

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

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PV2R系列高压低噪音叶片泵 PV2R Series high pressure vane pumps with lower noise

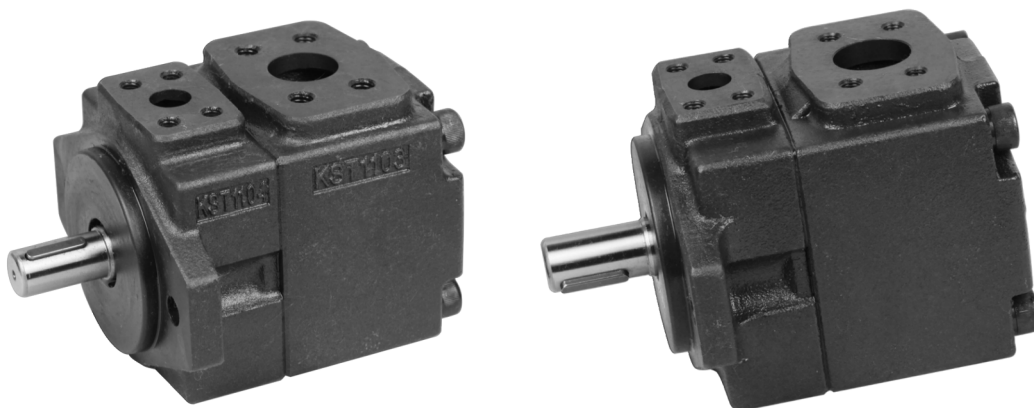
产品简介

PV2R系列高压低噪音叶片泵是本公司开发的新型产品，该泵是近年在综合国内外同类产品优点基础上研发的全国产系列产品，具有结构合理、性能先进、效率高、噪声低、脉动小、可靠性好等特点。该泵规格齐全，安装连接尺寸符合国家标准和国际标准外，还有多个派生系列安装连接尺寸，可满足国内外同类产品替代要求，极大方便用户，广泛应用于机床、塑料机械、锻压机械、工程机械、交通运输机械等领域。

Products introduction

PV2R series high pressure vane pumps with lower noise are the new developed products with the integration of the advantages of similar products at home and abroad in recent years, with the features of rational structure, high performance, high efficiency, lower noise, small pulsation, strong reliability, etc. The pumps provide extreme convenience for users and meet the substitution requirements for similar products with full specifications, national and international standard mounting dimensions, as well as derivative series mounting dimensions, making the pumps widely applied in the fields of machine tool industry, plastic machinery, forging machinery, engineering machinery, transportation machinery, etc.

单泵 Single Pumps



型号说明 Model Descriptions

PV2R1	1	—*	—F	—1	—R	—A	—A
叶片泵 产品代号 Vane pumps' codes	子系列号 Model of subsidiary series	公称排量 ml/r Nominal displacement	安装型式 Mounting type	轴伸形式 Shaft extension	旋转方向 Direction of rotation	排出口位置 Outlet position	吸入口位置 Inlet position
PV2R 1		6,8,10,12,14,17, 19,23,25,28,31	F: 法兰安装型 Flange mounting	1: 大轴标准 1: Major shaft standard 2: 小轴 2: Minor shaft	(从轴端看) R:顺时针方向 (右旋标准) (from shaft end) R: Clockwise direction (Right rotation standard)	(从轴端看) A:上方(标准) R、B、L (排出口A设定为上方)	(从轴端看) A:上方(标准) B:下方 R:右方 L:左方
PV2R 2		26,33,41,47, 53,59,65,75			(from shaft end) A: Upper(Standard) R、B、L (Outlet port A is set as upper.)	(from shaft end) A: Upper(Standard) B: Bottom R: Right L: Left	
PV2R 3		52,60,66,76,85,94 116,125,136,153			L:逆时针方向 (左旋) L:Counterclockwise direction (Left rotation)		

PV2R系列高压低噪音叶片泵 PV2R Series high pressure vane pumps with lower noise

技术参数 Technical parameters

产品 型号 Model	理论排量 Theoretical displacement (mL/r)	最高使用压力 Max pressure					允许转速 Allowed driving speed (r/min)		质量 Weight (kg)
		石油系工作油 Working oil of Petroleum series			水基合成液 Water-based synthetic hydraulic fluid		最高 Max	最低 Mini	
		高压用特定油 Particular pressure oil	抗磨液压油 Anti-wear oil	普通液压油 Common oil	耐磨性水乙二醇 Anti-wear water -glyco	磷酸酯脂肪酸酯 Sul phosuccinic ester fatty of acid			
PV2R1-6 PV2R1-8 PV2R1-10 PV2R1-12 PV2R1-14 PV2R1-17 PV2R1-19 PV2R1-23 PV2R1-25 PV2R1-28 PV2R1-31	6.1 8.1 10.2 12.3 14.0 16.3 18.3 22.5 25.1 27.6 30.6	21	17.5	16	16	16	1800 (1200)	750	8
PV2R2-26 PV2R2-33 PV2R2-41 Pv2R2-47 PV2R2-53 PV2R2-59 PV2R2-65 PV2R2-75*	25.4 32.2 40.5 46.2 52.3 58.2 64.1 74.5	21	17.5	14	16	14	1800 (1200)	600	16
PV2R3-52 PV2R3-60 PV2R3-66 PV2R3-76 PV2R3-85 PV2R3-94 PV2R3-116 PV2R3-125 PV2R3-136 PV2R3-153	51.5 62.9 67.0 79.2 84.5 93.8 113.2 122.8 135.8 152.8	21	17.5	14	16	14	1800 (1200) 1200	600	32 #34

注:

- 1、公称排量“6”、“8”泵，超过16Mpa使用时，转速不低于1450r/min。
- 2、使用水基、合成液时，最高转速限制在1200r/min。
- 3、对于严格要求低噪声的场合，建议工作转速在1000r/min，最高工作压力在12~14MPa。
- 4、有*处为PV2R2-W组拓展规格，有#处为PV2R3-W组2个拓展规格，泵体加长10mm，安装尺寸相同，接受特殊订货。
- 5、驱动功率近似计算：泵的排量（mL/r）×电机转速（r/min）×工作压力（MPa）/49000。计算结果单位为KW。

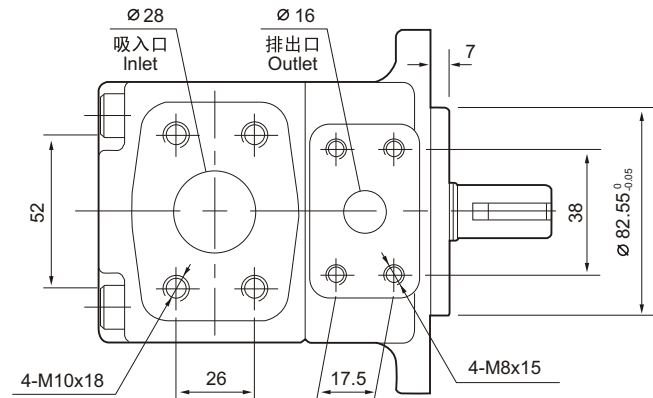
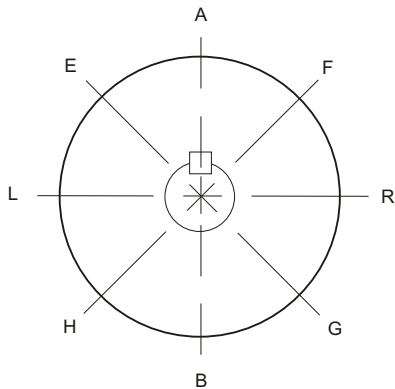
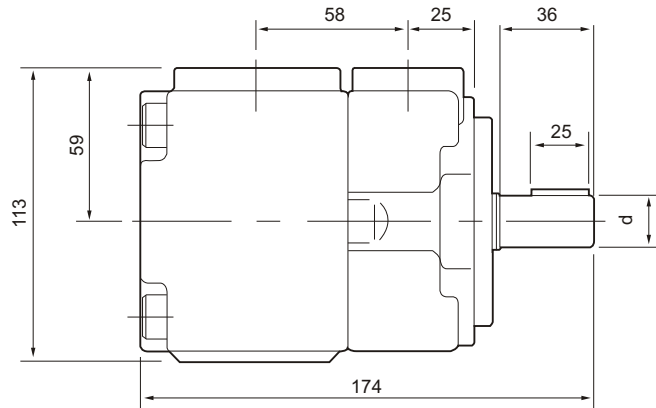
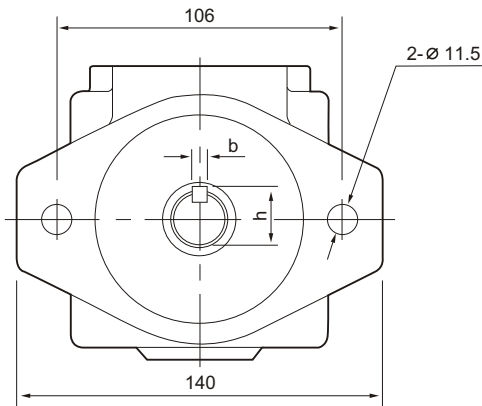
Notes:

