Gillain & Co
HYGIENIC EQUIPMENT FOR FOOD & LIFE SCIENCES

Manual or Automatic - it's your Choice

LKB Automatic or Manual Butterfly Valve

Application
LKB is a sanitary automatically or manually operated butterfly valve for use in stainless steel pipe systems.

Working principle
LKB is either remote-controlled by means of an actuator or manually operated by means of a handle.
The actuator is made in three standard versions, normally closed (NC), normally open (NO) and air/air activated (A/A).

The actuator is designed so that an axial movement of a piston is transformed into a 90° rotation of a shaft. The torque of the actuator is increased when the valve disc contacts the seal ring of the butterfly valve.

The handle for manual operation mechanically locks the valve in its open or closed position.

The handles for the valve sizes DN125 and DN150, which are designed for locking in two intermediate positions, enables adjusting of the valve, so that the flow rate can be regulated.

Standard design
LKB is available in three versions, LKB for ISO tubes, LKB-2 for DIN tubes and LKB-F for flange connection.

The valve consists of two valve body halves, valve disc, bushes for the disc stem and seal ring. LKB-F also consists of two flanges and two flange seal rings. The valve is assembled by means of screws and nuts.

Two actuator sizes, ø85mm and ø133mm, cover all valve sizes. The actuator is available in two versions, LKLA and LKLA-T.

The actuator is fitted onto the valve by means of a bracket and screws. (The actuator can also be fitted onto ball valves by means of special brackets).

The handle for manual operation is fitted onto the valve by means of a cap/block system and a screw.

The valve has welding ends as standard, but LKB and LKB-2 can also be supplied with fittings.

Control Equipment
Control and indication is possible in connection with the remote-controlled LKB valve. See "Options".

LKLA-T can be fitted with ThinkTop®.



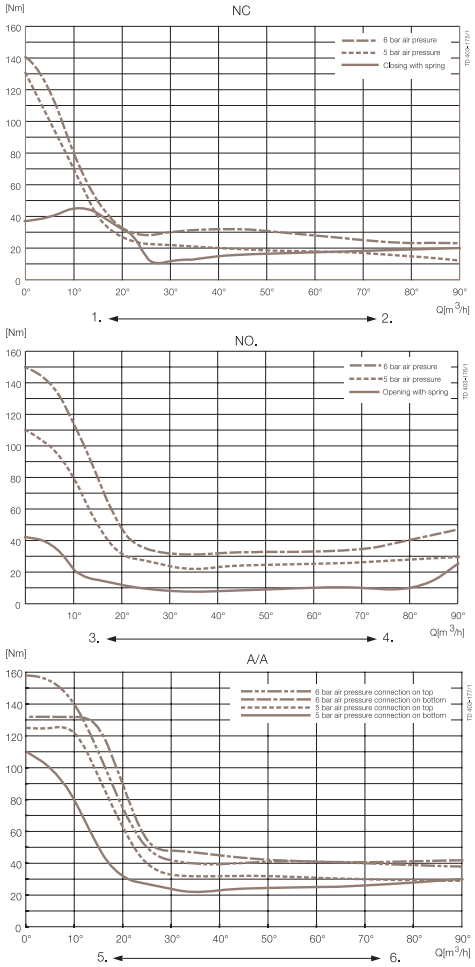
LKB-F butterfly valve with LKLA actuator
LKB butterfly valve with handle 1.1

