Alfa Laval LKHPF

Centrifugal pumps

Introduction

The Alfa Laval LKHPF Centrifugal Pump for High Inlet Pressure is a high-pressure, high-efficiency centrifugal pump suited for high-pressure filtration applications. To increase process productivity, it is distinguished by high efficiency, low energy consumption, gentle product treatment, chemical resistance, and a wide range of flow rates, pressures and options.

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

Applications

Designed for inlet pressures up to 40 bar and for Cleaning-in-Place (CIP), the Alfa Laval LKHPF pump is ideal for use in filtration systems across the food, beverage, home-personal care, biotechnology and pharmaceutical industries. Tough under pressure, the LKHPF is ideal for demanding nanofiltration and reverse osmosis filtration installations.

The LKHPF pump is available in nine sizes to handle capacities up to 280 m3/h and differential pressures up to 11 bar at 50 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.
- High inlet pressure: designed for inlet pressures up to 40 bar and can therefore be used in the most demanding applications within filtration.

Standard design

All media contacting steel components like pump casing, impeller, impeller nut and backplate are in W. 1.4404 (AISI 316L). A stainless steel shroud protects the motor and 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 LKHPF pump is equipped with an internal single mechanical shaft seal but is also available with a flushed shaft seal. The secondary seal of the flushed seal is a long-lasting lip seal. The front-loading shaft seal 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.

With heavy-duty pump casing and backplate, high-pressure internal seals and multiple heavy-duty studs, the pump is capable of handling very high inlet pressures.

Technical Data

Materials

Product wetted steel parts:	W. 1.4404 / AISI 316L
Other steel parts:	Stainless steel
Inside surface finish:	Standard blastedPolished ≤32 Ra.
Product wetted elastomers:	EPDMNBR (Buna); FPM (Viton)

Motor

NEMA: Special high thrust bearing NEMA C-Face motor, foot mounted motor according to NEMA standards. 60 Hz. 3500 rpm. Premium efficiency, TEFC, insulation Class F.

Motor sizes

60 Hz:	3-100 Hp

Operating Data

Max. inlet pressure

LKHPF-10 to -70:	4000 kPa / 40 bar / 600 psi

Temperature

Temperature range:	-10 °C to +140 °C / +14 °F to +284 °F (EPDM)
Flush media:	Max. 70 °C / 158 °F

Flushed Shaft Seal

Water pressure inlet:	Max. 1 bar / 14.5 psi
Water consumption:	0.25-0.5 l/min / 4-8 USGPH

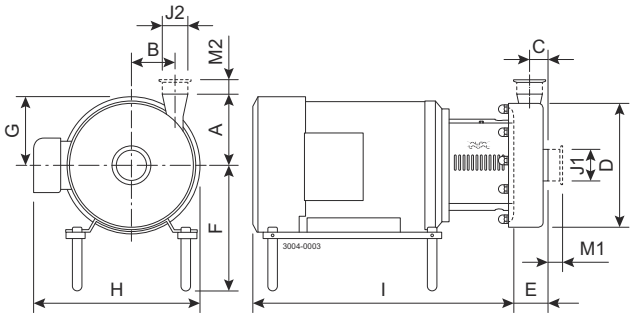
Connections for Flushed Shaft Seal

LKHPF-10 to -70:	Ø6 mm / Ø¼"

Noise

Noise level (at 3 ft.):	60-80 dB (A)

Dimensions (inch)



Pump specific measures

Pump Model	LKHPF-10	LKHPF-20	LKHPF-25	LKHPF-35	LKHPF-40	LKHPF-45	LKHPF-50	LKHPF-60	LKHPF-70
A	5.591	7.087	7.598	7.598	8.346	7.598	8.071	10.315	10.000
B	3.425	3.425	4.173	4.685	4.961	3.819	4.646	4.016	5.787
C	1.142	1.693	1.496	1.102	1.339	1.693	1.654	1.654	1.102
D	9.724	9.961	11.929	11.929	12.953	11.929	12.953	12.953	16.063
E	2.520	3.071	3.228	2.598	3.031	3.661	3.583	3.661	3.661

