

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

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 300 and in standardized installation lengths API 609 category A (DIN 3202 K1).

Technical specifications

- **Media temperature** : -60 to 230 °C
- **Ambient temperature**: -20 to 70 °C
- **Operating pressure** : 0 to 40 bar
- **Nominal sizes**: DN 50 to 300
- **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



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 400	DN 50 to 400	DN 50 to 300
Media temperature	-60 to 230 °C	-60 to 230 °C	-60 to 230 °C	-60 to 230 °C
Operating pressure	0 to 40 bar	0 to 40 bar	0 to 40 bar	0 to 40 bar

Connection types

Flange (wafer)	●	●	●	●
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Conformities

ATEX	●	●	●	●
EAC	●	●	●	●
FDA	●	●	●	●
TA Luft (German Clean Air Act)	●	●	●	●

Comparison of area of application AUMA, Bernard



GEMÜ AQ

GEMÜ BC

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	●	●
Applications with many/frequent cycle duties	●	●
Fail-safe option	●	●
Positioning application	●	●

Industrial sectors

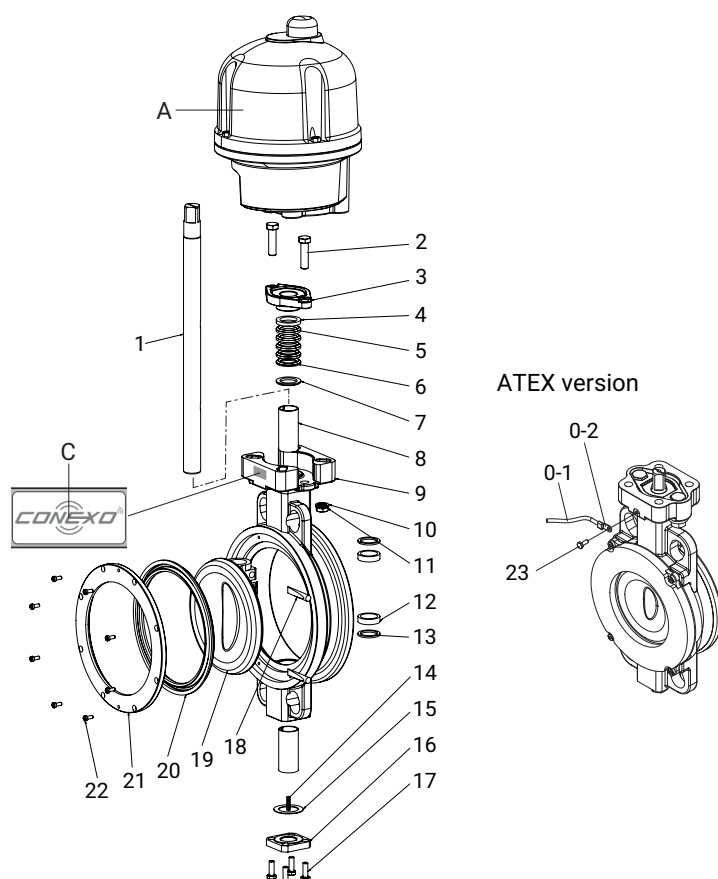
Chemical processes	●	●
Surface finishing	●	●
Water treatment	●	●
Mechanical engineering	●	●
Power generation and environmental systems	●	●
Food processing technology	●	●
Semiconductor	●	●
Medical systems	●	●
Pharmaceutical industry	●	●

Comparison of technical data of AUMA, Bernard actuators



	GEMÜ AQ	GEMÜ BC
Manufacturer	AUMA	Bernard Controls
Manufacturer type	AM, AC, SQ, SQR	AQ, AQL
Torques	150 to 2400 Nm	50 to 500 Nm
Duty cycle	20 % (On/Off actuator) 25 % (control actuator)	30 % (ON/OFF actuator) 50 % (control actuator)
Heating	Yes	Yes
Voltage		
230 V AC, 50 Hz	●	●
230 V AC, 60 Hz	-	●
24 V DC	-	●
400 V AC, 50 Hz	●	-
Protection class	IP 68	IP 68
Ambient temperature	-40 to 70 °C	-40 to 60 °C
Housing materials		
Aluminium	●	●
Versions		
Limit switches	●	●
ON/OFF actuator	●	●
Optional on-site control	●	●
Optional positioner	●	-
Optional positioning actuator	●	●
Optional potentiometer	-	●
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 packing	PTFE
5	Medium packing	PTFE
6	Lower packing	PTFE
7	Packing washer	PTFE
8	Bush	Copper alloy
9	Body	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	same 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