CERTIFIED HYGIENIC ENGINEERING DESIGN EUROPEAN GROUP EHEDG
TYPE EL
OCTOBER 2008

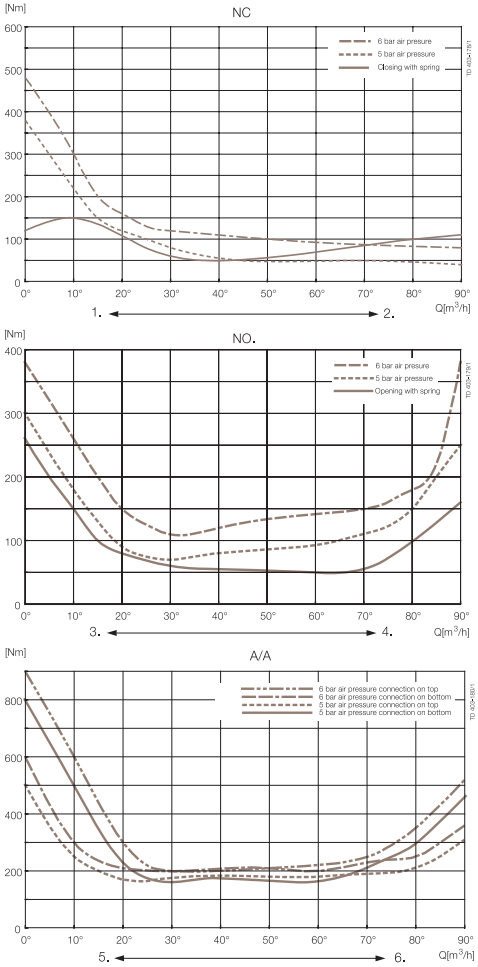
Gillain & Co NV | Boomsesteenweg 85, B-2630 Aartselaar | Tel. +32 3 870 60 80, Fax +32 3 870 60 89 | advice@gillain.com | www.gillain.com

Torque diagrams - Actuator

LKLA ø85 mm:



LKLA ø133 mm:



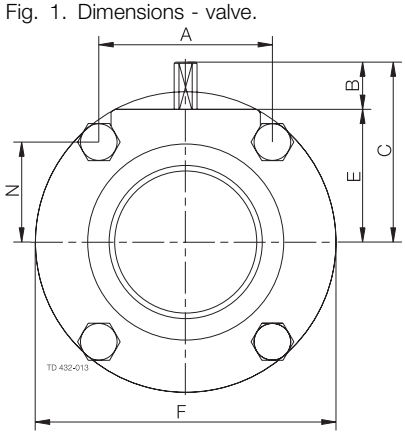
Torque values (for rotating the valve disc in a dry seal ring)

Size	Max. Nm
25mm/DN25	15
DN32	15
38mm/DN40	15
51mm/DN50	20
63.5mm/DN65	25
76mm/DN80	30
101.6mm/DN100	35
DN125	50
DN150	120

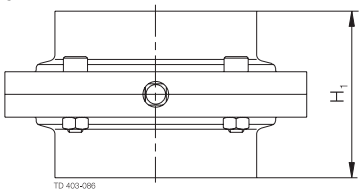
Angular motion of actuator:

1. Closing - Spring activated
2. Opening - Air activated
3. Closing - Air activated
4. Opening - Spring activated
5. Closing
6. Opening

Fig. 1. Dimensions - valve.

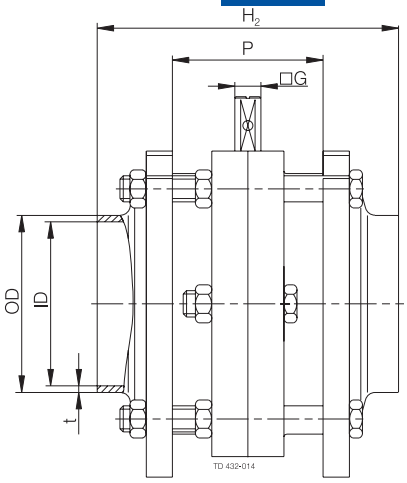


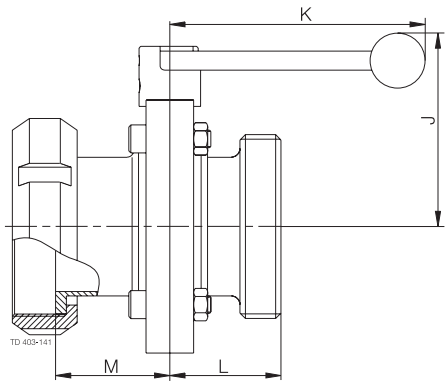
a. LKB-F.



b. LKB with welding ends.

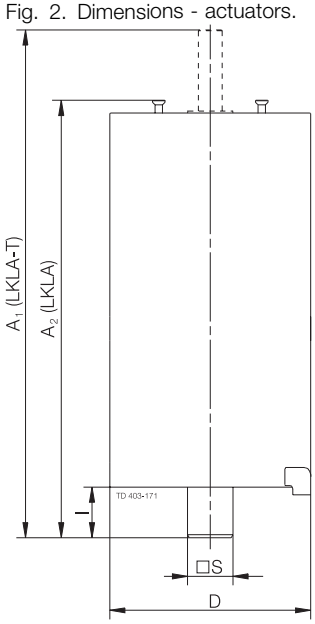
Note! LKB sizes DN 125 and 150 are with six screws.



