



Making Mixing and CIP Easy

Alfa Laval SMPU Skid Mounted Pump Unit

Applications

The Alfa Laval Skid Mounted Pump Unit for mixing and CIP is a cost-effective and standardized pump unit to be used in combination with an Alfa Laval Rotary Jet Mixer or a Toftejorg Rotary Jet Head cleaning machine.

Design

The unit contains the highly energy efficient, sanitary Alfa Laval LKH centrifugal pump and a variable frequency drive, piping, two Alfa Laval Pressure Gauges, two manual Alfa Laval LKB-2 Butterfly Valves at inlet and outlet and a drain valve (Alfa Laval LKB-2). The Alfa Laval In-line Instrumentation House prepares the unit for installation of an instrument from e.g. the Alfa Laval range of hygienically designed instruments. Also, the unit is prepared for a flowmeter. Everything is mounted on a stainless steel frame with a stainless steel cover for protection of the frequency drive. The unit is not electrically wired, nor is the frequency converter programmed. This is done during installation. Start and stop of the unit can be done via the plant's control system or directly from the VFD. The unit is available in three different sizes; 7.5, 11, and 15 kW.



TECHNICAL DATA

Pump

Type: Alfa Laval LKH Centrifugal Pump
 Model: See table
 Mechanical seal: Single shaft seal, C/SiC, EPDM
 Motor ABB foot-flanged motor according to the IEC metric standard with cover, 2 poles = 3000/3600 rpm at 50/60 Hz, IP 55, insulation class F. Energy efficiency class: IE2

Frequency drive

Type: Danfoss VLT® AutomationDrive FC 301
 Power rating: See table
 Mains voltage: 380/480 VAC
 On/off: Local mains disconnect
 Insulation class IP55/NEMA 12
 RFI filter Class A1/B
 Display Graphical Local Control Panel

Valves

Type: Alfa Laval LKB-2 Butterfly Valves

Pressure gauges

Type: Alfa Laval Pressure Gauge
 Measuring range: 0 to 10 bar
 Accuracy: Class 1.0 (+/- 1%)
 Pressure overload on diaphragm: Short time 130% of FS

PHYSICAL DATA

Materials

Product wetted steel parts: AISI 316L, AISI 329
 Other steel parts: AISI 304, AISI 304L
 Finish: Semi bright
 Product wetted seals: EPDM rubber
 Pressure gauge filling: FDA approved silicone oil

Operating pressure and temperature

Max. inlet/outlet pressure: 10 bar
 Temperature range wetted parts: -10°C to 95°C (max. temperature if valve operates)
 Ambient temperature: -10°C to 45°C

Process connection

Inlet and outlet: Complete DIN11851 (2 nd series) unions, for dimensions see table
 Connection type on In-line Instrumentation House: Clamp DIN32676 DN40/ISO2852 DN38
 Connection type for insertion of flow meter: Clamp DIN32676 in dimension as outlet connection, see table

Weight

See table



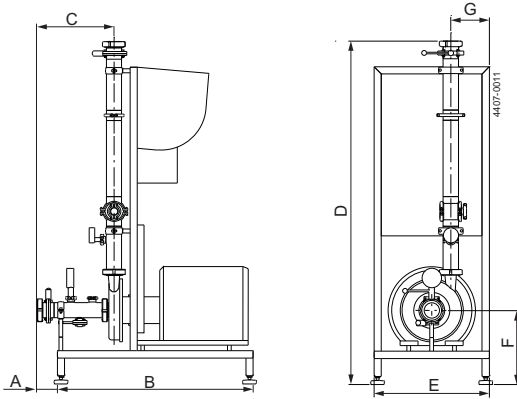
Operation with Alfa Laval Rotary Jet Mixer

The Alfa Laval Skid Mounted Pump Unit is typically installed together with an Alfa Laval Rotary Jet Mixer for mixing in a tank. The tank outlet is connected to the inlet of the Alfa Laval Skid Mounted Pump Unit and the Alfa Laval Skid Mounted Pump Unit is connected via the piping system to the inlet of an Alfa Laval Rotary Jet Mixer that is submerged in the liquid inside the tank. The liquid flow generated by the Alfa Laval Skid Mounted Pump Unit leaves the rotating nozzles of the Alfa Laval Rotary Jet Mixer – making sure that the injected liquid reaches all the tank contents, ensuring good mixing.

