

Blince hydraulic vane pump





◎加工中心 CNC machining center



◎自动测试台 Automatic testing bench



◎定子磨 Stator grinding machine



◎数控机床 NC machines

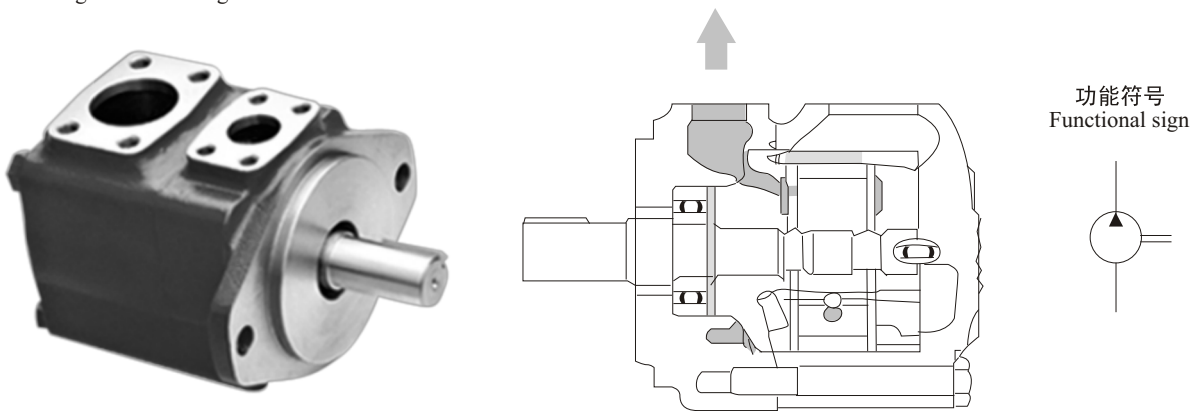
VQ 系列单泵 VQ series single pumps

适合行走机械的高性能子母叶片泵
High performance composition vane pumps for walking machinery

产品外观及简介 Shape and introduction

本系列是专为工程机械开发的高压高性能子母叶片泵，适用于工程机械，尤其行走机械的场合。其主要特点：
The series high pressure resistant composition vane pumps with high performance are developed for engineering machinery application, especially for walking machinery. The main features are as follows:

- 1、采用液压平衡的子母叶片结构设计，压力更高，最高达到21 Mpa;
 - 2、采用浮动侧板结构，可以自动补偿间隙，达到压力平衡，实现高转速高压力的优越性能；
 - 3、侧板采用双金属挠性材料，极大提高抗咬合性能，使泵的效果更高，寿命更长。
1. Adopt the structure of hydraulic balancing composition vanes, making the resistant pressure higher to maximum 21 Mpa.
 2. Adopt the structure of floating side plate supporting with its function of automatic tolerance compensation, which helps to get pressure balance and high performance under high rotation speed and high pressure.
 3. Adopt bimetal flexible material for side plates, which dramatically improves the engagement performance of the gears and thus makes the pump working better and longer.



型号说明 Model descriptions:

(F3-)	25VQ	21	A	(F)	-1	A	20	L
前注 Front marks	系列号 Code of series	▲排量代号 Displacement codes	油口连接 Pump port connection	安装型式 Mounting type	轴伸形式 Shaft extension	出口口位置 Outlet port position	设计号 Designing No.	旋转方向 Direction of rotation
无标记: 石油系油乳 化液水—乙 二醇	20VQ	2,3,4,5,6,7,8,9 10,11,12,14	A-SAE 4螺栓法兰 4-bolted Flange	无标记: No marks: 法兰安装型 Flange mounting F- 脚座安装型 F-Foot mounting	1-带键直轴 1- straight shaft with key 151-花键轴 151-spline shaft	(从泵的盖端看) (from cover end pump) A-进口油对侧 A- Opposition of inlet B-从进口油逆时针90° B- counterclockwise 90° from inlet C-进口油同侧 C- the same side of inlet D-从进口油顺时针90° D- Clockwise 90° from inlet	30	(从泵的轴端看) (from shaft end pump) L-逆时针旋转 L-counterclockwise rotation 无标记: No marks: 顺时针旋转 Clockwise rotation
No mark: water-in oil emulsion of petroleum series	25VQ	10,12,14,15,17, 19,21			1-带键直轴 1- straight shaft with key 86-重型带 键直轴 86-heavy-duty straight shaft with key 11-花键轴 11-spline shaft			
F3:磷酸酯液 F3: Sul phosuccinic ester fatty of acid	35VQ	21,25,30,32,35, 38,45						
	45VQ	42,45,50,57,60 66,75						

▲在1200r/min和0.69MPa(100psi)下的额定排量USgpm。
The rated displacement(USgpm) is under the conditions of 1200r/min and 0.69 Mpa(100psi).

VQ系列叶片泵

VQ series vane pumps



VQ 系列单泵 VQ series single pumps

工作参数 Operating parameters

型号 Models	排量代号 Displacement code	几何排量 Geometric displacement (ml/r)	最高转速 Max speed (r/min)	最高压力 Max pressure (Mpa)	典型输出流量 Typical outlet flow (L/min) 最高转速及最高压力 under Max speed and Max pressure	典型输出功率 Typical outlet power (KW) 最高转速及最高压力 under Max speed and Max pressure	重量 Weight
20VQ	2	7	2700	21	16.4	7.2	11.8
	3	11.7	2700	21	24.4	10.8	
	4	15	2700	21	32.7	14.4	
	5	18	2700	21	42.3	17.9	
	6	19	2700	21	50.6	21.5	
	7	22	2700	21	58.8	23.7	
	8	27	2700	21	56.4	25.1	
	9	30	2700	21	73.4	26.0	
	10	31.5	2700	21	81.7	26.8	
	11	36	2700	21	88.5	27.7	
	12	40	2700	16	96.5	28.4	
	14	45	2700	14	115.4	29.1	
25VQ	10	32.5	2700	21	81.4	35.2	14.5
	12	38.3	2700	21	88.5	41.0	
	14	43.3	2700	21	103.8	46.6	
	15	47.3	2500	21	109.4	48.1	
	17	52.5	2500	21	119.2	51.8	
	19	60	2500	21	133.5	55.2	
	21	65.0	2500	21	146.2	61.9	
35VQ	21	64.0	2500	21	145.5	63.7	22.7
	25	79.2	2500	21	173.1	75.3	
	30	95.0	2500	21	211.5	87.7	
	32	101	2500	21	220.2	92.2	
	35	109	2400	21	230.8	98.5	
	38	118	2400	21	250	104.4	
	45	147	2400	21	271.2	99.8	
45VQ	42	134	2400	17.5	255.8	91.4	34.1
	45	147	2200	17.5	271.2	99.8	
	50	156	2200	17.5	303.8	105.2	
	57	180	2200	17.5	343.7	120.2	
	60	189	2200	17.5	369.2	126.8	
	66	208	2200	17.5	408.7	142.4	
	75	237	2200	14	460	120.2	

