

Liquid ring vacuum pumps 液环式真空泵

With motor carrier design 带电机托架设计



LELC 90, 125, 150, 250, 325, 425

Pressure range:

入口压力范围: 33 - 1013 mbar

Suction volume flow:

入口流量: 61 - 470 m³/h

CONSTRUCTION TYPE

结构型式

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

SIHI液环式真空泵是结构简单使用可靠的容积泵，具有如下特点：

non-polluting due to nearly isothermal compression

几乎等温压缩，无污染

oil-free, as no lubrication in the working chamber

在工作腔内无需润滑，因而绝对无油

capable of handling nearly all gases and vapours

可处理几乎所有的气体和蒸汽

small quantities of entrained liquid can be handled

可处理少量的夹带液体

easy maintenance and reliable operation

易维护，高可靠性

low noise and nearly free from vibration

低噪音，几乎无振动

wide choice of materials, therefore applicable nearly everywhere

广泛的材质选择，基本上可用于所有场合

shaft not in contact with the medium

轴不接触介质

protection against cavitation as standard

气蚀保护作为标准配置

incorporated dirt drain

一体式排污

incorporated central drain

一体式中心排放

no metallic contact of the rotating parts

旋转部件没有金属接触

SIHI liquid ring vacuum pumps LELC are single-stage ones.

SIHI LELC 系列液环式真空泵是单级泵。

APPLICATION

应用

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 33 to 900 mbar must be created by robust vacuum pumps.

干气和湿气的处理和抽除，正常条件下可处理夹带的液体；可应用于所有需要真空泵产生真空，入口压力从33到900 mbar的场合。



NOTE

注意事项

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 last page).

It is possible to reuse the service liquid. The pumps are equipped with a connection through which the contaminated service liquid can continuously be drained during operation (dirt drain), if necessary.

泵运转期间需连续不断地补充工作液（通常为水），以带走气体压缩而产生的热量和补充部分随气体排出的工作液。此部分工作液可在汽液分离器中与气体分开（请见样本附件部分），以重新利用。

泵可按需要配备一个连接，以保证在运转条件下连续地排放被污染的工作液。

The direction of rotation is clockwise, when looking from the motor towards the pump.

从泵的驱动端看，泵的旋转方向为顺时针。

GENERAL TECHNICAL DATA 常规技术数据

Pump type 泵型号	Unit 单位	LELC 90	LELC 125	LELC 150	LELC 250	LELC 325	LELC 425
Synchronous speed 同步转速	50 Hz rpm	1500					
Max. compression over atmospheric pressure 最大背压	bar	0.3				0.3 (0.5*)	
Max. admissible pressure difference 允许最大压差	bar	1.1				1.1 (1.5*)	
Pressure test (above atmospheric pressure) 压力试验 (表压)	bar	3					
Moment of inertia of the rotating pump parts and water 满水时转动部件的惯性力矩	Kg. m ²	0.035	0.053	0.069	0.097	0.14	0.21
Noise level at a suction pressure of 80 mbar 在80 mbar 入口压力下的噪音	dB (A)	65				70	72
Max. gas temperature 最大吸气温度	Dry gas 干空气	200					
	Saturated gas 饱和气	100					
Service liquid 工作液 Max. recommended temperature for water as working liquid 工作液为水的最大推荐温度 Max. admissible temperature for other suitable working media 对其他适合的工作液最大允许温度 Max. kinematic viscosity 最大动粘度 Max. density 最大密度 volume up to shaft level 到轴中心线的容积	°C	40					
	°C	80					
	mm ² /s	4					
	kg/m ³	1200					
	liter	2.4	2.8	3.2	4.0	4.3	4.7

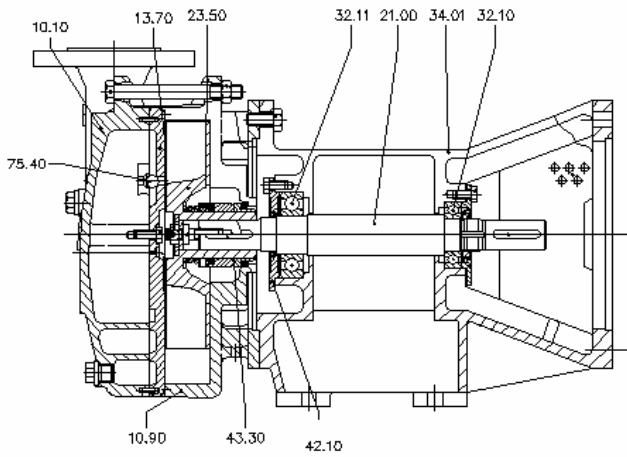
The combination of several limiting values is not admissible. 不允许将几种极限值同时选择

