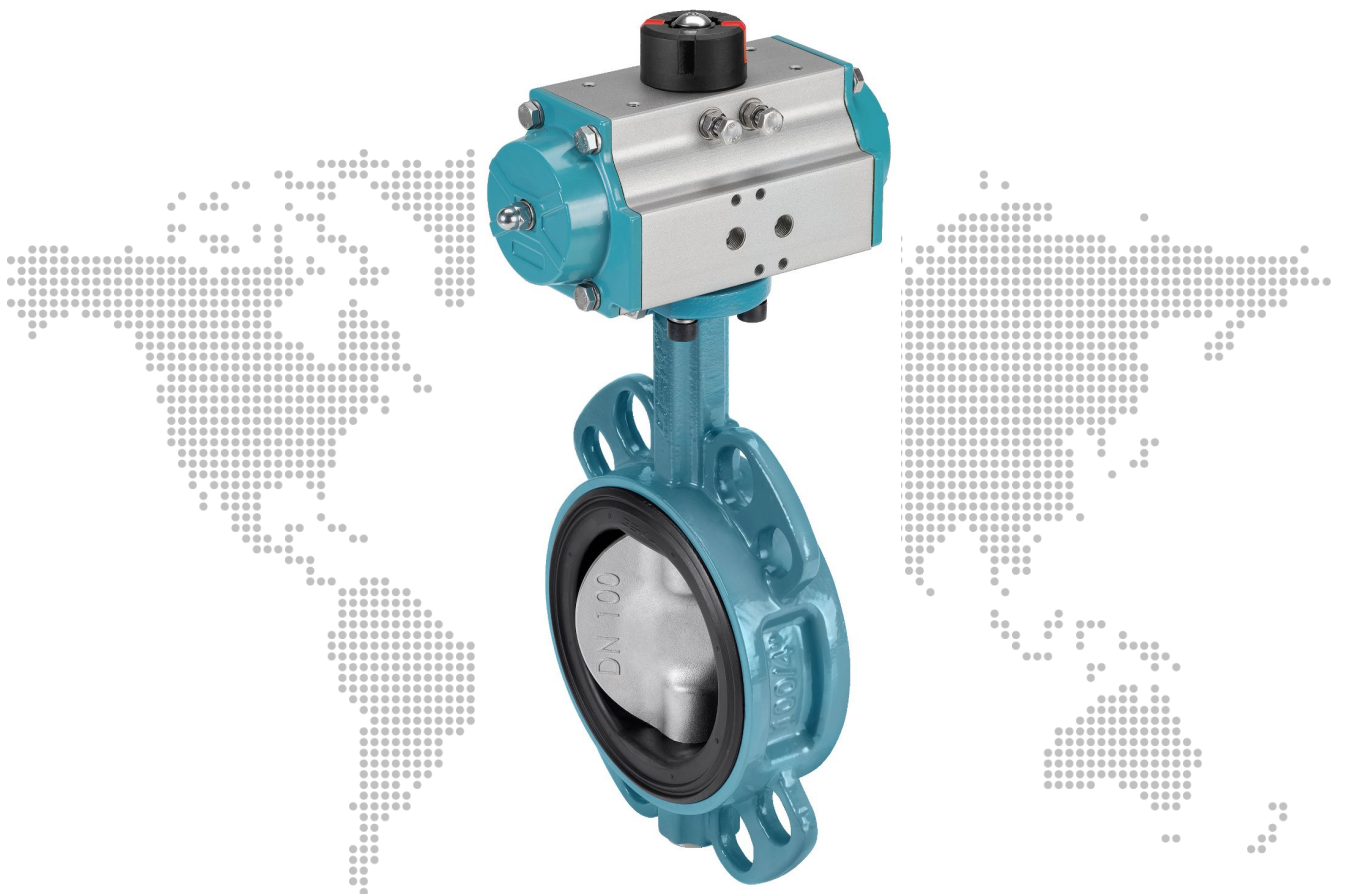


## GEMÜ R481 Victoria

Pneumatically operated butterfly valve

EN

### Operating instructions



further information  
webcode: GW-R481



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27.10.2020

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## 1 General information

### 1.1 Information

- The descriptions and instructions apply to the standard versions. For special versions not described in this document the basic information contained herein applies in combination with any additional special documentation.
- Correct installation, operation, maintenance and repair work ensure faultless operation of the product.
- Should there be any doubts or misunderstandings, the German version is the authoritative document.
- Contact us at the address on the last page for staff training information.
- A supplement to Directive 2014/34/EU (ATEX Directive) is included with the product, provided that it was ordered in accordance with ATEX.

### 1.2 Symbols used

The following symbols are used in this document:

Symbol	Meaning
●	Tasks to be performed
▶	Response(s) to tasks
-	Lists

### 1.3 Definition of terms

#### Working medium

The medium that flows through the GEMÜ product.

#### Control function

The possible actuation functions of the GEMÜ product.

#### Control medium

The medium whose increasing or decreasing pressure causes the GEMÜ product to be actuated and operated.

### 1.4 Warning notes


Wherever possible, warning notes are organised according to the following scheme:


SIGNAL WORD	
Possible symbol for the specific danger	<b>Type and source of the danger</b> <ul style="list-style-type: none"> <li>▶ Possible consequences of non-observance.</li> <li>● Measures for avoiding danger.</li> </ul>


Warning notes are always marked with a signal word and sometimes also with a symbol for the specific danger.

The following signal words and danger levels are used:

⚠ DANGER	
	<b>Imminent danger!</b> <ul style="list-style-type: none"> <li>▶ Non-observance can cause death or severe injury.</li> </ul>

⚠ WARNING	
	<b>Potentially dangerous situation!</b> <ul style="list-style-type: none"> <li>▶ Non-observance can cause death or severe injury.</li> </ul>

⚠ CAUTION	
	<b>Potentially dangerous situation!</b> <ul style="list-style-type: none"> <li>▶ Non-observance can cause moderate to light injury.</li> </ul>

NOTICE	
	<b>Potentially dangerous situation!</b> <ul style="list-style-type: none"> <li>▶ Non-observance can cause damage to property.</li> </ul>

The following symbols for the specific dangers can be used within a warning note:

Symbol	Meaning
	Danger of explosion!
	Corrosive chemicals!
	GEMÜ products without an operator!
	Hot plant components!
	Use as end-of-line valve!
	Danger – bodily injury!

## 2 Safety information

The safety information in this document refers only to an individual product. Potentially dangerous conditions can arise in combination with other plant components, which need to be considered on the basis of a risk analysis. The operator is responsible for the production of the risk analysis and for compliance with the resulting precautionary measures and regional safety regulations.

The document contains fundamental safety information that must be observed during commissioning, operation and maintenance. Non-compliance with these instructions may cause:

- Personal hazard due to electrical, mechanical and chemical effects.
- Hazard to nearby equipment.
- Failure of important functions.
- Hazard to the environment due to the leakage of dangerous materials.

The safety information does not take into account:

- Unexpected incidents and events, which may occur during installation, operation and maintenance.
- Local safety regulations which must be adhered to by the operator and by any additional installation personnel.

### Prior to commissioning:

1. Transport and store the product correctly.
2. Do not paint the bolts and plastic parts of the product.
3. Carry out installation and commissioning using trained personnel.
4. Provide adequate training for installation and operating personnel.
5. Ensure that the contents of the document have been fully understood by the responsible personnel.
6. Define the areas of responsibility.
7. Observe the safety data sheets.
8. Observe the safety regulations for the media used.

### During operation:

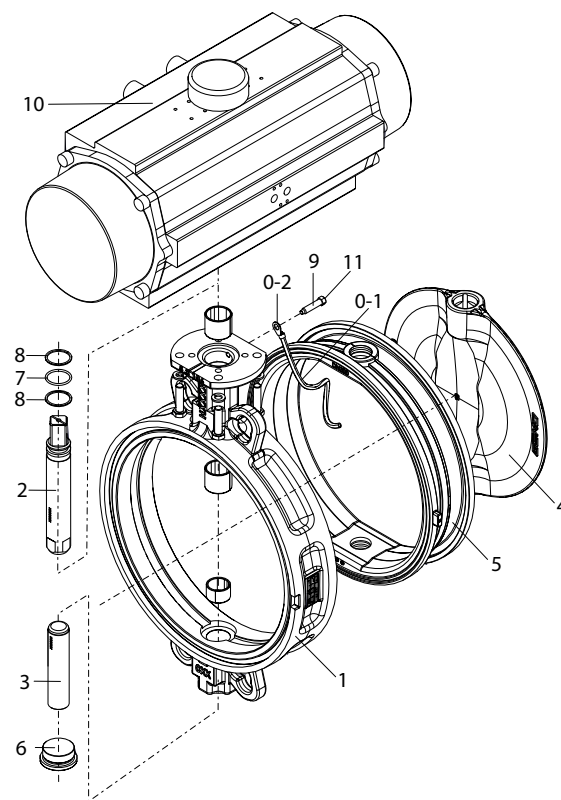
9. Keep this document available at the place of use.
10. Observe the safety information.
11. Operate the product in accordance with this document.
12. Operate the product in accordance with the specifications.
13. Maintain the product correctly.
14. Do not carry out any maintenance work and repairs not described in this document without consulting the manufacturer first.

### In cases of uncertainty:

15. Consult the nearest GEMÜ sales office.

## 3 Product description

### 3.1 Construction



Item	Name	Materials
1	Body	SG iron 5.3106, epoxy coated (RAL 5021)
2	Shaft	1.4021
3	Axis	1.4021
4	Disc	Various materials (see order data)
5	Liner	Various materials (see order data)
6	Threaded plug	1.4021
7	O-ring	NBR
8	Support rings	PTFE
9	Hexagon head bolts	Stainless steel A2-70
0	Earthing kit	
0-1	Cable lug	
0-2	Stranded wire	
10	Pneumatic actuator	Aluminium

### 3.2 Description

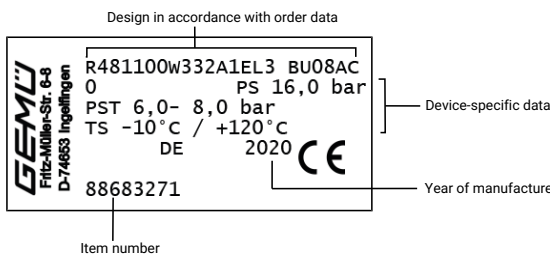
The GEMÜ R481 Victoria soft seated metal butterfly valve has a metal actuator and is pneumatically operated. Normally Closed, Normally Open and Double Acting control functions are available. Various pneumatic actuators are available. The butterfly valve is available in nominal sizes DN 50 to 300 and in standard installation lengths ISO 5752/20 | EN 558-1/20 | API 609 category A (DIN 3202 K1) in wafer and lug body versions.

### 3.3 Function

The product controls a flowing medium by being closed or opened by a control medium.

### 3.4 Product label

The product label is located on the valve body. Product label data (example):



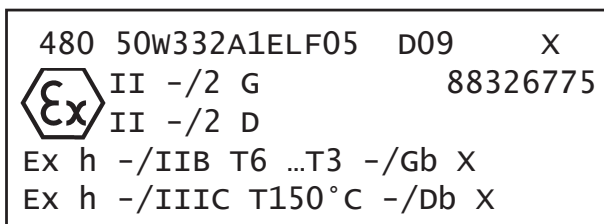
The month of manufacture is encoded in the traceability number and can be obtained from GEMÜ. The product was manufactured in Germany.

The operating pressure stated on the product label applies to a media temperature of 20 °C. The product can be used up to the maximum stated media temperature. You can find the pressure/temperature correlation in the technical data.

### 3.5 ATEX label

The product with special function X is intended for use in potentially explosive areas and is equipped with an ATEX label.

On the butterfly valve there is an additional adhesive label with the ATEX marking for the butterfly valve with bare shaft:



The ATEX marking applies only to the butterfly valve with bare shaft. The overall evaluation must be carried out by the plant operator.

## 4 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](http://www.gemu-group.com/conexo)

## 5 Correct use

 <b>DANGER</b>	
	<p><b>Danger of explosion!</b></p> <ul style="list-style-type: none"> <li>▶ Risk of severe injury or death.</li> <li>● Do not use the product in potentially explosive zones.</li> <li>● Only use the product in potentially explosive zones confirmed in the declaration of conformity.</li> </ul>

 <b>WARNING</b>	
<p><b>Improper use of the product</b></p> <ul style="list-style-type: none"> <li>▶ Risk of severe injury or death.</li> <li>▶ Manufacturer liability and guarantee will be void.</li> <li>● Only use the product in accordance with the operating conditions specified in the contract documentation and in this document.</li> </ul>	

The product is designed for installation in piping systems and for controlling a working medium.

