

Semi Lug, Lug and Flanged Type



Specification

Description : GVC double eccentric Cargo Oil butterfly valves suitable for bi-directional flow and bubble tight shut-off at full rated pressure with Direct Mount ISO table, preloaded V-gland packing, blow-out proof stem and replaceable metal seat ring with soft seal.

Numbering System : Series OSR : Double Eccentric SEMI-LUG Cargo Oil type butterfly Valve
Series OLR : Double Eccentric LUG Cargo Oil type butterfly Valve
Series OFR : Double Eccentric FLANGED Cargo Oil type butterfly Valve



SEMI-LUG
Series OSR



LUG
Series OLR



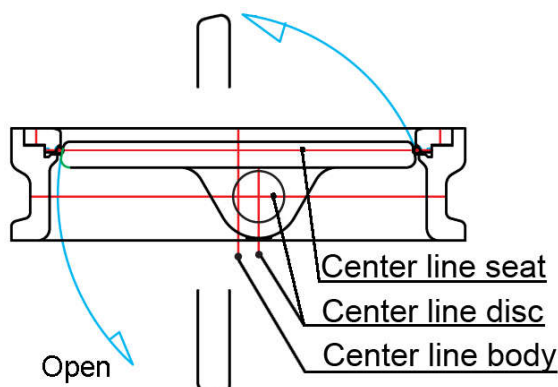
FLANGED
Series OFR

Face to Face : KSV 7490 and JIS F7480

Production Range : Size : DN 50 - DN 1000 (2" - 40")
Working Pressure : 0 to 40 Bar
Working Temperature : -20°C to + 250°C

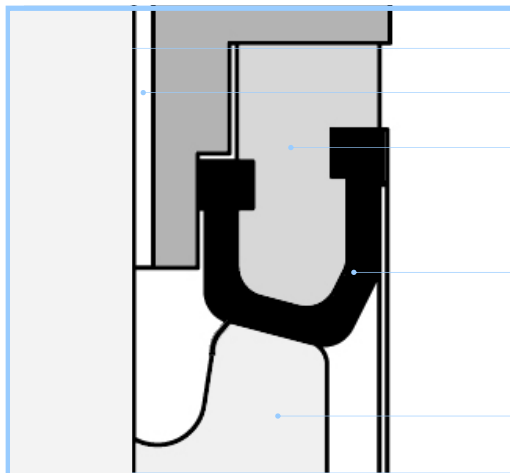
Pressure Classes : PN6, PN10, PN16 and PN25 (EN 1092, ISO 7005 [also PN20])
ANSI/ASME 150# and 300#
KS/JIS 5K, 10K, 16K, 20K and 30K

Sealing Design : The center line disc has a double offset to the seat ring (Double eccentric design). When the disc opens, it unseats over a small rotation angle because of the cam effect caused by the double offset design. This prevents seat abrasion/wear providing a perfect seal over a long period of time.



Specification

Seat Configurations :



Stem

Bearing

Retainer Ring; Available in several materials.

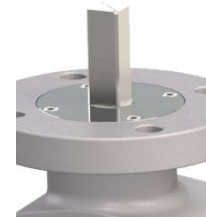
Soft Seat; Bonded to the metal retainer ring by heat treatment, available in EPDM, NBR or Viton depending on application.

Disc

Materials :
- Cast Iron, Nodular Cast Iron
- Cast Steel, Stainless Steel
- Duplex and Super Duplex
- Aluminium Bronze, Ni-Aluminium Bronze, Tin Bronze
- Others on request

Certification : CE/PED, ABS Design Assessment, BV / DNV / KRS / LRS RMRS type approvals, marine class society certified foundries and materials, NACE MR0175 certified materials, GOST-R. Please consult us for further information.

Operation : ISO 5211 top flange for direct mount of;
• Hand lever
• Manual Worm Gear
• Single or Double acting Pneumatic actuator
• Electric actuator
• Single or Double acting Hydraulic actuator



ISO 5211 Direct Mount

General Application : Double eccentric Cargo Oil butterfly valves are designed for heavy duty applications such as high pressure and high flow applications in General. Because of their design the Cargo Oil butterfly valves are widely used as oil and gas valves on board of oil tankers, FPSO's, FSO's, FDPSO'S, in onshore / offshore oil and gas applications and on crude oil, MFO/HFO tank terminals. The design of the seat ring keeps the retainer ring free from any tension from the pipeline mounting flanges. Because of this design, misalignment of flanges or forces caused by temperature changes in the piping have no effect on the sealing of the valve. The geometry of the rubber seat minimizes residue of foreign articles on the seat which minimizes wear and tear of the seat. The Cargo Oil butterfly valves are suitable for bi-directional flow and provide bubble tight shut-off at full rated pressure.