Material Design 材料设计

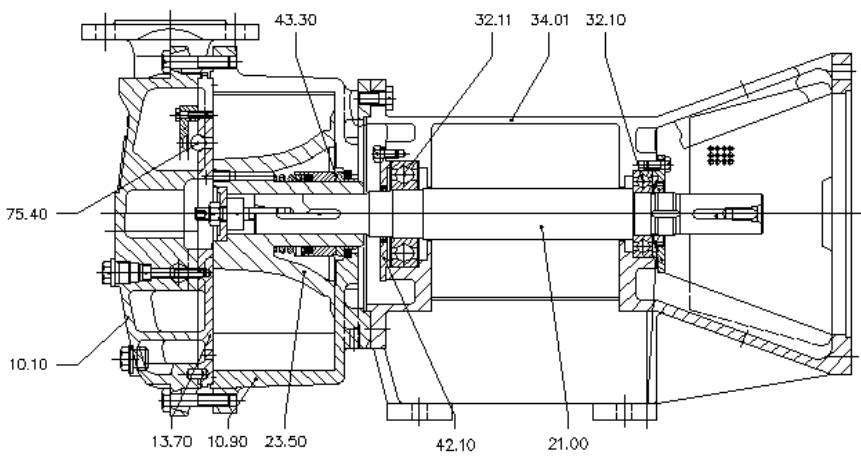
Item 位号	Component 零件	0K		0E		4B	
		LELC 90/125/150		LELC 250/325/425		LELC 90/125/150/250/325/425	
10.10	Casing 泵盖	0.6025				1.4408	
10.90	Central body 中间体						
13.70	Guide disc 中间体						
23.50	Vane wheel impeller 叶轮	1.4301		1.4408			
21.00	Shaft 轴	1.0503				1.0503	
34.01	Motor carrier 轴承座	0.6025				0.6025	
43.30	Material option 1 材料选择-1 Mechanical seal 机械密封	GBVGG Cr-Ni-St 铬钢 Carbon 石墨 Viton 氟橡胶 Cr-Ni-Mo-St 铬镍钼钢		EBPFF Cr-Ni-St 铬钢 Carbon 石墨 Perbunan 丁苯橡胶 Cr-Ni-St 铬钢		GBMGG Cr-Ni-Mo-St 铬镍钼钢 Carbon 石墨 PTFE Wrap 外包装为聚四氟乙烯 Cr-Ni-Mo-St 铬镍钼钢	
	Material option 2 材料选择-2 Mechanical seal 机械密封	GBMGG Cr-Ni-Mo-St 铬镍钼钢 Carbon 石墨 PTFE Wrap 外包装为聚四氟乙烯 Cr-Ni-Mo-St 铬镍钼钢					
75.40	Valve balls 阀球	PTFE 聚四氟乙烯					

Sectional Drawings 剖视图

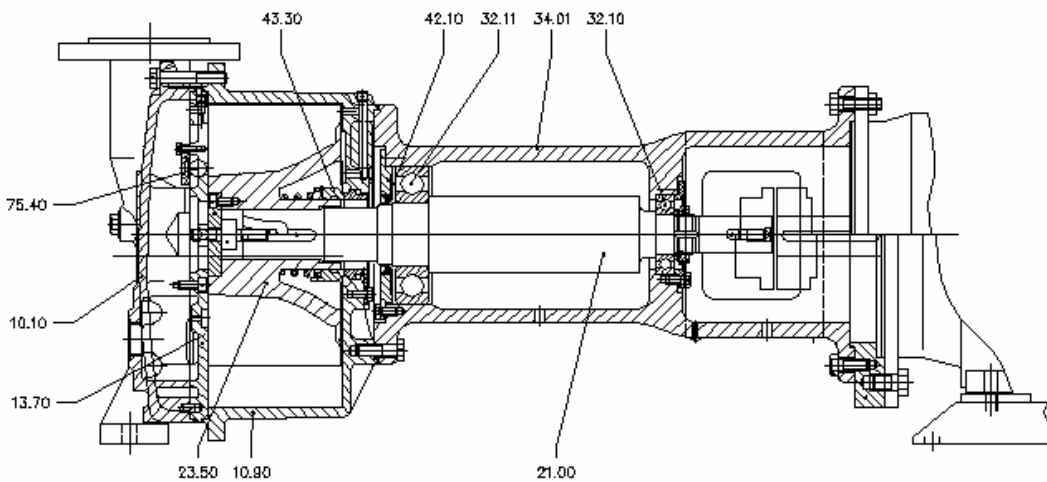
LELC 90, LELC 125, LELC 150



LELC 250

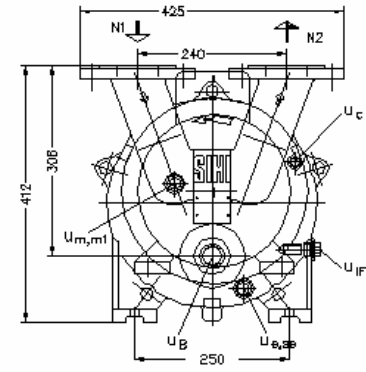
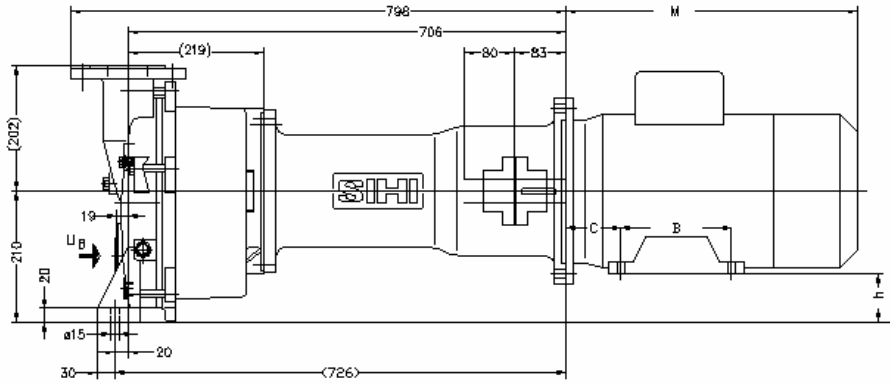


LELC 325, 425



10.10	Vacuum Casing 泵盖
10.90	Central body 中间体
13.70	Guide disc 导流盘
21.00	Shaft 轴
23.50	Vane wheel impeller 叶轮
34.01	Motor Carrier 托架
43.30	Mechanical seal 机械密封
75.40	Valve balls 阀球
32.10	Ball bearing 球轴承
32.11	Ball bearing 球轴承
42.10	Radial seal 径向密封

