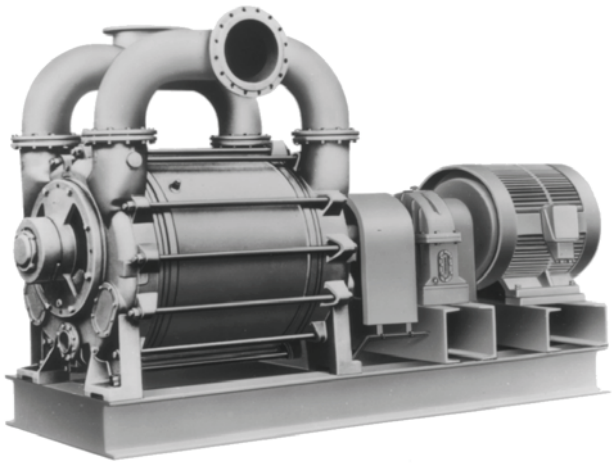
Liquid ring vacuum pumps
single-stage

LPH 11055

FLOWSERVE
SIHI® Pumps

Pressure range: **120 to 1013 mbar**
Suction volume flow: **3500 to 10 700 m³/h**



CONSTRUCTION TYPE

Sterling SIHI liquid ring vacuum pumps are displacement pumps of uncomplicated and robust construction with the following particular features:

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

The Sterling SIHI liquid ring vacuum pumps LPH 11055 are single-stage ones. They can be applied with small modification as compressors up to a compression pressure of 1,5 bar (see catalogue part K).

APPLICATION

Handling and exhausting of dry and humid gases; entrained liquid can be handled during normal duty. The pumps are applied in all fields where a pressure of 120...900 mbar must be created by robust vacuum pumps.
Fields of application are for example

- chemistry and pharmacy for distilling and degassing
- electric industry for impregnation and drying
- plastics industry for degassing etc.

NOTE

During operation the pump must continuously be supplied with service liquid, normally water, in order to eliminate the heat resulting from the gas compression and to replenish the liquid ring, because part of the liquid is leaving the pump together with the gas. This liquid can be separated from the gas in a liquid separator (see catalogue part accessories).
It is possible to reuse the service liquid. The pumps are equipped with a device by which the contaminated service liquid can continuously be drained during operation (dirt drain), if necessary.
The direction of rotation is clockwise, when looking from the drive on the pump.

