



Operating Instruction:

Leakage - Butterfly valve

with manual operation

Types LSV 4365
LSV 4366
LSV 4367
LSV 4368
LSV 4369
LSV 4370



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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, the 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. Safety instructions

4.1 Field of application

The Leakage - 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.

4.2 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.
- Liquids flowing through the leakage drain outlet are to be drained off without splashing into a discharge arrangement.
Before starting the system, the entire pipeline system must be thoroughly cleaned

4.3 General notes



NOTE

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

5. Function

5.1 Functional description

The valve will be opened and closed due to a rotation of 90°. The switch position is locked in the stop position manually. When closed, the butterfly valve with a tandem seal ensures that different media remain separated without leaking. In closed position alignment of the handle is 90°, in opened position alignment of the handle is parallel to the tube axis. The medium flows depressurised through the leakage drain ring-groove and out the leakage drain outlet. For hygienically demanding products, we recommend cleaning the leakage drain area. (Cleaning connection R1/4").

6. Installation informations

6.1 Installations instructions

Fitting position

Horizontal ► Leakage drain outlet below

Vertical ► Leakage drain outlet generally horizontally

Origin of liquids coming out from the leakage drain outlet

1. A small amount of liquid
⇒ part of the design when the valve is opening and closing
2. Liquid continuously leaking when valve is closed
⇒ seal is damaged (replace the seal)
3. Cleaning agent
⇒ cleaning the leakage drain area

6.2 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.



7. Maintenance

7.1 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; Silicone
Thread

→
→
→

Lubricants

Klüber Paraliq GTE
Klüber Paraliq GB 363
Teflon grease Interflon

7.2 Cleaning

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

7.3 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.

8. Control system - and interrogation system

8.1 Retrofitting for limit position feedback

By replacing the hand lever and the catch disc the valve can be retrofitted for limit position feedback (proximity switch).

8.2 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 50 - 80	DN 100 - 125	Actuator	Retrofit kit Art.-no.	Function
X	-	PDA 90/100	4200.080.100-022	- opening by air- closing by spring - closing by air - opening by spring
			4100.080.100-022	- opening by air - closing by air
X	-	PDA 90/125	4200.080.125-022	- opening by air- closing by spring - closing by air - opening by spring
			4100.080.125-022	- opening by air - closing by air
-	X	PDA 90/125	4200.100.125-022	- opening by air- closing by spring - closing by air - opening by spring
			4700.100.125-022	- opening by air - closing by air



9. Technical data

Model:	Leakage - Butterfly valve manual operation	
Valve size:	DN 50 - DN 125 DN 2" - DN 3"	
Connections:	<ul style="list-style-type: none"> • Welding end PN10 • K-Welding end PN10 • Male part DIN11851 • Liner / nut DIN11851 	
Temperature range:	<ul style="list-style-type: none"> • Ambient temperature: +4° bis +45°C • Product temperature: +0° bis +95°C depending on the medium • Sterilization temperature: +140°C (short-time 30min) 	
Operations pressures:	Working pressure: <ul style="list-style-type: none"> • DN50 - DN100 = 10 bar • DN2" - DN3" = 10 bar • DN125 = 6 bar Cleaning pressure: <ul style="list-style-type: none"> • Cleaning by the pipe cleaning: <ul style="list-style-type: none"> - max. 3 bar • Cleaning of the leakage line with product-subjected valve: <ul style="list-style-type: none"> - max. 1 bar (cleansing water) • Cleaning of the leakage line with the pipe cleaning: <ul style="list-style-type: none"> - max. 3 bar 	
Material:	in product contact	not in product contact
Stainless steel	1.4404 / AISI316L	1.4301 / AISI304
Surfaces:	Ra 0,8µm e-pol.	RA 1,5-2,5µm e-pol.
Seals:	EPDM (FDA); HNBR (FDA)	-

10. Disassembly and assembly

10.1 Disassembly

➤ Lubricants

• EPDM; Viton; K-Flex
Klüber Paraliq GTE 703

• NBR; HNBR; Silikon
Klüber Paraliq GB 363

• Thread
Teflongrease Interflon

- Unscrew the saucer-head screw (10) and take off the hand lever (9).
- Unscrew the screws (11) together with the lock washer (12).
- Remove the housing lower part (1).
- Develop the seal (4) with the flap (5).
- Position the flap (5) in "open" position toward the seal (4).
- Clamp the flap clamp (5) at the square into a vice.
- Deform the seal (4) manually to oval shape toward center of flap (5).
- Take the flap (5) at first with the short shaft end and then with the long shaft end out from the bore-holes of the seal (4).

