

## Butterfly Valve, Plastic

### Construction

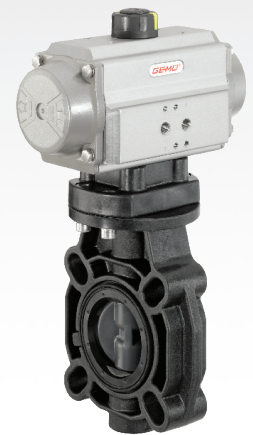
The GEMÜ D450, D451, D457 and D458 butterfly valves are available in nominal sizes DN 50 - 300. They are designed to provide the best possible flow rates and offer excellent corrosion protection. Butterfly discs which minimize pressure loss are available in various materials providing the optimal solution for most areas of use.

### Features

- Max. operating pressure: DN 50 - DN200, 10 bar;  
DN 250 - DN300, 6 bar
- UV resistant
- Wafer bodies for various standards:  
ISO/DIN, ANSI/ASTM, British Standard, JIS
- New butterfly disc design ensures low torque
- The hand lever can be adjusted in 7 positions (in 15° steps) and is equipped with a hole for attaching a safety lock to avoid undesired operation.



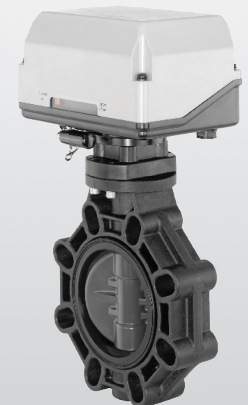
GEMÜ D450



GEMÜ D451

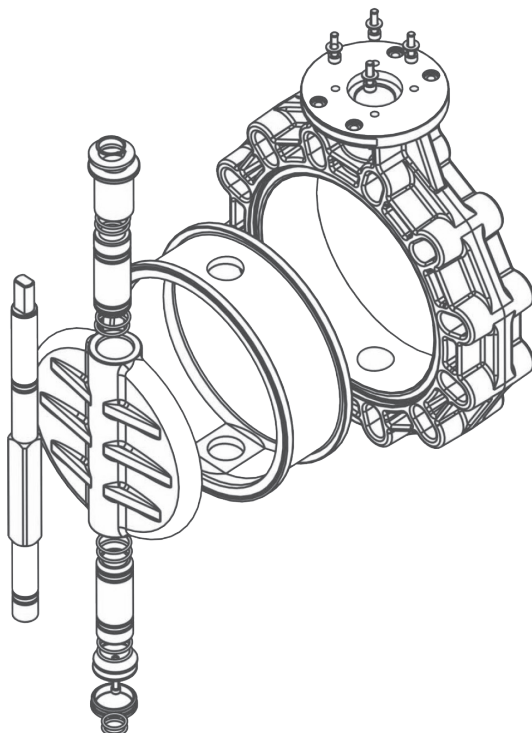


GEMÜ D457



GEMÜ D458

### Exploded drawing



## Technical data

### Working medium

Liquid media which have no negative impact on the physical and chemical properties of the disc and seal material.

### Ambient conditions

Max. permissible ambient temperature -20 to +60°C

### Max. perm. temp. of working medium

0 to + 90°C (dependent on disc material)

