

CONCENTRIC LUG BUTTERFLY VALVE EXCELLENCE RANGE TTV DUCTILE IRON BODY-STAINLESS STEEL DISC AND EPDM HT SEAT

Lug butterfly valve TTV excellence range for cold and hot water, sea water, alcohol, sodium hydroxide, demineralized water, mercury, alcalins.

Approval Bureau Veritas marine certificate., 10 years warranty.

Ductile iron EN GJS-500-7 body, stainless steel disc and High Temperature EPDM seat.

Between flanges PN10/16 according to DN.

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

Handling possible with stainless steel handle, gearbox or, chain gearbox and stem extension.

Thanks to the ISO 5211 plate and the square stem, an actuator can be installed direct on the valve.



Certificate
3.1



Reinforced Lug from DN200 to DN300

Size : DN40 to DN300

Connection : Between flanges PN10/16

Min Temperature : -20°C

Max Temperature : +130°C

Max Pressure : 16 Bars

Specifications : Long neck for isolation

Lug type

Full crossing stem

ISO 5211 direct mounting pad

Materials : Ductile iron GJS body, CF8M disc, EPDM HT seat

*the installation defects and wear defects are not covered by the guarantee

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SPECIFICATIONS :

- Long neck for isolation
- ISO 5211 mounting pad
- Lug type (reinforced Lug from DN200 to DN300)
- Between flanges PN10/16 from DN32/40 to 150, PN10 over
- Between flanges PN16 or Class 150 (PN20) on request
- Full crossing stem
- Removable EPDM HT seat, dovetail type above DN40
- Stainless steel disc
- 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 :

- Cold and hot water, sea water, alcohol, sodium hydroxide (concentration 70% max), demineralized water, mercury, alcalins
- Min and max Temperature Ts : - 20°C to + 130°C
- For temporary using, can be used at the end of the pipe from DN50 and over(6 bars max)
- For final using, can be used at the end of the pipe if assembled with a flange (12 bars max up to DN150, 10 bars over)
- Max Pressure Ps : 16 bars

RANGE :

- With lever from DN40 to DN 300
- IP65 gear box possible (**Ref. 1197**) from DN40 to DN 300
- IP65 chain gear box (**Ref. 1194**) from DN40 to DN 300
- On request, stem extension with special length (**Ref. 98665**)
- On request, CF8M stainless steel handle and bolting **Ref. 9831250-9831264**

CONNECTION :

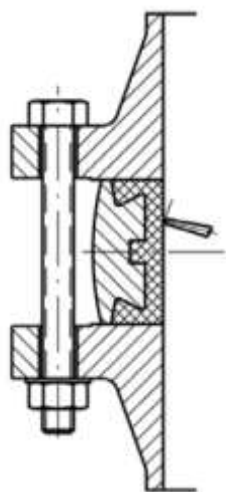
- Between flanges PN10/16 from DN40 to DN150 for the refs 1149L040 to 1149L150
- Between flanges PN10 from DN200 to DN300 for the refs 1149L200, 1149L250 and 1149L300
- Between flanges PN16 from DN200 to DN300 for the refs 1149L201, 1149L251 and 1149L301
- Class 150 (PN20) on request

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

		DN									
	Pressure (Bar)	32/40	50	65	80	100	125	150	200	250	300
Torque (Nm) with machined disc (on request)	1-5*	2	4	6	8	10	14	15	25	64	118
	6*	3	5	7	10	12	18	31	55	123	216
	10*	6	8	10	14	18	31	59	93	206	330
Torque (Nm)	16	9	11	20	29	47	82	130	210	360	475

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MAXIMUM TIGHTENING TORQUES FOR BOLTING FLANGES :



		Maximum torques (Nm)			
Bolting types		5,6 / A307 Gr.B	8,8 / A193 B7	10,9	12,9
Bolting DN	M12 (1/2")	41,16	84,28	117,6	142,1
	M14 (9/16")	66,64	132,3	186,2	225,4
	M16 (5/8")	102,9	205,8	289,1	347,9
	M18 (3/4")	142,1	284,2	396,9	475,3
	M20 (3/4")	196	401,8	568,4	676,2
	M22 (7/8")	259,7	539	764,4	911,4
	M24 (1")	338,1	695,8	980	1176
	M27 (1"1/8)	499,8	1029	1470	1764
	M30 (1"1/4)	666,4	1421	1960	2352

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FLOW COEFFICIENT Kv (m³/h) :

DN	Opening Angle								
	10°	20°	30°	40°	50°	60°	70°	80°	90°
32-40	3	4	8	17	25	35	45	56	70
50	3	6	14	22	37	60	95	147	164
65	4	7	10	22	48	78	140	160	201
80	5	12	29	52	88	156	216	281	359
100	9	21	48	87	147	234	346	519	627
125	19	35	78	148	232	372	562	761	995
150	28	48	108	203	324	536	865	1211	1471
200	35	91	206	320	554	952	1427	2163	2509
250	43	143	329	562	865	1471	2336	3460	3936
300	69	216	476	770	1341	2206	3460	4758	5865

HEAD LOSS CALCULATIONS :

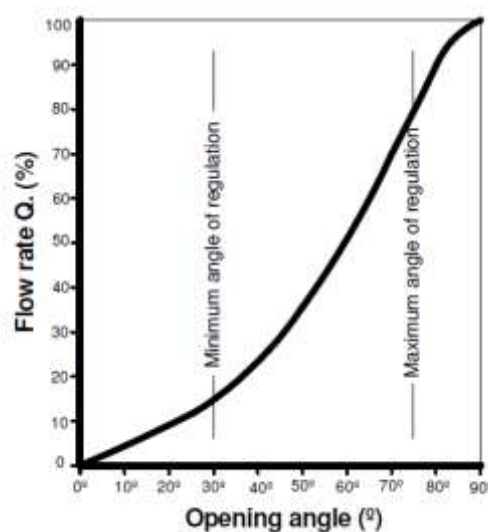
$$\Delta p = (Q / K_v)^2 \times SG$$

Q : flow in m³/h

Δp : Head loss in bar

SG : Specific gravity (= 1 for water)

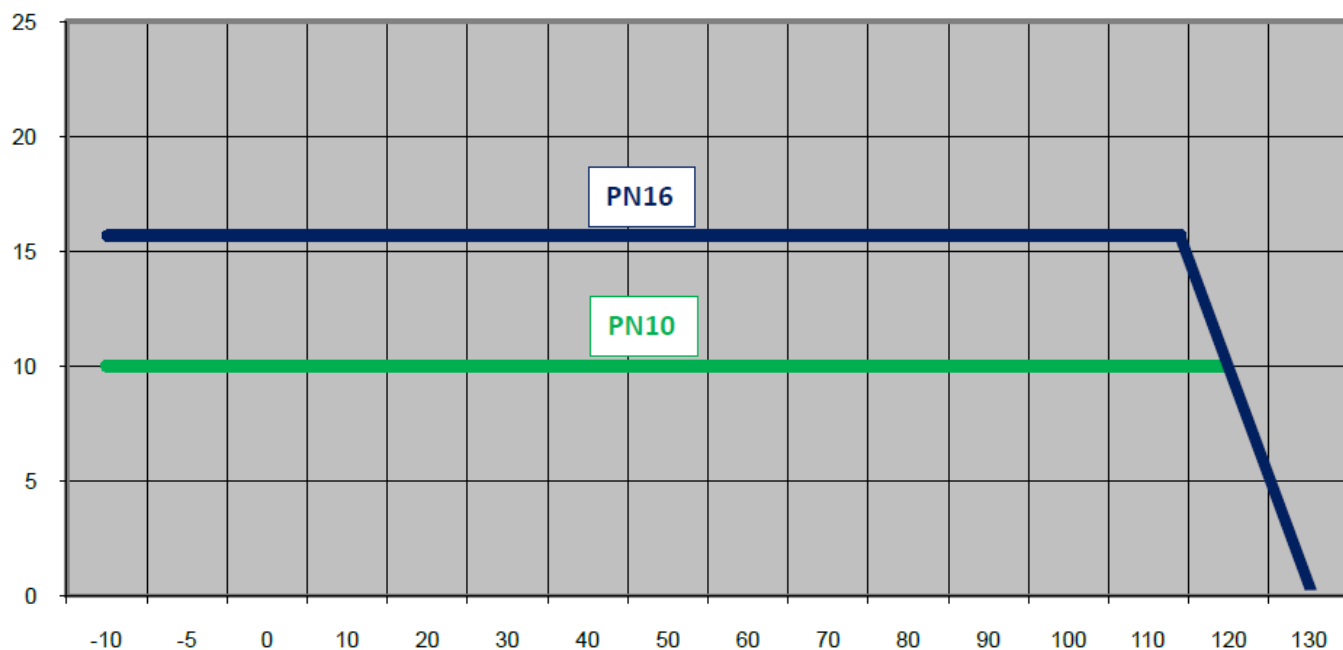
Kv : Volume of water in m³/h, that will flow through a given restriction or valve opening with a pressure drop of 1 bar at 20°C)