10.2 Assembly

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



NOTE

- Grease the two shafts of the flap (5) before inserting it into the seal (4) using a grease that is suitable for foods.
- When mounting the hand lever (9), 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.

11. Drawing

11.1 Drawing Type: LSV4365 - Base valve

- 1) Housing complete
- 2) Seal
- 3) Plain bearing
- 4) Seal
- 5) Flap
- 6) Catch disc
- 7) - Catch disc Standard
- Catch disc with proximity switch mounting
- 8) Straight pin
- 9) Screw
- 10) - Lever Standard
- Lever Standard for end position feedback
- Lever stainless steel
- Lever stainless steel for end position feedback
- 11) Saucer-head screw
- 12) Screw
- 13) Split washer
- 14) Hexagon screw
- 15) Hexagon nut

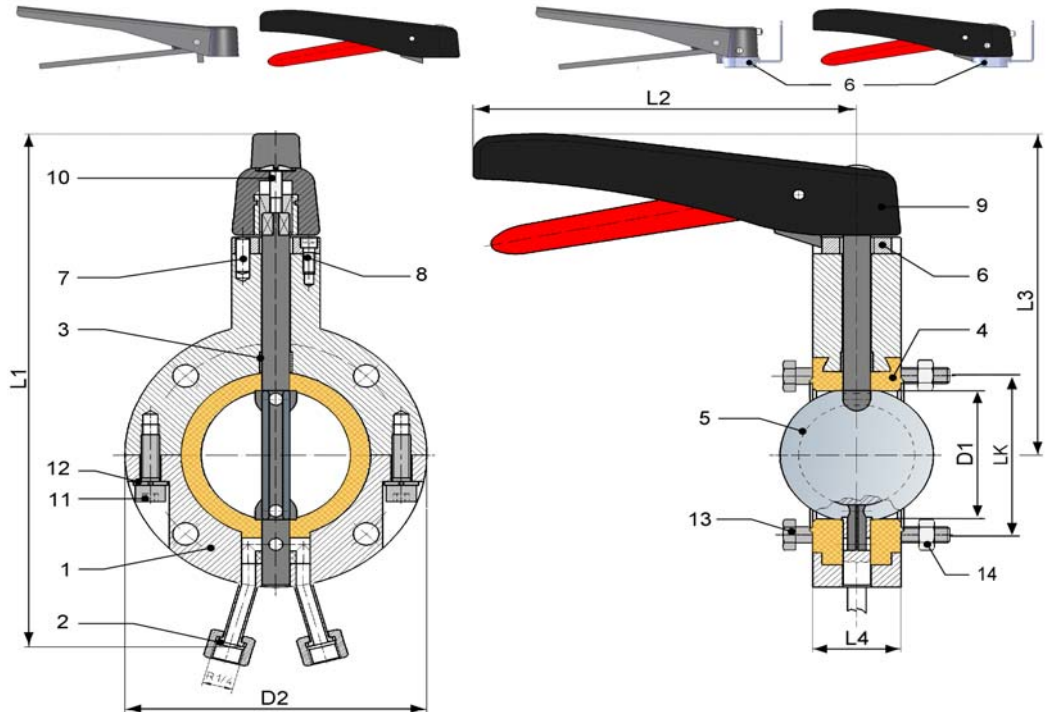
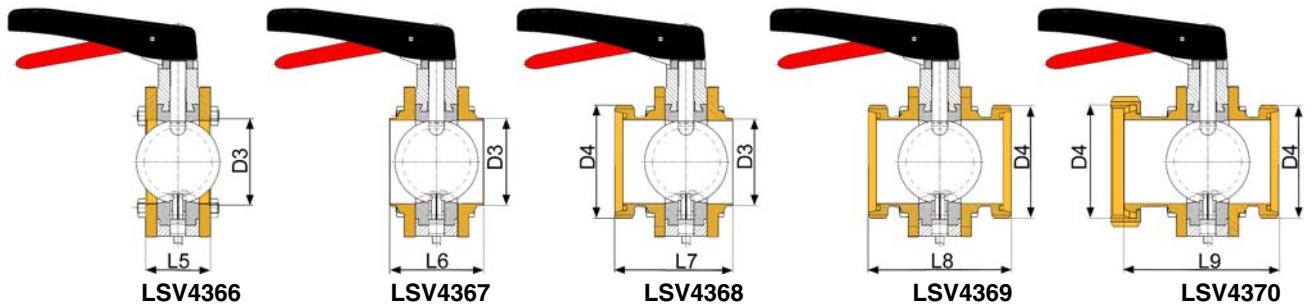