Typical Applications :
- Cargo Oil systems on (Crude) Oil Tankers
- Crude, MFO, HFO applications
- Fuel oil and Diesel oil applications
- Water ballast, Bilge , Drainage systems
- Tank cleaning systems
- Cargo Tank Venting and Inert Gas systems
- Sea- and freshwater applications
- On board of FPSO's, FSO's, FDPSO's etc.



Crude Oil Tanker

Series



SEMI-LUG

- Series OSR

Size Range : DN 50 - DN 1000 (2" - 40")
Pressure Classes : PN6, 10, 16, 20 and 25
ANSI/ASME 150# and 300#
JIS 5K, 10K, 16K, 20K and 30K

- 4 threaded lugged holes
- Upper and lower high strength centering lugs
- Light weight
- End of line application (Consult us for P-rating)
- Direct mount ISO table



LUG

- Series OLR

Size Range : DN 50 - DN 1000 (2" - 40")
Pressure Classes : PN6, 10, 16, 20 and 25
ANSI/ASME 150# and 300#
JIS 5K, 10K, 16K, 20K and 30K

- Full threaded lugged holes
- End of line application (Fully rated)
- Ship side application
- Direct mount ISO table



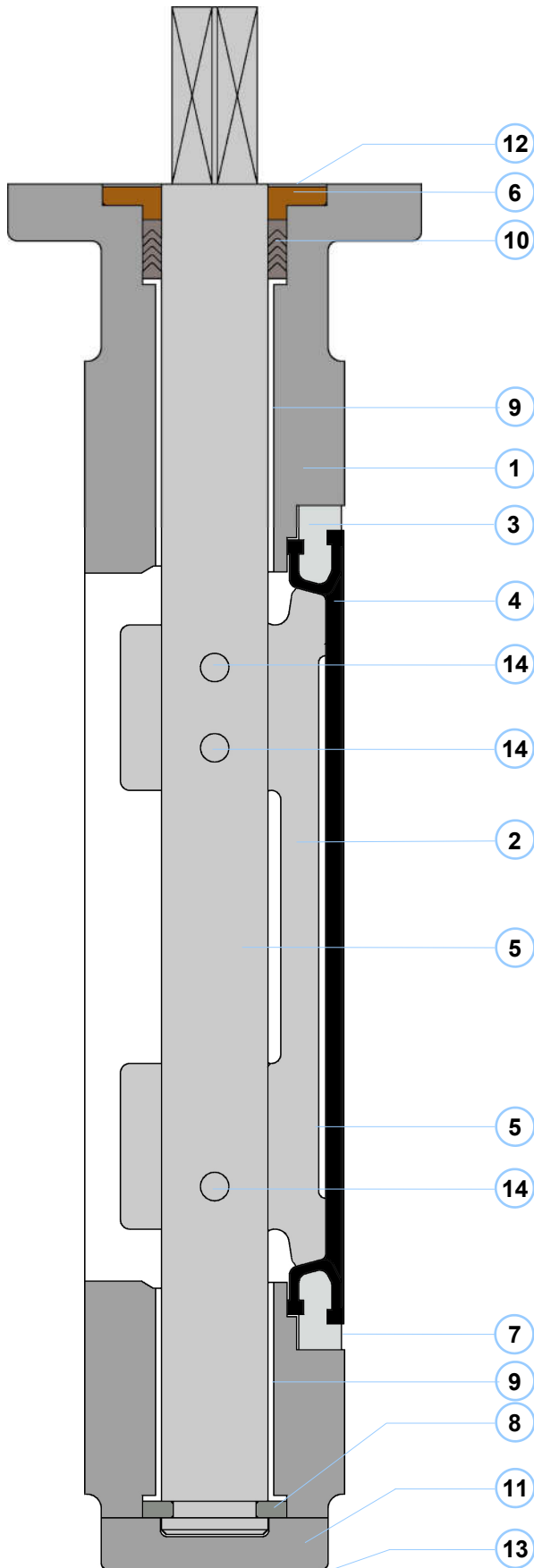
FLANGED

- Series OFR

Size Range : DN 50 - DN 1000 (2" - 40")
Pressure Classes : PN6, 10, 16, 20 and 25
ANSI/ASME 150# and 300#
JIS 5K, 10K, 16K, 20K and 30K

- Flanged connections
- End of line application (Fully rated)
- Shippside application
- Light weight alternative for gate or globe valve
- Direct mount ISO table