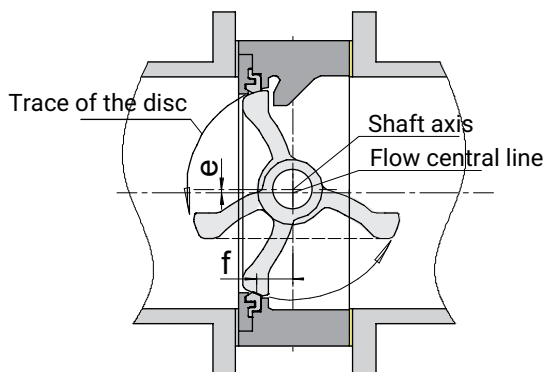
Product description

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

* available as spare part

Additional design features

Double-eccentric design



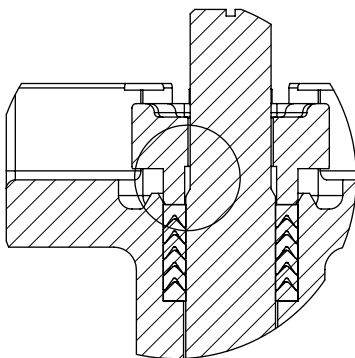
During operation, the disc directly disconnects from the seat, thereby reducing friction between the seat and disc, as well as the torque.

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

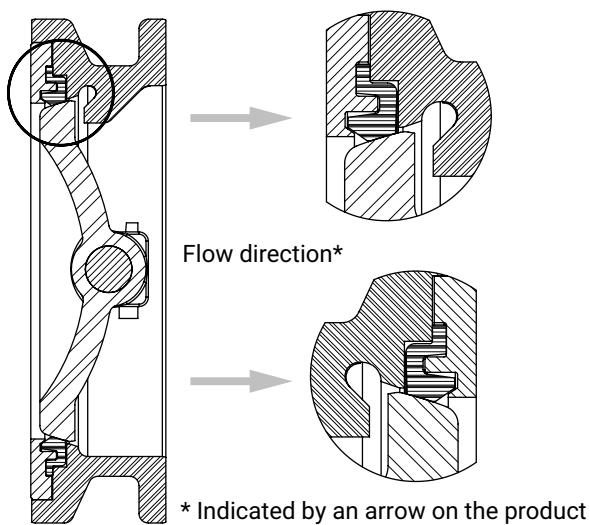
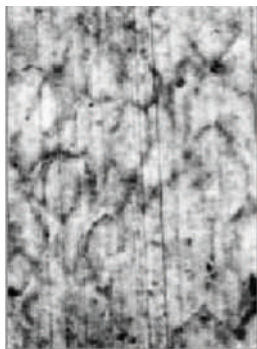
Spherical surface

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**Shut-off seal 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 improved cold flow properties (measured as deformation under load):
The 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

Actuator AUMA AQ

AUMA AQ - Voltage/Frequency

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

Bernard BC actuator

Bernard Controls BC - Voltage/Frequency

Voltage/Frequency	Code	Actuator version (code)			
		BC05, BC05A	BC10 / BC10B	BC15 / BC15C	BC50 / BC50F
24 V DC	C1	X	X	X	-
230 V / 50 Hz	L2	X	X	X	X
230 V / 60 Hz	L3	X	X	X	X
400 V / 50 Hz	N2	X	X	X	X