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PRESSURE / TEMPERATURE GRAPH (STEAM EXCLUDED) :

Pressure (Bar)



Temperature (°C)

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REPAIRABILITY :



SEAT



DISC



STEM



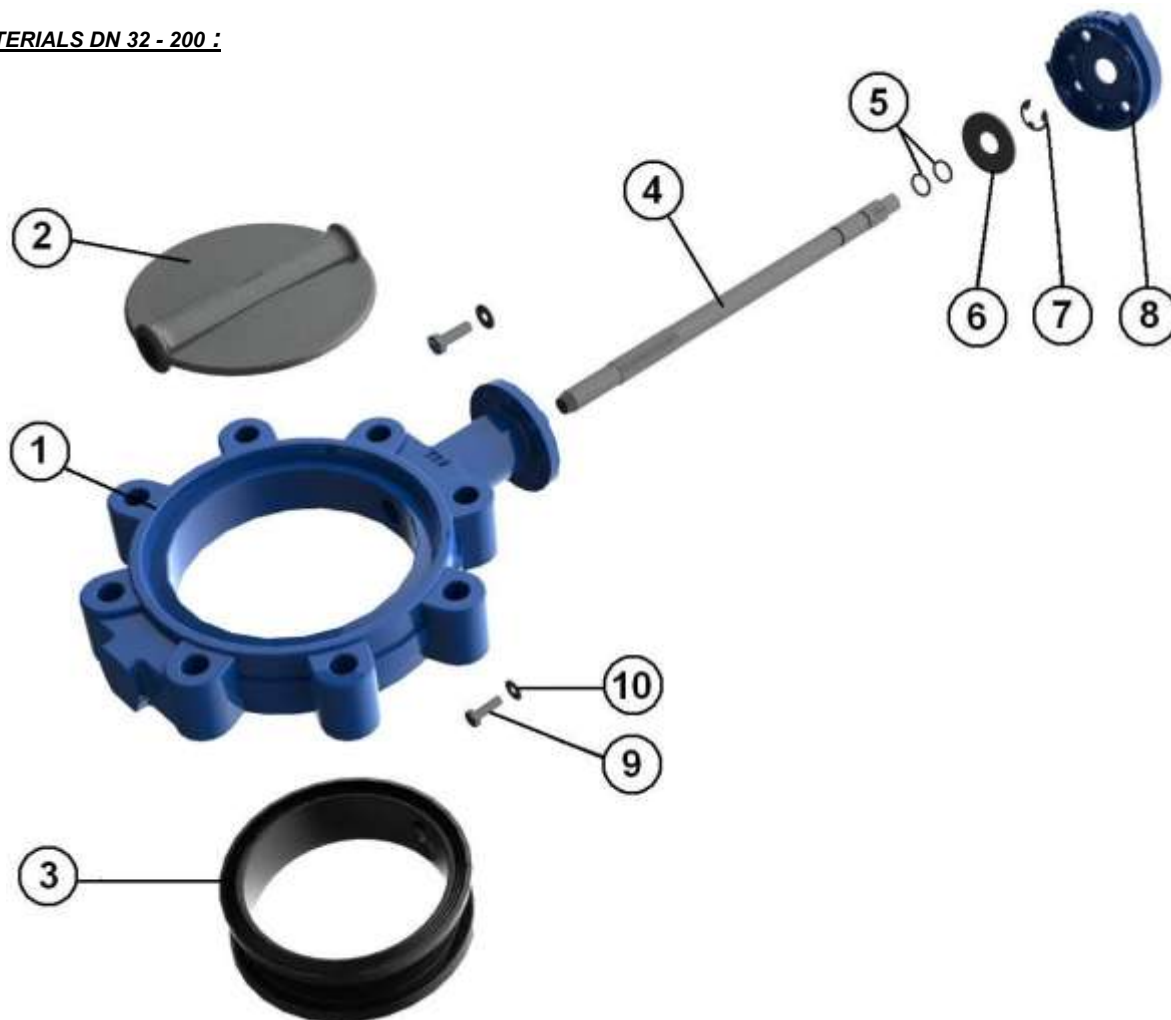
HANDLE



	DN	40	50	65	80	100	125	150	200	250	300
Seat	Ref.	9865080	9865081	9865082	9865083	9865084	9865085	9865086	9865087	9865088	9865089
Disc	Ref.	9865020	9865021	9865022	9865023	9865024	9865025	9865026	9865027	9865028	9865029
Stem	Ref.	9865040	9865041	9865042	9865043	9865044	9865045	9865046	9865047	9865048	9865049
Handle	Ref.	9831331		9831332	9831333		9831334		9831335	9831336	9831337

**CONCENTRIC LUG BUTTERFLY VALVE EXCELLENCE RANGE TTV
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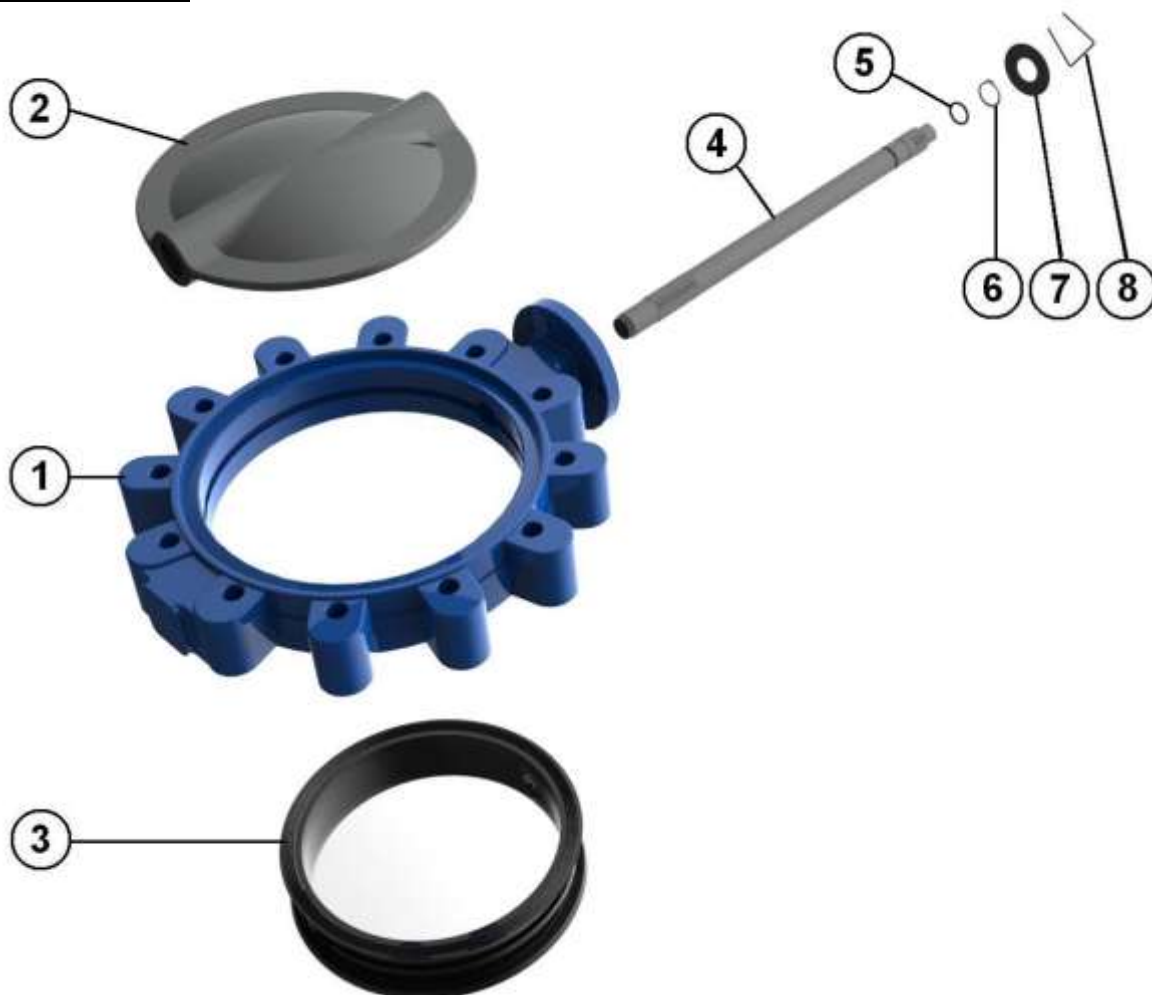
MATERIALS DN 32 - 200 :



