

**PTFE WAFER CONCENTRIC BUTTERFLY VALVE EXCELLENCE RANGE TTV
DUCTILE IRON BODY-CF8M DISC AND PTFE SEAT**

Wafer butterfly valve TTV excellence range for corrosives fluids (acids...).
PTFE seat in accordance with the regulation (EC) N° 1935/2004.
Ductile iron EN GJS-500-7 body, stainless steel disc and PTFE seat.
Between flanges PN10/16 or class 150 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.



Lloyd's Register
PED/2014/68/UE



- Size :** DN32/40 to DN300
- Connection :** Between flanges PN10/16 and Class 150 (PN20)
- Min Temperature :** -25°C
- Max Temperature :** +200°C
- Max Pressure :** 16 Bars up to DN150
- Specifications :** Long neck for isolation
2 parts body
ISO 5211 direct mounting pad

Materials : Ductile iron GJS 500-7 body, PTFE 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
- Wafer type
- Between flanges PN10/16 from DN32/40 to 300 and Class 150 (PN20) from DN40 to 300
- 2 parts body
- Full crossing stem
- PTFE sealing ring 3 mm thickness with silicone elastic gasket 6 mm thickness
- Stainless steel disc
- 9 positions lever with locking device up to DN200
- Rilsan coated body color RAL 5024 , 250-300 microns thickness
- Stem extension 75 mm length (option)
- Square lever 30x30 mm for special key (option)

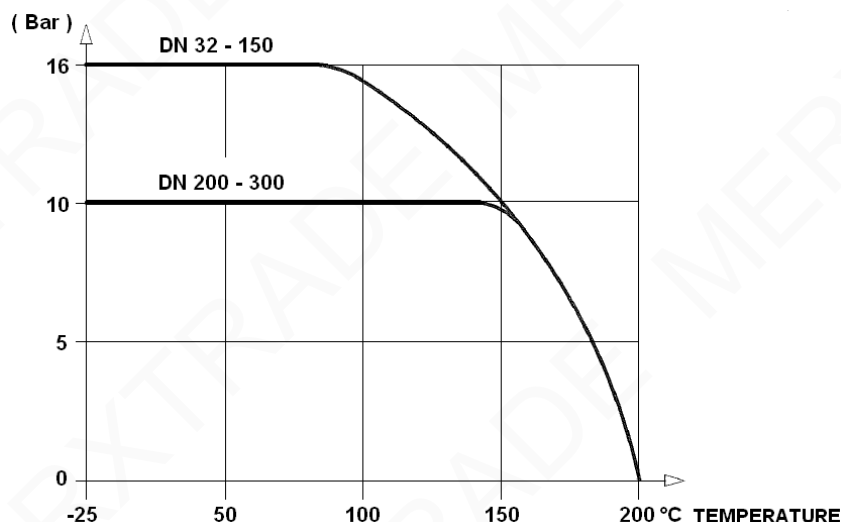
USE :

- For corrosive fluids (acids ...)
- Min and max Temperature Ts : - 25°C to + 200°C
- Max Pressure Ps : 16 bars up to DN150, 10 bars over (see graph under)

RANGE :

- With lever from DN 32/40 to DN 200
- With IP65 gear box from DN 250 to DN 300 (possible from DN 32/40 to DN200 : **Ref. 1197**)
- On request , IP65 chain gear box (**Ref. 1194**) from DN 32/40 to DN 300
- On request , stem extension with special length (**Ref. 98665**)
- On request, stainless steel lever and bolting (**Ref. 9831250-9831264**)

PRESSURE / TEMPERATURE GRAPH (STEAM EXCLUDED) :



ENDS :

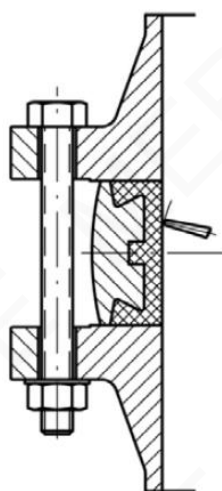
- Between flanges PN10/16 from DN32/40 to 300 and Class 150 (PN20) from DN40 to 300

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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
Torque (Nm)	25	40	45	75	90	160	180	230	475	680

MAXIMUM TIGHTENING TORQUES FOR BOLTING FLANGES :



		Maximum torques (Nm)			
		Bolting types	5,6 / A307 Gr.B	8,8 / A193 B7	10,9
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	5	10	16	22	31	36	36	36
50	3	7	15	33	44	48	54	54	54
65	6	10	21	40	57	86	102	102	102
80	7	16	37	56	84	182	246	246	246
100	9	22	51	88	134	187	255	336	336
125	21	33	91	153	232	331	468	560	560
150	45	69	149	281	302	597	822	1015	1072
200	55	131	254	420	631	904	1388	1758	1758
250	64	246	442	710	1056	1522	2128	3096	3096
300	100	275	472	953	1450	2093	2972	4193	4480

HEAD LOSS CALCULATIONS :

