PA Ventiler AB
EN DEL AV BEIJERTECH

ISO 9001 : 2015
BUREAU VERITAS
Certification

REF. 210L

CARBON STEEL DOUBLE OFFSET LUG BUTTERFLY VALVE PN25

Carbon steel double offset butterfly valve for steam, heating, geothermics, industrial cold, shipbuilding and petrochemical.
PTFE filled with 15% graphite packing and seat for a temperature up to 210°C.
Compatible with explosive atmosphere, ATEX Zone 1&21 and Zone 2&22.
With handle up to DN150 and with gearbox over.
Thanks to the ISO 5211 plate, an actuator can be installed on the valve.

Certificate 3.1

TÜVRheinland PED/2014/68/UE



Size :	DN50 to DN450
Connection :	Between flanges PN25
Min Temperature :	-29°C
Max Temperature :	+210°C
Max Pressure :	25 Bars
Specifications :	Lug type ISO 5211 mouting pad ATEX Full crossing stem
Materials :	Carbon steel ASTM A216 WCB

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SPECIFICATIONS :

- 100% tightness
- Lug type
- Between PN25 flanges
- Double offset
- Bidirectional with preferential flow direction indicated by the arrow
- ISO 5211 mounting pad
- Stainless steel CF8M disc
- Full crossing stem
- 10 positions ductile iron handle, with locking device up to DN150
- Gear box from DN 200 to DN450
- Inorganic zinc rich primer, gray color, 10 µm thickness
- Finish painting heat resisting aluminum Silver color 1504, 30 µm thickness
- Ductile iron EN GJS-400-15 handle with silver painting 1504 color

USE :

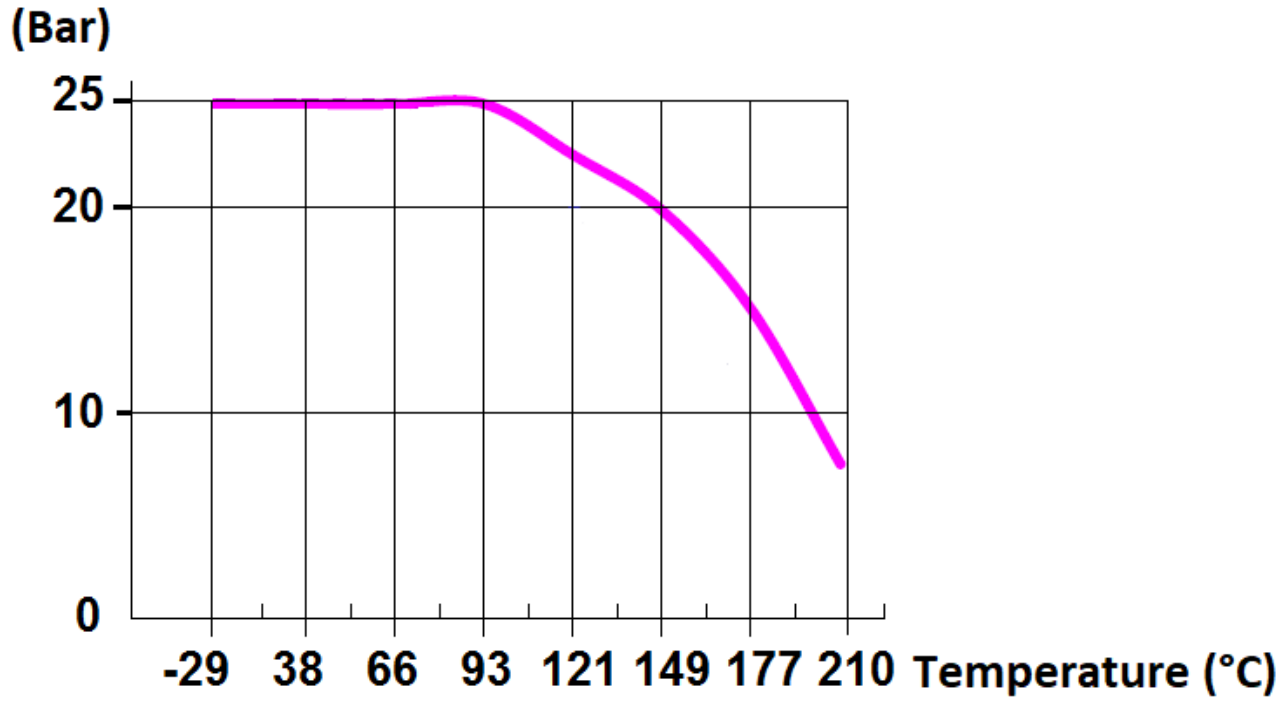
- Heating, geothermics, industrial cold, shipbuilding, petrochemical
- Steam : 10 bars maximum
- Min and max Temperature Ts : - 29°C to + 210°C
- Max Pressure Ps : 25 bars (see graph)
- Vacuum 10^{-3} torr but need to disassemble the packing and returning the Chevron V rings (face to the bottom)
- When using at dead end of pipeline, reverse preferential flow direction

RANGE :

- Lug butterfly valve with carbon steel body, and handle **Ref. 1110L** DN 50 to DN 150
- Lug butterfly valve with carbon steel body, and gear box **Ref. 1110L** DN 200 to DN 450
- Gear box **Ref. 1193** from DN 50 to DN 300

PRESSURE / TEMPERATURE GRAPH :

PRESSURE



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CONNECTION :