Bernard Controls BC - Control modules

Control module (code) ¹⁾	Actuator version (code)			
	BC05, BC05A	BC10 / BC10B	BC15 / BC15C	BC50 / BC50F
AB	-	-	-	X
AE	X	X	X	-
AP	X	X	X	X
AT	X	X	X	X

1) Control module

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

Code AE: ON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2)

Code AP: ON/OFF actuator, potentiometer output, Class A (EN15714-2)

Code AT: ON/OFF actuator, analogue position feedback, external set value 0/4-20mA, 2 additional potential-free limit switches

Bernard Controls BC - Actuator version

DN	Actuator version (code) ¹⁾			
	BC05, BC05A	BC10, BC10B	BC15, BC15C	BC50, BC50F
50	X	-	-	-
65	-	X	-	-
80	-	X	-	-
100	-	X	-	-
125	-	-	X	-
150	-	-	X	-
200	-	-	-	X
250	-	-	-	X
300	-	-	-	X

1) Actuator version

Code BC05: Actuator, motorized, operating time 16s, torque 50Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL1014, IP68

Code BC05A: Actuator, motorized, operating time 13s, torque 50Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL1014, IP68

Code BC10: Actuator, motorized, operating time 25s, torque 100Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL1014, IP68

Code BC10B: Actuator, motorized, operating time 21s, torque 100Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL1014, IP68

Code BC15: Actuator, motorized, operating time 30s, torque 150Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL1014, IP68

Code BC15C: Actuator, motorized, operating time 25s, torque 150Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL1014, IP68

Code BC50: Actuator, motorized, operating time 35s, torque 500Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL1014, IP68

Code BC50F: Actuator, motorized, operating time 30s, torque 500Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL1014, 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, motorized (double-eccentric), Tugela	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
Wafer design, face-to-face dimension FTF API609 table 3, 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
ANSI B16.5, Class 300, dimension FTF EN 558 series 109	M

6 Body material	Code
1.4408 / ASTM A351 / CF8M	4

6 Body material	Code
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	6

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

10 Liner fixing	Code
Loose liner	L

11 Voltage/Frequency	Code
120V 50Hz	G2
120V 60Hz	G3
380V 50Hz	J2
230V 50Hz	L2
230V 60Hz	L3
400V 50Hz	N2
480V 60Hz	P3
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
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
ON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2)	AE
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
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

13 Actuator version	Code	13 Actuator version	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	position indicator, KS, layer thickness 0, 140mm, RAL7037, manual override, IP68	
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		
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	AQ10L		
14 Type of design	Code	15 Special version	Code
Without		Without	
Valve free of oil and grease, media wetted area cleaned and packed in PE bag	0107	ATEX certification	X
Thermal separation between actuator and valve body via dew point barrier	5226		
16 CONEXO	Code		
Without			
Integrated RFID chip for electronic identification and traceability	C		

Order example

Ordering option	Code	Description
1 Type	R478	Butterfly valve, motorized (double-eccentric), Tugela
2 DN	300	DN 300
3 Body configuration	W	Wafer design, face-to-face dimension FTF API609 table 3, EN 558 series 108, EN 558 series 109
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
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

Butterfly valve with Bernard actuator

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

Order codes

1 Type	Code
Butterfly valve, motorized (double-eccentric), Tugela	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
Wafer design, face-to-face dimension FTF API609 table 3, 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
ANSI B16.5, Class 300, 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	6
9 Shut-off seal material	Code
TFM 1600 (FDA certification)	T
10 Liner fixing	Code
Loose liner	L
11 Voltage/Frequency	Code
24 VDC	C1
230V 50Hz	L2
230V 60Hz	L3
400V 50Hz	N2
12 Control module	Code
ON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)	AB
ON/OFF actuator, 2 additional potential-free limit switches, Class A (EN15714-2)	AE
ON/OFF actuator, potentiometer output, Class A (EN15714-2)	AP
ON/OFF actuator, analogue position feedback, external set value 0/4-20mA, 2 additional potential-free limit switches	AT
13 Actuator version	Code
Actuator, motorized, operating time 16s, torque 50Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL1014, IP68	BC05
Actuator, motorized, operating time 13s, torque 50Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL1014, IP68	BC05A
Actuator, motorized, operating time 25s, torque 100Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL1014, IP68	BC10
Actuator, motorized, operating time 21s, torque 100Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL1014, IP68	BC10B
Actuator, motorized, operating time 30s, torque 150Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL1014, IP68	BC15

