

**STAINLESS STEEL DOUBLE OFFSET WAFER BUTTERFLY VALVE CLASS 150 FIRE SAFE**

Stainless steel double offset butterfly valve wafer for steam, heating, geothermics, industrial cold, shipbuilding and petrochemical.

PTFE filled with 15% graphite packing and seat for a temperature up to +210°C.

Valve with firesafe certificate ISO 10497 to reduce risks in case of fire.

Compatible with explosive atmosphere, ATEX Zone 1&21 and Zone 2&22.

Handle up to DN150, gearbox over.

Thanks to the ISO 5211 plate, an actuator can be installed directly on the valve.



**Size :** DN50 to DN600 (NPS 2" to 24")

**Connection :** Between flanges Class 150 PN20

**Min Temperature :** -50°C

**Max Temperature :** +210°C

**Max Pressure :** 20 Bars

**Specifications :** Full crossing stem  
ISO 5211 mounting pad  
Wafer type

**Materials :** Stainless steel ASTM A351 CF8M

**STAINLESS STEEL DOUBLE OFFSET WAFER BUTTERFLY VALVE CLASS 150 FIRE SAFE**

**SPECIFICATIONS :**

- 100% tightness
- Wafer type
- Between Class 150 (PN20) flanges
- Double offset
- Bidirectional with preferential flow direction indicated by the arrow
- Fire safe according to ISO 10497 : 2010
- ISO 5211 mounting pad
- Stainless steel CF8M disc
- Full crossing stem
- 10 positions ductile iron handle, with locking device up to DN150 ( NPS 6" )
- Gear box from DN 200 to DN600 ( NPS 8" to 24" )
- Ductile iron EN GJS-400-15 handle with silver painting RAL 9006 color

**USE :**

- Heating, geothermics, industrial cold, shipbuilding, petrochemical
- Steam : 10 bars maximum
- Min and max Temperature Ts : - 50°C to + 210°C
- Max Pressure Ps : 20 bars ( see graph )
- Vacuum : 10<sup>-3</sup> torr
- When using at dead end of pipeline, reverse preferential flow direction

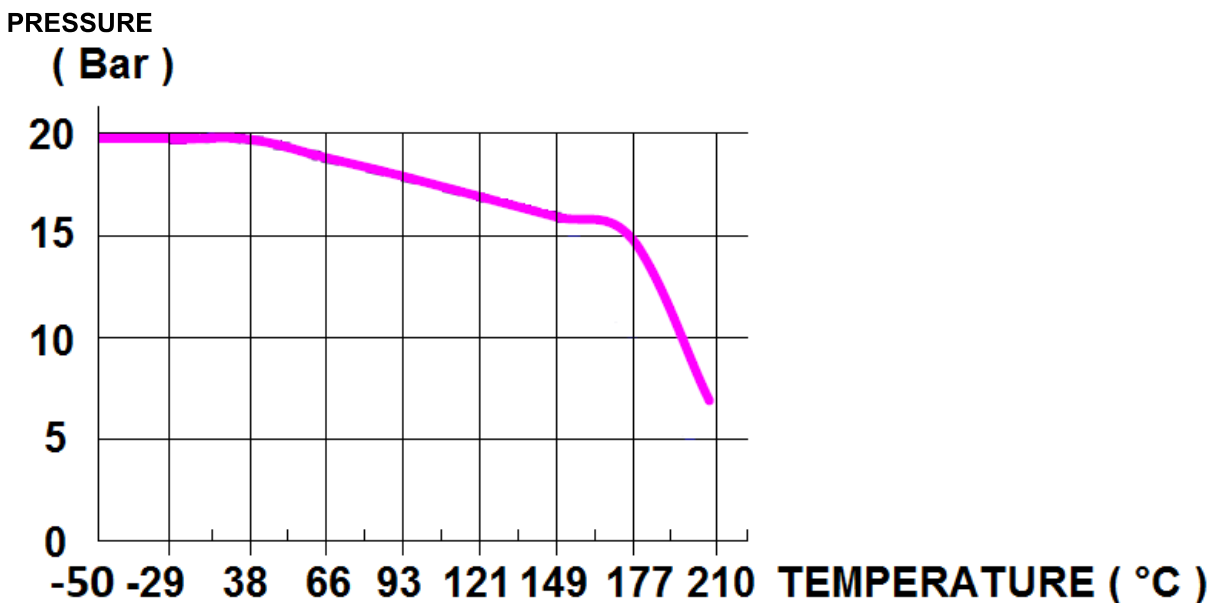
**RANGE :**

- Wafer type with stainless steel body , and handle **Ref. 1116** DN 50 to DN 150 ( NPS 2" to 6" )
- Wafer type with stainless steel body , and gear box **Ref. 1116** DN 200 to DN 600 ( NPS 8" to 24" )
- Gear box **Ref. 1193** from DN 50 to DN 350 ( NPS 2" to 14" )

**CONNECTION :**

- Between Class 150 (PN20) flanges

**PRESSURE / TEMPERATURE GRAPH :**



**STAINLESS STEEL DOUBLE OFFSET WAFER BUTTERFLY VALVE CLASS 150 FIRE SAFE**

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

DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
NPS	2"	2"1/2	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
Torque ( Nm ) at 0 Bar	29	37	50	76	118	147	176	255	333	461	657	843	1078	1274
Torque ( Nm ) at 5 Bar	32	46	61	88	137	196	235	323	470	725	960	1058	1382	1617
Torque ( Nm ) at 10 Bar	39	61	76	103	170	225	294	421	549	833	1264	1362	1803	2225
Torque ( Nm ) at 15 Bar	43	69	92	118	194	265	353	480	686	990	1509	1705	2166	2783
Torque ( Nm ) at 20 Bar	49	83	107	140	223	294	421	568	862	1196	1686	2087	2920	3783

