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 stainless steel AISI 329 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).

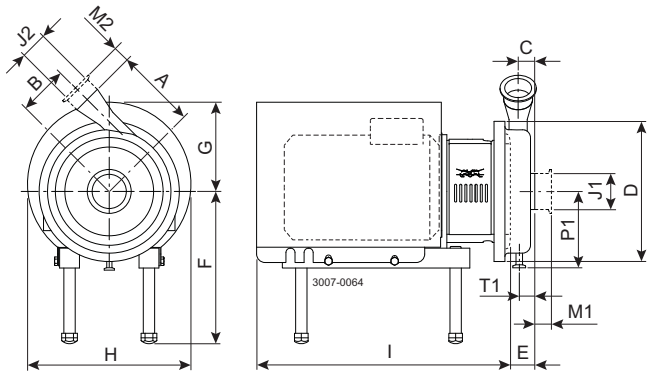
Temperature

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.

Dimension



Pump specific measures

Pump Model	LKH UltraPure-10	LKH UltraPure-20	LKH UltraPure-25	LKH UltraPure-35	LKH UltraPure-40	LKH UltraPure-45	LKH UltraPure-60	LKH UltraPure-70
A	142	180	193	193	212	193	261	254
B	87	88	106	119	126	97	102	147
C	23	27	32	23	28	41	62	25
D	247	253	303	303	329	329	329	408
E	51	63	69	54	64	64	106	76
P1	123	129	153	153	166	153	165	206
T1	23	23	24	26	24	28	47	11

Motor specific measures

Motor IEC Motor kW	IEC90 1.5/2.2	IEC100 3.0	IEC112 4.0	IEC132 5.5/7.5	IEC160 11/15/18.5	IEC180 22	IEC200 30/37	IEC250 55/75
F(max)*	316	336	339	358	386	406	372	500
G	157	185	198	196	262	286	399	394
H	288	325	359	383	485	533	670	738
I (LKH-10 to LKH-60)	434	516	497	597	791	842	980	-
I (LKH-70)	-	-	-	-	804	855	993	1051

*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

Pump Model Motor range (IEC)	LKH UltraPure-10 IEC90-IEC160	LKH UltraPure-20 IEC90-IEC160	LKH UltraPure-25 IEC90-IEC200	LKH UltraPure-35 IEC90-IEC180	LKH UltraPure-40 IEC90-IEC200	LKH UltraPure-45 IEC100-IEC180	LKH UltraPure-60 IEC112-IEC200	LKH UltraPure-70 IEC160-IEC250
Moter range (kW)	1.5-11	1.5-18.5	1.5-30	1.5-22	1.5-30	3-22	4-45	11-75

Dimensional data are based on 2 pole, ABB motors.

Drain diameter

	ISO 1127 Clamp	TC Clamp
1/2"	13.5	12.7
3/4"	17.2	19

Dimensions are for guidance only. For exact measures of specific pump specifications, please refer to Anytime Configurator.