GENERAL TECHNICAL DATA

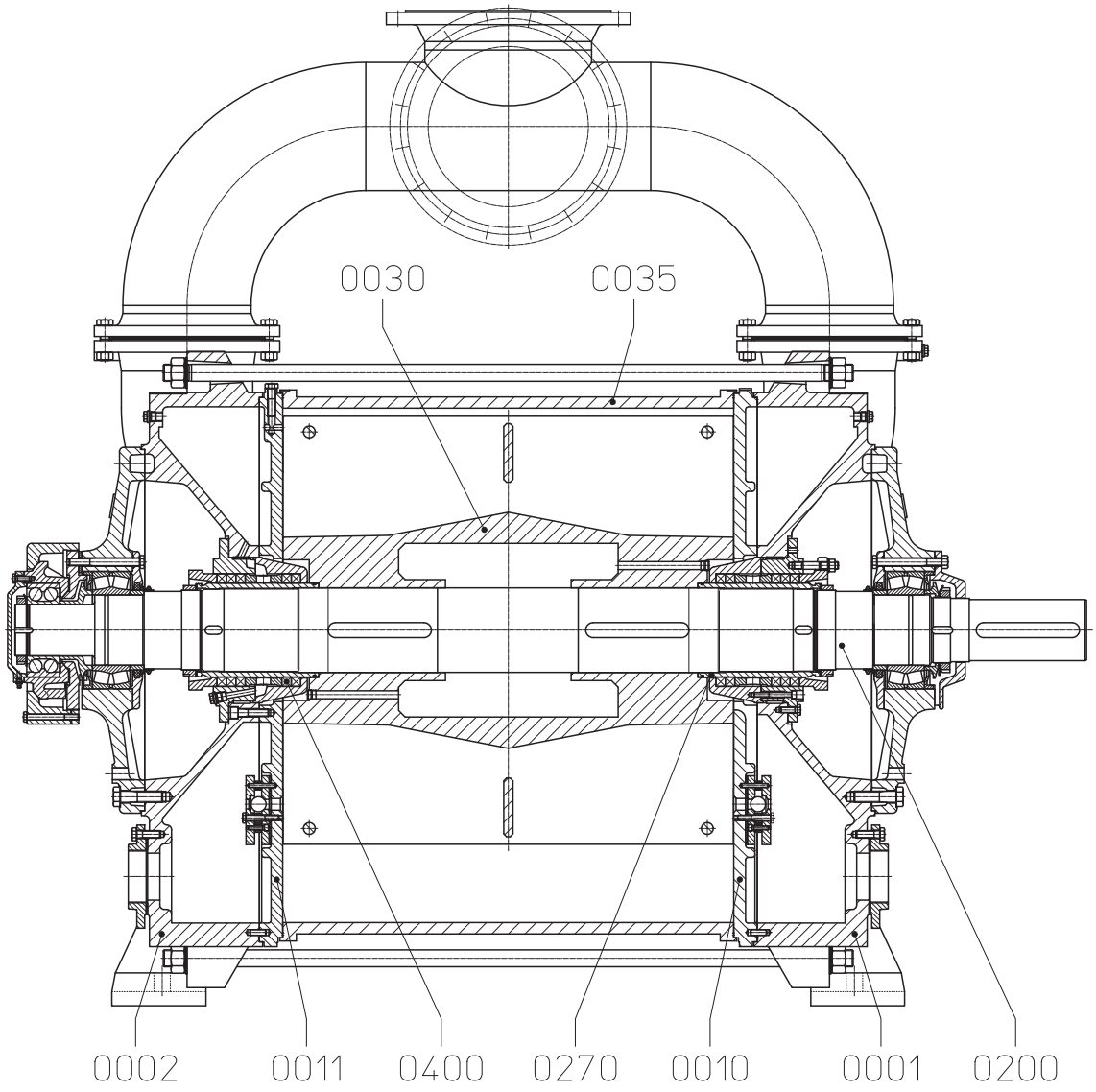
Pump type		unit	LPH 11055		
Speed		rpm	335	415	485
Max. compression over pressure		bar		1,5	
Max. admissible pressure difference		bar		1,2	
Hydraulic test (over pressure)		bar		3	
Moment of inertial of the rotating pump parts and the water filling		kg · m²		175	
Sound pressure level at a suction pressure of 200 mbar		dB (A)	86	87	88
Min. pulley diameter admissible in case of V-belt drive		mm		1250	
Max. gas temperature	dry	°C		160	
	saturated	°C		80	
Service liquid					
max. admissible temperature		°C		60	
max. viscosity		mm²/s		90	
max. density		kg/m³		1200	
volume up to shaft level		liter		410	
Max. flow resistance of the heat exchanger		bar		0,2	

The combination of several limiting values is not admissible.
[1] Other speeds are possible, change of the gear ratio resp. V-belt drive