**MAX TORQUE MAST ( in Nm ) :**

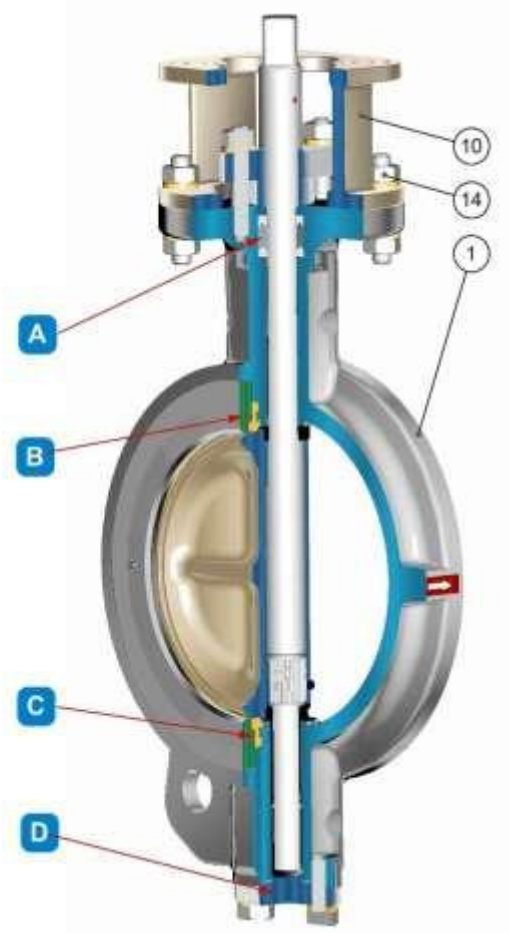
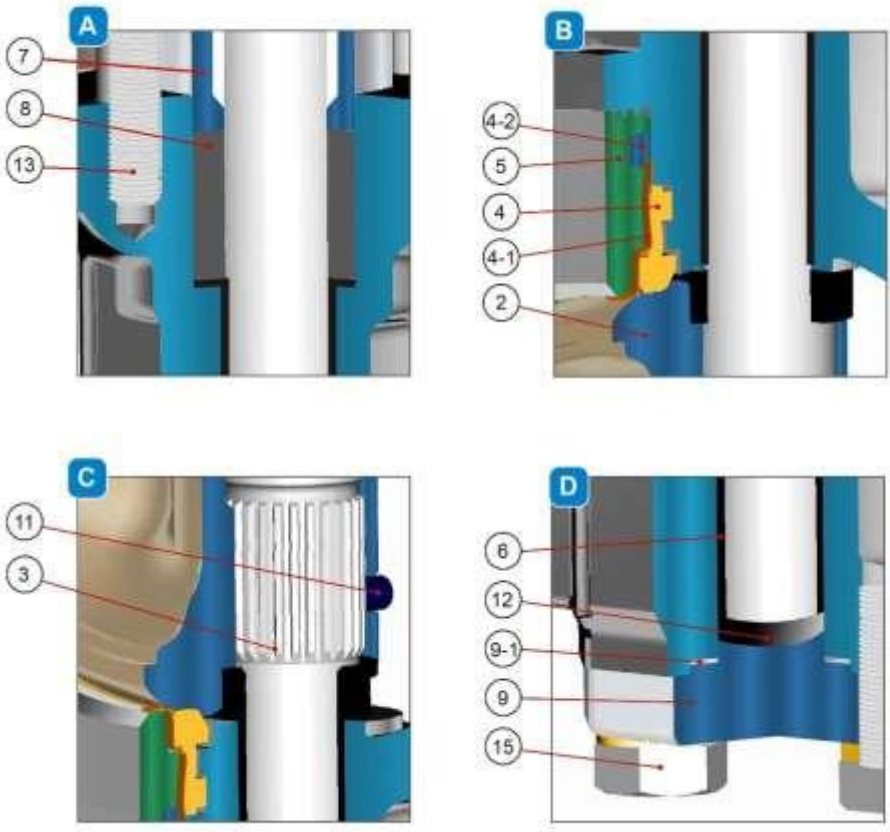
DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
NPS	2"	2"1/2	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
MAST	163		324		647		906	1295	2589		5179		10357	

**FLOW COEFFICIENT Kv ( m3 / h ) :**

DN	Percent of Rated Travel									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
50	3,5	11,2	22,5	33,7	62,3	109,0	132,3	176,4	201,5	138,4
65	6,1	19,9	38,9	57,1	105,5	185,1	223,1	298,4	339,9	224,0
80	8,6	29,4	58,8	87,4	160,0	280,2	338,2	452,3	515,5	344,2
100	9,5	35,5	62,3	95,1	185,1	324,3	359,8	467,9	497,3	530,2
125	14,7	45,8	91,7	135,8	250,8	437,6	528,4	705,7	805,2	847,6
150	20,8	66,6	131,5	195,5	360,7	629,6	761,1	1017,1	1158,9	1189,2
200	36,3	118,5	234,4	347,7	472,2	661,6	851,0	1126,9	1254,1	1513,5
250	108,1	263,8	425,5	504,2	798,3	1089,7	1427,1	1781,7	2110,3	2306,6
300	147,0	358,9	578,6	834,6	1124,3	1517,9	2645,7	2987,3	3328,9	3776,1
350	192,0	437,6	688,4	1007,6	1395,9	1938,2	2700,2	3658,4	4635,8	5158,1
400	272,4	464,4	780,1	1145,1	1646,7	2149,2	3202,7	4666,0	5956,4	6713,2
450	339,0	818,2	1259,3	1764,4	2435,5	3388,6	4684,2	6106,9	7381,8	8090,1
500	443,7	1035,3	1586,2	2212,4	3031,4	4275,1	6216,8	7867,8	9523,2	10226,3
600	730,8	1609,5	2380,1	3382,5	4757,7	6628,4	9375,3	12475,0	15868,0	17178,2

STAINLESS STEEL DOUBLE OFFSET WAFER BUTTERFLY VALVE CLASS 150 FIRE SAFE

**MATERIALS VALVES :**



(\* : Included in gaskets kit )

Item	Designation	Materials
1	Body	ASTM A351 CF8M
2	Disc	ASTM A351 CF8M
3	Shaft	ASTM A564 630
4*	Seat	PTFE filled with 15% graphite
4-1	Metal seat	Inconel 718
4-2*	Gasket	Graphite
5	Retainer	ASTM A351 CF8
6*	Bushing	PTFE + AISI 316
7	Gland	ASTM A351 CF8
8*	Gland packing	Graphite
9	Bottom cover	ASTM A351 CF8M
9-1*	Bottom cover gasket	Graphite
10	Yoke	ASTM A351 CF8
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

