

Lug type butterfly valves,  
for shut-off functions

- in open and closed cold and hot water systems
- for switching heating and cooling machines on and off



## Overview of types

Type	DN [mm]	$k_{Vmax}^1$ [m <sup>3</sup> /h]	Type	DN [mm]	$k_{Vmax}^1$ [m <sup>3</sup> /h]
D625NL	25	45	D6200NL	200	2900
D632NL	32	55	D6250NL	250	4400
D640NL	40	70	D6300NL	300	7300
D650NL	50	90	D6350NL	350	10900
D665NL	65	180	D6400NL	400	14200
D680NL	80	300	D6450NL	450	18800
D6100NL	100	580	D6500NL	500	24100
D6125NL	125	820	D6600NL	600	37300
D6150NL	150	1600	D6700NL	700	42800

<sup>1)</sup> according to VDI 2176

## Technical data

<b>Functional data</b>	Media	Cold and warm water. water with max 50% volume of glycol
	Media temperature	-20 °C ... +120 °C
	Rated pressure $p_s$	1600 kPa
	Flow rate $k_{VS}$	See «Overview of types»
	Leakage rate	A, tight (EN 12266-1)
	Pipe connectors	DN 25 ... DN 150 DN 200 ... DN 700
	Suitable connecting flanges	Flange PN 10 / PN 16 (according to ISO 7005-2) Flange PN 16 (according to ISO 7005-2)
	Angle of rotation	According to ISO 7005-2 and EN 1092-2
	Installation position	90° ↺
	Maintenance	Vertical to horizontal (in relation to the stem) Maintenance-free
<b>Materials</b>	Fitting	EN-JS1030 (GGG 40), Epoxy powder-coating (RAL 5002)
	Disc	DIN/EN 1.4301 / AISI SS 304 (Stainless steel)
	Stem	DIN/EN 1.4005 / AISI SS 416 (Stainless steel)
	Seat	EPDM
	Stem seal	EPDM O-ring
	Stem bearing	RPTFE
<b>Dimensions / weights</b>	See «Dimensions and weights» on pages 3 and 4	
<b>Actuation</b>	See Overview Valve-actuator combinations	

## Safety notes



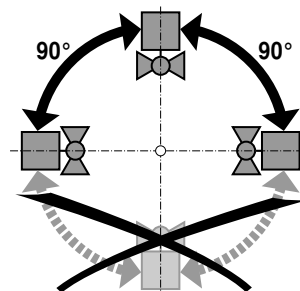
- The butterfly valve has been designed for use in stationary heating, ventilation and air conditioning systems and is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- It may only be installed by suitably trained personnel. Any legal regulations or regulations issued by authorities must be observed during assembly.
- The butterfly valve does not contain any parts that can be replaced or repaired by the user.
- The butterfly valve may not be disposed of as household refuse. All locally valid regulations and requirements must be observed.
- When determining the flow rate characteristic of final controlling elements, the recognised directives must be observed.
- In order to avoid water hammers in the piping system, the disc is to be opened and closed slowly.

## Product features

- Mode of operation** The butterfly valve is opened or closed completely by an open-close rotary actuator. Continuous rotary actuators are controlled by a commercially available controller and move the valve discs into any position desired.  
The disc made of stainless steel is pressed into the soft-sealing EPDM seat by a rotary movement and ensures leakage rate A (tight).  
The flow rate losses are slight in open position and the  $k_{vs}$  value is high.
- Manual override** Manual throttling or shut-off can be carried out with a lever or a worm gear (see «Accessories»).
- With lever (DN 25 ... 150): Adjustable in 10 ratchet steps with position indication (0 = 0° ↯; 9 = 90° ↯).
  - With worm gear (DN 25 ... 700): Steplessly adjustable (self-locking) with position indication.

## Installation instructions

- Recommended installation positions** The butterfly valves may be mounted from **vertical to horizontal**.  
The butterfly valves may not be installed in a hanging position i.e. with the stem pointing downwards.



- Water quality requirements** The water quality requirements specified in VDI 2035 must be adhered to.

- Maintenance**
- Butterfly valves, rotary actuators and mechanical accessories are maintenance-free.
  - Before any kind of service work is carried out on actuator sets of this type, it is essential to isolate the rotary actuator from the power supply (by unplugging the power lead). Any pumps in the part of the piping system concerned must also be switched off and the appropriate isolating fittings closed (allow everything to cool down first if necessary and reduce the pressure in the system to atmospheric).
  - The system must not be returned to service until the butterfly valve and the rotary actuator have been properly reassembled in accordance with the instructions and the pipework has been refilled in the proper manner.

### Recommendation

Butterfly valves should drive once per month a full cycle.