### Materials

Body	PP (GF)
Disc	PVC-U / PVC-C / PP-H
Seat (liner)	EPDM / FPM

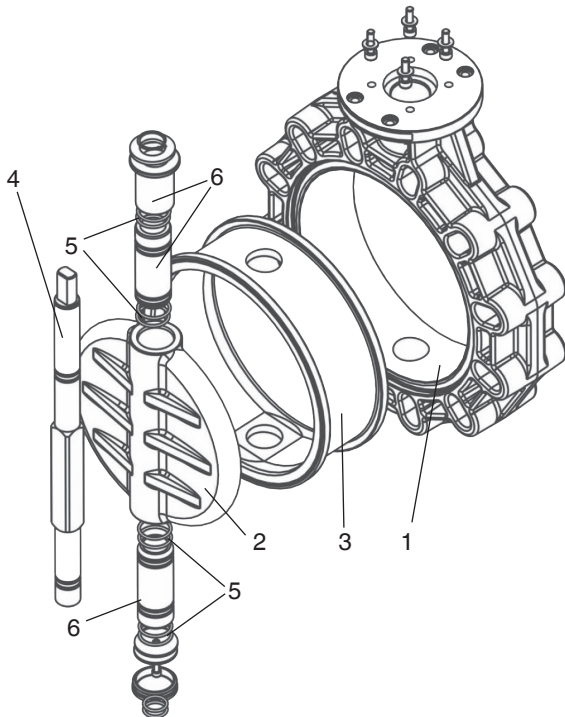
### Torques [Nm] / Kv values [m<sup>3</sup>/h]

	DN 50/65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300
<b>Kv value</b>	108	241	497	706	972	1980	3132	4714
<b>Torque</b>	25	28	35	85	110	110	180	285

### Pressure / temperature correlation for plastic

Medium temperature [°C]		-40	-30	-20	-10	0	5	10	20	25	30	40	50	60	70	80	90	100	110	120
Disc material	Code	Permissible operating pressure [bar]																		
PVC-U	1	-	-	-	-	-	-	10	10	10	8.0	6.0	3.5	1.5	-	-	-	-	-	-
PVC-C	2	-	-	-	-	-	-	10	10	10	8.5	6.5	5.0	3.5	2.5	1.5	-	-	-	-
PP-H	G5	-	-	-	-	-	10	10	10	10	8.5	7.0	5.5	4.0	2.7	1.5	0.8	-	-	-

## Individual parts



No.	Component	Material
1	Body	PP (GF)
2	Disc	PVC-U / PVC-C / PP-H
3	Seat (liner)	EPDM/FPM
4	Axis	Stainless steel AISI 630
5	O-ring	EPDM / Viton®
6	Bearing	PP (GF)

## Order data

1 Type	Code
Butterfly valve with bare shaft	D450
Butterfly valve with pneumatic actuator	D451
Butterfly valve with manual operator	D457
Butterfly valve with motorized actuator	D458

2 Nominal size	Code
DN 50 - 300	50- 300

3 Body configuration	Code
Wafer	W

4 Operating pressure	Code
6 bar (DN 250 - 300)	1
10 bar (DN 50 - 200)	2

5 Connection	Code
EN 1092 PN 10 / ANSI B16.5, class 150 / JIS 10K	2
Other connections on request	

6 Body material	Code
PP (GF)	5

7 Disc material	Code
PVC-U	1
PVC-C	2
PP-H	G5
Other materials on request	

8 Seat (liner) material	Code
FPM	4
EPDM	14

9 Control function	Code
Butterfly valve with bare shaft, type D450	-
Butterfly valve with manual operator, type D457	0
Normally closed (NC), type D451	1
Normally open (NO), type D451	2
Double acting (DA) , type D451	3
Normally closed (NC), actuator mounted across the piping, type D451	Q
Double acting (DA) actuator mounted across the piping, type D451	T
Normally open (NO), actuator mounted across the piping, type D451	U

