

Liquid ring Vacuum pumps 液环式真空泵

In close coupled design 机泵同轴设计



VG 95, 130, 155

PRESSURE RANGE:

入口压力范围： 33 – 1013 mbar

SUCTION VOLUME:

入口流量： 90 - 150 m³/h



CONSTRUCTION TYPE

结构型式

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

ABS 液环式真空泵是结构简单使用可靠的容积变化式泵，具有如下特点：

- nearly isothermal compression
几乎等温压缩
- oil-free, as no lubrication in the working chamber
therefore non-polluting
在工作腔内无需润滑，因而绝对无油，无污染
- Capable of handling of 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
- no metallic contact of the rotating parts
旋转部件没有金属接触

ABS liquid ring Vacuum pumps VG are single-stage
ABS VG 系列液环式真空泵是单级泵。

NOTE

注意事项

During operation the pump must be supplied continuously 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) and reused.

The pumps are equipped with a connection through which the contaminated service liquid can be drained continuously 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。此部分工作液可在气液分离器中与气体分开（请见样本附件部分），以重新利用。

泵可按需要配备连接管线，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。

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 generated.

干气和湿气的处理和抽除；正常条件下可处理夹带的液体。此真空泵可用于所有需要33 mbar到900 mbar的场合。

GENERAL TECHNICAL DATA 常规技术数据

Pump type 泵型号		Unit 单位	VG 95	VG 130	VG 155
Synchronous speed 同步转速	50 Hz 60 HZ	rpm	1500 1750		
Max. compression over atmospheric pressure 最大背压		bar	0.3		
Max. admissible pressure difference 允许最大压差		bar	1.1		
Test pressure above atmospheric pressure 水压试验 (表压)		bar	3		
Moment of inertia of the rotating pump parts and water filling 满水时转动部件的惯性力矩		kg · m ²	0.035	0.053	0.069
Noise level at a suction pressure of 80 mbar 在80mbar 入口压力下的噪音		dB (A)	72		
Max. gas temperature 最大吸气温度	Dry gas 干气	°C	200		
	Saturated gas 饱和气	°C	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 liquids 对其他适合的工作液最大允许温度 max. kinematic viscosity 最大运动粘度 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

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

Component 零件	Casing 泵盖	Central body 中间体	Guide disc 导流盘	Vane wheel impeller 叶轮	Mechanical seal 机械密封
Casing 泵盖	HT250	HT250	HT250	304	Q22BVGG

Sectional drawings 剖视图 VG95, VG130, VG155

10.10	Casing 泵盖
13.70	Guide disc 导流盘
10.90	Central body 中间体
23.50	Vane wheel impeller 叶轮
80.00	Motor 电机
43.30	Mechanical seal 机械密封
10.80	Sealing 密封
90.90	Adjust screw 调节螺丝
74.40	Valve balls 阀球

