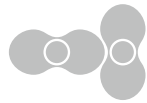




V-Serie

Oil Lubricated
Rotary Vane

油式旋片真空泵



R-Serie

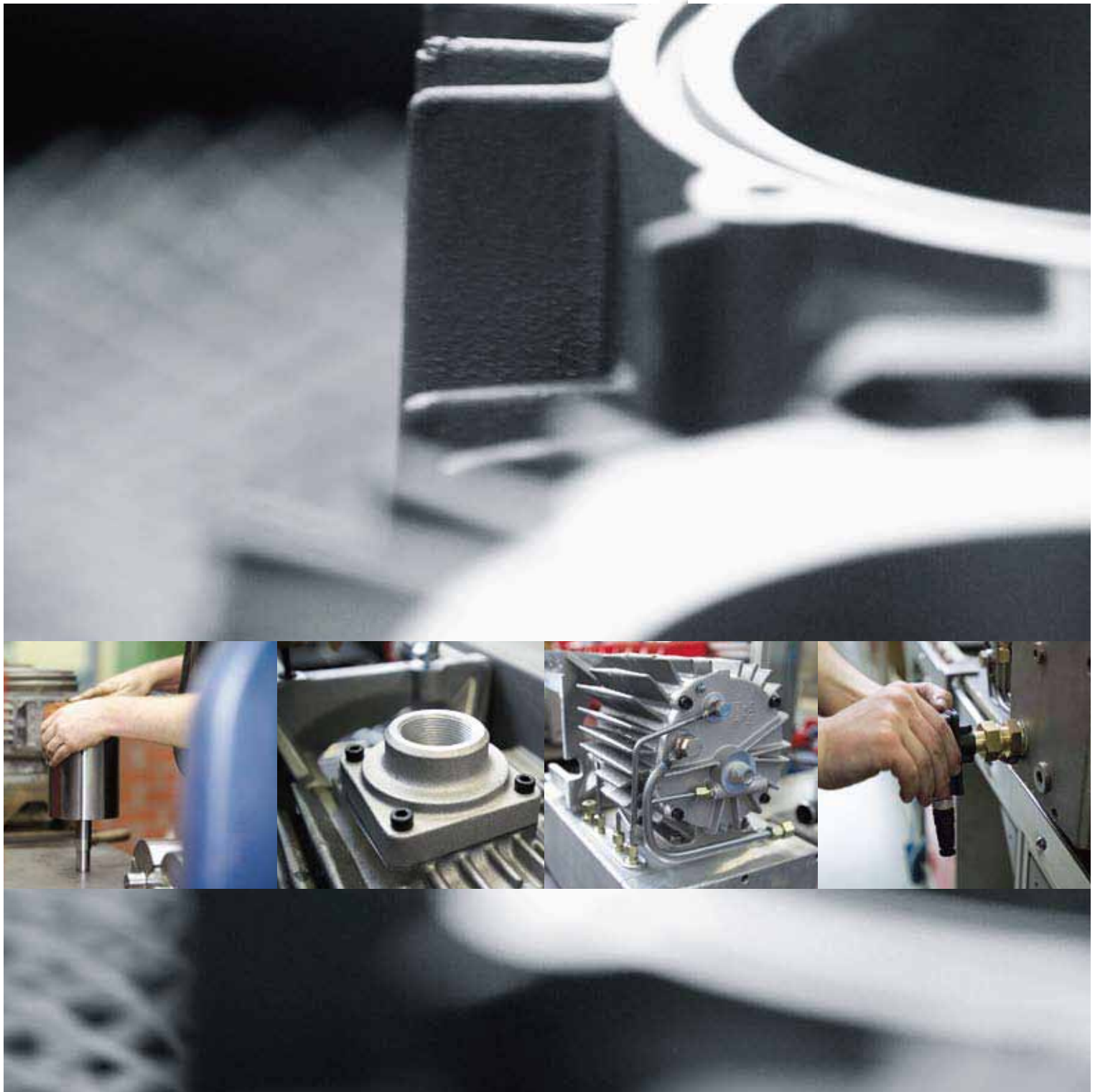
Roots

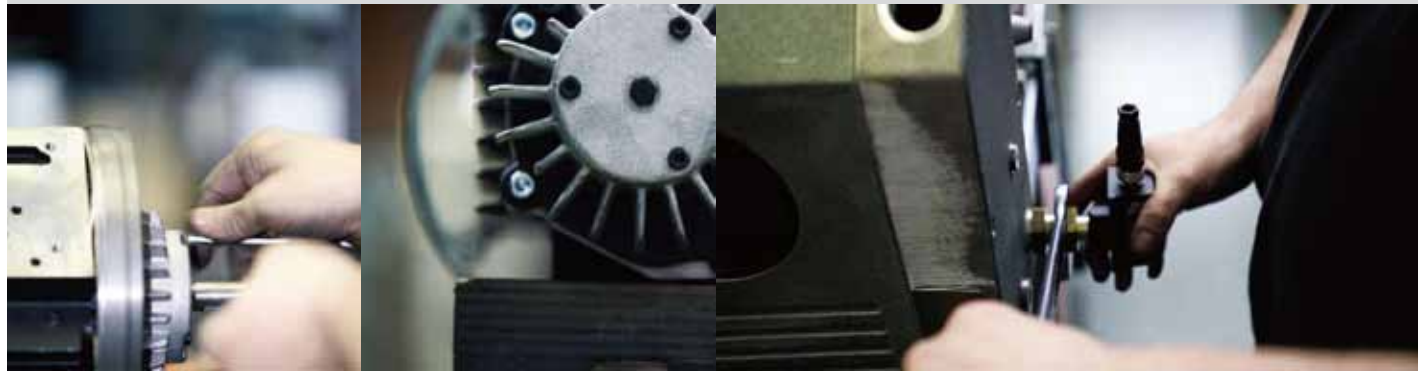
罗茨泵



**Elmo
Rietschle**

A Gardner Denver Product





The globally renowned vacuum companies Elmo Technology and Rietschle have joined forces within Gardner Denver. Elmo Rietschle stands for superior product portfolio, application experience and know-how in all vacuum and pressure technology areas. We make your process faster, safer and more cost-efficient.

Best quality

- All machines designed and produced inhouse
- Shortest response time
- Perfect logistics

全球著名的真空泵公司Elmo和Rietschle已与Gardner Denver共同携手。Elmo Rietschle代表着整个真空和压力技术领域的一流产品组合、应用经验和专业技术。拥有我们，您的生产过程将更快捷、更安全、更有效。

一流的品质

- 所有产品均在制造基地设计和生产
- 最短的响应时间
- 完善的物流系统

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油式旋片真空泵 / 罗茨泵选型
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体积减少压力增加:静态压缩系统

体积少压力增加是旋片式运行的原理。这种静态设计可以在真空，压力和两者结合的应用中产生良好的效果。根据规格和构造，例如油润滑式和无油式，真空度可达0.1mbar，流量从3到1535m³/hr；压力达1.5bar，流量从3到155m³/hr。当同时应用于真空和压力时，可同时达到0.6bar的真空度和0.7bar的正压。

在圆柱体的泵腔（1）内，转子（2）是偏心安装的，紧靠顶部几乎与缸体接触，转子叶片（4）安装在众多的转子槽（3）中。当转子开始转动，由于离心力的作用叶片抛出后沿缸体内部滑动。这样，两个叶片之间形成一个气室，其体积随着转动不断改变。当后面的叶片到达进气口（7）时，气体从进气口进入气室，在这时，气室（5）达到其最大的容积。当气室移动，其容积越来越小，气体被压缩，压强增加，直到气室（8）内的气体压强超过力腔（9）内的压强时，气体从出气口（10）排出。有些型号安装了单向阀（11）用于防止达到极限压强时排出的气体回流。

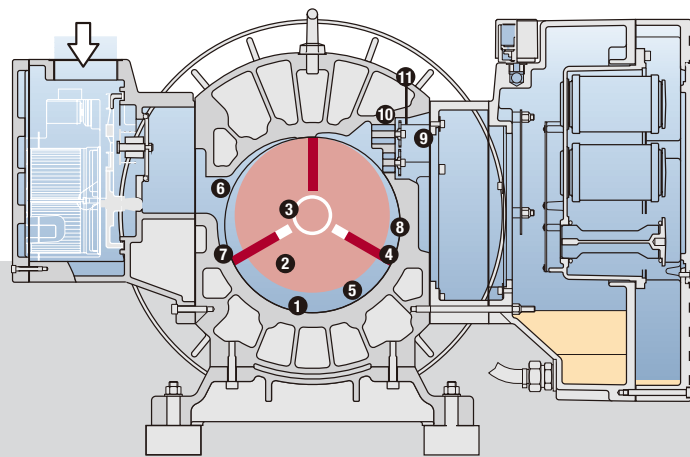
作为真空泵运行时，其过程相同，但气室（8）提供的是负压，腔体（9）内为大气压。

Pressure increase by volume reduction is the principle behind rotary vane operation. This static design offers excellent service in pressure, vacuum or a combination of both. Depending upon size and design - i.e. oil lubricated or dry running - vacuum up to 0.1 mbar abs with capacities ranging from 3 to 155 m³/hr can be reached. When used as a combined unit, 0.6 bar vacuum and 0.7 bar pressure can be achieved simultaneously.

In a cylindrical housing (1) a rotor (2) is positioned eccentrically so that it is on the top almost touching the cylinder. Rotor blades (4) are positioned into numerous rotor slots (3). When the rotor starts turning, due to centrifugal force the blades are thrown out and slide against the internal surface of the cylinder. In this way a cell (5) is formed between two blades with a volume that changes constantly during rotation. Air enters from the inlet port into a cell until the rear blade reaches the

inlet port (7). At this point the cell (5) has achieved its maximum air volume. As the cell then moves away from the port its volume becomes smaller and smaller, the air is thus compressed and the pressure rises. This continues until the pressure in the cell (8) exceeds that in the pressure chamber (9) and the air then exits through the outlet port (10). Some models are fitted with exhaust valves (11) which stop the backflow of this discharged air if the maximum pressure has been reached.

In a vacuum pump the process is similar, but the cell (8) gives decreasing pressure, and the chamber (9) is at atmospheric pressure.



油式旋片真空泵

V-VGD, V-VCB和V-VC

我们的油式旋片真空泵被广泛的应用于各个工业领域，为需要真空的应用行业提供最广泛系列的油式旋片真空泵。

优势一览

- 长寿命叶片
- 低噪音水平
- 易维护
- 能耐受较高水蒸气
- 保养周期长
- 适合于多种工业应用

Oil lubricated / Oil flooded

V-VGD, V-VCB and V-VC

Our oil lubricated rotary vane vacuum pumps are used in wide variety of industrial applications. We offer the largest range of oil flooded vacuum pumps for industrial vacuum operation.

Advantages at a glance

- Long vane life
- Low noise level
- Easy to service
- High water vapor tolerance
- Long service interval
- For many industrial applications

一次性油润滑旋片式真空泵

V-VL, V-VLB, V-VLV-2, V-VWZ

我们最新一代的一次性油润滑旋片式真空泵，采用经济有效的方法处理蒸汽，含腐蚀性气体、高蒸汽负荷和粘性残留，这种可靠性设计提供了极好的灵活性控制和低温运行。泵采用组件式设计，更易维护。空气或水2种冷却方式可供选择，完整的装备系统，以满足精确的工艺和控制需要。

优势一览

- 工艺安全
- 能处理腐蚀性气体和高蒸汽负荷
- 水平和垂直设计
- 组件1和2级设计
- 空气或水冷
- 减少聚合和堵塞
- 连续工作
- 易维护
- 也可组件成机组
- V-VLV-2带防爆认证
- V-VWZ可作为防爆标准版

Once through oil lubricated

V-VL, V-VLB, V-VLV-2, V-VWZ

Our latest generation of once through oil lubricated vacuum pumps provide a cost-effective way to handle process streams containing aggressive gases, high vapor loads and sticky residue. This reliable design offers excellent flexibility, control and low temperature operation. Pump designs are modular, making them easy to service. Air or water cooling options are offered, depending on one's application. Fully packaged systems are engineered to meet exact process and control requirements.

Advantages at a glance

- Process safe
- Can handle aggressive gases and high vapor loads
- Vertical and horizontal designs
- Modular 1 and 2 stage designs
- Air or water cooling
- Reduced polymerization and plugging
- Continuous duty
- Low maintenance
- Also available as packaged system
- V-VLV-2 available with ATEX certificate
- V-VWZ available as ATEX compliant version

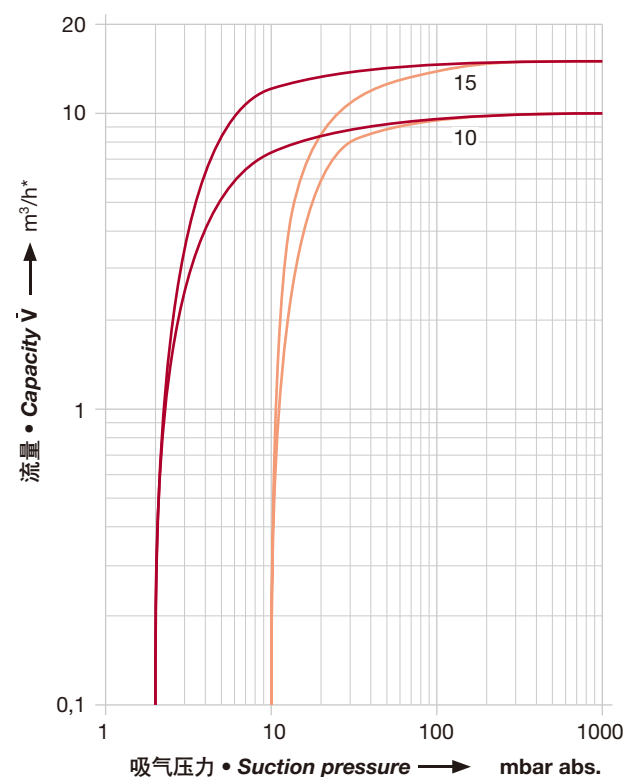




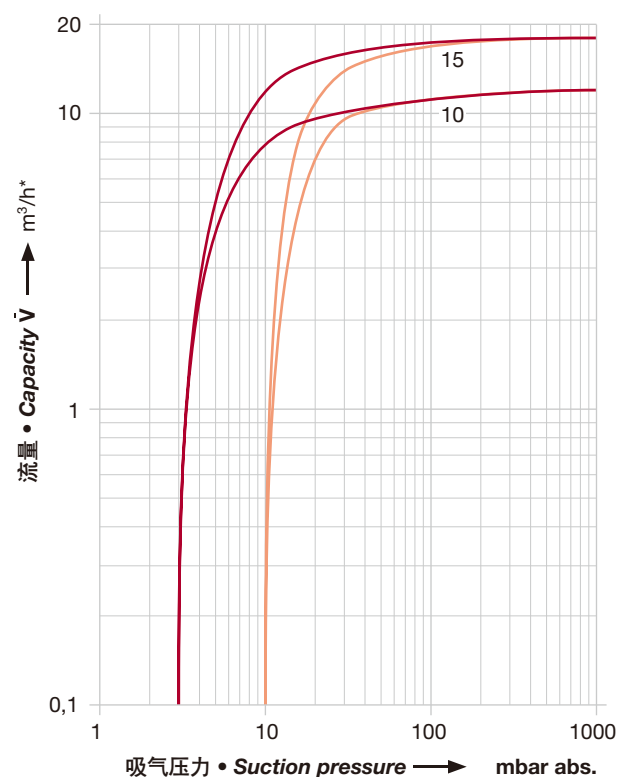
油润滑旋片式真空泵。流量从10至18m³/hr，极限真空可以让用户选择，高真空达2mbar（绝对值）或粗真空达10mbar（绝对值）。悬伸式转子和一体化电机使产品体积很小。内置筛网过滤器，真空逆止阀和油分离器。低噪音运行。电机符合 DIN EN 60034 标准，保护标准 IP 54，绝缘等级F。

Oil flooded rotary vane vacuum pump with capacities from 10 to 18 m³/h. The ultimate vacuum can be selected by operator at either 2 mbar (abs.) for fine vacuum or 10 mbar (abs.) for coarse vacuum. Needs little space thanks to overhung rotor design and integral motor. Fitted as standard with fine mesh filter, vacuum non-return valve and oil separator. Very quiet operation. Motors comply with DIN EN 60034, have IP 55 protection and insulation class F.

50 Hz 选型图 • Selection diagram



60 Hz 选型图 • Selection diagram



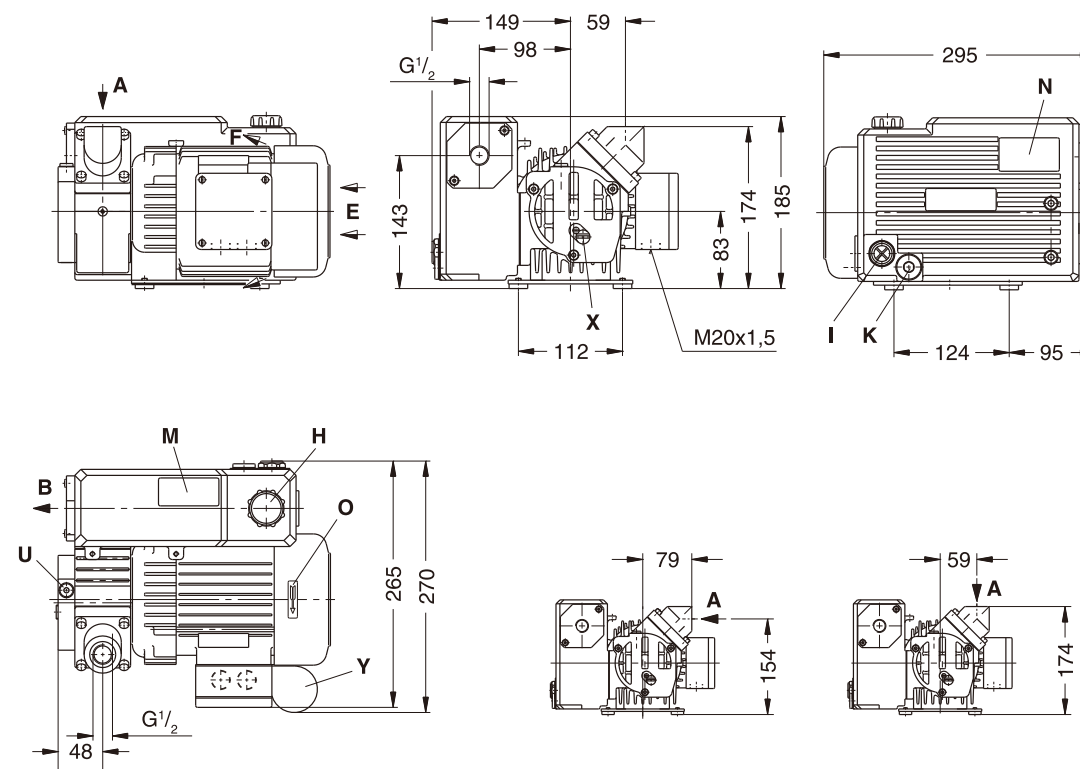
— 高真空 • Fine vacuum
— 粗真空 • Coarse vacuum

V-VGD (01)		10		15		10		15	
		50 Hz				60 Hz			
流量 Capacity	m³/h	10		15		12		18	
极限真空 高真空/粗真空 Ultimate vacuum Fine vacuum/Coarse vacuum	mbar (abs.)•	2 / 10				3 / 10			
电机类型 Motor version		3~		200 – 255 / 346 – 440 V ± 5 %		1~		230 V ± 10 %	
电机功率 Motor rating	kW	3~		0,37		0,55		0,44	
电流 Current drawn	A	3~		2,4 / 1,4		2,8 / 1,6		1,8 / 1,05	
转速 Speed	min⁻¹	2850				3420			
平均噪音 Average noise level	dB(A) →DIN45635	59		60		62		63	
最大重量 Maximum weight	kg					19			
油量 Oil capacity	l					0,4			

附件 • Accessories

VGD		10		15		10		15	
		50 Hz				60 Hz			
软管接头 Hose connection	ZSA	13 (18)							
电机启动器 Motor starter	ZMS	3~	25 / 16	40 / 16	25 / 16	40 / 16	1~	40	60

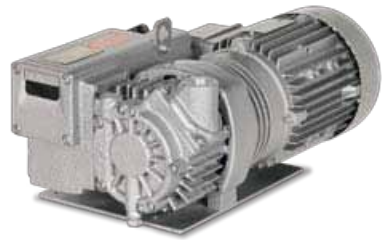
尺寸 • Dimensions [mm]



A	真空联接处 Vacuum connection	M	油标牌 Oil type plate
B	排气口 Exhaust	N	数据牌 Data plate
E	冷却空气入口 Cooling air inlet	O	旋转方向 Direction of rotation
F	冷却空气出口 Cooling air outlet	U	气镇阀(选装件) Gas ballastvalve(optional)
H	注油口 Oil filling point	X	真空转换 Vacuum switch
I	油位镜 Oil check	Y	电容器(1~) Capacitor (1~)
K	排油口 Oil drain point		

* 与进气口联接的吸气状态有关。工作曲线和数据表所示为真空泵在正常温度下运行。我们保留调整技术数据的权利。水气容纳，见数据I 200。
根据需要

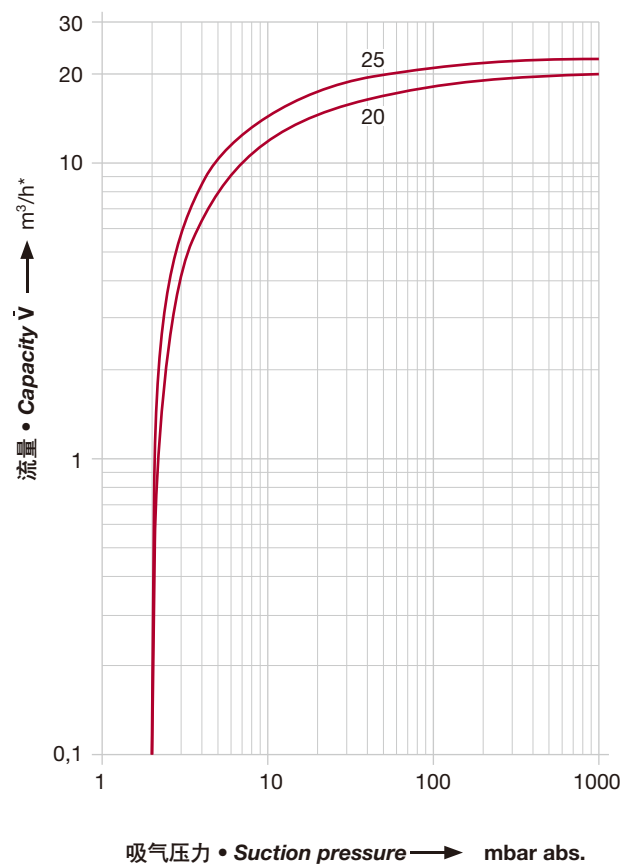
* refers to suction conditions at inlet connection. Curves, table content (tolerance ±10 %) refer to vacuum pump at normal operating temperature. Dimensions may differ. Water vapour tolerance, see leaflet I 200 (on request).
on request



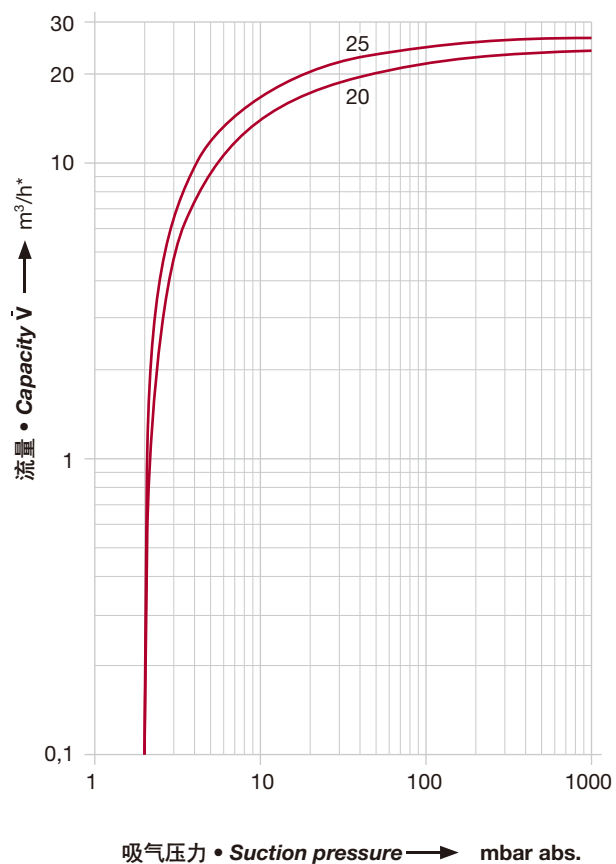
油润滑旋片式真空泵。流量从20至26.5m³/hr，极限真空2mbar（绝对值）。特别为小型真空包装机配套设计。法兰式电机，转子两侧装有轴承，风冷式。内置筛网过滤器，真空逆止阀和油分离器。法兰式电机符合 DIN EN 60034 标准，保护标准 IP54，绝缘等级F。

Oil flooded rotary vane vacuum pump with capacities ranging from 20 to 26.5 m³/h and an ultimate vacuum of 2 mbar (abs.). Designed especially for installation in small vacuum packaging machines. Flange motor, bearings on both sides of the rotor, air cooling. Fitted as standard with fine mesh filter, vacuum non-return valve and oil separator. Flange mounted motors comply with DIN EN 60034, have IP 55 protection and insulation class F.