LELC 325



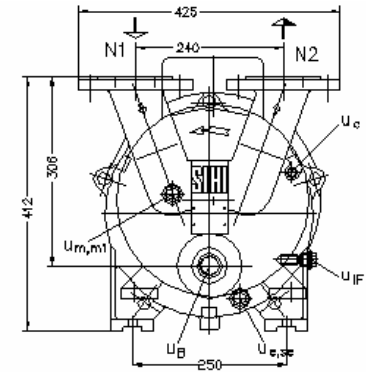
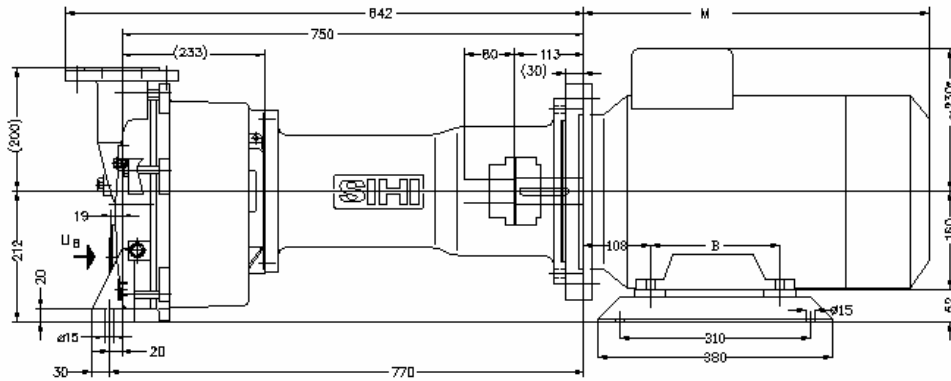
Motor feet are accessories and not part of the standard motor supply
电机底脚是附件不是标准电机配置

Pump	Electric motor 电机		Length of motor (M) 电机长度(M)		Aprox. weight w/o motor intermediate ring 重量(不包括电机) kg	h mm	B mm	C mm	Motor feet 电机底脚
	size 机座号	Rated output kW 额定功率 kW	IP55	EExd					Drawing No
LELC 325	132 M	7.5	430	538	122.8	78	178	89	FZ 33009
	160 M	11.0	535**	650**		50	210	108	FZ 6070

- N 1 = gas inlet DN 65 吸气口 DN 65
- N 2 = gas outlet DN 65 排气口 DN 65
- UB = connection for service liquid G 1 工作液连接口 G 1
- UC = connection for protection against cavitation G ¼ 气蚀保护管接口 G ¼
- Ue = drain connection G ½ 排液接口 G ½
- use = connection for dirt drain G ½ 排污接口 G ½
- Um = connection for pressure gauge G ½ 压力表接口 G ½
- Um1 = connection for drain valve G ½ 排水阀接口 G ½

Length of motor valid for standard motor used by SIHI Pumps (Shanghai) 电机长度对于 SIHI Pumps (Shanghai)使用的标准电机有效

LELC 425



Motor feet are accessories and not part of the standard motor supply
电机底脚是附件不是电机标准配置

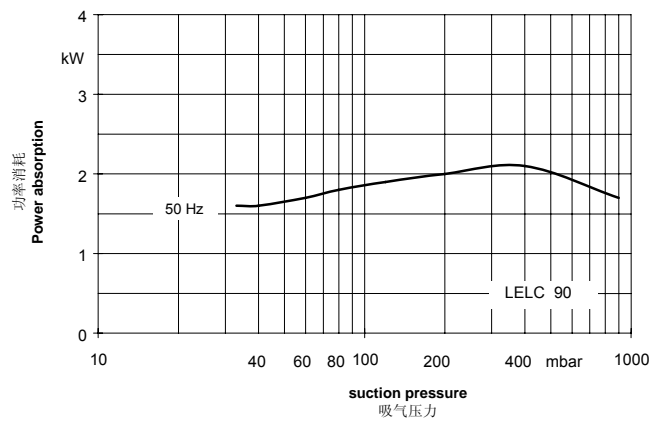
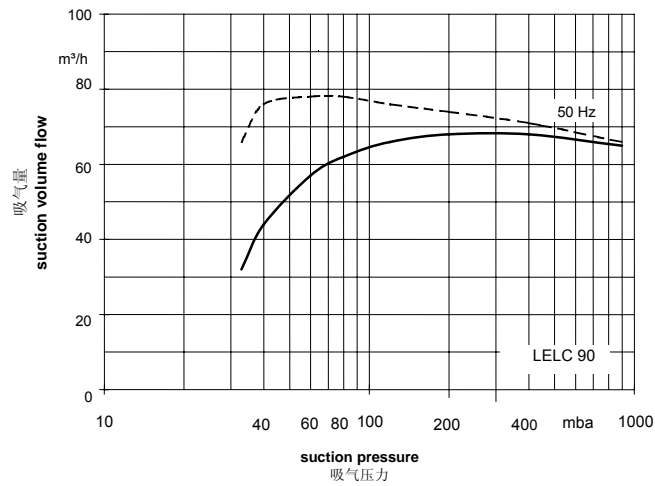
Pump	Electric motor 电机		Length of motor (M) 电机长度(M)		B mm	Aprox. weight of pump with intermediate ring but w/o motor 泵重量包括转接环但不包括电机 kg
	size 规格	Rated output kW 额定功率 kW	IP55	EExd		
LELC 425	160 M	11	505	620	210	139
	160 L	15	560	655	254	

- N 1 = gas inlet DN 65 吸气口 DN 65
- N 2 = gas outlet DN 65 排气口 DN 65
- UB = connection for service liquid G 1 工作液连接口 G 1
- UC = connection for protection against cavitation G ¼ 气蚀保护管接口 G ¼
- Ue = drain connection G ½ 排液接口 G ½
- use = connection for dirt drain G ½ 排污接口 G ½
- Um = connection for pressure gauge G ½ 压力表接口 G ½
- Um1 = connection for drain valve G ½ 排水阀接口 G ½

