

## The Compact Pump

### LKH-110 and LKH-120/P Multi-Stage Centrifugal Pump

#### Application

LKH-110 and -120/P are highly efficient and economical multi-stage centrifugal pumps, which meet the requirements of sanitary and gentle product treatment and chemical resistance. Both the LKH-110 and the LKH-120/P are available in 3 sizes, LKH-112, -113, -114 and LKH-122/P, -123/P, -124/P respectively, for 2, 3 and 4 stages.

#### Standard design

LKH-110 and -120/P consist of a motor, stub shaft with key, mechanical compression coupling, adaptor, back plate, impellers, pump casing, intermediate casing (3 or 4 stage), pump cover, impeller screw and shaft seal. The pumps are designed for CIP with emphasis on large internal roundings and cleanable seals. The sanitary versions of LKH-110 and -120/P have stainless steel shrouds for protection of the motor, and the complete unit is supported on four adjustable stainless steel legs.

#### Shaft seals

The pumps can be fitted with two types of mechanical seals:

- Single internal seal.
- Flushed seal.
- Sic/C material combination, outlet pressure up to 20 bar
- Sic/Sic material combination, outlet pressure up to 40 bar

Both seal types have stationary seal rings of silicon carbide and rotating seal rings of carbon or silicon carbide. The secondary seal of the flushed seal is a long lasting lip seal.

#### Materials

Product wetted

steel parts:	Acid-resistant steel, 1.4404 (316L) and Duplex steel
Other steel parts:	Stainless steel, 1.4301 (304).
Product wetted seals:	EPDM.
Other O-rings:	EPDM.
Finish:	Semi-bright.



Multistage pump with shroud and legs.

#### Technical data

##### Max. outlet pressure, LKH-110/P, LKH-120/P:

- Limited by the strength of the pump casing:  
4000 kPa (40 bar) temperature < 40° C.
- Limited by the strength of the pump casing:  
2000 kPa (20 bar) temperature > 40° C.

Temperature range: -10°C to +140°C (EPDM).

Water pressure: Normally atmospheric,  
max. 1 bar (flushed seal).

Water consumption: 0.25 -0.5 l/min. (flushed seal)

Noise level (at 1 m): 60-80 dB (A).

## Versions

	LKH-110	LKH-110/P	LKH-120/P
Inlet pressure	<10 bar	>10 bar	-
Motor	Standard	Special	Special
Back Plate	Standard	Reinforced	Standard
Shaft seal	C/SIC or SIC/SIC	SIC/SIC	SIC/SIC or SIC/C

**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 type, LKH-110:**

- Standard motor with a fixed ball bearing on drive side.

**Motor types, LKH-110/P and LKH-120/P:**

- Special motor with special bearings.

**Voltage and frequency**

3 ~, 50 Hz, 220-240V  $\Delta$ /380-420VY  $\leq$  4 kW  
 3 ~, 60 Hz, 250-280V  $\Delta$ /440-480VY  $\leq$  4.6 kW

3 ~, 50 Hz, 380-420V  $\Delta$ /660-690VY  $\geq$  5.5 kW  
 3 ~, 60 Hz, 440-480V  $\Delta$   $\geq$  6.3 kW

**Motor sizes, LKH-110**

50 Hz: 2.2, 3, 4, 5.5, 7.5, 11, 15, 18.5 kW.

60 Hz: 4.6, 6.3, 8.6, 12.5, 17, 21 kW.

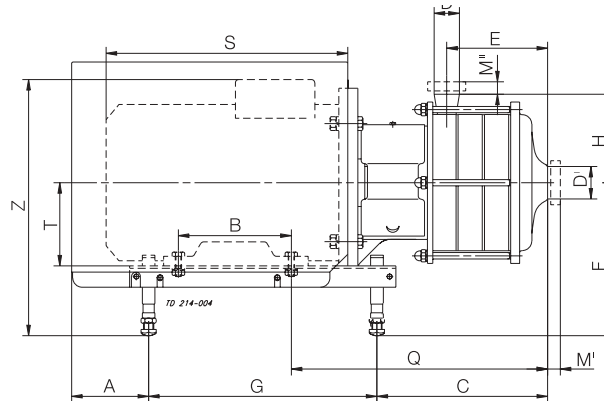
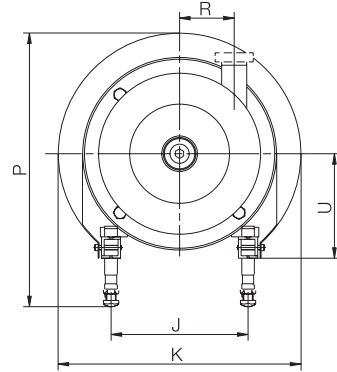
**Motor sizes, LKH-120/P**