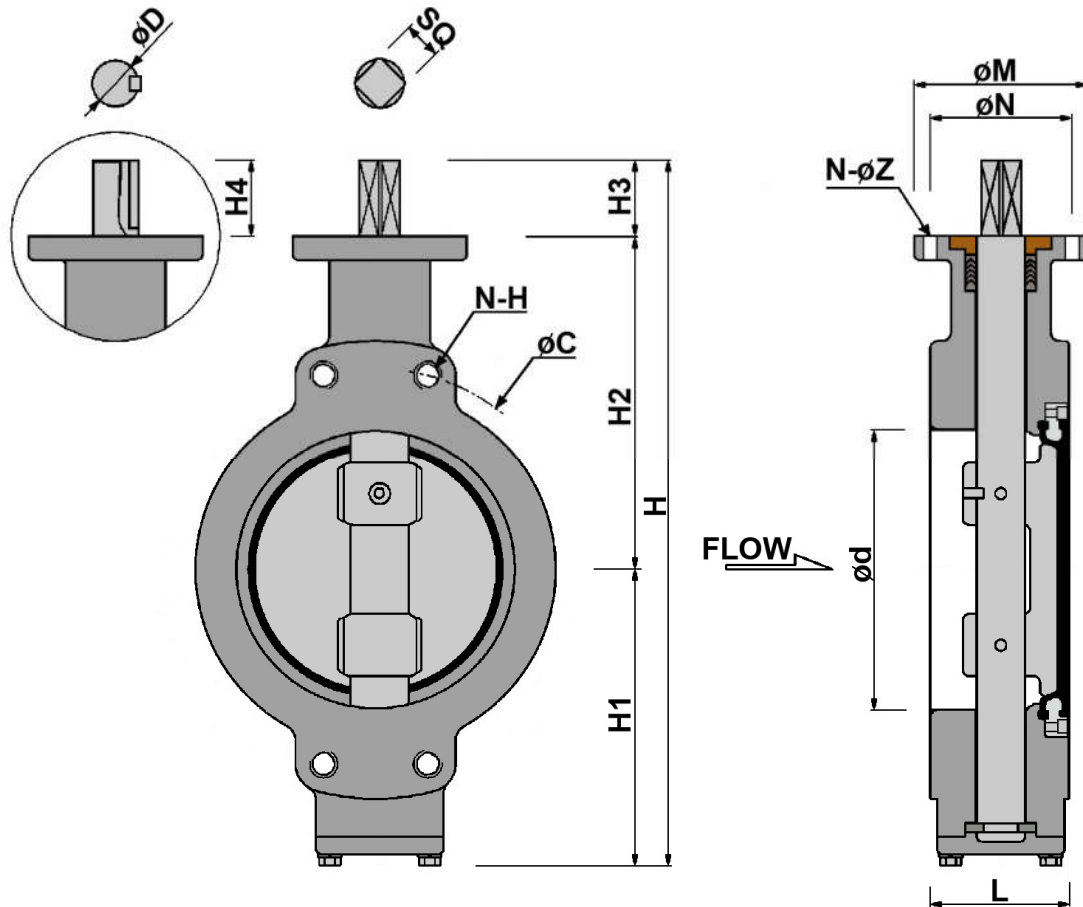
Materials and Parts



No	Part	Material
1	Body	<ul style="list-style-type: none"> • Cast Iron • Nodular Cast Iron • Carbon Steel • Stainless Steel • Aluminum Bronze • Ni-Aluminum Bronze • (Super) Duplex
2	Disc	<ul style="list-style-type: none"> • Carbon Steel • Stainless Steel • Aluminum Bronze • Ni-Aluminum Bronze • (Super) Duplex
3	Retainer Ring	<ul style="list-style-type: none"> • Cast Iron • Nodular Cast Iron • Carbon Steel • Stainless Steel • Aluminum Bronze • Ni-Aluminum Bronze
4	Seat	<ul style="list-style-type: none"> • EPDM • NBR • VITON
5	Stem	<ul style="list-style-type: none"> • Stainless Steel 304 • Stainless Steel 316 • Stainless Steel 410
6	Gland Bush	<ul style="list-style-type: none"> • Stainless Steel • Bronze
7	Retainer Bolt	<ul style="list-style-type: none"> • Stainless Steel • Galvanized Steel
8	Thrust Plate	<ul style="list-style-type: none"> • Stainless Steel • Bronze
9	Bearing	<ul style="list-style-type: none"> • Stainless Steel + PTFE
10	Gland Packing	<ul style="list-style-type: none"> • EPDM • NBR • VITON
11	Bottom Cover	<ul style="list-style-type: none"> • To suit body material
12	Gland Bush Bolt	<ul style="list-style-type: none"> • Stainless Steel • Galvanized Steel
13	Bottom Cover Bolt	<ul style="list-style-type: none"> • Stainless Steel • Galvanized Steel
14	Disc Pin	<ul style="list-style-type: none"> • To suit disc/stem material