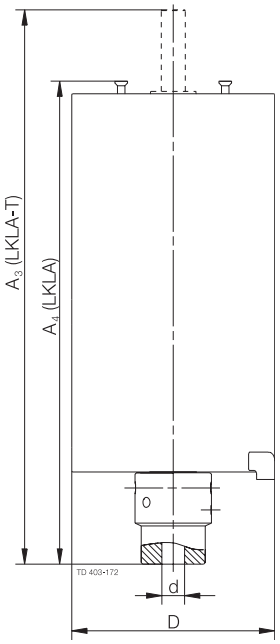


c. LKB with male part/nut and liner.

Fig. 2. Dimensions - actuators.



a. Without coupling.



b. With coupling.

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Dimensions (mm) - Valve

LKB, LKB-2, LKB-F:

Size	25	38	51	63.5	76.1	101.6	DN	DN	DN	DN	DN	DN	DN	DN	DN
	mm	mm	mm	mm	mm	mm	25	32	40	50	65	80	100	125	150
A	42.0	42.0	61.0	61.0	79.5	106.0	42.0	42.0	42.0	61.0	61.0	79.0	106.0	106.0	98.0
B	15.5	16.7	16.6	17.5	16.6	16.0	14.7	15.9	16.7	16.6	17.5	16.0	16.0	18.0	18.0
C	49.0	49.0	58.5	69.5	73.5	93.0	48.0	49.0	54.0	63.0	75.0	79.0	93.0	115.0	122.0
OD	25.6	38.6	51.6	64.1	76.6	102.2	30.0	36.0	42.0	54.0	70.0	85.0	104.0	129.0	154.0
ID	22.5	35.5	48.5	60.5	72.0	97.6	26.0	32.0	38.0	50.0	66.0	81.0	100.0	125.0	150.0
t	1.55	1.55	1.55	1.8	2.3	2.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
E	32.5	32.5	42.0	52.0	57.0	77.0	33.3	33.3	37.7	46.6	57.3	63.0	77.0	96.7	104.0
F	78.0	78.0	99.0	117.0	132.0	169.0	79.0	79.0	86.5	105.7	125.0	143.0	169.0	199.0	215.0
G	8.0	8.0	8.0	8.0	10.0	12.0	8.0	8.0	8.0	8.0	10.0	10.0	12.0	14.0	15.0
H_1	47.0	47.0	52.0	54.0	62.0	80.0	47.0	47.0	47.0	52.0	62.0	64.0	80.0	110.0	80.0
H_2	83.0	83.0	92.0	92.0	114.0	132.0	83.0	83.0	83.0	92.0	114.0	116.0	132.0	136.0	152.0
J	82.0	82.0	92.0	102.0	107.0	127.0	74.0	74.0	78.0	88.0	98.0	104.0	118.0	150.0	161.0
K	120.0	120.0	120.0	120.0	162.0	162.0	120.0	120.0	120.0	120.0	162.0	162.0	162.0	223.0	338.0
L IDF/ISO	45.0	45.0	47.5	48.5	52.5	61.5	-	-	-	-	-	-	-	-	-
M IDF/ISO	55.5	55.5	58.0	59.0	63.0	81.5	-	-	-	-	-	-	-	-	-
L DS	42.0	43.5	46.0	51.0	55.0	64.0	-	-	-	-	-	-	-	-	-
M DS	54.5	54.5	57.0	59.0	63.0	72.0	-	-	-	-	-	-	-	-	-
L SMS	38.5	43.5	46.0	51.0	55.0	75.0	-	-	-	-	-	-	-	-	-
M SMS	51.0	52.5	55.0	56.0	61.0	72.0	-	-	-	-	-	-	-	-	-
L BS	45.7	45.7	48.2	49.2	53.2	67.0	-	-	-	-	-	-	-	-	-
M BS	50.5	50.5	53.0	54.0	58.0	71.8	-	-	-	-	-	-	-	-	-
L DIN	45.5	45.5	48.0	52.0	61.0	70.0	40.0	40.0	37.0	37.0	43.0	48.0	51.0	55.0	115.0
M DIN	61.5	61.5	66.0	67.0	71.0	83.0	45.5	48.5	49.5	54.0	63.0	69.0	84.0	89.0	77.0
L Clamp	45.0	45.0	47.5	48.5	52.5	61.5	-	-	-	-	-	-	-	-	-
N	26.5	26.5	30.5	40.5	43.5	53.0	27.3	27.3	31.7	35.1	45.8	49.5	53.0	72.7	85.0
P	42.0	42.0	46.0	46.0	58.0	58.0	42.0	42.0	42.0	46.0	58.0	58.0	58.0	62.0	78.0
Weight LKB-F (kg)	1.6	1.3	2.1	2.9	5.0	7.9	1.6	1.6	1.7	2.6	4.7	5.8	7.9	11.7	12.3
Weight LKB/ LKB-2 (kg)	1.2	1.0	1.5	2.1	3.0	4.7	1.2	1.1	1.3	1.8	3.0	3.5	5.1	7.5	9.0