Item	Designation	Materials
1	Body	Ductile iron EN GJS-500-7 rilsan coated color RAL 5024 250-300 µ thickness
2	Disc	ASTM A351 CF8M
3	Seat	EPDM HT
4	Stem	AISI 304
5	O ring	NBR
6	Ring	Steel
7	Circlips	
8	Plate	Aluminium
9	Plate screw	5.6
10	Washer	Steel
	Lever	Aluminium ADC10 with epoxy painting 50µ thickness

**CONCENTRIC LUG BUTTERFLY VALVE EXCELLENCE RANGE TTV
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MATERIALS DN 250 - 300 :



Item	Designation	Materials
1	Body	Ductile iron EN GJS-500-7 rilsan coated color RAL 5024 250-300 μ thickness
2	Disc	ASTM A351 CF8M
3	Seat	EPDM HT
4	Stem	AISI 304
5	O ring	NBR
6	Circlips	Steel
7	Ring	
8	Spring	
Lever (up to DN300)		Ductile iron EN GJS-500-7 with epoxy painting 50μ thickness

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GEARBOX MATERIALS REF. 1197 :

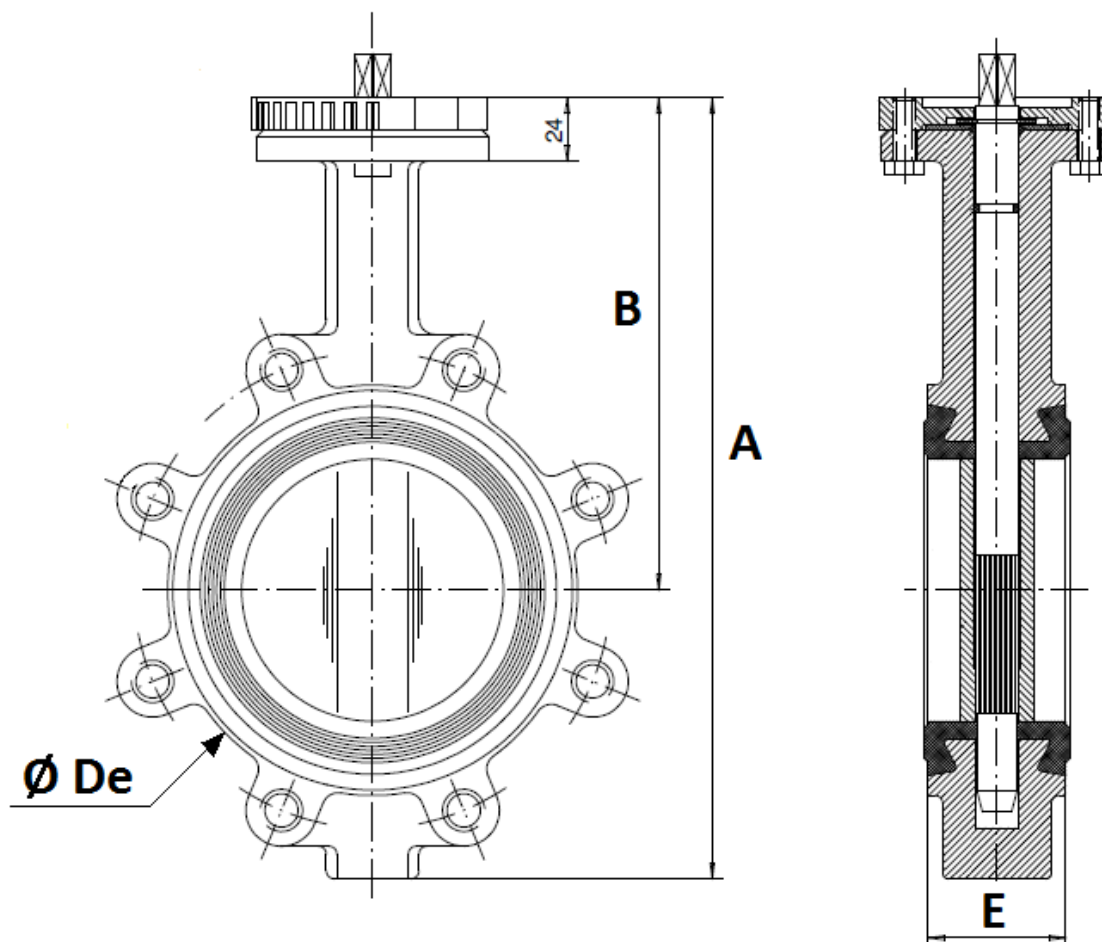


Item	Designation	Materials Ref. 1197
1	Screw	AISI 304
2	Pointer	PVC
3	Bonnet	Aluminium
4	O ring	NBR
5	Pin	Carbon steel
6	Quadrant	Ductile iron EN GJS-400-15
7	Gasket	NBR
8	Body	Aluminium
9	Adjusting bolt	Carbon steel
10	Washer	Galvanized steel
11	Nut	Galvanized steel
12	Cap	NBR 70
13	Bushing	Bronze
14	Worm	Carbon steel 45
15	Gasket	NBR
16	Stem	Carbon steel 45
17	Handwheel	Carbon steel
18	Pin	Carbon steel

**CONCENTRIC LUG BUTTERFLY VALVE EXCELLENCE RANGE TTV
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SIZE (in mm) :

- Valves DN 32 - 150 :