50 Hz 选型图 • Selection diagram



60 Hz 选型图 • Selection diagram

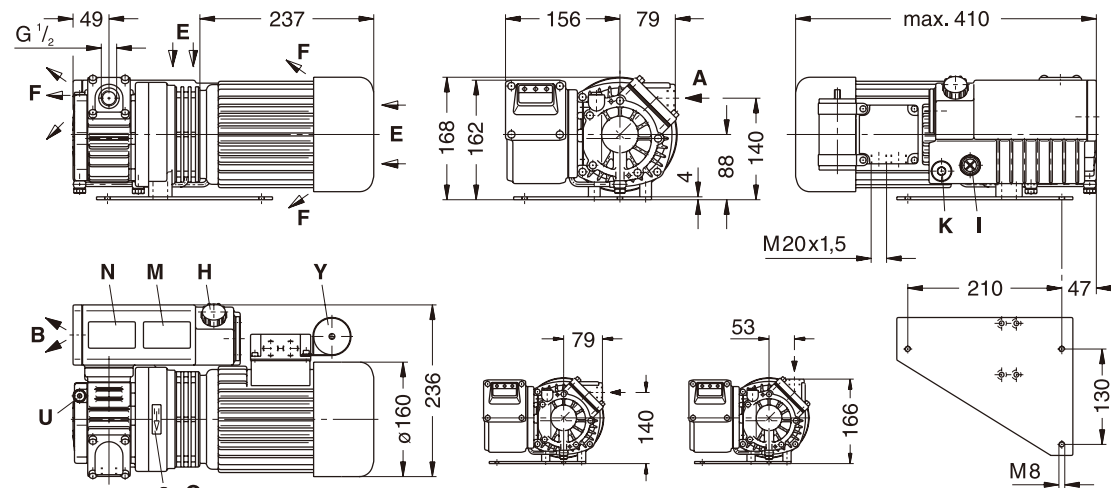


VCB	20		25		20		25	
	50 Hz				60 Hz			
流量 Capacity	m ³ /h	20	22,5	24	26,5			
极限真空 Ultimate vacuum	mbar (abs.)•	2						
电机类型 Motor version		3~	200 – 265 / 346 – 460 V ± 5 %			1~	230 V ± 10 %	
电机功率 Motor rating	kW	3~	0,75	0,75	0,9	1~	1,1	1,1
电流 Current drawn	A	3~	4,1 – 5,5 / 2,36 – 3,2	#	4,1 – 5,5 / 2,36 – 3,2	#		
转速 Speed	min ⁻¹		2850				3420	
平均噪音 Average noise level	dB(A) →DIN45635		63	62	64		66	
最大重量 Maximum weight	kg		23					
油量 Oil capacity	l		0,4					

附件 • Accessories

VCB	20		25		20		25	
	50 Hz				60 Hz			
软管接头 Hose connection	ZSA				13 (18)			
电机启动器 Motor starter	ZMS	3~	63 / 40	#	63 / 40	#		
		1~	63	63	63	#		

尺寸 • Dimensions [mm]



- A** 真空联接处
Vacuum connection
- B** 排气口
Exhaust
- E** 冷却空气入口
Cooling air inlet
- F** 冷却空气出口
Cooling air outlet
- H** 注油口
Oil filling point
- I** 油位镜
Oil check
- K** 排油口
Oil drain point
- M** 油标牌
Oil type plate
- N** 数据牌
Data plate
- O** 旋转方向
Direction of rotation
- U** 气镇阀(选装件)
Gas ballast valve(optional)
- Y** 电容器(1~)
Capacitor (1~)

* 与进气口联接的吸气状态有关。工作曲线和数据表所示为真空泵在正常温度下运行。我们保留调整技术数据的权利。水气容纳，见数据I 200。
根据需要

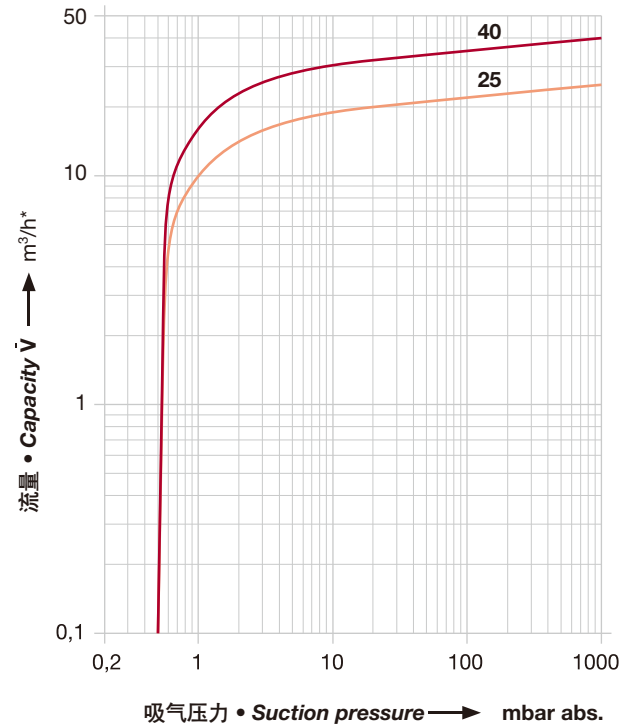
* refers to suction conditions at inlet connection. Curves, table content (tolerance ±10 %) refer to vacuum pump at normal operating temperature. Dimensions may differ. Water vapour tolerance, see leaflet I 200 (on request).
on request



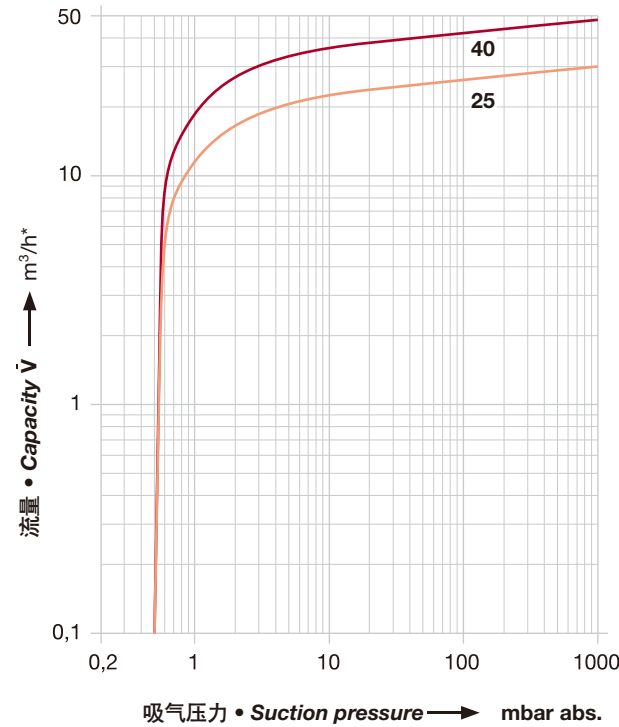
油润滑旋片式真空泵。流量从25至48m³/hr，极限真空0.5mbar（绝对值）。法兰式电机，转子两侧装有轴承，风冷式。内置筛网过滤器，真空逆止阀、气镇阀和油分离器。法兰式电机符合 DIN EN 60034 标准，保护标准 IP54，绝缘等级F。

Oil flooded rotary vane vacuum pump with capacities ranging from 25 to 48 m³/h. Ultimate vacuum 0.5 mbar (abs.). Flange motor, bearings on both sides of the rotor, air cooling. Fitted as standard with fine mesh filter, vacuum non-return valve, gas ballast valve and oil separator. Flange mounted motors comply with DIN EN 60034, have IP 55 protection and insulation class F.

50 Hz 选型图 • Selection diagram



60 Hz 选型图 • Selection diagram

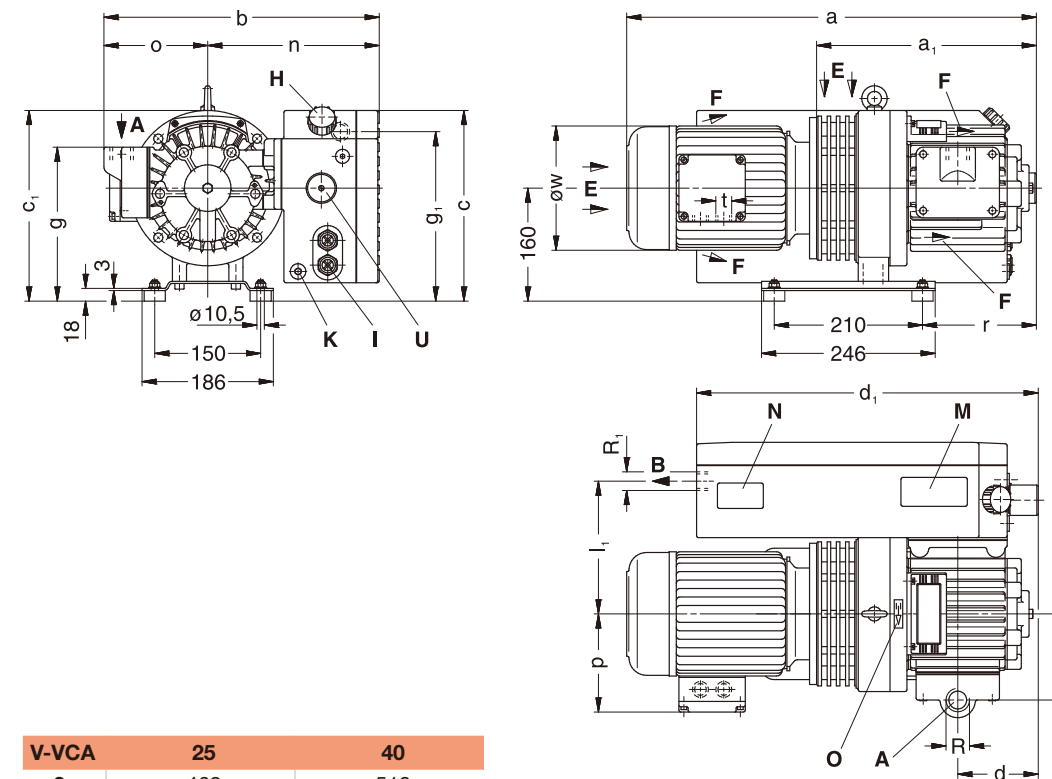


V-VCA		25	40
额定流量 Nominal capacity	m³/h	25	40
	60 Hz	30	48
极限真空 Ultimate partial pressure	mbar (abs.)	0,5	
电机类型 Motor version	3~	230 / 400 V ± 10 %	
	60 Hz	220 / 380 V	
	1~	230 V ± 10 %	
	60 Hz	220 V	
电机功率 Motor rating	kW (3~)	0,75	1,1
	60 Hz	0,90	1,3
	kW (1~)	1,0	1,5
	60 Hz	1,3	1,8
电流 Current drawn	A (3~)	3,5 / 2,0	4,7 / 2,7
	60 Hz	#	#
	A (1~)	7,2	9,0
	60 Hz	10,9	#
转速 Speed	min ⁻¹	1450	
	60 Hz	1740	
平均噪音 Average noise level	dB(A) →DIN 45635	57	61
	60 Hz	59	63
最大重量 Maximum weight	kg	40 / 45	50 / 53
油量 Oil capacity	l	1	2

附件 • Accessories

V-VCA		25	40
逆止阀 Non-return valve	ZRK	20 (03)	25 (03)
真空密封灰尘分离器 Vacuum tight dust separator	ZFP	145 (11)	145 (06)
真空密封进气口过滤器 Vacuum tight suction filter	ZVF	50/60Hz	20 (53)
电机启动器 Motor starter	ZMS	#	#

尺寸 • Dimensions [mm]



V-VCA	25	40
a 3~	462	510
1~	512	573
a ₁	230	266
b	333	380
c	255	270
c ₁	270	270
d	70	89
d ₁	360	411
g	218	218
g ₁	221	235
l	105	111
l ₁	145	188
n	201	243
o	132	137
p	139	139
r	80	116
t	M 20 x 1,5	M 25 x 1,5
ø w	176	176
R	G ¾	G 1
R ₁	Rp ½	Rp ¾

A	真空联接处 Vacuum connection	K	排油口 Oil drain point
B	排气口 Exhaust	M	油标牌 Oil type plate
E	冷却空气入口 Cooling air inlet	N	数据牌 Data plate
F	冷却空气出口 Cooling air outlet	O	旋转方向 Direction of rotation
H	注油口 Oil filling point	R	油冷却器 Oil cooler
I	油位镜 Oil check	U	气镇阀 Gas ballast valve

* 与进气口联接的吸气状态有关。工作曲线和数据表是按PNEUROP标准计算的，其所示为真空泵在正常温度下运行。我们保留调整技术数据权利。尺寸a和电流值会因不同电机而与数据表不同。水气容纳，见数据1 200。
根据需要

* refers to suction conditions at inlet connection. Curves, table content (tolerance ±10 %) according to PNEUROP standards and refer to vacuum pump at normal operating temperature. The dimensions a, p and ø w and/or the current drawn can differ. Water vapour tolerance, see leaflet 1 200 (on request).
on request



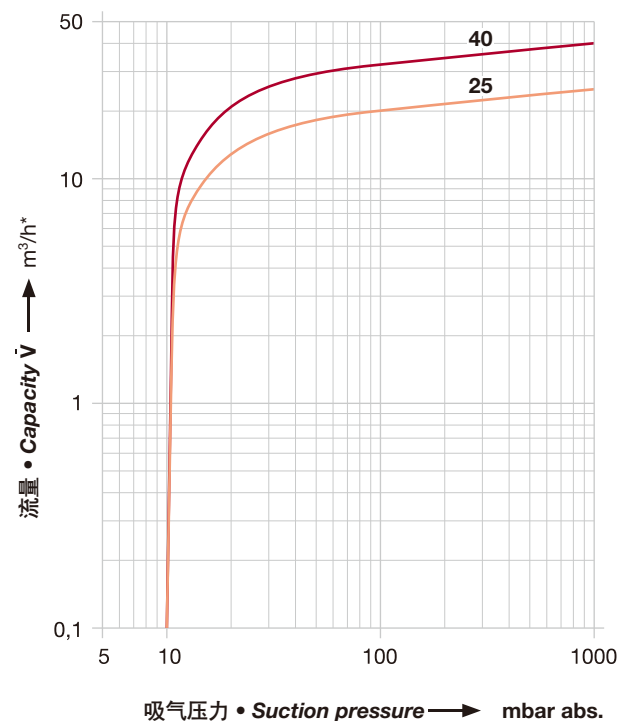
油润滑旋片式真空泵。流量从25至48m³/hr，极限真空10mbar（绝对值）。内置筛网过滤器，真空逆止阀、气镇阀和油分离器。法兰式电机，风冷式设计，转子两侧装有轴承。

法兰式电机符合 DIN EN 60034 标准，保护标准 IP54，绝缘等级F。

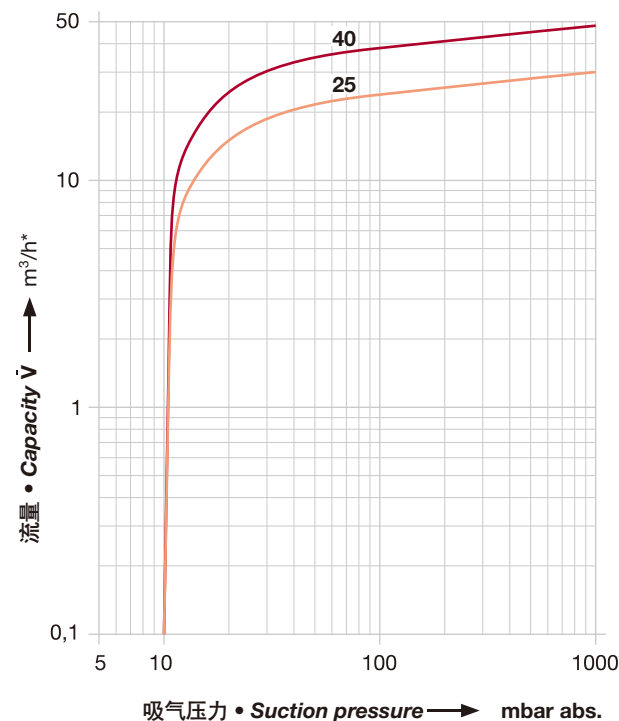
Oil flooded rotary vane vacuum pump with capacities from 25 to 48 m³/h. Ultimate vacuum 10 mbar (abs.). Fitted as standard with fine mesh filter, vacuum non-return valve, gas ballast valve and oil separator. Flange motor, air cooling, and bearings on both sides of the rotor.

Flange mounted motors comply with to DIN EN 60034, have IP 55 protection and insulation class F.

50 Hz 选型图 • Selection diagram



60 Hz 选型图 • Selection diagram

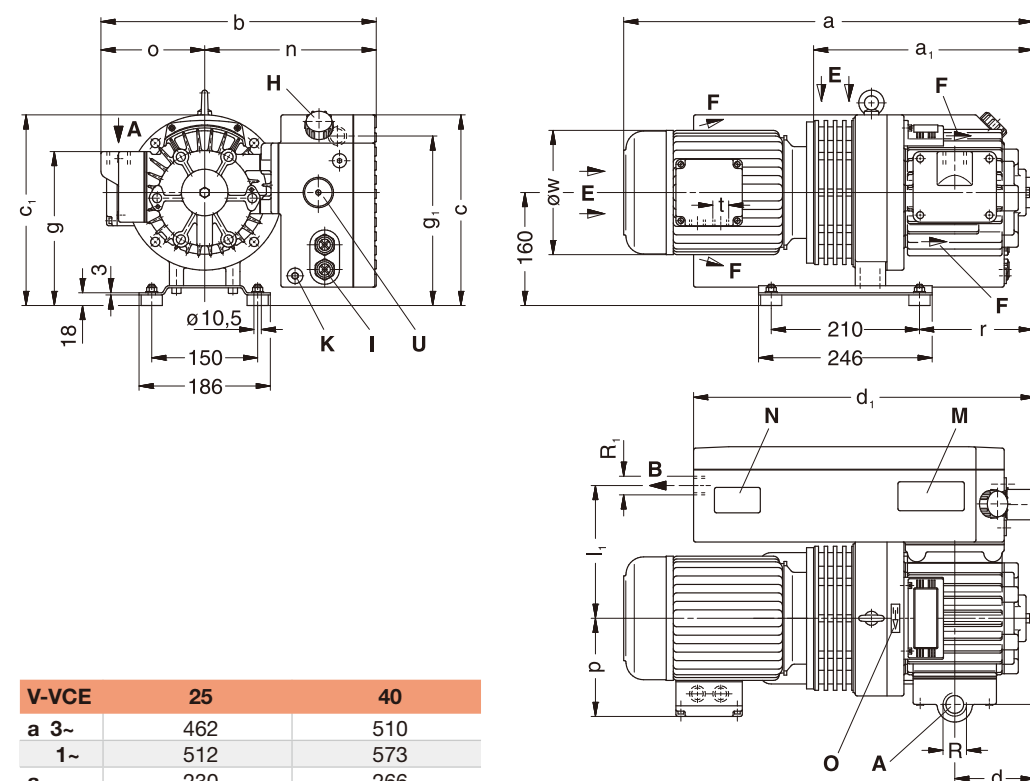


V-VCA		25		40	
额定流量 Nominal capacity	m ³ /h	50 Hz	25	60 Hz	40
		60 Hz	30		48
极限真空 Ultimate partial pressure	mbar (abs.)	10			
电机类型 Motor version	3~	50 Hz	230 / 400 V ± 10 %		
		60 Hz	220 / 380 V		
	1~	50 Hz	230 V ± 10 %		
		60 Hz	220 V		
电机功率 Motor rating	kW (3~)	50 Hz	0,75		1,1
		60 Hz	0,90		1,3
	kW (1~)	50 Hz	1,0		1,5
		60 Hz	1,3		1,8
电流 Current drawn	A (3~)	50 Hz	3,5 / 2,0		4,7 / 2,7
		60 Hz	#		#
	A (1~)	50 Hz	7,2		9,0
		60 Hz	10,9		#
转速 Speed	min ⁻¹	50 Hz	1450		
		60 Hz	1740		
平均噪音 Average noise level	dB(A)	50 Hz	57		61
	☒DIN 45635	60 Hz	59		63
最大重量 Maximum weight	kg	3~ / 1~	40 / 25		50 / 53
油量 Oil capacity	l		1		2

附件 • Accessories

V-VCE		25		40	
真空调节阀 Vacuum regulating valve	ZRV		13 / 2 (05)		20 / 1 (05)
逆止阀 Non-return valve	ZRK		20 (03)		25 (03)
真空密封灰尘分离器 Vacuum tight dust separator	ZFP		145 (11)		145 (06)
真空密封进气口过滤器 Vacuum tight suction filter	ZVF	50/60 Hz	20 (53)		20 (54) / 32 (52)
电机启动器 Motor starter	ZMS		#		#

尺寸 • Dimensions [mm]



V-VCE	25	40
a 3~	462	510
1~	512	573
a ₁	230	266
b	333	380
c	255	270
c ₁	270	270
d	70	89
d ₁	360	411
g	218	218
g ₁	221	235
l	105	111
l ₁	145	188
n	201	243
o	132	137
p	139	139
r	80	116
t	M 20 x 1,5	M 25 x 1,5
øw	176	176
R	G ¾	G 1
R ₁	Rp ½	Rp ¾

A	真空联接处 Vacuum connection	K	排油口 Oil drain point
B	排气口 Exhaust	M	油标牌 Oil type plate
E	冷却空气入口 Cooling air inlet	N	数据牌 Data plate
F	冷却空气出口 Cooling air outlet	O	旋转方向 Direction of rotation
H	注油口 Oil filling point	R	油冷却器 Oil cooler
I	油位镜 Oil check	U	气镇阀 Gas ballast valve

* 与进气口联接的吸气状态有关。工作曲线和数据表所示为真空泵在正常温度下运行。我们保留调整技术数据的权利。尺寸a和øw或/和电流值会因不同电机而与数据表不同。水气容纳，见数据I 200。
根据需要

* refers to suction conditions at inlet connection. Curves, table content (tolerance ±10 %) refer to vacuum pump at normal operating temperature.
The dimensions a and øw and/or the current drawn can differ.
Water vapour tolerance, see leaflet I 200 (on request).
on request



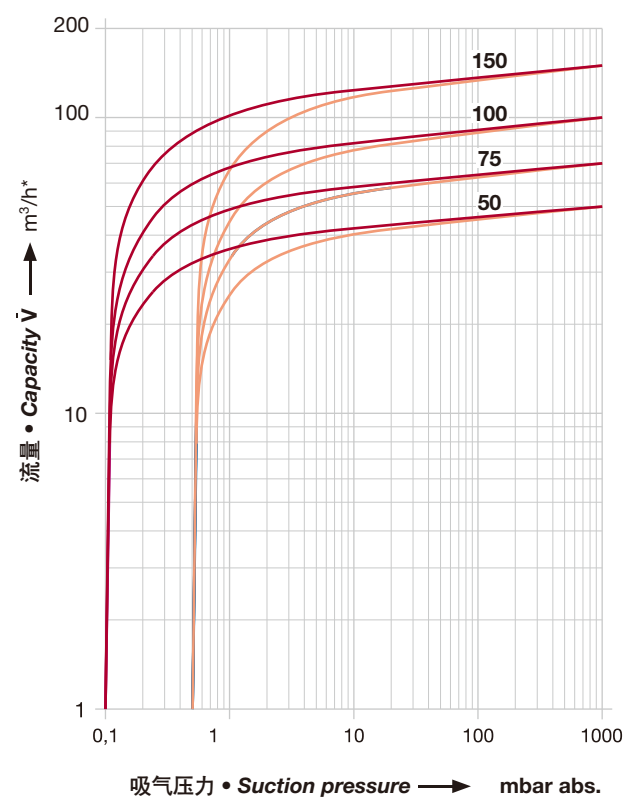
油润滑旋片式真空泵。流量从50至180 m³/hr，极限真空0.1mbar（绝对值）。法兰式电机，转子两侧装有轴承，装有油/气热交换器。内置筛网过滤器，真空逆止阀，气镇阀，保护罩和油分离器。

法兰式电机符合 DIN EN 60034 标准，保护标准 IP 54，绝缘等级F。

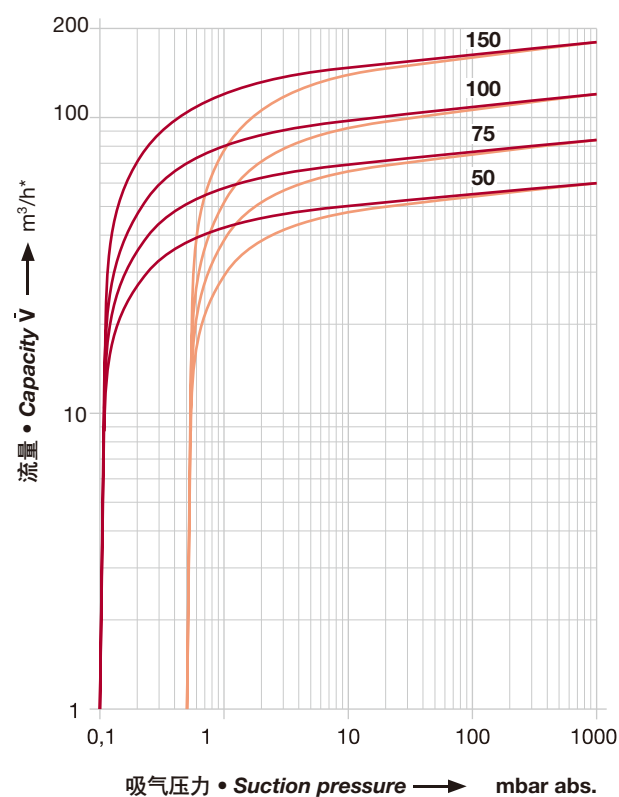
Oil flooded rotary vane vacuum pump with capacities ranging from 50 to 180 m³/h and an ultimate vacuum of 0.1 mbar (abs.). Flange motor, bearings on both sides of the rotor, oil/air heat exchanger. Fitted as standard with fine mesh filter, vacuum non-return valve, gas ballast valve, protection cover and oil separator.

Versions for handling of gases with raised oxygen-share as well as versions with high water vapour tolerance for vacuum drying are available.

