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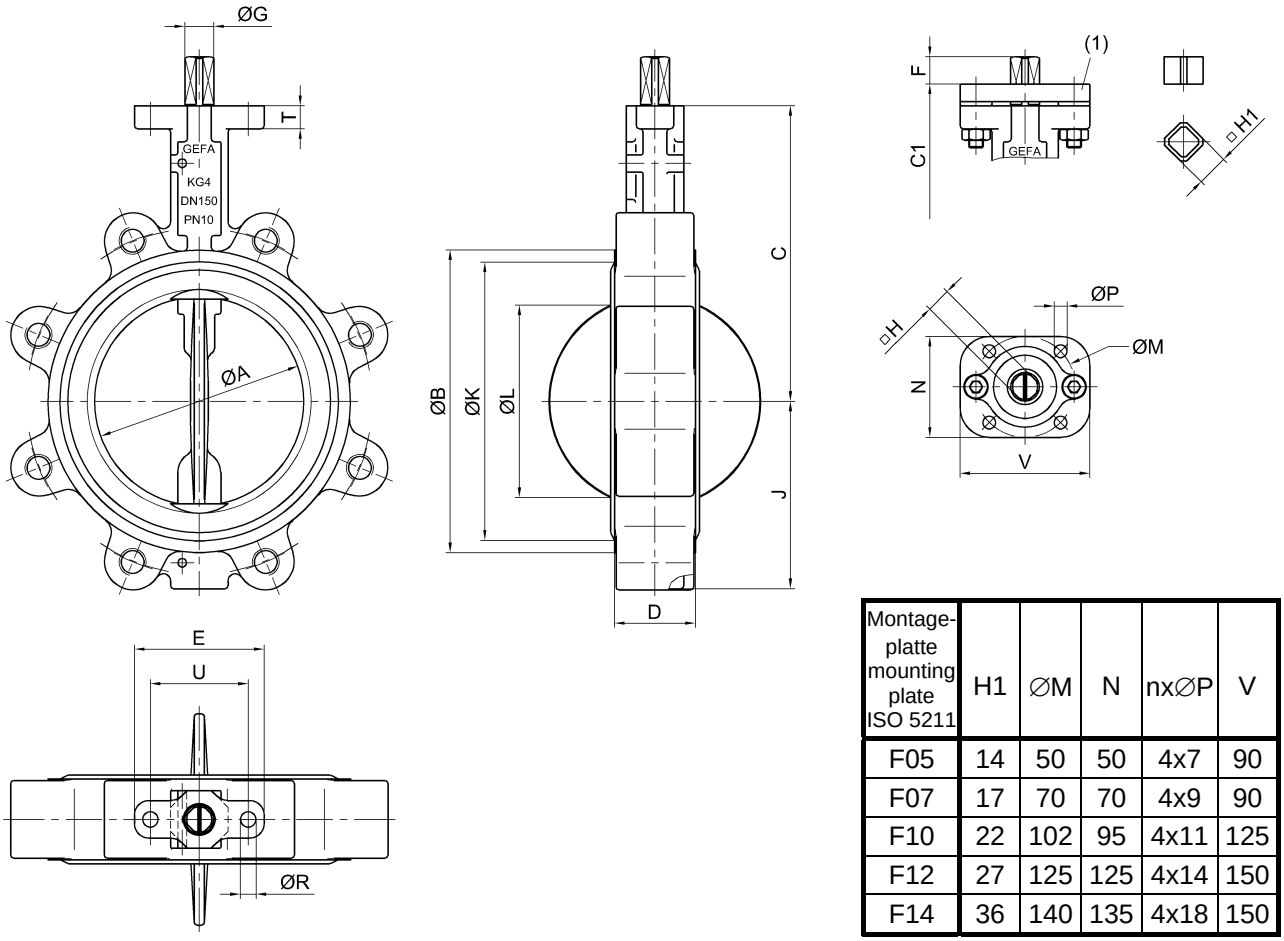
Maße
Einteilige Absperrklappe Serie KG4
Dimensions
One-piece butterfly valve series KG4
DN 50 - DN 300

Baulänge: EN 558-1 Reihe 20 (DIN 3202-K1) Face to face dimension: EN 558-1 line 20 (DIN 3202-K1)



Montage-platte mounting plate ISO 5211	H1	ØM	N	nxØP	V
F05	14	50	50	4x7	90
F07	17	70	70	4x9	90
F10	22	102	95	4x11	125
F12	27	125	125	4x14	150
F14	36	140	135	4x18	150

(1) MULTITOP Montageplatte und Vierkant-Adapter zum Direktaufbau von Antrieben mit größerem Anschlussflansch. Sonderaufbauten möglich.
MULTITOP mounting plate and square-adapter for direct mounting of actuators with larger connection flange. Special designs possible.

ØK = Sitzring-Außendurchmesser / Seat outside diameter
ØL = kleinster Flanschinnendurchmesser / smallest inside diameter of flange

DN	NPS	ØA	ØB	C	C1	D	E	F	ØG	H	J	ØK	ØL	ØR	T	U	kleinster Anschluss min. mounting plate DIN 3337/ISO 5211
50	2“	51	98	130	145	43	90	16	14	11	74	86	30	11	14	68	F05
65	2 1/2“	64	109	150	165	46	90	16	14	11	81	97	47	11	14	68	F05
80	3“	76	125	156	171	46	90	16	14	11	88	112	63	11	14	68	F05
100	4“	101	158	180	195	52	90	16	16	14	104	144	90	11	16	68	F07/SW14
125	5“	126	180	195	210	56	90	19	20	17	120	166	116	11	16	68	F07
150	6“	145	210	205	220	56	90	19	20	17	130	194	136	11	16	68	F07
200	8“	197	270	240	258	60	125	19	22	17	160	252	189	13	21	95	F10
250	10“	247	322	274	292	68	125	24	28	22	187	302	240	13	21	95	F10
300	12“	298	371	300	318	78	125	24	28	22	213	350	290	13	21	95	F10

