



**Elmo
Rietschle®**

An Ingersoll Rand Business

V-Serie

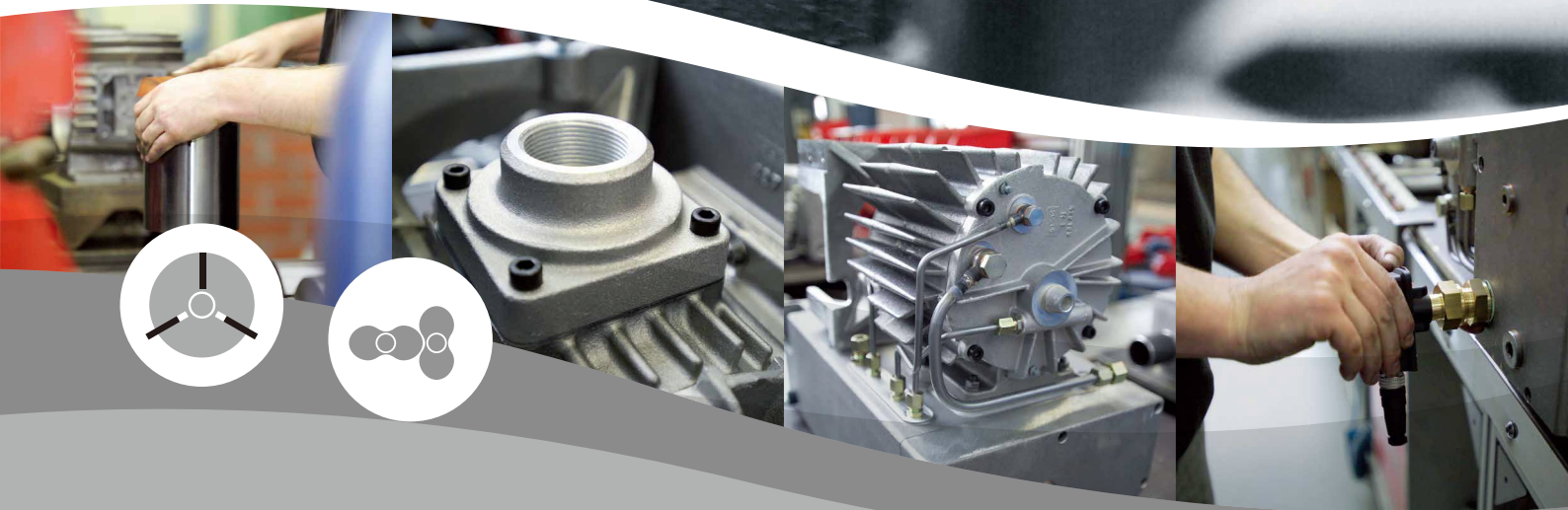
Oil Lubricated
Rotary Vane

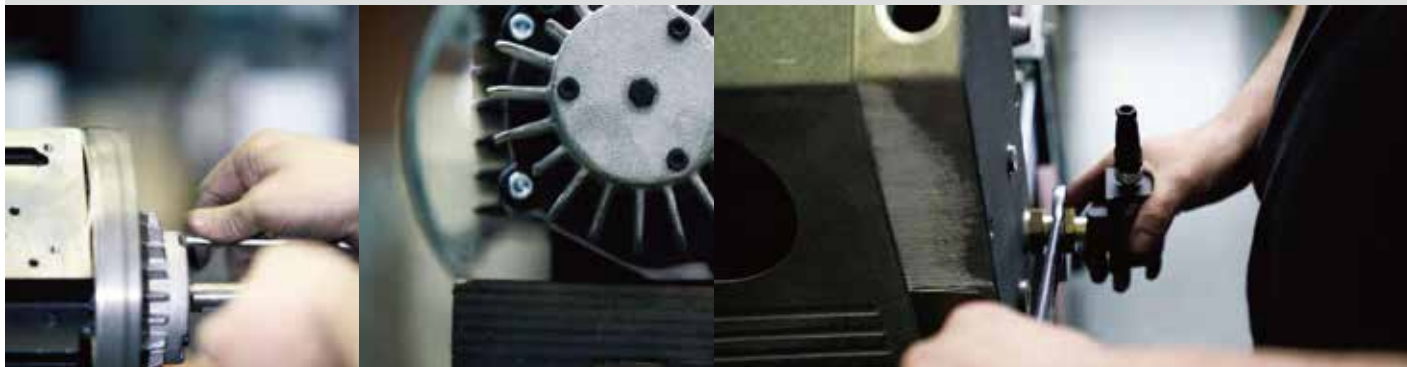
油式旋片真空泵

R-Serie

Roots

罗茨泵





Elmo Rietschle stands for superior product portfolio, application experience and expertise 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 logistic

Elmo Rietschle代表着整个真空和压力技术领域的优异产品组合、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。

卓越的品质

- 所有产品均在制造基地设计和生产
- 更短的响应时间
- 完善的物流系统

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设计原理 Operating Principle

体积减少压力增加:静态压缩系统

体积减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。

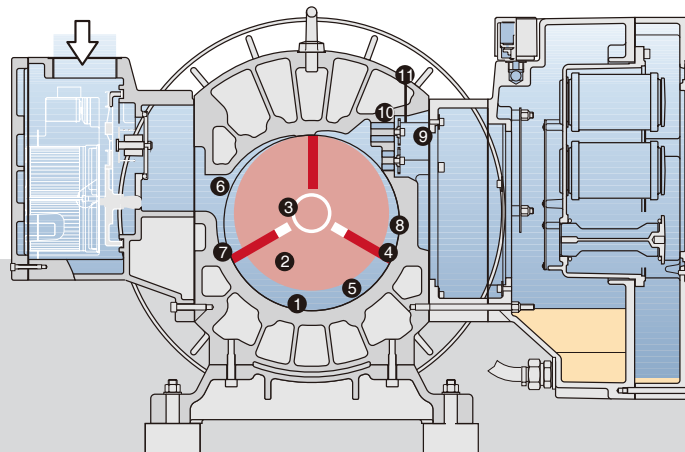
作为真空泵运行时，其过程相同，但气室（8）提供的是负压，腔体（9）内为大气压。

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更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



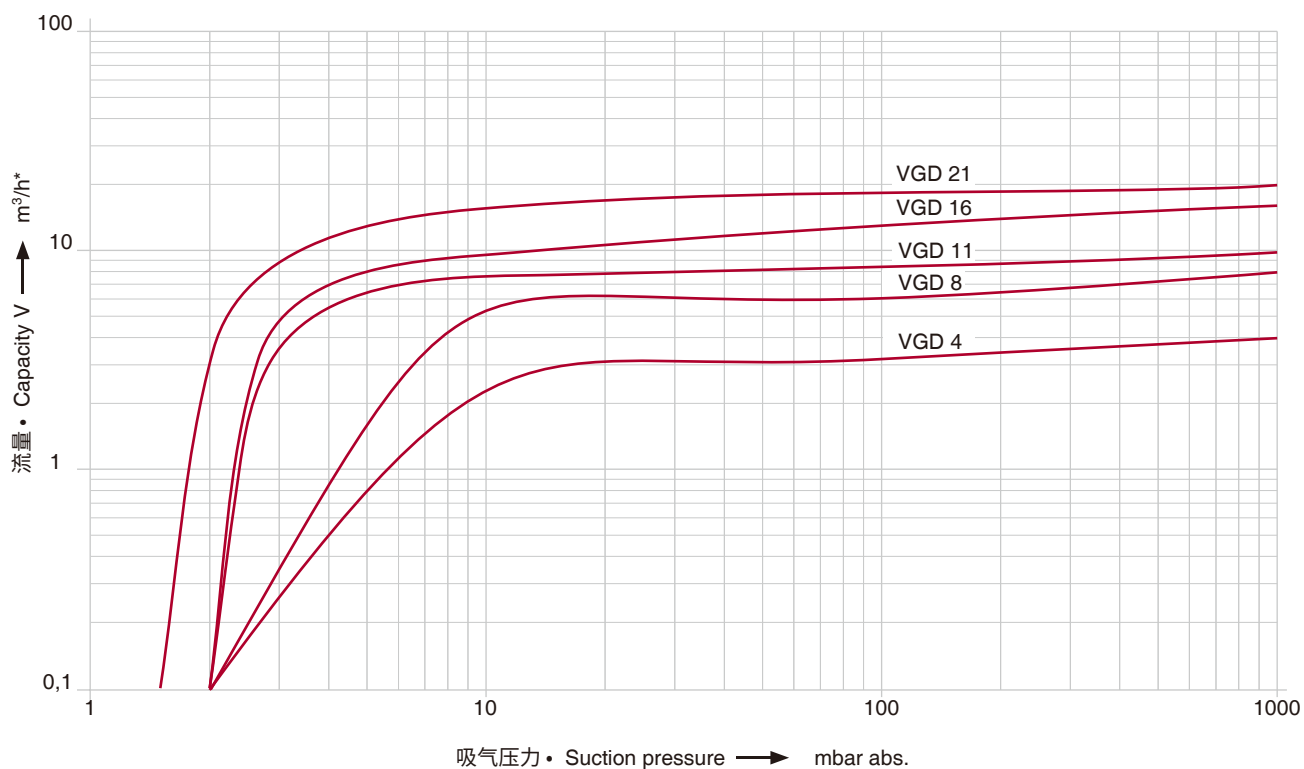


油式旋片真空泵
流量为4至20m³/hr。专为安装在小型真空包装机中设计。
由于悬臂式转子设计和整体式电机，占地面积小。标配细网过滤器、真空止回阀和机油分离器。低噪音运行。
工作范围：1.5–100mbar（绝对值）

Oil-flooded rotary vane vacuum pump
Capacities ranging from 4 to 20 m³/hr
Designed for installation into small vacuum packaging machines.
Small foot print due to overhung rotor design and integral motor. Fitted as standard with fine mesh filter, vacuum non-return valve and oil separator. Very quiet running.
Operating range: 1.5 – 100 mbar (abs.)

选型图 • Selection diagram

50 Hz

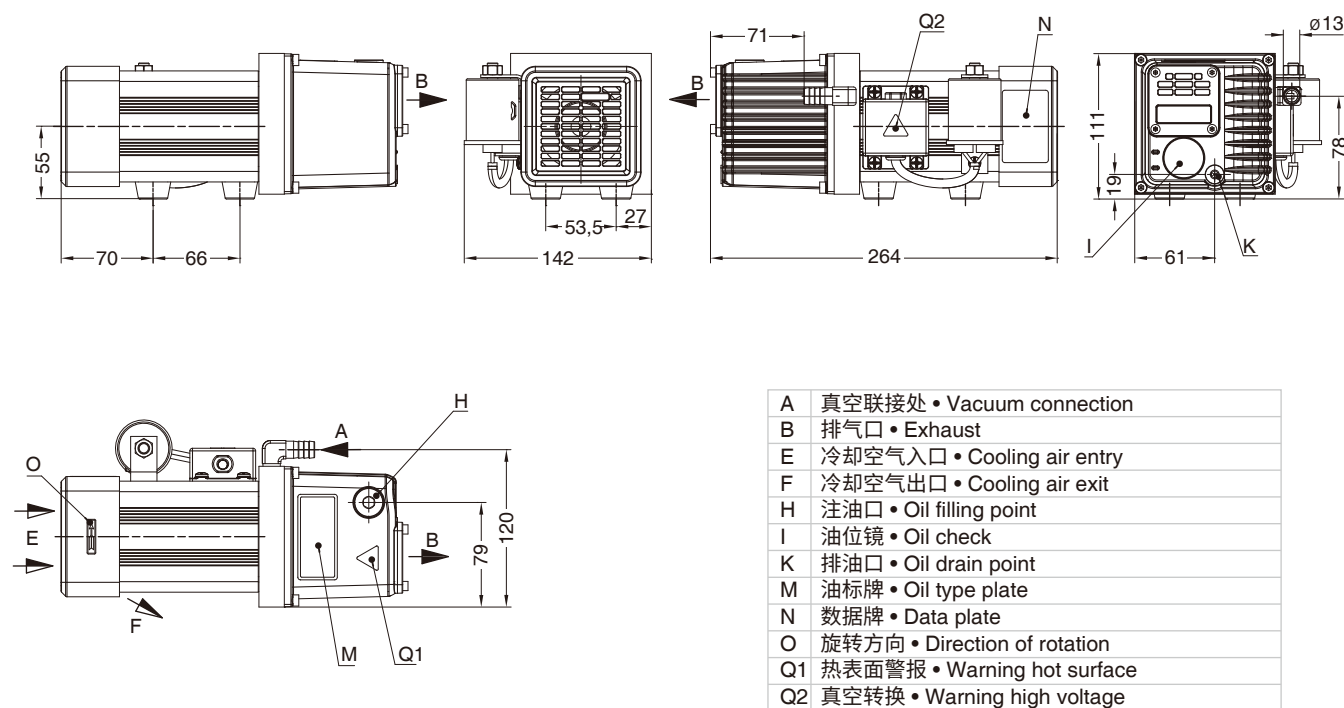


V-VGD			4	8
流量 Nominal suction capacity	m³/h	50 Hz	4	8
极限真空 Ultimate vacuum	mbar (abs.)		2	2
电机类型 Rated voltage	V	1~ 50 Hz	230 V±10%	
电机功率 Motor rating	kW	50 Hz	0,15	0,37
电流 Current consumption	A	1~ 50 Hz	1,3	2,5
转速 Speed	min⁻¹	50 Hz	3000	
平均噪音 Average noise level	dB(A) ENISO3744	50 Hz	54	62
最大重量 Max. weight	kg	50 Hz	5,8	11,5
油量 Oil capacity	l		0,13	0,25
防护等级 Protection class			IP54	

V-VGD			11	16	21
流量 Nominal suction capacity	m ³ /h	50 Hz	10	15	20
极限真空 Ultimate vacuum	mbar (abs.)		2	2	1,5
电机类型 Rated voltage	V	1~ 50 Hz 3~	230 V±10%	230 V±10%	230 V±10%
			-	400 V±10%	400 V±10%
电机功率 Motor rating	kW	50 Hz	0,37	0,55	0,75
电流 Current consumption	A	1~ 50 Hz 3~	2,5	3,9	5,2
			-	1,7	2,6
转速 Speed	min ⁻¹	50 Hz	3000		
平均噪音 Average noise level	dB(A) ENISO3744	50 Hz	62	65	67
最大重量 Max. weight	kg	50 Hz	11,5	16	19,5
油量 Oil capacity	l		0,25	0,45	0,45
防护等级 Protection class			IP54		