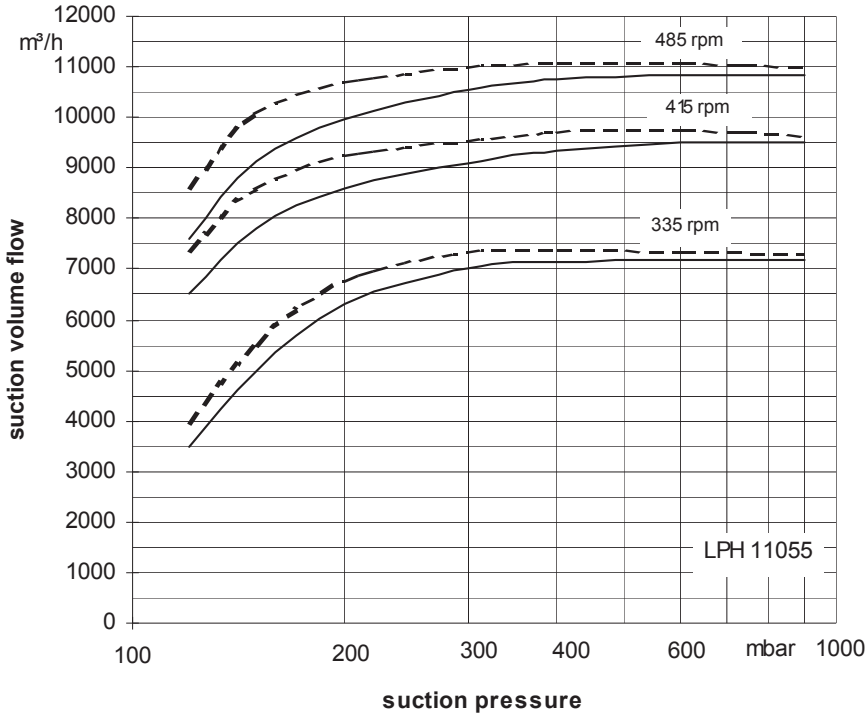
Material design

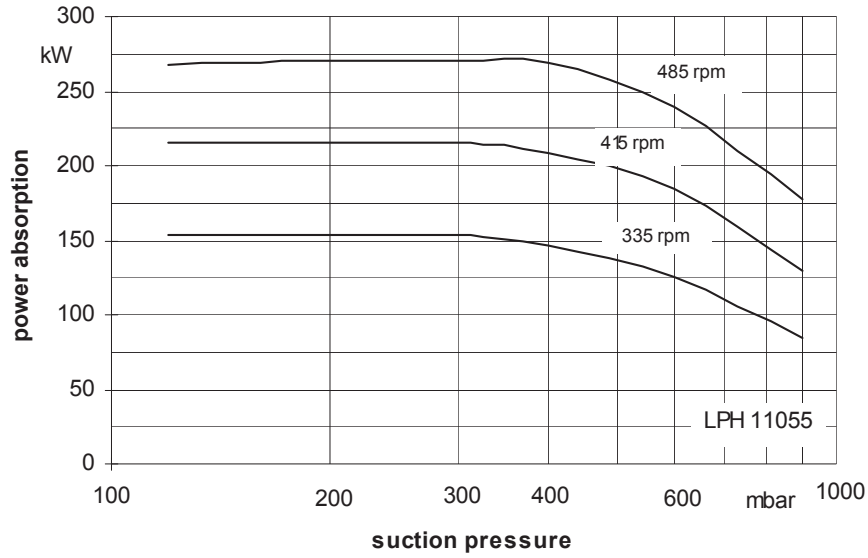
ITEM	COMPONENTS	MATERIAL DESIGN	
		02	42
0001, 0002	Casing	0.6025	1.4408
0010, 0011	Guide disk	0.6025	1.4408
0030	Vane wheel impeller	1.0570	1.4571
0035	Central body	1.0038	1.4571
0200	Shaft	1.0503	
0270	Shaft sleeve	1.4027.05	1.4581
0400	Gland packing	GORE	

