Gillain & Co
HYGIENIC EQUIPMENT FOR FOOD & LIFE SCIENCES

The safe choice for High Purity applications

LKB UltraPure automatic or manual butterfly valve



Concept

LKB UltraPure is an automatic or manual operated butterfly valve for on/off duties. The UltraPure execution is designed and documented to meet the demand in industries like BioPharm and Personal Care.

Working principles

LKB UltraPure is either remote controlled by means of an air-actuator or manually by means of a handle.

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 of the valve.

The air-actuator come in three standard versions, normally closed (NC), normally open (NO) and air/air activated (A/A).
Two actuator sizes, ø85 mm and ø133 mm, cover all valve sizes and is available in two versions, LKLA and LKLA-T (T for mounting of indication unit on actuator).

The handle for manual operation mechanically locks the valve in its open or closed position.
Handles are available in 2 positions, 4 positions, regulating 90° and lockable multi-position.
The valve can be supplied with either welding or clamp connections.

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.

*) SIP (steam in place) up to 140°C is possible, but only when using EPDM and without operating it. Any seal material must be 95°C before operation.

PHYSICAL DATA

Product wetted steel part . . . .1.4404 (316L) acc. to EN 10088
Other steel parts . . . . . .1.4301 (304) acc. to EN 10088
Bushings for valve disc . . . . .PVDF

Elastomers

Product wetted seals . . . . . .EPDM acc. to FDA and USP Class VI

Surface specification (Product wetted steel parts)

ISO 2037 / DIN . . . . . .Internal: 0.5 µm
ASME BPE designation: SF1
External: Semi-bright
ASME BPE* . . . . . .Internal: 0.5 µm
ASME BPE designation: SF1
External: Semi-bright
ASME BPE* . . . . . .Internal: 0.4 µm electro polish
ASME BPE designation: SF4
External: Semi-bright
* According to ASME BPE 2009 table SF-3

Connections

Weld ends** . . . . . .Matching tubes and fittings: ISO 2037 / DIN / ASME BPE
Acc. to ISO, DIN or ASME BPE
Clamp ends . . . . . .Matching tubes and fittings: ISO 2037 / DIN / ASME BPE
Acc. to ISO, DIN or ASME BPE
** Weld ends on ASME BPE valves are according to ASME BPE 2009 316L Table DT-3 with low sulfur and suitable for orbital welding

Actuator

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

CERTIFIED EHEDG TYPE EL

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

Options

A. Product wetted seals: FPM (acc. to FDA and USP Class VI), Q and PFA
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.
H. Handle with two or four positions.
I. Handle for electrical position indication.
J. Handle with infinite intermediate positions.
K. Multipositioning handle**.
L. Lockable Multiposition Handle. Padlock can be mounted as shown in fig. 3.
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.