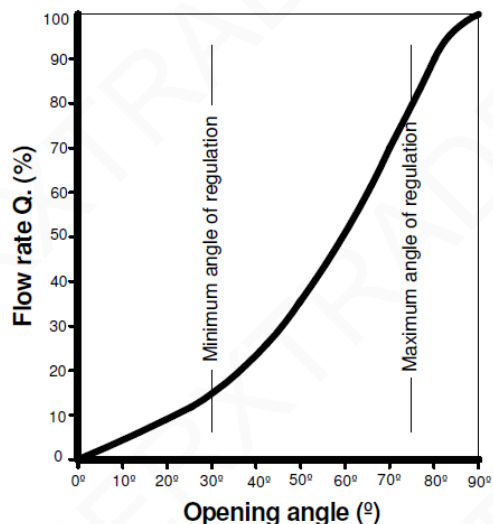
$\Delta p = (Q / Kv)^2 \times SG$

Q : flow in m³/h

Δp : Head loss in bar

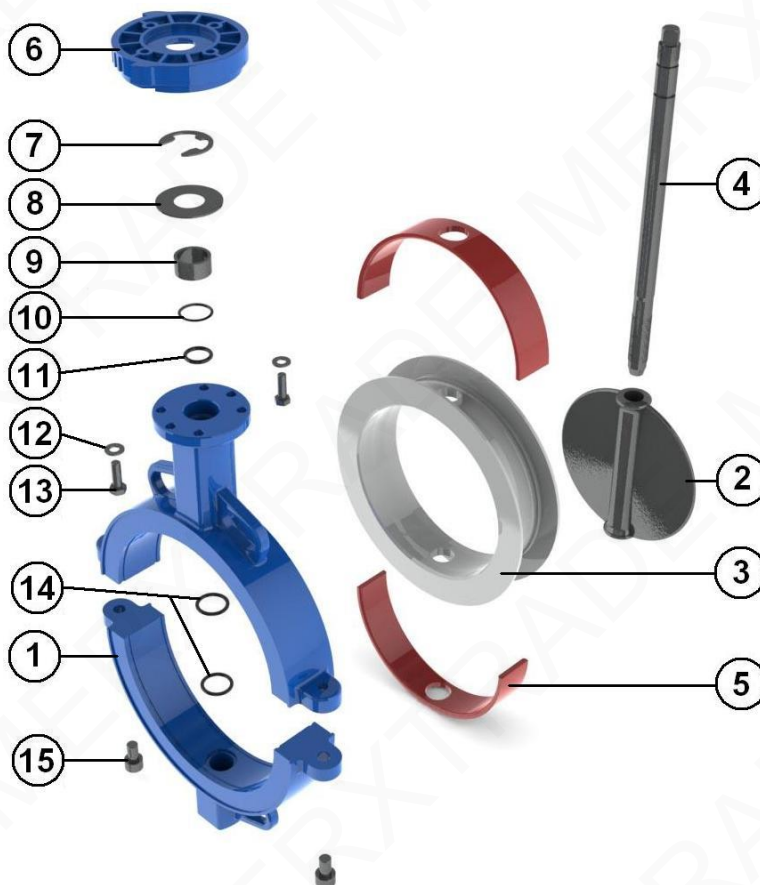
SG : Specific gravity (= 1 for water)

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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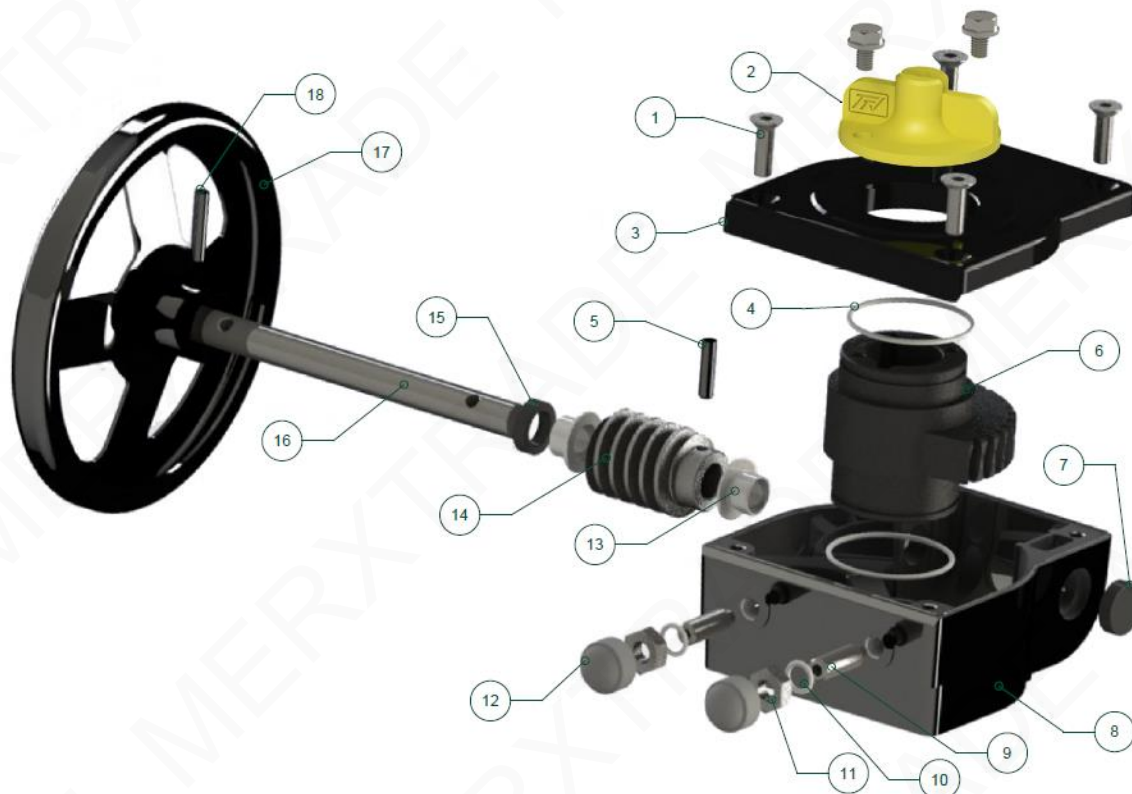
MATERIALS :



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	PTFE
4	Stem DN40-50 and 150-300	SS 17 4-PH (630)
4	Stem DN65-125	AISI 316
5	Insert	Silicone
6	Plate	Aluminium
7	Circlips	AISI 316
8	Ring	
9	Socket	
10	O ring	FKM
11	O ring	FKM
12	Washer	AISI 316
13	Plate screw	A4
14	O ring	FKM
15	Body screw	A4
	Lever	Aluminium ADC10 with epoxy painting 50μ thickness

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GEARBOX MATERIALS REF. 1197 :

