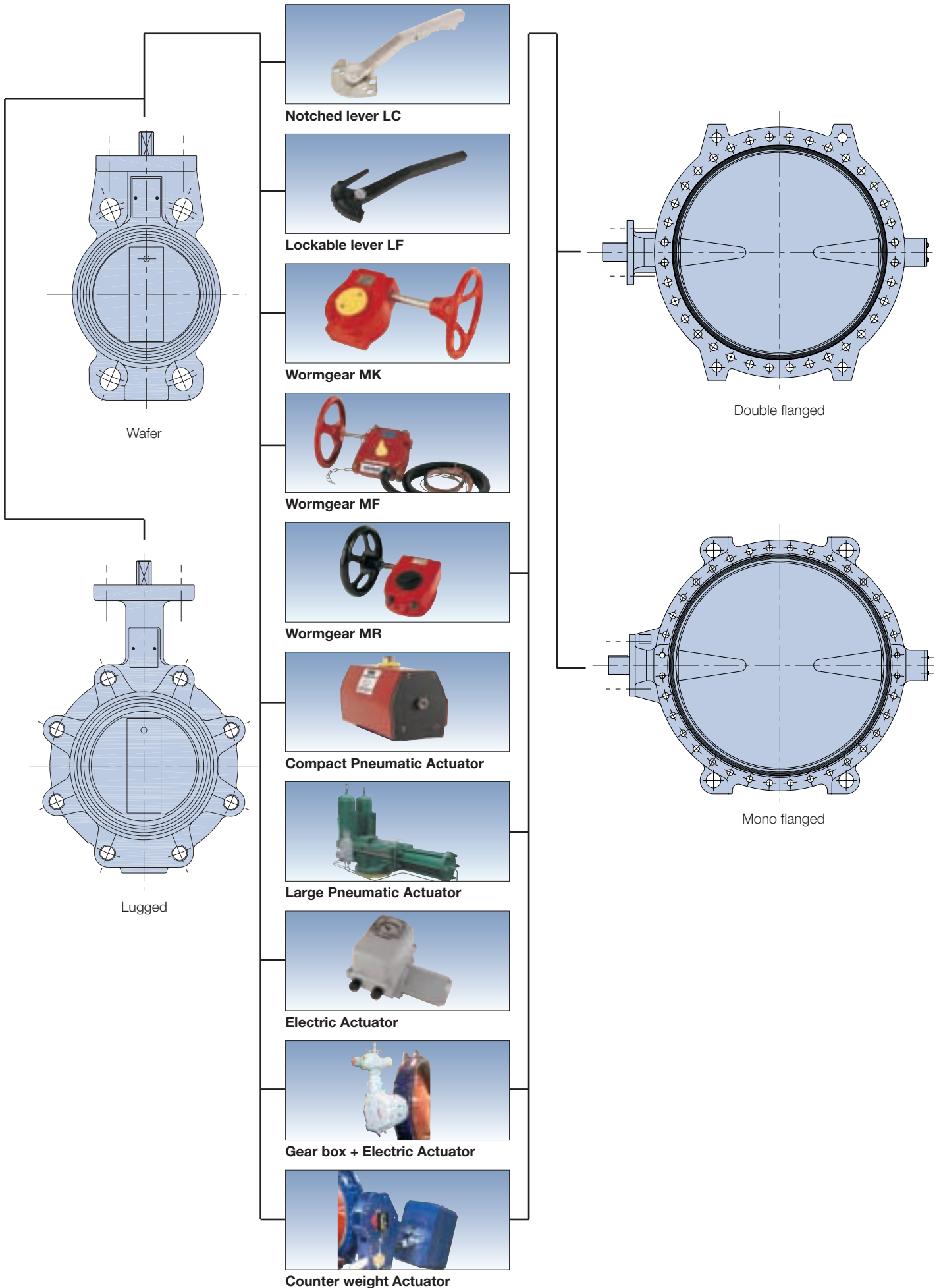
DN (mm)	DN (inch)	A	B	C	øD	E	øG	H	øJ	øL	Nb	øM	a	b	l	P	Mass/weight (kg)
1 050	42"	780	770	254	1 340	140	100	30	350	298	8	22	28	16	120	695	1 090
1 100	44"	820	805	254	1 370	140	100	30	350	298	8	22	28	16	120	710	1 000
1 200	48"	870	830	254	1 490	140	100	30	350	298	8	22	28	16	120	760	1 160
1 300	52"	960	935	254	1 625	140	120	40	415	356	8	32	32	18	130	835	1 520
1 350	54"	987	965	254	1 685	140	120	40	415	356	8	32	32	18	130	865	1 560
1 400	56"	1 015	1 000	254	1 690	140	120	40	415	356	8	32	32	18	130	865	1 590
1 500	60"	1 130	1 090	254	1 855	180	130	50	475	406	8	38	32	18	160	950	1 940
1 600 (10)	64"	1 170	1 135	254	1 930	180	130	50	475	406	8	38	32	18	160	980	2 010
1 600 (16)	64"	1 170	1 135	356	1 930	200	150	50	475	406	8	38	36	20	170	990	2 800
1 650	66"	1 230	1 200	356	2 035	200	150	55	475	406	8	38	36	20	170	1 040	3 280
1 800	72"	1 290	1 250	356	2 115	200	150	55	475	406	8	38	36	20	170	1 080	3 490
2 000	80"	1 463	1 390	356	2 340	200	200	55	560	483	12	38	45	25	170	1 200	4 150
2 100	84"	1 532	1 460	356	2 535	200	200	55	560	483	12	38	45	25	170	1 290	4 900
2 200	88"	1 566	1 500	356	2 545	200	200	55	560	483	12	38	45	25	170	1 300	4 600
2 400	96"	1 672	1 590	356	2 755	200	200	55	560	483	12	38	45	25	170	1 425	5 400

**Notes**

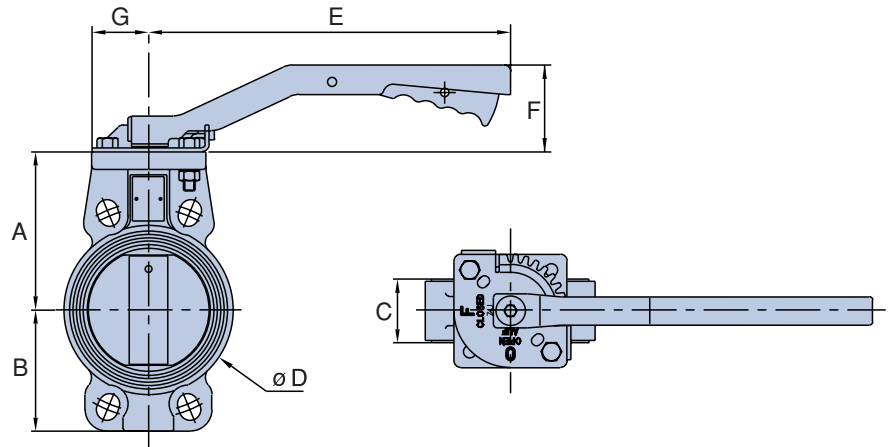
- Flange accommodation must be specified when ordering.
- Specify size, product name, part name, material and flange accommodation when ordering spare parts.
- C = FTF ISO 5752 series 20 - NF E 29305 series 20 - MSS SP 67 - API 609 - DIN 3202 - BS 5155 - EN 558.
- For other valve sizes, see specific datasheets.
- 1 bar = 14.6 Psi.

