

## 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:

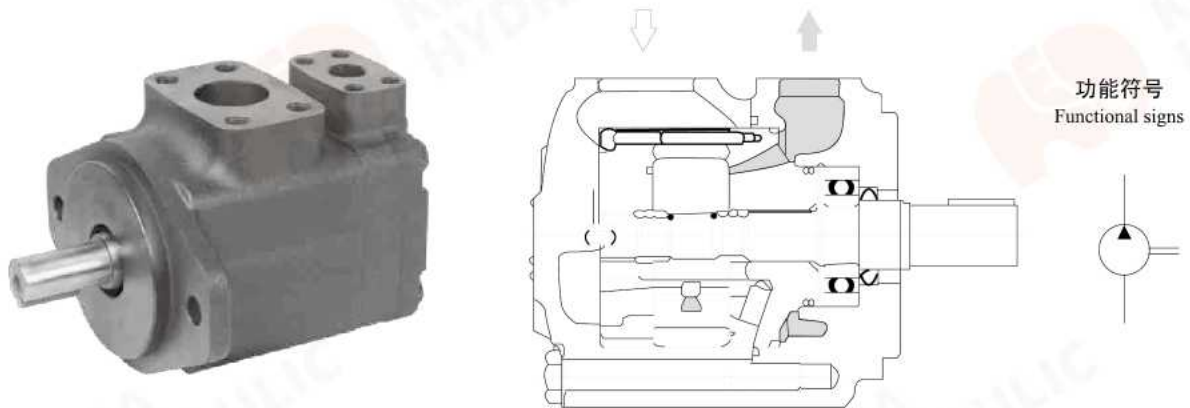
- 1、子母叶片的结构设计，减少了叶片对定子的冲击，在较高的工作压力和高转速下，性能更稳定，寿命更长。
- 2、子母叶片结构本身具有低噪音的特性。12叶片的设计、流量脉动很小，噪音更低。
- 3、多排量的选择，以及泵芯的插装式结构、使用户使用更灵活，维修更方便。

### 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	出油口位置 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  F3: 磷酸酯液 F3: Sul phosuccinic ester fatty of acid	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  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) (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
	25V	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			
	35V	21,25,30,32, 35,38,45			11-花键轴 11-spline shaft			
	45V	42,45,50,57, 60,66,75						

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

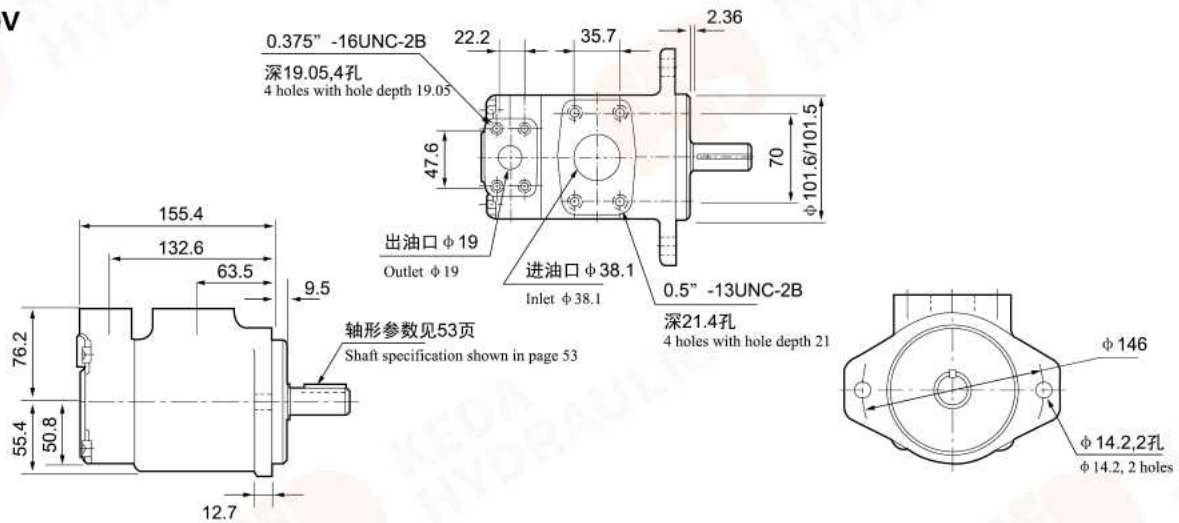
▲The rated displacement (USgpm) is under the conditions of 1200r/min and 0.69Mpa(100psi).

