

Liquid ring compressors



LOH 20103, LOH 20107

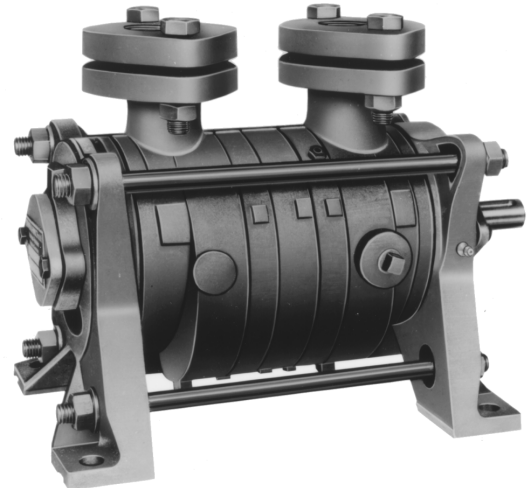
Compression pressures: 0,2 to 1 bar
Suction volume flow: 18 to 51 m³/h

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
- no metallic contact of the rotating parts

The Sterling SIHI liquid ring compressors LOH 20103 and LOH 20107 are single-stage compressors. They can be applied without modification as vacuum pump up to a suction pressure of 150 mbar see catalogue part LI).



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

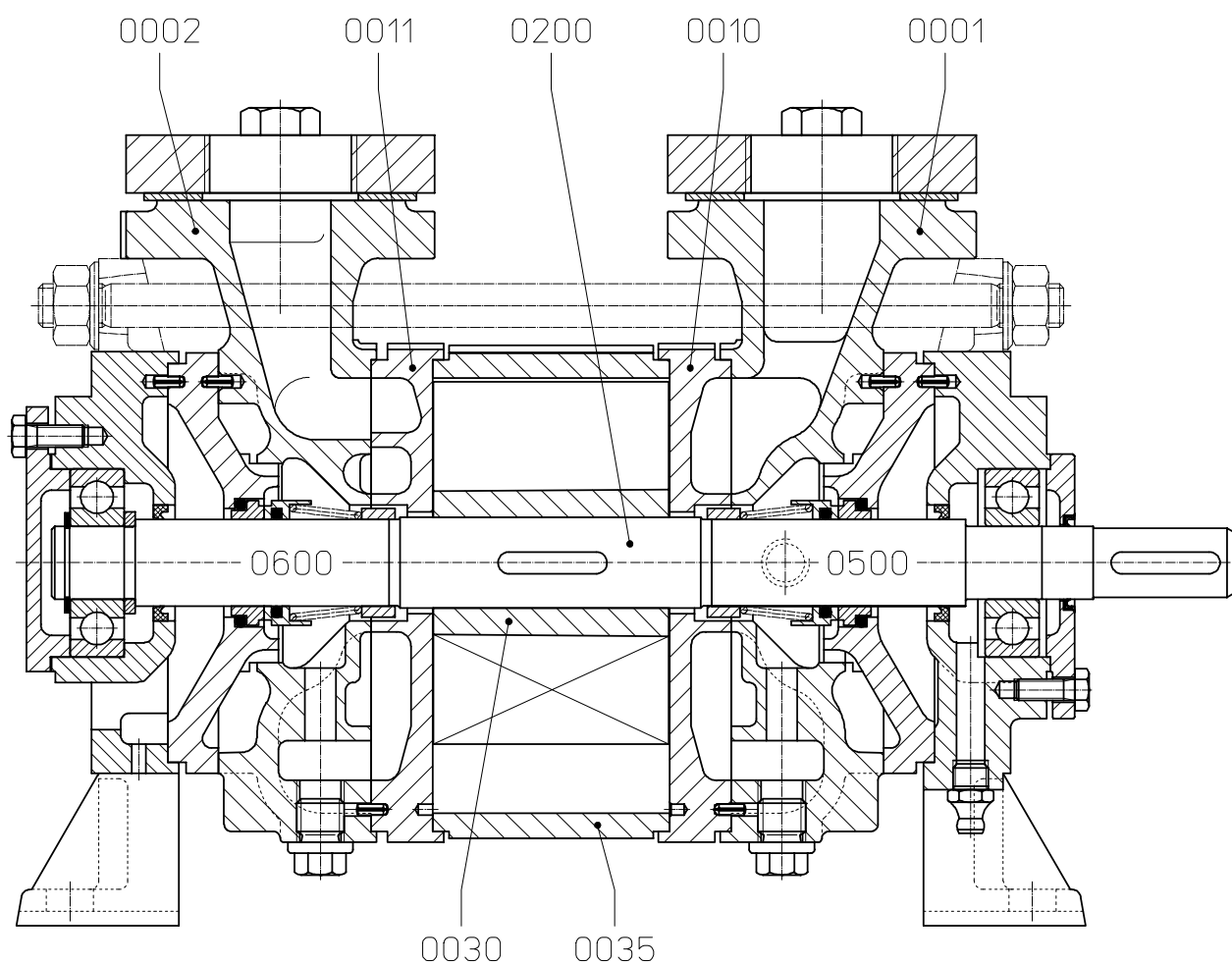
Pump type	unit	LOH 20103	LOH 20107
Speed	50 Hz 60 Hz	2800 3400	2800 3400
Max. compression over pressure	bar		1
Hydraulic test (over pressure)	bar		3
Moment of inertial of the rotating pump parts and the water filling	kg · m ²	0,0033	0,005
Sound pressure level of measuring area	dB (A)	70 71	70 71
Min. pulley diameter permissible in case of V-belt drive	mm	80	90
Max. gas temperature	dry °C saturated °C		200 100
Service liquid			
max. admissible temperature	°C		80
max. viscosity	mm ² /s		90
max. density	kg/m ³		1200
volume up to shaft level	litre	0,9	1,0