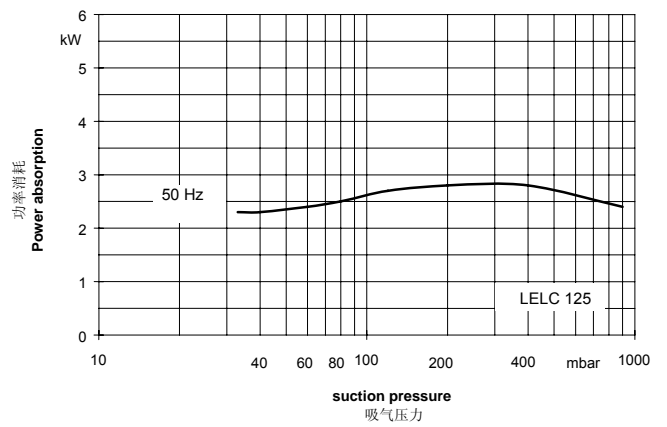
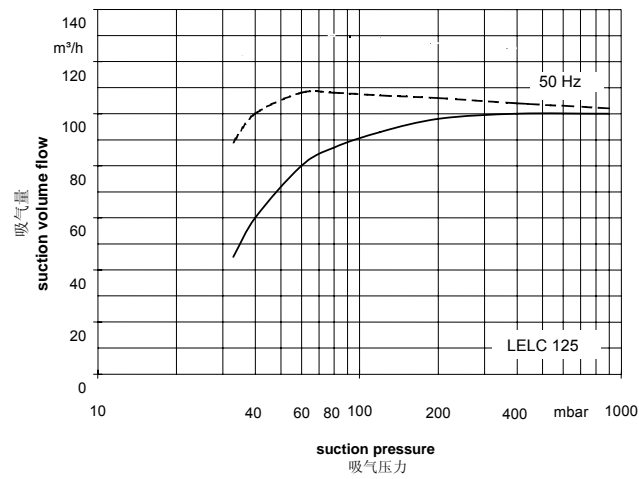
Length of motor valid for standard motor used by SIHI Pumps (Shanghai) 电机长度对于 SIHI Pumps (Shanghai)使用的标准电机有效
Length of intermediate ring included in length of pump 泵的长度包括转接环的长度

Performance Curves 泵的性能曲线

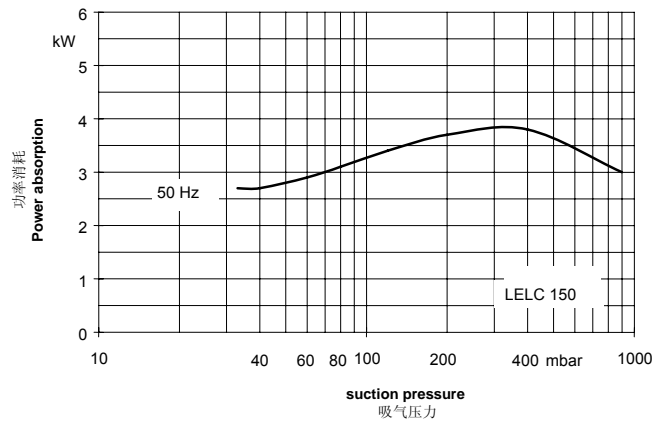
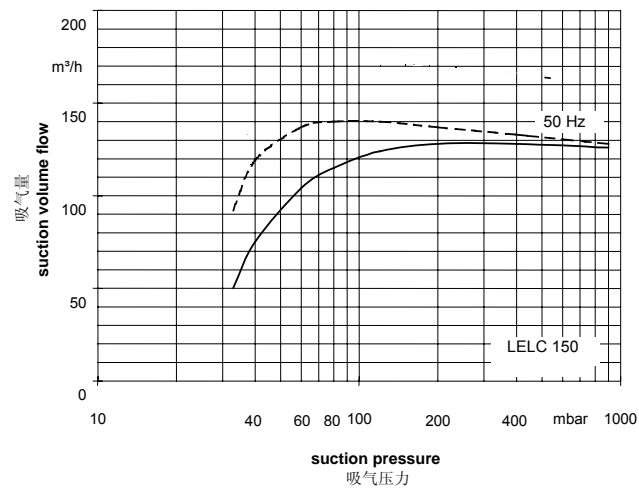
LELC 90



LELC 125



LELC 150

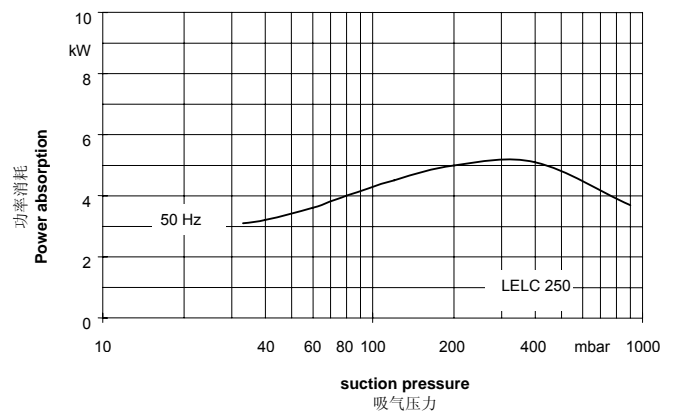
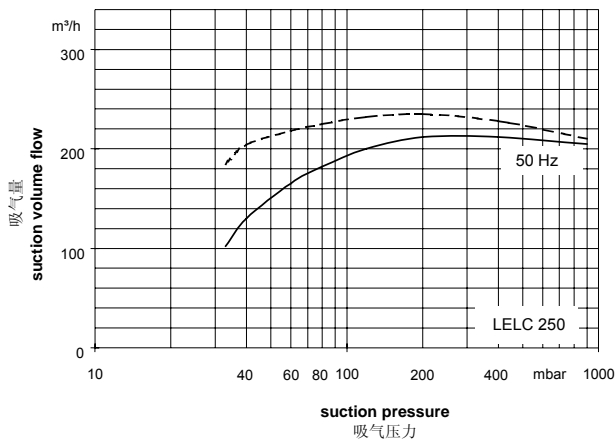


