

## V系列单泵 V series single pumps

### 产品外观及简介

本系列是工业应用而开发的高性能子母叶片泵。适用于注塑机械、橡胶机械、压铸机械、机床等各种液压系统中。其主要特点：

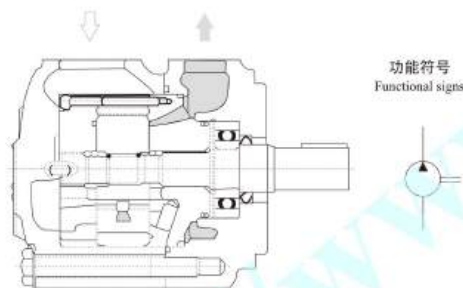
1. 子母叶片的结构设计，减少了叶片对定子的冲击，在较高的工作压力和高转速下，性能更稳定，寿命更长。
2. 子母叶片结构本身具有低噪音的特性。12叶片的设计，流量脉动很小，噪音更低。
3. 多排量的选择，以及泵芯的插装式结构，使用户使用更灵活，维修更方便。

### Shape and introduction

These series of composition vane pumps in high performance are developed for industrial application. They can be applied properly in the hydraulic system of plastic injection machinery, rubber machinery, casting machinery, machine tool industry, etc.

The main features are:

1. The designing structure of composition vanes reduces its impact on the stator, so the pumps will have further stability and longer lifetime while working with high pressure and high speed.
2. The designing structure of composition vanes itself reduces the noise. The design of 12 vanes makes smaller flow pulsation and lower noise.
3. Multi-displacement option and the cartridge structure of pump core make flexible application and easy maintenance.



### 型号说明 Model descriptions:

(F3-)	**V	**	A	(F)	-*	*	22	*
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	出口位置 Outlet 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	20V	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- 法兰安装型 No mark-flange mounting	1-带键直轴 1-straight shaft with key 151-花键轴 151-spline shaft	(从泵的盖端看) (viewed from the cover end of the pump) A-进油口对侧 A: the opposite of inlet B-从进油口逆时针90° B:counterclockwise 90° of pump port C-进油口同侧 C:the same side of pump inlet port D-从进油口顺时针90° D:clockwise 90° of pump inlet port	22	(从泵的轴端看) (viewed from the shaft end of the pump) L-逆时针旋转 L-counterclockwise rotation R-顺时针旋转 R-clockwise rotation
F3: 磷酸酯液 F3: Sul phosuccinic ester fatty of acid	25V	10,12,14,15,17, 19,21		F- 脚座安装型 F- foot 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			
	35V	21,25,30,32, 35,38,45						
	45V	42,45,50,57, 60,66,75						

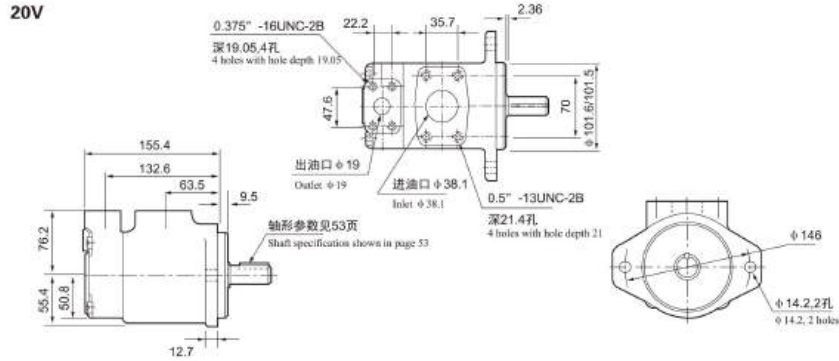
▲在1200r/min和0.69MPa (100psi) 下的额定排量USgpm