- Use the product in accordance with the technical data.


### 5.1 Product without special function X


The product is not intended for use in potentially explosive areas.

### 5.2 Product with special function X

With the special version X order option, the product is intended for use in potentially explosive areas in zone 1 with gases, mists or vapours and zone 21 with combustible dusts in accordance with EU Directive 2014/34/EU (ATEX).

The product has the following explosion protection marking:

Gas:  II -/2 G Ex h -/IIB T6 ... T3 -/Gb X

Dust:  II -/2 D Ex h -/IIIC T150°C -/Db X

The product has been developed in compliance with the following harmonized standards:

- EN 1127-1:2011
- ISO 80079-36:2016
- ISO 80079-37:2016

The product can be used in the following ambient temperature ranges: -10 °C to +70 °C

**For use in potentially explosive areas, the following special conditions or operation limits must be observed:**

Index X is applied to the ATEX marking.

The following special conditions must be complied with:

- Temperature class depending on the temperature of the conveyed medium and the clock frequency
- Not permissible as an end-of-line valve

## 6 Order data

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

Products ordered with **bold marked ordering options** are so-called preferred series. Depending on the nominal size, these are available more quickly.

### Order codes

1 Type	Code
Butterfly valve, pneumatically operated	R481
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
3 Body configuration	Code
Flange-mounted design (lug), face-to-face dimension FTF EN 558 series 20	L
Intermediate flange design (wafer), face-to-face dimension FTF EN 558 series 20	W
4 Operating pressure	Code
3 bar	0
6 bar	1
10 bar	2
16 bar	3
5 Connection type	Code
PN 6 / flange EN 1092, face-to-face dimension FTF EN 558 series 20	1
PN 10 / flange EN 1092, face-to-face dimension FTF EN 558 series 20	2
PN 16 / flange EN 1092, face-to-face dimension FTF EN 558 series 20	3
ANSI B16.5, Class 150, face-to-face dimension FTF EN 558 series 20	D
Flange BS 10 Table "D", face-to-face dimension FTF EN 558, series 20	H
Flange BS 10 Table "E", face-to-face dimension FTF EN 558, series 20	S
Flange AS 2129 Table "D", face-to-face dimension FTF EN 558, series 20	T
Flange AS 2129 Table "E", face-to-face dimension FTF EN 558, series 20	U
6 Body material	Code
EN-GJS-400-15 (GGG-40), epoxy-coated 250 µm	2

6 Continuation of Body material	Code
EN-GJS-400-18-LT (GGG-40.3), epoxy coated 250 µm	3
7 Disc material	Code
<b>1.4408</b>	<b>A</b>
1.4408, polished, roughness Ra 0.6-3.2, except disc marking	B
<b>1.4408, Halar coated</b>	<b>C</b>
<b>1.4469, super duplex</b>	<b>D</b>
<b>EN-GJS-400-15 (GGG-40), epoxy coated</b>	<b>E</b>
EN-GJS-400-15 (GGG-40), HALAR coated	P
EN-GJS-400-15 (GGG-40), RILSAN PA11 coated	R
2.0975 / CC333G	G
1.4435 / ASTM A351 / CF3M / AISI 316L	I
8 Shaft material	Code
1.4021	1
9 Shut-off seal material	Code
<b>EPDM</b>	<b>E</b>
SBR-AB/P (abrasion resistant)	F
NBR (DVGW gas certification)	J
EPDM (FDA certification), white	M
<b>NBR</b>	<b>N</b>
<b>FPM (FKM)</b>	<b>V</b>
<b>EPDM (ACS, WRAS, DVGW water, BELGAQUA certification)</b>	<b>W</b>
<b>EPDM-HT (FDA certification)</b>	<b>Z</b>
ECO	C
CSM	H
Silicone (MVQ-S, steam)	R
Silicone (MVQ)	S
NBR (FDA certification), white	U
10 Liner fixing	Code
Liner bonded into body	B
Loose liner	L
11 Type of design	Code
Without	
Media wetted area cleaned to ensure suitability for paint applications, parts sealed in plastic bag	0101
Valve free of oil and grease, media wetted area cleaned and packed in PE bag	0107



11 Continuation of Type of design	Code
Butterfly valve body powder coated, RAL 5015, sky blue	1892
Thermal separation between actuator and valve body via dew point barrier	5226

12 Special version	Code
Without	
ACS certification	A
BELGAQUA certification	B
WRAS certification	W
ATEX certification	X
ATEX certification (in the piping system)	Y

13 Control function	Code
Normally closed (NC)	1
Normally open (NO)	2
Double acting (DA)	3

14 Actuator version	Code
Actuator version	

15 CONEXO	Code
without	
Integrated RFID chip for electronic identification and traceability	C

### Order example - standard version

Order option	Code	Description
1 Type	R481	Butterfly valve, pneumatically operated
2 DN	80	DN 80
3 Body configuration	W	Intermediate flange design (wafer), face-to-face dimension FTF EN 558 series 20
4 Operating pressure	3	16 bar
5 Connection type	3	PN 16 / flange EN 1092, face-to-face dimension FTF EN 558 series 20
6 Body material	2	EN-GJS-400-15 (GGG-40), epoxy-coated 250 µm
7 Disc material	A	1.4408
8 Shaft material	1	1.4021
9 Shut-off seal material	E	EPDM
10 Liner fixing	L	Loose liner
11 Type of design		Without
12 Special version		Without
13 Control function	1	Normally closed (NC)
14 Actuator version	SU10KC	Actuator, pneumatic, single acting, clockwise rotation, spring closing, SC0100U 6F05/07S17D11
15 CONEXO		without

**7 Technical data**

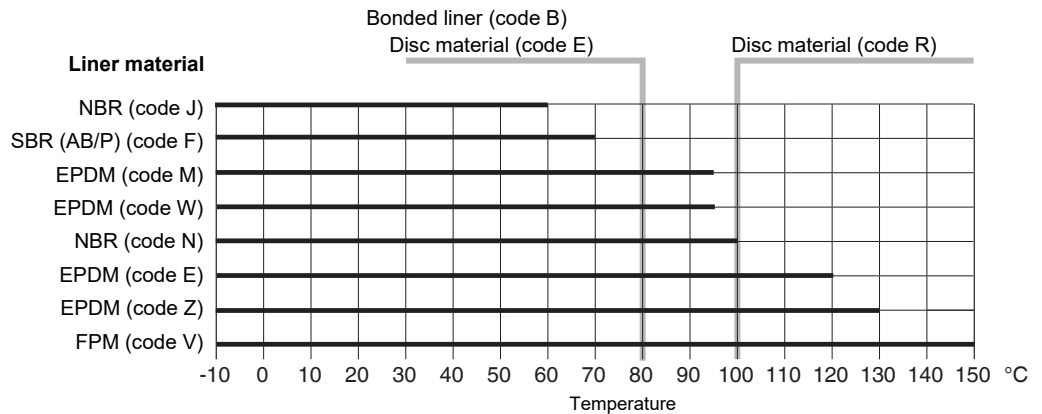
**7.1 Medium**

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

**7.2 Temperature**

**Ambient temperature:** -10 to 70 °C

**Media temperature:** -10 to 150 °C  
Depending on the liner and disc material or the type of liner fixing



FPM material not suitable for water/steam applications above 100 °C, Observe Pressure/Temperature diagram.

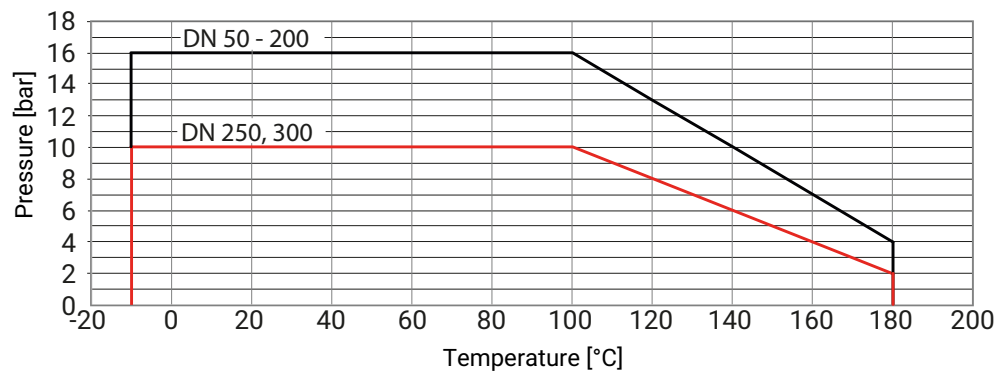
**Storage temperature:** 5 to 40 °C

**7.3 Pressure**

**Control pressure:** 6 to 8 bar

**Operating pressure:** 0 to 16 bar  
Use (installation) as end-of-line valve  
DN 50 – 200: 10 bar  
DN 250, 300: 6 bar

**Pressure/temperature diagram:**







**Pressure rating:** PN 6  
PN 10  
PN 16

**Kv values:**

DN	Kv values at opening angle							
	20°	30°	40°	50°	60°	70°	80°	90°
<b>50</b>	3	9	20	33	65	110	124	125
<b>65</b>	9	15	30	64	118	195	214	222
<b>80</b>	19	40	66	117	196	321	353	363
<b>100</b>	29	75	137	213	316	487	584	618
<b>125</b>	48	100	185	315	550	895	1060	1120
<b>150</b>	60	150	281	450	789	1280	1630	1730
<b>200</b>	110	281	472	759	1480	2880	3710	3900
<b>250</b>	200	444	738	1190	2110	3880	5180	5410
<b>300</b>	250	682	1060	1670	3120	6360	8620	8930

Kv values in m<sup>3</sup>/h

When the opening angle is below 30° no regulation should be made!

**7.4 Product conformity****Machinery Directive:** 2006/42/EC**Pressure Equipment Directive:** 2014/68/EU**Food:** FDA**Drinking water:** ACS  
WRAS  
Belgaqua**Explosion protection:** ATEX (2014/34/EU), order code Special version X and Y**ATEX marking:** Special function code X  
Gas:  II -/2 G Ex h -/IIB T6...T3 -/Gb X  
Dust:  II -/2D Ex h -/IIIC T150°C -/Db XSpecial function code Y  
Gas:  II 2 G Ex h /IIC T6...T3 Gb X  
Dust:  II 2D Ex h /IIIC T150°C Db X**7.5 Mechanical data****Torques:**

DN	PS		
	3 bar	10 bar	16 bar
<b>50</b>	-	-	9
<b>65</b>	-	-	15
<b>80</b>	-	-	25
<b>100</b>	-	-	40
<b>125</b>	-	-	60
<b>150</b>	-	-	100
<b>200</b>	145	-	242
<b>250</b>	152	310	-
<b>300</b>	245	330	-

Torques in Nm

Working medium water (20 °C) and optimal operating conditions

Butterfly valves with bonded liner: the torques must be multiplied by the factor 1.3

**Weight:****Butterfly valve**

DN	Wafer	Lug
<b>50</b>	1.70	2.22
<b>65</b>	2.47	2.91
<b>80</b>	3.18	4.40
<b>100</b>	4.36	6.20
<b>125</b>	5.87	8.10
<b>150</b>	7.73	10.13
<b>200</b>	13.9	18.35
<b>250</b>	19.64	28.74
<b>300</b>	27.26	36.75

Weights in kg

**Actuator type ADA/ASR**

Type	ADA	ASR
<b>0020U</b>	1.4	1.5
<b>0040U</b>	2.1	2.3
<b>0080U</b>	3	3.7
<b>0130U</b>	3.8	4.8
<b>0200U</b>	5.6	7.3
<b>0300U</b>	8.5	10.8
<b>0500U</b>	11.2	15.4
<b>0850U</b>	16.9	22.2
<b>1200U</b>	25.8	34.3

Weights in kg

**Actuator DR/SC**

Type	DR	SC
<b>0015U</b>	1.0	1.1
<b>0030U</b>	1.6	1.7
<b>0060U</b>	2.7	3.1
<b>0100U</b>	3.7	4.3
<b>0150U</b>	5.2	6.1
<b>0220U</b>	8.0	9.3
<b>0300U</b>	9.8	12.0
<b>0450U</b>	-	17.0
<b>0600U</b>	-	22.0
<b>0900U</b>	-	33.0

