

Butterfly Valve, Plastic

Construction

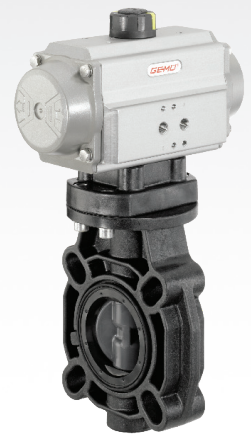
The GEMÜ D450, D451, D457 and D458 butterfly valves are available in nominal sizes DN 50 - 300. They are designed to provide the best possible flow rates and offer excellent corrosion protection. Butterfly discs which minimize pressure loss are available in various materials providing the optimal solution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

Features

- Max. operating pressure: DN 50 - DN200, 90 psi;
DN 250 - DN300, 150 psi
- 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 safety lock to avoid undesired operation.



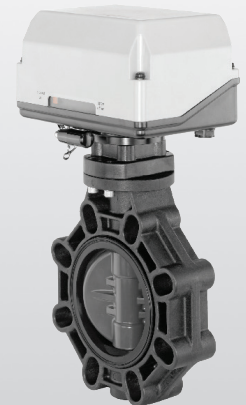
GEMÜ D450



GEMÜ D451

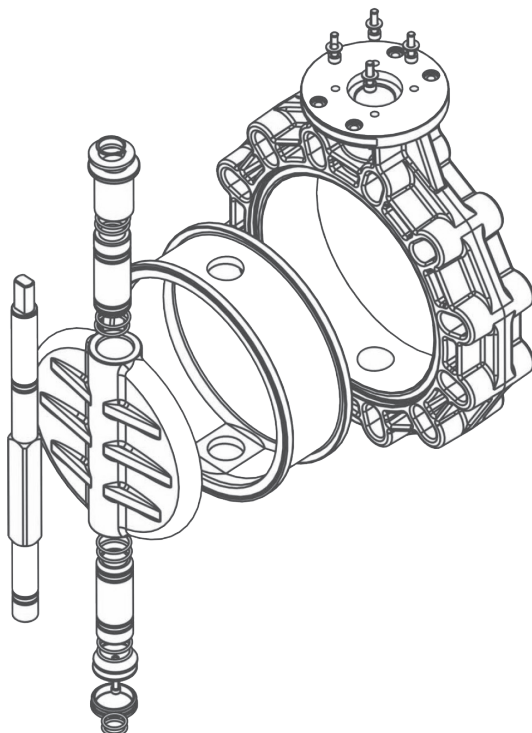


GEMÜ D457



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 -4 to 140 °F

Max. perm. temp. of working medium

32 to 194 °F (dependent on disc material)

Materials

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

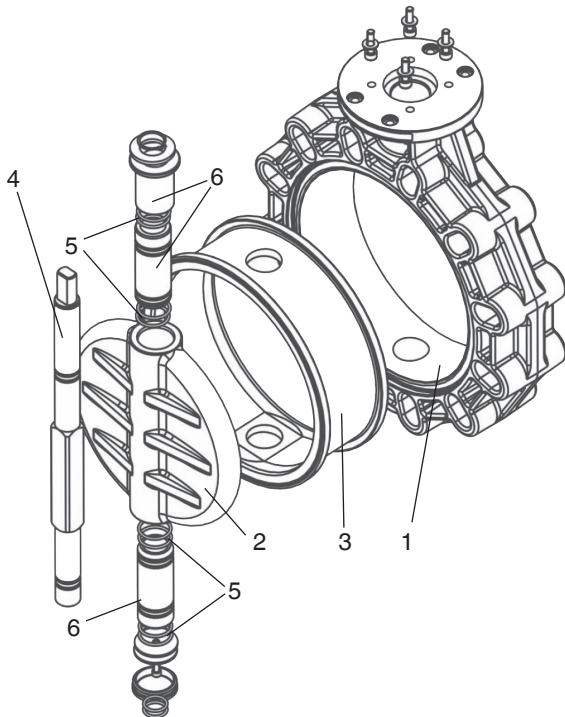
Torques [in-lbs] / Cv values [gpm]