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

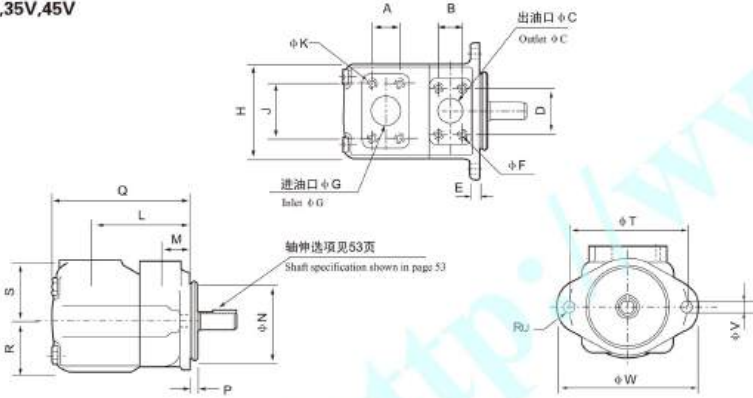
## 工作参数 Operating parameters

型号 Models	排量代号 Displacement code	几何排量 Geometric displacement (mL/r)	使用抗磨液压油或磷酸酯液 Anti-wear hydraulic oil or phospholipid		使用水乙二醇液 Water glycol fluid		使用油包水乳化液 Water-in-oil emulsion		最低转速 Mini speed (r/min)								
			最高压力 Max pressure (Mpa)	最高转速 Max speed (r/min)	最高压力 Max pressure (Mpa)	最高转速 Max speed (r/min)	最高压力 Max pressure (Mpa)	最高转速 Max speed (r/min)									
20V	2	7.5	13.8	1800	13.8	1500	6.9	1200	600								
	3	10															
	4	13															
	5	17															
	6	19	20.7	1800	15.9	1500	6.9	1200	600								
	7	23															
	8	27															
	9	30															
	10	32.5															
	11	36															
	12	40															
	14	45								13.8	13.8						
	25V	10	32.5	17.2	1800	15.9	1500	6.9	1200	600							
		12	40														
14		43															
15		45															
17		55															
19		59															
21		67															
35V		21	67								17.2	1800	15.9	1500	6.9	1200	600
		25	81														
		30	97														
	32	100															
	35	112															
	38	121															
	45	142															
	45V	42	138	17.2	1800	15.9	1500	6.9	1200	600							
		45	142														
		50	162														
57		183															
60		193															
66		212															
75		237	13.8								13.8						

安装连接尺寸 Installation sizes



25V,35V,45V



型号 Models	A	B	C	D	E	G	H	J	L	M	N	P	Q	R
25V	35.7	26.2	25.4	52.4	12.7	38.1	118	69.9	121	38.1	101.6/101.5	9.53	162.1	63.5
35V	42.9	30.2	31.8	58.7	16	50.8	140	77.8	125.5	38.1	127.0/126.9	9.53	185	69.9
45V	61.9	35.7	38.1	69.9	16	76.2	159	106.4	153	43	127.0/126.9	12.7	216	82.6

型号 Models	S	T	U	V	W	F x 全部螺纹深, 4孔 F x all depth of screw, 4 holes	K x 全部螺纹深, 4孔 K x all depth of screw, 4 holes
25V	76.2	146	14	14.2	175	3/8-16UNC-2B x 19.1深 3/8-16UNC-2B x 19.1 depth	1/2-13UNC-2B x 23.8深 1/2-13UNC-2B x 23.8 depth
35V	82.6	181	16	17.5	213	7/16-14UNC-2B x 22.3深 7/16-14UNC-2B x 22.3 depth	1/2-13UNC-2B x 22.3深 1/2-13UNC-2B x 22.3 depth
45V	93.7	181	16	17.5	213	1/2-13UNC-2B x 23.8深 1/2-13UNC-2B x 23.8 depth	5/8-11UNC-2B x 30深 5/8-11UNC-2B x 30 depth

V系列双联泵 V Series double pumps

产品外观及简介

本系列是工业应用而开发的高性能子母叶片泵, 适用于注塑机械、橡胶机械、压铸机械、机床等各种液压系统中。

- 其主要特点:
1. 子母叶片的结构设计, 减少了叶片对定子的冲击, 在较高的工作压力和高转速下, 性能更稳定, 寿命更长。
  2. 子母叶片结构本身具有低噪音的特性。12叶片的设计, 流量脉动很小, 噪音更低。
  3. 多排量的选择, 以及泵芯的插装式结构, 使用户使用更灵活, 维修更方便。

Shape and introduction

These series of composition vane pumps in high performance are developed for industrial application. They can be applied properly in the hydraulic system of plastic injection machinery, rubber machinery, casting machinery, machine tool industry, etc.

- The main features are:
1. The designing structure of composition vanes reduces its impact on the stator, so the pumps will have further stability and longer lifetime while working with high pressure and high speed.
  2. The designing structure of composition vanes itself reduces the noise. The design of 12 vanes makes smaller flow pulsation and lower noise.
  3. Multi-displacement option and the cartridge structure of pump core make flexible application and easy maintenance.

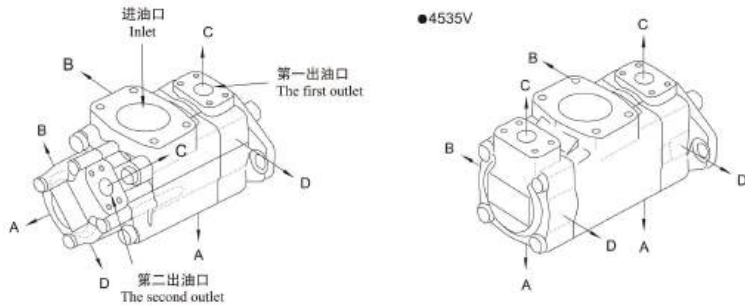


型号说明 Model descriptions:

(F3-)	****V	**	A	**	(F)	-**	*	22	*
前注 Front marks	系列号 Code of series	▲排量代号轴端泵 Displacement code shaft end pump	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	2520V	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- 法兰安装型 No mark-flange mounting	1-带键直轴 1-straight shaft with key	见下表 See as the following table	22	(从泵的轴端看) (viewed from the shaft end of the pump) L-逆时针旋转 L-counterclockwise rotation R-顺时针旋转 R-clockwise rotation
	3520V	21,25,30,32,35,38,45		2,3,4,5,6,7,8,9,10,11,12,14	86-重型带 键直轴 86-heavy-duty straight shaft with key				
No mark: water-in oil emulsion of petroleum series	3525V	21,25,30,32,35,38,45		10,12,14,15,17,19,21	F- 脚座安装型 F-foot mounting				
F3:磷酸酯液 F3: phosphate ester fatty acid	4520V	42,45,50,57,60,66,75		2,3,4,5,6,7,8,9,10,11,12,14	11-花键轴 11-spline shaft				
	4525V	42,45,50,57,60,66,75		10,12,14,15,17,19,21					
	4535V	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 0.69Mpa(100psi).