The combination of several limiting values is not admissible.

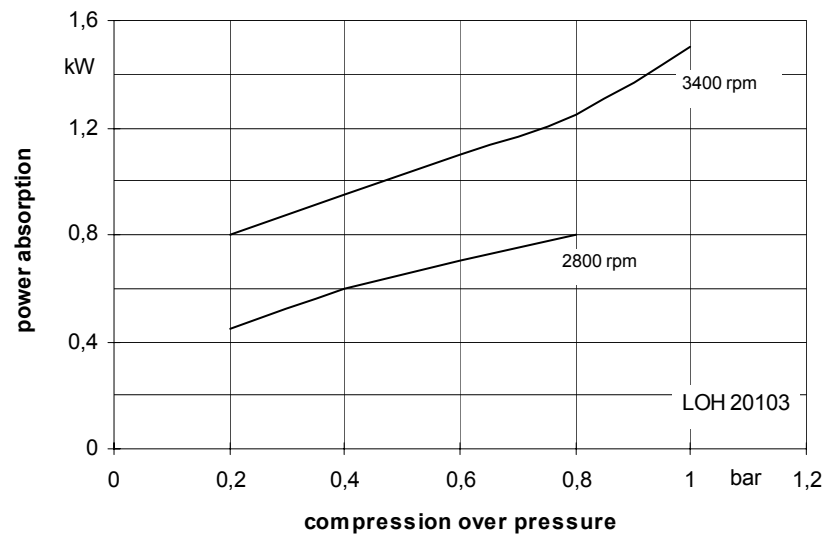
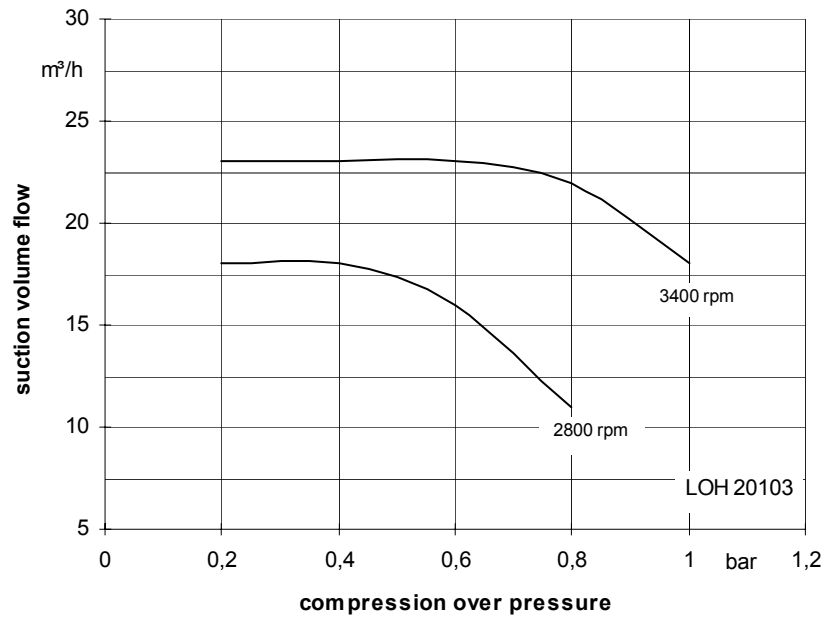
Material design