- Please consult us for exact material standard and grade
- Other materials and special demands upon request

Series OSR Semi-Lug Type DN 50 - 1200

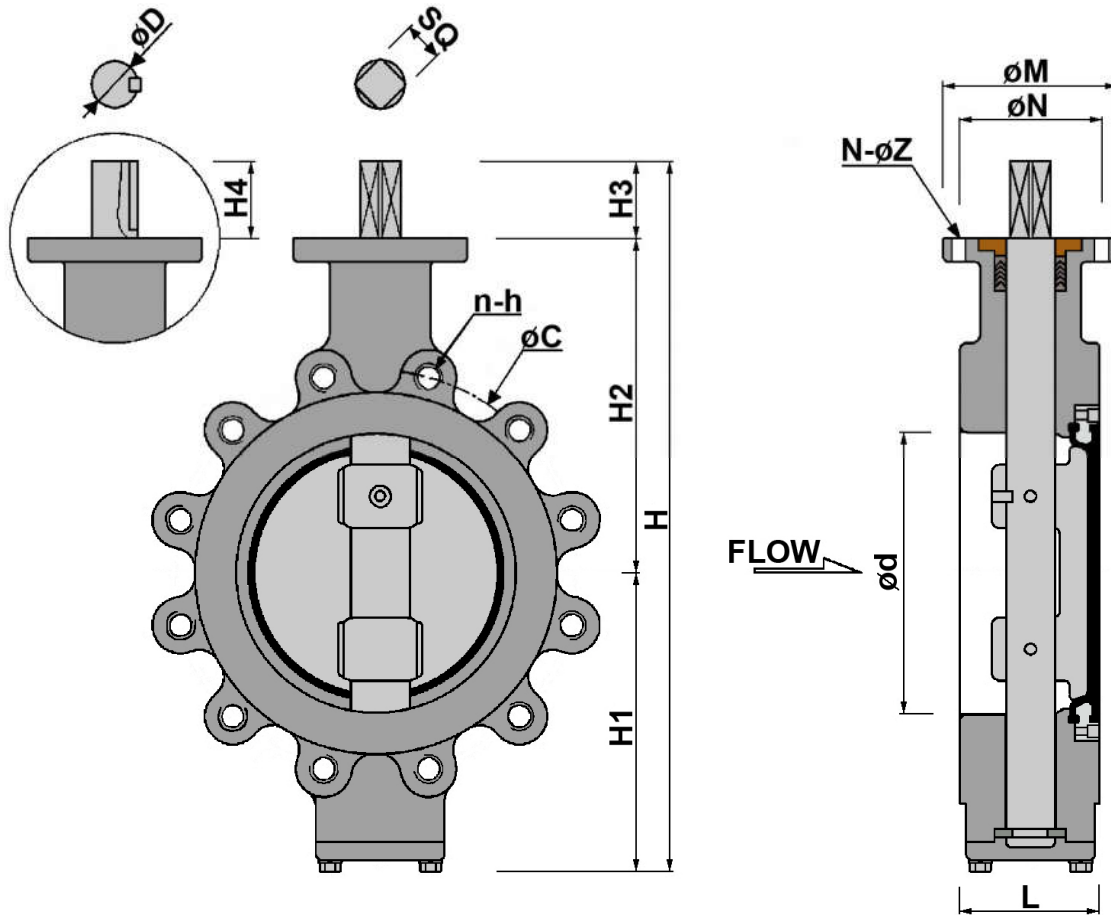


Dimensions DN 50 - 1000, **DIN PN10, PN16, ANSI 150** [mm]