50 Hz 选型图 • Selection diagram



60 Hz 选型图 • Selection diagram



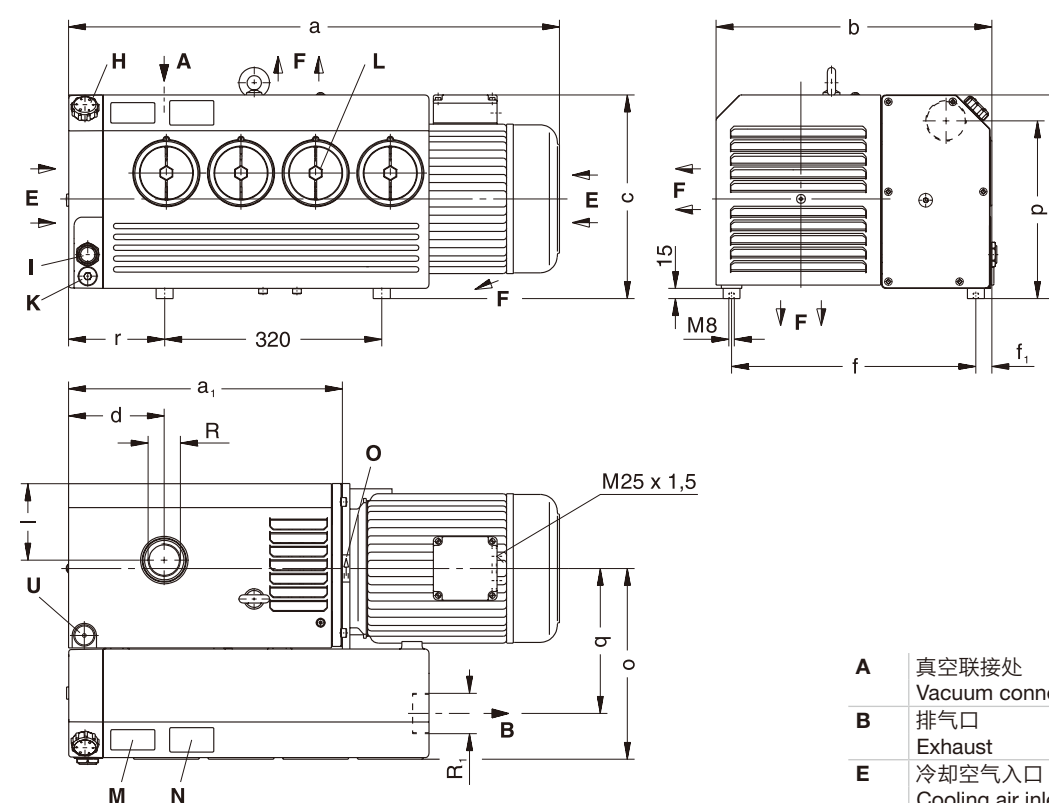
— 无气镇阀 • without gas ballast
 — 带气镇阀 • with gas ballast

VC			50	75	100	150
额定流量 Nominal capacity	m ³ /h	50 Hz	50	70	100	150
		60 Hz	60	84	120	180
极限真空 Ultimate partial pressure	mbar (abs.)		0,1			
电机类型 Motor version	3~	50 Hz	200 – 255 / 346 – 440 V ± 5 %			
		60 Hz	200 – 277 / 346 – 480 V ± 5 %			
电机功率 Motor rating	kW	50 Hz	1,25	1,85	2,2	3,0
		60 Hz	1,5	2,2	2,6	3,6
电流 Current drawn	A	50 Hz	8,8 / 5,1	9,6 / 5,6	8,3 / 4,8	11,4 / 6,6
		60 Hz	7,4 / 4,3	9,5 / 5,5	10,0 / 5,8	13,7 / 7,9
转速 Speed	min ⁻¹	50 Hz	1450			
		60 Hz	1740			
平均噪音 Average noise level	dB(A)	50 Hz	64	64	66	68
	→ DIN 45635	60 Hz	67	68	69	71
最大重量 Maximum weight	kg	50 Hz	57	59	88	89
		60 Hz	57	59	90	98
油量 Oil capacity	l		3,0	3,0	3,0	3,5

附件 • Accessories

VC			50	75	100	150
真空密封灰尘分离器 Vacuum tight dust separator	ZFP		145 (06)	145 (06)	216 (06)	216 (06)
真空密封进气口过滤器 Vacuum tight suction filter	ZVF		32 (53)	32 (53)	32 (54)	40 (53)
电机启动器 Motor starter	ZMS	50 Hz	100 / 63	100 / 63	100 / 63	160 / 100
		60 Hz	100 / 63	100 / 63	100 / 63	160 / 100

尺寸 • Dimensions [mm]



- A 真空联接处
Vacuum connection
- B 排气口
Exhaust
- E 冷却空气入口
Cooling air inlet
- F 冷却空气出口
Cooling air outlet
- H 注油口
Oil filling point
- I 油位镜
Oil check
- K 排油口
Oil drain point
- L 油雾分离器
成份VC 50 / 75 -> 3
Oil separator element
VC 50 / 75 -> 3 elements
- M 油标牌
Oil type plate
- N 数据牌
Data plate
- O 旋转方向
Direction of rotation
- U 气镇阀
Gas ballast valve

VC		50	75	100	150
a	50 Hz	585,5	639,5	707	707
	60 Hz	585,5	639,5	724	724
a ₁		316,5	316,5	404	404
b		336	336	406	406
c	50 Hz	-	-	300	300
	60 Hz	-	-	300	315
c ₁		267	267	297	297
d		113,5	113,5	141	141
f		287,5	287,5	360	360
f ₁		23,5	23,5	24	24
l		90,5	90,5	112	112
o		236	236	281	281
p		242	242	259	259
q		166,5	166,5	214	214
r		104,5	104,5	142	142
R		G 1¼	G 1¼	G 1½	G 1½
R ₁		Rp 1¼	Rp 1¼	Rp 2	Rp 2

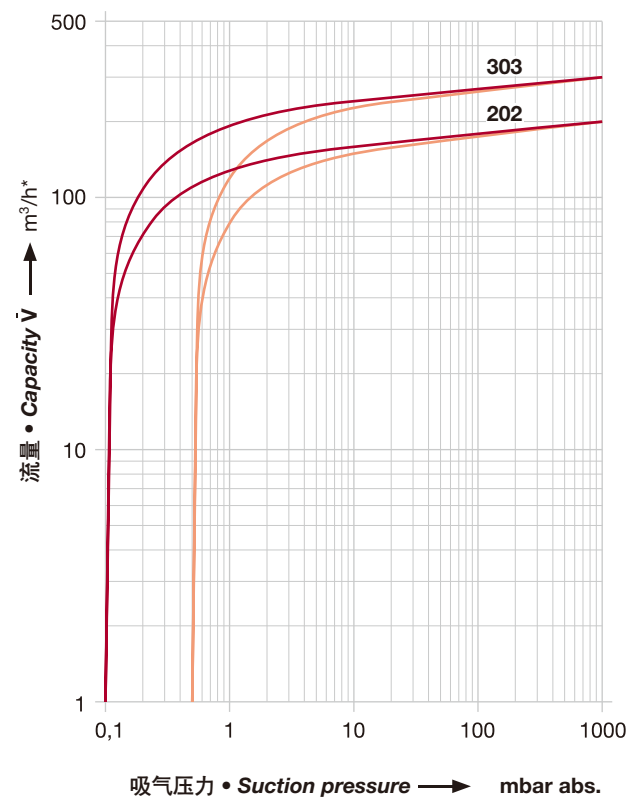
* refers to suction conditions at inlet connection. Curves, table content (tolerance ±10 %) according to PNEUROP standards and refer to vacuum pump at normal operating temperature. The dimensions a, p and ø w and/or the current drawn can differ. Water vapour tolerance, see leaflet I 200.



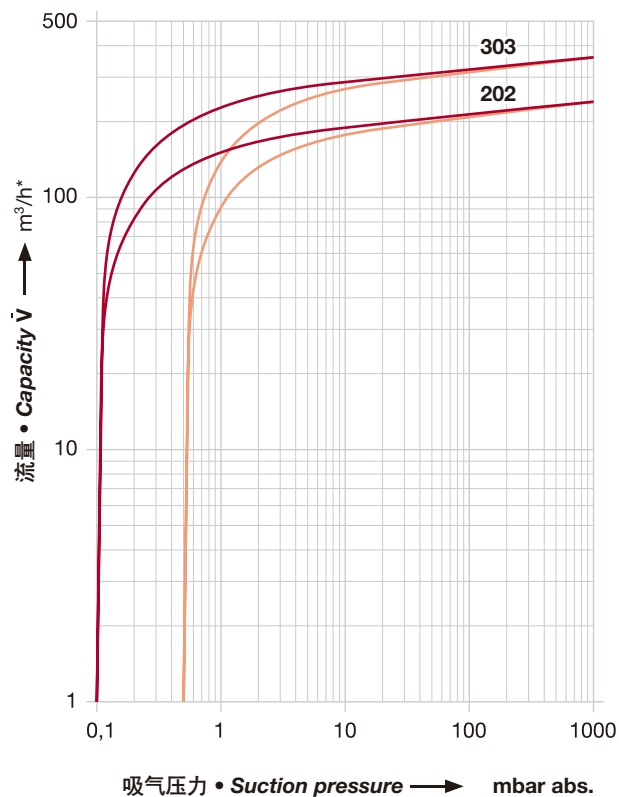
油润滑旋片式真空泵。流量从200至360 m³/hr, 极限真空0.1mbar (绝对值)。法兰式电机, 转子两侧装有轴承, 叶片采用铝合金材质, 寿命特长, 吸气口内置网状过滤去和止回阀, 压缩腔内采用O型密封圈。
法兰式电机符合 DIN EN 60034 标准, 保护标准 IP 54, 绝缘等级F。

Oil flooded rotary vane vacuum pump with capacities ranging from 200 to 360 m³/h and an ultimate vacuum of 0.1 mbar (abs.). Flange motor, bearings on both sides of the rotor, oil/air heat exchanger. Fitted as standard with fine mesh filter, vacuum non-return valve, gas ballast valve, protection cover and oil separator. Versions for handling of gases with raised oxygen-share as well as versions with high water vapour tolerance for vacuum drying are available.

50 Hz 选型图 • Selection diagram



60 Hz 选型图 • Selection diagram



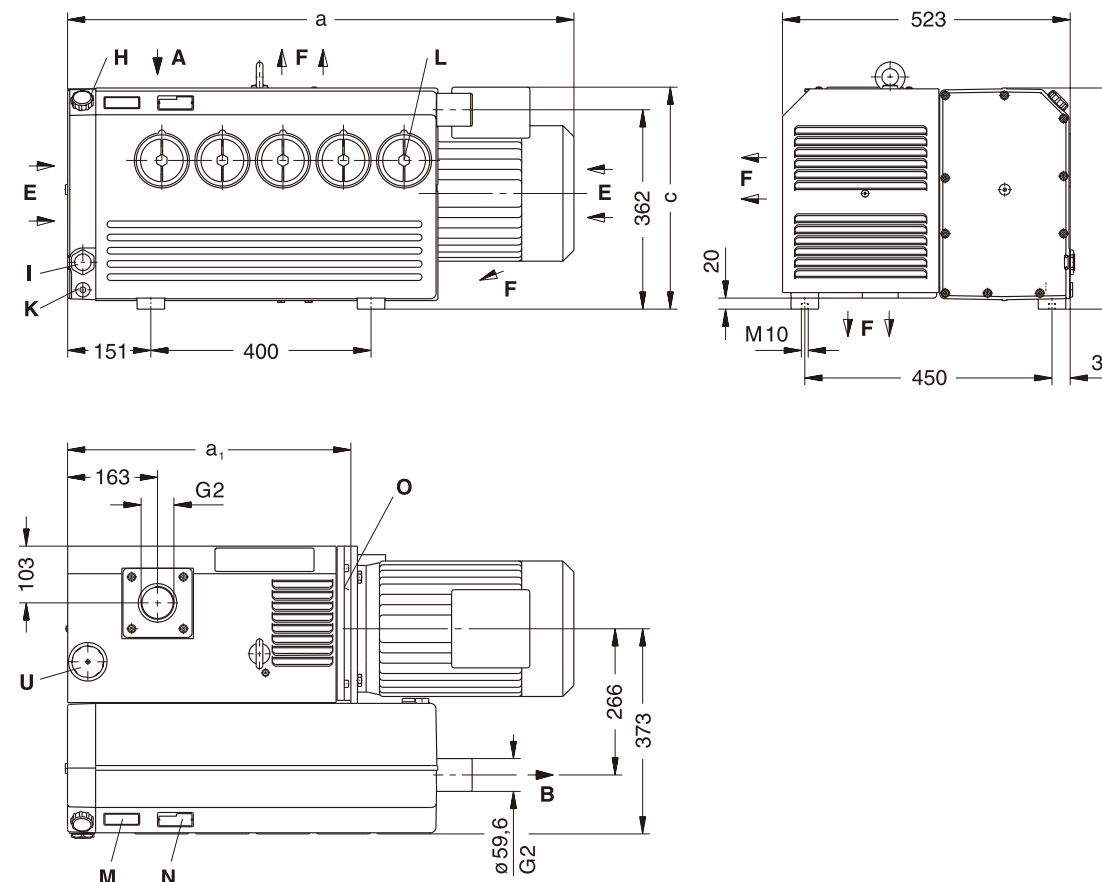
— 无气镇阀 • without gas ballast
— 带气镇阀 • with gas ballast

VC			202	303
额定流量 Nominal capacity	m ³ /h	50 Hz	200	300
		60 Hz	240	360
极限真空 Ultimate partial pressure	mbar (abs.)		0,1	
电机类型 Motor version	3~	50 Hz	400 / 690 V ± 10 %	
		60 Hz	380 / 660 V	
电机功率 Motor rating	kW	50 Hz	5,5	7,5
		60 Hz	7,5	9,0
电流 Current drawn	A	50 Hz	13,0 / 7,5	15,0 / 8,7
		60 Hz	20,0 / 11,5	19,0 / 11,0
转速 Speed	min ⁻¹	50 Hz	1450	
		60 Hz	1740	
平均噪音 Average noise level	dB(A) → DIN 45635	50 Hz	69	70
		60 Hz	73	74
最大重量 Maximum weight	kg	50 Hz	174	187
		60 Hz	191	192
油量 Oil capacity	l		8	8

附件 • Accessories

VC			200	300
逆止阀 Non-return valve	ZRK		50 (03)	50 (03)
真空密封灰尘分离器 Vacuum tight dust separator	ZFP		216 (01)	216 (51)
真空密封进气口过滤器 Vacuum tight suction filter	ZVF		50 (53)	50 (53)
电机启动器 Motor starter	ZMS	50 Hz	160 / 100	160 / 100
		60 Hz	160 / 100	160 / 100
软启动器 Soft starter	ZAD		尺寸根据需要 Sizes on request	

尺寸 • Dimensions [mm]



VC		202	303
a	50 Hz	835	920
a ₁	60 Hz	920	920
a ₁	50 Hz	505	515
	60 Hz	515	515
c	50 Hz	378	403
	60 Hz	407	407

A	真空联接处 Vacuum connection	K	排油口 Oil drain point
B	排气口 Exhaust	L	油雾分离器 Oil separator element
E	冷却空气入口 Cooling air inlet	M	油标牌 Oil type plate
F	冷却空气出口 Cooling air outlet	N	数据牌 Data plate
H	注油口 Oil filling point	O	旋转方向 Direction of rotation
I	油位镜 Oil check	U	气镇阀 Gas ballast valve

* 与进气口联接的吸气状态有关。工作曲线和数据表是按PNEUROP标准计算的, 其所示为真空泵在正常温度下运行。我们保留调整技术数据权利。尺寸a和电流值会因不同电机而与数据表不同。水气容纳, 见数据表 200。

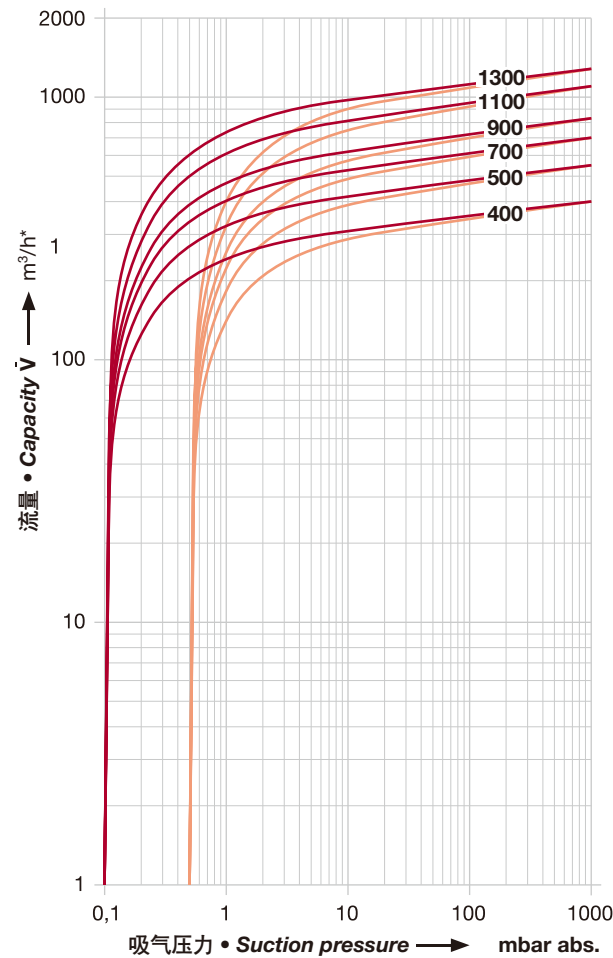
* refers to suction conditions at inlet connection. Curves, table content (tolerance ±10 %) according to PNEUROP standards and refer to vacuum pump at normal operating temperature. The dimensions a, p and ø w and/or the current drawn can differ. Water vapour tolerance, see leaflet I 200.



油润滑旋片式真空泵。流量从400至1535 m³/hr, 极限真空0.1 mbar (绝对值)。法兰式电机, 转子两侧装有轴承, 装有油/气热交换器。内置筛网过滤器, 真空逆止阀, 气镇阀, 保护罩和油分离器。法兰式电机符合 DIN EN 60034 标准, 保护标准 IP 54, 绝缘等级F。

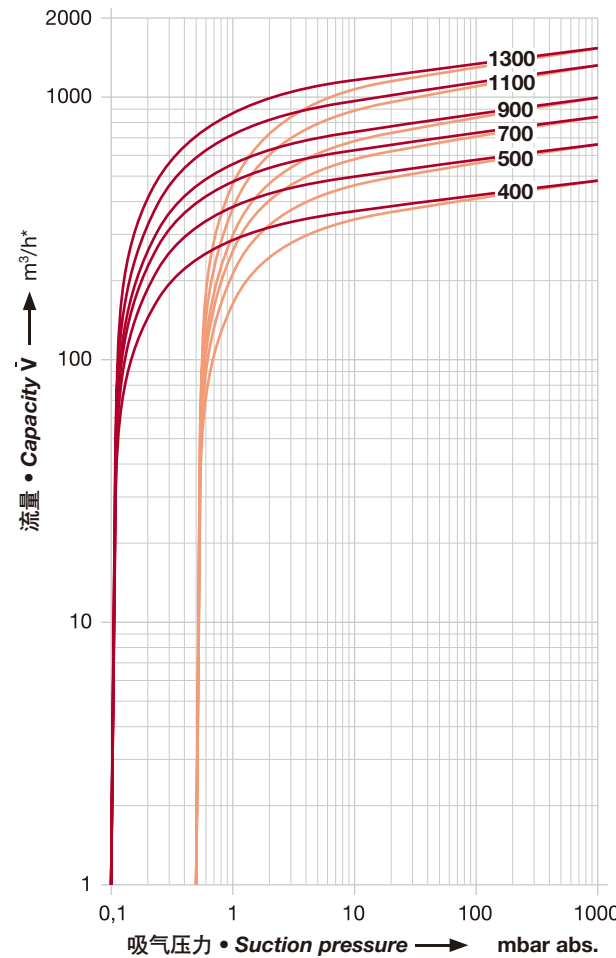
Oil flooded rotary vane vacuum pump with capacities ranging from 400 to 1,535 m³/h and an ultimate vacuum of 0.1 mbar (abs.). Flange motor, bearings on both sides of the rotor, oil/air heat exchanger. Fitted as standard with micro inlet filter or fine mesh filter, vacuum non-return valve, gas ballast valve, protection cover and oil separator. Version with water cooling available.

50 Hz 选型图 • Selection diagram



— 无气镇阀 • without gas ballast
— 带气镇阀 • with gas ballast

60 Hz 选型图 • Selection diagram

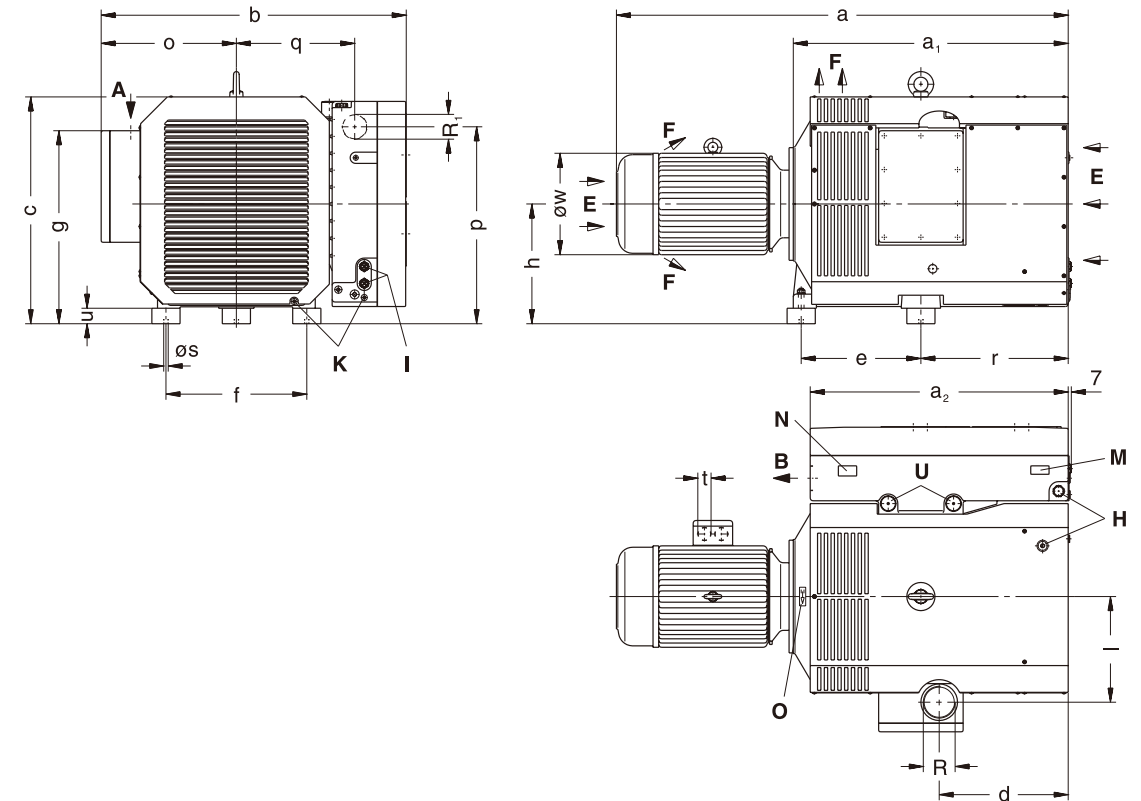


VC		400	500	700	900	1100	1300
额定流量 Nominal capacity	m ³ /h	50 Hz 400 60 Hz 480	550 660	700 840	830 995	1100 1320	1280 1535
极限真空 Ultimate partial pressure	mbar (abs.)	0,1					
电机类型 Motor version	3~	50 Hz 400 / 690 V ± 10 % 60 Hz 380 / 660 V					
电机功率 Motor rating	kW	50 Hz 9,0 60 Hz 11,0	11,0 15,0 13,0 18,0	15,0 18,5 18,0 22,0	18,5 22,0	22,0 30 • 26,0 36 •	30 36
电流 Current drawn	A	50 Hz 21 12 60 Hz 25,5 14,7	24 14 28 16,2	30 17,5 33 19,0	43 24,8 45 26,0	45/26 60/35 • 51/30 64/37 •	60/35 64/37
转速 Speed	min ⁻¹	50 Hz 950 60 Hz 1140					
平均噪音 Average noise level	dB(A) → DIN 45635	50 Hz 73 60 Hz 75	75 77	78 80	79 81	81 83 • 83 85 •	82 83 • 84 85 •
最大重量 Maximum weight	kg	485	579	605	710	960 1130 •	1050 1130 •
油量 Oil capacity	l	12	17,5	17,5	20	26	26

附件 • Accessories

VC	ZAD	尺寸根据需要 Sizes on request
软启动器 Soft starter		

尺寸 • Dimensions [mm]

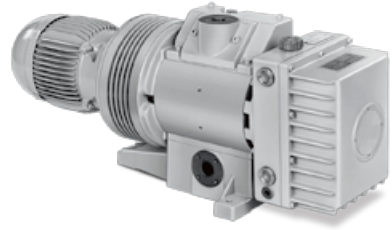


VC	400	500	700	900	1100	1300
a	1381	1517	1584	1604	1763 1900 •	1900
a ₁	864	1000	1006	976	1135 1165 •	1165
a ₂	787	926	926	916	1074 2034 •	1074 2034 •
b	931	986	986	1083	1122	1122
c	606	606	765	805	805 915 •	805 915 •
d	337	337	337	458	472	472
e e ₁	415	485	506	425	500 645 •	500 645 •
f f ₁	380	380	500	500	500 780 •	500 780 •
g	539	540	635	685	685 795 •	685 795 •
h	330	330	425	425	425 535 •	425 535 •
i	310	310	310	375	375	375
o	410	410	410	480	480	480
p	514	514	609	699	699 809 •	699 809 •
q	372	417	417	420	441	441
r r ₁	405	472	472	523	602 487 •	602 487 •
ø s	M 12	M 12	M 16	M 16	M 16	M 16
t	M 40 x 1,5	M 40 x 1,5	M 40 x 1,5	M 50 x 1,5	M 50 x 1,5	M 50 x 1,5
u	40	40	55	55	55	55
ø w	312	312	360	360	360	431
R	G 3	G 3	G 3	G 4	G 4	G 4
R ₁	Rp 3	Rp 3	Rp 3	Rp 3	Rp 3	Rp 3

- A 真空联接处
Vacuum connection
- B 排气口
Exhaust
- E 冷却空气入口
Cooling air inlet
- F 冷却空气出口
Cooling air outlet
- H 注油口
Oil filling point
- I 油位镜
Oil check
- K 排油口
Oil drain point
- M 油标牌
Oil type plate
- N 数据牌
Data plate
- O 旋转方向
Direction of rotation
- U 气镇阀
Gas ballast valve

* 与进气口联接的吸气状态有关。工作曲线和数据表是按PNEUROP标准计算的。其所示为真空泵在正常温度下运行。我们保留调整技术数据的权利。尺寸因不同电机而与数据表不同。水气容纳, 见数据I 200。
根据需要 • 类型: 粗真空

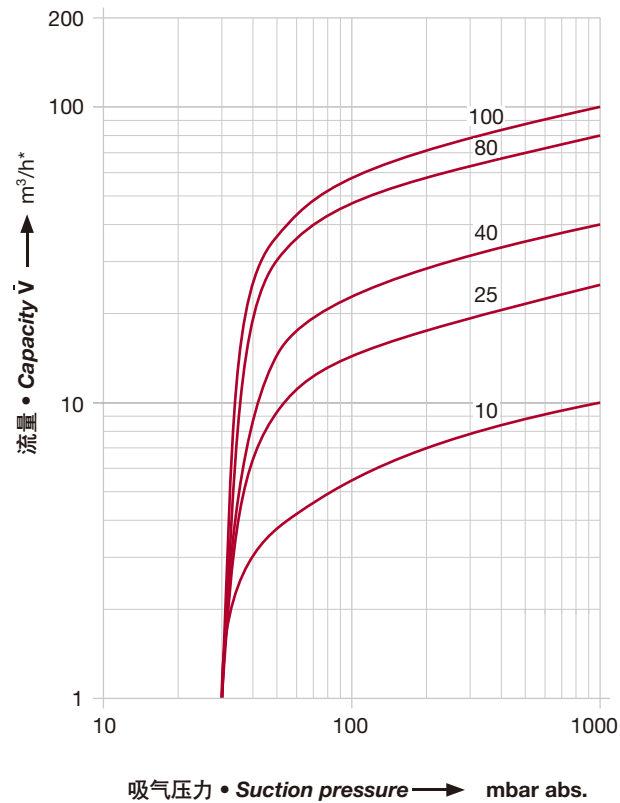
* refers to suction conditions at inlet connection. Curves, table content (tolerance ±10 %) according to PNEUROP standards and refer to vacuum pump at normal operating temperature. The dimensions can differ.
Water vapour tolerance, see leaflet I 200 (on request).
on request • Versions for coarse vacuum



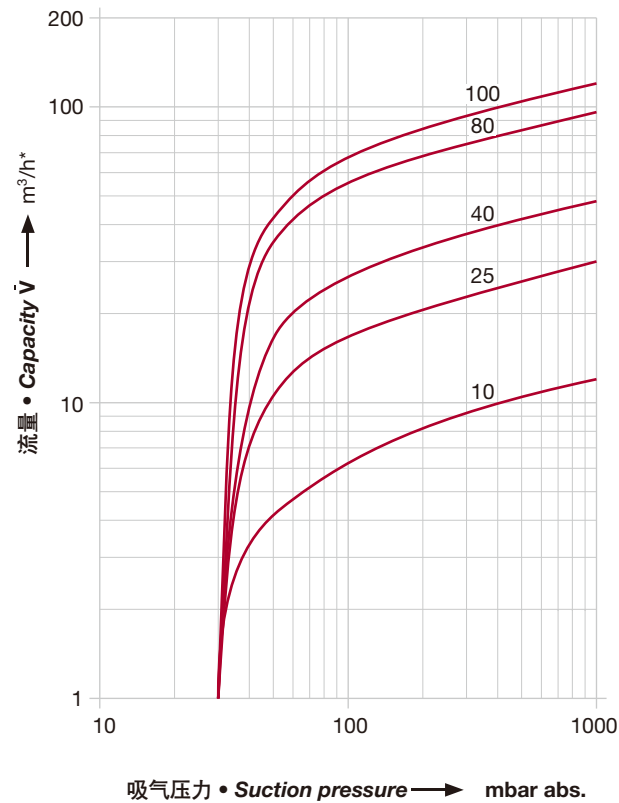
一次性油润滑旋片式真空泵。流量从10至120 m³/hr，极限真空30 mbar（绝对值）。转子两侧装有轴承，传动轴密封，防止腐蚀性蒸汽对轴承的腐蚀。风冷式，低温水平。法兰式电机符合 DIN EN 60034 标准，保护标准 IP 54，绝缘等级F。

Fresh oil lubricated rotary vane vacuum pump with capacities ranging from 10 to 120 m³/h and an ultimate vacuum of 30 mbar (abs.). Bearings on both sides of the rotor. Shaft sealing for bearing protection from corrosive vapours, air cooling, low temperature level. Flange mounted motors comply with DIN EN 60034, have IP 55 protection and insulation class F.