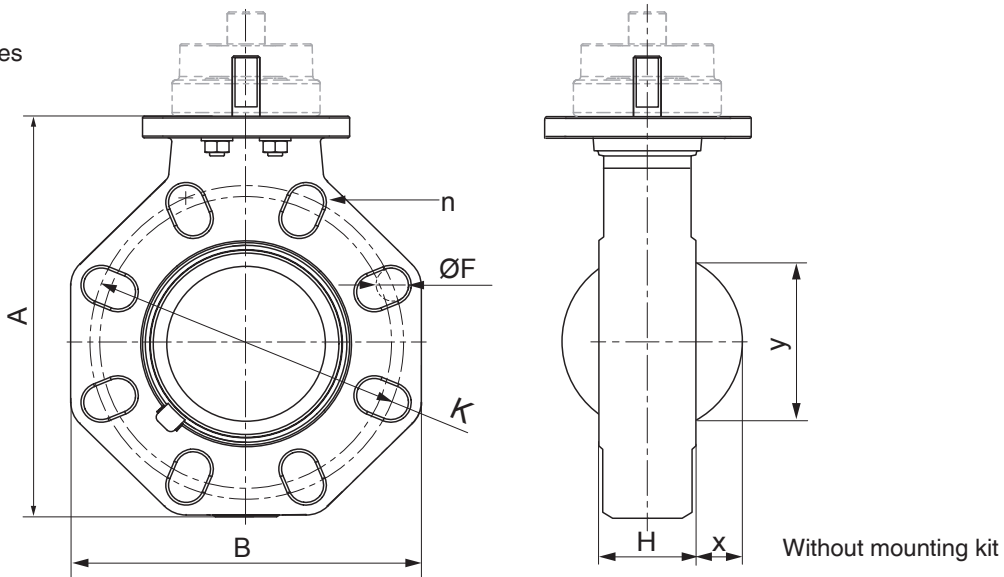
10 Operator size	Code
D450 (column 10)	see page 4
D451 (column 10)	see page 6
D457 (column 10)	see page 5
D458 (column 11/12/13)	see page 8 / 10

Order example	1	2	3	4	5	6	7	8	9	10
Code	D450	65	W	2	2	5	1	4	-	F07 L17

Other versions and materials on request

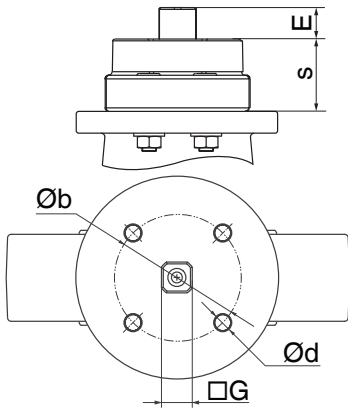
## Body dimensions [mm]

n = Number of bolt holes



DN	Inch	A	B	F	H	K	x	y	n
50/65	2 1/2"	190	156	18	46	125 - 145	8.5	44.0	4
80	3"	221	190	19	49	150 - 170	15.5	66.0	8
100	4"	244	212	19	56	180 - 192	22.5	85.0	8
125	5"	273	238	22	64	190 - 215	28.5	105.0	8
150	6"	303	265	24	72	240	39.0	133.0	8
200	8"	366	320	23	73	270 - 298	60.0	180.5	8
250	10"	450	453	29	114	335 - 362	61.5	212.0	12
300	12"	545	477	29	114	390 - 432	91.5	279.0	12

## 10 Order data / Connection dimensions GEMÜ D450 butterfly valve with integrated mounting kit [mm]



### 10 Operator flange - Parallel square

DN	□G	E	s	Øb	Ød	Weight [kg]	Code
50/65	17	19	40	70	9	1,2	F07 L17
80	17	19	40	70	9	1,4	F07 L17
100	17	19	40	70	9	1,9	F07 L17
125	17	22	40	70	9	2,7	F07 L17
150	17	22	40	70	9	3,7	F07 L17
200	17	19	55	70/102	11	6,7	F07 F10 L17
	22	22	55	102	11	6,7	F10 L22
250	22	22	55	102	11	13,2	F10 L22
300	22	22	56	102	11	18,0	F10 L22
	27	29	56	102	11	18,0	F10 L27

### Mounting kits for pneumatic and motorized actuators (please order separately)

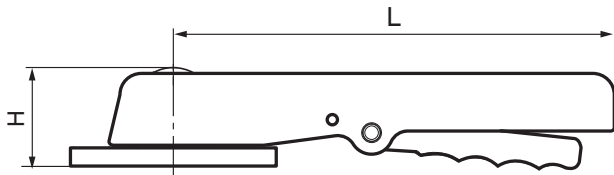
DN	Order key	DN	Order key
50/65	D450 65S01 F07 L17	200	D450 200S01 F07/F10 L22
80 - 100	D450 80S01 F07 L17	250 - 300	D450 250S01 F10/F12 L22
125 - 150	D450 125S01 F07 L17	300	D450 300S01 F10/F12 L27**
200	D450 200S01 F07/F10 L17*		