## Accessories

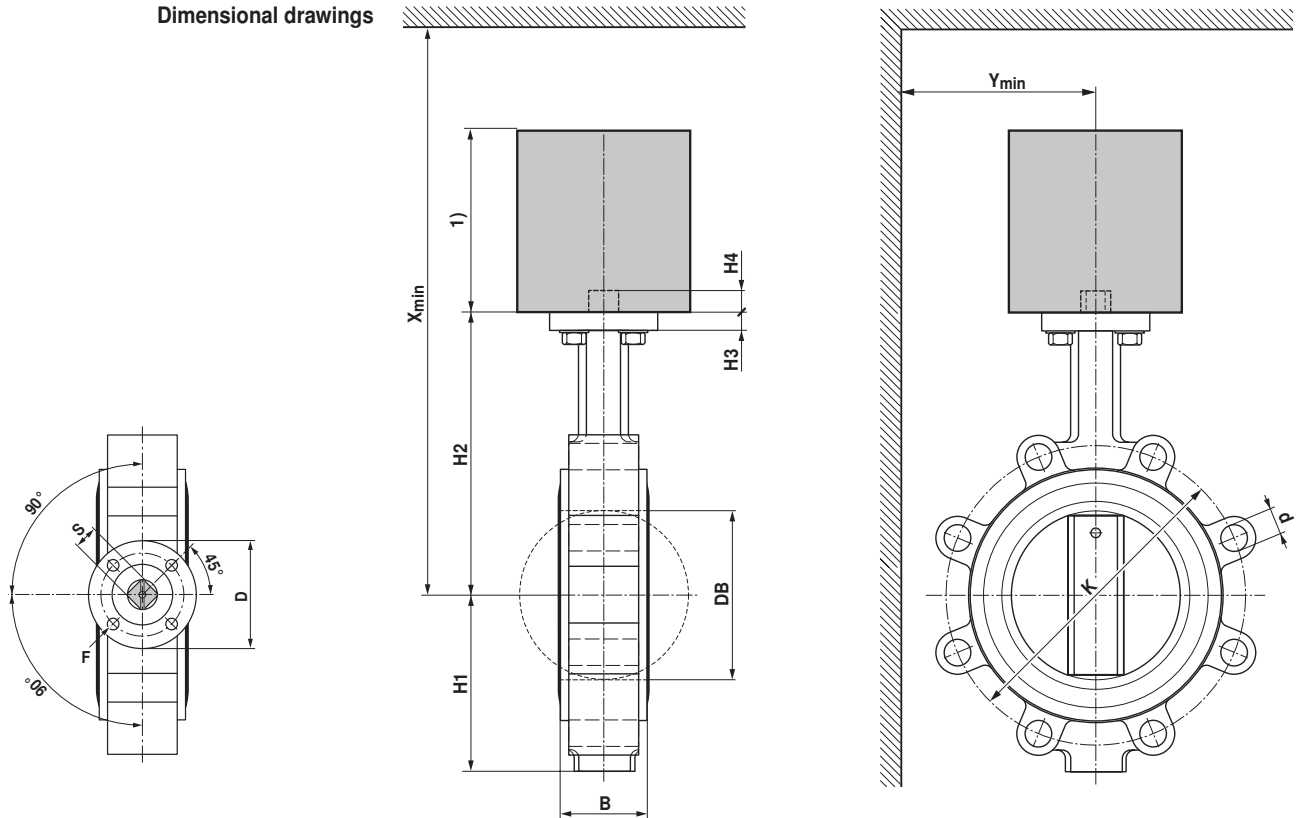
Mechanical accessories	Worm gear <sup>1)</sup>		Lever		for butterfly valves DN
	Type	Weight [kg]	Type	Weight [kg]	
	ZD6N-S100	4.3	ZD6N-H100	0.4	25 ... 100
	ZD6N-S150	4.6	ZD6N-H150	0.7	125 ... 150
	ZD6N-S200	10.8			200
	ZD6N-S250	10.9			250
	ZD6N-S350	11.9			300 ... 350
	ZD6N-S400	26.6			400
	ZD6N-S450	27.0			450
	ZD6N-S500	40.9			500
	ZD6N-S600	53.7			600
	ZD6N-S700	94.9			700

<sup>1)</sup> unsuitable for outdoor applications

## Dimensions [mm]

## DN 25 ... DN 350

Dimensional drawings



DN [mm]	Mounting flange <sup>2)</sup>					H1 [mm]	H2 [mm]	B [mm]	DB [mm]	PN 10 / PN 16		PN 16		Weight [kg]
	D [mm]	F [mm]	S [mm]	H3 [mm]	H4 [mm]					K [mm]	d [mm]	K [mm]	d [mm]	
25	65	F05	14	11	13	53	90	32	30	85	4 x M12			1.1
32	65	F05	14	11	13	60	100	33	35	100	4 x M16			1.5
40	65	F05	14	11	13	68	119	33	42	110	4 x M16			1.6
50	65	F05	14	11	13	72	133	43	52	125	4 x M16			2.4
65	65	F05	14	11	13	81	147	46	64	145	4 x M16			2.9
80	65	F05	14	11	13	96	158	46	78	160	8 x M16			4.2
100	65	F05	14	11	13	106	170	52	103	180	8 x M16			4.9
125	90	F07	17	15	19	122	194	56	122	210	8 x M16			7.2
150	90	F07	17	15	19	140	202	56	155	240	8 x M20			8.8
200	90	F07	17	15	19	172	240	60	202			295	12 x M20	14.2
250	125	F10	22	15	24	206	268	68	250			355	12 x M24	23.8
300	125	F10	22	15	24	244	316	78	301			410	12 x M24	33.2
350	125	F10	22	15	24	267	361	78	333			470	16 x M24	44.2