**Maximum differential pressure (bar)**

Valve size	1 050 - 1 600	1 650 - 2 000	2 100 - 2 400
<b>Mono flanged between flanges</b>	16	10	6
<b>Mono flanged end of line</b>	10	6	4



### Notched lever LC



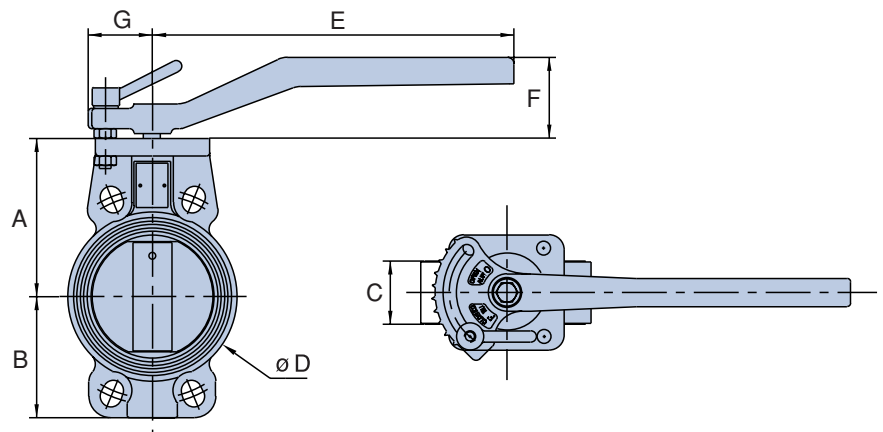
#### Dimensions

DN (mm)	DN (inch)	Type	Wafer				Lugged				E	F	G
			A	B	øD	Weight	A	B	øD	Weight			
50	2"	LC4	110	74	94	3.3	152	76	153	4.2	230	71	45
65	2½"	LC4	118	81	107	3.8	159	84	173	4.7	230	71	45
80	3"	LC4	125	93	126	4.5	166	90	188	7.6	230	71	45
100	4"	LC12	140	107	150	6.7	182	109	219	9.4	320	77	50
125	5"	LC12	160	122	179	9.3	193	120	252	11.8	320	77	50
150	6"	LC20	175	135	204	12.0	217	140	278	16.0	420	77	50

#### Notes

- Dimensions in mm, weights in kg
- Dimensions and weights are given as a guide.
- Number of locking positions: LC4 = 9, LC12 = 9, LC20 = 7

### Lockable lever LF



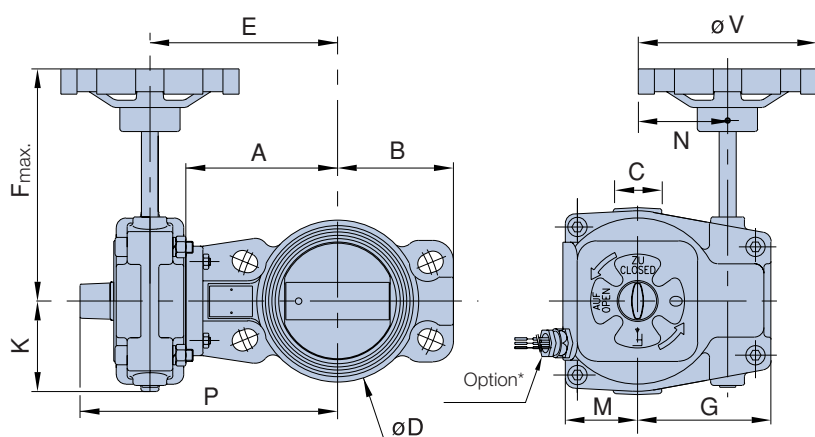
#### Dimensions

DN (mm)	DN (inch)	Type	Wafer				Lugged				C	E	F	G
			A	B	øD	Weight	A	B	øD	Weight				
50	2"	LF4	110	74	94	3.8	152	76	153	4.7	43	230	69	45
65	2½"	LF4	118	81	107	4.3	159	84	173	5.2	46	230	69	45
80	3"	LF4	125	93	126	5.0	166	90	188	8.1	46	230	69	45
100	4"	LF12	140	107	150	7.6	182	109	219	10.3	52	320	75	63
125	5"	LF12	160	122	179	10.1	193	120	252	12.7	56	320	75	63
150	6"	LF20	175	135	204	13.1	217	140	278	17.1	56	420	75	63
200	8"	LF20	206	167	259	17.1	242	167	335	24.1	60	420	75	63
250	10"	LF50	247	200	313	30.6	280	203	400	40.6	68	702	150	82

#### Notes

- Dimensions in mm, weights in kg
- Dimensions and weights are given as a guide.
- Continuous adjustable.

### Worm gear MF



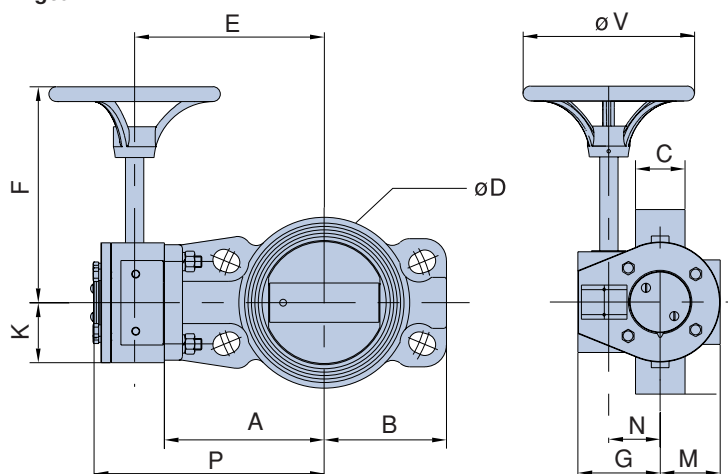
#### Notes

- Dimensions in mm, weights in kg
- Dimensions and weights are given as a guide.
- Number of handwheel turns: MF1 : 10  
MF2 : 17

#### Dimensions

DN (mm)	DN (inch)	Actuator	Wafer						Lug						C	F	G	K	M	N	øV
			A	B	øD	E	P	Weight	A	B	øD	E	P	Weight							
50	2"	MF 1	110	74	94	140	198	9.8	152	76	153	182	240	10.7	43	208	111	75	60	75	150
65	2½"	MF 1	118	81	107	148	206	10.3	159	84	173	189	247	11.2	46	208	111	75	60	75	150
80	3"	MF 1	125	93	126	155	213	11	166	90	188	196	254	14.1	46	208	111	75	60	75	150
100	4"	MF 1	140	107	150	170	228	13	182	109	219	212	270	15.7	52	208	111	75	60	75	150
125	5"	MF 1	160	122	179	190	248	15.5	193	120	252	223	281	18	56	208	111	75	60	75	150
150	6"	MF 1	175	135	204	205	263	18	217	140	278	247	305	22	56	215	111	75	60	75	225
200	8"	MF 1	206	170	259	236	294	22	242	167	335	272	330	29	60	215	111	75	60	75	225
250	10"	MF 2	247	200	313	298	376	43	280	203	400	331	409	53	68	276	179	138	104	132	300
300	12"	MF 2	277	233	369	328	406	51	310	228	470	361	439	64	78	276	179	138	104	132	300
350	14"	MF 2	300	270	418	351	429	59	350	270	520	401	479	87	78	276	179	138	104	132	300
400	16"	MF 2	345	300	467	396	474	89	375	300	588	426	504	124	102	276	179	138	104	132	300