\* L17 for pneum. actuator, control function 3, \*\* L27 for pneum. actuator, control function 1

Order example	1	2	3	4	5	6	7	8	9	10	
Code	D450			Order data butterfly valve (page 3)							F07 L17

## 10 Order data / Dimensions - GEMÜ D457 butterfly valve with manual operator [mm]

Hand lever

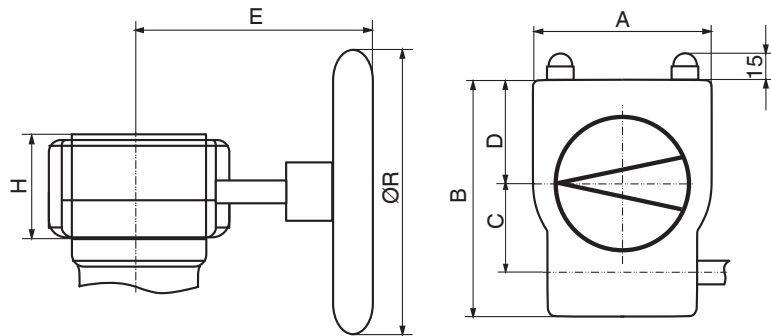


10 Operator size

DN	H	L	Weight [kg]	Code
50/65	52	220	0.2	PHL220H10
80	52	245	0.3	PHL245H12
100	54	245	0.3	PHL245H16
125	54	320	0.4	PHL320H20
150	58	320	0.4	PHL320H20
200	70	391	0.4	PHL391H26

Order example	1	2	3	4	5	6	7	8	9	10	
Code	D457		Order data butterfly valve (page 3)								PHL245H16

Gearbox and handwheel



10 Operator size

DN	Order designation	A	B	C	D	E	H	ØR	n*	Weight [kg]	Code
50/65-125	GB232 06 F05-F07 D17 PS100	80	114	42.5	48.0	105	53	100	10.0	0.8	GB232
150	GB232 06 F05-F07 D17 PS160	80	114	42.5	48.0	155	59	160	10.0	0.9	GB232
200 - 300	GB232 08 F07-F10 D22 PS200	100	131	50,0	56,0	170	67	200	9,3	1,4	GB232

Material: Aluminium, polyurethane coated

n\*: Handwheel turns OPEN/CLOSED

Order example	1	2	3	4	5	6	7	8	9	10	
Code	D457		Order data butterfly valve (page 3)								GB232

## Technical data - GEMÜ D451 with pneumatic actuator ADA/ASR

### Control medium

Filtered, dry compressed air, non-corrosive medium

### Control pressure

6 - 8 bar

### Temperature range

-30 ... +100 °C, other temperatures on request

### Angle of rotation

±5° adjustable (85° - 95°)

