



The safe choice for High Purity applications

LKB UltraPure Automatic or Manual Butterfly Valve

Concept

LKB UltraPure is an automatic or manually 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 comes in three standard versions, normally closed (NC), normally open (NO) and air/air activated (A/A).

Two actuator sizes, \varnothing 3.35" and \varnothing 5.24", cover all valve sizes and are 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:145 psi (10 bar)

Min. product pressure:Full vacuum

Temperature range:14°F to +203°F*

Actuator

Max. air pressure:101.5 psi (7 bar)

Min. air pressure, NC and NO:58 psi (4 bar)

Temperature range:-13°F to +194°F.

Air consumption (litres free air):

- \varnothing 3.35 in:0.24 x p (bar)

- \varnothing 5.24 in:0.95 x p (bar)

Weight:

- \varnothing 3.35 in:6.6 lb.

- \varnothing 5.24 in:26.5 lb

*) SIP (steam in place) up to 284°F is possible, but only when using EPDM and without operating it. Any seal material must be 203°F before operation.

PHYSICAL DATA

Product wetted steel part1.4404 (316L) acc. to EN 10088

Other steel parts1.4301 (304) acc. to EN 10088

Bushings for valve discPVDF

Elastomers

Product wetted sealsEPDM acc. to FDA and USP Class VI

Connections

Weld ends**Matching tubes and fittings: ISO 2037 / DIN / ASME BPE

Acc. to ISO, DIN or ASME BPE

Clamp endsMatching 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 \varnothing 85 mm: Bronze).

Seals:NBR

Housing for switches:PPO



Surface specification (Product wetted steel parts)

ISO 2037 / DIN:

Internal:20 µin
 ASME BPE designation:SF1
 External:Semi-bright

ASME BPE*:

Internal:20 µin
 ASME BPE designation:SF1
 External:Semi-bright

ASME BPE*:

Internal:16 µin electro polish
 ASME BPE designation:SF4
 External:Semi-bright

* According to ASME BPE 2009 table SF-3

Options

- A. Product wetted seals: FPM (acc. to FDA and USP Class VI), Q and PFA
- B. Tri-Clamp® or butt weld ends standard
- C. ThinkTop® for control and indication.*
- D. Green Top - position indication MS or PS
- E. Indication unit with micro switches.*
- F. Indication unit with inductive proximity switches.*
- G. Handle with two or four positions.
- H. Handle for electrical position indication.
- I. Handle with infinite intermediate positions.
- J. Multi-positioning handle with lever handle or pull knob
- K. Service tool for actuator.
- L. Service tool for fitting 1"-1.5" valve discs

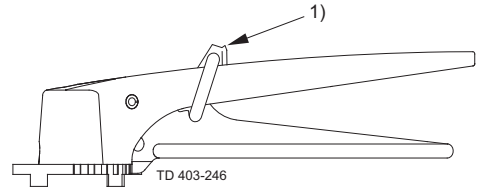


Fig. 1. Lockable Multiposition Handle with padlock.

1. Padlock

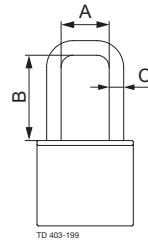


Fig. 2. Dimensions - padlock.

- A. Min. 0.79 inch
- B. Min. 1.38 inch
- C. ø 0.23 inch

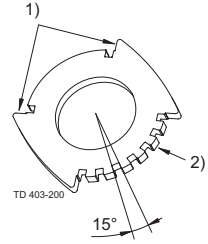


Fig. 3 Positioning cap.

- 1. On/Off
- 2. Multi positioning

Note for Ultra Pure ASME BPE clamp valve (size 1" - 2½")!

Installation and removal of some clamp rings is easiest by removal of the lockable multi position handle first.

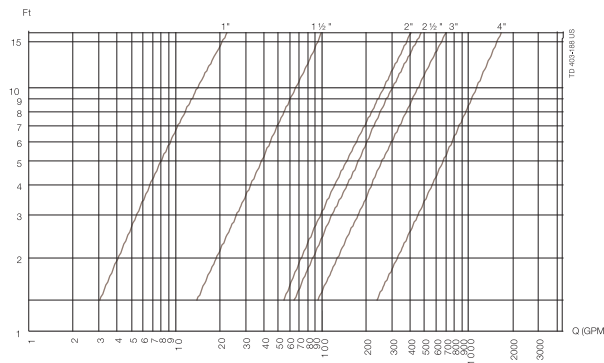
Documentation

All valves are delivered with Alfa Laval Q-doc.