1. The rotation speed shall not be less than 1450r/min for the pumps with the nominal displacement of 6 ml/r or 8 ml/r working under the pressure exceeding 16Mpa.
2. The highest rotation speed shall be limited within 1200r/min, while applying with water-based synthetic hydraulic fluids.
3. It is recommended to work with rotation speed of 1000r/min and maximum pressure of 12-14Mpa on the occasion where lower noise is strictly required.
4. Those pumps with the marks * belong to the extension specification of PV2R2-W group. Those pumps with the marks # belong to the extension specification of PV2R3-W group. These two groups pump casing are 10mm longer than usual specification for special order.
5. The approximate calculation formula for driving power is as follows: the displacement of pump(mL/r) × the rotation speed of motor(r/min) × the working pressure (Mpa) / 49000. The unit for the final calculation result is KW.

PV2R系列高压低噪音叶片泵 PV2R Series high pressure vane pumps with lower noise

外型及安装连接尺寸
Shape and installation dimensions

法兰安装型: PV2R1-* -F-1-RAA
Flange mounting: PV2R1-* -F-1-RAA



轴伸形式 Shaft extension	d	b	h	备注 Remarks
1	$\varnothing 19.05_{-0.03}^0$	$4.75_{0}^{+0.03}$	$21.24_{-0.16}^0$	大轴 Major shaft
2	$\varnothing 15.88_{-0.03}^0$	$3.97_{0}^{+0.03}$	$17.68_{-0.16}^0$	小轴 Minor shaft

PV2R系列叶片泵

PV2R series vane pumps



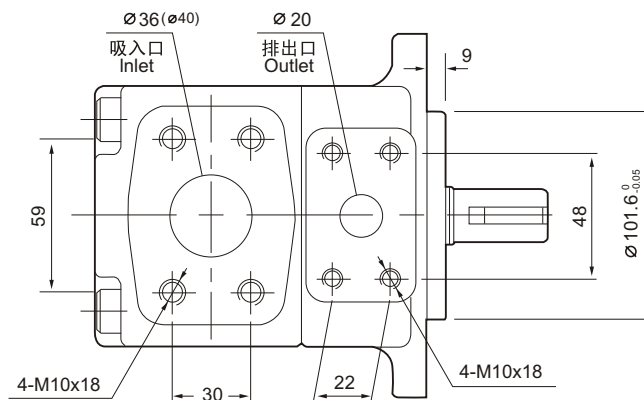
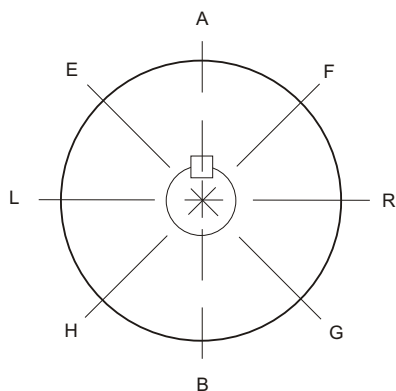
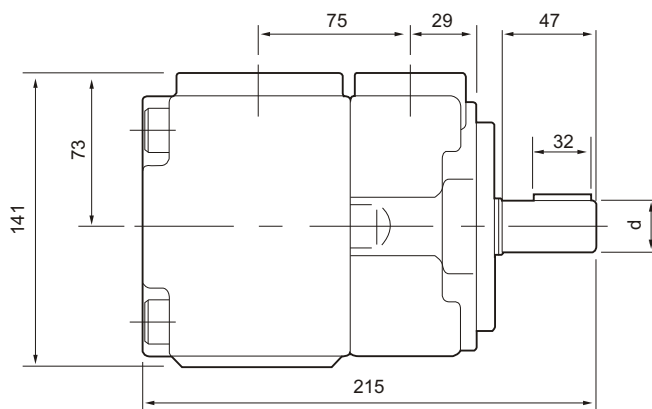
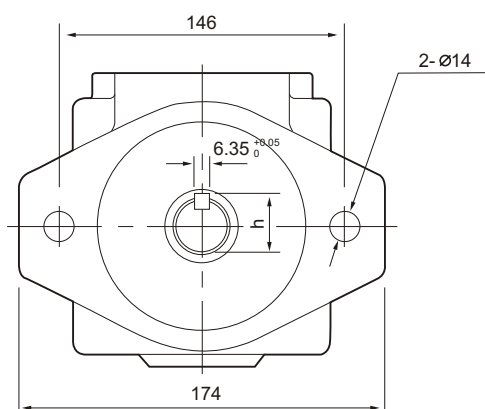
PV2R系列高压低噪音叶片泵 PV2R Series high pressure vane pumps with lower noise

外型及安装连接尺寸

Shape and installation dimensions

法兰安装型: PV2R2- * -F-1-RAA

Flange mounting: PV2R2- * -F-1-RAA

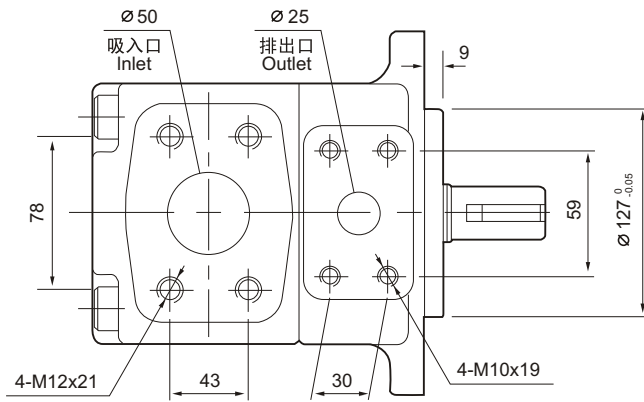
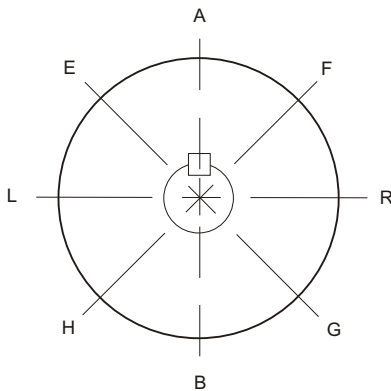
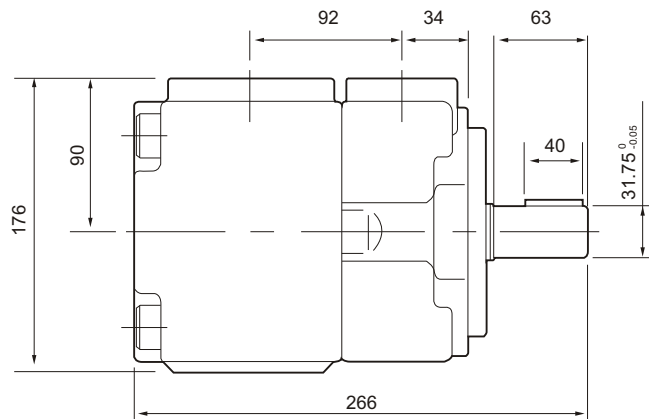
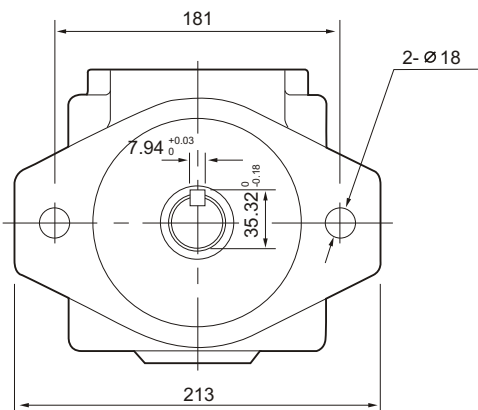