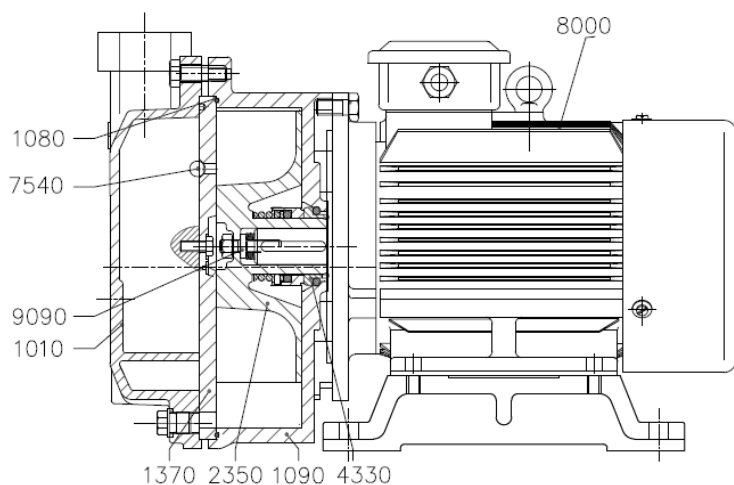
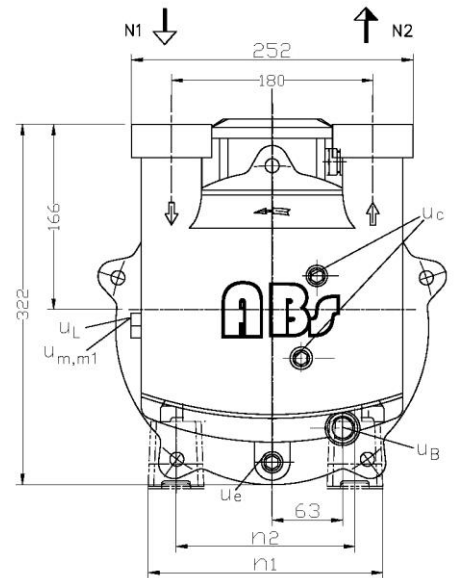
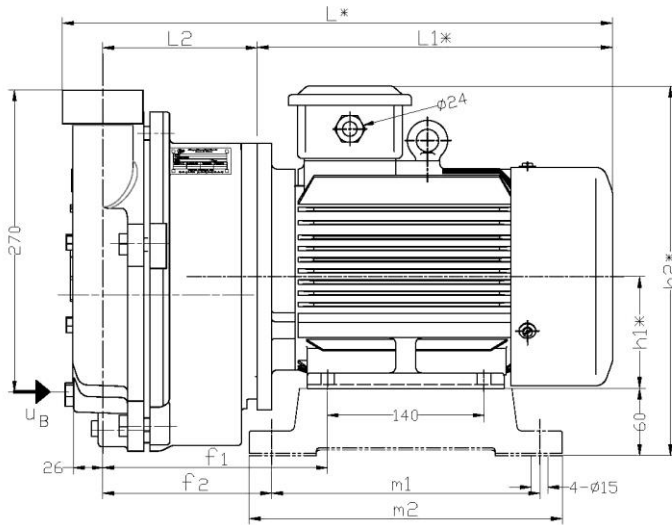


Table of Dimensions and weights 外形尺寸和重量列表

* Dimensions and weights are Valid for standard motors used by ABS Pumps (Shanghai)

* 尺寸和重量对昂伯（上海）使用的标准电机有效

VG95, VG130, VG155



N 1 = gas inlet G1 1/2

吸气口 G1 1/2

N 2 = gas outlet G1 1/2

排气口 G1 1/2

UB = connection for service liquid G 1/2

工作液连接口 G 1/2

ue = drain connection G 1/4

排液接口/排污接口 G 1/4

um = connection for pressure gauge G 3/8

压力表接口 G 3/8

uc = connection for protection against cavitation G 1/4

气蚀保护管接口 G 1/4

Pump 泵型号	motor 电机 IP 55,50Hz,4P		h ₁	h ₂	f ₁	f ₂	n ₁	n ₂	L*	L1*	L2	m1	m2	Approx weight 重量(kg)	
	Size	kW												Motor	Pump+ motor
VG 95	100L1	2.2	100	330	195	145	160	210	482	318	132	240	280	31	71
	100L2	3.0	100	330	195	145	160	210	486	318	132	240	280	36	76
VG 130	100L2	3.0	100	330	201	151	160	210	492	318	138	240	280	36	78
	112M	4.0	112	355	208	158	190	235	514	340	138	240	280	41	85
VG 155	112M	4.0	112	355	227	177	190	235	533	340	157	240	280	41	89
	112M	4.8	112	355	227	177	190	235	593	400	157	280	320	45	93