Änderungen vorbehalten
subject to changes

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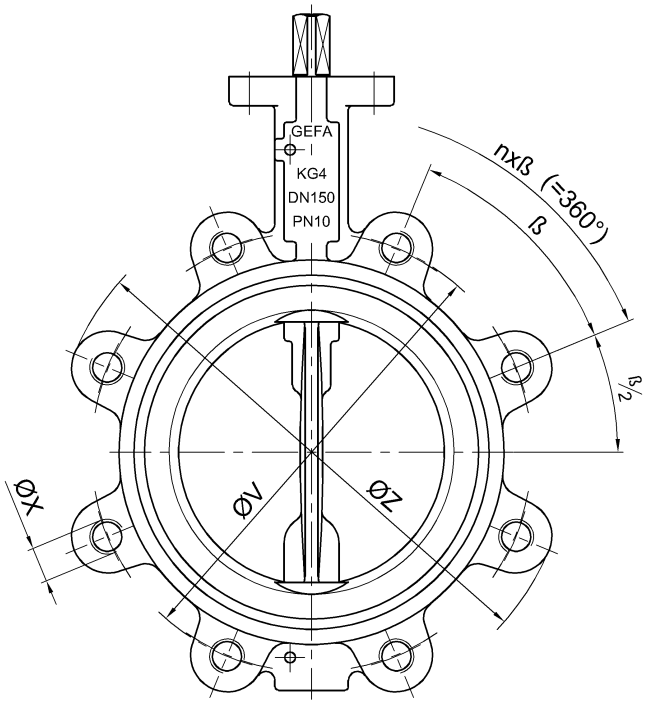
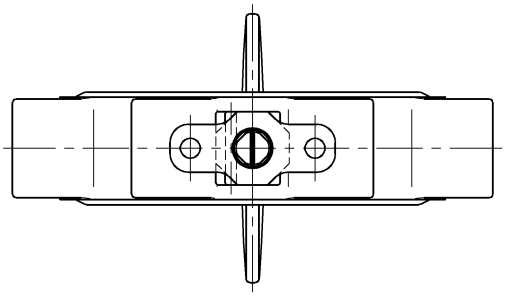
Flanschanschluss
Einteilige Absperrklappe Serie KG4
Flange connection
One-piece butterfly valve series KG4
DN 50 – DN 300





DN	NPS	Druckstufe Pressure class	ØV	ØX	ØZ	n	ß	kg	DN	NPS	Druckstufe Pressure class	ØV	ØX	ØZ	n	ß	kg
50	2“	PN10	125	M16	155	4	90°	3,0	150	6“	PN10	240	M20	280	8	45°	11,0
		PN16									PN16						
		Class 150	120,7	5/8“ UNC							Class 150	241,3	3/4“ UNC				
65	2 1/2“	PN10	145	M16	175	4	90°	3,5	200	8“	PN10	295	M20	335	8	45°	15,8
		PN16									PN16			335	12	30°	16,9
		Class 150	139,7	5/8“ UNC							Class 150	298,5	3/4“ UNC	335	8	45°	15,8
80	3“	PN10	160	M16	190	8	45°	5,8	250	10“	PN10	350	M20	402	12	30°	26,0
		PN16									PN16	355	M24				
		Class 150	152,4	5/8“ UNC	190	4	90°				Class 150	362	7/8“ UNC				
100	4“	PN10	180	M16	220	8	45°	7,0	300	12“	PN10	400	M20	482	12	30°	43
		PN16									PN16	410	M24				
		Class 150	190,5	5/8“ UNC							Class 150	431.8	7/8“ UNC				
125	5“	PN10	210	M16	252	8	45°	9.5									
		PN16															
		Class 150	215,9	3/4“ UNC													

Maximale Druckbelastung: siehe Druck-Temperatur-Diagramm
Maximum pressure: please refer to pressure-temp. range diagram

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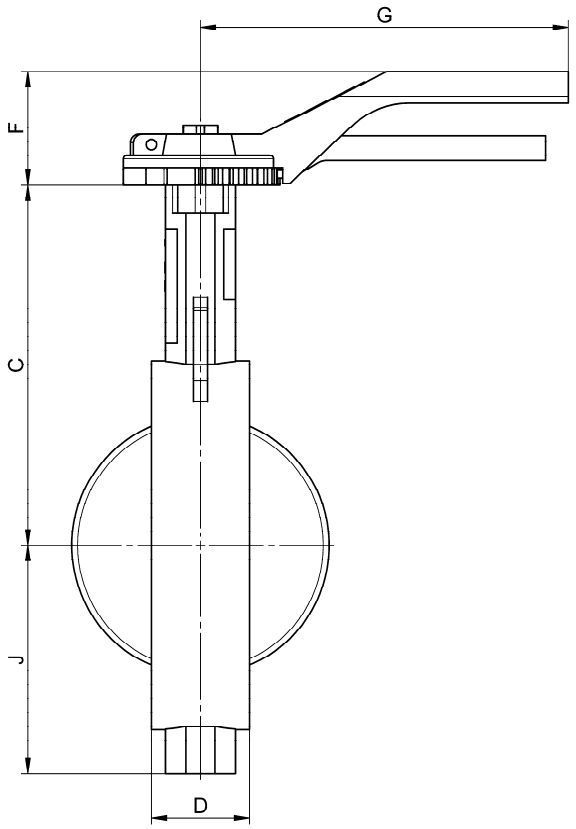
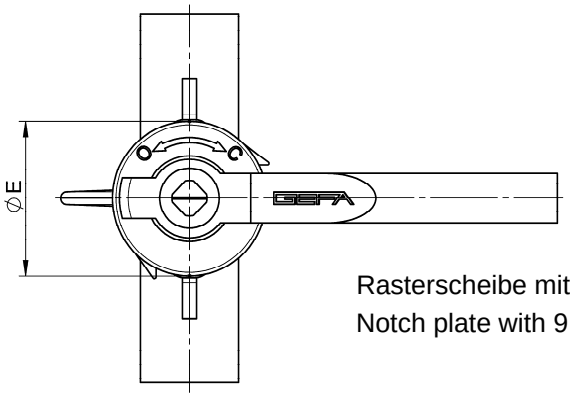
Einteilige Absperrklappe Serie KG2/KG4 mit Handhebel
One-piece butterfly valve Series KG2/KG4 with hand lever
DN 50 – DN 250