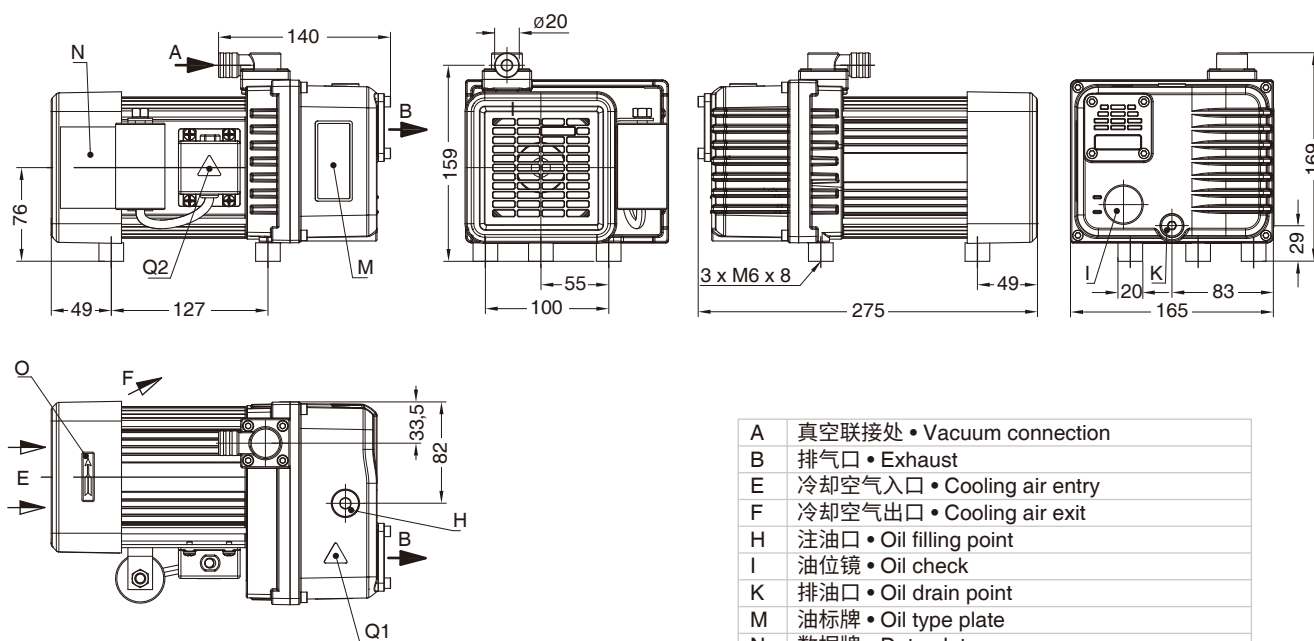
尺寸 • Dimensions [mm]

VGD 4



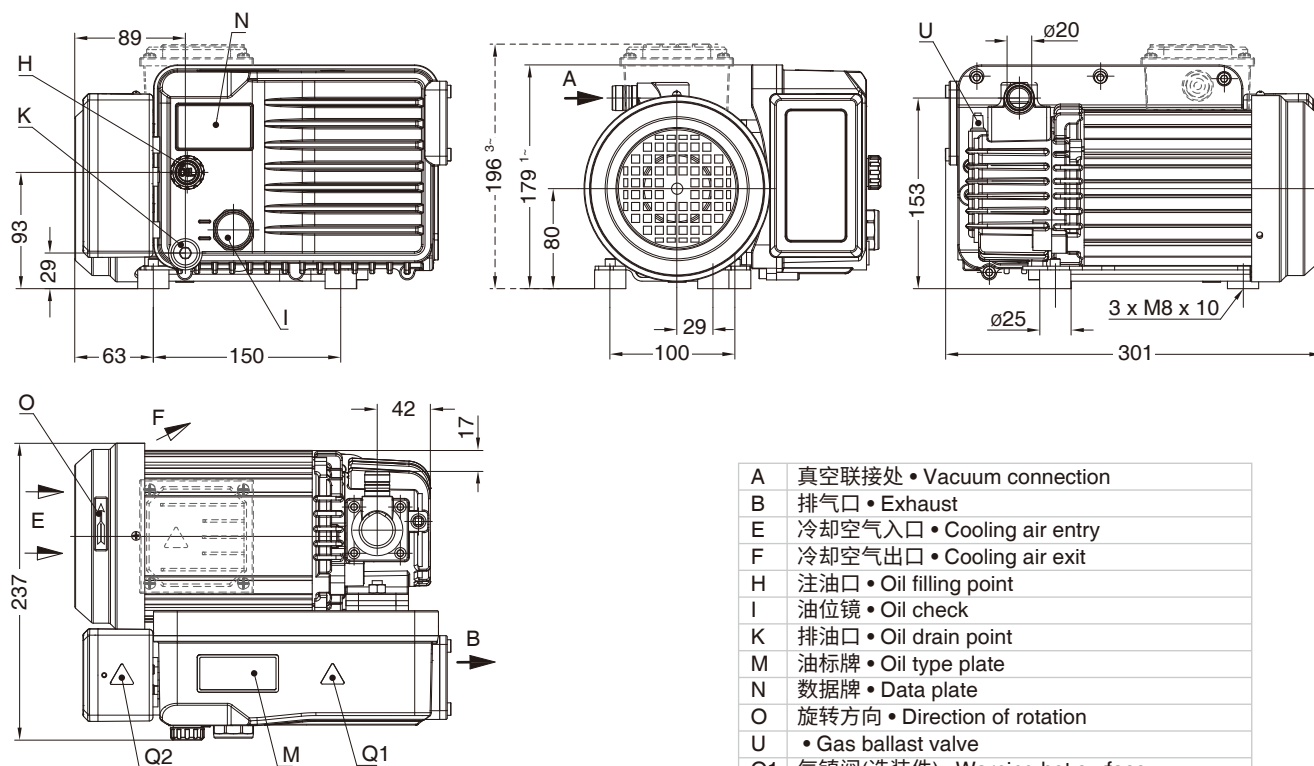


VGD 8 | VGD 11



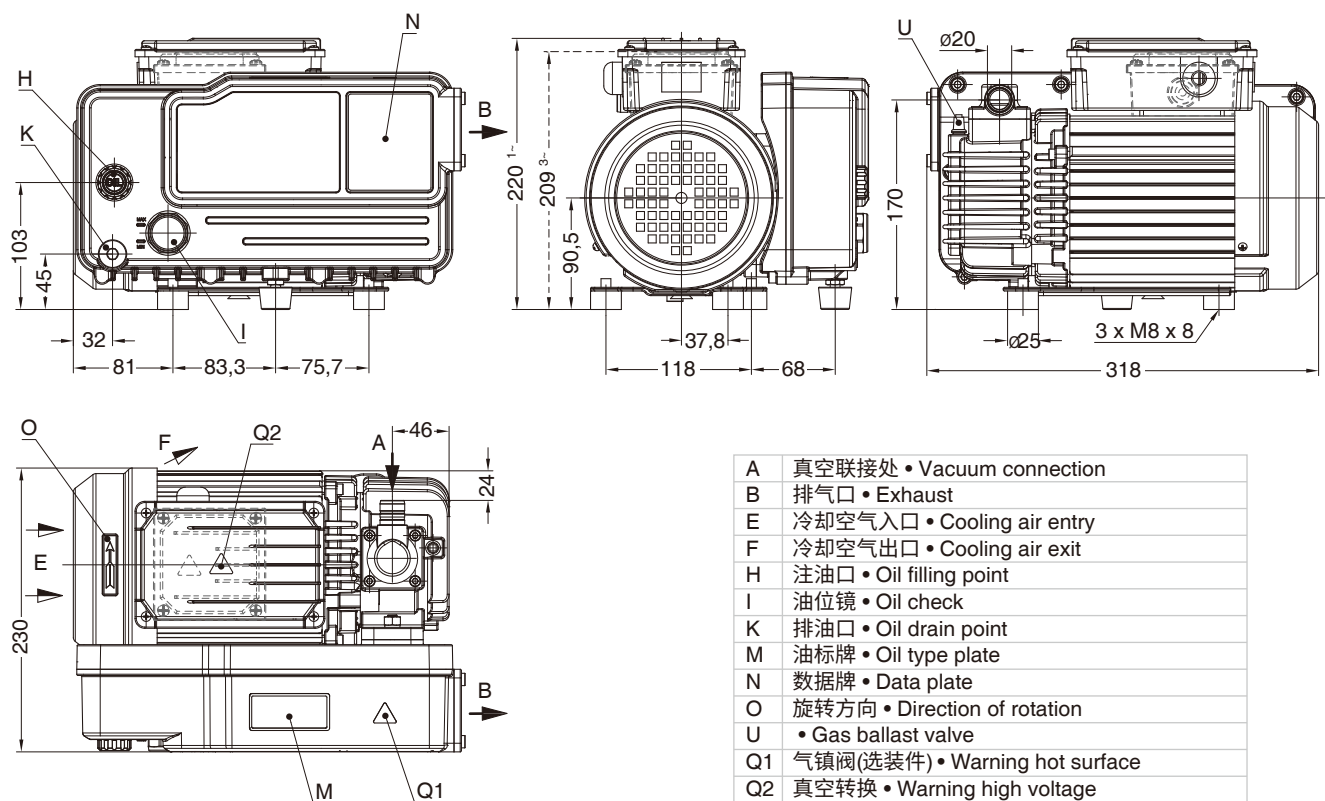
A	真空联接处 • Vacuum connection
B	排气口 • Exhaust
E	冷却空气入口 • Cooling air entry
F	冷却空气出口 • Cooling air exit
H	注油口 • Oil filling point
I	油位镜 • Oil check
K	排油口 • Oil drain point
M	油标牌 • Oil type plate
N	数据牌 • Data plate
O	旋转方向 • Direction of rotation
Q1	气镇阀(选装件) • Warning hot surface
Q2	真空转换 • Warning high voltage

VGD 16



A	真空联接处 • Vacuum connection
B	排气口 • Exhaust
E	冷却空气入口 • Cooling air entry
F	冷却空气出口 • Cooling air exit
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	• Gas ballast valve
Q1	气镇阀(选装件) • Warning hot surface
Q2	真空转换 • Warning high voltage

VGD 21



选装附件 • Accessories

VGD			4	8	11	16	21
电机启动器 Motor starter	ZMS (3~)	50 Hz	-	-	-	25	40
	ZMS (1~)	50 Hz	16	25	25	40	63

- VGD 16和VGD 21标配有额外的G $\frac{3}{4}$ 螺纹连接。
- The VGD 16 and VGD 21 are supplied with an additional G $\frac{3}{4}$ threaded connection as standard.

m³/h * 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，其所示为真空泵在正常状态下运行。
- 电机尺寸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)。
- # 根据需要
- 我们保留调整技术数据权利。

m³/h * refers to suction conditions at inlet connection

- Curves, tables content (tolerance $\pm 10\%$) according to PNEUROP standards and refer to vacuum pump at normal operating temperature.
- The dimensions a, p and ϕ w as well as the current drawn can differ.
- Water vapour tolerance, see leaflet I 200 (on request).
- # on request
- We reserve the right to alter technical information!





油式旋片真空泵，单相电机和3相IE2电机

流量达25m³/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。

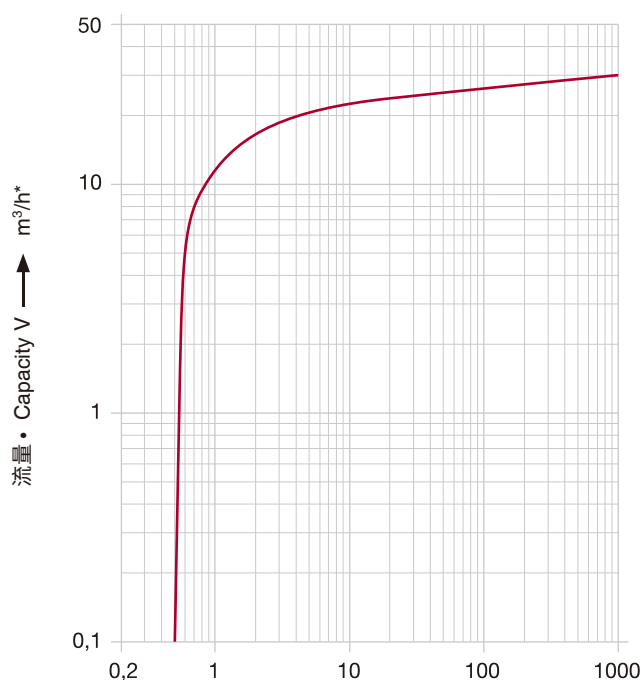
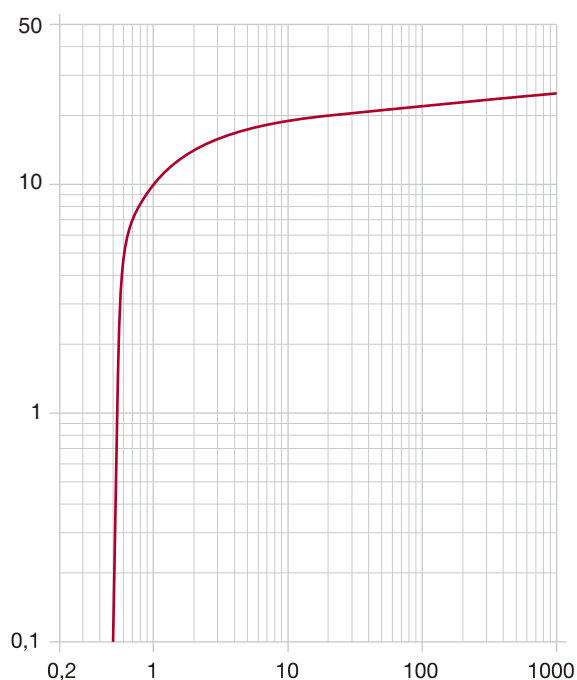
法兰式电机符合DIN EN 60034标准，保护标准 IP54，绝缘等级F。

Oil-flooded rotary vane vacuum pumps with 1~ motors and 3~ IE2 motors
Capacities ranging from 25 m³/hr, 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 correspond to DIN EN 60034 and have IP 55 protection and insulation class F.

选型图 • Selection diagram

50 Hz

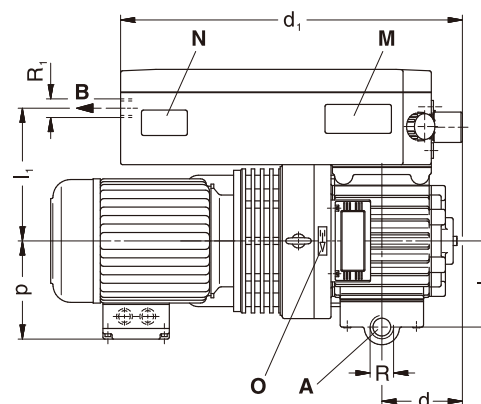
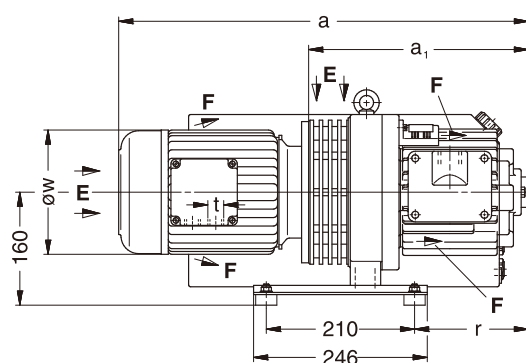
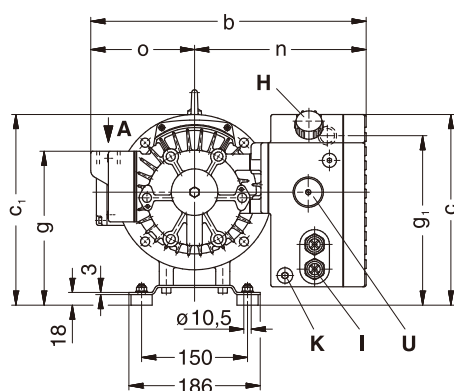
60 Hz



吸气压力 • Suction pressure → mbar abs.