性能参数: SAE 10W油液▲82°C(180°F), 泵进口▲0 PSIG (14.7/Psia) 注: 出口必须始终高于进口压力。

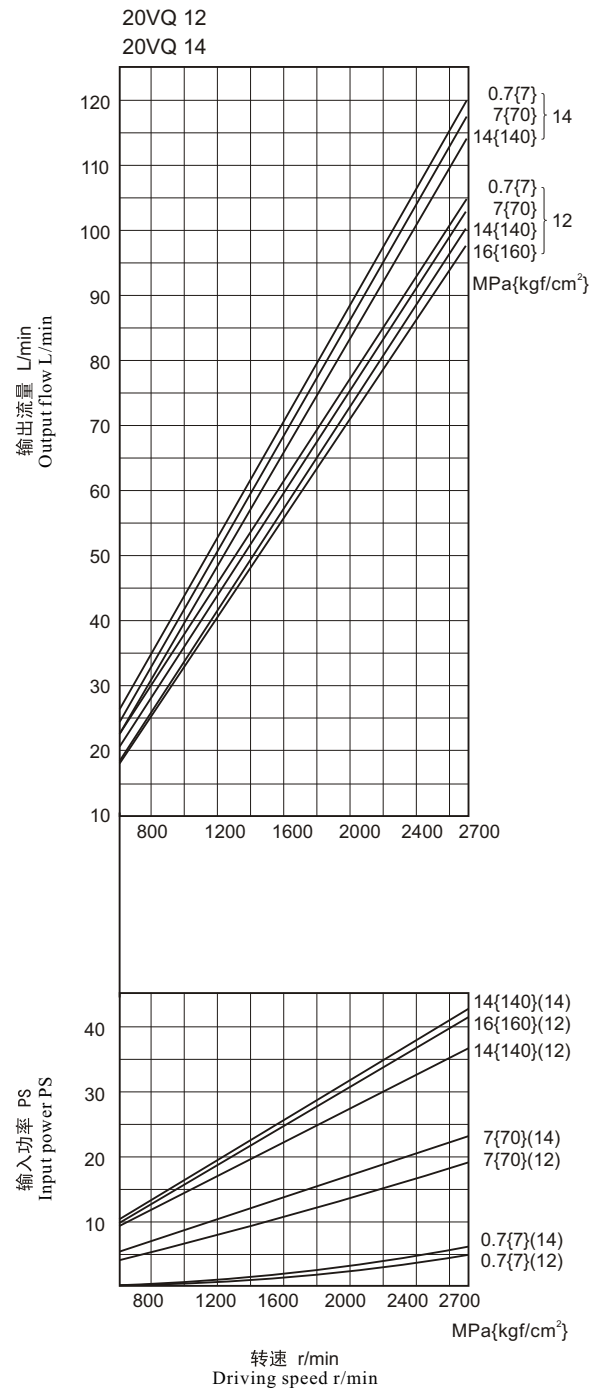
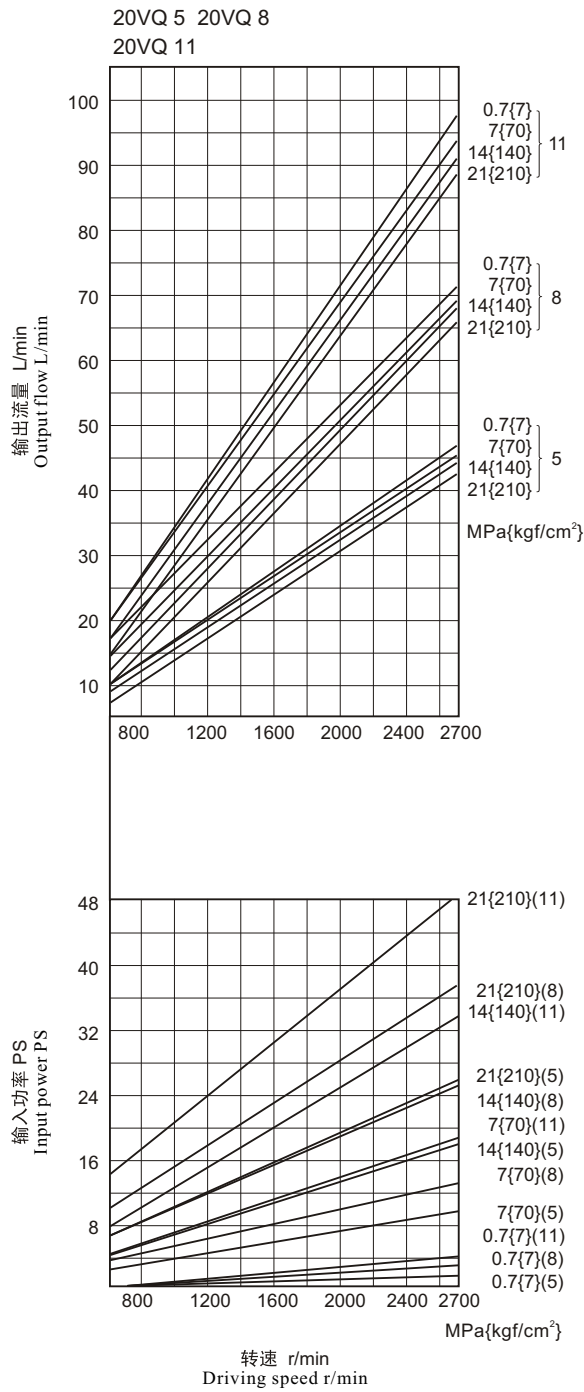
Performance parameters: SAE 10W hydraulic fluid ▲82°C (180°F), pump inlet ▲0 PSIG (14.71/Psia) Notes: The pressure of outlet port must be higher than the one of inlet port.



特性曲线 [50°C, 10W油 (26cst) 空载]

Characteristic curve with 10W type oil(26cst) under 50°C and no load

20VQ 输出流量, 输入功率
20VQ output flow, input power

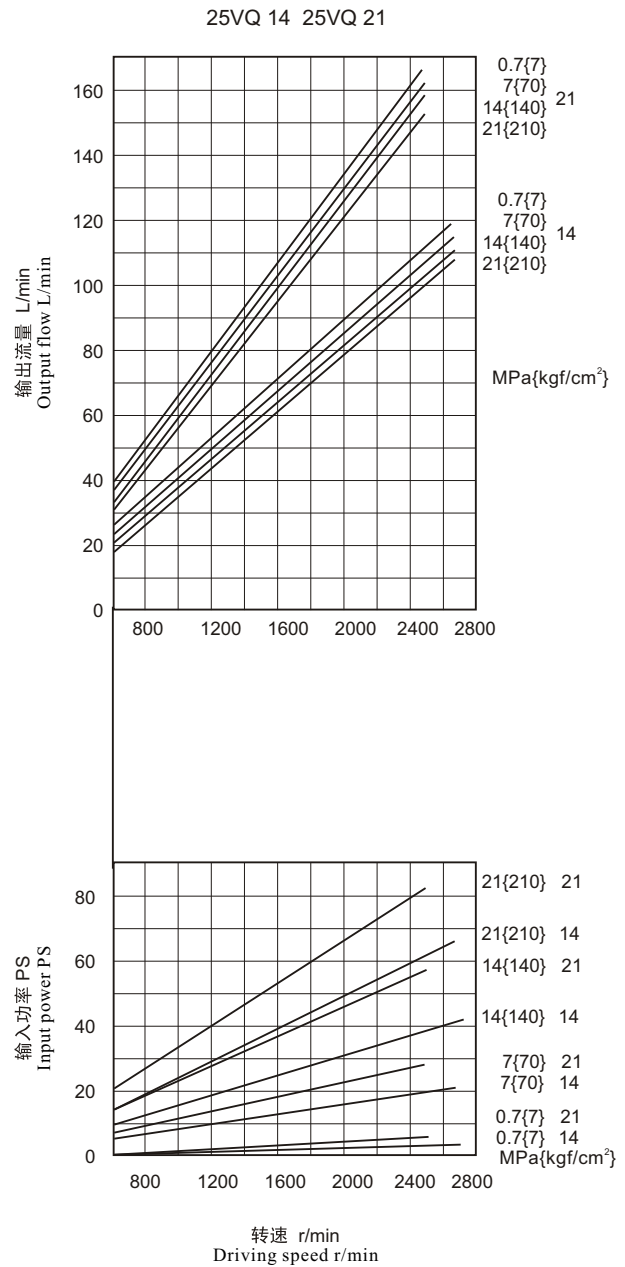
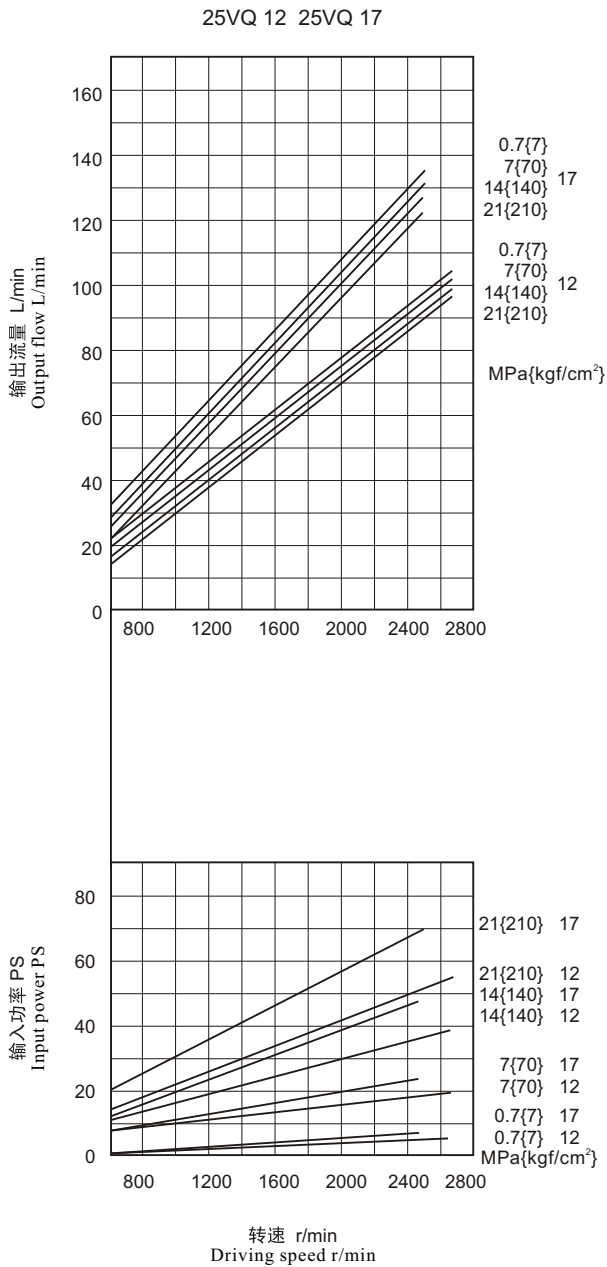