Material / Materials

Handhebel: Aluminium
Rasterscheibe: Aluminium

Hand lever: Aluminium
Notch plate: Aluminium



Rasterscheibe mit 9 Regelstellungen
Notch plate with 9 positions for regulation

DN	NPS	C	D	∅E	F	G	J	kg *
50	2“	130	43	90	29	210	74	0,4 / 1,1
65	2 1/2“	150	46				81	
80	3“	156	46				88	
100	4“	180	52				104	
125	5“	195	56				120	
150	6“	205	56				130	
200	8“	240	60	125	38	340	160	1,0
250	10“	274	68				187	

* Gewicht Handhebel inklusive Zubehör
* Weight of hand lever including accessories

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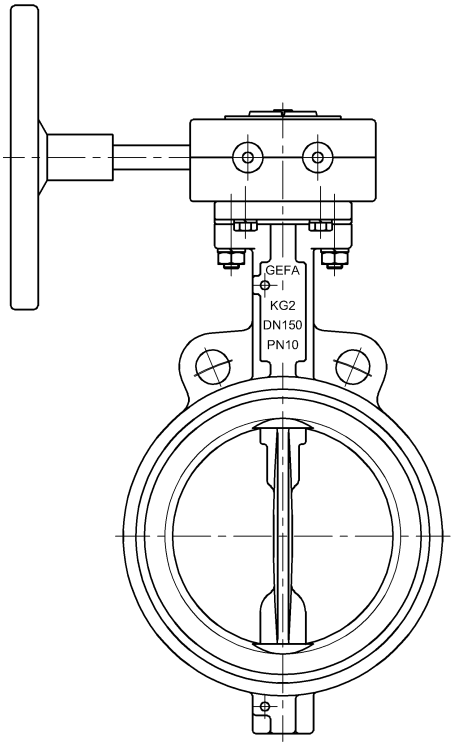
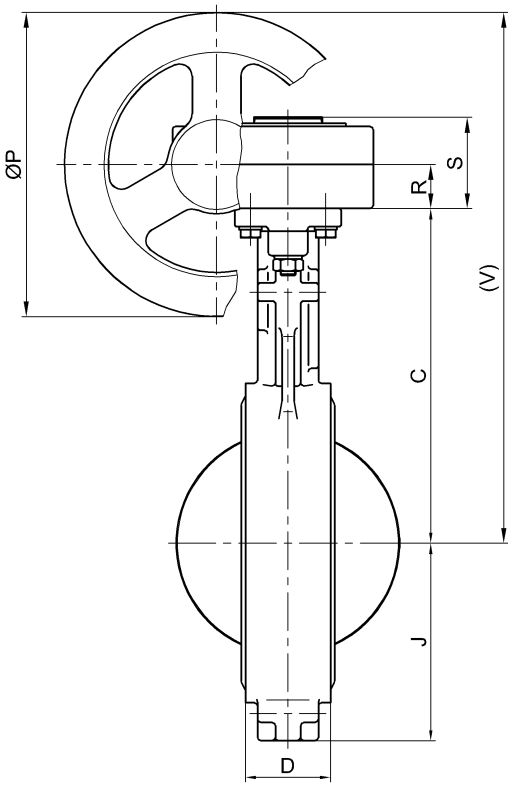
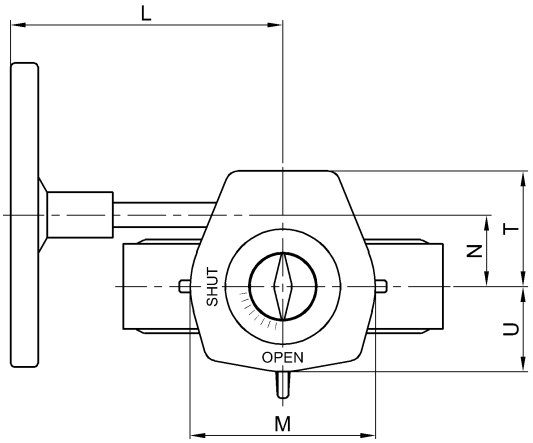
Einteilige Absperrklappe Serie KG2 /KG4 mit Aluminium Getriebe
One-piece butterfly valve series KG2/KG4 with aluminium gear operator
DN 50 - DN 300







Getriebewerkstoffe / Gear materials
Gehäuse / Body: Aluminium / aluminium
Welle / Stem: Stahl / steel
Handrad / Handwheel: Stahl / steel

Gewicht des Getriebes inklusive Handrad. Klappenspezifische Daten entnehmen Sie bitte den entsprechenden Datenblättern.

Weight of gear operator including handwheel. Regarding valve data please refer to relevant data sheets.

DN	NPS	Getriebe Typ Gear type	C	D	J	L	M	N	∅P	R	S	T	U	V	kg
50	2“	BGM98111V	145	43	74	150	113	39	125	31	71	64	56	239	2,0
65	2 1/2“	BGM98111V	165	46	81	150	113	39	125	31	71	64	56	259	2,0
80	3“	BGM98111V	171	46	88	150	113	39	125	31	71	64	56	265	2,0
100	4“	BGM98114	195	52	104	150	113	39	125	31	71	64	56	289	2,0
125	5“	BGM98117	210	56	120	187	113	39	200	31	71	64	56	341	2,5
150	6“	BGM98117	220	56	130	187	113	39	200	31	71	64	56	351	2,5
200	8“	BGM98417	258	60	160	197	130	52	200	32	73	83	65	390	3,3
250	10“	BGM98422	292	68	187	197	130	52	200	32	73	83	65	424	3,3
300	12“	BGM98722	318	78	213	246	164	67	315	38	86	109	82	514	7,7