**工作参数** Operating parameters

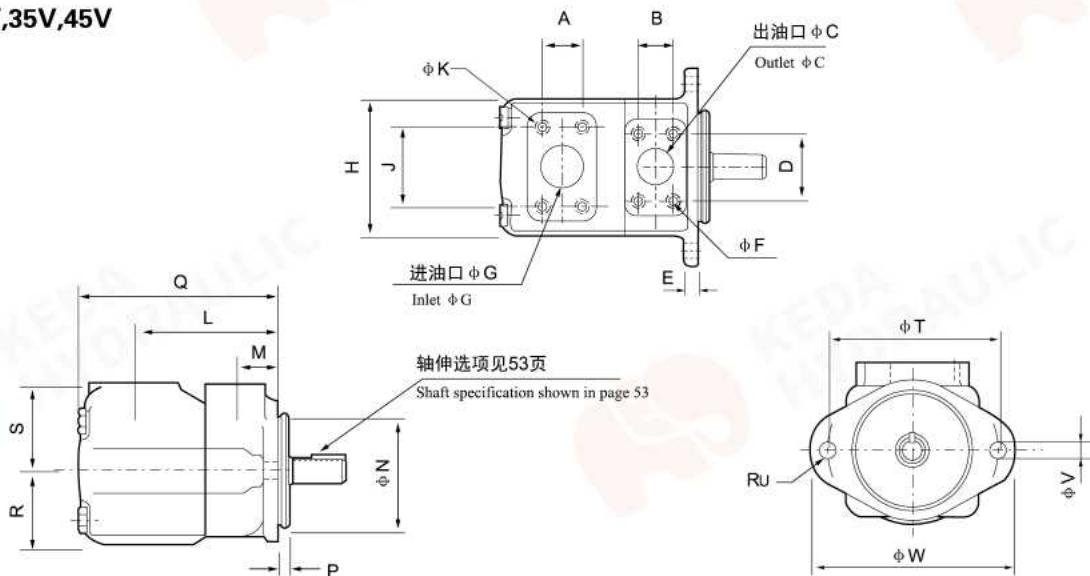
型号 Models	排量代号 Displacement code	几何排量 Geometric displacement (mL/r)	使用抗磨液压油或磷酸酯液 Anti-wear hydraulic oil or phospholipid		使用水乙二醇液 Water glycol fluid		使用油包水乳化液 Water-in-oil emulsion		最低转速 Mini speed (r/min)
			最高压力 Max pressure (Mpa)	最高转速 Max speed (r/min)	最高压力 Max pressure (Mpa)	最高转速 Max speed (r/min)	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	20.7						
	6	19							
	7	23							
	8	27							
	9	30							
	10	32.5	15.9						
	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

### 20V



### 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:

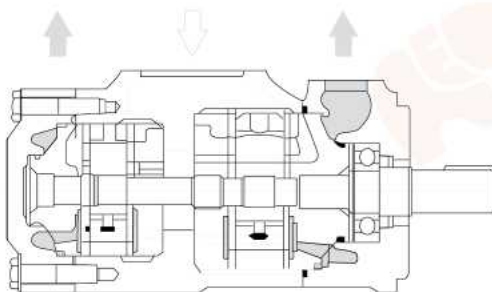
- 1、子母叶片的结构设计, 减少了叶片对定子的冲击, 在较高的工作压力和高转速下, 性能更稳定, 寿命更长。
- 2、子母叶片结构本身具有低噪音的特性。12叶片的设计、流量脉动很小, 噪音更低。
- 3、多排量的选择, 以及泵芯的插装式结构、使用户使用更灵活, 维修更方便。

### Shape and introduction

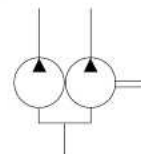
These series of composition vane pumps in high performance are developed for industrial application. They can be applied properly in the hydraulic system of plastic injection machinery, rubber machinery, casting machinery, machine tool industry, etc.

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.



功能符号  
Functional signs



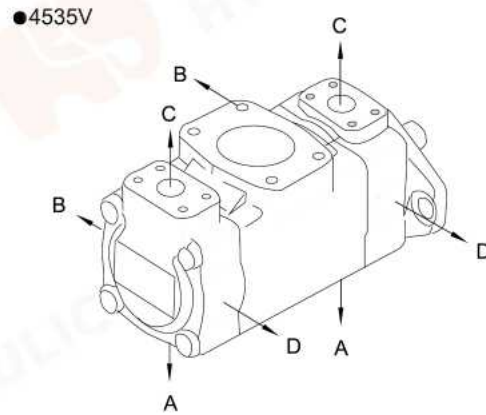
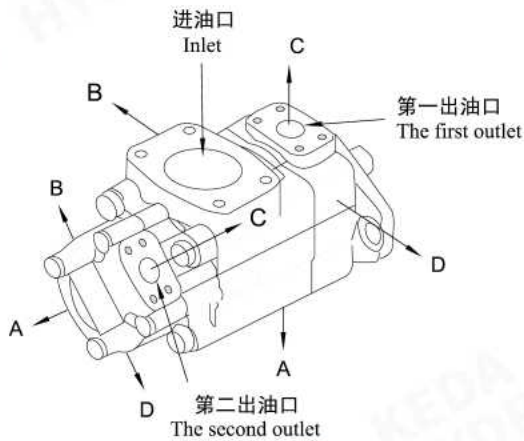
### 型号说明 Model descriptions:

