

# Liquid ring compressors

## LOH 25003, LOH 25007, LOH 25309

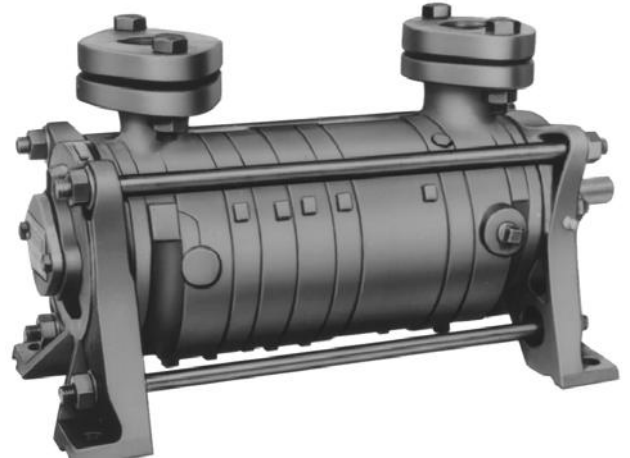
**Compression pressure:** 0,2 to 2 bar  
**Suction volume flow:** 12 to 58 m<sup>3</sup>/h

### CONSTRUCTION TYPE

Sterling SIHI liquid ring compressors are displacement compressors of simple and robust construction. They have the following important features:

- Handling of nearly all gases and vapours
- non-polluting due to nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- additional liquid can be handled with the gas flow
- easy in maintenance and reliable operation
- low noise and nearly free of vibrations
- wide choice of material, therefore applicable nearly everywhere
- incorporated central drain
- no metallic contact of the rotating parts

The Sterling SIHI liquid ring compressors LOH 25003, LOH 25007 and LOH 25309 are two-stage compressors. They can be applied without modification as vacuum pump up to a suction pressure of 40 mbar (see catalogue part LI2).



### APPLICATION

Handling and compressing of dry and humid gases; entrained liquid can be handled during normal duty. The compressors are applied in all fields where a compression over pressure of up to 1 bar has to be created by robust compressors and only a small increase in temperature is admissible during compression.

Fields of application are e.g.:

- the plastics industry, for the recovery of process gases as vinyl chloride
- the petrochemical industry, for the compression of combustible gases as gasoline vapours or hydrogen
- transport of gases in general, e.g. to a reactor

### NOTE

During operation the compressor must continuously be supplied with service liquid, normally water, in order to eliminate the heat resulting from the gas compression and in order to replenish the liquid ring, because part of the liquid is leaving the compressor together with the gas. This liquid can be separated from the gas in a pressure liquid separator ( see catalogue part accessories). It is possible to reuse the service liquid.

The direction of rotation is clockwise, when looking from the drive on the pump.