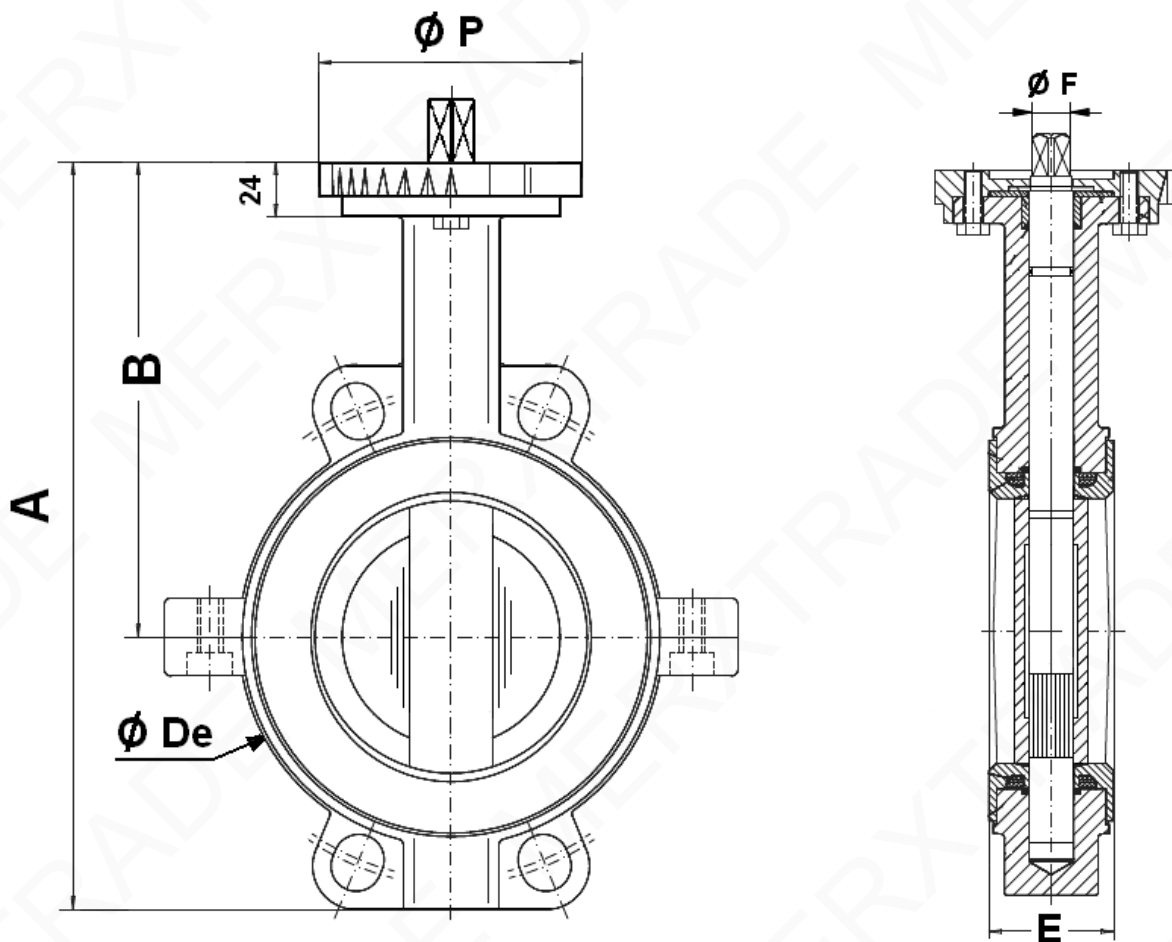


Item	Designation	Materials Ref. 1197
1	Screw	AISI 304
2	Indicator	PVC
3	Cover	Aluminium
4	O ring	NBR
5	Pin	Carbon steel
6	Quadrant	Ductile iron EN GJS-400-15
7	Gasket	NBR
8	Body	Aluminium
9	Adjusting bolt	Carbon steel
10	Washer	Galvanized steel
11	Nut	Galvanized steel
12	Cap	NBR 70
13	Bushing	Bronze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

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

- Valves :

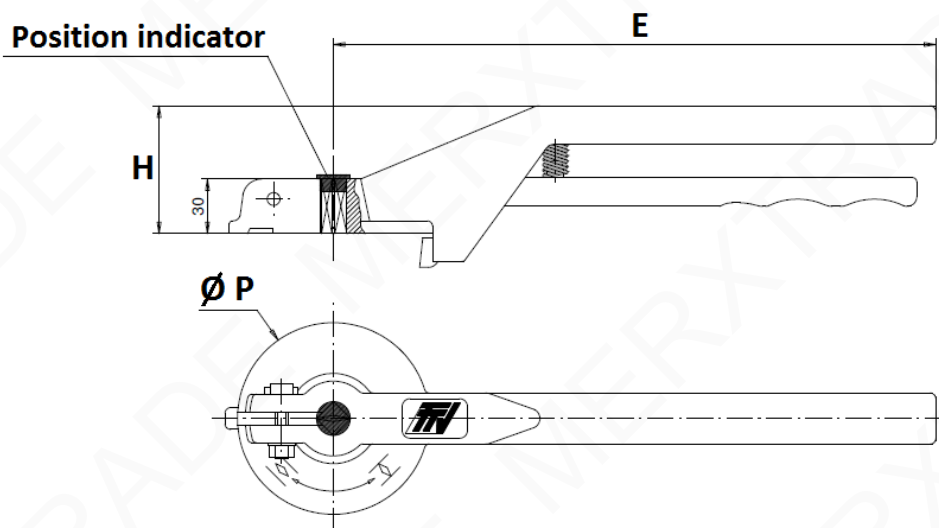


DN	32/40	50	65	80	100	125	150	200	250	300
A	205	226	242	262	290	326	348	438	448	515
B	140	156	161	167	184	207	215	257	248	280
Ø De	83	103	117	134	150	185	205	270	320	373
E	33	43	46	46	52	56	56	60	68	78
Ø F	9.5	9.5	12	14	14	17	17	21	23	26.5
Ø P	88	88	88	88	88	105	105	105	150	150
Weight (Kg)	2.5	4	4.57	5.18	6.5	9.5	10.37	16.8	31	42