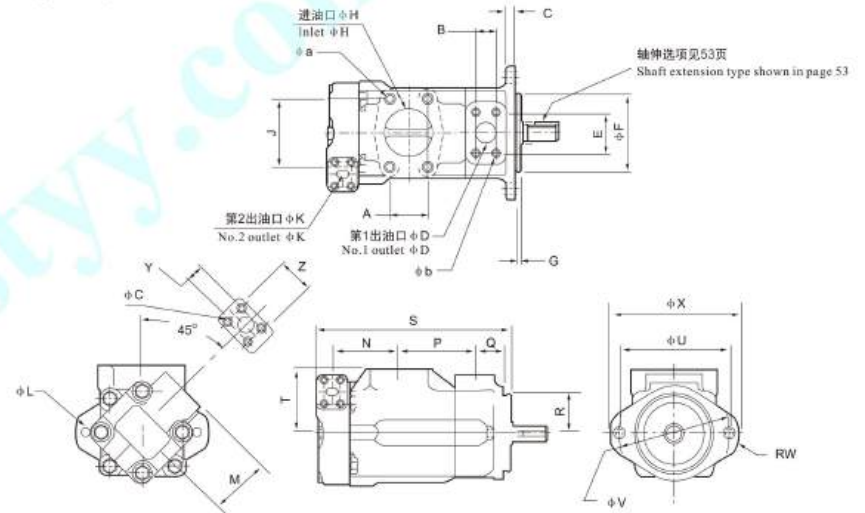
油口位置表 (从泵的盖端看) Pump oil port position (viewed from cover end pump)



油口位置 Pump position	所有系列 (除4535V外) All series (except for 4535 V)	4535V
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

安装连接尺寸 Installation sizes

2520V,35\*\*V和452\*V



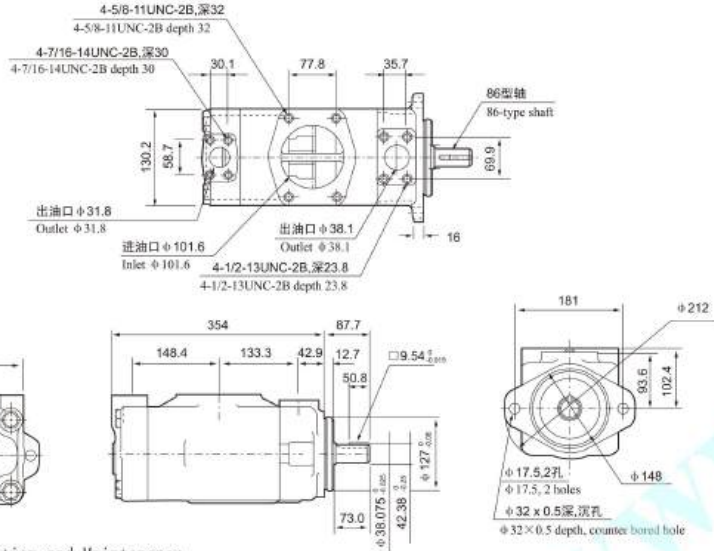
型号 Models	φa x 全部螺攻深, 4孔 φa x all screw holes, 4 holes	φb x 全部螺攻深, 4孔 φb x all screw holes, 4 holes	φc x 全部螺攻深, 4孔 φc x all screw holes, 4 holes
2520V	1/2-13UNC-2B x 23.8深 1/2-13UNC-2B x 23.8 depth	3/8-16UNC-2B x 20.1深 3/8-16UNC-2B x 20.1 depth	3/8-15UNC-2B x 20.1深 3/8-15UNC-2B x 20.1 depth
3520V	5/8-11UNC-2B x 25.4深 5/8-11UNC-2B x 25.4 depth	7/16-14UNC-2B x 21.0深 7/16-14UNC-2B x 21.0 depth	3/8-15UNC-2B x 20.1深 3/8-15UNC-2B x 20.1 depth
3525V	5/8-11UNC-2B x 25.4深 5/8-11UNC-2B x 25.4 depth	7/16-14UNC-2B x 21.0深 7/16-14UNC-2B x 21.0 depth	3/8-15UNC-2B x 20.1深 3/8-15UNC-2B x 20.1 depth
4520V	5/8-11UNC-2B x 25.4深 5/8-11UNC-2B x 25.4 depth	1/2-13UNC-2B x 23.8深 1/2-13UNC-2B x 23.8 depth	3/8-15UNC-2B x 20.1深 3/8-15UNC-2B x 20.1 depth
4525V	5/8-11UNC-2B x 25.4深 5/8-11UNC-2B x 25.4 depth	1/2-13UNC-2B x 23.8深 1/2-13UNC-2B x 23.8 depth	3/8-15UNC-2B x 20.1深 3/8-15UNC-2B x 20.1 depth