The operating data are applicable under the following conditions 性能曲线基于如下工况:

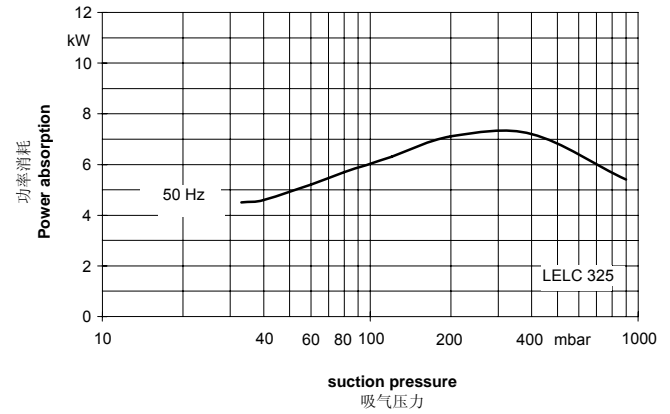
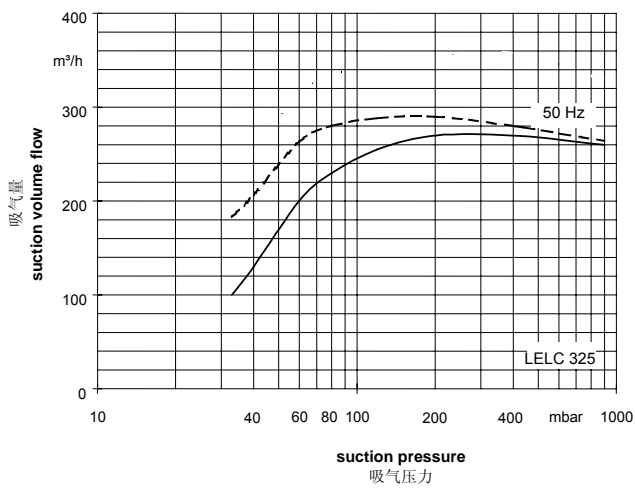
- | | | |
|----------------------|------------------------------------|------------|
| pumping medium 吸气介质: | - dry air 干空气: | 20°C _____ |
| | - water vapour saturated air 饱和空气: | 20°C ----- |
| service liquid: | - water 水: | 15°C _____ |

Compression pressure 排气压力: 1013 mbar (atmospheric pressure 大气压)
 Tolerance 性能允许误差: According to SIHI Pumps (Shanghai) standard QM-PD-02 rev.02

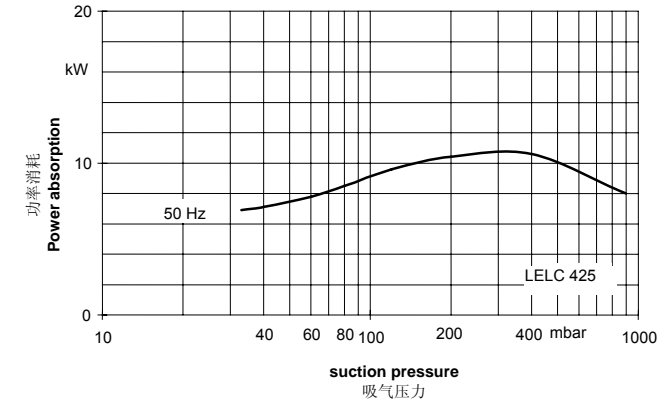
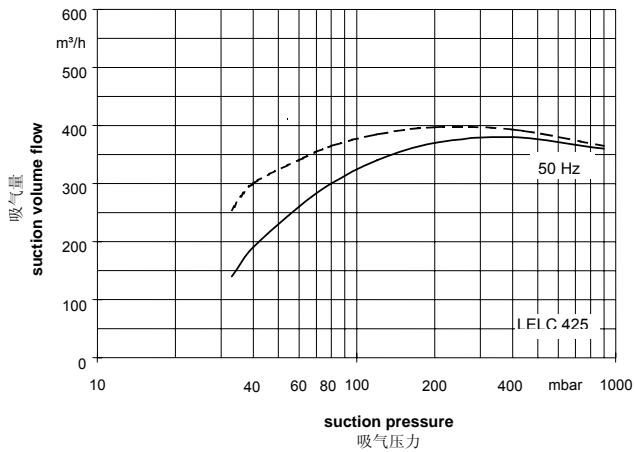
LELC 250



LELC 325



LELC 425



The operating data are applicable under the following conditions 性能曲线基于如下工况:

pumping medium 吸气介质:

- dry air 干空气:

20°C _____

- water vapour saturated air 饱和空气:

20°C - - - - -

service liquid:

- water 水:

15°C

Compression pressure 排气压力:

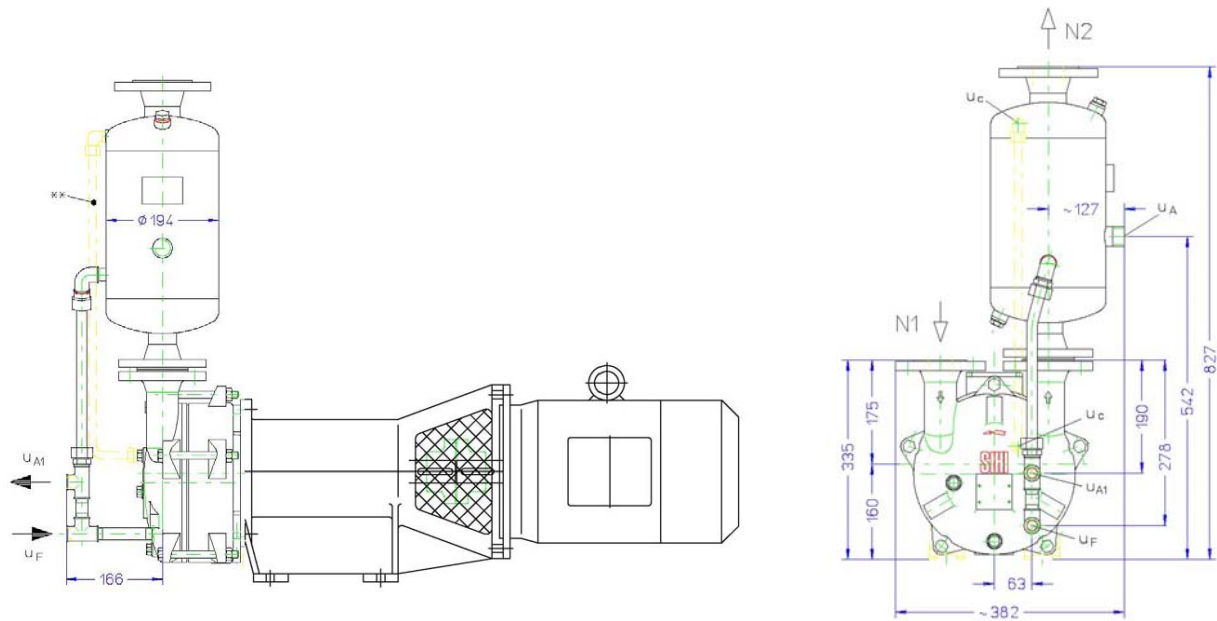
1013 mbar (atmospheric pressure 大气压)

Tolerance 性能允许误差:

According to SIHI Pumps (Shanghai) standard QM-PD-02 rev.02

Arrangement Drawings with Accessories 带附件的外形图

LELC 90, LELC 125, LELC 150



N 1 = gas inlet DN40 吸气口 DN40

N 2 = gas outlet DN40 排气口 DN40

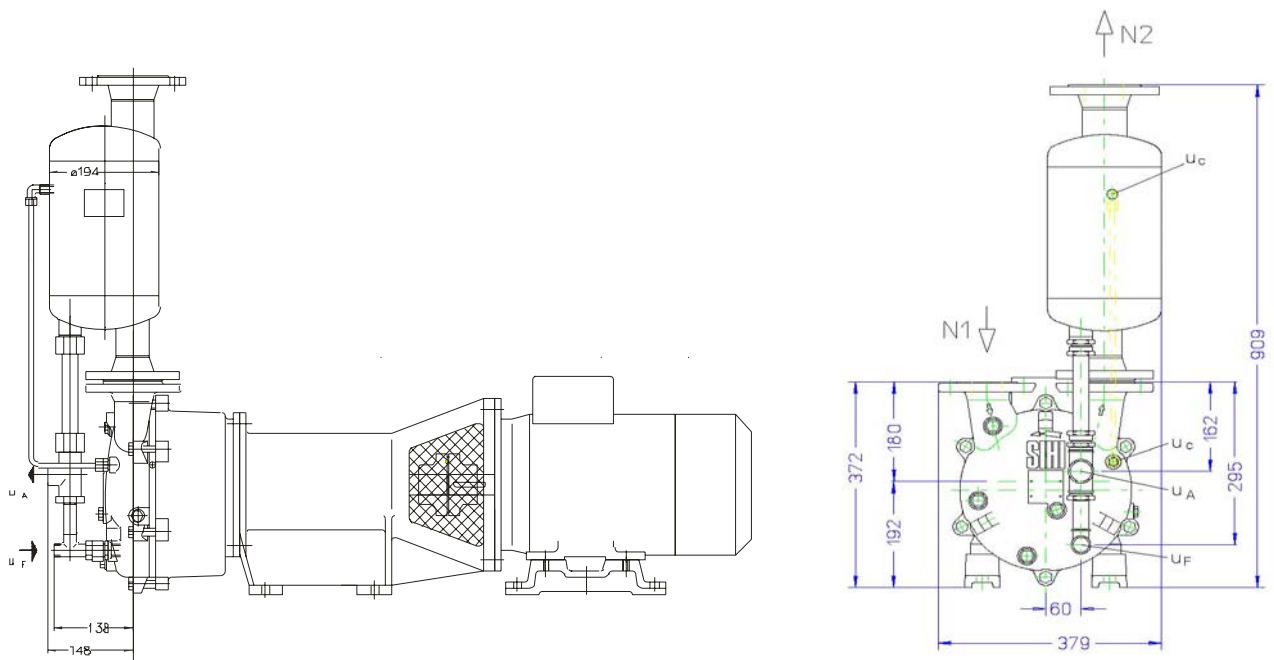
U_{A1} = connection for dirt drain G1 排污接口 G 1

Connection lines: See list of accessories 连接管线请见附件列表

U_F = connection for fresh liquid G ½ 工作液接口 G ½

U_c = connection for protection against cavitation G ¾ 气蚀保护管接口 G ¾

LELC 250



Motor feet are accessories and not part of the standard motor supply
电机底脚是附件不是电机标准配置