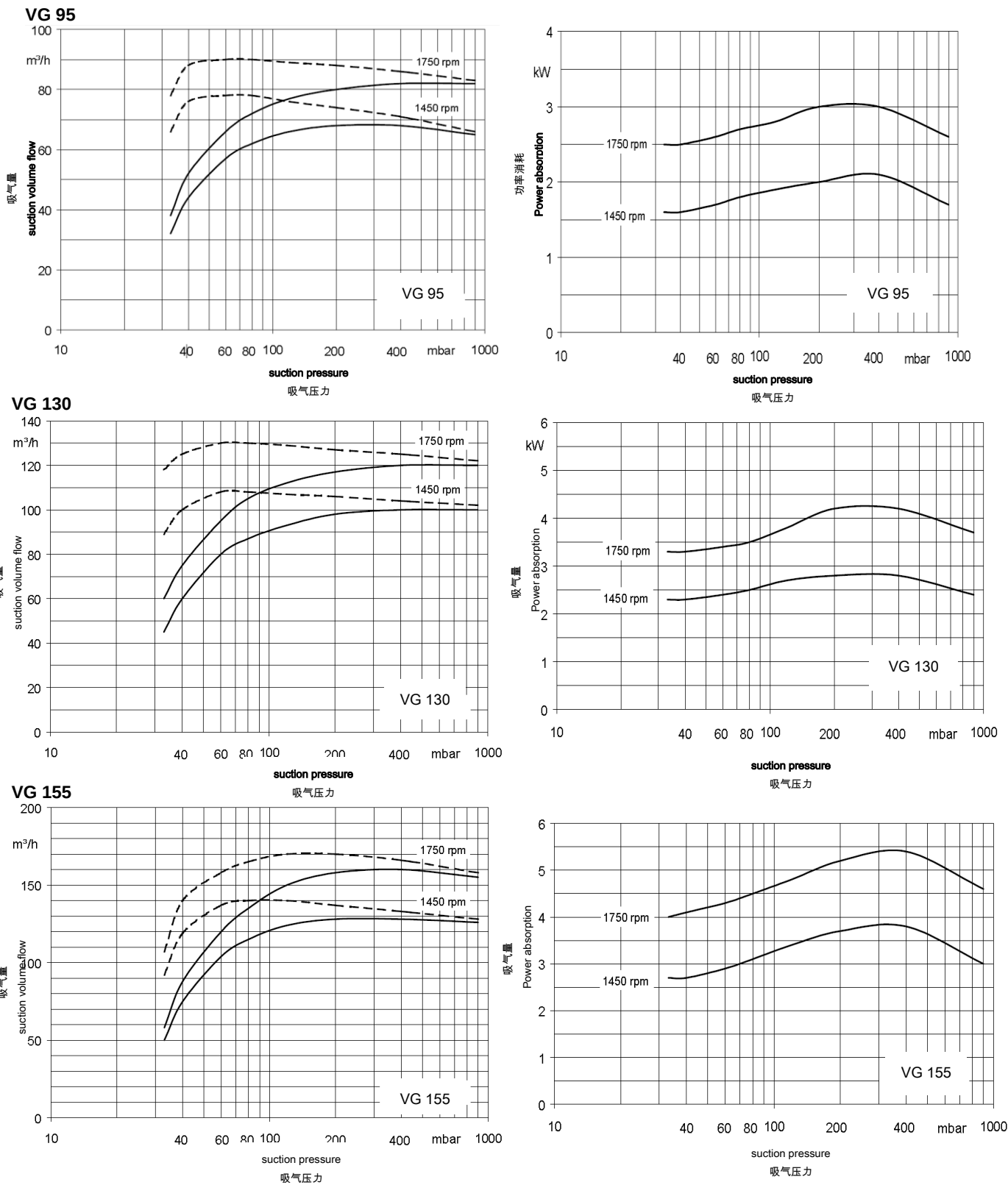
Pump 泵型号	motor 电机 IP 55,60Hz,4P		h ₁	h ₂ *	f ₁	f ₂	n ₁	n ₂	L*	L1*	L2	m1	m2	Approx weight 重量(kg)	
	Size	kW												Motor	Pump+ motor
VG 95	100L2	3.3	100	330	195	145	160	210	528	360	132	240	280	36	76
VG 130	112M	4.8	112	360	209	158	190	250	574	400	138	280	320	41	85
VG 155	112M	6	112	360	227	177	190	250	593	400	157	280	320	45	93

