



## LUG BUTTERFLY VALVE

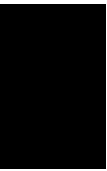
Model/Ref: 1160 1168



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**LUG BUTTERFLY VALVE**

**BUREAU  
VERITAS**


Reinforced lug from DN200 to DN1400 :


**Lloyd's  
Register**

PED 97/23/CE



**Size :** DN 32 to 1400 mm  
**Ends :** Between flanges ISO PN10/16  
**Min Temperature :** - 10°C ( with EPDM seat )  
**Max Temperature :** + 110°C ( with EPDM seat )  
**Max Pressure :** 16 Bars up to DN300  
**Specifications :** Long neck for isolation  
 Lug type  
 Full crossing stem  
 ISO 5211 mounting pad

**Materials :** Ductile iron EN GJS 500-7 body

## LUG BUTTERFLY VALVE

### SPECIFICATIONS :

- Long neck for isolation
- ISO 5211 mounting pad
- Lug type ( reinforced Lug from DN200 to DN1400 )
- Between flanges ISO PN10
- On request, between flanges ISO PN16 or ISO PN20 ANSI150
- Full crossing stem
- Removable seat
- Stainless steel disc up to DN100
- Ductile iron epoxy coated disc +/- 40  $\mu$  from DN125 to 300, ductile iron rilsan coated disc +/- 300  $\mu$  over for 1160 and 1162 types
- 9 positions lever with locking device up to DN200, stop in all positions but non lockable from DN250 to 300
- Rilsan coated body color RAL 5024 , 250-300 microns thickness
- Stem extension 75 mm length ( option )
- Square lever 30x30 mm for special key ( option )

### USE :

- Fluids : Depending of the seat
- For temporary using, can be used at the end of the pipe ( 6 bars max )
- Min and max Temperature Ts : Depending of the seat
- Max Pressure PN : 16 bars up to DN300 , 10 bars over

### RANGE :

- With lever from DN 32 to DN 300
- Naked stem from DN 350 to DN1400
- IP65 Gear box possible ( **Ref. 1197** ) from DN 32 to DN 1400
- IP65 chain gear box possible ( **Ref. 1194** ) from DN 32 to DN 500
- On request, stem extension with special length ( **Ref. 98665** )
- On request, stainless steel handle and bolting **Ref. 9831250-9831264**

### ENDS:

- Between flanges ISO PN10 ( on request ISO PN16 or ISO PN20 ANSI150 )

### TORQUE VALUES ( in Nm with safety coefficient of 30 % included ) at 10 Bars :

DN	32/40	50	65	80	100	125	150	200	250	300	350	400
Torque ( Nm )	9	11	20	29	47	82	130	210	360	475	760	1300

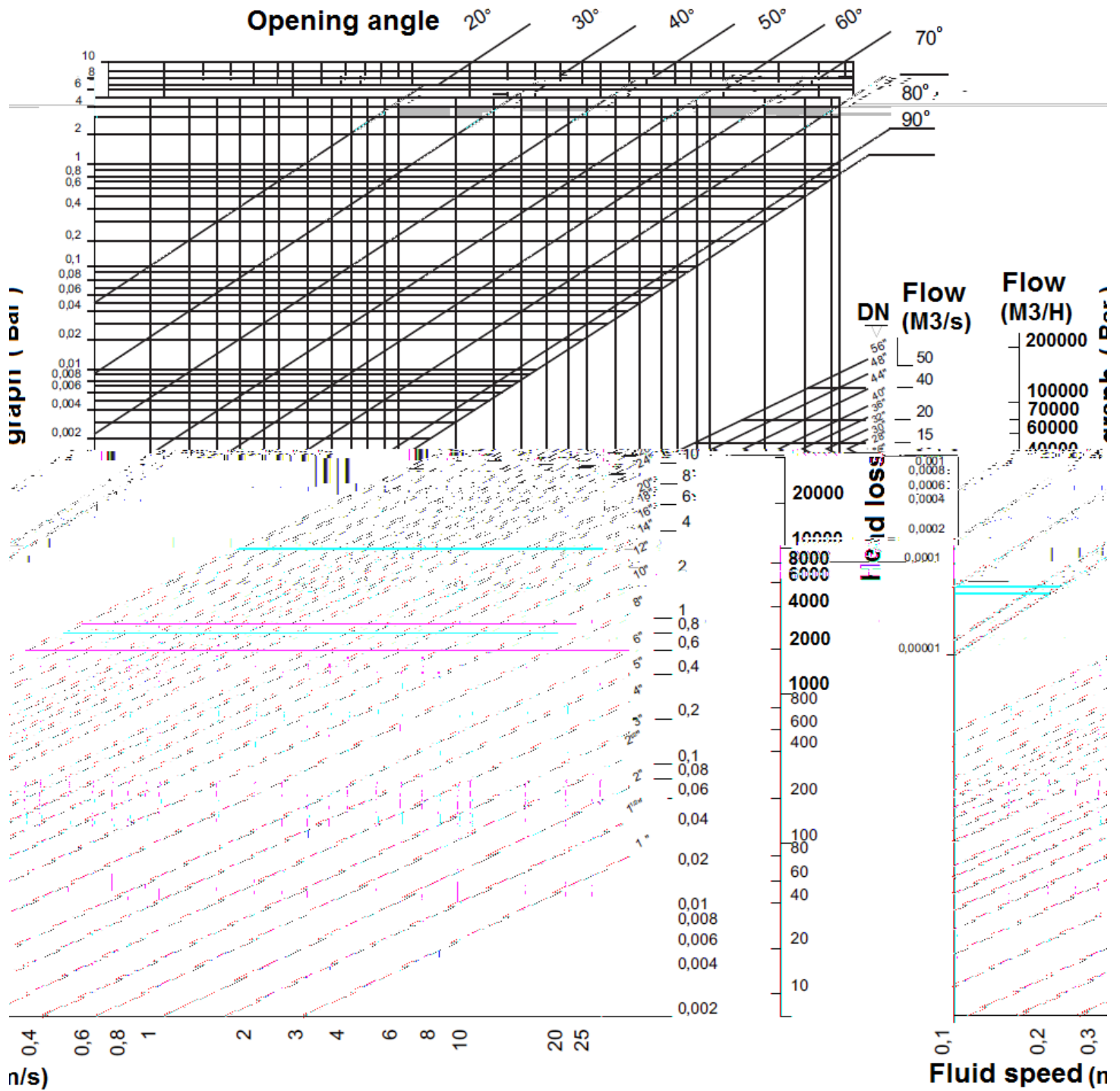
DN	450	500	600	700	750	800	900	1000	1100	1200	1300	1400
Torque ( Nm )	1600	2340	3300	4600	5800	7400	11000	13600	14200	16400	17800	19200

### FLOW COEFFICIENT Kvs ( m<sup>3</sup>/h ) :

DN	32/40	50	65	80	100	125	150	200	250	300	350	400
Kvs ( m <sup>3</sup> /h )	70	109	200	334	551	901	1427	2383	3825	5659	8177	10659

DN	450	500	600	700	800	900	1000	1200	1300	1400
Kvs ( m <sup>3</sup> /h )	12562	16021	22737	32443	43263	53873	64407	97341	119770	129808