- Between PN25 flanges

TORQUE VALUE (in Nm with safety coefficient of 30 % included) :

DN	50	65	80	100	125	150	200	250	300	350	400	450
Torque (Nm) at 0 Bar	13	19	26	35	51	62	89	150	196	382	573	783
Torque (Nm) at 5 Bar	15	22	29	41	64	83	114	211	294	539	686	963
Torque (Nm) at 10 Bar	17	29	37	51	76	103	147	261	374	784	980	1225
Torque (Nm) at 15 Bar	20	35	44	61	89	118	166	309	539	980	1176	1470
Torque (Nm) at 20 Bar	22	41	51	77	105	147	204	394	625	1176	1372	1666
Torque (Nm) at 25 Bar	25	51	59	85	127	176	242	489	828	1323	1568	1911

MAX TORQUE MAST (in Nm) :

DN	50	65	80	100	125	150	200	250	300	350	400	450
MAST	163		324		647		906	1295	2589		5179	

FLOW COEFFICIENT Kv (m3 / h) :

	Opening %									
DN	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
50	0,9	1,7	4,3	8,6	12,9	19,8	30,2	45,7	55,2	56,9
65	4,3	7,8	19,0	27,6	44,0	60,3	79,3	96,6	117,2	120,7
80	7,8	13,8	35,3	50,9	79,3	110,3	146,6	182,8	220,7	224,1
100	12,1	22,4	56,0	83,6	131,0	181,0	237,9	292,2	353,4	362,1
125	21,6	38,8	97,4	139,7	218,1	301,7	408,6	501,7	600,9	620,7
150	21,6	66,4	131,0	194,8	359,5	627,6	758,6	1013,8	1155,2	1185,3
200	36,2	118,1	233,6	346,6	470,7	659,5	848,3	1123,3	1250,0	1508,6
250	107,8	262,9	424,1	502,6	795,7	1086,2	1422,4	1775,9	2103,4	2299,1
300	146,6	357,8	576,7	831,9	1120,7	1512,9	2637,1	2977,6	3318,1	3763,8
350	191,4	436,2	686,2	1004,3	1391,4	1931,9	2691,4	3646,6	4620,7	5141,4
400	271,6	462,9	777,6	1141,4	1641,4	2142,2	3192,2	4650,9	5937,1	6691,4
450	337,9	815,5	1255,2	1758,6	2427,6	3377,6	4669,0	6087,1	7357,8	8063,8

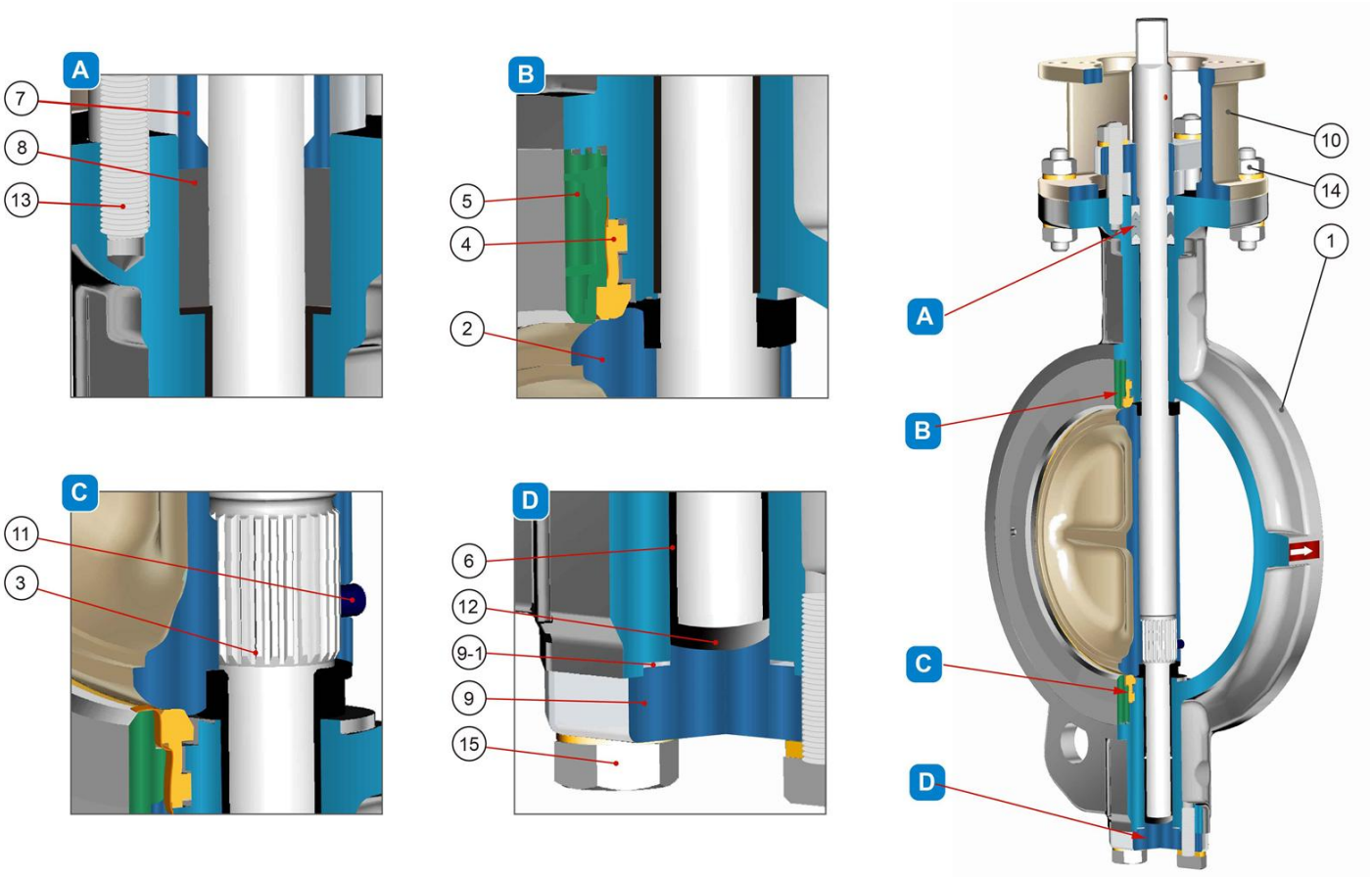
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MATERIALS VALVES :