90°

## 10 Order data - GEMÜ D451 with pneumatic actuator ADA/ASR

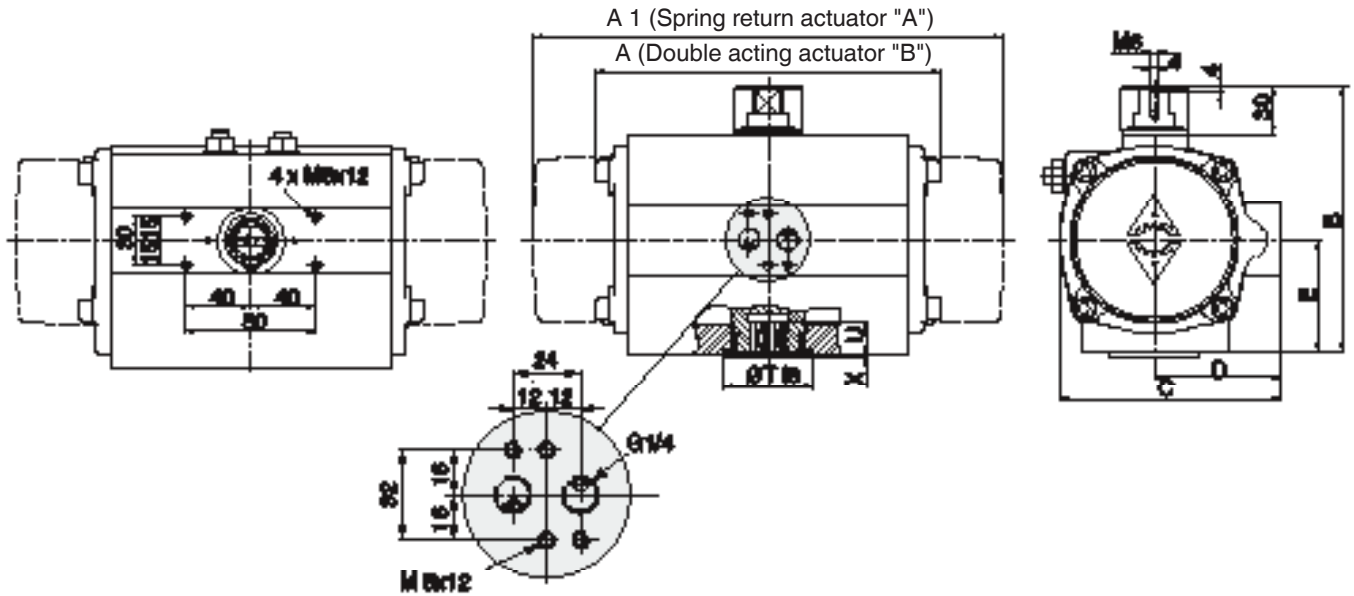
### 10 Actuator size\*

DN	Single acting ASR	Code	Double acting ADA	Code
50/65	ASR0080U S14 F05F07 Y S17/S14 A	AU08KC0	ADA0080U F05F07 Y S17/S14 A	BU08AC0
80	ASR0080U S14 F05F07 Y S17/S14 A	AU08KC0	ADA0080U F05F07 Y S17/S14 A	BU08AC0
100	ASR0130U S14 F05F07 Y S17/S14 A	AU13KC0	ADA0080U F05F07 Y S17/S14 A	BU08AC0
125	ASR0200U S14 F07F10 Y S17/S14 A	AU20KE0	ADA0130U F05F07 Y S17/S14 A	BU13AC0
150	ASR0300U S14 F07F10 Y S22 A	AU30KD0	ADA0130U F05F07 Y S17/S14 A	BU13AC0
200	ASR0300U S14 F07F10 Y S22 A	AU30KD0	ADA0130U F05F07 Y S17/S14 A	BU13AC0
250	ASR0850U S14 F10F12 Y S27 A	AU85KG0	ADA0300U F07F10 Y S22 A	BU30AD0
300	ASR0850U S14 F10F12 Y S 27 A	AU85KG0	ADA0500U F10 Y S22 A	BU50AF0

Technical data for liquids +20 to +80 °C with control pressure 6 bar

Order example	1	2	3	4	5	6	7	8	9	10	
Code	D451		Order data butterfly valve (page 3)								BU08KCO

Actuator dimensions - GEMÜ D451 with pneumatic actuator ADA/ASR [mm]



ADA/ASR	0020U			0040U		0080U	0130U	0200U	0300U	0500U	0850U
ISO 5211	F03/F05	F04	F05	F04	F05	F05	F05	F07	F07	F10	F10
Octagonal	9	14		14		17	17	17	22	22	27
Air connector	G1/4			G1/4		G1/4	G1/4	G1/4	G1/4	G1/4	G1/4
A	145			158		177	196	225	273	304	372
A1	163			195		217	258	299	348,5	397	473
B	96			115		137	147	165	182	199	221
C	76			91		111	122	135.5	152.5	173	191.5
D	48			56		66	71	78	86	96	106
E	34			45		55	60	70	80	85	98
ØT	25	35		35		55	55	55	70	70	85
U	10	12		12		19	22	23	24	32	39
<b>Weight [kg]</b>											
ADA	1.4			2.1		3.0	3.8	5.6	8.5	11.2	16.9
ASR	1.5			2.3		3.7	4.8	7.3	10.8	15.4	22.2