NOTE! Weights are for valves with welding ends and handles.

Dimensions (mm) - Actuator

LKLA and LKLA-T:

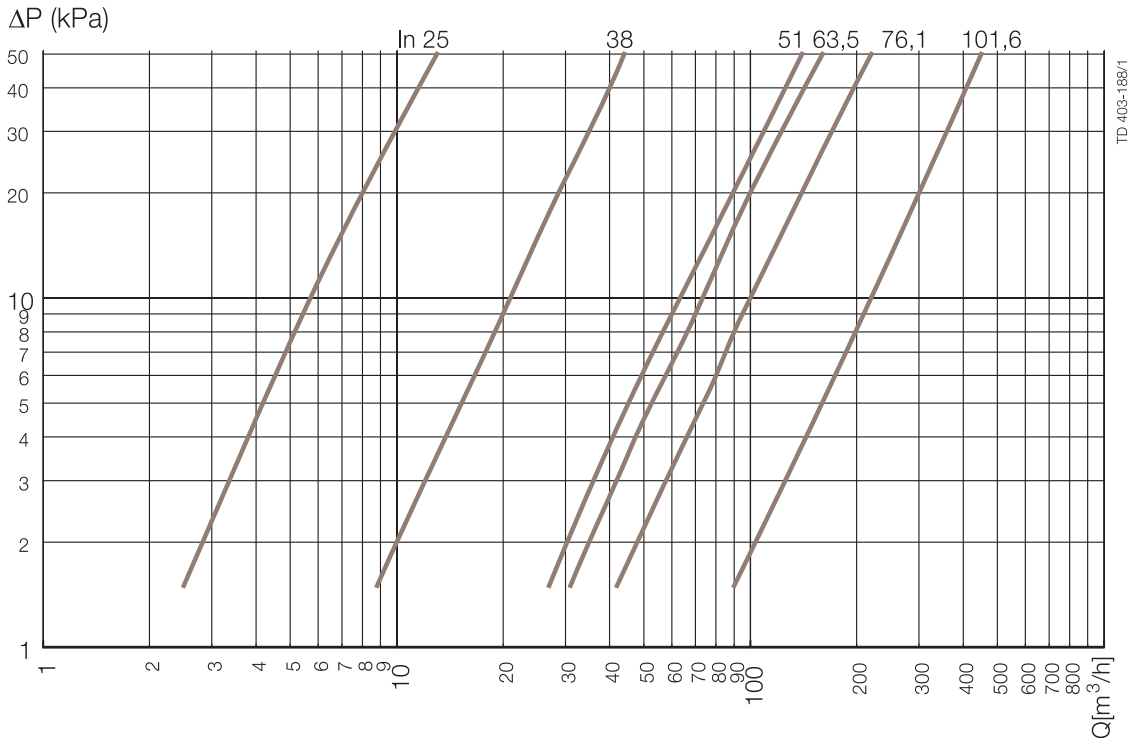
Valve size	25-63.5 DN25-50	76.1 DN65-80	101.6 DN100	101.6 DN100	DN125	DN125	DN150	DN150
A_1	244	242	242	363	246	363	246	363
A_2	193	191	191	316	195	316	195	316
A_3	244	244	244	337	244	337	244	337
A_4	173	173	173	290	173	290	173	290
D	85	85	85	133	85	133	85	133
d	17	17	17	30	20	30	20	30
I	16.5	16.5	16.5	34	16.5	34	16.5	34
S	8	10	12	12	14	14	15	15
Function	NC,NO,A/A	NC,NO,A/A	NC,NO,A/A	NC,NO,A/A	A/A	NC,NO,A/A	A/A	NC,NO,A/A