Item.	COMPONENTS	MATERIAL DESIGN		
		01	02	42
0001, 0002	Casing	0.6025		1.4408
0010, 0011	Intermediate piece	0.6025		1.4408
0030	Vane wheel impeller	RG 9	1.4027.05	1.4517
0035	Central body	1.0570		1.4581
0200	Shaft	1.4021		1.4401
0500, 0600	Mechanical seal	Cr-steel / carbon / Perbunan		Cr Ni Mo-steel / carbon / Viton

Sectional drawing LOH 20103, LOH 20107



Suction volume flow and power absorption LOH 20103

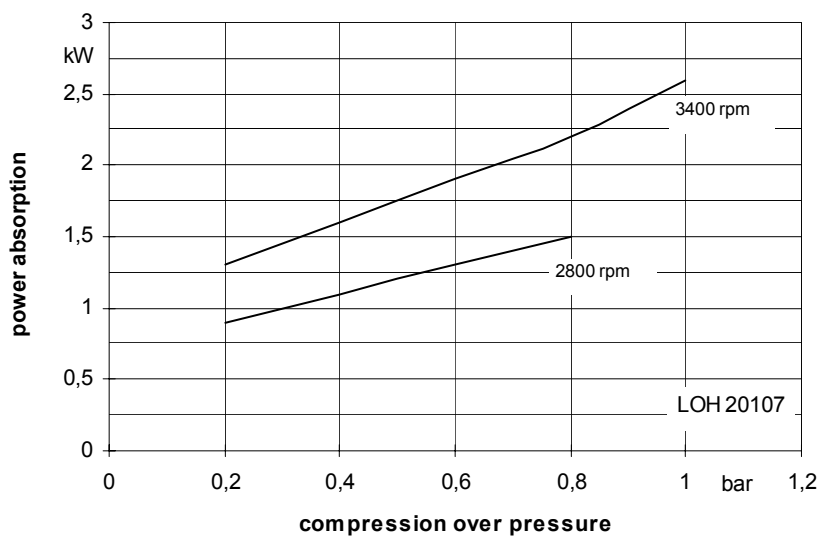
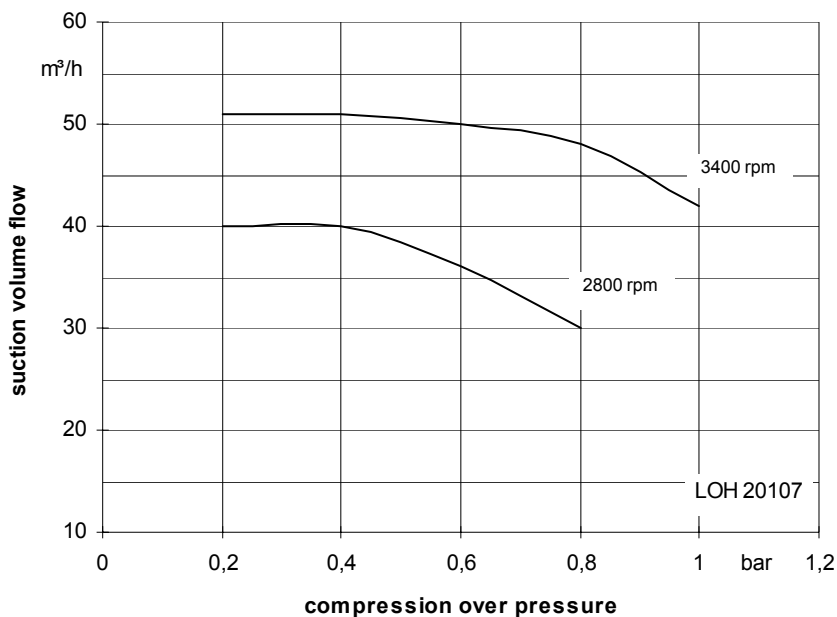