## Technical data - Motorized GEMÜ actuators

### Min. / Max. ambient temperature

-10 to +60° C

### Special feature

Standard manual override

### Weight

Actuator version 2070	4.6 kg
Actuator version 4100/4200	11.0 kg
Actuator version 6400	14.0 kg

### Actuator materials

Actuator version	2070	4100, 4200, 6400
Body	ABS	Aluminium
Optical position indicator	PPR natural	PMMA

### Protection class to EN 60529

IP 65

### Rating

Actuator version 2070, 4100, 4200	continuously rated
Actuator version 6400	70 % rated

### Operating times

Actuator version 2070	approx. 15 s
Actuator version 4100	approx. 20 s
Actuator version 4200	approx. 16 s
Actuator version 6400	approx. 29 s

### Directives

EC Machinery Directive 98/37/EC, annex II B  
EC EMC directive 89/336/EEC

### Travel

Nominal travel	90°
Maximum travel	93°
Setting range limit switch Min.	0 - 20°
Setting range limit switch Max.	70 - 93°

### Power supply

Rated voltage	24 V DC / 24 V, 120 V, 230 V AC
Rated frequency (for AC rated voltage)	50/60 Hz
Voltage tolerance	+10% / -15%

### Power and current consumption [W]

Actuator version (Code)	Functional module A0, AE, AP, E1, E2		
	24 V DC	120 V AC	230 V AC
2070, 4100, 4200	96	160	161
6400	120	170	185

### Correlation actuator version / nominal size

DN	Actuator version (Code)			
	2070	4100	4200	6400
50/65 - 125	X	-	-	-
150	-	X	-	-
200 - 250	-	-	X	-
300	-	-	-	X

**Information: For connection and wiring diagrams for motorized GEMÜ actuators see data sheet**

Actuator version code 2070, 4100, 4200, 6400 - data sheet GEMÜ 9468



## 10 Order data - GEMÜ D458 with motorized GEMÜ actuator

11 Voltage / Frequency	Code
24 V DC	C1*
24 V AC 50/60 Hz	C4
120 V AC 50/60 Hz	G4
230 V AC 50/60 Hz	L4
* only functional module 00, 0E and 0P	

12 Functional module	Code
OPEN / CLOSE control with relay, not reversible	00*
OPEN / CLOSE control with 2 additional potential-free limit switches, with relay, not reversible	0E*
OPEN / CLOSE control with potentiometer output, with relay, not reversible	0P*
OPEN/CLOSE control	A0**
OPEN/CLOSE control with 2 additional potential-free limit switches	AE**
OPEN/CLOSE control with potentiometer output	AP**
Control module; for external set value 0-10V DC	E1**
Control module; for external set value 4-20 mA	E2**
* overall height 1      ** overall height 2	

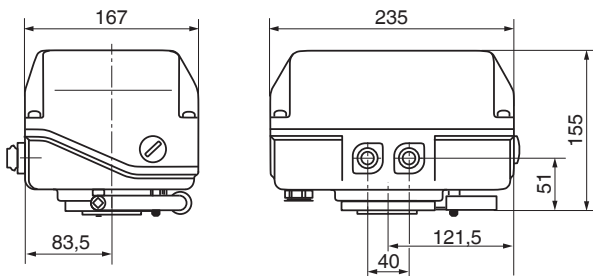
13 Actuator version	Code
DN 50/65-125 Torque 70 Nm, operating time 15 s; supply voltage C1,C4,G4,L4	2070
DN 150 Torque 100 Nm, operating time 20 s; supply voltage C1,C4,G4,L4	4100
DN 200-250 Torque 200 Nm, operating time 16 s; supply voltage C1,C4,G4,L4	4200
DN 300 Torque 400 Nm, operating time 29 s; supply voltage C1,C4,G4,L4	6400