13 Actuator version	Code	14 Type of design	Code
Actuator, motorized, operating time 25s, torque 150Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL1014, IP68	BC15C	Valve free of oil and grease, media wetted area cleaned and packed in PE bag	0107
Actuator, motorized, operating time 35s, torque 500Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL1014, IP68	BC50	Thermal separation between actuator and valve body via mounting kit, mounting parts made from stainless steel	5227
Actuator, motorized, operating time 30s, torque 500Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL1014, IP68	BC50F		
14 Type of design	Code	15 Special version	Code
Without		Without	
		ATEX certification	X
		16 CONEXO	Code
		Without	
		Integrated RFID chip for electronic identification and traceability	C

Order example

Ordering option	Code	Description
1 Type	R478	Butterfly valve, motorized (double-eccentric), Tugela
2 DN	300	DN 300
3 Body configuration	W	Wafer design, face-to-face dimension FTF API609 table 3, EN 558 series 108, EN 558 series 109
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
9 Shut-off seal material	T	TFM 1600 (FDA certification)
10 Liner fixing	L	Loose liner
11 Voltage/Frequency	L2	230V 50Hz
12 Control module	AB	ON/OFF actuator, 2 additional potential-free limit switches, additional potential-free torque switches, Class A (EN15714-2)
13 Actuator version	BC50	Actuator, motorized, operating time 35s, torque 500Nm, BERNARD, type AQ 2 additional limit switches, heating, manual override, aluminium housing, RAL1014, 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

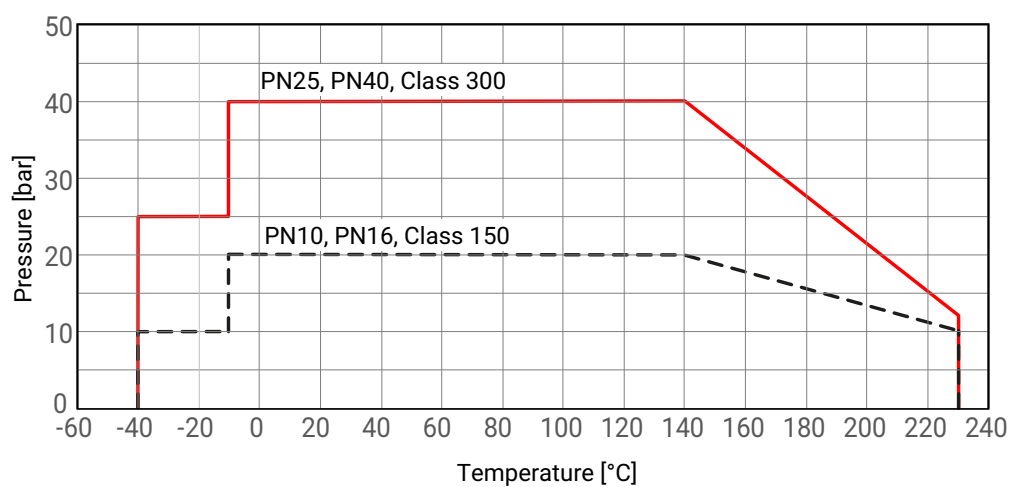
Media temperature: -60 – 230 °C

Ambient temperature: -20 – 70 °C

Storage temperature: 5 – 40 °C

Pressure

Pressure/temperature diagram:



Kv values:

DN	NPS	Connection type code ¹⁾	
		D, 2, 3	M, 5, 6
50	2"	45.0	45.0
65	2½"	78.0	78.0
80	3"	165.0	165.0
100	4"	400.0	400.0
125	5"	650.0	650.0
150	6"	1050.0	1050.0
200	8"	2200.0	1800.0
250	10"	3300.0	3150.0
300	12"	5100.0	4750.0
350	14"	5800.0	5200.0
400	16"	8000.0	6900.0
450	18"	10500.0	9300.0
500	20"	14000.0	11300.0
600	24"	21600.0	18500.0