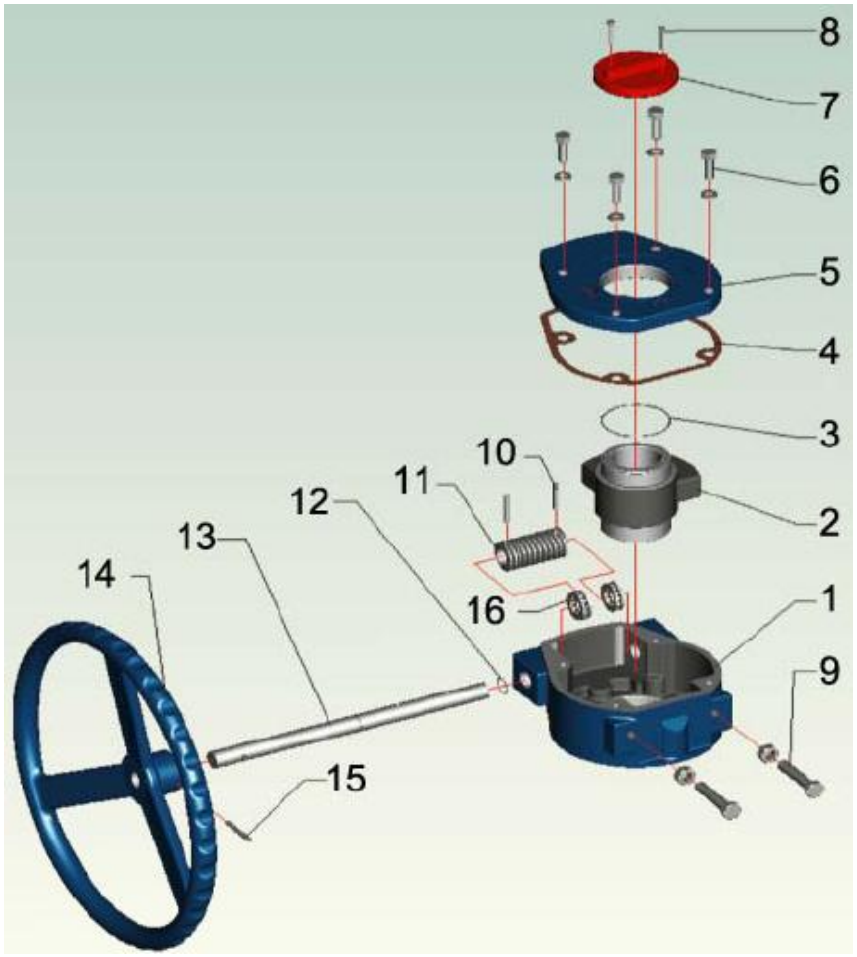
Item	Designation	Materials
1	Body	ASTM A216 WCB
2	Disc	ASTM A351 CF8M
3	Shaft	ASTM A564 630
4*	Seat	PTFE filled with 15% graphite
5	Retainer	ASTM A351 CF8
6*	Bushing	PTFE + AISI 316
7	Gland	ASTM A351 CF8
8*	Gland packing	PTFE filled with 15% graphite
9	Bottom cover	ASTM A216 WCB
9-1*	Bottom cover gasket	PTFE filled with 15% graphite
10	Yoke	ASTM A216 WCB
11*	Stop stud	ASTM A193 Gr. B8M
12*	Lock plate	PTFE filled with 15% graphite + AISI 316
13	Stud	ASTM A193 Gr. B8
14	Nut	ASTM A194 Gr. 8
15	Bolt	ASTM A193 Gr. B8

(* : Included in gaskets kit)

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CARBON STEEL DOUBLE OFFSET LUG BUTTERFLY VALVE PN25

MATERIALS GEARBOX DN50 – 350 :