DN [mm]	SR..A		SR..P		GR..A		DGR..A		DR..		SY1		SY2 / SY3		SY4 / SY5		SRF (ARF)	
	X <sub>min</sub> [mm]	Y <sub>min</sub> [mm]	X <sub>min</sub> [mm]	Y <sub>min</sub> [mm]	X <sub>min</sub> [mm]	Y <sub>min</sub> [mm]	X <sub>min</sub> [mm]	Y <sub>min</sub> [mm]	X <sub>min</sub> [mm]	Y <sub>min</sub> [mm]	X <sub>min</sub> [mm]	Y <sub>min</sub> [mm]	X <sub>min</sub> [mm]	Y <sub>min</sub> [mm]	X <sub>min</sub> [mm]	Y <sub>min</sub> [mm]	X <sub>min</sub> [mm]	Y <sub>min</sub> [mm]
25	220	150	320	150							320	150					240	150
32	240	150	340	150							340	150					260	150
40	250	160	350	160							350	160					280	160
50	270	160	370	160							370	160					290	160
65	280	170	380	170							380	170					310	170
80	290	180	390	180	300	180					390	180					310	180
100	300	190			320	190					410	190						
125					340	210	400	210	500	210			530	210				
150							400	220	510	220			540	220				
200													580	250				
250															630	280		
300															680	310		
350															730	340		

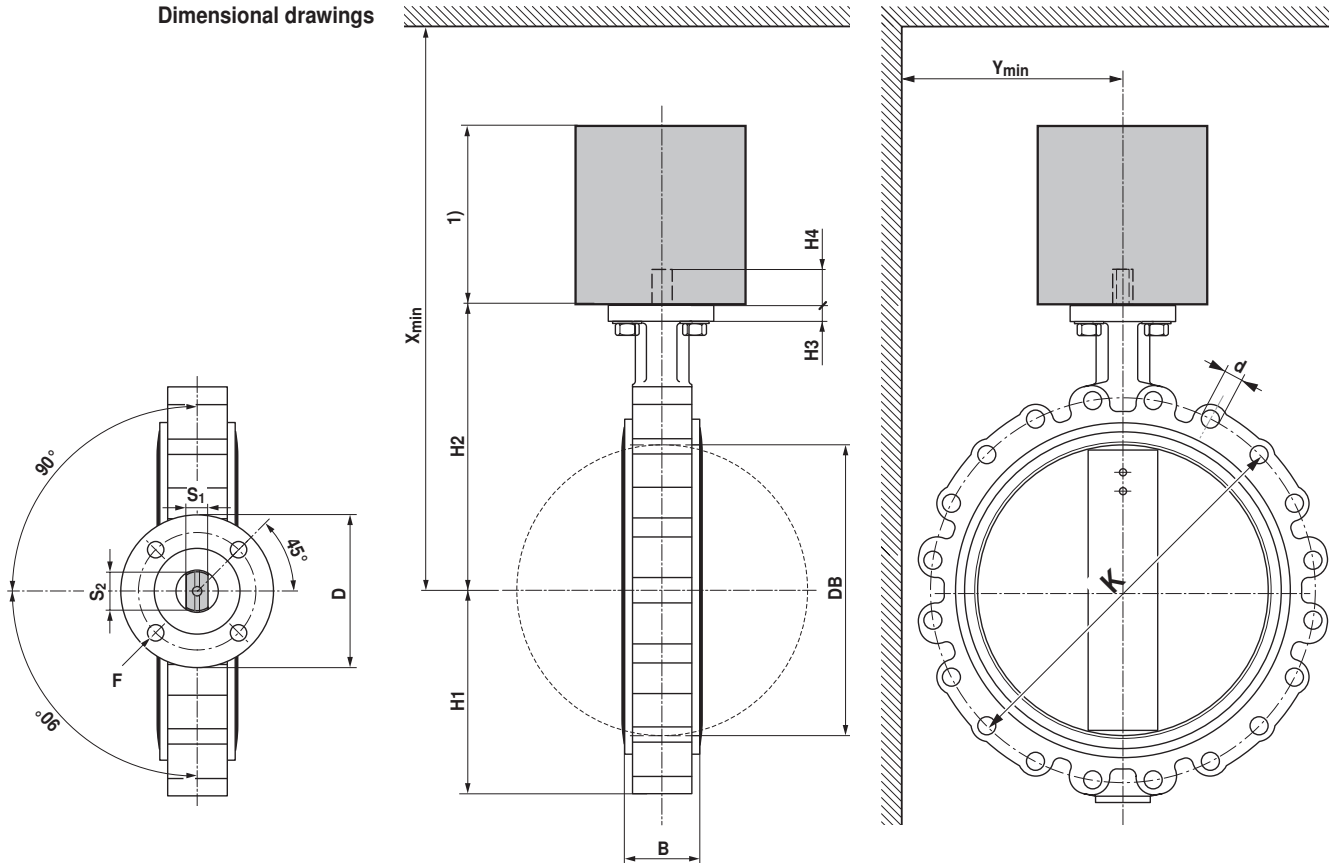
1) The actuator dimensions can be found on the respective actuator data sheet