Connections

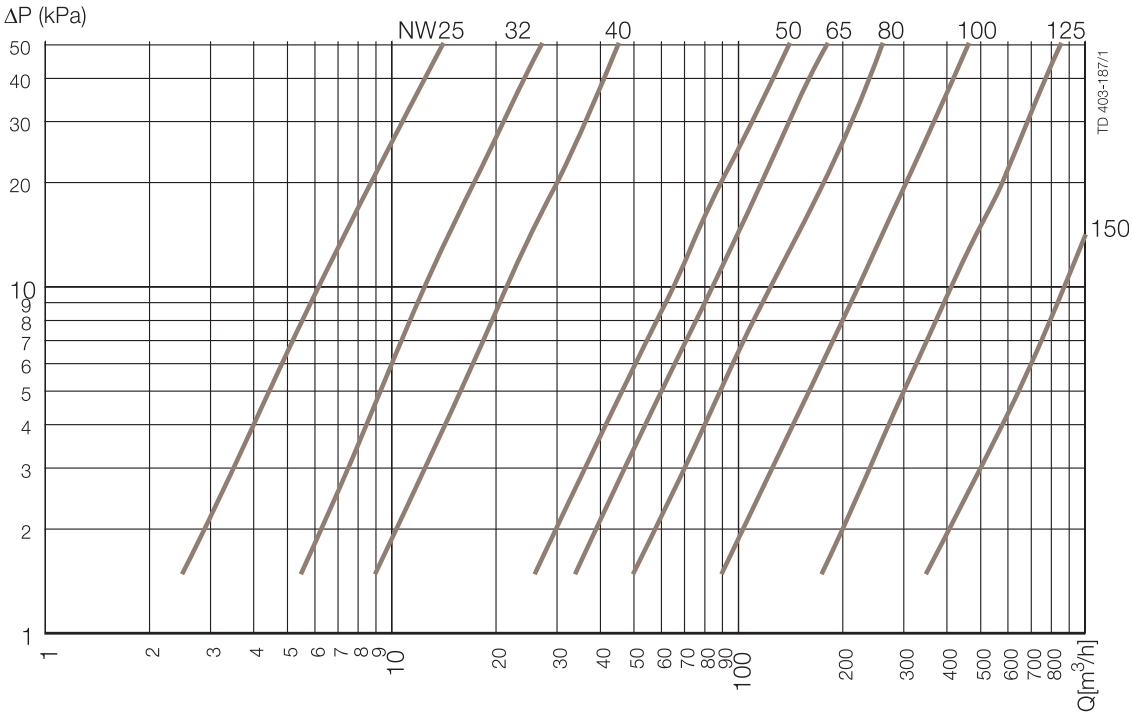
Compressed air

R1/8" (BSP), internal thread.

Capacity/Pressure drop diagrams



LKB and LKB-F fully open.



LKB-2 and LKB-F fully open.

NOTE!
For the diagrams the following applies:
Medium: Water (20°C).
Measurement: In accordance with VDI 2173.

Technical Data

Valve:

Max. product pressure: . . . . . .1000 kPa (10 bar).
Min. product pressure: . . . . . .Full vacuum.
Temperature range: . . . . . .-10°C to +95°C.

Actuator:

Max. air pressure: . . . . . .700 kPa (7 bar).
Min. air pressure, NC and NO: . . . . . .400 kPa (4 bar).
Temperature range: . . . . . .-25°C to +90°C.
Air consumption (litres free air) - ø85 mm: . . . . . .0.24 x p (bar).
Air consumption (litres free air) - ø133 mm: . . . . . .0.95 x p (bar).
Weight: . . . . . .- ø85 mm: 3 kg.
- ø133 mm: 12 kg.

Materials

Valve:

Product wetted steel parts: . . . . . .1.4307 (304L) or 1.4404 (316L).
Other steel parts: . . . . . .1.4307 (304L).
Rubber grades: . . . . . .Silicone rubber (Q), EPDM or Fluorinated rubber (FPM), HNBR, PFA.
Bushes for valve disc: . . . . . .PVDF.
Finish: . . . . . .Semi-bright.

Actuator:

Actuator body: . . . . . .Stainless steel 1.4307 (304L).
Piston: . . . . . .Light alloy (for ø85 mm: Bronze).
Air/air version.
Seals: . . . . . .Nitrile (NBR).
Housing for switches: . . . . . .Noryl (PPO).