型号 Models	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
2520V	50.8	26.2	12.7	25.4	52.4	101.6/101.5	9.53	63.5	88.9	19.1	14.2	75.2	88.1	101.6	38.1
3520V	62	30.1	15.9	31.7	58.7	127/126.9	9.53	76.2	106.3	19.1	17.5	75.2	99.6	114.3	38.1
3525V	62	30.1	15.9	31.7	58.7	127/126.9	9.53	76.2	106.3	25.4	17.5	74.7	109.5	114.3	38.1
4520V	69.9	35.7	15.9	38.1	69.9	127/126.9	12.7	88.9	120.6	19.1	17.5	75.2	120	119.4	42.9
4525V	69.9	35.7	15.9	38.1	69.9	127/126.9	12.7	88.9	120.6	25.4	17.5	74.7	136	119.4	42.9

型号 Models	R	S	T	U	V	W	X	Y	Z
2520V	76.2	250	85.3	146.1	120	14	174.7	22.2	47.6
3520V	82.6	273.3	88.9	181	148	16	213	22.2	47.6
3525V	82.6	287.3	88.9	181	148	16	213	26.2	52.4
4520V	93.7	303.5	102.4	181	148	16	213	22.2	47.6
4525V	93.7	325	102.4	181	148	16	213	26.2	52.4

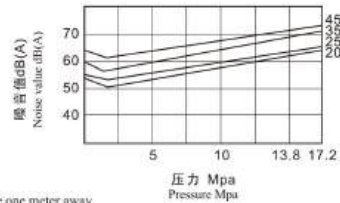
安装连接尺寸 Installation sizes

4535V



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.
- 噪音数据 Noise data**



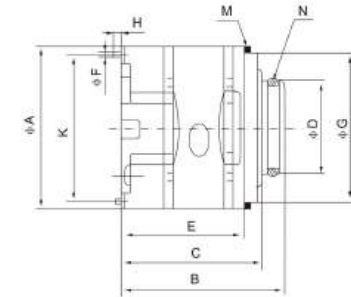
- 各系列单泵的平均噪音值测试条件：  
The average conditions for noise value testing of series of pumps:
- 1、静音实验室，转速为1500r/min
  - 2、抗磨液压油，粘度30cst
  - 3、测试油温45-50°C
  - 4、测试距离，距泵后1m
1. Test with rotation speed of 1500r/min in mute laboratory.
  2. Anti-wear hydraulic oil with the viscosity of 30cst.
  3. The testing temperature of hydraulic oil ranges from 45°C to 50°C.
  4. The distance between the noise sampling site and the back side of pump shall be one meter away.

型号说明 Model descriptions

(F3-)	PC-	25V	-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	PC-单泵泵芯 PC-single pump core 双联泵轴端泵芯 Shaft end core of double vane pumps	20V	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
F:磷酸酯液 F:Sul phosaccinic ester fatty of acid	PCT-双联泵盖端泵芯 PCT-cover end core of double vane pumps	25V	10,12,14,15,17,19,21		
		35V	21,25,30,32,35,38,45		
		45V	42,45,50,57,60,66,75		

▲在1200r/min和0.69Mpa (100psi) 下的额定排量Us(gpm)。  
The rated displacement (Us(gpm)) is under the conditions of 1200r/min and 0.69Mpa (100psi).  
性能参数：与相应系列，规格的油泵性能参数一致。详见V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 V 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)
20V	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
25V	96.8	98.8	87	52.2	71.2	4.8	90.5	5	88.19	97×91×3.5	44×3.53
35V	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
45V	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
20V	48/96	30	45°	16.617	15.56
25V	48/96	40	45°	21.9	20.86
35V	40/80	37	45°	24.38	23.1
45V	12/24	14	30°	32.59	27.60

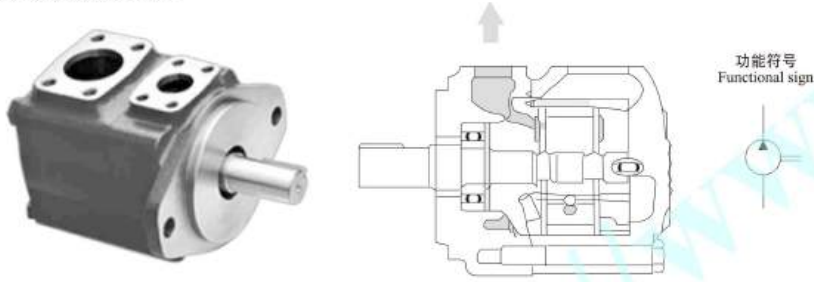
## VQ 系列单泵 VQ series single pumps

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、侧板采用双金属柔性材料，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	出油口位置 Outlet port position	设计号 Designing No.	旋转方向 Direction of rotation
无标记： 右油系油乳 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	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： 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： 顺时针旋转 Clockwise rotation
	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		20	
	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).

