

GEMÜ R478 Tugela

Motorized butterfly valve



Features

- High-performance butterfly valve with double-eccentric construction in order to separate the disc directly from the seat (gasket), thereby reducing friction and extending the service life
- Continuous shaft with temperature resistant graphite bearing and PTFE gland packing for readjustment in operation for minimized leakage, even at low pressures
- Antistatic fixture for ATEX area
- Various actuator types can be selected
- Bubble tight sealing, in accordance with EN 12266-1/P12, leak rate A

Description

The GEMÜ R478 Tugela double-eccentric metal butterfly valve is operated by a motorized actuator. The butterfly valve is available in nominal sizes DN 50 to 600 and in standardized installation lengths API 609 category A (DIN 3202 K1).

Technical specifications

- **Media temperature** : -40 to 230 °C
- **Ambient temperature**: -40 to 70 °C
- **Operating pressure** : 0 to 40 bar
- **Nominal sizes**: DN 50 to 600
- **Body configurations**: Wafer
- **Connection standards**: ASME I ISO
- **Body materials**: 1.0619 (WCB), cast steel material with CDP coating I 1.4408 (CF8M), investment casting material
- **Liner materials**: PTFE TFM™
- **Disc materials**: 1.4408
- **Supply voltage**: 120 V AC, 50 Hz I 120 V AC, 60 Hz I 230 V AC, 50 Hz I 230 V AC, 60 Hz I 24 V DC I 380 V AC, 50 Hz I 400 V AC, 50 Hz I 440 V AC, 60 Hz I 460 V AC, 60 Hz I 480 V AC, 60 Hz
- **Operating time 90°**: 13 to 35 s
- **Protection class**: IP68
- **Conformities**: ATEX I EAC I FDA I TA Luft (German Clean Air Act)

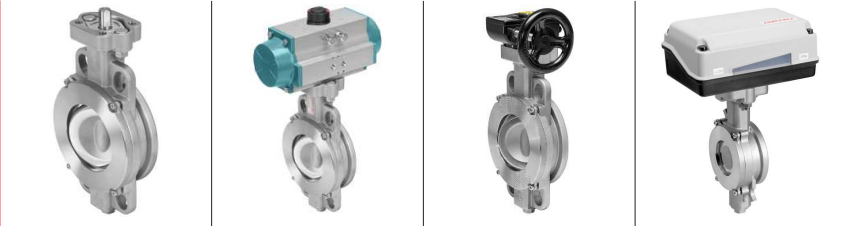
Technical data depends on the respective configuration



further information
webcode: GW-R478



Product line

				
	GEMÜ R470 Tugela	GEMÜ R471 Tugela	GEMÜ R477 Tugela	GEMÜ R478 Tugela
Operation				
With bare shaft	●	-	-	-
Manual	-	-	●	-
Pneumatic	-	●	-	-
Motorized	-	-	-	●
Nominal sizes	DN 50 to 600	DN 50 to 600	DN 50 to 600	DN 50 to 600
Media temperature	-40 to 230 °C	-40 to 230 °C	-40 to 230 °C	-40 to 230 °C
Operating pressure	0 to 40 bar	0 to 40 bar	0 to 40 bar	0 to 40 bar
Connection types				
Flange (lug)	●	●	●	●
Flange (U section)	●	●	●	●
Flange (wafer)	●	●	●	●
Conformities				
ATEX	●	●	●	●
EAC	●	●	●	●
FDA	●	●	●	●
FMEDA	●	-	-	-
TA Luft (German Clean Air Act)	●	●	●	●

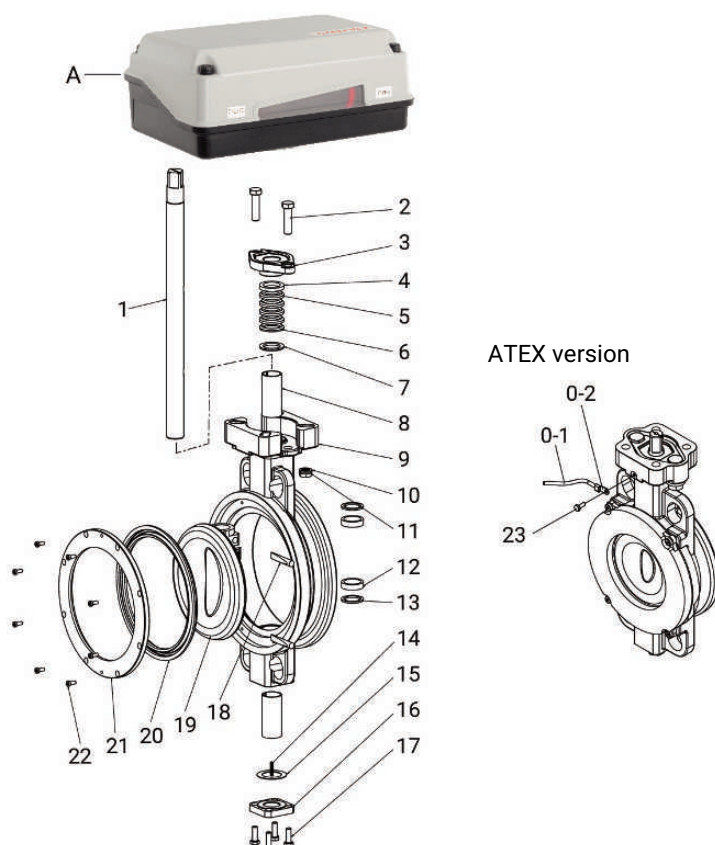
Comparison of area of application – actuators AQ and PF

		
	GEMÜ AQ	GEMÜ PF
Range of functions		
Use in non-aggressive environment (up to C3)	●	●
Use in aggressive environment (C5)	●	●
Use in protected outdoor areas	●	●
Use in unprotected outdoor areas	●	●
Fail-safe option	●	●
Positioning application	●	●
Industrial sectors		
Chemical processes	●	●
Surface finishing	●	●
Water treatment	●	●
Mechanical engineering	●	●
Power generation and environmental systems	●	●
Food processing technology	●	●
Semiconductor	●	●
Medical systems	●	●
Pharmaceutical industry	●	●

Comparison of technical data – actuators AQ and PF

		
	GEMÜ AQ	GEMÜ PF
Manufacturer	AUMA	AUMA
Manufacturer type	AM, AC, SQ, SQR	PROFOX
Torques	150 to 2400 Nm	80 to 600 Nm
Duty cycle	20 % (ON/OFF actuator) 25 % (control actuator)	50 % (control actuator) S2 - 15min (ON/OFF actuator)
Heating	Yes	Yes
Voltage		
230 V AC, 50 Hz	●	●
24 V DC	-	●
400 V AC, 50 Hz	●	-
Protection class	IP 68	IP 68
Ambient temperature	-40 to 70 °C	-30 to 70 °C
Housing materials		
Aluminium	●	●
Versions		
Limit switches	●	●
ON/OFF actuator	●	●
Optional on-site control	●	●
Optional positioner	●	●
Optional positioning actuator	●	●
Torque switch	●	●

Product description



Item	Designation	Material
1	Shaft	See order code (order data)
2	Hexagon screw	Stainless steel
3	Packing washer	1.4408
4	Upper gland packing	PTFE
5	Middle gland packing	PTFE
6	Lower gland packing	PTFE
7	Packing washer	PTFE
8	Bush	316/PTFE
9	Housing	See order code (order data)
10	Spring washer	Stainless steel
11	Hexagon nut	Stainless steel
12	Shaft bearing	PTFE coated steel
13	Shaft bearing	PTFE coated steel
14	Static spring	Stainless steel
15	Sealing washer	Stainless steel
16	Lower cap	As body
17	Hexagon screw	Stainless steel
18	Disc pin	Steel
19	Disc	See order code (order data)
20*	Seat	See order code (order data)
21	Seat retainer	
22	Hexagon screw	Stainless steel

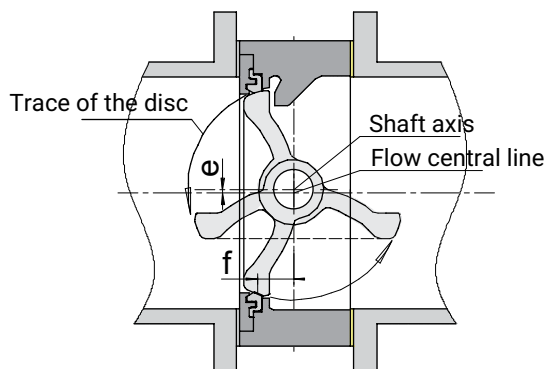
Product description

Item	Designation	Material
A	Motorized actuator	
0	Earthing kit for ATEX version	
0-1	Stranded wire (ATEX version)	
0-2	Cable lug (ATEX version)	
23	Hexagon screw	Stainless steel

* available as spare part

Additional design features

Double-eccentric design



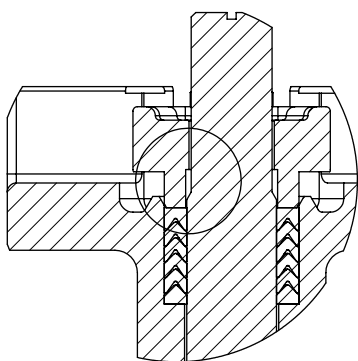
During operation, the disc directly disconnects from the seat, thereby reducing friction between the seat and disc, as well as the torque.