Änderungen vorbehalten
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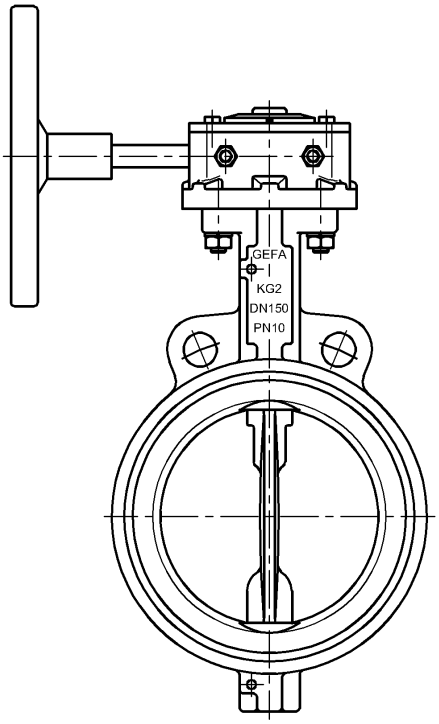
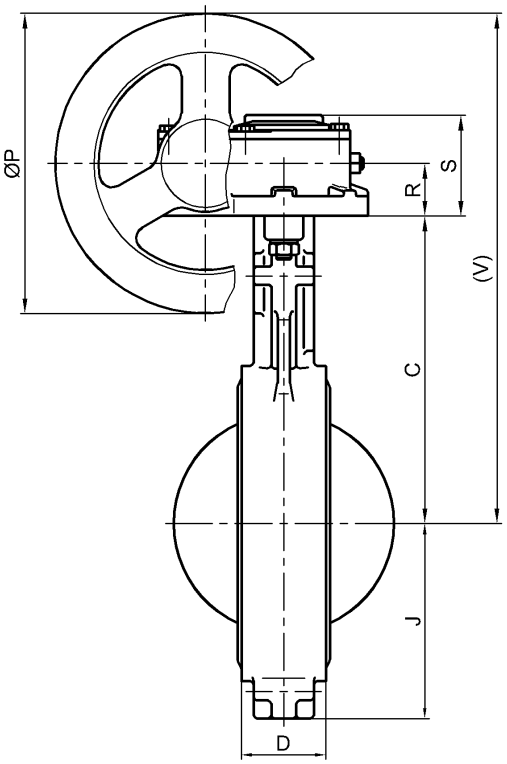
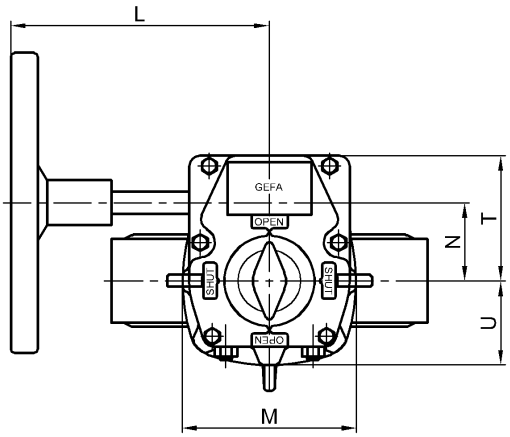
Einteilige Absperrklappe Serie KG2/KG4 mit Grauguss Getriebe
One-piece butterfly valve series KG2/KG4 with cast iron gear operator
DN 50 - DN 300







Getriebewerkstoffe / Gear materials

Gehäuse / Body:	Grauguss / cast iron
Welle / Stem:	Stahl / steel
Handrad / Handwheel:	Stahl / steel

Auf Wunsch ist ein Kettenrad lieferbar.
Gewicht des Getriebes inklusive Handrad.
Klappenspezifische Daten entnehmen Sie bitte den entsprechenden Datenblättern.

Upon request chain wheel can be supplied.
Weight of gear operator including handwheel.
Regarding valve data please refer to relevant data sheets.

DN	NPS	Getriebe Typ Gear type	C	D	J	L	M	N	∅P	R	S	T	U	V	kg
50	2“	BGMM0711V	130	43	74	150	88	39	125	27	58	62	45	220	2,9
65	2 1/2“	BGMM0711V	150	46	81	150	88	39	125	27	58	62	45	240	2,9
80	3“	BGMM0711V	156	46	88	150	88	39	125	27	58	62	45	246	2,9
100	4“	BGMM0714	180	52	104	150	88	39	125	27	58	62	45	270	2,9
125	5“	BGMM0717	195	56	120	187	88	39	200	27	58	62	45	322	3,5
150	6“	BGMM0717	205	56	130	187	88	39	200	27	58	62	45	332	3,5
200	8“	BGMM1017	240	60	160	197	116	52	200	35	67	84	58	375	5,0
250	10“	BGMM101022	274	68	187	197	116	52	200	35	67	84	58	409	5,0
300	12“	BGMM101022	300	78	213	197	116	52	200	35	67	84	58	435	5,0