轴伸形式 Shaft extension	d	h	备注 Remarks
1	$\varnothing 25.4_{-0.05}^0$	$28.18_{-0.18}^0$	大轴 Major shaft
2	$\varnothing 22.23_{-0.03}^0$	$25.01_{-0.18}^0$	小轴 Minor shaft

PV2R系列高压低噪音叶片泵 PV2R Series high pressure vane pumps with lower noise

外型及安装连接尺寸
Shape and installation dimensions

法兰安装型: PV2R3- *-F-1-RAA
Flange mounting: PV2R3- *-F-1-RAA



PV2R系列叶片泵 PV2R series vane pumps



PV2R系列高压低噪音叶片泵 PV2R Series high pressure vane pumps with lower noise

双联叶片泵

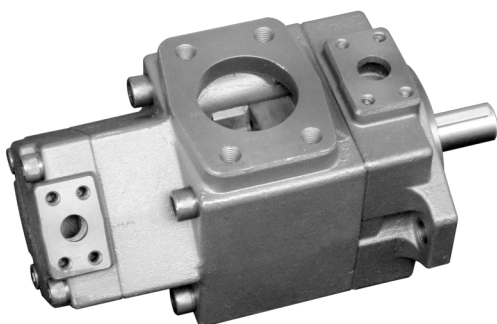
本系列泵由同一轴驱动的两个PV2R系列单泵；并联组装在同一壳体内而成，具有一个共用进油口和两个可以输向两个独立回路的出油口；

按照两个泵的系列组合，可获得多种流量。双泵的驱动功率为二单泵功率之和。

Double vane pumps

The double vane pumps are composed with two single PV2R series pumps, which were driving by one shaft and were assembled in parallel in one pump casing with one common inlet port and two outlet ports that connecting to two individual oil circuits.

A variety of flows can be obtained by different combination of the two pumps. The power of double vane pumps is the power sum of two single vane pumps.



PV2R	13	—*	—*	—F	—1	—R	—A	—A	—A	
叶片泵 产品代号 Models	子系列号 Code of subsidiaries series	盖端泵 公称排量 Cover end pump displacement (mL/r)	轴端泵 公称排量 Shaft end pump displacement (mL/r)	安装型式 Mounting type	轴伸形式 Shaft extension	旋转方向 Direction of rotation	盖端泵 排出口位置 Cover end pump outlet position	轴端泵 排出口位置 Shaft end pump outlet position	吸入口位置 Inlet position	
PV2R 12		6, 8, 10, 12, 14, 17, 19, 23, 25, 28, 31	26, 33, 41, 47, 53, 59, 65, 75	F: 法兰安装型 F: Flange mounting	1:大轴标准 1: Major shaft standard 2:小轴 2: Minor shaft	(从轴端看) R:顺时针方向 (右旋标准) (from shaft end) R:Clockwise direction (Right rotation standard)	(从轴端看) E:左上方45°(标准) F:右上方45° G:右下方45° H:左下方45° (from shaft end) E: Upper left 45° (Standard) F: Upper right 45° G: Bottom right 45° H: Bottom left 45°	A:上方(标准) 轴端泵的 排出口位置 设定为上方	A:上方(标准) B:下方 R:右方 L:左方	
PV2R 13		6, 8, 10, 12, 14, 17, 19, 23, 25, 28, 31	52, 60, 66, 76, 85, 94, 116, 125, 136, 153,			L:逆时针方向 (左旋) L:Counterclockwise Direction (Left rotation)	A:上方(标准) B:下方 R:右方 L:左方 A: Upper (standard) B: Bottom R: Right L: Left			A: Upper (standard) outlet position of shaft end pump shall be set as upper
PV2R 23		26, 33, 41, 47, 53, 59, 65, 75	52, 60, 66, 76, 85, 94, 116, 125, 136, 153,			E:左上方45°(标准) F:右上方45° G:右下方45° H:左下方45° (from shaft end) E: Upper left 45° (Standard) F: Upper right 45° G: Bottom right 45° H: Bottom left 45°				

PV2R系列高压低噪音叶片泵 PV2R Series high pressure vane pumps with lower noise

技术参数 Technical parameters

产品 型号 Model	油泵出口 Outlet	公称排量 Nominal displacement (ml/r)	最高使用压力 Max pressure				允许转速 Allowed driving speed (r/min)		质量 Weight (kg)	
			石油系工作油 Working oil of Petroleum series			水基合成液 Water-based synthetic hydraulic fluid		最高 Max		最低 Mini
			高压用特定油 Particular pressure oil	抗磨液压油 Anti-wear oil	普通液压油 Common oil	耐磨性水乙二醇 Anti-wear water -glyco	磷酸酯脂肪酸酯 Sul phosuccinic ester fatty of acid			
PV2R12	锥端泵 Cove end pump PV2R1	-6	21	17.5	14	16	14	1800	600	22.5
		-8								
		-10								
		-12								
		-14								
		-17								
		-19								
		-23								
		-25								
		-28								
	-31									
	轴端泵 Bearing pump PV2R2	-26	16	16	16	16	750			
		-33								
		-41								
-47										
PV2R2	-53	16	16	16	750					
	-59									
	-65									

注:

- 1、使用水基、合成液液压时，最高转速限制在1200r/min。
- 2、对于严格要求低噪声的场合，建议工作转速在1000r/min，最高工作压力在12-14Mpa。

Notes:

1. The highest rotation speed shall be limited within 1200r/min, while adopting water-based synthetic hydraulic fluids.
2. It is recommended to work with rotation speed of 1000r/min and maximum pressure of 12-14Mpa on the occasion where lower noise is strictly required.

PV2R系列叶片泵

PV2R series vane pumps



PV2R系列高压低噪音叶片泵 PV2R Series high pressure vane pumps with lower noise

技术参数 Technical parameters

产品型号 Model	油泵出口 Outlet	公称排量 Nominal displacement (ml/r)	最高使用压力 Max pressure				允许转速 Allowed driving speed (r/min)		质量 Weight (kg)	
			石油系工作油 Working oil of Petroleum series			水基合成液 Water-based synthetic hydraulic fluid		最高 Max		最低 Mini
			高压用特定油 Particular pressure oil	抗磨液压油 Anti-wear oil	普通液压油 Common oil	耐磨性水乙二醇 Anti-wear water-glyco	磷酸酯脂肪酸酯 Sul phosuccinic ester fatty of acid			
PV2R13	盖端泵 Cove end pump PV2R1	-6	21	17.5	16	16	1800	750	37.5	
		-8								
		-10								
		-12								
		-14								
		-17								
		-19								
		-23								
		-25								
		-28								
	轴端泵 Bearing pump PV2R3	-31	17.5	16	14	14	1200	600		
		-52								
		-60								
		-66								
		-76								
		-85								
		-94								
		-116								
		-125								
	-136	17.5	16	14	14	1200				
	-153									

注:

1、使用水基、合成液液压时，最高转速限制在1200r/min。

2、对于严格要求低噪声的场合，建议工作转速在1000r/min，最高工作压力在12-14MPa。

Notes:

1. The highest rotation speed shall be limited within 1200r/min, while adopting water-based synthetic hydraulic fluids.

2. It is recommended to work with rotation speed of 1000r/min and maximum pressure of 12-14Mpa on the occasion where lower noise is strictly required.

