The safe choice for High Purity applications

Alfa Laval 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, ø85 mm and ø133 mm, 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: .......... 1000 kPa (10 bar)
Min. product pressure: .......... Full vacuum
Temperature range: .......... -10°C to +140°C (EPDM)

However max. 95°C when operating the valve.

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 (l/min free air):
- ø85 mm: 0.24 x p (bar)
- ø133 mm: 0.95 x p (bar)

Weight:
- ø85 mm: 3 kg
- ø133 mm: 12 kg

PHYSICAL DATA

Product wetted steel parts: 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

Connections
Weld ends**
- ø85 mm: Matching tubes and fittings: ISO 2037 / DIN / ASME BPE
- ø133 mm: Matching tubes and fittings: ISO 2037 / DIN / ASME BPE

Clamp ends
- ø85 mm: Matching tubes and fittings: ISO 2037 / DIN / ASME BPE
- ø133 mm: Matching tubes and fittings: ISO 2037 / DIN / 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: PP
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
to ASME BPE 2009 table SF-3
External: ................................ Semi-bright
ASME BPE*:
Internal: ................................ 0.4 µm electro polish
to ASME BPE 2009 table SF-3
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. 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.

Capacity/Pressure drop diagrams

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

Fig. 2. Dimensions - padlock.
A. Min. 20 mm
B. Min. 35 mm
C. ø 6 mm

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 ESO1699.

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

LKLA ø85 mm:

1. Closing - Spring activated
2. Opening - Air activated

LKLA ø133 mm:

1. Closing - Spring activated
2. Opening - Air activated

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

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

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<tr>
<th>Size</th>
<th>Max. Nm</th>
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<tbody>
<tr>
<td>25 mm</td>
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<td>DN40</td>
</tr>
<tr>
<td>51 mm</td>
<td>DN50</td>
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<tr>
<td>63.5 mm</td>
<td>DN65</td>
</tr>
<tr>
<td>76 mm</td>
<td>DN80</td>
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<tr>
<td>101.6 mm</td>
<td>DN100</td>
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### Dimensions

#### Dimensions (mm)

**LK9 UltraPure**

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<th>63.5</th>
<th>76.1</th>
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**NOTE:** Weights are for valves with welding ends and handles.

#### Dimensions (mm) - Actuator

**LKLA and LKLA-T:**

<table>
<thead>
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**Connections**

**Compressed air**

**RvR (BSP), internal thread.**