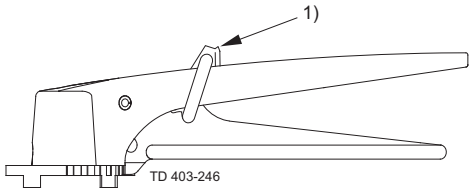


Fig. 1. Lockable Multiposition Handle with padlock.
1. Padlock

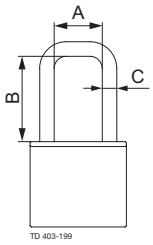


Fig.2. Dimensions - padlock.
A. Min. 20 mm
B. Min. 35 mm
C. ø6 mm

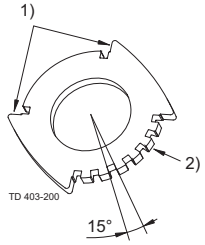


Fig. 3 Positioning cap.
1. On/Off
2. Multi positioning

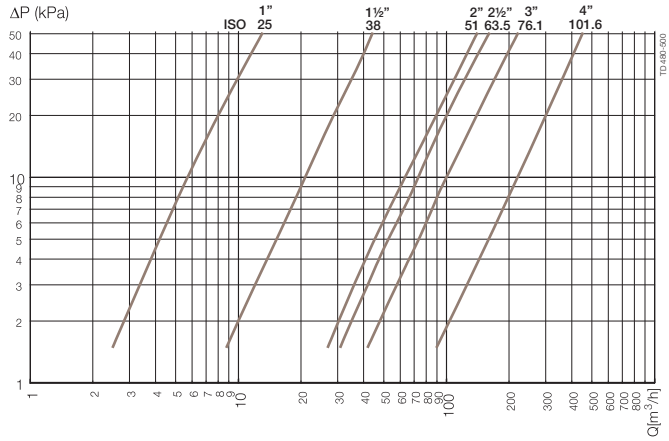
Documentation

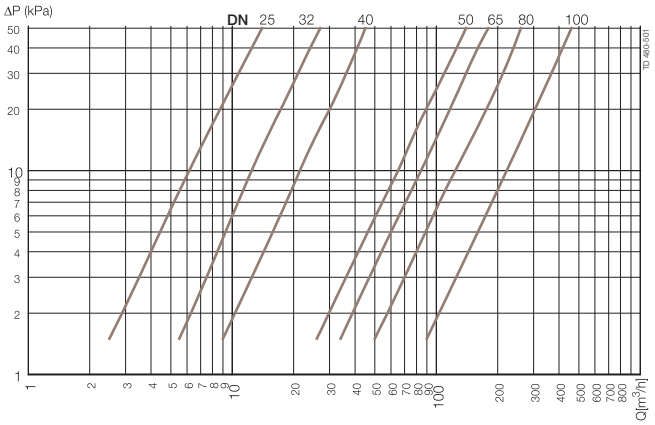
All valves are delivered with Alfa Laval Q-doc.

Note!

For further details, see also ESE01699.

Capacity/Pressure drop diagrams





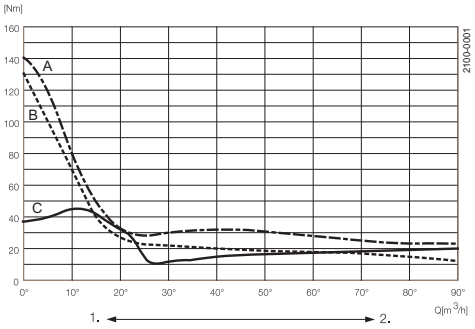
NOTE!

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

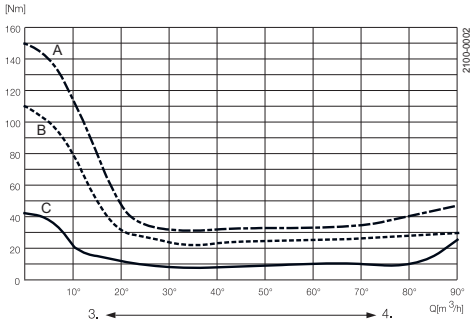
Torque diagrams - Actuator

LKLA ø85 mm:

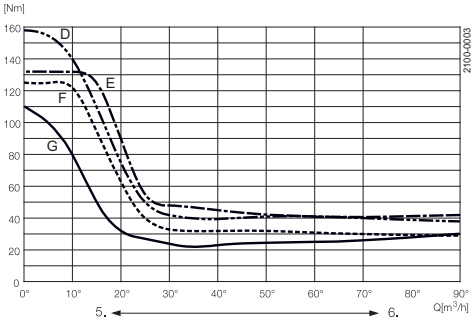
NC



NO

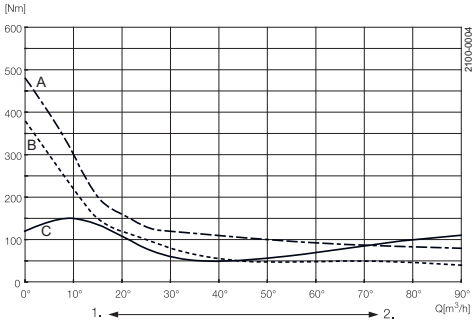


A/A

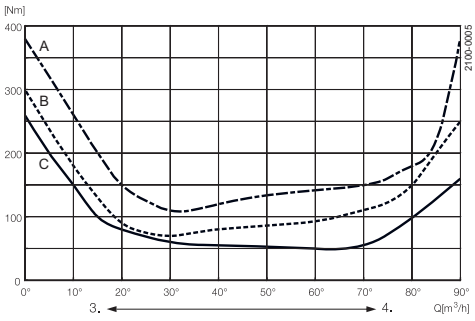


LKLA ø133 mm:

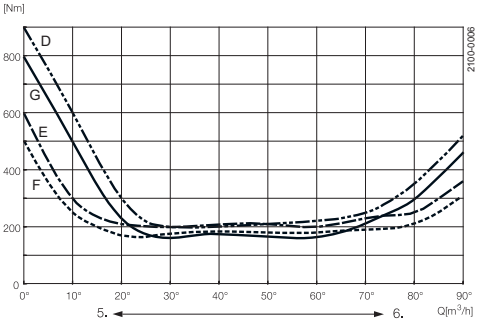
NC



NO



A/A



A = 6 bar air pressure
B = 5 bar air pressure
C = Closing/opening with spring

D = 6 bar air pressure connection on top
E = 6 bar air pressure connection on bottom
F = 5 bar air pressure connection on top
G = 5 bar air pressure connection on bottom

Angular motion of actuator:

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

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

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

Dimensions

Fig. 1. Dimensions - valve.