# LUG BUTTERFLY VALVE

**HEAD LOSS GRAPH :**


**LUG BUTTERFLY VALVE**

**COMPATIBILITY :**

Types	Elastic ring	Min/Max Temperature	Applications	Not Advisable
<b>1160</b>	EPDM	-10°C + 110°C	Cold and hot water	Hydrocarbon, steam, gas, acids, oil, freon
<b>1162</b>	NBR	-10°C + 90°C	Non aromatic hydrocarbon, fuel, water, natural gas, grease, oil, compressed air, glycol	Gas in atmospheric condition, petrol, premium gasoline, acetone, acetic acid and solvent
<b>1163</b>	EPDM	-10°C + 110°C	Cold and hot water, sea water, alcohol, hydroxyd of soda, demineralized water, mercury, alcalins	Hydrocarbon, steam, gas, acids, oil, Freon
<b>1164</b>	FKM	-5°C + 180°C	Acids, grease, hydrocarbon, petrol, premium gasoline, Argon, glycerin, oil, carbon dioxide, biogas	Steam and hot water ( 130°C max), freon, amoniac, acetylene
<b>1168</b>	White NBR	-10°C + 90°C	Oil, grease	Gas in atmospheric condition, petrol, premium gasoline, acetone, acetic acid and solvent

The above information are given with sincerity and are result of a long experience. Each case is particular and they can not engage our responsibility. We advise to proceed with real condition use trials.

**OTHER MODELS ON REQUEST :**

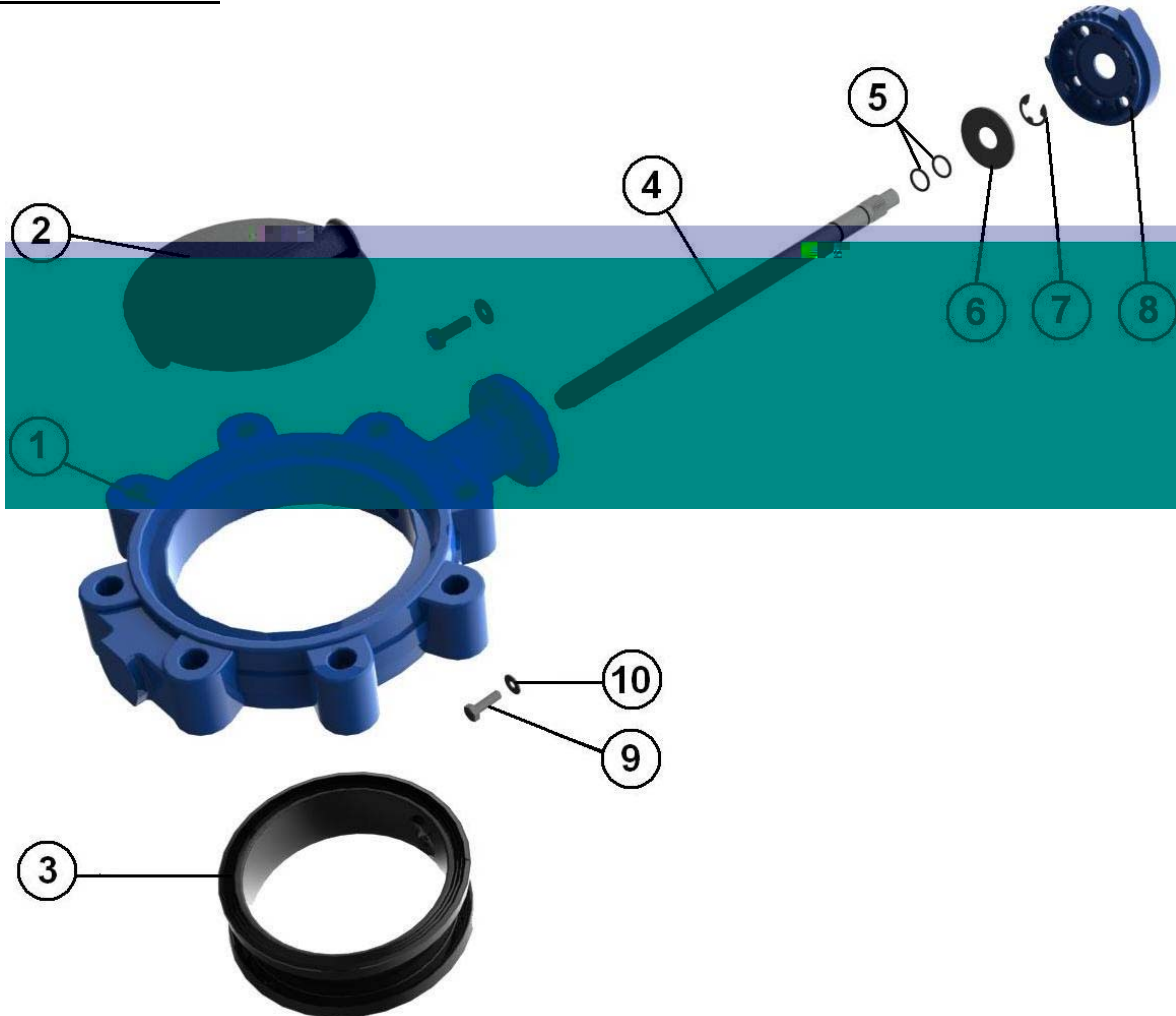
BODY
Cast iron EN GJL-250
Ductile iron EN GJS-500-7
ASTM A216 WCB
SS 304
ASTM A351 CF8M