特性曲线 [50°C, 10W油 (26cst) 进油口压力0MPa]

Characteristic curve with 10W type oil(26cst) under 50°C and pressure zero Mpa for inlet port

25VQ 输出流量, 输入功率

25VQ output flow, input power





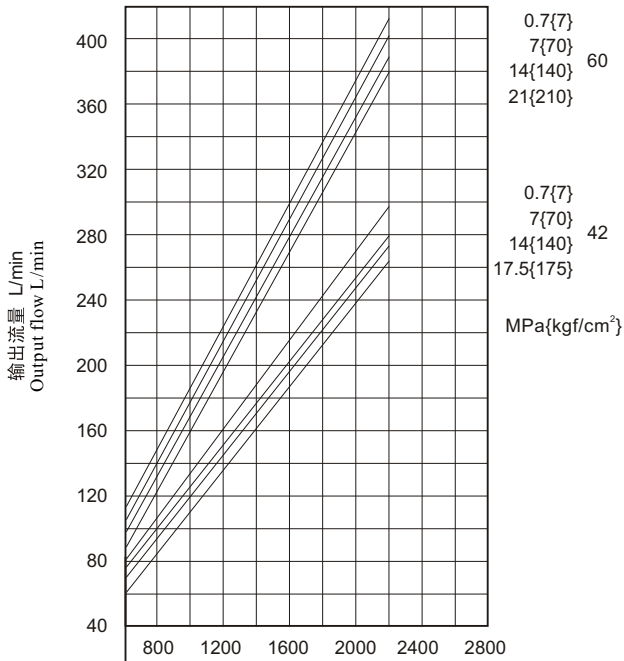
特性曲线 [50°C, 10W油 (26cst) 进油口压力0MPa]

Characteristic curve with 10W type oil(26cst) under 50°C and pressure zero Mpa for inlet port

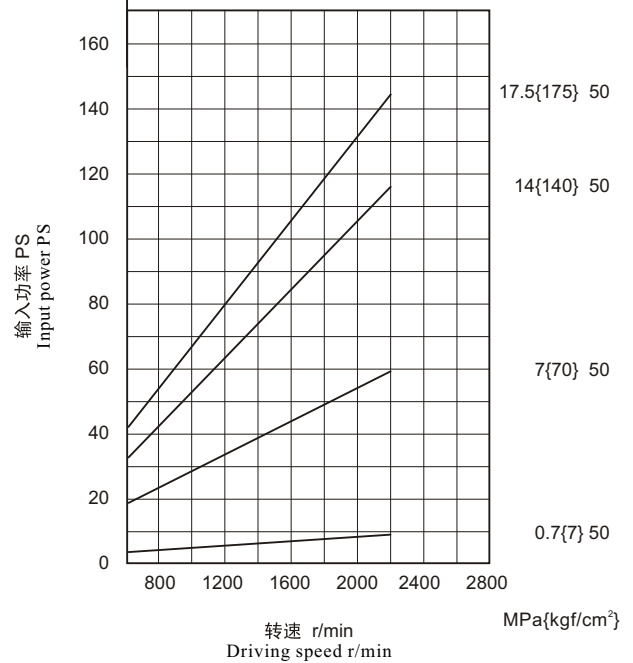
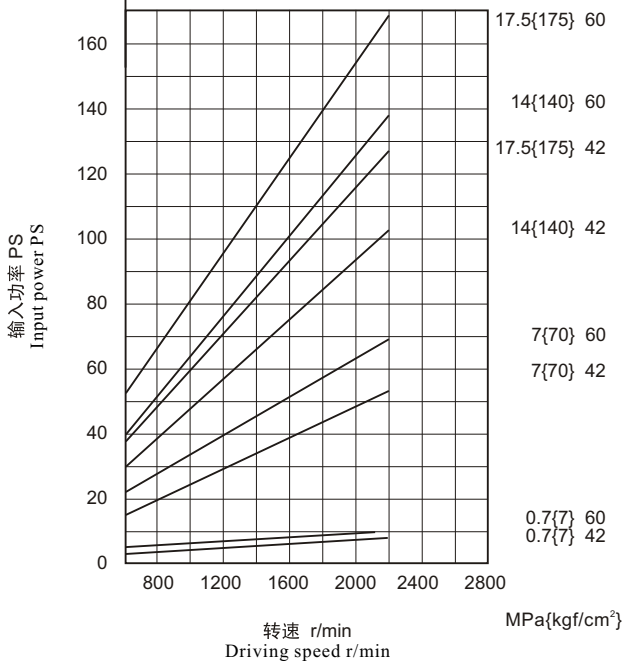
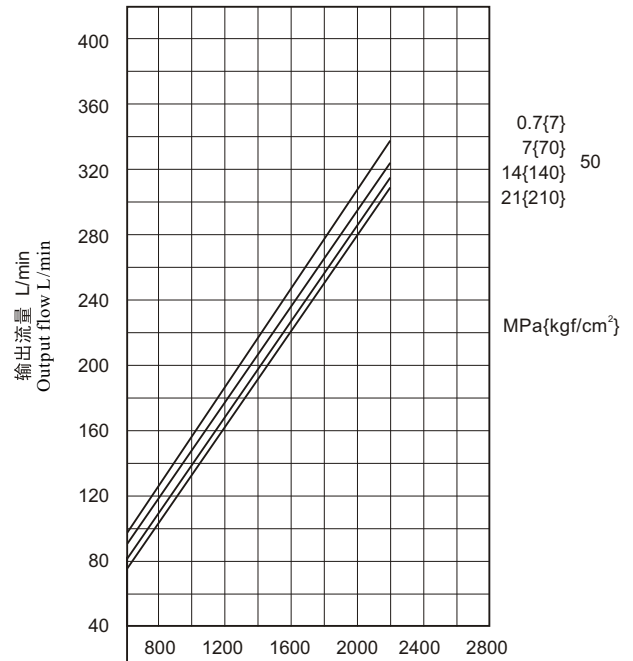
45VQ 输出流量, 输入功率