Änderungen vorbehalten
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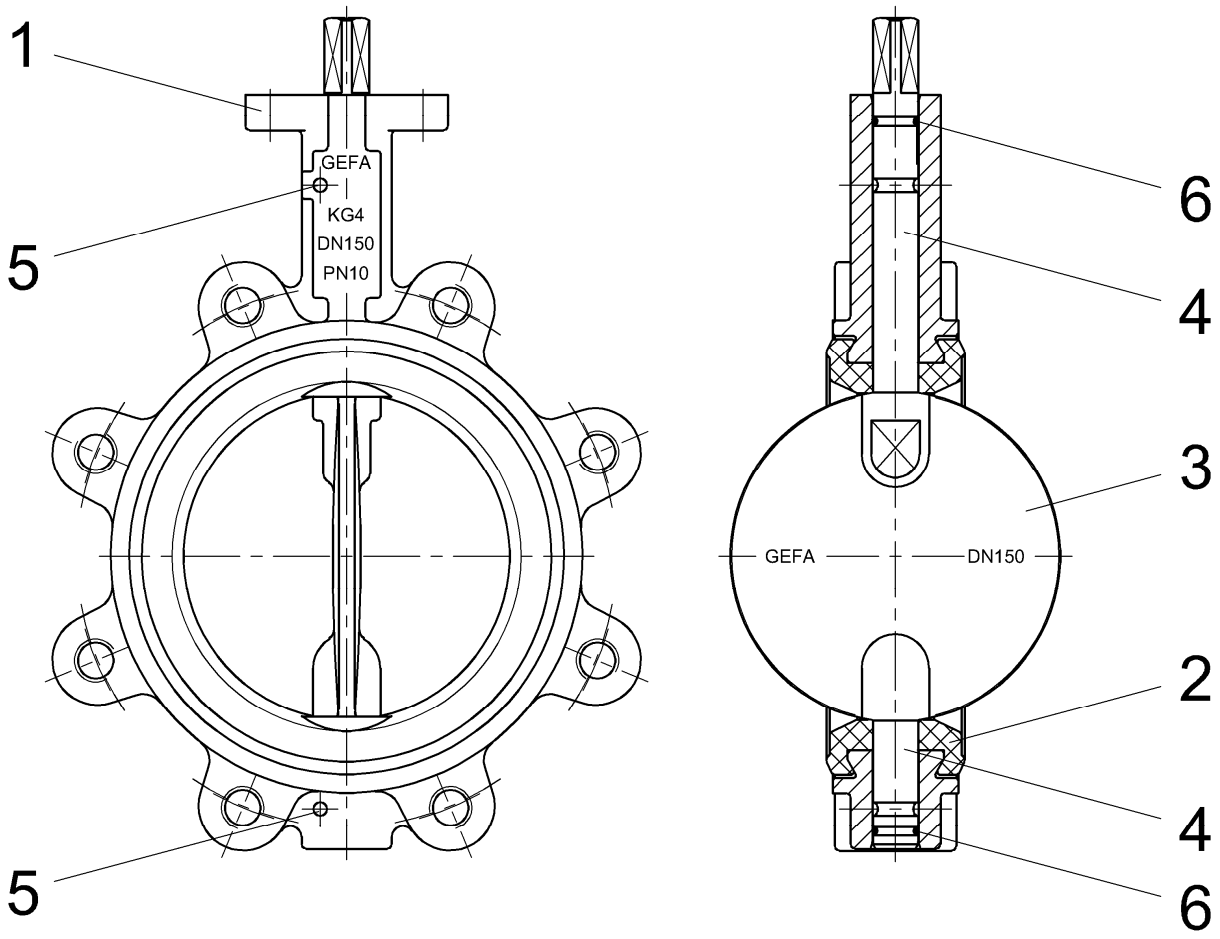
Werkstoffe
Einteilige Absperrklappe Serie KG4
Materials
one-piece butterfly valve series KG4
DN 50 – DN 300



Teil Nr. Part No.	Bezeichnung Description	Material KG4 2366 E	 KG4 2366 B
1	Gehäuse Body	EN-GJS-400-15 Sphäroguss GGG40 Ductile iron GGG40	EN-GJS-400-15 Sphäroguss GGG40 Ductile iron GGG40
2*	Sitzring Seat	EPDM	NBR
3	Klappenscheibe Disc	1.4408	1.4408
4	Welle Stem	1.4021	1.4021
5	Kerbstift Grooved pin	Stahl verzinkt Steel zinced	Stahl verzinkt Steel zinced
6*	O-Ring	NBR	NBR

* = Verschleißteile / Wearing parts

Wahlweise andere Werkstoffe lieferbar
Other materials available

Änderungen vorbehalten
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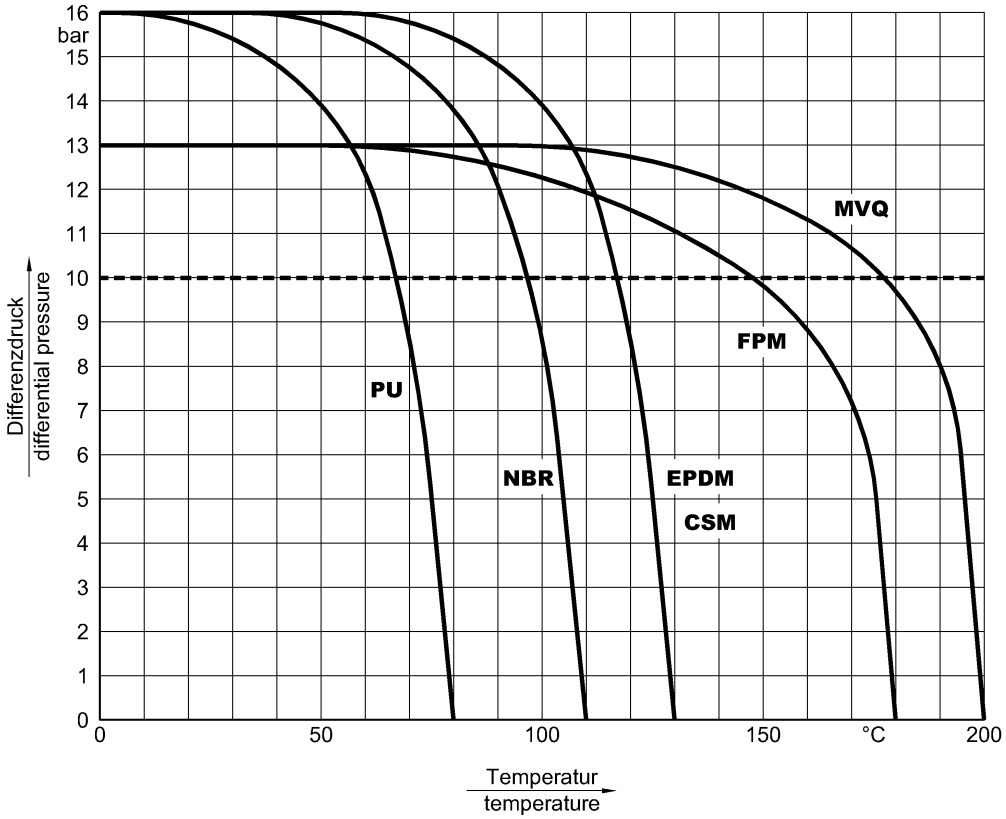
Operating instructions Installation / Operation soft-seated butterfly valve series K

Introduction

The following information and instructions are important for perfect installation and safe operation of the valve. Prior to installation and initial use of the valve, the qualified staff in charge of installing and operating the valve has to be instructed according to this information.