### Worm gear MK



#### Notes

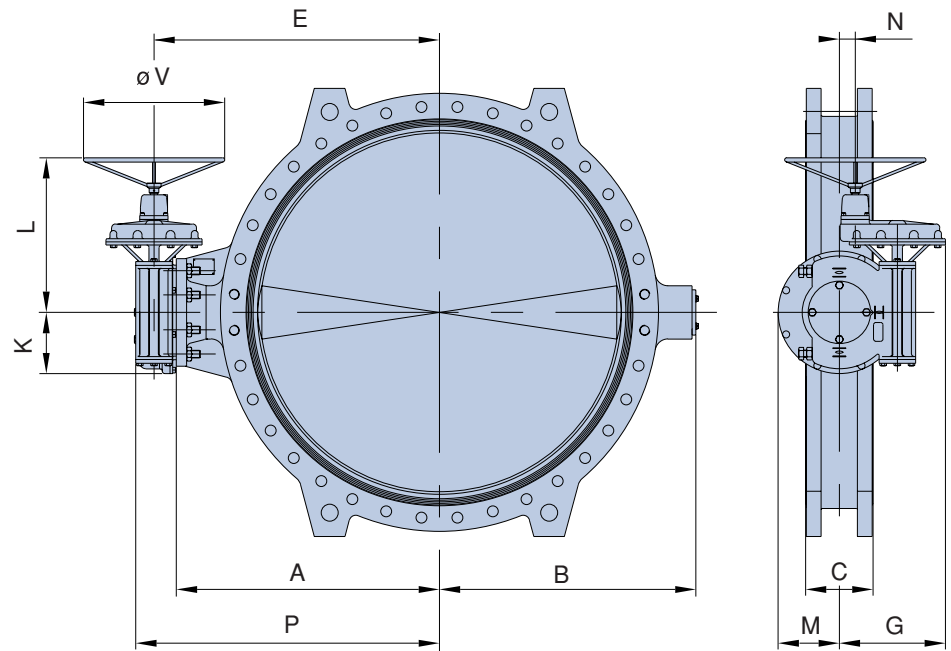
- Dimensions in mm, weights in kg
- Dimensions and weights are given as a guide.
- Number of handwheel turns:  
MK1: 6  
MK2: 7.5  
MK3: 12.5  
MK4: 20

#### Dimensions

DN (mm)	DN (inch)	Actuator	Wafer						Lug						C	F	G	K	M	N	øV
			A	B	øD	E	P	Weight	A	B	øD	E	P	Weight							
50	2"	MK 1	110	74	94	136	171	7,3	152	76	153	178	213	8,2	43	185	72	55	55	45	150
65	2½"	MK 1	118	81	107	144	179	7,8	159	84	173	185	220	8,7	46	185	72	55	55	45	150
80	3"	MK 1	125	93	126	151	186	8,5	166	90	188	192	227	11,6	46	185	72	55	55	45	150
100	4"	MK 1	140	107	150	166	201	10,5	182	109	219	208	243	13,2	52	185	72	55	55	45	150
125	5"	MK 1	160	122	179	186	221	13	193	120	252	219	254	15,5	56	185	72	55	55	45	150
150	6"	MK 2	175	135	204	211	256	15,5	217	140	278	253	298	19,5	56	228	101	77	77	67	300
200	8"	MK 2	206	170	259	241	287	25,5	242	167	335	277	323	32,5	60	228	101	77	77	67	300
250	10"	MK 3	247	200	313	282	328	33,5	280	203	400	315	362	43,5	68	228	118	82	82	80	300
300	12"	MK 3	277	233	369	315	357	44,5	310	223	470	348	392	57,5	78	228	118	82	82	80	300
350	14"	MK 3	300	270	418	338	380	52,5	350	270	520	388	432	80,5	78	228	118	82	82	80	300
400	16"	MK 4	345	300	467	399	466	99	375	300	588	429	496	135	102	285	160	130	130	122	400
450	18"	MK 4	375	330	521	429	496	113	400	330	633	454	521	166	114	285	160	130	130	122	400