45VQ output flow, input power

45VQ 42 45VQ 60



45VQ 50

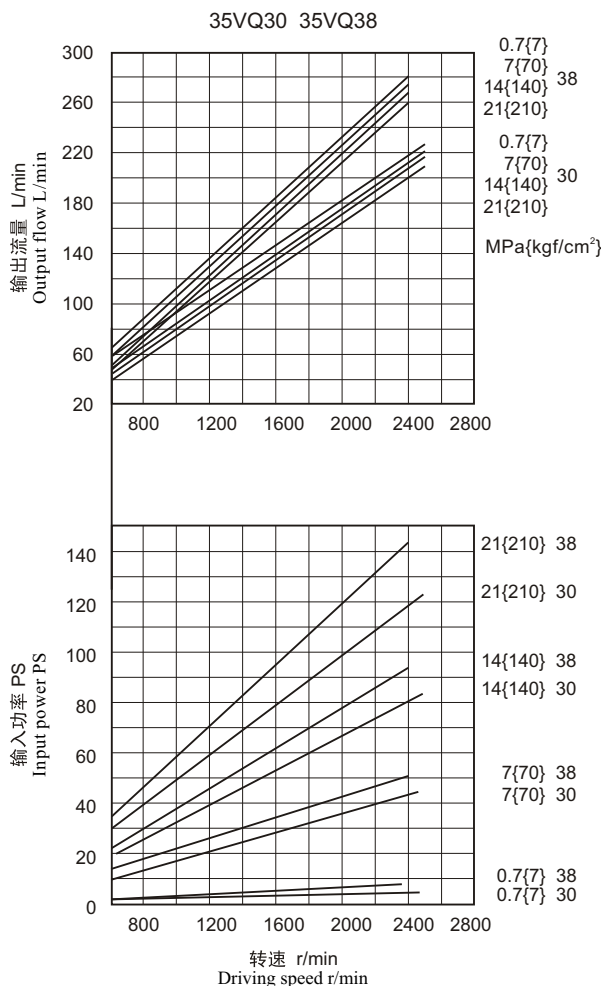
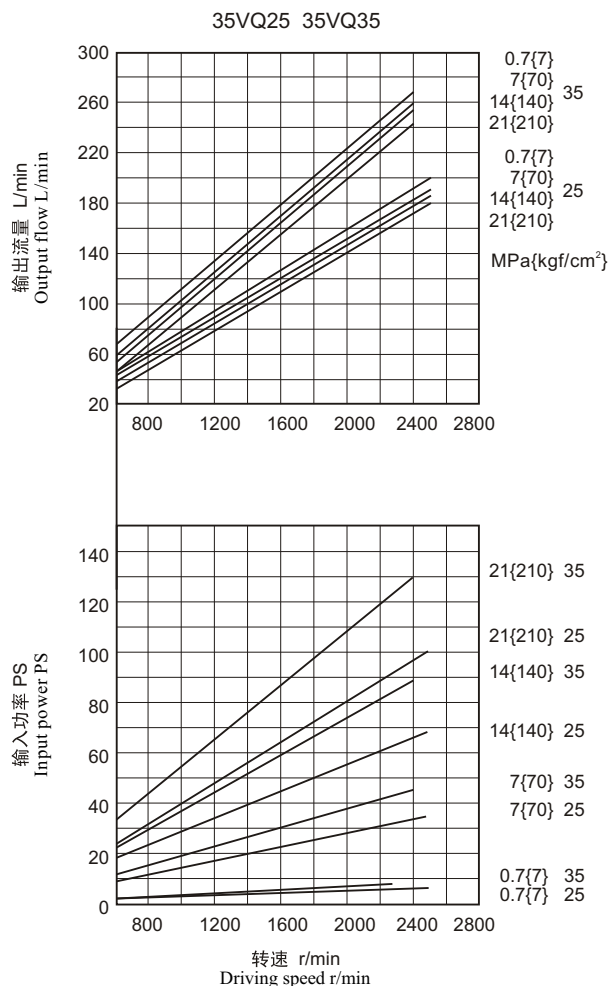


特性曲线 [50°C, 10W油 (26cst) 空载]

Characteristic curve with 10W type oil(26cst) under 50°C and no load

35VQ 输出流量, 输入功率

35VQ output flow, input power



使用与维护 Operation and Maintenance

● 液压用油 Hydraulic oil

推荐使用40°C时粘度等级为32-68cst抗磨液压油或带有字母标记SC、SD、SE或SF的汽车曲轴箱油。额定转速和压力下的推荐粘度：最低13cst、最高54cst、最低49°C、最高65°C。

It is recommended to adopt anti-wear hydraulic fluids with viscosity of 32cst-68cst under the temperature of 40°C, or automobile crankcase oil with alphabetic marks of SC, SD, SE or SF. The recommended viscosity under rated rotation speed and rated pressure should range from 13cst to 54cst with the temperature range of 49°C to 65°C.

● 冷启动 Cold start

当使用SAE10W油在860至54cst范围内工作时，转速和压力应限制在它们各自额定的50%以内，直到系统热起来。油液粘度超过860cst启动时要特别注意，要使整个系统包括远处的缸和马达都热起来。

In the case of adopting SAE 10W type hydraulic oil with viscosity between 860cst and 54cst, the operating rotation speed and pressure shall be limited within 50% of rated rotation speed and rated pressure respectively, until the system warms up. Particular attention should be paid to make sure that the whole system including the cylinder and motor on the far away side shall be all warmed up, when the pump starts up with the hydraulic oil viscosity exceeding 860cst.

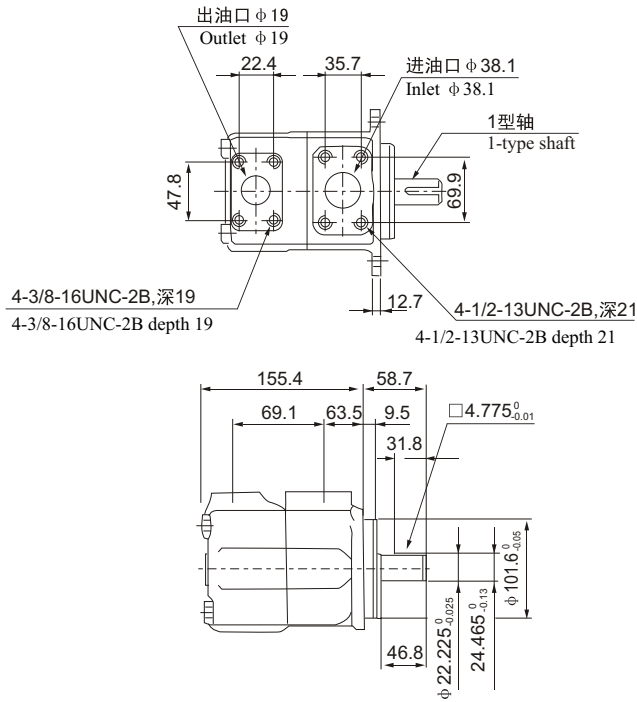
● 高温运行 High temperature operation

在高温运行时，粘度不得低于13cst，温度不得超过99°C，因为泵芯组件和密封件的期望寿命将缩短。

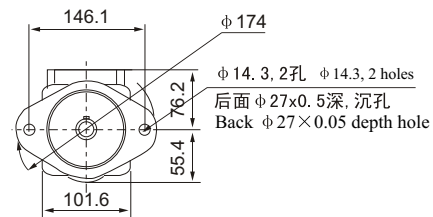
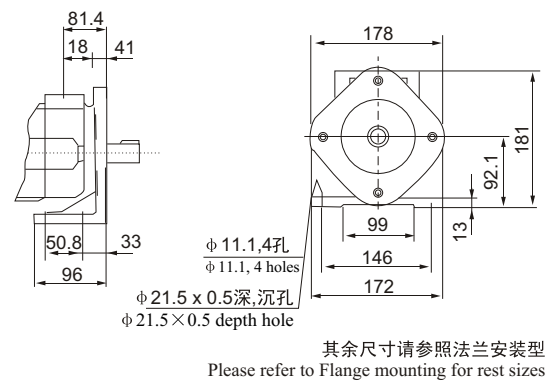
While working under high temperature, the viscosity shall not be less than 13cst, and the temperature shall not exceed 99°C. Otherwise, the service lifetime of pump core components and sealing parts will be reduced.