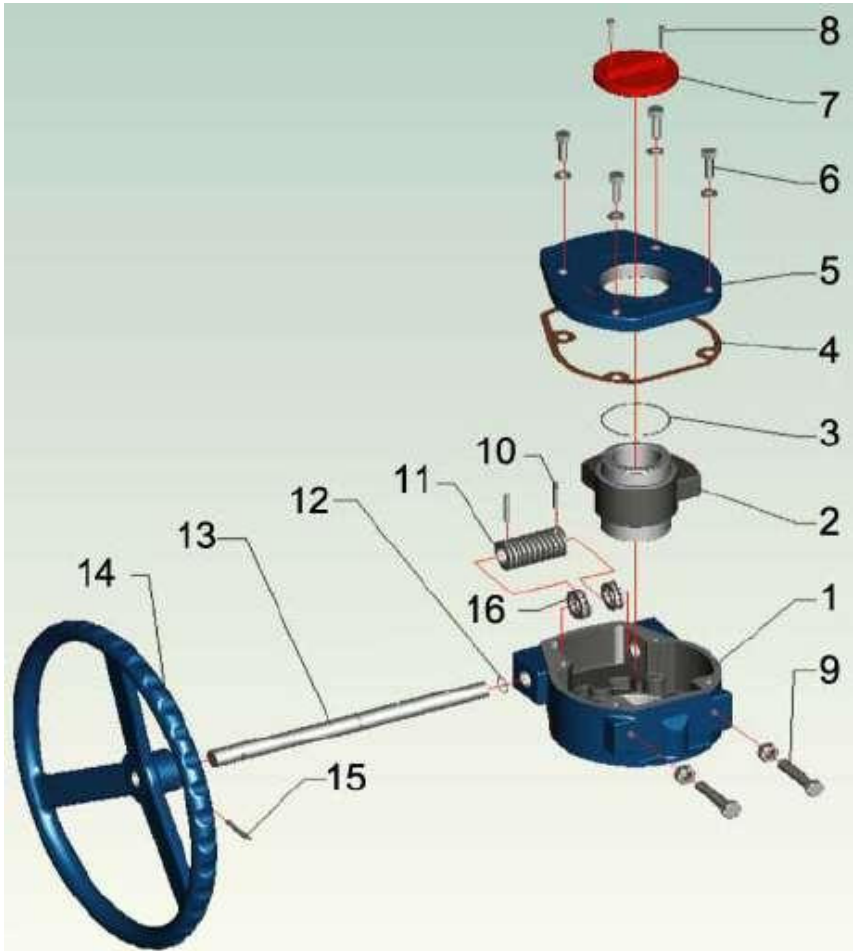
**Repairability :**



*Gaskets kit (Items 4, 4-2, 6, 8, 9-1, 11 et 12)	
DN50	9865290
DN65	9865291
DN80	9865292
DN100	9865293
DN125	9865294
DN150	9865295
DN200	9865296
DN250	9865297
DN300	9865298
DN350	9865299

STAINLESS STEEL DOUBLE OFFSET WAFER BUTTERFLY VALVE CLASS 150 FIRE SAFE

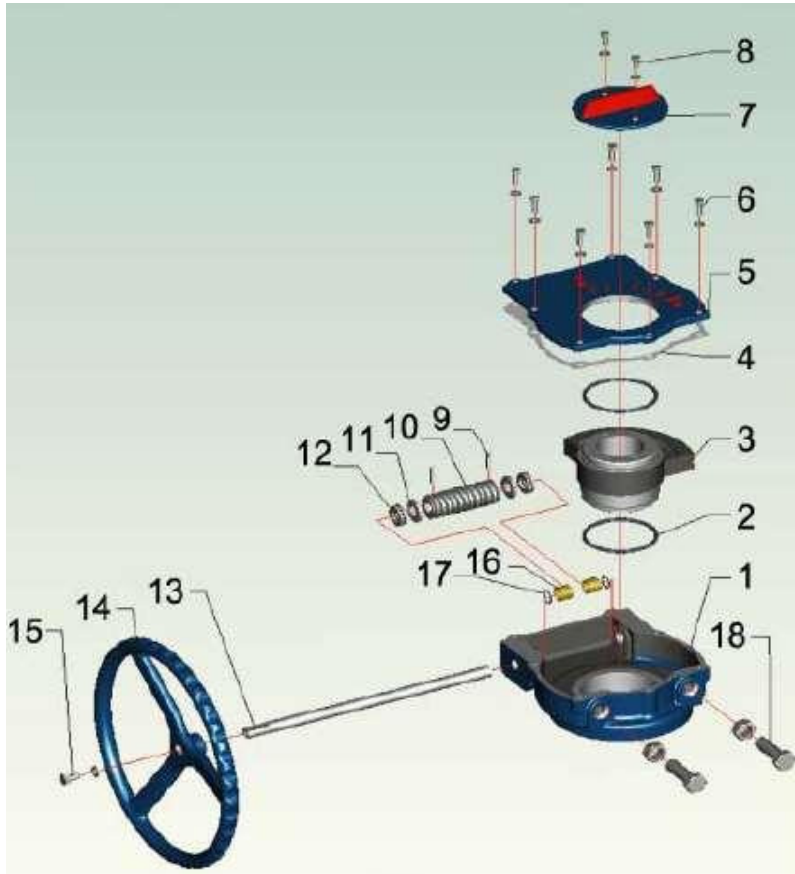
MATERIALS GEARBOX DN50 – 350 ( NPS 2" to 14" ) :



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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MATERIALS GEARBOX DN400 – 600 ( NPS 16" to 24" ) :