Fig. 1

11.2 Drawing Type: LSV4366; LSV4367; LSV4368; LSV4369; LSV4370



11.3 Dimensions

DN	LK	L9	L8	L7	L6	L5	L4	L3	L2	L1	D4	D3	D2	D1
50 (ø50)	125	149	156	109	86	68	38	148	165	~ 232	Rd78x1/6	ø 53x1,5	ø 110	ø 50
65 (ø66)	145	158	166	111	86	68	38	158	165	~ 252	Rd95x1/6	ø 70x2	ø 130	ø 66
80 (ø80)	160	158	179	114	89	71	41	167	165	~ 269	Rd110x1/4	ø 85x2	ø 145	ø 81
100 (ø100)	180	187	197	118	89	71	41	178	180	~ 290	Rd130x1/4	ø 104x2	ø 165	ø 100
125 (ø125)	210	181	193	145	101	87	53	214	285	~ 341	Rd160x1/4	ø 129x2	ø 195	ø 125
2"	-	-	-	-	86	68	38	148	165	~ 232	-	-	ø 110	ø 48
2½"	-	-	-	-	86	68	38	158	165	~ 252	-	-	ø 130	ø 65
3"	-	-	-	-	89	71	41	167	165	~ 269	-	-	ø 145	ø 72

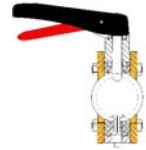
12. Spare parts list

12.1 Type 4365 LSV - Base valve

Item.	Designation	Material	DN50	DN65	DN80	DN100	DN125	
	Leakage-Butterfly valve Standard	EPDM 1.4404	4365 050 130-041	4365 065 130-041	4365 080 130-041	4365 100 130-041	4365 125 130-041	
		HNBR 1.4404	4365 050 420-041	4365 065 420-041	4365 080 420-041	4365 100 420-041	4365 125 420-041	
	Leakage-Butterfly valve with Stainless steel - Lever	EPDM 1.4404	4365 050 120-041	4365 065 120-041	4365 080 120-041	4365 100 120-041	4365 125 120-041	
		HNBR 1.4404	4365 050 494-041	4365 065 494-041	4365 080 494-041	4365 100 494-041	4365 125 494-041	
	Leakage-Butterfly valve Standard with proximity switch mounting	EPDM 1.4404	4365 050 140-041	4365 065 140-041	4365 080 140-041	4365 100 140-041	4365 125 140-041	
		HNBR 1.4404	4365 050 423-041	4365 065 423-041	4365 080 423-041	4365 100 423-041	4365 125 423-041	
	Leakage-Butterfly valve with Stainless steel - Lever and proximity switch mounting	EPDM 1.4404	4365 050 123-041	4365 065 123-041	4365 080 123-041	4365 100 123-041	4365 125 123-041	
		HNBR 1.4404	4365 050 421-041	4365 065 421-041	4365 080 421-041	4365 100 421-041	4365 125 421-041	
1	Housing (incl. Pos. 11 + 12)	1.4301	4365 050 001-022	4365 065 001-022	4365 080 001-022	4365 100 001-022	4365 125 001-022	
2	Seal	EPDM	2354 012 006-054					
3	Plain bearing	Cu, XSM	8050 012 010-060		8050 015 010-060		8050 020015-156	
4	Seal	EPDM	4377 050 000-054	4377 065 000-054	4377 080 000-054	4377 100 000-054	4377 125 000-054	
		HNBR	4378 050 000-050	4378 065 000-050	4378 080 000-050	4378 100 000-050	4378 125 000-050	
5	Flap	1.4462	4365 050 003-131	4365 065 003-131	4365 080 003-131	4365 100 003-131	4365 125 003-131	
