Liquid ring vacuum pumps
in compact design

SIHI*extruvac*

LEME 130, LEME 155

Pressure range: **100 to 1013 mbar**
Suction volume flow: **30 to 170 m³/h**

CONSTRUCTION TYPE

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

- non-polluting due to nearly isothermal compression
- oil-free, as no lubrication in the working chamber
- handling of nearly all gases and vapours
- able to handle water carry over
- easy maintenance and reliable operation
- low noise and nearly free from vibration
- wide choice of material, therefore applicable nearly everywhere
- shaft not contact with the medium
- protection against cavitation as standard
- incorporated dirt drain
- incorporated central drain
- no metallic contact of the rotating parts

The SIHI liquid ring vacuum pumps LEME are single-stage ones.

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. 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.

APPLICATION

Handling and exhausting of dry and humid gases. The pumps are applied in all fields where a pressure of 100 to 900 mbar must be created by robust vacuum pumps.
The LEME is specially designed to handle additional water that is exhaust through the suction inlet.

GENERAL TECHNICAL DATA

Pump type		unit	LEME 130	LEME 155
Speed	50 Hz 60 Hz	rpm	1450 1750	
Max. compression over pressure		bar	0.3	
Max. admissible pressure difference		bar	1.1	
Hydraulic test (over pressure)		bar	3	
Moment of inertial of the rotating pump parts and of the water filling		kg · m²	0.053	0.069
Sound pressure level at a suction pressure of 150 mbar		dB (A)	65	
Max. gas temperature	dry saturated	°C °C	200 100	
Service liquid max. admissible temperature max. viscosity max. density volume up to shaft level		°C mm²/s kg/m³ litre	80 4 1200 2.8	3.2
Max. Water handle capability		m³/h	7.5	

The combination of several limiting values is not admissible.

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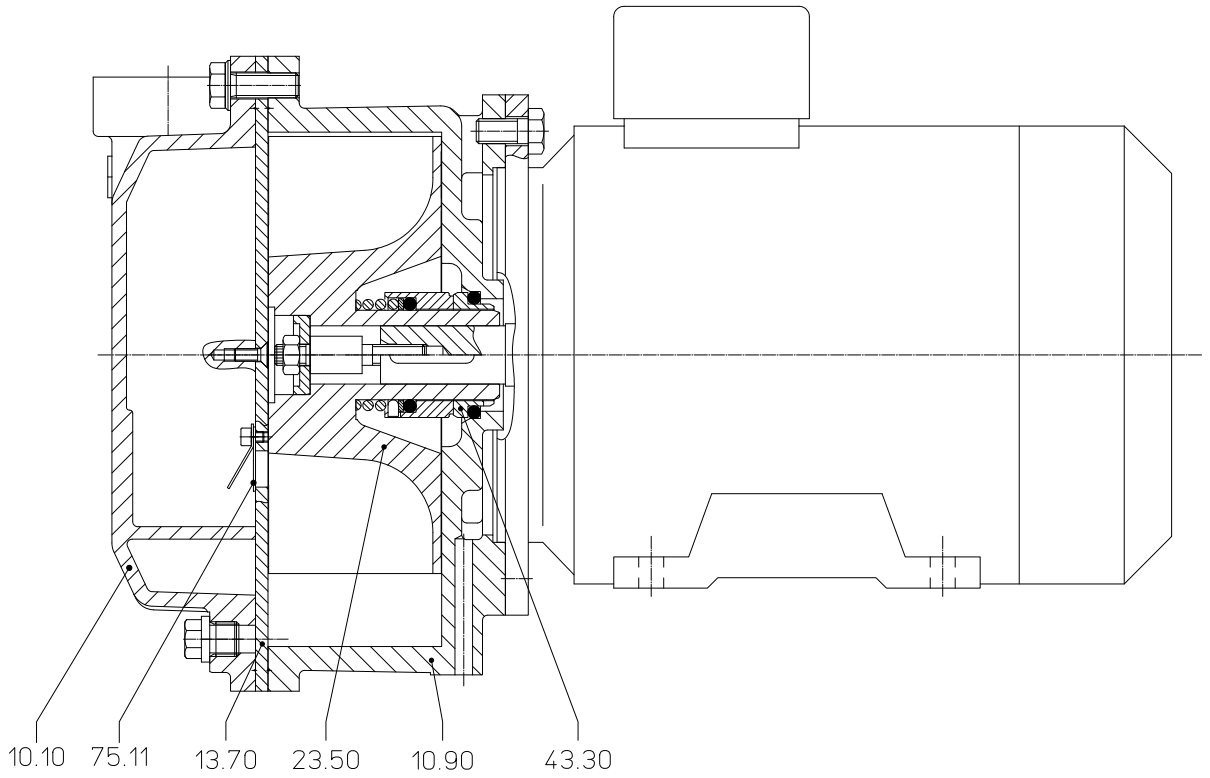
Material design