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STANDARD LEVERS SIZE (in mm) :

DN 32 – 200 :

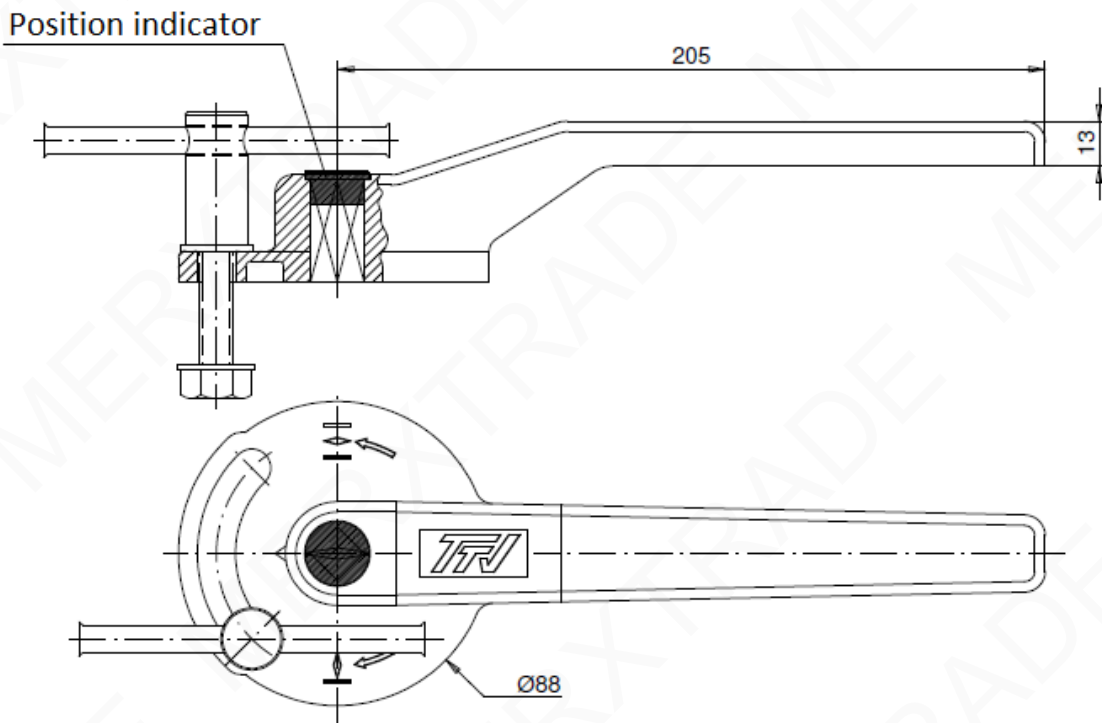


DN	32-100	125-200
E	205	330
H	57	70
Ø P	88	105

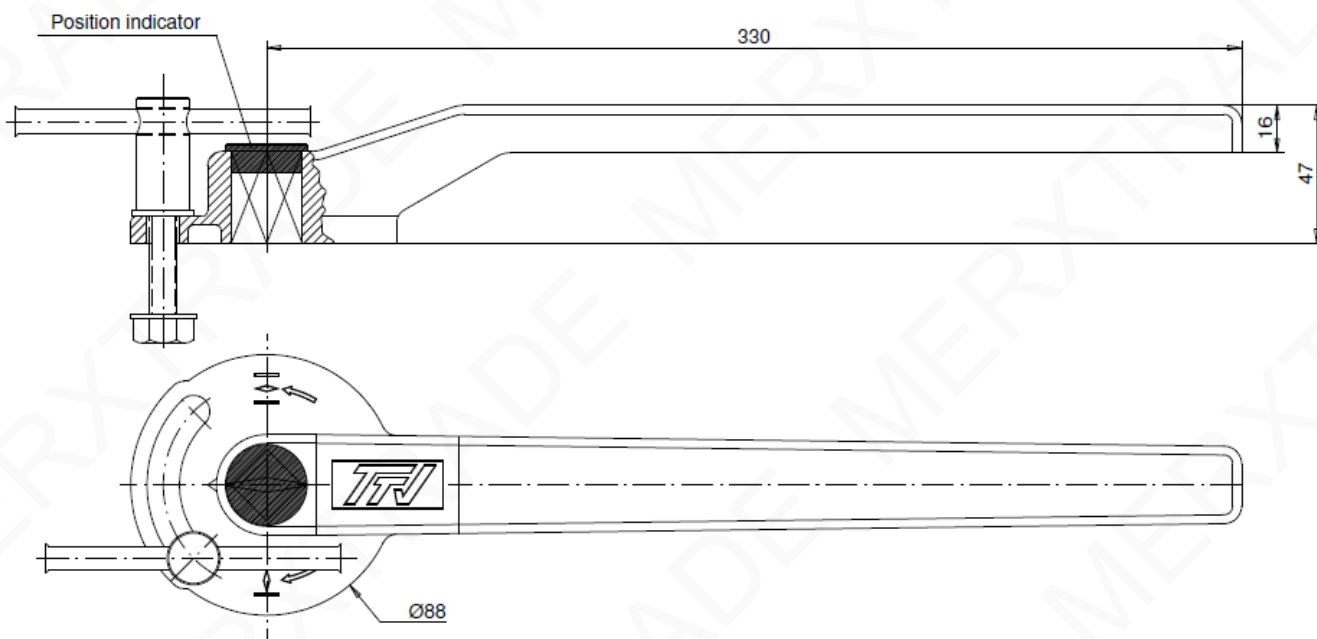
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ASTM A351 CF8M STAINLESS STEEL LEVERS SIZE (in mm) (ON REQUEST) :