### GENERAL TECHNICAL DATA

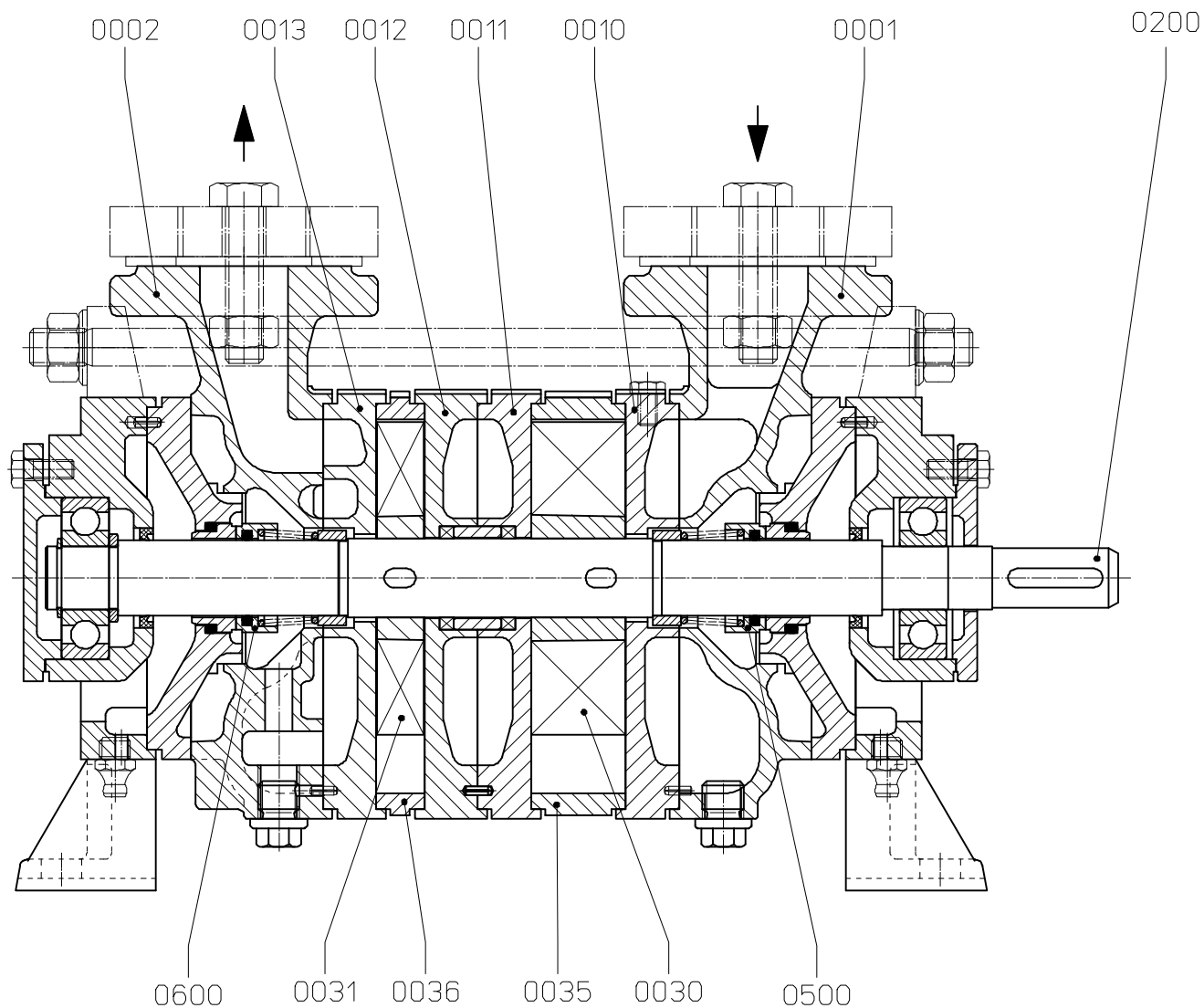
Pump type	unit	LOH 25003	LOH 25007	LOH 25309
Speed	50 Hz 60 Hz	2800 3400	2800 3400	2900 3500
Max. compression over pressure	bar		2,6	
hydraulic test (over pressure)	bar		4	
Moment of inertial of the rotating pump parts and the water filling	kg · m <sup>2</sup>	0,004	0,0065	0,00875
Sound pressure level of measuring area	dB (A)	70 71	70 71	70 71
Min. pulley diameter permissible in case of V-belt drive	mm	80 90	80 90	112
Max. gas temperature	dry °C saturated °C		200 100	
Service liquid				
max. admissible temperature	°C		100	
max. viscosity	mm <sup>2</sup> /s		90	
max. density	kg/m <sup>3</sup>		1200	
volume up to shaft level	liter	1	1,2	1,4

The combination of several limiting values is not admissible.