Item	Components	Material design 0A	0K
10.10	Vacuum casing	0.6025	
10.90	Central body		
13.70	Guide disc	1.4301	
23.50	Vane wheel impeller	2.1096.01	1.4308
43.30	Mechanical seal	Cr-Steel / Carbon / Perbunan	
75.11	Valve plate	PTFE	

Sectional drawing LEME 130, LEME 155



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

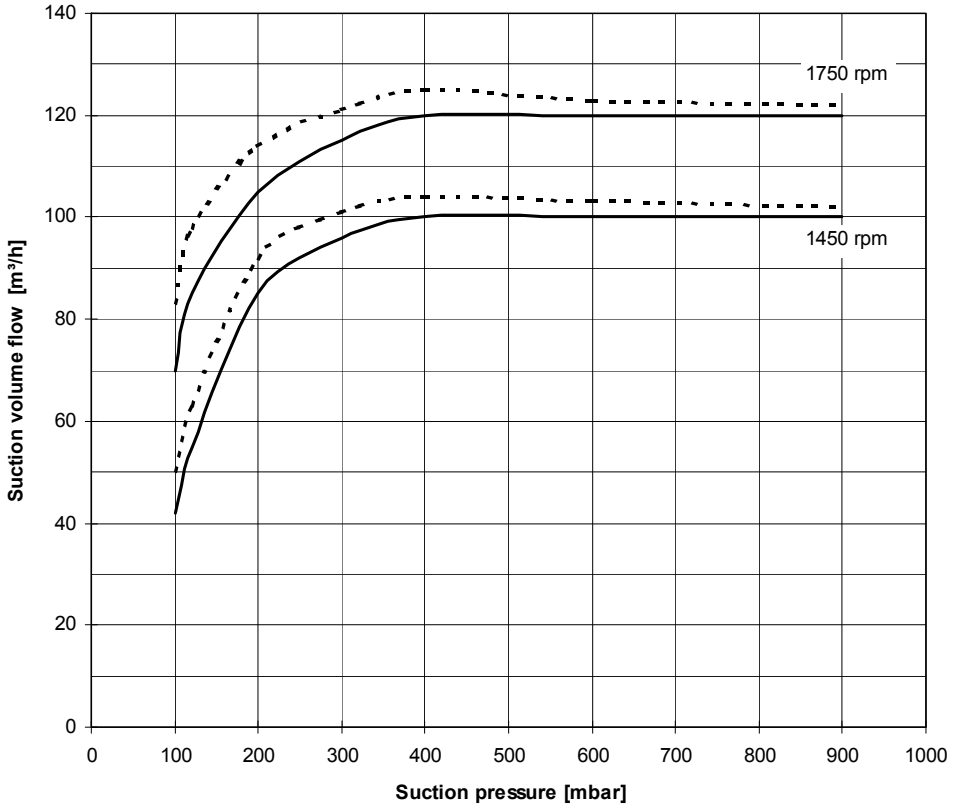
suction pressure [mbar]		100				200				400			
Pump type	speed	KB difference in temperature [°C]			FB	KB difference in temperature [°C]			FB	KB difference in temperature [°C]			FB
	[rpm]	10	5	2		10	5	2		10	5	2	
LEME 130	1450	0.19	0.31	0.52	0.95	0.19	0.31	0.51	0.9	0.18	0.29	0.46	0.75
	1750	0.24	0.39	0.60		0.26	0.40	0.60		0.24	0.37	0.53	
LEME 155	1450	0.22	0.36	0.58	0.95	0.23	0.37	0.57	0.9	0.23	0.35	0.51	0.75
	1750	0.29	0.44	0.65		0.30	0.45	0.64		0.29	0.41	0.57	