DN	d	L	H	H1	H2	H3	Stem				Top Flange				Kg	DIN PN10		DIN PN16		ANSI 150	
							Round			Square	ISO 5211	N	M	nxo		C	n-h	C	n-h	C	n-h
							D	Key	H4	SQ											
50	62	44	276	113	130	33	16	5x5	33	12	F07	70	90	4x9	5	125	4xM16	125	4xM16	120.5	4x5/8"
65	75	46	286	118	135	33	16	5x5	33	12	F07	70	90	4x9	6	145	4/8xM16	145	4/8xM16	139.5	4x5/8"
80	90	62	300	127	140	33	19	6x6	33	12	F07	70	90	4x9	8	160	8xM16	160	8xM16	152.5	4x5/8"
100	106	65	339	146	160	33	19	6x6	33	12	F07	70	90	4x9	11	180	8xM16	180	8xM16	190.5	8x5/8"
125	128	70	407	162	190	55	22	8x7	55	17	F10	102	125	4x12	18	210	8xM16	210	8xM16	216.0	8x3/4"
150	150	90	459	189	215	55	25	8x7	55	17	F10	102	125	4x12	25	240	8xM20	240	8xM20	241.5	8x3/4"
200	202	100	509	214	240	55	32	10x8	55	27	F10	102	125	4x12	36	295	8xM20	295	12xM20	298.5	8x3/4"
250	250	110	606	256	285	65	40	12x8	65	27	F14	140	175	4x18	48	350	12xM20	355	12xM24	362.0	12x7/8"
300	300	110	655	275	315	65	40	12x8	65	27	F14	140	175	4x18	68	400	12xM20	410	12xM24	432.0	12x7/8"
350	335	120	749	309	350	90	50	14x9	90	36	F16	165	210	4x22	75	460	16xM20	470	16xM24	476.0	12x1"
400	390	130	820	350	380	90	50	14x9	90	36	F16	165	210	4x22	110	515	16xM24	525	16xM27	539.5	16x1"
450	440	150	890	383	417	90	55	16x10	90	46	F16	165	210	4x22	125	565	20xM24	585	20xM27	578.0	16x1 1/8"
500	490	160	955	420	445	90	65	20x12	90	50	F16	165	210	4x22	185	620	20xM24	650	20xM30	635.0	20x1 1/8"
600	594	200	1128	488	520	120	80	22x14	120	50	F25	254	300	8x18	315	725	20xM27	770	20xM33	749.5	20x1 1/4"
700	700	220	1262	552	590	120	80	22x14	120	--	F25	254	300	8x18	480	840	24xM27	840	24xM33	863.5	28x1 1/4"
800	800	240	1410	625	655	130	90	25x14	130	--	F30	298	350	8x23	685	950	24xM30	950	24xM36	978.0	28x1 1/2"
900	900	240	1585	690	735	160	100	28x16	160	--	F35	356	415	8x33	905	1050	28xM30	1050	28xM36	1086.0	32x1 1/2"
1000	1000	240	1725	760	805	160	110	32x18	160	--	F35	356	415	8x33	1210	1160	28xM33	1170	28xM39	1200.0	36x1 1/2"