This design is particularly low-wear and this, together with the temperature-resistant carbon bushing, increases the service life.

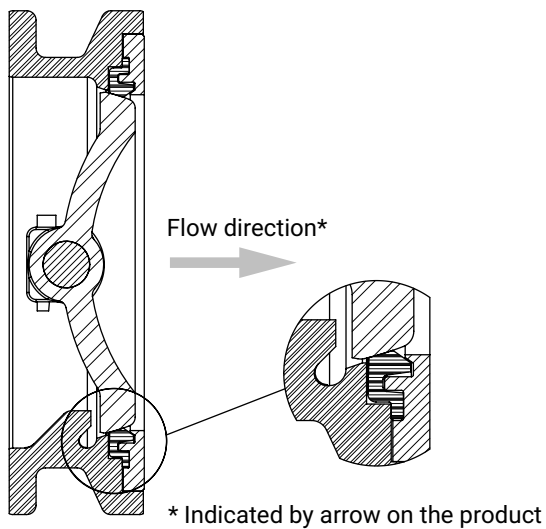
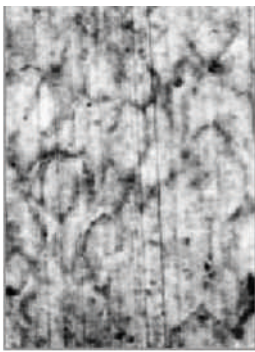
Spherical surface

The disc is designed with a spherical surface for improved mechanical behaviour under pressure and temperature fluctuations.

Shaft blow-out protection



There is a chamfer at the upper end of the shaft which acts as an additional safety measure in case the shaft breaks.

Flow direction**Seat material****PTFE****TFM**

TFM™ is made from conventional PTFE and a 1% proportion of perfluoropropyl vinyl ether (PPVE). While the properties of conventional PTFE (excellent chemical resistance, application in a wide temperature range and resistance to embrittlement or ageing, etc.) are maintained, the PPVE additive leads to a better distribution of the PTFE particles and thus to a higher density of the polymer structure.

This leads to the following additional advantages:

- Significantly better cold flow properties (measured as deformation under load):
Same cold flow properties as PTFE with 25% glass fibres.
- Reduced gas permeability and increased blocking properties
- The smooth surface results in less abrasion of the shut-off seal and fewer abraded particles in the medium.

Actuator assignment

AUMA AQ actuator

AUMA AQ - Voltage/Frequency

Voltage/Frequency	Code	Actuator version (code)		
		AQ05H	AQ07H	AQ10L
120V 50Hz	G2	X	X	X
120V 60Hz	G3	X	X	X
380V 50Hz	J2	X	X	X
230V 50Hz	L2	X	X	X
230V 60Hz	L3	X	X	X
400V 50Hz	N2	X	X	X
480V 60Hz	P3	X	X	X
440V 60Hz	V3	X	X	X
460V 60Hz	W3	X	X	X

AUMA AQ - Actuator version

DN	Actuator version (code) ¹⁾		
	AQ05H	AQ07H	AQ10L
50	X	-	-
65	X	-	-
80	X	-	-
100	X	-	-
125	X	-	-
150	X	X	-
200	-	X	-
250	-	-	X
300	-	-	X

1) Actuator version

Code AQ05H: Actuator, motorized, operating time 16s, torque 150Nm, AUMA, type SQ Class A (EN15714-2), Open/Close control, 75° to 105°, continuously adjustable, flasher unit for travel indication, heating, mechanical position indicator, KS, layer thickness 0, 140mm, RAL7037, manual override, IP68

Code AQ07H: Actuator, motorized, operating time 16s, torque 300Nm, AUMA, type SQ Class A (EN15714-2), Open/Close control, 75° to 105°, continuously adjustable, flasher unit for travel indication, heating, mechanical position indicator, KS, layer thickness 0, 140mm, RAL7037, manual override, IP68

Code AQ10L: Actuator, motorized, operating time 32s, torque 600Nm, AUMA, type SQ Class A (EN15714-2), Open/Close control, 75° to 105°, continuously adjustable, flasher unit for travel indication, heating, mechanical position indicator, KS, layer thickness 0, 140mm, RAL7037, manual override, IP68

Order data

Butterfly valve with AUMA actuator

Other configurations available on request. Please check the availability with GEMÜ before ordering.

Order codes

1 Type	Code
Butterfly valve, double-eccentric, motorized, long service life, low friction thanks to direct separation of seat/disc, continuous and blow-out proof shaft, with anti-static unit and low-maintenance spindle seal, readjustable	R478

2 DN	Code
DN 50	50
DN 65	65
DN 80	80
DN 100	100
DN 125	125
DN 150	150
DN 200	200
DN 250	250
DN 300	300
DN 350	350
DN 400	400
DN 450	450
DN 500	500
DN 600	600

3 Body configuration	Code
Flange-mounted design (lug), face-to-face dimension FTF EN 558 series 20	L
Double flange design (U section), face-to-face dimension FTF EN 558, series 20	U
Intermediate flange design (wafer), face-to-face dimension FTF API609 table B, EN 558 series 108, EN 558 series 109	W

4 Operating pressure	Code
10 bar	2
16 bar	3
20 bar	4
25 bar	5
40 bar	6

5 Connection type	Code
PN 10 / flange EN 1092, face-to-face dimension FTF EN 558 series 108	2
PN 16 / flange EN 1092, face-to-face dimension FTF EN 558 series 108	3
PN 25 / flange EN 1092, face-to-face dimension FTF EN 558 series 20	5
PN 40 / flange EN 1092, face-to-face dimension FTF EN 558 series 109	6
ANSI B16.5, Class 150, face-to-face dimension FTF EN 558 series 108	D

5 Connection type	Code
ANSI B16.5, Class 300, face-to-face dimension FTF EN 558 series 109	M

6 Body material	Code
1.4408 / ASTM A351 / CF8M	4
1.0619 / ASTM A216 WCB, CDP coated 20 µm, for non-European countries, 1.0619 is not a material for pressure equipment according to 2014/68/EU	5

7 Disc material	Code
1.4408 / ASTM A351 CF8M	A

8 Shaft material	Code
1.4542 / ASTM 564 630 UNS S17400	6
1.4410 / ASTM A276 S32750	D
Note: -40 °C only possible with shaft material 1.4410 (Code D)	

9 Shut-off seal material	Code
TFM 1600 (FDA certification)	T

10 Liner fixing	Code
Loose liner	L

11 Voltage/Frequency	Code
24V AC/DC	C5
120V 50Hz	G2
120V 60Hz	G3
380V 50Hz	J2
230V 50Hz	L2
230V 60Hz	L3
400V 50Hz	N2
480V 60Hz	P3
85-240V AC/DC	S5
24V-240V AC / DC for model 20, 35, 55, 85, 140, 300	U5
440V 60 Hz	V3
460V 60Hz	W3

