

Alfa Laval LKH

Centrifugal Pumps

Introduction

The Alfa Laval LKH Centrifugal Pump is a premium pump for use in hygienic applications. To increase process productivity, it is distinguished by high efficiency, gentle product treatment, chemical resistance, and a wide range of flow rates, pressures and options.

Precision-engineered, the LKH pump delivers greater energy efficiency than similar pumps. Its optimized design, premium motor, tight tolerances and advanced impeller design minimize recirculation and reduce energy consumption.

Application

Designed for Cleaning-in-Place (CIP), the Alfa Laval LKH is ideal for hygienic applications within the dairy, food, beverage and personal care industries that require gentle product treatment and reliable operation.

The LKH pump is available in 13 sizes to handle capacities up to 2200 USGPM and differential pressures up to 525 feet at 60 Hz.

Benefits

- Energy efficient: superior efficiency resulting in reduced energy consumption and CO2 footprint.
- Hygienic: designed according to the most stringent hygienic design standards and with verified, effective CIP cleanability.
- Wide performance envelope: reduce need for parallel and serial pump installations and ensure pump operating with high efficiency.
- Maximized uptime and reduced maintenance costs: robust mechanical design and ease of maintenance with modular front-loading seals.

Standard design

All media contacting steel components like pump casing, impeller, impeller nut and backplate are in AISI 316L. Four adjustable stainless steel legs support the complete unit.

A compression coupling securely attaches the stub shaft to the motor shaft with precision alignment, and the semi-open impeller with a special vane design ensures efficient and gentle handling of the product as it moves through the pump.



As standard, the LKH pump is equipped with a single mechanical shaft seal but is also available with a single flushed or a double mechanical shaft seal. The front-loading shaft seal, with the spring and washers mounted on the atmospheric side, makes maintenance fast, easy and inexpensive. It takes just a few minutes to replace the shaft seal. In addition, the balanced design minimizes the risk of seal opening during unforeseen pressure shock.

Certificates



Authorized to carry the 3A symbol

TECHNICAL DATA

Materials

Product wetted steel parts:	AISI 316L
Other steel parts:	Stainless steel
Inside surface finish:	Mech. ≤ 32 Ra
Product wetted elastomers:	EPDM
Rotary seal face:	Carbon
Stationary seal face:	Silicon Carbide

Motor

Standard C-faced, foot mounted motor according to NEMA standard. 3 phase, 60 HZ, 230/460V. 3500 RPM or 1750 RPM. Premium efficiency, Class F. Note different frame sizes. LKH-75 and -90 only low speed (1750 RPM).

Motor sizes

60Hz:	1 - 100 Hp
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OPERATING DATA

Max inlet pressure

LKH-5:	87 PSI (6 bar)
LKH-10 - 60:	145 PSI (10 bar)
LKH-70 - LKH-90	72.5 PSI (5 bar)

Temperature

Temperature range:	14°F to +284° F (EPDM)
Flush media:	Max 158°F
Flush housing sterilization (pump not in operation):	Max 257°F

Flushed shaft seal:

Water pressure inlet:	Max. 14.5 PSI (1 bar)
Water consumption:	4-8 USGPH

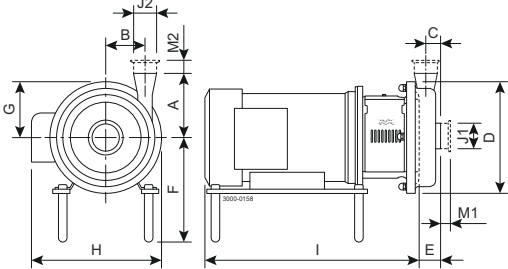
Double mechanical shaft seal:

Water pressure inlet, LKH-5 to -60:	Max. 72.5 PSI. (5 bar)
Water pressure inlet, LKH-70 to -90:	Max. 43.5 PSI. (3 bar)
Water consumption:	4-8 USGPH

Connections for flushed and double mechanical shaft seal

LKH-5 - 90:	1/8" G
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Dimensions



Pump specific measures (inch)

Pump Model	LKH-5	LKH-10	LKH-15	LKH-20	LKH-25	LKH-35	LKH-40	LKH-45	LKH-50	LKH-60	LKH-70	LKH-75	LKH-90
A	6.220	5.591	6.535	7.087	7.598	7.598	8.346	7.598	8.071	10.276	10.000	10.197	12.205
B	2.756	3.425	2.598	3.465	4.173	4.685	4.961	3.819	4.646	4.016	5.787	6.929	9.843
C	0.866	0.906	1.693	1.063	1.260	0.906	1.102	1.614	1.378	2.441	0.984	1.890	2.559
D	7.441	9.724	9.724	9.961	11.929	11.929	11.929	12.953	12.953	12.953	16.063	18.425	19.843
E	1.654	2.008	3.425	2.480	2.717	2.126	2.520	3.268	3.031	4.173	2.992	3.622	3.740