Kv values in m³/h

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, dimension FTF EN 558 series 109

0 – 40 bar

Product conformity**Machinery Directive:** 2006/42/EC**Pressure Equipment Directive:** 2014/68/EU**Low Voltage Directive:** 2014/35/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 -/IIC T150°C -/Db X

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, 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, 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

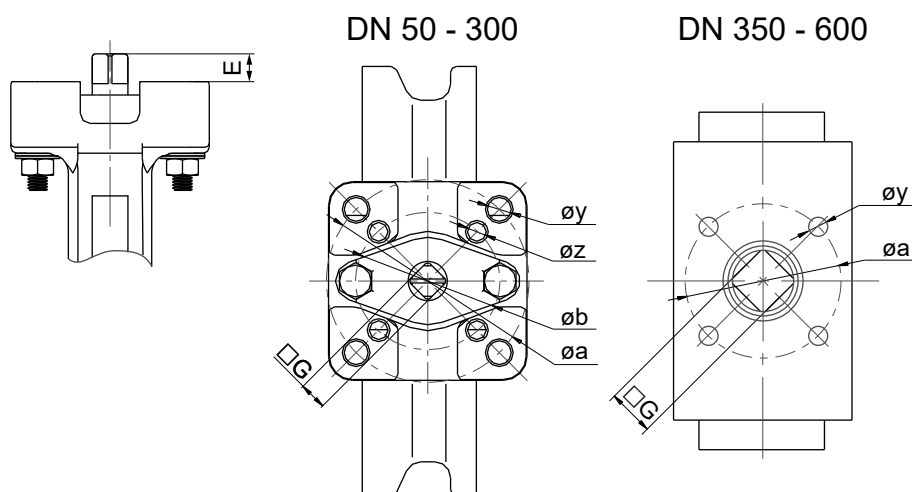
Actuator dimensions

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

Body dimensions

Actuator flange

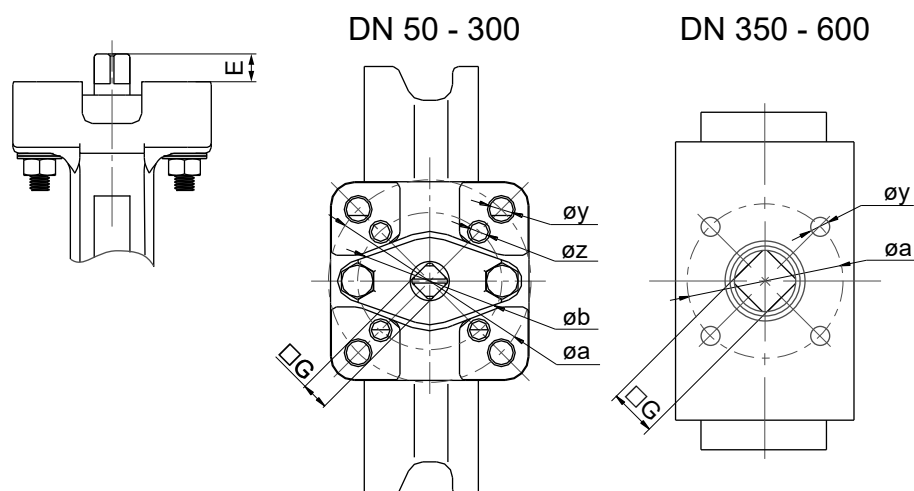
Flange PN10 (code 2), PN16 (code 3), CLASS 150 (code D)



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)