50 Hz 选型图 • Selection diagram



60 Hz 选型图 • Selection diagram

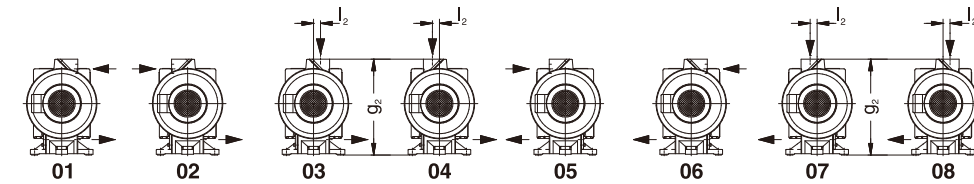
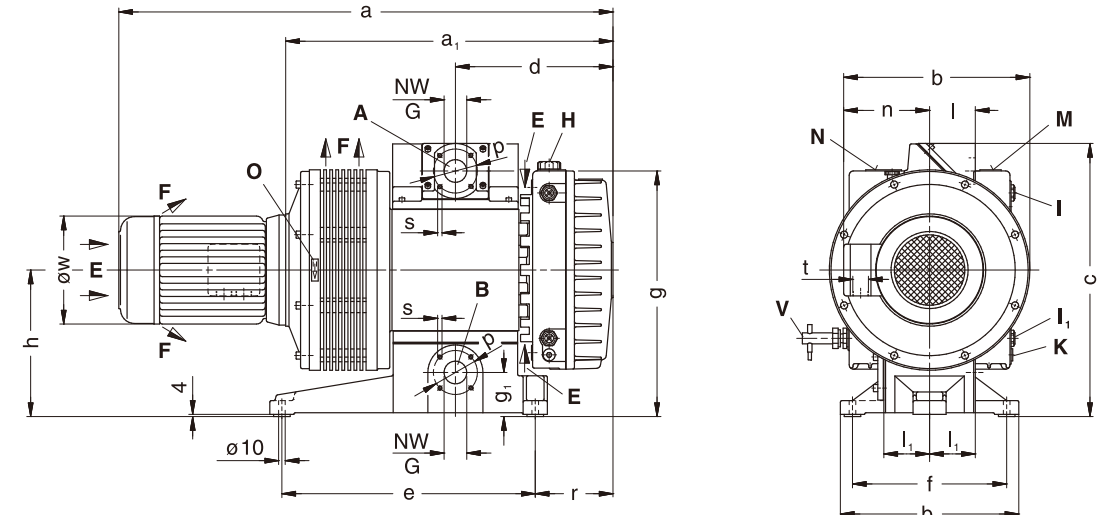


VL			10	25	40	80	100
流量 Capacity	m³/h	50 Hz	10	25	40	80	100
		60 Hz	12	30	48	96	120
极限真空 Ultimate vacuum	mbar (abs.)		30				
电机类型 Motor version	3~	50 Hz	230 / 400 V ± 10 %				
		60 Hz	220 / 380 V				
电机功率 Motor rating	kW	50 Hz	0,37	0,75	1,1	2,2	3,0
		60 Hz	0,45	0,90	1,3	2,6	3,6
电流 Current drawn	A	50 Hz	1,73 / 1,0	3,46 / 2,0	4,7 / 2,7	8,3 / 4,8	11,4 / 6,6
		60 Hz	#	#	#	#	#
转速 Speed	min ⁻¹	50 Hz	1450				
		60 Hz	1740				
平均噪音 Average noise level	dB(A)	50 Hz	73	73	73	73	75
		60 Hz	76	76	76	76	76
最大重量 Maximum weight	kg		42	55	70	120	130
新油量 (最小/最大) Fresh Oil capacity min./max.	l (min./max.)		1/5				1,5/9
新油量消耗量 Fresh oil consumption	l/h	50 Hz		0,034			0,069
		60 Hz		0,041			0,083

附件 • Accessories

液体分离器	Liquid separator	真空密封灰尘分离器	Vacuum tight dust separator
逆止阀	Non-return valve	2/2电磁阀	2/2-way solenoid valve
星角启动器	Star-Delta starter	锁式法兰	Clamped flange
真空开关	Vacuum switch	小型法兰接头	Small flange fittings
真空表	Vacuum gauge	油雾分离器	Oil mist separator

尺寸 • Dimensions [mm]

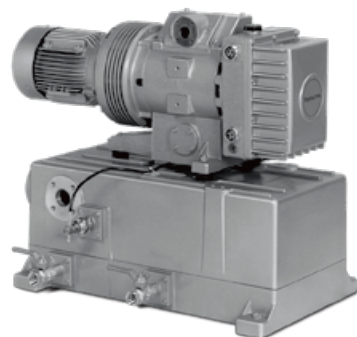


- 01-08 联接位置
Connection positions
- 01 标准型
Standard version
- A 真空联接处
Vacuum connection
- B 排气口
Exhaust
- E 冷却空气入口
Cooling air inlet
- F 冷却空气出口
Cooling air outlet
- H 注油口
Oil filling point
- l/l₁ 油位镜 (最高/最低)
Oil check max./min.
- K 排油口
Oil drain point
- M 油标牌
Oil type plate
- N 数据牌
Data plate
- O 旋转方向
Direction of rotation
- V 新油位开关
Level control fresh oil
- V.F. 真空法兰 DIN 28404
Vacuum flange DIN 28404
- G.F. 螺纹法兰
Threaded flange

VL		10	25	40	80	100
a		596	695	776	846	896
a ₁		395	463	532	543	593
b / b ₁		221 / 224	240 / 240	259 / 240	336 / 324	336 / 324
c		332	338	330	495	495
d		232	252	286	260	285
e		200	250	300	410	460
f		180	200	200	280	280
g		290	300	294	442	442
g ₁ / g ₂		82 / 338	82 / 338	64 / 336	80 / 498	80 / 498
h		184	184	184	264	264
l		68	68	68	83	83
l ₁ / l ₂		61 / 22	68 / 32	68 / 32	83 / 30	83 / 30
n		112	120	139	154	154
r		196	196	215	140	140
t		M 20 x 1,5	M 20 x 1,5	M 25 x 1,5	M 32 x 1,5	M 32 x 1,5
ø w		143	158	176	196	196
V.F. p		55	55	55	80	80
V.F. ø s		M 6	M 6	M 6	M 8	M 8
V.F. NW		25	25	25	40	40
G.F. G		G 1/2	G 3/4	G 1	G 1 1/4	G 1 1/2

* 与进气口联接的吸气状态有关。工作曲线和数据表所示为真空泵在正常温度下运行。我们保留调整技术数据权利。尺寸a和ø w或和电流值会因不同电机而与数据表不同。
根据需要

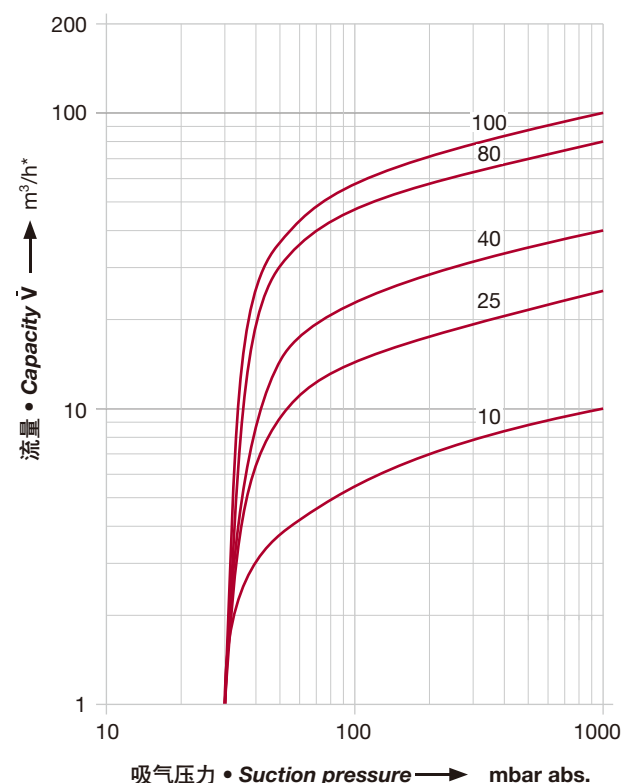
* refers to suction conditions at inlet connection. Curves, table content (tolerance ±10 %) refer to vacuum pump at normal operating temperature.
The dimensions a and ø w and/or the current drawn can differ.
on request



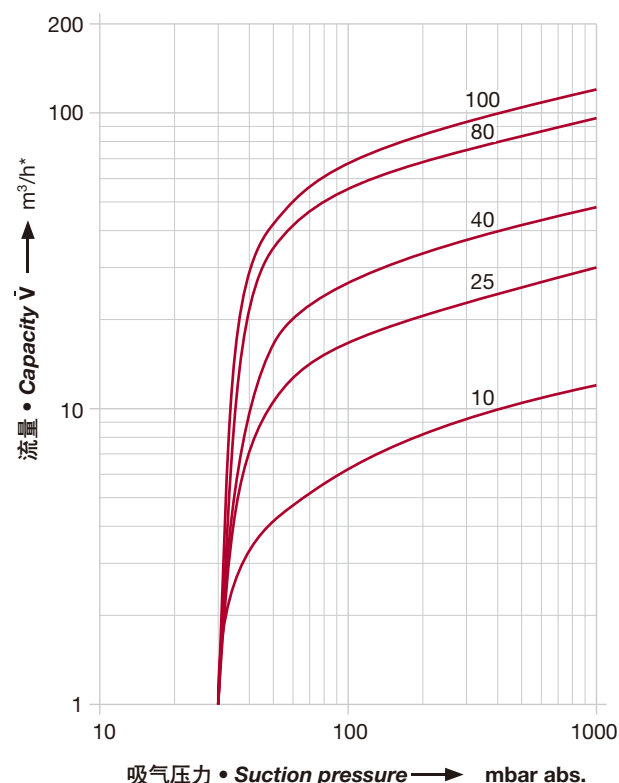
一次性油润滑旋片式真空泵。流量从10至120 m³/hr，极限真空30 mbar（绝对值）。配有废油和冷凝物收集箱。转子两侧装有轴承，传动轴密封，防止腐蚀性蒸汽对轴承的腐蚀。风冷式，低温水平。法兰式电机符合 DIN EN 60034 标准，保护标准 IP 54，绝缘等级F。

Fresh oil lubricated rotary vane vacuum pump with capacities ranging from 10 to 120 m³/h and an ultimate vacuum of 30 mbar (abs.). Fitted as standard with waste oil and condensate tank. Bearings on both sides of the rotor. Shaft sealing for bearing protection from corrosive vapours, air cooling, low temperature level. Flange mounted motors comply with DIN EN 60034, have IP 55 protection and insulation class F.

50 Hz 选型图 • Selection diagram



60 Hz 选型图 • Selection diagram

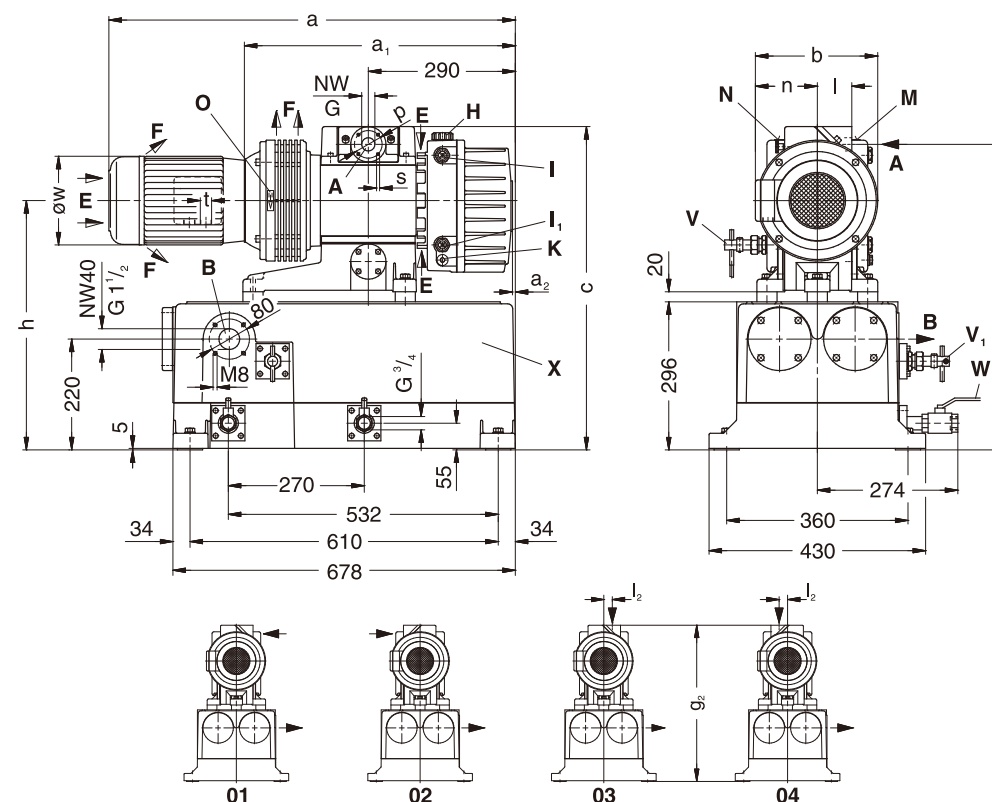


VLB		10	25	40	80	100
流量 Capacity	m³/h	10	25	40	80	100
极限真空 Ultimate vacuum	mbar (abs.)	12	30	48	96	120
电机类型 Motor version	3~	230 / 400 V ± 10 %				
电机功率 Motor rating	kW	220 / 380 V				
电流 Current drawn	A	0,37	0,75	1,1	2,2	3,0
转速 Speed	min ⁻¹	0,45	0,90	1,3	2,6	3,6
平均噪音 Average noise level	dB(A)	1,73 / 1,0	3,46 / 2,0	4,7 / 2,7	8,3 / 4,8	11,4 / 6,6
最大重量 Maximum weight	kg	#	#	#	#	#
新油量 (最小/最大) Fresh Oil capacity min./max.	l (min./max.)	1450			1740	
新油量消耗量 Fresh oil consumption	l/h	73	73	73	73	75
		76	76	76	76	76
		90	100	115	168	180
			1/5			1,5/9
			0,034			0,069
			0,041			0,083

附件 • Accessories

液体分离器	Liquid separator	真空密封灰尘分离器	Vacuum tight dust separator
逆止阀	Non-return valve	2/2电磁阀	2/2-way solenoid valve
星角启动器	Star-Delta starter	锁式法兰	Clamped flange
真空开关	Vacuum switch	小型法兰接头	Small flange fittings
真空表	Vacuum gauge		

尺寸 • Dimensions [mm]



- 01-04 联接位置
Connection positions
- 01 标准型
Standard version
- A 真空联接处
Vacuum connection
- B 排气口
Exhaust
- E 冷却空气入口
Cooling air inlet
- F 冷却空气出口
Cooling air outlet
- H 注油口
Oil filling point
- I/I₁ 油位镜 (最高/最低)
Oil check max./min.
- K 排油口
Oil drain point
- M 油标牌
Oil type plate
- N 数据牌
Data plate
- O 旋转方向
Direction of rotation
- V 新油位开关
Level control fresh oil
- V₁ 冷凝物位置开关
Level switch condensate
- W 冷凝物排放处
Condensate drain point
- X 废油收集箱 (17l)
Waste oil tank (17 l)
- V.F. 真空法兰 DIN 28404
Vacuum flange DIN 28404
- G.F. 螺纹法兰
Threaded flange

VLB	10	25	40	80	100
a	654	733	780	876	901
a ₁	453	501	536	573	598
a ₂	58	38	4	30	5
b	221	240	259	336	336
c	644	650	642	807	807
g / g ₂	602 / 650	612 / 650	606 / 648	754 / 810	754 / 810
h	496	496	496	576	576
l / l ₂	68 / 22	68 / 32	68 / 32	83 / 30	83 / 30
n	112	120	139	154	154
t	M 20 x 1,5	M 20 x 1,5	M 25 x 1,5	M 32 x 1,5	M 32 x 1,5
ø w	143	158	176	196	196
V.F. p	55	55	55	80	80
V.F. ø s	M 6	M 6	M 6	M 8	M 8
V.F. NW	25	25	25	40	40
G.F. G	G ½	G ¾	G 1	G 1 ¼	G 1 ½

* 与进气口联接的吸气状态有关。工作曲线和数据表所示为真空泵在正常温度下运行。我们保留调整技术数据的权利。尺寸a和ø w或和电流值会因不同电机而与数据表不同。
根据需要

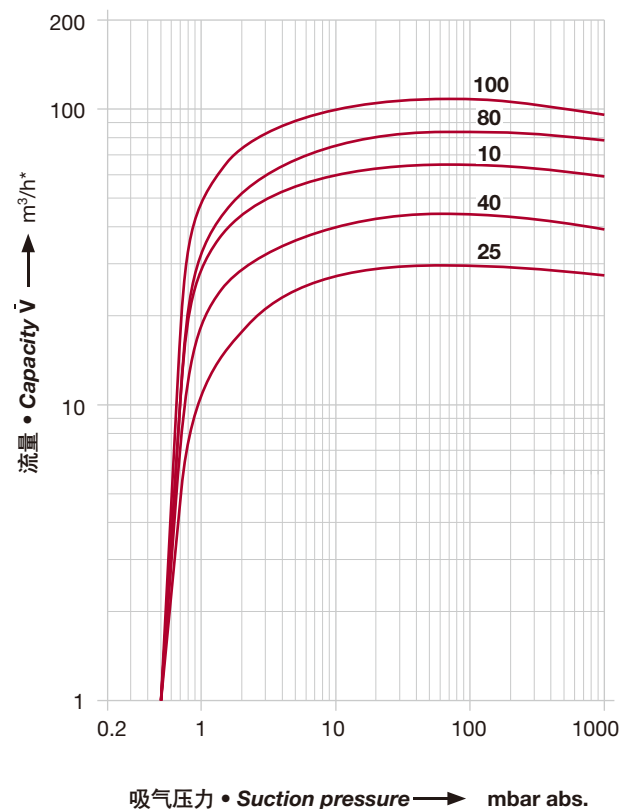
* refers to suction conditions at inlet connection. Curves, table content (tolerance ±10 %) refer to vacuum pump at normal operating temperature.
The dimensions a and ø w and/or the current drawn can differ.
on request



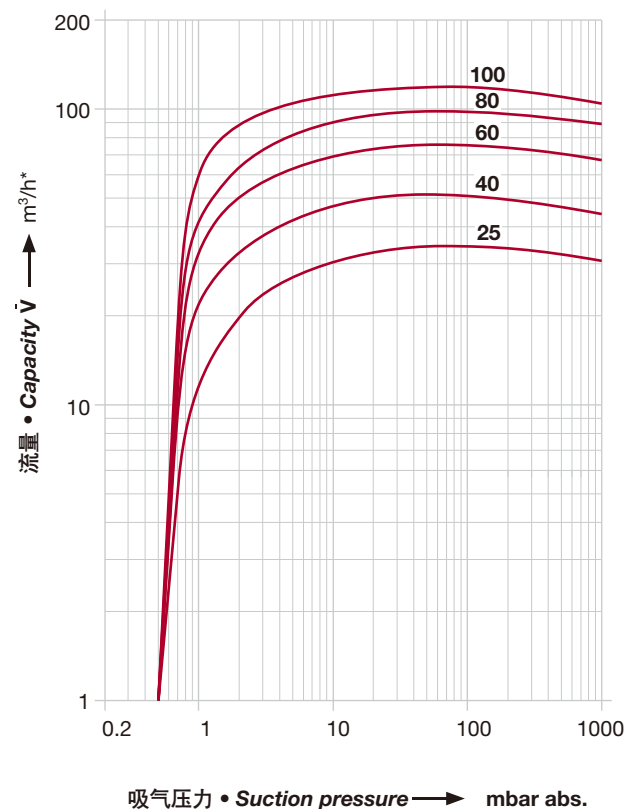
立式双级旋片式真空泵。流量从27至120 m³/hr, 极限真空0.5 mbar (绝对值)。新油润滑防止腐蚀性气体对泵内腔的腐蚀。可与罗茨真空泵组一起使用。法兰式电机符合 DIN EN 60034 标准, 保护标准 IP 54, 绝缘等级 F。

Two stage rotary vane vacuum pump in vertical design. Capacities ranging from 27 to 120 m³/h. Ultimate vacuum 0.5 mbar (abs.). The fresh oil lubrication protects the pump chamber from corrosive vapours. Can be used in combination with a rotary lobe vacuum pump. Flange mounted motors comply with DIN EN 60034, have IP 55 protection and insulation class F.