Technical data for liquids +20 ... +80 °C

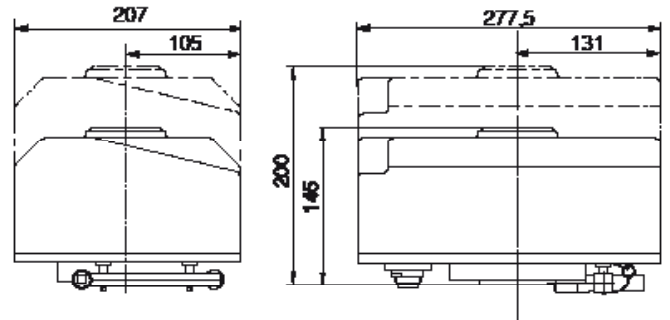
Order example	1	2	3	4	5	6	7	8	11	12	13
Code	D458	Order data butterfly valve (page 3)							C1	A0	2070

## Actuator dimensions - GEMÜ D458 with motorized GEMÜ actuator [mm]

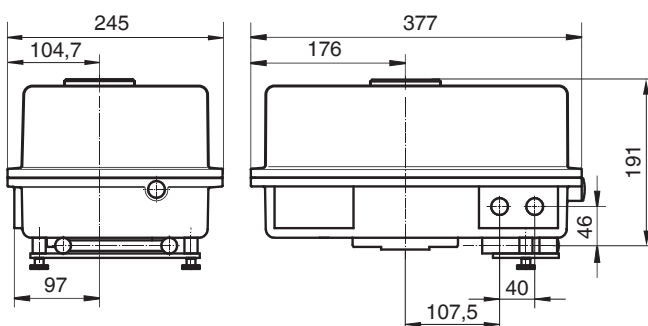
### Actuator version 2070



### Actuator version 4100, 4200



### Actuator version 6400



- full line  $\triangleq$  overall height 1, version functional module code 00, 0E, 0P
- - - - broken line  $\triangleq$  overall height 2 version functional module code A0, AE, AP, E2, E1

## Technical data - Motorized J+J actuators

### Min. / Max. ambient temperature

-20 to +70° C

### Protection class to EN 60529

IP 67 - J4C55

IP 65 - J4C14, J4C30

### Special feature

Standard manual override

### Weight

Actuator version J4C55 2.3 kg

Actuator version J4C14 / J4C30 5.2 kg

### Power supply

#### Rated voltage

Version J4C14/30 (C5) 24 V AC/DC (± 5%)

Version J4C20/35/55 (R5) 12 - 24 V AC/DC (± 5%)

All versions (S5) 85 - 240 V AC/DC (0/+ 5%)

Rated frequency (at AC rated voltage) 50/60 Hz

Rating 75 %

### Correlation actuator version / nominal size

DN	Actuator version (Code)		
	J4C55 55 Nm	J4C14 140 Nm	J4C30 300 Nm
50/65 - 100	X	-	-
125 - 200	-	X	-
250	-	-	X
300	not available		

Technical data for EPDM, +20 °C, medium water

### Operating times (± 10%)

Actuator version	24 V AC/DC Code C5	12-24 V AC/DC Code R5	85-240 V AC/DC Code S5
J4C55	-	17 s	13 s
J4C14	58 s	-	58 s
J4C30	58 s	-	58 s