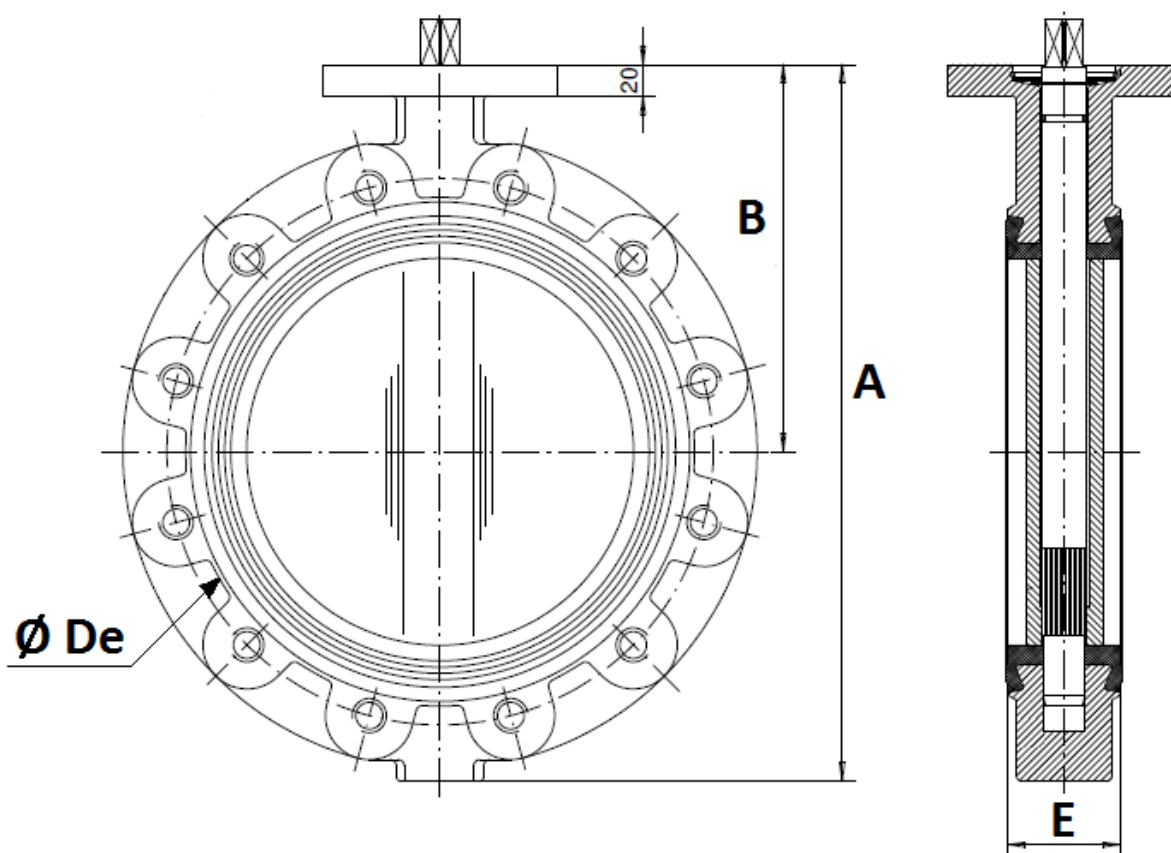


PN	PN10/16						
DN	32/40	50	65	80	100	125	150
A	205	226	246	259	295	325	352
B	140	156	161	169	187	206	215
Ø De	83	102	115	136	157	192	220
E	33	43	46	46	52	56	56
Weight (Kg)	2.7	4.1	4.7	6.1	7.9	10.9	11.85
Ref.	1149L040	1149L050	1149L065	1149L080	1149L100	1149L125	1149L150

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SIZE (in mm) :

- **Valves DN 200 -300 :**

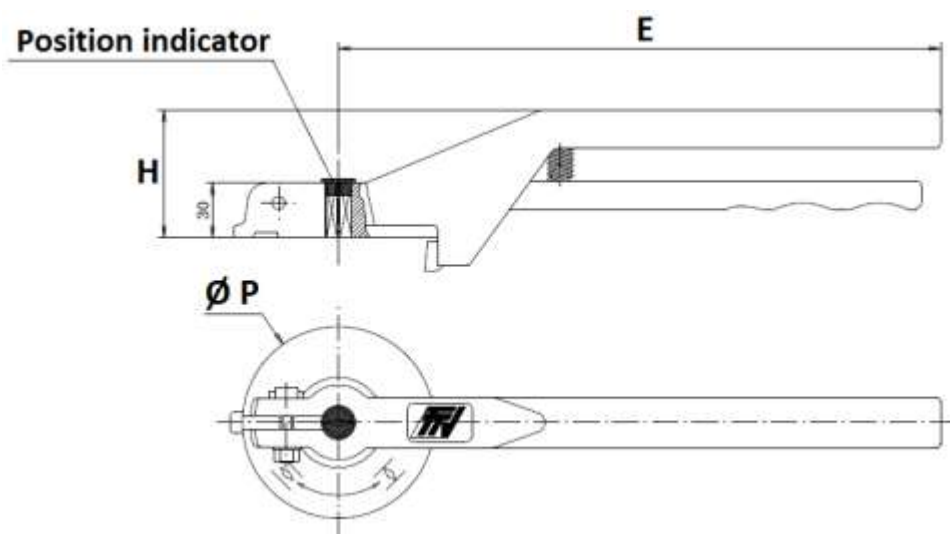


DN	200		250		300	
PN	PN10	PN16	PN10	PN16	PN10	PN16
A	422		460		523	
B	255		248		280	
Ø De	275		329		378	
E	60		68		78	
Weight (Kg)	18.5		31.8		47.80	
Ref.	1149L200	1149L201	1149L250	1149L251	1149L300	1149L301

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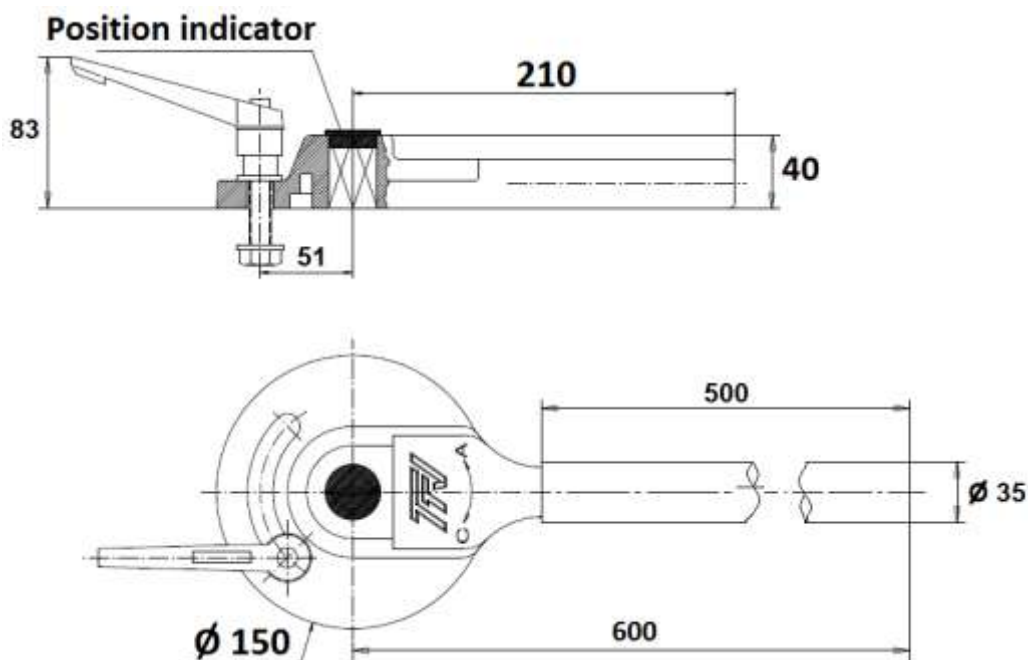
STANDARD LEVERS SIZE (in mm) :

DN 32 – 200 :



DN	32-100	125-200
E	205	330
H	57	70
Ø P	88	105

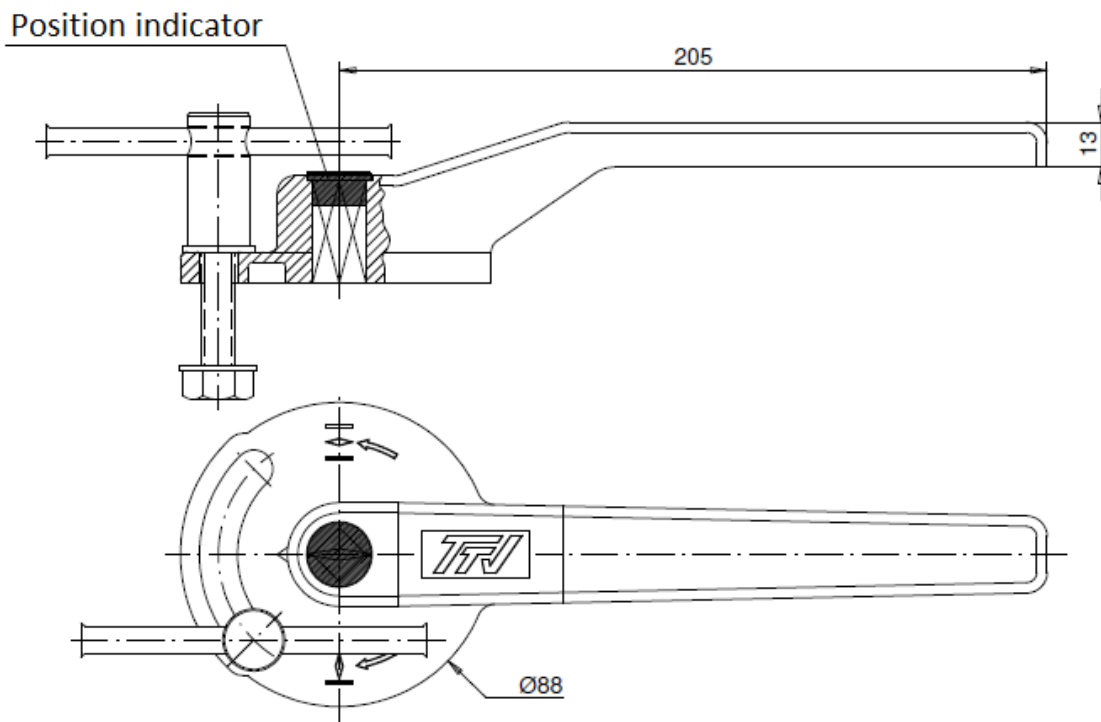
DN 250 – 300 :