DN 40 - 100



DN 125 - 200

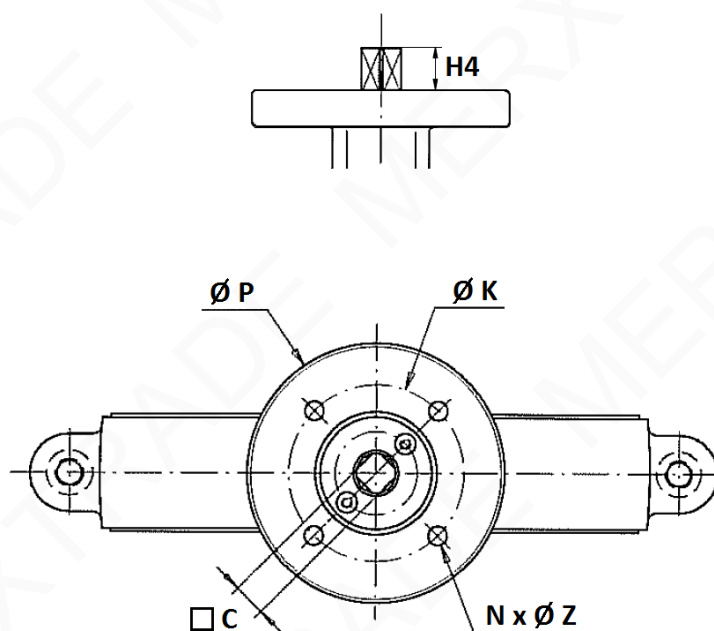
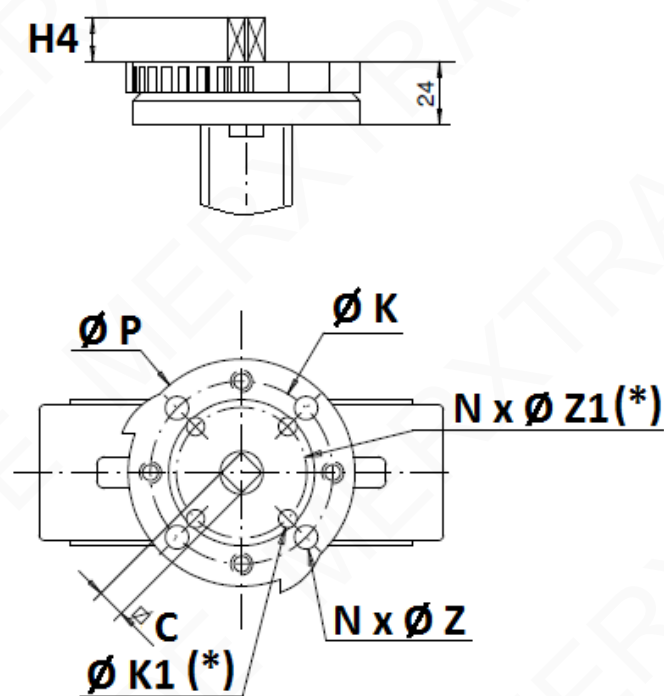


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ISO MOUNTING PAD AND STEM SIZE (in mm) :

DN 40 - 200

DN 250 – 300

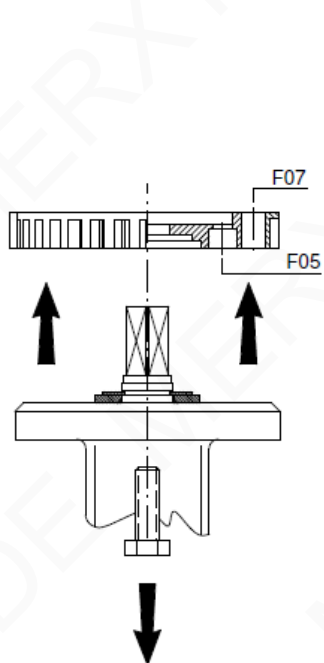


(*) : Only from DN32 to DN100 (see installation for ISO plate F05 next page)

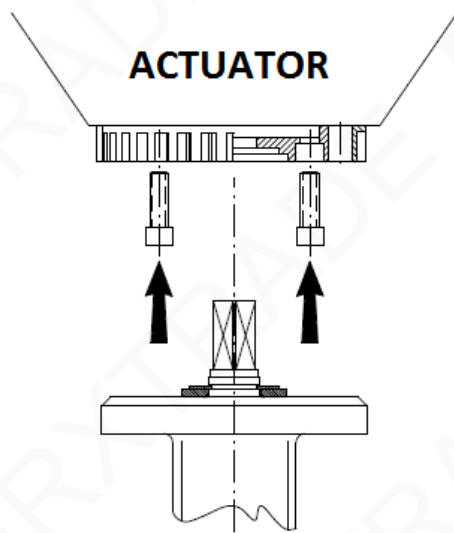
DN	32/40	50	65	80	100	125	150	200	250	300
H4	14	14	16	16	20	20	20	24	24	24
C	8	8	9	11	11	14	14	17	19	22
Ø K	70	70	70	70	70	70	70	70	102	102
ISO	F07	F07	F07	F07	F07	F07	F07	F07	F10	F10
N x Ø Z	4 x 9	4 x 9	4 x 9	4 x 9	4 x 9	4 x 9	4 x 9	4 x 9	4 x 11	4 x 11
Ø K1	50	50	50	50	50	-	-	-	-	-
ISO 1	F05	F05	F05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

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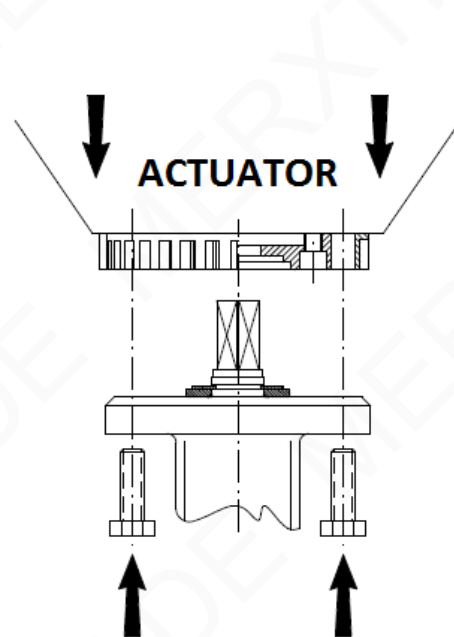
ISO PLATE INSTALLATION FOR DN32-100 ISO F05 :