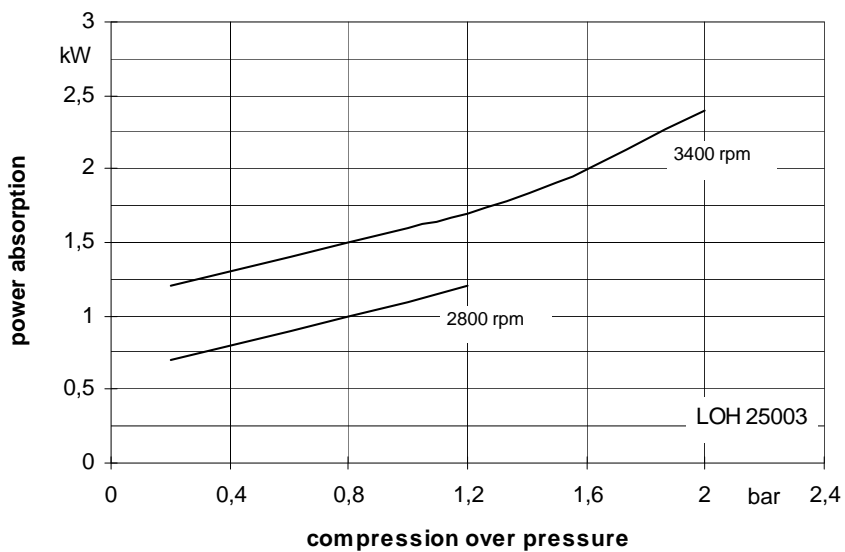
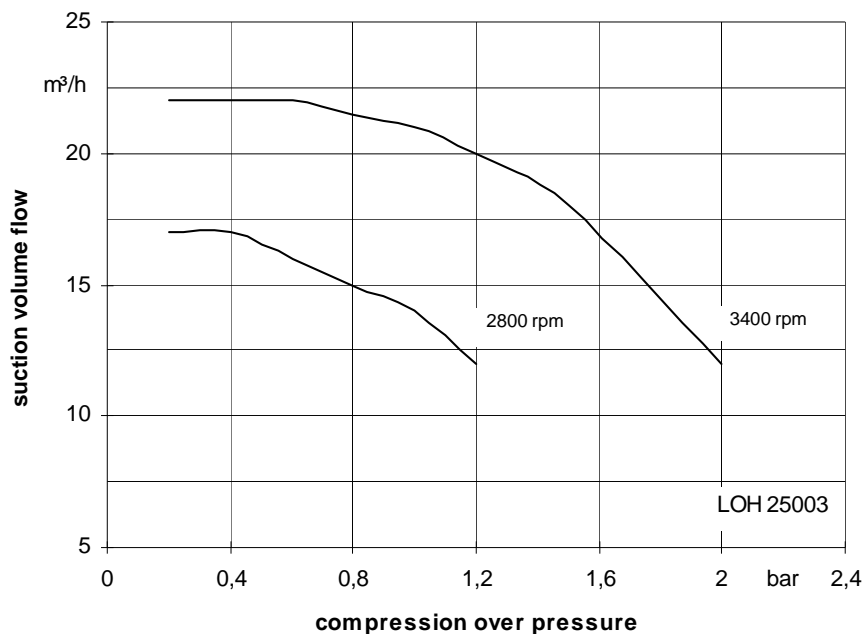
## Material design

Pos.	COMPONENTS	MATERIAL DESIGN		
		01	02	42
0001, 0002	Casing	0.6025		1.4408
0035, 0036	Central body	0.6025 / 1.0570		
0010, 0011, 0012, 0013	Guide disk	0.6025		
0030, 0031	Vane wheel impeller	Rg9	1.4027.05	1.4517
0200	Shaft	1.4021		1.4401
0500, 0600	Mechanical seal	Cr Ni-steel / carbon / Perbunan		Cr Ni Mo-steel / carbon / Viton