Wormgear MR



Dimensions

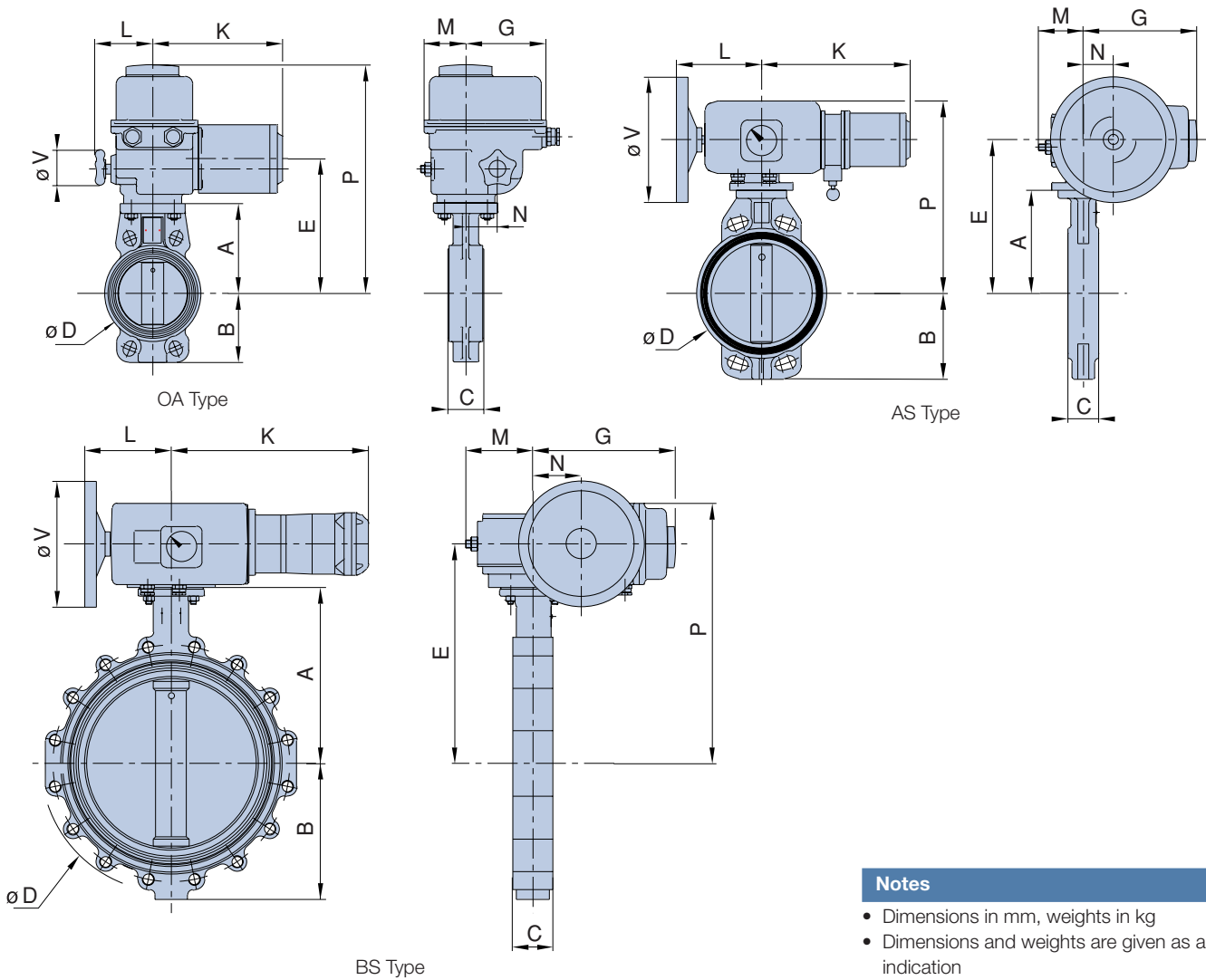
DN (mm)	DN (inch)	Nr of Actuator handwheel turns	A	B	C	E	G	K	L	M	N	øV	Weights				
													Wafer	Lugged	Double flanged	Mono flanged	
500	20"	AB 1250	14	425	375	127	473	148	110	496	110	105	500	132	205	192	
550	22"	AB 1250	14	470	405	154	518	148	110	496	110	105	500	149	256	209	
600	24"	AB 1250	14	495	430	154	543	148	110	496	110	105	600	170,5	285,5	228,5	
650	26"	AB 1950 / SP 4	52	545	485	165	600	260	143	437	143	211	400	235	318	313	
700	28"	AB 1950 / SP 4	52	570	510	165	625	260	143	437	143	211	400	265	328	340	
750	30"	AB 1950 / SP 4	52	610	540	165	665	260	143	437	143	211	400	323	418	448	
800	32"	AB 1950 / SP 4	52	640	560	190	695	260	143	437	143	211	400	358	448	451	
850	34"	IW 6	70	700	640	203	770	295	188	410	188	242	400	453	612	552	
900	36"	IW 6	70	700	665	203	770	295	188	410	188	242	400	530	632	575	
1 000	40"	IW 6	70	750	715	216	820	295	188	410	188	242	600	613	743	666	
1 050	42"	IW 6	70	780	770	254	850	295	188	410	188	242	600			1184	1174
1 100	44"	IW 6	70	820	805	254	890	295	188	410	188	242	600			1283	1084
1 200	48"	IW 6	70	870	855	254	940	295	188	410	188	242	600			1360	1244
1 300	52"	IW 72	90	960	935	254	1 047	355	225	555	225	91	600			1827	1675
1 350	54"	IW 72	90	987	965	254	1 047	355	225	555	225	91	800			1873	1717
1 400	56"	IW 72	90	1 015	1 000	254	1 102	355	225	555	225	91	800			1906	1747
1 500	60"	IW 82	180	1 130	1 090	254	1 225	451	260	605	260	68	700			2362	2168
1 600 (10)	64"	IW 82	180	1 170	1 135	254	1 265	451	260	600	260	68	800			2439	2238
1 600 (16)	64"	IW 82	180	1 200	1 165	356	1 295	451	260	600	260	68	800			3229	3028
1 650	66"	IW 82	180	1 230	1 200	356	1325	451	260	600	260	68	800			3836	3508
1 800	72"	IW 9	270	1 290	1 250	356	1 390	471	298	710	298	280	800			4135	3786
2 000	80"	IW 10	360	1 463	1 390	356	1 573	534	368	726	368	343	800			4979	4564
2 100	84"	IW 10	360	1 532	1 460	356	1 642	534	368	726	368	343	800			5804	5314
2 200	88"	IW 11	540	1 566	1 500	356	1 686	572	398	745	398	381	800			5547	5087
2 400	96"	IW 11	540	1 672	1 590	356	1 792	572	398	745	398	381	800			6427	5887

Notes

- Dimensions in mm, weights in kg
- Dimensions and weights are given as a guide.

Type of actuator	Quarterturn		Multiturn	
	OA	AS/BS	ST	ASM
Travel stops	X	X	on gearbox	on gearbox
Limit switch for open and close position	X	X	X	X
Torque switches		X	X	X
Handwheel for manual action	X	X	X	X

### Electric quarter-turn actuators



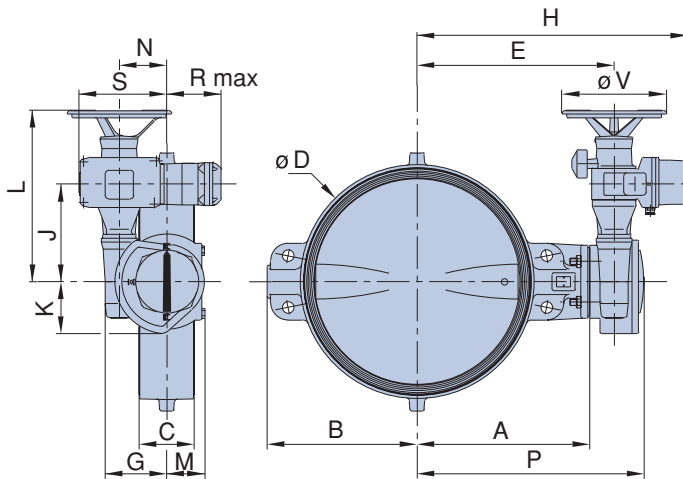
### Notes

- Dimensions in mm, weights in kg
- Dimensions and weights are given as an indication

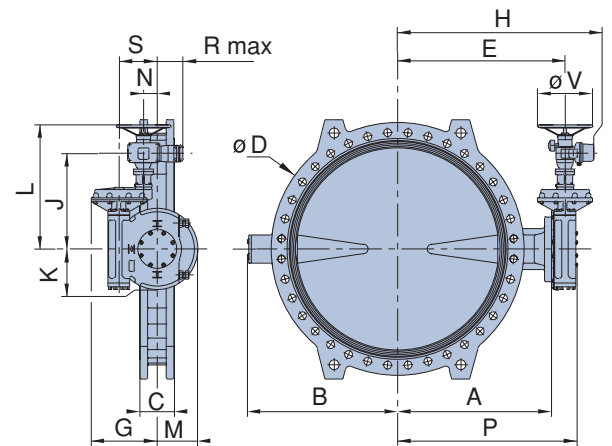
### Dimensions

DN (mm)	DN (Inch)	Actuator	A		B		C	ØD		E		G	K	L	M	N	P		ØV	Weight	
			Wafer Lugged	Lugged	Wafer Lugged	Lugged		Wafer Lugged	Lugged	Wafer Lugged	Lugged						Wafer Lugged	Lugged			
50	2"	OA 3	110	152	74	76	43	94	153	179	221	125	160	90	65	49	325	367	60	8.2	9.4
50	2"	OA 6	110	152	74	76	43	94	153	179	221	125	202	90	65	49	325	367	60	8.5	9.7
65	2½"	OA 3	118	159	81	84	46	107	173	187	228	125	160	90	65	49	333	374	60	8.7	9.9
65	2½"	OA 6	118	159	81	84	46	107	173	187	228	125	202	90	65	49	333	374	60	9	10.2
80	3"	OA 6	125	166	93	90	46	126	188	194	235	125	202	90	65	49	340	381	60	10	13.1
100	4"	OA 8	140	182	107	109	52	150	219	223	265	125	202	90	65	49	369	411	60	13	16
125	5"	OA 15	160	193	122	120	56	179	252	243	276	226	260	112	89	49	389	422	100	16	18.5
150	6"	AS 18	175	217	135	140	56	204	278	275	317	226	340	167	89	59	352	394	100	27	31
200	8"	AS 50	206	242	170	167	60	259	335	306	342	226	340	167	89	59	383	419	250	33	40
250	10"	AS 50	247	280	200	203	68	313	400	362	395	226	340	167	89	59	439	472	250	41	51
300	12"	AS 80	277	310	233	228	78	369	482	407	440	226	340	167	89	59	484	517	250	51	64
350	14"	BS 100	300	350	270	270	78	418	520	386	436	284	392	172	134	96	467	517	250	65	93
400	16"	BS 150	345	375	300	300	102	467	588	431	461	284	392	172	134	96	512	542	250	97	132

