

Alfa Laval SolidC

Centrifugal pumps

Introduction

The Alfa Laval SolidC Centrifugal Pump is designed for basic transport of fluids in hygienic applications. It provides reliable, low-maintenance operation. With its hygienic design, cost-effective operation and quick, easy maintenance, the SolidC offers excellent value for money.

Applications

Designed for Cleaning-in-Place (CIP), the Alfa Laval SolidC is ideal for basic duties across the dairy, food, beverage and personal care industries in which hygienic treatment is required. Typical applications are pumping of CIP solutions, utilities, cooling or heating water, and other simple transport duties.

The SolidC pump is available in four sizes to handle capacities up to 75 m³/hour and differential pressures up to 8 bar at 50Hz.

Benefits

- Hygienic: designed according to international hygienic design standards and with verified effective CIP cleanability.
- Cost-effective operation: consistent performance ensured.
- Quick and easy maintenance: wear parts changed in just a few minutes.

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.

The semi-open impeller with a special vane design and balance holes enhance circulation around the shaft seal and reduce axial forces. This maximizes cleanability while minimizing wear on the shaft seal and motor bearings.

As standard, the SolidC pump is equipped with a single mechanical shaft seal, but is also available with a single flushed mechanical shaft seal. The secondary seal of the flushed seal is a long-lasting lip 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.



TECHNICAL DATA

Materials

Product wetted steel parts:	W. 1.4404 (316L)
Other steel parts:	Stainless steel
Inside surface finish:	Standard blasted
Product wetted elastomers:	EPDM
Ratary seal face:	Carbon
Stationary seal face:	Silicon Carbide

Motor

Foot-flanged motor according to the IEC metric standard, 2 poles = 3000/3600 rpm at 50/60 Hz, 4 poles = 1500/1800 rpm at 50/60 Hz, IP 55 (with drain hole with labyrinth plug), insulation class F.

Motor sizes

50Hz:	1.5 - 22 kW
60Hz:	1.5 - 22 kW

Min/max motor speed

2 poles:	900 - 4000 rpm
4 poles:	900 - 2200 rpm

Warranty

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

OPERATING DATA

Max inlet pressure

SolidC 1 - 4:	400kPa (4 bar)
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Temperature

Temperature range:	-10°C to +120°C (EPDM)
Flush media:	Max 70°C

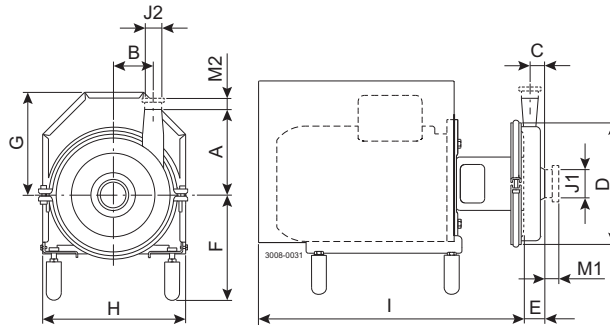
Flushed shaft seal

Water pressure inlet:	Max. 1 bar
Water consumption:	0.25 -0.5 l/min

Connections for flushed shaft seal

SolidC 1 - 4:	1/8" G
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Dimensions (mm)



Pump specific measures

Pump Model	SolidC-1	SolidC-2	SolidC-3	SolidC-4
A	180	200	210	230
B	67	94	121	120
C	28	35	31	27
D	238	227	311	333
E	40	47	44	44

Motor specific measures

Motor IEC	IEC90	IEC100	IEC112	IEC132	IEC160
Motor kW	1.5/2.2	3.0	4.0	5.5/7.5	11/15/18.5/22
F(max)*	246	256	259	279	307
G	197	200	229	240	292
H	235	285	284	334	384
I	490	528	511	643	771

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

Motor overview

Pump Model	SolidC-1	SolidC-2	SolidC-3	SolidC-4
Motor range (IEC)	IEC90-IEC112	IEC100-IEC160	IEC132-IEC160	IEC132-IEC160

Dimensional data are based on 2 pole, WEGmotors.

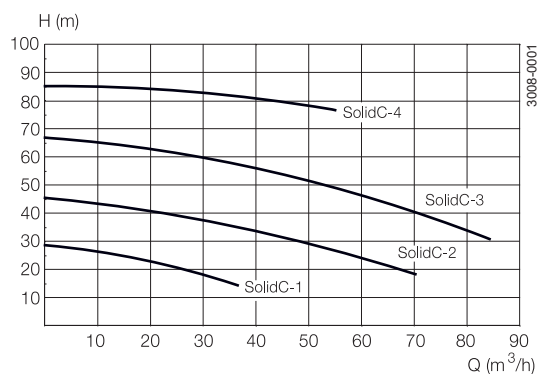
Connections

Pump Model		SolidC-1	SolidC-2	SolidC-3	SolidC-4
Clamp ISO 2037	M1	21	21	21	21
	M2	21	21	21	21
Union ISO(IDF)	M1	21	21	21	21
	M2	21	21	21	21
Union DIN/ISO	M1	23	61	61	61
	M2	22	22	22	23
Union SMS	M1	20	24	24	24
	M2	20	20	20	20
Union (BS)RJT	M1	27	27	27	27
	M2	27	27	27	27
Union DS	M1	20	24	24	24
	M2	20	20	20	20
J1*		51 / 2"	63,5 / 2,5"	76,1 / 3"	76,1 / 3"
J2*		38 / 1,5"	38 / 1,5"	38 / 1,5"	51 / 2"

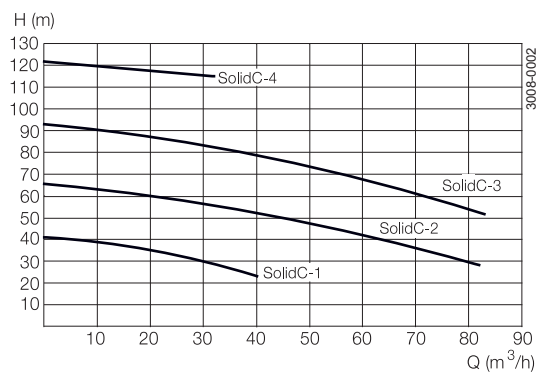
* Other dimensions available on request.