Weights in kg

**Weight:****Actuator type GDR/GSR**

Type	GDR	GSR
<b>0050</b>	1.1	1.2
<b>0065</b>	1.5	1.8
<b>0075</b>	2.6	3.2
<b>0085</b>	3.4	4.3
<b>0100</b>	5.1	6.6
<b>0115</b>	8	10.6
<b>0125</b>	10	13.4
<b>0140</b>	11	17.2
<b>0160</b>	19.5	24.4
<b>0180</b>	26	37.5

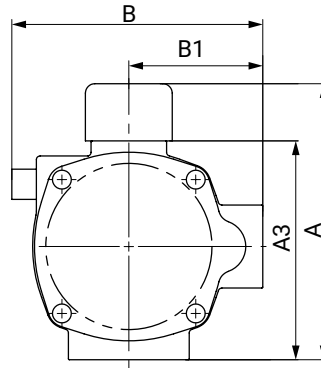
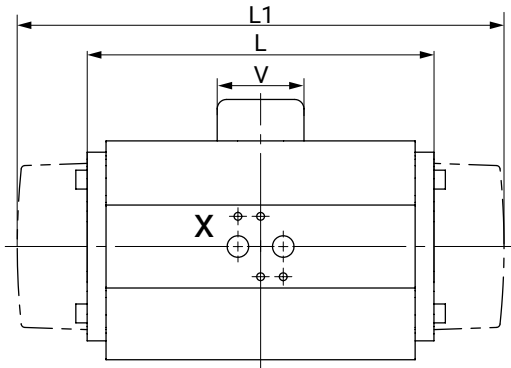
Weights in kg

## 8 Dimensions

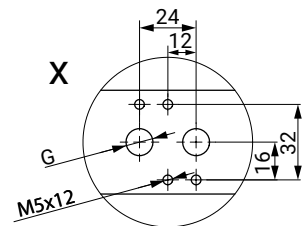
### 8.1 Actuator dimensions

#### 8.1.1 ADA/ASR

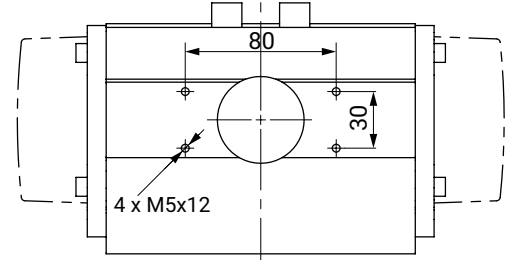
Type 00010 - 4000U



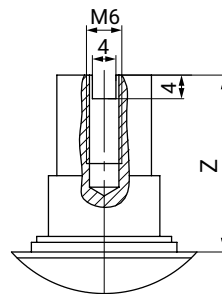
Type 00010 - 1750U



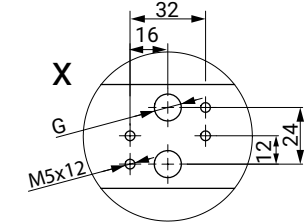
Type 00010 - 0850U



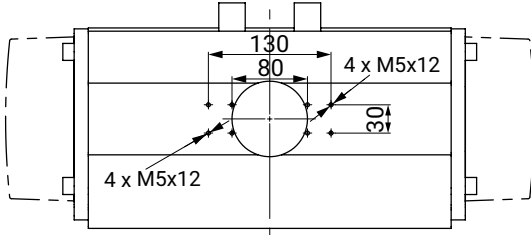
Type 00010 - 4000U



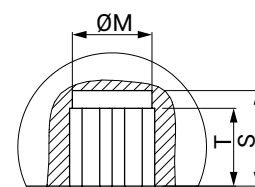
Type 02100 - 4000U



Type 01200 - 4000U



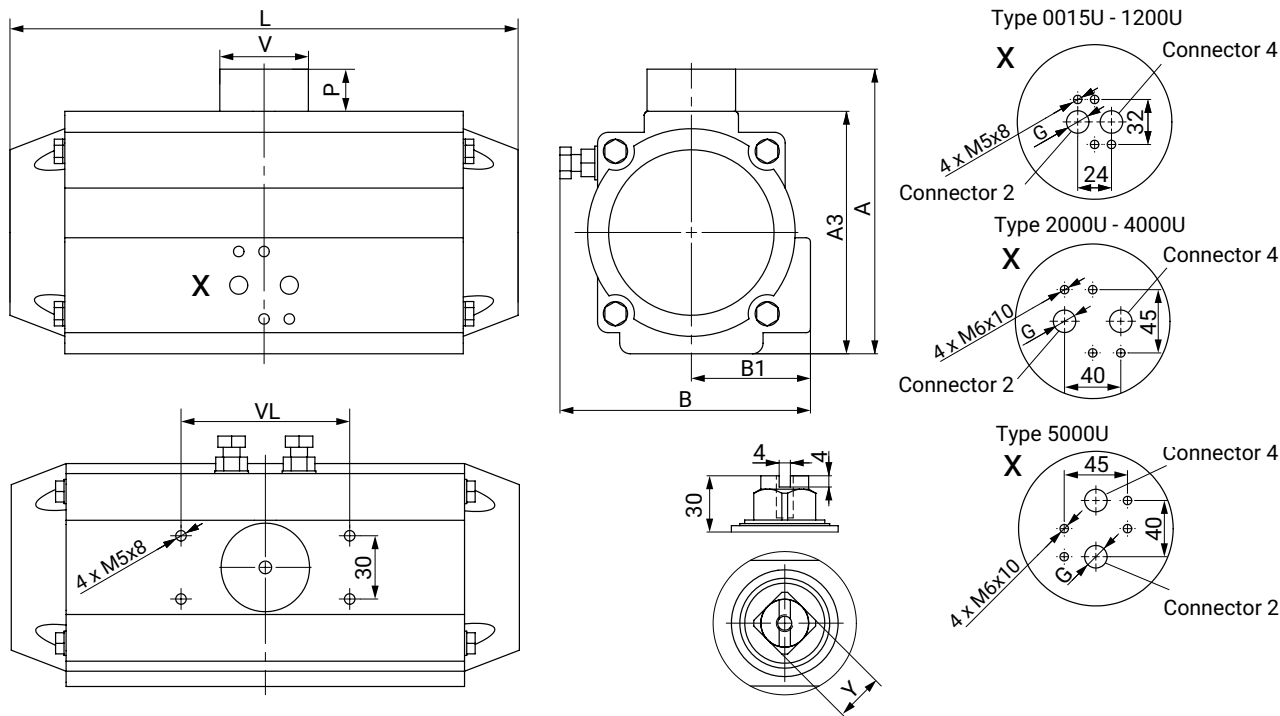
Type 00010 - 4000U



Type	A	A3	B	B1	V	G	P	Z	L	L1
0040U	115.0	85.0	91.0	56.0	40.0	G1/4"	30.0	30.0	158.0	195.0
0200U	165.0	135.0	135.5	78.0	40.0	G1/4"	30.0	30.0	225.0	299.0
0500U	199.0	169.0	173.0	96.0	40.0	G1/4"	30.0	30.0	304.0	397.0
0850U	221.0	191.0	191.5	106.0	40.0	G1/4"	30.0	30.0	372.0	473.0
1200U	249.0	219.0	212.5	116.0	65.0	G1/4"	30.0	30.0	439.0	560.0
1750U	280.0	250.0	242.5	131.0	65.0	G1/4"	30.0	30.0	461.0	601.0
2100U	313.0	283.0	276.5	148.0	65.0	G1/4"	30.0	30.0	510.0	702.0
2500U	383.0	353.0	356.0	177.5	65.0	G1/4"	30.0	30.0	518.0	738.0
4000U	434.0	404.0	415.0	213.0	65.0	G1/4"	30.0	30.0	630.0	940.0

Dimensions in mm

8.1.2 DR/SC

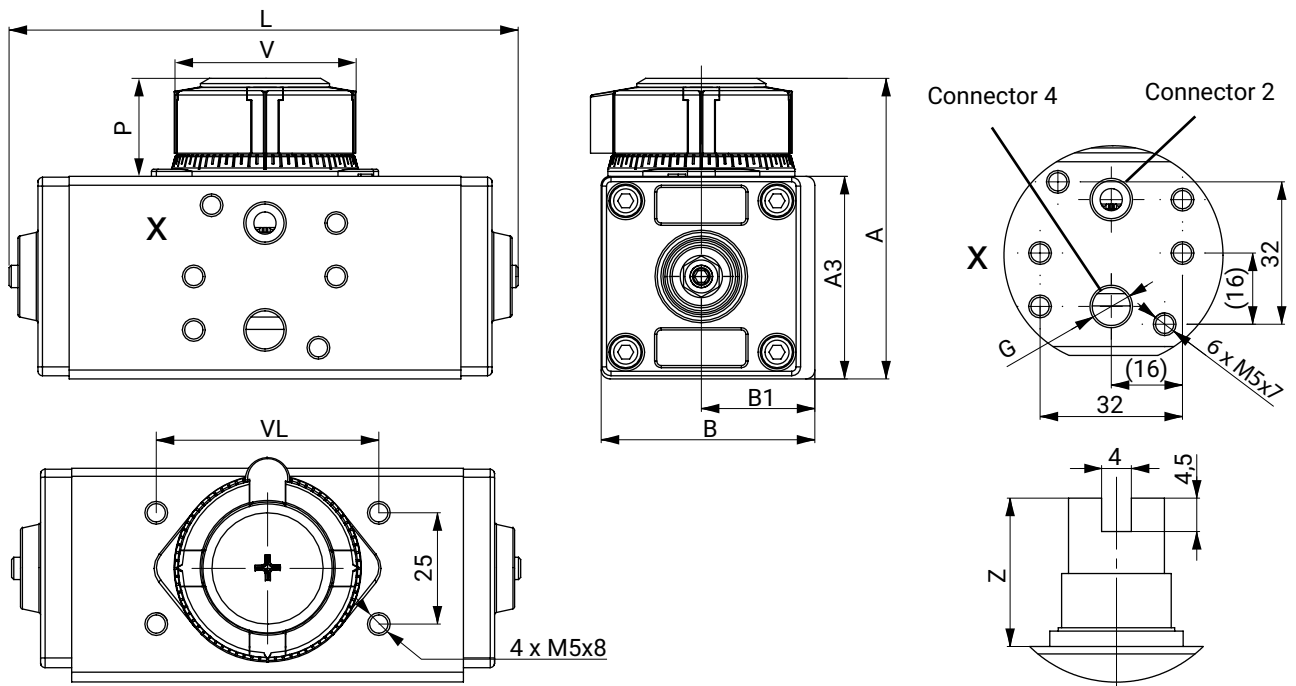


Type	A	A3	B	B1	V	G	P	L	Y
0015U	89.0	69.0	72.0	43.0	42.0	G1/8"	20.0	136.0	11.0
0030U	105.0	85.0	84.5	48.5	42.0	G1/8"	20.0	153.5	11.0
0060U	122.0	102.0	93.0	50.5	42.0	G1/8"	20.0	203.5	17.0
0100U	135.0	115.0	106.0	56.5	42.0	G1/8"	20.0	241.0	17.0
0150U	147.0	127.0	118.5	63.0	42.0	G1/4"	20.0	259.0	17.0
0220U	175.0	145.0	136.0	72.0	58.0	G1/4"	30.0	304.0	27.0
0300U	187.0	157.0	146.5	77.0	58.0	G1/4"	30.0	333.0	27.0
0450U	207.0	177.0	166.0	86.0	67.5	G1/4"	30.0	394.5	27.0
0600U	226.0	196.0	181.0	93.0	67.5	G1/4"	30.0	422.5	27.0
0900U	270.5	220.5	200.0	101.0	80.0	G1/4"	50.0	474.0	36.0