N 1 = gas inlet DN50 吸气口 DN50

N 2 = gas outlet DN50 排气口 DN50

U_A = connection for dirt drain G1 排污接口 G 1

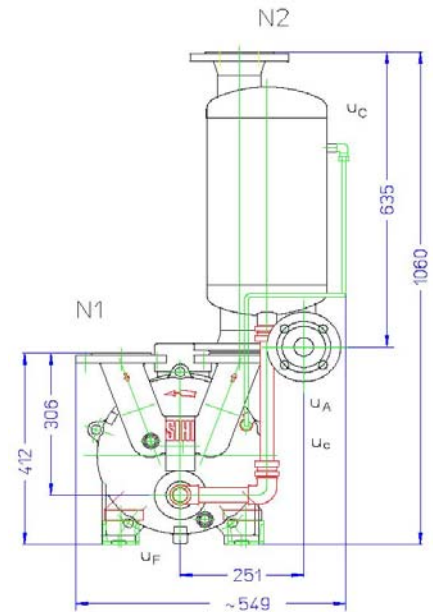
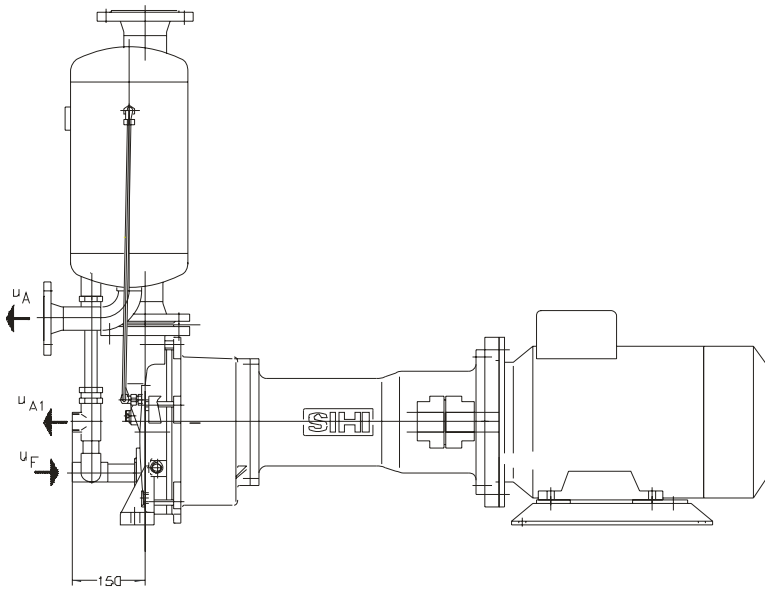
U_F = connection for fresh liquid G ½ 工作液接口 G ½

U_c = connection for protection against cavitation G ¼ 气蚀保护管接口 G ¼

Connection lines: see list of accessories 连接管线请见附件列表

表

LELC 325, LELC 425



Motor feet are accessories and not part of the standard motor supply
电机底脚是附件不是电机标准配置

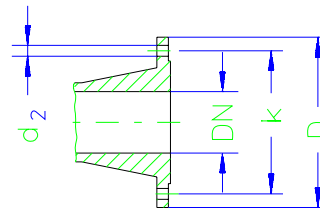
- N 1 = gas inlet DN65 吸气口 DN65
- N 2 = gas outlet DN65 排气口 DN65
- u_{A1} = connection for dirt drain G1 排污接口 G 1
- u_A = connection for liquid drain G 1 排污接口 G 1

- u_F = connection for fresh liquid G ½ 工作液接口 G ½
- u_c = connection for protection against cavitation G ¼ 气蚀保护管接口 G ¼

Connection lines: See list of accessories 连接管线请见附件列表

Flange Connections to DIN 2501 PN 10 法兰尺寸

flange connections to DIN 2501 PN 10 法兰尺寸			
DN	40	50	65
k	110	110	145
D	150	150	185
Number of holes in	4 x 18	4 x 18	4 x 18



Water Flow Requirements 水流量需求

Suction pressure 入口压力 [mbar]		33				120				200				400			
Pump 泵型 号	Synchronous Speed 转速 [rpm]	KB			FB	KB			FB	KB			FB	KB			FB
		difference in temperature				difference in temperature				difference in temperature				difference in temperature			
		温差 [°C]				温差 [°C]				温差 [°C]				温差 [°C]			
		10	5	2		10	5	2		10	5	2		10	5	2	
LELC 90	1500	0.12	0.22	0.41	1.0	0.14	0.24	0.44	0.95	0.14	0.24	0.44	0.9	0.15	0.24	0.41	0.75
LELC 125	1500	1.17	0.28	0.50	1.0	0.19	0.31	0.52	0.95	0.19	0.31	0.51	0.9	0.18	0.29	0.46	0.75
LELC 150	1500	0.19	0.32	0.54	1.0	0.22	0.36	0.58	0.95	0.23	0.37	0.57	0.9	0.23	0.35	0.51	0.75
LELC 250	1500	0.22	0.37	0.63	1.2	0.29	0.45	0.70	1.1	0.30	0.46	0.68	1.0	0.28	0.42	0.59	0.8
LELC 325	1500	0.31	0.52	0.88	1.6	0.40	0.63	0.97	1.5	0.42	0.65	0.96	1.4	0.40	0.60	0.84	1.15
LELC 425	1500	0.46	0.74	1.19	2.0	0.56	0.85	1.23	1.75	0.57	0.84	1.18	1.6	0.45	0.60	0.75	0.9

FB [m³/h] = fresh water service

FB [m³/h]=新鲜工作水

KB [m³/h] = combined liquid service with service water 10 °C, 5 °C, 2 °C warmer than the fresh water.