Flow chart

Frequency: 50 Hz Speed (synchr): 3000 rpm



Frequency: 60 Hz Speed (synchr): 3600 rpm



Options

- A. Impeller with reduced diameter.
- B. Flushed shaft seal.
- C. Rotating seal face of Silicon Carbide.
- D. Product wetted elastomers NBR or FPM.
- E. Product wetted surface finish mechanically polished to $Ra \leq 0.8 \mu\text{m}$.
- F. Surface finish measurement with certificate ($Ra \leq 0.8 \mu\text{m}$).
- G. Motor for other voltage and/or frequency.
- H. Half speed motor.

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 ESE00797.

Alfa Laval LKH Prime

Centrifugal pumps

Introduction

Based on the market-leading Alfa Laval LKH pump, the Alfa Laval LKH Prime Centrifugal Pump is a versatile, highly efficient self-priming pump for use in hygienic applications, especially tank emptying and CIP return applications. With its combination of air-screw technology and advanced design, the pump can remove air from the suction pipe. Precision-engineered, the LKH Prime delivers greater energy efficiency than similar pumps. Its optimized design, premium motor, tight tolerances and advanced impeller and airscrew design minimize recirculation and reduce energy consumption.

Application

The LKH Prime pump is designed to meet the stringent hygienic requirements across the food, dairy, beverage, and home-personal care industries. It is ideal for tank emptying and CIP return applications. With verified and effective CIP cleanability, the LKH Prime can be used as a product pump as well.

The LKH Prime is available in three sizes to handle capacities up to 100 m³/h and differential pressures up to 7.5 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 and effective CIP cleanability.
- Quiet: operates very quietly compared to other self-priming pumps improving the working environment.
- Reduced capital investment: designed for Cleaning-in-Place (CIP) duties containing entrained air but can also pump product reducing need for additional pump.

Standard design

All media contacting steel components like pump casing, impeller, airscrew, front cover, recirculation pipe 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 handling of the product as it moves through the pump.

As standard, the LKH prime pump is equipped with a single mechanical shaft seal but is also available with 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.



Working principle

On applications where the pumped media contains a mixture of air and liquid in the suction line, airscrew rotation causes the formation of a continuous liquid ring within the canister. Due to the eccentric position of the canister relative to the airscrew, an air chamber forms between the liquid ring and the airscrew, which separates into air pockets between the air-screw vanes.

The continuous rotation of the air-screw forces air pockets through the canister into the suction stage of the impeller which are then pumped out via the discharge.

Liquid is returned from the discharge via the recirculation pipe into the canister to ensure the liquid ring is maintained at all times. When there is no air present, the canister and recirculation loop have no function and are fully filled with liquid. The liquid passes through the canister into the suction stage of the impeller, allowing the pump to act as a traditional centrifugal pump.

TECHNICAL DATA

Materials

Product wetted steel parts:	W. 1.4404 (316L)
Other steel parts:	Stainless steel
Inside surface finish:	Standard blasted
Product wetted elastomers:	EPDM
Rotary seal face:	Carbon
Stationary seal face:	Silicon Carbide

Motor

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

Motor sizes

50Hz:	1.5 - 45 kW
60Hz:	1.8 - 45 kW

Min/max motor speed

Air evacuation:	2800 - 3600 rpm
Pumping product (no air):	900 - 3600 rpm

Warranty

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

OPERATING DATA

Max inlet pressure

LKH Prime 10 - 40:	500kPa (5 bar)
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Air release time

LKH Prime 10 - 40:	Max 15 min.
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Temperature

Temperature range:	-10°C to +140°C (EPDM)
Flush media:	Max 70°C

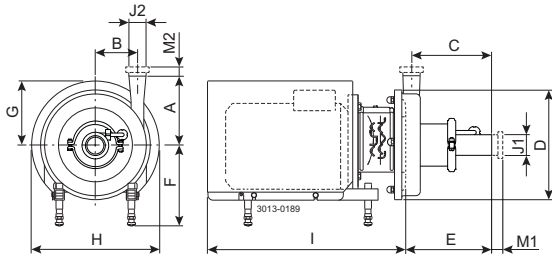
Double mechanical shaft seal

Water pressure inlet, LKH Prime 10 - 40:	Max. 500 kPa (5 bar)
Water consumption:	0.25 - 0.5 l/min

Connections for flushed and double mechanical shaft seal

LKH Prime 10 - 40:	1/8" G
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Dimensions (mm)



Pump specific measures

Pump Model	LKH Prime 10	LKH Prime 20	LKH Prime 40
A	174	187	259
B	85	92	126
C	222	248	271
D	247	253	329
E	245	280	301

Motor specific measures

Motor IEC	IEC90	IEC100	IEC112	IEC132	IEC160	IEC180	IEC200
Motor kW	1.5/2.2	3.0	4.0	5.5/7.5	11-18.kw	22	30/37/45
F(max)*	262	282	285	304	332	352	372
G	157	185	198	196	262	286	399
H	288	325	359	383	485	533	670
I	434	516	497	597	791	842	980

*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 overview

Pump Model	LKH Prime 10	LKH Prime 20	LKH Prime 40
Motor range (IEC)	IEC90-IEC132	IEC100-IEC160	IEC132-IEC200
Motor range (kW)	1.5-5.5	3.0-11	5.5-45kw

Dimensional data are based on 2 pole, ABB motors.

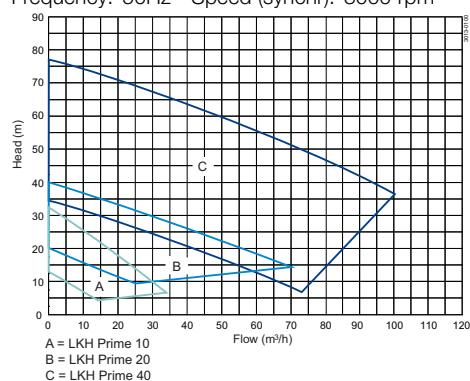
Connections

Pump Model		LKH Prime 10	LKH Prime 20	LKH Prime 40
Clamp ISO 2037	M1	21	21	21
	M2	21	21	12
Union ISO(IDF)	M1	21	21	21
	M2	21	21	21
Union DIN/ISO	M1	22	25	30
	M2	22	22	27
Union SMS	M1	20	24	24
	M2	20	20	24
Union (BS)RJT	M1	27	27	27
	M2	27	27	22
Union DS	M1	20	24	24
	M2	20	20	21
Union DIN/DIN	M1	22	25	30
	M2	22	22	27
J1*		51 / 2"	63,5 / 2,5"	76,1 / 3"
J2*		51 / 2"	51 / 2"	63,5 / 2,5"

* Other dimensions available on request.