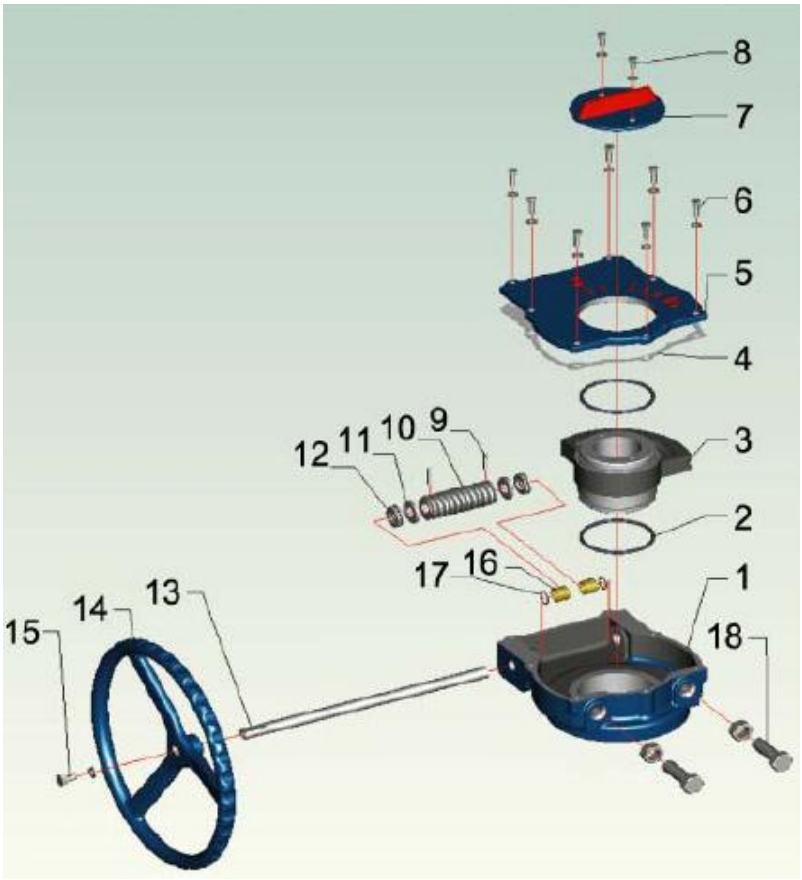


Item	Designation	Materials
1	Body	Cast iron
2	Worm gear	Ductile iron
3	O ring	NBR
4	Gasket	Paper
5	Cover	Cast iron
6	Screw	Steel
7	Indicator	Cast iron
8	Screw	Steel
9	Stop bolt	Steel
10	Pin	Steel
11	Worm	Steel
12	O ring	NBR
13	Worm shaft	Steel
14	Handwheel	Cast iron
15	Pin	Steel
16	Bearing	Steel

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CARBON STEEL DOUBLE OFFSET LUG BUTTERFLY VALVE PN25

MATERIALS GEARBOX DN400 - 450 :



Item	Designation	Materials
1	Body	Cast iron
2	O ring	NBR
3	Worm gear	Ductile iron
4	Gasket	Paper
5	Cover	Cast iron
6	Screw	Steel
7	Indicator	Cast iron
8	Screw	Steel
9	Pin	Steel
10	Worm	Steel
11	Ring	Steel
12	Bearing	Steel
13	Worm shaft	Steel
14	Handwheel	Cast iron
15	Screw	Steel
16	Bushing	Copper
17	O ring	NBR
18	Stop bolt	Steel

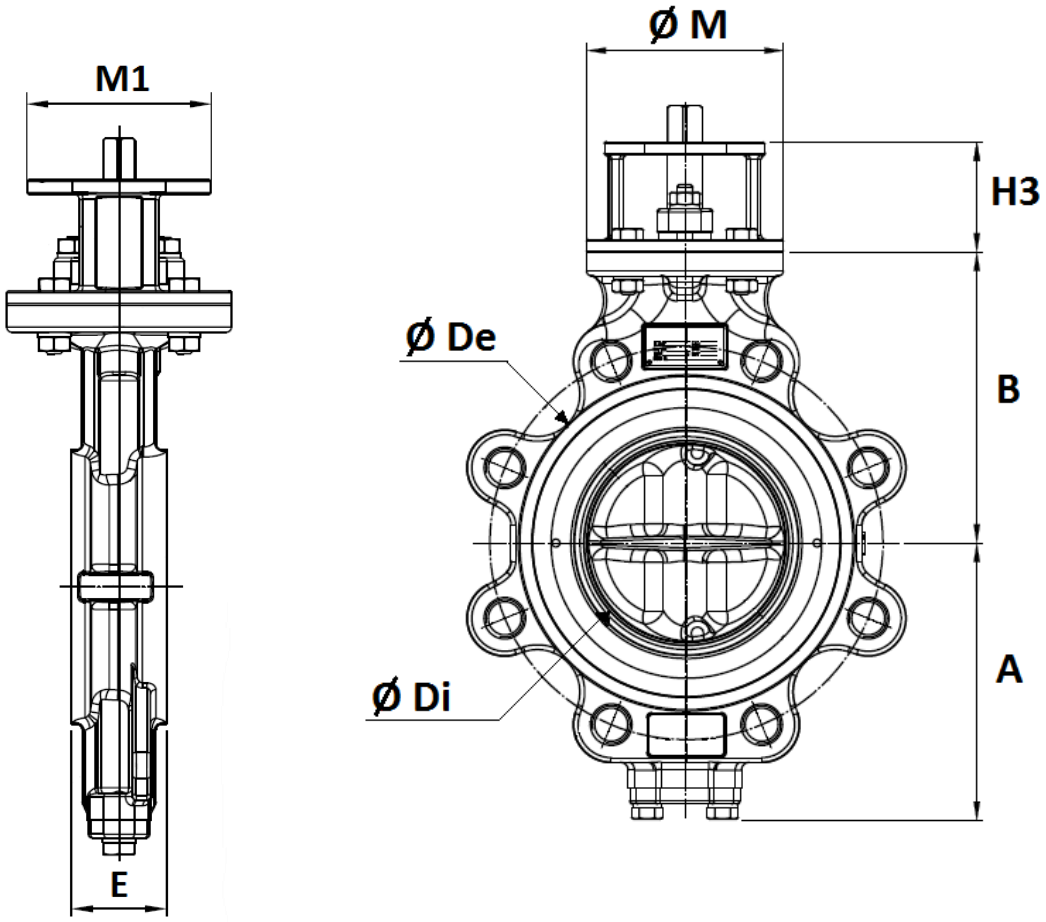
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VALVE SIZE (in mm) :