PV2R系列高压低噪音叶片泵 PV2R Series high pressure vane pumps with lower noise

技术参数 Technical parameters

产品 型号 Model	油泵出口 Outlet	公称排量 Nominal displacement (ml/r)	最高使用压力 Max pressure					允许转速 Allowed driving speed (r/min)		质量 Weight (kg)				
			石油系工作油 Working oil of Petroleum series			水基合成液 Water-based synthetic hydraulic fluid		最高 Max	最低 Mini					
			高压用特定油 Particular pressure oil	抗磨液压油 Anti-wear oil	普通液压油 Common oil	耐磨性水乙二醇 Anti-wear water -glyco	磷酸酯脂肪酸酯 Sul phosuccinic ester fatty of acid							
PV2R23	差 端 泵 Cove end pump PV2R2	-26	21	17.5	14	16	14	1800	45					
		-33												
		-41												
		-47												
		-53												
		-59												
		-65												
	轴 端 泵 Bearing pump PV2R3	-52						17.5		16	14	14	1200	(1200)
		-60												
		-66												
		-76												
		-85												
		-94												
		-116												
-125														
136														
153														

注:

- 1、使用水基、合成液液压时，最高转速限制在1200r/min。
- 2、对于严格要求低噪声的场合，建议工作转速在1000r/min，最高工作压力在12-14MPa。

Notes:

1. The highest rotation speed shall be limited within 1200r/min, while adopting water-based synthetic hydraulic fluids.
2. It is recommended to work with rotation speed of 1000r/min and maximum pressure of 12-14Mpa on the occasion where lower noise is strictly required.

PV2R系列叶片泵

PV2R series vane pumps



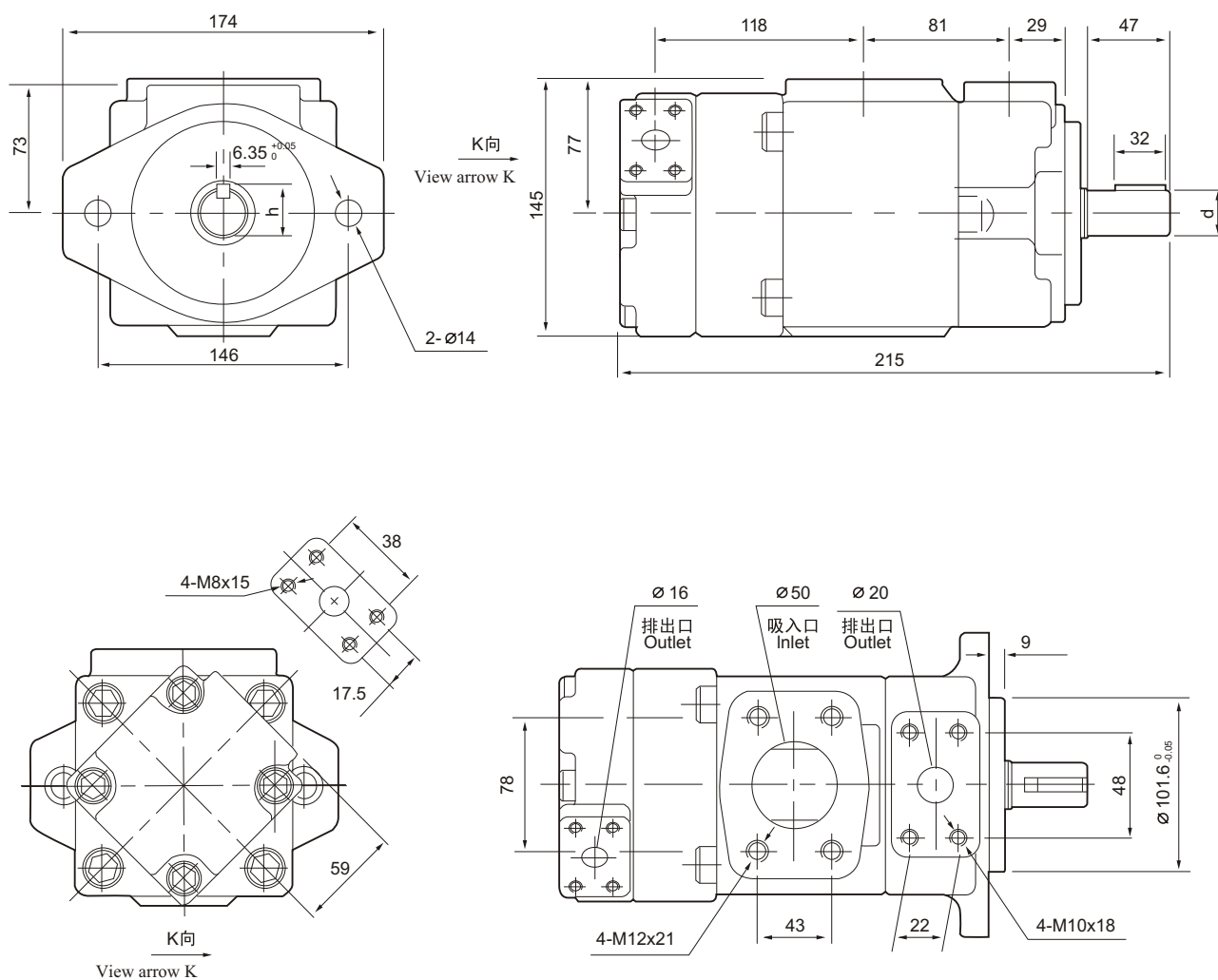
PV2R系列高压低噪音叶片泵 PV2R Series high pressure vane pumps with lower noise

外型及安装连接尺寸

Shape and installation dimensions

法兰安装型: PV2R12-*/*-F-1-REAA

Flange mounting: PV2R12-*/*-F-1-REAA

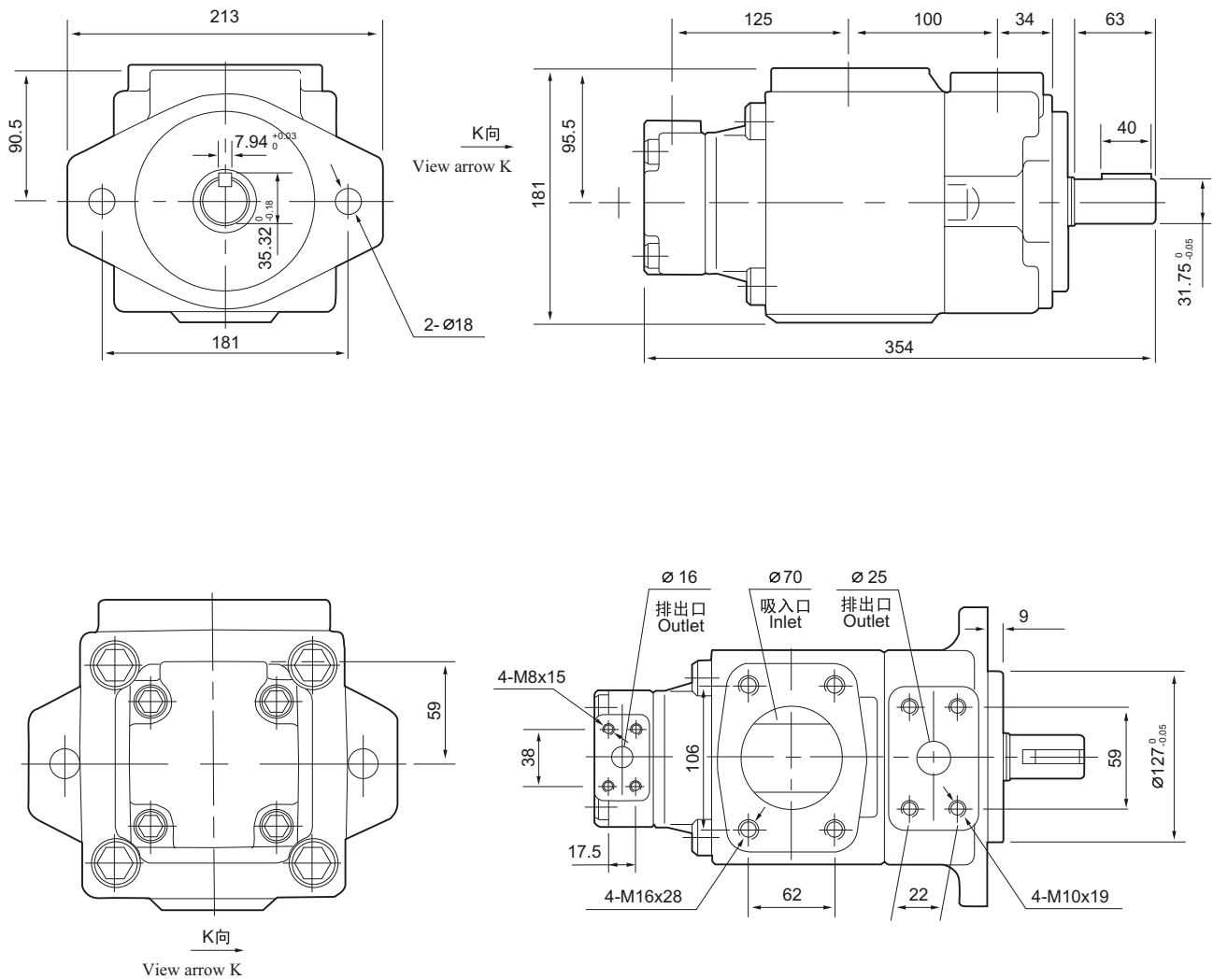


轴伸形式 Shaft extension	d	h	备注 Remarks
1	$\varnothing 25.4^{+0.05}_{-0.05}$	$28.18^{+0}_{-0.18}$	大轴 Major shaft
2	$\varnothing 22.23^{+0}_{-0.03}$	$25.01^{+0}_{-0.18}$	小轴 Minor shaft