Sizes DN550 (22"), DN650 (26"), DN750 (30"), DN850 (34") on request

Series OLR Lug Type DN 50 - 1000

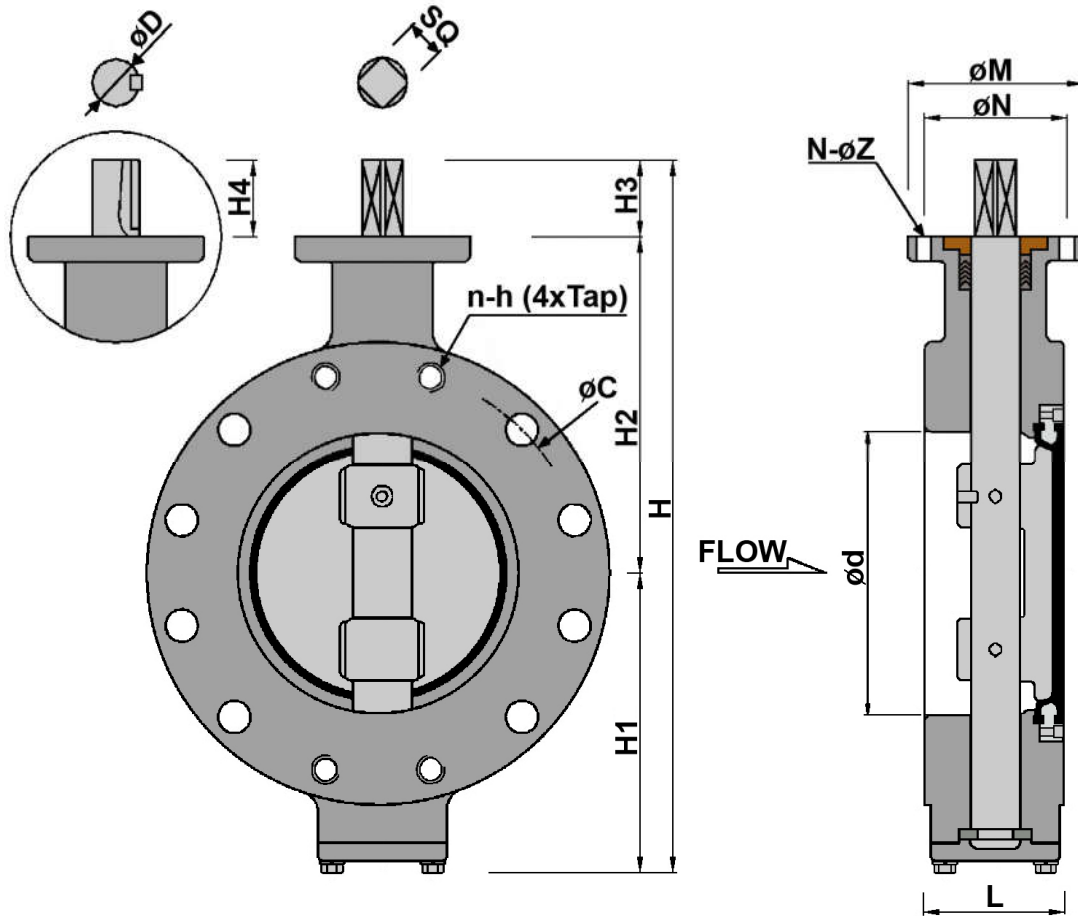


Dimensions DN 50 - 1000, **DIN PN10, PN16, ANSI 150** [mm]

DN	d	L	H	H1	H2	H3	Stem				Top Flange				Kg	DIN PN10		DIN PN16		ANSI 150	
							Round			Square	ISO 5211	N	M	nxo		C	n-h	C	n-h	C	n-h
							D	Key	H4	SQ											
50	62	44	276	113	130	33	16	5x5	33	12	F07	70	90	4x9	7.5	125	4xM16	125	4xM16	120.5	4x5/8"
65	75	46	286	118	135	33	16	5x5	33	12	F07	70	90	4x9	9	145	4/8xM16	145	4/8xM16	139.5	4x5/8"
80	90	62	300	127	140	33	19	6x6	33	12	F07	70	90	4x9	11	160	8xM16	160	8xM16	152.5	4x5/8"
100	106	65	339	146	160	33	19	6x6	33	12	F07	70	90	4x9	15	180	8xM16	180	8xM16	190.5	8x5/8"
125	128	70	407	162	190	55	22	8x7	55	17	F10	102	125	4x12	20	210	8xM16	210	8xM16	216.0	8x3/4"
150	150	90	459	189	215	55	25	8x7	55	17	F10	102	125	4x12	29.5	240	8xM20	240	8xM20	241.5	8x3/4"
200	202	100	509	214	240	55	32	10x8	55	27	F10	102	125	4x12	42	295	8xM20	295	12xM20	298.5	8x3/4"
250	250	110	606	256	285	65	40	12x8	65	27	F14	140	175	4x18	60	350	12xM20	355	12xM24	362.0	12x7/8"
300	300	110	655	275	315	65	40	12x8	65	27	F14	140	175	4x18	75	400	12xM20	410	12xM24	432.0	12x7/8"
350	335	120	749	309	350	90	50	14x9	90	36	F16	165	210	4x22	87	460	16xM20	470	16xM24	476.0	12x1"
400	390	130	820	350	380	90	50	14x9	90	36	F16	165	210	4x22	125	515	16xM24	525	16xM27	539.5	16x1"
450	440	150	890	383	417	90	55	16x10	90	46	F16	165	210	4x22	159	565	20xM24	585	20xM27	578.0	16x1 1/8"
500	490	160	955	420	445	90	65	20x12	90	50	F16	165	210	4x22	200	620	20xM24	650	20xM30	635.0	20x1 1/8"
600	594	200	1128	488	520	120	80	22x14	120	50	F25	254	300	8x18	280	725	20xM27	770	20xM33	749.5	20x1 1/4"
700	700	220	1262	552	590	120	80	22x14	120	--	F25	254	300	8x18	520	840	24xM27	840	24xM33	863.5	28x1 1/4"
800	800	240	1410	625	655	130	90	25x14	130	--	F30	298	350	8x23	795	950	24xM30	950	24xM36	978.0	28x1 1/2"
900	900	240	1585	690	735	160	100	28x16	160	--	F35	356	415	8x33	1100	1050	28xM30	1050	28xM36	1086.0	32x1 1/2"
1000	1000	240	1725	760	805	160	110	32x18	160	--	F35	356	415	8x33	1250	1160	28xM33	1170	28xM39	1200.0	36x1 1/2"