DN	50	65	80	100	125	150	200	250	300	350	400	450
NPS	2"	2"1/2	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"
E	43	46	47	53	57	56	62	68	78	78	102	114
A	99	110	128	150	163	176	206	238	269	306	342	370
B	118	125	140	157	170	185	220	260	290	326	370	395
H3	60	60	70	70	70	70	80	80	100	100	120	120
Ø M	90	90	125	125	125	125	150	150	175	175	210	210
M1	70	70	102	102	102	102	125	125	160	160	195	195
Ø De	92	108	126	153	184	212	268	326	375	416	476	534
Ø Di	38	63	78	95	118	143	188	236	282	322	371	418
Min pipe diameter	49	62	78	93	120	149	196	243	289	329	377	423
Weight free stem (in Kg)	5.1	5.7	11.2	13.8	18.6	21.4	33	48	66	93	136.5	179.5

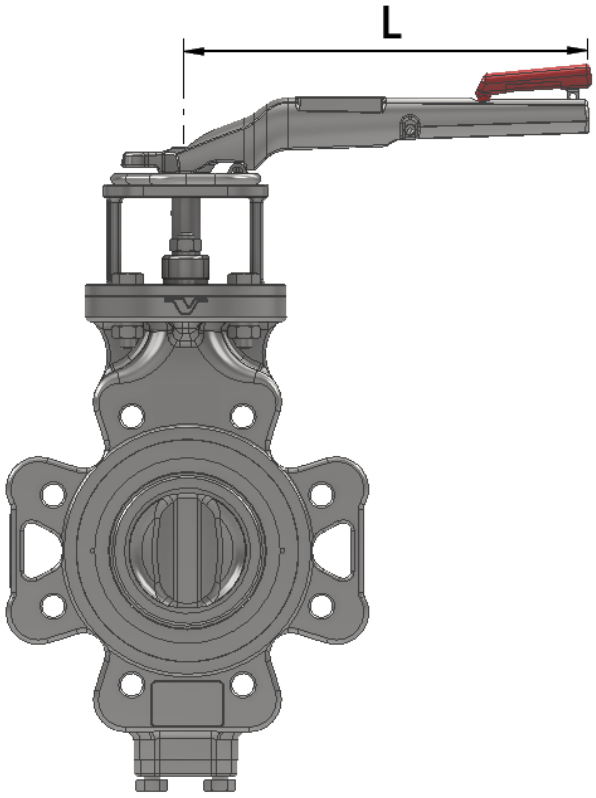
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HANDLE SIZE :



DN	50	65	80	100	125	150
L	200	200	250	250	355	355
Weight (Kg)	0.7	0.7	0.8	0.8	1.6	1.6

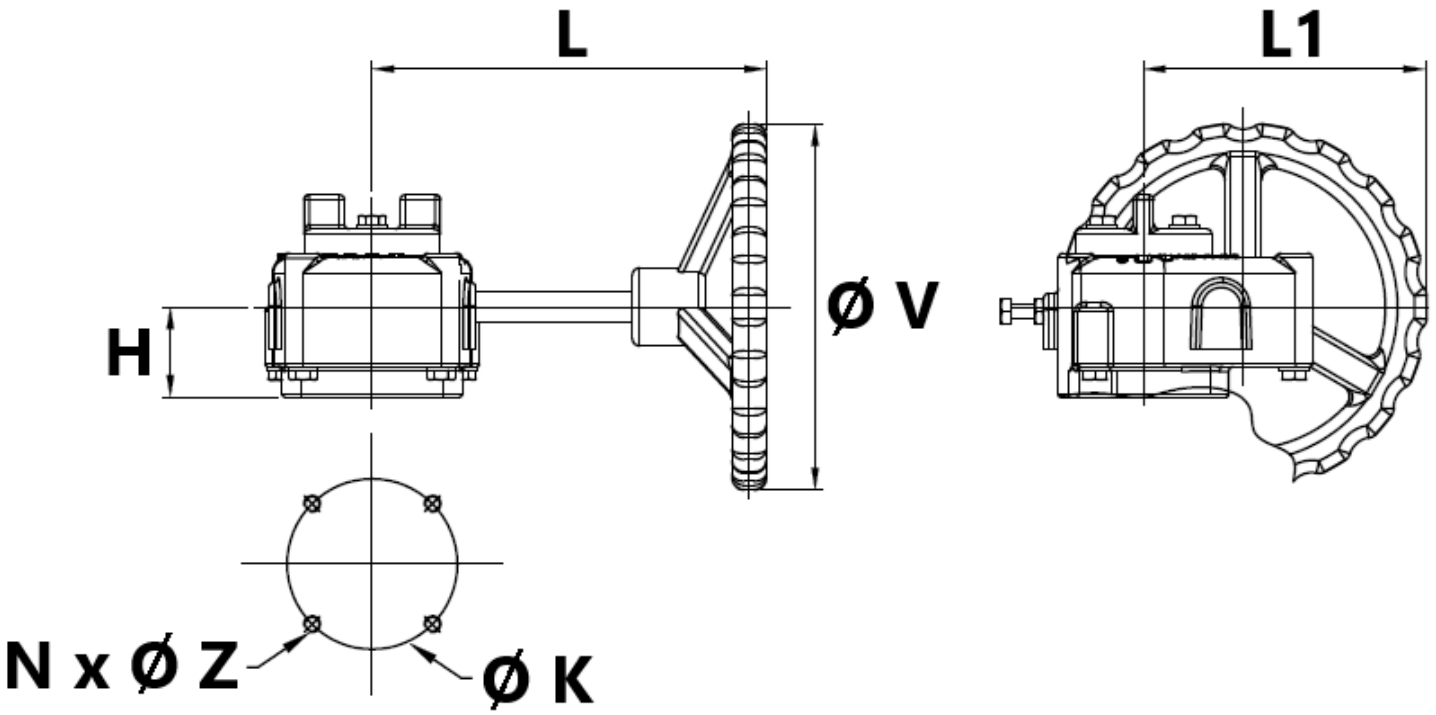
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GEARBOX SIZE DN 50-350 :