Dimensions in mm

**8.1.3 GDR/GSR**

**8.1.3.1 Type G0032**

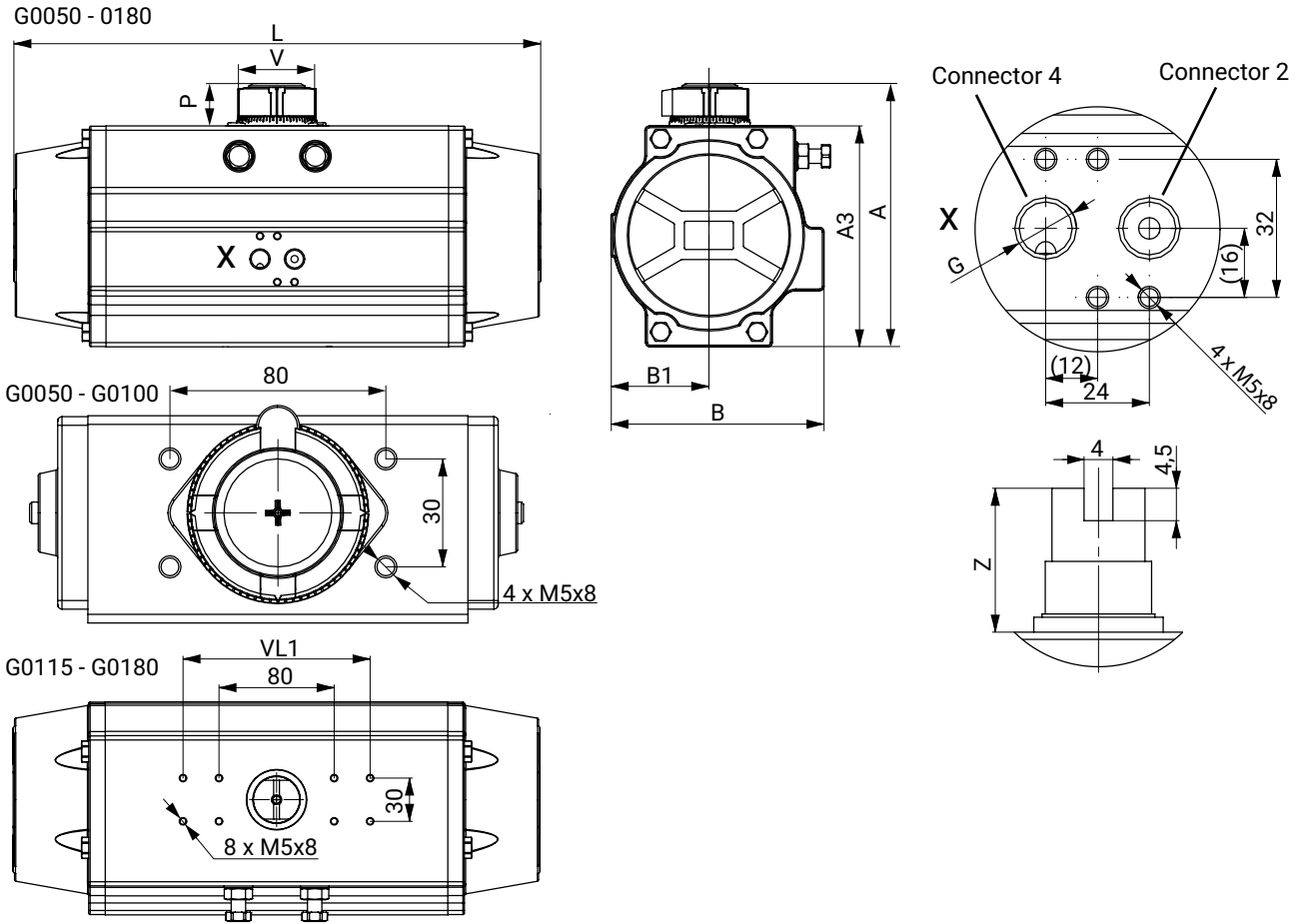


Type	A	A3	B	B1	V	G	P	VL	Z	L
<b>G0032</b>	67.5	45.5	49.0	26.5	40.0	G1/8"	22.0	50.0	20.0	115.0

Dimensions in mm



8.1.3.2 Type G0050 – G0180

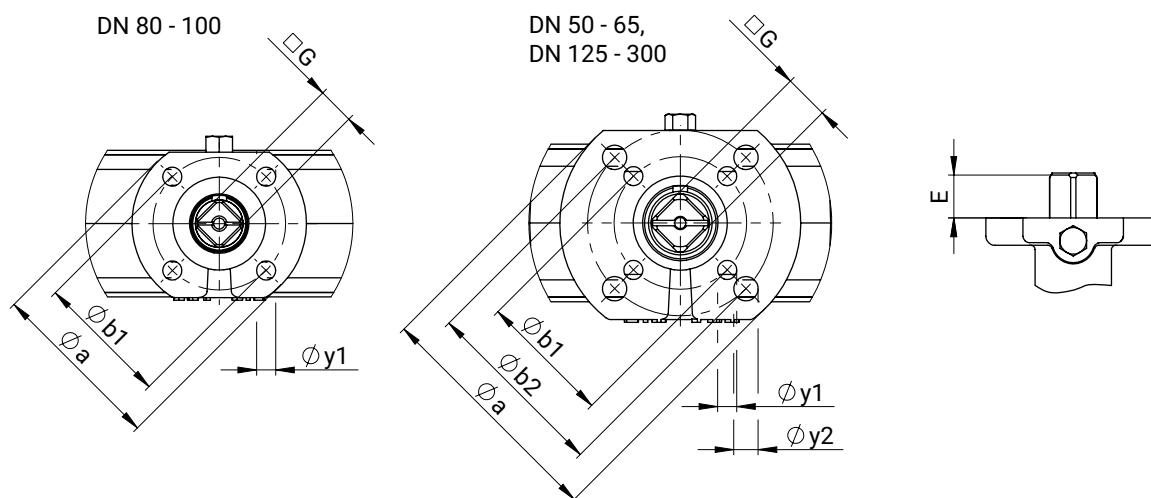


Type	A	A3	B	B1	V	G	P	VL	Z	L	VL1
G0050	92.0	70.0	71.0	30.0	40.0	G1/8"	22.0	80.0	20.0	141.0	-
G0065	102.5	80.5	80.5	35.5	40.0	G1/8"	22.0	80.0	20.0	162.0	-
G0075	119.0	97.0	94.5	42.0	40.0	G1/8"	22.0	80.0	20.0	208.0	-
G0085	130.5	108.5	106.0	47.5	40.0	G1/8"	22.0	80.0	20.0	237.0	-
G0100	143.5	121.5	123.0	55.0	40.0	G1/8"	22.0	80.0	20.0	271.5	-
G0115	174.0	142.0	137.0	64.0	65.0	G1/4"	32.0	80.0	30.0	337.0	130.0
G0125	185.5	153.5	148.0	68.0	65.0	G1/4"	32.0	80.0	30.0	366.0	130.0
G0140	207.9	175.9	164.0	76.5	65.0	G1/4"	32.0	80.0	30.0	428.5	130.0
G0160	225.0	193.0	188.0	88.0	65.0	G1/4"	32.0	80.0	30.0	512.0	130.0
G0180	251.0	219.0	212.5	96.5	65.0	G1/4"	32.0	80.0	30.0	573.0	130.0

Dimensions in mm

## 8.2 Body dimensions

### 8.2.1 Actuator flange

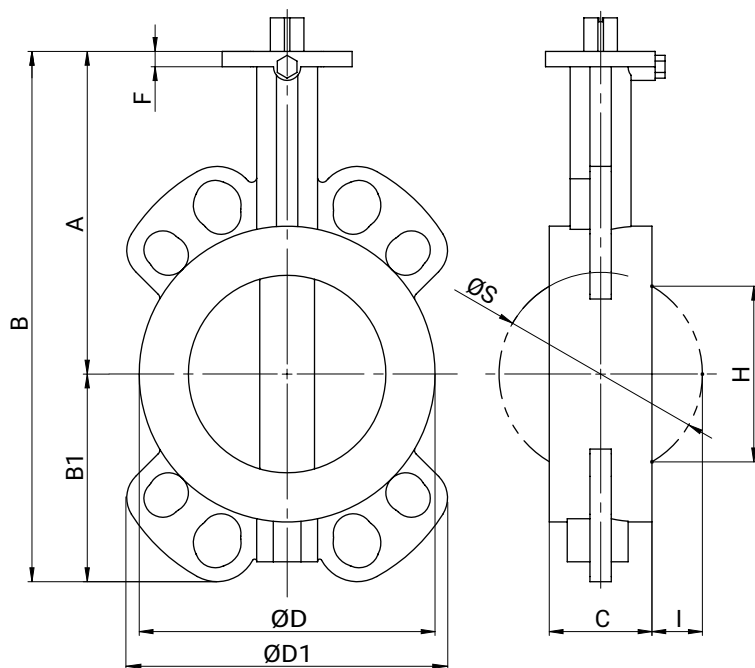


DN	$\square G$	$\phi a$	ISO 5211	$\phi b_1$	$\phi y_1$	$\phi b_2$	$\phi y_2$	E
50	9.0	65.0	F03   F05	36.0	6.0	50.0	7.0	17.0
65	11.0	65.0	F03   F05	36.0	6.0	50.0	7.0	17.0
80	11.0	65.0	F05	36.0	7.0	-	-	17.0
100	14.0	65.0	F05	50.0	7.0	-	-	17.0
125	17.0	90.0	F05   F07	50.0	7.0	70.0	9.0	23.0
150	17.0	90.0	F05   F07	50.0	7.0	70.0	9.0	23.0
200	22.0	125.0	F07   F10	70.0	9.0	102.0	11.0	34.0
250	22.0	125.0	F07   F10	70.0	9.0	102.0	11.0	34.0
300	22.0	125.0	F07   F10	70.0	9.0	102.0	11.0	34.0

Dimensions in mm

## 8.2.2 Body

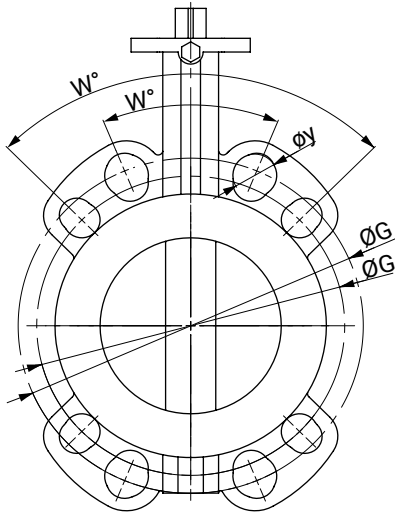
### 8.2.2.1 Wafer body configuration



DN	PS	A	B	B1	C	ØD	ØD1	F	H	ØS	I
50	16	120.0	182.0	62.0	43.0	90.0	118.0	7.0	29.0	52.0	5.0
65	16	137.0	218.0	81.0	46.0	108.0	133.0	7.0	48.0	67.0	10.0
80	16	145.0	231.0	87.0	46.0	130.0	141.0	7.0	68.0	82.0	18.0
100	16	166.0	271.0	105.0	52.0	150.0	163.0	7.0	88.0	102.0	25.0
125	16	187.0	304.0	117.0	56.0	175.0	120.0	9.0	114.0	127.0	35.0
150	16	200.0	332.0	132.0	56.0	207.0	129.0	9.0	141.0	152.0	48.0
200	16	240.0	413.0	173.0	60.0	263.0	157.0	11.0	193.0	202.0	71.0
250	10	265.0	466.0	201.0	68.0	317.0	185.0	11.0	242.0	252.0	92.0
300	10	290.0	531.0	241.0	78.0	366.0	164.0	11.0	291.0	302.0	112.0