Motor specific measures (inch)

Motor TC/TSC	56TC	143TC	145TC	182TC	184TC	213TC	215TC	254TC	256TC	284TSC	286TSC	324TSC	326TSC	364TSC	365TSC
Motor HP	1.0	1.5	2.0	3.0	5.0	7.5	10.0	15.0	20.0	25.0	30.0	40.0	50.0	60.0	75.0
F(max)* ¹	8.110	8.110	8.110	9.094	9.094	9.843	9.843	10.866	10.866	11.614	11.614	12.598	12.598	13.622	13.622
G	3.307	3.504	3.543	4.488	4.488	5.394	5.394	6.772	6.772	7.677	7.677	8.425	8.504	9.331	9.331
H	8.937	9.094	9.094	11.102	11.102	13.071	13.071	17.795	17.795	20.945	20.945	23.346	23.346	26.811	26.811
I (LKH-5)	13.307	14.843	-	18.268	-	-	-	-	-	-	-	-	-	-	-
I (LKH-10 to LKH-60)	-	14.843	15.118	17.992	18.150	21.024	21.024	26.063	27.835	28.583	30.039	33.071	34.646	34.449	-
I (LKH-70 to LKH-90)	-	-	-	-	-	21.811	21.811	26.575	28.346	29.094	30.551	33.583	35.157	34.961	38.346

¹ Possible to reduce dimension F by min. 2.32 inch for all pump models. For smaller models it will be possible to reduce dimension F even further.

Motor overview

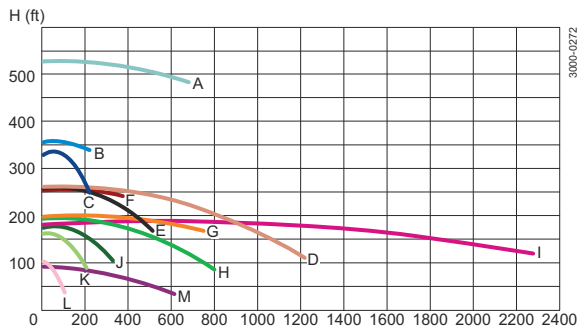
Pump Model	LKH-5	LKH-10	LKH-15	LKH-20	LKH-25	LKH-35	LKH-40	LKH-45	LKH-50	LKH-60	LKH-70	LKH-75	LKH-90
Motor range (TC/TSC)	56TC- 182TC	56TC- 254TC	145TC- 154TC	145TC- 256TC	145TC- 286TSC	182TC- 286TSC	182TC- 286TSC	182TC- 286TSC	182TC- 324TSC	213TC- 364TSC	213TC- 405TSC	254TC- 326TSC	286TSC- 405TSC

Connections (inch)

Pump Model	LKH-5		LKH-10 LKH-20 LKH-35	LKH-15 LKH-45 LKH-50 LKH-70	LKH-25	LKH-40	LKH-60 LKH-70	LKH-60 LKH-70	LKH-90
TRI-Clamp	M1	1.13	1.13	1.13	1.13	1.13	1.13	1.5	1.5
	M2	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.5
J1 ¹		2.00"	2.50"	4.00"	3.00"	3.00"	4.00"	6.00"	6.00"
J2 ¹		1.50"	2.00"	3.00"	2.50"	2.00"	4.00"	4.00"	6.00"

¹ Other dimensions available on request.

Flow chart



A = LKH-70 D = LKH-60 G = LKH-75 J = LKH-20 M = LKH-15
 B = LKH-40 E = LKH-25 H = LKH-45 K = LKH-10
 C = LKH-35 F = LKH-50 I = LKH-90 L = LKH-5

Options

- Impeller with reduced diameter.
- Flushed shaft seal.
- Double mechanical shaft seal.
- Rotating seal face of Silicon Carbide.
- Product wetted elastomers NBR, FPM or FEP.
- 1/2" or 3/4" tri clamp drain connection.
- Product wetted surface finish $Ra \leq 20$.
- Inducer (LKH-10 to -50).
- Counter flanges, seal rings and bolts for flanged connections (industrial version).
- Standard clearance is 0.02" (0.04" for LKH-70 to LKH-90) and can be made up to 0.098").
- Motor enclosures: washdown, TEFC, explosion proof, inverter duty and others upon request.
- Motor for other voltage and/or frequency.

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 ESE00698.

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