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 remotely 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, ø3.35" and ø5.24", 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**

<table>
<thead>
<tr>
<th>Valve</th>
<th>Max. product pressure: 145 psi (10 bar)</th>
<th>Min. product pressure: Full vacuum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. air pressure:</td>
<td>101.5 psi (7 bar)</td>
<td>Min. air pressure: 58 psi (4 bar)</td>
</tr>
<tr>
<td>Temperature range:</td>
<td>-13°F to +194°F</td>
<td>-6.35 in: 0.24 x p (bar)</td>
</tr>
<tr>
<td>- ø6.24 in: 0.24 x p (bar)</td>
<td>Weight:</td>
<td></td>
</tr>
<tr>
<td>- ø6.24 in: 0.95 x p (bar)</td>
<td>Weight:</td>
<td></td>
</tr>
<tr>
<td>- ø6.24 in: 26.5 lb</td>
<td>Weight:</td>
<td></td>
</tr>
</tbody>
</table>

°F 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.

**Actuator**

| Actuator body:                | 1.4307 (304L)                        |
| Pisto:                        | Light alloy                           |
| Seals:                        | EPDM                                 |

**Elastomers**

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

**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: PVD

**Connections**

Weld ends: Matching tubes and fittings: ISO 2037

Clamp ends: Matching tubes and fittings: ISO 2037

**Actuator**

Actuator body: 1.4307 (304L)

Piston: Light alloy

Seals: EPDM

**Housing for switchs:** 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
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 MB 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 Multi-position 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 (70°F)
Measurement: In accordance with VDI 2173.
Torque diagrams - Actuator

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

<table>
<thead>
<tr>
<th>LKB UltraPure</th>
<th>Max Torque (ft-lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-inch</td>
<td>11</td>
</tr>
<tr>
<td>1.5-inch</td>
<td>11</td>
</tr>
<tr>
<td>2-inch</td>
<td>11</td>
</tr>
<tr>
<td>2.5-inch</td>
<td>15</td>
</tr>
<tr>
<td>3-inch</td>
<td>18</td>
</tr>
<tr>
<td>4-inch</td>
<td>20</td>
</tr>
</tbody>
</table>
Dimensions

Fig. 1. Dimensions - valve.

Fig. 2. Dimensions - actuator.

Dimensions (inch) - Actuator

LKLA and LKLA-T

<table>
<thead>
<tr>
<th>Valve Size</th>
<th>1&quot;-2.5&quot;</th>
<th>3&quot;-4&quot;</th>
<th>4&quot;</th>
<th>5&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2</td>
<td>7.60</td>
<td>7.52</td>
<td>7.53</td>
<td>12.44</td>
</tr>
<tr>
<td>A3</td>
<td>9.61</td>
<td>9.61</td>
<td>9.61</td>
<td>13.27</td>
</tr>
<tr>
<td>A4</td>
<td>6.81</td>
<td>6.81</td>
<td>6.81</td>
<td>11.42</td>
</tr>
<tr>
<td>D</td>
<td>3.35</td>
<td>3.35</td>
<td>3.35</td>
<td>5.24</td>
</tr>
<tr>
<td>d</td>
<td>0.67</td>
<td>0.67</td>
<td>0.67</td>
<td>1.18</td>
</tr>
<tr>
<td>l</td>
<td>0.65</td>
<td>0.65</td>
<td>0.65</td>
<td>1.34</td>
</tr>
<tr>
<td>s</td>
<td>0.31</td>
<td>0.39</td>
<td>0.47</td>
<td>0.47</td>
</tr>
<tr>
<td>Function</td>
<td>NC NO/A</td>
<td>NC NO/A</td>
<td>NC NO/A</td>
<td>NC NO/A</td>
</tr>
</tbody>
</table>

Note: Suitability depends on process conditions.

Connections

Compressed air

R1/8" (BSPP) internal thread.

(Quiet connect fittings for 1/4" tubing provided as standard.)