安装连接尺寸 Installation sizes

20VQ法兰安装 20VQ Flange mounting

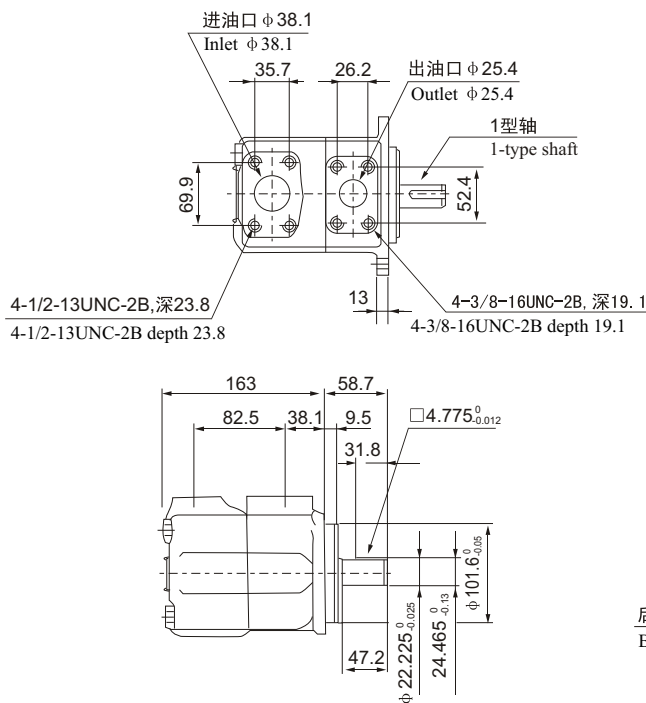


20VQ脚座安装 20VQ foot mounting

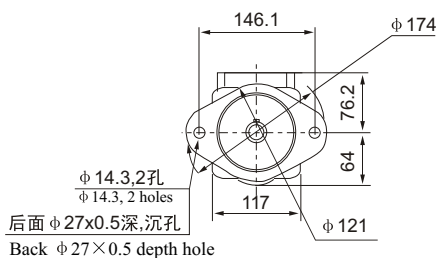
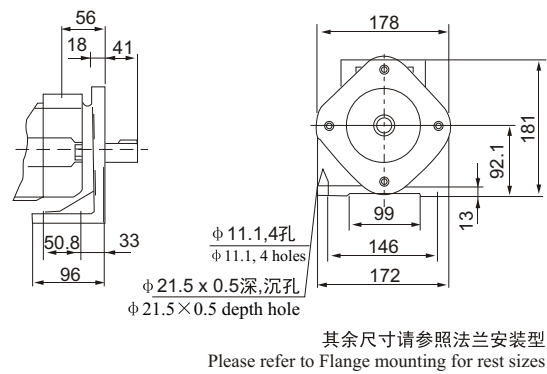


其它轴伸尺寸请参见53页
Please refer to shaft extension sizes in page 53 for rest sizes

25VQ法兰安装 25VQ Flange mounting



25VQ脚座安装 25VQ foot mounting



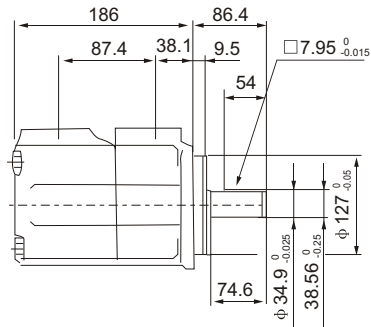
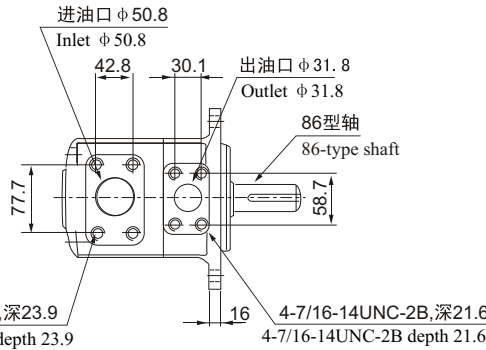
其它轴伸尺寸请参见53页
Please refer to shaft extension sizes in page 53 for rest sizes

VQ系列叶片泵 VQ series vane pumps

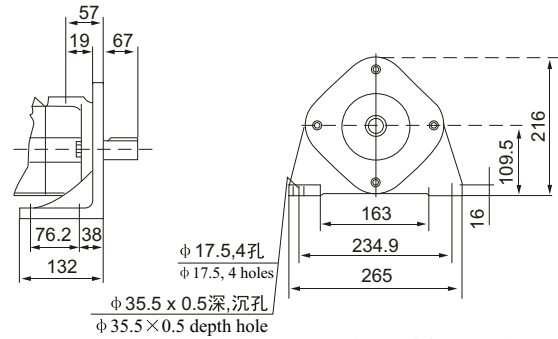


安装连接尺寸 Installation sizes

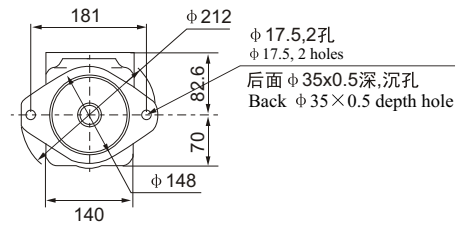
35VQ法兰安装 35VQ Flange mounting



35VQ脚座安装 35VQ foot mounting

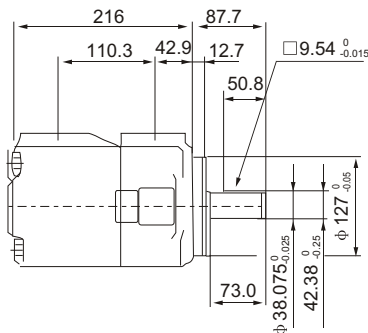
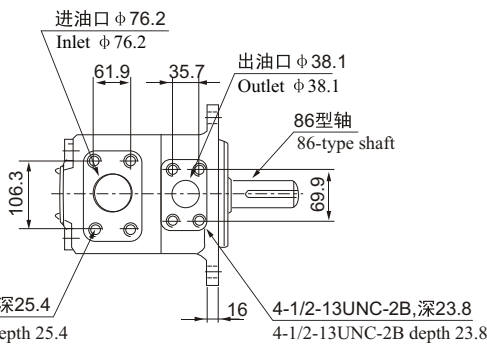


其余尺寸请参照法兰安装型
Please refer to Flange mounting for rest sizes

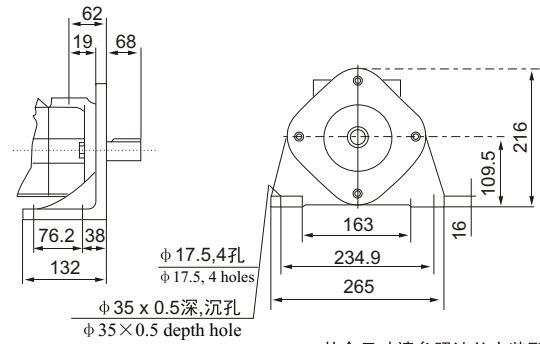


其它轴伸尺寸请参见53页
Please refer to shaft extension sizes in page 53 for rest sizes

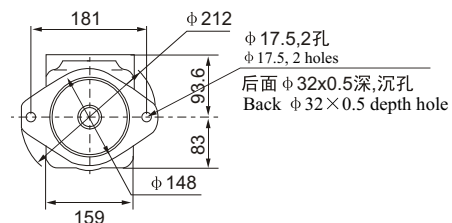
45VQ法兰安装 45VQ Flange mounting



45VQ脚座安装 45VQ foot mounting



其余尺寸请参照法兰安装型
Please refer to Flange mounting for rest sizes



其它轴伸尺寸请参见53页
Please refer to shaft extension sizes in page 53 for rest sizes



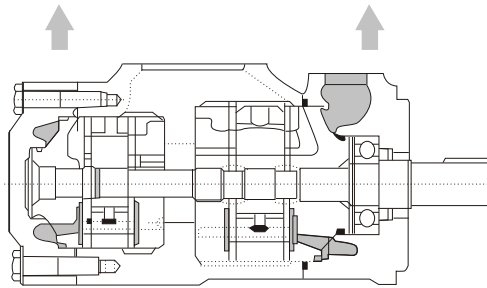
VQ系列双联泵 VQ series double pumps

适合行走机械的高性能子母叶片泵
High performance composition vane pumps for walking machinery

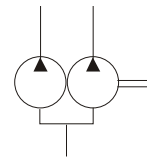
产品外观及简介 Shape and introduction

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 - 2、采用浮动侧板结构，可以自动补偿间隙，达到压力平衡，实现高转速高压力的优越性能；
 - 3、侧板采用双金属挠性材料，极大提高抗咬合性能，使泵的效果更高，寿命更长。
1. Adopt the structure of hydraulic balancing composition vanes, making the resistant pressure higher to maximum 21 Mpa.
 2. Adopt the structure of floating side plate supporting with its function of automatic tolerance compensation, which helps to get pressure balance and high performance under high rotation speed and high pressure.
 3. Adopt bimetal flexible material for side plates, which dramatically improves the engagement performance of the gears and thus makes the pump working better and longer.