## Sectional drawing LOH 25003, LOH 25007, LOH 25309



### Suction volume flow and power absorption LOH 25003

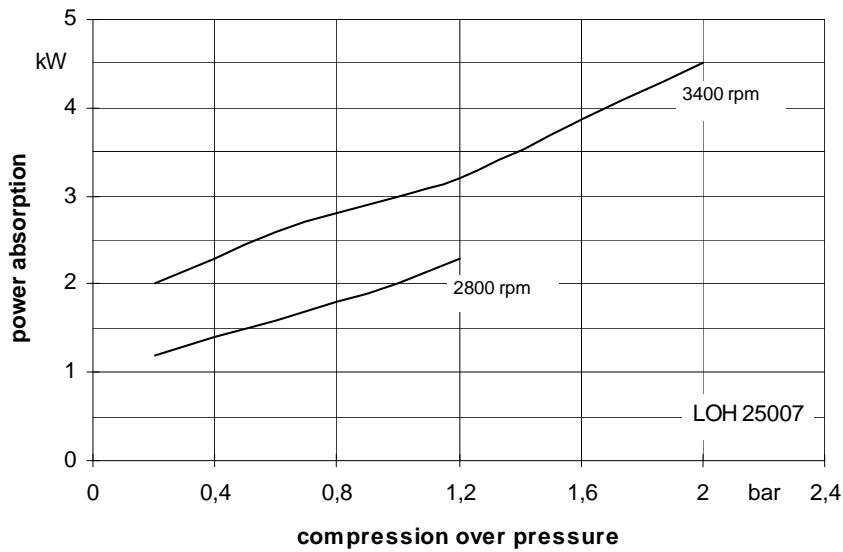
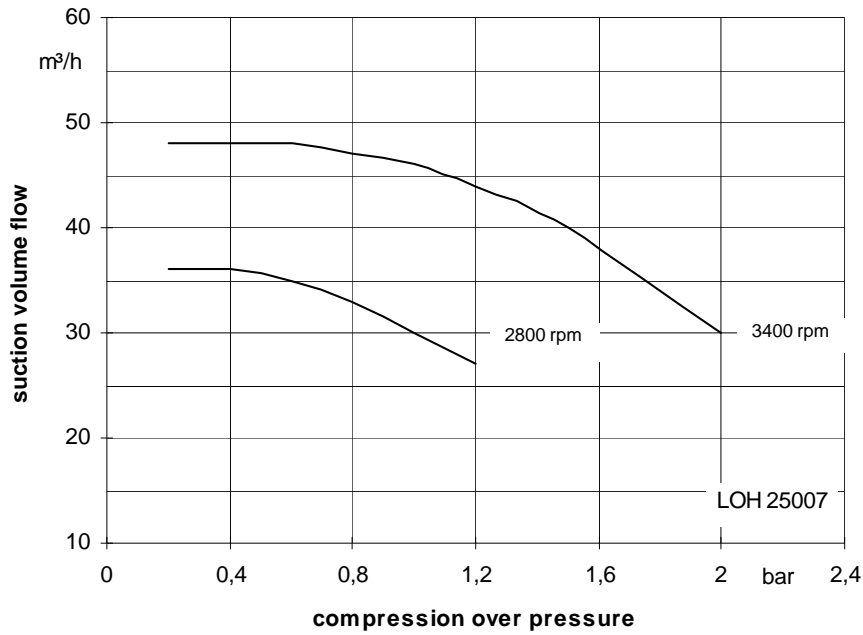


The values indicated for volume flow and power absorption are valid for compression of dry air at 20°C from atmospheric pressure (1013 mbar) to the respective compression pressure with water at 20°C as service liquid. Tolerance of the curve values is 10 %. The compression pressure in bar is indicated as pressure above the atmospheric pressure.

The data indicated change with deviating service conditions, such as deviating physical data of the gas to be handled or of the service liquid (vapour pressure, temperature, density, viscosity) when handling entrained liquid, at a suction pressure deviating from atmospheric pressure, when handling gas-vapours mixtures.

For determination of service data for deviating service conditions please see catalogue section TH.