Sectional drawing



Suction volume flow and power absorption LPH 11055



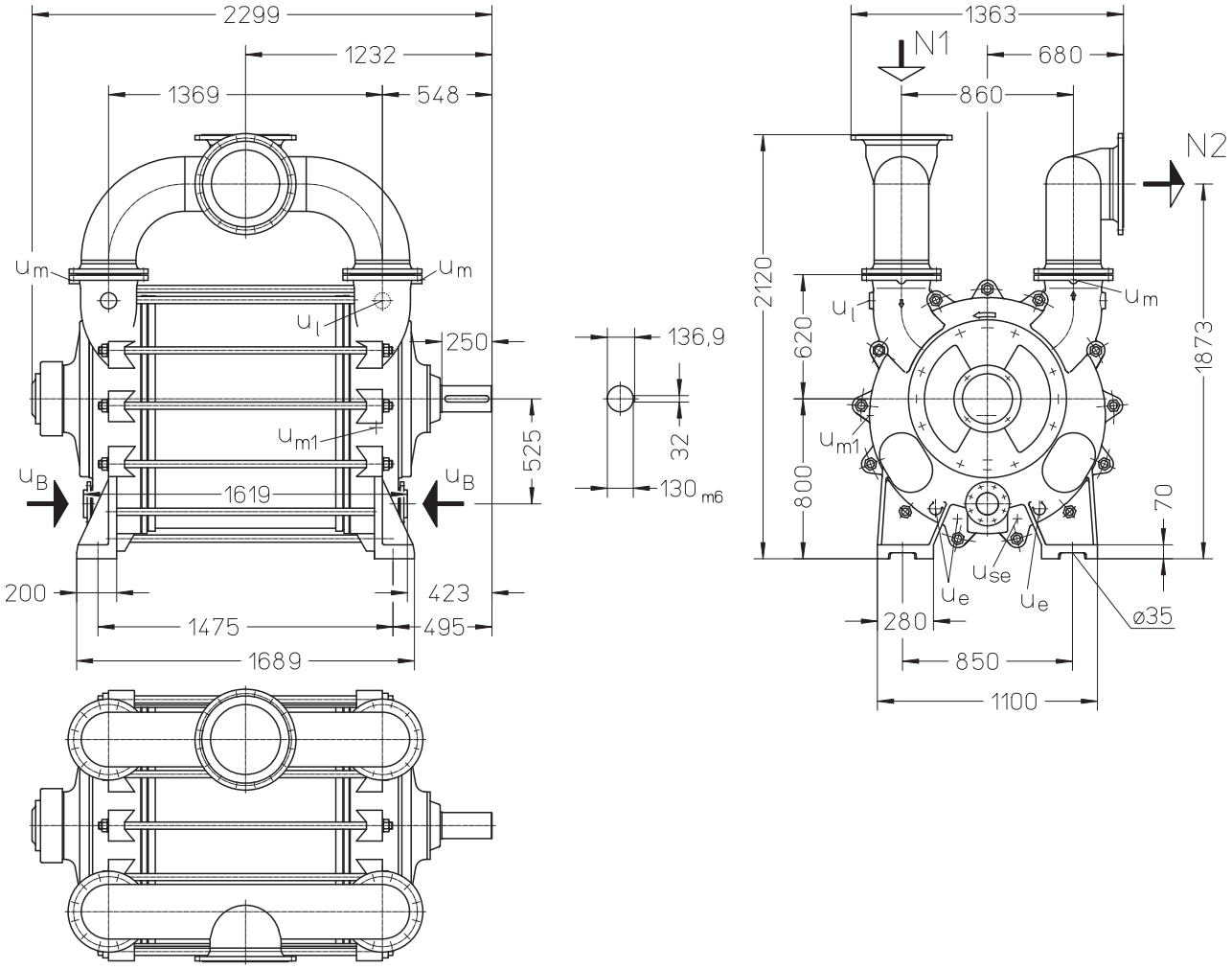


The operating data are applicable under the following conditions:

- pumping medium: - dry air: 20°C _____
  - water vapour saturated air: 20°C ----------
- service liquid: - water: 15°C

Compression pressure 1013 mbar (atmospheric pressure)
The suction volume flow is applied to the suction pressure.
Tolerance of the operating data 10% and of the power absorption 5%
Max. fresh water need with the lowest suction pressure

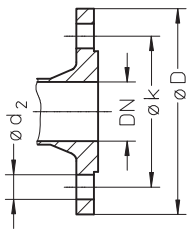
Dimension drawing LPH 11055



weight: abt. 5000 kg

N 1 = gas inlet DN 350
N 2 = gas outlet DN 350
u_B = connection for service liquid G 4
u_e = drainage (screwed plug) G 1
u_l = connection for vent cock G 1 ½
u_m = connection for pressure gauge G ½
u_{m1} = connection for drain valve G 1
u_{se} = connection for dirt drain G 1

flange connections to DIN 2501 PN 10	
DN	350
k	460
D	505
number x d_2	16 x 22



Fresh water requirements in [m³/h] dependent on the suction pressure, speed, mode of operation and difference in temperature

suction pressure in [mbar]		120					400					600					900				
pump	speed [rpm]	KB difference in temperature [°C]				FB	KB difference in temperature [°C]				FB	KB difference in temperature [°C]				FB	KB difference in temperature [°C]				FB
		20	10	5	2		20	10	5	2		20	10	5	2		20	10	5	2	
LPH 11055	335	5,5	9,4	14,7	22	33	5,1	8,5	12,8	18,4	26	4,3	7,1	10,6	15,1	21	2,8	4,5	6,6	9,0	12
	415	7,2	11,9	17,5	24,3		6,7	10,6	15,1	20,2		5,7	9,0	12,6	16,6		3,8	5,8	7,8	9,9	
	485	8,5	13,6	19,2	25,6		8,0	12,2	16,6	21,2		6,9	10,4	13,9	17,4		4,7	6,7	8,6	10,4	

FB = fresh liquid service
KB = combined liquid service 20 °C, 10 °C, 5 °C, 2 °C warmer than the fresh water.

Data regarding the size - order notes

series + size	hydraulics + bearings	shaft sealing	material design	casing seal
	B• 2 antifriction bearings •N 1 shaft end, clockwise	041 double gland packing	02 main parts of iron cast, free of non-ferrous metal 42 main parts of Cr Ni Mo-cast steel	0 liquid seal
LPH 11055	BN	041	02, 42	0

Upon request (dependent on the operating conditions) this vacuum pump is delivered as complete unit, e.g. pump, couplings, coupling guard and gear, mounted on a base frame.

Any changes in the interest of the technical development are reserved.

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