Proper use

The soft-seated butterfly valve series K may only be used to stop, throttle and control media flows within the permissible pressure/temperature limits.



From DN 200 the use of seats with higher shore hardness is necessary at a differential pressure of more than 13 bar.
Lug type valves: Max. differential pressure 6 bar for valves used in an end-of-line function.
KG2 / KG4 and valves from DN 600: Max. differential pressure 10 bar.

The suitability of the product-related parts used and their chemical resistance properties have to be clarified before start-up of the plant. The usual flow rate must not be exceeded. Vibrations, water hammers and cavitation as well as abrasive components result in damage of the valve and affect its service life.

Valves must not be used to support the pipeline nor as a step-up.
This includes the different kinds of operation like hand levers, gear operators, actuators, feedback and control systems.
When using a hand lever, handwheel and manual emergency operation, take care that there is enough space for a proper operation.

Earthing the valve

If the butterfly valve is supplied with anti-static device and used in potentially explosive zones, the earthing strap supplied with the valve must be connected effectively at site with the potential compensation cable before the valve is put into operation.

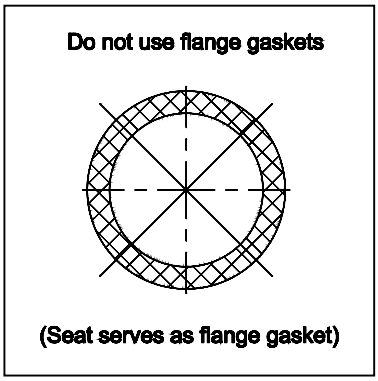
Transport and storage

The valve must be transported and stored dry and clean.
In humid rooms, a drying material or heating must be used to avoid condensation.
During transport and intermediate storage the butterfly valve should not be outside a temperature range of -15°C and +30°C.
The transport packaging protects the valve against soiling and damage. Impact and vibrations must be avoided.
The outer paintwork (coating) must remain undamaged, otherwise the faulty spots must be repaired immediately.
The factory-adjusted basic setting (position of the disc at delivery) must not be changed.

Conditions for mounting the valve

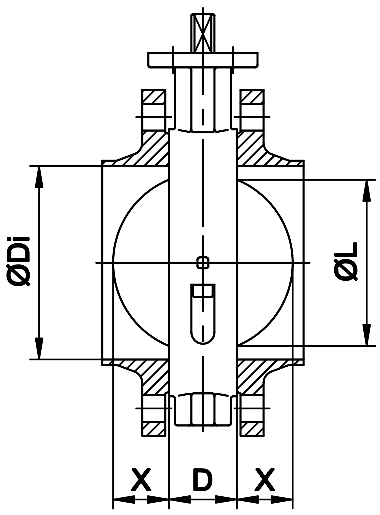
The soft-seated butterfly valve series K is installed between pipeline flanges acc. to DIN2501 or ANSI B16.5.
The pipeline must not have any axial or angular offset, since otherwise the disc could be damaged and the seat can become deformed, which is not permitted.

The seat of the GEFA butterfly valve has a sealing lip.
Due to this seat design the butterfly valve is "self-sealing" to the flanges and does not require additional flange gaskets.
Pre-condition: The flange sealing surfaces have been checked to make sure that they have a smooth surface structure.
Residues (welding beads) must be removed.
No cross marks may be visible.



The "clearance" of the mating flanges - including inner coating- has to be sufficient to allow the disc to be fully opened without touching (ØDi ≥ ØL + 6 mm). This must be checked before the valve is installed and compared with the space necessary for the valve according to the table.

DN	D	ØL	X
50	43	33	6
65	46	48	10
80	46	64	17
100	52	91	27
125	56	117	37
150	56	137	46
200	60	190	70
250	68	240	91
300	78	290	111
350	78	330	131
400	102	377	144
500	127	475	182
600	149	567	215
700	169	665	255
800	189	763	295
900	209	859	334
1000	229	967	378



Transport packaging

Transport packaging protects the interior of the valve from soiling and damage.
Do not remove the packaging until the valve is going to be installed.

Installation position

Basically the butterfly valve series K can be installed in any position. The recommended position, however, is with the shaft being horizontal.
The lower disc edge should open in flow direction.

Installation

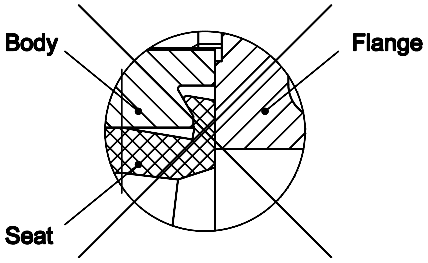
The soft-seated butterfly valve series K has to be switched to a slightly angled position.
The position of the disc must be within the face-to-face dimension of the valve.

Spread the mating flanges and insert the valve carefully between the flanges.

If the pipeline is to be welded at site, temporary fitting blocks should be installed instead of the butterfly valve, since flying sparks and welding residues can damage the seat due to high temperatures.
Never leave the butterfly valve installed when welding of the pipeline/flanges has to be completed.