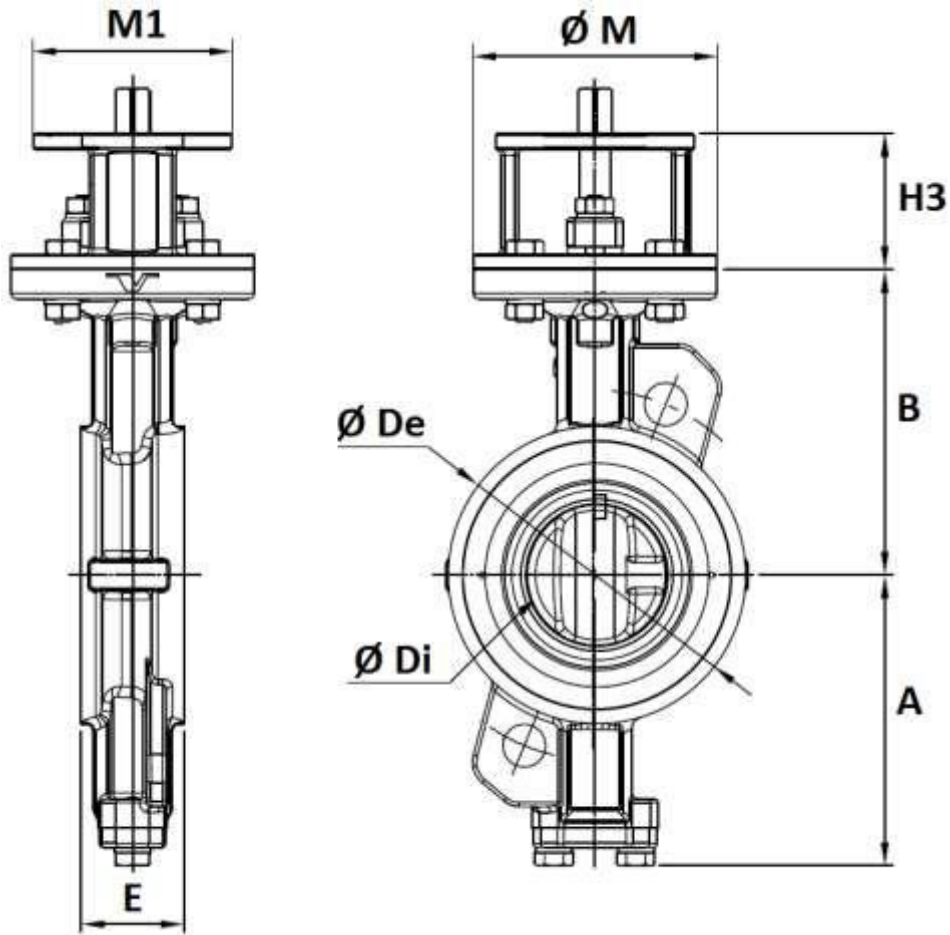


Item	Designation	Materials
1	Body	Cast iron
2	O ring	NBR
3	Worm gear	Ductile iron
4	Gasket	Paper
5	Cover	Cast iron
6	Screw	Steel
7	Indicator	Cast iron
8	Screw	Steel
9	Pin	Steel
10	Worm	Steel
11	Ring	Steel
12	Bearing	Steel
13	Worm shaft	Steel
14	Handwheel	Cast iron
15	Screw	Steel
16	Bushing	Copper
17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



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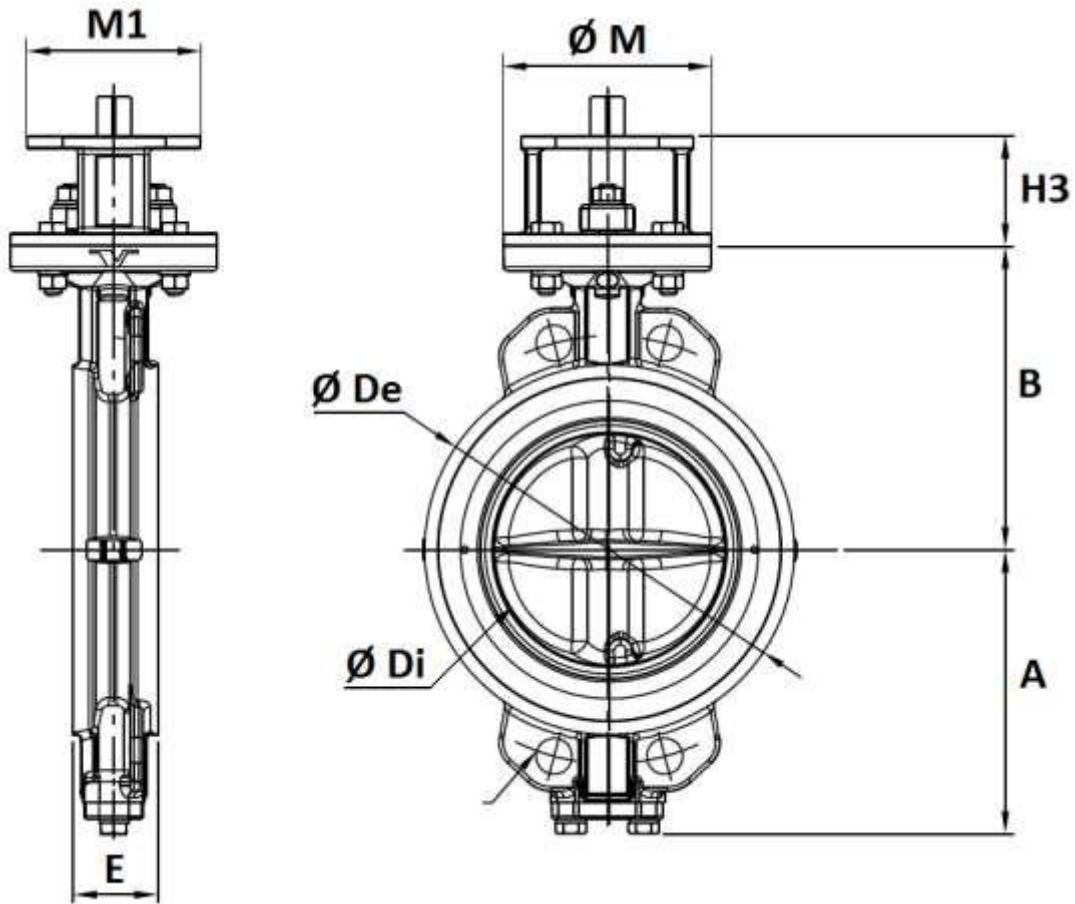
VALVE SIZE DN50 - 150 ( in mm ) :



NPS	2"	2"1/2	3"	4"	5"	6"
DN	50	65	80	100	125	150
E	43	46	47	53	57	56
A	99	110	128	150	163	176
B	118	125	140	157	170	185
H3	60	60	70	70	70	70
Ø M	90	90	125	125	125	125
M1	70	70	102	102	102	102
Ø De	92	108	126	153	184	212
Ø Di	37	63	78	95	118	143
Min pipe diameter	49	62	78	93	120	149
Weight (in Kg)	3.9	4.5	7	9	12	13.5
Ref.	1116050	1116065	1116080	1116100	1116125	1116150