Flow chart

Frequency: 50Hz - Speed (synchr): 3000 rpm



Options

- A. Impeller with reduced diameter.
- B. Double mechanical shaft seal.
- C. Rotating seal face of Silicon Carbide.
- D. Product wetted elastomers NBR or FPM.
- E. ½" vertical drain connections (two connections).
- F. Product wetted surface finish mechanically polished to $Ra \leq 0.8 \mu\text{m}$.
- G. Adjustable pads.
- H. Motor for other voltage and/or frequency.
- I. Motor with increased safety/flame proof motor.

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.

Alfa Laval LKHI

Centrifugal pumps

Introduction

The Alfa Laval LKHI Centrifugal Pump for 16 bar Inlet Pressure is a premium pump for use in hygienic applications with inlet pressures up to 16 bar. 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 LKHI 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 16 bar and for Cleaning-in-Place (CIP), the Alfa Laval LKHI is ideal for higher pressure hygienic applications within the dairy, food, beverage and personal care industries that require gentle product treatment and reliable operation.

The LKHI pump is available in nine sizes to handle capacities up to 240 m³/h and provide differential pressures up to 8 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 16 bar and can therefore be used in systems with higher pressure rating.

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 LKHI 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.



TECHNICAL DATA

Materials

Product wetted steel parts:	W. 1.4404 (316L)
Other steel parts:	Stainless steel
Inside surface finish:	Standard blasted
Product wetted elastomers:	EPDM
Rotary seal face:	Carbon
Stationary seal face:	Silicon Carbide

Motor

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

Motor sizes

50Hz:	1.5 - 30 kW
60Hz:	1.2 - 34 kW

Min/max motor speed

2 poles: 1.5 - 30 kW:	900 - 4000 rpm
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Warranty

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

OPERATING DATA

Max inlet pressure

LKHI 10 - 60:	1600kPa (16 bar)
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Temperature

Temperature range:	-10°C to +140°C (EPDM)
Flush media:	Max 70°C

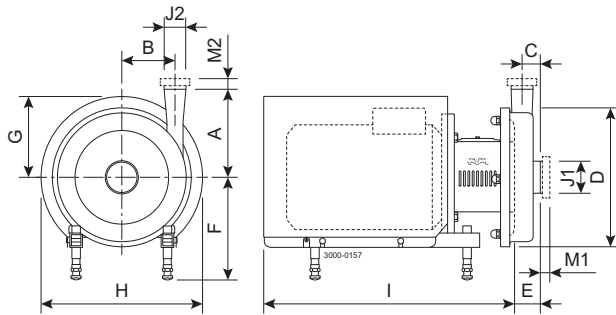
Flushed shaft seal

Water pressure inlet:	Max. 1 bar
Water consumption:	0.25 - 0.5 l/min

Connections for flushed mechanical shaft seal

LKHI 10 - 60:	1/8" G
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Dimensions (mm)



Pump specific measures

Pump Model	LKHI-10	LKHI-15	LKHI-20	LKHI-25	LKHI-35	LKHI-40	LKHI-45	LKHI-50	LKHI-60
A	142	166	180	193	193	212	212	205	261
B	87	66	88	106	119	126	126	118	102
C	23	43	27	32	23	28	28	35	62
D	247	247	253	303	303	329	329	329	329
E	51	87	63	69	54	64	64	77	106

Motor specific measures

Motor IEC	IEC90	IEC100	IEC112	IEC132	IEC160	IEC180	IEC200
Motor kW	1.5/2.2	3.0	4.0	5.5/7.5	11/15/18.5	22	30
F(max)*	262	282	285	304	332	352	372
G	157	185	198	196	262	286	399
H	288	325	359	383	485	533	670
I	434	516	497	597	791	842	980

*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 overview

Pump Model	LKHI-10	LKHI-15	LKHI-20	LKHI-25	LKHI-35	LKHI-40	LKHI-45	LKHI-50	LKHI-60
Motor range (IEC)	IEC90- IEC112	IEC100- IEC132	IEC90- IEC132	IEC132- IEC160	IEC112- IEC160	IEC132- IEC180	IEC112- IEC160	IEC132- IEC180	IEC132- IEC200

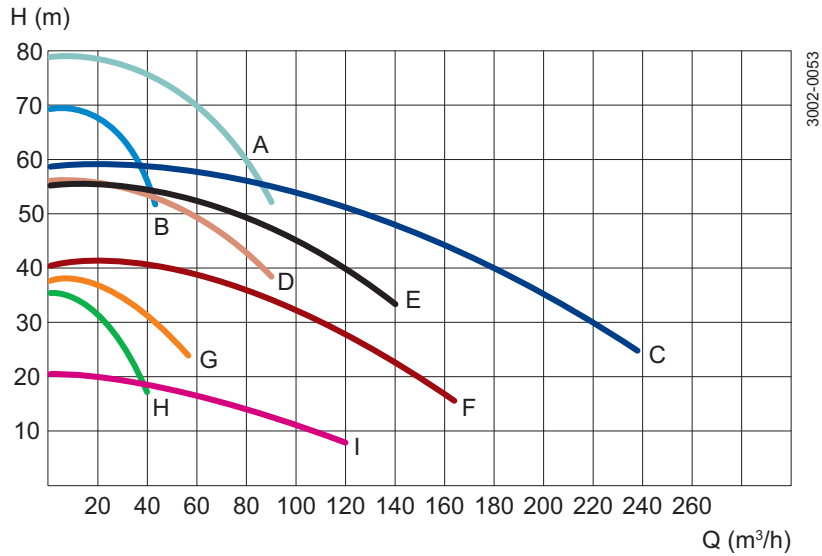
Dimensional data are based on 2 pole, ABB motors.

Connections

Pump Model		LKHI-10 LKHI-20 LKHI-35	LKHI-15 LKHI-45 LKHI-50	LKHI-25	LKHI-40	LKHI-60
Clamp ISO 2037	M1	21	21	21	21	21
	M2	21	21	21	12	21
Union ISO(IDF)	M1	21	21	21	21	21
	M2	21	21	21	21	21
Union DIN/ISO	M1	25	30	30	30	30
	M2	22	30	25	27	30
Union SMS	M1	24	35	24	24	35
	M2	20	24	24	24	35
Union (BS)RJT	M1	27	32	27	27	32
	M2	27	27	27	22	32
Union DS	M1	24	24	24	24	24
	M2	20	24	24	21	24
J1*		63.5 / 2.5"	101.6 / 4"	76.1 / 3"	76.1 / 3"	101.6 / 4"
J2*		51 / 2"	76.1 / 3"	63.5 / 2.5"	63.5 / 2.5"	101.6 / 4"

* Other dimensions available on request.