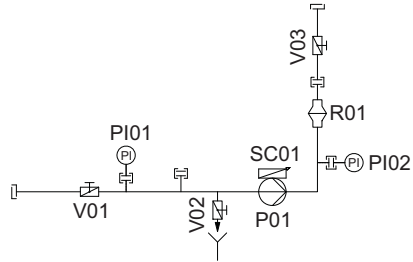
Benefits

With the Alfa Laval Skid Mounted Pump Unit you get a high quality system, optimized for the Alfa Laval Rotary Jet Mixer or the Toftejorg tank cleaning machine. The installation time is short. You only have to connect two pipes, do the electrical wiring and set up the variable frequency drive. If additional instrumentation is needed this can be inserted without further welding.

Dimensions (mm)

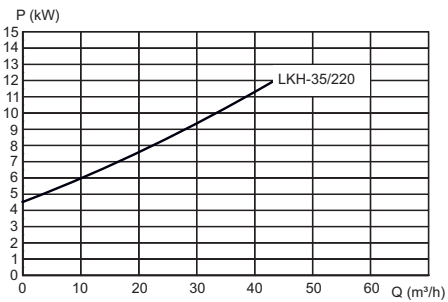
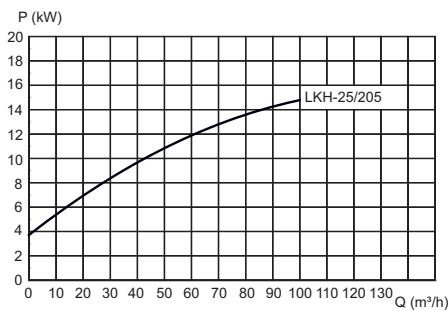
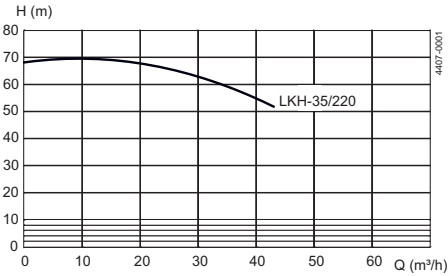
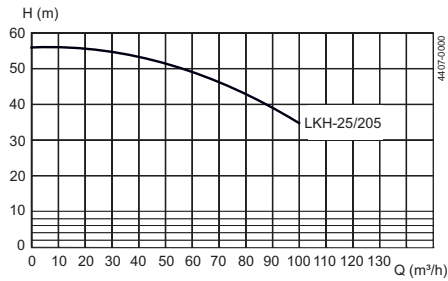


P&I diagram of Skid Mounted Pump Unit



Type	Pump model	VFD power rating	Inlet	Outlet	Weight (kg)	A	B	C	D	E	F	G
SMPU 7.5	LKH-35/220/7.5 kW	7.5 kW / 10 hp	DN65	DN50	271	117	1090	640	~1900	1085	~400	200
SMPU 11	LKH-25/205/11 kW	11 kW / 15 hp	DN80	DN65	287	117	1090	640	~1900	1085	~411	214
SMPU 15	LKH-25/205/15 kW	15 kW / 20 hp	DN80	DN80	333	117	1090	640	~1900	1311	~411	214

Pump Curves at 50 Hz



Alfa Laval reserves the right to change specifications without prior notification. ALFA LAVAL is a trademark registered and owned by Alfa Laval Corporate AB.

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