PV2R系列高压低噪音叶片泵 PV2R Series high pressure vane pumps with lower noise

外型及安装连接尺寸
Shape and installation dimensions

法兰安装型: PV2R13-*/*-F-1-RAAA
Flange mounting: PV2R13-*/*-F-1-RAAA



PV2R系列叶片泵

PV2R series vane pumps



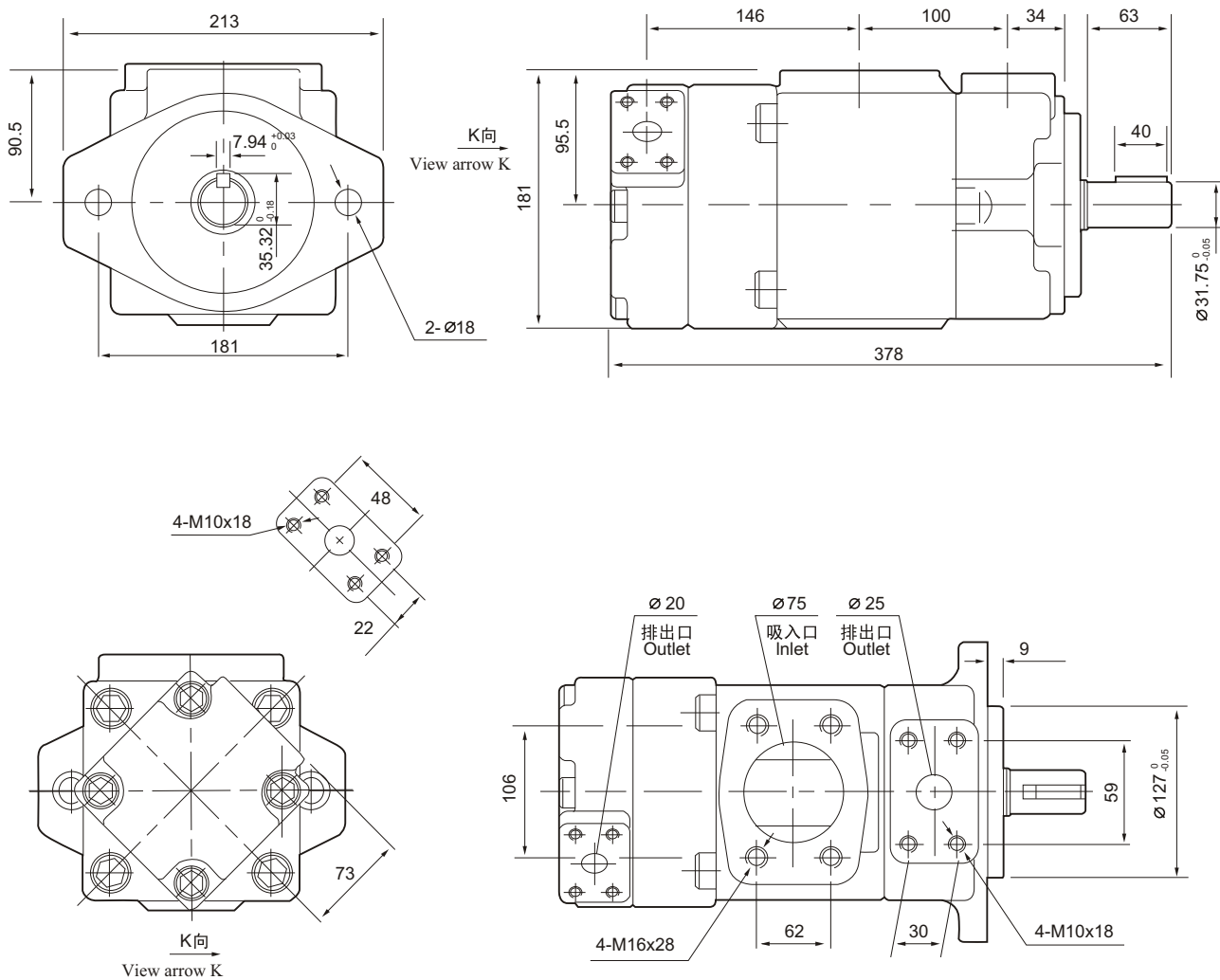
PV2R系列高压低噪音叶片泵 PV2R Series high pressure vane pumps with lower noise

外型及安装连接尺寸

Shape and installation dimensions

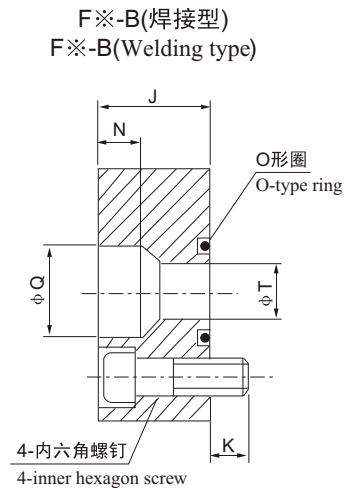
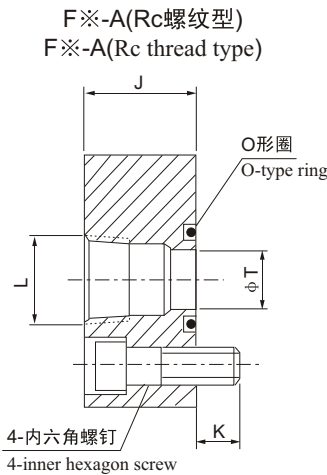
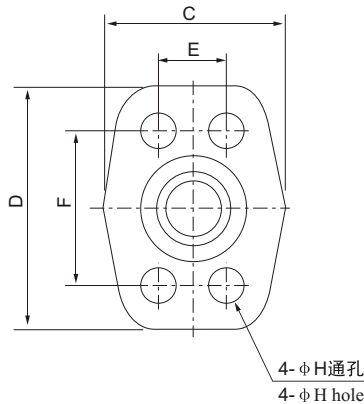
法兰安装型: PV2R23-*/*-F-1-REAA