Gear boxes & electric multiturn actuators



AS 200/400 Types



IW + ASM/ST Types

Dimensions for Wafer and Lugged types

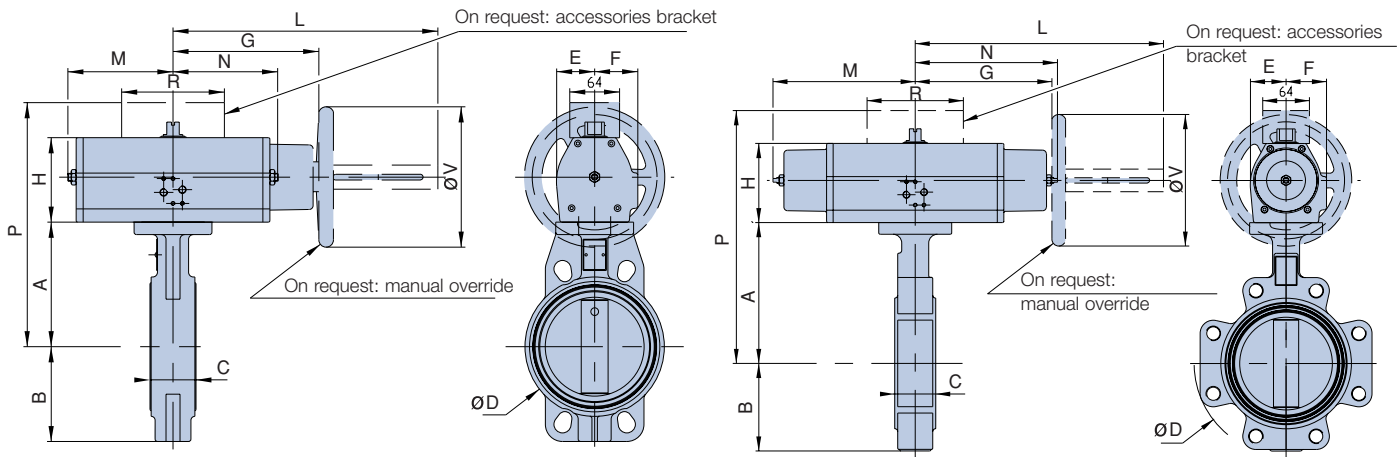
DN (mm)	DN (inch)	Actuator	A		C	øD		E		G	H		J	K	L	M	N	P		R	S	øV		Weight	
			Wafer	Lugged		Wafer	Lugged	Wafer	Lugged		Wafer	Lugged						Wafer	Lugged			Wafer	Lugged		
450	18"	AS 200	375	400	330	114	521	650	445	470	218	656	681	258	188	470	130	183	524	549	109	298	300	151	204
500	20"	AS 200	425	425	375	127	571	704	495	495	218	706	706	258	188	470	130	183	574	574	109	298	300	175	248
550	22"	AS 400	470	470	405	154	622	765	540	540	179	751	751	280	148	497	120	138	627	627	154	253	300	193	300
600	24"	AS 400	495	495	430	154	670	828	565	565	179	776	776	280	148	497	120	138	652	652	154	253	300	215	330
650	26"	IW52 + ASM0	545	545	485	165	753	870	610	610	231	821	821	377	143	594	143	200	668	668	92	315	300	257	340
700	28"	IW52 + ASM0	570	570	510	165	776	895	635	635	231	846	846	377	143	594	143	200	693	693	92	315	300	291	354
750	30"	IW52 + ASM0	610	610	540	165	882	972	675	675	231	886	886	377	143	594	143	200	733	733	92	315	300	324	474
800	32"	IW6 + ASM1	640	640	560	190	882	1 010	710	710	273	921	921	377	188	594	188	242	768	768	50	357	400	407	497
850	34"	IW6 + ASM1	700	700	640	203	970	1 120	770	770	273	981	981	377	188	594	188	242	828	828	50	357	400	467	627
900	36"	IW6 + ASM1	700	700	665	203	1 000	1 148	770	770	273	981	981	377	188	594	188	242	828	828	50	357	400	545	647
1 000	40"	IW63 + ASM1	750	750	715	216	1 105	1 240	820	820	302	1 031	1 031	406	188	623	188	274	878	878	18	389	400	632	762

Dimensions for Double flanged and Mono flanged types

DN (mm)	DN (inch)	Actuator	A	B	C	øD	E	F	G	H	J	K	L	M	N	P	R	S	øV	Weights	
																				Double	Mono
500	20"	AS 200	425	375	127	571	495	375	218	706	258	188	470	130	183	574	109	298	300	235	-
550	22"	AS 400	470	405	154	780	540	400	179	751	280	148	497	120	138	627	154	253	300	253	-
600	24"	AS 400	495	430	154	670	565	132	179	776	280	148	497	120	138	652	154	253	300	273	-
650	26"	IW52 + ASM0	545	485	165	890	610	154	231	821	377	143	594	143	200	668	92	315	300	336	-
700	28"	IW52 + ASM0	570	510	165	940	635	480	231	846	377	143	594	143	200	693	92	315	300	366	-
750	30"	IW52 + ASM0	610	540	165	1 010	675	505	231	886	377	143	594	143	200	733	92	315	300	474	-
800	32"	IW6 + ASM1	640	560	190	1 060	710	565	273	921	377	188	594	188	242	768	50	357	400	500	-
850	34"	IW6 + ASM1	700	640	203	1 168	770	597	273	981	377	188	594	188	242	828	50	357	400	567	-
900	36"	IW6 + ASM1	700	665	203	1 160	770	597	273	981	377	188	594	188	242	828	50	357	400	590	-
1000	40"	IW63 + ASM1	750	715	216	1 290	820	660	302	1 031	406	188	623	188	274	878	18	389	400	685	-
1050	42"	IW63 + ASM1	780	770	254	1 340	850	695	302	1 061	406	188	623	188	274	908	18	389	400	1 202	1 192
1100	44"	IW7 + ASM1	820	805	254	1 370	907	710	355	1 118	524	225	741	225	91	983	201	206	400	1 369	1 170
1200	48"	IW7 + ASM1	870	830	254	1 490	957	760	414	1 168	533	225	750	225	31	1 033	261	146	400	1 456	1 340
1300	52"	IW8 + ASM2	960	935	254	1 625	1 115	835	391	1 326	630	275	847	275	128	1 198	164	243	300	1 904	1 752
1350	54"	IW82 + ASM2	987	965	254	1 685	1 142	865	450	1 353	639	275	856	275	68	1 225	224	183	300	1 958	1 802
1400	56"	IW85 + ASM3	1 015	1 000	254	1 690	1 170	865	450	1 381	936	275	856	275	68	1 253	224	183	400	1 993	1 834
1500	60"	IW9 + ASM3	1 130	1 090	254	1 855	1 230	950	483	1 441	702	298	919	298	101	1 318	191	216	400	2 418	2 224
1600 (10)	64"	IW9 + ST14	1 170	1 135	254	1 930	1 270	980	471	1 535	721	298	922	298	279	1 358	168	430	300	2 538	2 337
1600 (16)	64"	IW9 + ST14	1 200	1 165	356	1 930	1 300	980	471	1 565	721	298	922	298	279	1 388	168	430	300	3 328	3 127
1650	66"	IW9 + ST14	1 230	1 200	356	2 035	1 330	1 040	471	1 595	721	298	922	298	279	1 418	168	430	300	3 935	3 607
1800	72"	IW10 + ST30	1 290	1 250	356	2 115	1 400	1 080	534	1 710	766	368	995	368	343	1 492	124	488	450	4 302	3 953
2000	80"	IW10 + ST30	1 463	1 390	356	1 340	1 583	1 200	572	1 893	783	398	1 012	398	381	1 689	86	526	450	5 101	4 686
2100	84"	IW10 + ST30	1 532	1 460	356	2 535	1 652	1 290	572	1 962	783	398	1 012	398	381	1 758	86	526	450	5 596	5 136
2200	88"	IW11 + ST30	1 566	1 500	356	2 545	1 686	1 300	572	1 996	783	398	1 012	398	381	1 792	86	526	450	5 926	5 436
2400	96"	IW115 + ST30	1 672	1 590	356	2 755	1 792	1 425	572	2 102	783	398	1 012	398	381	1 907	86	526	450	6 606	6 066