功能符号
Functional sign



型号说明 Model descriptions:

(F3-)	****VQ	**	A	**	(F)	-*	*	20	*
前注 Front marks	系列号 Code of series	▲排量代号 Displacement codes	油口连接 Pump port connection	▲排量代号盖端泵 Displacement code cover end pump	安装型式 Mounting type	轴伸形式 Shaft extension	油口位置 Pump position	设计号 Designing No.	旋转方向 Direction of rotation
无标记： 石油系油乳 化液水—乙 二醇 No mark: water-in oil emulsion of petroleum series F3:磷酸酯液 F3: Sul phosuccinic ester fatty of acid	2520VQ	10,12,14,15,17,19,21	A-SAE 4螺栓法兰 4-bolted Flange	2,3,4,5,6,7,8,9,10,11,12,14	无标记： No marks: 法兰安装型 Flange mounting	1-带键直轴 1- straight shaft with key 86-重型带键直轴 86-heavy-duty straight shaft with key 11-花键轴 11-spline shaft	见下表 See as the following table	20	(从泵的轴端看) (from shaft end pump) 无标记： No marks: 顺时针旋转 Clockwise rotation L-逆时针旋转 L-counterclockwise rotation
	3520VQ	21,25,30,32,35,38,45		2,3,4,5,6,7,8,9,10,11,12,14					
	3525VQ	21,25,30,32,35,38,45		10,12,14,15,17,19,21					
	4520VQ	42,45,50,57,60,66,75		2,3,4,5,6,7,8,9,10,11,12,14	F-脚座安装型 F-Foot mounting				
	4525VQ	42,45,50,57,60,66,75		10,12,14,15,17,19,21					
4535VQ	42,45,50,57,60,66,75	21,25,30,32,35,38,45							

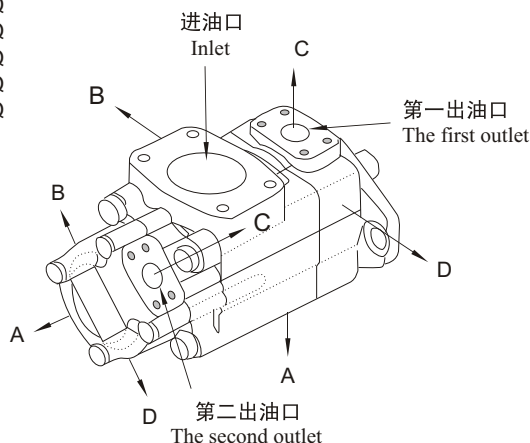
▲在1200r/min和0.69MPa(100psi)下的额定排量USgpm。
The rated displacement (USgpm) is under the conditions of 1200r/min and 0.69 Mpa(100psi).

VQ系列叶片泵 VQ series vane pumps

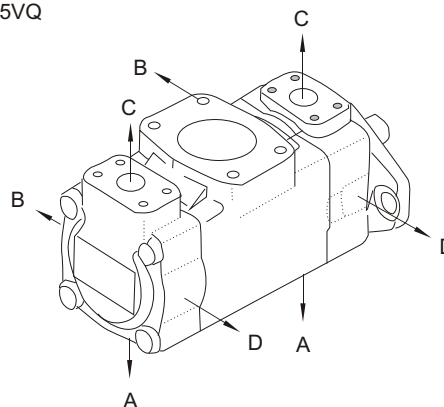


油口位置表 (从泵的盖端看) Pump oil port position(viewed from cover end pump)

- 2520VQ
- 3520VQ
- 3525VQ
- 4520VQ
- 4525VQ



- 4535VQ



油口位置 Pump position		所有系列 (除4535VQ外) All series (except for 4535VQ)	4535VQ
第一出油口 在进油口对侧 The first outlet is the opposition side of inlet.	AA	第二出油口在进油口逆时针转135° The second outlet is to counterclockwise rotation of 135° from inlet	第二出油口在进油口对侧 The second outlet is the opposition side of inlet.
	AB	第二出油口在进油口逆时针转45° The second outlet is to counterclockwise rotation of 45° from inlet	第二出油口在进油口逆时针转90° The second outlet is to counterclockwise rotation of 90° from inlet
	AC	第二出油口在进油口顺时针转45° The second outlet is to clockwise rotation of 45° from inlet	第二出油口在进油口同侧 The second outlet is the same side of inlet.
	AD	第二出油口在进油口顺时针转135° The second outlet is to clockwise rotation of 135° from inlet	第二出油口在进油口顺时针转90° The second outlet is to clockwise rotation of 90° from inlet
第一出油口 从进油口逆 时针转90° The first outlet is to counterclockwise rotation of 90° from inlet	BA	第二出油口在进油口逆时针转135° The second outlet is to counterclockwise rotation of 135° from inlet	第二出油口在进油口对侧 The second outlet is the opposition side of inlet.
	BB	第二出油口在进油口逆时针转45° The second outlet is to counterclockwise rotation of 45° from inlet	第二出油口在进油口逆时针转90° The second outlet is to counterclockwise rotation of 90° from inlet
	BC	第二出油口在进油口顺时针转45° The second outlet is to clockwise rotation of 45° from inlet	第二出油口在进油口同侧 The second outlet is the same side of inlet.
	BD	第二出油口在进油口顺时针转135° The second outlet is to clockwise rotation of 135° from inlet	第二出油口在进油口顺时针转90° The second outlet is to clockwise rotation of 90° from inlet
第一出油口 在进油口同侧 The first outlet is the same side of inlet.	CA	第二出油口在进油口逆时针转135° The second outlet is to counterclockwise rotation of 135° from inlet	第二出油口在进油口对侧 The second outlet is the opposition side of inlet.
	CB	第二出油口在进油口逆时针转45° The second outlet is to counterclockwise rotation of 45° from inlet	第二出油口在进油口逆时针转90° The second outlet is to counterclockwise rotation of 90° from inlet
	CC	第二出油口在进油口顺时针转45° The second outlet is to clockwise rotation of 45° from inlet	第二出油口在进油口同侧 The second outlet is the same side of inlet.
	CD	第二出油口在进油口顺时针转135° The second outlet is to clockwise rotation of 135° from inlet	第二出油口在进油口顺时针转90° The second outlet is to clockwise rotation of 90° from inlet
第一出油口 从进油口顺 时针转90° The first outlet is to clockwise rotation of 90° from inlet	DA	第二出油口在进油口逆时针转135° The second outlet is to counterclockwise rotation of 135° from inlet	第二出油口在进油口对侧 The second outlet is the opposition side of inlet.
	DB	第二出油口在进油口逆时针转45° The second outlet is to counterclockwise rotation of 45° from inlet	第二出油口在进油口逆时针转90° The second outlet is to counterclockwise rotation of 90° from inlet
	DC	第二出油口在进油口顺时针转45° The second outlet is to clockwise rotation of 45° from inlet	第二出油口在进油口同侧 The second outlet is the same side of inlet.
	DD	第二出油口在进油口顺时针转135° The second outlet is to clockwise rotation of 135° from inlet	第二出油口在进油口顺时针转90° The second outlet is to clockwise rotation of 90° from inlet

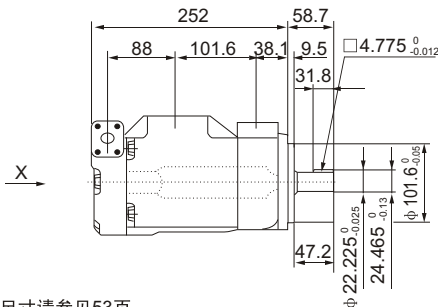
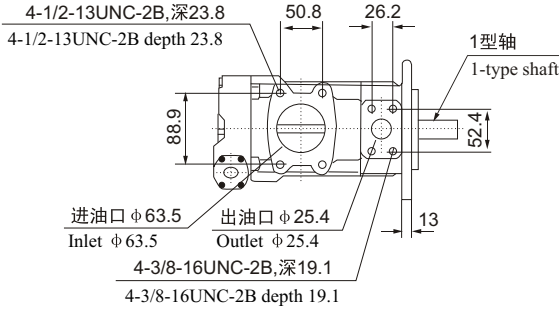
VQ系列叶片泵