V-VCA			25
流量 Suction capacity	m³/h	50 Hz	25
		60 Hz	30
极限真空 Ultimate vacuum	mbar (abs.)		0.5
电机类型 Rated voltage	3~	50 Hz	230 / 400 V ± 10 %
		60 Hz	#
电机功率 Motor rating	kW(3~)	50 Hz	0,75
		60 Hz	#
电流消耗 Current consumption	A(3~)	50 Hz	2,96 / 1,71
		60 Hz	#
电机效率 Motor efficiency	η [%]	50 Hz	79.6%
		60 Hz	#
转速 Speed	min⁻¹	50 Hz	1450
		60 Hz	1740
平均噪音 Average noise level	dB(A) EN ISO 3744	50 Hz	57
		60 Hz	59
最大重量 Max. weight	kg		40
油量 Oil capacity	l		1

尺寸 • Dimensions [mm]



V-VCA	25
a	3~ 485
a ₁	1~ 512
b	333
c	255
c ₁	270
d	70
d ₁	360
g	218
g ₁	221
l	105
l ₁	145
n	201
o	132
p	128
r	80
t	M 20 x 1,5
øw	185
R	G ¾
R ₁	Rp ½

A	真空联接处 • Vacuum connection
B	排气口 • Exhaust
E	冷却空气入口 • Cooling air entry
F	冷却空气出口 • Cooling air exit
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

选装附件 • Accessories

V-VCA			25
逆止阀 Non-return valve	ZRK		20 (03)
真空密封灰尘分离器 Vacuum tight dust separator	ZFP		145 (11)
真空密封进气口过滤器 Vacuum tight suction filter	ZVF	50 Hz	20 (53)
		60 Hz	
电机启动器 Motor starter	ZMS (3~)	50 Hz	40 / 25
		60 Hz	#

m³/h * 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，其所示为真空泵在正常状态下运行。
- 电机尺寸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)。
- # 根据需要
- 我们保留调整技术数据的权利。

m³/h * refers to suction conditions at inlet connection

- Curves, tables content (tolerance ±10%) according to PNEUROP standards and refer to vacuum pump at normal operating temperature.
- The dimensions a, p and ø w as well as the current drawn can differ.
- Water vapour tolerance, see leaflet I 200 (on request).
- # on request
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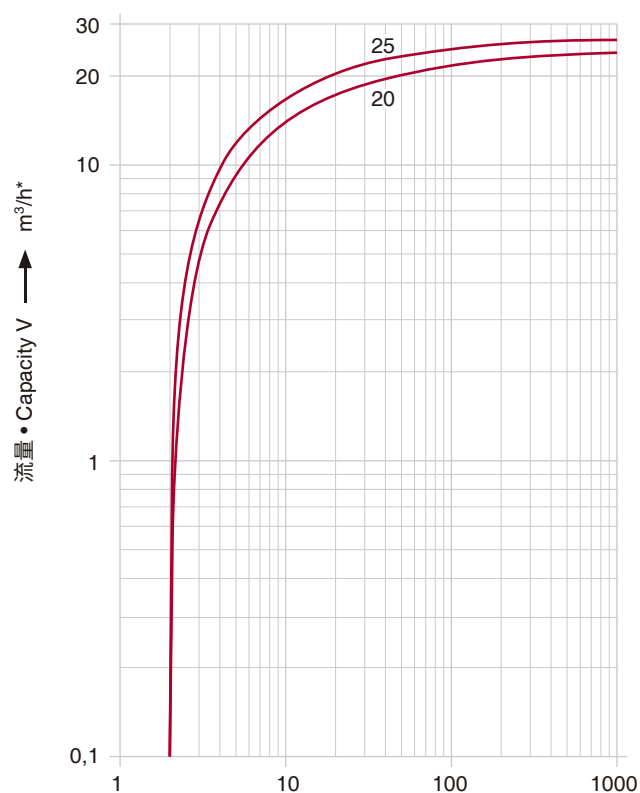
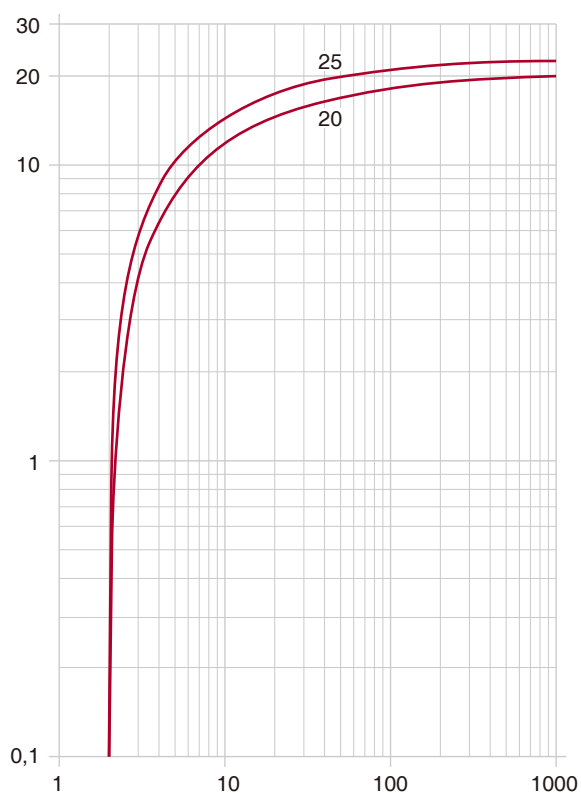
油式旋片真空泵，IE2电机
流量从20至26.5 m³/hr，极限真空
2mbar（绝对值）。特别为小型真空包
装机配套设计。法兰式电机，转子两
侧装有轴承，风冷式。内置筛网过滤
器，真空逆止阀和油分离器。
法兰式电机符合 DIN EN 60034 标
准，保护标准 IP54，绝缘等级F。

Oil-flooded rotary vane vacuum pumps
with IE2 motors
Capacities ranging from 20 to 26.5 m³/hr,
ultimate vacuum 2 mbar (abs.).
Designed for installation into 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
correspond to DIN EN 60034 and have IP
55 protection and insulation class F.

选型图 • Selection diagram

50 Hz

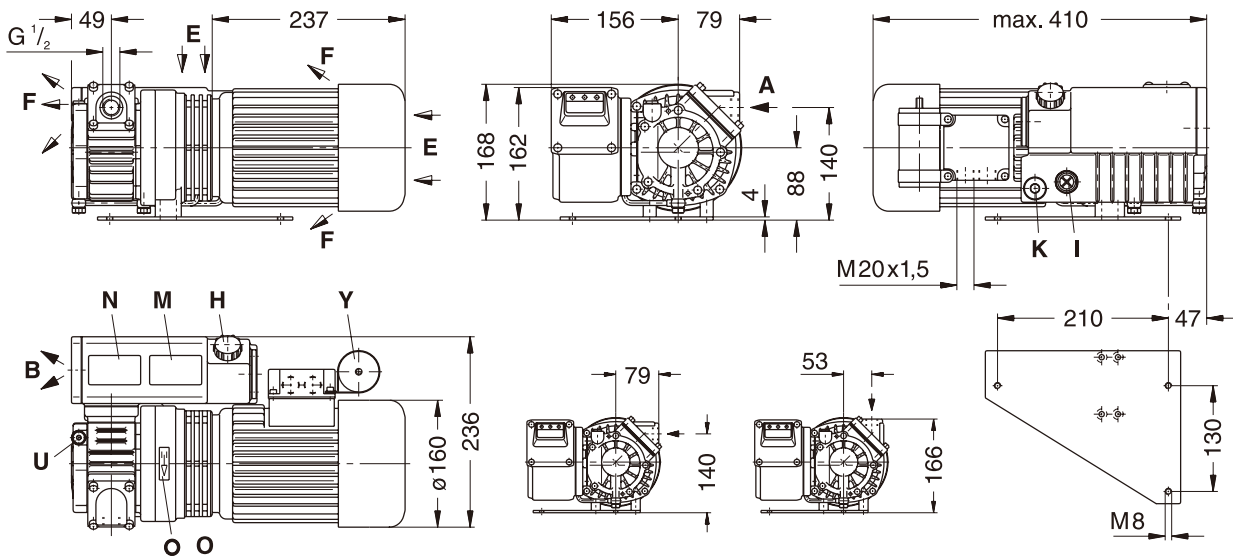
60 Hz



吸气压力 • Suction pressure → mbar abs.

V-VCB				20	25
流量 Suction capacity	m ³ /h	50 Hz		20	24
		60 Hz		24	26.5
极限真空 Ultimate vacuum	mbar (abs.)	50 Hz		2	
		60 Hz		2	
电机类型 Rated voltage	3~	50 Hz		230/400 V ± 10 %	
		60 Hz		265/460 V ± 10 %	
电机功率 Motor rating	kW	50 Hz		0,75	
		60 Hz		0,9	
电流 Current drawn	A(1~)	50 Hz		2,86 / 1,65	
		60 Hz		2,86 / 1,65	
转速 Speed	min ⁻¹	50 Hz		2850	
		60 Hz		3420	
平均噪音 Average noise level	dB(A) EN ISO 3744	50 Hz		63	62
		60 Hz		64	66
最大重量 Max. weight	kg			23	
油量 Oil capacity	l			0,35	

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 entry
F	冷却空气出口 • Cooling air exit
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~)

选装附件 • Accessories

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

m³/h * 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，其所示为真空泵在正常状态下运行。
- 电机尺寸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)。
- # 根据需要
- 我们保留调整技术数据的权利。

m³/h * refers to suction conditions at inlet connection

- Curves, tables content (tolerance ±10%) according to PNEUROP standards and refer to vacuum pump at normal operating temperature.
- The dimensions a, p and ø w as well as the current drawn can differ.
- Water vapour tolerance, see leaflet I 200 (on request).
- # on request
- We reserve the right to alter technical information!





油式旋片真空泵，单相电机和3相IE2电机

流量为25m³/hr，极限真空10mbar（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。

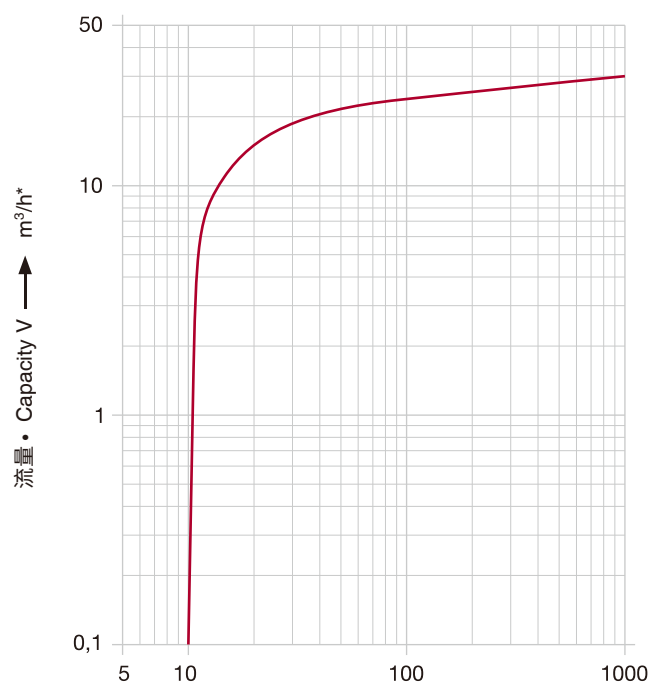
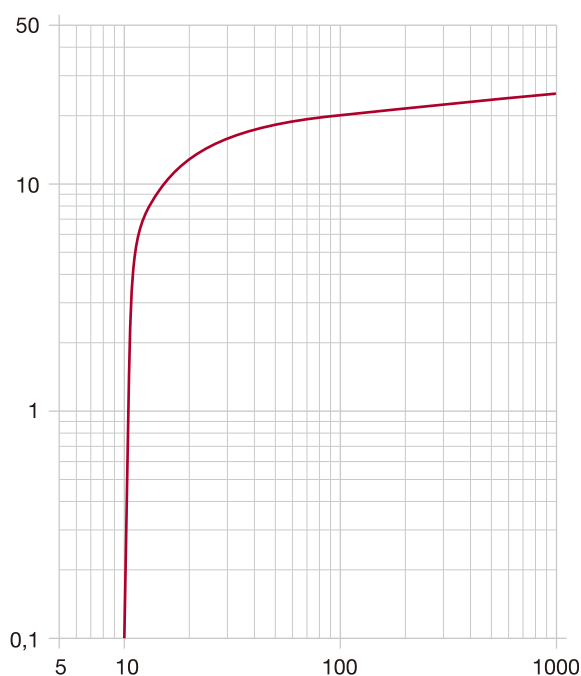
法兰式电机符合DIN EN 60034标准，保护标准 IP54，绝缘等级F。

Oil-flooded rotary vane vacuum pumps with 1~ motors and 3~ IE2 motors
Capacities ranging from 25 m³/hr, ultimate vacuum 10 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 correspond to DIN EN 60034 and have IP 55 protection and insulation class F.

选型图 • Selection diagram

50 Hz

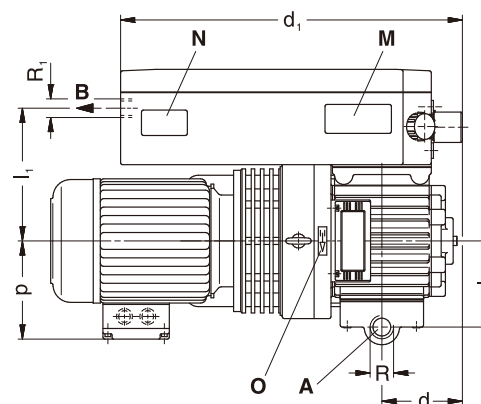
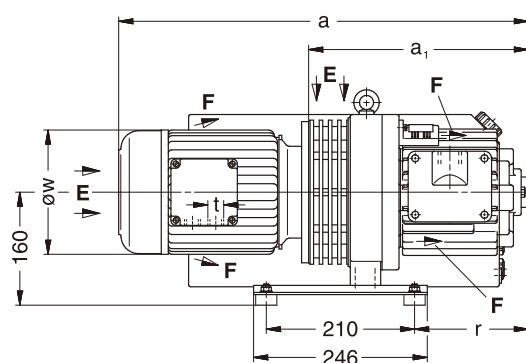
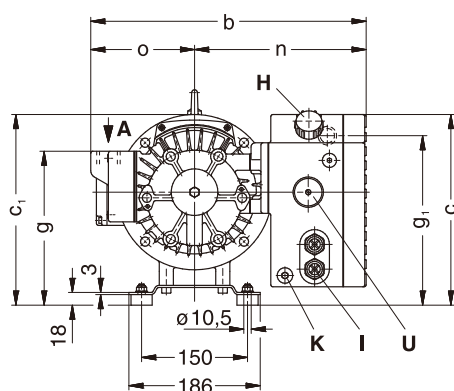
60 Hz



吸气压力 • Suction pressure → mbar abs.