	DN 50/65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300
Cv value	126	282	581	826	1137	2317	3664	5515
Torque	221	248	310	752	973	973	1594	2522

Pressure / temperature correlation for plastic

Medium temperature [°F]		-40	-22	-4	14	32	41	50	68	77	86	104	122	140	158	176	194	212	230	248
Disc material	Code	Permissible operating pressure [psi]																		
PVC-U	1	-	-	-	-	-	-	150	150	150	120	90	51	22	-	-	-	-	-	-
PVC-C	2	-	-	-	-	-	-	150	150	150	123	94	75	51	36	22	-	-	-	-
PP-H	G5	-	-	-	-	-	150	150	150	150	123	105	80	60	39	22	11.6	-	-	-

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

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

2 Nominal size	Code
DN 50 NPS 2"	50
DN 65 NPS 2 1/2"	65
DN 80 NPS 3"	80
DN 100 NPS 4"	100
DN 125 NPS 5"	125
DN 150 NPS 6"	150
DN 200 NPS 8"	200
DN 250 NPS 10"	250
DN 300 NPS 12"	300

8 Seat (liner) material	Code
FPM	4
EPDM	14

3 Body configuration	Code
Wafer	W

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

4 Operating pressure	Code
90 psi (DN 250 - 300)	1
150 psi (DN 50 - 200)	2

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

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

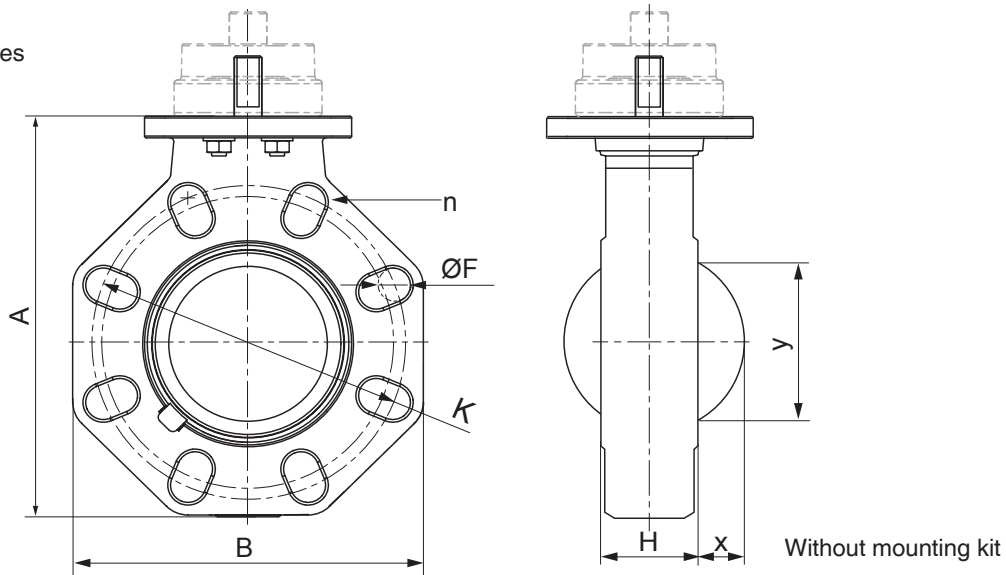
6 Body material	Code
PP (GF)	5

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

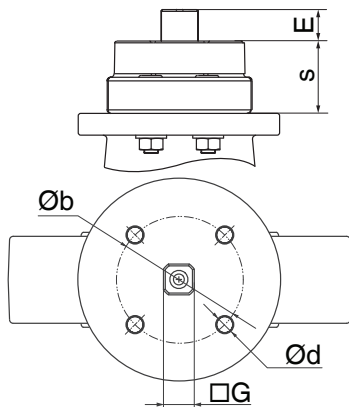
Body dimensions [inch]