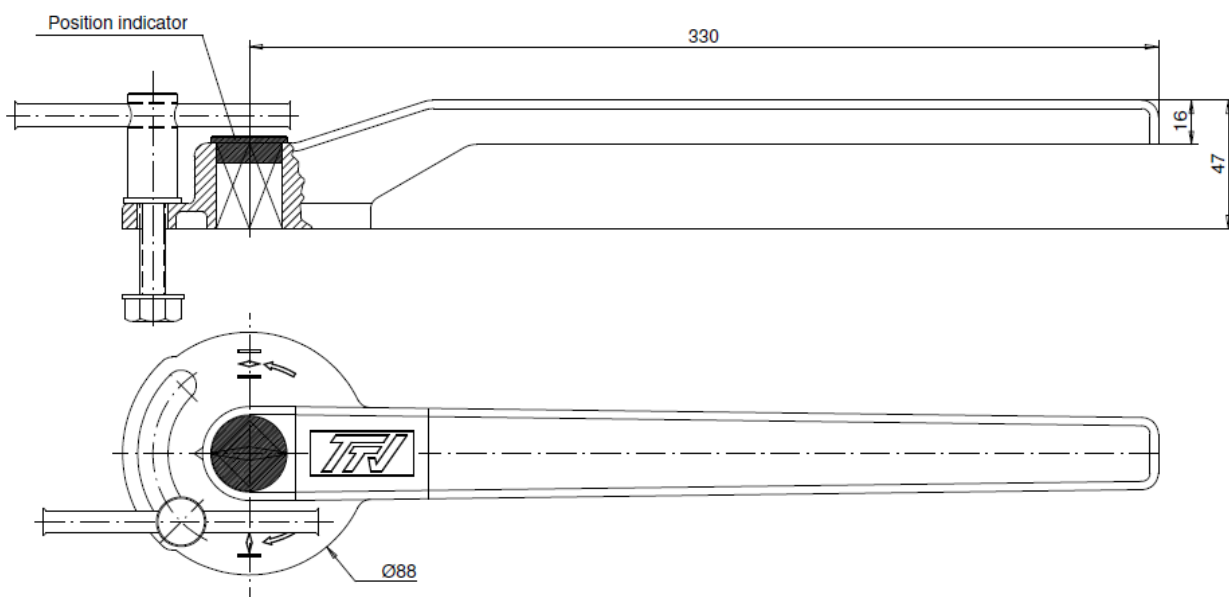
**CONCENTRIC LUG BUTTERFLY VALVE EXCELLENCE RANGE TTV
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ASTM A351 CF8M STAINLESS STEEL LEVERS SIZE (in mm) (ON REQUEST) :

DN 40 - 100



DN 125 - 200

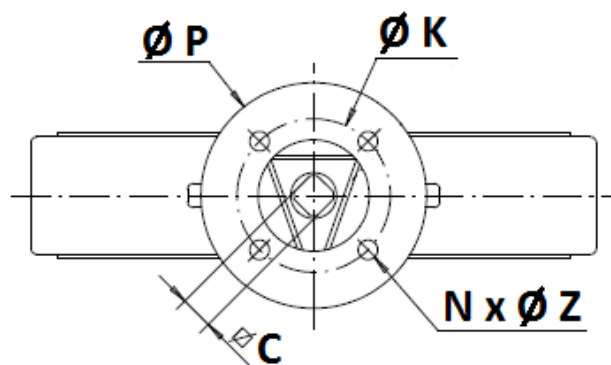
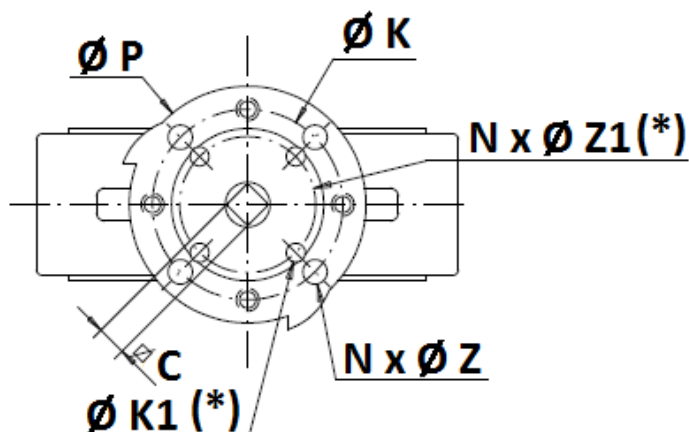
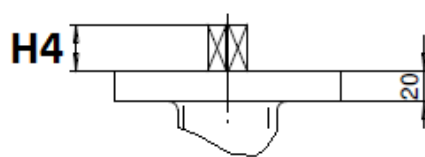
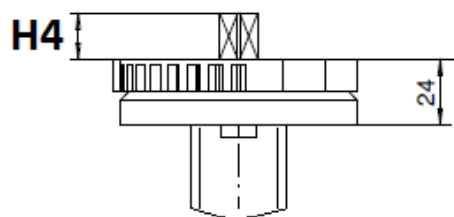


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ISO MOUNTING PAD SIZE (in mm) :

DN 32 – 200

DN250-300

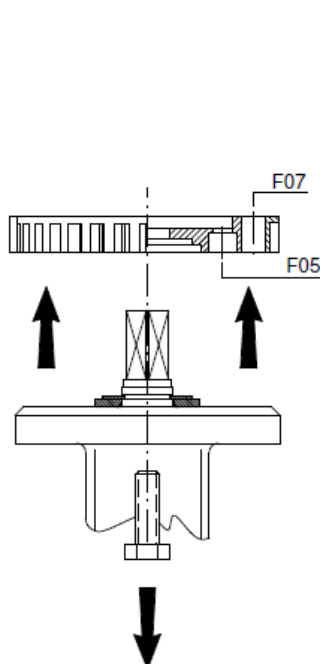


(*) : Only from DN32 to DN100 (see installation for ISO plate F05 next page)

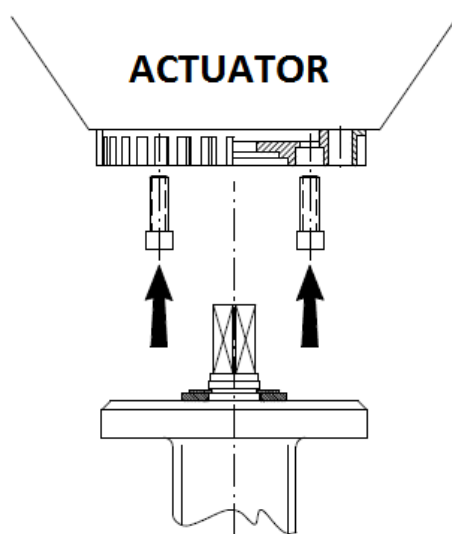
DN	32/40	50	65	80	100	125	150	200	250	300
H4	14		16		20			24		
C	8		9	11		14		17	19	22
Ø K	70							102		
ISO	F07							F10		
N x Ø Z	4 x 9							4 x 11		
Ø K1	50					-				
ISO 1	F05									
N x Ø Z1	4 x 7									
Ø P	88					105			150	

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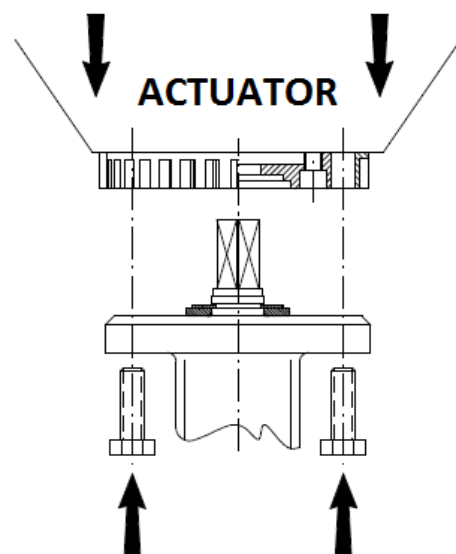
ISO PLATE INSTALLATION FOR DN32-100 ISO F05 :