12 Control module	Code
ON/OFF actuator	A0
ON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)	AB

Butterfly valve with AUMA actuator

12 Control module	Code	13 Actuator version	Code
ON/OFF actuator, positioner AUMATIC (AC 01.2), fieldbus interface Profibus DP-V0, Basic AUMA standard SQ (S2 15 minutes, actuator class A/B), TPC AA000-1A1-A000, TPA xxR100-0I1-000	ADP	continuously adjustable, flasher unit for travel indication, heating, mechanical position indicator, KS, layer thickness 0, 140mm, RAL7037, manual override, IP68	
ON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2)	AE	Actuator, motorized, operating time 25s, torque 140Nm, J+J, type J4 heating, IP67	J4C14
ON/OFF actuator, 2 additional potential-free limit switches, BSR battery pack (NC)	AE1	Actuator, motorized, operating time 9s, torque 20Nm, J+J, type J4 heating, IP67	J4C20
ON/OFF actuator, 2 additional potential-free limit switches, BSR battery pack (NO)	AE2	Actuator, motorized, operating time 48s, torque 300Nm, J+J, type J4 heating, IP67	J4C30
ON/OFF actuator, positioner AUMATIC (AC 01.2), Basic AUMA standard SQ (S2 15 minutes, actuator class A/B), TPC A-1B1-1C1-A000, TPA xxR100-0I1-000	ASC	Actuator, motorized, operating time 9s, torque 35Nm, J+J, type J4 heating, IP67	J4C35
ON/OFF actuator, remote and on-site control, AUMA MATIC (AM 01.1), Basic AUMA standard SQ (S2 15 minutes, actuator class A/B), MSP 1110KC3-F18E1, TPA xxR1AA-101-000	ASM	Actuator, motorized, operating time 13s, torque 55Nm, J+J, type J4 heating, IP67	J4C55
Control actuator, external set value 0-10 VDC	E1	Actuator, motorized, operating time 29s, torque 85Nm, J+J, type J4 heating, IP67	J4C85
Control actuator, external set value 0/4-20 mA	E2	Actuator, motorized, operating time 10s, torque 35Nm, J+J, type J4 heating, IP67	JRC35
13 Actuator version	Code	14 Type of design	Code
Actuator, motorized, operating time 16s, torque 150Nm, AUMA, type SQ Class A (EN15714-2), Open/Close control, 75° to 105°, continuously adjustable, flasher unit for travel indication, heating, mechanical position indicator, KS, layer thickness 0, 140mm, RAL7037, manual override, IP68	AQ05H	Without	
Actuator, motorized, operating time 16s, torque 300Nm, AUMA, type SQ Class A (EN15714-2), Open/Close control, 75° to 105°, continuously adjustable, flasher unit for travel indication, heating, mechanical position indicator, KS, layer thickness 0, 140mm, RAL7037, manual override, IP68	AQ07H	Valve free of oil and grease, media wetted area cleaned and packed in PE bag	0107
Actuator, motorized, operating time 32s, torque 600Nm, AUMA, type SQ Class A (EN15714-2), Open/Close control, 75° to 105°,	AQ10L	Thermal separation between actuator and valve body via dew point barrier	5226
15 Special version	Code	16 CONEXO	Code
Without		Without	
ATEX certification	X	Integrated RFID chip for electronic identification and traceability	C

Order example

Ordering option	Code	Description
1 Type	R478	Butterfly valve, double-eccentric, motorized, long service life, low friction thanks to direct separation of seat/disc, continuous and blow-out proof shaft, with anti-static unit and low-maintenance spindle seal, readjustable
2 DN	300	DN 300
3 Body configuration	W	Intermediate flange design (wafer), face-to-face dimension FTF API609 table B, EN 558 series 108, EN 558 series 109

Ordering option	Code	Description
4 Operating pressure	4	20 bar
5 Connection type	6	PN 40 / flange EN 1092, face-to-face dimension FTF EN 558 series 109
6 Body material	4	1.4408 / ASTM A351 / CF8M
7 Disc material	A	1.4408 / ASTM A351 CF8M
8 Shaft material	6	1.4542 / ASTM 564 630 UNS S17400
9 Shut-off seal material	T	TFM 1600 (FDA certification)
10 Liner fixing	L	Loose liner
11 Voltage/Frequency	G2	120V 50Hz
12 Control module	A0	ON/OFF actuator
13 Actuator version	AQ10L	Actuator, motorized, operating time 32s, torque 600Nm, AUMA, type SQ Class A (EN15714-2), Open/Close control, 75° to 105°, continuously adjustable, flasher unit for travel indication, heating, mechanical position indicator, KS, layer thickness 0, 140mm, RAL7037, manual override, IP68
14 Type of design		Without
15 Special version		Without
16 CONEXO		Without

Technical data

Medium

Working medium: Gaseous and liquid media which have no negative impact on the physical and chemical properties of the disc and seat material.

Temperature

Media temperature: -40 – 230 °C

Ambient temperature: -40 – 70 °C

Storage temperature: 5 – 40 °C

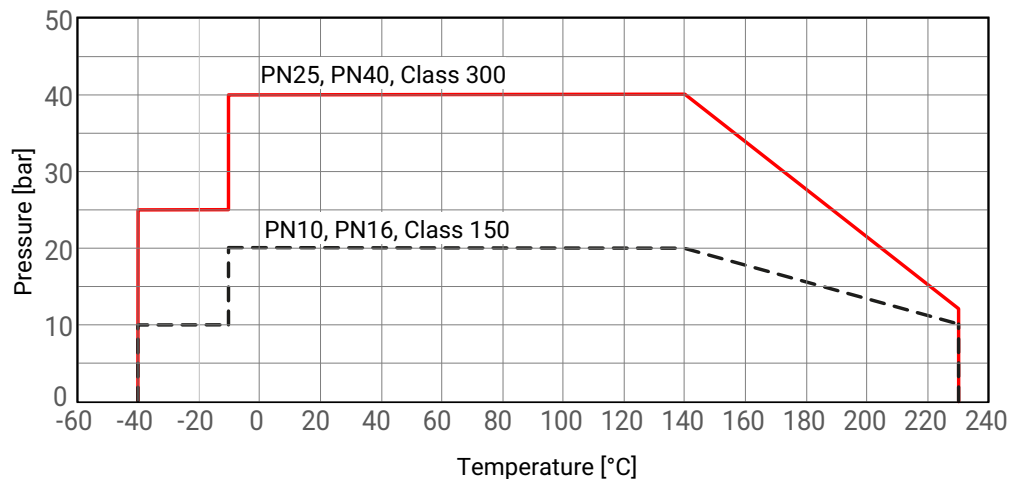
Pressure

Operating pressure: 0 – 40 bar

Note: Cannot be used as an end-of-line valve

Vacuum: Can be used up to a vacuum of 10 mbar (abs) due to a leak rate at 10^{-3} [mbar l / sec]
These values apply to room temperature and air. The values may deviate for other media and other temperatures.

Pressure/temperature diagram:



Cv values:

DN	NPS	Body	Kv in m³/h at opening angle in °						
		CLASS	90	80	65	50	35	20	0
50	2"	CL300	24.7	25.3	27.2	21.3	9.6	0.1	0.0
65	2½"	CL300	59.6	69.3	74.2	50.6	24.2	2.99	0.0
80	3"	CL300	123.0	129.0	118.0	95.5	60.2	17.2	0.0
100	4"	CL300	281.0	295.0	250.0	170.0	100.0	35.9	0.0
125	5"	CL300	423.0	449.0	393.0	276.0	168.0	52.3	0.0
150	6"	CL150	770.0	776.0	586.0	384.0	211.0	85.2	0.0
		CL300	696.0	705.0	543.0	363.0	200.0	78.0	0.0
200	8"	CL150	1480.0	1530.0	1160.0	734.0	414.0	192.0	0.0
		CL300	1470.0	1520.0	1150.0	734.0	419.0	195.0	0.0
250	10"	CL150	2400.0	2410.0	1780.0	1120.0	597.0	271.0	0.0
		CL300	2410.0	2340.0	1690.0	1030.0	522.0	218.0	0.0
300	12"	CL150	3650.0	3600.0	2610.0	1650.0	910.0	410.0	0.0
		CL300	3350.0	3250.0	2350.0	1490.0	781.0	345.0	0.0
350	14"	CL150	3890.0	3810.0	2960.0	2000.0	1200.0	647.0	0.0
		CL300	3860.0	3720.0	2780.0	1790.0	1030.0	510.0	0.0
400	16"	CL150	6350.0	5960.0	4270.0	2570.0	1420.0	720.0	0.0
		CL300	5300.0	5140.0	3670.0	2350.0	1330.0	643.0	0.0
450	18"	CL150	8080.0	7710.0	5360.0	3290.0	1800.0	888.0	0.0
		CL300	6740.0	6390.0	4650.0	2900.0	1590.0	767.0	0.0
500	20"	CL150	9590.0	9050.0	6320.0	3850.0	2070.0	948.0	0.0
		CL300	7800.0	7290.0	5460.0	3600.0	2040.0	1000.0	0.0
600	24"	CL150	14300.0	13400.0	9620.0	6100.0	3560.0	1950.0	0.0
		CL300	12400.0	11800.0	8550.0	5650.0	3240.0	1770.0	0.0

Cv values in m³/h

Product conformity

Machinery Directive: 2006/42/EC

Pressure Equipment Directive: 2014/68/EU

Food: FDA

EAC: The product is certified according to EAC.