2) according to ISO 5211

## Dimensions [mm]

## DN 400 ... DN 700

Dimensional drawings



DN [mm]	Mounting flange <sup>2)</sup>						PN 16				K [mm]	d [mm]	Weight [kg]
	D [mm]	F [mm]	S <sub>1</sub> [mm]	S <sub>2</sub> [mm]	H <sub>3</sub> [mm]	H <sub>4</sub> [mm]	H <sub>1</sub> [mm]	H <sub>2</sub> [mm]	B [mm]	DB [mm]			
400	175	F14	22	28.2	20	48	306	402	102	391	525	16 x M27	90
450	175	F14	27	36.2	20	48	328	420	114	442	585	20 x M27	121
500	175	F14	27	36.2	22	48	358	474	127	493	650	20 x M30	154
600	210	F16	36	48.2	22	48	454	559	154	594	770	20 x M33	243
700	300	F25	46	60.2	33	66	532	622	165	695	840	24 x M33	319

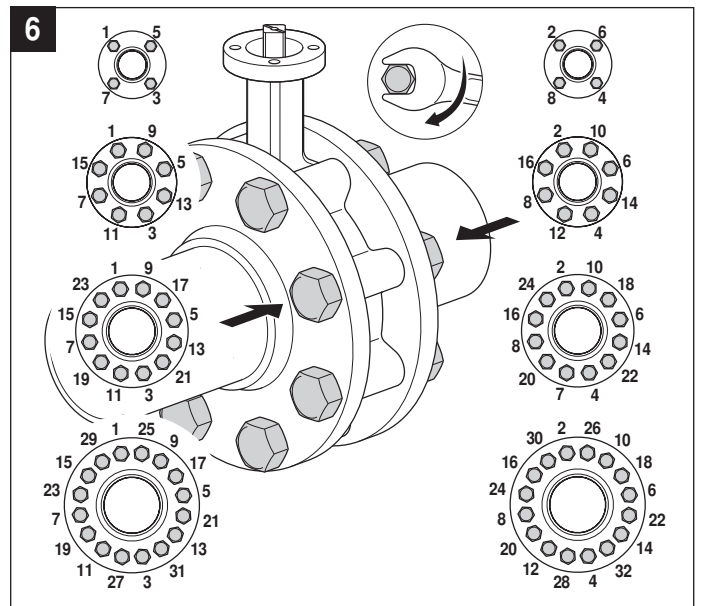
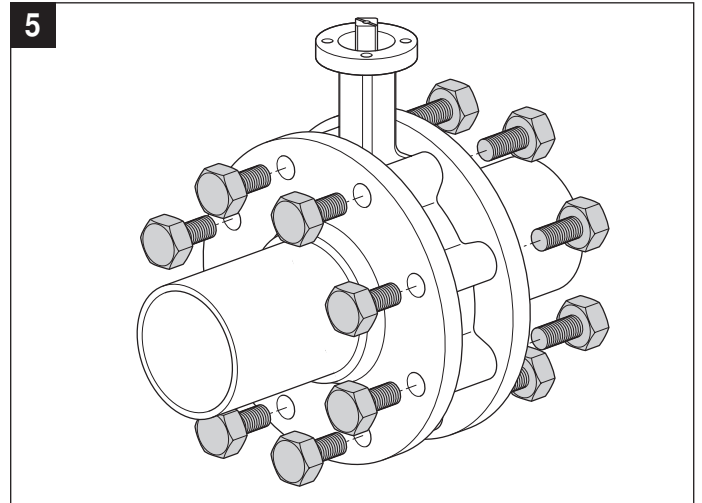
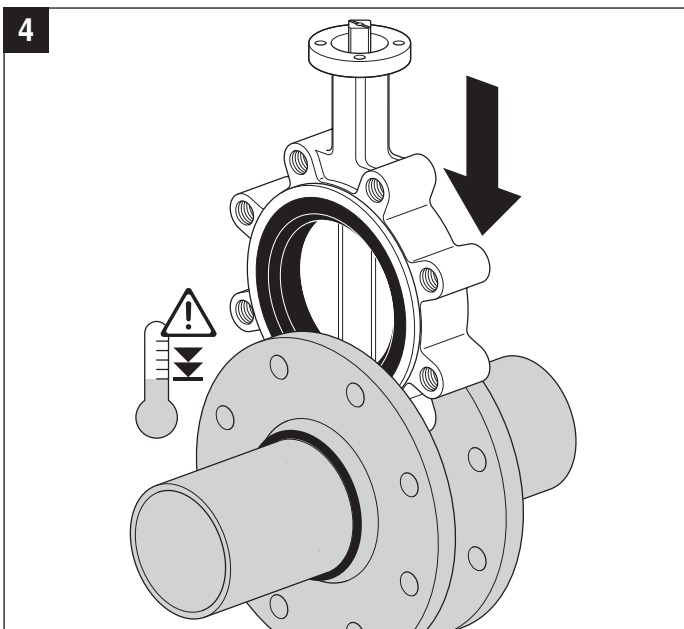