Unscrew and remove the flange



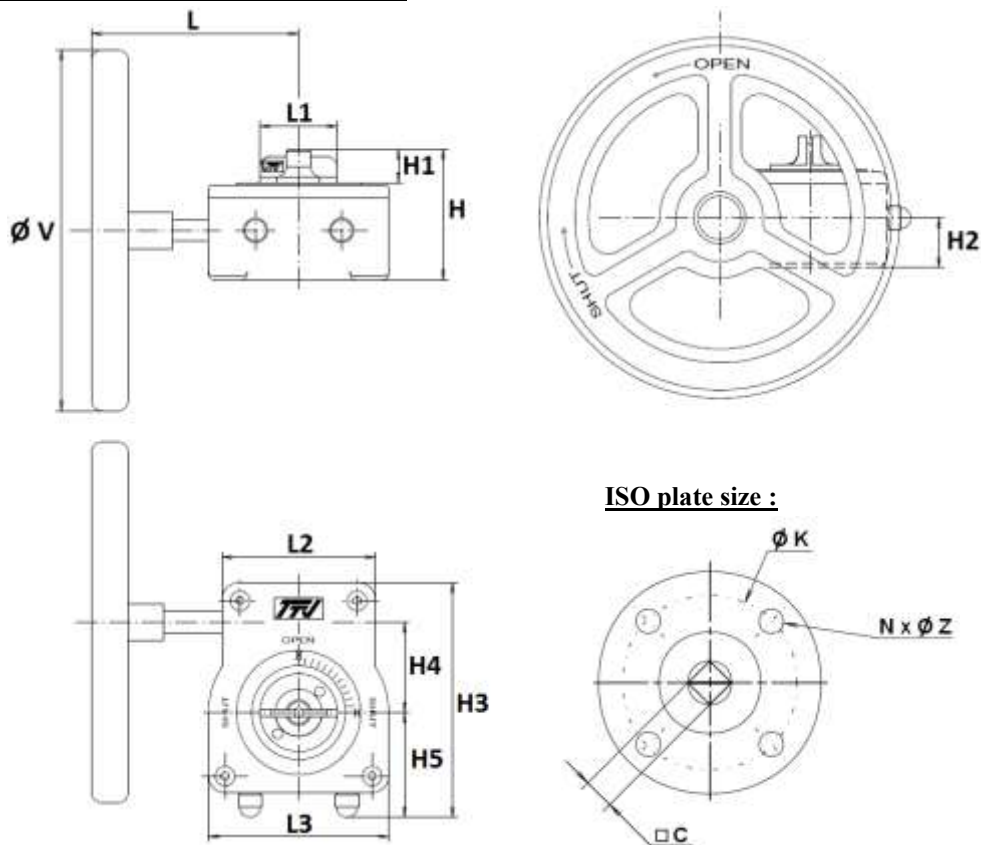
Screw the flange to the actuator with hexagon socket screws



Screw the valve to the flange

**CONCENTRIC LUG BUTTERFLY VALVE EXCELLENCE RANGE TTV
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GEARBOX SIZE REF.1197 (in mm) :



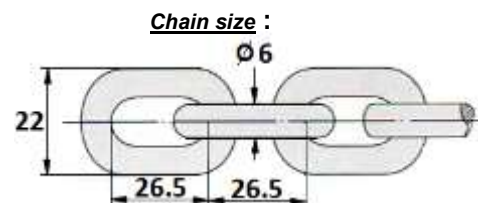
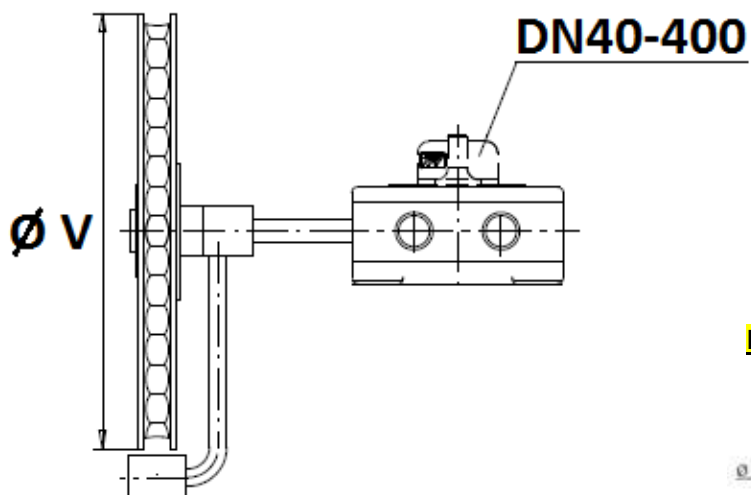
ISO plate size :

DN	32/50	65	80/100	125/150	200	250	300
L	115	115	115	115	115	223.5	223.5
L1	43	43	43	43	43	55	55
L2	85	85	85	85	85	110	110
L3	100	100	100	100	100	142	142
H	73	73	73	73	73	103	103
H1	19	19	19	19	19	33	33
H2	27.5	27.5	27.5	27.5	27.5	42	42
H3	130	130	130	130	130	176	176
H4	50	50	50	50	50	60	60
H5	58	58	58	58	58	82	82
Ø V	140	140	140	200	200	300	300
C	8	9	11	14	17	19	22
Ø K	70	70	70	70	70	102	102
ISO	F07	F07	F07	F07	F07	F10	F10
N x Ø Z	4 x M8	4 x M8	4 x M8	4 x M8	4 x M8	4 x M10	4 x M10
Weight (Kg)	1.35	1.35	1.35	1.75	1.75	4	4
Ref.	1197050	1197065	1197100	1197150	1197200	1197250	1197300

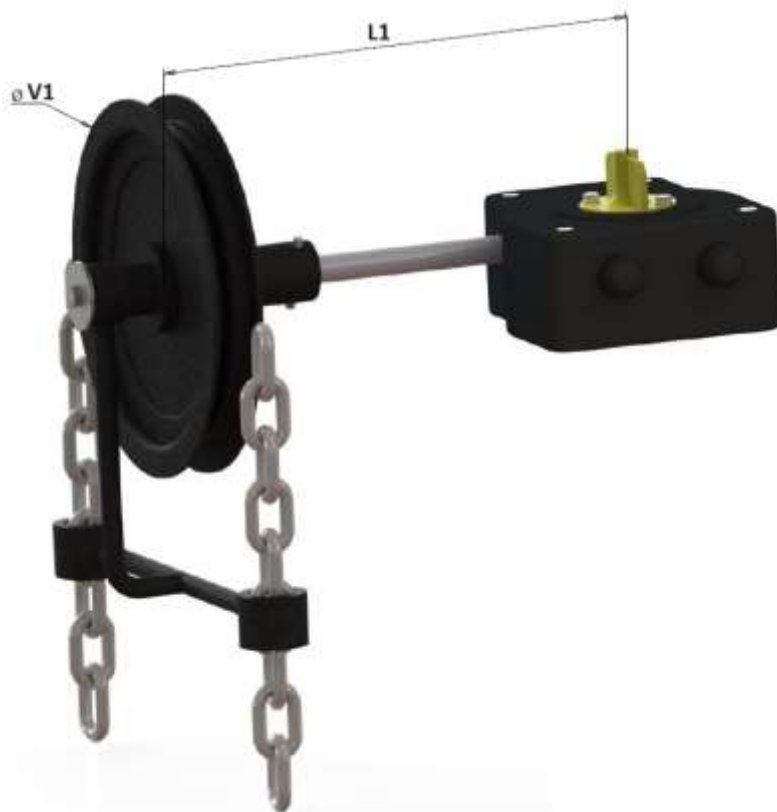
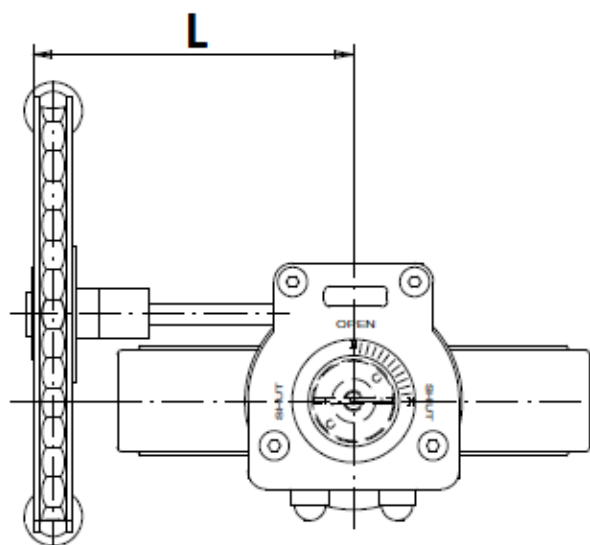
Sferaco 90 rue du Ruisseau 38297 St Quentin Fallavier Tel: + 33 (0) 474.94.15.90 Fax: + 33 (0) 474.95.62.08 Internet: www.sferaco.com E-mail: info@sferaco.fr