## Suction volume flow and power absorption LOH 25007

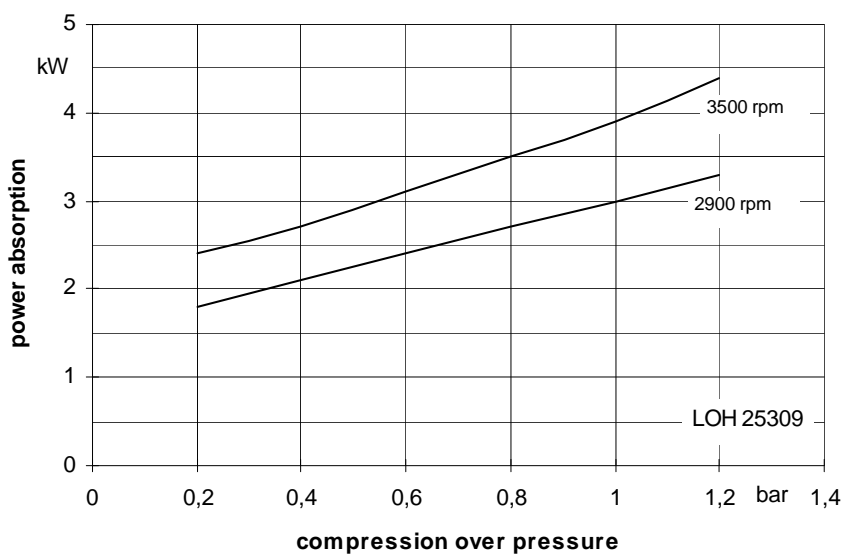
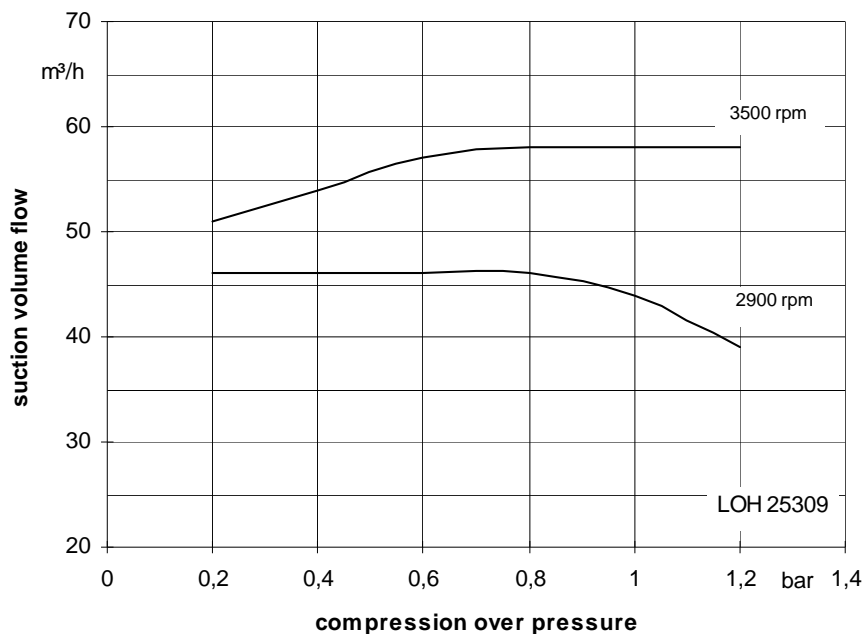


The values indicated for volume flow and power absorption are valid for compression of dry air at 20°C from atmospheric pressure (1013 mbar) to the respective compression pressure with water at 20°C as service liquid. Tolerance of the curve values is 10 %. The compression pressure in bar is indicated as pressure above the atmospheric pressure.

The data indicated change with deviating service conditions, such as deviating physical data of the gas to be handled or of the service liquid (vapour pressure, temperature, density, viscosity) when handling entrained liquid, at a suction pressure deviating from atmospheric pressure, when handling gas-vapours mixtures.

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## Suction volume flow and power absorption LOH 25309