n = Number of bolt holes



DN	Inch	A	B	F	H	K	x	y	n
50/65	2 1/2"	7.48	6.14	0.71	1.81	4.92 - 5.71	0.33	1.73	4
80	3"	8.70	7.48	0.75	1.93	5.91 - 6.69	0.61	2.60	8
100	4"	9.61	8.35	0.75	2.20	7.09 - 7.56	0.89	3.35	8
125	5"	10.75	9.37	0.87	2.52	7.48 - 8.46	1.12	4.13	8
150	6"	11.93	10.43	0.94	2.83	9.45	1.54	5.24	8
200	8"	14.41	12.6	0.91	2.87	10.63 - 11.73	2.36	7.11	8
250	10"	17.72	17.83	1.14	4.49	13.19 - 14.25	2.42	8.35	12
300	12"	21.46	18.78	1.14	4.49	15.35 - 17.01	3.60	10.98	12

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



10 Operator flange - Parallel square

DN	□G	E	s	Øb	Ød	Weight [lbs]	Code
50/65	0.67	0.75	1.57	2.76	0.35	2.6	F07 L17
80	0.67	0.75	1.57	2.76	0.35	3.1	F07 L17
100	0.67	0.75	1.57	2.76	0.35	4.2	F07 L17
125	0.67	0.87	1.57	2.76	0.35	5.9	F07 L17
150	0.67	0.87	1.57	2.76	0.35	8.2	F07 L17
200	0.67	0.75	2.17	4.02	0.43	14.8	F07 F10 L17
	0.87	0.87	2.17	4.02	0.43	14.8	F10 L22
250	0.87	0.87	2.17	4.02	0.43	29.1	F10 L22
	0.87	0.87	2.2	4.02	0.43	39.7	F10 L22
300	1.06	1.14	2.2	4.02	0.43	39.7	F10 L27

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

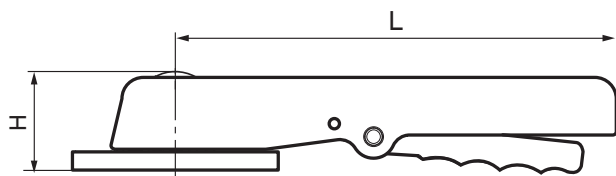
DN	Order key	DN	Order key
50/65	D450 65S01 F07 L17	200	D450 200S01 F07/F10 L22
80 - 100	D450 80S01 F07 L17	250 - 300	D450 250S01 F10/F12 L22
125 - 150	D450 125S01 F07 L17	300	D450 300S01 F10/F12 L27**
200	D450 200S01 F07/F10 L17*		

* 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 [inch]

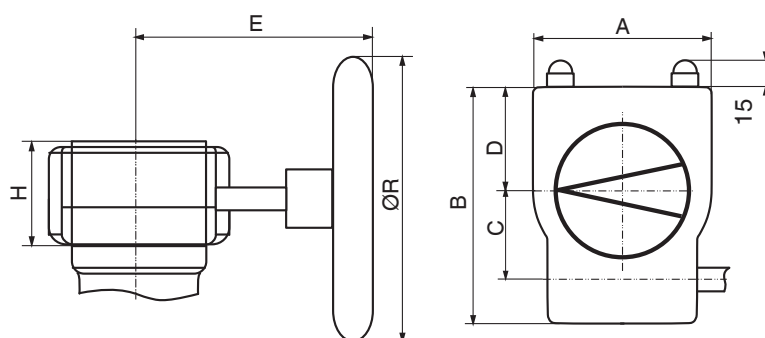
Hand lever



10 Operator size				
DN	H	L	Weight [lbs]	Code
50/65	2.05	8.66	0.4	PHL220H10
80	2.05	9.65	0.7	PHL245H12
100	2.13	9.65	0.7	PHL245H16
125	2.13	12.60	0.9	PHL320H20
150	2.28	12.60	0.9	PHL320H20
200	2.76	15.39	0.9	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 [lbs]	Code		
50/65-125	GB232 06 F05-F07 D17 PS100	3.15	4.49	1.67	1.89	4.13	2.09	3.94	10.0	1.8	GB232		
150	GB232 06 F05-F07 D17 PS160	3.15	4.49	1.67	1.89	6.1	2.32	6.30	10.0	2.0	GB232		
200 - 300	GB232 08 F07-F10 D22 PS200	3.94	5.16	1.97	2.20	6.69	2.64	7.87	9,30	3.1	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