Flow chart



A = LKHI - 40 D = LKHI - 25 G = LKHI - 20
B = LKHI - 35 E = LKHI - 50 H = LKHI - 10
C = LKHI - 60 F = LKHI - 45 I = LKHI - 15

Options

- A. Impeller with reduced diameter.
- B. Flushed shaft seal.
- C. Rotating seal face of Silicon Carbide.
- D. Product wetted elastomers NBR or FPM.
- E. Product wetted surface finish mechanically polished to $Ra \leq 0.8 \mu\text{m}$.
- F. Surface finish measurement with certificate ($Ra \leq 0.8 \mu\text{m}$).
- G. Adjustable pads.
- H. Motor for other voltage and/or frequency.

Ordering

Please state the following when ordering:

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

Notel

- The curves for LKHI are the same as those for LKH.
- For further details, see also Instruction Manual, ESE00700.

Alfa Laval LKHI

Centrifugal pumps

Introduction

The Alfa Laval LKHI Centrifugal Pump for 16 bar Inlet Pressure is a premium pump for use in hygienic applications with inlet pressures up to 16 bar. 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 LKHI 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 16 bar and for Cleaning-in-Place (CIP), the Alfa Laval LKHI is ideal for higher pressure hygienic applications within the dairy, food, beverage and personal care industries that require gentle product treatment and reliable operation.

The LKHI pump is available in nine sizes to handle capacities up to 240 m³/h and provide differential pressures up to 8 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 16 bar and can therefore be used in systems with higher pressure rating.

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 LKHI 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.



TECHNICAL DATA

Materials

Product wetted steel parts:	W. 1.4404 (316L)
Other steel parts:	Stainless steel
Inside surface finish:	Standard blasted
Product wetted elastomers:	EPDM
Rotary seal face:	Carbon
Stationary seal face:	Silicon Carbide

Motor

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

Motor sizes

50Hz:	1.5 - 30 kW
60Hz:	1.2 - 34 kW

Min/max motor speed

2 poles: 1.5 - 30 kW:	900 - 4000 rpm
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Warranty

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

OPERATING DATA

Max inlet pressure

LKHI 10 - 60:	1600kPa (16 bar)
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Temperature

Temperature range:	-10°C to +140°C (EPDM)
Flush media:	Max 70°C

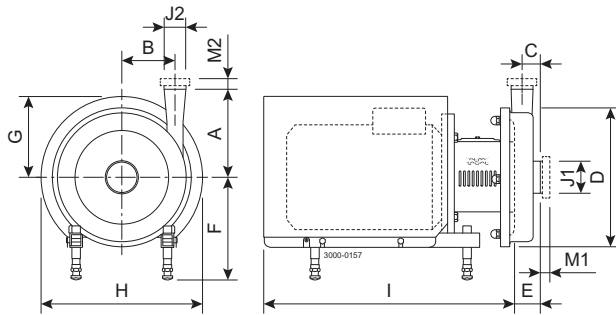
Flushed shaft seal

Water pressure inlet:	Max. 1 bar
Water consumption:	0.25 - 0.5 l/min

Connections for flushed mechanical shaft seal

LKHI 10 - 60:	1/8" G
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Dimensions (mm)



Pump specific measures

Pump Model	LKHI-10	LKHI-15	LKHI-20	LKHI-25	LKHI-35	LKHI-40	LKHI-45	LKHI-50	LKHI-60
A	142	166	180	193	193	212	212	205	261
B	87	66	88	106	119	126	126	118	102
C	23	43	27	32	23	28	28	35	62
D	247	247	253	303	303	329	329	329	329
E	51	87	63	69	54	64	64	77	106

Motor specific measures

Motor IEC	IEC90	IEC100	IEC112	IEC132	IEC160	IEC180	IEC200
Motor kW	1.5/2.2	3.0	4.0	5.5/7.5	11/15/18.5	22	30
F(max)*	262	282	285	304	332	352	372
G	157	185	198	196	262	286	399
H	288	325	359	383	485	533	670
I	434	516	497	597	791	842	980

*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 overview

Pump Model	LKHI-10	LKHI-15	LKHI-20	LKHI-25	LKHI-35	LKHI-40	LKHI-45	LKHI-50	LKHI-60
Motor range (IEC)	IEC90- IEC112	IEC100- IEC132	IEC90- IEC132	IEC132- IEC160	IEC112- IEC160	IEC132- IEC180	IEC112- IEC160	IEC132- IEC180	IEC132- IEC200

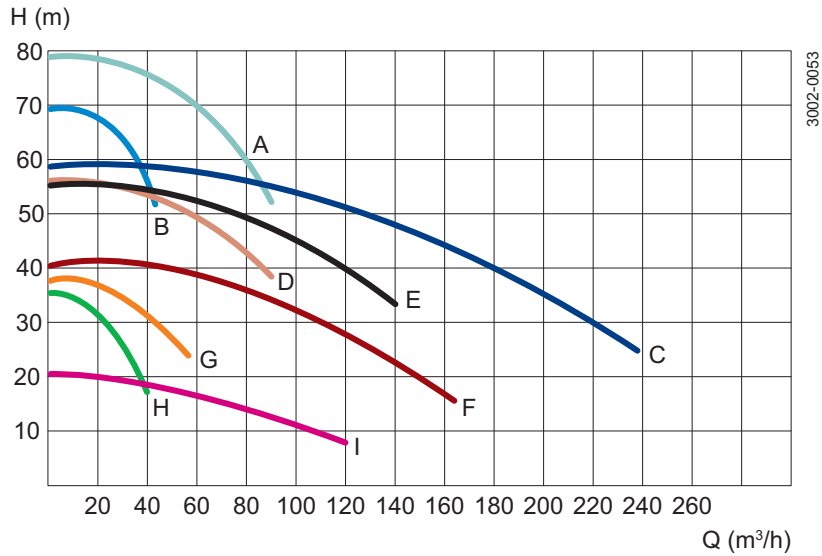
Dimensional data are based on 2 pole, ABB motors.