Flange mounting: PV2R23-*/*-F-1-REAA



法兰连接组件 Flange components

安装连接尺寸 Installation sizes



法兰型号 Flange models	对应管子规格 Corresponding pipes' specifications	尺寸 mm Sizes mm											O型圈 O-type ring GB34521-82	内六角螺钉 inner hexagon screw	螺钉拧紧力矩 Tightening torque of screw N·m	对应油泵接口 Corresponding pumps connector
		C	D	E	F	H	J	K	L	N	Q	T				
F04 A	1/2"	43	59.0	17.5	38.1	9.0	28.0	11	1/2"	—	—	13	21.2x2.65	M8x30	35	PV 2R1 出口 PV 2R12、PV 2R13 盖端泵出口 PV2R1 port PV. 2R12, PV2R13 cover end pump port
F04-B									—	11	22.5					
F06-A	3/4"	53.2	71.6	22.2	47.6	11.2	30.0	11	3/4"	—	—	19	30x3.55	M10x30	68.5	PV 2R2、PV 2R12 轴端泵出口 PV 2R23盖端泵出口 PV2R2, PV2R12 shaft end pump port PV2R23 cover end pump port
F06-B									—	12	28.5					
F08-A	1"	58.0	76.4	26.2	52.4	11.2	30.0	16	1"	—	—	26	34.5x3.55	M10x35	68.5	PV 2R1 吸入口 PV2R1 inlet
F08-B									—	14	34.5					
F10-A	1-1/4"	57.7	84.7	30.2	58.7	12.0	40.0	16	1-1/4"	—	—	32	40x3.55	M10x45	68.5	PV 2R2吸入口 PV 2R3出口、PV 2R13 PV 2R23轴端泵出口 PV2R2 inlet PV2R3 port, PV2R13, PV2R23 shaft end pump port
F10-B									—	16	43.0					
F12-A	1-1/2"	70.0	96.0	35.7	69.9	13.8	40.0	18	1-1/2"	—	—	38	50x3.55	—	118	—
F12-B									—	18	49.1					
F16-A	2"	87.0	105.0	42.9	77.8	13.8	40.0	18	2"	—	—	51	65x3.55	M12x45	118	PV 2R3、PV 2R12 吸入口 PV2R3, PV2R12 inlet
F16-B									—	20	61.0					
F20-A	2-1/2"	96.0	116.0	50.8	88.9	13.8	45.0	18	2-1/2"	—	—	63	75x3.55	—	118	—
F20-B									—	22	77.1					
F24-A	3"	121.0	141.4	61.9	106.4	17.0	45.0	17	3"	—	—	76	85x3.55	M16x45	287	PV 2R13、PV 2R23 吸入口 PV2R13, PV2R23 inlet
F24-B									—	25	90.0					
F28-A	3-1/2"	136.0	155.0	69.9	120.7	17.0	50.0	17	3-1/2"	—	—	89	100x3.5	M16x40 M16x50	287	—
F28-B									—	28	102.8					
F32-A	4"	145.0	162.0	77.8	130.2	17.0	50.0	17	4"	—	—	102	115x3.5	M16x40 M16x50	287	—
F32-B									—	28	115.5					

V系列低噪音叶片泵

V Series Low Noise Vane Pumps

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：

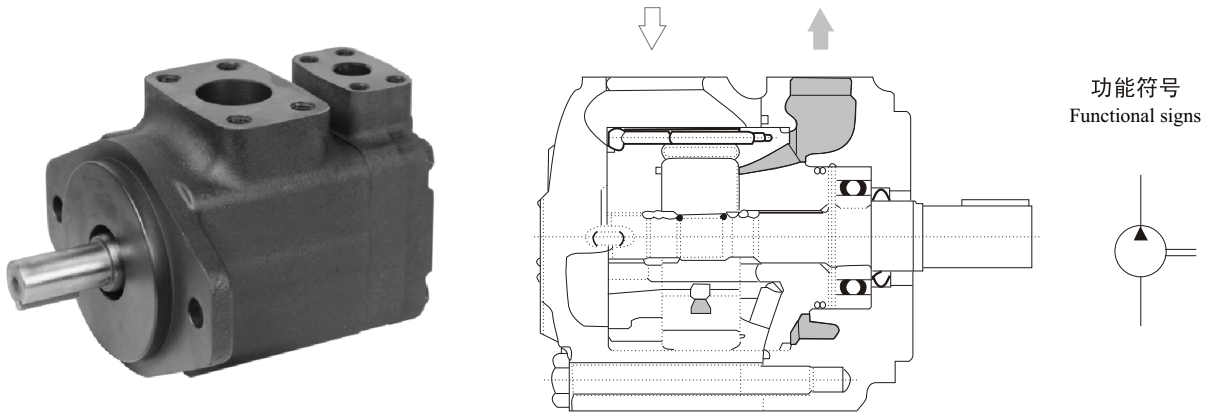
- 1、子母叶片的结构设计，减少了叶片对定子的冲击，在较高的工作压力和高转速下，性能更稳定，寿命更长。
- 2、子母叶片结构本身具有低噪音的特性。12叶片的设计、流量脉动很小，噪音更低。
- 3、多排量的选择，以及泵芯的插装式结构、使用户使用更灵活，维修更方便。

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	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		F- 脚座安装型 F- foot mounting	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).

V系列低噪音叶片泵

V Series Low Noise Vane Pumps



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				

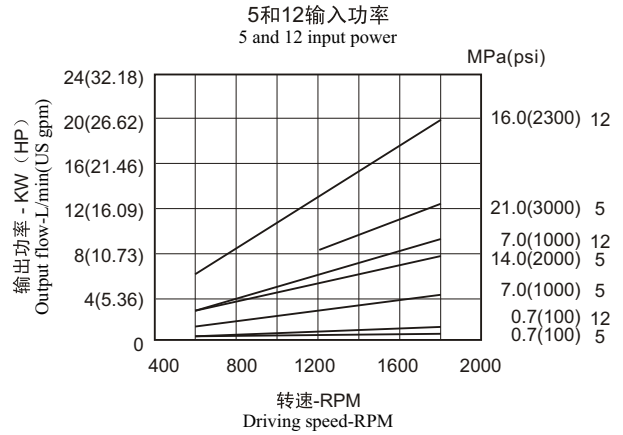
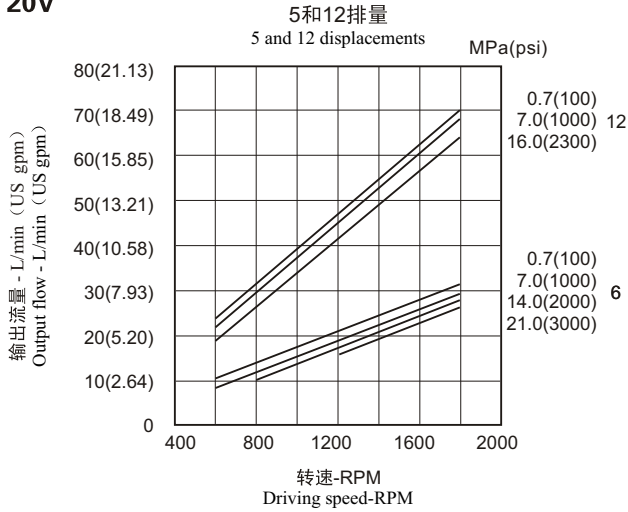