87 - 116 psi

Temperature range

-22 ... 212 °F, other temperatures on request

Angle of rotation

±5° adjustable (85° - 95°)

90°

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

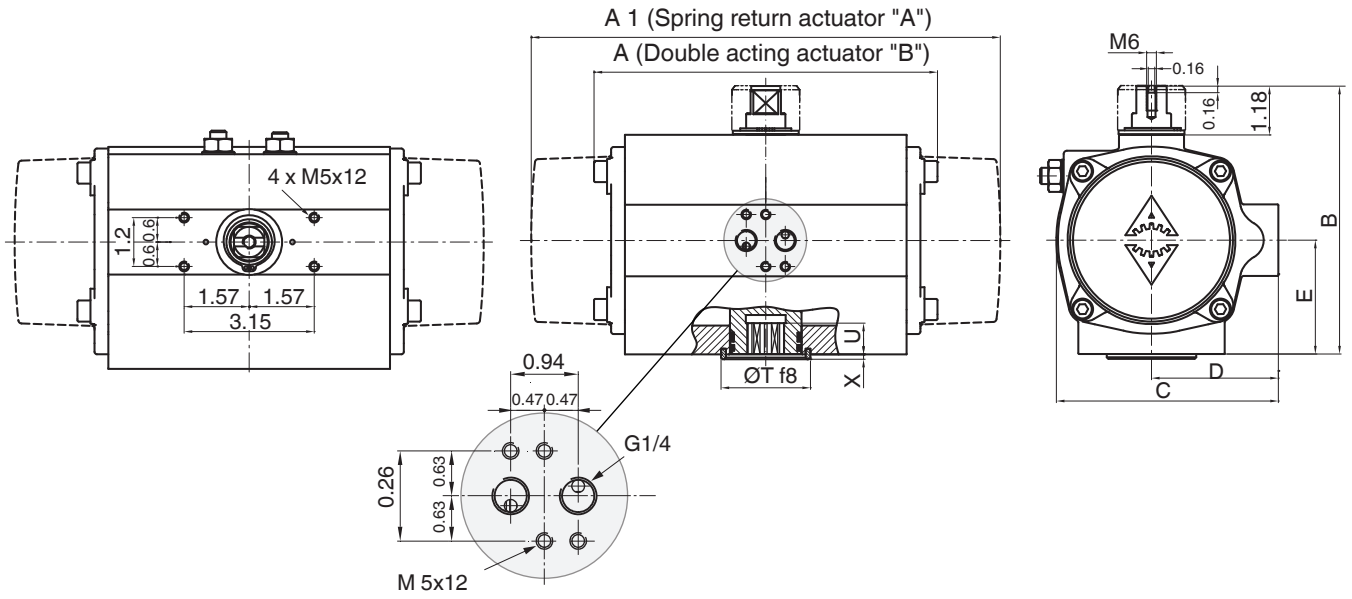
10 Actuator size*

DN	Single acting ASR	Code	Double acting ADA	Code
50/65	ASR0080U S14 F05F07 Y S17/S14 A	AU08KCO	ADA0080U F05F07 Y S17/S14 A	BU08ACO
80	ASR0080U S14 F05F07 Y S17/S14 A	AU08KCO	ADA0080U F05F07 Y S17/S14 A	BU08ACO
100	ASR0130U S14 F05F07 Y S17/S14 A	AU13KCO	ADA0080U F05F07 Y S17/S14 A	BU08ACO
125	ASR0200U S14 F07F10 Y S17/S14 A	AU20KE0	ADA0130U F05F07 Y S17/S14 A	BU13ACO
150	ASR0300U S14 F07F10 Y S22 A	AU30KD0	ADA0130U F05F07 Y S17/S14 A	BU13ACO
200	ASR0300U S14 F07F10 Y S22 A	AU30KD0	ADA0130U F05F07 Y S17/S14 A	BU13ACO
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 68 to 176 °F with control pressure 87 psi

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 [inch]