Dimensions in mm

8.2.2.1.1 Connections



Connection EN1092, EN1759

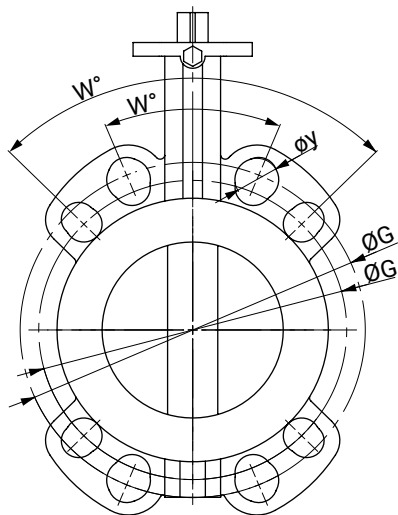
DN	INCH	Connection (code)															
		EN1092-1 PN6 (code 1)				EN1092-1 PN10 (code 2)				EN1092-1 PN16 (code 3)				EN1759/CL150 (code D)			
DIN	ASME	w°	n	ØG	y	w°	n	ØG	y	w°	n	ØG	y	w°	n	ØG	y
50	2"	90	4	110.0	14.0	90	4	125.0	18.0	90	4	125.0	18.0	90	4	120.6	19.0
65	2½"	90	4	130.0	14.0	90	4	145.0	18.0	90	4	145.0	18.0	90	4	139.7	19.0
80	3"	90	4	150.0	18.0	45	8	160.0	18.0	45	8	160.0	18.0	90	4	152.4	19.0
100	4"	90	4	170.0	18.0	45	8	180.0	18.0	45	8	180.0	18.0	45	8	190.5	19.0
125	5"	45	8	200.0	18.0	45	8	210.0	18.0	45	8	210.0	18.0	45	8	215.9	22.2
150	6"	45	8	225.0	18.0	45	8	240.0	22.0	45	8	240.0	22.0	45	8	241.3	22.2
200	8"	45	8	280.0	18.0	45	8	295.0	22.0	30	12	295.0	22.0	45	8	298.5	22.2
250	10"	30	12	335.0	18.0	30	12	350.0	22.0	30	12	355.0	26.0	30	12	362.0	25.4
300	12"	30	12	395.0	22.0	30	12	400.0	22.0	30	12	410.0	26.0	30	12	431.8	25.4

Dimensions in mm

Connection AS2129, BS10

DN	INCH	Connection (code)															
		AS 2129 D (code T)				AS 2129 E (code U)				BS10 D (code H)				BS10 E (code S)			
DIN	ASME	w°	n	ØG	y	w°	n	ØG	y	w°	n	ØG	y	w°	n	ØG	y
50	2"	90	4	114.0	18.0	90	4	114.0	18.0	90	4	114.3	17.5	90	4	114.3	17.5
65	2½"	90	4	127.0	18.0	90	4	127.0	18.0	90	4	127.0	17.5	90	4	127.0	17.5
80	3"	90	4	146.0	18.0	90	4	146.0	18.0	90	4	146.1	17.5	90	4	146.1	17.5
100	4"	90	4	178.0	18.0	45	8	178.0	18.0	90	4	177.8	17.5	45	8	177.8	17.5
125	5"	45	8	210.0	18.0	45	8	210.0	18.0	45	8	209.6	17.5	45	8	209.6	17.5
150	6"	45	8	235.0	18.0	45	8	235.0	22.0	45	8	235.0	17.5	45	8	235.0	20.6
200	8"	45	8	292.0	18.0	45	8	292.0	22.0	45	8	292.1	17.5	45	8	292.1	20.6
250	10"	45	8	356.0	22.0	30	12	356.0	22.0	45	8	355.6	22.2	30	12	355.6	22.2
300	12"	30	12	406.0	22.0	30	12	406.0	26.0	30	12	406.4	22.2	30	12	406.4	25.4

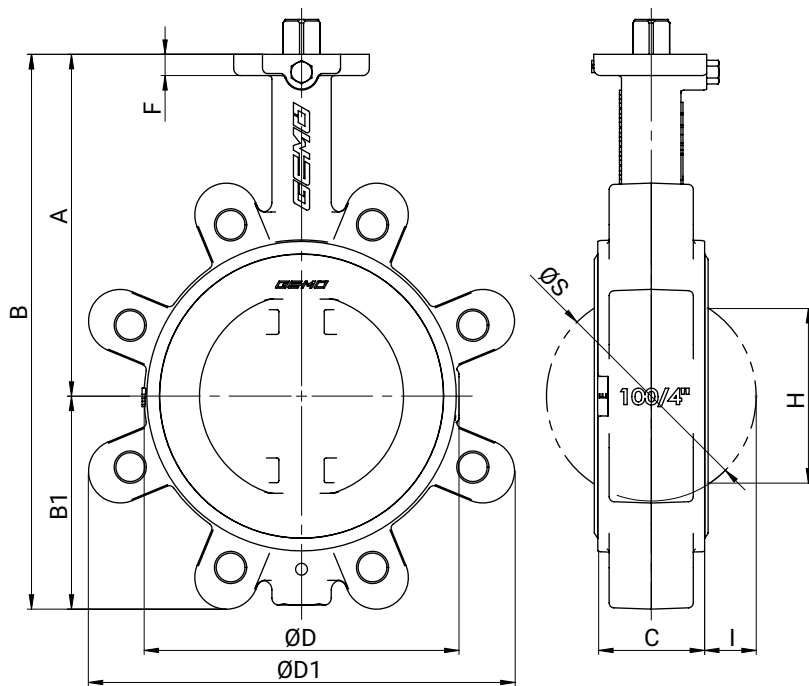
Dimensions in mm



### Connection JIS K10, K16

DN	INCH	Connection (code)							
		JIS-K10 (code G)				JIS-K16 (code J)			
DIN	ASME	w°	n	ØG	y	w°	n	ØG	y
50	2"	90	4	120.0	19.0	45	8	120.0	19.0
65	2½"	90	4	140.0	19.0	45	8	140.0	19.0
80	3"	45	8	150.0	19.0	45	8	160.0	23.0
100	4"	45	8	175.0	19.0	45	8	185.0	23.0
125	5"	45	8	210.0	23.0	45	8	225.0	25.0
150	6"	45	8	240.0	23.0	30	12	260.0	25.0
200	8"	30	12	290.0	23.0	30	12	305.0	25.0
250	10"	30	12	355.0	25.0	30	12	380.0	27.0
300	12"	22,5	16	400.0	25.0	22,5	16	430.0	27.0

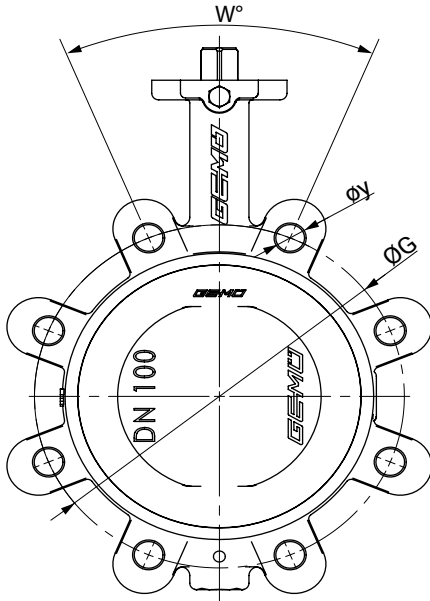
Dimensions in mm

**8.2.2.2 Lug body configuration**

DN	PS	A	B	B1	C	ØD	ØD1	F	H	ØS	I
50	16	120.0	182.0	62.0	44.0	91.0	116.0	9.0	29.0	52.0	4.0
65	16	137.0	219.0	82.0	46.0	109.0	126.0	9.0	48.0	67.0	10.0
80	16	145.0	234.0	89.0	46.0	131.0	177.0	9.0	68.0	82.0	18.0
100	16	166.0	270.0	104.0	52.0	153.0	207.0	10.0	88.0	102.0	25.0
125	16	187.0	305.0	118.0	56.0	175.0	231.0	10.0	114.0	127.0	36.0
150	16	200.0	333.0	133.0	56.0	208.0	255.0	10.0	141.0	152.0	48.0
200	16	240.0	415.0	175.0	60.0	264.0	325.0	12.0	193.0	202.0	71.0
250	10	265.0	467.0	202.0	68.0	317.0	386.0	11.0	242.0	252.0	92.0
300	10	290.0	531.0	241.0	78.0	366.0	459.0	12.0	291.0	302.0	112.0

Dimensions in mm

## 8.2.2.2.1 Connections



Connection EN1092, EN1759

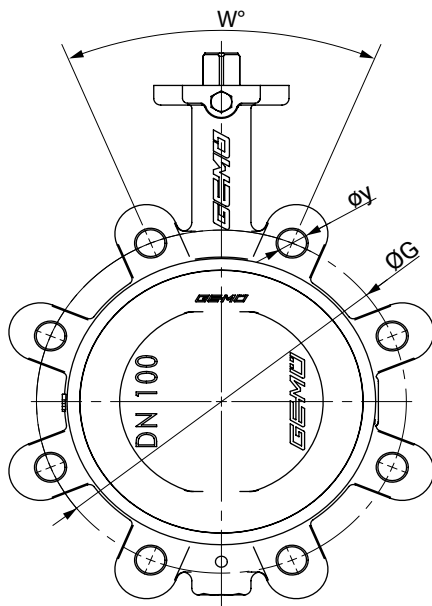
DN	INCH	Connection (code)															
		EN1092-1 PN6 (code 1)				EN1092-1 PN10 (code 2)				EN1092-1 PN16 (code 3)				EN1759/CL150 (code D)			
DIN	ASME	w°	n	ØG	y	w°	n	ØG	y	w°	n	ØG	y	w°	n	ØG	y
50	2"	90	4	110.0	12.0	90	4	125.0	M16	90	4	125.0	M16	90	4	120.6	5/8"
65	2½"	90	4	130.0	12.0	90	4	145.0	M16	90	4	145.0	M16	90	4	139.7	5/8"
80	3"	90	4	150.0	16.0	45	8	160.0	M16	45	8	160.0	M16	90	4	152.4	5/8"
100	4"	90	4	170.0	16.0	45	8	180.0	M16	45	8	180.0	M16	45	8	190.5	5/8"
125	5"	45	8	200.0	16.0	45	8	210.0	M16	45	8	210.0	M16	45	8	215.9	3/4"
150	6"	45	8	225.0	16.0	45	8	240.0	M20	45	8	240.0	M20	45	8	241.3	3/4"
200	8"	45	8	280.0	16.0	45	8	295.0	M20	30	12	295.0	M20	45	8	298.5	3/4"
250	10"	30	12	335.0	16.0	30	12	350.0	M20	30	12	355.0	M24	30	12	362.0	7/8"
300	12"	30	12	395.0	20.0	30	12	400.0	M20	30	12	410.0	M24	30	12	431.8	7/8"

Dimensions in mm

Connection AS 2129, BS10

DN	INCH	Connection (code)															
		AS 2129 D (code T)				AS 2129 E (code U)				BS10 D (code H)				BS10 E (code S)			
DIN	ASME	w°	n	ØG	y	w°	n	ØG	y	w°	n	ØG	y	w°	n	ØG	y
50	2"	90	4	114.0	M16	90	4	114.0	M16	90	4	114.3	5/8"	90	4	114.3	5/8"
65	2½"	90	4	127.0	M16	90	4	127.0	M16	90	4	127.0	5/8"	90	4	127.0	5/8"
80	3"	90	4	146.0	M16	90	4	146.0	M16	90	4	146.1	5/8"	90	4	146.1	5/8"
100	4"	90	4	178.0	M16	45	8	178.0	M16	90	4	177.8	5/8"	45	8	177.8	5/8"
125	5"	45	8	210.0	M16	45	8	210.0	M16	45	8	209.6	5/8"	45	8	209.6	5/8"
150	6"	45	8	235.0	M16	45	8	235.0	M20	45	8	235.0	5/8"	45	8	235.0	3/4"
200	8"	45	8	292.0	M16	45	8	292.0	M20	45	8	292.1	5/8"	45	8	292.1	3/4"
250	10"	45	8	356.0	M20	30	12	356.0	M20	45	8	355.6	3/4"	30	12	355.6	3/4"
300	12"	30	12	406.0	M20	30	12	406.0	M24	30	12	406.4	3/4"	30	12	406.4	7/8"

Dimensions in mm


**Connection JIS K10, JIS K16**

DN	INCH	Connection (code)							
		JIS-K10 (code G)				JIS-K16 (code J)			
DIN	ASME	w°	n	ØG	y	w°	n	ØG	y
50	2"	90.0	4	120. 0	M16	45.0	8	120. 0	M16
65	2½"	90.0	4	140. 0	M16	45.0	8	140. 0	M16
80	3"	45.0	8	150. 0	M16	45.0	8	160. 0	M20
100	4"	45.0	8	175. 0	M16	45.0	8	185. 0	M20
125	5"	45.0	8	210. 0	M20	45.0	8	225. 0	M22
150	6"	45.0	8	240. 0	M20	30.0	12	260. 0	M22
200	8"	30.0	12	290. 0	M20	30.0	12	305. 0	M22
250	10"	30.0	12	355. 0	M22	30.0	12	380. 0	M24
300	12"	22.5	16	400. 0	M22	22.5	16	430	M24

Dimensions in mm



## 9 Manufacturer's information

### 9.1 Delivery

- Check that all parts are present and check for any damage immediately upon receipt.