(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  No mark: water-in oil emulsion of petroleum series F3:磷酸酯液 F3: Sul phosuccinic ester fatty of acid	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 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	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					
	3525V	21,25,30,32,35, 38,45		10,12,14,15,17, 19,21					
	4520V	42,45,50,57,60, 66,75		2,3,4,5,6,7,8,9, 10,11,12,14					
	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).

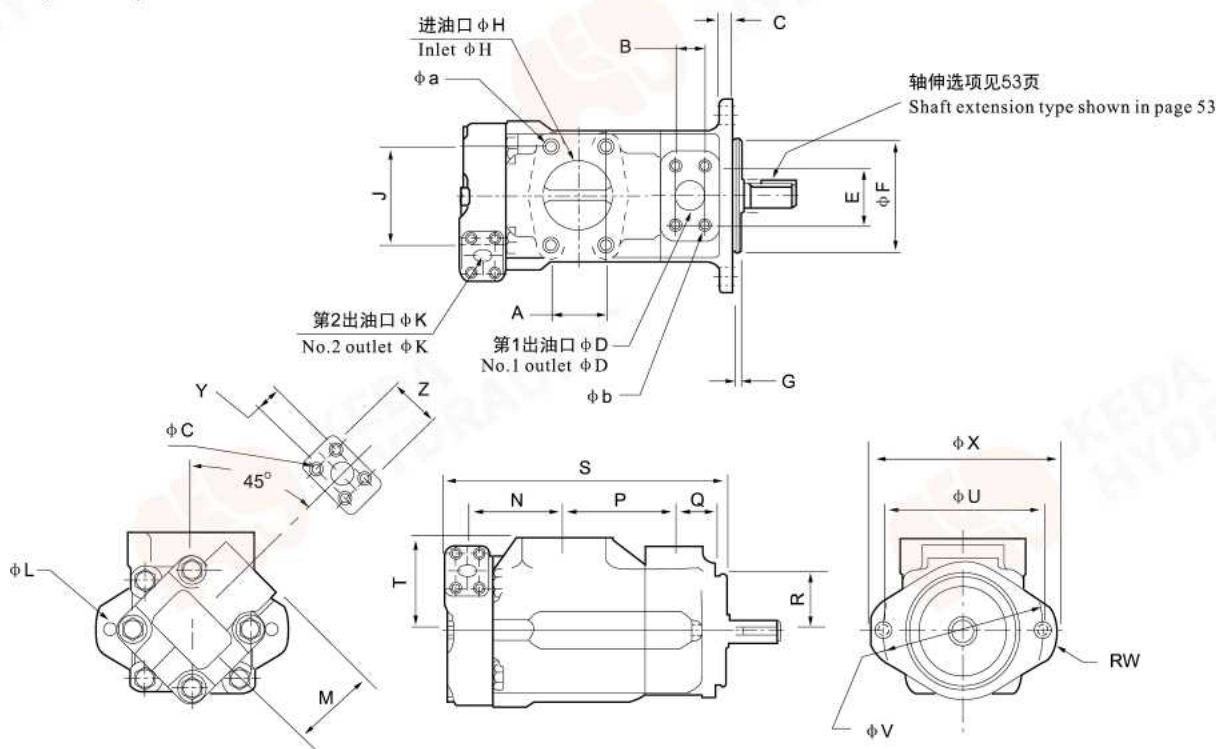
## 油口位置表 (从泵的盖端看) Pump oil port position (viewed from cover end pump)