Explosion protection: 2014/34/EU (ATEX)

ATEX marking: **Assessment of the body**

Special function code X

Gas:  II -/2 G Ex h -/IIC T6...T3 -/Gb XDust:  II -/2D Ex h -/IIIC T150°C -/Db X

TA Luft (German Clean Air Act):

The product meets the following requirements under the max. permissible operating conditions:

- Tightness or compliance with the specific leak rate within the sense of TA-Luft as well as VDI 2440
- Compliance with the requirements in accordance with DIN EN ISO 15848-1, Table C.2, Class BH

Mechanical data**Torques:**

DN	NPS	Connection type code ¹⁾									
		D, 2, 3					M, 5, 6				
		Maximum pressure differential [bar]									
		0.0	6.0	10.0	16.0	20.0	0.0	20.0	25.0	40.0	50.0
50	2"	33.0	33.0	34.0	35.0	37.0	33.0	37.0	38.0	40.0	42.0
65	2½"	43.0	44.0	45.0	46.0	50.0	43.0	50.0	52.0	57.0	60.0
80	3"	54.0	56.0	57.0	58.0	64.0	54.0	64.0	67.0	74.0	79.0
100	4"	68.0	71.0	72.0	74.0	84.0	68.0	84.0	88.0	99.0	107.0
125	5"	90.0	94.0	96.0	100.0	115.0	90.0	115.0	121.0	139.0	151.0
150	6"	114.0	120.0	123.0	128.0	149.0	123.0	158.0	167.0	193.0	211.0
200	8"	181.0	192.0	200.0	211.0	258.0	202.0	280.0	299.0	358.0	397.0
250	10"	250.0	268.0	280.0	297.0	372.0	287.0	409.0	439.0	530.0	591.0
300	12"	357.0	387.0	408.0	438.0	567.0	393.0	603.0	655.0	813.0	918.0
350	14"	559.0	607.0	640.0	688.0	721.0	699.0	861.0	901.0	1023.0	1104.0
400	16"	950.0	1027.0	1079.0	1156.0	1207.0	1188.0	1445.0	1509.0	1701.0	1830.0
450	18"	1420.0	1534.0	1611.0	1725.0	1802.0	1629.0	2011.0	2107.0	2394.0	2585.0
500	20"	1967.0	2144.0	2262.0	2439.0	2557.0	2499.0	3089.0	3237.0	3679.0	3974.0
600	24"	3324.0	3579.0	3748.0	4003.0	4173.0	3579.0	4429.0	4641.0	5278.0	5703.0

Torques in Nm

1) **Connection type**

Code 2: PN 10 / flange EN 1092, face-to-face dimension FTF EN 558 series 108

Code 3: PN 16 / flange EN 1092, face-to-face dimension FTF EN 558 series 108

Code 5: PN 25 / flange EN 1092, face-to-face dimension FTF EN 558 series 20

Code 6: PN 40 / flange EN 1092, face-to-face dimension FTF EN 558 series 109

Code D: ANSI B16.5, Class 150, face-to-face dimension FTF EN 558 series 108

Code M: ANSI B16.5, Class 300, face-to-face dimension FTF EN 558 series 109

Weight:**Butterfly valve**

DN	NPS	Connection type code ¹⁾	
		D, 2, 3	M, 5, 6
50	2"	3.2	3.2
65	2½"	3.6	3.6
80	3"	4.9	4.9
100	4"	7.5	7.5
125	5"	8.0	8.0
150	6"	12.0	14.0
200	8"	18.0	23.0
250	10"	31.0	40.0
300	12"	47.0	66.0
350	14"	77.0	114.0
400	16"	96.0	146.0
450	18"	133.0	212.0
500	20"	156.0	261.0
600	24"	268.0	385.0

Weights in kg

1) **Connection type**

Code 2: PN 10 / flange EN 1092, face-to-face dimension FTF EN 558 series 108

Code 3: PN 16 / flange EN 1092, face-to-face dimension FTF EN 558 series 108

Code 5: PN 25 / flange EN 1092, face-to-face dimension FTF EN 558 series 20

Code 6: PN 40 / flange EN 1092, face-to-face dimension FTF EN 558 series 109

Code D: ANSI B16.5, Class 150, face-to-face dimension FTF EN 558 series 108

Code M: ANSI B16.5, Class 300, face-to-face dimension FTF EN 558 series 109

Flow direction:

Indicated by an arrow on the product

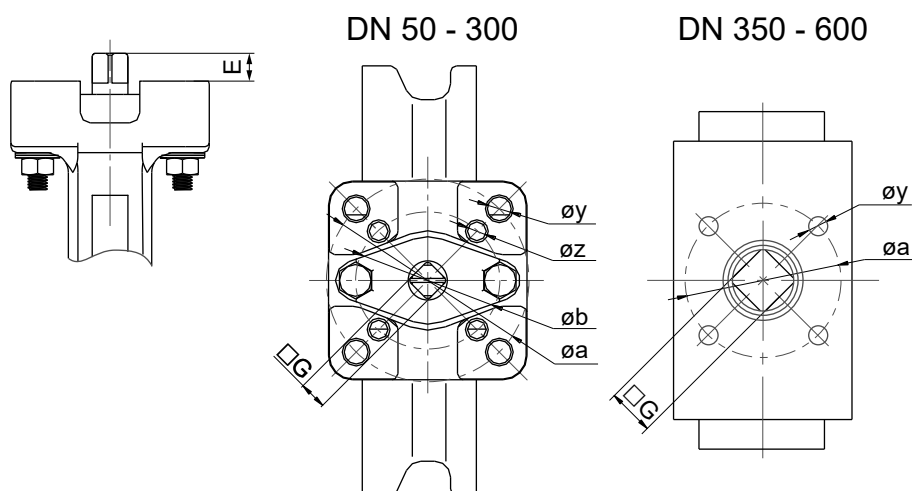
Technical data of actuator

Note: For technical data see manufacturer's original datasheets

Dimensions

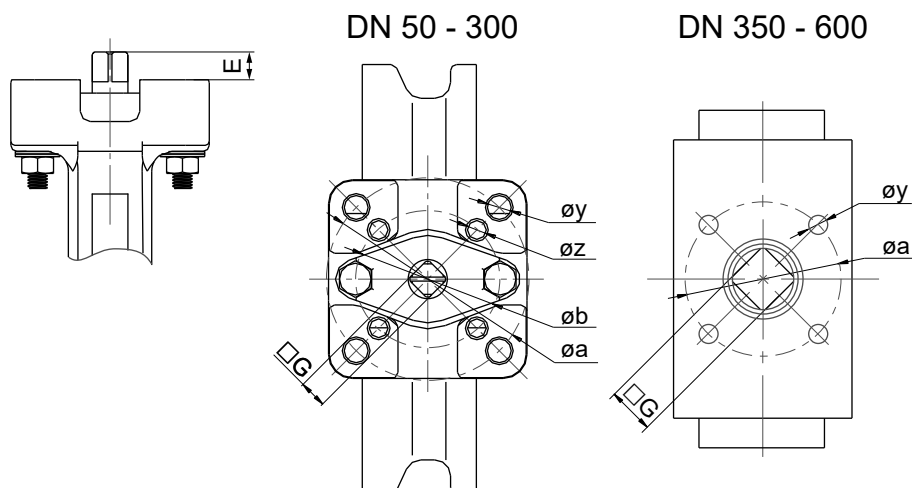
Actuator flange

Flange PN10 (code 2), PN16 (code 3), CLASS 150 (code D)



DN	NPS	ISO 5211	øa	øb	E	G	øy	øz
50	2"	F05	50.0	-	15.0	11.0	4 x 7.0	-
65	2½"	F05/F07	70.0	50.0	15.0	11.0	4 x 9.5	4 x 7.0
80	3"	F05/F07	70.0	50.0	15.0	11.0	4 x 9.5	4 x 7.0
100	4"	F07	70.0	-	19.0	14.0	4 x 9.5	-
125	5"	F07	70.0	-	19.0	14.0	4 x 9.5	-
150	6"	F07/F10	102.0	70.0	19.0	14.0	4 x 12.0	4 x 9.5
200	8"	F10	102.0	-	22.0	17.0	4 x 12.0	-
250	10"	F10/F12	125.0	102.0	27.0	22.0	4 x 14.0	4 x 12.0
300	12"	F12/F14	140.0	125.0	32.0	27.0	4 x 18.0	4 x 14.0
350	14"	F14/F16	165.0	140.0	29.0	27.0	4 x 22.0	4 x 18.0
400	16"	F14/F16	165.0	140.0	38.0	36.0	4 x 22.0	4 x 18.0
450	18"	F14/F16	165.0	140.0	38.0	36.0	4 x 22.0	4 x 18.0
500	20"	F14/F16	165.0	140.0	48.0	46.0	4 x 22.0	4 x 18.0
600	24"	F16/F25	254.0	165.0	48.0	46.0	8 x 19.0	4 x 22.0