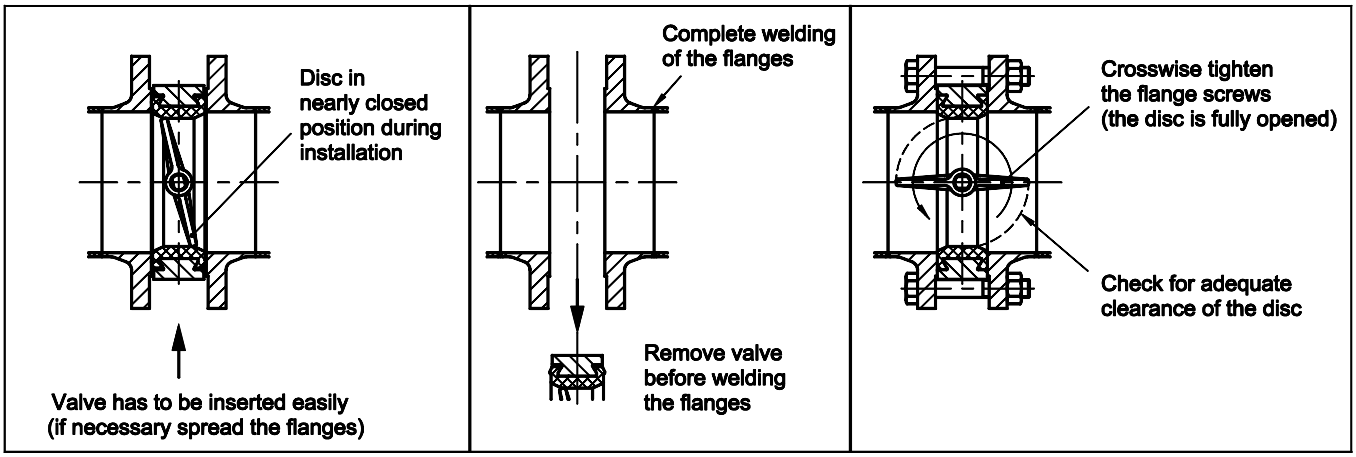
Center the butterfly valve using the flange screws. The outside diameter of the valve body is used for full centering!

NOTE!
If the valve is inserted incorrectly between the flanges, the seat can become displaced and destroyed.



Remove the flange-spreaders and tighten the flange screws slightly and evenly crosswise with the disc fully opened.
During this procedure, check that the valve is centered between the mating flanges.
Open and close the valve several times and cross-tighten the flange screws once again with the disc in closed position. (Tightening torque: please refer to below table).
Check that the disc has adequate clearance.

When installing the lug type butterfly valve as end-in-line valve, the free port must be secured by a blind flange.



Tightening torque for flange screws

DN	40	50	65	80	100	125	150	200	250	300	350	400	500	600	700	800	900	1000
NPS	1 ½"	2"	2 ½"	3"	4"	5"	6"	8"	10"	12"	14"	16"	20"	24“	28“	32“	36“	40”
Tightening torque [Nm]	85	85	85	85	85	85	165	165	165	165	165	285	285	415	415	570	570	760

Mounting of actuators

It must be ensured that the actuator is centred on the valve shaft.
The weight of a mounted actuator must not place a one-sided load on the shaft of the valve:
if necessary actuators must be supported without fixing.
External loads must not be applied to actuators, this can damage or destroy the valve.

Initial operation

The butterfly valve has been tested for leakage using air or water. Residues of the test medium may still be on the contact surfaces of the valve. Possible reactions with the operating medium must be observed.
Prior to initial operation, the pipeline must be flushed effectively with the valve fully opened to eliminate soiling and to avoid damage to the sealing surfaces. The valve must not be switched during the flushing process.

During a system pressure test the following pressures must not be exceeded:

1,5 x PN with disc in open position
1,1 x PN with disc in closed position

Impermissible operation

Never operate the butterfly valve without actuating devices and/or locking of the shaft.
Do not operate the valve in the cavitation area.
Do not exceed the pressure/temperature range.
Avoid all foreign particles on the sealing surfaces.

Removing the valve

Before removing the butterfly valve make sure that the pipe section is depressurised and evacuated.
In case of toxic, caustic and other outgasing media the pipe section must also be ventilated.
Safety classification is the responsibility of the system operator.

The butterfly valve is removed by loosening the flange screws and sufficient spreading of the mating flanges.
The valve disc must be closed at an angle within the face-to-face dimension of the valve to prevent damage to the disc. Actuators either have to be dismounted before the valve is removed or they have to be secured against unauthorized or unintentional operation.

Disposal / repair of the valve

After having removed the valve it has to be disassembled and cleaned to prevent injuries caused by residues of the medium.
If the valve is returned to the manufacturer, a safety data sheet relating to the media must be included.

Subject to modifications without notice.

Edition: 2011-03-10

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Operating instructions Maintenance / Mounting butterfly valve series KG2 / KG4 DN 50 – DN 300

Maintenance

- The valves do not require any special maintenance. For valves with DVGW approval according to DIN EN 13774 / DIN EN 1074-2 (DG-4313 BU0327 and DW-6201BU0331) maintenance must be done by the manufacturer. Otherwise the approval is no longer valid.

Disassembly (Valves without DVGW approval)