The product's performance is tested at the factory. The scope of delivery is apparent from the dispatch documents and the design from the order number.

### 9.2 Transport

1. Only transport the product by suitable means. Do not drop. Handle carefully.
2. After the installation dispose of transport packaging material according to relevant local or national disposal regulations / environmental protection laws.

### 9.3 Storage

1. Store the product free from dust and moisture in its original packaging.
2. Avoid UV rays and direct sunlight.
3. Do not exceed the maximum storage temperature (see chapter "Technical data").
4. Do not store solvents, chemicals, acids, fuels or similar fluids in the same room as GEMÜ products and their spare parts.

## 10 Installation in piping

### 10.1 Preparing for installation

#### WARNING

##### The equipment is subject to pressure!

- ▶ Risk of severe injury or death.
- Depressurize the plant.
- Completely drain the plant.

#### WARNING



##### Corrosive chemicals!

- ▶ Risk of caustic burns.
- Wear suitable protective gear.
- Completely drain the plant.

#### WARNING



##### GEMÜ products without an operator!

- ▶ Risk of severe injury or death.
- Do not apply pressure to GEMÜ products without an operator installed in piping.

#### CAUTION



##### Hot plant components!

- ▶ Risk of burns.
- Only work on plant that has cooled down.

#### CAUTION

##### Leakage

- ▶ Emission of dangerous materials.
- Provide precautionary measures against exceeding the maximum permitted pressures caused by pressure surges (water hammer).

#### CAUTION

##### Exceeding the maximum permissible pressure.

- ▶ Damage to the product.
- Provide precautionary measures against exceeding the maximum permitted pressures caused by pressure surges (water hammer).

#### CAUTION



##### Use as end-of-line valve!

- ▶ Damage to the GEMÜ product.
- When using the GEMÜ product as an end-of-line valve, a mating flange must be fitted.

#### CAUTION



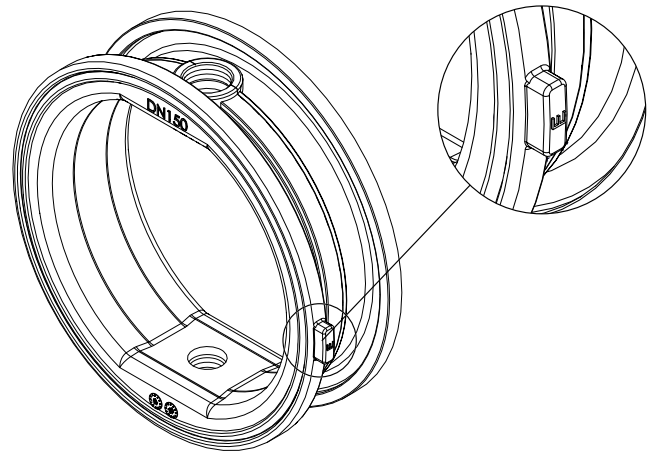
##### Danger – bodily injury!

- ▶ Risk of severe injury!
- Before performing any work on the GEMÜ product, depressurize the plant.

**NOTICE**

**Suitability of the product!**

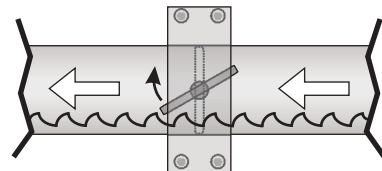
- ▶ The product must be appropriate for the piping system operating conditions (medium, medium concentration, temperature and pressure) and the prevailing ambient conditions.
1. Ensure the product is suitable for the relevant application.
  2. Check the technical data of the product and the materials.
  3. The external pressure must not exceed 1 bar PSa.
  4. Pressure surges are not permissible. The plant operator must plan appropriate precautionary measures.
  5. The pressure differential must not exceed the maximum operating pressure.
  6. The butterfly valve may only be used with a bonded liner up to 0.2 bar abs.
  7. The plant operator must ensure fire protection is in place. Regularly service electrical equipment designed for preventive fire protection in compliance with DIN VDE 0100-610 (IEC/EN 61557).
  8. Keep appropriate tools ready.
  9. Use appropriate protective gear as specified in plant operator's guidelines.
  10. Observe appropriate regulations for connections.
  11. Installation work must be performed by trained personnel.
  12. Shut off plant or plant component.
  13. Secure the plant or plant component against recommissioning.
  14. Depressurize the plant or plant component.
  15. Completely drain the plant or plant component and allow it to cool down until the temperature is below the media vaporization temperature and cannot cause scalding.
  16. Decontaminate, rinse and ventilate the plant or plant component properly.
  17. Lay piping so that the product is protected against transverse and bending forces, and also from vibrations and tension.
  18. Only install the product between matching aligned pipes (see following chapters).
  19. Please note the flow direction (see chapter "Installation location").
  20. Please note the installation position (see chapter "Installation location").
  21. The valve is not designed for loads caused by earthquakes.
  22. The plant operator must take into account loads and torques for the bearing elements.  
For valves with a nominal size > DN xx, suitable bearing elements may need to be used. Design weights and dimensions can be found in the datasheets.
  23. Match the coloured marking of the liner to the material (see table):



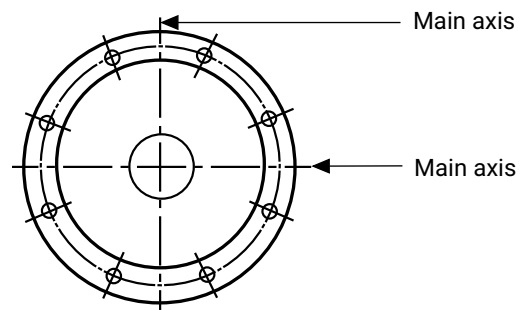
Material	Code	Colour
EPDM	EL	-
EPDM (drinking water)	WL	Orange
EPDM white	ML	-
EPDM-HT	TL	Grey
NBR	NL	Blue
FPM	VL	Yellow
Flucast AB/P	FL	Red

**10.2 Installation location**

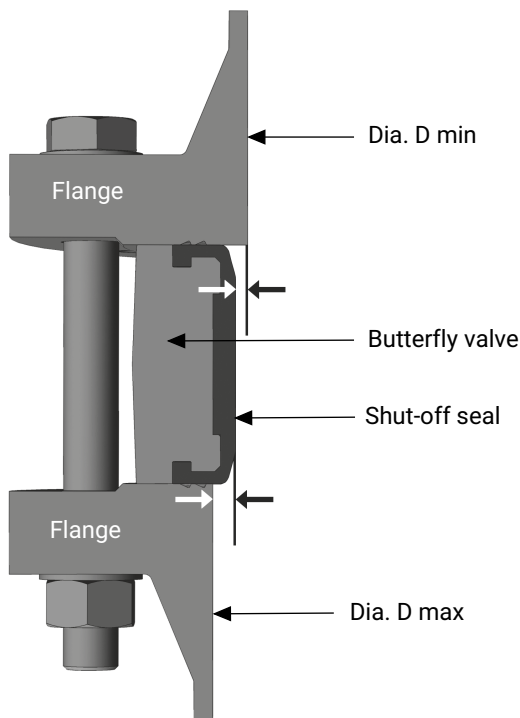
1. You can choose the installation position of the GEMÜ product. If media is contaminated and  $DN \geq 300$ , install GEMÜ R481 horizontally, so that the lower edge of the disc opens in-line with flow direction.



2. You can choose the flow direction of the GEMÜ product.
3. Arrange the bolt holes of piping and valves so that they are not on the two main axes (but rather symmetrical to them).



4. The inside diameter of the piping must match the nominal diameter of the GEMÜ product.
5. The diameter of the pipe flanges should be, in compliance with the respective nominal size, between "D max" and "D min" (see table).



DN	D max	D min
25	32	13
40	47	29
50	60	33
65	74	53
80	96	72
100	113	92
125	140	118
150	169	146
200	223	197
250	273	247
300	323	297
350	363	335
400	417	384
450	465	432
500	518	485
600	618	580

Dimensions in mm

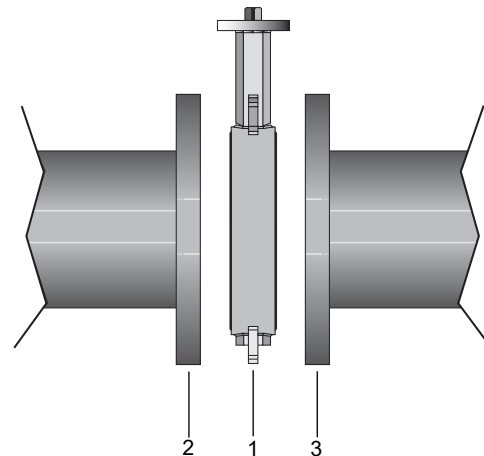
### 10.3 Installation of the standard version

#### ⚠ CAUTION

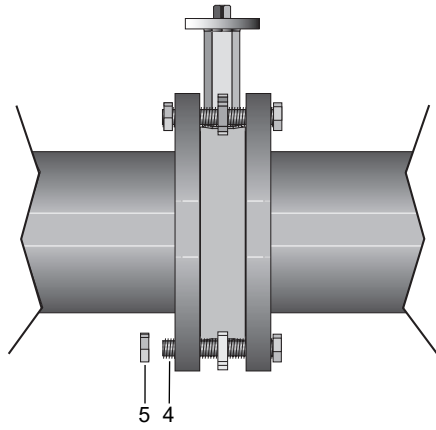
##### Damage!

- ▶ Before carrying out any welding on the piping, remove the butterfly valve to prevent damage to the liner.

1. Shut off plant or plant component.
2. Secure against recommissioning.
3. Depressurize the plant or plant component.
4. Completely drain the plant or plant component and allow it to cool down until the temperature is below the media vaporization temperature and cannot cause scalding.
5. Decontaminate, rinse and ventilate the plant or plant component properly.
6. Check flange faces for potential damage.
7. Remove any rough areas (rust, dirt, etc.) from the pipe flanges.
8. Sufficiently spread the pipe flanges.
9. Do not use any flange seals.
10. Clamp the butterfly valve **1** centrally between the pipes with flanges **2** and **3**.

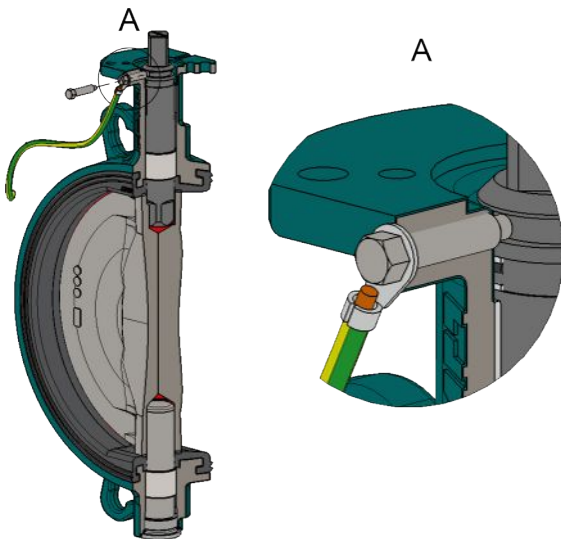


11. Slightly open the butterfly valve **1**. The disc must not project from the body.
12. Insert bolts **4** in all holes in the flange.



13. Slightly tighten the bolts **4** and nuts **5** diagonally.
14. Fully open the disc and check the alignment of the piping.
15. Tighten the nuts **5** diagonally until the flanges fit tightly on the body.  
Observe the permissible tightening torque of the bolts (see "Mechanical data").

**10.4 Installation of the ATEX version**



1. Install the butterfly valve, see chapter "Installation of the standard version".
2. Connect the earthing cable of the butterfly valve to the earth terminal of the plant.
3. Test the resistance between the earthing cable and actuator shaft (value <math><106 \Omega</math>, typical value <math><5 \Omega</math>).

**11 Pneumatic connection**

**11.1 Control functions**

The following control functions are available:

**Control function 1**

**Normally closed (NC)**

Butterfly valve resting position: closed by spring force. Activation of the actuator (connector 2) opens the butterfly valve. When the actuator is vented, the butterfly valve is closed by spring force.