50 Hz 选型图 • Selection diagram



60 Hz 选型图 • Selection diagram

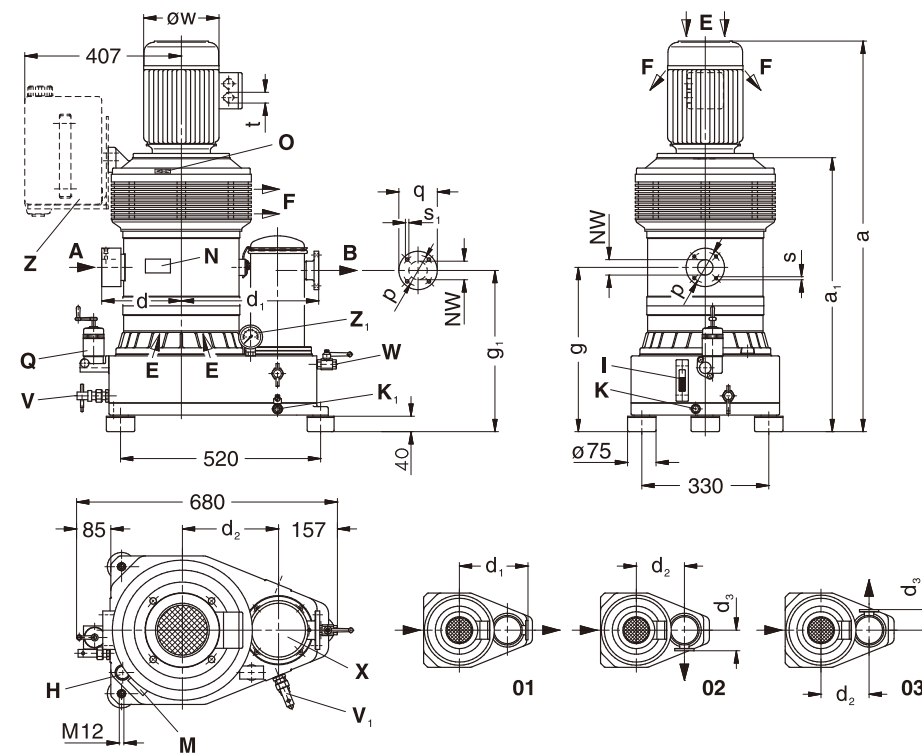


VLV-2			25	40	60	80	100
流量 Capacity	m³/h	50 Hz	27	40	60	80	100
		60 Hz	32	48	72	96	120
极限真空 Ultimate vacuum	mbar (abs.)		0,5				
电机类型 Motor version	3~	50 Hz	230 / 400 V ± 10 %				
		60 Hz	220 / 380 V				
电机功率 Motor rating	kW	50 Hz	1,5	1,5	2,2	3,0	3,0
		60 Hz	1,8	1,8	2,6	3,6	3,6
电流 Current drawn	A	50 Hz	6,1 / 3,5	6,1 / 3,5	8,3 / 4,8	11,4 / 6,6	11,4 / 6,6
		60 Hz	8,0 / 4,6	8,0 / 4,6	13,6 / 7,9	18,5 / 10,7	18,5 / 10,7
转速 Speed	min ⁻¹	50 Hz	1450				
		60 Hz	1740				
平均噪音 Average noise level	dB(A)	50 Hz	73	73	73	73	74
		60 Hz	76	76	76	76	77
最大重量 Maximum weight	kg		140	155	180	215	235
新油量 (最小/最大) Fresh Oil capacity min./max.	l (min./max.)		2 / 6				
新油量消耗量 Fresh oil consumption	l/h	50 Hz	0,065				
		60 Hz	0,078				

附件 • Accessories

预分离器 Preseparator	Preseparator	锁式法兰 Clamped flange	Clamped flange
冲洗系统 Flushing unit	Flushing unit	小型法兰接头 Small flange fittings	Small flange fittings
逆止阀 Non-return valve	Non-return valve	真空开关/真空表 Vacuum switch / Vacuum gauge	Vacuum switch / Vacuum gauge
放气阀 Bleeding valve	Bleeding valve	蝶阀 Butterfly valve	Butterfly valve
开关传动装置 Switch gear	Switch gear	冷凝器 Condenser	Condenser

尺寸 • Dimensions [mm]



01-03	联接位置 Connection positions
01	标准型 Standard version
A	真空联接处 Vacuum connection
B	排气口 Exhaust
E	冷却空气入口 Cooling air inlet
F	冷却空气出口 Cooling air outlet
H	注油口 Oil filling point
I	油位镜 Oil check
K	排油口 Oil drain point
K ₁	冷凝物排放处 Condensate drain point
M	油标牌 Oil type plate
N	数据牌 Data plate
O	旋转方向 Direction of rotation
Q	注油泵 Oil metering pump
V	新油位开关 Level switch fresh oil
V ₁	冷凝物位置开关 Level switch condensate
W	冷凝物排放点 Drain cock for condensate
X	油雾分离器 Oil mist separator
Z	冲洗系统 Flushing unit
Z ₁	压力表 Manometer

VLV-2	25	40	60	80	100
a	873	893	960	990	1020
a ₁	605	625	655	685	715
d	207	207	207	207	207
d ₁	357	357	357	357	357
d ₂	250	250	250	250	250
d ₃	107	107	107	107	107
g	375	385	400	415	430
g ₁	334	334	424	424	424
p	55	55	80	80	80
q	70	70	100	100	100
s	M6	M6	M8	M8	M8
s ₁	7	7	9	9	9
t	M 25 x 1,5	M 25 x 1,5	M 32 x 1,5	M 32 x 1,5	M 32 x 1,5
ø w	178	178	198	198	198
NW	25	25	40	40	40

* 与进气口联接的吸气状态有关。工作曲线和数据表是按PNEUROP标准计算的, 其所示为真空泵在正常温度下运行。我们保留调整技术数据的权利。尺寸a和ø w或/和电流值会因不同电机而与数据表不同。

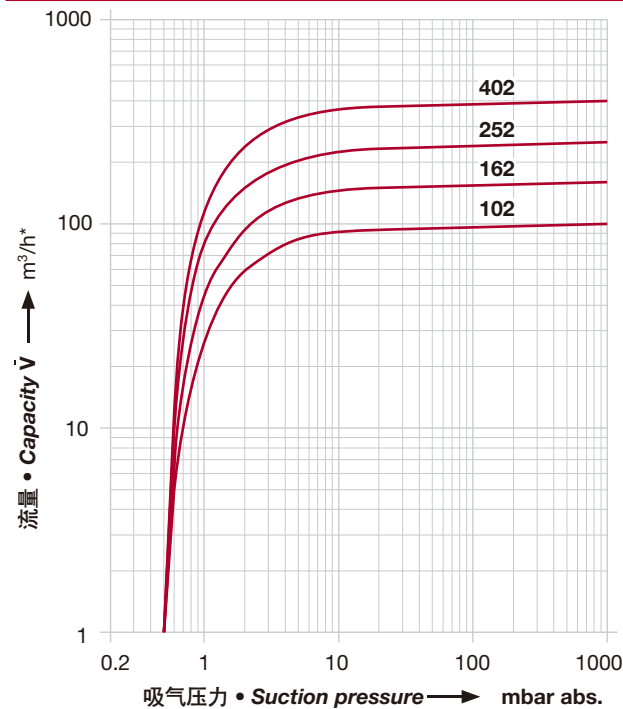
* refers to suction conditions at inlet connection. Curves, table content (tolerance ±10 %) according to PNEUROP standards and refer to vacuum pump at normal operating temperature. The dimensions a and ø w and/or the current drawn can differ.



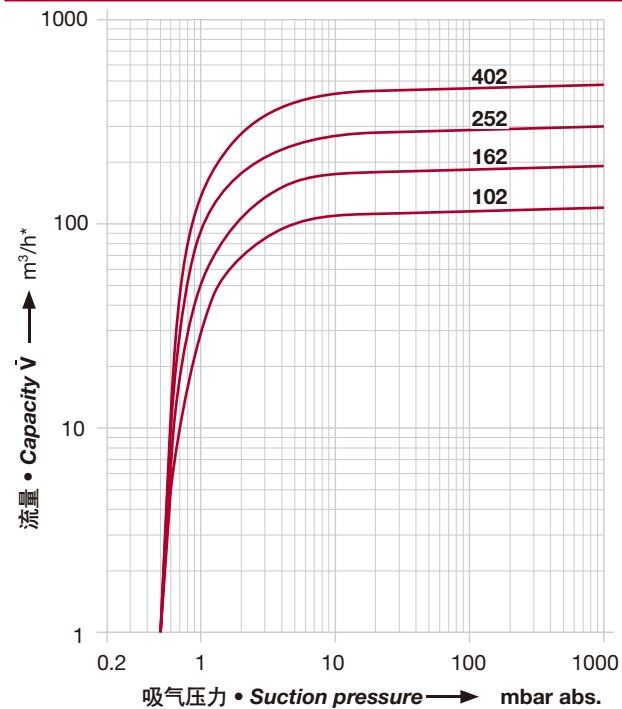
带有循环冷却系统VWZ (13)：双级旋片式真空泵，内部装有水冷却系统。流量从100至480 m³/hr，极限真空0.5 mbar（绝对值）。由于一次性油润滑，可以处理腐蚀性气体。组件式设计，易于更换泵段。安装有运行温度自动调节器和冷却水调节阀，多种附件供选择。法兰式电机符合 DIN EN 60034 标准，保护标准 IP 54，绝缘等级F。

V-VWZ (13) with circulation cooling: Two stage rotary vane vacuum pump with internal water cooling. Capacities ranging from 100 to 480 m³/h, ultimate vacuum 0.5 mbar (abs.). Due to fresh oil lubrication suitable for handling aggressive gases. Easy stage exchange due to modular design. Operating temperature thermostat and integrated cooling water regulation valve. Large range of accessories. Flange mounted motors comply with DIN EN 60034, have IP 55 protection and insulation class F.

50 Hz 选型图 • Selection diagram



60 Hz 选型图 • Selection diagram

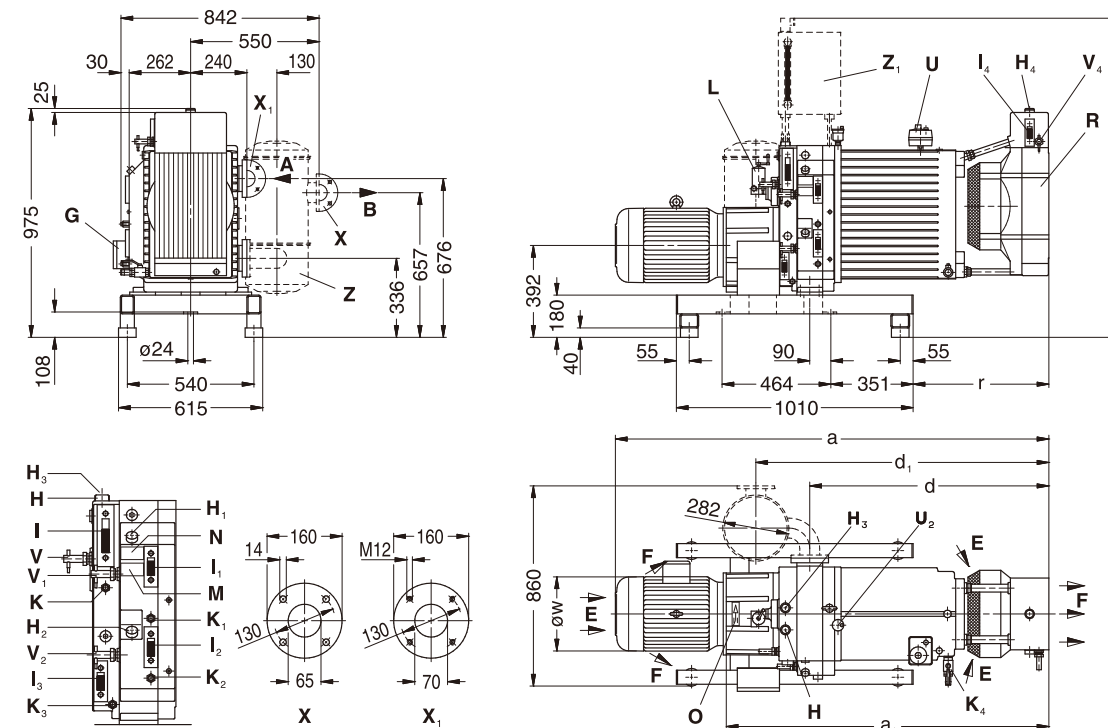


VWZ (13)		102	162	252	402
流量 Capacity	m³/h	50 Hz 100	160	250	400
		60 Hz 120	192	300	480
极限真空 Ultimate vacuum	mbar (abs.)	0,5			
电机类型 Motor version	3~	50 Hz 230 / 400 V ±10 %	400 / 690 V ± 10 %		
		60 Hz 220 / 380 V	380 / 660 V		
电机功率 Motor rating	kW	50 Hz 4,0	5,5	7,5	11,0
		60 Hz 4,8	6,6	9,0	13,2
电流 Current drawn	A	50 Hz 15,2 / 8,8	11,5 / 6,6	15,5 / 8,9	21 / 12
		60 Hz #	#	#	#
转速 Speed	min ⁻¹	50 Hz 1450	1740		
		60 Hz 1740			
平均噪音 Average noise level	dB(A) →DIN 45635	50 Hz 70,5	72	73	74
		60 Hz 71,5	73	74	75
最大重量 Maximum weight	kg	460	475	495	550
新油量 (最小/最大) Fresh oil capacity min./max.	l (H)	2 / 6			
新油量消耗量 Fresh oil consumption	l/h (H)	0,130 / 0,156		0,162 / 0,194	
低压段油量 Oil capacity LP-stage	l (H ₁)	1,6 / 1,8 / 2,8			
高压段油量 Oil capacity HP-stage	l (H ₂)	1,6 / 1,8 / 2,8			
齿轮箱油量 Oil capacity gear	l (H ₃)	1,6 / 1,8 / 2,8			
冷却水量 (50%防冻液) Cooling water capacity (50 % glysantin)	l	56	52	74	68

附件 • Accessories

液体分离器	Liquid separator	真空密封灰尘分离器	Vacuum tight dust separator
逆止阀	Non-return valve	2/2电磁阀	2/2-way solenoid valve
星角启动器	Star-Delta starter	油雾分离器	Oil mist separator
真空开关/真空表	Vacuum switch / Vacuum gauge	冲洗系统	Flushing unit

尺寸 • Dimensions [mm]

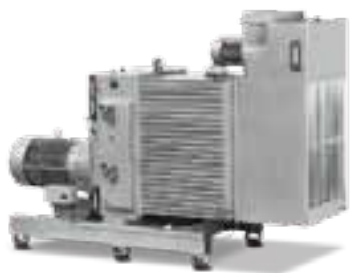


A 真空联接处 Vacuum connection	I₂ 高压段轴承油位镜 Oil check bearing HP-stage	U 安全和运行温度自动感应器 Safety and operating temperature thermostat
B 排气口 Exhaust	I₃ 传动箱油位镜 Oil check gear box	U₂ 冷却水通风口 Cooling water vent
E 冷却空气入口 Cooling air inlet	I₄ 冷却水位镜 Cooling water check	V 新油位开关 Level control fresh oil
F 冷却空气出口 Cooling air outlet	K 新油排出口 Fresh oil drain point	X, X₁ 法兰DN65 DIN2501 PN6 Flange DN65 DIN2501 PN6
G 接线盒 Terminal box	K₁ 低压段轴承油排放口 Oil drain bearing LP-stage	附件 • Accessories
H 新油注油口 Fresh oil filling point	K₂ 高压段轴承油排放口 Oil drain bearing HP-stage	V₁ 低压段轴承油位开关 Level control bearing LP-stage
H₁ 低压段轴承注油口 Oil filler bearing LP-stage	K₃ 传动箱油排放口 Oil drain gear	V₂ 高压段轴承油位开关 Level control bearing HP-stage
H₂ 高压段轴承注油口 Oil filler bearing HP-stage	K₄ 冷却水排放口 Cooling water drain	V₄ 冷却水位开关 Level control cooling water
H₃ 齿轮箱注油口 Oil filler gear box	L 定量注油泵 Oil metering pump	Z 油雾分离器 Oil mist separator
H₄ 冷却水入口 和安全阀 Cooling water filler and safety valve	M 油标牌 Oil type plate	Z₁ 冲洗系统 Flushing unit
I 新油油位镜 Oil check fresh oil	N 数据牌 Data plate	
I₁ 低压段轴承油位镜 Oil check bearing LP-stage	O 旋转方向 Direction of rotation	
	R 水冷却器 Water cooler	

VWZ (13)	102	162	252	402
a / a ₁	1485 / 1165	1570 / 1165	1781 / 1376	1893 / 1376
d / d ₁	860 / 1090	860 / 1090	1020 / 1250	1020 / 1250
r / øw	419 / 220	419 / 246	579 / 246	579 / 312

* 与进气口联接的吸气状态有关。工作曲线和数据表是按PNEURO标准计算的，其所示为真空泵在正常温度下运行。我们保留调整技术数据的权利。尺寸a和øw和/或电流值会因不同电机而与数据表不同。

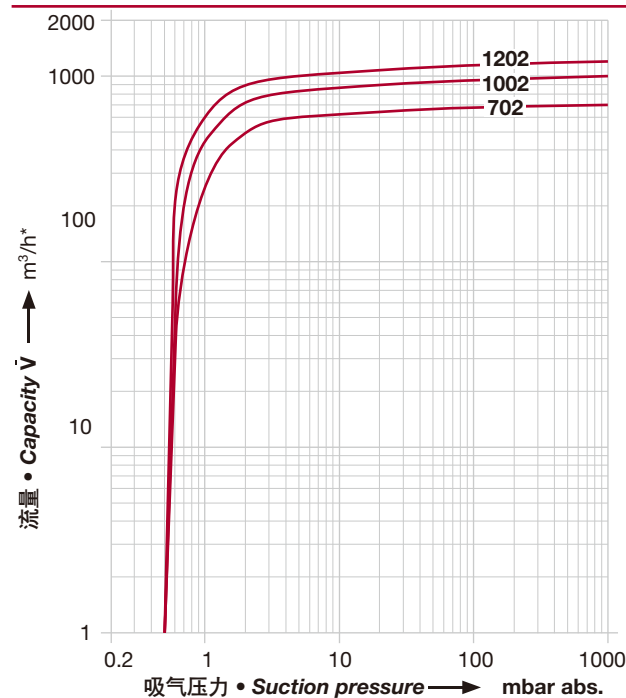
* refers to suction conditions at inlet connection. Curves, table content (tolerance ±10 %) according to PNEURO standards and refer to vacuum pump at normal operating temperature. The dimensions a and øw and/or the current drawn can differ.



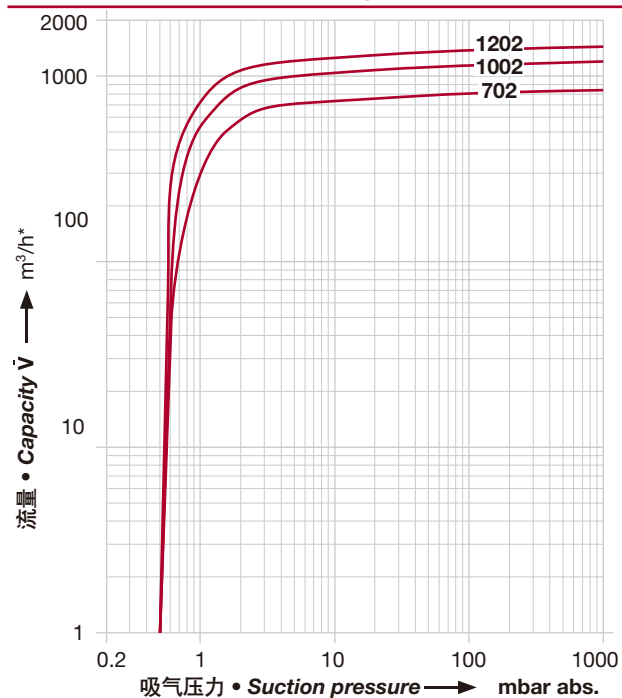
带有循环冷却系统，内部装有水冷却系统
VWZ (13)：双级旋片式真空泵，内部装
有水冷却系统。流量从700至1440m³/hr，
极限真空0.5mbar（绝对值）。由于一次性
油润滑，可以处理腐蚀性气体。组件式设计，
易于更换泵段。安装有运行温度自动调节器
和冷却水调节阀，多种附件供选择。
法兰式电机符合 DIN EN 60034 标准，保护
标准 IP 54，绝缘等级F。

V-VWZ (13) with circulation cooling: Two stage
rotary vane vacuum pump with internal water
cooling. Capacities ranging from 700 to
1,440 m³/h, ultimate vacuum 0.5 mbar (abs.).
With its fresh oil lubrication it is suitable for
handling aggressive gases. Easy stage ex-
change due to modular design. Operating
temperature thermostat and integrated cooling
water regulation valve. Large range of
accessories.
Flange mounted motors comply with
DIN EN 60034, have IP 55 protection and
insulation class F.

50 Hz 选型图 • Selection diagram



60 Hz 选型图 • Selection diagram

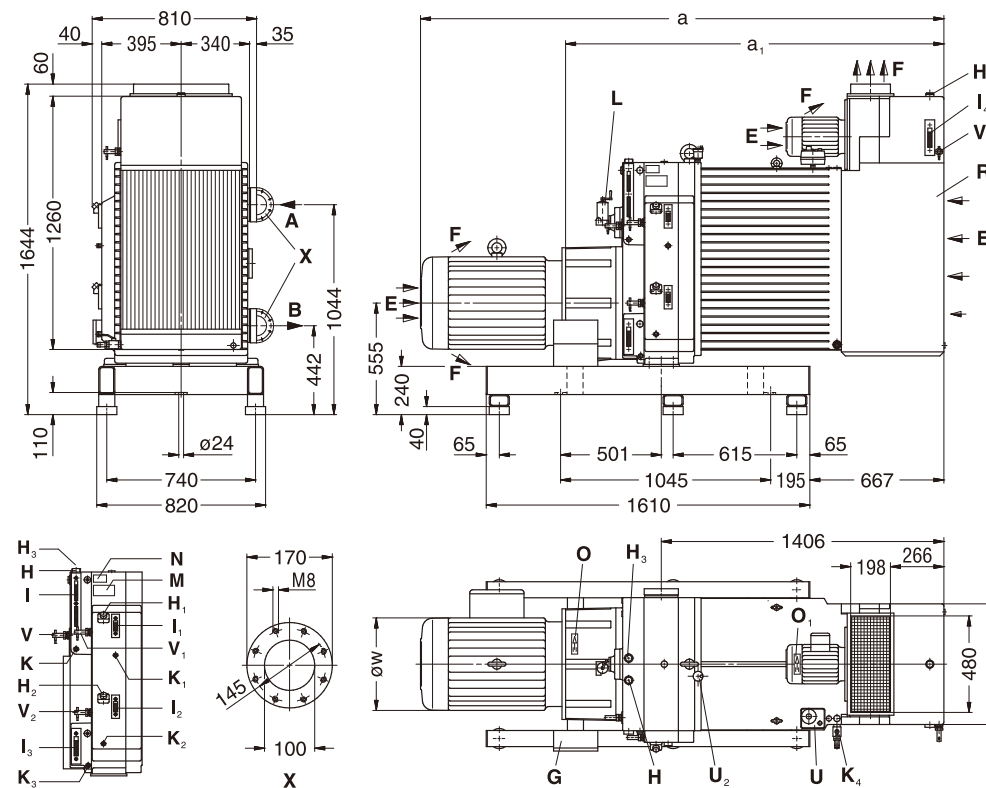


VWZ (13)		702	1002	1202
流量 Capacity	m ³ /h	50 Hz 700	1000	1200
极限真空 Ultimate vacuum	mbar (abs.)	60 Hz 840	1200	1440
电机类型 Motor version	3~	400 / 690 V ± 10 %		
电机功率 Motor rating	kW	50 Hz 18,5	22,0	22,0
电流 Current drawn	A	60 Hz 22,2	26,4	26,4
转速 Speed	min ⁻¹	50 Hz 36 / 20,8	43 / 24,8	43 / 24,8
平均噪音 Average noise level	dB(A) →DIN 45635	60 Hz #	#	#
最大重量 Maximum weight	kg	#	#	#
新油量 (最小/最大) Fresh oil capacity min./max.	l (H)	950	1140	950
新油量消耗量 Fresh oil consumption	l/h (H)	80	81	83
低压段油量 Oil capacity LP-stage	l (H ₁)	81	82	84
高压段油量 Oil capacity HP-stage	l (H ₂)	1750	1810	2379
齿轮箱油量 Oil capacity gear	l (H ₃)	2379	2500	2610
冷却水量 (50%防冻液) Cooling water capacity (50 % glysantin)	l	2610	2650	

附件 • Accessories

液体分离器 Liquid separator	真空密封灰尘分离器 Vacuum tight dust separator
逆止阀 Non-return valve	2/2电磁阀 2/2-way solenoid valve
星角启动器 Star-Delta starter	油雾分离器 Oil mist separator
真空开关/真空表 Vacuum switch / Vacuum gauge	冲洗系统 Flushing unit

尺寸 • Dimensions [mm]



A 真空联接处 Vacuum connection	I₁ 低压段轴承油位镜 Oil check bearing LP-stage	O, O₁ 旋转方向 Direction of rotation
B 排气口 Exhaust	I₂ 高压段轴承油位镜 Oil check bearing HP-stage	R 水冷却器 Water cooler
E 冷却空气入口 Cooling air inlet	I₃ 传动箱油位镜 Oil check gear box	U 安全和运行温度自动 感应器 Safety and operating temperature thermostat
F 冷却空气出口 Cooling air outlet	I₄ 冷却水位镜 Cooling water check	U₂ 冷却水通风口 Cooling water vent
G 接线盒 Terminal box	K 新油排油口 Fresh oil drain point	V 新油位开关 Level control fresh oil
H 新油注油口 Fresh oil filling point	K₁ 低压段轴承排放口 Oil drain bearing LP-stage	X 法兰 DN 100 DIN28404 Flange DN 100 DIN 28404
H₁ 低压段轴承注油口 Oil filler bearing LP-stage	K₂ 高压段轴承排放口 Oil drain bearing HP-stage	附件 • Accessories
H₂ 高压段轴承注油口 Oil filler bearing HP-stage	K₃ 传动箱排放口 Oil drain gear	V₁ 低压段轴承油位开关 Level control bearing LP-stage
H₃ 齿轮箱注油口 Oil filler gear box	K₄ 冷却水排放口 Cooling water drain	V₂ 高压段轴承油位开关 Level control bearing HP-stage
H₄ 冷却水入口 和安全阀 Cooling water filler and safety valve	L 定量注油泵 Oil metering pump	V₄ 冷却水位开关 Level control cooling water
I 新油油位镜 Oil check fresh oil	M 油标牌 Oil type plate	
	N 数据牌 Data plate	

VWZ (13)	702	1002	1202
a / a ₁	2480 / 1852 (18,5 - 22 kW)	2585 / 1882 (30 kW)	2672 / 1882 (37 kW)
ø w	360	360	489

* 与进气口联接的吸气状态有关。工作曲线和数据表是按PNEUROP标准计算的，其所示为真空泵在正常温度下运行。我们保留调整技术数据的权利。尺寸a和ø w或/和电流值会因不同电机而与数据表不同。

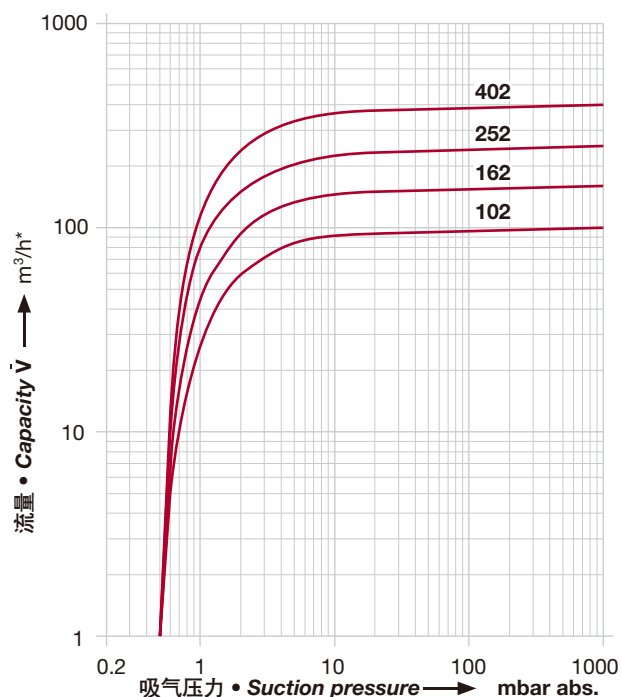
* refers to suction conditions at inlet connection. Curves, table content (tolerance ±10 %) according to PNEUROP standards and refer to vacuum pump at normal operating temperature. The dimensions a and ø w and/or the current drawn can differ.