DN	50-65	80	100	125-150	200	250	300-350
NPS	2"-2"1/2	3"	4"	5"-6"	8"	10"	12"-14"
L	162		202		265		340
L1	116		163		216		281
H	37		42		41		52
Ø V	150		200		310		400
Ø K	70		102		125		140
ISO	F07		F10		F12		F14
N x Ø Z	4 x M8		4 x M10		4 x M12		4 x M16
Weight (Kg)	3.3		7.5		9		22
Ref.	1193001	1193002	1193003	1193004	1193005	1193006	1193007

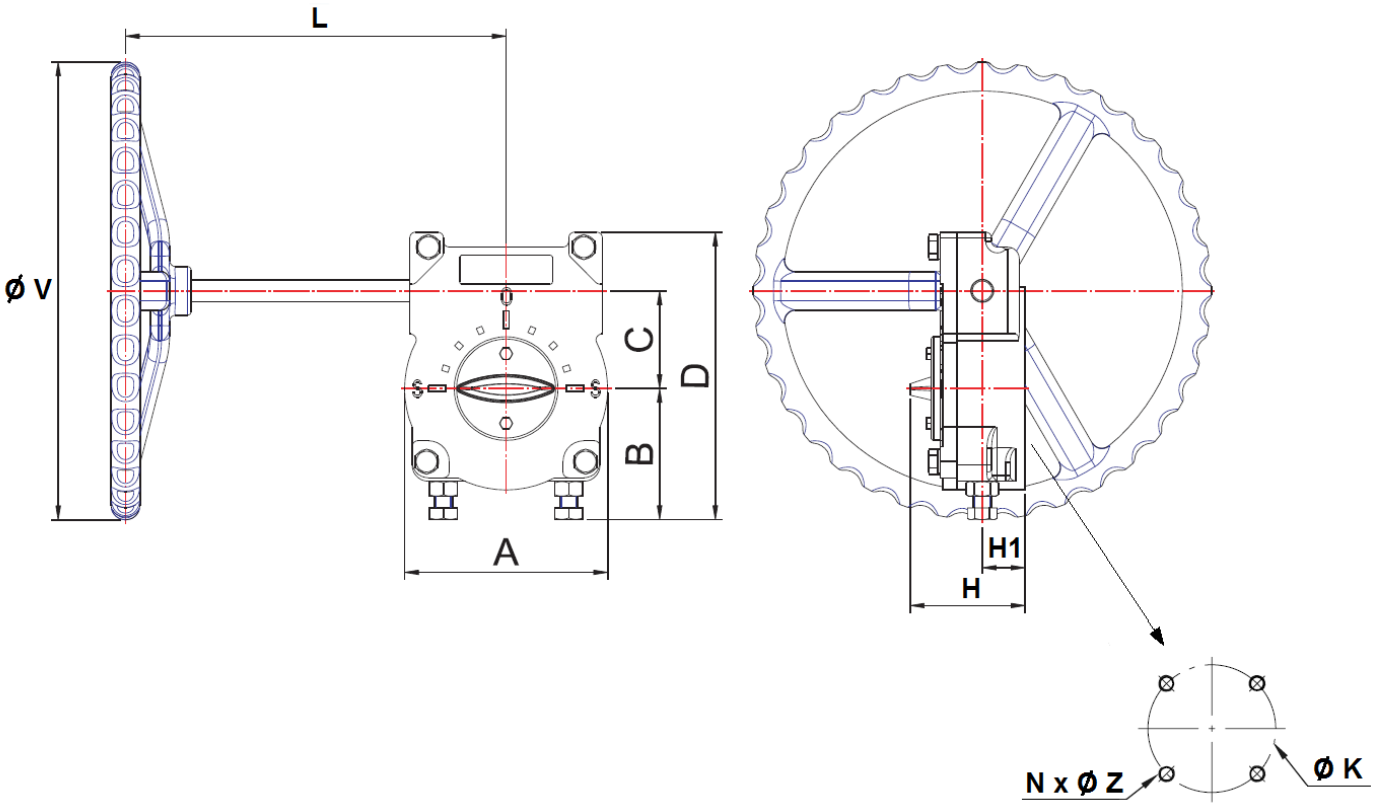
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GEARBOX SIZE DN 400-450 :