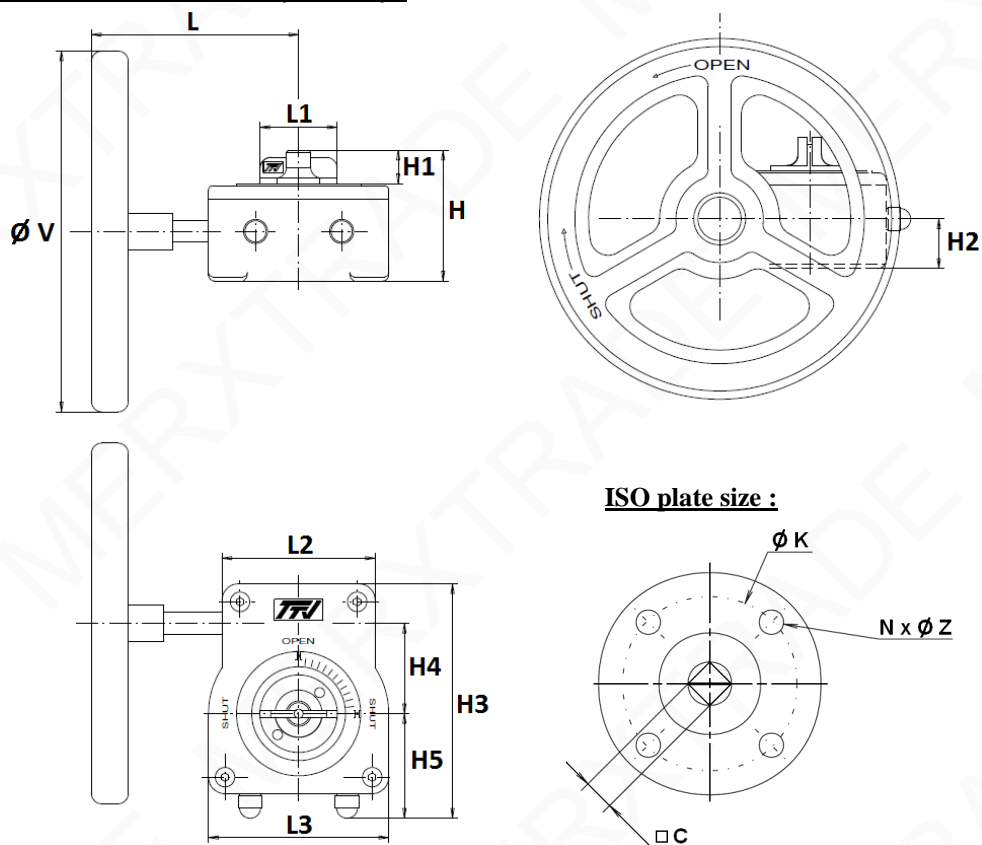
Unscrew and remove the flange



Screw the flange to the actuator with hexagon socket screws



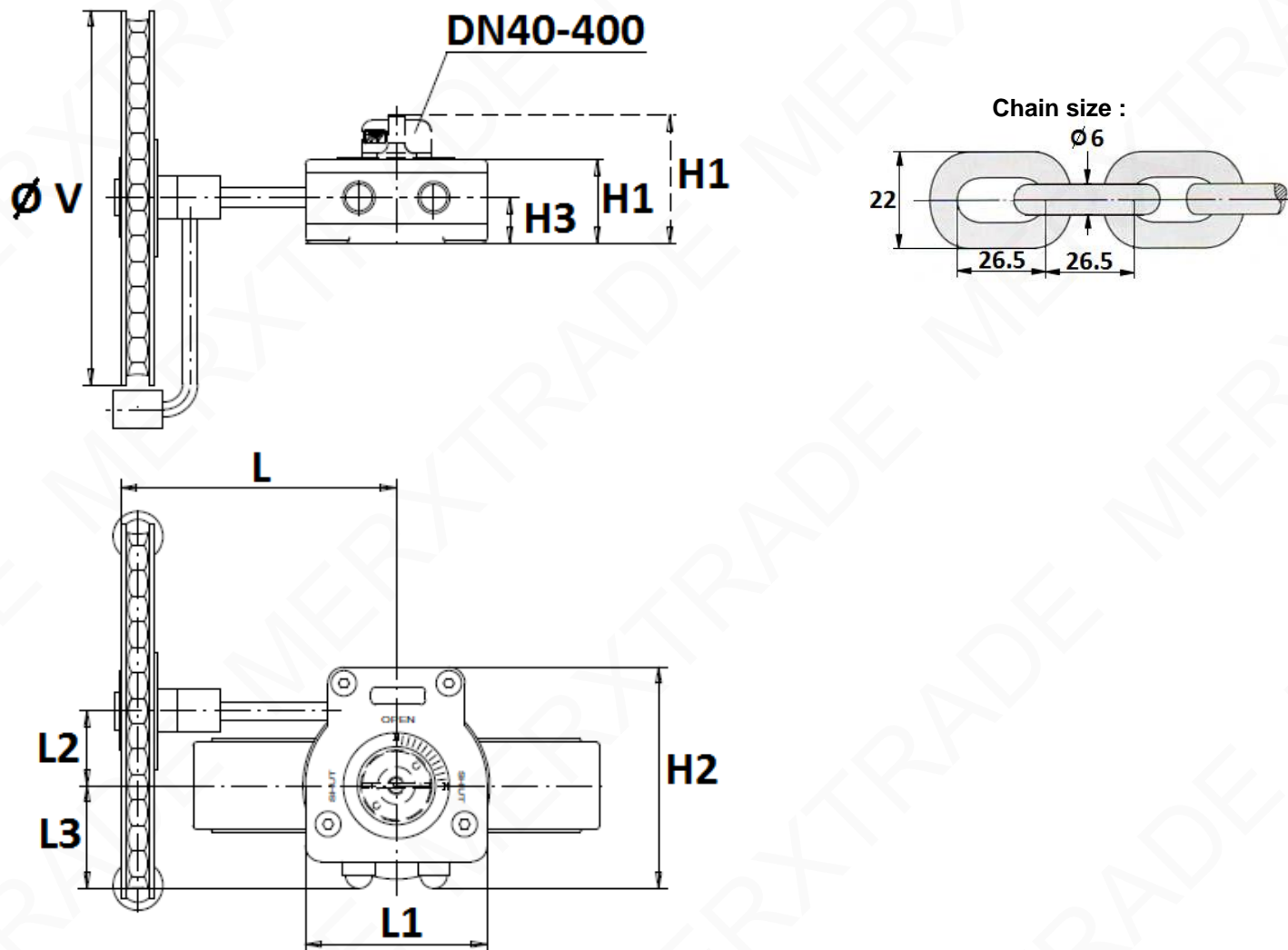
Screw the valve to the flange

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GEARBOX SIZE REF.1197 (in mm) :


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

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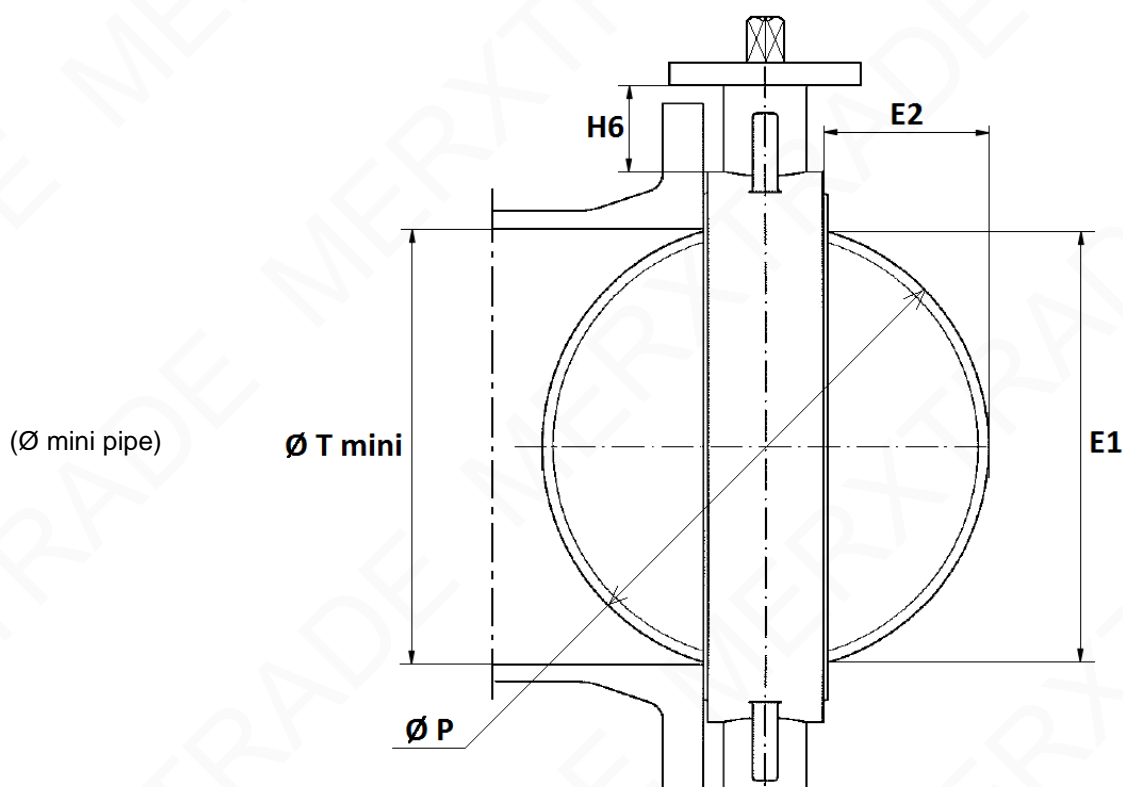
CHAIN GEARBOX SIZE REF.1194 (in mm) :



DN	32/50	65	80/100	125/150	200	250	300
L	120	120	120	215	215	325	325
L1	100	100	100	100	100	142	142
L2	50	50	50	50	50	61	61
L3	56	56	56	56	56	80	80
H1	73	73	73	73	73	103	103
H2	128	128	128	128	128	175	175
H3	27.5	27.5	27.5	27.5	27.5	42	42
Ø V	160	160	160	210	210	300	300
Weight (Kg)	2.35	2.35	2.35	2.75	2.75	6.8	6.8
Ref.	1194050	1194065	1194100	1194150	1194200	1194250	1194300

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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
Number of cycles for opening or closing	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

