Alfa Laval LKH UltraPure Centrifugal Pump

When Higher Purity is the Issue

Applications
The LKH UltraPure is a highly efficient pump, which meets the requirements of pharmaceutical and biotech industries. It provides gentle product treatment and is chemically resistant. LKH UltraPure is available in seven model sizes, LKH UltraPure 10, 20, 25, 35, 40, 45, 60 and 70.

Standard design
As standard the LKH UltraPure is delivered with a 45° outlet to ensure adequate venting and it is designed for CIP and SIP with emphasis on large internal radii and cleanable seals. It has a stainless steel shroud for protection of the motor, and the complete unit is supported on four adjustable stainless steel legs.

The LKH UltraPure is equipped with either an external single or a double mechanical shaft seal. Both have stationary seal rings made from duplex stainless steel with sealing surface in silicon carbide and rotating seal rings in silicon carbide as standard.

TECHNICAL DATA

Standard materials
Product wetted steel parts: ............ W. 1.4404 (316L) with material traceability 3.1 acc. to EN 10204.
Other steel parts: ................. Stainless steel.
Inside surface finish: ................. Mech Ra ≤ 0.5.
External finish: ................. Fiber brushed.
Product wetted elastomers: ............ EPDM - USP Class VI, 121°C Chapter 88, and Chapter 87.

Connections for double mechanical shaft seal
1/8" BSP.

Motor
Foot-flanged motor with a fixed angular contact bearing according to the IEC metric standard, 2 poles = 3000/3600 rpm at 50/60 Hz, IP 55 (with drain hole sealed with labyrinth plug), insulation class F.

Min/Max speed
2 poles: 900 - 4000 rpm.
4 poles: 900 - 2200 rpm.

Warranty
Extended 3-years warranty on LKH UltraPure pumps. The warranty covers all non-wear parts on the condition that genuine Alfa Laval Spare Parts are used.

OPERATING DATA

Pressure
Max. inlet pressure: .................. 500 kPa (5 bar).

Temperature
Temperature range: .................. -10°C to +140°C (EPDM).

Double mechanical seal
Water pressure inlet: .................. Max. 500 kPa (5 bar).
Water consumption: .................. 0.25 - 0.5 l/min.
### Pump specific measures

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*Possible to reduce dimension F by min. 59 mm for all pump models. For smaller models it will be possible to reduce dimension F even further.

### Motor specific measures

<table>
<thead>
<tr>
<th>Motor IEC</th>
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<th>IEC100</th>
<th>IEC112</th>
<th>IEC132</th>
<th>IEC160</th>
<th>IEC180</th>
<th>IEC200</th>
<th>IEC250</th>
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<td>4.0</td>
<td>5.5/7.5</td>
<td>11/15</td>
<td>18.5</td>
<td>22</td>
<td>30/37</td>
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<td>F(max)*</td>
<td>316</td>
<td>336</td>
<td>339</td>
<td>358</td>
<td>386</td>
<td>406</td>
<td>372</td>
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<td>383</td>
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<td>I (LKH-10 to LKH-60)</td>
<td>434</td>
<td>516</td>
<td>497</td>
<td>597</td>
<td>791</td>
<td>842</td>
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<td>I (LKH-70)</td>
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<td>804</td>
<td>855</td>
<td>993</td>
<td>1051</td>
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*Possible to reduce dimension F by min. 59 mm for all pump models. For smaller models it will be possible to reduce dimension F even further.

### Frame overview

Dimensional data are based on 2 pole, ABB motors.

### Drain diameter

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<tr>
<th>ISO 1127</th>
<th>Clamp</th>
<th>TC Clamp</th>
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<td>1/2&quot;</td>
<td>13.5</td>
<td>12.7</td>
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<td>3/4&quot;</td>
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Dimensions are for guidance only. For exact measures of specific pump specifications, please refer to Anytime Configurator.
Connections

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<td>M2 36</td>
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<td>76.1 / 3&quot;</td>
<td>101.6 / 4&quot;</td>
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</table>

* Other dimensions might be available upon request.

Flow chart – Frequency: 50Hz - Speed (synchr): 3000 rpm

Q-doc

Standard documentation package:
- Declaration of compliance to EN 10204 type 3.1 (MTR)
- Declaration of compliance to the U.S. Food & Drug Administration CFR 21 (non-metallic parts)
- Declaration of compliance to the U.S. Pharmacopeia (Elastomers and polymers)
- TSE (Transmissible Spongiform Encephalopathy) / ADI (Animal Derivative Ingredient) declaration
- Declaration of surface finishing compliance
- Declaration of passivation and electro polishing (if specified)
- 3.1 certification in accordance to EN10204
- Pump performance test certificate

Optional documentation:
- Hydrostatic test certificate
- Surface measurement report
- Delta ferrite report (impeller)

Options
A. Impeller with reduced diameter.
B. Impeller with delta ferrite max. 1%.
C. Motor for other voltage and/or frequency.
D. Half speed motor.
E. Motor with increased safety/flame proof motor.
F. ATEX approved execution (LKHex UltraPure)
G. Double mechanical shaft seal.
H. Adjustable pads.
I. Horizontal drain connection, see illustration below.
J. Drain with 1/2" Alfa Laval Unique DVST UltraPure valve welded directly to casing, see illustration below.
K. Special flush arrangement with 1/2" Alfa Laval Unique DVST UltraPure diaphragm valve, needle valve and flow meter, see illustration below.
L. No drain.
M. Product wetted surface finish mechanically polished to Ra ≤ 0.8 μm.
N. Product wetted surface finish electropolished to Ra ≤ 0.4 μm.
O. Passivated surface.
P. Product wetted elastomers FPM or FEP to USP Class VI, 121°C Chapter 88, and Chapter 87.
Q. Hydrostatic testing with certificate.
R. Surface finish measurement with certificate.
S. 0°, 90° or 270° outlet, see illustration below.

Ordering
Please state the following when ordering:
- Pump size.
- Connections.
- Impeller diameter.
- Motor size.
- Voltage and frequency.
- Flow, pressure and temperature.
- Density and viscosity of the product.
- Options.

Note! For further details, see also Instruction manual ESE01703. This product has EHEDG certificate.
Available outlet positions

Available drain connections

1/2" Alfa Laval Unique DVST UltraPure valve
- Welded directly to casing
- Inside finish electropolished to Ra ≤ 0.4 μm
- PTFE diaphragm conforming to USP Class VI

Flush arrangement
With the flush kit arrangement some process fluid is passing through the flush housing of the double mechanical seal, creating a barrier from the atmosphere to avoid potential process contamination across the seal face.

Available tube standards:
- ISO 1127
- DIN 11850
- ASME-BPE
- ISO 2037

Alfa Laval reserves the right to change specifications without prior notification.

How to contact Alfa Laval
Contact details for all countries are continually updated on our website. Please visit www.alfalaval.com to access the information direct.