Dimensions in mm

Flange PN25 (code 5), PN40 (code 6), CLASS 300 (code M)

DN	NPS	ISO 5211	øa	øb	E	G	øy	øz
50	2"	F05	50.0	-	15.0	11.0	4 x 7.0	-
65	2½"	F05/F07	70.0	50.0	15.0	11.0	4 x 9.5	4 x 7.0
80	3"	F05/F07	70.0	50.0	15.0	11.0	4 x 9.5	4 x 7.0
100	4"	F07	70.0	-	19.0	14.0	4 x 9.5	-
125	5"	F07	70.0	-	19.0	14.0	4 x 9.5	-
150	6"	F10	102.0	-	22.0	17.0	4 x 12.0	-
200	8"	F10/F12	125.0	102.0	27.0	22.0	4 x 14.0	4 x 12.0
250	10"	F12/F14	140.0	125.0	32.0	27.0	4 x 18.0	4 x 13.5
300	12"	F14	140.0	-	32.0	27.0	4 x 18.0	-
350	14"	F14/F16	165.0	140.0	38.0	36.0	4 x 22.0	4 x 18.0
400	16"	F14/F16	165.0	140.0	48.0	46.0	4 x 22.0	4 x 18.0
450	18"	F16/F25	254.0	165.0	48.0	46.0	8 x 19.0	4 x 22.0
500	20"	F16/F25	254.0	165.0	57.0	55.0	8 x 19.0	4 x 22.0
600	24"	F16/F25	254.0	165.0	57.0	55.0	8 x 19.0	4 x 22.0

Dimensions in mm

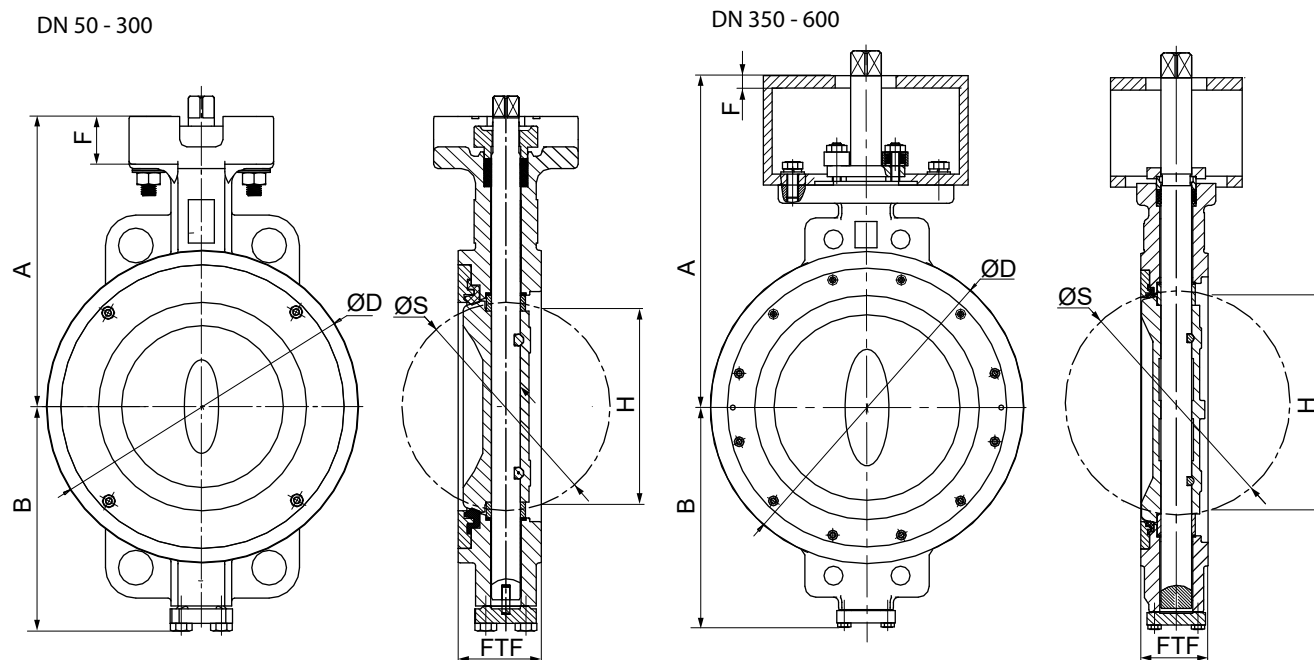
Actuator dimensions

For more detailed information on third-party actuators, refer to the manufacturers' documentation

Body

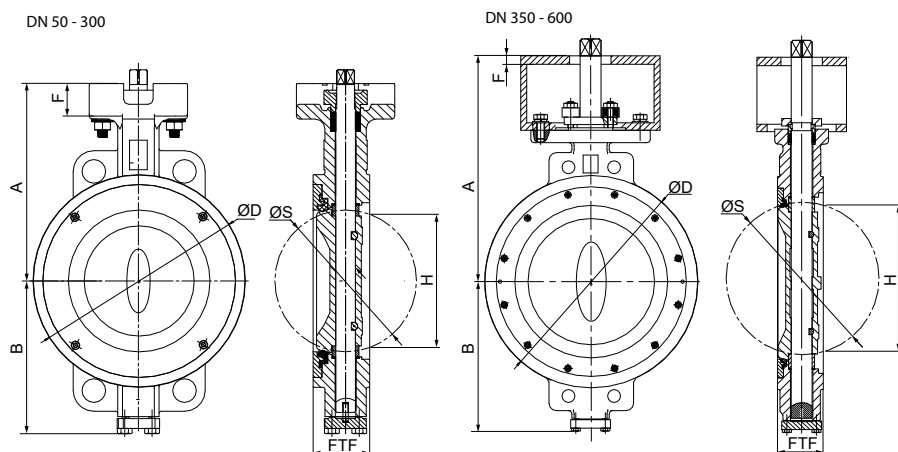
Wafer body configuration

Flange PN10 (code 2), PN16 (code 3), CLASS 150 (code D)



DN	NPS	A	B	ØD	F	FTF	H	ØS
50	2"	124.0	96.4	100.0	-	50.0	15.0	38.6
65	2½"	122.0	101.0	105.0	-	51.5	49.0	57.0
80	3"	143.5	115.0	132.0	-	49.5	69.0	74.0
100	4"	160.0	128.0	158.0	-	56.5	91.0	96.0
125	5"	176.5	148.0	186.0	-	57.0	103.0	111.0
150	6"	198.0	157.0	216.0	33.0	57.5	140.0	144.0
200	8"	230.0	195.0	266.0	35.0	63.0	179.0	188.0
250	10"	273.0	236.0	324.0	34.0	71.0	231.0	237.0
300	12"	319.0	262.0	381.0	30.0	81.5	276.0	283.0
350	14"	455.0	303.0	429.0	17.0	92.0	300.0	307.0
400	16"	490.0	337.5	480.0	17.0	101.5	347.0	363.5
450	18"	502.0	353.5	533.0	17.0	114.0	394.0	414.0
500	20"	524.0	376.5	584.0	17.0	127.0	434.0	458.0
600	24"	625.0	453.5	692.0	22.0	154.0	524.0	550.0

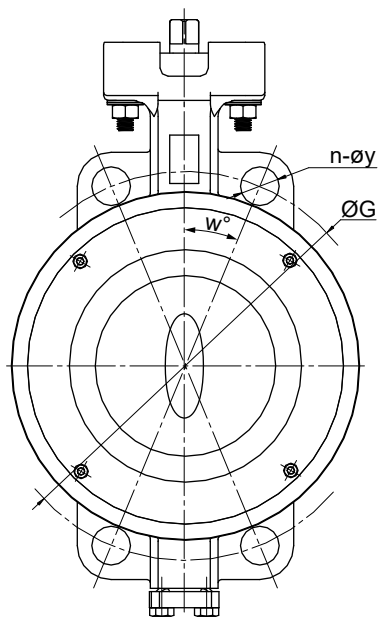
Dimensions in mm

Flange PN25 (code 5), PN40 (code 6), CLASS 300 (code M)