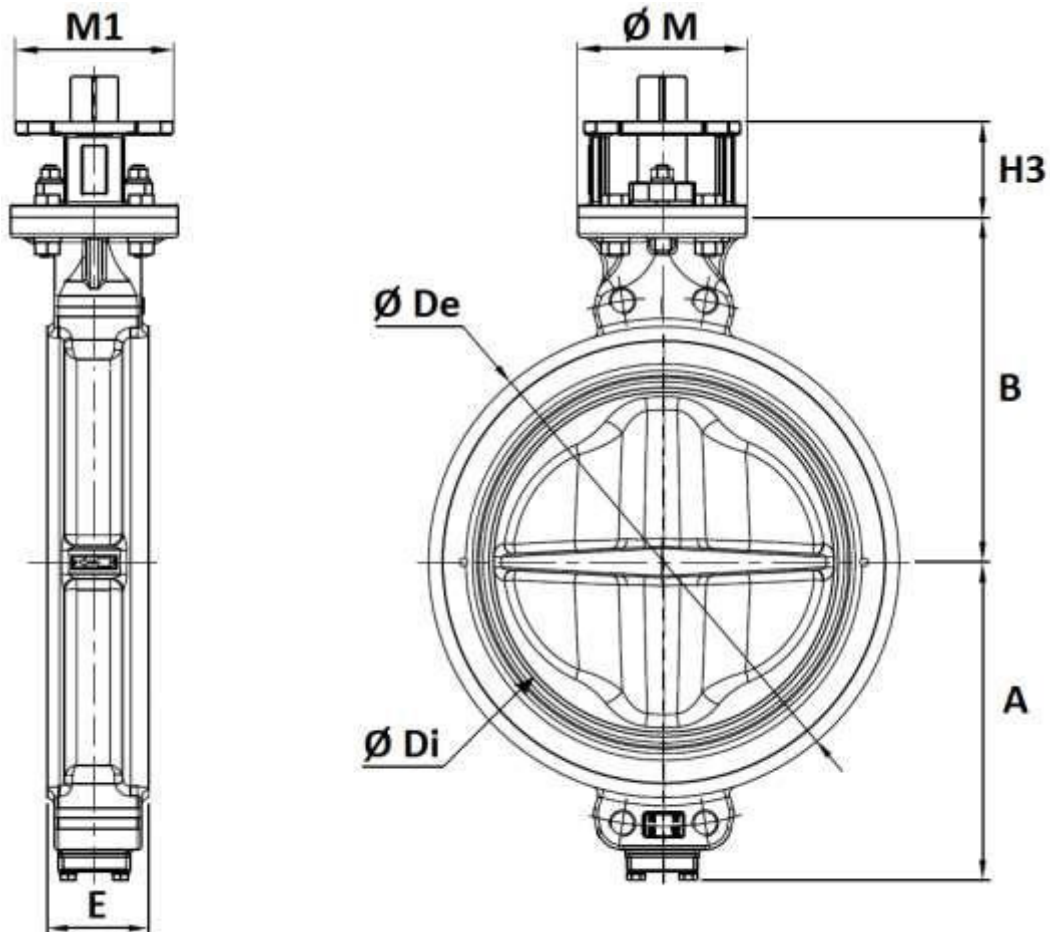
STAINLESS STEEL DOUBLE OFFSET WAFER BUTTERFLY VALVE CLASS 150 FIRE SAFE

VALVE SIZE DN200 - 400 ( in mm ) :



NPS	8"	10"	12"	14"	16"
DN	200	250	300	350	400
E	62	68	78	78	102
A	206	238	269	306	342
B	220	260	290	326	370
H3	80	80	100	100	120
Ø M	150	150	175	175	210
M1	125	125	160	160	195
Ø De	268	326	375	416	476
Ø Di	187.6	235.5	282	322	371
Min pipe diameter	196	243	289	329	377
Weight (in Kg)	22	32	48	66	107
Ref.	1116200	1116250	1116300	1116350	1116400



**STAINLESS STEEL DOUBLE OFFSET WAFER BUTTERFLY VALVE CLASS 150 FIRE SAFE**
VALVE SIZE DN450 - 600 ( in mm ) :


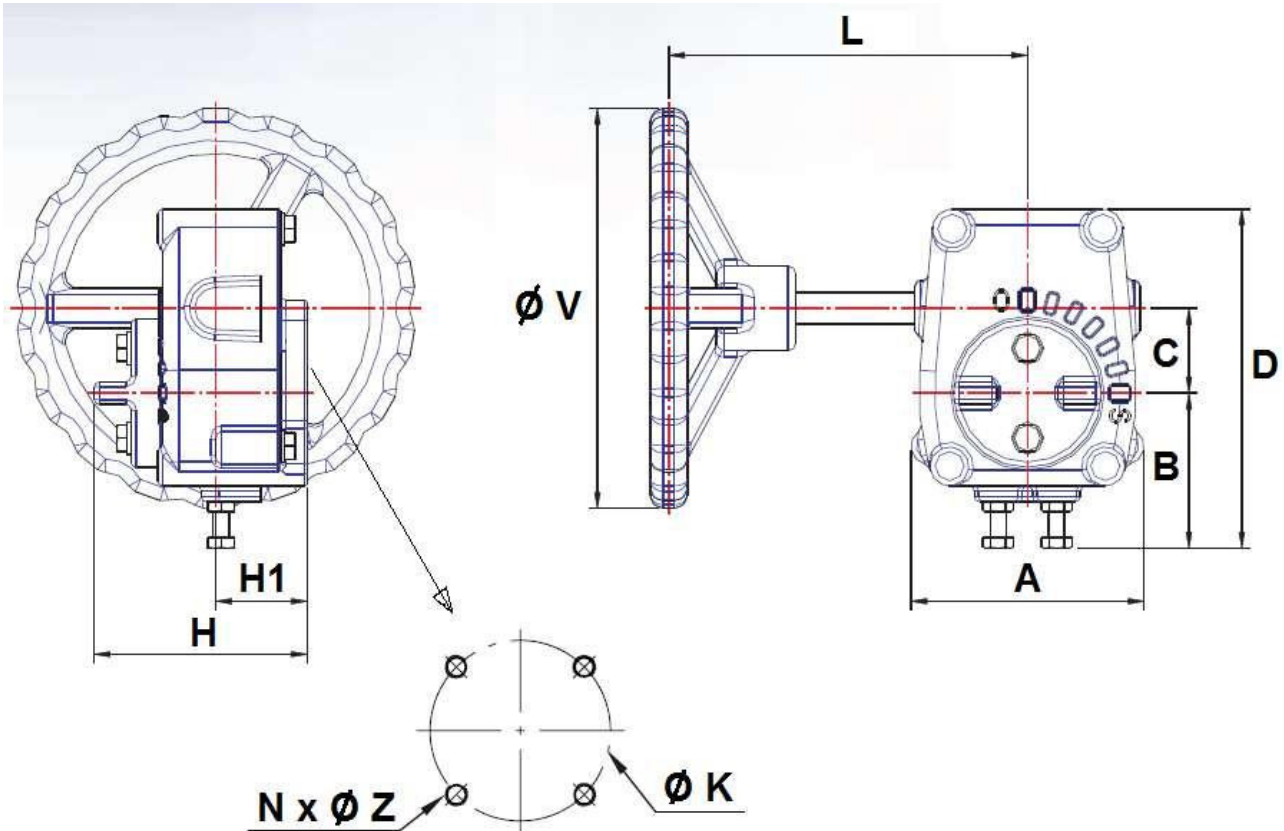
NPS	18"	20"	24"
DN	450	500	600
E	114	127	154
A	370	399	455
B	395	430	490
H3	120	120	150
Ø M	210	210	300
M1	195	195	300
Ø De	534	588	692
Ø Di	418	466	570
Min pipe diameter	423	471	572
Weight (in Kg)	130	163	278
Ref.	1116450	1116500	1116600