Connections

Pump Model		LKHI-10 LKHI-20 LKHI-35	LKHI-15 LKHI-45 LKHI-50	LKHI-25	LKHI-40	LKHI-60
Clamp ISO 2037	M1	21	21	21	21	21
	M2	21	21	21	12	21
Union ISO(IDF)	M1	21	21	21	21	21
	M2	21	21	21	21	21
Union DIN/ISO	M1	25	30	30	30	30
	M2	22	30	25	27	30
Union SMS	M1	24	35	24	24	35
	M2	20	24	24	24	35
Union (BS)RJT	M1	27	32	27	27	32
	M2	27	27	27	22	32
Union DS	M1	24	24	24	24	24
	M2	20	24	24	21	24
J1*		63.5 / 2.5"	101.6 / 4"	76.1 / 3"	76.1 / 3"	101.6 / 4"
J2*		51 / 2"	76.1 / 3"	63.5 / 2.5"	63.5 / 2.5"	101.6 / 4"

* Other dimensions available on request.

Flow chart



A = LKHI - 40 D = LKHI - 25 G = LKHI - 20
B = LKHI - 35 E = LKHI - 50 H = LKHI - 10
C = LKHI - 60 F = LKHI - 45 I = LKHI - 15

Options

- A. Impeller with reduced diameter.
- B. Flushed shaft seal.
- C. Rotating seal face of Silicon Carbide.
- D. Product wetted elastomers NBR or FPM.
- E. Product wetted surface finish mechanically polished to $Ra \leq 0.8 \mu\text{m}$.
- F. Surface finish measurement with certificate ($Ra \leq 0.8 \mu\text{m}$).
- G. Adjustable pads.
- H. Motor for other voltage and/or frequency.

Ordering

Please state the following when ordering:

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

Notel

- The curves for LKHI are the same as those for LKH.
- For further details, see also Instruction Manual, ESE00700.

Alfa Laval LKH Evap

Centrifugal pumps

Introduction

The Alfa Laval LKH Evap Centrifugal Pump is a premium pump for use in hygienic applications. As a low-NPSHr, high-efficiency centrifugal pump, the LKH Evap is a tailored evaporator pump supported by strong and extensive documentation, including a comprehensive vacuum curve package. It features a special scraper impeller, ClearFlow, that solves the product buildup problem in high solids applications, which can prolong production time between cleaning.

Precision-engineered, the LKH Evap 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.

Applications

The LKH Evap Centrifugal Pump is designed for hygienic applications across the dairy, food, beverage, brewery, alcohol, ethanol, starch and chemical industries. It is ideal for use in evaporation duties for applications, such as liquid concentration and powder processing as well as plant and equipment dewatering.

The LKH Evap pump is available in 10 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 and effective Cleaning-in-Place.
- Low NPSHr: reduced NPSHr enables optimized system designs.
- 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 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 LKH Evap 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.

LKH Evap is available with the Clear Flow Impeller which is to be used in applications where there is a risk of building up a hard layer of product between impeller and backplate.



TECHNICAL DATA

Materials

Product wetted steel parts:	W. 1.4404 (316L)
Other steel parts:	Stainless steel
Inside surface finish:	Standard blasted
Product wetted elastomers:	EPDM
Ratary seal face:	Carbon
Stationary seal face:	Silicon Carbide

Motor

Foot-flanged motor according to the IEC metric standard, 2 poles = 3000/3600 rpm at 50/60 Hz, 4 poles = 1500/1800 rpm at 50/60 Hz, IP 55
(with drain hole with labyrinth plug), insulation class F

Motor sizes

50Hz:	1.5 - 75 kW
60Hz:	1.2 - 80 kW

Min/max motor speed

2 poles: 1.5 - 45kW:	900 - 4000 rpm
2 poles: 55 - 75 kW:	900 - 3600 rpm
4 poles: 1.5 - 75 kW:	900 - 2200 rpm

Warranty

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

OPERATING DATA

Max inlet pressure

LKH Evap 10 - 70:	1000kPa (10 bar)
LKH Evap 70, 60Hz:	500kPa (5 bar)

Temperature

Temperature range:	-10°C to +140°C (EPDM)
Flush media:	Max 70°C

Flushed shaft seal

Water pressure inlet:	Max. 1 bar
Water consumption:	0.25 - 0.5 l/min

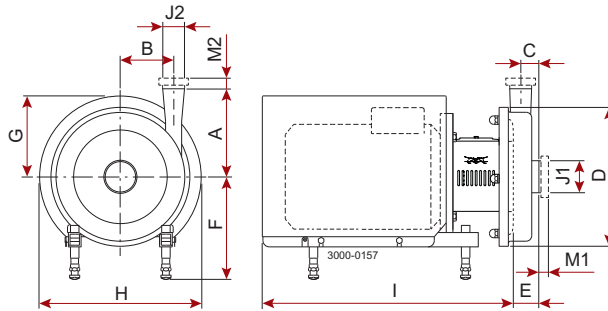
Double mechanical shaft seal

Water pressure inlet, LKH Evap 10 to 60:	Max. 500 kPa (5 bar)
Water pressure inlet, LKH Evap 70:	Max. 300 kPa (3 bar)
Water consumption:	0.25 - 0.5 l/min

Connections for flushed and double mechanical shaft seal

LKHPF 10 - 70:	1/8" G
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Dimensions (mm)



Pump specific measures

Pump Model	LKHevap-10	LKHevap-15	LKHevap-20	LKHevap-25	LKHevap-35	LKHevap-40	LKHevap-45	LKHevap-50	LKHevap-60	LKHevap-70
A	142	166	180	193	193	212	212	205	261	254
B	87	66	88	106	119	126	126	118	102	147
C	23	43	27	32	23	28	28	35	62	25
D	247	247	253	303	303	329	329	329	329	408
E	51	87	63	69	54	64	64	77	106	76

Motor specific measures

Motor IEC	IEC90	IEC100	IEC112	IEC132	IEC160	IEC180	IEC200	IEC250
Motor kW	1.5/2.2	3.0	4.0	5.5/7.5	11/15/18.5	22	30/37/45	55/75
F(max)*	262	282	285	304	332	352	372	446
G	157	185	198	196	262	286	399	394
H	288	325	359	383	485	533	670	738
I (LKHevap-10 to -60)	434	516	497	597	791	842	980	-
I (LKHevap-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.