V-VCE			25
流量	m³/h	50 Hz	25
Suction capacity		60 Hz	30
极限真空	mbar (abs.)		10
Ultimate vacuum			
电机类型	3~	50 Hz	230 / 400 V ± 10 %
Rated voltage		60 Hz	#
电机功率	kW(3~)	50 Hz	0,75
Motor rating		60 Hz	#
电流消耗	A(3~)	50 Hz	2,96 / 1,71
Current consumption		60 Hz	#
电机效率	η [%]	50 Hz	79.6%
Motor efficiency		60 Hz	#
电机类型	1~	50 Hz	230 V ± 10 %
Rated voltage		60 Hz	220 V
电机功率	kW(1~)	50 Hz	1,0
Motor rating		60 Hz	1,3
电流消耗	A(1~)	50 Hz	7,2
Current consumption		60 Hz	10,9
转速	min⁻¹	50 Hz	1450
Speed		60 Hz	1740
平均噪音	dB(A)**	50 Hz	57
Average noise level		60 Hz	59
最大重量	kg	3~	40
Max. weight		1~	45
油量	l		1
Oil capacity			

尺寸 • Dimensions [mm]



V-VCE	25
a	3~ 485
a ₁	1~ 512
b	333
c	255
c ₁	270
d	70
d ₁	360
g	218
g ₁	221
l	105
l ₁	145
n	201
o	132
p	128
r	80
t	M 20 x 1,5
øw	185
R	G ¾
R ₁	Rp ½

A	真空联接处 • Vacuum connection
B	排气口 • Exhaust
E	冷却空气入口 • Cooling air entry
F	冷却空气出口 • Cooling air exit
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

选装附件 • Accessories

V-VCE	25
真空调节阀 Vacuum regulating valve	ZRV 13/2 (05)
逆止阀 Non-return valve	ZRK 20 (03)
真空密封灰尘分离器 Vacuum tight dust separator	ZFP 145 (11)
真空密封进气口过滤器 Vacuum tight suction filter	ZVF 50 Hz 20 (53) 60 Hz
电机启动器 Motor starter	ZMS (3~) 50 Hz 40 / 25 60 Hz # ZMS (1~) 50 Hz 100 60 Hz 160

m³/h * 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，其所示为真空泵在正常状态下运行。
- 电机尺寸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)。
- #根据需要
- 我们保留调整技术数据的权利。

m³/h * refers to suction conditions at inlet connection

- Curves, tables content (tolerance ±10%) according to PNEUROP standards and refer to vacuum pump at normal operating temperature.
- The dimensions a, p and ø w as well as the current drawn can differ.
- Water vapour tolerance, see leaflet I 200 (on request).
- # on request
- We reserve the right to alter technical information!





油式旋片真空泵，符合UL1004标准的IE3电机

流量从50至180m³/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。

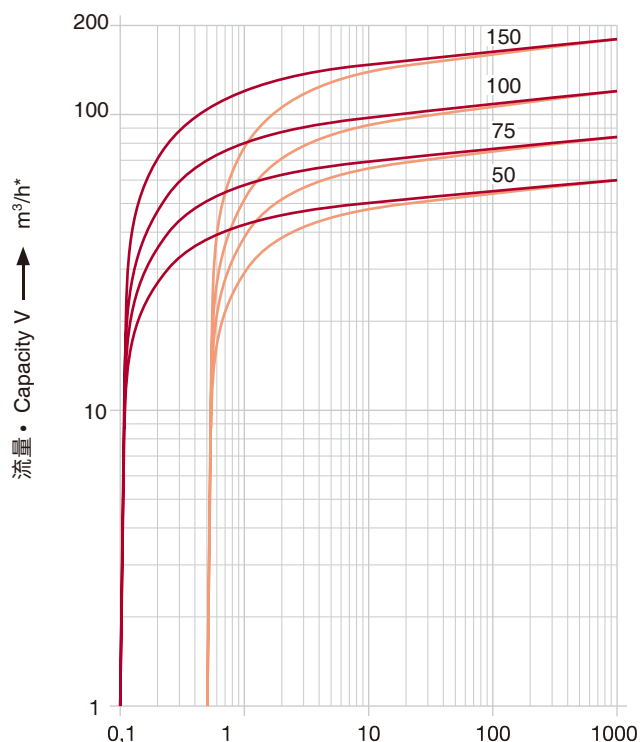
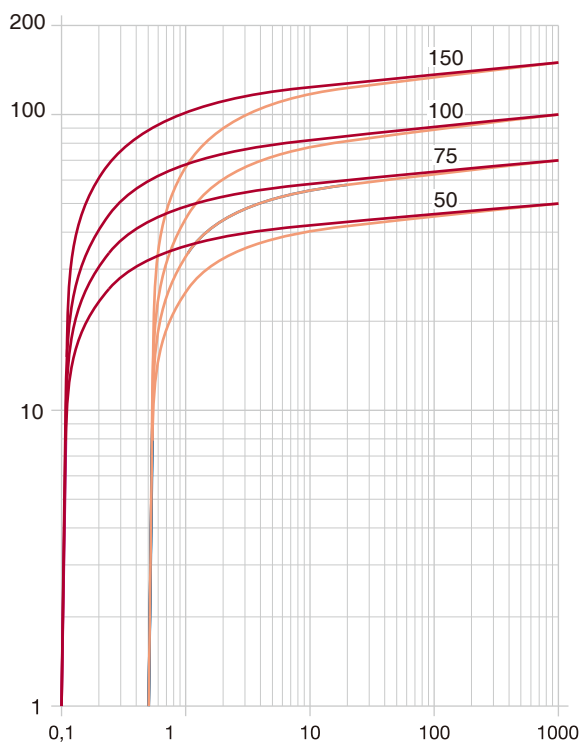
版本除了能处理高氧含量气体还能处理高水蒸气气体。

Oil-flooded rotary vane vacuum pumps with IE3 motors according to UL 1004 Capacities ranging from 50 to 180 m³/hr, Ultimate partial pressure 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 nonreturn 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.

选型图 • Selection diagram

50 Hz

60 Hz

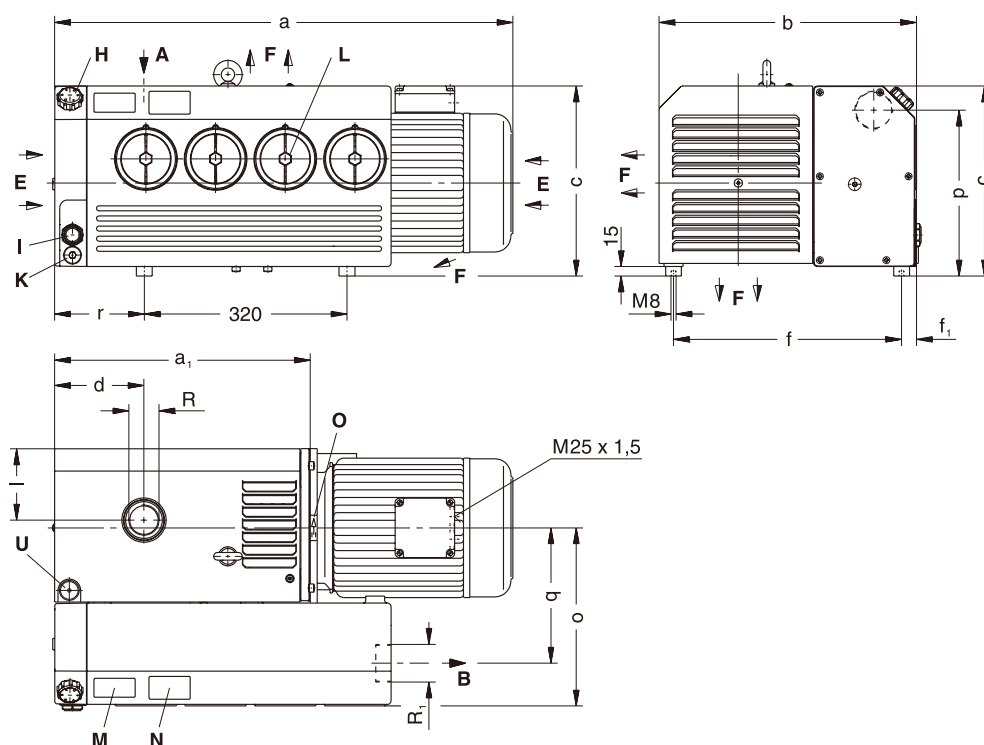


吸气压力 • Suction pressure → mbar abs.

— 气镇阀关闭 • without gas ballast
— 开启气镇阀 • with gas ballast

V-VC			50	75	100	150
流量 Suction capacity	m³/h	50 Hz	50	70	100	150
		60 Hz	60	84	120	180
极限真空 Ultimate vacuum	mbar (abs.)		0,5			
电机类型 Rated voltage	3~	50 Hz 60 Hz	230 / 440 V			
电机功率 Motor rating	kW(3~)	50 Hz 60 Hz	1,25	1,85	3,0	4,0
电流消耗 Current consumption	A(3~)	50 Hz 60 Hz	6,9 / 4,0	8,7 / 5,0	8,3 / 4,8	14,2 / 8,2
转速 Speed	min⁻¹	50 Hz 60 Hz	1450 1750			
平均噪音 Average noise level	dB(A) EN ISO 3744	50 Hz 60 Hz	64 67	64 68	66 69	68 71
最大重量 Max. weight	kg	50 Hz 60 Hz	57 57	59 59	88 90	89 98
油量 Oil capacity	l		3,0	3,0	3,0	3,5

尺寸 • Dimensions [mm]



V-VC	50		75		100		150	
a 50 Hz	660	660	660	660	740	740	765	740
60 Hz	660	660	660	660	-	740	-	740
a ₁	316,5		316,5		404		404	
b	336		336		406		406	
c 50 Hz	270		270		309	324	310	330
60 Hz	270		270		-	324	-	330
c ₁	267		267		297		297	
d	113,5		113,5		141		141	
f	287,5		287,5		360		360	
l	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	
t	M 25 x 1,5		M 25 x 1,5		M 25 x 1,5	M 32 x 1,5	M 25 x 1,5	M 32 x 1,5
R	G1 ¼		G1 ¼		G1 ½		G1 ½	
R _i	Rp1 ½		Rp1 ½		Rp 2		Rp 2	

A	真空联接处 • Vacuum connection
B	排气口 • Exhaust
E	冷却空气入口 • Cooling air entry
F	冷却空气出口 • Cooling air exit
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 • Oil separator element
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

选装附件 • Accessories

V-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 (3~)	50 Hz 63 / 40 60 Hz 63 / 40	63 / 40 63 / 40	100 / 63 100 / 63	100 / 63 160 / 100

- m³/h * 与进气口连接的吸气状态有关
- 工作曲线和数据表 (公差10%) 是按PNEUROP标准计算, 其所示为真空泵在正常状态下运行
- 噪音水平是根据EN ISO 3744标准测量的, 测量时离真空泵1米距离, 泵的吸气口真空度处于400 mbar(a), 同时在吸气口由管道连接至室外并配置真空安全阀, 公差±3dB(A)
- 电机尺寸和电流值会因不同电机而与数据表不同
- VC匹配2006/42/EC (机器), 2006/95/EC (低电压)指令及EN60034-1标准旋转电机
- 电机符合EN60034-1/-2/-3(IEC60034) 和热等级F
- 水汽容纳, 见数据I200
- # 根据需要
- 我们保留更改技术信息的权利

- m³/h * refers to suction conditions at inlet connection
- Curves, tables content (tolerance ±10%) according to PNEUROP standards and refer to vacuum pump at normal operating temperature (1bar (abs.) and 20°C).
- Measuring surface sound pressure level acc. to EN ISO 3744, measured with an equivalent unit at a distance of 1 m. The pump is throttled to 400 mbar (a) suction pressure, with suction side piping connected and vacuum relief valves fitted, tolerance ± 3 dB (A).
- The motor dimensions as well as the current drawn can differ depending on the motor type.
- VC match the 2006/42/EC (machinery) and 2006/95/EC (low voltage) directives and the EN 60034-1 norm "Rotating electrical machines".
- The motors comply with EN 60 034-1 / -2 / -30 (IEC 60034) and thermal class F.
- Water vapour tolerance, see leaflet I 200 (on request).
- # on request
- We reserve the right to alter technical information!





油式旋片真空泵，符合UL1004标准的IE3电机

流量从200至360m³/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。

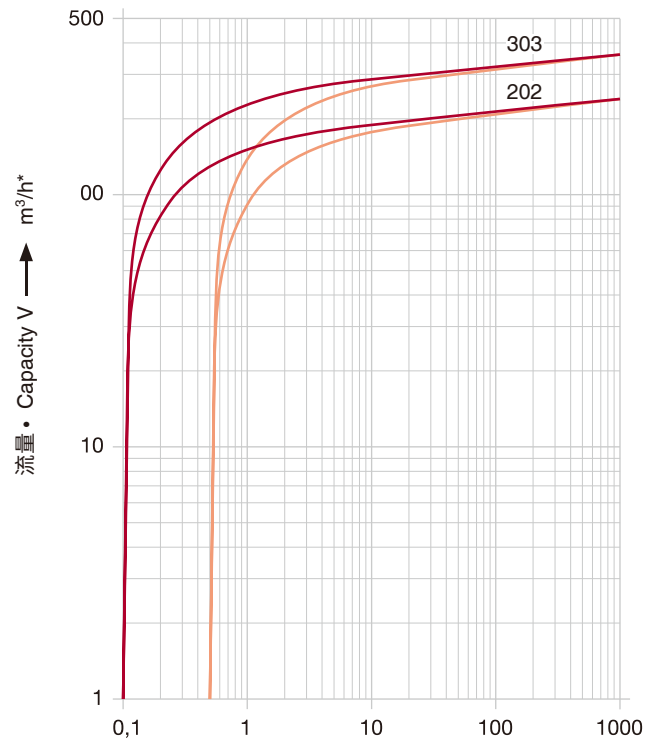
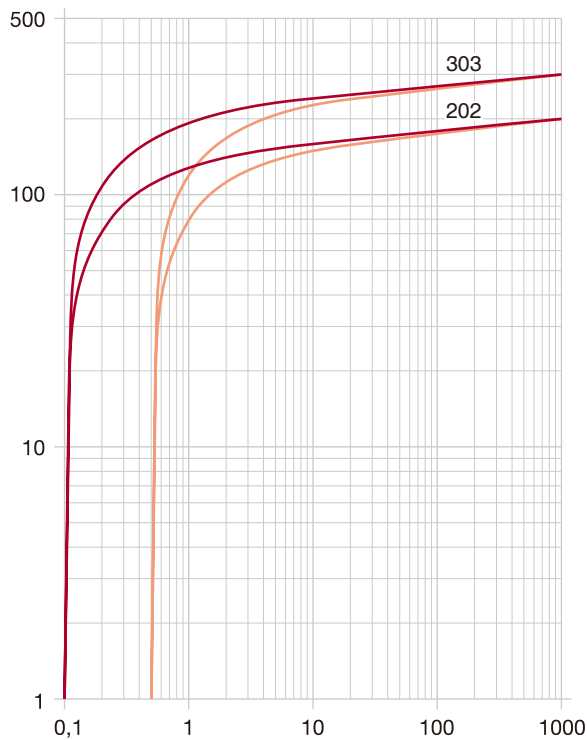
法兰式电机符合 DIN EN 60034 标准，保护标准 IP 54，绝缘等级F。版本除了能处理高氧含量气体还能处理高水蒸气气体。

Oil-flooded rotary vane vacuum pumps with IE3 motors according to UL 1004 Capacities ranging from 200 to 360 m³/hr, Ultimate partial pressure 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 nonreturn 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.