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HANDLE SIZE (in ductile iron EN GJS-400-15 with silver painting RAL 9006 color) :



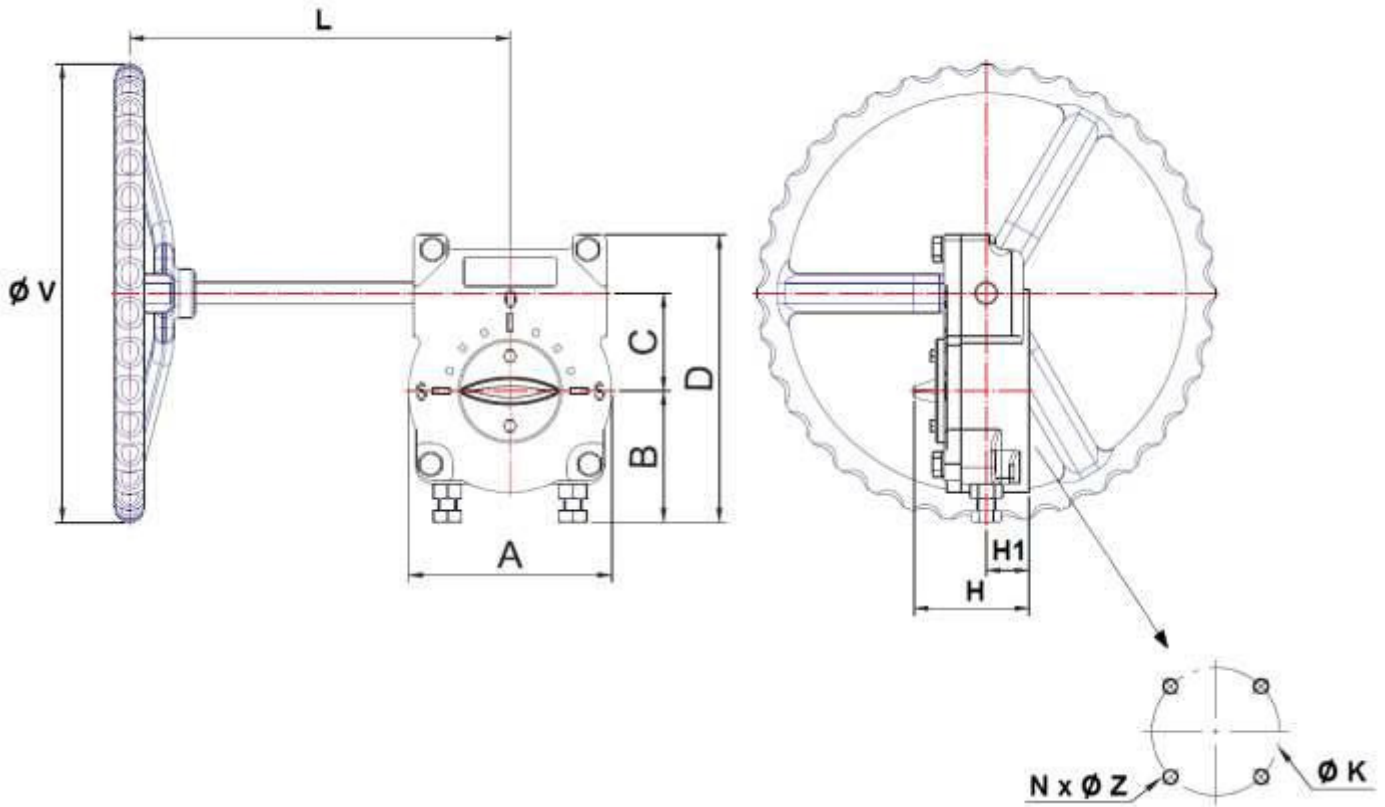
<b>DN</b>	<b>50</b>	<b>65</b>	<b>80</b>	<b>100</b>	<b>125</b>	<b>150</b>
<b>NPS</b>	<b>2"</b>	<b>2"1/2</b>	<b>3"</b>	<b>4"</b>	<b>5"</b>	<b>6"</b>
<b>L</b>	<b>200</b>	<b>200</b>	<b>250</b>	<b>250</b>	<b>355</b>	<b>355</b>
<b>Weight (Kg)</b>	<b>0.7</b>	<b>0.7</b>	<b>0.8</b>	<b>0.8</b>	<b>1.6</b>	<b>1.6</b>

**STAINLESS STEEL DOUBLE OFFSET WAFER BUTTERFLY VALVE CLASS 150 FIRE SAFE**
**GEARBOX SIZE DN 50-350 ( NPS 2" to 14" ) :**


