



Original operating instructions:

Butterfly valves
Typ: 435x
EPDM
manual operation



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2. Information for your safety

We are pleased that you have decided for a high-class KIESELMANN product. With correct application and adequate maintenance, our products provide long time and reliable operation.

Before installation and initiation, please carefully read this instruction manual and the security advices contained in it. This guarantees reliable and safe operation of this product and your plant respectively. Please note that an incorrect application of the process components may lead to great material damages and personal injury.

In case of damages caused by non observance of this instruction manual, incorrect initiation, handling or external interference, guarantee and warranty will lapse!

Our products are produced, mounted and tested with high diligence. However, if there is still a reason for complaint, we will naturally try to give you entire satisfaction within the scope of our warranty. We will be at your disposal also after expiration of the warranty. In addition, you will also find all necessary instructions and spare part data for maintenance in this instruction manual. If you don't want to carry out the maintenance by yourself, our KIESELMANN service team will naturally be at your disposal.

3. Marking of security instructions in the operating manual

Hints are available in the chapter "safety instructions" or directly before the respective operation instruction. The hints are highlighted with a danger symbol and a signal word. Texts beside these symbols have to be read and adhered to by all means. Please continue with the text and with the handling at the valve only afterwards.

Symbol	Signal word	Meaning
	DANGER	Imminent danger which may cause severe personal injury or death.
	ATTENTION	Dangerous situation which may cause slight personal injury or material damages.
	NOTE	Marks application hints and other information which is particularly useful.

4. Valve types

4.1 Butterfly valve DN1 - DN4 inch

► manual operation

Typ	Seal		Connection
4351	EPDM	w/w	welding end / welding end
4352	EPDM	m/w	male / welding end
4353	EPDM	m/m	male / male
4354	EPDM	l/m	liner / male
4355	EPDM	l/w	liner / welding end
		l/l	liner / liner
4358	EPDM	f/f	flange / flange

5. Safety instructions

5.1 Field of application

The Butterfly valve is used as a shut-off valve in the food and beverage industry, in pharmaceutical and chemical engineering, as well as in bio-engineering.



ATTENTION

- To avoid danger and damage, the fitting must be used in accordance with the safety instructions and technical data contained in the operating instructions.

5.2 General safety instructions



DANGER

- Dismantling the valve or valve assemblies from the plant can cause injuries from fluids or gases flowing out.
- Dismantle the valve or valve assembly only when the plant has been rendered pressure-less and free of liquid and gas.

5.3 General note



NOTE

- Impurities can cause damage to the seals. Clean inside areas prior to assembly.

6. Function

6.1 Functional description

The valve is opened and closed by a 90° twist of a lockable hand lever. Before actuating the valve the limit stop catch has to be unlocked by lifting the catch lever against the hand lever. When the catch lever is released in the end position it automatically snaps back into the limit stop catch by spring force. The position of the hand lever shows whether the valve is open or closed. Pointing in the direction of the pipe axis the valve is opened-pointing across the pipe axis the valve is closed.

7. Installation informations

7.1 Installations instructions

Fitting position: The installation position is without import.

7.2 Welding guidelines

Sealing elements integrated in weld components must generally be removed prior to welding. To prevent damage, welding should be undertaken by certified personnel (EN287). Use the TIG (Tungsten Inert Gas) welding process.



NOTE

- Impurities can cause damage to the seals and seals area. Clean inside areas prior to assembly.

8. Maintenance

8.1 Maintenance

The maintenance intervals depend on the operating conditions "temperature, temperature-intervals, medium, cleaning medium, pressure and opening frequency". It is recommended to change the leakage butterfly valve-seal annually. The maintenance intervals, however, depend on the condition of the seals and are to be fixed by the user.



NOTE

Seal materials

EPDM; Viton; K-Flex
NBR; HNBR; Silikon
Thread



Lubricants

Klüber Paraliq GTE
Klüber Paraliq GB 363
Teflon grease Interflon

8.2 Cleaning

For best cleaning results, keep the valve open during cleaning to completely rinse the gasket and the valve head.