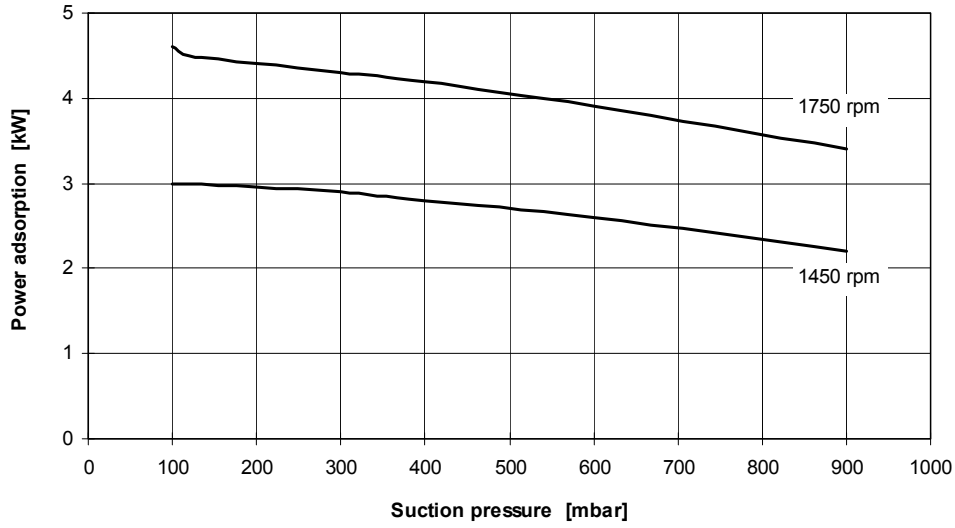
FB = fresh liquid service

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

These values are valid without water handling capabilities.

Suction volume flow and power absorption LEME 130





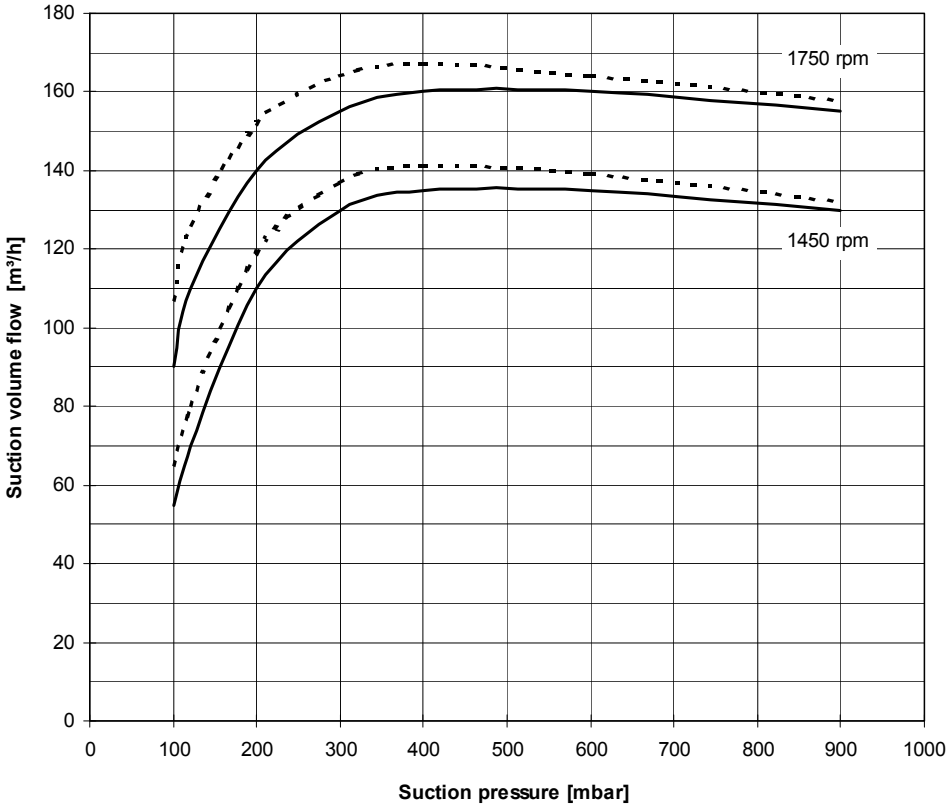
The operating data are applicable under the following conditions:

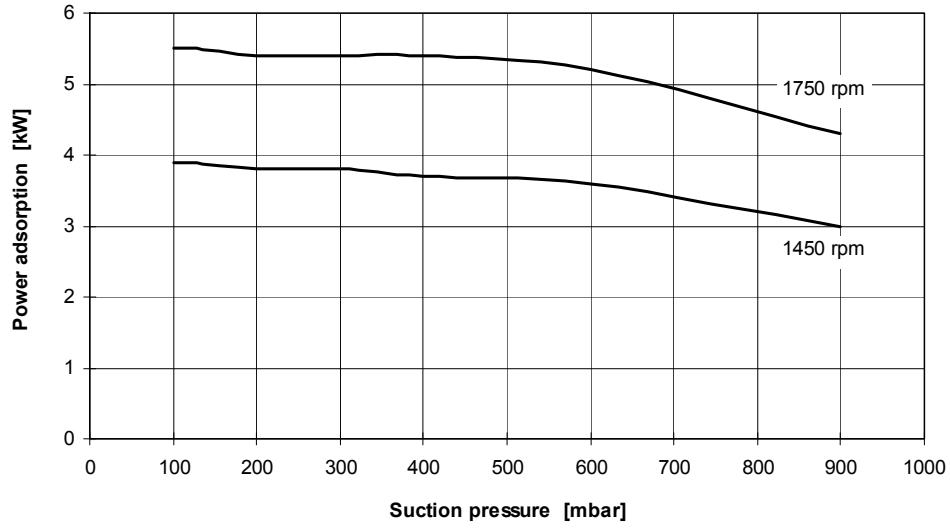
- pumping medium: - dry air: 20°C ——————
  - water vapour saturated air: 20°C -
- service liquid: - water: 15°C

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

Note:
For different operating parameters, especially for additional water handling, the performance curve will change.
Dependent on the used electric motor additional medium can be handled up to 7.5 m³/h.