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	G1/4
A	5.71		6.22		6.97	7.72	8.86	10.75	11.97	14.65	14.65
A1	6.42		7.68		8.54	10.16	11.77	13.72	15.63	18.62	18.62
B	3.78		4.53		5.39	5.79	6.50	7.17	7.83	8.70	8.70
C	2.99		3.58		4.37	4.80	5.33	6.00	6.81	7.54	7.54
D	1.89		2.20		2.60	2.80	3.07	3.39	3.78	4.17	4.17
E	1.34		1.77		2.17	2.36	2.76	3.15	3.35	3.86	3.86
ØT	0.98	1.38		1.38		2.17	2.17	2.17	2.76	2.76	3.35
U	0.39	0.47		0.47		0.87	0.91	0.94	1.26	1.54	1.54
Weight [lbs]											
ADA	3.1		4.6		6.6	8.4	12.3	18.7	24.7	37.3	37.3
ASR	3.3		5.1		8.2	10.6	16.1	23.8	33.9	48.9	48.9

Technical data - Motorized GEMÜ actuators

Min. / Max. ambient temperature

14 to 140 °F

Special feature

Standard manual override

Weight

Actuator version 2070	10.1 lbs
Actuator version 4100/4200	24.2 lbs
Actuator version 6400	30.9 lbs

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	

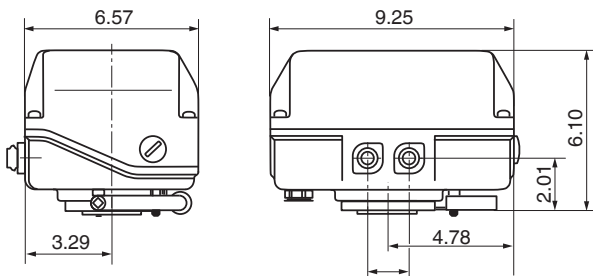
13 Actuator version	Code
DN 50/65-125 Torque 619 in-lbs, operating time 15 s; supply voltage C1,C4,G4,L4	2070
DN 150 Torque 886 in-lbs, operating time 20 s; supply voltage C1,C4,G4,L4	4100
DN 200-250 Torque 1770 in-lbs, operating time 16 s; supply voltage C1,C4,G4,L4	4200
DN 300 Torque 3540 in-lbs, operating time 29 s; supply voltage C1,C4,G4,L4	6400

Technical data for liquids 68 ... 176 °F

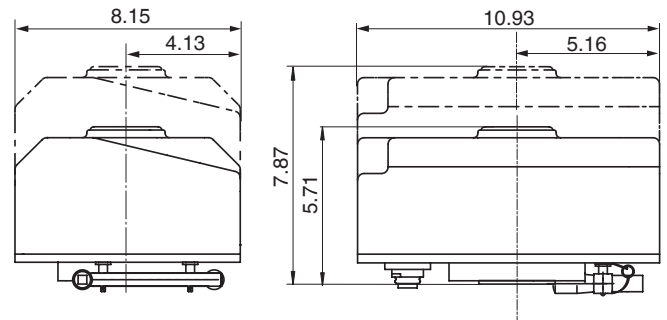
Order example	1	2	3	4	5	6	7	8	11	12	13
Code	D458	Order data butterfly valve (page 3)							C1	A0	2070

Actuator dimensions - GEMÜ D458 with motorized GEMÜ actuator [inch]

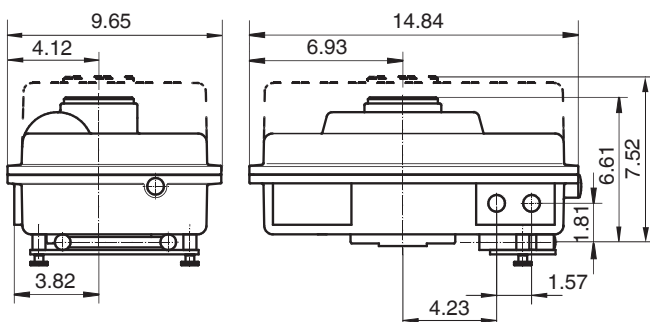
Actuator version 2070



Actuator version 4100, 4200



Actuator version 6400



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

Technical data - Motorized J+J actuators

Min. / Max. ambient temperature

-4 to 158 °F

Protection class to EN 60529

IP 67 - J4C55

IP 65 - J4C14, J4C30

Special feature

Standard manual override

Weight

Actuator version J4C55	5.1 lbs
Actuator version J4C14 / J4C30	11.5 lbs

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 487 in-lbs	J4C14 1240 in-lbs	J4C30 2656 in-lbs
50/65 - 100	X	-	-
125 - 200	-	X	-
250	-	-	X
300	not available		