The values indicated for volume flow and power absorption are valid for compression of dry air at 20°C from atmospheric pressure (1013 mbar) to the respective compression pressure with water at 20°C as service liquid. Tolerance of the curve values is 10 %. The compression pressure in bar is indicated 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 20107

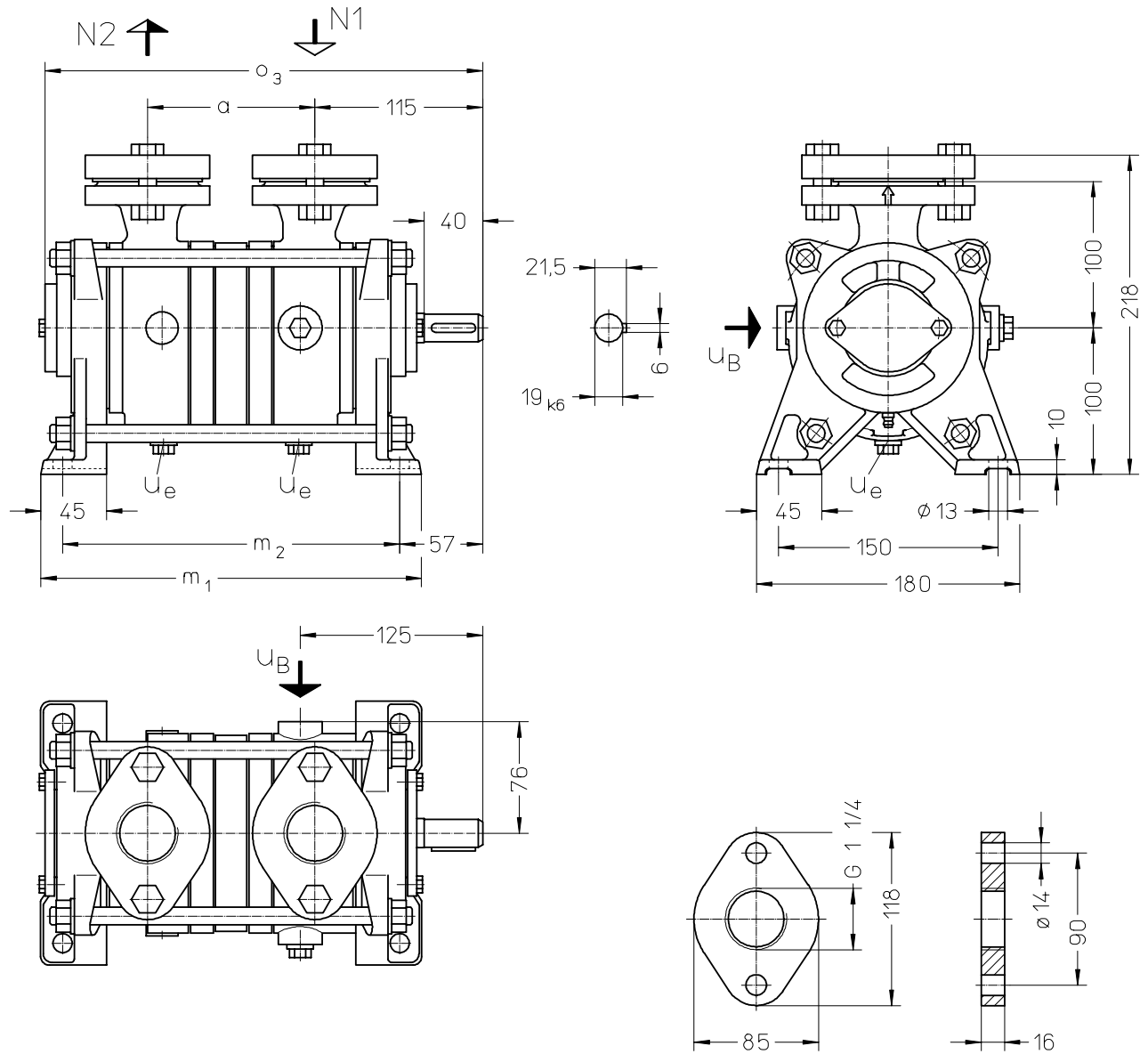


The values indicated for volume flow and power absorption are valid for compression of dry air at 20°C from atmospheric pressure (1013 mbar) to the respective compression pressure with water at 20°C as service liquid. Tolerance of the curve values is 10 %. The compression pressure in bar is indicated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