**Control function 2**

**Normally open (NO)**

Butterfly valve resting position: opened by spring force. Activation of the actuator (connector 4) closes the butterfly valve. When the actuator is vented, the butterfly valve is opened by spring force.

**Control function 3**

**Double acting (DA)**

Butterfly valve resting position: undefined. The butterfly valve is opened and closed by activating the respective control medium connectors (connector 2: open / connector 4: close).

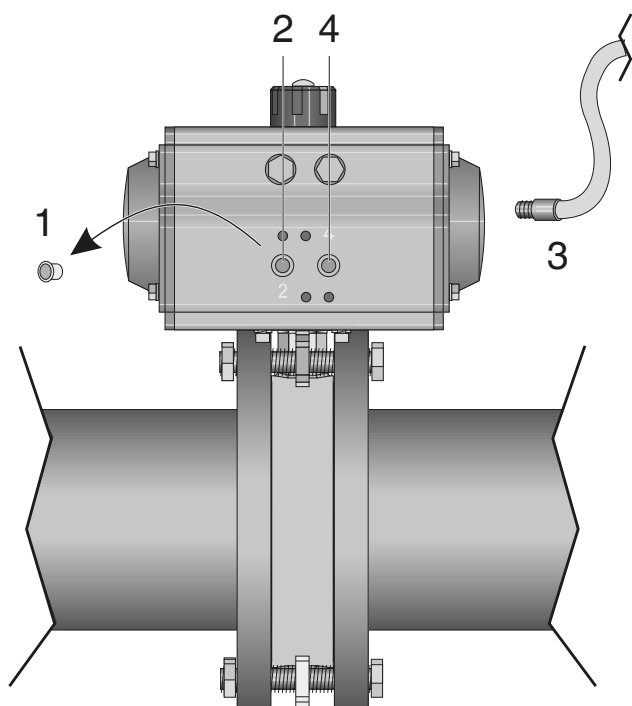
Control function	Connectors	
	2	4
1 (NC)	+	-
2 (NO)	-	+
3 (DA)	+	+

+ = available / - = not available  
(for connectors 2 / 4 see picture in chapter Connecting the control medium)

### 11.2 Connecting the control medium

1. Use suitable connectors.
2. Connect the control medium lines tension-free and without any bends or knots.

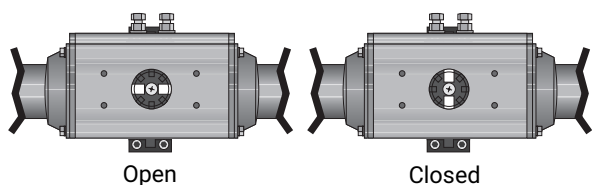
Thread size of the control medium connectors: G1/4



3. Remove the protection cap 1.
4. Screw the control medium line 3 into control medium connector 2.
5. If appropriate, screw the second control medium line into control medium connector 4.

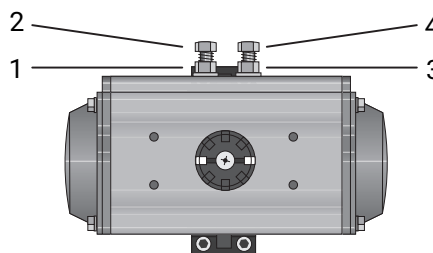
	Control function	Connectors
1	Normally closed (NC)	2: Control medium (open)
2	Normally open (NO)	4: Control medium (close)
3	Double acting (DA)	2: Control medium (open) 4: Control medium (close)
For connectors 2 / 4 see picture above		

### 11.3 Optical position indicator



### 12 Setting the end positions

The end positions can be set by  $\pm 20^\circ$  ( $+5^\circ/-15^\circ$ ).



#### Setting the 0° end position:

1. Move the butterfly valve to the closed position.
2. Loosen the lock nut 1.
3. Set the end position via screw 2.
4. Tighten the lock nut 1.

#### Setting the 90° end position:

5. Move the butterfly valve to the open position.
6. Loosen the lock nut 3.
7. Set the end position via screw 4.
8. Tighten the lock nut 3.

## 13 Commissioning

### ⚠ WARNING



#### Corrosive chemicals!

- ▶ Risk of caustic burns.
- Wear suitable protective gear.
- Completely drain the plant.

### ⚠ CAUTION

#### Leakage

- ▶ Emission of dangerous materials.
- Provide precautionary measures against exceeding the maximum permitted pressures caused by pressure surges (water hammer).

### ⚠ CAUTION



#### Use as end-of-line valve!

- ▶ Damage to the GEMÜ product.
- When using the GEMÜ product as an end-of-line valve, a mating flange must be fitted.

### ⚠ CAUTION

#### Cleaning agent

- ▶ Damage to the GEMÜ product.
  - The plant operator is responsible for selecting the cleaning material and performing the procedure.
1. Check the tightness and the function of the product (close and reopen the product).
  2. Flush the piping system of new plant and following repair work (the product must be fully open).
    - ⇒ Harmful foreign matter has been removed.
    - ⇒ The product is ready for use.
  3. Commission the product.
  4. Commissioning of actuators in accordance with the enclosed instructions.

## 14 Operation

Operate the product according to the control function (see also chapter "Pneumatic connections").

## 15 Troubleshooting

Error	Possible cause	Troubleshooting
The product doesn't open or doesn't open fully	Actuator defective	Replace the actuator
	Operating pressure too high	Operate the product with operating pressure specified in datasheet
	Foreign matter in the product	Remove and clean the product
	The actuator design is not suitable for the operating conditions	Use an actuator that is designed for the operating conditions
	Flange dimensions do not comply with specifications	Use correct flange dimensions
	Inside diameter of piping too small for nominal size of product	Install product with suitable nominal size
The product leaks downstream (doesn't close or doesn't close fully)	Operating pressure too high	Operate the product with operating pressure specified in datasheet
The product doesn't close or doesn't close fully	The actuator design is not suitable for the operating conditions	Use an actuator that is designed for the operating conditions
	Foreign matter in the product	Remove and clean the product
Connection between valve body and piping leaking	Incorrect installation	Check installation of valve body in piping
	Threaded connections / unions loose	Tighten threaded connections / unions
	Sealing material faulty	Replace sealing material
Valve body leaks	Valve body leaks or is corroded	Check valve body for damage, replace valve body if necessary
	Incorrect installation	Check installation of valve body in piping
Increased switching noises when opening the product	When the disc is in the closed position, this may cause a higher breakaway torque	Use the product regularly
Actuator does not open or does not open correctly	Control medium not connected	Connect the control medium
	End positions incorrectly set	Correctly set the end positions (see "Setting the end positions")
	Stroke limiter (optional) incorrectly set	Correctly set the stroke limiter (optional)
	Contaminated control medium	Disassemble and clean the actuator, install a filter upstream
Actuator leaking at the mounting flange	Actuator damaged	Check the actuator for potential damage, replace the actuator if necessary
	Valve body damaged	Check valve body for potential damage, replace valve body if necessary
	Unions loose	Tighten unions
	Incorrect assembly	Check actuator mounting on the valve body

### 16 Inspection and maintenance

#### **WARNING**

**The equipment is subject to pressure!**


- ▶ Risk of severe injury or death.
- Depressurize the plant.
- Completely drain the plant.

#### **CAUTION**

**Use of incorrect spare parts!**

- ▶ Damage to the GEMÜ product.
- ▶ Manufacturer liability and guarantee will be void.
- Use only genuine parts from GEMÜ.

#### **CAUTION**



**Hot plant components!**

- ▶ Risk of burns.
- Only work on plant that has cooled down.

#### **NOTICE**

**Exceptional maintenance work!**

- ▶ Damage to the GEMÜ product.
- Any maintenance work and repairs not described in these operating instructions must not be performed without consulting the manufacturer first.

The operator must carry out regular visual examination of the products depending on the operating conditions and the potential danger in order to prevent leakage and damage.

1. Have servicing and maintenance work performed by trained personnel.
2. Wear appropriate protective gear as specified in plant operator's guidelines.
3. Shut off plant or plant component.
4. Secure plant or plant component against recommissioning.
5. Depressurize the plant or plant component.
6. Actuate products which are always in the same position four times a year.

#### 16.1 Cleaning the product

- Clean the product with a damp cloth.
- Do **not** clean the product with a high pressure cleaning device.

#### 16.2 ATEX version

- Test the resistance between the earthing cable and actuator shaft at least once a year.  
(Value <math><106 \Omega</math>, typical value <math><5 \Omega</math>)


### 16.3 Removing the butterfly valve from the piping

#### **WARNING**

**The equipment is subject to pressure!**

- ▶ Risk of severe injury or death.
- Depressurize the plant.
- Completely drain the plant.


#### **WARNING**



**Corrosive chemicals!**

- ▶ Risk of caustic burns.
- Wear suitable protective gear.
- Completely drain the plant.

#### **CAUTION**



**Hot plant components!**

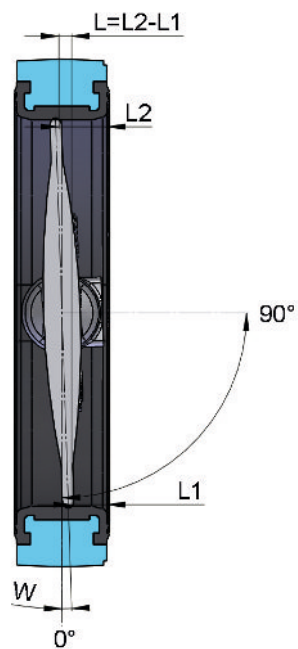
- ▶ Risk of burns.
- Only work on plant that has cooled down.

1. Maintenance work must only be performed by trained personnel.
2. Use appropriate protective gear as specified in plant operator's guidelines.
3. Move the butterfly valve to a slightly open position. The disc must not project from the body.
4. Loosen and remove flange bolts and nuts.
5. Spread the piping flanges.
6. Remove the butterfly valve.



### 16.4 Presetting the butterfly valves

1. Move the butterfly disc to the closed position.
2. Determine the L1 and L2 dimensions and use them to calculate the L dimension.
3. The butterfly disc must be turned out of the seal seat in the closed position. (Anticlockwise)
4. Comply with the L dimension when setting.
5. If readjustment is necessary, open the butterfly disc and adapt the presetting.
6. Repeat steps 1 to 4 until the L dimension has been reached.
7. In the open position, the disc must be set to 90°, otherwise the Kv value will be reduced.



DN	L [mm]	W [°]
25	2.0	9.1
40	2.0	5.7
50	2.0	4.6
65	2.0	3.5
80	2.0	2.9
100	2.0	2.3
125	2.0	1.8
150	7.7	3.0
200	8.9	2.6
250	10.0	2.3
300	11.0	2.1
350	11.8	1.9
400	12.6	1.8
450	13.4	1.7
500	14.1	1.6
600	15.5	1.5

## 17 Spare parts

### 17.1 Ordering spare parts

#### CAUTION

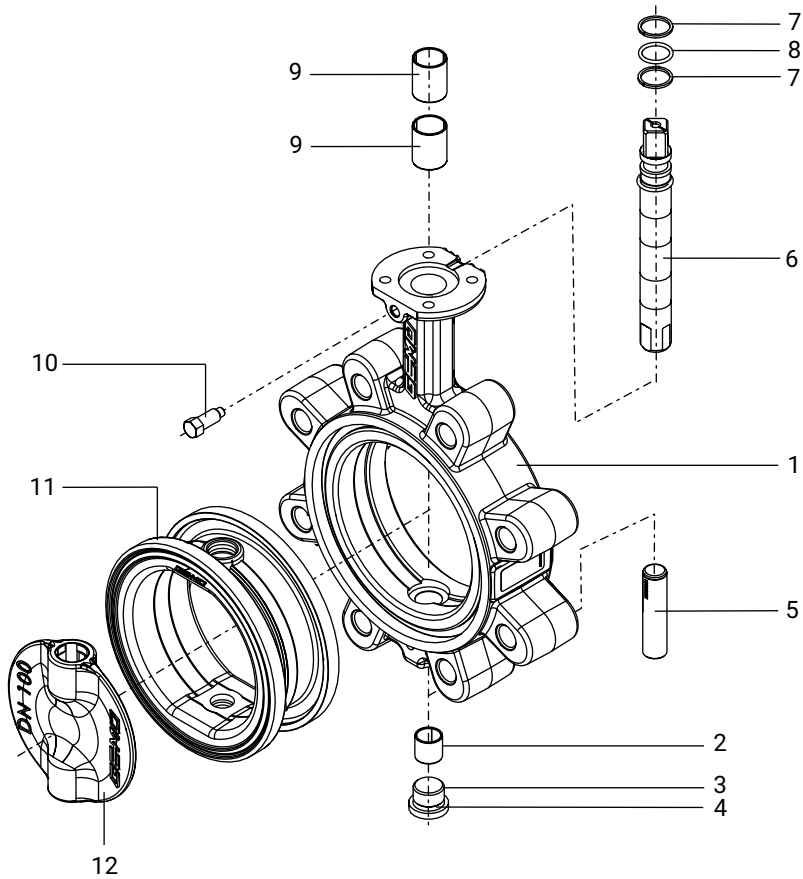
##### **Use of incorrect spare parts!**

- ▶ Damage to the GEMÜ product.
- ▶ Manufacturer liability and guarantee will be void.
- Use only genuine parts from GEMÜ.