STEM
SS 420
SS 304
SS 316
Hastelloy

DISC
Cast iron EN GJL-250
Ductile iron ENGJS-500-7
ASTM A216 WCB
SS 304

ELASTIC RING
EPDM
EPDM HT

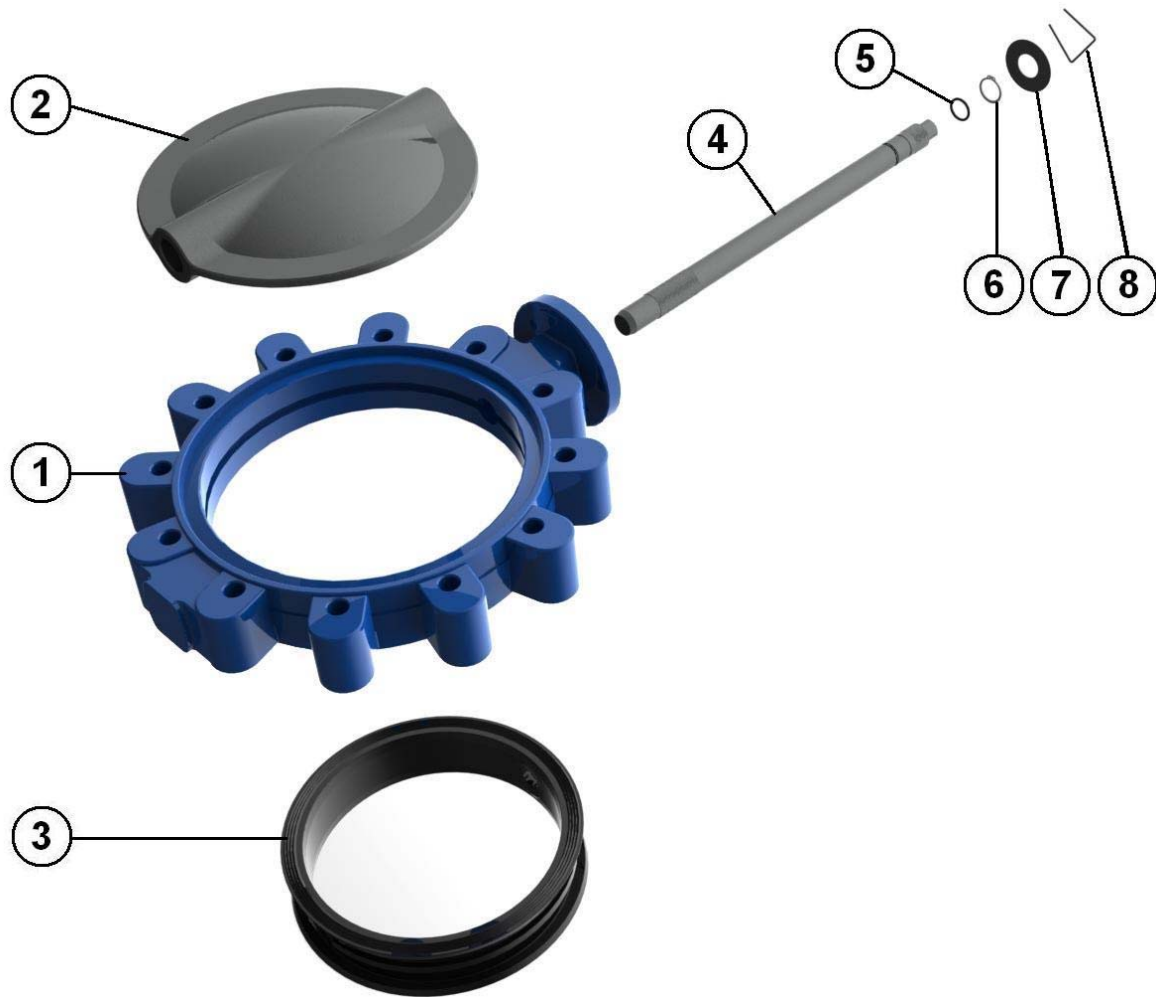
HANDLING
Aluminium lever
S.S. lever
Square
Gear box

**LUG BUTTERFLY VALVE**
**MATERIALS DN 32 - 200 :**


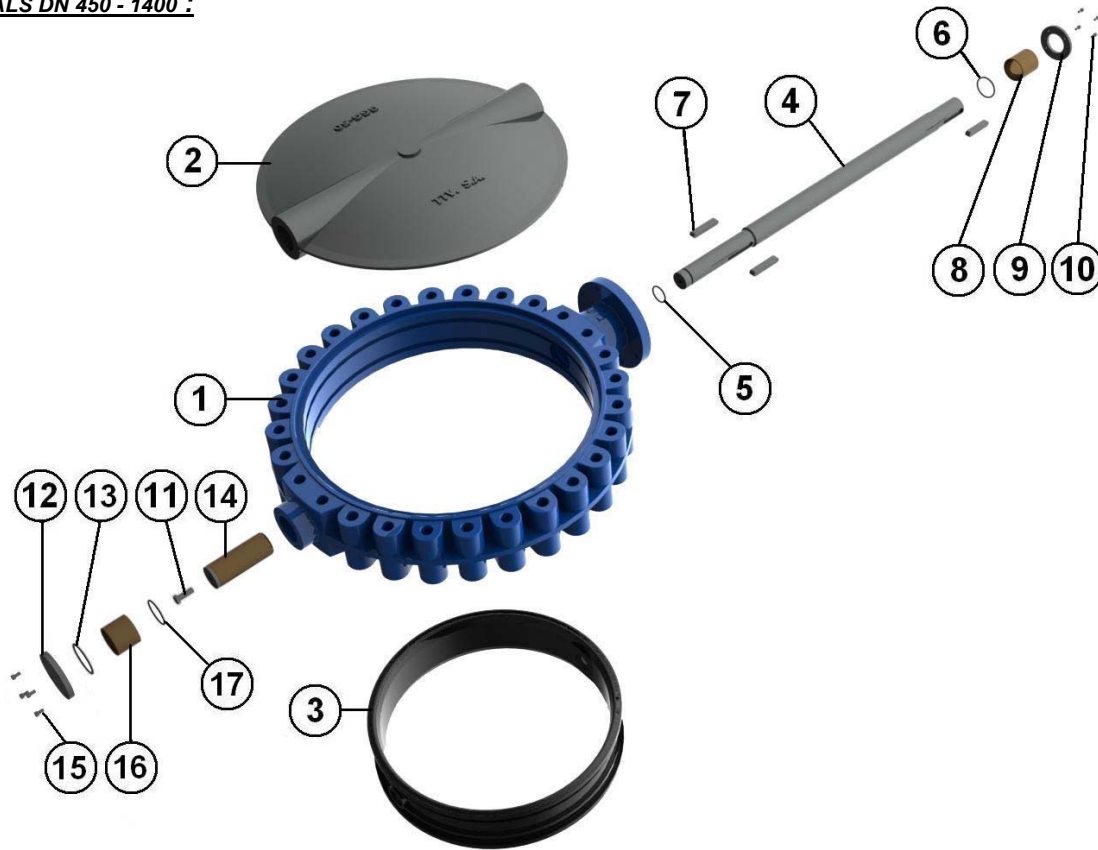
Item	Designation	Materials				
		1160	1162	1163	1164	1168
1	Body	Ductile iron EN GJS-500-7				
2	Disc DN32-100	ASTM A351 CF8M				
2	Disc DN125-200	EN GJS 500-7	EN GJS 500-7	ASTM A351 CF8M		
3	Elastic ring	EPDM	NBR	EPDM	FKM	White NBR
4	Stem	SS 420	SS 420	SS 304	SS 304	SS 304
5	O ring	EPDM	NBR	EPDM	FKM	NBR
6	Ring	Steel	Steel	Steel	Steel	Steel
7	Circlips	Steel	Steel	Steel	Steel	Steel
8	Plate	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium
9	Plate screw	5.6	5.6	5.6	5.6	5.6
10	Washer	Steel	Steel	Steel	Steel	Steel
	Lever	Aluminium				

**LUG BUTTERFLY VALVE**

MATERIALS DN 250 - 400 :



Item	Designation	Materials				
		1160	1162	1163	1164	1168
1	Body	Ductile iron EN GJS-500-7				
2	Disc	ENGJS500-7	ENGJS500-7	ASTM A351 CF8M		
3	Elastic ring	EPDM	NBR	EPDM	FKM	White NBR
4	Stem	SS 420	SS 420	SS 304	SS 304	SS 304
5	O ring	EPDM	NBR	EPDM	FKM	NBR
6	Circlips	Steel	Steel	Steel	Steel	Steel
7	Ring	Steel	Steel	Steel	Steel	Steel
8	Spring	Steel	Steel	Steel	Steel	Steel
Lever ( up to DN300 )		Aluminium				