V系列低噪音叶片泵 V Series Low Noise Vane Pumps

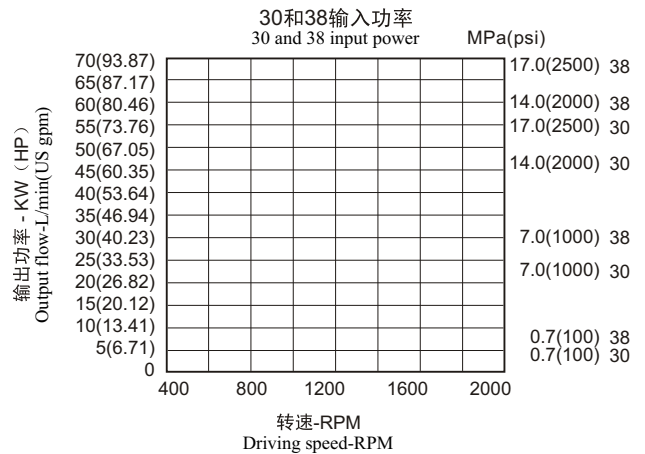
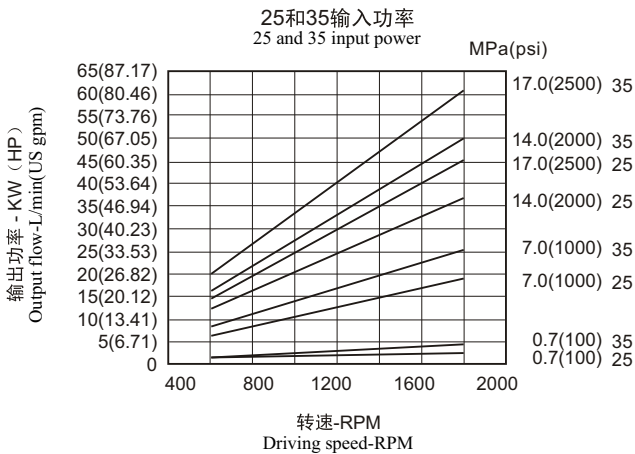
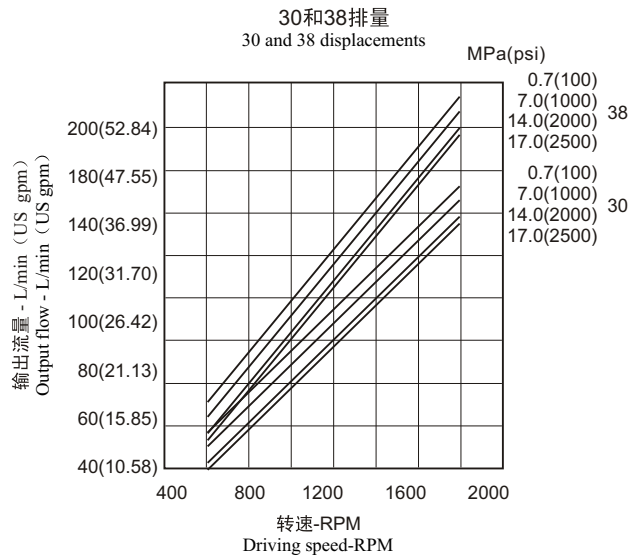
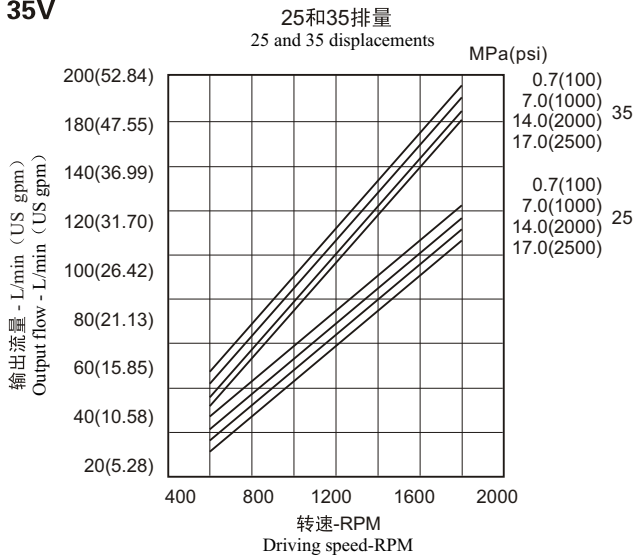
特性曲线 [50°C, 10W油 (26cst) 进油口压力0MPa]

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

20V



35V



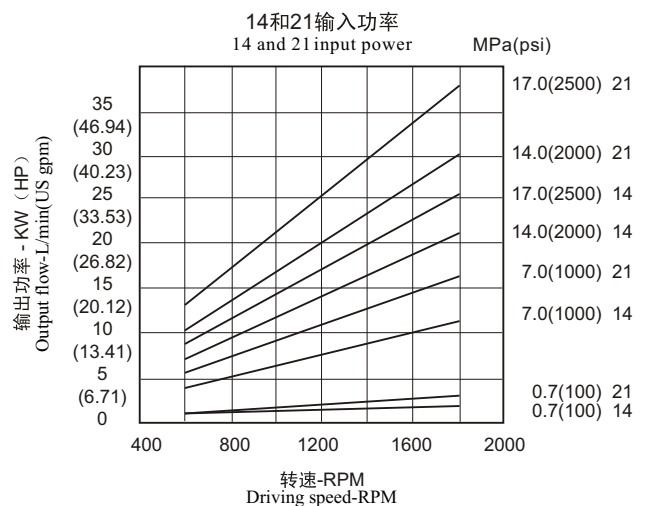
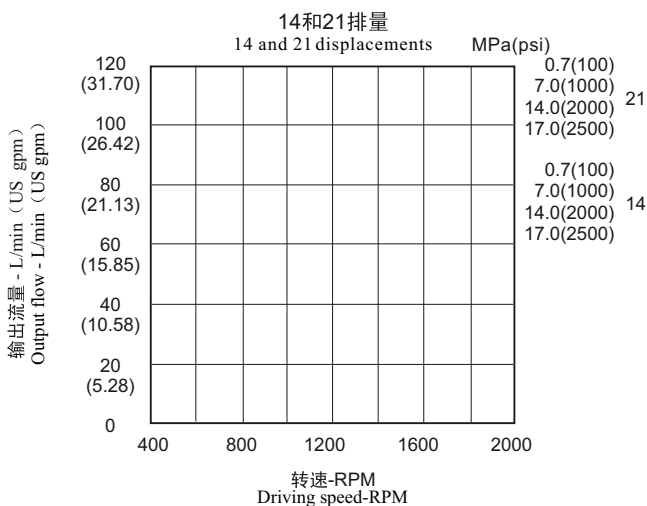
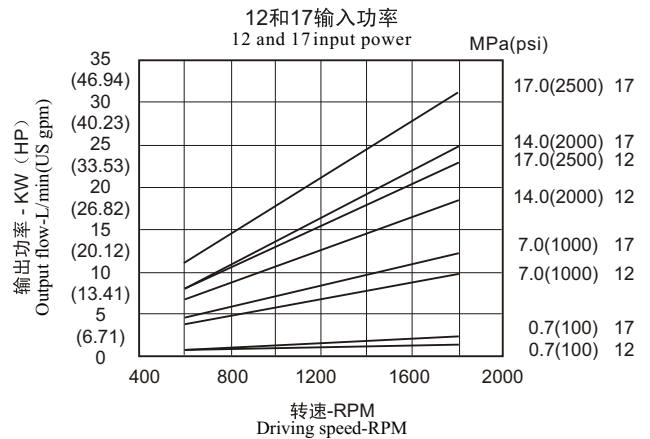
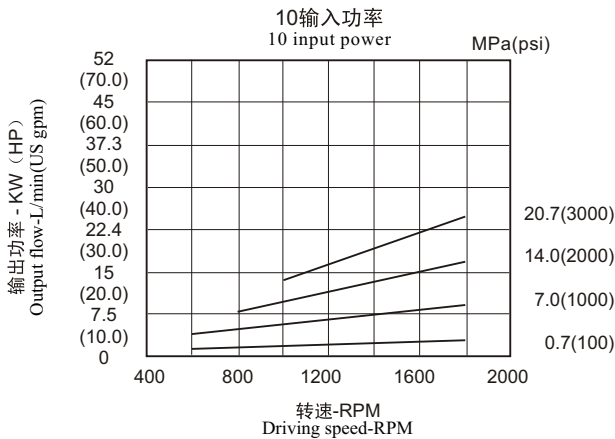
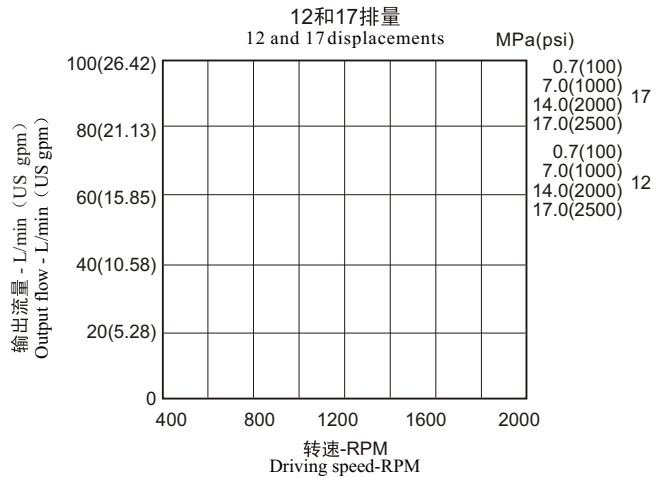
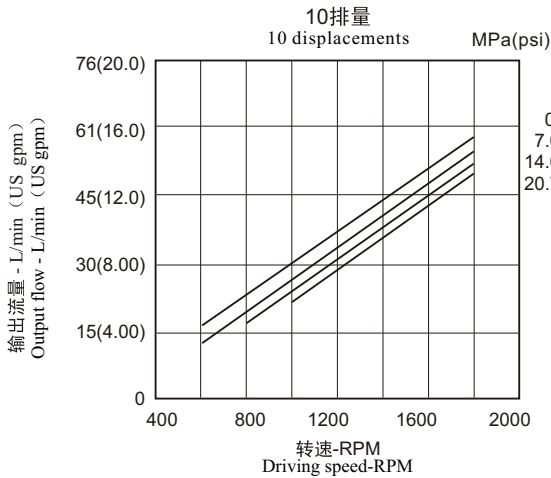
V系列低噪音叶片泵 V Series Low Noise Vane Pumps