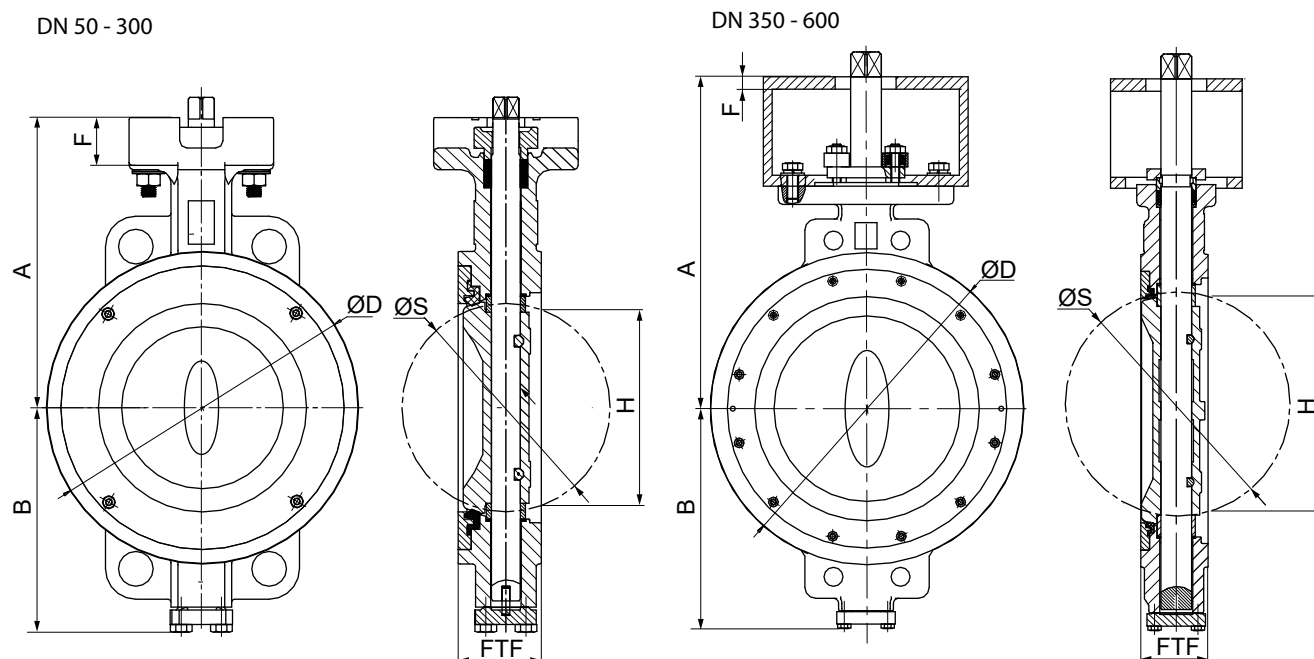


DN	NPS	ISO 5211	øa	øb	E	G	øy	øz
50	2"	F05	50.0	-	15.0	11.0	4 x 7.0	-
65	2½"	F05/F07	70.0	50.0	15.0	11.0	4 x 9.5	4 x 7.0
80	3"	F05/F07	70.0	50.0	15.0	11.0	4 x 9.5	4 x 7.0
100	4"	F07	70.0	-	19.0	14.0	4 x 9.5	-
125	5"	F07	70.0	-	19.0	14.0	4 x 9.5	-
150	6"	F10	102.0	70.0	22.0	17.0	4 x 12.0	-
200	8"	F10/F12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