选型图 • Selection diagram

50 Hz

60 Hz

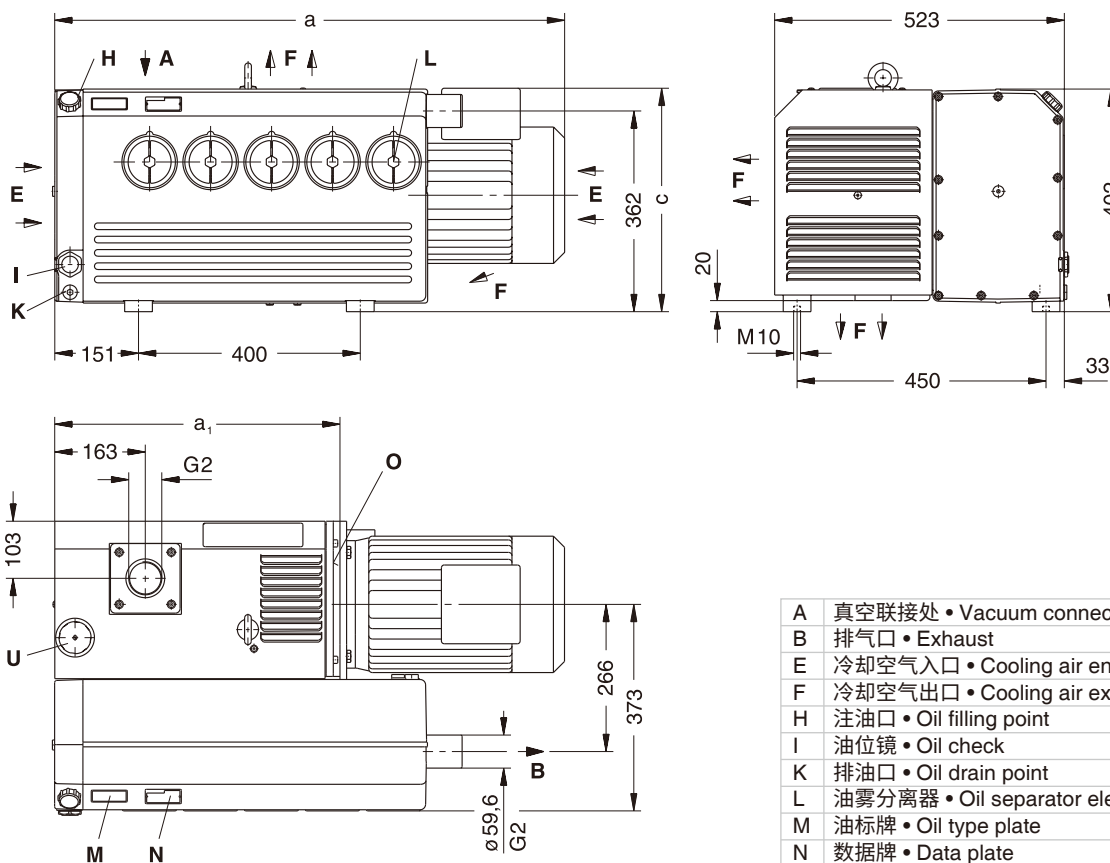


吸气压力 • Suction pressure → mbar abs.

— 气镇阀关闭 • without gas ballast
— 开启气镇阀 • with gas ballast

V-VC			202	303
流量	m ³ /h	50 Hz	200	300
Suction capacity		60 Hz	240	360
极限真空	mbar (abs.)		0,5	
电机类型	3~	50 Hz	400 / 690 V ± 10 %	
Rated voltage		60 Hz	380 / 660 V	
电机功率	kW(3~)	50 Hz	5,5	7,5
Motor rating		60 Hz	7,5	9,0
电流消耗	A(3~)	50 Hz	13,0 / 7,5	15,0 / 8,7
Current consumption		60 Hz	20,0 / 11,5	19,0 / 11,0
转速	min ⁻¹	50 Hz	1450	
Speed		60 Hz	1740	
平均噪音	dB(A)	50 Hz	69	70
Average noise level	EN ISO 3744	60 Hz	73	74
最大重量	kg	50 Hz	174	187
Max. weight		60 Hz	191	192
油量	l		8	8
Oil capacity				

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 entry
F	冷却空气出口 • Cooling air exit
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 • Oil separator element
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

V-VC	202	303
a 50 Hz	#	925
60 Hz	-	#
a ₁ 50 Hz	515	515
60 Hz	-	515
c 50 Hz	#	412
60 Hz	-	#

选装附件 • Accessories

V-VC	202	303
逆止阀 Non-return valve	ZRK	50 (03)
真空密封灰尘分离器 Vacuum tight dust separator	ZFP	216 (01)
真空密封进气口过滤器 Vacuum tight suction filter	ZVF	50 (53)
电机启动器 Motor starter	ZMS (3~)	50 Hz 160 / 10 60 Hz #

- m³/h * 与进气口连接的吸气状态有关
- 工作曲线和数据表 (公差10%) 是按PNEUROP标准计算, 其所示为真空泵在正常状态下运行
- 噪音水平是根据EN ISO 3744标准测量的, 测量时离真空泵1米距离, 泵的吸气口真空度处于400 mbar(a), 同时在吸气口由管道连接至室外并配置真空安全阀, 公差±3dB(A)
- 电机尺寸和电流值会因不同电机而与数据表不同
- VC匹配2006/42/EC (机器), 2006/95/EC (低电压)指令及EN60034-1标准旋转电机
- 电机符合EN60034-1/-2/-3(IEC60034) 和热等级F
- 水汽容纳, 见数据I200
- # 根据需要
- 我们保留更改技术信息的权利

- m³/h * refers to suction conditions at inlet connection
- Curves, tables content (tolerance ±10%) according to PNEUROP standards and refer to vacuum pump at normal operating temperature (1bar (abs.) and 20°C).
- Measuring surface sound pressure level acc. to EN ISO 3744, measured with an equivalent unit at a distance of 1 m. The pump is throttled to 400 mbar (a) suction pressure, with suction side piping connected and vacuum relief valves fitted, tolerance ± 3 dB (A).
- The motor dimensions as well as the current drawn can differ depending on the motor type.
- VC match the 2006/42/EC (machinery) and 2006/95/EC (low voltage) directives and the EN 60034-1 norm "Rotating electrical machines".
- The motors comply with EN 60 034-1 / -2 / -30 (IEC 60034) and thermal class F.
- Water vapour tolerance, see leaflet I 200 (on request).
- # on request
- We reserve the right to alter technical information!





油式旋片真空泵，符合UL1004标准的IE3电机

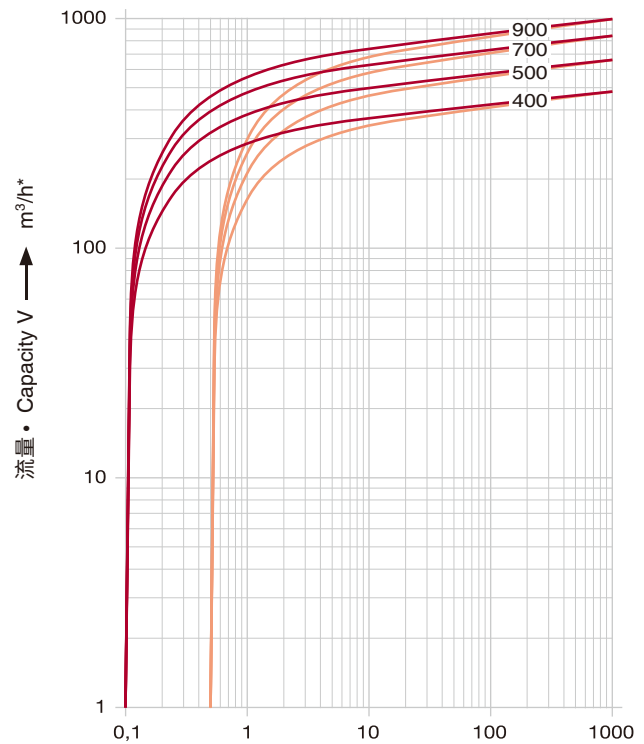
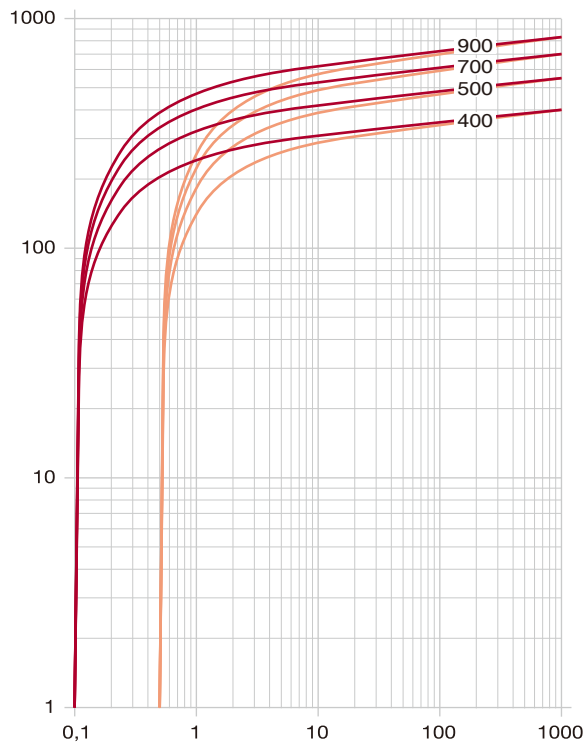
流量从400至695m³/hr，极限真空0.1mbar（绝对值）。法兰式电机，转子两侧装有轴承，装有油/气热交换器。内置筛网过滤器，真空逆止阀，气镇阀，保护罩和油分离器。版本用水冷却。

Oil-flooded rotary vane vacuum pumps with IE3 motors according to UL 1004 Capacities ranging from 400 to 695 m³/hr, Ultimate partial pressure 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.

选型图 • Selection diagram

50 Hz

60 Hz

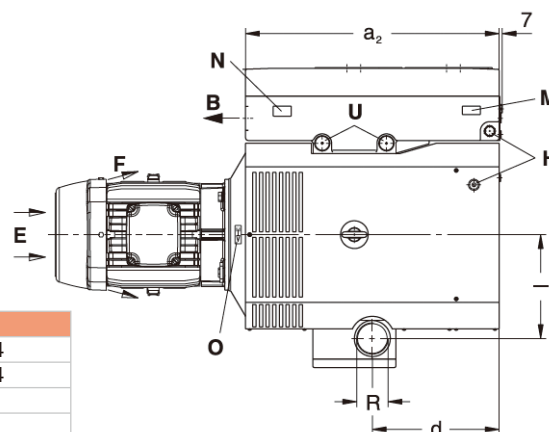
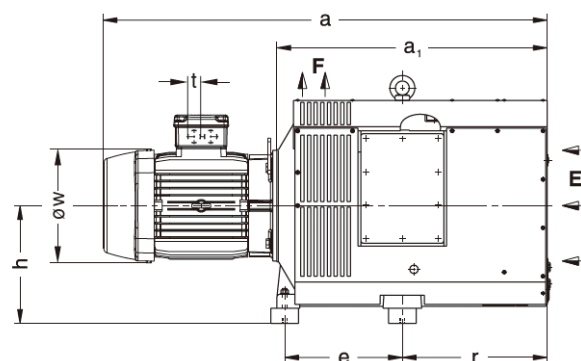
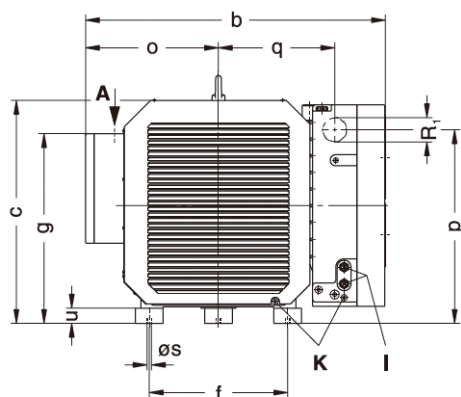


吸气压力 • Suction pressure → mbar abs.

— 气镇阀关闭 • without gas ballast
— 开启气镇阀 • with gas ballast

V-VC			400	500		700		900	
流量	m³/h	50 Hz	400	550		700		830	
Suction capacity		60 Hz	480	660		840		995	
极限真空	mbar (abs.)		0,5						
Ultimate vacuum									
电机类型	3~	50 Hz	400 / 690 V ± 10 %						
Rated voltage		60 Hz	380 / 660 V						
电机功率	kW(3~)	50 Hz	9,0	11,0	15 •	15,0	18,5 •	18,5	22,0 •
Motor rating		60 Hz	11,0	13,0	18 •	18,0	22,0 •	22,0	26,0 •
电流消耗	A(3~)	50 Hz	18,1 / 10,1	22,0 / 12,7	27,6/16,0	27,6 / 16,0	35,5 / 20,6	35,5 / 20,6	42,0 / 24,3
Current consumption		60 Hz	#	#	36,8 / 16,0	36,8 / 16,0	44,0 / 25,5	44,0 / 25,5	50,4 / 29,0
电机效率	η [%]	50 Hz	89,8	90,3	91,2	91,2	91,8	91,8	92,2
Motor efficiency		60 Hz	#	#	93,0	93,0	93,0	93,0	93,0
转速	min ⁻¹	50 Hz	950						
Speed		60 Hz	1140						
平均噪音	dB(A) EN ISO 3744	50 Hz	73	75		78		79	
Average noise level		60 Hz	75	77		80		81	
最大重量	kg	50 Hz	490	591	671	685	685	721	741
Max. weight		60 Hz	#	#	679	693	702	738	803
油量	l		12	17,5		17,5		20	
Oil capacity									

尺寸 • Dimensions [mm]



V-VC	400	500	700	900
a 50 Hz	1391	1560	1654	1624
60 Hz	#	1678	1654	1624
a ₁	864	1000	1006	976
a ₂	787	926	926	916
b	931	986	986	1083
c	606	606	765	805
d	337	337	337	458
e	415	485	506	425
f	380	380	500	500
g	539	540	635	685
h	330	330	425	425
l	310	310	310	375
o	410	410	410	480
p	514	514	609	699
q	372	417	417	420
r	405	472	472	523
Øs 50 Hz	M12	M12	M16	M16
60 Hz	M40 x 1,5	M40 x 1,5	M40x1,5 M50x1,5	M50x1,5
t	40	40	55	55
u	347	347 360	360 386	386 386
Øw	#	# 386	386 386	386 386
R	G3	G3	G3	G4
R ₁	Rp3	Rp3	Rp3	Rp3

A	真空联接处 • Vacuum connection
B	排气口 • Exhaust
E	冷却空气入口 • Cooling air entry
F	冷却空气出口 • Cooling air exit
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

选装附件 • Accessories

V-VC			400		500		700		900	
电机启动器 Motor starter	ZMS	50 Hz	200 / 160	250 / 160	- / 200	- / 200	- / 200	- / 250	- / 250	- / 250
		60 Hz	#	#	- / 250	- / 250	- / 250	- / -	- / -	- / -

- m³/h * 与进气口连接的吸气状态有关
- 工作曲线和数据表 (公差10%) 是按PNEUROP标准计算, 其所示为真空泵在正常状态下运行
- 噪音水平是根据EN ISO 3744标准测量的, 测量时离真空泵1米距离, 泵的吸气口真空度处于400 mbar(a), 同时在吸气口由管道连接至室外并配置真空安全阀, 公差±3dB(A)
- 电机尺寸和电流值会因不同电机而与数据表不同
- VC匹配2006/42/EC (机器), 2006/95/EC (低电压)指令及EN60034-1标准旋转电机
- 电机符合EN60034-1/-2/-3(IEC60034) 和热等级F
- 水汽容纳, 见数据I200
- # 根据需要
- 我们保留更改技术信息的权利

- m³/h * refers to suction conditions at inlet connection
- Curves, tables content (tolerance ±10%) according to PNEUROP standards and refer to vacuum pump at normal operating temperature (1bar (abs.) and 20°C).
- Measuring surface sound pressure level acc. to EN ISO 3744, measured with an equivalent unit at a distance of 1 m. The pump is throttled to 400 mbar (a) suction pressure, with suction side piping connected and vacuum relief valves fitted, tolerance ± 3 dB (A).
- The motor dimensions as well as the current drawn can differ depending on the motor type.
- VC match the 2006/42/EC (machinery) and 2006/95/EC (low voltage) directives and the EN 60034-1 norm "Rotating electrical machines".
- The motors comply with EN 60 034-1 / -2 / -30 (IEC 60034) and thermal class F.
- Water vapour tolerance, see leaflet I 200 (on request).
- # on request
- We reserve the right to alter technical information!