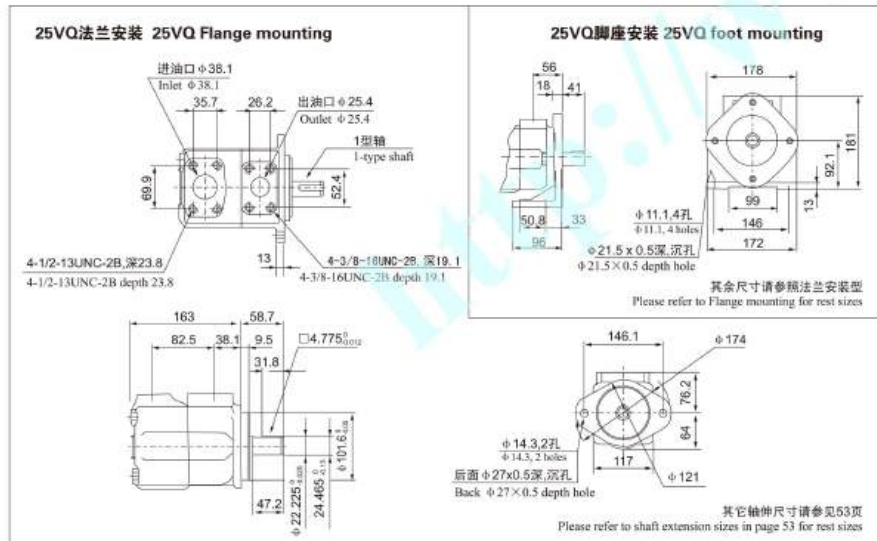
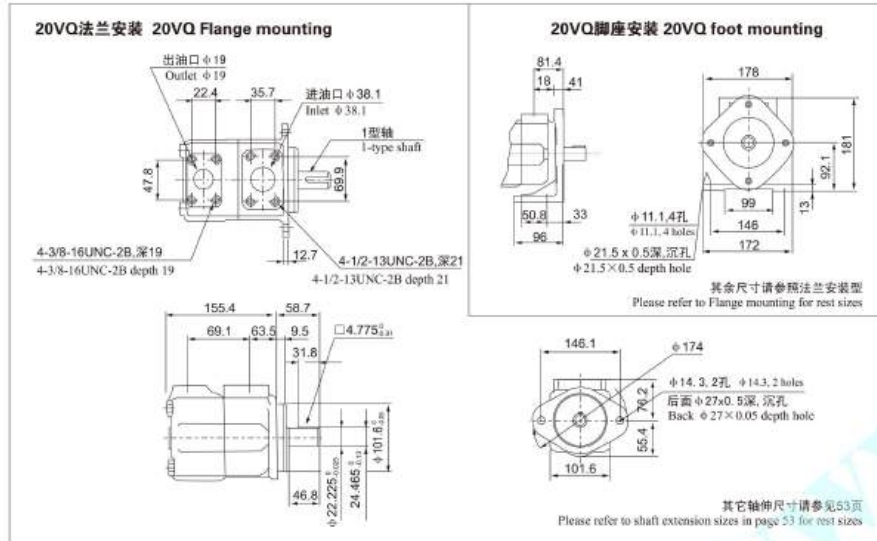
## VQ 系列单泵 VQ series single pumps

### 工作参数 Operating parameters

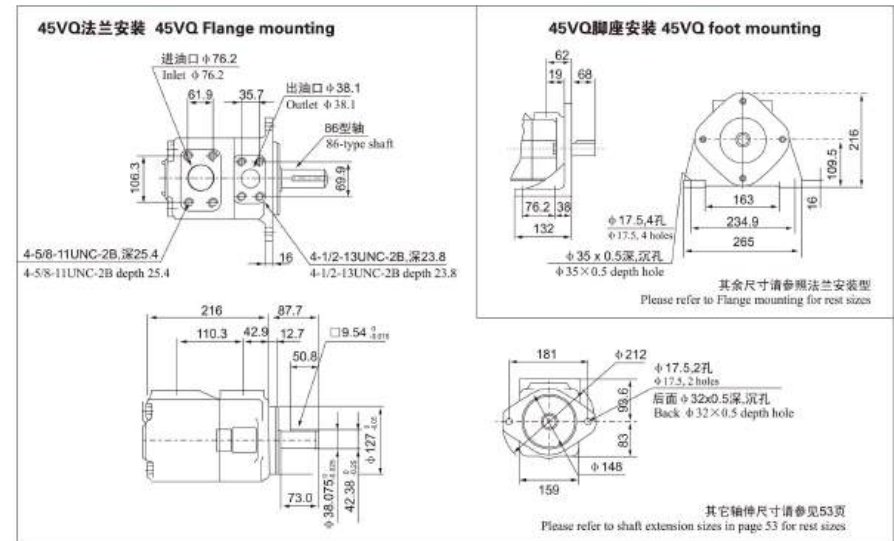
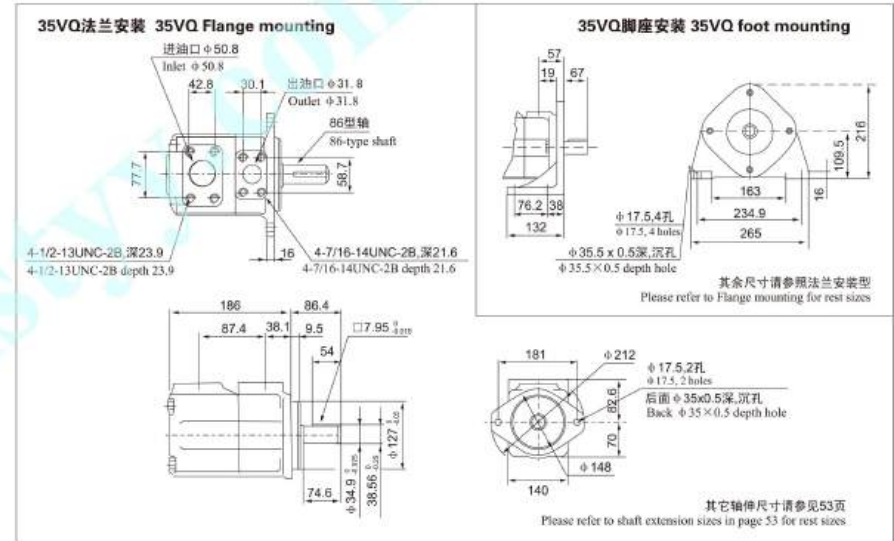
型号 Models	排量代号 Displacement code	几何排量 Geometric displacement (ml/r)	最高转速 Max speed (r/min)	最高压力 Max pressure (Mpa)	典型输出流量 Typical outlet flow (L/min) 最高转速及最高压力 under Max speed and Max pressure	典型输出功率 Typical outlet power (KW) 最高转速及最高压力 under Max speed and Max pressure	重量 Weight		
20VQ	2	7	2700	21	16.4	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 (14.7/Psia) Notes: The pressure of outlet port must be higher than the one of inlet port.