50 Hz: 30, 37, 45 kW.

60 Hz: 35, 43, 52, 64, 87 kW.

Dimensions (mm)

900006/2



LKH-112

Size	Motor			
	2.2 kw	3 kw	4 kw	5.5 kw
A	109	78	81	81
B	125	140	140	178
C	173	181	188	186
E	76	76	76	76
F min.	189	185	184	184
F max.	275	295	297	317
G	242	320	320	400
H	140	140	140	140
J	140	160	190	216
K	268	323	359	383
P min.	323	353	378	376
P max.	408	463	492	509
Q	255	276	283	321
R	86	86	86	86
S	270	299	301	402
T	90	100	112	132
U	125	145	147	167
Z min.	311	321	330	347
Z max.	397	431	443	480
Weight (kg)	49	57	67	85

LKH-114

Size	Motor	
	5.5/7.5 kw	11.0/15.0 kw
A	81	105
B	178	210
C	269	298
E	159	159
F min.	184	228
F max.	317	345
G	400	483
H	140	140
J	216	254
K	383	485
P min.	376	486
P max.	509	603
Q	404	451
R	86	86
S	402	493
T	132	160
U	167	195
Z min.	347	438
Z max.	480	555
Weight (kg)	100	144/153

LKH-113

Size	Motor		
	4.0 kw	5.5/7.5 kw	11.0 kw
A	81	81	105
B	140	178	210
C	230	228	257
E	118	118	118
F min.	184	184	228
F max.	297	317	345
G	320	400	483
H	140	140	140
J	190	216	254
K	359	383	485
P min.	378	376	486
P max.	492	509	603
Q	325	363	410
R	86	86	86
S	301	402	493
T	112	132	160
U	147	167	195
Z min.	330	347	438
Z max.	443	480	555
Weight (kg)	72	90	134

Note! \*S, \*Z for pumps with ABB motors.

Dimensions (mm) - Sanitary version

900045/3

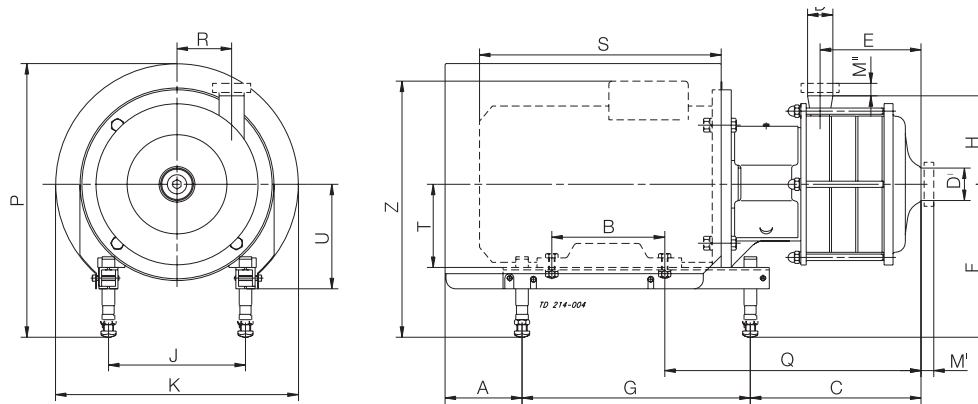


Fig. 4. Dimensions - Sanitary version.

LKH-122/P

Size	BROOK-motor	
	30/37/45kW	
A	246	
B	305	
C	258	
E	83	
Fmin.	260	
Fmax.	385	
G	534	
H	265	
J	318	
K	673	
Pmin.	661	
Pmax.	786	
Q	411	
R	113	
S	700	
T	200	
U	220	
Zmin.	585	
Zmax.	710	
Weight (kg)	370/370/390	