When ordering spare parts, please provide the following information:

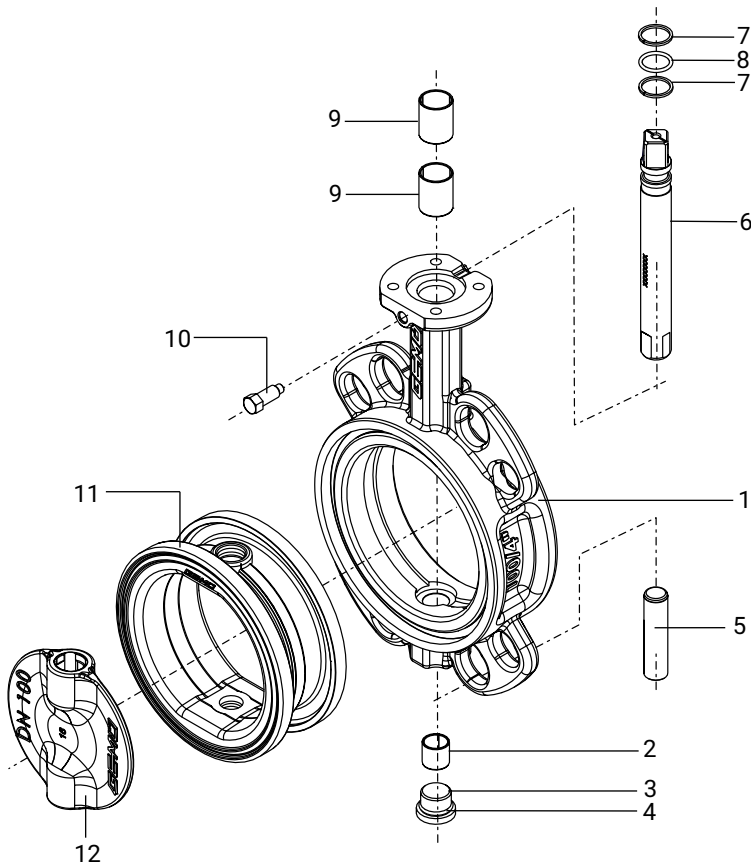
1. Complete order code
2. Item number
3. Traceability number
4. Name of spare part
5. Area of use (medium, temperatures and pressures)

## 17.2 Lug



Item	Name	Order designation
1	Coated metallic valve body	R480...SVK...
2	Bush	
3	Threaded plug	
4	O-ring	
5	Axis	
6	Shaft	
7	Support ring	
8	O-ring	
9	Bush	
10	Hexagon head bolt with pin	R480...SLN...
11	Liner	
12	Butterfly disc	R480...SDS...

**17.3 Wafer**



Item	Name	Order designation
1	Coated metallic valve body	R480...SVK...
2	Bush	
3	Threaded plug	
4	O-ring	
5	Axis	
6	Shaft	
7	Support ring	
8	O-ring	
9	Bush	
10	Hexagon head bolt with pin	R480...SLN...
11	Liner	
12	Butterfly disc	R480...SDS...

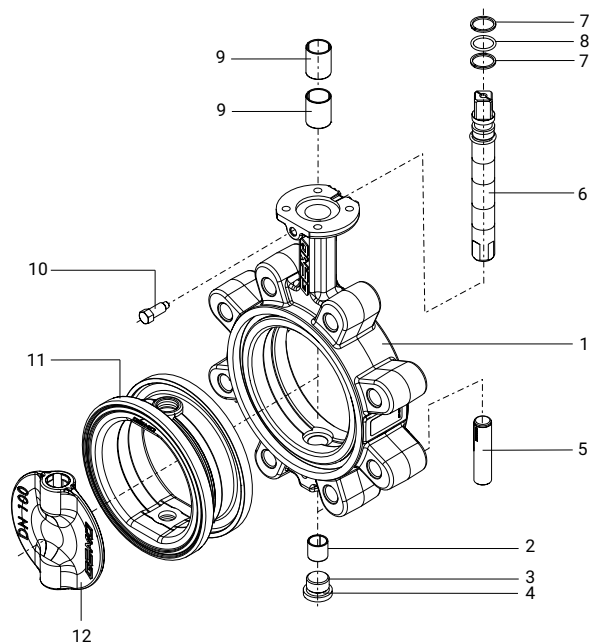
## 17.4 Replacement of spare parts

### NOTICE

- Assembly instructions for replacing the wearing parts are included with every wearing parts kit.

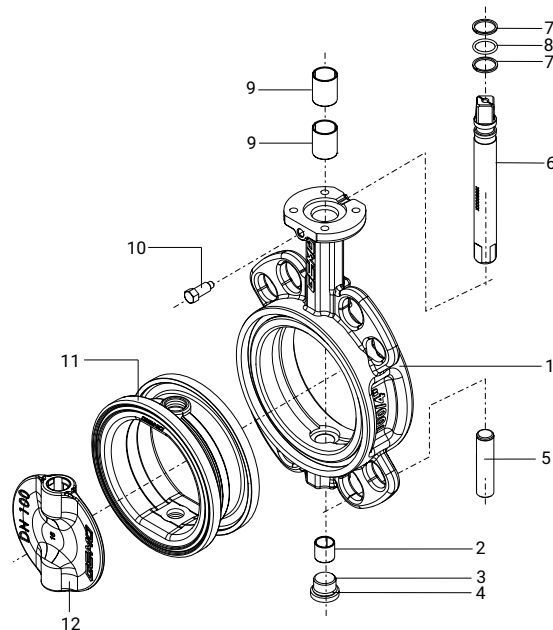
### 17.4.1 Replacing the SVK wearing parts kit

#### 17.4.1.1 Lug



1. Loosen and remove the hexagon head bolt **10** with pin.
2. Remove the support ring **7**, O-ring **8** and bush **9**.
3. Pull the shaft **6** out upwards.
4. Undo the threaded plug **3**, remove the O-ring **4** and bush **2**.
5. Pull the axis **5** out downwards.
6. Assemble the wearing parts kit in reverse order.

#### 17.4.1.2 Wafer



1. Loosen and remove the hexagon head bolt **10** with pin.
2. Remove the support ring **7**, O-ring **8** and bush **9**.
3. Pull the shaft **6** out upwards.
4. Undo the threaded plug **3**, remove the O-ring **4** and bush **2**.
5. Pull the axis **5** out downwards.
6. Assemble the wearing parts kit in reverse order.

#### 17.4.2 Replacing the SDS wearing parts kit

1. Disassemble the SVK wearing parts kit (see chapter "Replacing the SVK wearing parts kit").
2. Remove the butterfly disc **12**.
3. Assemble the wearing parts kit in reverse order.

#### 17.4.3 Replacing the SLN wearing parts kit

1. Disassemble the SVK wearing parts kit (see chapter "Replacing the SVK wearing parts kit").
2. Disassemble the SDS wearing parts kit (see chapter "Replacing SDS wearing parts kit").
3. Remove the liner **11**.
4. Assemble the wearing parts kit in reverse order.

### **18 Removal from piping**

1. Disassemble the product. Observe warning notes and safety information.
2. Remove in reverse order to installation.

### **19 Disposal**

1. Pay attention to adhered residual material and gas diffusion from penetrated media.
2. Dispose of all parts in accordance with the disposal regulations/environmental protection laws.

### **20 Returns**

Legal regulations for the protection of the environment and personnel require that the completed and signed return delivery note is included with the dispatch documents. Returned goods can be processed only when this note is completed. If no return delivery note is included with the product, GEMÜ cannot process credits or repair work but will dispose of the goods at the operator's expense.

1. Clean the product.
2. Request a return delivery note from GEMÜ.
3. Complete the return delivery note.
4. Send the product with a completed return delivery note to GEMÜ.

**21 Declaration of Incorporation according to 2006/42/EC (Machinery Directive)**

**Declaration of Incorporation**  
**according to the EC Machinery Directive 2006/42/EC, Annex II, 1.B for partly**  
**completed machinery**

We, GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG  
Fritz-Müller-Straße 6-8  
74653 Ingelfingen-Criesbach, Germany

declare that the following product

Make: GEMÜ Butterfly valve, metal, pneumatically operated  
Serial number: from 20.03.2019  
Project number: KL-Metall-pneumatisch-2019  
Commercial name: GEMÜ R481

**meets the following essential requirements of the Machinery Directive 2006/42/EC:**

1.1.3, 1.1.5, 1.1.7, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 1.2.5, 1.2.6, 1.3., 1.3.2, 1.3.3, 1.3.4, 1.3.7, 1.3.8, 1.3.9, 1.5.3, 1.5.5, 1.5.6, 1.5.7, 1.5.8, 1.5.9, 1.5.13, 1.5.14, 1.5.16, 1.6.1

**We also declare that the specific technical documentation has been compiled in accordance with part B of Annex VII.**

**Citation of the harmonized standards used in compliance with Article 7 Section 2:**

EN ISO 12100:2010-11 Safety of machinery – General principles for design – Risk assessment and risk reduction (ISO 12100:2010)  
EN 593:2017 Industrial valves – Metallic butterfly valves for general purposes

**Citation of other technical standards and specifications used:**

EN 558:2017-05 Industrial valves – Face-to-face and centre-to-face dimensions of metal valves for use in flanged pipe systems

The manufacturer or his authorised representative undertake to transmit, in response to a reasoned request by the national authorities, relevant information on the partly completed machinery. This transmission takes place:

Electronically

Authorised documentation officer **GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG**  
**Fritz-Müller-Straße 6-8**  
**74653 Ingelfingen, Germany**

This does not affect the industrial property rights!

**Important note! The partly completed machinery may be put into service only if it was determined, where appropriate, that the machinery into which the partly completed machinery is to be installed meets the provisions of this Directive.**

2020-07-09



Joachim Brien  
Head of Technical Department

**22 Declaration of conformity according to 2014/68/EU (Pressure Equipment Directive)**

# EU Declaration of Conformity

## in accordance with 2014/68/EU (Pressure Equipment Directive)

We, GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG  
Fritz-Müller-Straße 6-8  
74653 Ingelfingen-Criesbach, Germany

declare that the product listed below complies with the safety requirements of the Pressure Equipment Directive 2014/68/EU.

**Description of the pressure equipment:** GEMÜ R481  
**Notified body:** TÜV Rheinland Industrie Service GmbH  
**Number:** 0035  
**Certificate no.:** 01 202 926/Q-02 0036  
**Conformity assessment procedure:** Module H  
**Technical standard used:** EN 1983, AD 2000

**Classification of the valves: Max. permissible operating pressure when used as:**


Wafer type butterfly valve						End-of-line valve	
PS	Fluids of group 1		Fluids of group 2			Fluids of group 1 and 2	
	Gases	Liquids	Gases	Liquids		Liquids	
16	DN25–DN200	DN25–DN200	DN25–DN200	DN25–DN200			
10	DN250–DN350	DN250–DN600	DN250–DN500	DN250–DN600	DN25–DN200		
6			DN600		DN250–DN600		

**Note for products with a nominal size ≤ DN 25:**

The products are developed and produced according to GEMÜ process instructions and quality standards which comply with the requirements of ISO 9001 and ISO 14001.

According to Article 4, Paragraph 3 of the Pressure Equipment Directive 2014/68/EU these products must not be identified by a CE-label.

2020-07-20



Joachim Brien  
Head of Technical Department





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www.gemu-group.com

Subject to alteration

10.2020 | 88730029