油式旋片真空泵，符合UL1004标准的IE3电机

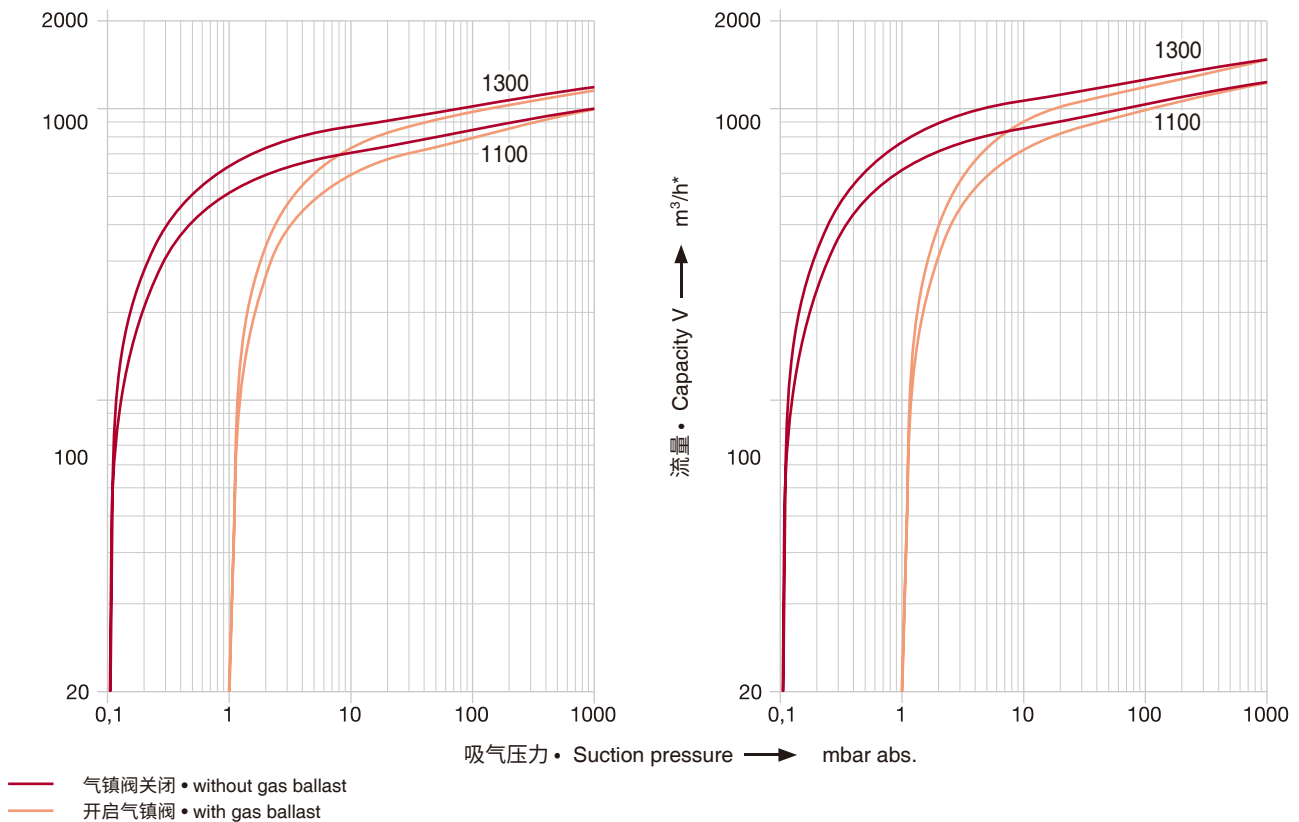
流量从1100至1535m³/hr，极限真空0.1 mbar（绝对值）。法兰式电机，转子两侧装有轴承，装有油/气热交换器。内置筛网过滤器，真空逆止阀，气镇阀，保护罩和油分离器。版本用水冷却。

Oil-flooded rotary vane vacuum pumps with IE3 motors according to UL 1004 Capacities ranging from 1100 to 1535 m³/hr, Ultimate partial pressure 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. Picture shows pump with optional accessory cover.

选型图 • Selection diagram

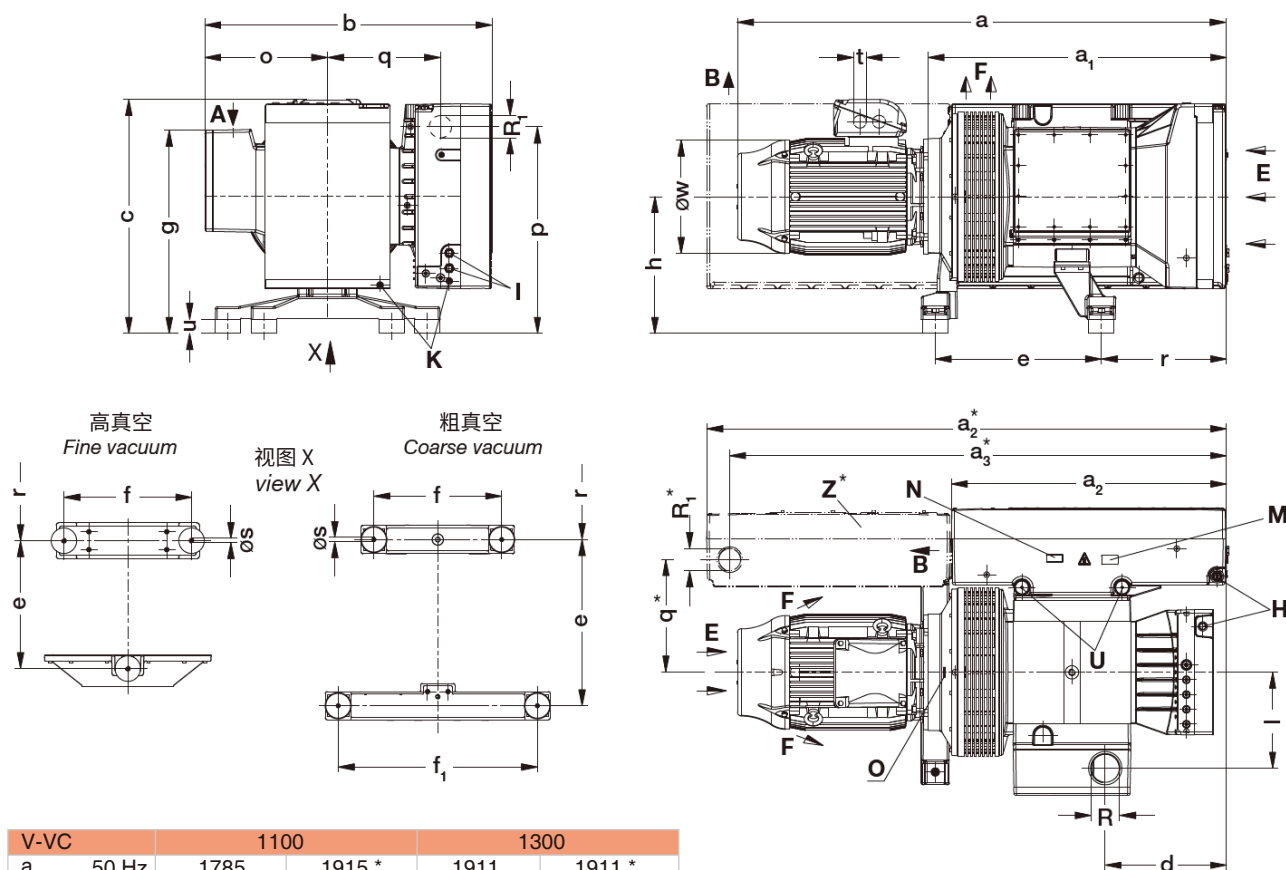
50 Hz

60 Hz



V-VC			1100		1300	
流量 Suction capacity	m³/h	50 Hz	1100		1280	
		60 Hz	1320		1535	
极限真空 Ultimate vacuum	mbar (abs.)		1,0	20 *	1,0	20 *
电机类型 Rated voltage	3~	50 Hz	400 / 690 V $\pm$ 10 %			
		60 Hz	380 / 660 V $\pm$ 10 %			
电机功率 Motor rating	kW(3~)	50 Hz	22,0	30 *	30	30 *
		60 Hz	26,0	36 *	36	36 *
电流消耗 Current consumption	A(3~)	50 Hz	42,0 / 24,3	54,2 / 31,4	54,2 / 31,4	54,2 / 31,4
		60 Hz	50,4 / 29,0	74,5 / 42,9	74,5 / 42,9	74,5 / 42,9
电机效率 Motor efficiency	η [%]	50 Hz	92,2	94,0	94,0	94,0
		60 Hz	93,0	94,1	94,1	94,1
转速 Speed	min ⁻¹	50 Hz	950			
		60 Hz	1140			
平均噪音 Average noise level	dB(A) EN ISO 3744	50 Hz	81	83	82	83
		60 Hz	83	85	84	85
最大重量 Max. weight	kg	50 Hz	1055	1250	1125	1260
		60 Hz	1065	1235	1125	1260
油量 Oil capacity	l		26		26	

尺寸 • Dimensions [mm]



V-VC		1100	1300
a	50 Hz	1785	1915 *
	60 Hz	1785	1911
a ₁		1135	1165 *
a ₂		1077	2034 *
a ₃		-	1945 *
b		1122	1122
c		805	920 *
d		475	475
e		500	650 *
f		500	500 *
f ₁		-	780 *
g		685	795 *
h		425	535 *
l		375	375
o		480	480
p		699	699
q		441	441 *
r		605	490 *
ø _s		M16	M16
t		M 50 x 1,5	M 50 x 1,5
u		55	55
ø _w	50 Hz	386	455
	60 Hz	386	455
R		G4	G4
R ₁		Rp3	Rp3

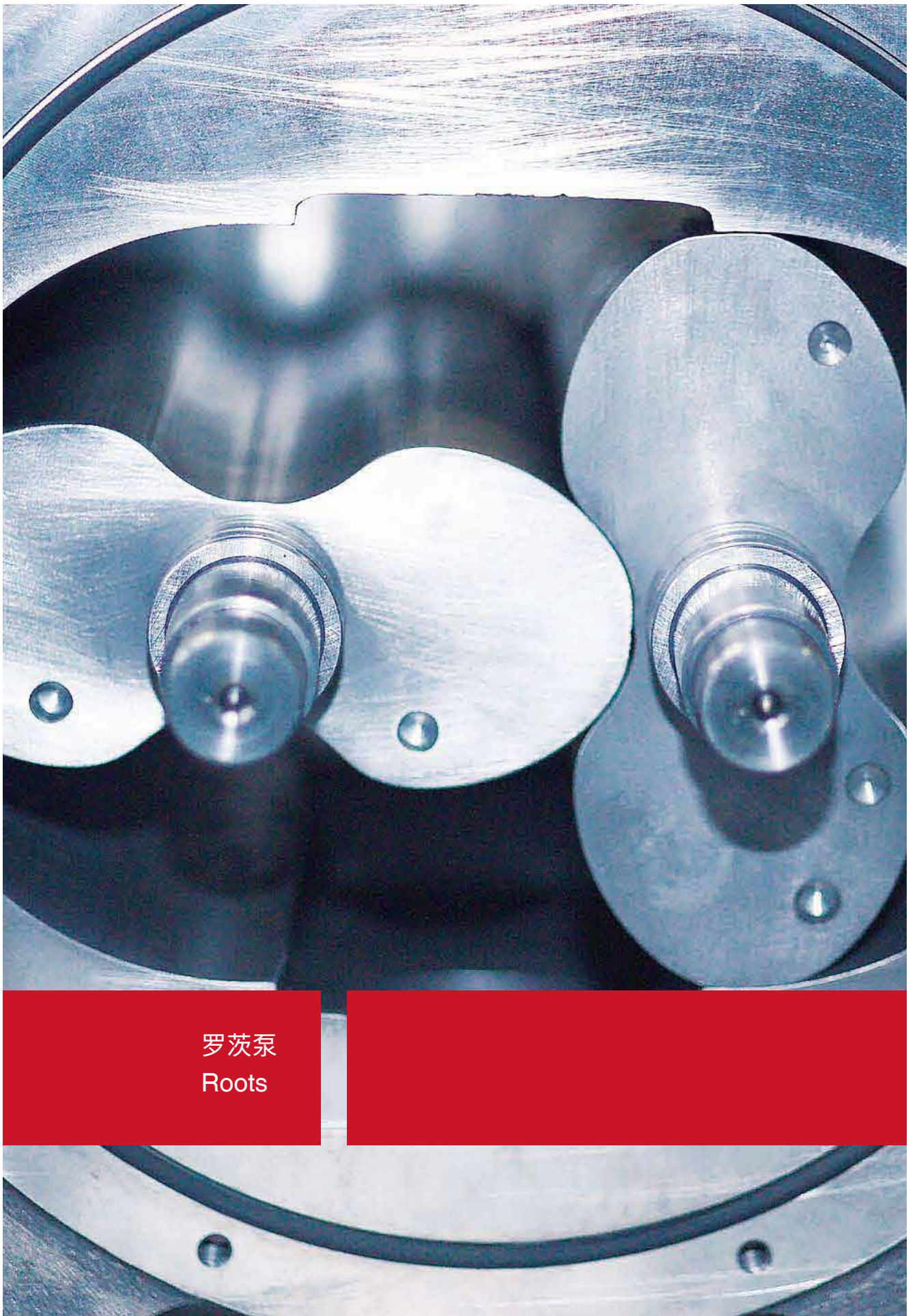
* 仅是粗真空 • For coarse vacuum only

A	真空联接处 • Vacuum connection
B	排气口 • Exhaust
E	冷却空气入口 • Cooling air entry
F	冷却空气出口 • Cooling air exit
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
Z*	外加油分离器 • Additional oil separator

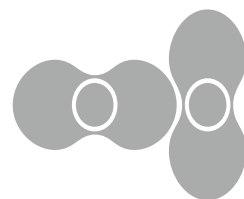
- m³/h * 与进气口连接的吸气状态有关
- 工作曲线和数据表 (公差10%) 是按PNEUROP标准计算, 其所示为真空泵在正常状态下运行
- 噪音水平是根据EN ISO 3744标准测量的, 测量时离真空泵1米距离, 泵的吸气口真空度处于400 mbar(a), 同时在吸气口由管道连接至室外并配置真空安全阀, 公差±3dB(A)
- 电机尺寸和电流值会因不同电机而与数据表不同
- VC匹配2006/42/EC (机器), 2006/95/EC (低电压)指令及EN60034-1标准旋转电机
- 电机符合EN60034-1/-2/-3(IEC60034) 和热等级F
- 水汽容纳, 见数据I200
- # 根据需要
- 我们保留更改技术信息的权利

- m³/h * refers to suction conditions at inlet connection
- Curves, tables content (tolerance ±10%) according to PNEUROP standards and refer to vacuum pump at normal operating temperature (1bar (abs.) and 20°C).
- Measuring surface sound pressure level acc. to EN ISO 3744, measured with an equivalent unit at a distance of 1 m. The pump is throttled to 400 mbar (a) suction pressure, with suction side piping connected and vacuum relief valves fitted, tolerance ± 3 dB (A).
- The motor dimensions as well as the current drawn can differ depending on the motor type.
- VC match the 2006/42/EC (machinery) and 2006/95/EC (low voltage) directives and the EN 60034-1 norm "Rotating electrical machines".
- The motors comply with EN 60 034-1 / -2 / -30 (IEC 60034) and thermal class F.
- Water vapour tolerance, see leaflet I 200 (on request).
- # on request
- We reserve the right to alter technical information!