Body

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

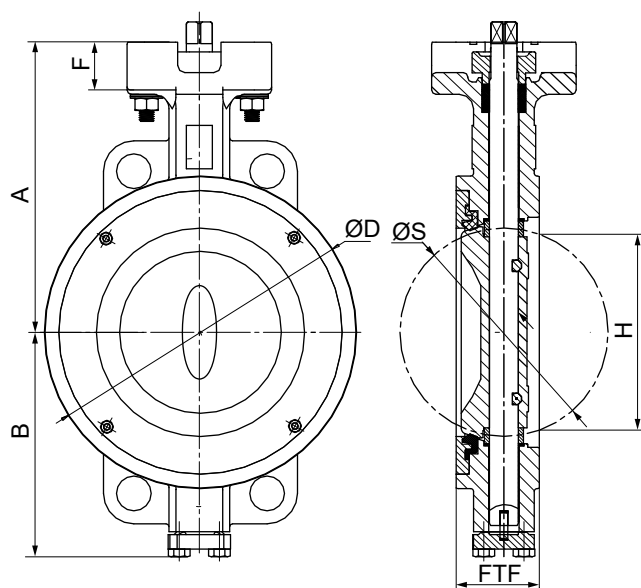


DN	NPS	A	B	øb	FTF	ØD	F	H	ØS
50	2"	124.0	96.4	50.0	50.0	100.0	-	15.0	38.6
65	2½"	122.0	101.0	50.0	51.5	105.0	-	49.0	57.0
80	3"	143.5	115.0	50.0	49.5	132.0	-	69.0	74.0
100	4"	160.0	128.0	70.0	56.5	158.0	-	91.0	96.0
125	5"	176.5	148.0	70.0	57.0	186.0	-	103.0	111.0
150	6"	198.0	157.0	70.0	57.5	216.0	33.0	140.0	144.0
200	8"	230.0	195.0	102.0	63.0	266.0	35.0	179.0	188.0
250	10"	273.0	236.0	102.0	71.0	324.0	34.0	231.0	237.0
300	12"	319.0	262.0	125.0	81.5	381.0	30.0	276.0	283.0
350	14"	455.0	303.0	140.0	92.0	429.0	17.0	300.0	307.0
400	16"	490.0	337.5	140.0	101.5	480.0	17.0	347.0	363.5
450	18"	502.0	353.5	140.0	114.0	533.0	17.0	394.0	414.0
500	20"	524.0	376.5	140.0	127.0	584.0	17.0	434.0	458.0
600	24"	625.0	453.5	165.0	154.0	692.0	22.0	524.0	550.0