Notes

- Dimensions in mm, weights in kg
- Dimensions and weights are given as a guide.



### Double acting pneumatic actuator

DN (mm)	DN (inch)	Actuator DR	A		B		C	D		E	F	G	H	L	M	N	P		R	V	Weight	
			Wafer	Lug	Wafer	Lug		Wafer	Lug								Wafer	Lug			Wafer	Lug
50	2"	10-2	110	152	74	76	43	94	153	33	41	145	86	290	45	98	241	283	132	180	4,2	5,1
65	2 1/2"	10-2	118	159	81	84	46	107	173	33	41	145	86	290	45	98	249	290	132	180	4,7	5,6
80	3"	20-2	125	166	93	90	46	126	188	33	41	145	86	290	98	98	256	297	132	180	5,5	8,6
100	4"	21-4	140	182	107	109	52	150	219	33	41	145	86	290	98	98	271	313	132	180	7,5	10,2
125	5"	30-0	160	193	122	120	56	179	252	50	55	190	110	340	65	135	315	348	132	180	12,2	14,7
150	6"	40-0	175	217	135	140	56	204	278	50	55	190	110	340	135	135	330	372	132	180	15,9	19,9
200	8"	50-0	206	242	170	167	60	259	335	70	75	295	148	500	90	190	399	435	132	320	24,4	31,4
250	10"	60-1	247	280	200	203	68	313	400	70	75	295	148	500	190	190	440	473	132	320	35,5	45,5
300	12"	60-1	277	310	233	228	78	369	470	70	75	295	148	500	190	190	470	503	132	320	43,5	56,5
350	14"	71-0	300	350	270	270	78	418	520	110	110	515	248	800	145	295	603	653	156	400	71	99
400	16"	70-0	345	375	300	300	102	467	588	110	110	515	248	800	145	295	648	678	156	400	101	136
450	18"	70-0	375	400	330	330	114	521	633	110	110	515	248	800	145	295	678	703	156	400	115	168
500	20"	82-0	425	425	375	375	127	571	704	110	110	515	248	800	295	295	728	728	156	400	149	222
550	22"	82-0	470	470	405	405	154	622	765	110	110	515	248	800	295	295	773	773	156	400	165	272
600	24"	82-0	495	495	430	430	154	670	828	110	110	515	248	800	295	295	798	798	156	400	187	302

### Single acting pneumatic actuator: spring to close

DN (mm)	DN (inch)	Actuator SR	A		B		C	D		E	F	G	H	L	M	N	P		R	V	Weight	
			Wafer	Lug	Wafer	Lug		Wafer	Lug								Wafer	Lug				
50	2"	20-2	110	152	74	76	43	94	153	33	41	145	86	290	145	145	241	283	132	180	5,5	6,4
65	2 1/2"	20-2	118	159	81	84	46	107	173	33	41	145	86	290	145	145	249	290	132	180	6	6,9
80	3"	30-0	125	166	93	90	46	126	188	50	55	190	110	340	65	195	280	321	132	180	8,8	11,9
100	4"	40-0	140	182	107	109	52	150	219	50	55	190	110	340	195	195	295	337	132	180	13,2	15,9
125	5"	50-0	160	193	122	120	56	179	252	70	75	295	148	500	90	285	353	386	132	320	20,9	23,4
150	6"	60-1	175	217	135	140	56	204	278	70	75	295	148	500	285	285	368	410	132	320	29,5	33,5
200	8"	60-1	206	242	170	167	60	259	335	70	75	295	148	500	285	285	399	435	132	320	33,5	40,5
250	10"	71-0	247	280	200	203	68	313	400	110	110	515	248	800	145	520	550	583	156	400	68	78
300	12"	81-0	277	310	233	228	78	369	470	110	110	515	248	800	520	520	580	613	156	400	99	112
350	14"	81-0	300	350	270	270	78	418	520	110	110	515	248	800	520	520	603	653	156	400	107	135
400	16"	80-0	345	375	300	300	102	467	588	110	110	515	248	800	520	520	648	678	156	400	137	172

### Single acting pneumatic actuator: spring to open

DN (mm)	DN (inch)	Actuator SR	A		B		C	D		E	F	G	H	L	M	N	P		R	V	Weight	
			Wafer	Lug	Wafer	Lug		Wafer	Lug								Wafer	Lug				
50	2"	20-2	110	152	74	76	43	94	153	33	41	145	86	290	145	145	241	283	132	180	5,5	6,4
65	2 1/2"	20-2	118	159	81	84	46	107	173	33	41	145	86	290	145	145	249	290	132	180	6	6,9
80	3"	30-0	125	166	93	90	46	126	188	50	55	190	110	340	65	195	280	321	132	180	8,8	11,9
100	4"	40-0	140	182	107	109	52	150	219	50	55	190	110	340	195	195	295	337	132	180	13,2	15,9
125	5"	50-0	160	193	122	120	56	179	252	70	75	295	148	500	90	285	353	386	132	320	20,9	23,4
150	6"	60-1	175	217	135	140	56	204	278	70	75	295	148	500	285	285	368	410	132	320	29,5	33,5
200	8"	60-1	206	242	170	167	60	259	335	70	75	295	148	500	285	285	399	435	132	320	33,5	40,5
250	10"	71-0	247	280	200	203	68	313	400	110	110	515	248	800	145	520	550	583	156	400	68	78
300	12"	81-0	277	310	233	228	78	369	470	110	110	515	248	800	520	520	580	613	156	400	99	112
350	14"	81-0	300	350	270	270	78	418	520	110	110	515	248	800	520	520	603	653	156	400	107	135
400	16"	80-0	345	375	300	300	102	467	588	110	110	515	248	800	520	520	648	678	156	400	137	172

### Notes

- Air supply pressure: 6 bar (85 psi) (Other pressure: on request)
- Dimensions in mm, weights in kg.
- Dimensions and weights are given as a guide.