KB [m³/h]=比新鲜水温高10 °C, 5 °C, 2°C 的混合工作液

Data Regarding the Pump Size关于泵规格的数据 - Order Notes 定单代码

series + size 系列+规格	hydraulics + bearings 水力性能+轴承结构	shaft sealing 轴密封	material design 材料代码	casing seal 泵体密封
	A• hydraulic 水力性能	YTB standard mechanical seal O-rings Perbunan 标准机械密封 O型圈为丁苯橡胶	OK main parts from 0.6025 impeller from 1.4301 主要零件材质为铸铁, 叶轮为 1.4301 不锈钢	
•B two antifriction bearings 两个减摩轴承 motor carrier with feet 带底脚的电机托架 LELC 90 to 250	YTC standard mechanical seal O-rings Viton 标准机械密封 O型圈为氟橡胶	0E main parts from 0.6025 impeller from 1.4408 主要零件材质为铸铁, 叶轮为 1.4408 不锈钢	0	liquid sealing 液封
•1 two antifriction bearings 两个减摩轴承 motor carrier without feet 不带底脚的电机托架 LELC 325/425	YTD special mechanical seal O-rings Viton encapsulated with Teflon 特殊机械密封 O型圈为氟橡胶外包裹聚四氟 乙烯	4B main parts of 1.4408 impeller from 1.4408 主要零件材质为不锈钢 叶轮为 1.4408 不锈钢		
	XAE special mechanical seal O-rings Viton encapsulated with Teflon 特殊机械密封 O型圈为氟橡胶外包裹聚四氟 乙烯			
LELC 90 125 150 250	AB	YTC, YTD	OK / 4B	0
325 425	A1	YTB, XAE	0E / 4B	0

Motor and Coupling Data 电机和联轴器数据

Series + size 系列+规格	Motor enclosure 电机50Hz/ IP 55 / EExd					Weight of motor kg 电机重量 kg		Coupling 联轴器	
	Y-voltage Y-电压 V +/- 5%	Δ-voltage Δ-电压 V +/- 5%	Rated output 额定功率 kW	Size 机座号	Motor code (only indicates size) 电机代码 (仅指明规格)	IP 55	EExd	Size	kg
LELC 90	380	220	2.2	100L1	FS	35.8	43	4-φ28/φ28	2
LELC 125	380	220	3.0	100L2	FS	41.2	47	4-φ28/φ28	2
LELC 150	660	380	4.0	112 M	FS	48	58	4-φ28/φ28	2
LELC 250	660	380	5.5	132 S	GS	68	80	6-φ38/φ38	4.2
LELC 325	660	380	7.5	132 M	GS	80	95	6-φ38/φ38	4.2
LELC 325	660	380	11.0	160 M	NS	123	150	6-φ38/φ42	4.1
LELC 425	660	380	11.0	160 M	NS	123	150	6-φ38/φ42	4.1
LELC 425	660	380	15.0	160 L	NS	144	168	6-φ38/φ42	4.1

Weight of motors and couplings valid for standard motors and couplings used by SIHI Pumps (Shanghai)

Example for ordering: 定单范例

The pump size LELC 250 in cast iron with impeller in stainless steel with standard mechanical seal prepared to accept a 5.5kW motor has the order code:

LELC 250 AB YTB 0E 0 GS. Motor, motor feet and coupling are not included in this code, and must be ordered separately.

Please indicate if you require a standard motor (IP55) or flame proof motor (EExd), the required voltage, the required motor frequency and if you need motor feet.

配置为不锈钢叶轮, 标准机械密封和5.5kW电机的LELC 250铸铁泵的订单号码为: LELC 250 AB YTB 0E 0 GS. 电机, 电机底脚和联轴器并不包括在这个代码中, 必须单独订购。如果需要标准电机 (IP55) 或防爆电机 (EExd), 电机电压, 电机频率请单独注明。

Accessories 的附件

LELC 90 - 425

Recommended accessories 推荐附件		LELC 90	LELC 125	LELC 150	LELC 250	LELC 325	LELC 425
Overhead liquid separator 上置式汽液分离器	Type 型号	XBa 1042			XBa 940	XBa 2040	
	Material design 材质	Galvanized steel 镀锌钢 or 1.4301					
	Weight 重量	9.7 kg			10.5 kg	18 kg	
Service liquid line 工作液管路	Material design 材质	1.4301					
Cavitation protection line 气蚀保护管路	Material design 材质	1.4301					
SIHI gas ejector SIHI大气喷射器	Type 型号	GEVB 90A	GEVB 125A	GEVB 150A			
	Service liquid temp 工作液温度	15 °C					
	Material design 材质 0R	Venturi tube holder/Casing 壳体 - 0.6025 / Venturi tube/Drive nozzle - PTFE 文丘里管: 聚四氟乙烯					
	Material design 材质 4R	Venturi tube holder/Casing 壳体 1.4408 / Venturi tube/Drive nozzle - PTFE 文丘里管: 聚四氟乙烯					
Disc type non-return valve 板式止回阀	Type 型号	C-NRV-150-OE or 4B-0001			C-NRV-250-OE or 4B-0001	C-NRV-425-OE/ or B-0001	
	Weight 重量	2.6 kg			3.2 kg	4.5 kg	
	Material design 材质 OE	Casing 阀体 - 0.6025; Valve disc 阀板: 1.4401; Sealing disc:Teflon.密封圈: 聚四氟乙烯					
	Material design 材质 4B	4B: Casing 阀体: 1.4408, Valve disc 阀板: 1.4401, Sealing disc: Teflon 密封圈: 聚四氟乙烯					
Support feet	Material design 材质	0.6025				Steel (A3)	Steel (A3)
	Weight 重量	Only for LELC 250 (只针对 LELC 250): 3.15 kg/foot				2.8 kg/foot	2.8 kg/foot

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

公司保留对技术参数更改的权利。



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