**CONCENTRIC LUG BUTTERFLY VALVE EXCELLENCE RANGE TTV
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CHAIN GEARBOX SIZE REF.1194 (in mm) :



NEW TYPE (MODIFICATION IN PROGRESS) :



DN	32/50	65	80/100	125/150	200	250	300
L	120			215		325	
L1	110					250	
Ø V	160			210		300	
Ø V1							
Weight (in Kg)	2.35	2.35	2.35	2.75	2.75	6.8	6.8
Ref.	1194050	1194065	1194100	1194150	1194200	1194250	1194300

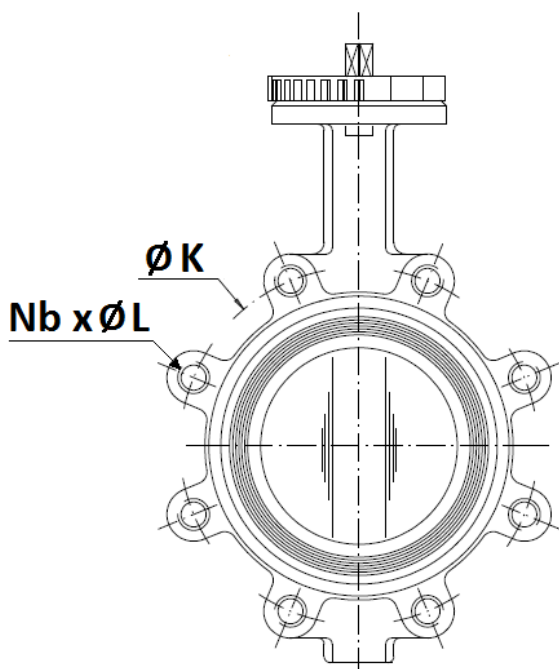
**CONCENTRIC LUG BUTTERFLY VALVE EXCELLENCE RANGE TTV
DUCTILE IRON BODY-STAINLESS STEEL DISC AND EPDM HT SEAT**

GEARBOX SPECIFICATIONS :

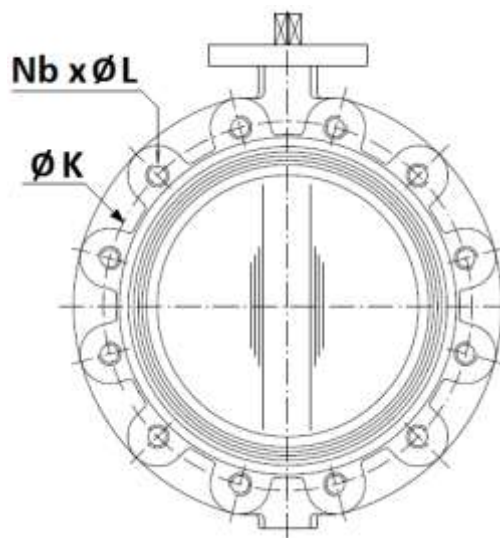
DN	32/50	65	80/100	125/150	200	250	300
Ref.	1197050	1197065	1197100	1197150	1197200	1197250	1197300
Ratio factor	37 : 1	37 : 1	37 : 1	37 : 1	37 : 1	36 : 1	36 : 1
Turns number for closing / opening	9.25	9.25	9.25	9.25	9.25	9	9
Input torque (Nm)	9	9	9	9	9	18.5	18.5
Output torque (Nm)	250	250	250	250	250	500	500

BETWEEN FLANGES SIZE (in mm) :

DN 32-150



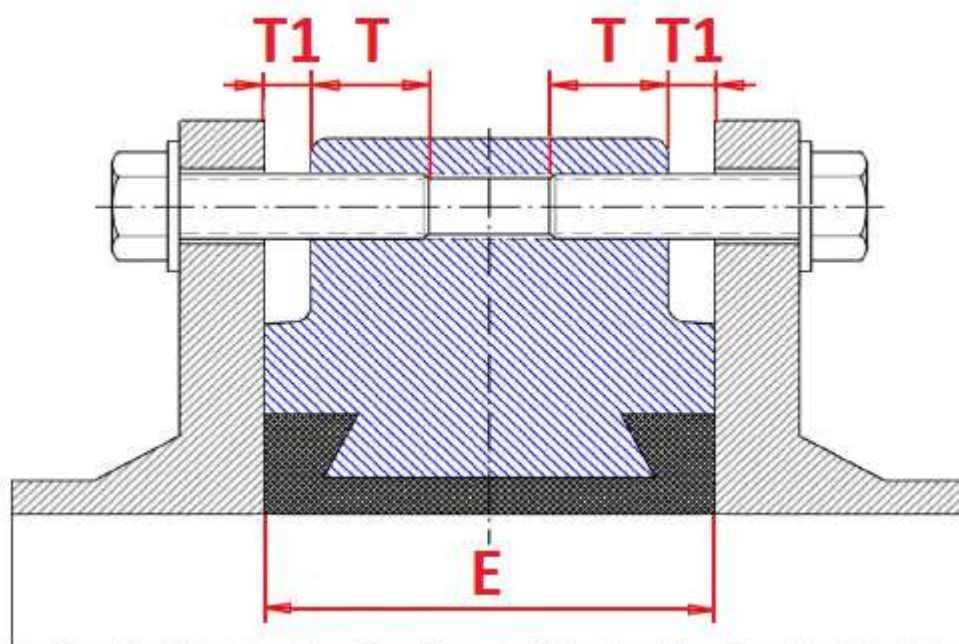
DN200 – 300



	DN (mm)	32	40	50	65	80	100	125	150	200	250	300
	NPS (")	1"1/4	1"1/2	2"	2"1/2	3"	4"	5"	6"	8"	10"	12"
PN10	Ø K	100	110	125	145	160	180	210	240	295	350	400
	Nb x Ø L	4 x M16				8 x M16			8 x M20		12 x M20	
PN16	Ø K	100	110	125	145	160	180	210	240	295	355	410
	Nb x Ø L	4 x M16				8 x M16			8xM20	12xM20	12 x M24	
Class 150	Ø K	88.9	98.5	120.6	139.7	152.4	190.5	215.9	241.3	298.5	362	431.8
	Nb x Ø L	4 x 1/2"		4 x 5/8"			8x5/8"	8 x 3/4"			12 x 7/8"	