DN	NPS	A	B	ØD	F	FTF	H	ØS
50	2"	124.0	96.4	100.0	22.0	50.0	15.0	38.6
65	2½"	122.0	101.0	105.0	15.0	51.5	49.0	57.0
80	3"	143.5	115.0	132.0	18.0	49.5	69.0	74.0
100	4"	160.0	128.0	158.0	23.0	56.5	91.0	96.0
125	5"	176.5	148.0	186.0	23.0	57.0	103.0	111.0
150	6"	217.5	170.5	216.0	26.0	59.0	140.0	144.0
200	8"	250.0	206.5	270.0	35.0	73.0	179.0	188.0
250	10"	303.0	248.0	324.0	31.0	83.0	231.0	237.0
300	12"	335.5	291.0	409.0	39.0	92.0	276.0	283.0
350	14"	470.0	320.5	445.0	17.0	117.0	300.0	315.0
400	16"	500.5	365.5	470.0	17.0	133.5	347.0	363.5
450	18"	531.0	382.5	560.0	17.0	149.0	394.0	414.0
500	20"	593.0	426.5	585.0	22.0	162.0	434.0	456.5
600	24"	645.0	498.0	692.0	22.0	181.0	524.0	550.0

Dimensions in mm

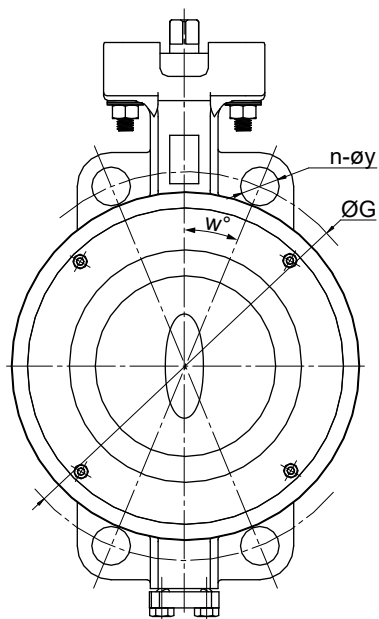
Connections



DN	NPS	PN10				PN16				PN25				PN40			
		n	ØG	w°	ø y	n	ØG	w°	ø y	n	ØG	w°	ø y	n	ØG	w°	ø y
50	2"	4	125.0	45.0	18.0	4	125.0	45.0	18.0	4	125.0	45.0	18.0	4	125.0	45.0	18.0
65	2½"	8	145.0	22.5	18.0	8	145.0	22.5	18.0	8	145.0	22.5	18.0	8	145.0	45.0	18.0
80	3"	8	160.0	22.5	19.0	8	160.0	22.5	19.0	8	160.0	22.5	19.0	8	160.0	22.5	19.0
100	4"	8	180.0	22.5	18.0	8	180.0	22.5	18.0	8	190.0	22.5	22.0	8	190.0	22.5	22.0
125	5"	8	210.0	22.5	18.0	8	210.0	22.5	18.0	8	220.0	22.5	26.0	8	220.0	22.5	26.0
150	6"	8	240.0	22.5	22.0	8	240.0	22.5	22.0	8	250.0	22.5	28.0	8	250.0	22.5	28.0
200	8"	8	295.0	22.5	24.0	12	295.0	15.0	24.0	12	310.0	15.0	28.0	12	320.0	15.0	30.0
250	10"	12	350.0	15.0	22.0	12	355.0	15.0	26.0	12	370.0	15.0	30.0	12	385.0	15.0	33.0
300	12"	12	400.0	15.0	22.0	12	410.0	15.0	26.0	16	430.0	11.25	M27	16	450.0	11.25	M30
350	14"	16	460.0	11.25	22.0	16	470.0	11.25	26.0	16	490.0	11.25	M30	16	510.0	11.25	M33
400	16"	16	515.0	11.25	28.0	16	525.0	11.25	30.0	16	550.0	11.25	M33	16	585.0	11.25	M36
450	18"	20	565.0	9.0	M24	20	585.0	9.0	M27	20	600.0	9.0	M33	20	610.0	9.0	M36
500	20"	20	620.0	9.0	M24	20	650.0	9.0	M30	20	660.0	9.0	M33	20	670.0	9.0	M39
600	24"	20	725.0	9.0	M27	20	770.0	9.0	M33	20	770.0	9.0	M36	20	795.0	9.0	M45

Dimensions in mm

n = number of bolt holes / bolts



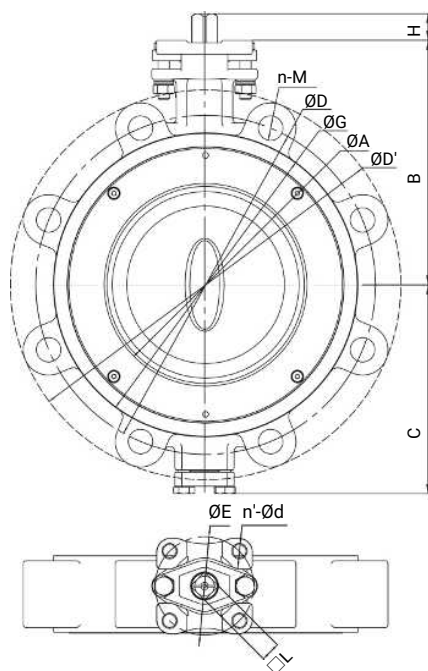
DN	NPS	CLASS 150				CLASS 300			
		n	ØG	w°	øy	n	ØG	w°	øy
50	2"	4	120.5	45.0	19.0	8	127.0	22.5	18.0
65	2½"	4	139.5	45.0	18.0	8	149.0	22.5	22.0
80	3"	4	152.5	45.0	19.0	8	168.5	22.5	22.0
100	4"	8	190.5	22.5	19.0	8	200.0	22.5	22.0
125	5"	8	216.0	22.5	24.0	8	235.0	22.5	22.0
150	6"	8	241.0	22.5	24.0	12	270.0	15.0	24.0
200	8"	8	298.5	22.5	24.0	12	330.0	15.0	28.0
250	10"	12	362.0	15.0	26.0	16	387.5	11.25	1" x 8UN
300	12"	12	432.0	15.0	26.0	16	451.0	11.25	1⅝" x 8UN
350	14"	12	476.0	15.0	30.0	20	514.5	9.0	1⅝" x 8UN
400	16"	16	540.0	11.25	28.6	20	571.5	9.0	1¼" x 8UN
450	18"	16	578.0	11.25	1⅝" x 8UN	24	628.5	7.5	1¼" x 8UN
500	20"	20	635.0	9.0	1⅝" x 8UN	24	685.5	7.5	1¼" x 8UN
600	24"	20	749.5	9.0	1¼" x 8UN	24	812.8	7.5	1½" x 8UN