罗茨泵
Roots



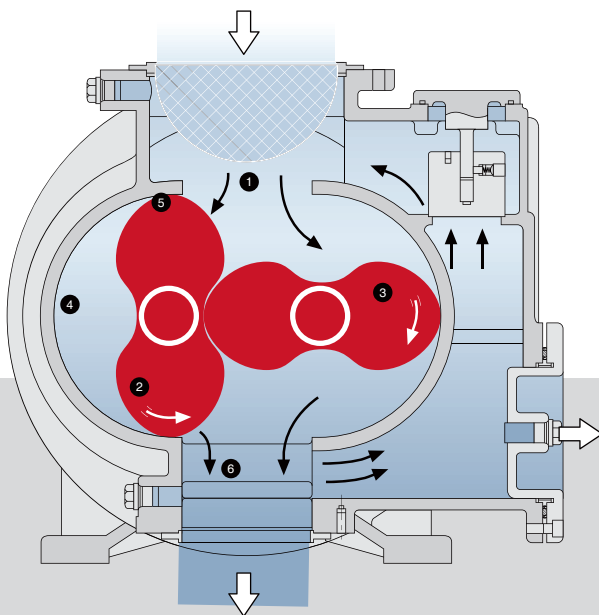
罗茨泵的设计原理 Operating Principle

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，达到出口(6)时，气室中的空气体积在传输中不被减少，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.

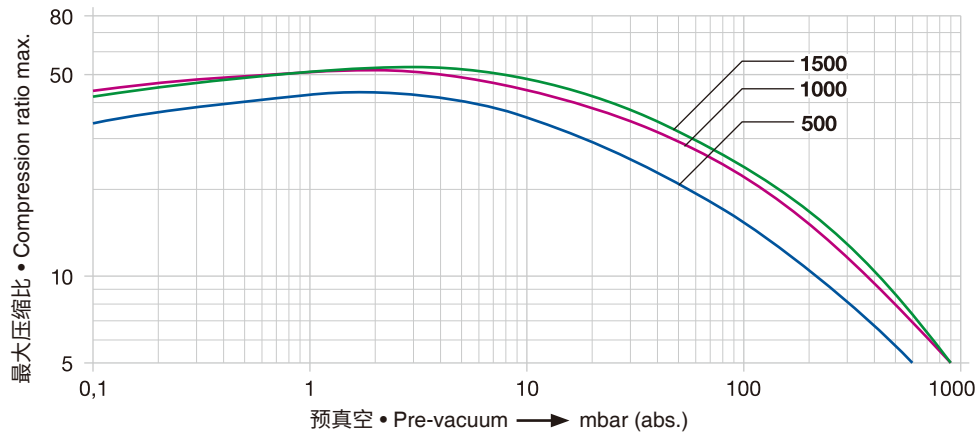




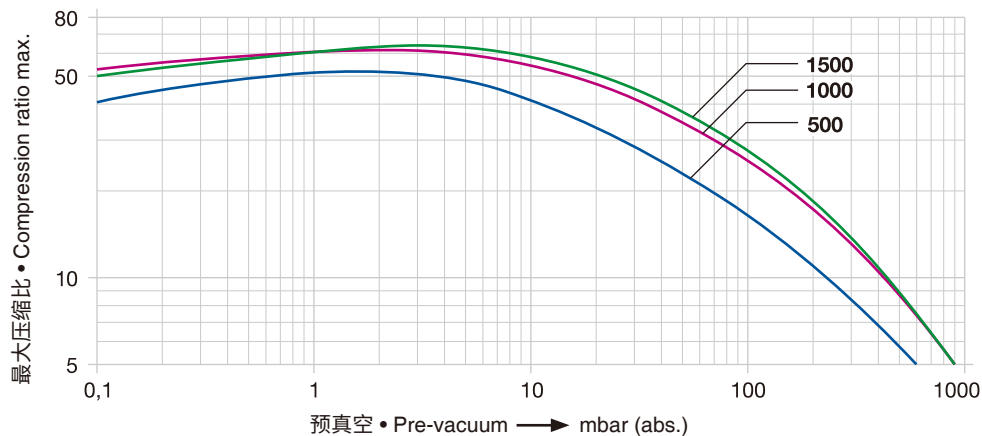
无接触式运行罗茨真空泵
流量从485-1909m³/hr。主要用于产生粗和高真空，处理气体和蒸汽，因为它们能忍受高水蒸汽和大量的腐蚀性气体。罗茨泵一般与前级泵组合在一起使用。
法兰式电机符合DIN EN 60034标准，保护标准IP 54，绝缘等级F。

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

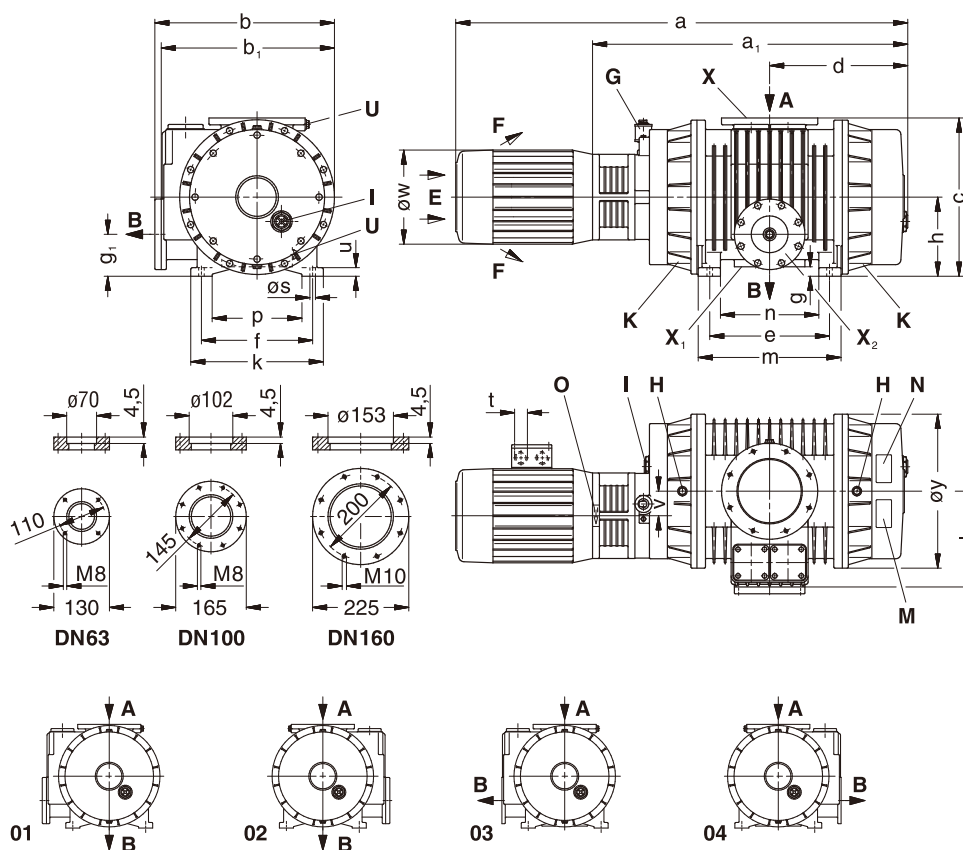


60 Hz 选型图 • Selection diagram



R-VWP			500		1000		1500	
			50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
流量 Suction capacity	m³/h		485	590	1072	1295	1580	1909
溢流阀处的压力差 Pressure difference at the overflow valve	Δmbar		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 ±10 %	230 / 400V ±10 %	220 / 380 V ±10 %	230 / 400 V ±10 %	220 / 380 V ±10 %
电机功率 Motor rating	kW		1,5	1,8	3,0	3,6	4,0	4,8
电流 Current drawn	A		5,0 / 2,9	#	10,0 / 5,75	#	12,8 / 7,4	#
转速 Speed	min ⁻¹		2870	3450	2870	3450	2870	3450
平均噪音 Average noise level	dB(A)	1 mbar	67	71	66	70	71	75
	EN ISO 3744	10 mbar	68	72	67	71	72	76
最大重量 Maximum weight	kg		106		176		206	
油量 Oil intake	l		1.5		3.5		3.5	

尺寸 • Dimensions [mm]



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 entry
F	冷却空气出口 • Cooling air exit
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, X ₁ , X ₂	法兰 DIN 28404 • Flange DIN 28404

R-VWP	500	1000	1500
a	906	931	1058
a ₁	627	628	738
b	315	418	418
b ₁	301	404	404
c	260	370	370
d	278	269	324
e	206	170	280
f	200	260	260
g	19	22	22
g ₁	78	98	98
h	130	185	185
k	232	310	310

R-VWP	500	1000	1500
l	176	224	224
m	244	226	334
n	178	122	230
p	168	210	210
Øs	11	13	13
t	M25 x 1,5	M25 x 1,5	M25 x 1,5
u	18	20	20
v	38	57,5	57,5
Øw	176	196	220
Øy	250	360	360
X / X ₁ / X ₂	DN100 / DN100 / DN63	DN160 / DN100 / DN100	DN160 / DN100 / DN100

选装附件 • Accessories

电机启动器
软管连接阀

Motor starter
Hose connection flange

液体分离器
螺纹法兰

Liquid separator
Threaded flange

m³/h * 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，其所示为真空泵在正常状态下运行。
- 电机尺寸和电流值会因不同电机而与数据表不同。
- 水气容纳，见数据 | 200 (根据需要)。
- # 根据需要
- 我们保留调整技术数据的权利。

m³/h * refers to suction conditions at inlet connection

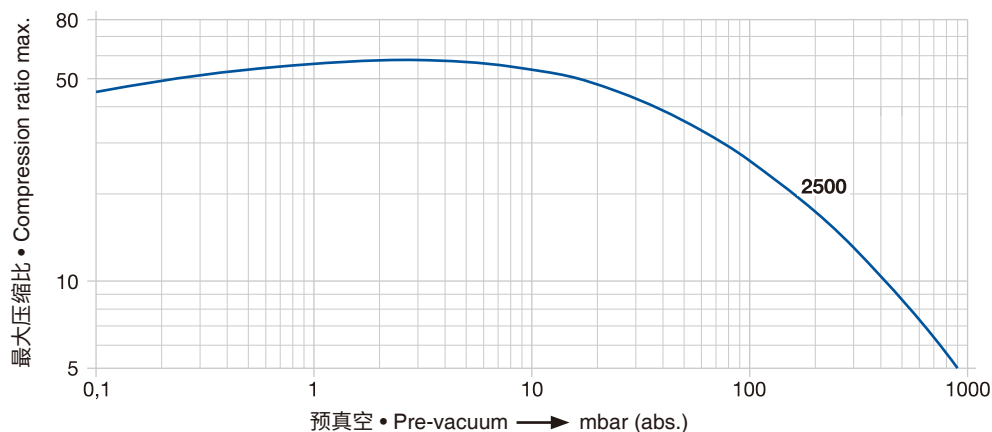
- Curves, tables content (tolerance ±10%) according to PNEUROP standards and refer to vacuum pump at normal operating temperature.
- The dimensions a, p and Ø w as well as the current drawn can differ.
- Water vapour tolerance, see leaflet | 200 (on request).
- # on request
- We reserve the right to alter technical information!



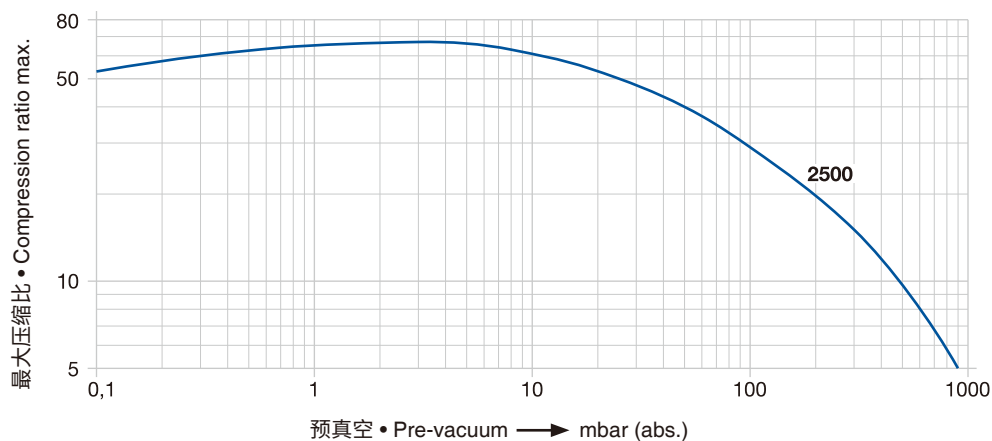
无接触式运行罗茨真空泵
流量从2293–2752m³/hr。主要用于产生粗和高真空，处理气体和蒸汽，因为它们能忍受高水蒸汽和大量的腐蚀性气体。罗茨泵一般与前级泵组合在一起使用。
法兰式电机符合DIN EN 60034标准，保护标准IP 54，绝缘等级F。

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

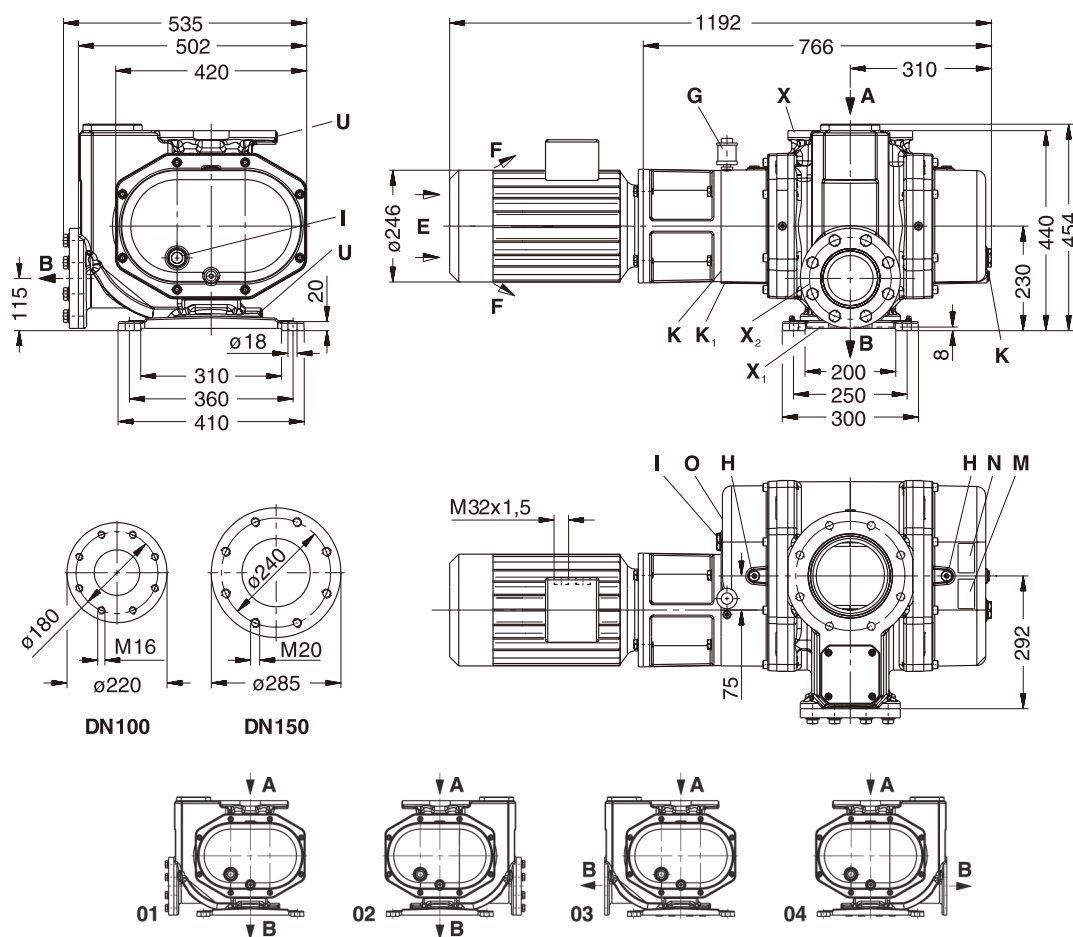


60 Hz 选型图 • Selection diagram



R-VWP			2500	
			50 Hz	60 Hz
流量 Suction capacity	m ³ /h		2293	2752
溢流阀处的压力差 Pressure difference at the overflow valve	Δmbar		35	
泄露率 Leak rate	mbar l / s		0,01	
电机类型 Motor version	3~		400 / 690 V ±10 %	380 / 660 V
电机功率 Motor rating	kW		5,5	7,5
电流 Current drawn	A		10,0 / 5,75	#
转速 Speed	min ⁻¹		2900	3500
平均噪音 Average noise level	dB(A)	1 mbar	72	76
	EN ISO 3744	10 mbar	73	77
最大重量 Maximum weight	kg		328	
油量 Oil intake	l		2,8	