Dimensional drawing LOH 20103, LOH 20107

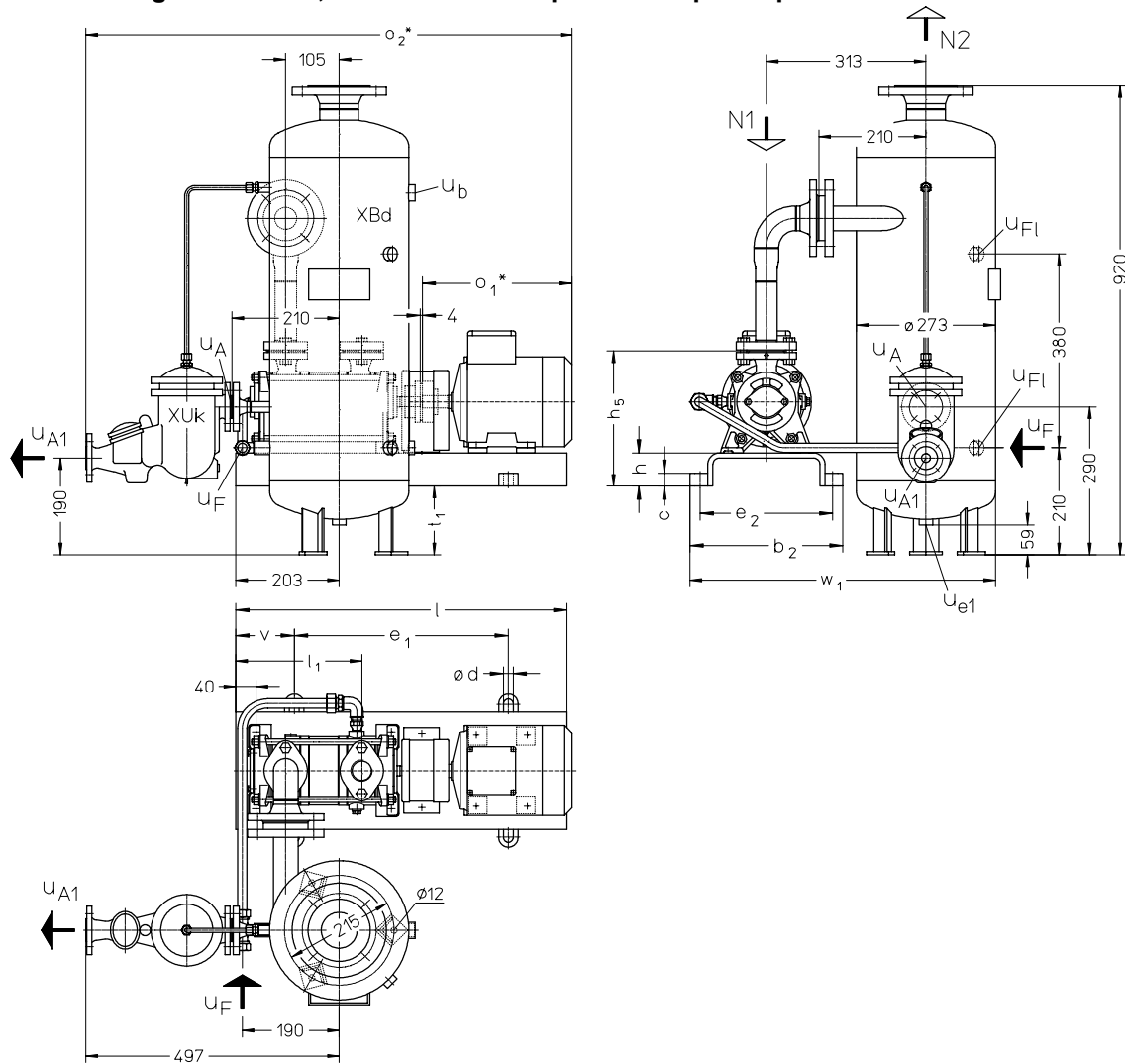


oval flange to DIN 2558 PN 6

- N 1 = gas inlet G 1 ¼
- N 2 = gas outlet G 1 ¼
- u_B = connection for service liquid G ¾
- u_e = drainage (screwed plug) G ¼

	a	m ₁	m ₂	o ₃	weight abt. kg
LOH 20103	114	260	230	299	20
LOH 20107	149	295	265	334	21