**LUG BUTTERFLY VALVE**
**MATERIALS DN 450 - 1400 :**


		Materials				
Item	Designation	1160	1162	1163	1164	1168
1	Body	Ductile iron EN GJS-500-7				
2	Disc	ENGJS500-7	ENGJS500-7	ASTM A351 CF8M		
3	Elastic ring	EPDM	NBR	EPDM	FKM	White NBR
4	Stem	SS 420	SS 420	SS 304	SS 304	SS 304
5	O ring	EPDM	NBR	EPDM	FKM	NBR
6	O ring	EPDM	NBR	EPDM	FKM	NBR
7	Pin	ST - 60	ST - 60	ST - 60	ST - 60	ST - 60
8	Socket	BRONZE	BRONZE	BRONZE	BRONZE	BRONZE
9	Ring	F1110	F1110	F1110	F1110	F1110
10	Screw	5.6	5.6	5.6	5.6	5.6
11	Screw	5.6	5.6	5.6	5.6	5.6
12	Cap	F1110	F1110	F1110	F1110	F1110
13	O ring	EPDM	NBR	EPDM	FKM	NBR
14	Socket	F1110	F1110	F1110	F1110	F1110
15	Screw	5.6	5.6	5.6	5.6	5.6
16	Socket	BRONZE	BRONZE	BRONZE	BRONZE	BRONZE
17	O ring	EPDM	NBR	EPDM	FKM	NBR

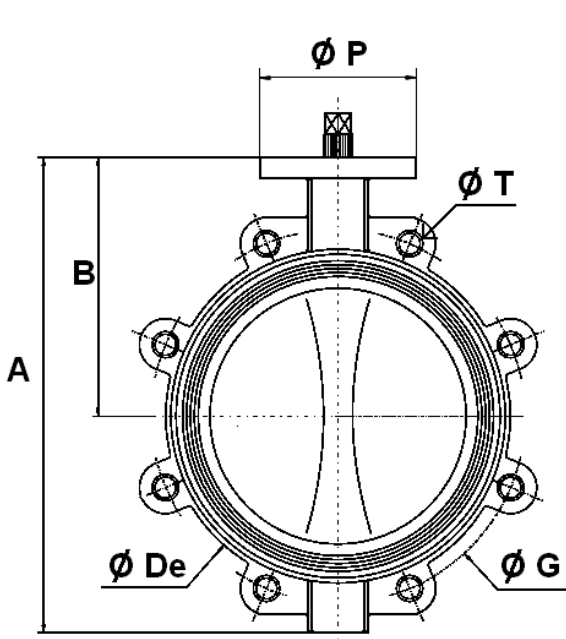


**LUG BUTTERFLY VALVE**

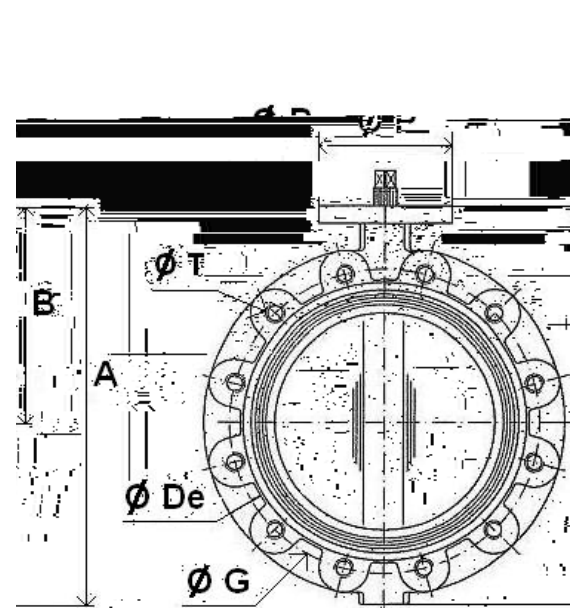
SIZE ISO PN10 ( in mm ) :

- Valves DN 32 - 400 :

**DN 32 -150**



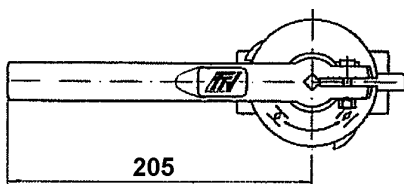
**DN 200 - 400**



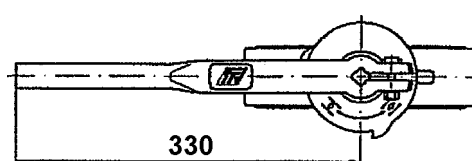
DN	32/40	50	65	80	100	125	150	200	250	300	350	400
A	205	224	241	256	294	327	354	438	462	524	580	660
B	140	154	160	172	185	204	214	256	248	282	300	340
Ø De	83	102	115	136	157	192	220	275	329	378	436	487
E	33	43	46	46	52	56	56	60	68	78	78	102
Ø F	10.5	10.5	14.5	16.5	16.5	18.5	18.5	22.5	25.5	30.5	30.5	35.5
Ø G	100/110	125	145	160	180	210	240	295	350	400	460	515
Ø P	88	88	88	88	88	105	105	105	150	150	170	170
Ø T	4xM16	4xM16	4xM16	8xM16	8xM16	8xM16	8xM20	8xM20	12xM20	12xM20	16xM20	16xM24
Weight (Kg)	2.7	4.1	4.7	6.1	7.9	10.9	11.85	18.5	31.8	47.80	53	77

- Levers :