尺寸 • Dimensions [mm]



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 entry
F	冷却空气出口 • Cooling air exit
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, X ₁ , X ₂	法兰DIN 2501 • Flange DIN 2501
	X → DN 150 PN 16 • X ₁ , X ₂ → DN 100 PN 16

选装附件 • Accessories

电机启动器
软管连接阀

Motor starter
Hose connection flange

液体分离器
螺纹法兰

Liquid separator
Threaded flange

m³/h * 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，其所示为真空泵在正常状态下运行。
- 电机尺寸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)。
- # 根据需要
- 我们保留调整技术数据权利。

m³/h * refers to suction conditions at inlet connection

- Curves, tables content (tolerance ±10%) according to PNEUROP standards and refer to vacuum pump at normal operating temperature.
- The dimensions a, p and Ø w as well as the current drawn can differ.
- Water vapour tolerance, see leaflet I 200 (on request).
- # on request
- We reserve the right to alter technical information!

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:

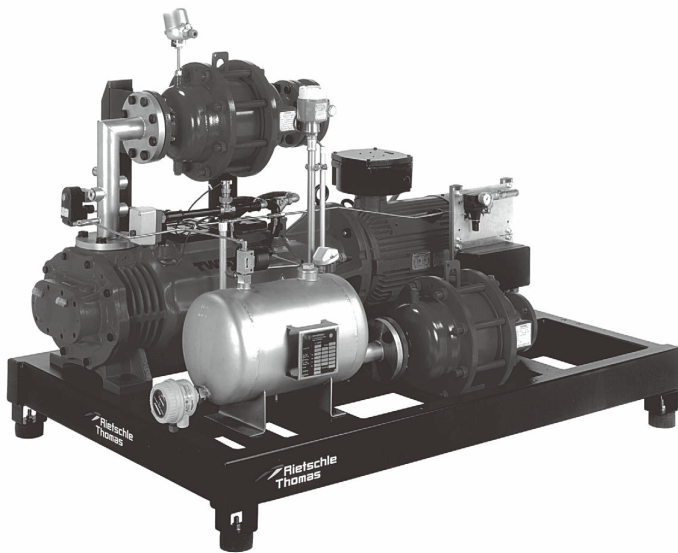
- 水
- 异丙醇
- 酒精
- 丙酮

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

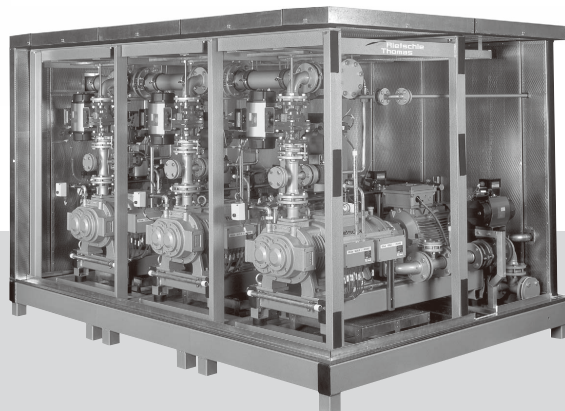
- Water
- Isopropan
- Ethanol
- Acetone

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。

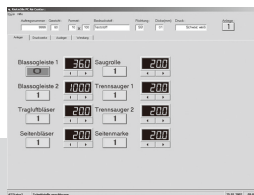
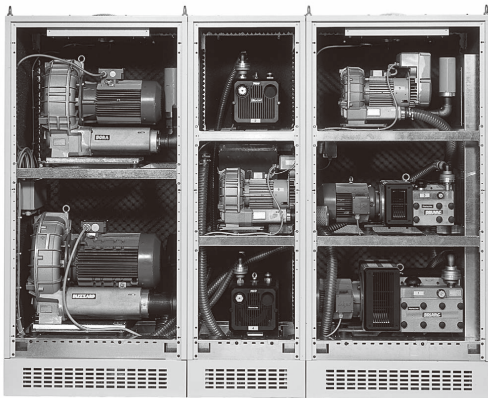
In printing and paper processing industries. There has been a trend in the last few years towards installing a large number of vacuum pumps, compressors and blowers centrally, remote from the printing machines. The air-center has come into its own as a standard in this field, providing a lot of advantages,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

到目前为止，为了达到这个目的，我们只使用干式和油式旋片真空泵和压缩机。

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 handling
- Packaging
- Conveying
- Medical
- And other industrial applications

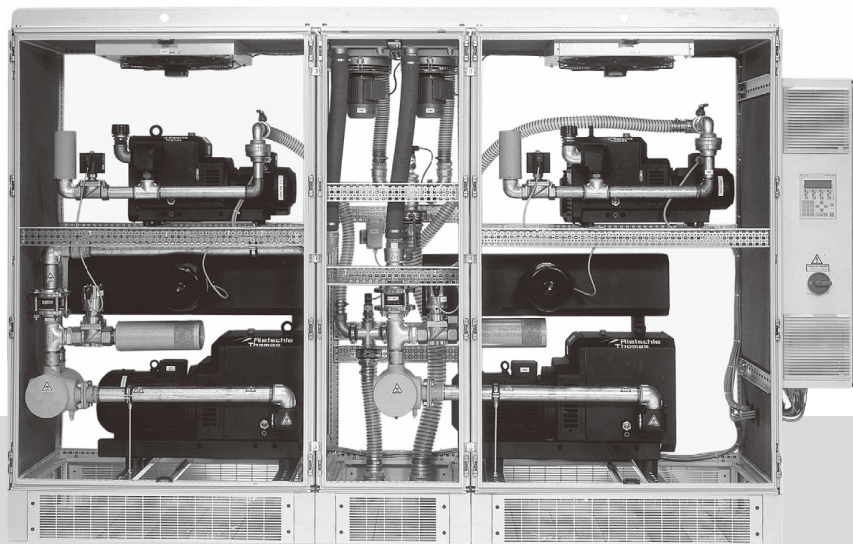
To date, for this purpose we have only used dry running and oil lubricated rotary vane vacuum pumps and compressors.

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：3 x 15, 3 x 25, 3 x 40, 3 x 60, 3 x 100, 3 x 150, 3 x 202, 3 x 303 m³/hr, 50 Hz。极限真空达10 mbar (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

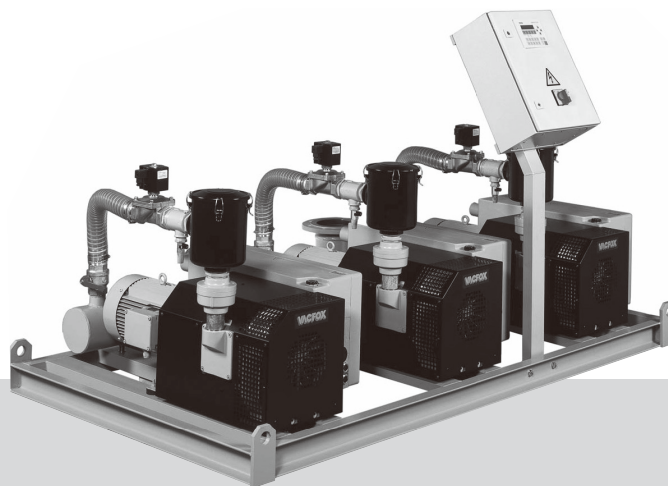
- Central control panel with complete regulation of the air centre by compact monitoring.
- Monitoring output of the electric motors
- Alternating base-load operation
- Vacuum level indication (with liquid crystal indicators)
- Summary indication of function (programme, service, hours counter)
- Vacuum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

$$1.8 \times tC \text{ (°C)} + 32 = tF \text{ (°F)}$$

$$0.556 \times tF \text{ (°F)} - 17.78 = tC \text{ (°C)}$$

温度换算 tC (°C) ↔ tF (°F):

$$1.8 \times tC \text{ (°C)} + 32 = tF \text{ (°F)}$$

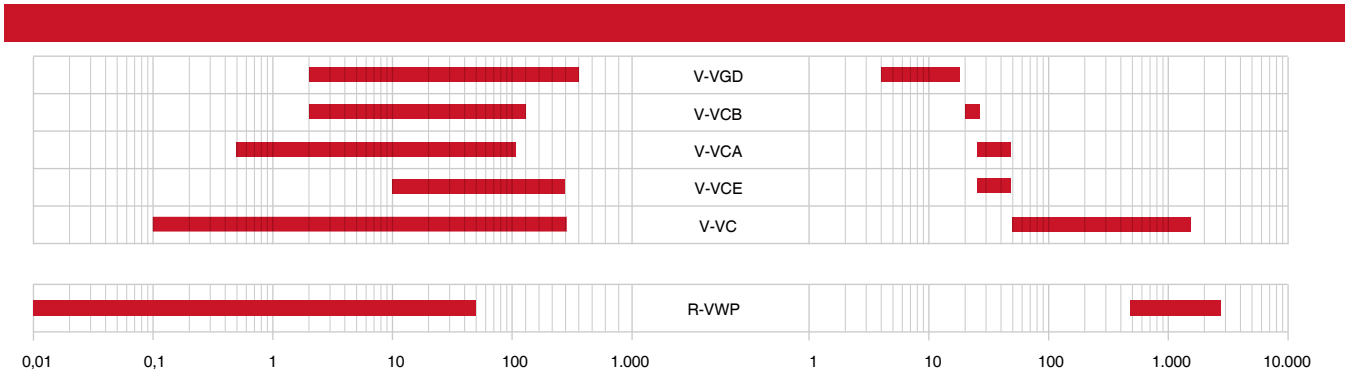
$$0.556 \times tF \text{ (°F)} - 17.78 = tC \text{ (°C)}$$

长度 / Length						
	m	cm	m	in	ft	yd
1 mm	1	0,1	10^3	$3,94 \times 10^{-2}$	$3,28 \times 10^{-3}$	$1,093 \times 10^{-3}$
1 cm	10	1	10^2	0,394	$3,28 \times 10^{-2}$	$1,093 \times 10^{-2}$
1 m	10^3	10^2	1	39,4	3,28	1,093
1 in	25,4	2,54	$2,54 \times 10^2$	1	$8,33 \times 10^{-2}$	$2,78 \times 10^{-2}$
1 ft	$3,084 \times 10^2$	30,48	0,305	12	1	0,333
1 yd	9,144	$0,914 \times 10^2$	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	$3,53 \times 10^{-5}$	$2,20 \times 10^{-4}$	$2,64 \times 10^{-4}$
1 l (dm ³)	10^3	1	$0,610 \times 10^2$	$3,53 \times 10^{-2}$	0,220	0,264
1 in ³	16,39	$1,639 \times 10^{-2}$	1	$5,79 \times 10^{-4}$	$3,606 \times 10^{-3}$	$4,327 \times 10^{-3}$
1 ft ³	$2,83 \times 10^4$	28,3	$1,728 \times 10^3$	1	6,25	7,46
1 Imp. gal	$4,55 \times 10^3$	4,55	$2,773 \times 10^2$	0,160	1	1,20
1 U.S. gal	$3,785 \times 10^3$	3,785	$2,311 \times 10^2$	0,134	0,833	1

重量 / Weight						
	g	kg	oz	lb	Brit. ton	U.S. ton
1 g	1	10^{-3}	$3,53 \times 10^{-2}$	$2,205 \times 10^{-3}$	$0,984 \times 10^{-6}$	$1,103 \times 10^{-6}$
1 kg	103	1	35,3	2,205	$0,984 \times 10^{-3}$	$1,103 \times 10^{-3}$
1 oz	28,35	$2,835 \times 10^{-2}$	1	$6,246 \times 10^{-2}$	$2,788 \times 10^{-5}$	$3,125 \times 10^{-5}$
1 lb	454	0,454	16,01	1	$4,463 \times 10^{-4}$	$5,00 \times 10^{-4}$
1 Brit. ton	$1,016 \times 10^6$	$1,016 \times 10^3$	$3,587 \times 10^4$	$2,24 \times 10^3$	1	1,120
1 U.S. ton	$0,907 \times 10^6$	$0,907 \times 10^3$	$3,20 \times 10^4$	$2,00 \times 10^3$	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

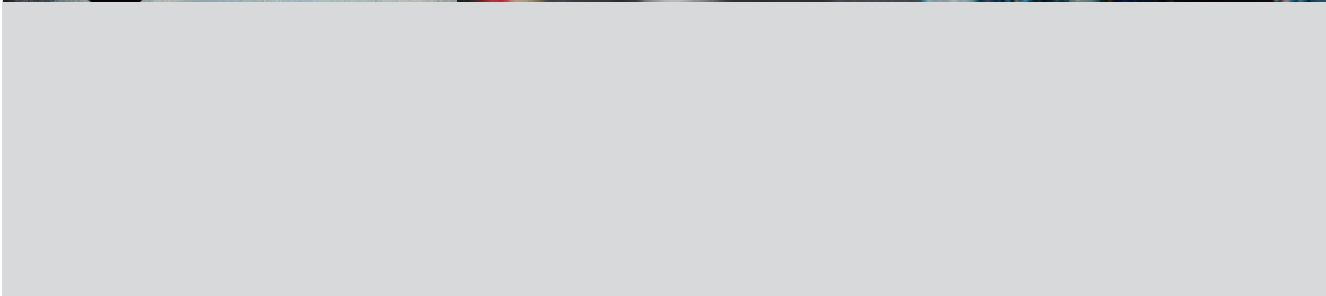
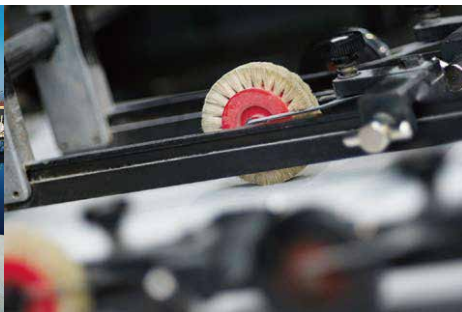
Packaging industry

- 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





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



Pump Solutions / 真空系统



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