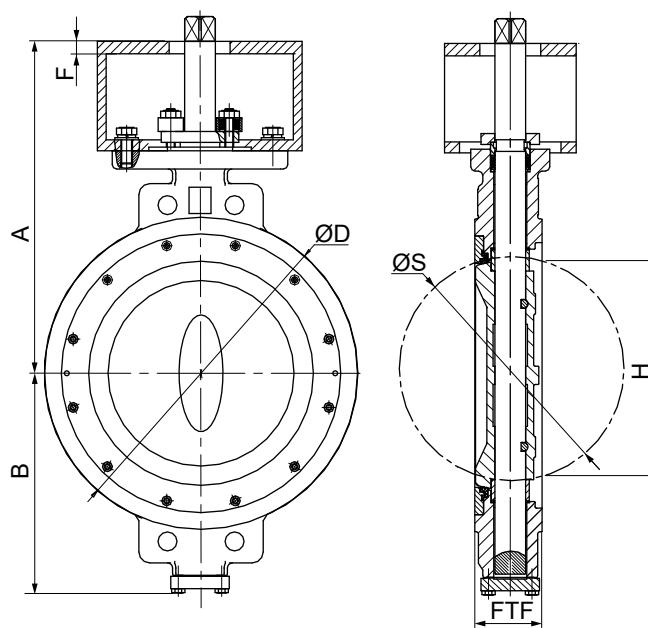
Dimensions in mm

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

DN 50 - 300



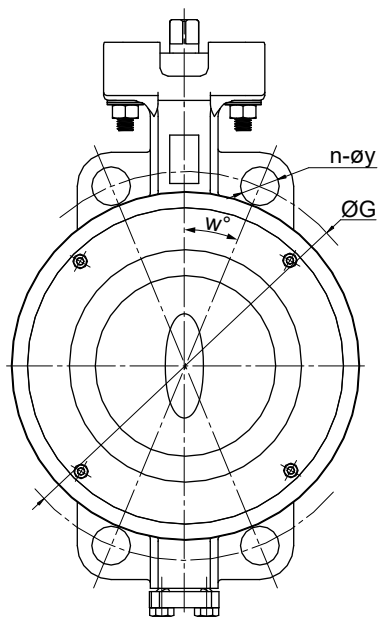
DN 350 - 600



DN	NPS	A	B	øb	FTF	ØD	F	H	ØS
50	2"	124.0	96.4	50.0	50.0	100.0	22.0	15.0	38.6
65	2½"	122.0	101.0	50.0	51.5	105.0	15.0	49.0	57.0
80	3"	143.5	115.0	50.0	49.5	132.0	18.0	69.0	74.0
100	4"	160.0	128.0	70.0	56.5	158.0	23.0	91.0	96.0
125	5"	176.5	148.0	70.0	57.0	186.0	23.0	103.0	111.0
150	6"	217.5	170.5	70.0	59.0	216.0	26.0	140.0	144.0
200	8"	250.0	206.5	102.0	73.0	270.0	35.0	179.0	188.0
250	10"	303.0	248.0	102.0	83.0	324.0	31.0	231.0	237.0
300	12"	335.5	291.0	125.0	92.0	409.0	39.0	276.0	283.0
350	14"	470.0	320.5	140.0	117.0	445.0	17.0	300.0	315.0
400	16"	500.5	365.5	140.0	133.5	470.0	17.0	347.0	363.5
450	18"	531.0	382.5	140.0	149.0	560.0	17.0	394.0	414.0
500	20"	593.0	426.5	140.0	162.0	585.0	22.0	434.0	456.5
600	24"	645.0	498.0	165.0	181.0	692.0	22.0	524.0	550.0

Dimensions in mm

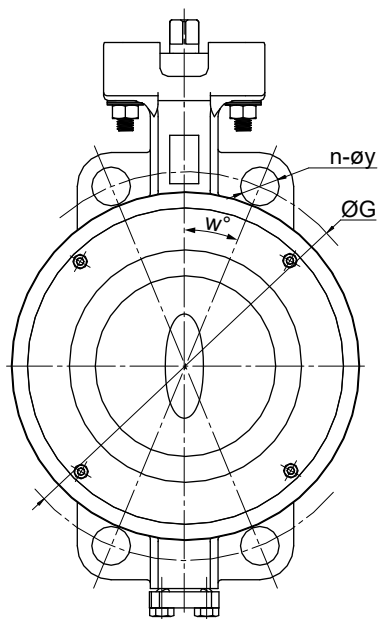
Connections



DN	NPS	PN10				PN16				PN25				PN40			
		n	ØG	w°	øy	n	ØG	w°	øy	n	ØG	w°	øy	n	ØG	w°	øy
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

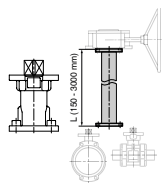


DN	NPS	CLASS 150				CLASS 300			
		n	ØG	w°	øy	n	ØG	w°	øy
50	2"	4	120.5	45.0	19.0	8	127.0	22.5	18.0
65	2½"	4	139.5	45.0	18.0	8	149.0	22.5	22.0
80	3"	4	152.5	45.0	19.0	8	168.5	22.5	22.0
100	4"	8	190.5	22.5	19.0	8	200.0	22.5	22.0
125	5"	8	216.0	22.5	24.0	8	235.0	22.5	22.0
150	6"	8	241.0	22.5	24.0	12	270.0	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

Accessories



GEMÜ RCO

Shaft extension

The RCO 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 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.

GEMÜ CONEXO

The interaction of valve components that are equipped with RFID chips and an associated IT infrastructure actively increase process reliability.



Thanks to serialization, every valve and every relevant valve component such as the body, actuator or diaphragm, and even automation components, can be clearly traced and read using the CONEXO pen RFID reader. The CONEXO app, which can be installed on mobile devices, not only facilitates and improves the "installation qualification" process, but also makes the maintenance process much more transparent and easier to document. The app actively guides the maintenance technician through the maintenance schedule and directly provides him with all the information assigned to the valve, such as test reports, testing documentation and maintenance histories. The CONEXO portal acts as a central element, helping to collect, manage and process all data.

For further information on GEMÜ CONEXO please visit:

www.gemu-group.com/conexo

Ordering

GEMÜ Conexo must be ordered separately with the ordering option "CONEXO" (see order data).



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