VQ series vane pumps



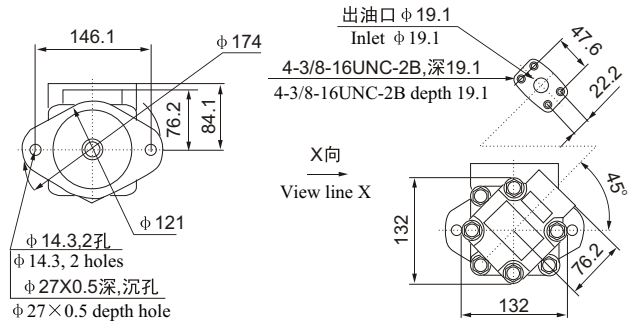
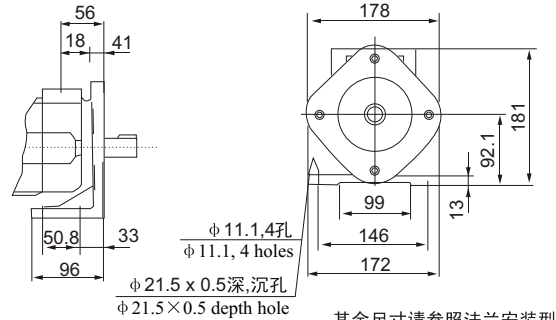
安装连接尺寸 Installation sizes

2520VQ法兰安装 2520VQ Flange mounting

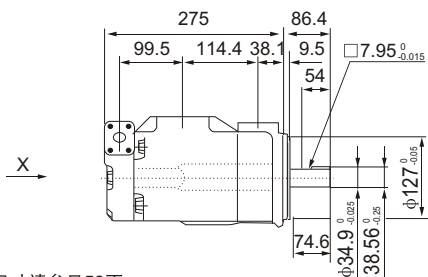
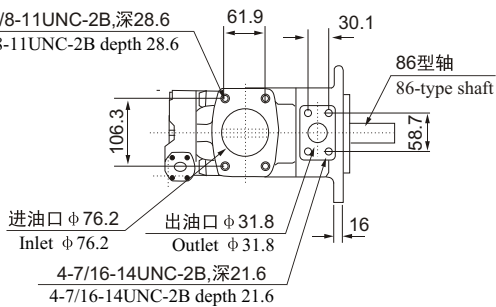


其它轴伸尺寸请参见53页
Please refer to shaft extension sizes in page 53 for rest sizes

2520VQ脚座安装 2520VQ foot mounting

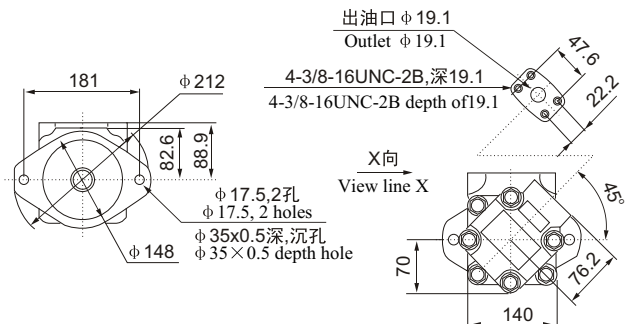
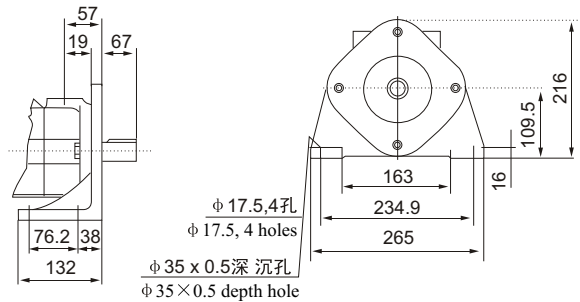


3520VQ法兰安装 3520VQ Flange mounting



其它轴伸尺寸请参见53页
Please refer to shaft extension sizes in page 53 for rest sizes

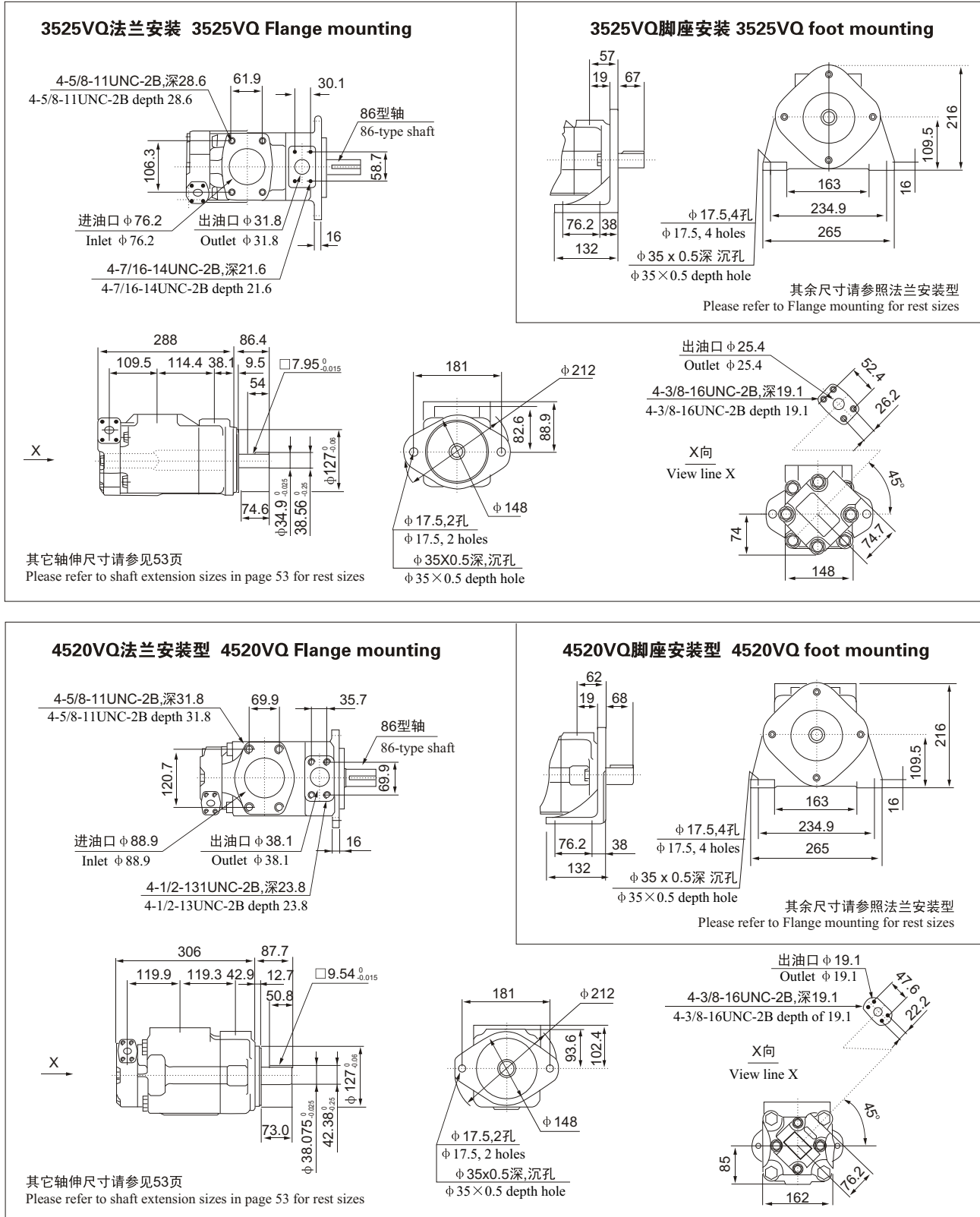
3520VQ脚座安装 3520VQ foot mounting



VQ系列叶片泵

VQ series vane pumps

安装连接尺寸 Installation sizes

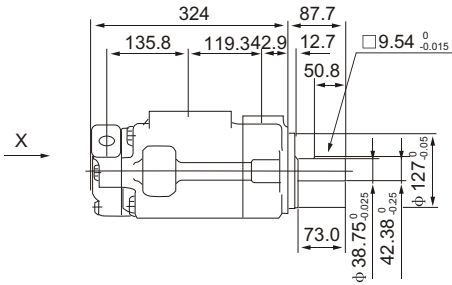
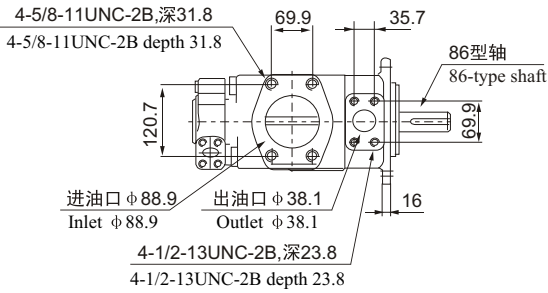