Motor overview

Pump Model	LKHevap-10	LKHevap-15	LKHevap-20	LKHevap-25	LKHevap-35	LKHevap-40	LKHevap-45	LKHevap-50	LKHevap-60	LKHevap-70
Motor range (IEC)	IEC90- IEC112	IEC100- IEC132	IEC90- IEC132	IEC132- IEC160	IEC112- IEC160	IEC132- IEC180	IEC112- IEC160	IEC132- IEC180	IEC132- IEC200	IEC132- IEC250

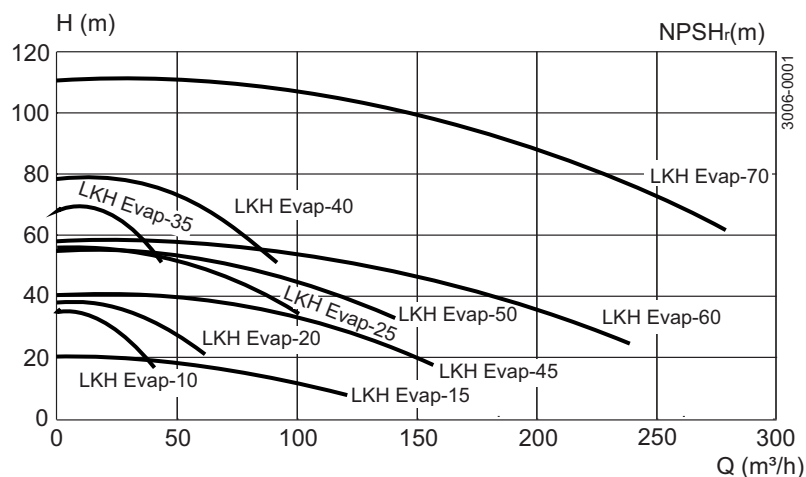
Dimensional data are based on 2 pole, ABB motors.

Connections

Pump Model	LKHevap-10	LKHevap-15	LKHevap-20	LKHevap-25	LKHevap-35	LKHevap-40	LKHevap-45	LKHevap-50	LKHevap-60	LKHevap-70
Clamp ISO 2037	M1 M2	21 21	21 21	102 21	21 21	21 12	21 21	21 21	102 21	21 21
Union ISO(IDF)	M1 M2	21 21	21 21	102 21	21 21	21 21	21 21	21 21	102 21	21 21
Union DIN/ISO	M1 M2	25 22	30 30	111 30	30 25	30 27	30 30	30 30	111 30	30 30
Union SMS	M1 M2	24 20	35 24	105 24	24 24	24 24	35 35	105 35	24 24	105 35
Union (BS)RJT	M1 M2	27 27	32 27	108 27	27 27	27 22	32 32	108 32	27 27	108 32
Union DS	M1 M2	24 20	24 24	105 24	24 24	24 21	24 24	105 24	24 24	105 24
Union DIN/DIN	M1 M2	25 22	30 30	111 30	30 25	30 27	30 30	111 30	30 30	111 30
J1*		63,5 / 2,5"	101,6 / 4"	76,1 / 3"	76,1 / 3"	76,1 / 3"	76,1 / 3"	101,6 / 4"	76,1 / 3"	76,1 / 3"
J2*		51 / 2"	76,1 / 3"	76,1 / 3"	63,5 / 2,5"	63,5 / 2,5"	63,5 / 2,5"	101,6 / 4"	101,6 / 4"	101,6 / 4"

* Other dimensions available on request.

Flow chart



Note: If Clear Flow impeller is mounted the performance can be up to 10% lower than shown on the curves above

Options

- A. Impeller with reduced diameter.
- B. Flushed shaft seal.
- C. Double mechanical shaft seal.
- D. Rotating seal face of Silicon Carbide.
- E. Product wetted elastomers NBR, FPM or FEP.
- F. ½" vertical drain connection.
- G. Product wetted surface finish mechanically polished to $Ra \leq 0.8 \mu\text{m}$.
- H. Surface finish measurement with certificate ($Ra \leq 0.8 \mu\text{m}$).
- I. Inducer (LKH Evap 10 to 50).
- J. Adjustable pads.
- K. Motor for other voltage and/or frequency.
- L. Half speed motor.
- M. Motor with increased safety/flare proof motor.

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.

Notel

For further details, see also instruction manual.

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 500 m³/hour 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.
- 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 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 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.



TECHNICAL DATA

Materials

Product wetted steel parts:	W. 1.4404 (316L)
Other steel parts:	Stainless steel
Inside surface finish:	Standard blasted
Product wetted elastomers:	EPDM
Rotary seal face:	Carbon
Stationary seal face:	Silicon Carbide

Motor

Foot-flanged motor according to the IEC metric standard, 2 poles = 3000/3600 rpm at 50/60 Hz, 4 poles = 1500/1800 rpm at 50/60 Hz, IP 55 (with drain hole with labyrinth plug), insulation class F.

Motor sizes

50Hz:	0.75 - 110 kW
60Hz:	0.75 - 110 kW

Min/max motor speed

2 poles: 0.75 - 45 kW:	900 - 4000 rpm
2 poles: 55 - 110 kW:	900 - 3600 rpm
4 poles: 0.75 - 75 kW:	900 - 2200 rpm

Warranty

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

OPERATING DATA

Max inlet pressure

LKH-5:	600 kPa (6 bar)
LKH-10 - 70:	1000kPa (10 bar)
LKH-70, 60Hz:	500kPa (5 bar)
LKH-85 - 90:	500kPa (5 bar)

Temperature

Temperature range:	-10°C to +140°C (EPDM)
Flush media:	Max 70°C
Flush housing sterilization (pump not in operation):	Max 125°C

Flushed shaft seal

Water pressure inlet:	Max. 1 bar
Water consumption:	0.25 - 0.5 l/min

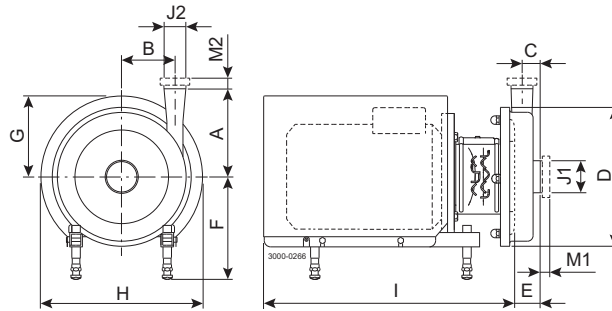
Double mechanical shaft seal

Water pressure inlet, LKH-5 to -60:	Max. 500 kPa (5 bar)
Water pressure inlet, LKH-70 to -90:	Max. 300 kPa (3 bar)
Water consumption:	0.25 - 0.5 l/min

Connections for flushed and double mechanical shaft seal

LKH-5 - 70, LKH-90:	1/8" G
LKH-85:	Ø6 tube

Dimensions (mm)



Pump specific measures

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-85	LKH-90
A	158	142	166	180	193	193	212	193	205	261	254	229	310
B	70	87	66	88	106	119	126	97	118	102	147	220	250
C	22	23	43	27	32	23	28	41	35	62	25	65	65
D	189	247	247	253	303	303	329	329	329	329	408	438	504
E	42	51	87	63	69	54	64	64	77	106	76	97	95