Technical data for EPDM, 68 °F, 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 487 in-lbs)	J4C55
DN 125 - 200 (torque 1240 in-lbs)	J4C14
DN 250 (torque 2656 in-lbs)	J4C30

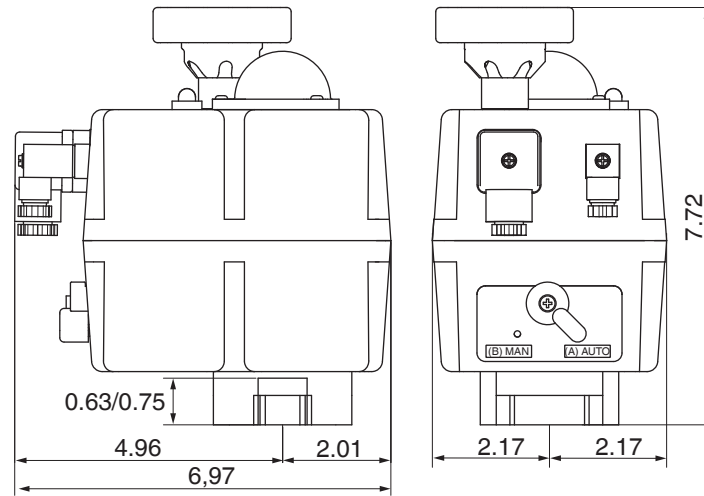
Technical data for liquids 68 ... 176 °F

Order example

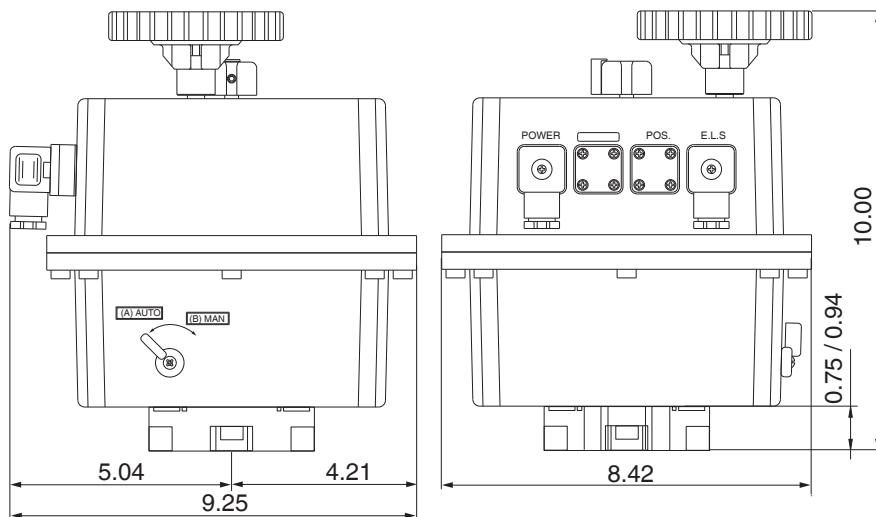
Code	1	2	3	4	5	6	7	8	11	12	13	
	D458	Order data butterfly valve (page 3)						R5	AE	J4C55		

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

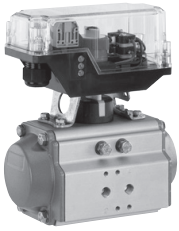
Actuator version - J4C55



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



GEMÜ 487
GEMÜ D487



GEMÜ 488
GEMÜ D488



GEMÜ 481
GEMÜ D481



GEMÜ 497

DN 40 - 900



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