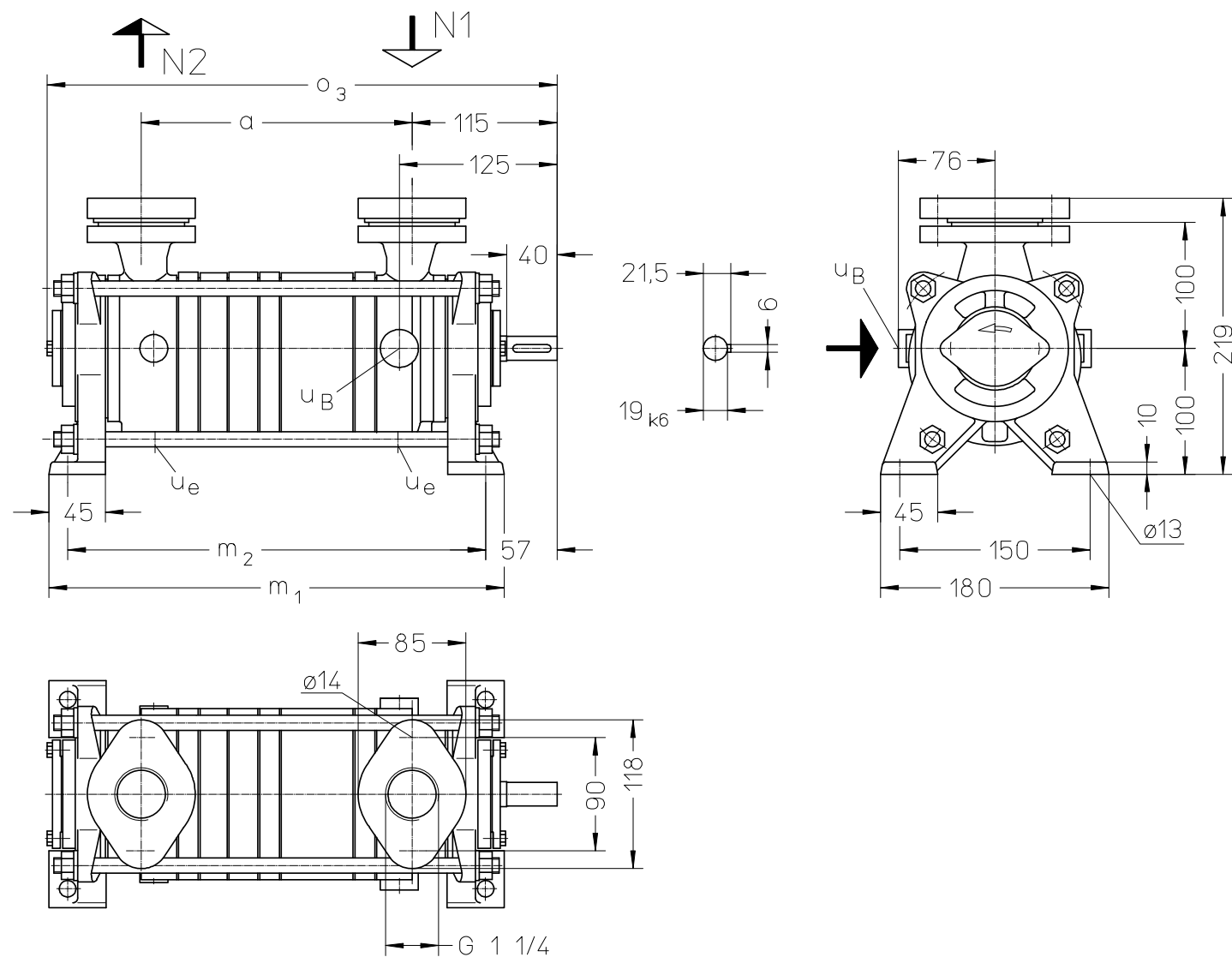


The values indicated for volume flow and power absorption are valid for compression of dry air at 20°C from atmospheric pressure (1013 mbar) to the respective compression pressure with water at 20°C as service liquid. Tolerance of the curve values is 10 %. The compression pressure in bar is indicated as pressure above the atmospheric pressure.

The data indicated change with deviating service conditions, such as deviating physical data of the gas to be handled or of the service liquid (vapour pressure, temperature, density, viscosity) when handling entrained liquid, at a suction pressure deviating from atmospheric pressure, when handling gas-vapours mixtures.

For determination of service data for deviating service conditions please see catalogue section TH.