Motor specific measures

Motor IEC	IEC80	IEC90	IEC100	IEC112	IEC132	IEC160	IEC180	IEC200	IEC250	IEC280
Motor kW	0.75/1.1	1.5/2.2	3.0	4.0	5.5/7.5	11/15/18.5	22	30/37/45	55/75	90/110
F(max)*	262	262	282	285	304	332	352	372	446	496
G	125	157	185	198	196	262	286	399	394	584
H	250	288	325	359	383	485	533	670	738	960
I (LKH-5)	400	441	-	-	-	-	-	-	-	-
I (LKH-10 to -60)	-	434	516	497	597	791	842	980	-	-
I (LKH-70 to -90)	-	-	-	-	-	804	855	993	1051	1271

*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 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-85	LKH-90
Motor range (IEC)	IEC80-IEC90	IEC90-IEC160	IEC90-IEC160	IEC90-IEC160	IEC90-IEC200	IEC90-IEC180	IEC90-IEC200	IEC100-IEC180	IEC100-IEC200	IEC112-IEC200	IEC160-IEC250	IEC200-IEC280	IEC180-IEC250

From LKH-5 to LKH-85 dimensional data are based on 2 pole, ABB motors.

For LKH-90 dimensional data are based on 4 pole, ABB motors.

Connections

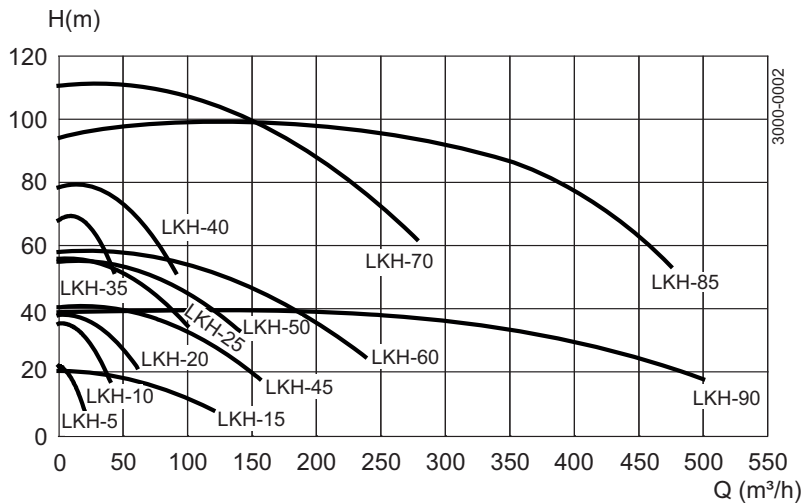
Pump Model		LKH-5	LKH-10 LKH-20 LKH-35	LKH-15 LKH-45 LKH-50 LKH-70	LKH-25	LKH-40	LKH-60	LKH-85 LKH-90
Clamp ISO 2037	M1	21	21	21	21	21	21	-
	M2	21	21	21	21	12	21	-
Union ISO(IDF)	M1	21	21	21	21	21	21	-
	M2	21	21	21	21	21	21	-
Union DIN/ISO	M1	22	25	30	30	30	30	-
	M2	22	22	30	25	27	30	-
Union SMS	M1	20	24	35	24	24	35	-
	M2	20	20	24	24	24	35	-
Union (BS)RJT	M1	27	27	32	27	27	32	-
	M2	27	27	27	27	22	32	-
Union DS	M1	20	24	24	24	24	24	-
	M2	20	20	24	24	21	24	-
Union DIN/DIN	M1	22	25	30	30	30	30	50
	M2	22	22	30	25	27	30	50
Clamp ASME BPE	M1	-	-	-	-	-	-	38
	M2	-	-	-	-	-	-	38
J1*		51 / 2"	63,5 / 2,5"	101,6 / 4"	76,1 / 3"	76,1 / 3"	101,6 / 4"	152,5 / 6"
J2*		38 / 1,5"	51 / 2"	76,1 / 3"	63,5 / 2,5"	63,5 / 2,5"	101,6 / 4"	152,5 / 6"

* Other dimensions available on request.

ESE00263/7

Flow chart

Frequency: 50 Hz Speed (synchr): 3000 rpm



Options

- A. Impeller with reduced diameter.
- B. Flushed shaft seal.
- C. Double mechanical shaft seal.
- D. Rotating seal face of Silicon Carbide.
- E. Product wetted elastomers NBR, FPM or FEP.
- F. ½" vertical drain connection.
- G. Product wetted surface finish mechanically polished to $Ra \leq 0.8 \mu\text{m}$.
- H. Surface finish measurement with certificate ($Ra \leq 0.8 \mu\text{m}$).
- I. Inducer (LKH-10 to -50).
- J. Adjustable pads.
- K. Motor for other voltage and/or frequency.
- L. Half speed motor.
- M. Motor with increased safety/flame proof motor.
- N. ATEX approved execution (LKH_{ex}).

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.

The Pump for any application!

Alfa Laval i-CP2000 Centrifugal Pump

Applications

The Alfa Laval i-CP2000 pump is a highly efficient and economical centrifugal pump, which meets the requirements of sanitary and gentle product treatment and chemical resistance. The pump is available in six sizes, Alfa Laval i-CP2010, -20, -25, -35, -40, -50.

Standard design

The Alfa Laval i-CP2000 pump consists of a standard motor, stub shaft, mechanical compression coupling, adaptor, back plate, impeller, pump casing and shaft seal. The pump is designed for CIP with emphasis on large internal radii and easily cleanable seals. The pump has a stainless steel shroud for protection of the motor, and the complete unit is supported on four adjustable legs.

Shaft seals

The Alfa Laval i-CP2000 pump is equipped with an external single or double mechanical shaft seal. All have stationary seal rings in acid resistant steel AISI 316L with sealing surfaces in silicon carbide and rotating seal rings in carbon (optional silicon carbide). Double mechanical seal is equipped with a secondary mechanical seal.

Materials

Product wetted steel parts: AISI 316L.
 Other steel parts: AISI 304, surface treated carbon steel.
 Finish: Semi bright.
 Product wetted seals: EPDM elastomer (FDA).

Technical data

Max. inlet pressure: 500kPa (5 bar).
 Temperature range: -10°C to +140°C (EPDM).

Double mechanical shaft seal:

Water pressure inlet: Max. 500 kPa (5 bar).
 Water consumption: 0.25 -0.5 l/min.
 Temperature range 0°C to +140°C

Connections for DMSS:

R 1/8" (BSP) external thread.