Sizes DN550 (22"), DN650 (26"), DN750 (30"), DN850 (34") on request

Series OFR Flanged Type DN 50 - 1000



Dimensions DN 50 - 1000, **DIN PN10, PN16, ANSI 150** [mm]

DN	d	L	H	H1	H2	H3	Stem				Top Flange				Kg	DIN PN10		DIN PN16		ANSI 150	
							Round			Square	ISO 5211	N	M	nxo		C	n-h	C	n-h	C	n-h
							D	Key	H4	SQ											
50	62	44	276	113	130	33	16	5x5	33	12	F07	70	90	4x9	8	125	4xM16	125	4xM16	120.5	4x5/8"
65	75	46	286	118	135	33	16	5x5	33	12	F07	70	90	4x9	10	145	4/8xM16	145	4/8xM16	139.5	4x5/8"
80	90	62	300	127	140	33	19	6x6	33	12	F07	70	90	4x9	12	160	8xM16	160	8xM16	152.5	4x5/8"
100	106	65	339	146	160	33	19	6x6	33	12	F07	70	90	4x9	16	180	8xM16	180	8xM16	190.5	8x5/8"
125	128	70	407	162	190	55	22	8x7	55	17	F10	102	125	4x12	22	210	8xM16	210	8xM16	216.0	8x3/4"
150	150	90	459	189	215	55	25	8x7	55	17	F10	102	125	4x12	38	240	8xM20	240	8xM20	241.5	8x3/4"
200	202	100	509	214	240	55	32	10x8	55	27	F10	102	125	4x12	45	295	8xM20	295	12xM20	298.5	8x3/4"
250	250	110	606	256	285	65	40	12x8	65	27	F14	140	175	4x18	65	350	12xM20	355	12xM24	362.0	12x7/8"
300	300	110	655	275	315	65	40	12x8	65	27	F14	140	175	4x18	84	400	12xM20	410	12xM24	432.0	12x7/8"
350	335	120	749	309	350	90	50	14x9	90	36	F16	165	210	4x22	100	460	16xM20	470	16xM24	476.0	12x1"
400	390	130	820	350	380	90	50	14x9	90	36	F16	165	210	4x22	145	515	16xM24	525	16xM27	539.5	16x1"
450	440	150	890	383	417	90	55	16x10	90	46	F16	165	210	4x22	185	565	20xM24	585	20xM27	578.0	16x1 1/8"
500	490	160	955	420	445	90	65	20x12	90	50	F16	165	210	4x22	245	620	20xM24	650	20xM30	635.0	20x1 1/8"
600	594	200	1128	488	520	120	80	22x14	120	50	F25	254	300	8x18	370	725	20xM27	770	20xM33	749.5	20x1 1/4"
700	700	220	1262	552	590	120	80	22x14	120	--	F25	254	300	8x18	555	840	24xM27	840	24xM33	863.5	28x1 1/4"
800	800	240	1410	625	655	130	90	25x14	130	--	F30	298	350	8x23	865	950	24xM30	950	24xM36	978.0	28x1 1/2"
900	900	240	1585	690	735	160	100	28x16	160	--	F35	356	415	8x33	1185	1050	28xM30	1050	28xM36	1086.0	32x1 1/2"
1000	1000	240	1725	760	805	160	110	32x18	160	--	F35	356	415	8x33	1340	1160	28xM33	1170	28xM39	1200.0	36x1 1/2"

Sizes DN550 (22"), DN650 (26"), DN750 (30"), DN850 (34") on request

Torque Figures

“Everything you need to size”

Torque Table

DN	P 5.0 b10.1ar	P 10 bar	P 16 bar
50	10.1	11.7	18.2
65	14.9	19.2	23.4
80	21.8	28.9	40.8
100	39.3	49.3	64.6
125	69.1	74.4	107
150	117	158	213
200	261	307	409
250	340	451	553
300	462	612	926
350	659	875	1300
400	882	1173	1750
450	1052	1521	2328
500	1370	2124	3033
600	3101	3321	4634
700	3557	4893	6845
800	5096	6846	10422
900	7963	9649	15713
1000	10108	11212	18643

Torque

Torque figures as mentioned in the torque table are;

- Initial break away and seating values in Nm (Newton Meters)
- **Excluding** any safety factor
- For valves that are operated at least once per month
- Temperature 0° to 50°C

Safety factor (sf)