Note!

For further details, see also ESE01699.

Capacity/Pressure drop diagrams



NOTE!

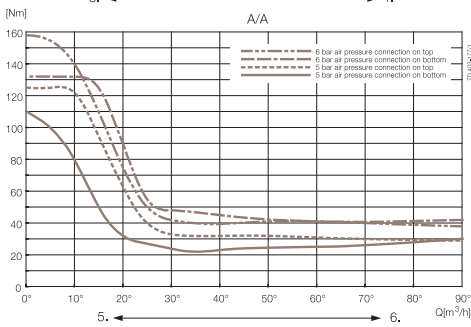
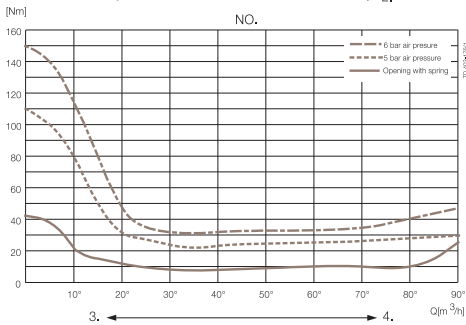
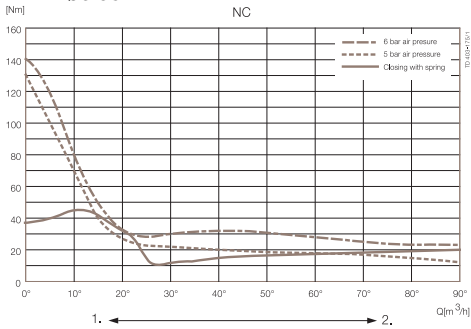
For the diagrams the following applies:

Medium: Water (68°F).

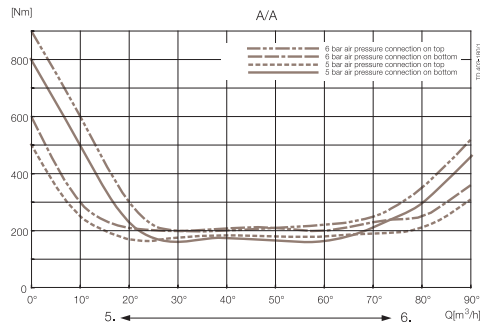
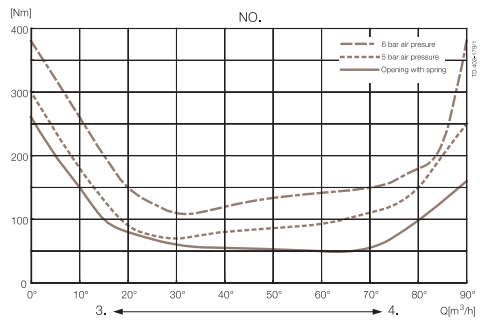
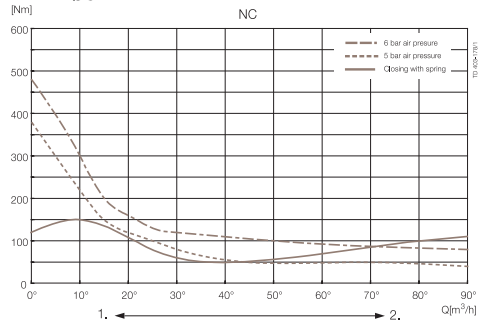
Measurement: In accordance with VDI 2173.

Torque diagrams - Actuator

LKLA \varnothing 3.35 in.:



LKLA \varnothing 5.24 in.:



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

| LKB UltraPure | Max Torque (ft-lbs) |
|---------------|---------------------|
| 1-inch | 11 |
| 1.5-inch | 11 |
| 2-inch | 11 |
| 2.5-inch | 15 |
| 3-inch | 18 |
| 4-inch | 26 |

Dimensions

Fig. 1. Dimensions - valve.