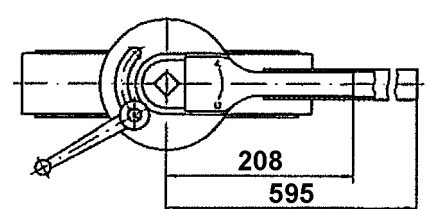
**DN 40 - 100**



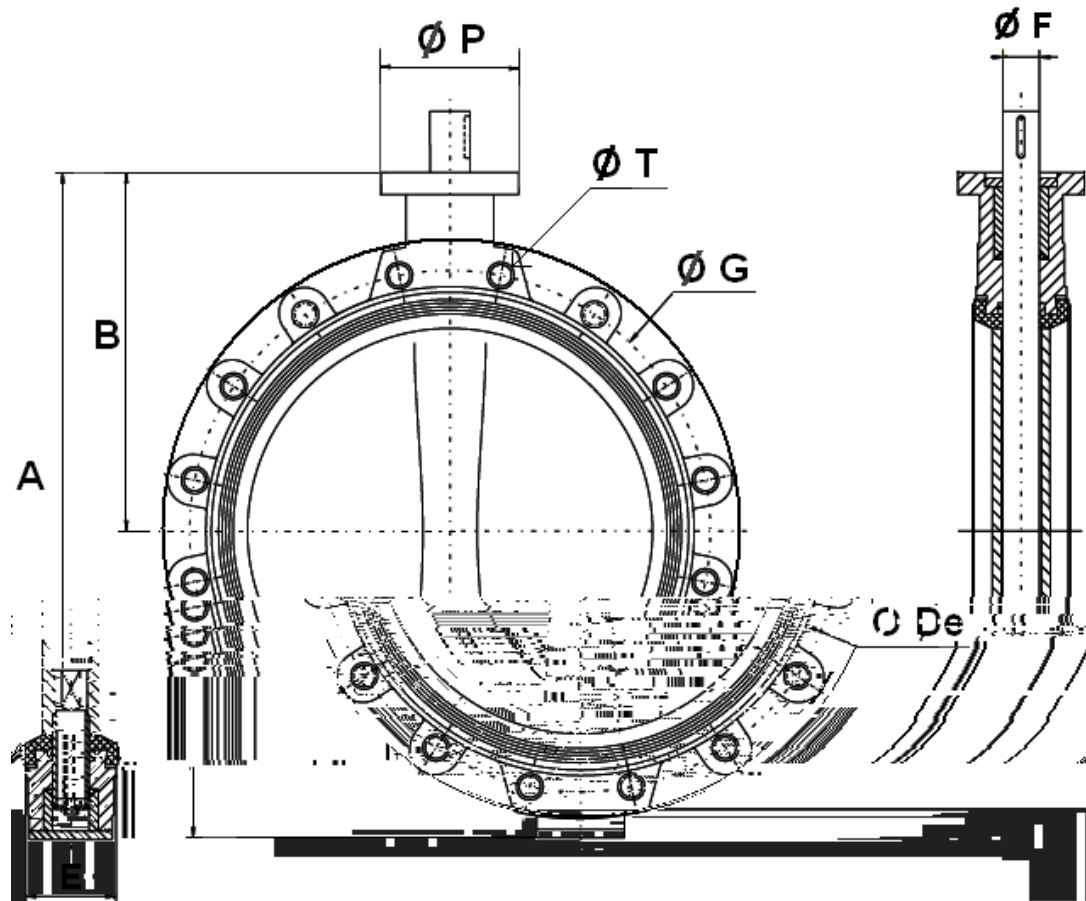
**DN 125 - 200**



**DN 250 - 300**



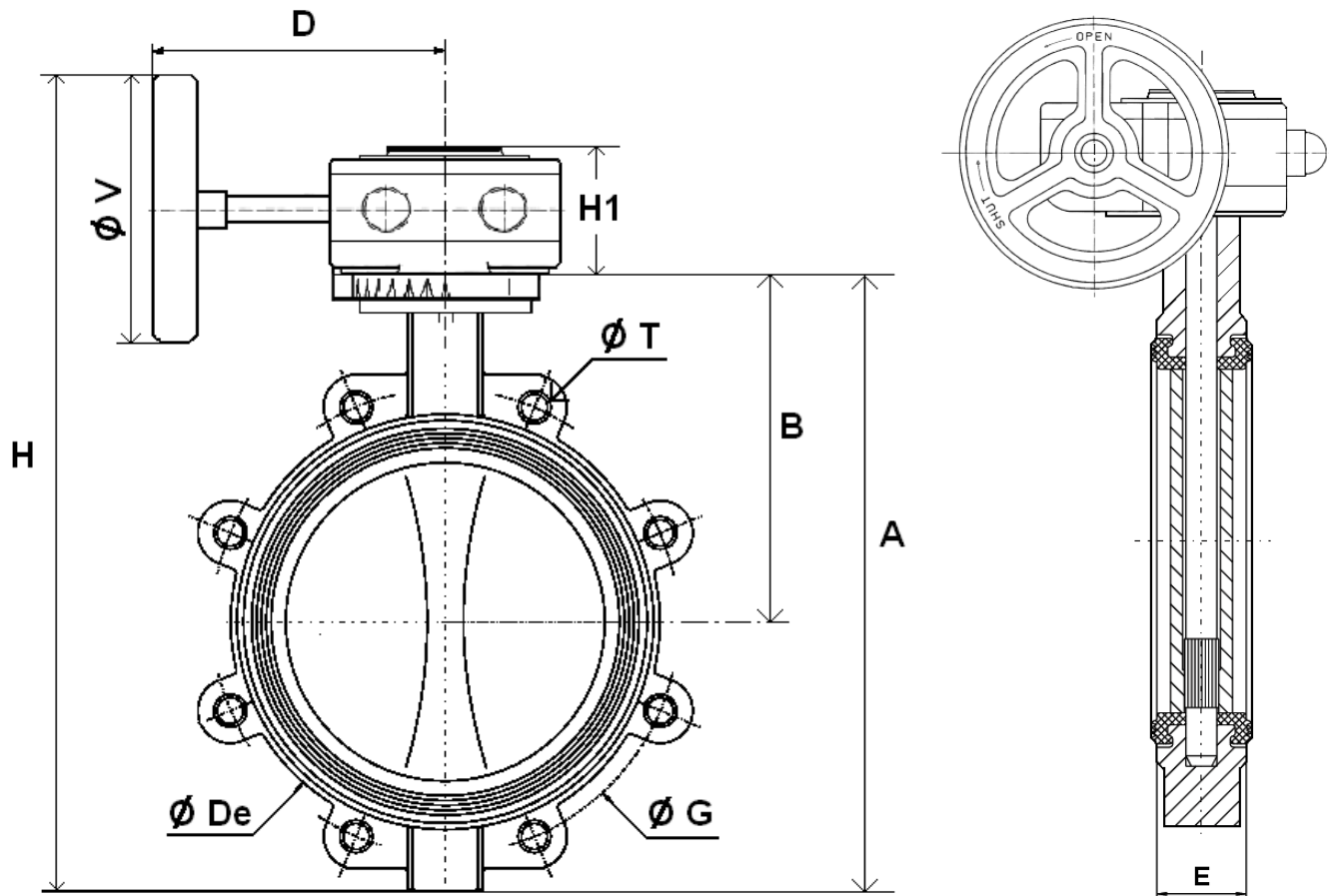
LUG BUTTERFLY VALVE



**LUG BUTTERFLY VALVE**

SIZE ISO PN10 ( in mm ) :

- Valves with gear box DN 32 - 400 :