6	Catch disc	1.4308, 1.4301	4021 025 005-027		4021 100 025-027		4021 100 005-020	
	Catch disc with proximity switch mounting	1.4308, 1.4301	4321 025 001-021	4321 050 001-021	4321 100 001-021		4021 100 161-021	
7	Straight pin (2x)	1.4301	8062 061 016-020				8062 061 028-020	
8	Pan head screw (2x)	1.4301	4021 025 013-020				4021 100 013-020	
9	Lever Standard	PA, 1.4301	4335 100 000-089			4318 100 200-021	-	
	Lever Standard for end position feedback	PA, 1.4301	4321 100 100-089			4321 100 200-021	-	
	Lever stainless steel	1.4301	4318 050 300-021	4318 100 300-021			4318 150 000-021	
	Lever stainless steel for end position feedback	1.4301	4321 050 300-021	4321 100 300-021			4321 150 003-021	
10	Saucer-head screw	1.4301	4301 100 005-020				8095 006 030-020	
11	Pan head screw (2x)	1.4301	8095 008 020-020		8095 010 025-020		8095 012 030-020	
12	Split washer (2x)	1.4301	8140 008 001-020		8140 010 001-020		8140 012 001-020	
13	Hexagon screw (4x)	1.4301	8105 008 070-020		8105 010 070-020		8105 012 090-020	
14	Hexagon nut (4x)	1.4301	8107 008 000-020		8107 010 000-020		8107 012 000-020	

12.2 Type 4366 LSV with welding end PN10 S-S

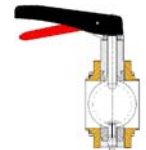
Material	valve complete	welding end	Base valve
EPDM 1.4301 1.4404	4366 DN 130-021	2069 DN 000-020	4365 DN 130-041
	4366 DN 130-041	2069 DN 000-040	4365 DN 130-041
	4366 DN 120-041	2069 DN 000-040	4365 DN 120-041
	4366 DN 140-041	2069 DN 000-040	4365 DN 140-041
	4366 DN 123-041	2069 DN 000-040	4365 DN 123-041
HNBR 1.4301 1.4404	4366 DN 420-021	2069 DN 000-020	4365 DN 420-041
	4366 DN 420-041	2069 DN 000-040	4365 DN 420-041
	4366 DN 494-041	2069 DN 000-040	4365 DN 494-041
	4366 DN 423-041	2069 DN 000-040	4365 DN 423-041
	4366 DN 421-041	2069 DN 000-040	4365 DN 421-041



DN = nominal diameter z.B. 050

12.3 Type 4367 LSV with K-welding end PN10 S-S

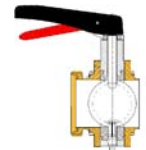
Material	valve complete	K-welding end	Base valve
EPDM 1.4301 1.4404	4367 DN 130-021	2041 DN 000-020	4365 DN 130-041
	4367 DN 130-041	2041 DN 000-040	4365 DN 130-041
	4367 DN 120-041	2041 DN 000-040	4365 DN 120-041
	4367 DN 140-041	2041 DN 000-040	4365 DN 140-041
	4367 DN 123-041	2041 DN 000-040	4365 DN 123-041
HNBR 1.4301 1.4404	4367 DN 420-021	2041 DN 000-020	4365 DN 420-041
	4367 DN 420-041	2041 DN 000-040	4365 DN 420-041
	4367 DN 494-041	2041 DN 000-040	4365 DN 494-041
	4367 DN 423-041	2041 DN 000-040	4365 DN 423-041
	4367 DN 421-041	2041 DN 000-040	4365 DN 421-041