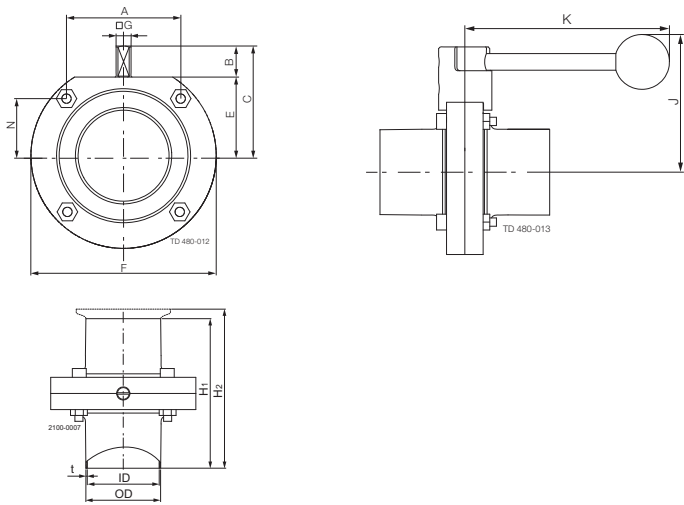
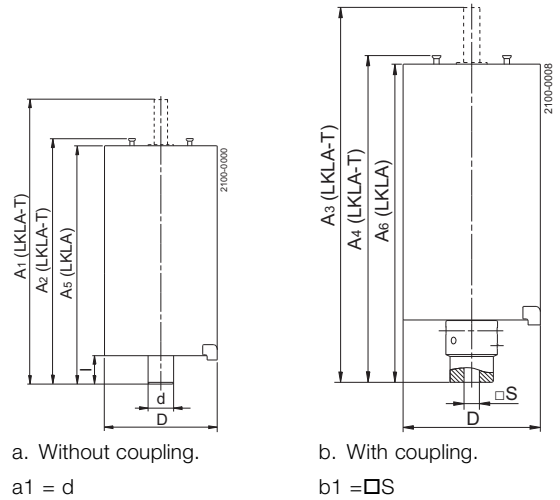


Fig. 2. Dimensions - actuator.



Dimensions (inch)

LKB UltraPure

| Size | 1" | 1½" | 2" | 2½" | 3" | 4" |
|----------------|-------|-------|-------|-------|-------|-------|
| A | 1.654 | 1.654 | 2.402 | 2.402 | 3.130 | 4.173 |
| B | 0.610 | 0.657 | 0.654 | 0.689 | 0.654 | 0.630 |
| C | 1.929 | 1.929 | 2.303 | 2.736 | 2.894 | 3.661 |
| OD | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 4.0 |
| ID | 0.870 | 1.370 | 1.870 | 2.370 | 2.870 | 3.834 |
| t | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.083 |
| E | 1.280 | 1.280 | 1.654 | 2.047 | 2.244 | 3.031 |
| F | 3.071 | 3.071 | 3.898 | 4.606 | 5.197 | 6.654 |
| □ G | 0.315 | 0.315 | 0.315 | 0.315 | 0.394 | 0.472 |
| H ₁ | 5.000 | 5.000 | 5.197 | 5.276 | 6.378 | 7.087 |
| H ₂ | 2.850 | 2.850 | 3.047 | 3.126 | 3.441 | 4.402 |
| J | 3.228 | 3.228 | 3.622 | 4.016 | 4.213 | 5.000 |
| K | 4.724 | 4.724 | 4.724 | 4.724 | 6.378 | 6.378 |
| N | 1.043 | 1.043 | 1.201 | 1.594 | 1.713 | 2.087 |
| Weight (lb) | 2.65 | 2.20 | 3.31 | 4.63 | 6.61 | 10.36 |

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

Dimensions (inch) - Actuator

LKLA and LKLA-T

| Valve Size | 1"-2.5" | 3" | 4" | 4" |
|----------------|-----------|-----------|-----------|-----------|
| A ₁ | 9.61 | 9.53 | 9.53 | 14.29 |
| A ₂ | 7.60 | 7.52 | 7.52 | 12.44 |
| A ₃ | 9.61 | 9.61 | 9.61 | 13.27 |
| A ₄ | 6.81 | 6.81 | 6.81 | 11.42 |
| D | 3.35 | 3.35 | 3.35 | 5.24 |
| d | 0.67 | 0.67 | 0.67 | 1.18 |
| l | 0.65 | 0.65 | 0.65 | 1.34 |
| □ s | 0.31 | 0.39 | 0.47 | 0.47 |
| Function | NC,NO,A/A | NC,NO,A/A | NC,NO,A/A | NC,NO,A/A |

Notel Suitability depends on process conditions

900594

Connections

Compressed air

R1/8" (BSP), internal thread.

(Quick connect fittings for ¼" tubing provided as standard)

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