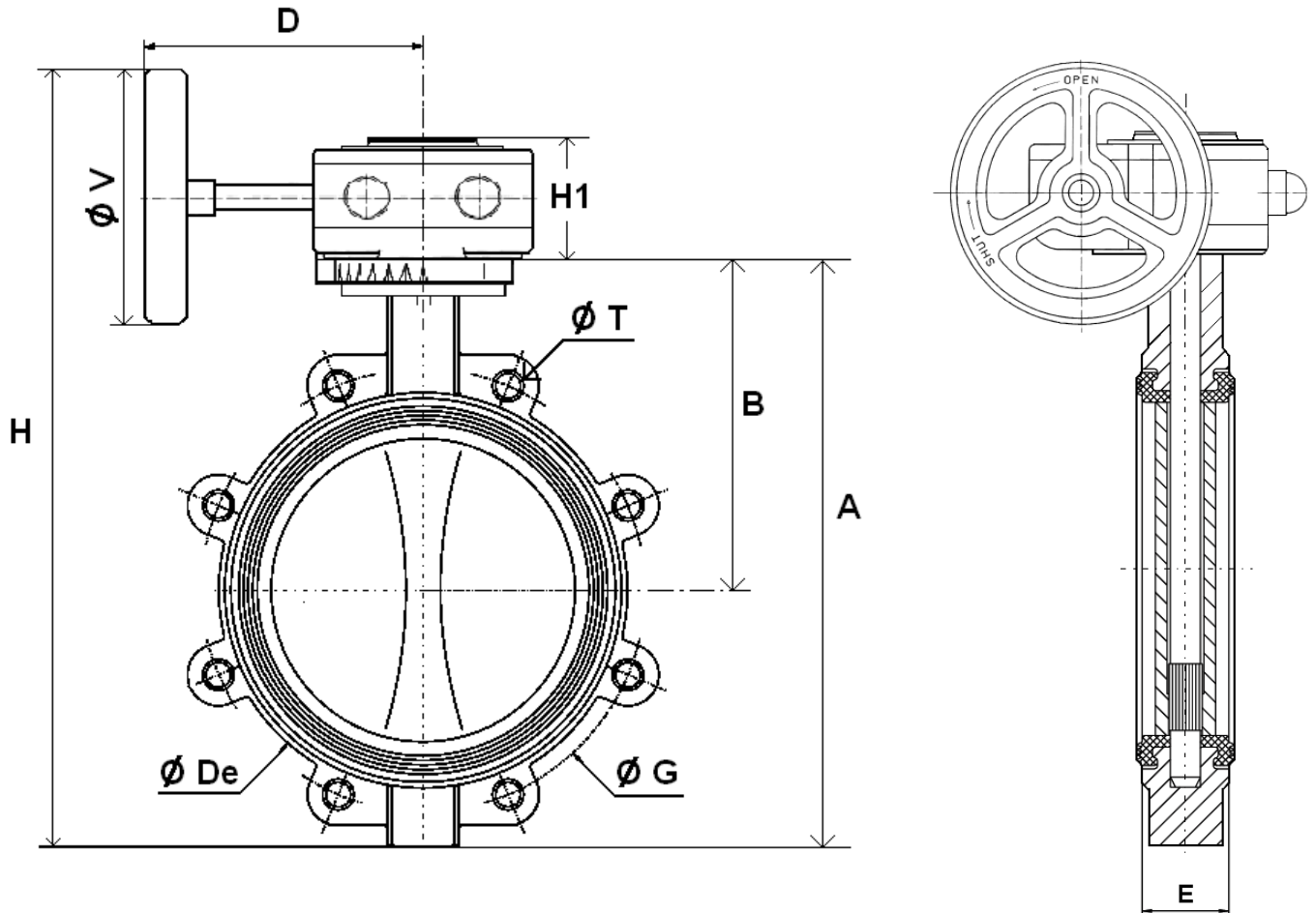


DN	32/40	50	65	80	100	125	150	200	250	300	350	400
A	205	224	241	256	294	327	354	438	462	524	580	660
B	140	154	160	172	185	204	214	256	248	282	300	340
$\phi De$	83	102	115	136	157	192	220	275	329	378	436	487
D	120	120	120	120	120	136	136	136	223	223	345	345
E	33	43	46	46	52	56	56	60	68	78	78	102
H	303	322	339	354	392	455	482	566	648	710	829	909
H1	58	58	58	58	58	58	58	58	74	74	98	98
$\phi G$	100/110	125	145	160	180	210	240	295	350	400	460	515
$\phi T$	4xM16	4xM16	4xM16	8xM16	8xM16	8xM16	8xM20	8xM20	12xM20	12xM20	16xM20	16xM24
$\phi V$	140	140	140	140	140	200	200	200	300	300	400	400
Weight ( Kg )	4.05	5.45	6.05	7.45	9.25	12.65	13.6	20.25	35.8	51.8	62.5	86.5

**LUG BUTTERFLY VALVE**

SIZE ISO PN10 ( in mm ) :

- Valves with gear box DN 450 - 1400 :