Arrangement drawing LOH 20103, LOH 20107 with pressure liquid separator

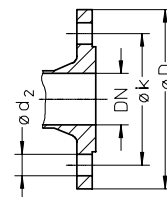


- N 1 = gas inlet G 1 ¼
- N 2 = gas outlet DN 65
- U_A = liquid drain DN 15
- U_{A1} = liquid drain DN 15
- U_b = connection for safety valve G ¾
- U_{e1} = drain connection G ½
- U_F = connection for fresh liquid Ø18
- U_{FI} = connection for liquid level indicator G ½

	electric motor 50 Hz			b ₂	c	d	e ₁	e ₂	h	h ₅	l	l ₁	o ₁ *	o ₂ *	t ₁	v	w ₁	weight abt. kg
	size	IP 55	kW EEEx e II T3															
LOH 20103	80 a	0,75	-	317	20	15	350	285	35	235	570	212	274	899	165	110	608	44
	80 b	1,1	-															
	80 a	-	0,75															
	80 b	-	1,1															
LOH 20107	90 S	1,5	-	300	25	19	420	260	65	265	650	247	332	992	135	115	600	55
		-	1,3										294	954				
	90 L	2,2	-										332	992				
		-	1,85										319	979				

flange connections to DIN 2501 PN 10		
DN	15	65
k	65	145
D	95	185
number x d ₂	4 x 14	4 x 18

* dimensions dependent on the motor make



Fresh water requirement in [m³/h] dependent on compression pressure, speed, mode of operation and difference in temperature

pump	speed [rpm]	compression pressure in bar																			
		0,2				FB	0,4				FB	0,8				FB	1				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 20103	2800	0,01	0,02	0,03	0,05	0,15	0,02	0,02	0,04	0,07	0,21	0,02	0,03	0,06	0,10	0,35	-	-	-	-	-
	3400	0,02	0,03	0,05	0,07		0,02	0,03	0,06	0,09		0,03	0,05	0,08	0,13		0,04	0,06	0,10	0,16	0,4
LOH 20107	2800	0,02	0,03	0,05	0,08	0,15	0,02	0,03	0,06	0,09	0,21	0,04	0,05	0,09	0,15	0,35	-	-	-	-	-
	3400	0,03	0,04	0,06	0,09		0,04	0,05	0,08	0,12		0,05	0,07	0,12	0,18		0,06	0,09	0,14	0,21	0,4

FB = fresh liquid service

KB = combined 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
	<ul style="list-style-type: none"> • B 2 antifriction bearings • N 1 shaft end, clockwise 	131 mechanical seal	01 normal design cast iron 02 as 01, but without non-ferrous metal 42 main parts of Cr Ni Mo steel	0 liquid seal
LOH 20103	BN	131	01, 42	0
LOH 20107	BN	131	01, 02, 42	0

Accessories

Recommended accessories		LOH 20103	LOH 20107		
Pressure liquid separator material design 130 / St-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.	35 018 092 35 003 086		35 018 093 35 003 087	
Liquid discharge trap material design 762 / GG20+1.4541 hanging gas line material design 072 / St 37-0	type / weight	XUk 1602 / 11 kg			
	SIHI part No.	43 014 792			
Motor dependent on the operating point, for example.: IP 55 EEx e II T3	size	80 a	80 b	90 S	90 L
	power	0,75 kW	1,1 kW	1,5 kW	2,2 kW
	weight	8 kg	10 kg	13 kg	16 kg
	size	80 a	80 b	90 S	90 L
	power	0,75 kW	1,1 kW	1,3 kW	1,85 kW
	weight	11 kg	12 kg	14 kg	16 kg
Coupling for motor IP 55 pump side motor side (for motor size 80) motor side (for motor size 90) for motor EEx e II T3 pump side motor side (for motor size 80) motor side (for motor size 90)	type / weight	B 80 / 1,5 kg			
	SIHI part No.	43 021 409 43 021 420 43 039 231			
	type / weight	BDS 88 / 2 kg			
	SIHI part No.	43 024 676 43 025 933 43 028 108			
Contact safety device material design 076 / steel 345 / 2.0321	SIHI part No.	43 042 201 43 042 202			
Base frame material design 081 / RSt 37-2	type / weight	S 007 / 8 kg	S 210 / 19,3 kg		
	SIHI part No.	43 040 647	43 040 630		

Any changes in the interest of technical development are reserved.

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