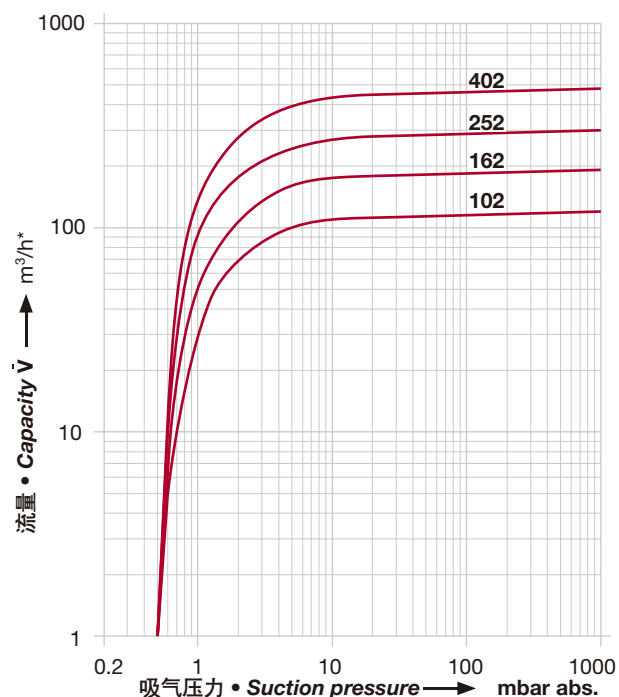
带有外部循环冷却系统VWZ (14)：双级旋片式真空泵。流量从100至480 m³/hr，极限真空0.5 mbar (绝对值)。由于一次性油润滑，可以处理腐蚀性气体。组件式设计，易于更换泵段。安装有运行温度自动调节器和冷却水调节阀，多种附件供选择。法兰式电机符合 DIN EN 60034 标准，保护标准 IP 54，绝缘等级F。

V-VWZ (14) with fresh water cooling: Two stage rotary vane vacuum pump with internal water cooling. Capacities ranging from 100 to 480 m³/h, ultimate vacuum 0.5 mbar (abs.). Due to fresh oil lubrication suitable for handling aggressive gases. Easy stage exchange due to modular design. Operating temperature thermostat and integrated cooling water regulation valve. Large range of accessories. Flange mounted motors comply with DIN EN 60034, have IP 55 protection and insulation class F.

50 Hz 选型图 • Selection diagram



60 Hz 选型图 • Selection diagram

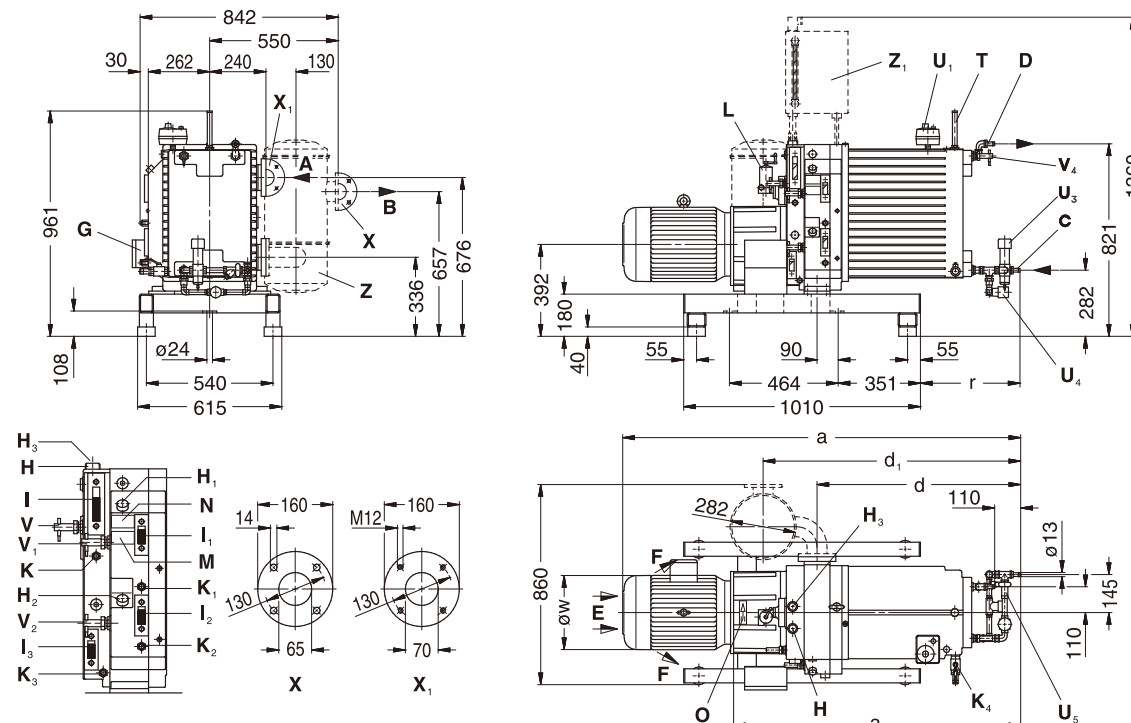


VWZ (14)		102	162	252	402
流量 Capacity	m³/h	50 Hz 100 60 Hz 120	160 192	250 300	400 480
极限真空 Ultimate vacuum	mbar (abs.)	0,5			
电机类型 Motor version	3~	50 Hz 230 / 400 V ±10 % 60 Hz 220 / 380 V		400 / 690 V ± 10 % 380 / 660 V	
电机功率 Motor rating	kW	50 Hz 4,0 60 Hz 4,8	5,5 6,6	7,5 9,0	11,0 13,2
电流 Current drawn	A	50 Hz 15,2 / 8,8 60 Hz #	11,5 / 6,6 #	15,5 / 8,9 #	21 / 12 #
转速 Speed	min ⁻¹	50 Hz 1450 60 Hz 1740			
平均噪音 Average noise level	dB(A) →DIN 45635	50 Hz 70,5 60 Hz 71,5	72 73	73 74	74 75
最大重量 Maximum weight	kg	430 445 455 510			
新油量 (最小/最大) Fresh oil capacity min./max.	l (H)	2 / 6			
新油消耗量 Fresh oil consumption	l/h (H)	0,130 / 0,156		0,162 / 0,194	
低压段油量 Oil capacity LP-stage	l (H ₁)	1,6 / 1,8 / 2,8			
高压段流量 Oil capacity HP-stage	l (H ₂)	1,6 / 1,8 / 2,8			
齿轮箱油量 Oil capacity gear	l (H ₃)	1,6 / 1,8 / 2,8			
冷却水量 (入口水温度15摄氏度 而相应出水温度摄氏度) Cooling water flow rate (inlet: 15 °C; outlet 25 / 35 / 45 °C)	l/h	200 / 100 / 60	260 / 140 / 80	350 / 160 / 120	450 / 220 / 170

附件 • Accessories

液体分离器	Liquid separator	真空密封灰尘分离器	Vacuum tight dust separator
逆止阀	Non-return valve	2/2电磁阀	2/2-way solenoid valve
星角启动器	Star-Delta starter	油雾分离器	Oil mist separator
真空开关/真空表	Vacuum switch / Vacuum gauge	冲洗系统	Flushing unit

尺寸 • Dimensions [mm]



A	真空联接处 Vacuum connection	I ₂	高压段轴承油位镜 Oil check bearing HP-stage	U ₃	温控水阀 Thermostatic water valve
B	排气口 Exhaust	I ₃	传动箱油位镜 Oil check gear box	U ₄	自闭式引液阀 Self closing priming valve
C	冷却水入口 Cooling water inlet	K	新油排油口 Fresh oil drain point	U ₅	灰尘隔 Dirt trap
D	冷却水出口 Cooling water outlet	K ₁	低压段轴承油排放口 Oil drain bearing LP-stage	V	新油位开关 Level control fresh oil
E	冷却空气入口 Cooling air inlet	K ₂	高压段轴承油排放口 Oil drain bearing HP-stage	V ₄	冷却水位开关 Level control cooling water
F	冷却空气出口 Cooling air outlet	K ₃	传动箱油排放口 Oil drain gear	X, X ₁	法兰 DN 65 DIN2501 PN6 Flange DN65 DIN2501 PN6
G	接线盒 Terminal box	K ₄	冷却水排放口 Cooling water drain	附件 • Accessories	
H	新油注油口 Fresh oil filling point	L	定量注油泵 Oil metering pump	V ₁	低压段轴承油位开关 Level control bearing LP-stage
H ₁	低压段轴承注油口 Oil filler bearing LP-stage	M	油标牌 Oil type plate	V ₂	高压段轴承油位开关 Level control bearing HP-stage
H ₂	高压段轴承注油口 Oil filler bearing HP-stage	N	数据牌 Data plate	Z	油雾分离器 Oil mist separator
H ₃	齿轮箱注油口 Oil filler gear box	O	旋转方向 Direction of rotation	Z ₁	冲洗系统 Flushing unit
I	新油油位镜 Oil check fresh oil	T	冷却水温度计 Thermometer-cooling water		
I ₁	低压段轴承油位镜 Oil check bearing LP-stage	U ₁	安全温度感应器 Safety thermostat		

VWZ (14)	102	162	252	402
a / a ₁	1333 / 1013	1418 / 1013	1630 / 1225	1742 / 1225
d / d ₁	708 / 938	708 / 938	868 / 1098	868 / 1098
r / øw	268 / 220	268 / 246	428 / 246	428 / 312

* 与进气口联接的吸气状态有关。工作曲线和数据表是按PNEURO标准计算的，其所示为真空泵在正常温度下运行。我们保留调整技术数据的权利。尺寸a和øw或/和电流值会因不同电机而与数据表不同。

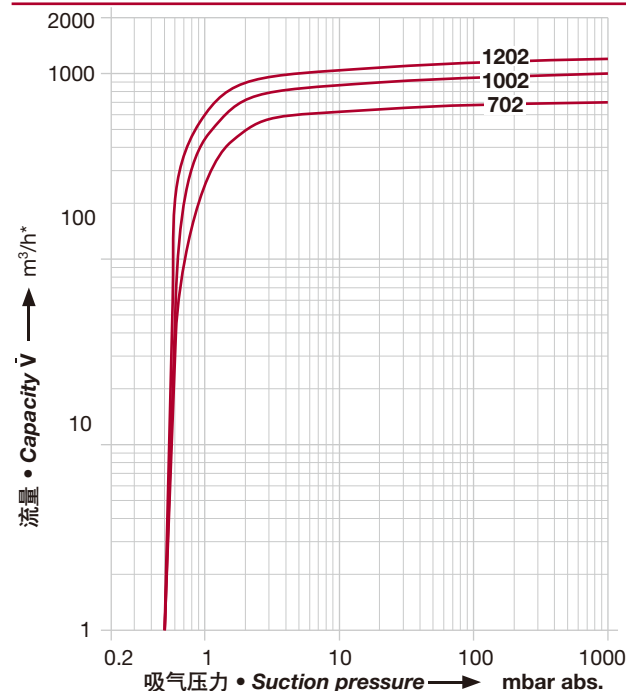
* refers to suction conditions at inlet connection. Curves, table content (tolerance ±10 %) according to PNEURO standards and refer to vacuum pump at normal operating temperature. The dimensions a and øw and/or the current drawn can differ.



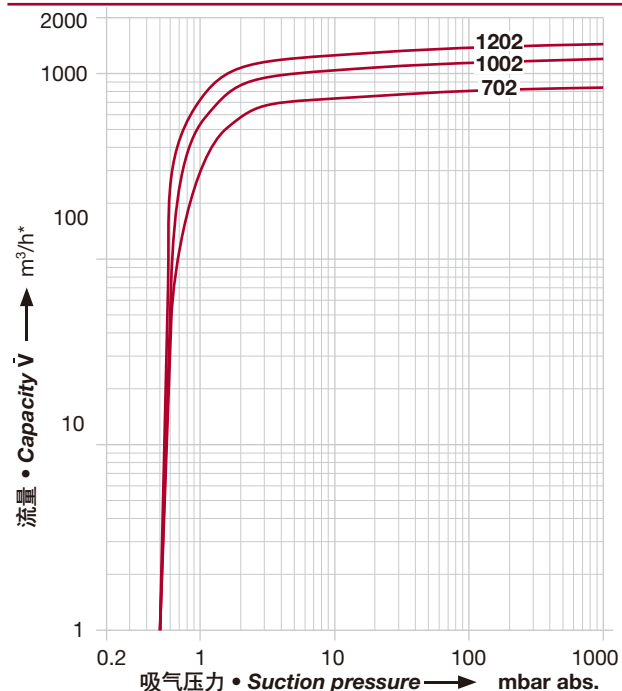
带有外部循环冷却系统VWZ (14)：双级旋片式真空泵。流量从700至1440m³/hr，极限真空0.5mbar（绝对值）。由于一次性油润滑，可以处理腐蚀性气体。组件式设计，易于更换泵段。安装有运行温度自动调节器和冷却水调节阀，多种附件供选择。法兰式电机符合 DIN EN 60034 标准，保护标准 IP 54，绝缘等级F。

V-VWZ (14) with fresh water cooling: Two stage rotary vane vacuum pump with internal water cooling. Capacities ranging from 700 to 1,440 m³/h, ultimate vacuum 0.5 mbar (abs.). Due to fresh oil lubrication suitable for handling aggressive gases. Easy stage exchange due to modular design. Operating temperature thermostat and integrated cooling water regulation valve. Large range of accessories. Flange mounted motors comply with DIN EN 60034, have IP 55 protection and insulation class F.

50 Hz 选型图 • Selection diagram



60 Hz 选型图 • Selection diagram

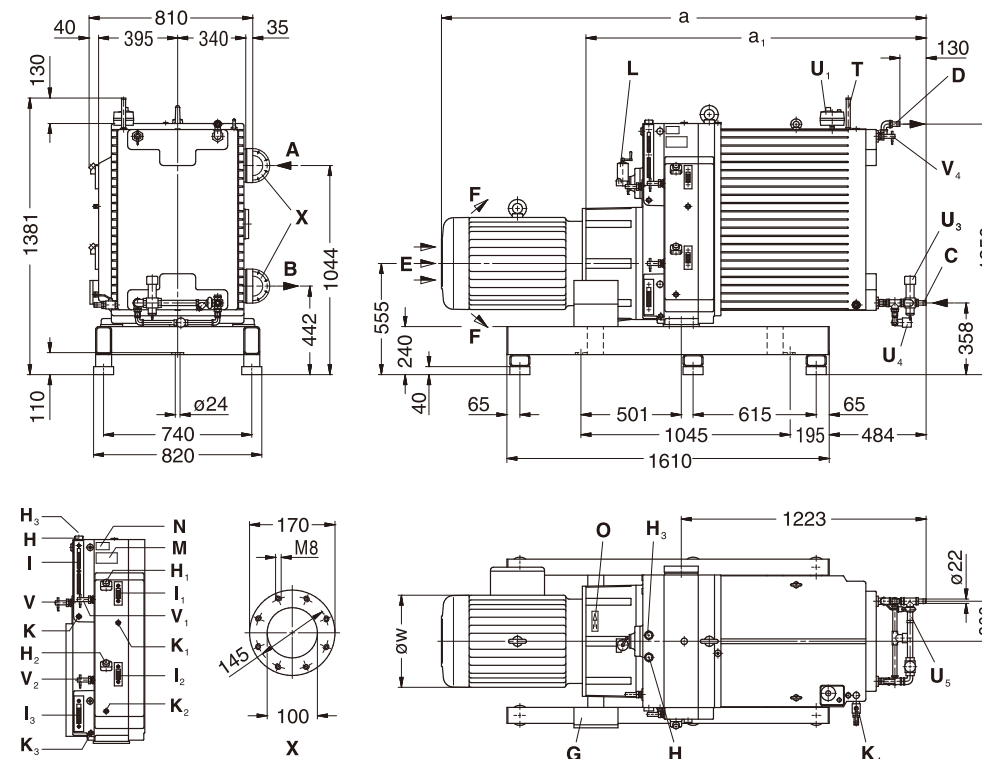


VWZ (14)		702		1002		1202			
流量 Capacity	m³/h	50 Hz		60 Hz		50 Hz		60 Hz	
极限真空 Ultimate vacuum	mbar (abs.)	0,5							
电机类型 Motor version	3~	400 / 690 V ± 10 % 380 / 660 V							
电机功率 Motor rating	kW	50 Hz		60 Hz		50 Hz		60 Hz	
电流 Current drawn	A	50 Hz		60 Hz		50 Hz		60 Hz	
转速 Speed	min ⁻¹	50 Hz		60 Hz		50 Hz		60 Hz	
平均噪音 Average noise level	dB(A) →DIN 45635	50 Hz		60 Hz		50 Hz		60 Hz	
最大重量 Maximum weight	kg	1645		1705		2279		2400	
新油量 (最小/最大) Fresh oil capacity min./max.	l (H)	3 / 21							
新油消耗量 Fresh oil consumption	l/h (H)	0,342 / 0,410		0,760 / 0,912		0,949 / 1,138			
低压段油量 Oil capacity LP-stage	l (H ₁)	3,5 / 4,5 / 7,0							
高压段流量 Oil capacity HP-stage	l (H ₂)	3,5 / 4,5 / 7,0							
齿轮箱油量 Oil capacity gear	l (H ₃)	3,5 / 4,5 / 7,0							
冷却水量 (入口水温度15摄氏度而相应出水温度摄氏度) Cooling water flow rate (inlet: 15 °C; outlet 25 / 35 / 45 °C)	l/h	600 / 340 / 190		1100 / 600 / 240		1265 / 690 / 276			

附件 • Accessories

液体分离器	Liquid separator	真空密封灰尘分离器	Vacuum tight dust separator
逆止阀	Non-return valve	2/2电磁阀	2/2-way solenoid valve
星角启动器	Star-Delta starter	油雾分离器	Oil mist separator
真空开关/真空表	Vacuum switch / Vacuum gauge	冲洗系统	Flushing unit

尺寸 • Dimensions [mm]

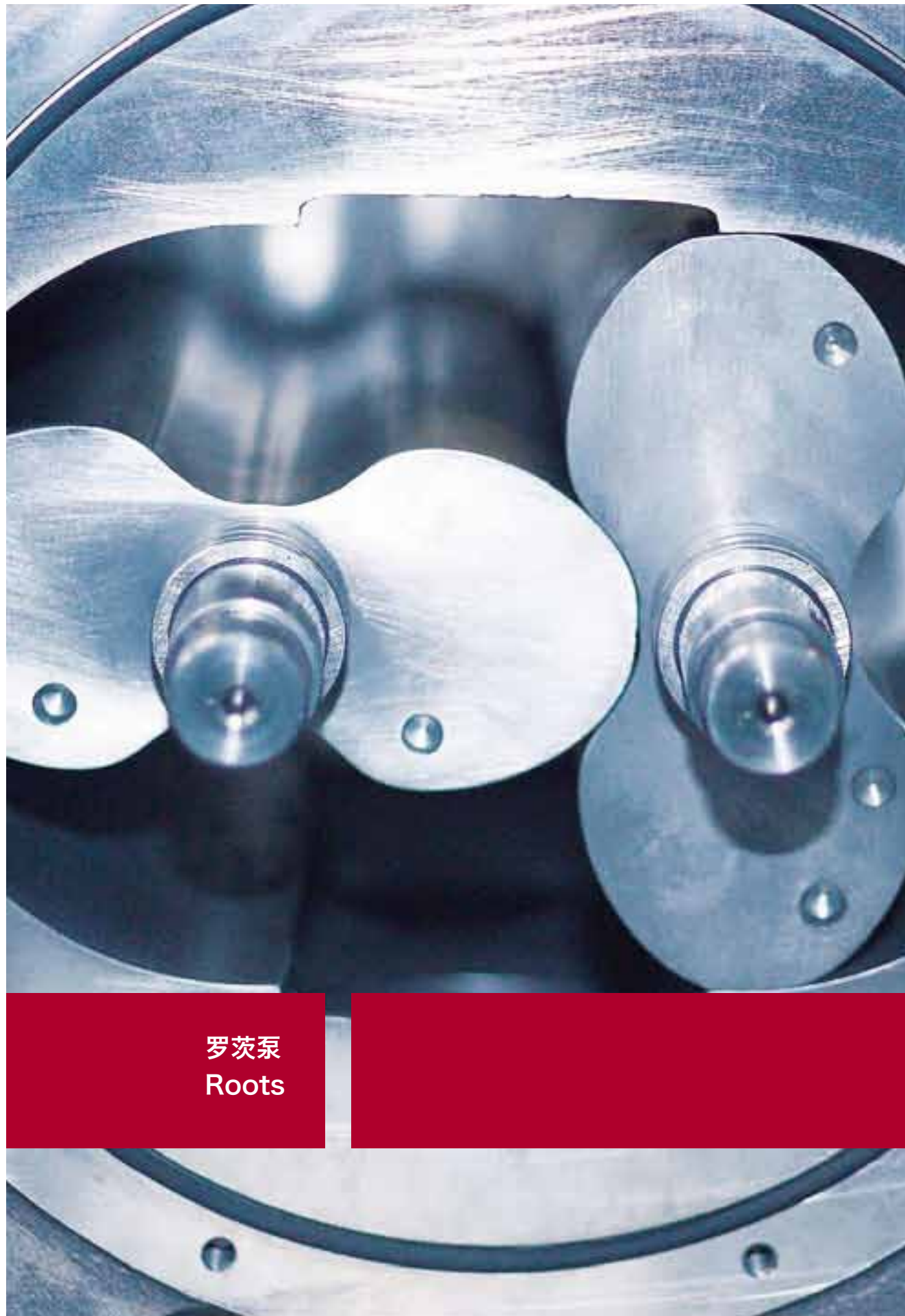
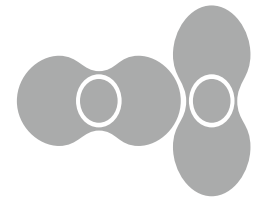


A	真空联接处 Vacuum connection	I₁	低压段轴承油位镜 Oil check bearing LP-stage	T	冷却水温度计 Thermometer-Cooling water
B	排气口 Exhaust	I₂	高压段轴承油位镜 Oil check bearing HP-stage	U₁	安全温度感应器 Safety thermostat
C	冷却水入口 Cooling water inlet	I₃	传动箱油位镜 Oil check gear box	U₃	温控水阀 Thermostatic water valve
D	冷却水出口 Cooling water outlet	K	新油排出口 Fresh oil drain point	U₄	自闭式引液阀 Self closing priming valve
E	冷却空气入口 Cooling air inlet	K₁	低压段轴承油排放口 Oil drain bearing LP-stage	U₅	灰尘隔 Dirt trap
F	冷却空气出口 Cooling air outlet	K₂	高压段轴承油排放口 Oil drain bearing HP-stage	V	新油位开关 Level control fresh oil
G	接线盒 Terminal box	K₃	传动箱油排放口 Oil drain gear	V₄	冷却水位开关 Level control cooling water
H	新油注油口 Fresh oil filling point	K₄	冷却水排放口 Cooling water drain	X	法兰 DN 100 DIN 28404 Flange DN 100 DIN 28404
H₁	低压段轴承注油口 Oil filler bearing LP-stage	L	定量注油泵 Oil metering pump	附件 • Accessories	
H₂	高压段轴承注油口 Oil filler bearing HP-stage	M	油标牌 Oil type plate	V₁	低压段轴承油位开关 Level control bearing LP-stage
H₃	齿轮箱注油口 Oil filler gear box	N	数据牌 Data plate	V₂	高压段轴承油位开关 Level control bearing HP-stage
I	新油油位镜 Oil check fresh oil	O	旋转方向 Direction of rotation		

VWZ (14)	702	1002	1202
a / a ₁	2297 / 1669 (18,5 - 22 kW)		2402 / 1699 (30 kW)
ø w	360	360	489

* 与进气口联接的吸气状态有关。工作曲线和数据表是按PNEUROP标准计算的，其所示为真空泵在正常温度下运行。我们保留调整技术数据的权利。尺寸a和øw和/或电流值会因不同电机而与数据表不同。

* refers to suction conditions at inlet connection. Curves, table content (tolerance ±10 %) according to PNEUROP standards and refer to vacuum pump at normal operating temperature. The dimensions a and ø w and/or the current drawn can differ.



罗茨泵
Roots

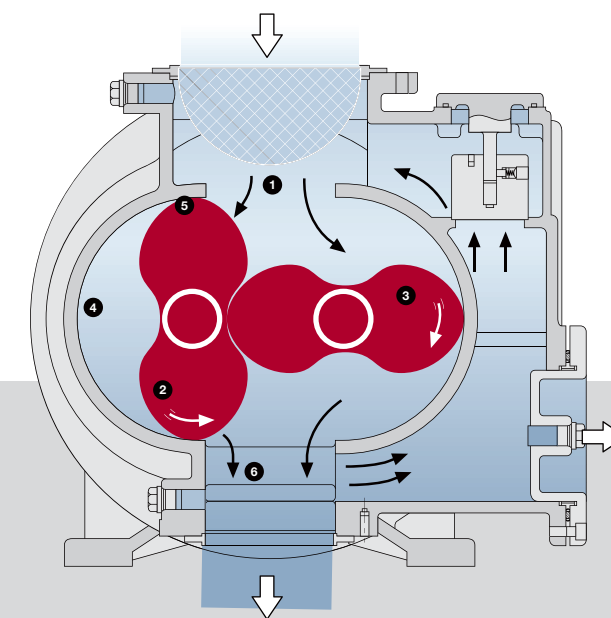
罗茨泵的设计原理 Operating Principle

与旋片泵相同，罗茨泵也是静态压缩系统，尽管其压力产生不是由于“内部”体积减少，而是因为旋片式罗茨风机的无接触式运行，没有被抽出气体污染的可能性。2级或3级罗茨真空泵SHARK，真空运行：0.5bar，压力运行：2bar，流量：20-8580m³/hr。

与旋片泵相同，气体从进口(1)进入腔体内两个转子(2)+(3)组成的气室，然后气室与进气口被随后的转子头(5)分开。在气室(4)中的气体被完全的输送，达到出气口(6)时，气室中的空气体积在传输中没有被减少，从压力腔中产生的绝对压力进入下一个气室，随后被排放，就在这个阶段输送过程中，“外部压缩”产生了。

Similar to rotary vane pumps, rotary lobe vacuum pumps and blowers are also static compression systems, although the compression does not result from an »internal« volume reduction. Because of the non-contact operation of the rotary lobe blower, there is no possibility of contamination of the pumped gas. The two or three-lobed rotary blower SHARK is for vacuum operation to 0.5bar(abs.) and pressure operation to 2bar(abs.) at capacities of 20 to 8580m³/hr.