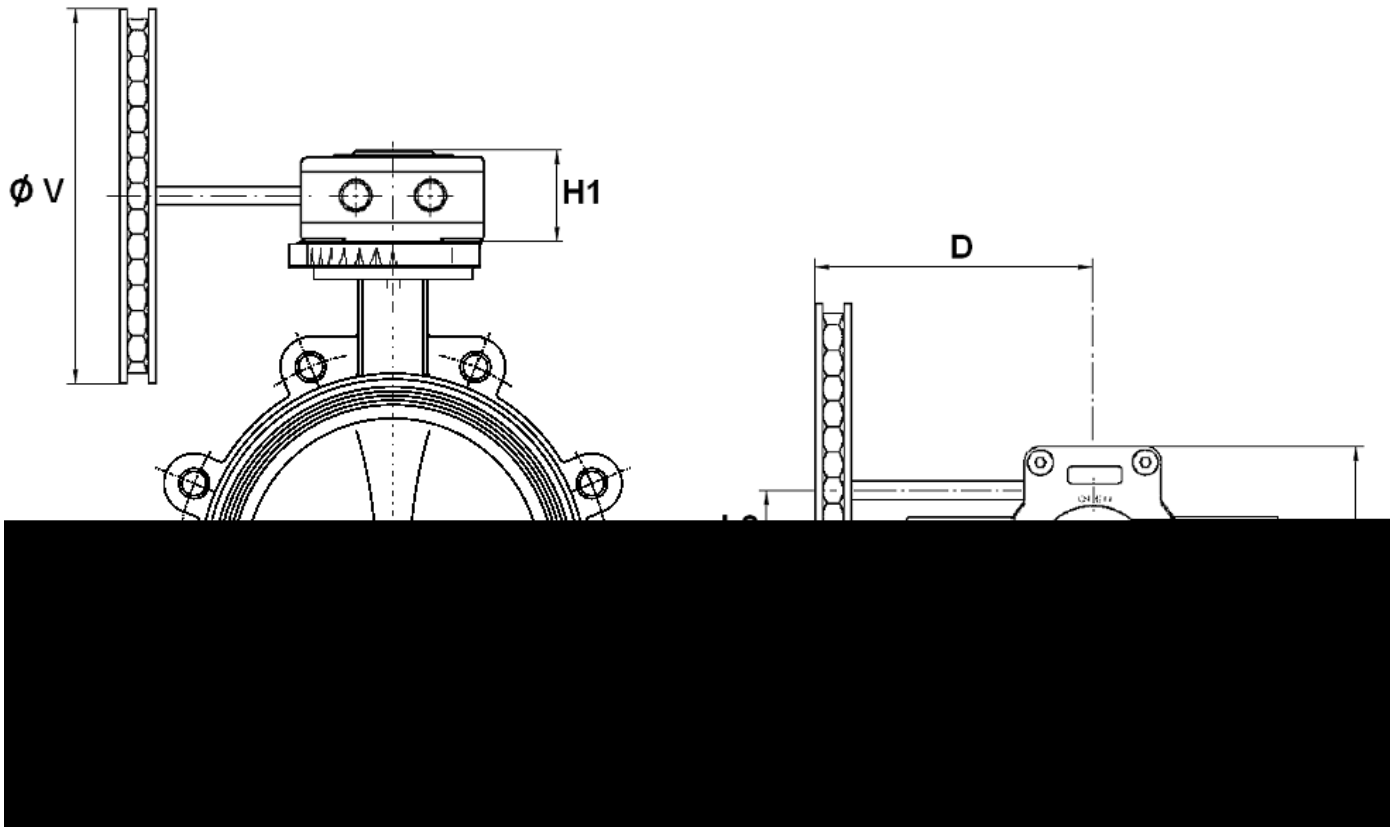


DN	450	500	600	700	750	800	900	1000	1100	1200	1300	1400
A	738	822	965	1100	1150	1248	1325	1457	1580	1720	1910	1990
B	394	440	507	575	600	655	685	754	815	873	1005	1025
$\phi De$	538	593	695	804	860	911	1010	1124	1225	1330	1460	1530
D	364	386	421	440	440	438	492	492	492	550	605	605
E	114	127	154	165	190	190	203	216	216	254	360	360
H	1083	1171	1376	1409	1459	1657	1688	1820	1943	2178	2260	2429
H1	90	98	122	117	117	117	125	125	125	115	178	178
$\phi G$	565	620	725	840	900	950	1050	1160	1270	1380	-	1590
$\phi T$	20xM24	20xM24	20xM27	24xM27	24xM30	24xM30	28xM30	28xM33	32xM33	32xM36	-	36xM39
$\phi V$	600	600	700	500	500	700	600	600	600	800	700	700
Weight ( Kg )	128.8	161.8	248.3	339	409	501.3	624.8	834.8	1094.8	1546.5	2562	2682

**LUG BUTTERFLY VALVE**

SIZE ISO PN10 ( in mm ) :

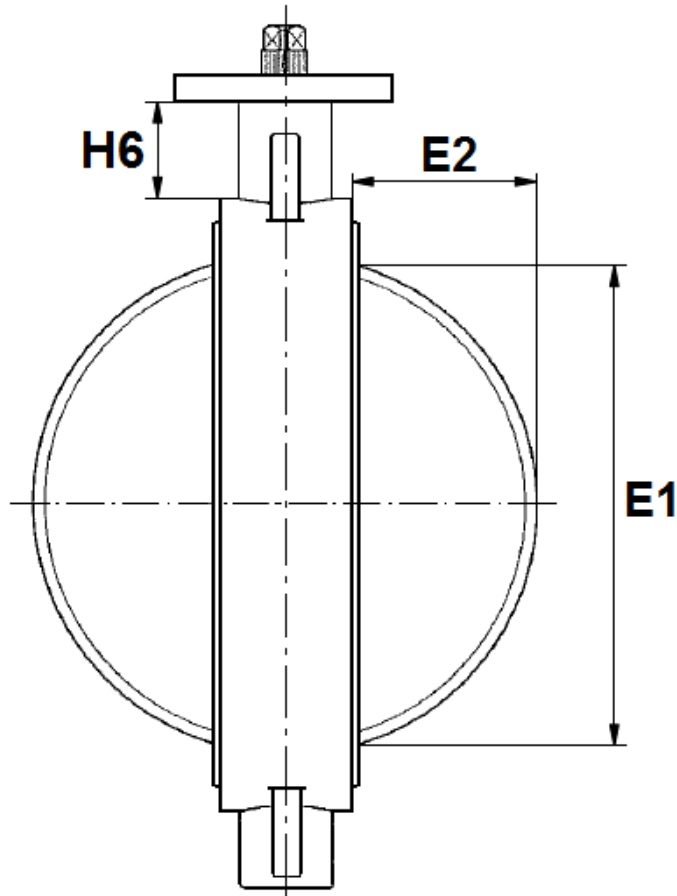
- Valves with chain gear box :



DN	32/40	50	65	80	100	125	150	200	250	300	350	400	450	500
D	120	120	120	120	120	126	126	126	214	214	331	331	350	365
H1	58	58	58	58	58	58	58	58	77	77	88	88	90	98
L	130	130	130	130	130	130	130	130	177.5	177.5	222	222	232	267
L1	100	100	100	100	100	100	100	100	146	146	175	175	204	227
L2	50	50	50	50	50	50	50	50	60	60	80	80	86	104.5
L3	58	58	58	58	58	58	58	58	82.5	82.5	85	85	100	110
Ø V	125	125	125	125	125	210	210	200	300	300	400	400	500	500
Weight ( Kg )	5.05	6.45	7.05	8.45	10.25	13.65	14.6	21.25	38.6	54.6	67.3	91.3	136.2	168.7

**LUG BUTTERFLY VALVE**

NECK AND DISC SIZE ( in mm ) :



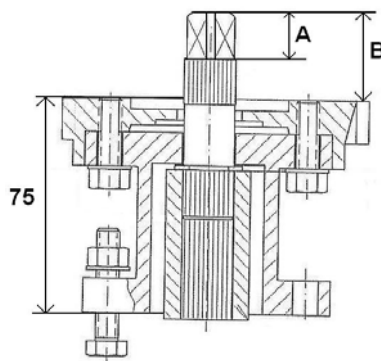
DN	32/40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
E1	23	24.5	46	65	85	109	136	188	238	289	331	385	424	479	575
E2	3.5	3.5	9.5	17	24	33.5	45.5	69	90	110.5	131	148	162.5	184	221
H6	76	82	80	80	88	93	89	99	71	76	69	80	96	119	127

DN	700	750	800	900	1000	1100	1200	1300	1400
E1	680	721	777	850	957	1052	1146	1261	1368
E2	267.5	278	305	335.5	382.5	429	460	475.5	527.5
H6	148	140	170	150	162	175	176	240	228

## LUG BUTTERFLY VALVE

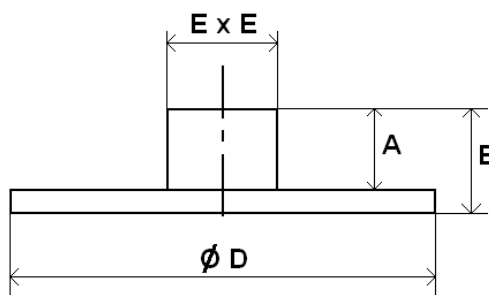
### SIZE ( in mm ) :

- Stem extension for isolation ( 75 mm ) :



DN	32-50	65	80-100	125-150	200
A	19	19	19	17	17
B	34	34	34	34	34
Weight (Kg)	0.8	0.8	0.9	0.9	1

- Square lever for special key ( 30x30 mm ) :

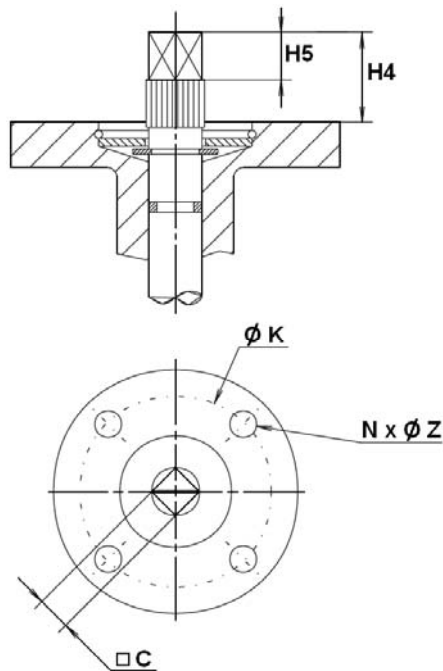


DN	32-50	65	80-100	125-150	200
A	20	20	20	20	20
B	31	31	32	32	32
Ø D	107	107	107	107	107
E x E	30 x 30	30 x 30	30 x 30	30 x 30	30 x 30
Weight (Kg)	0.88	0.88	0.88	0.88	0.88