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	155	155	195	195	258	258	346
A	87	87	117	117	153	153	181
B	49	49	81	81	97	97	102
C	41	41	63	63	61	61	81
D	130	130	176	176	186	186	223
H	81	81	91	91	88	88	117
H1	37	37	41.5	41.5	41	41	52
Ø V	150	150	200	200	310	310	400
Ø K	70	70	102	102	125	125	140
ISO	F07	F07	F10	F10	F12	F12	F14
N x Ø Z	4 x M8	4 x M8	4 x M10	4 x M10	4 x M12	4 x M12	4 x M16
Weight (Kg)	3.3	3.3	7.5	7.5	9	9	22
Ref.	1193001	1193002	1193003	1193004	1193005	1193006	1193007

**STAINLESS STEEL DOUBLE OFFSET WAFER BUTTERFLY VALVE CLASS 150 FIRE SAFE**

GEARBOX SIZE DN 400-600 ( NPS 16" to 24" ):



DN	400-500-600
NPS	16"-20"-24"
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 (Kg)	35

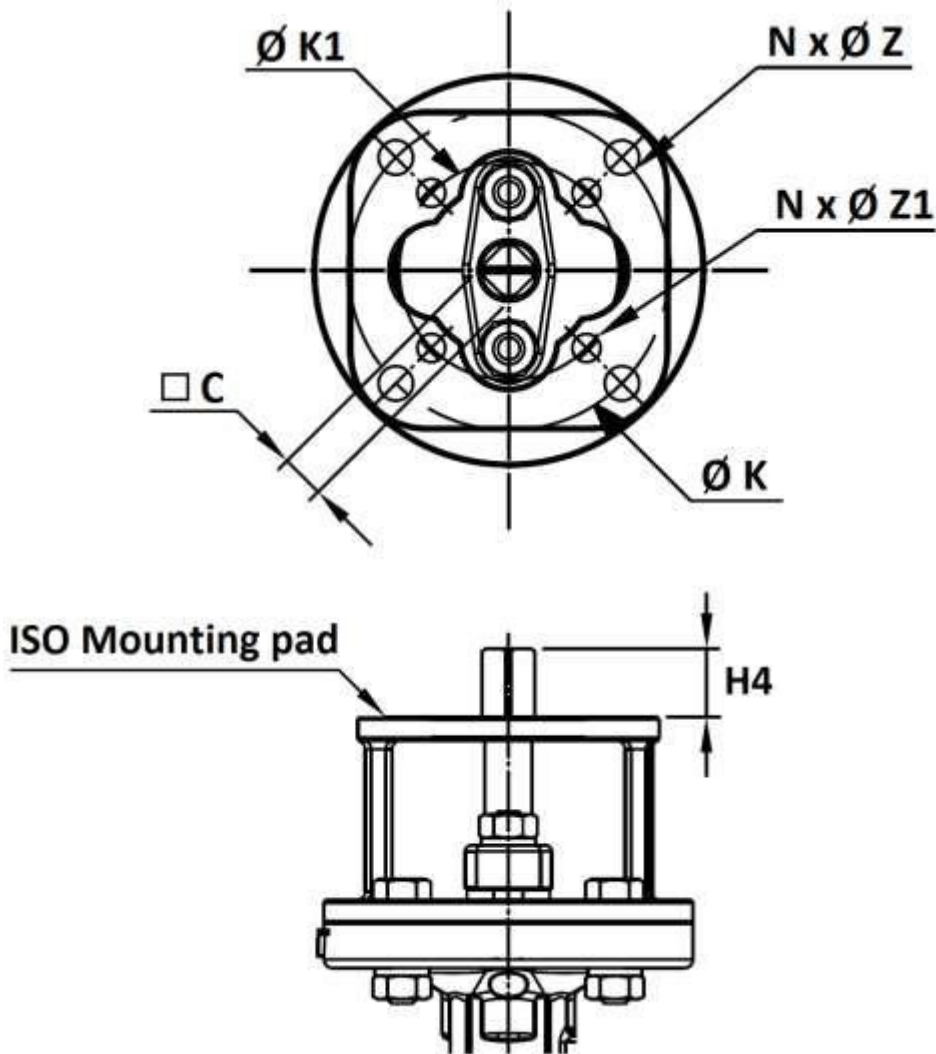
**STAINLESS STEEL DOUBLE OFFSET WAFER BUTTERFLY VALVE CLASS 150 FIRE SAFE**

**GEARBOX SPECIFICATIONS :**

DN	50-65	80	100	125-150	200-250	300-350	400-600
NPS	2"-2"1/2	3"	4"	5"-6"	8"-10"	12"-14"	16"-24"
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

STAINLESS STEEL DOUBLE OFFSET WAFER BUTTERFLY VALVE CLASS 150 FIRE SAFE

*ISO MOUNTING PAD AND STEM SIZE ( in mm ) :*



NPS	2"	2"1/2	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
C	11	11	14	14	17	17	19	22	27	27	36	36	46	46
H4	18	18	23	23	23	23	28	28	37	37	47	47	56	56
$\varnothing K$	70	70	102	102	102	102	125	125	140	140	165	165	165	254
ISO	F07	F07	F10	F10	F10	F10	F12	F12	F14	F14	F16	F16	F16	F25
$N \times \varnothing Z$	4 x 8	4 x 8	4 x 10	4 x 10	4 x 10	4 x 10	4 x 12	4 x 12	4 x 16	4 x 16	4 x 22	4 x 22	4 x 22	8 x 17
$\varnothing K1$	50	50	70	70	70	70	102	102	125	125	140	140	140	-
ISO1	F05	F05	F07	F07	F07	F07	F10	F10	F12	F12	F14	F14	F14	-
$N \times \varnothing Z1$	4 x 6	4 x 6	4 x 8	4 x 8	4 x 8	4 x 8	4 x 10	4 x 10	4 x 12	4 x 12	4 x 16	4 x 16	4 x 16	-