Suction volume flow and power absorption LEME 155





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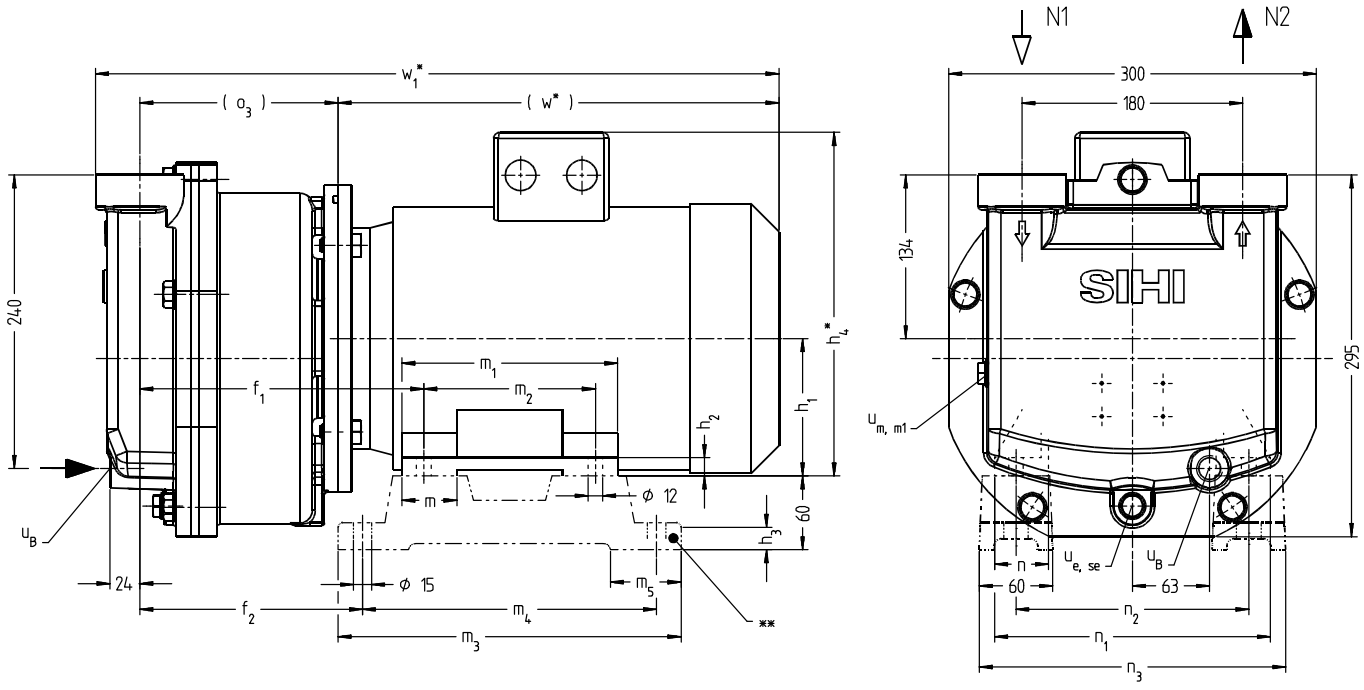
Dimension table



N 1 = gas inlet G 1 ½
N 2 = gas outlet G 1 ½
u_B = connection for service liquid G ½
u_e = drain connection G $^3/_8$
u_{se} = connection for dirt drain G $^3/_8$
u_m = connection for pressure gauge G $^3/_8$
u_{m1} = connection for drain valve G $^3/_8$

	Electric motor IP 55 size	kW 50 Hz	kW 60 Hz	f_1	f_2	h_1	h_2	h_3	h_4*	m	m_1	m_2	m_3	m_4	m_5	n	n_1	n_2	n_3	o_3	w*	w_1*	approx. weight [kg]
LEME 130	112 M	4	4,8	215	165	112	15	22	280	45	176	140	280	240	58	44	225	190	250	145	320	501	60
	112 M	5	6,2																		340	521	68
LEME 155	112 M	5	6,2	232	182															162		538	78
	132 M	6,7	8	272	222	132	18		320	88	218	178	320	278		55	256	216	276		426	624	92

other motors on request
* dimensions dependent on the motor make
** see list of accessories

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Data regarding the pump size - order hints

Series & size	Hydraulic & bearing	Shaft sealing	Material design	Casing seal
	0• Hydraulic for additional water handling •Z two grease lubricated antifriction bearings arranged in the motor	AAE mechanical seal, O-rings Perbunan	0A main parts from cast iron (GG) 0K Similar to 0A, but impellers in low alloyed steel	0 Liquid seal
LEME 130	0Z	AAE	0A, 0K	0
LEME 155				

Motor Selection

For our products we offer a lot of different motor types.
To identify the right motor please specify frequency, voltage and protection class.

Example of an Order:

LEME 155 0Z AAE 0A 0 with 5.0 kW AC motor, 50 Hz, 400V Δ, IP55

Accessories

Recommended accessories		LEME 130	LEME 155
SIHI ball type non-return valve Material design 776 / brass and NBR	size weight SIHI part no.	G 1 ½ 1.9 kg 20 082 115	
Support foot for motor size 112 M for motor size 132 M	SIHI part no.	20 047 010 -	20 047 010 20 047 012

Spare parts

Spare part kit		LEME 130	LEME 155
Basic repair kit Consist of: mechanical seal, valve plate, sealing material, adjustment crew	SIHI part no.	65007510	65007520

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

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