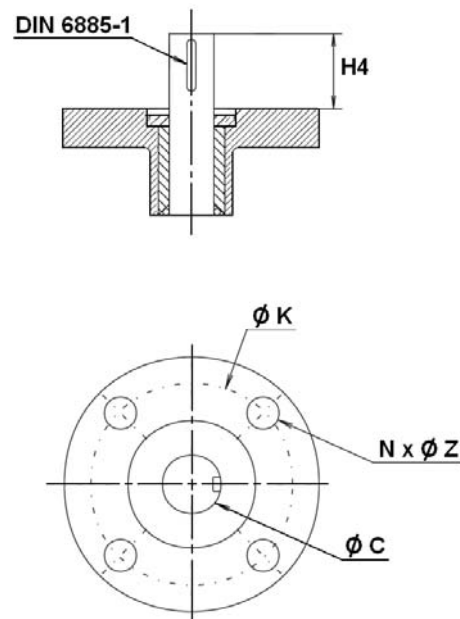
**LUG BUTTERFLY VALVE**

ISO MOUNTING PAD AND STEM SIZE ( in mm ) :

**DN 32 – 400**



**DN 450 - 1400**



DN	32/40	50	65	80	100	125	150	200	250	300	350	400
H4	30	30	30	30	30	30	30	30	40	40	40	40
H5	17	17	17	17	17	17	17	17	20	20	20	20
C	8	8	9	11	11	14	14	17	19	22	22	27
Ø K	70	70	70	70	70	70	70	70	102	102	140	140
ISO	F07	F07	F07	F07	F07	F07	F07	F07	F10	F10	F14	F14
N x Ø Z	4 x 9	4 x 9	4 x 9	4 x 9	4 x 9	4 x 9	4 x 9	4 x 9	4 x 11	4 x 11	4 x 18	4 x 18

DN	450	500	600	700	750	800	900	1000	1100	1200	1300	1400
H4	80	80	90	90	110	110	110	110	110	110	120	120
Ø C	50	50	60	60	65	65	80	80	80	100	120	120
Ø K	140	140	165	254	254	254	254	254	254	254	298	298
ISO	F14	F14	F16	F25	F25	F25	F25	F25	F25	F25	F30	F30
N x Ø Z	4 x 18	4 x 18	4 x 22	8 x 18	8 x 18	8 x 18	8 x 18	8 x 18	8 x 18	8 x 18	8 x 22	8 x 22



## LUG BUTTERFLY VALVE

### STANDARDS :

- Fabrication according to ISO 9001:2008
- DIRECTIVE 97/23/CE : CE N° 0038  
Risk Category III module H
- Tests according to ISO 5208, A class
- Between flanges according to EN 1092-1 PN10
- ISO 5211 mounting pad
- Length according to ISO 5752 short series 20, EN 558 series 20 ( NF 29305 ),BS 5155 Wafer short/medium, DIN 3202 part 3, series K1
- ATEX Group II Category 2 G/2D Zone 1 & 21 Zone 2 & 22 ( optional marking )
- French water agreement **A.C.S. N° 07 ACC LY 504** for types **1160** and **1163** from **DN32 to 400**
- Approval certificate Russian **GOST-R**
- Approval certificate **Marine Lloyd's** N° 99/00131 from DN40 to 600
- Approval certificate **Marine ABS**, N° MD1935037 up to DN1400
- Approval certificate **Marine DNV**, N° P-13614
- Approval certificate **Marine BUREAU VERITAS**, N° 14087/B0 BV from DN32 to 1000
- OTAN agreement ( N° 286B )

ADVICE :Our opinion and our advice are not guaranteed and Lauridsen Industri shall not be liable for the consequences of damages.

### INSTALLATION INSTRUCTIONS

#### GENERAL GUIDELINES :

- Ensure that the valves to be used are appropriate for the conditions of the installation (type of fluid, pressure and temperature).
- Be sure to have enough valves to be able to isolate the sections of piping as well as the appropriate equipment for maintenance and repair.
- Ensure that the valves to be installed are of correct strength to be able to support the capacity of their usage.
- **Installation of all circuits should ensure that their function can be automatically tested on a regular basis (at least two times a year).**

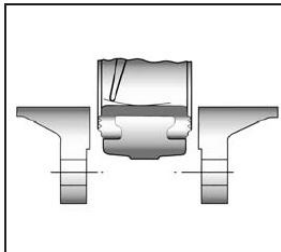
#### INSTALLATION INSTRUCTIONS :

- **Before installing the valves, clean and remove any objects from the pipes** (in particular bits of sealing and metal) which could obstruct and block the valves.

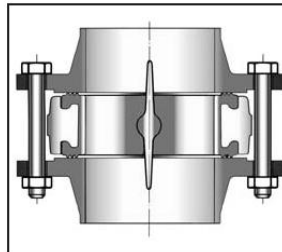
## LUG BUTTERFLY VALVE

### INSTALLATION INSTRUCTIONS ( SUITE ):

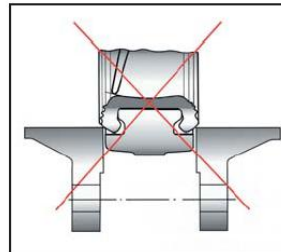
- Ensure that both connecting pipes either side of the valve (upstream and downstream) are aligned (if they're not, the valves may not work correctly).
- Make sure that the two sections of the pipe (upstream and downstream) match, the valve unit will not absorb any gaps. Any distortions in the pipes may affect the tightness of the connection, the working of the valve and can even cause a rupture. To be sure, place the kit in position to ensure the assembling will work.
- If sections of piping do not have their final support in place, they should be temporarily fixed. This is to avoid unnecessary strain on the valve.
- The valve must be inserted between flanges with disc half opened but the disc must not overpass the valve thickness. Position the bolts to keep centered the valve. Then open fully the valve and tighten the bolts. See graph under.



Half open valve introduction



Complete opened disc valves when screw tightening



- Tighten the bolts in cross.
- The disc must move easily inside the pipe.
- Valves must be opened during cleaning operation.
- Tests must be done with a cleaned pipe.
- Tests must be done with opened valve. Test pressure must not be higher than the valve specification according to EN 12266-1.
- Then open slowly the valve.
- **Do not mount butterfly valves with stainless steel pressed collars and turning flanges without strias.**
- **And not on flat face flanges without strias ( example : painted cast iron fittings )**

### MAINTENANCE :

- We recommend to operate fully the valve 1 to 2 times per year.
- During maintenance operation, ensure that the pipe isn't under pressure, that there's no fluid in the pipe and that the valve is isolated. If there's a fluid in the pipe, evacuate it. Ensure that there are no risks due to the temperature or the fluid ( like acids ). If the fluid is corrosive, inert the installation before maintenance operation.