Double or single acting pneumatic actuator



**External limit switches**

- Protection to IP 67
  - Working temperature: - 25°C to + 70°C
  - 300 volts - 6 A
- On request:**
- Explosion proof switches E Ex "d"



**Limit switches or sensors in box**

- Box in alloyed aluminium or polycarbonate
- Protection to IP 65
- Working temperature: - 25°C to + 80°C
- Adjustable cams from 0° to 90°
- Electricity supply all voltages, AC or DC supply

**On request:**

- Explosion proof switches E Ex "i"



**Pneumatic Positioners (standard)**

- Working temperature: - 15°C to + 80°C (- 40°C on request)
- Air supply pressure: 1.4 to 6 bar (20 to 50 Psi)
- Signal: 0.2 to 1 bar (3 to 50 Psi)

**Electropneumatic Positioners (standard)**

- Protection to IP 54
- Working temperature: - 15°C to + 80°C
- Input signal: 4-20 mA



Manual override "CM" type for double or single acting pneumatic actuators



Accessories such as solenoid valves, speed regulators and silencers.



**ISOBOX**

- Protection to IP 67
- Working temperatures: - 25°C to + 100°C
- Available with Limit switches or sensors

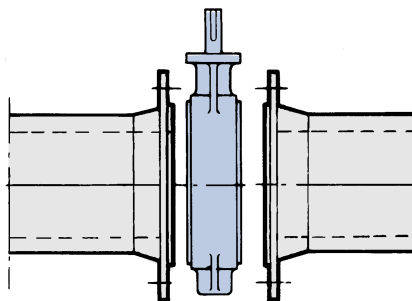
**Size of valve**

**TYPE**

50 to 200 2" to 8"	ISOBOX 1
250 to 600 10" to 24"	ISOBOX 2

### Assembly on line

1. Leave sufficient space between the flanges to avoid injury to the sides of the seat while sliding the valve between the two flanges. Be sure that these edges have well aligned, parallel, and erect sealing faces.
2. Center the valve by bolting the body locator first.
3. Progressively tighten diametrically opposed bolts by alternating sides until contact has been made between the metal valve body and the flange faces. Tighten bolts fully.
4. Control after mounting: operate the valve from fully open position to fully closed position to make sure that nothing is obstructing the disc.



### Between flanges and dead end assembly for Wafer type

Size (mm)	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	1000			
DN (inch)	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"	32"	34"	36"	40"			
EN 1092 PN 6	1		1	1	1	1		1	1	1	1	1	1		1										
DIN 2501 PN 10															1										
BS 4504 PN 16															1										
ISO 2084 PN 25															1										
EN 1759 Class 150			1												1										
ANSI B 16.5 Class 150			1												1										
ANSI B 16.47 A Class 150	See ANSI B 16.5															V					V				
BS 10 Table E	1	1				1																			
JIS B 2210 JIS 10 K			1	1						1										1					
JIS 16 K	1	1				1																			
MSS SP 44 Class 150														V	1	V					V				
AWWA C207 Tables 2-3-4-5														V		V					V				

### Between flanges and dead end assembly for Lugged type

Size (mm)	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	1000		
DN (inch)	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"	32"	34"	36"	40"		
EN 1092 PN 6																								
DIN 2501 PN 10																								
BS 4504 PN 16																								
ISO 2084 PN 25																			V			V		
EN 1759 Class 150																						V		
ANSI B 16.5 Class 150																								
ANSI B 16.47 A Class 150	See ANSI B 16.5															V					V	V		
BS 10 Table E																								
JIS B 2210 JIS 10 K																								
JIS 16 K																				V		V		
MSS SP 44 Class 150														V		V					V	V		
AWWA C207 Tables 2-3-4-5														V		V					V	V		

### Between flanges and dead end assembly for Double flanged type

Size (mm)	500	550	600	650	700	750	800	850	900	1000	1050	1100	1200	1300	1350	1400	1500	1600	1650	1800	2000	2100	2200	2400
DN (inch)	20"	22"	24"	26"	28"	30"	32"	34"	36"	40"	42"	44"	48"	52"	54"	56"	60"	64"	66"	72"	80"	84"	88"	96"
EN 1092 PN 6								V		V	V			V							V			V
DIN 2501 PN 10														V								V		V
BS 4504 PN 16														V							V	V		V
ISO 2084 PN 25													V											
EN 1759 Class 150												V		V										
ANSI B 16.5 Class 150	See ANSI B 16.47 A																							
ANSI B 16.47 A Class 150	See ANSI B 16.5			V					V			V		V	V									
BS 10 Table E											V													
JIS B 2210 JIS 10 K														V										
JIS 16 K				V									V	V										
MSS SP 44 Class 150		V		V					V		V		V	V										
AWWA C207 Tables 2-3-4-5		V		V					V		V		V	V						V	V		V	V

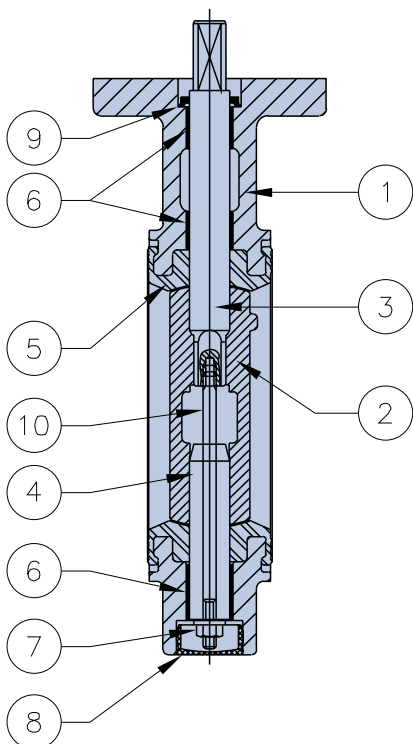
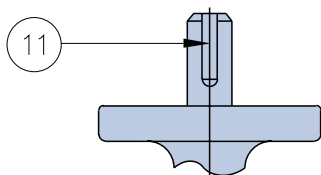
### Between flanges and dead end assembly for Mono flanged type

Size (mm)	1050	1100	1200	1300	1350	1400	1500	1600	1650	1800	2000	2100	2200	2400
DN (inch)	42"	44"	48"	52"	54"	56"	60"	64"	66"	72"	80"	84"	88"	96"
EN 1092 PN 6														
DIN 2501 PN 10														
BS 4504 PN 16														
ISO 2084 PN 20														
EN 1759 Class 150														
ANSI B 16.47 A Class 150		V			V									
BS 10 Table E														
JIS B 2210 JIS 10 K														
JIS 16 K														
MSS SP 44 Class 150		V			V									
AWWA C207 Tables 2-3-4-5		V			V				V	V		V		V

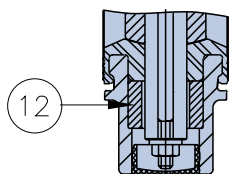
### Notes

- : Possible for all versions
- V : Please contact factory
- 1 : With counter-flange in case of dead end assembly
- These data are valid for Raised Face only. For Flat Face, please consult factory.
- Please, specify requested valve drilling when ordering.