安装连接尺寸 Installation sizes



安装连接尺寸 Installation sizes



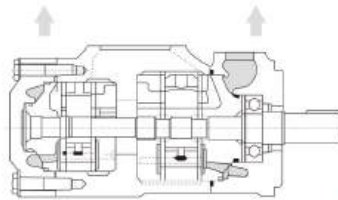
## VQ系列双联泵 VQ series double pumps

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

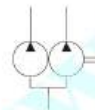
### 产品外观及简介 Shape and introduction

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、侧板采用双金属柔性材料，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



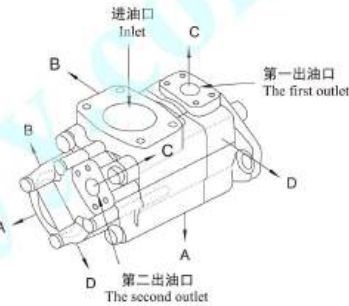
### 型号说明 Model descriptions:

(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	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	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
F3: 磷酸酯液 F3: Sul phosuccinic ester fatty of acid	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					
	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	F-脚座安装型 F-Foot mounting	11-花键轴 11-spline shaft			L-逆时针旋转 L-counter-clockwise rotation	

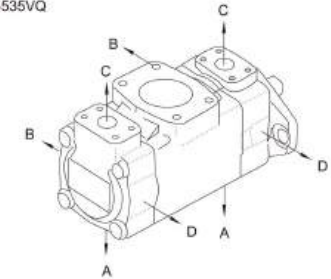
▲在1200r/min和0.69MPa(100psi)下的额定排量USgpm。  
The rated displacement (USgpm) is under the conditions of 1200r/min and 0.69 Mpa(100psi).