DN = nominal diameter z.B. 050

12.4 Type 4368 LSV with male part und K-welding end PN10 G-S

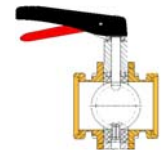
Material	valve complete	Gewindestutzen	K-welding end	Base valve
EPDM 1.4301 1.4404	4368 DN 130-021	4368 DN 001-021	2041 DN 000-020	4365 DN 130-041
	4368 DN 130-041	4368 DN 001-041	2041 DN 000-040	4365 DN 130-041
	4368 DN 120-041	4368 DN 001-041	2041 DN 000-040	4365 DN 120-041
	4368 DN 140-041	4368 DN 001-041	2041 DN 000-040	4365 DN 140-041
	4368 DN 123-041	4368 DN 001-041	2041 DN 000-040	4365 DN 123-041
HNBR 1.4301 1.4404	4368 DN 420-021	4368 DN 001-021	2041 DN 000-020	4365 DN 420-041
	4368 DN 420-041	4368 DN 001-041	2041 DN 000-040	4365 DN 420-041
	4368 DN 494-041	4368 DN 001-041	2041 DN 000-040	4365 DN 494-041
	4368 DN 423-041	4368 DN 001-041	2041 DN 000-040	4365 DN 423-041
	4368 DN 421-041	4368 DN 001-041	2041 DN 000-040	4365 DN 421-041



DN = nominal diameter z.B. 050

12.5 Type 4369 LSV with male part G-G

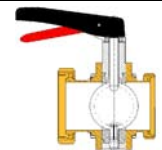
Material	valve complete	male part (2x)	Base valve
EPDM 1.4301 1.4404	4369 DN 130-021	4368 DN 001-021	4365 DN 130-041
	4369 DN 130-041	4368 DN 001-041	4365 DN 130-041
	4369 DN 120-041	4368 DN 001-041	4365 DN 120-041
	4369 DN 140-041	4368 DN 001-041	4365 DN 140-041
	4369 DN 123-041	4368 DN 001-041	4365 DN 123-041
HNBR 1.4301 1.4404	4369 DN 420-021	4368 DN 001-021	4365 DN 420-041
	4369 DN 420-041	4368 DN 001-041	4365 DN 420-041
	4369 DN 494-041	4368 DN 001-041	4365 DN 494-041
	4369 DN 423-041	4368 DN 001-041	4365 DN 423-041
	4369 DN 421-041	4368 DN 001-041	4365 DN 421-041



DN = nominal diameter z.B. 050

12.6 Type 4370 LSV with Liner/nut und male part K/M-G

Material	valve complete	Liner/nut	male part	Base valve
EPDM 1.4301 1.4404	4370 DN 420-021	4370 DN 001-021	4368 DN 001-021	4365 DN 130-041
	4370 DN 420-041	4370 DN 001-041	4368 DN 001-041	4365 DN 130-041
	4370 DN 494-041	4370 DN 001-041	4368 DN 001-041	4365 DN 120-041
	4370 DN 423-041	4370 DN 001-041	4368 DN 001-041	4365 DN 140-041
	4370 DN 421-041	4370 DN 001-041	4368 DN 001-041	4365 DN 123-041
HNBR 1.4301 1.4404	4370 DN 420-021	4370 DN 001-021	4368 DN 001-021	4365 DN 420-041
	4370 DN 420-041	4370 DN 001-041	4368 DN 001-041	4365 DN 420-041
	4370 DN 494-041	4370 DN 001-041	4368 DN 001-041	4365 DN 494-041
	4370 DN 423-041	4370 DN 001-041	4368 DN 001-041	4365 DN 423-041
	4370 DN 421-041	4370 DN 001-041	4368 DN 001-041	4365 DN 421-041



DN = nominal diameter z.B. 050