For DN ≤ 125 (5")



### 1. Removal of the seat

Maintenance procedure:

1. Remove the valve actuator.
2. Pull out the protection plug 8.
3. Remove the "V" Ring seal 9.
4. Unscrew and remove the safety nut 7.
5. Extract the control shaft 3 and its thru-bolt 10 after having placed the disc 2 in open position and located the orientation of the key 11 (for sizes 10" to 40" - 250 mm to 1000 mm).
6. Remove the spindle 4.
7. Remove the disc 2.
8. Displace the seat 5 from the center by extracting one of the two journals from its housing. This operation will allow the lateral disengagement of the body seat.

### 2. Remounting the seat

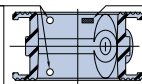
1. Make sure the coupling 12 is in the body for DN 50 to 125.
2. Do not grease either the outside of the seat or the inside of the body.
3. Deform the seat 5 and insert one of the two spherical journals free in its body housing. Spread out the two lateral seat lips correctly on the grooved body faces. Place the central part of the seat properly in the grooved body. Put the second spherical journal in position. Make sure the liner is well placed around its periphery.
4. Grease the following parts lightly (Ref. compound type 111 from Dow Corning "Silicone Grease").
  - The inside of the seat and more particularly the two spherical journals.
  - Along the control shaft as well as its extremity connected with the disc.
  - Along the spindle.
5. Remount the disc 2 in the open position. Be sure that the female part of the disc connecting with the shaft is on mounting flange side.
6. Be sure that body and disc machining is in line.
7. Replace the spindle 4.
8. Set the control shaft together with its thru-bolt, note the key position (size = 900) or the grooved mark on the square top (size < 900), giving the orientation of the disc.
9. Screw the safety nut 7 at the thru-bolt's extremity (side of spindle).
10. Remount the protection plug 8.
11. Assemble the actuator.
12. Open and close the valve.

Rep. Number	Designation	Rep. Number	Designation		
1	1	Body	8	1	Protection plug
2	1	Disc	9	1	"V" Ring
3	1	Control shaft	10	1	Thru-bolt
4	1	Spindle	11	1	Key
5	1	Seat	12	1	Coupling
6	1	Self lubricating bearings	13	1	Identification plate
7	1	Safety nut	14	1	Rivet

### Marking of the seat

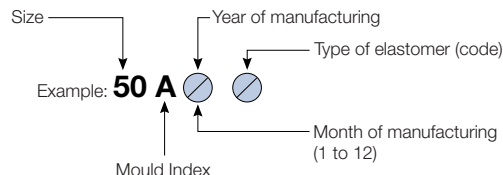
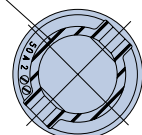
DN 50 - 1000

Color mark



DN ≥ 1050

Marking only by engraving  
 - Mould index  
 - Year of manufacturing  
 - Manufacturing number



### Type of elastomer

Designation	Code	Color mark	Designation	Code	Color mark
EPDM	0	None	Fluorated elastomer	5	Red
Nitrile NBR	1	Yellow	Hypalon®	6	Green
Carboxyated Nitrile X-NBR	2	Orange	EPDM-S	OS	Blue
EPDM white	OA	None	Therban®	8	White
Silicone	4	None	Nitrile DIN	9	Grey

® Registered trade mark

**A code with the following basis information is marked on the identification plate:**

- four characters defining type of body, material of body, disc and seat materials
- one character or more, defining the top works (with option(s)) and type of actuator (if applicable).

For the order, completing the above data with the following information:

- the nominal diameter (DN)
- the flange
- the working pressure
- and if applicable, the valve options

**Type**

- 3 Wafer
- 5 Mono flanged
- 6 Double flanged
- 7 Lugged
- A Double flanged, flat face
- B Lugged, flat face

**Body**

- 1 Ductile Iron
- 2 Carbon Steel
- 3 Stainless Steel
- A Aluminium Bronze

**Disc**

- 0 Ductile Iron, Nickel plated
- 1 Ductile Iron, Epoxy coated
- 2 Aluminium Bronze
- 3 Stainless Steel
- 4 Stainless Steel, Polished
- 5 Uranus B6@
- 6 Ductile Iron, Nitrile rubber lined
- 7 Monel 400@
- 8 Ductile Iron, EPDM rubber lined
- 9 Ductile Iron, Halar coated
- A Stainless Steel, Halar coated
- E Ductile Iron, Ebonite coated
- R Ductile Iron, Rilsan coated
- U Ductile Iron, Powder Epoxy coated

**Seat**

- 0 EPDM
- 1 Nitrile, NBR
- 2 Carboxyted Nitrile
- 3 White EPDM
- 4 Silicone
- 5 Fluorated elastomer
- 6 Hypalon®
- 7 EPDM - S
- 8 Therban®
- 9 Nitrile, DIN

**Top works**

- 0 Bare shaft
- 1 Handle kit, type LC
- 3 Gear box, type MG
- 4 Gear box, type GS
- 5 Gear box, type MR
- 7 Gear box, type MK
- 8 Handle kit, type LF
- 9 Gear box, type MF

*Options (Top works)*

- B Padlock
- T Switches
- M Flange actuator (MG, GS, MR)
- S ISOBOX (switches)
- W Chainwheel
- Q Square cap

**Actuators**

- A Pneumatic actuator
- C Electric actuator
- H Hydraulic actuator
- P Counter weight actuator

*Options*

Consult us

**DN (mm)**

DN50 (2") - DN2400 (96")

**Flange: Type**

(For class flanges, precise the standard).

See page 20.

**PS**

Working pressure (CWP)

**Valve options**

- MC Glued seat
- R Shaft extension

*Approvals & Certificates*

- A Food Grade Approved
- F Fire Protection Approved
- G Gas Approved
- M Naval Approved
- P Potable Water Approved
- T TPED Approved
- X ATEX Approved

**Examples**

**1. JMC butterfly valve with handle type LF, DN150, for mounting between flanges defined by the EN 1092 in PN16:**

**JMC 31108 - 150 PN16 PS6:**

3 1 1 0 8 - 150 PN16 PS6

- Type (Wafer) ————— 3
- Body (Ductile iron) ————— 1
- Disc (Ductile iron, epoxy coated) ————— 1
- Seat (EPDM) ————— 0
- Top works (lockable lever LF) ————— 8
- DN (150) ————— 150
- Flange (EN 1092 PN16) ————— PN16
- Working pressure (6 bar max) ————— PS6

**2. Same valve but with pneumatic actuator, working pressure of 10 bar, glued seat and TPED approved:**

**JMC 31100A - 150 PN16 PS10 MC T:**

3 1 1 0 0 A - 150 PN16 PS10 MC T

- Top works (Bare shaft) ————— 0
- Actuator (Pneumatic actuator) ————— A
- Working pressure (10 bar max) ————— PS10
- Glued seat ————— MC
- TPED approved ————— T

**3. Same valve but with gear box, type MR (option: flange actuator), electric actuator, for mounting between flanges defined by EN 1759, Class 150, potable water approved according WRAS:**

**JMC 31105MC - 150 EN1759 Class150 PS6 (WRAS):** 3 1 1 0 5 M C - 150 EN1759 Class150 PS6 P(WRAS)

- Top works (gear box, type MR) ————— 5
- Top works option (flange actuator) ————— M
- Actuator (Electric actuator) ————— C
- Flange (EN 1759 Class 150) ————— EN1759 Class150
- Potable water approved (WRAS) ————— P(WRAS)