Dimension drawing LOH 25003, LOH 25007



N 1 = gas inlet G 1 ¼

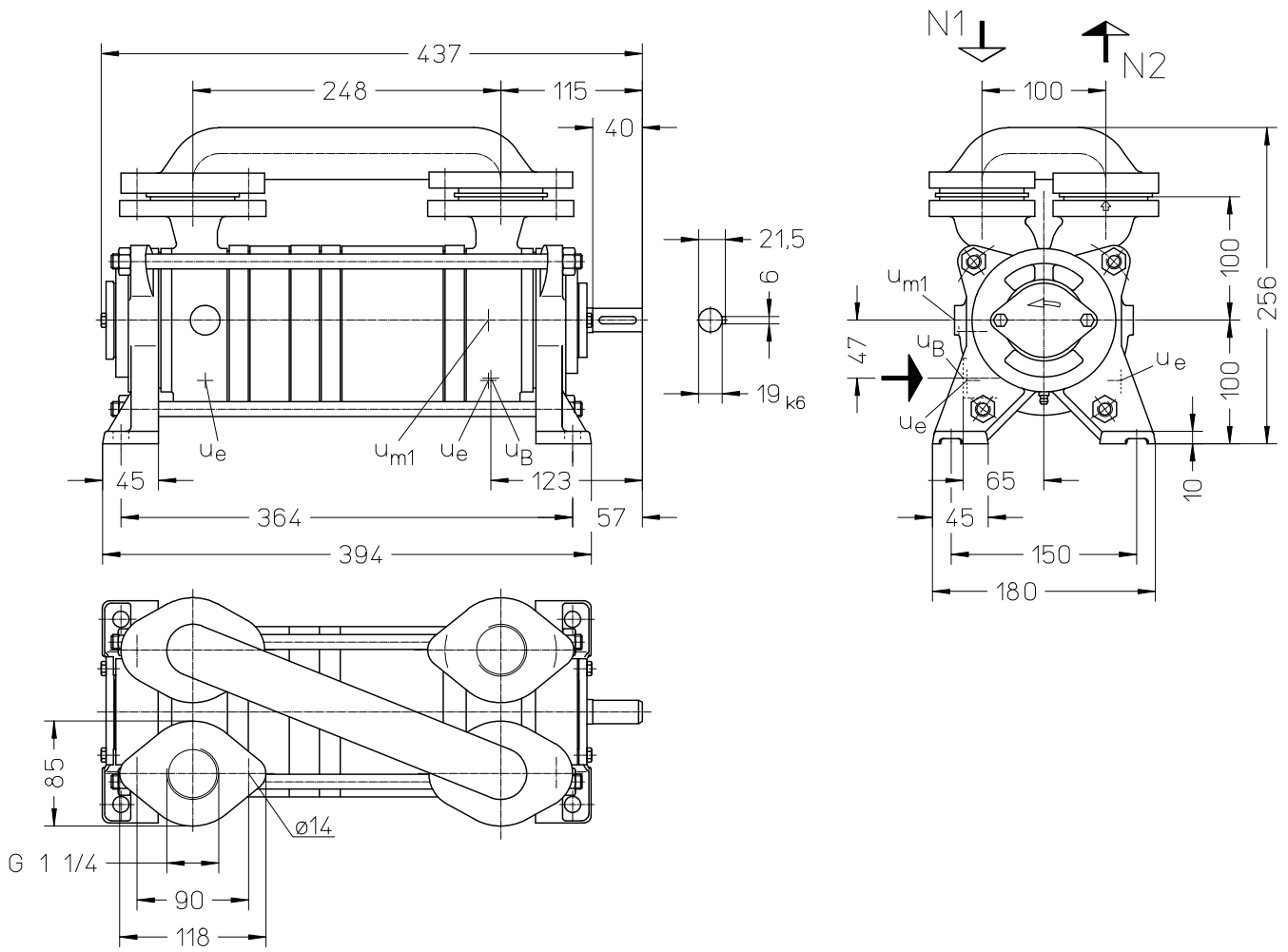
N 2 = gas outlet G 1 ¼

$u_B$  = connection for service liquid G ¾

$u_e$  = drain connection G ¼

	a	$m_1$	$m_2$	$o_3$	weight abt. kg
LOH 25003	163	309	279	348	22
LOH 25007	213	359	329	398	23

**Dimensional drawing LOH 25309**



- N 1 = gas inlet G 1 ¼
- N 2 = gas outlet G 1 ¼
- $u_B$  = connection for service liquid G ½
- $u_e$  = drain connection G ¼
- $u_{m1}$  = connection for drain valve G ¼