## 10 Order data - GEMÜ D458 with motorized J+J actuator

### 11 Voltage / Frequency Code

24 V (voltage range LOW) C5

12 - 24 V (voltage range LOW) R5

85 - 240 V (voltage range HIGH) S5

### 12 Functional module Code

OPEN/CLOSE control with 2 additional potential-free limit switches AE

Potentiometer AP

Control module; for external set value 4-20 mA E2

Control module; for external set value 0-10V DC E1

With BSR accupack - NC AE1

With BSR accupack - NO AE2

### 13 Actuator version Code

DN 50/65 - 100 (torque 55 Nm) J4C55

DN 125 - 200 (torque 140 Nm) J4C14

DN 250 (torque 300 Nm) J4C30

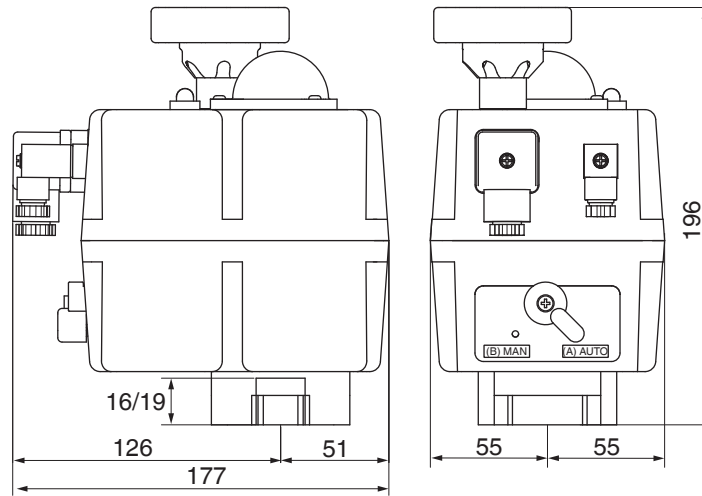
Technical data for liquids +20 ... +80 °C

### Order example

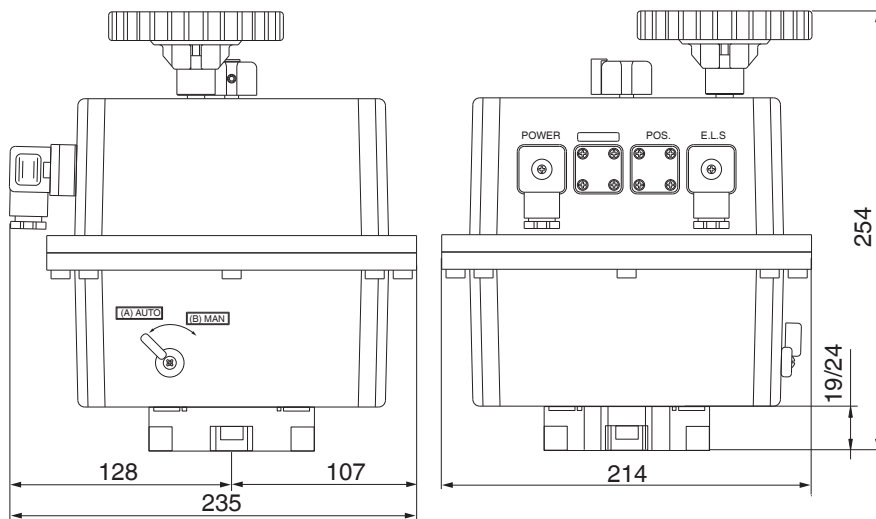
	1	2	3	4	5	6	7	8	11	12	13	
Code	D458	Order data butterfly valve (page 3)						R5	AE	J4C55		

Actuator dimensions - GEMÜ D458 with motorized J+J actuator [mm]

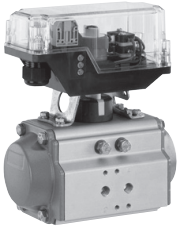
Actuator version - J4C55



Actuator version - J4C14 / J4C30



## Instrumentation for quarter turn valves



GEMÜ ES2  
Electrical position  
indicator  
on pneum. actuator



GEMÜ 1436 cPos  
Positioner and process controller  
on pneum. actuator



GEMÜ 1435 ePos  
Positioner  
on pneum. actuator



GEMÜ 4221  
Combi switchbox with  
integrated pilot valve  
on pneum. actuator

## Further butterfly valves in metal

GEMÜ Victoria  
DN 25 - 600

DN 40 - 900



GEMÜ 487  
GEMÜ D487



GEMÜ 488  
GEMÜ D488



GEMÜ 481  
GEMÜ D481



GEMÜ 497



GEMÜ 498



GEMÜ 491

For further butterfly valves, accessories and other products, please see our Product Range catalogue and Price List.  
Contact GEMÜ.

**GEMÜ**® VALVES, MEASUREMENT  
AND CONTROL SYSTEMS