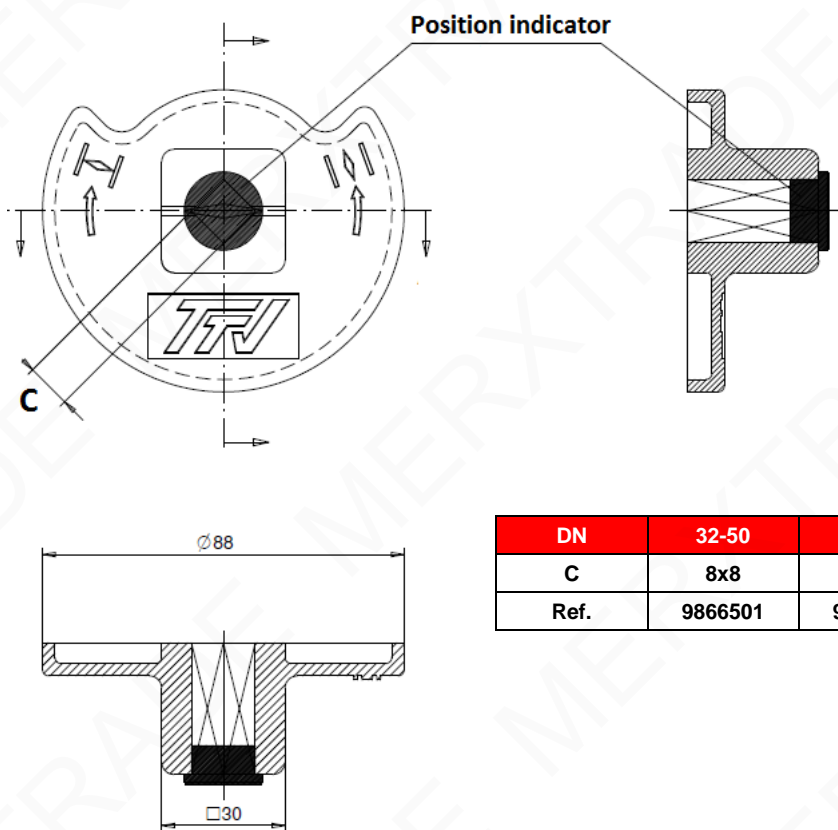
DISC AND NECK SIZE (in mm) :


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

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SIZE (in mm) :

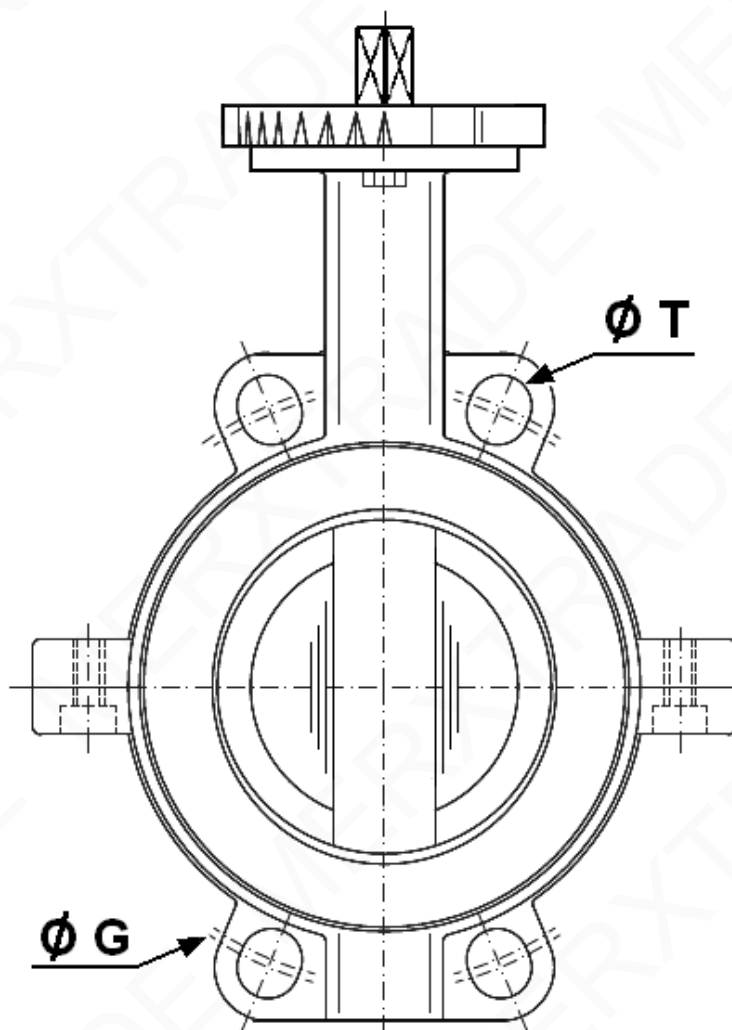
- Square lever for special key (30x30 mm) :



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

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BETWEEN FLANGES SIZE (in mm) :



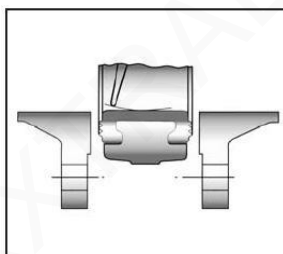
	DN (mm)	32	40	50	65	80	100	125	150	200	250	300
	NPS (")	1"1/4	1"1/2	2"	2"1/2	3"	4"	5"	6"	8"	10"	12"
PN10	Ø G	100	110	125	145	160	180	210	240	295	350	400
	Ø T	18	18	18	18	18	18	18	23	23	23	23
PN16	Ø G	100	110	125	145	160	180	210	240	295	355	410
	Ø T	18	18	18	18	18	18	18	23	23	27	27
Class 150	Ø G	88.9	98.5	120.6	139.7	152.4	190.5	215.9	241.3	298.5	362	431.8
	Ø T	16	16	19	19	19	19	23	23	23	26	26

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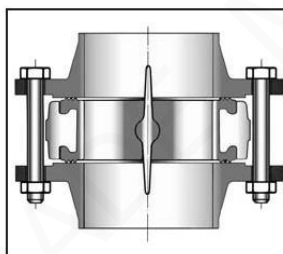
STANDARDS :

- Manufacturer certified ISO 9001:2015
- Designing according to ISO 10631 and EN 593
- DIRECTIVE 2014/68/EU : CE N° 0038
Risk Category III module H
- Certificate 3.1 on request
- 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.
- **FDA PTFE seat**
- PTFE seat compatible with foodstuffs according to the rule **CE 1935/2004 (article 3)**

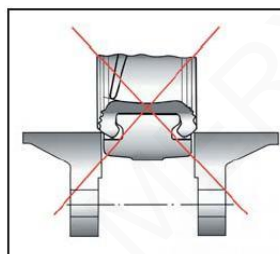
INSTALLATION INSTRUCTIONS :



Half open valve introduction



**Complete opened disc valves
when screw tightening**



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