## 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

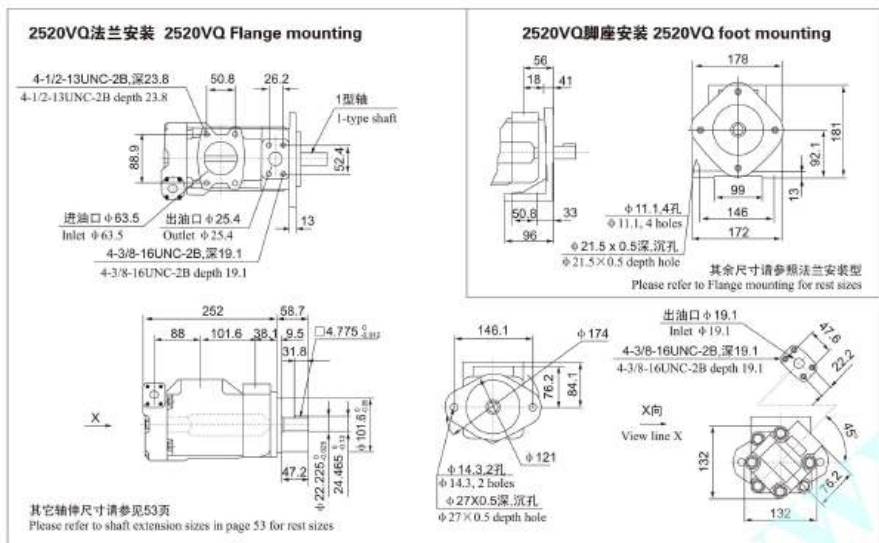


- 4535VQ

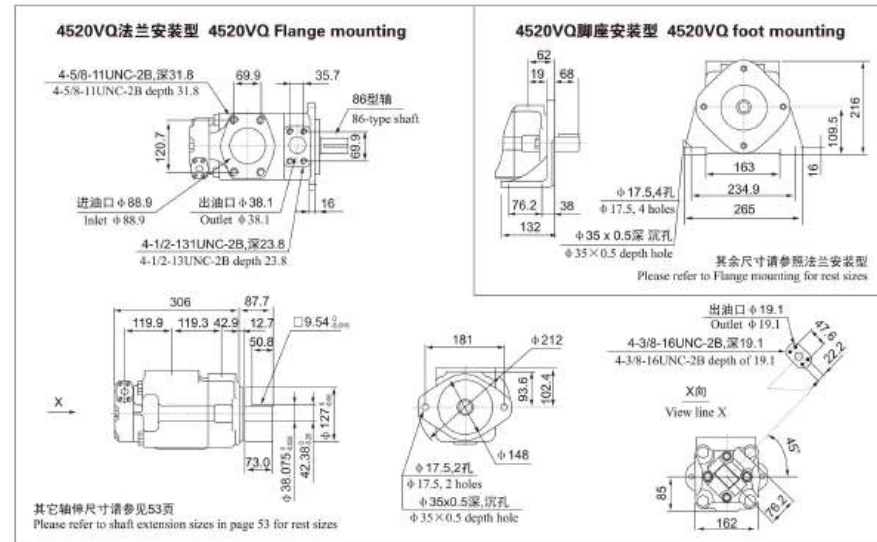
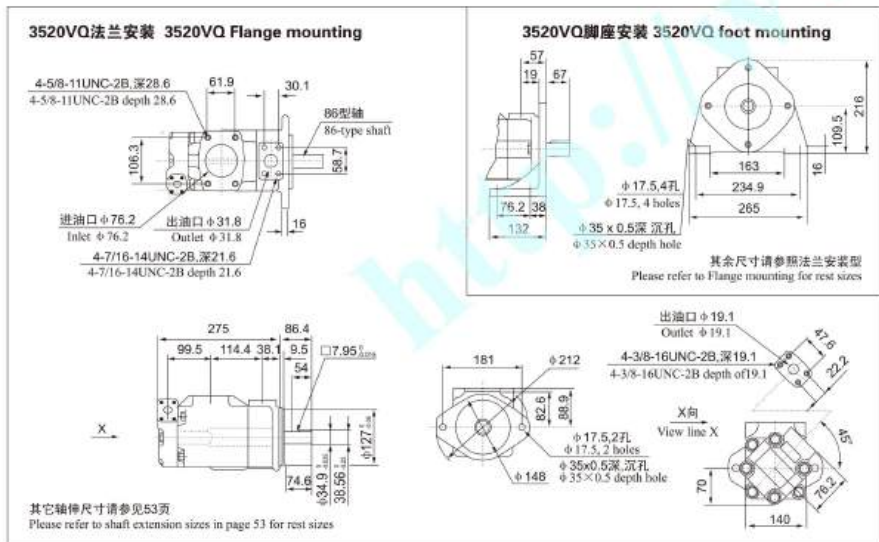
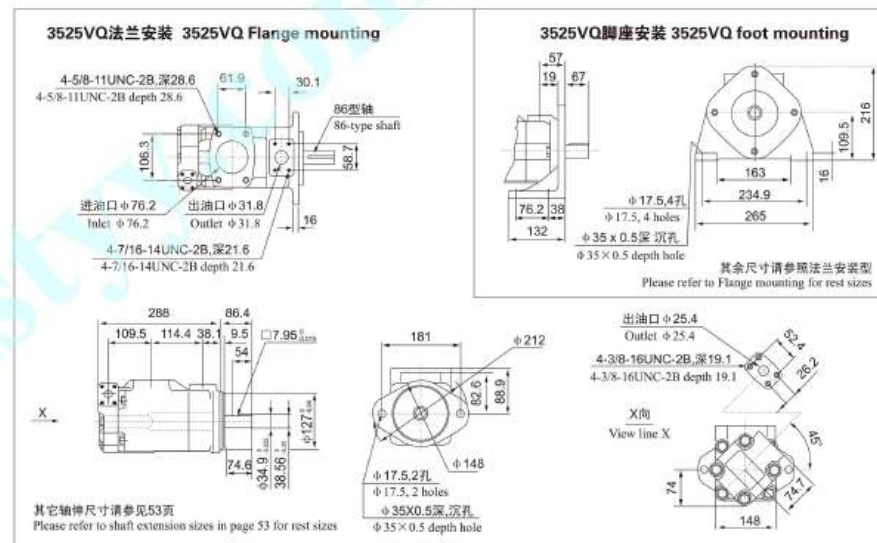


油口位置 Pump position	所有系列 (除4535VQ外) All series (except for 4535VQ)	4535VQ
第一出油口 在进油口对侧 The first outlet is the opposition side of inlet.	AA 第二出油口在进油口逆时针转135° The second outlet is to counterclockwise rotation of 135° from inlet	第二出油口在进油口对侧 The second outlet is the opposition side of inlet.
	AB 第二出油口在进油口逆时针转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°C 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°C 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