Dimensions in mm

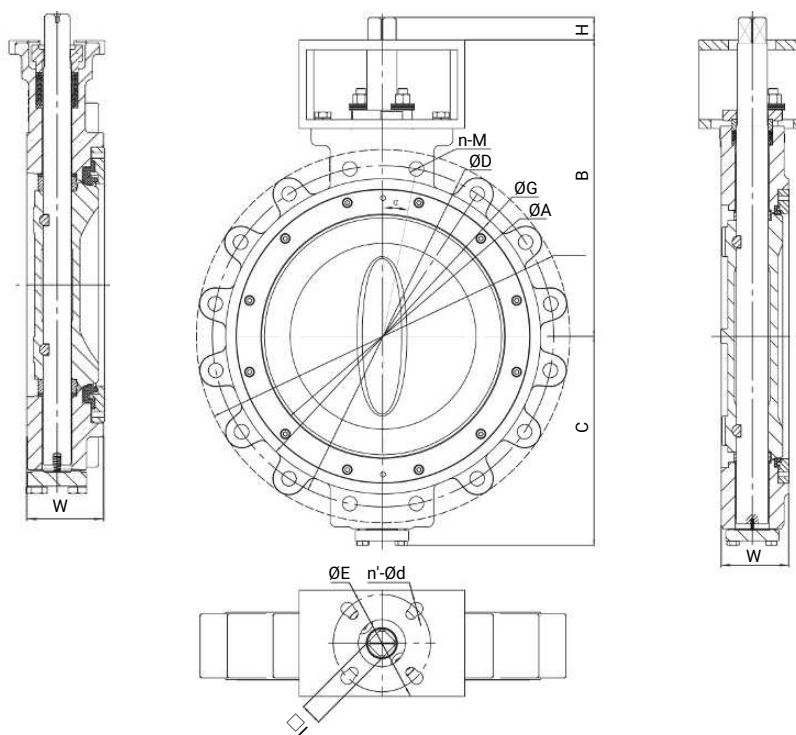
n = number of bolt holes / bolts

Lug body configuration

DN 50 - DN 300



DN 350 - DN 600



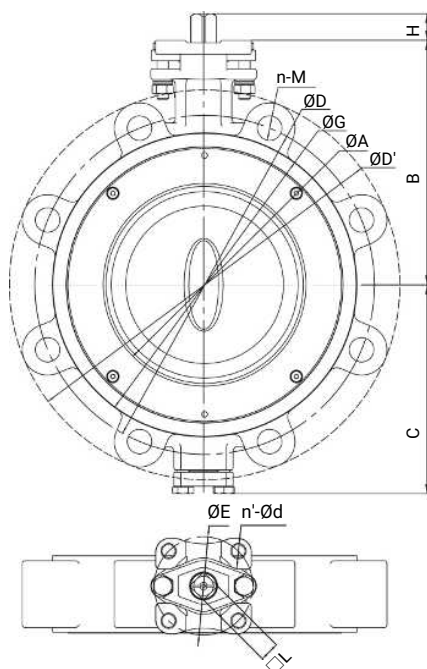
DN	NPS	ISO 5211	ØA	B	C	ØD'	ØG	H	□L	W	ØE	n'-ØF
50	2"	F05	38.5	116.0	86.0	155.0	100.0	15.0	11.0	42.0	50.0	4.0-7.0
65	2,5"	F05	57.0	126.2	93.0	174.0	105.0	15.0	11.0	45.5	50.0	4.0-7.0
80	3"	F05	74.0	133.8	102.0	182.5	132.0	15.0	11.0	47.0	50.0	4.0-7.0
100	4"	F07	96.0	148.5	118.0	220.5	158.0	19.0	14.0	52.0	70.0	4.0-9.5
125	5"	F07	111.0	161.5	133.0	250.0	186.0	19.0	14.0	54.0	70.0	4.0-9.5
150	6"	F07	144.0	173.8	148.5	277.0	216.0	19.0	14.0	57.5	70.0	4.0-9.5
200	8"	F10	188.0	230.0	195.0	335.0 / 331.0	266.0	22.0	17.0	60.0	102.0	4.0-12.0
250	10"	F10/F12	237.0	273.0	235.0	402.0	320.0	27.0	22.0	60.5	102.0/125.0	4.0-12.0/4.0-14.0
300	12"	F12/F14	283.0	319.0	261.0	472.0	378.0	32.0	27.0	78.5	150.0/140.0	4.0-14.0/4.0-18.0
350	14"	F14/F16	302.5	455.0	303.0	520.0	429.0	29.0	27.0	92.0	140.0/165.0	4.0-18.0/4.0-22.0
400	16"	F14/F16	363.5	490.0	342.0	588.0	480.0	38.0	36.0	101.6	140.0/165.0	4.0-18.0/4.0-22.0
450	18"	F14/F16	413.4	502.0	353.0	632.0	533.0	38.0	36.0	114.0	140.0/165.0	4.0-18.0/4.0-22.0
500	20"	F14/F16	458.0	524.0	376.0	704.0	584.0	48.0	46.0	127.0	140.0/165.0	4.0-18.0/4.0-22.0
600	24"	F16/F25	550.0	625.0	453.0	830.0	692.0	48.0	46.0	154.0	165.0/254.0	4.0-23.0/8.0-19.0

Dimensions in mm

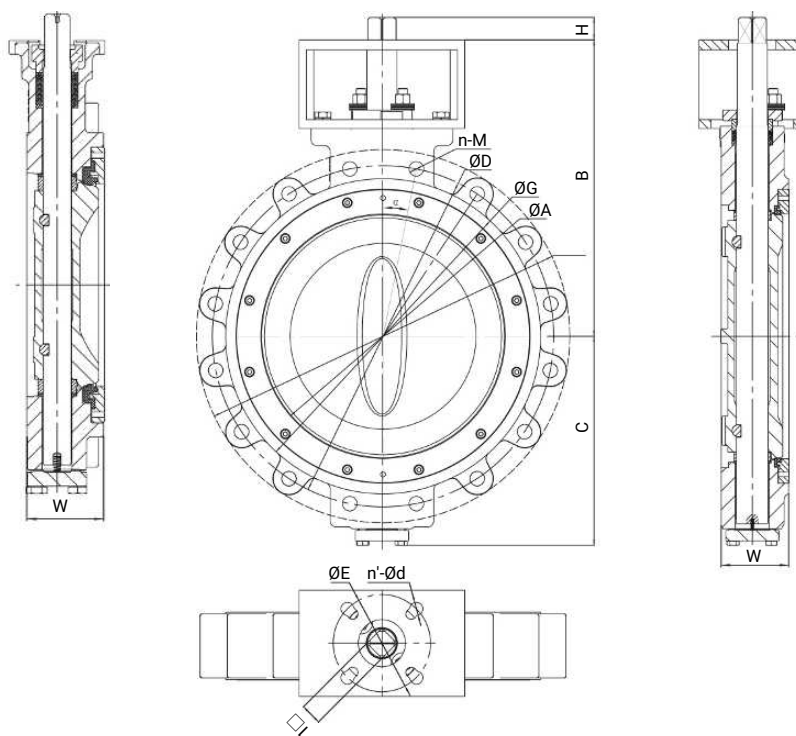
n = number of bolt holes / bolts

Connections

DN 50 - DN 300



DN 350 - DN 600



PN10/PN16

DN	NPS	PN10				PN16			
		ØD	n-Ød	n-M	α	ØD	n-Ød	n-M	α
50	2"	125.0	4-M16	-	45.00°	125.0	4-M16	-	45.00°
65	2,5"	145.0	4-M16	-	45.00°	145.0	4-M16	-	45.00°
80	3"	-	-	-	-	-	-	-	-
100	4"	180.0	8-M16	-	22.50°	180.0	8-M16	-	22.50°
125	5"	210.0	8-M16	-	22.50°	210.0	8-M16	-	22.50°
150	6"	240.0	8-M20	-	22.50°	240.0	8-M20	-	22.50°
200	8"	295.0	8-M20	-	22.50°	295.0	12-M20	-	22.50°
250	10"	350.0	12-M20	-	15.00°	355.0	12-M24	-	15.00°
300	12"	400.0	12-M20	-	15.00°	410.0	12-M24	-	15.00°
350	14"	460.0	-	16-M20	11.25°	470.0	-	16-M24	11.25°
400	16"	515.0	-	16-M24	11.25°	525.0	-	16-M27	11.25°
450	18"	565.0	-	20-M24	9.00°	585.0	-	20-M27	9.00°
500	20"	620.0	-	20-M24	9.00°	650.0	-	20-M30	9.00°
600	24"	725.0	-	20-M27	9.00°	770.0	-	20-M33	9.00°

Dimensions in mm

n = number of bolt holes / bolts

CLASS150

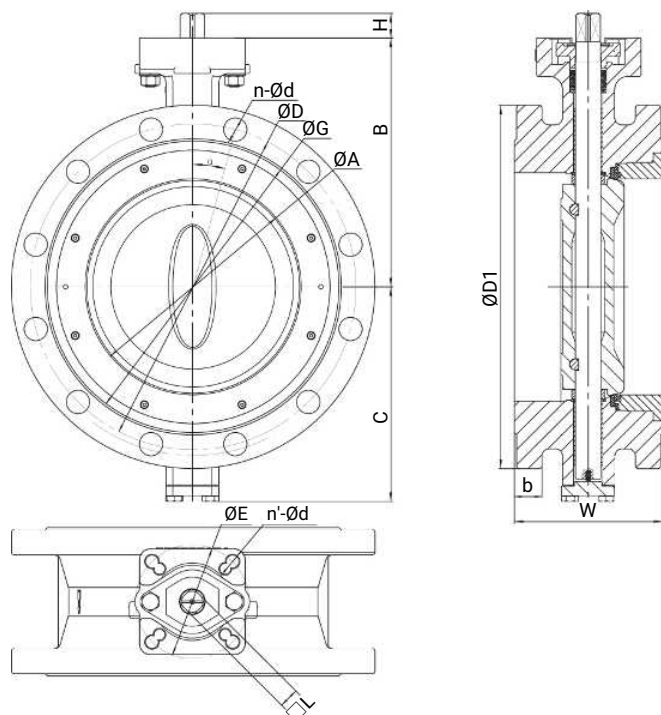
DN	NPS	ØD	n-Ød	n-M	α
50	2"	120.5	4-5/8"-11UN	-	45.00°
65	2,5"	139.5	4-5/8"-11UN	-	45.00°
80	3"	152.5	4-5/8"-11UN	-	45.00°
100	4"	190.5	8-5/8"-11UN	-	22.50°
125	5"	216.0	8-3/4"-10UN	-	22.50°
150	6"	241.0	8-3/4"-10UN	-	22.50°
200	8"	298.5	8-3/4"-10UN	-	22.50°
250	10"	362.0	12-7/8"-9UN	-	15.00°
300	12"	432.0	12-7/8"-9UN	-	15.00°
350	14"	-	-	-	-
400	16"	539.8	-	16-1-UNC	11.25°
450	18"	-	-	-	-
500	20"	635.0	-	20-1½-8UN	9.00°
600	24"	749.3	-	20-1¼-8UN	9.00°