Similar to the rotary vane pump, air enters the inlet opening (1) into a conveying cell formed by the two rolling pistons (2) + (3) in the housing. This is until the cell is separated from the inlet by the following piston head (5). The air in the cell (4) is conveyed without reduction until it reaches the outlet (6), where air with a higher absolute pressure flows from the pressure chamber into the following cell, and must then be discharged. It is during this stage of the conveying that »external compression« takes place.

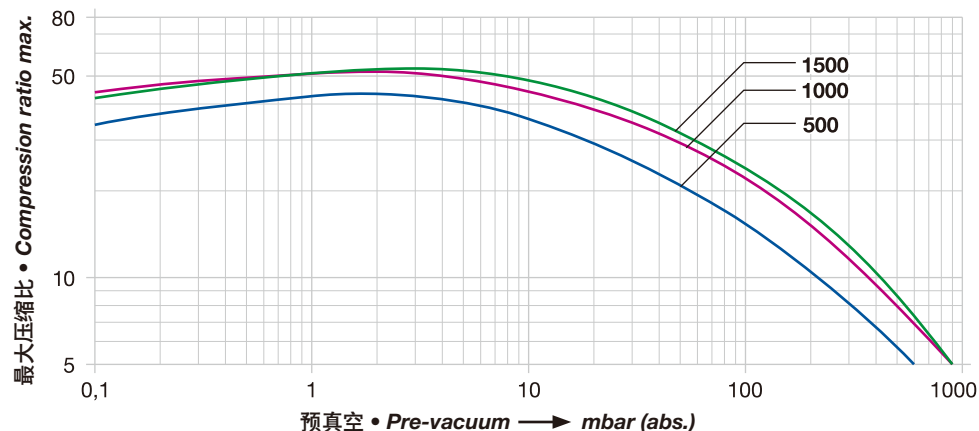




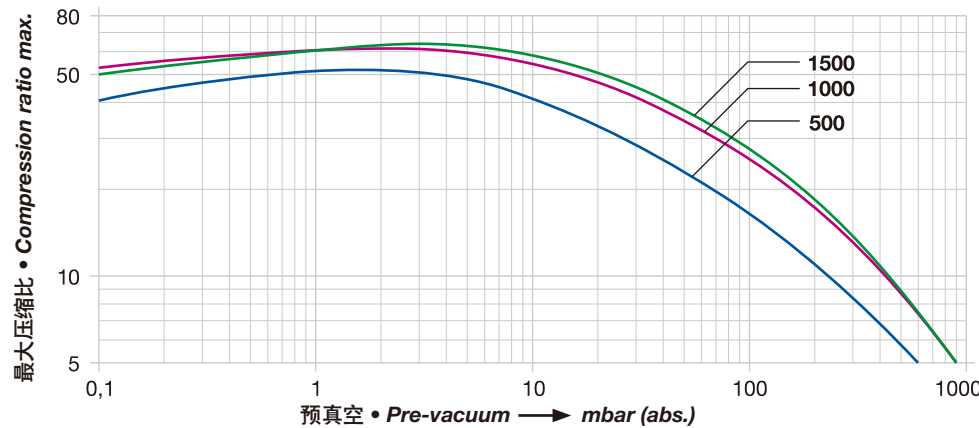
无接触式运行罗茨式真空泵，流量从485-1909m³/hr。主要用于产生粗和高真空，处理气体和蒸汽，因为它们能忍受高水蒸汽和大量的腐蚀性气体。罗茨泵一般与前级泵组合在一起使用。法兰式电机符合DIN EN 60034标准，保护标准IP 54，绝缘等级F。

Contactless operating Roots vacuum pump with capacities ranging from 485 to 1909m³/hr. Primarily used for producing coarse and fine vacuum and for handling gases and vapours, as they can tolerate water vapour and most corrosive gases. Roots pumps are used, normally, in combination with backing pumps. Flange mounted motors correspond to DIN EN 60034 and have IP 54 protection and insulation class F.

50 Hz 选型图 • Selection diagram



60 Hz 选型图 • Selection diagram

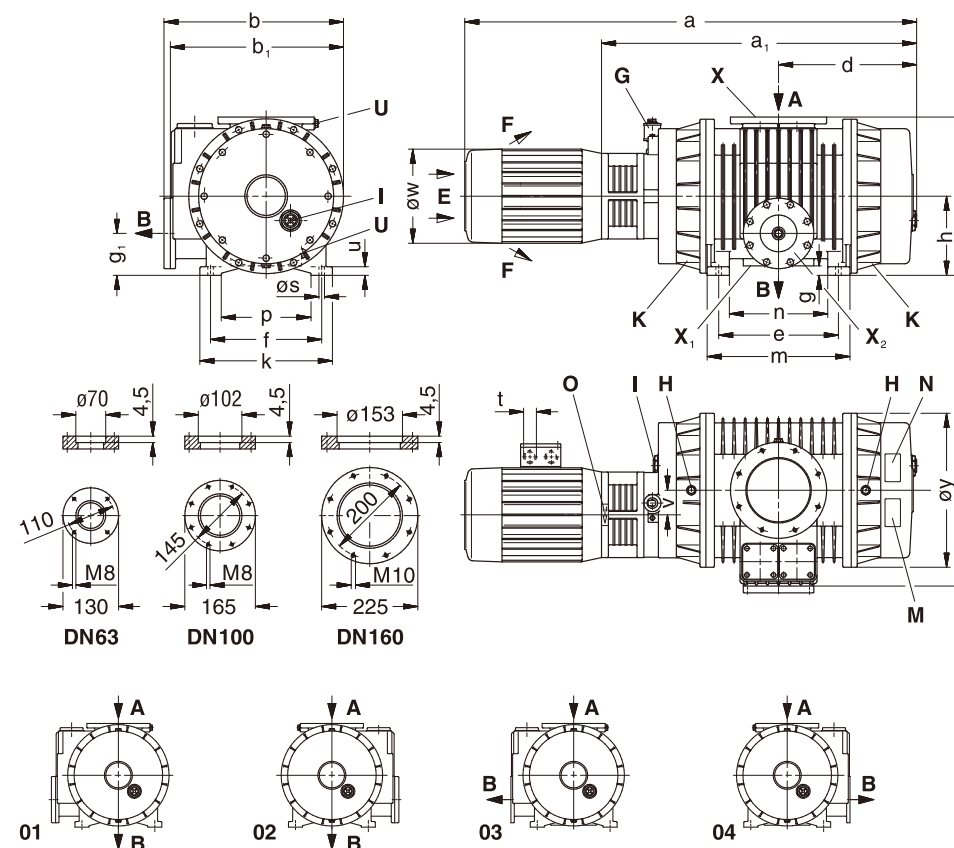


R-VWP	500		1000		1500			
	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz		
流量 Capacity	m ³ /h		485	590	1072	1295	1580	1909
溢流阀处的压力差 Pressure difference at the overflow valve	Δ mbar		50		43		43	
泄露率 Leak rate	mbar l/s		0,01					
电机类型 Motor version	3~	230 / 400 V ±10 %	220 / 380 V	230 / 400V ±10 %	220 / 380 V	230 / 400 V ±10 %	220 / 380 V	
电机功率 Motor rating	kW	1,5	1,8	3,0	3,6	4,0	4,8	
电流 Current drawn	A	5,7 / 3,3	#	10,7 / 6,2	#	13,7 / 7,9	#	
转速 Speed	min ⁻¹	2840	3450	2880	3480	2870	3470	
平均噪音 Average noise level	dB(A)	67	71	66	70	71	75	
		68	72	67	71	72	76	
最大重量 Maximum weight	kg	100		180		225		
油量 Oil intake	l	1,5		3,5		3,5		

附件 • Accessories

- | | |
|-------|------------------------|
| 电机启动器 | Motor starter |
| 软管连接阀 | Hose connection flange |
| 液体分离器 | Liquid separator |
| 隔音罩 | Acoustic enclosure |

尺寸 • Dimensions [mm]



R-VWP	500	1000	1500
a	871	931	1058
a ₁	627	628	738
b / b ₁	317 / 301	420 / 405	420 / 405
c	260	370	370
d	278	269	324
e / f	206 / 200	170 / 260	280 / 260
g / g ₁	19 / 78	22 / 98	22 / 98
h	130	185	185
k	232	310	310
l	176	224	224
m / n	244 / 178	226 / 122	334 / 230
p	168	210	210
os	11	13	13
t	M 25 x 1,5	M 32 x 1,5	M 32 x 1,5
u / v	18 / 38	20 / 57,5	20 / 57,5
ow	176	196	220
oy	250	360	360
X / X ₁ / X ₂	DN 100 / DN 100 / DN 63	DN 160 / DN 100 / DN 100	DN 160 / DN 100 / DN 100

- 01-04 联接位置
Connection positions
- 01 标准型
Standard version
- A 真空联接处
High vacuum connection
- B 前真空联接处
Pre-vacuum connection
- E 冷却空气入口
Cooling air inlet
- F 冷却空气出口
Cooling air outlet
- G 密封油瓶
Sealing oil pot
- H 注油口
Oil filling point
- I 油位镜
Oil check
- K 排油口
Oil drain point
- M 油标牌
Oil type plate
- N 数据牌
Data plate
- O 旋转方向
Direction of rotation
- U 仪表联接处
Gauge connection
- X, X₁, X₂ 法兰 DIN 28404
Flange DIN 28404

* 与进气口联接的吸气状态有关。工作曲线和数据表是按真空泵在正常温度下运行。尺寸a和ow或和电流值会因不同电机而与数据表不同。
根据需要

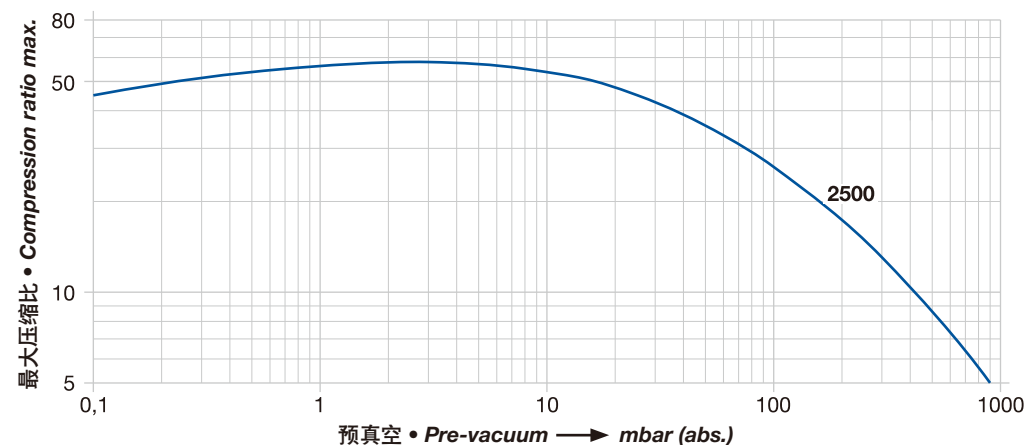
* refers to suction conditions at inlet connection. Curves, table content (tolerance ±10%) refer to vacuum pump at normal operating temperature. The dimensions a and ow and/or the current drawn can differ.
on request



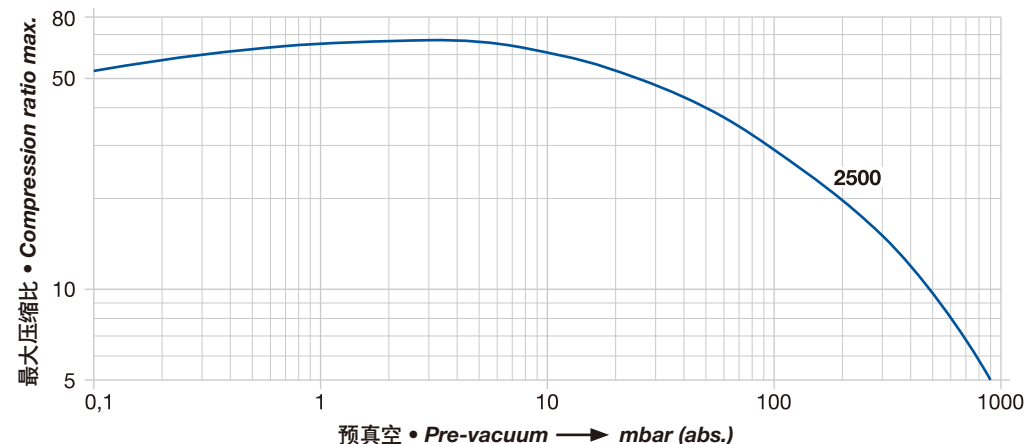
无接触式运行罗茨式真空泵，流量从 2293-2752m³/hr。主要用于产生粗和高真空，处理气体和蒸汽，因为它们能忍受高水蒸汽和大量的腐蚀性气体。罗茨泵一般与前级泵组合在一起使用。法兰式电机符合DIN EN 60034标准，保护标准IP 54，绝缘等级F。

Contactless operating Roots vacuum pump with capacities ranging from 2293 to 2752 m³/hr. Primarily used for producing coarse and fine vacuum and for handling gases and vapours, as they can tolerate water vapour and most corrosive gases. Roots pumps are used, normally, in combination with backing pumps. Flange mounted motors correspond to DIN EN 60034 and have IP 54 protection and insulation class F.

50 Hz 选型图 • Selection diagram



60 Hz 选型图 • Selection diagram

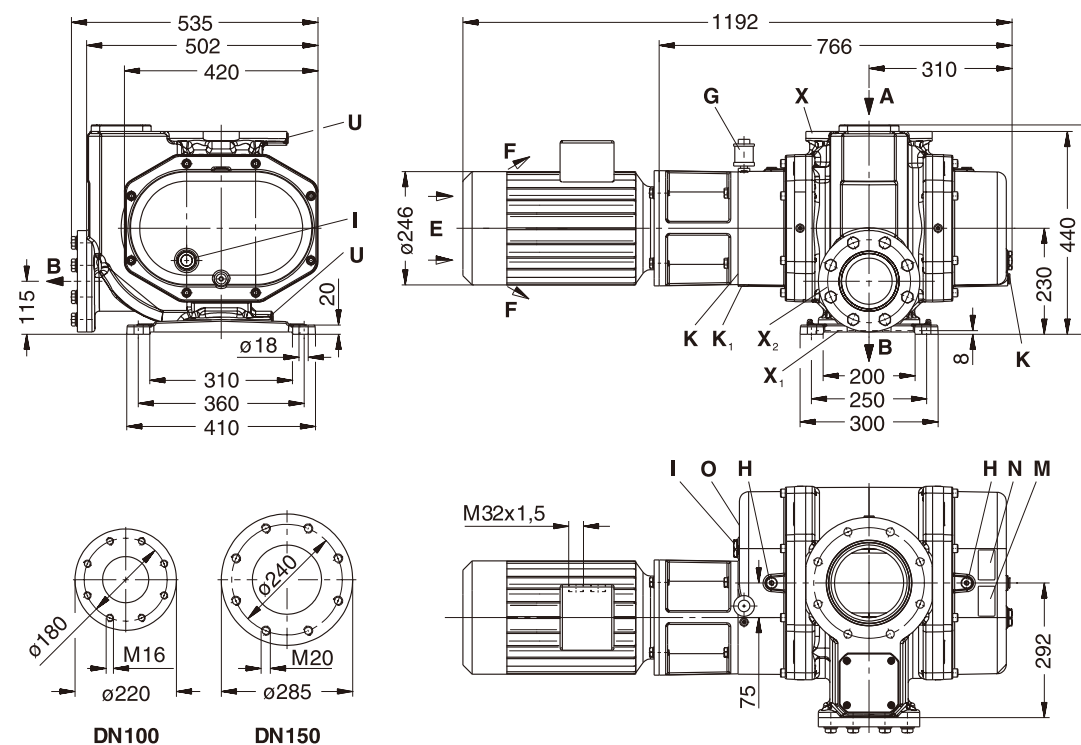


R-VWP	2500		
		50 Hz	60 Hz
流量 Capacity	m ³ /h	2293	2752
溢流阀处的压力差 Pressure difference at the overflow valve	Δ mbar	35	
泄露率 Leak rate	mbar l/s	0,01	
电机类型 Motor version	3~	400 / 690 V ±10 %	
电机功率 Motor rating	kW	5,5	7,5
电流 Current drawn	A	11,0 / 6,4	#
转速 Speed	min ⁻¹	2850	3500
平均噪音 Average noise level	dB(A)	1 mbar	72
		10 mbar	73
最大重量 Maximum weight	kg	342	
油量 Oil intake	l	2,8	

附件 • Accessories

电机启动器	Motor starter
软管连接阀	Hose connection flange
液体分离器	Liquid separator

尺寸 • Dimensions [mm]



01-04 联接位置 Connection positions	G 密封油瓶 Sealing oil pot	O 旋转方向 Direction of rotation
01 标准型 Standard version	H 注油口 Oil filling point	U 仪表联接处 法兰 DIN 2501 Gauge connection Flange DIN 2501
A 高真空联接处 High vacuum connection	I 油位镜 Oil check	X DN 150 PN 16
B 前真空联接处 Pre-Vacuum connection	K, K₁ 排油口 Oil drain point	X₁, X₂ DN 100 PN 16
E 冷却空气入口 Cooling air inlet	M 油标牌 Oil type plate	
F 冷却空气出口 Cooling air outlet	N 数据牌 Data plate	

* 与进气口联接的吸气状态有关。工作曲线和数据表是按真空泵在正常温度下运行。尺寸a和ø w或和电流值会因不同电机而与数据表不同。
根据需要

* refers to suction conditions at inlet connection. Curves, table content (tolerance ±10%) refer to vacuum pump at normal operating temperature. The dimensions a and ø w and/or the current drawn can differ.
on request



R-VPR

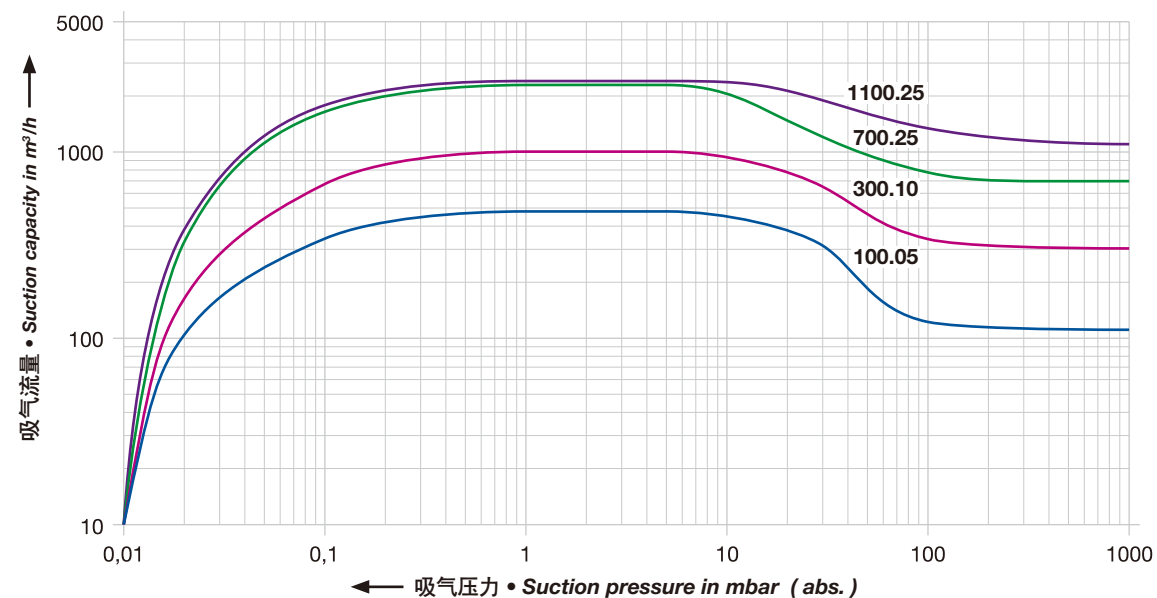
VPR 100.05 | 300.10 | 700.25 | 1100.25



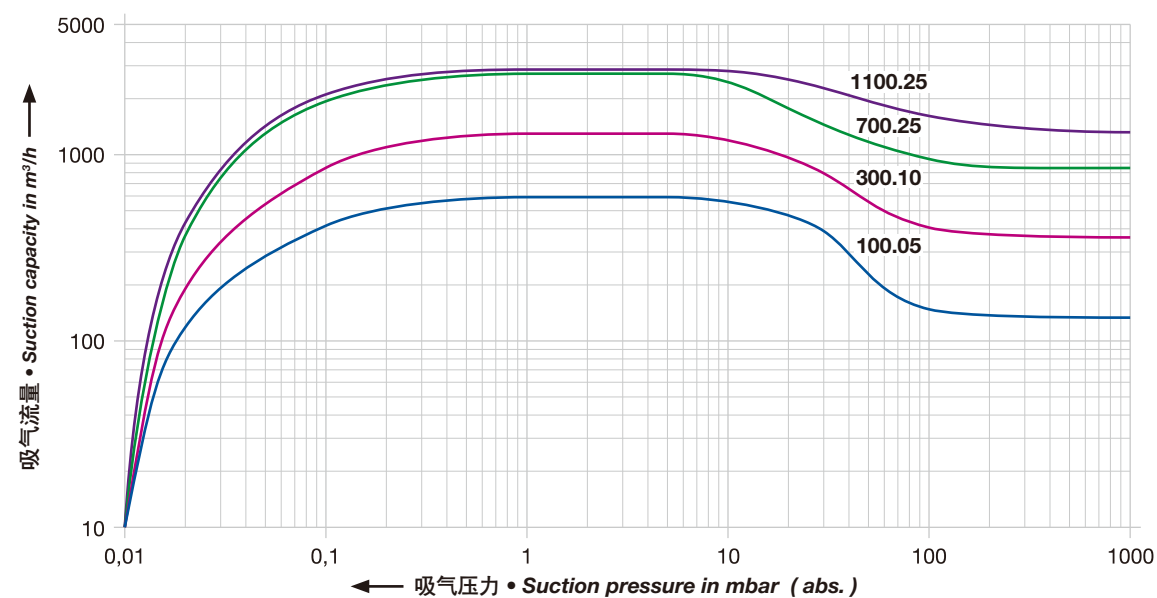
含V-VC和罗茨真空泵组。主要产生工业应用所需的高真空。
法兰式电机符合DIN EN 60034, 保护标准IP 54, 绝缘等级F。

Pump set consisting of V-VC in combination with rotary lobe vacuum pump. Primarily used for production of fine vacuum for general industrial applications.
Flange mounted motors comply with DIN EN 60034, have IP 54 protection and insulation class F.

50 Hz 选型图 • Selection diagram



60 Hz 选型图 • Selection diagram

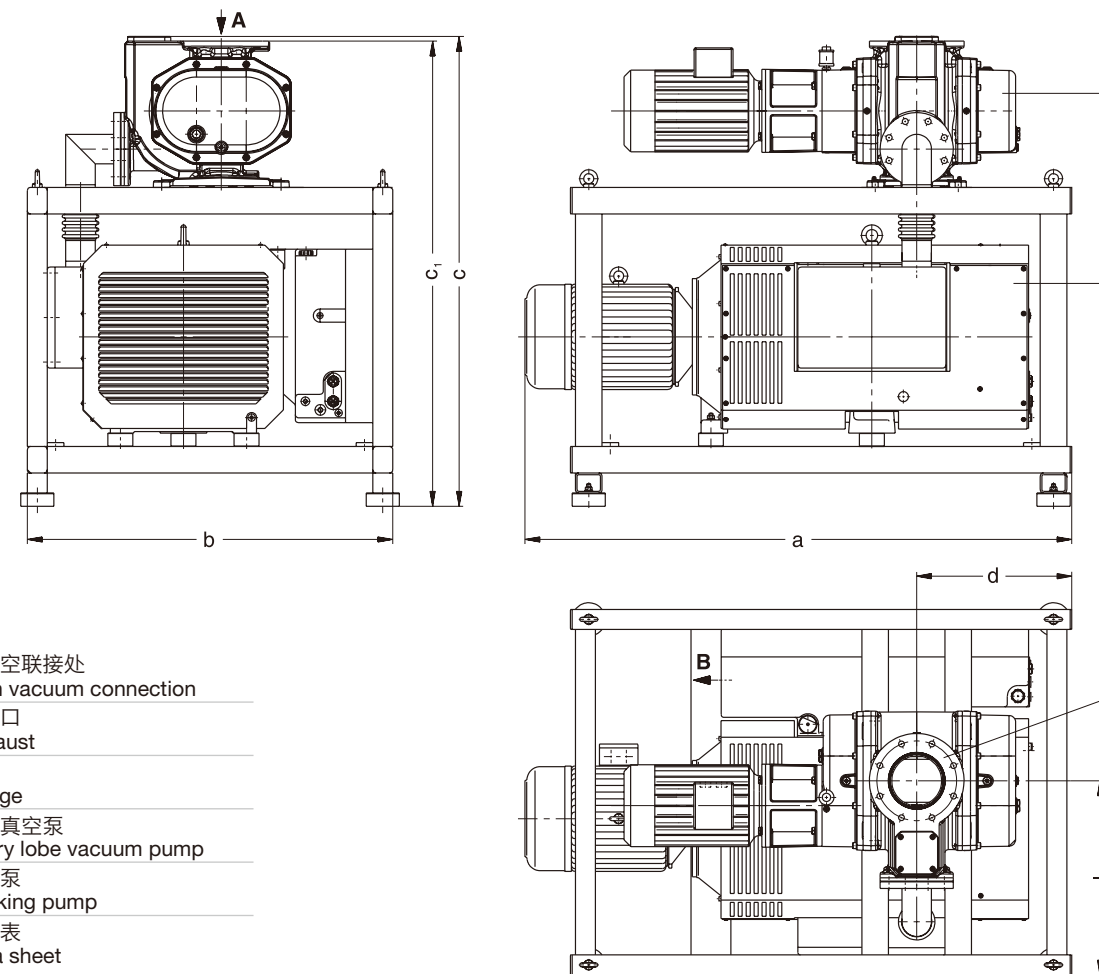


R-VPR		100.05	300.10	700.25	1100.25	
极限真空 Ultimate vacuum	mbar (abs.)	0,01				
平均噪音 Average noise level	dB(A)	50 Hz	74	76	80	83
		60 Hz	76	78	83	86
最大重量 Maximum weight	kg	225	425	1080	1440	

R-VWP

VPR 100.05 | 300.10 | 700.25 | 1100.25

尺寸 • Dimensions [mm]



- A 高真空联接处
High vacuum connection
- B 排气口
Exhaust
- X 法兰
Flange
- I 罗茨真空泵
rotary lobe vacuum pump
- II 前级泵
Backing pump
- 数据表
Data sheet

R-VPR	100.05	300.10	700.25	1100.25
I	VWP 500	VWP 1000	VWP 2500	VWP 2500
•	D 200	D 200	D 201	D 201
II	VC 100	VC 300	VC 700	VC 1100
•	D 231	D 231	D 232	D 233
a	873	1003	1702	1900
b	520	860	1100	1166
c	-	-	1574	1574
c ₁	790	1067	1560	1560
d	282	285	455	610
I	176	474	560	560
X	DN 100 DIN 28404	DN 160 DIN 28404	DN150 PN16 DIN 2501	DN150 PN16 DIN 2501

* 与进气口联接的吸气状态有关。工作曲线和数据表（公差±10%）是按PNEUROP标准计算的，其所示为真空泵在正常温度下运行。进一步的细节和尺寸请参考我们的数据表。

* refers to suction conditions at inlet connection. Curves, table content (tolerance ±10%) according to PNEUROP standards and refer to vacuum pump at normal operating temperature. Please consult our data sheets for further details and dimensions.