**Fresh water requirements** in [m<sup>3</sup>/h] dependent on compression pressure, speed, mode of operation and difference in temperature

pump	speed [rpm]	compression pressure in bar																			
		0,4				FB	0,8				FB	1,2				FB	2,0				FB
		KB					KB					KB					KB				
		difference in temperature [°C]					difference in temperature [°C]					difference in temperature [°C]					difference in temperature [°C]				
30	20	10	5	30	20	10	5	30	20	10	5	30	20	10	5						
LOH 25003	2800	0,02	0,03	0,05	0,08	0,18	0,03	0,04	0,07	0,11	0,3	0,03	0,05	0,08	0,14	0,4	-	-	-	-	-
	3400	0,03	0,04	0,07	0,10		0,04	0,05	0,09	0,14		0,04	0,06	0,11	0,17		0,06	0,09	0,15	0,24	0,6
LOH 25007	2800	0,03	0,05	0,07	0,10	0,18	0,04	0,06	0,10	0,15	0,3	0,06	0,08	0,13	0,20	0,4	-	-	-	-	-
	3400	0,05	0,06	0,09	0,12		0,06	0,09	0,13	0,18		0,07	0,10	0,16	0,23		0,11	0,15	0,24	0,34	0,6
LOH 25309	2900	0,05	0,07	0,11	0,16	0,3	0,07	0,10	0,17	0,26	0,6	0,08	0,12	0,21	0,33	0,8	-	-	-	-	-
	3500	0,06	0,08	0,13	0,18		0,09	0,12	0,20	0,30		0,11	0,15	0,26	0,39		-	-	-	-	-

FB = fresh liquid service

KB = combined fresh liquid service 30 °C, 20 °C, 10 °C, 5 °C warmer than the fresh water.

#### Data regarding the size - order notes

series + size	hydraulics + bearings	shaft sealing	material design	case sealing
	B• 2 lubricated antifriction bearings •N 1 shaft end clockwise	131 mechanical seal	01 normal design, cast iron 02 as above, but without non-ferrous metal 42 main parts of Cr Ni Mo-steel	0 liquid seal
LOH 25003 25007 25309	BN	131	01, 02, 42	0



## Accessories

Recommended accessories			LOH 25003	LOH 25007	LOH 25309		
<b>Pressure liquid separator</b> material design      130 / galvanized 172 / 1.4571  service liquid line material design      072 / St 37-0 172 / 1.4571  discharge line material design      072 / St 37-0 172 / 1.4571	type / weight	XBd 0413 / 28 kg					
	SIHI part No.	35 000 298 35 000 299					
	SIHI part No.	upon request 35 003 088	upon request 35 003 089	upon request 35 003 090			
	SIHI part No.	35 003 167 35 003 168					
<b>Liquid discharge trap</b> material design      762/ 0.6020+1.4541  hanging gas line material design      072 / St 37-0	type / weight	XUk 1602 / 11 kg					
	SIHI part No.	43 014 792					
<b>Motor</b> in case of standard design IP 55   EEx e II T3	size	80 B	90 S	90 L	100 L	100 L	112 M
	power	1,1 kW	1,5 kW	2,2 kW	3 kW	3 kW	4 kW
	weight	10 kg	13 kg	16 kg	23 kg	23 kg	30 kg
	size	80 B	90 S	90 L	100 L	112 M	132 S
power	1,1 kW	1,5 kW	1,85 kW	2,5 kW	3,3 kW	4,6 kW	
weight	12 kg	14 kg	16 kg	22 kg	28 kg	50 kg	
<b>Coupling</b> for motor IP 55 pump side motor side  for motor EEx e II T3 pump side motor side	type / weight	B68 / 0,6 kg			B80 / 1,5 kg		
	SIHI part No.	43 021 400			43 021 409		
	SIHI part No.	43 021 404	43 021 405		43 021 417		
	SIHI part No.	BDS76 / 0,8 kg			BDS88 / 1,9 kg		BDS103/3,1 kg
SIHI part No.	43 025 689			43 024 676		43 025 935	
SIHI part No.	43 025 690	43 025 930		43 024 707		43 025 941	
<b>Safety contact device</b> material design      076 / 1.0330 345 / 2.0321	SIHI part No.	43 042 201				43 042 205	
	SIHI part No.	43 042 202				43 042 206	43 042 245
<b>Base frame</b> material design      081 / 1.0038	type / weight	S008 / 10 kg		S241 / 24 kg		for motor 100+112 : S272 / 28 kg	
	SIHI part No.	43 040 648		43 040 631		43 040 633 for motor 132 : S303 / 34 kg 43 040 635	

Any changes in the interest of technical development are reserved.

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