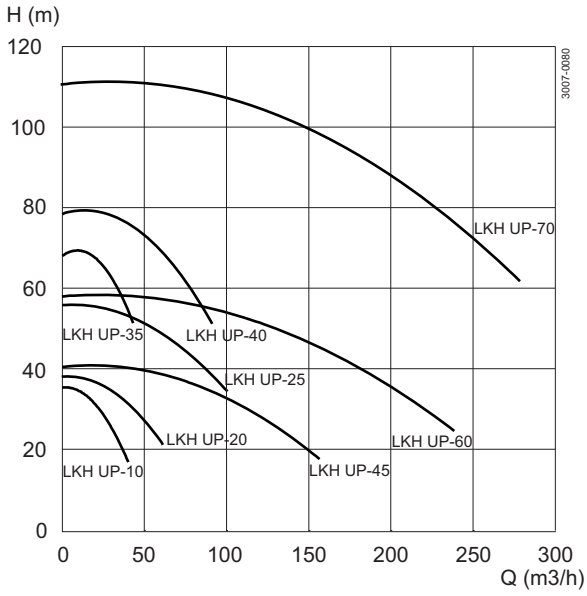
Connections

Pump Model		LKH UltraPure-10 LKH UltraPure-20 LKH UltraPure-35	LKH UltraPure-25	LKH UltraPure-40	LKH UltraPure-45 LKH UltraPure-70	LKH UltraPure-60
Clamp ISO 1127	M1	36	48	48	92	92
	M2	36	36	36	48	92
Clamp ASME BPE	M1	29	29	29	29	29
	M2	29	29	29	29	29
Clamp ISO 2037	M1	21	21	21	21	21
	M2	21	21	21	21	21
Clamp DIN 32676	M1	64	64	64	92	92
	M2	21	64	21	64	92
Flange Asept. A for DIN	M1	64	96	96	60	60
	M2	47	64	47	96	60
Flange Asept. A for ASME	M1	56	58	58	60	60
	M2	47	56	47	58	60
Union Asept. A for DIN	M1	100	100	100	64	64
	M2	48	100	48	100	64
Union Asept. A for ASME	M1	60	54	54	64	64
	M2	48	60	48	54	64
J1*		63.5 / 2.5"	76.1 / 3"	76.1 / 3"	101.6 / 4"	101.6 / 4"
J2*		51 / 2"	63.5 / 2.5"	51 / 2"	76.1 / 3"	101.6 / 4"

* Other dimensions might be available upon request.

ESE00269/9

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



Q-doc

Standard documentation package:

- Declaration of compliance with Regulation (EC) No.: 1935/2004
- 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 finish 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.

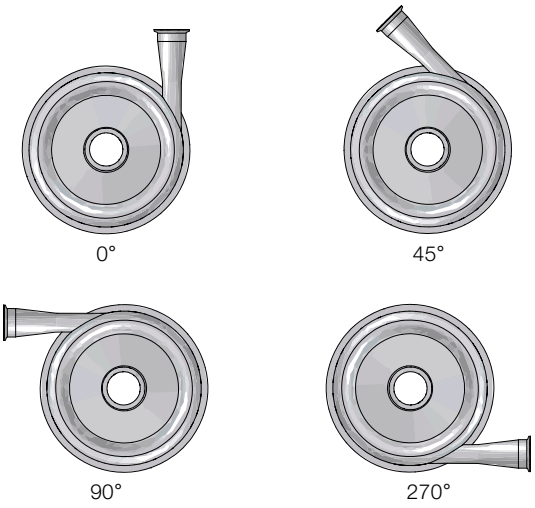
Ordering

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.

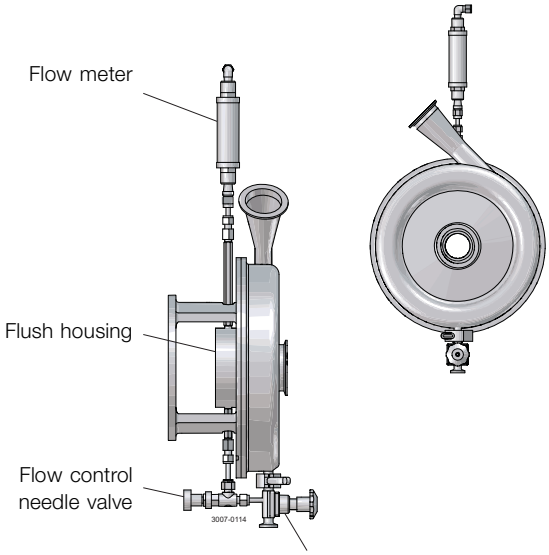
Note! For further details, see also Instruction manual ESE01703. This product has EHEDG certificate

Available outlet positions



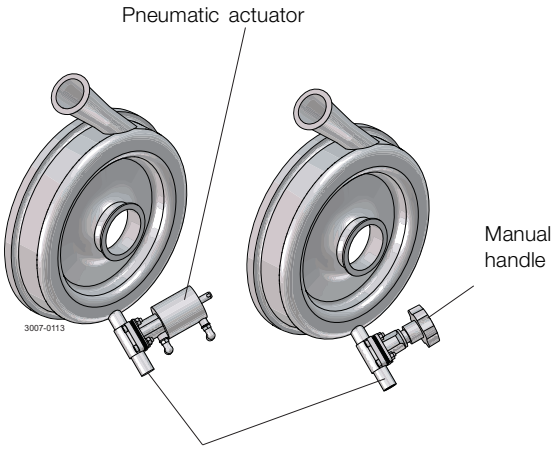
Flush arrangement

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.



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



Available tube standards::

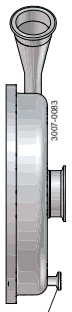
- ISO1127
- DIN11850
- ASME-BPE
- ISO2037

Available drain connections



½" or ¾" vertical drain:

- Tri-clamp for ASME
- Clamp for ISO 1127



½" or ¾" horizontal drain:

- Tri-clamp for ASME
- Clamp for ISO 1127
- Clamp for DIN 11864-3

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

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Contact details for all countries
are continually updated on our website.
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