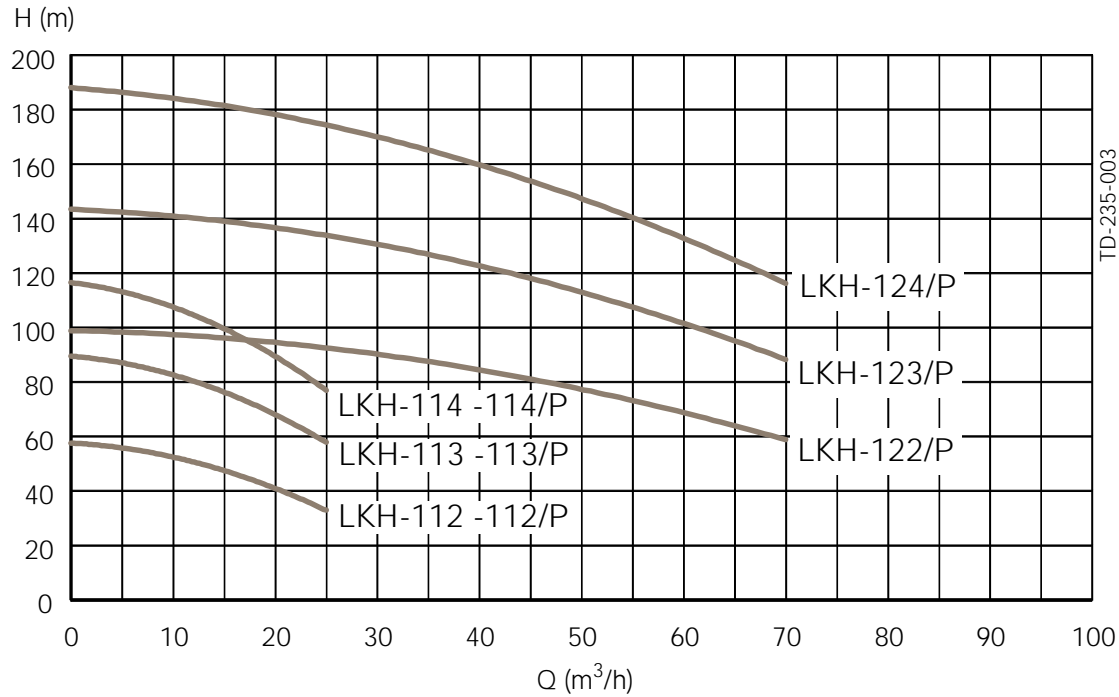
LKH-124/P

Size	BROOK-motor	
	30/37/45 kw	55/75kW
A	246	389
B	305	310/349
C	372	424
E	197	197
Fmin.	260	401
Fmax.	385	462
G	534	640
H	265	265
J	318	406
K	673	753
Pmin.	661	811
Pmax.	786	872
Q	525	618
R	113	113
S	700	845/890
T	200	250
U	220	
Zmin.	585	746/776
Zmax.	710	807/837
Weight (kg)	404/404/424	578/593

LKH-123/P

Size	BROOK-motor	
	30/37/45 kw	55/75kW
A	246	389
B	305	310/349
C	316	368
E	141	141
Fmin.	260	401
Fmax.	385	462
G	534	640
H	265	265
J	318	406
K	673	753
Pmin.	661	811
Pmax.	786	872
Q	469	562
R	113	113
S	700	845/890
T	200	250
U	220	
Zmin.	585	746/776
Zmax.	710	807/837
Weight (kg)	387/387/407	561/576

Volumetric flow



Connections (mm)

LKH-112, -113, -114

D' 51	ISO	ISO	DIN	SMS	BS	DS
D" 38	Clamp	Male	Male	Male	Male	Male
M <sup>I</sup>	21	21	23	20	27	20
M <sup>II</sup>	21	21	23	20	27	20

LKH-122/P, -123/P, -124/P

	Heavy duty clamp	Flange acc. to DIN2635
D <sub>I</sub>	76.5	NW80
D <sub>II</sub>	63.8	NW65
M <sub>I</sub>	29	56
M <sub>II</sub>	29	56

LKH-112/P, -113/P, -114/P

D' 51	Heavy Duty clamp
D" 38	
M <sup>I</sup>	29
M <sup>II</sup>	29

**Options**

- A) Special motor for inlet pressure higher than 10 bar (only LKH-110).
- B) Motor for other voltage and/or frequency (only LKH-110).
- C) Motor with increased safety/flame proof motor.
- D) Flushed shaft seal.
- E) Impeller with reduced diameter.
- F) Counter flanges, seal rings and bolts for flanged connections (industrial version).
- G) Product wetted seals of Nitrile (NBR), or Fluorinated rubber (FPM).
- H) Rotating seal ring of Silicon Carbide.

**Ordering**

Please state the following when ordering:

**LKH-110:**

- If the inlet pressure is higher than 10 bar it is necessary to order a special version with a modified motor and a stronger backplate. Use the following designation:
  - LKH-110: Inlet pressure (0-10 bar)
  - LKH-110/P: Inlet pressure > 10 bar
- Pump size.
- Version, sanitary or industrial.
- 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 PD 65036 and instruction IM 70777.