系统解决方案 System solution

系统解决方案

我们可以为您定制符合工艺要求的真空系统

任务

混合物:

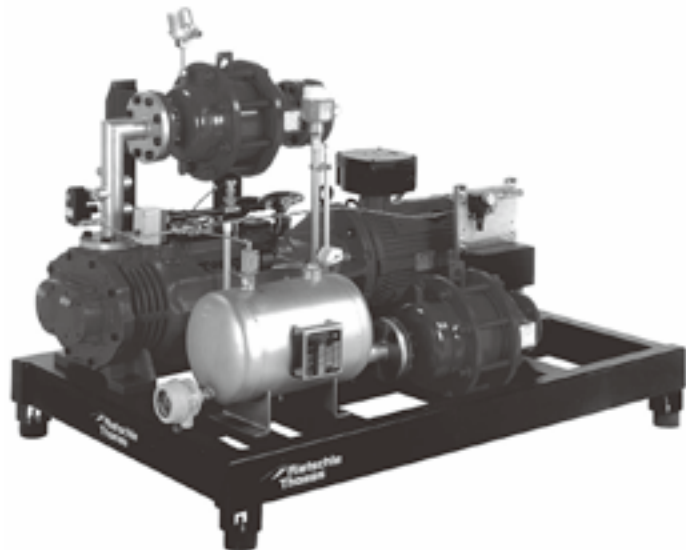
- 水
- 异丙醇
- 酒精
- 丙酮

真空干燥和蒸馏

在特殊工艺情况下，可用大量的冲洗气体对泵腔进行冲洗，将残留介质带出泵外

Elmo Rietschle 解决方案

- 采用前端冷凝器以减小真空泵的抽速
- 通过控制改变螺杆泵转速来调节抽速
- 通过控制改变螺杆泵的转速来保持恒定的真空度
- 配置排气冷凝器
- ATEX认证



System solution

We would like to present to you our latest example of a tailor-made vacuum system

Task:

A mixture of

- Water
- Isopropan
- Ethanol
- Acetone

Has to be removed from a pharmaceutical dryer.

The special task hereby is to handle the extraordinarily large stream of rinsing gas at medium pressure.

The Elmo Rietschle solution

- Pre-condensation of the solvent fumes with the aim of reducing the size of the vacuum unit
- Use of a speed controlled screw vacuum pump
- Pressure is kept constant by changing the required pump speed
- Installation of an exhaust condenser
- ATEX configuration

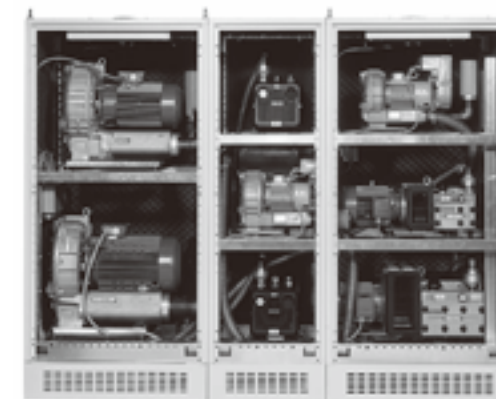
在印刷和造纸工业中，近几年有一种趋势，将大量的真空泵、压力泵和风机搬离印刷机。中央风柜作为一种标准开始进入这个领域，并拥有下面的优点：

- 可根据用气需求，采用模块化组合
- 改善生产环境安全，降低噪音污染
- 维护简单、方便
- 可以回收余热，减少供热成本

采用模块化组合和变频控制技术，可对每台泵和风机进行控制及调节，这样可使流量、压力能够满足任何印刷机的需求，同时具备下列优势：

- 能耗减少50%以上
- 因为低速运行，使得使用性更高并维护费用更低

控制软件可根据前端的生产负荷变化，例：印刷的材料、纸张的重量、印刷机速度变化等，通过调节变频器自动增加、减低负荷来匹配系统对用气变化的需求，同时，系统还具备手动操作模式，可有效减少生产准备时间。



In printing and paper processing industries. There has been a trend in the last few years towards installing a large number of vacuum pumps, compressors and blowers centrally, remote from the printing machines. The air-center has come into its own as a standard in this field, providing a lot of advantages, some of which are:

- Flexible adaptation to any air demand due to the modular assembly concept.
- Highly improved industrial safety and ergonomics by reduced noise pollution.
- Less time required for maintenance due to easy access to the machines.
- Reduced heating costs due to recovery of thermal losses.

Logical development has lead to the AIR-BUSLOGIX. The modular assembly concept makes it possible to control each pump or blower with the help of a frequency converter. Thus, volume flow and pressure will meet the demand at any location of any printing machine exactly. And there are side benefits:

- Up to 50% saving on energy costs
- Higher availability and less maintenance costs because of low speed operation

The control software provides the opportunity to store and load the setting of the frequency converter of each pump or blower, depending on the printing job (i. e. material to be printed, direction of printing, weight etc.). Manual adjustment is always possible, too. Another advantage offered by the software is to reduce make ready time.

系统解决方案 System solution

Elmo Rietschle具有数十年的开发真空系统和低压系统的经验:

- 印刷工业
- 纸处理工业
- 包装工业
- 物料输送
- 医疗
- 及其它工业应用

为了这个目的, 我们只用使干式和油式旋片真空泵和压缩机的历史, 到此为止了。

我们新一代的爪式泵就是我们挑战未来的答案:

- 无磨损
- 高效
- 在通过变频器对压力进行直接控制方面具有新的技术优势

更大的优势是在高的真空和压力下, 可获得更大的流量

欢迎联系我们的工程部, 我们将竭诚回答你的任何问题

For more than a decade Elmo Rietschle have been developing central vacuum and low pressure systems, mainly for

- Printing
- Paper handing
- Packaging
- Conveying
- Medical
- And other industrial applications

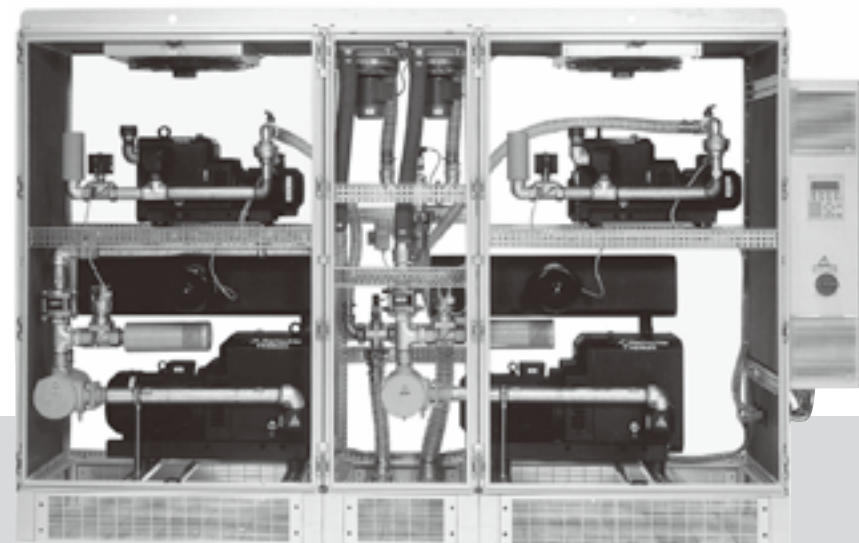
To date, for this purpose we have only used dry running and oil lubricated rotary vane vacuum pumps and compressors.

Our new generation of claw-pumps is our answer to the challenges of the future.

- Wear resistant
- High efficiency
- And direct pressure control by frequency inverter are some of the advantages of this new technology.

Further benefits are increased capacity at higher pressure or vacuum.

Feel free to contact our engineering department, who will be pleased to answer any questions.



真空系统RVM在医疗工程中

这些系统是由几台平行安装的真空泵并带一个真空容器组成, 用一个编程控制器, 在任何时间都可调节到合适精确的真空需求。(按照规范EN737-3)。CE医疗认证标志(设备IIA), 按照1993.6.14欧盟指令(93/42/CEE)

控制

- 通过一个中央控制面板来调节系统空气供应
- 电机的监控
 - 交互式基底负载运行
 - 真空状态指示(带液晶指示)
 - 基本功能指示(程序、服务、时间计数)
 - 真空和出错指示

附件

- 单级或双级得细菌旁过滤器
- 消音器
- 真空表

真空系统RVM

在大气压下气站的流量: 3x15,3x25,3x 40,3x60,3x100, 3x150, 3x202, 3x303m³/hr, 50Hz。极限真空达10mbar (abs.)



Vacuum system RVM in medical engineering

These systems consist of several parallel mounted vacuum pumps that are interconnected with a vacuum vessel. With the use of a programmable controller the RVM can be adapted to suit the exact vacuum demand at any one time. (in accordance with norm EN737-3). The CE MEDICAL marked station (equipment IIA) according to the European Directive of June 14, 1993 (93/42/CEE).

Control

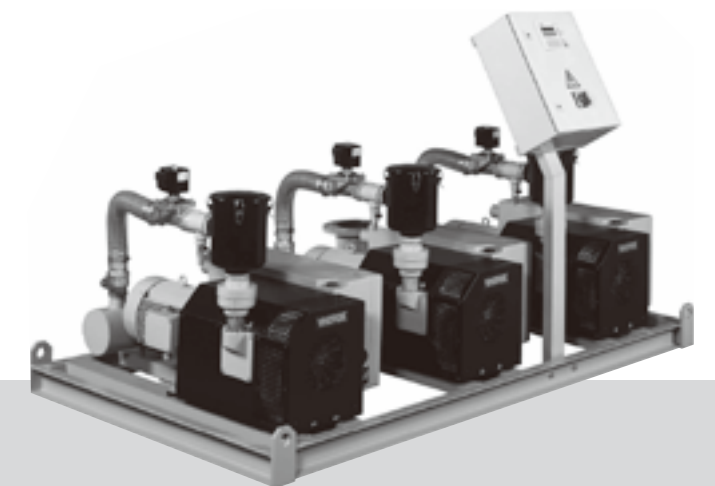
- Central control panel with complete regulation of the air centre by compact monitoring.
- Monitoring output of the electric motors
- Alternating base-load operation
- Vacuum level indication (with liquid crystal indicators)
- Summary indication of function (programme, service, hours counter)
- Vacuum and failure alarm indicator

Accessories

- single or double bacteriologic bypass filter
- additional silencer
- vacuum gauge
- Vacu-stat

Vacuum systems RVM

The nominal capacity of the stations at atmospheric pressure is 3 x 15, 3 x 25, 3 x 40, 3 x 60, 3 x 100, 3 x 150, 3 x 200 and 3 x 300 m³/hr at 50 Hz. The max. vacuum is 10 mbar (abs.).



换算表 Conversion Tables

压力, 真空 / Pressure, Vacuum						
	mbar (hPa)	bar	Pa (N/m ²)	kPa	atm	kp/cm ² (at)
1 mbar (hPa)	1	1 x 10 ⁻³	10 ²	0,1	9,869 x 10 ⁻⁴	1,02 x 10 ⁻³
1 bar	10 ³	1	1 x 10 ⁵	100	0,987	1,02
1 Pa (N/m ²)	0,01	1 x 10 ⁻⁵	1	0,001	9,869 x 10 ⁻⁶	1,02 x 10 ⁻⁵
1 kPa	10	0,01	10 ³	1	9,869 x 10 ⁻³	1,02 x 10 ⁻²
1 atm	1,013 x 10 ³	1,013	1,013 x 10 ⁵	1,013 x 10 ²	1	1,033
1 kp/cm ² (at)	9,807 x 10 ²	0,981	9,807 x 10 ⁴	98,07	0,968	1
1 mm H ₂ O	9,807 x 10 ⁻²	9,807 x 10 ⁻⁵	9,807	9,807 x 10 ⁻³	9,677 x 10 ⁻⁵	10 ⁻⁴
1 Torr (mm Hg)	1,333	1,333 x 10 ⁻³	1,333 x 10 ²	1,333 x 10 ⁻¹	1,316 x 10 ⁻³	1,36 x 10 ⁻³
1 micron	1,333 x 10 ⁻³	1,333 x 10 ⁻⁶	1,333 x 10 ⁻¹	1,333 x 10 ⁻⁴	1,316 x 10 ⁻⁶	1,36 x 10 ⁻⁶
1 in. Hg	33,86	3,386 x 10 ⁻²	3,386 x 10 ³	3,386	3,342 x 10 ⁻²	3,453 x 10 ⁻²
1 in. H ₂ O	2,491	2,491 x 10 ⁻³	2,491 x 10 ²	0,249	2,458 x 10 ⁻³	2,54 x 10 ⁻³
1 lb/in ² (psi)	68,95	6,895 x 10 ⁻²	6,895 x 10 ³	6,895	6,805 x 10 ⁻²	7,03 x 10 ⁻²

	mm H ₂ O	Torr (mm Hg)	micron	in. Hg	in. H ₂ O	lb/in ² (psi)
1 mbar (hPa)	10,197	0,75	750	2,953 x 10 ⁻²	0,402	1,45 x 10 ⁻²
1 bar	1,02 x 10 ⁴	7,5 x 10 ²	7,5 x 10 ⁵	29,53	4,015 x 10 ²	14,5
1 Pa (N/m ²)	0,102	7,5 x 10 ⁻³	7,5	2,953 x 10 ⁻⁴	4,015 x 10 ⁻³	1,45 x 10 ⁻⁴
1 kPa	1,02 x 10 ²	7,5	7,5 x 10 ³	0,295	4,015	0,145
1 atm	1,033 x 10 ⁴	7,6 x 10 ²	7,6 x 10 ⁵	29,92	4,068 x 10 ²	14,7
1 kp/cm ² (at)	10 ⁴	7,356 x 10 ²	7,356 x 10 ⁵	28,96	3,973 x 10 ²	14,22
1 mm H ₂ O	1	7,354 x 10 ⁻²	73,54	2,896 x 10 ⁻³	3,394 x 10 ⁻²	1,42 x 10 ⁻³
1 Torr (mm Hg)	13,59	1	10 ³	3,937 x 10 ⁻²	0,535	1,934 x 10 ⁻²
1 micron	1,359 x 10 ⁻²	10 ⁻³	1	3,937 x 10 ⁻⁵	5,35 x 10 ⁻⁴	1,934 x 10 ⁻⁵
1 in. Hg	3,45 x 10 ²	25,4	2,54 x 10 ⁴	1	13,6	0,491
1 in. H ₂ O	25,4	1,868	1,868 x 10 ³	7,356 x 10 ⁻²	1	3,613 x 10 ⁻²
1 lb/in ² (psi)	7,03 x 10 ²	51,71	5,171 x 10 ⁴	2,036	27,68	1

Vacuum Conversion

Absolute pressure p (mbar abs.) can be converted to and from pressure difference Δp (inches Hg) based on atmospheric pressure of 1013 mbar abs. (= 760 Torr = 29.92 inches Hg abs.) using the following formulae:

$$29.92 - 2.953 \times 10^{-2} \times p \text{ (mbar abs.)} = \Delta p \text{ (inches Hg)}$$

$$1013 - 33.86 \times \Delta p \text{ (inches Hg)} = p \text{ (mbar abs.)}$$

真空换算

极限压力p (mbar 绝对压) 能换算成为压力差Δp(inches Hg) 基于大气压力为1013mbar绝对压 (=760 Torr = 29.92 in Hg 绝对压) 可用以下方程式:

$$29.92 - 2.953 \times 10^{-2} \times p \text{ (mbar 绝对压)} = \Delta p \text{ (inches Hg)}$$

$$1013 - 33.86 \times \Delta p \text{ (inches Hg)} = p \text{ (mbar 绝对压)}$$

流量 / Capacity

	m ³ /h	m ³ /min	m ³ /s	l/min	cfm (ft ³ /min)	gal/min
1 m ³ /h	1	1,667 x 10 ⁻²	2,778 x 10 ⁻⁴	16,67	0,588	4,403
1 m ³ /min	60	1	1,667 x 10 ⁻²	10 ³	35,28	2,642 x 10 ²
1 m ³ /s	3600	60	1	6 x 10 ⁴	2,117 x 10 ³	1,585 x 10 ⁴
1 l/min	6 x 10 ⁻²	10 ³	1,667 x 10 ⁻⁵	1	3,528 x 10 ⁻²	0,264
1 cfm (ft ³ /min)	1,699	2,832 x 10 ⁻²	4,72 x 10 ⁻⁴	28,32	1	7,481
1 gal/min	0,227	0,378	6,306 x 10 ⁻⁵	3,784	0,133	1

功率 / Efficiency

	kW	W (J/s)	PS	hp	kcal/h	Btu/h
1 kW	1	10 ³	1,36	1,341	860	3,412 x 10 ³
1 W (J/s)	10 ⁻³	1	1,36 x 10 ⁻³	1,341 x 10 ⁻³	0,860	3,412
1 PS	0,736	736	1	0,986	6,329 x 10 ²	2,509 x 10 ³
1 hp	0,746	7,46	1,014	1	6,413 x 10 ²	2,545 x 10 ³
1 kcal/h	1,163 x 10 ⁻³	1,163	1,58 x 10 ⁻³	1,559 x 10 ⁻³	1	3,968
1 Btu/h	2,931 x 10 ⁻⁴	0,2931	3,985 x 10 ⁻⁴	3,93 x 10 ⁻⁴	0,252	1

Temperature Conversion tC (°C) ↔ tF (°F):
 1.8 x tC (°C) + 32 = tF (°F)
 0.556 x tF (°F) - 17.78 = tC (°C)

温度换算 tC (°C) ↔ tF (°F):
 1.8 x tC (°C) + 32 = tF (°F)
 0.556 x tF (°F) - 17.78 = tC (°C)

长度 / Length

	m	cm	m	in	ft	yd
1 mm	1	0,1	10 ³	3,94 x 10 ⁻²	3,28 x 10 ⁻³	1,093 x 10 ⁻³
1 cm	10	1	10 ²	0,394	3,28 x 10 ⁻²	1,093 x 10 ⁻²
1 m	10 ³	10 ²	1	39,4	3,28	1,093
1 in	25,4	2,54	2,54 x 10 ²	1	8,33 x 10 ⁻²	2,78 x 10 ⁻²
1 ft	3,084 x 10 ²	30,48	0,305	12	1	0,333
1 yd	9,144	0,914 x 10 ²	0,914	36	3	1

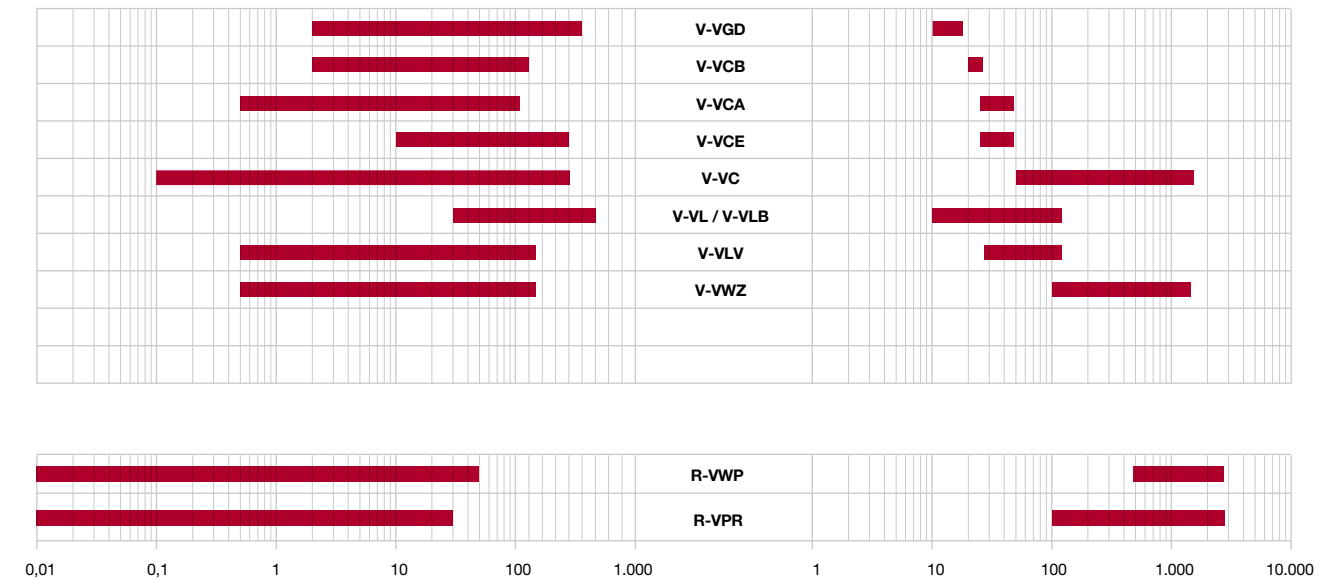
体积 / Volume

	ml (cm ³)	l (dm ³)	in ³	ft ³	Imp. gal	U.S. gal
1 ml (cm ³)	1	10 ⁻³	0,061	3,53 x 10 ⁻⁵	2,20 x 10 ⁻⁴	2,64 x 10 ⁻⁴
1 l (dm ³)	10 ³	1	0,610 x 10 ²	3,53 x 10 ⁻²	0,220	0,264
1 in ³	16,39	1,639 x 10 ⁻²	1	5,79 x 10 ⁻⁴	3,606 x 10 ⁻³	4,327 x 10 ⁻³
1 ft ³	2,83 x 10 ⁴	28,3	1,728 x 10 ³	1	6,25	7,46
1 Imp. gal	4,55 x 10 ³	4,55	2,773 x 10 ²	0,160	1	1,20
1 U.S. gal	3,785 x 10 ³	3,785	2,311 x 10 ²	0,134	0,833	1

重量 / Weight

	g	kg	oz	lb	Brit. ton	U.S. ton
1 g	1	10 ⁻³	3,53 x 10 ⁻²	2,205 x 10 ⁻³	0,984 x 10 ⁻⁶	1,103 x 10 ⁻⁶
1 kg	103	1	35,3	2,205	0,984 x 10 ⁻³	1,103 x 10 ⁻³
1 oz	28,35	2,835 x 10 ⁻²	1	6,246 x 10 ⁻²	2,788 x 10 ⁻⁵	3,125 x 10 ⁻⁵
1 lb	454	0,454	16,01	1	4,463 x 10 ⁻⁴	5,00 x 10 ⁻⁴
1 Brit. ton	1,016 x 10 ⁶	1,016 x 10 ³	3,587 x 10 ⁴	2,24 x 10 ³	1	1,120
1 U.S. ton	0,907 x 10 ⁶	0,907 x 10 ³	3,20 x 10 ⁴	2,00 x 10 ³	0,893	1

技术规格 Technical Specifications



应用 Application

油润滑 Oil lubricated

环境保护工程

- 充气
- 干燥
- 粉尘及烟雾抽出系统

食品加工

- 灌装
- 切割

工业应用

- 干燥系统
- 粉尘及烟雾抽出系统
- 工业炉
- 真空压缩

包装工业

- 中央真空系统
- 包装机械

气体输送

木工加工工业

- 粉尘及烟雾抽出系统
- 真空压缩

Environmental engineering

- Aeration
- Drying
- Dust extraction systems

Food processing

- Bottling and filling machines
- Cutting machines

Industrial applications

- Drying systems
- Dust extraction systems
- Industrial furnaces
- Vacuum hold down

Packaging industry

- Centralized vacuum systems
- Packaging machines

Pneumatic conveying

Woodworking industry

- Dust extraction systems
- Vacuum hold down



一次性油润滑 Once through oil lubricated rotary vanes

化学和制药工艺

- 结晶
- 除气
- 蒸馏
- 干燥
- 蒸发
- 分馏
- 注入
- 冷却
- 涂层
- 过滤

Chemical and pharmaceutical processes

- Crystallization
- Degassing
- Distillation
- Drying
- Evaporation
- Fractionation
- Impregnation
- Super cooling
- Vacuum coating (sublimation)
- Vacuum filtration





F-Series Radial / 离心风机



G-Series Side Channel / 侧流式风机



L-Series Liquid Ring / 液环式真空泵



V-Series Rotary Vane / 旋片泵



R-Series Roots / 罗茨泵



C-Series Claw / 爪式泵



S-Series Screw / 螺杆式真空泵



X-Series Pump Stands / 真空系统

www.gd-elmorietschle.com
info.cn@gardnerdenver.com

登福机械（上海）有限公司

上海市青浦工业园区新团路200号

销售电话：(上海) 021-62919525 (北京) 010-64207259 (深圳) 0755-82350100

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