For sizing and safe operation purposes the specified torque values need to be multiplied with the following minimum safety factors;

- For liquid and lubricant media **sf = 1.30**
- For powdery (non-lubricant) media **sf = 1.6~2.0**
- For dry gasses and high viscous media **sf = 2.0**

Service

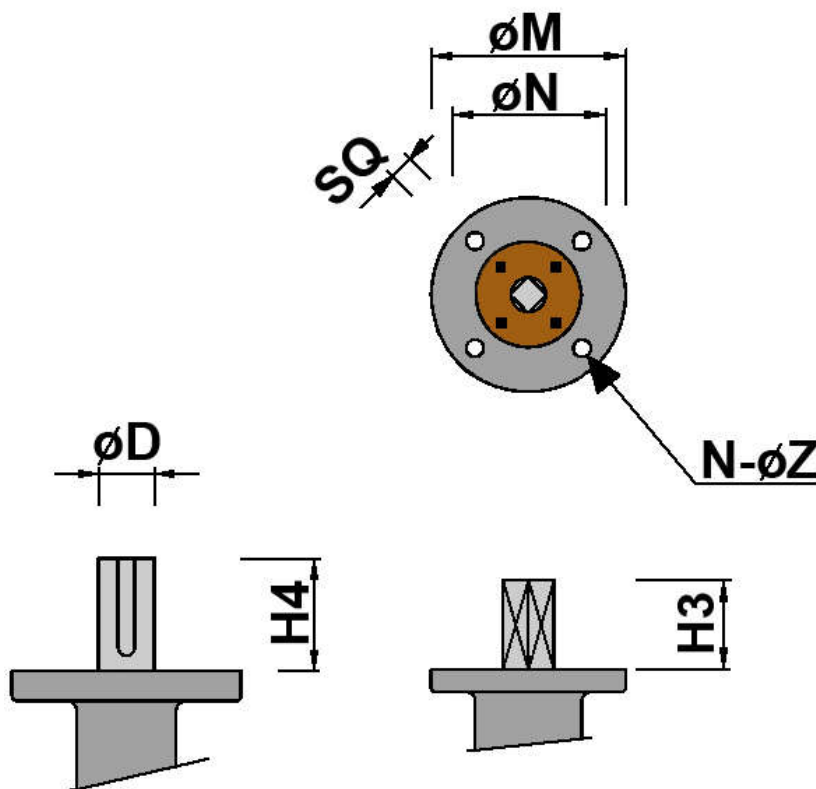
For assistance in sizing and dimensioning actuators-valve combinations please contact our Engineers.

We have wide experience in sizing Pneumatic, Electric and Hydraulic actuators.

Notes

Sizes DN550 (22”), DN650 (26”), DN750 (30”), DN850 (34”) on request.

Sizing Dimensions



DN	Stem					Top Flange			
	Round			Square		ISO 5211	N	M	N- Z
	D	H4	Key	SQ	H3				
50	16	33	5x5	12	33	F07	70	90	4x9
65	16	33	5x5	12	33	F07	70	90	4x9
80	19	33	6x6	12	33	F07	70	90	4x9
100	19	33	6x6	12	33	F07	70	90	4x9
125	22	55	8x7	17	55	F10	102	125	4x12
150	25	55	8x7	17	55	F10	102	125	4x12
200	32	55	10x8	27	55	F10	102	125	4x12
250	40	65	12x8	27	65	F14	140	175	4x18
300	40	65	12x8	27	65	F14	140	175	4x18
350	50	90	14x9	36	90	F16	165	210	4x22
400	50	90	14x9	36	90	F16	165	210	4x22
450	55	90	16x10	46	90	F16	165	210	4x22
500	65	90	20x12	50	90	F16	165	210	4x22
600	80	120	22x14	50	120	F25	254	300	8x18
700	80	120	22x14	--	120	F25	254	300	8x18
800	90	130	25x14	--	130	F30	298	350	8x23
900	100	160	28x16	--	160	F35	356	415	8x33
1000	110	160	32x18	--	160	F35	356	415	8x33

Product Group C
Concentric Rubber Lined Butterfly Valves



Product Group O
*Double Eccentric Replaceable Seat Ring
Type Butterfly Valves (Cargo Oil)*



Product Group H, F and M
High Performance Butterfly Valves



Product Group T
Triple Eccentric Metal Seated Butterfly Valves



Product Group E
Disc Seated Butterfly Valves



Product Group L
*Cryogenic Butterfly Valves (LPG, LNG)
Ball, Gate, Globe and Check Valves*



Product Group D
Damper Butterfly Valves