Dimensions in mm

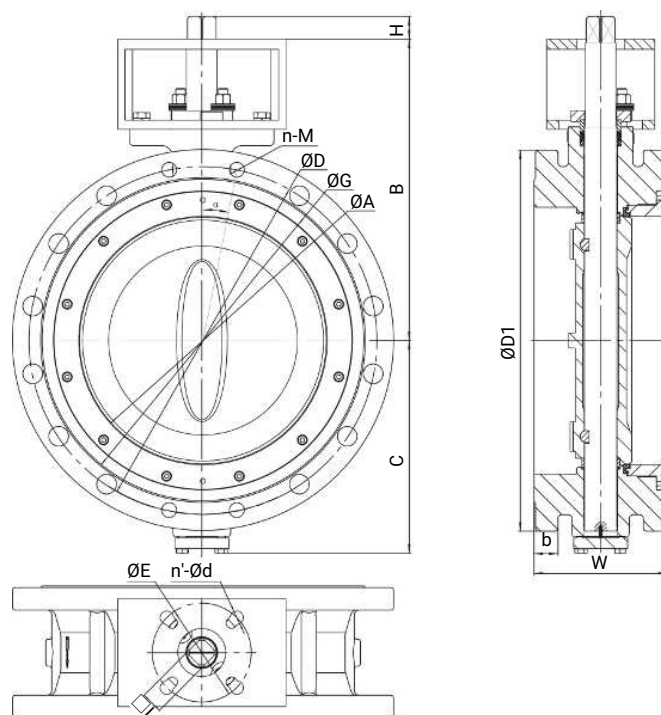
n = number of bolt holes / bolts

U section body configuration

DN 150 - DN 300



DN 350 - DN 600



DN	NPS	ØA	B	C	ØG	H	□L	W	ØE	n'-ØF	ISO 5211
150	6"	144.0	198.0	157.0	216.0	19.0	14.0	140.0	70.0/102.0	4.0-9.5/4.0-12.0	F07/F10
200	8"	188.0	230.0	195.0	266.0	22.0	17.0	152.0	102.0	4.0-12.0	F10
250	10"	237.0	273.0	236.0	324.0	27.0	22.0	165.0	102.0/125.0	4.0-12.0/4.0-14.0	F10/F12
300	12"	283.0	318.5	262.0	381.0	32.0	27.0	178.0	125.0/140.0	4.0-14.0/4.0-18.0	F12/F14
350	14"	302.5	455.0	303.0	429.0	29.0	27.0	190.0	140.0/165.0	4.0-18.0/4.0-22.0	F14/F16
400	16"	363.5	490.0	342.0	480.0	38.0	36.0	216.0	140.0/165.0	4.0-18.0/4.0-22.0	F14/F16
450	18"	413.4	502.0	353.0	533.0	38.0	36.0	222.0	140.0/165.0	4.0-18.0/4.0-22.0	F14/F16
500	20"	458.0	524.0	376.0	584.0	48.0	46.0	229.0	140.0/165.0	4.0-18.0/4.0-22.0	F14/F16
600	24"	550.0	625.0	453.0	692.0	48.0	46.0	267.0	165.0/254.0	4.0-23.0/8.0-19.0	F16/F25

Dimensions in mm

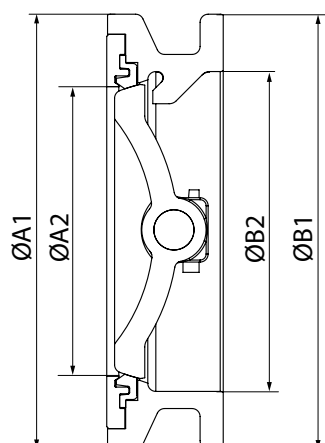
n = number of bolt holes / bolts

Connections**CLASS150**

DN	NPS	ØD	n-Ød	n-M	α
150	6"	241.0	8.0-24.0	-	22.5°
200	8"	298.5	8.0-24.0	-	22.5°
250	10"	362.0	12.0-24.0	-	15.0°
300	12"	432.0	12.0-26.0	-	15.0°
350	14"	476.3	-	12-Ø30	15.0°
400	16"	539.8	-	4-1-8UNC, 12-Ø30	11.25°
450	18"	578.0	-	4-1½-8UNC, 12-Ø33	11.25°
500	20"	635.0	-	4-1½-8UNC, 16-Ø33	9.0°
600	24"	749.3	-	4-1¼-8UNC, 16-Ø36	9.0°

Dimensions in mm

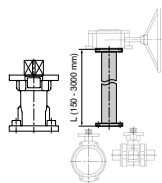
n = number of bolt holes / bolts

Gasket

DN	NPS	Connection											
		PN10, PN16, CL150, PN25, PN40, CL300				CL150				CL300			
		ØA1	ØA2	ØB1	ØB2	ØA1	ØA2	ØB1	ØB2	ØA1	ØA2	ØB1	ØB2
50	2"	99.6	38.6	99.0	56.0	-	-	-	-	-	-	-	-
65	2½"	105.0	57.0	104.8	74.0	-	-	-	-	-	-	-	-
80	3"	132.0	74.0	132.0	95.0	-	-	-	-	-	-	-	-
100	4"	157.5	96.0	156.7	115.8	-	-	-	-	-	-	-	-
125	5"	185.2	111.0	185.7	140.3	-	-	-	-	-	-	-	-
150	6"	-	-	-	-	215.2	144.0	215.2	159.9	215.5	144.0	215.5	159.5
200	8"	-	-	-	-	265.9	188.0	265.6	209.4	269.4	188.0	269.4	209.6
250	10"	-	-	-	-	324.0	118.5	324.0	254.0	324.0	237.0	324.0	254.0
300	12"	-	-	-	-	381.0	283.0	380.75	305.1	409.0	283.0	409.0	304.8
350	14"	-	-	-	-	427.6	307.2	428.0	365.0	445.0	314.7	445.0	364.0
400	16"	-	-	-	-	480.0	363.5	480.0	400.0	470.0	363.5	470.0	394.0
450	18"	-	-	-	-	533.0	414.0	533.0	444.5	560.0	414.2	560.0	444.5
500	20"	-	-	-	-	584.0	458.3	584.0	493.6	583.3	456.4	583.3	493.6
600	24"	-	-	-	-	692.0	549.8	692.0	610.0	690.3	549.8	690.3	599.7

Dimensions in mm

Accessories



GEMÜ RC0

Shaft extension

The RC0 shaft extension for quarter turn valves is a distance piece between manually, pneumatically or electrically operated valves. This means that valves can be protected from flooding or better access for operation of the valve can be ensured (also for manual override).



GEMÜ MSC

Mounting kit

The MSC mounting kit is an interface, for the same and different ends, to join flange designs according to ISO 5211. This mounting kit ensures thermal separation of actuator and valve body. It can also be used as height compensation for insulated pipelines. The mounting kit is available in steel, electrogalvanized and stainless steel in an open or closed design.

GEMÜ MSC refers to mounting kits for ADA, ASR, DR and SC pneumatic actuators. The mounting kits contain different parts depending on the butterfly valve actuator configuration. Fixing screws are not included.

GEMÜ ADH

Mounting sleeve

The mounting sleeve accessories are available in the square and star geometry designs. These are used for the shaft and hub support for quarter turn actuators. Both sleeves have an internal square drive (please observe stated measurement dimensions here). The sleeve material is sintered metal and they are chemically nickel plated with a surface of 25 µm.



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