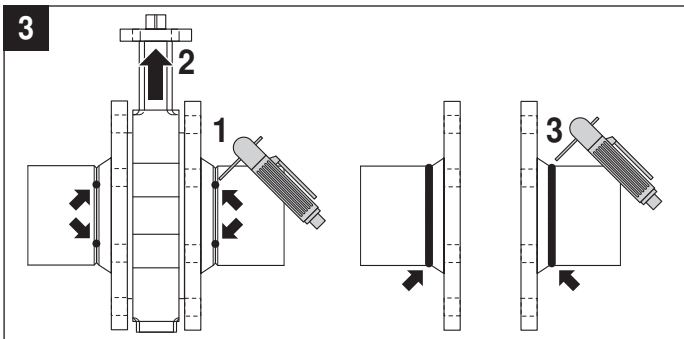
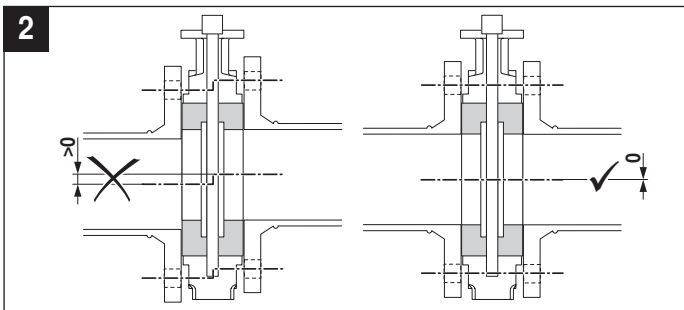
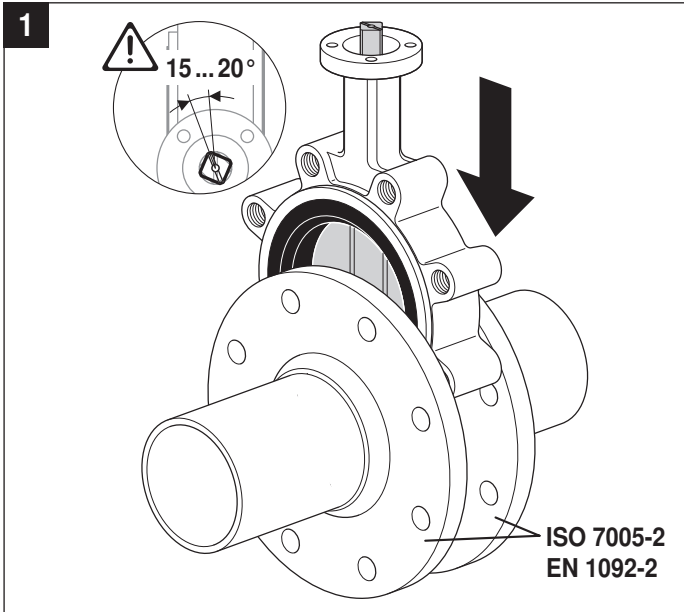
DN [mm]	SY4		SY5		SY6		SY7		SY8		SY9		SY10		SY12	
	X <sub>min</sub> [mm]	Y <sub>min</sub> [mm]	X <sub>min</sub> [mm]	Y <sub>min</sub> [mm]	X <sub>min</sub> [mm]	Y <sub>min</sub> [mm]	X <sub>min</sub> [mm]	Y <sub>min</sub> [mm]	X <sub>min</sub> [mm]	Y <sub>min</sub> [mm]	X <sub>min</sub> [mm]	Y <sub>min</sub> [mm]	X <sub>min</sub> [mm]	Y <sub>min</sub> [mm]	X <sub>min</sub> [mm]	Y <sub>min</sub> [mm]
400	1100	1300			1100	1300	1300	1300								
450			1200	1400			1300	1400	1300	1400						
500									1400	1500	1700	1500				
600											1800	1800	1800	1800	1800	1800
700													1800	1800	1800	1900