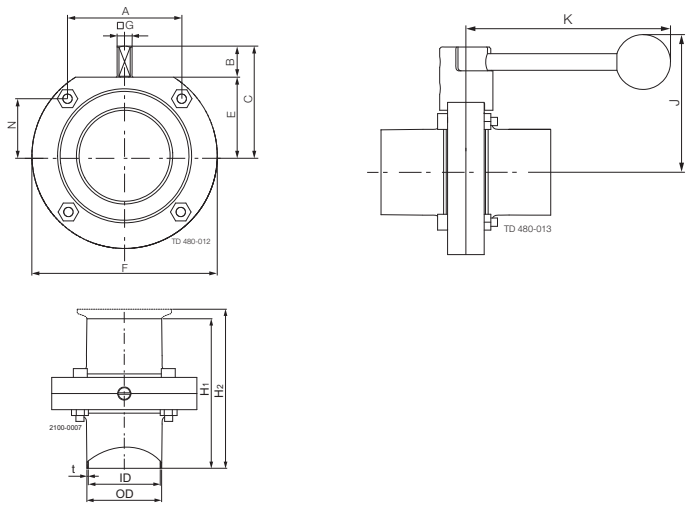
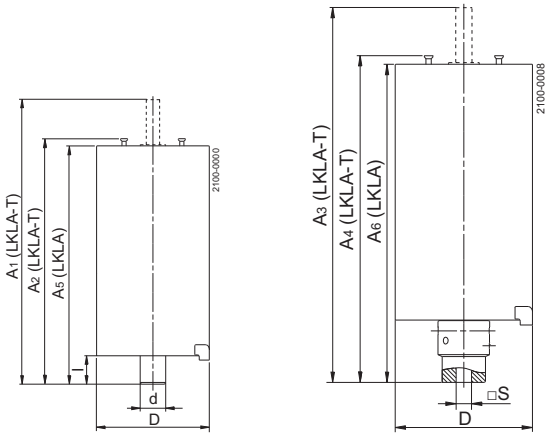


Fig. 2. Dimensions - actuator



a. Without coupling.

a1 = d

b. With coupling.

b1 = •S

Dimensions (mm)

LKB UltraPure

Size	25 mm	38 mm	51 mm	63.5 mm	76.1 mm	101.6 mm	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100
A	42.00	42.00	61.00	61.00	79.50	106.00	42.00	42.00	42.00	61.00	61.00	79.00	106.00
B	15.50	16.70	16.60	17.50	16.60	16.00	14.70	15.90	16.70	16.60	17.50	16.00	160.00
C	49.00	49.00	58.50	69.50	73.50	93.00	48.00	49.00	54.00	63.00	75.00	79.00	93.00
OD	25.00	38.00	51.00	63.50	76.10	101.60	29.00	35.00	41.00	53.00	70.00	85.00	104.00
ID	22.60	35.60	48.60	60.30	72.90	97.60	26.00	32.00	38.00	50.00	66.00	81.00	100.00
t	1.20	1.20	1.20	1.60	1.60	2.00	1.50	1.50	1.50	1.50	2.00	2.00	2.00
E	32.50	32.50	42.00	52.00	57.00	77.00	33.30	33.30	37.70	46.60	57.30	63.00	77.00
F	78.00	78.00	99.00	117.00	132.00	169.00	79.00	79.00	86.50	105.70	125.00	143.00	169.00
• G	8	8	8	8	10	12	8	8	8	8	10	10	12
H1	127.00	127.00	132.00	134.00	162.00	180.00	127.00	127.00	127.00	132.00	142.00	164.00	180.00
H2	104.20	104.20	109.20	111.20	176.40	194.40	90.00	90.00	90.00	95.00	118.00	120.00	136.00
J	82.00	82.00	92.00	102.00	107.00	127.00	74.00	74.00	78.00	88.00	98.00	104.00	118.00
K	120.00	120.00	120.00	120.00	162.00	162.00	120.00	120.00	120.00	120.00	162.00	162.00	162.00
N	26.50	26.50	30.50	40.50	43.50	53.00	27.30	27.30	31.70	35.10	45.80	49.50	53.00
Weight (kg)	1.2	1.0	1.5	2.1	3.0	4.7	1.2	1.1	1.3	1.8	3.1	3.5	5.1

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

Dimensions (mm) - Actuator

LKLA and LKLA-T:

Valve size	25-63.5 mm DN25-50	76.1 mm DN65-80	101.6 mm DN100	101.6 mm DN100
A_1	244	242	242	363
A_2	193	191	191	316
A_3	244	244	244	337
A_4	173	173	173	290
A_5	185	183	183	308
A_6	165	165	165	282
D	85	85	85	133
d	17	17	17	30
l	16.5	16.5	16.5	34
• s	8	10	12	12
Function	NC, NO, A/A	NC, NO, A/A	NC, NO, A/A	NC, NO, A/A

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Connections R⅛" (BSP), internal thread.

Compressed air

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ESE01697EN 1201

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Contact details for all countries
are continually updated on our website.
Please visit www.alfalaval.com to
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