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



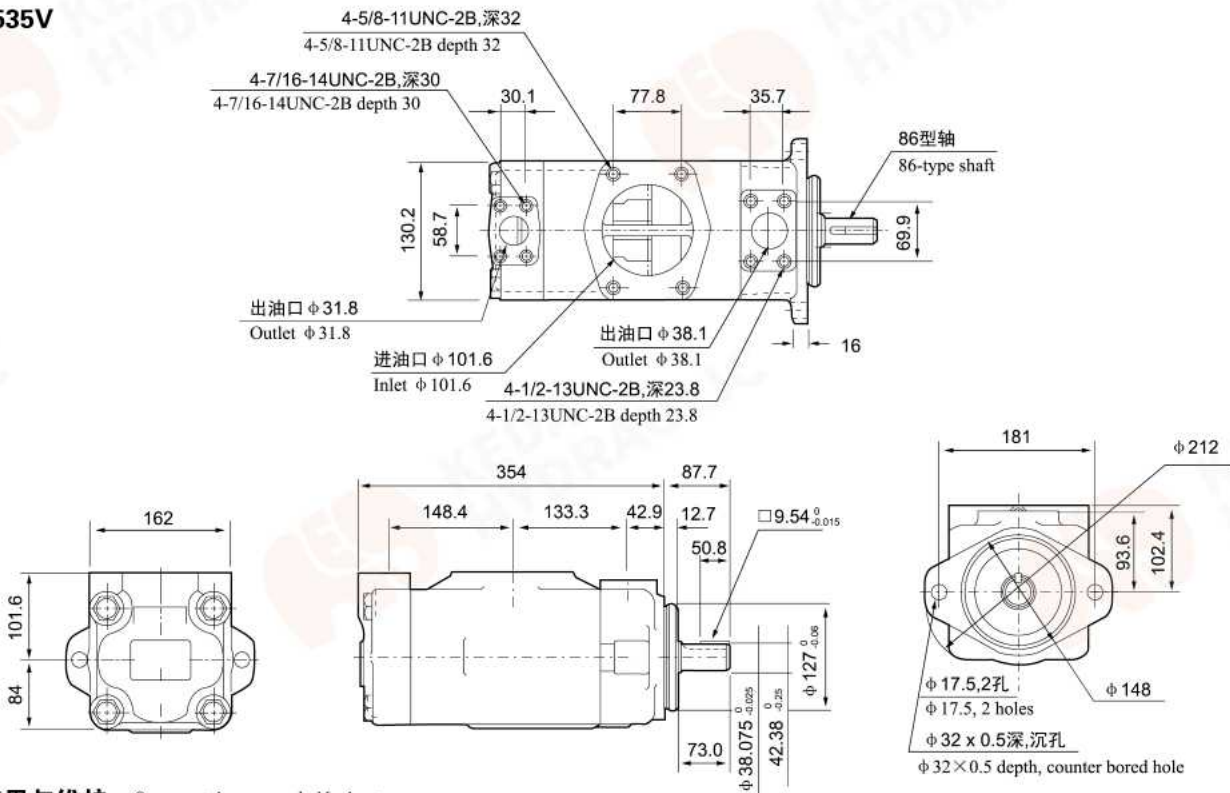
型号 Models	φ a x 全部螺纹深, 4孔 φ a x all screw holes, 4 holes	φ b x 全部螺纹深, 4孔 φ b x all screw holes, 4 holes	φ c x 全部螺纹深, 4孔 φ c x all screw holes, 4 holes
2520V	1/2-13UNC-2B x 23.8深 1/2-13UNC-2B x 23.8 depth	3/8-16UNC-2B x 20.1深 3/8-16UNC-2B x 20.1 depth	3/8-15UNC-2B x 20.1深 3/8-15UNC-2B x 20.1 depth
3520V	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SAE 10W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.

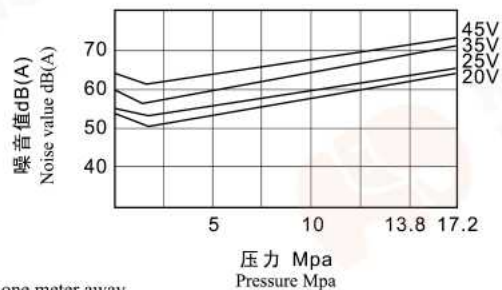
### ● 噪音数据 Noise data

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  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	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
		25V	10,12,14,15,17,19,21		
		35V	21,25,30,32,35,38,45		
		45V	42,45,50,57,60,66,75		

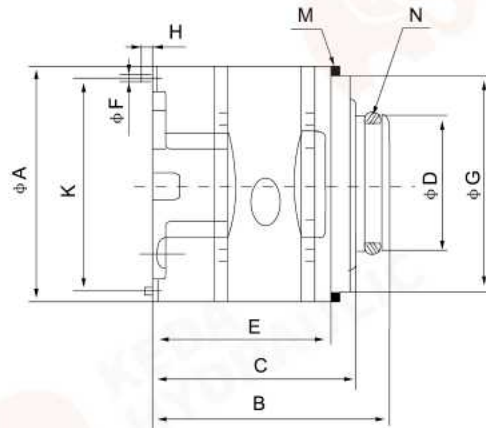
▲在1200r/min和0.69Mpa (100psi) 下的额定排量Usgpm。

The rated displacement(Usgpm) 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