VQ系列叶片泵 VQ series vane pumps



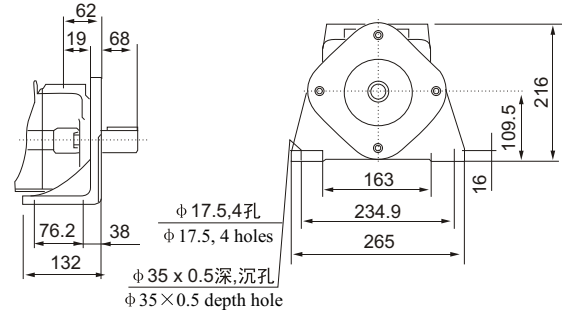
安装连接尺寸 Installation sizes

4525VQ法兰安装 4525VQ Flange mounting

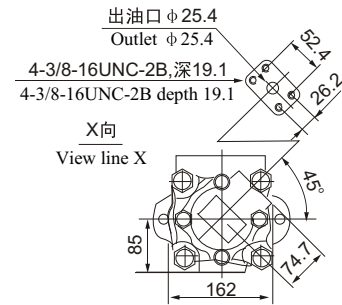
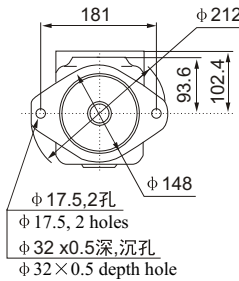


其它轴伸尺寸请参见53页
Please refer to shaft extension sizes in page 53 for rest sizes

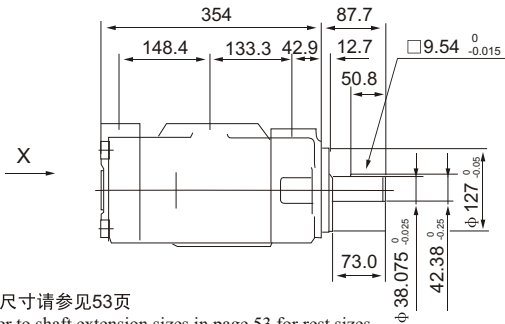
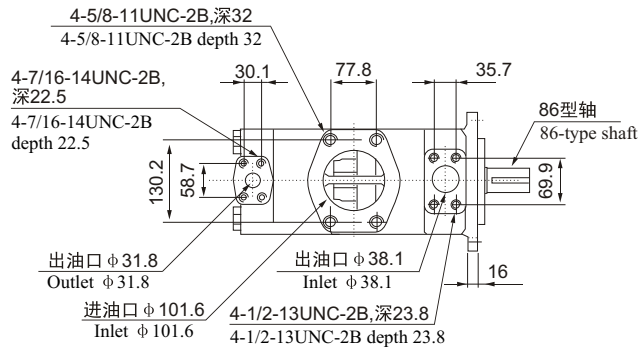
4525VQ脚座安装 4525VQ foot mounting



其余尺寸请参照法兰安装型
Please refer to Flange mounting for rest sizes

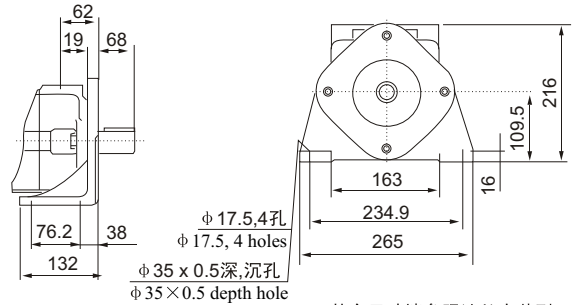


4535VQ法兰安装型 4535VQ Flange mounting

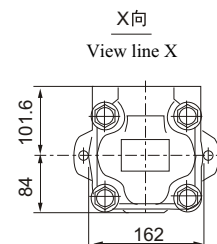
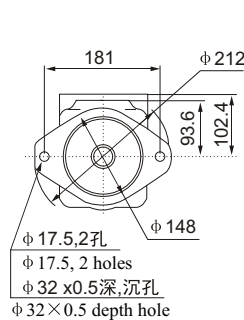


其它轴伸尺寸请参见53页
Please refer to shaft extension sizes in page 53 for rest sizes

4535VQ脚座安装型 4535VQ foot mounting



其余尺寸请参照法兰安装型
Please refer to Flange mounting for rest sizes



VQ系列叶片泵

VQ series vane pumps



VQ系列泵心 VQ series pump core

型号说明 Model descriptions

(F3-)	PC-	20VQ	-5	-R	-10
前注 Front marks	泵芯标记 Pump core marks	系列号 Models	▲排量代号 Displacement code	旋转方向 Direction of rotation	设计号 Designing No.
无标记: 石油系油乳化液 水-乙二醇 No mark: water-in oil emulsion of petroleum series F:磷酸酯液 F:Sul phosuccinic ester fatty of acid	PC-单泵泵芯 PC-single pump core 双联泵轴端泵芯 Shaft end core of double vane pumps PCT-双联泵盖端泵芯 PCT-cover end core of double vane pumps	20VQ	2,3,4,5,6,7,8,9,10,11,12,14	(从泵的轴端看) (from shaft end pump) L-逆时针旋转 L-counterclockwise rotation R-顺时针旋转 R-clockwise rotation	10
		25VQ	10,12,14,15,17,19,21		
		35VQ	21,25,30,32,35,38,45		
		45VQ	42,45,50,57,60,66,75		

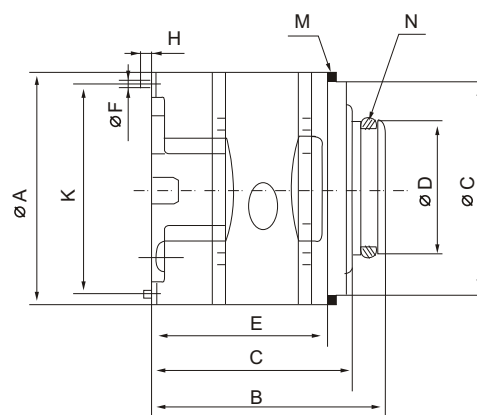
▲在1200r/min和0.69Mpa (100psi) 下的额定排量Usqpm。

The rated displacement USqpm is under the conditions of 1200r/min and 0.69 Mpa(100psi).

性能参数: 与相应系列, 规格的油泵性能参数一致, 详见VQ系列单泵的性能参数。

The specifications of double vane pumps are the same with relative series of single vane pumps. Please check details on the operating parameter sheets shown in VQ series of single vane pumps.

安装连接尺寸 Installation sizes



系列号 Models	A	B	C	D	E	F	G	H	K	M (挡圈) M (ring)	N(O型圈) (内径×线径) N (O type ring) (Inner diameter×lead wire diameter)
20VQ	82.5	81.5	70.1	47	61.5	4.8	76.2	6	73.6	82.76×76.26×3.5	40×3.5
25VQ	96.8	98.8	87	52.2	71.2	4.8	90.5	5	88.19	97×91×3.5	44×3.53
35VQ	114.3	117.7	105	72.2	90.3	6.4	108	6	103.94	114.5×108.5×3.5	63.09×3.53
45VQ	133.35	141.1	129.6	80.2	105.5	6.4	127	10	133.35	133.6×127.6×3.5	71×3.55

系列号 Models	转子内花键齿廓参数 Spline teeth No. in rotor				
	模数 Modulus	齿数 No. of teeth	标准压力角 Standard angle	大径 Major diameter	小径 Minor diameter
20VQ	48/96	30	45°	16.617	15.56
25VQ	48/96	40	45°	21.9	20.86
35VQ	40/80	37	45°	24.38	23.1
45VQ	12/24	14	30°	32.59	27.60