Motor specific measures

Motor TC/TSC	213TC	215TC	254TC	256TC	284TSC	286TSC	324TSC	326TSC	364TSC	365TSC
Motor HP	7.5	10.0	15.0	20.0	25.0	30.0	40.0	50.0	60.0	75.0
F(max) [1]	9.843	9.843	10.866	10.866	11.614	11.614	12.598	12.598	13.622	13.622
G	5.394	5.394	6.772	6.772	7.677	7.677	8.425	8.504	9.331	9.331
H	13.071	13.071	17.795	17.795	20.945	20.945	23.346	23.346	26.811	26.811
I (LKHPF-10 to LKHPF-60)	21.024	21.024	26.063	27.835	28.583	30.039	33.071	34.646	34.449	-
I (LKHPF-70)	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 mm for all pump models. For smaller models it will be possible to reduce dimension F even further.

Motor overview

Pump Model	LKHPF-10	LKHPF-20	LKHPF-25	LKHPF-35	LKHPF-40	LKHPF-45	LKHPF-50	LKHPF-60	LKHPF-70
Motor range (TC/TSC)	213TC	213TC - 215TC	213TC - 256TC	213TC - 256TC	215TC - 286TSC	213TC - 256TC	213TC - 286TSC	213TC - 364TSC	234TSC - 405TSC

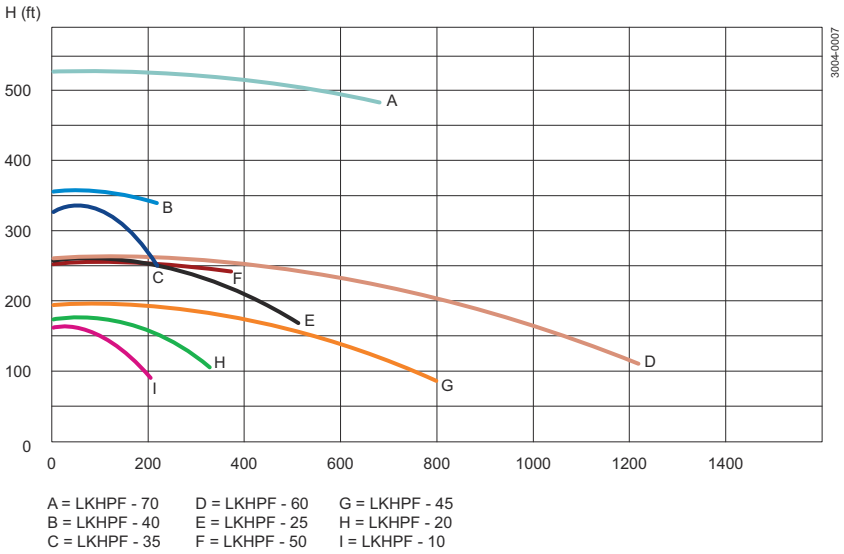
Note! Dimensional data are based on 2 pole, Sterling motors.

Connections

Pump Model		LKHPF-10 LKHPF-20 LKHPF-35	LKHPF-25	LKHPF-40	LKHPF-45 LKHPF-50 LKHPF-70	LKHPF-60
Tri-Clamp	M1	1.12	1.12	1.12	1.12	1.12
	M2	1.12	1.12	1.12	1.12	1.12
J1 [1]		2.50"	3.00"	3.00"	4.00"	4.00"
J2 [1]		2.00"	2.50"	2.00"	3.00"	4.00"

[1] Other dimensions available on request.

Flow chart



A = LKHPF - 70
B = LKHPF - 40
C = LKHPF - 35
D = LKHPF - 60
E = LKHPF - 25
F = LKHPF - 50
G = LKHPF - 45
H = LKHPF - 20
I = LKHPF - 10

Options

- Impeller with reduced diameter.
- Motor for other voltage and/or frequency.
- Flushed shaft seal.
- Caunder connection.

Ordering

Please state the following when ordering:

- Pump size.
- Connections.
- Impeller diameter.
- Motor size.
- Single or flushed shaft seal.
- Elastomer type.
- Optional extras.

Material grades

- Surface roughness, product wetted parts: unpolished, 32Ra, micro inches (0.8 mm), or higher finishes.
- Seals in Nitrile (NBR/Buna) or Fluorinated rubber (FPM/Viton).

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