DN	400-450
L	307
A	251
B	113
C	123
D	293
H	127
H1	56
Ø V	400
Ø K	165
ISO	F16
N x Ø Z	4 x M20
Weight (in Kg)	35

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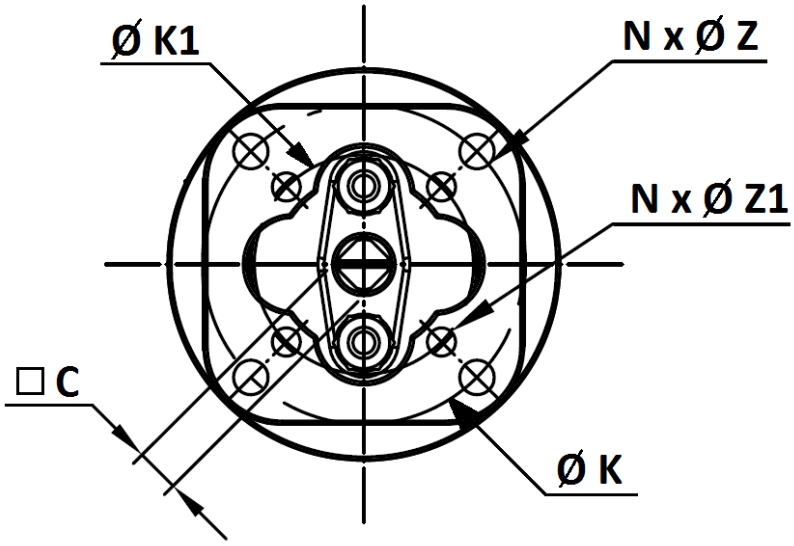
GEARBOX SPECIFICATIONS :

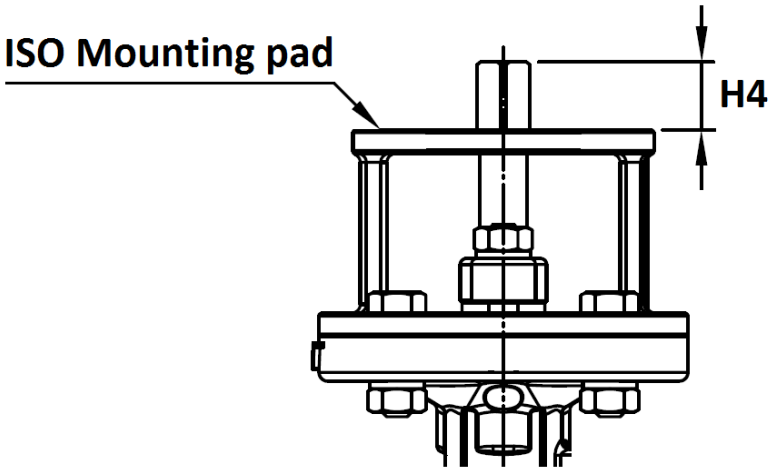
DN	50-65	80	100	125-150	200-250	300-350	400-450
Ref.	1193001	1193002	1193003	1193004	-	-	-
Ratio factor	40 :1	40 :1	36 :1	36 :1	36 :1	52 :1	70 :1
Number of cycles for opening or closing	10	10	9	9	9	13	17.5
Input torque (Nm)	24.5	24.5	54	54	109	150	225
Output torque (Nm)	245	245	490	490	980	1960	3922

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ISO MOUNTIG PAD AND STEM SIZE (in mm) :





DN	50	65	80	100	125	150	200	250	300	350	400	450
NPS	2"	2"1/2	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"
C	11		14		17		19	22	27		36	
H4	18		23				28		37		47	
Ø K	70		102				125		140		165	
ISO	F07		F10				F12		F14		F16	
N x ØZ	4 x 10		4 x 12				4 x 14		4 x 18		4 x 22	
Ø K1	50		70				102		125		140	
ISO1	F05		F07				F10		F12		F14	
NxØZ1	4 x 8		4 x 10				4 x 12		4 x 14		4 x 18	

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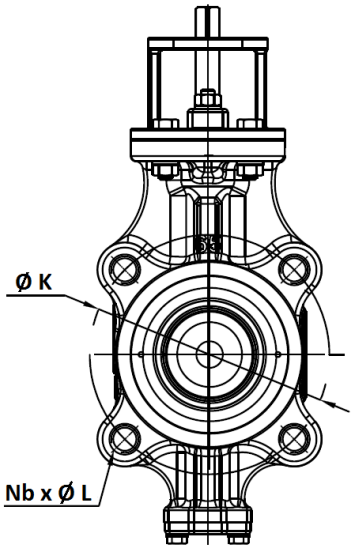
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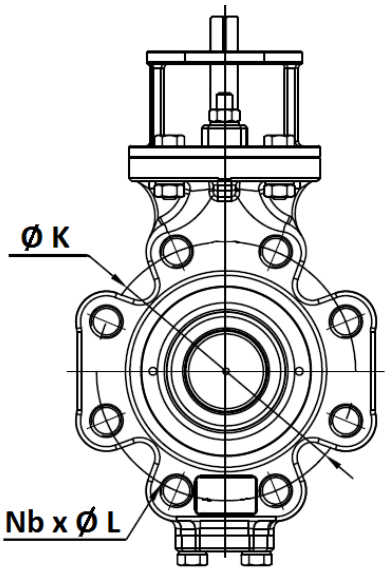
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BETWEEN FLANGES PN25 SIZE (in mm) :