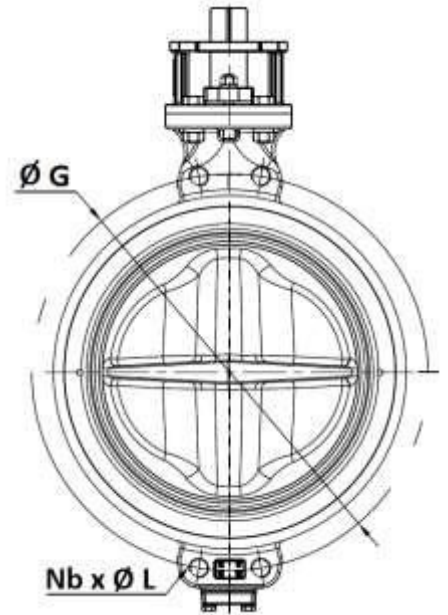
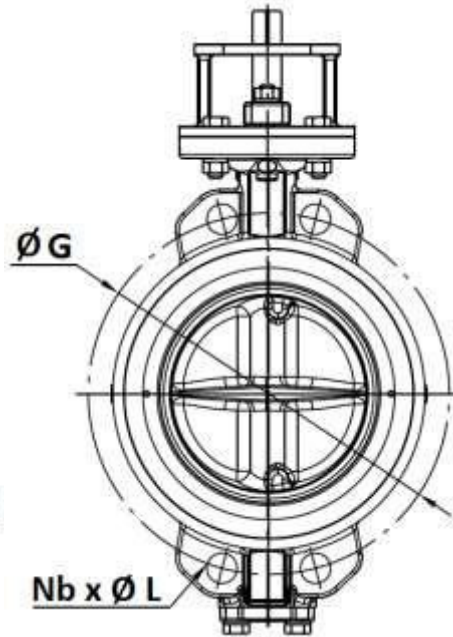
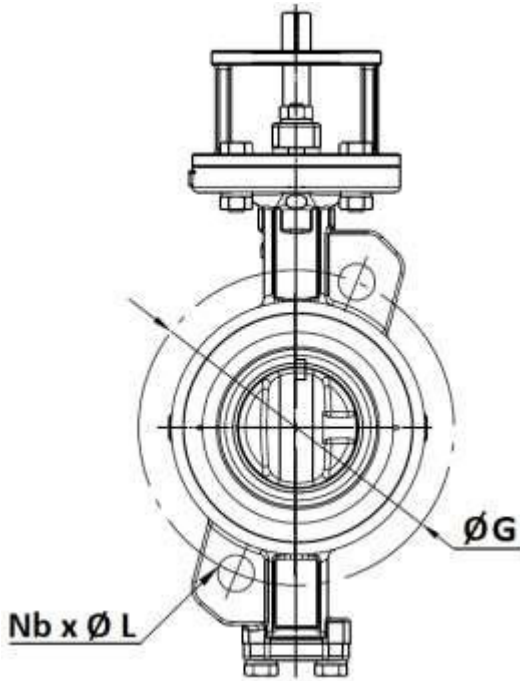
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BETWEEN FLANGES CLASS 150 PN20 SIZE ( in mm ) :

**DN 50 – 150**

**DN 200 - 400**

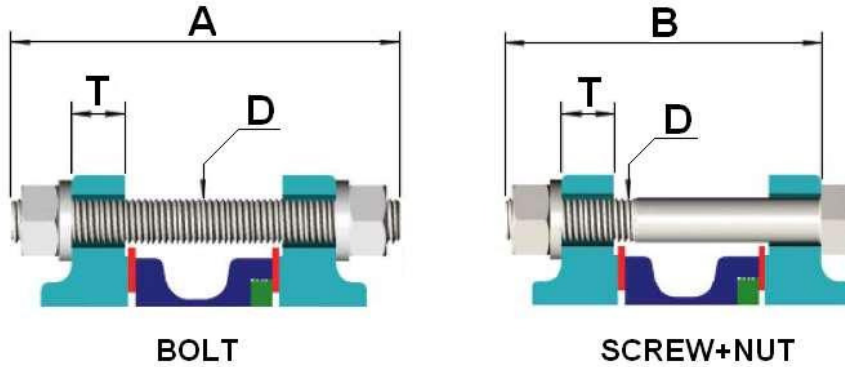
**DN 450 - 600**



NPS	2"	2"1/2	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
Ø G	120.6	139.7	152.4	190.5	215.9	241.3	298.4	362	431.8	476.2	539.8	577.8	635	749.3
Nb x ØL	2 x 19	2 x 19	2 x 19	2 x 19	2 x 22.2	2 x 22.2	4 x 22.2	4 x 25.4	4 x 25.4	4 x 28.6	4 x 28.6	4x M30	4x M30	4x M33
Ref.	1116050	1116065	1116080	1116100	1116125	1116150	1116200	1116250	1116300	1116350	1116400	1116450	1116500	1116600

STAINLESS STEEL DOUBLE OFFSET WAFER BUTTERFLY VALVE CLASS 150 FIRE SAFE

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



DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
NPS	2"	2"1/2	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
A	135	135	140	155	175	175	185	200	215	230	265	290	305	360
B	125	125	130	140	155	155	165	180	195	205	240	265	280	330
D	M16	M16	M16	M16	M20	M20	M20	M24	M24	M27	M27	M30	M30	M33
T	22	22	24	24	26	28	30	32	34	38	40	48	48	58

**BOLTING TIGHTENING TORQUES :**

Bolting size	Max torque (Nm)
M16	150
M20	270
M22	434
M24	450
M26	650
M27	700
M28	815
M30	950
M32	1140
M33	1300

**STAINLESS STEEL DOUBLE OFFSET WAFER BUTTERFLY VALVE CLASS 150 FIRE SAFE**

**STANDARDS :**

- Manufacturer certified ISO 9001:2015
- DIRECTIVE 2014/68/EU : For liquids and gas of Group 1
  - DN50 (NPS 2") : Risk Category I, CE 0035 marking
  - DN65-150 (NPS 2"1/2-6") : Risk Category II, CE 0035 marking
  - DN200-600 (NPS 8"-24") : Risk Category III, CE 0035 marking
- Designing according to API 609
- Marking according to MSS SP-25
- Tightness tests according to ISO 5208, Rate A
- Between flanges according to ANSI B16-5 Class 150 (PN20)
- ISO 5211 mounting pad
- Length according to EN 558 series 20 ( ISO 5752 series 20 )
- Fire safe according to ISO 10497 : 2010
- 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

**ADVICE :** Our opinion and our advice are not guaranteed and SFERACO shall not be liable for the consequences of damages.  
The customer must check the right choice of the products with the real service conditions.