The Alfa Laval i-CP2000 pump is designed, tested and approved according to EHEDG guidelines



Motor

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

Voltage and frequency

3 ~, 50 Hz, 220-240V Δ/380-420VY	≤ 4 kW
3 ~, 60 Hz, 250-280V Δ/440-480VY	≤ 4.6 kW
3 ~, 50 Hz, 380-420V Δ/660-690VY	≥ 5.5 kW
3 ~, 60 Hz, 440-480V Δ	≥ 6.4 kW

Motor sizes

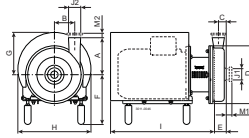
50 Hz: 1.5 - 2.2 - 3 - 4 - 5.5 - 7.5 - 11 - 15 - 18.5 - 22 kW.

60 Hz: 1.75 - 2.5 - 3.5 - 4.6 - 6.4 - 8.6 - 12.5 - 17 - 21 - 25 kW.

Warranty

Extended 3-years warranty on Alfa Laval i-CP2000 pumps. The warranty covers all non wear parts on the condition that genuine Alfa Laval Spare Parts are used.

Dimensions (mm)



Pump specific measures

Pump Model	ICP-10	ICP-20	ICP-25	ICP-35	ICP-40	ICP-50
A	142	180	193	193	212	205
B	87	88	106	119	186	118
C	23	27	32	23	28	35
D	247	253	303	303	329	329
E	69	54	77	64	63	51

Moter specific measures

Motor IEC	IEC90	IEC100	IEC112	IEC132	IEC160	IEC180
Motor kW	1.5/2.2	3.0	4.0	5.5/7.5	11/15/18.5	22
F(max)*	246	256	259	279	307	
G	167	177	219	222	288	296
H	288	323	359	383	485	520
I	436	502	502	611	765	840

*Possible to reduce dimension F by min. XX mm for all pump models.

For smaller models it will be possible to reduce dimension F even further.

Moter overview

Pump Model	ICP-10	ICP-20	ICP-25	ICP-35	ICP-40	ICP-50
Motor range (IEC)	IEC90-IEC112	IEC90-IEC132	IEC132-IEC160	IEC112-IEC160	IEC132-IEC180	IEC132-IEC180

Dimensional data are based on 2 pole, TechTop motors.

Connections

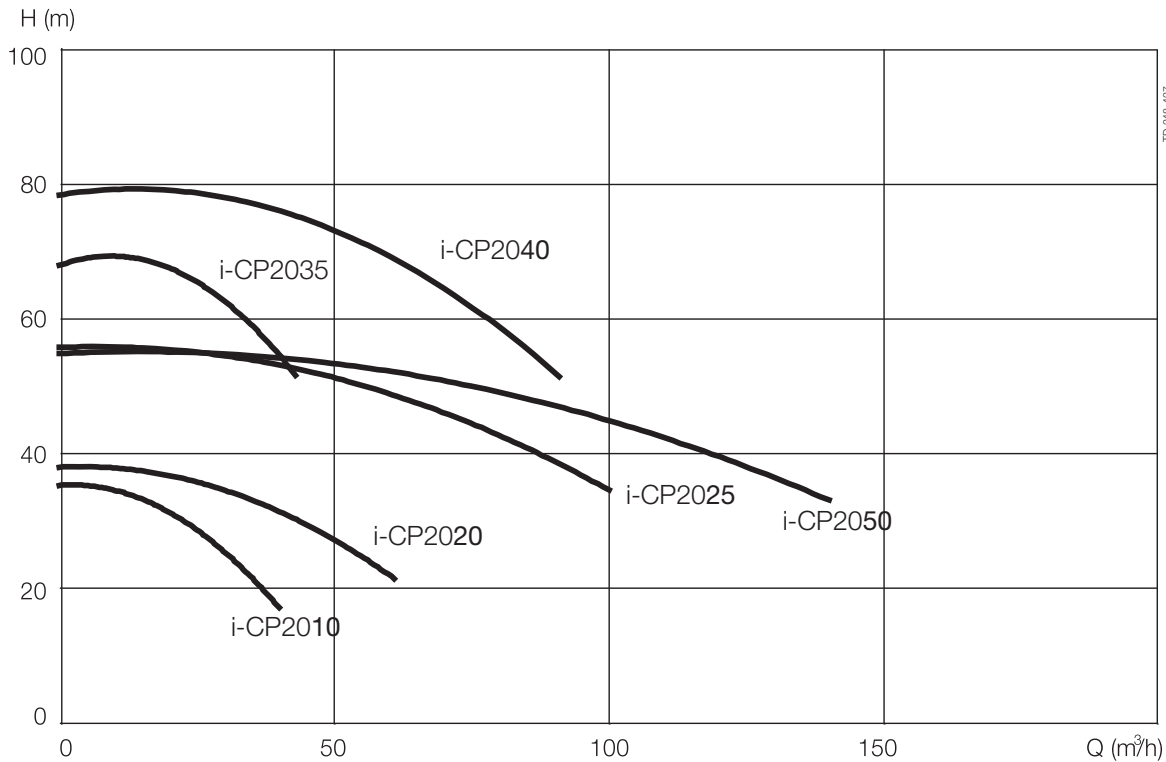
Pump Model		ICP-10 ICP-20 ICP-35	ICP-25	ICP-40	ICP-50
Clamp ISO 2037	M1	21	21	21	21
	M2	21	21	12	21
Union ISO(IDF)	M1	21	21	21	21
	M2	21	21	21	21
Union DIN/ISO	M1	25	30	30	30
	M2	22	25	27	30
Union SMS	M1	24	24	24	35
	M2	20	24	24	24
J1*		63,5 / 2,5"	76,1 / 3"	76,1 / 3"	101,6 / 4"
J2*		51 / 2"	63,5 / 2,5"	63,5 / 2,5"	76,1 / 3"

* Other dimensions available on request.

ESE00886/3

Flow chart

Frequency: 50 Hz Speed (synchr): 3000 rpm



Options

- A. Impeller with reduced diameter.
- B. 1500 rpm. motor.
- C. Double mechanical shaft seal.
- D. Surface roughness, product wetted parts: $R_a \leq 0.8 \mu\text{m}$.
- E. Product wetted seals of Nitrile (NBR) or Fluorinated rubber (FPM).
- F. Rotating seal ring of Silicon Carbide.

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 ESE00887.

This product has EHEDG certification