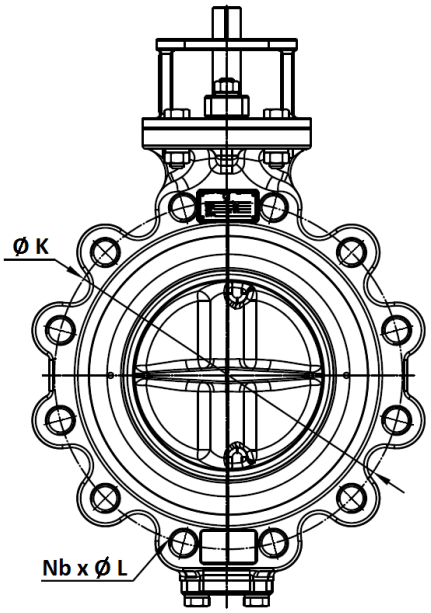
DN50



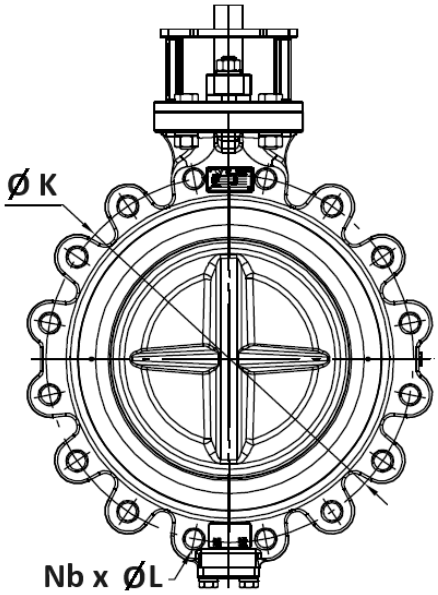
DN65 - 150



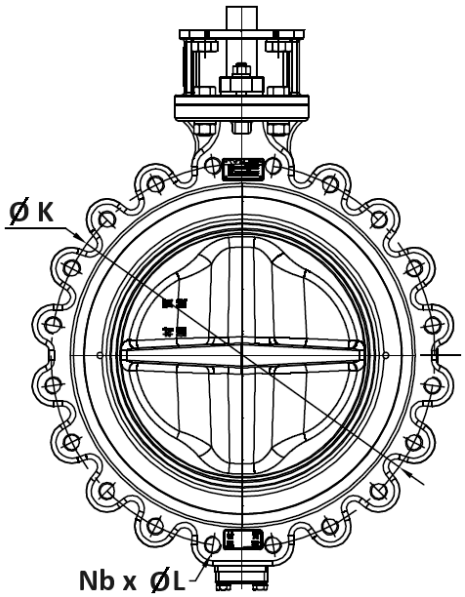
DN200 - 250



DN300-400



DN450



PN	PN25											
DN	50	65	80	100	125	150	200	250	300	350	400	450
Ø K	125	145	160	190	220	250	310	370	430	490	550	600
Nb x ØL	4 x M16	8 x M16	8 x M16	8 x M20	8 x M24	8 x M24	12 x M24	12 x M27	16 x M27	16 x M30	16 x M33	20 x M33
Ref.	1110L050	1110L065	1110L080	1110L100	1110L125	1110L150	1110L200	1110L250	1110L300	1110L350	1110L400	1110L450

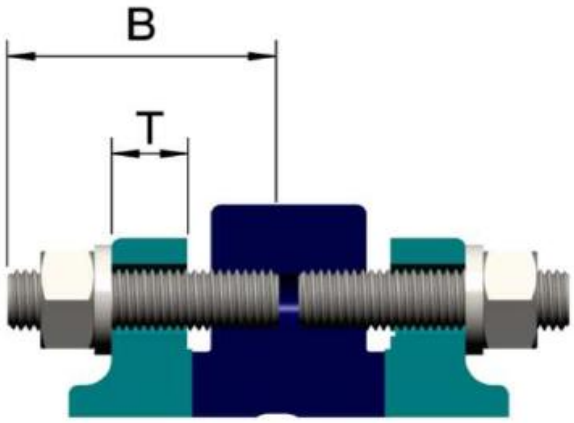
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BOLTING SIZE (in mm, not included with valves) :



DN	50	65	80	100	125	150	200	250	300	350	400	450
B	75			90	105		110	115	120	130	145	150
T	22	22	24	24	26	28	30	32	34	38	40	48
Threading	M16			M20	M24			M27		M30	M33	

BOLTING TORQUES :

Bolting size	Max torque (Nm)
M16	150
M20	270
M24	450
M27	700
M30	950
M33	1300

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CARBON STEEL DOUBLE OFFSET LUG BUTTERFLY VALVE PN25

STANDARDS :

- Manufacturer certified ISO 9001:2015
- DIRECTIVE 2014/68/EU : For liquids and gas of Group 1
  - DN50-125 : Risk Category II, CE0035 marking
  - DN150-450 : Risk Category III, CE0035 marking
- Certificate 3.1 on request
- Designing according to API 609
- Marking according to MSS SP-25
- Tightness tests according to ISO 5208, Rate A
- Between flanges according to EN 1092-1 PN25
- ISO 5211 mounting pad
- Length according to EN 558 series 20 (ISO 5752 series 20)
- ATEX Group II Category 2 G/2D Zone 1 & 21 Zone 2 &22 according to directive 2014/34/EU (Optional marking)
- SIL2 according to IEC/EN 61508, SIL 3 possible according to installation

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