8.3 Dry running

The butterfly valves should not be operated in dry-run mode for lengthy periods wherever this can be avoided, as this will lead to increased wear.

9. Control system - and interrogation system

9.1 Retrofitting for limit position feed-back

By replacing the hand lever (1) and the catch disc (3) the valve can be retrofitted for limit position feed-back (proximity switch).

9.2 Conversion to pneumatic actuation

By a simple retrofitting operation the valve can be converted to pneumatic actuation. The rotary actuator for this purpose is supplied complete with fitting device. The following actuators are available, depending on the desired actuating function:

DN 25-40 DN 1 - 1½	DN 50 DN 2	DN 65-100 DN 2½ - 4	Actuator	Comm. Item no.	Function
X	-	-	PDA 90/75	4500.050.075-022 4400.050.075-022	- opening by air- closing by spring - closing by air - opening by spring - opening by air - closing by air
X	X	-	PDA 90/100	4500.050.100-022 4400.050.100-022	- opening by air- closing by spring - closing by air - opening by spring - opening by air - closing by air
-	-	X	PDA 90/100	4500.100.100-022 4400.100.100-022	- opening by air- closing by spring - closing by air - opening by spring - opening by air - closing by air

10. Technical data

Model:	Butterfly valves manual operation	
Valve size:	DN 1 inch - DN 4 inch	
Connections:	Welding ends Male / welding end Male / male Liner / male Liner / welding end Flange / flange	
Temperature range:	<ul style="list-style-type: none"> • Ambient temperature: +4° to +45°C • Product temperature: +0° to +95°C depending on the medium • Sterilization temperature: (short-time 30min) +140°C (EPDM, HNBR) +125°C (Silicone) 	
Operations pressures:	Working pressure:	
	DN 1 inch - 2½ inch	= 16 bar
	DN 3 inch - 4 inch	= 10 bar
	Cleaning pressure:	
	<ul style="list-style-type: none"> • Cleaning by pipe cleaning: - max. 3 bar 	
Material:	in product contact	
Stainless steel type:	1.4404 / AISI316L	
Surfaces: <i>(varies depending on valve type)</i>	RA 0,8µm	
a) article -code xxxx.xxx.xxx-0x1		
b) article -code xxxx.xxx.xxx-0x2		
Seals:	EPDM (FDA)	
	not in product contact	
	1.4301 / AISI304	
	RA 1,5-2,5µm	
	a) - e-polished	
	b) - mat	
	-	

11. Disassembly and assembly

11.1 Disassembly Typ: 4351, 4352, 4353, 4354, 4355

► Lubricants

- EPDM; Viton; K-Flex Klüber Paralip GTE 703
- NBR; HNBR; Silikon Klüber Paralip GB 363
- Thread Teflongrease Interlon

11.2 Disassembly Typ: 4358

- Unscrew the screw (2) and take off the hand lever (1).
- Release the catch disc (3) from the flanges and remove it.
- Unscrew the screw joints (7)-(8) take off the flange (4).
- Remove the seal (5) and the flap (6).
- Position the flap (6) in "open" position toward the seal (5).
- Deform the seal (5) manually to oval shape toward center of the flap disc (6).
- Pull out rotary shutter at traverse borings of the seal (5), first at short, then at long shaft end.
- Carry out assembly in reverse order.

11.3 Assembly

- Thouroughly clean and slightly lubricate mounting areas and running surfaces.
- Assemble in reverse order.



NOTE

Grease the two shafts of the flap (6) before inserting it into the seal (5) using a grease that is suitable for foods. When mounting the hand lever (1), be sure the lever orientation is matched up with the position slot at the square shaft. In this way the correct indication of the valve position by the hand lever is ensured.

12. Drawing

- 1) Hand lever
 2) Screw
 3) Catch disc
 4) Welding flange
 Male flange
 Liner flange
 Housing flange
 5) Seal
 6) Flap
 7) Pan head screw
 8) Hex. nut
 9) Cap
 10) Welding flange
 Male flange
 Liner flange
 11) Disc
 12) K-flex seal
 13) Screw
- w = welding end
m = male
l = liner
f = flange