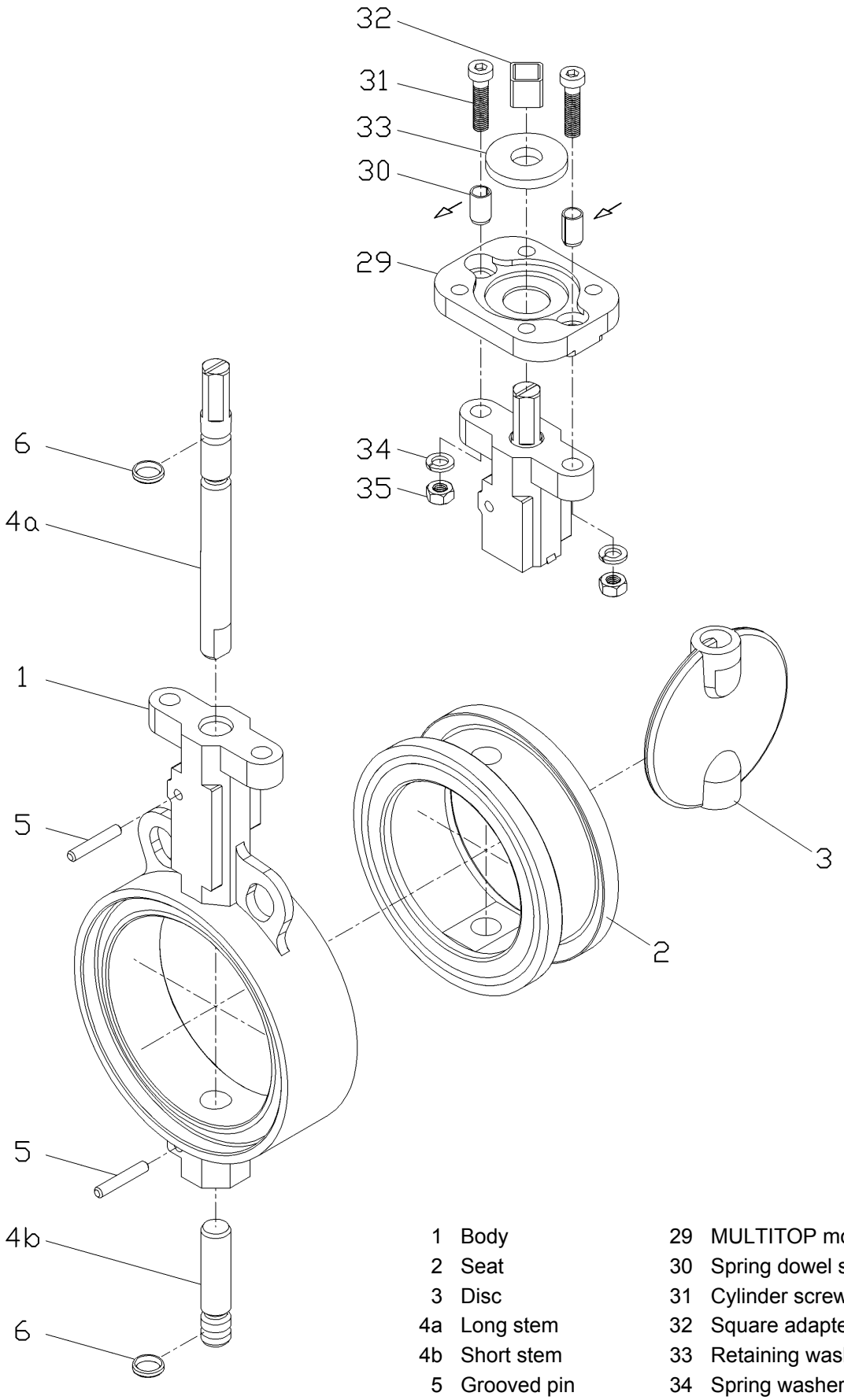
- Valves with hand lever:
  Loosen the lateral screw joint of the hand lever and pull the hand lever off the valve stem (4).
  Loosen the fastening screws of the throttle plate and remove the throttle plate, if required.
- Valves with actuator:
  Loosen the fastening screws between the MULTITOP mounting plate (29) and the actuator or between the valve and the bracket and remove the actuator.
  If required, remove the MULTITOP mounting plate (29) from the valve by loosening the fastening screws (31) and the spring dowel sleeves (30).
- Knock out the grooved pins (5). Take note that the direction of knocking must be from the ungrooved to the grooved side.
- Turn the disc (3) to "OPEN" position.
  After removing the stems, the disc is no longer secured in the valve and must be prevented from falling out.
- Pull the long stem (4a) including the O-ring (6) out of the body.
- Pull the short stem (4b) including the O-ring (6) out of the body, if necessary by using a screwed-in treaded rod or screw.
- Press the disc (3) out of the seat (2).
- Lever the seat (2) with a suitable, blunt tool out of the body (1).
- Check all part for flawless condition and renew them, if required. Only use original GEFA□spare parts.

Assembly (Valves without DVGW approval)

- Thoroughly clean all parts and check them for wear. Parts that show wear or corrosion must be replaced to ensure operational safety in future.
  Use silicone oil for the assembly, if the application permits this.
- Insert the seat (2) according to the holes into the body (1). The two holes in the body and the seat must be aligned.
- Place the O-rings (6) into the small groove (width 4 mm) of the short and the long stem.
- Insert the disc (3) into the seat (2) in a way that the double flat is pointing to the top flange. The disc should be in position "OPEN". It has to be ensured that the stem holes of the disc are in line with the upper and lower holes in the seat (2) and the body (1).
- Insert the long stem (4a) with the double flat side into the body (1). The surfaces of the double flat and the groove on the square must be aligned parallel to the disc (3). Push the stem in until the lower edge of the square fits flush with the upper edge of the body.
- Insert the short stem (4b) into the body (1). The thread at the front side points outwards.
  Push in the stem until the front side fits flush with the lower edge of the body.
- Check whether the holes in the body (1) are in line with the bigger grooves of the stem (4a, 4b) before inserting the grooved pins (5). When a stem covers a part of the hole, the position of the stem must be corrected.
- Place the grooved pins (5) with the ungrooved side into the holes of the body (1) and push them in by tapping them gently with a hammer.
- After the assembly the disc has to be switched for several times (at least 4x) by 180°.
- Check the seat and the stem tightness. Test pressure 1.1 times nominal pressure.
- Valves with hand lever:
- Loosely attach the throttle plate with the screws to the top flange. Slide the hand lever onto the stem and position the throttle plate. Tighten the fastening screws of the throttle plate and attach the lever with the lateral screw joint.
- Valves with actuator:
  Attach the whole actuator unit, align it and fasten it with screws.

Mounting of the MULTITOP mounting plate.

- Position the mounting plate (29) on the body.
- Insert the spring dowel sleeves (30) through the mounting plate into the body. The slot in the spring dowel sleeve must point in the force direction (see arrow in the assembly drawing) to achieve a rigid connection. Do not insert the mounting plate without using spring dowel sleeves, as the transverse forces cannot be absorbed by the screws.
- Insert the cylinder screws (31) and tighten them.
- Slide a square adapter (32) onto the stem, if required. Prevent the square adapter from sliding down the stem by using the attached washer (33), if required.



1	Body	29	MULTITOP mounting plate
2	Seat	30	Spring dowel sleeve
3	Disc	31	Cylinder screw
4a	Long stem	32	Square adapter
4b	Short stem	33	Retaining washer
5	Grooved pin	34	Spring washer
6	O-ring	35	Hexagonal nut

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