<sup>1)</sup> The actuator dimensions can be found on the respective actuator data sheet

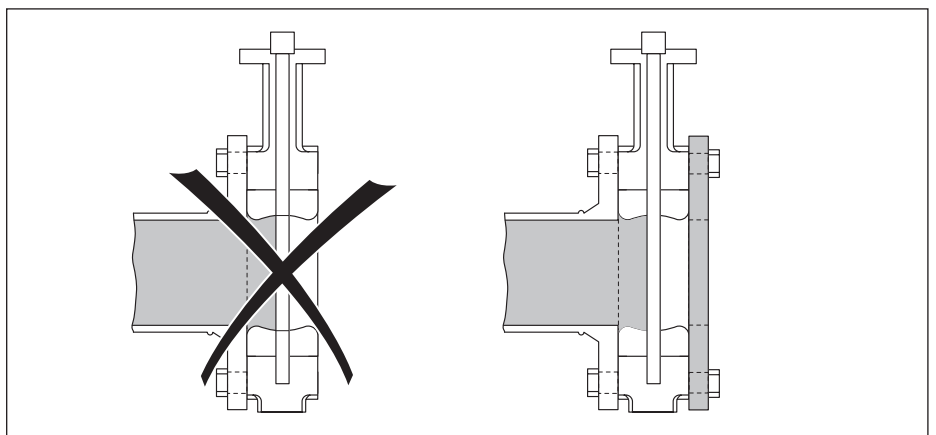
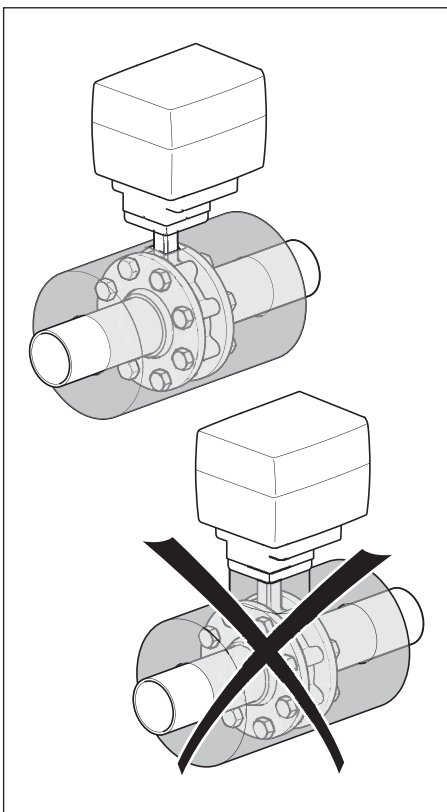
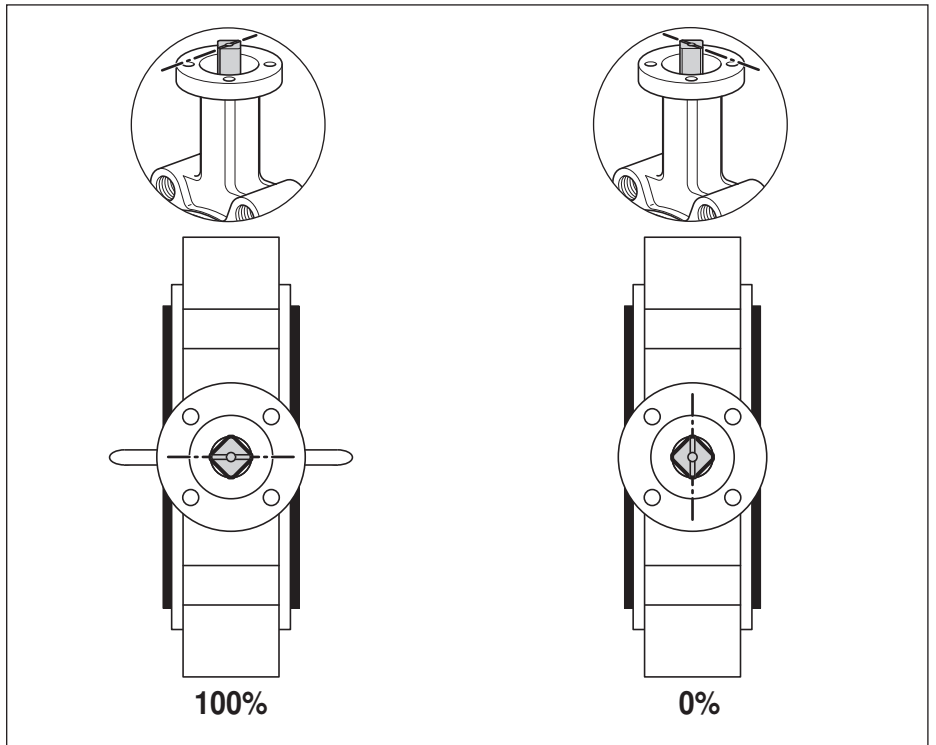
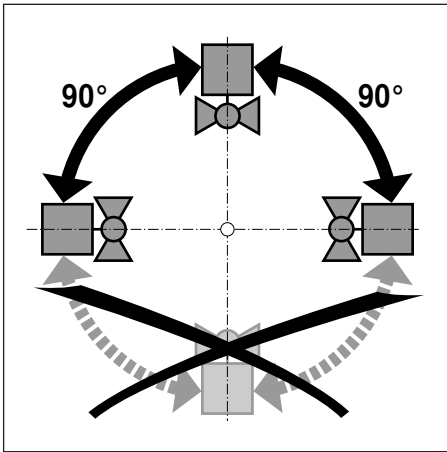
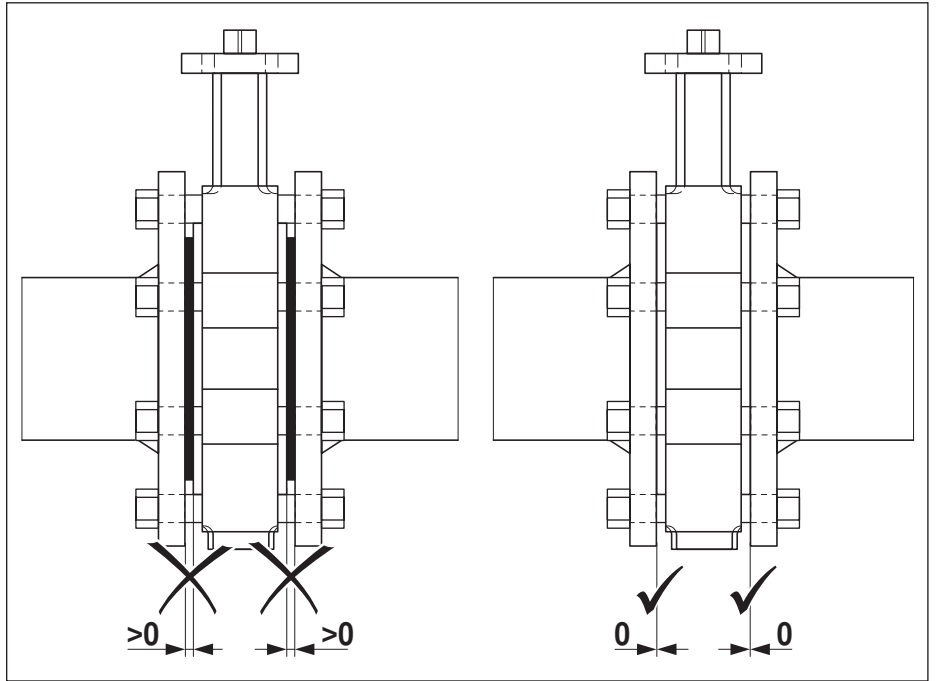
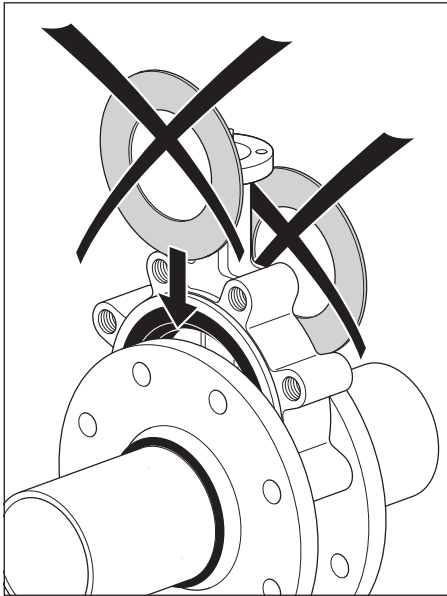
<sup>2)</sup> according to ISO 5211