Seal Qualities

PFA:

PFA is a bonded seal in the PTFE family consisting of an EPDM seal with an outside PFA liner. The chemical resistance of PFA is very similar to PTFE, but opposite to those PFA is thermo plastic and has minimal porosity. The seal has high mechanical strength which makes it a perfect choice when dealing with abrasive products. Furthermore, the design of the PFA seal minimizes the risk of worn seal. Another advantage of the PFA seal is that the service intervals are prolonged due to a longer lifetime for the seal. The maximal temperature for the PFA seal is 90°C (194°F).
The seal is available in the following sizes: ISO:38, 51, 63.5, 76.1, 101.6 and DIN: 40, 50, 65, 80, 100.
The PFA seal rings fit the LKB-F sizes for ISO and are available as spare. The flange seals are not available in PFA, please select available rubber quality.

EPDM:

The EPDM seal is mechanically strong and normally resistant to ozone and other strong oxidizers, animal and vegetable fats, polar solvents, Acids and bases, water and aqueous solutions.
The seal is available in all sizes.

Silicone:

Normally resistant to ozone, other strong oxidizers and strong bases. The seal is available in all sizes.

FPM:

Normally resistant to ozone and other oxidizers, hydrocarbons in general, oils, lubricants and greases.
The seal is available in all sizes.

HNBR:

Mechanically strong and normally resistant to ozone and strong oxidizers, animal and vegetable fats, nonpolar solvents, oils and lubricants, water and aqueous solutions.
The flange seals are not available in HNBR, please select available rubber quality.
For further information on Product- and Chemical Resistance of Flexible Rubber Materials, please see PD sheet 65036.

Options

A. Male parts or clamp liners in accordance with required standard.
B. ThinkTop® for control and indication.*
C. Indication unit with micro switches.*
D. Indication unit with inductive proximity switches.*
E. Indication unit with Hall proximity switches.*
F. Explosion proof indication unit with inductive proximity switches.*
G. Bracket for actuator. (Also for ball valves).
H. Handle with two or four positions (standard on DN125 and DN150).
I. Handle for electrical position indication.
J. Handle with infinite intermediate positions (not for DN125 and DN150).
K. Multipositioning handle**.
L. Lockable Multiposition Handle. Padlock can be mounted as shown in fig. 5.
Note! Padlock is not delivered.
M. Special cap for 90° turned handle position.
N. Service tool for actuator.
O. Service tool for fitting 25-38 mm (DN25 - DN40) valve discs.

* For further information see Product Catalogue chapter "Control & Indication".

** A padlock can be mounted on the Lockable Multiposition Handle as shown in the opposite figure.
Note! Padlock is not delivered.

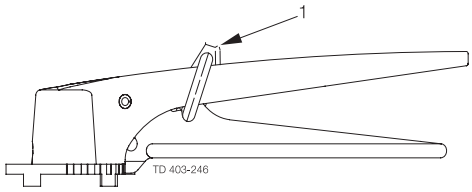


Fig. 3. Lockable Multiposition Handle with padlock.
1. Padlock

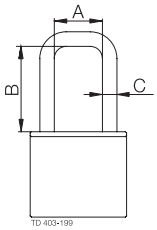


Fig. 4. Dimensions - padlock.
A. Min. 20 mm
B. Min. 35 mm
C. ø6 mm

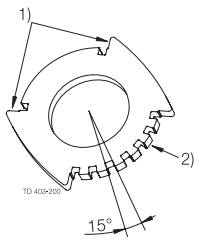


Fig. 5. Positioning cap.
1. On/Off
2. Multi positioning

Ordering

Please state the following when ordering:

- Valve type: LKB, LKB-2 or LKB-F.
- Valve size.
- Connections, if not welding ends.
- Materials: 1.4307 (304L) or 1.4404 (316L).
- Rubber grade: EPDM, Silicone (Q), Fluorinated rubber (FPM), HNBR or PFA.
- Type of handle, if required.

If ordering with actuator:

- Type: LKLA or LKLA-T.
- Size: ø85mm or ø133mm.
- Function: NC, NO or Air/Air.
- Other options.

Note!

For further details, see also IM 70730.

ESE00285EN 1001

The information contained herein is correct at the time of issue, but may be subject to change without prior notice.

How to contact Alfa Laval
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are continually updated on our website.
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access the information direct.

Gillain & Co NV | Boomsesteenweg 85, B-2630 Aartselaar | Tel. +32 3 870 60 80, Fax +32 3 870 60 89 | advice@gillain.com | www.gillain.com