Motor feet are part of the standard supply of VE95-155

电机底脚为标准配置

Flange connections see page 13 法兰连接请见第13页

Performance Curves 泵的性能曲线



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

pumping medium:	- dry air 干空气:	20°C
吸气介质	- water VEpour saturated air 饱和空气:	20°C
service liquid:	- water 水：	15°C
工作液		
Compression pressure	1013 mbar (atmospheric pressure)	
排气压力	标准大气压	
The suction volume flow is applied to the suction pressure	吸气量是入口压力下的流量	
Tolerance of the operating data 10%	性能允许误差10%	
Max. fresh water need with lowest suction pressure	最大新鲜水用量是最低入口压力下的流量	

Water flow requirements 水流量需求

不同转速和进出口工作液温差下的新鲜补充水流量 (m³/h)

KB : 新鲜补充水流量 [m³/h]

FB: 工作液流量 (m³/h)

入口压力 (mbar)		33					120					200					400				
真空泵 型号	转速 [rpm]	KB			FB	KB			FB	KB			FB	KB			FB				
		Temperature difference [° C]				Temperature difference [° C]				Temperature difference [° C]				Temperature difference [° C]							
		10	5	2		10	5	2		10	5	2		10	5	2					
VG 95	1450	0.12	0.22	0.41	1.0	0.14	0.24	0.44	0.95	0.14	0.25	0.44	0.9	0.15	0.24	0.41	0.75				
	1750	0.18	0.30	0.52		0.19	0.32	0.53		0.20	0.33	0.53		0.19	0.31	0.47					
VG 130	1450	0.17	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				
	1750	0.22	0.36	0.59		0.24	0.39	0.60		0.26	0.40	0.60		0.24	0.37	0.53					
VG 155	1450	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				
	1750	0.26	0.41	0.63		0.29	0.44	0.65		0.30	0.45	0.64		0.29	0.41	0.57					

FB

[m³/h] = fresh water service 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.

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

系列+规格	XP 标准机械密封 QV 标准机械密封 (O 型圈为氟橡胶) QM 标准机械密封(O 型圈为氟橡胶外包裹聚四氟乙烯)	OK 主要零件材质为铸, 叶轮为 304 不锈钢	B**: 标准电压非标轴串定制电机 S**:非标电压非标轴串定制电机
VG 95-155	QV, QM	OK	B**/S**

Motor data 电机数据

Series+size 系列+规格	Motor enclosure 电机防护等级 IP 55 50 Hz				Motor enclosure 电机防护等级 IP 55 60 Hz			
	Y-Δ voltage Y-Δ -电压 V +/- 5%	Power 功率 kW	Size 规格	Motor-code 电机代码	Y-Δ voltage Y-Δ -电压 V +/- 10%	Power 功率 kW	Size 规格	Motor-code 电机代码
VG 95	380/220	2.2	100 L1- 4	B33	440/220	3.3	100 L2- 4	S03
		3	100 L2- 4	B34				
VG130	380/220	3	100 L2- 4	B34	440/220	4.8	112 M -4	S04
		4	112 M- 4	B35				
VG 155	660/380	4	112 M- 4	B35	720/440	6	112 M -4	S05
		5	112 M- 4	S35				

Example for ordering 定单范例

The pump size VG 130 in cast iron with impeller in stainless steel with standard mechanical seal and 5.5kW motor has the order code: VG130-OK-QV-B04

配不锈钢叶轮, 标准机械密封和4kW电机的VG130 铸铁泵的订单代码为 : VG130-OK-QV-B34。



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