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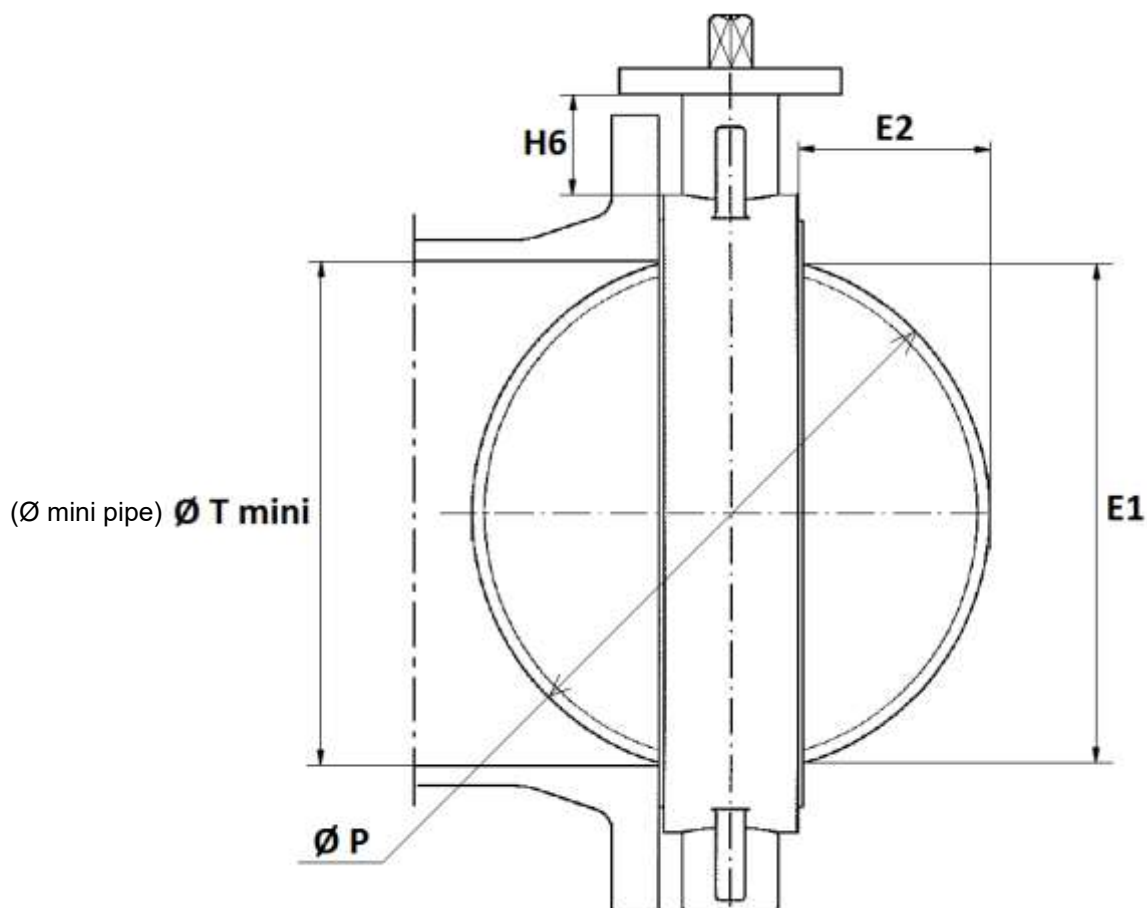
DEPTH THREADED HOLES (in mm) :



DN	PN10	PN16	Class 150 (PN20)	PN10, PN16 and CLASS 150	
	T	T	T	T1	E
32	13.5	13.5	13.6	2.5	33
40	13.5	13.5	12	2.5	33
50	14.5	14.5	13.5	2.5	43
65	13.5	13.5	14.3	3.5	46
80	16	16	17.2	4	46
100	17.5	17.5	18.7	2.5	52
125	20	20	23.2	3	56
150	20	20	21.6	3	56
200	23	23	23.4	3	60
250	26.5	26.5	27.3	2.5	68
300	31	29	30.3	3	78

**CONCENTRIC LUG BUTTERFLY VALVE EXCELLENCE RANGE TTV
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NECK AND DISC SIZE (in mm) :

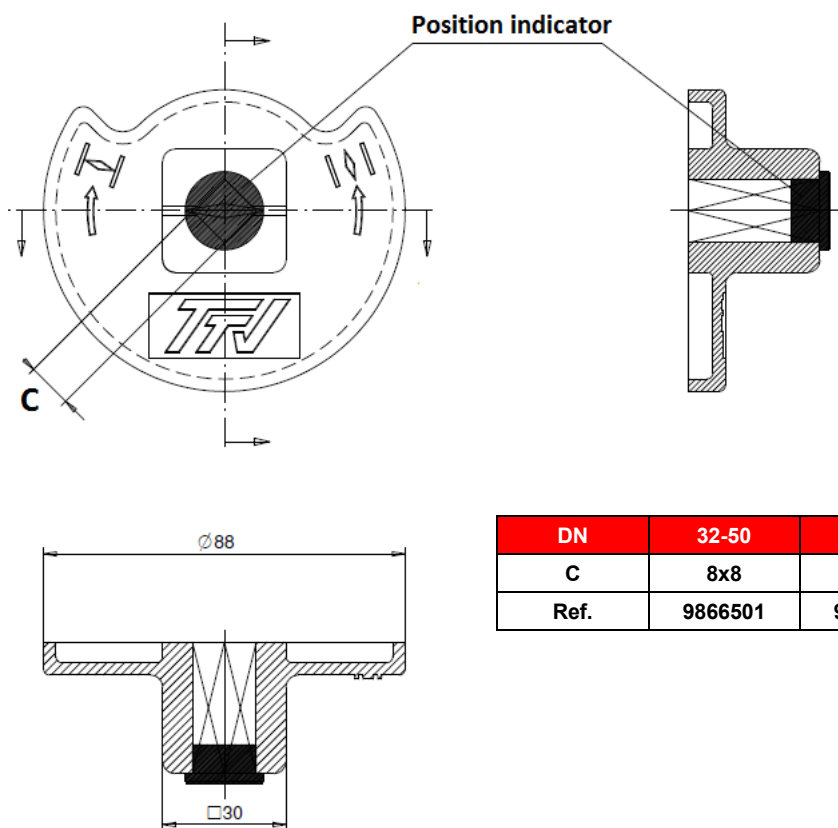


DN	32/40	50	65	80	100	125	150	200	250	300
E1	23	24.5	46	65	85	109	136	188	238	289
E2	3.5	3.5	9.5	17	24	33.5	45.5	69	90	110.5
H6	76	82	80	80	88	93	89	99	71	76
Ø T mini	26	27.5	49	68	88	112	139	191	241	292
Ø P	40	50	65	80	100	123	147	198	248	299

**CONCENTRIC LUG BUTTERFLY VALVE EXCELLENCE RANGE TTV
DUCTILE IRON BODY-STAINLESS STEEL DISC AND EPDM HT SEAT**

SIZE (in mm) :

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



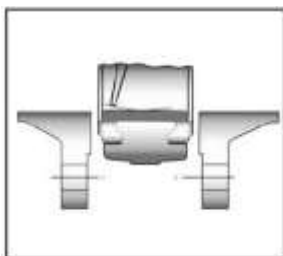
DN	32-50	65	80-100	125-150	200
C	8x8	9x9	11x11	14x14	17x17
Ref.	9866501	9866502	9866503	9866504	9866505

CONCENTRIC LUG BUTTERFLY VALVE EXCELLENCE RANGE TTV DUCTILE IRON BODY-STAINLESS STEEL DISC AND EPDM HT SEAT

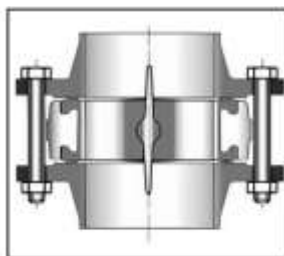
STANDARDS :

- Manufacturer certified ISO 9001 : 2015
- Designing according to ISO 10631 and EN 593
- DIRECTIVE 2014/68/EU : For liquids or Gas of Group 1
 - DN32-50 : Risk category I, CE marking
 - DN65-200 : Risk category II, CE0094 marking
 - DN250-300 : Risk category III, CE0094 marking
- Certificate 3.1 on request
- Pressure tests according to EN 12266-1, Rate A
- Between flanges according to EN 1092-1 PN10/16
- ISO 5211 mounting pad
- Length according to :
 - ISO 5752 short series 20
 - EN 558 series 20 (NF 29305)
 - BS 5155 series 4
 - DIN 3202 part 3, series K1
 - API 609 Table 1 up to DN600
 - ASME B16.10 Table 8 column 3
- ATEX Group II Category 2 G/2D Zone 1 & 21 Zone 2 & 22 (on request)
- The valves are suitable for use in a safety instrumented system up to SIL 2 in low demand mode. Under consideration of the minimum required hardware fault tolerance HFT= 1 the valves may be used in a redundant architecture up to SIL 3.
- Approval certificate **Marine BUREAU VERITAS on request**

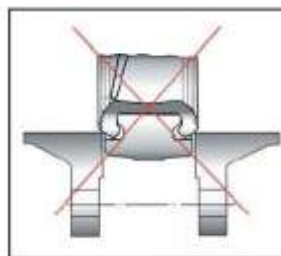
INSTALLATION INSTRUCTIONS :



Half open valve introduction



**Complete opened disc valves
when screw tightening**



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.

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