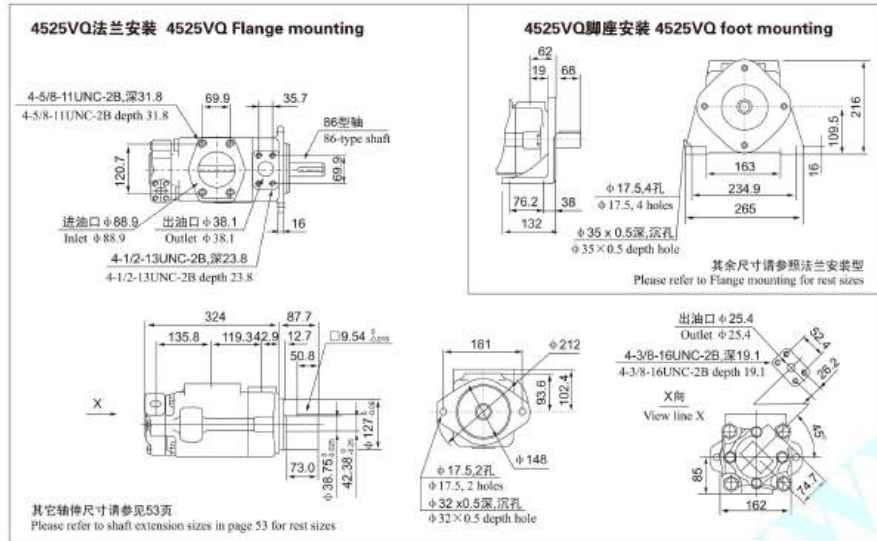
安装连接尺寸 Installation sizes



安装连接尺寸 Installation sizes



安装连接尺寸 Installation sizes



VQ系列泵芯 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	PC-单泵泵芯 PC-single pump core 双联泵轴盖泵芯 Shaft 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
F:磷酸酯液 F:Sulphosacetic ester fatty acid	PCT-双联泵盖端泵芯 PCT-cover end core of double vane pumps	25VQ	10,12,14,15,17,19,21		
		35VQ	21,25,30,32,35,38,45		
		45VQ	42,45,50,57,60,66,75		

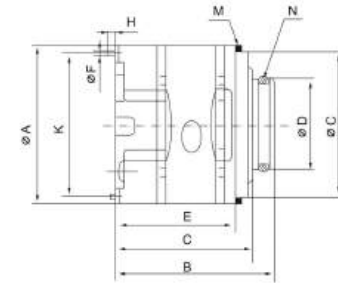
▲在1200r/min和0.69Mpa (100psi) 下的额定排量USgpm。

The rated displacement USgpm 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。

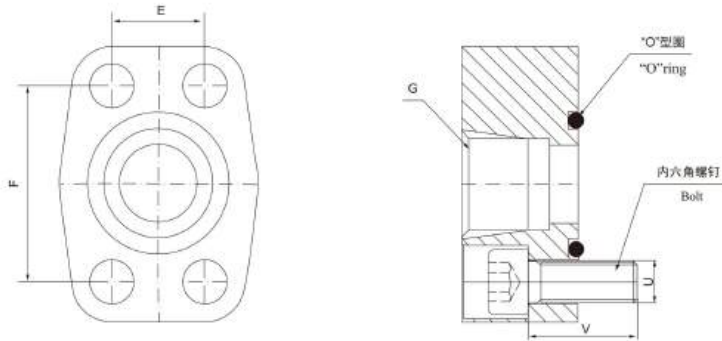
The specifications of double vane pumps are the same with relative series of single vane pumps. Please check details on the operating parameter sheets shown in VQ series of single vane pumps.

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) N (O type ring) (内径×线径) (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	转子内花键齿形参数 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

**V (VQ)泵配用法兰连接尺寸 V (VQ) Flange Installation sizes**

 精细品质 永恒追求  
 Fine Quality Eternal Pursuit

配套的型号 Models	尺寸 Dimension (mm)			内六角螺钉 Bolt		“O”型圈 (内径×线径) “O”ring
	E	F	G	U	V (mm)	
20V (VQ) 出油口 Outlet	22.22	47.6	3/4	3/8-16UNC	30	28×3.55
25V (VQ) 出油口 Outlet	26.2	52.4	1	3/8-16UNC	30	34.5×3.55
35V (VQ) 出油口 Outlet	30.2	58.7	1 $\frac{1}{4}$	7/16-14UNC	35	40×3.55
45V (VQ) 出油口 Outlet 20V (VQ), 25V (VQ) 出油口 Outlet	35.7	69.9	1 $\frac{1}{2}$	1/2-13UNC	40	50×3.55
35V (VQ) 进油口 inlet	42.9	77.8	2	1/2-13UNC	40	63.09×3.55
45V (VQ) 3520V (VQ), 3525V (VQ) 出油口 Outlet	62	106.4	3	5/8-11UNC	45	82.5×3.55
2520V (VQ) 进油口 inlet	50.8	88.9	2 $\frac{1}{2}$	1/2-13UNC	45	71×3.55
4520 (4525) V (VQ) 进油口 inlet	69.9	120.6	3 $\frac{1}{2}$	5/8-11UNC	50	100×3.55
4535V (VQ) 进油口 inlet	77.8	130.2	4	5/8-11UNC	50	115×3.55