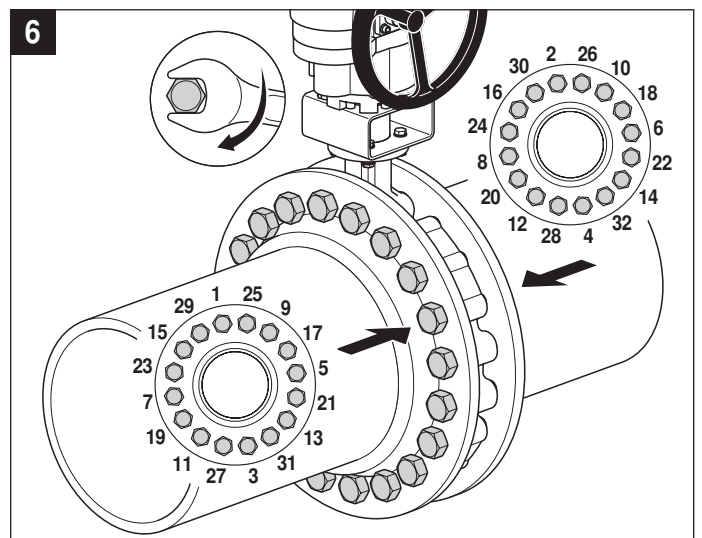
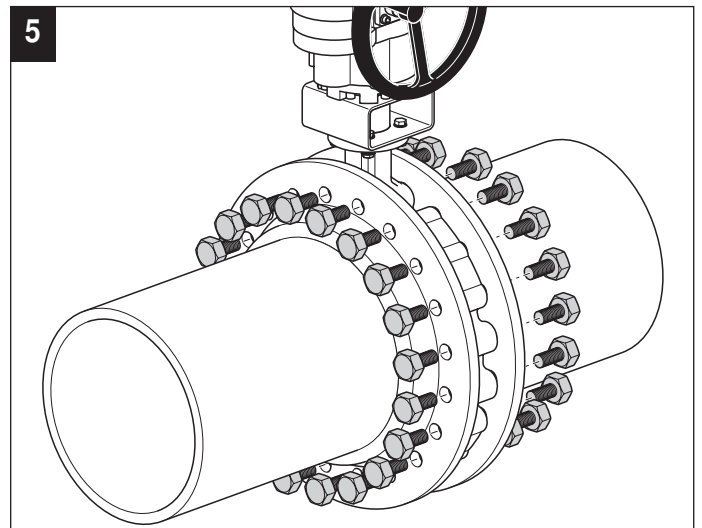
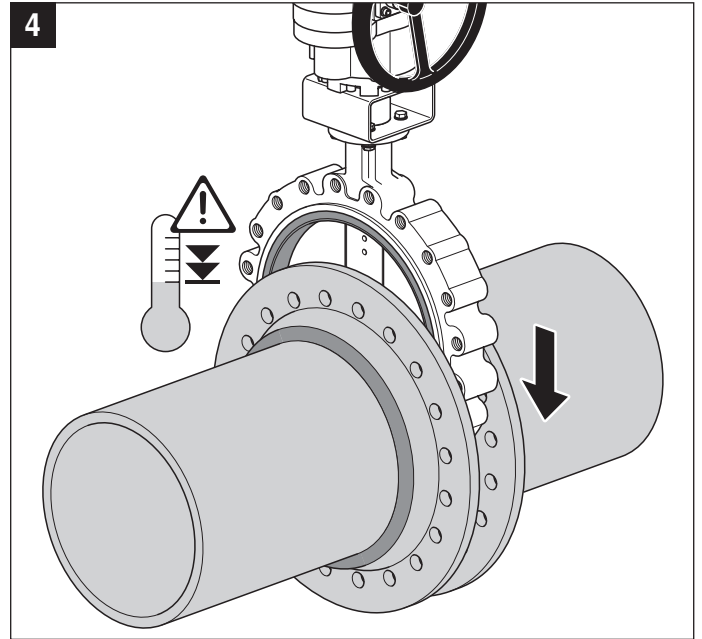
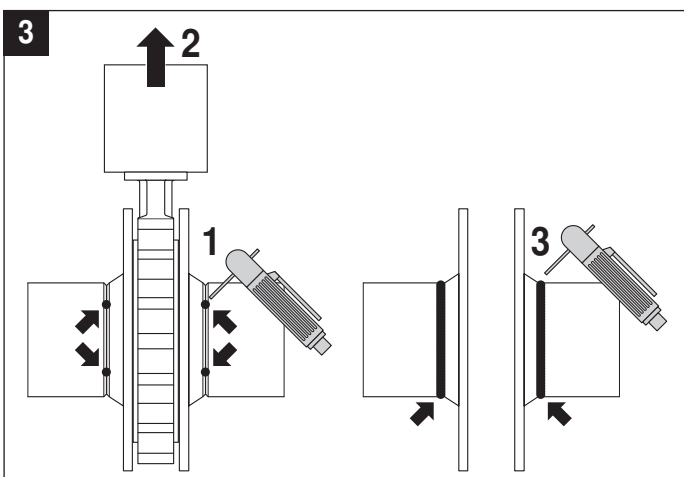
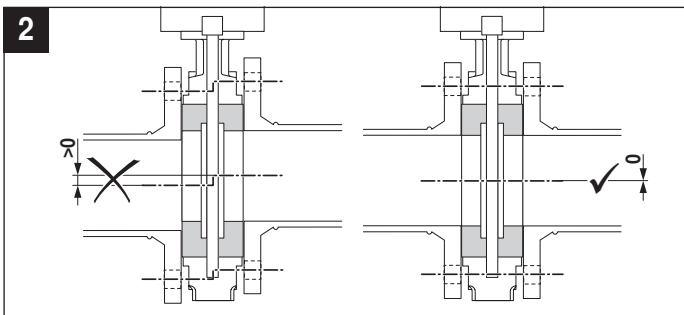
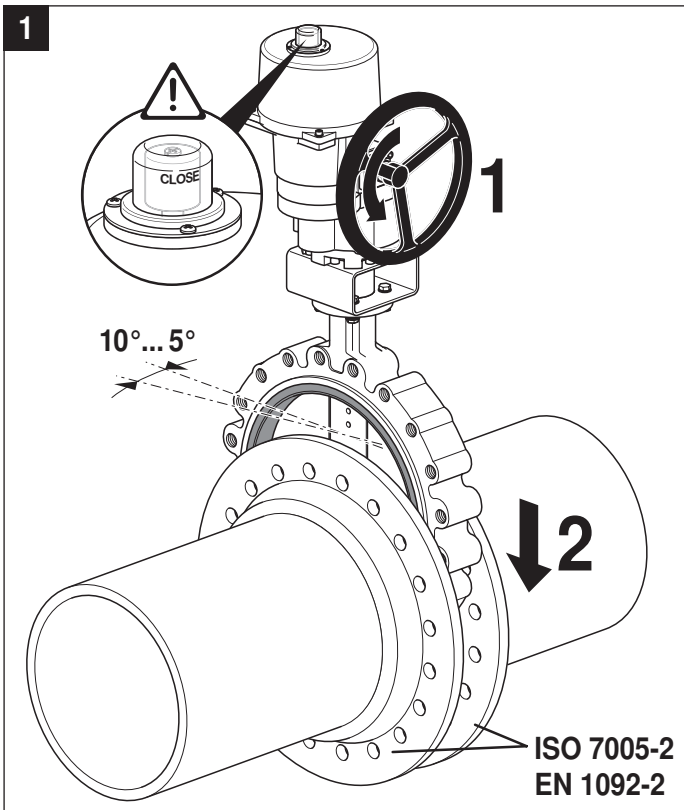
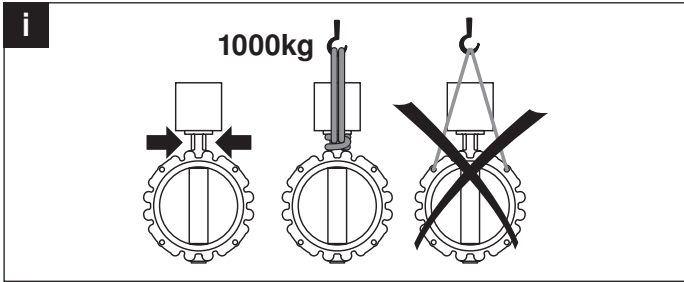
## Further documentations

- Overview Valve-actuator combinations
- Data sheets actuators
- Installation instructions for butterfly valves and/or actuators. respectively
- Notes for project planning (hydraulic characteristic curves and circuits. installation regulations. commissioning. maintenance etc.)



DN	A	B
DN 25	M12	≤35 Nm
DN 32	M16	≤94 Nm
DN 40	M16	≤94 Nm
DN 50	M16	≤94 Nm
DN 65	M16	≤94 Nm
DN 80	M16	≤94 Nm
DN 100	M16	≤94 Nm
DN 125	M16	≤94 Nm
DN 150	M20	≤162 Nm
DN 200	M20	≤162 Nm
DN 250	M24	≤270 Nm
DN 300	M24	≤270 Nm
DN 350	M24	≤270 Nm





**A**

**B**

DN	A	B
DN 400	M27	≤360 Nm
DN 450	M27	≤360 Nm
DN 500	M30	≤510 Nm
DN 600	M33	≤700 Nm
DN 700	M33	≤700 Nm