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

25V



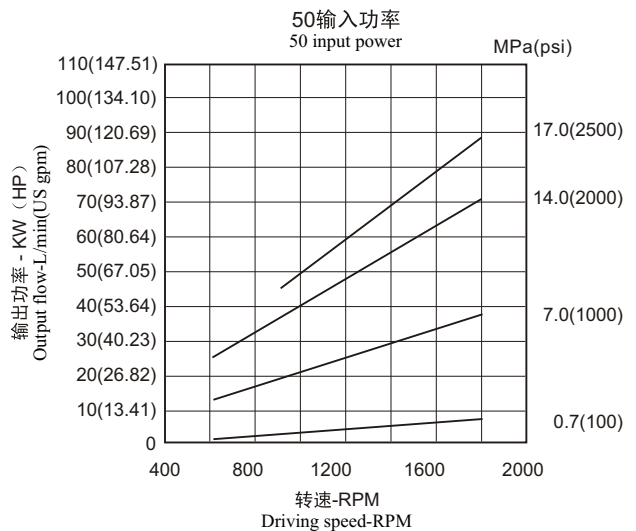
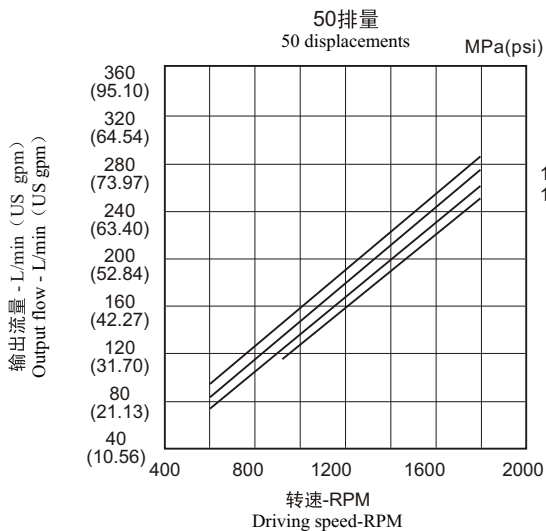
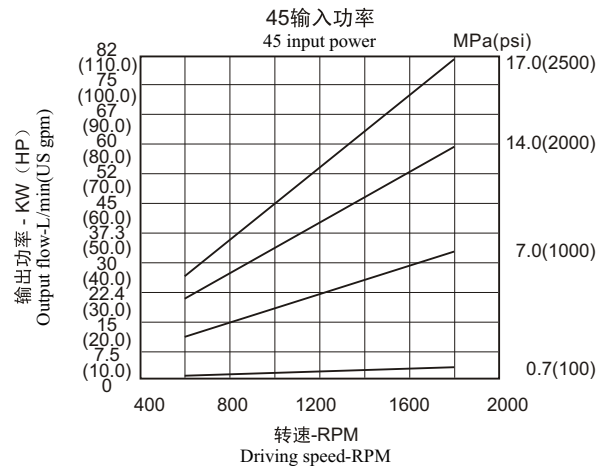
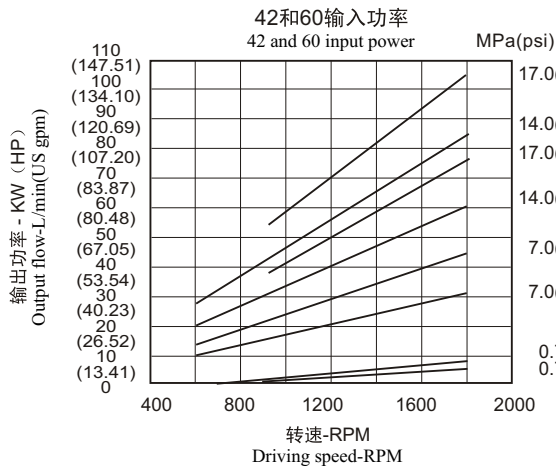
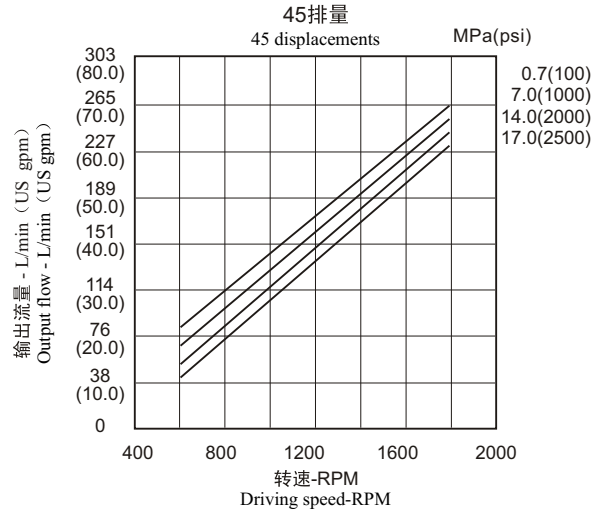
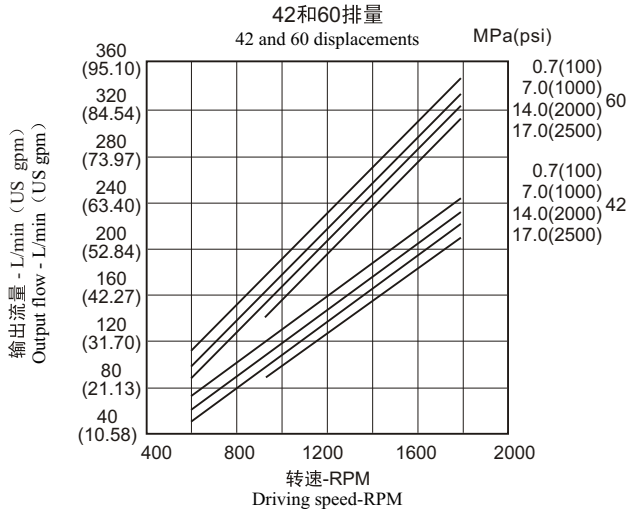


V系列低噪音叶片泵 V Series Low Noise Vane Pumps

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

45V

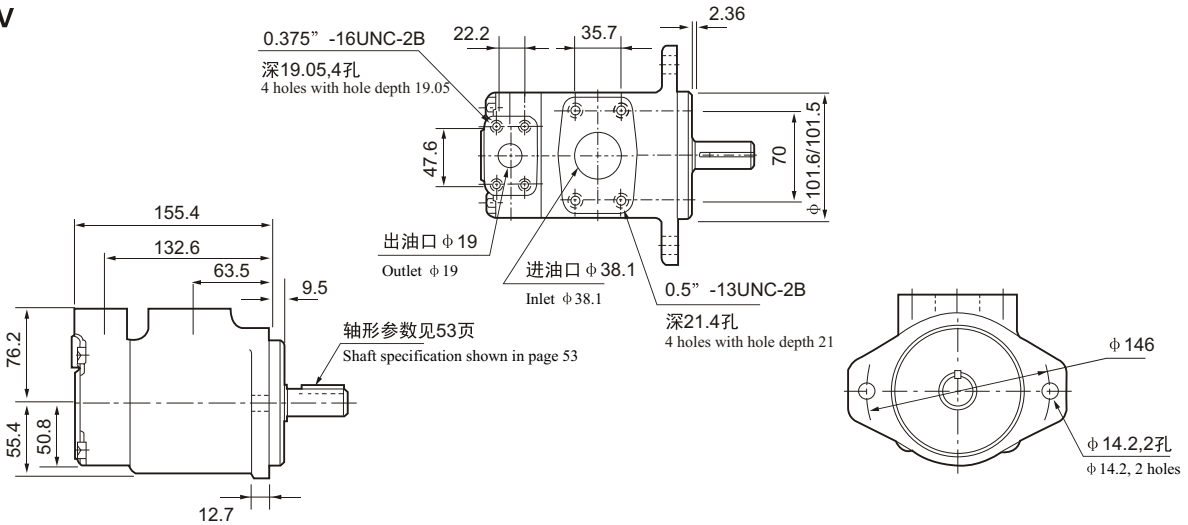


V系列低噪音叶片泵 V Series Low Noise Vane Pumps

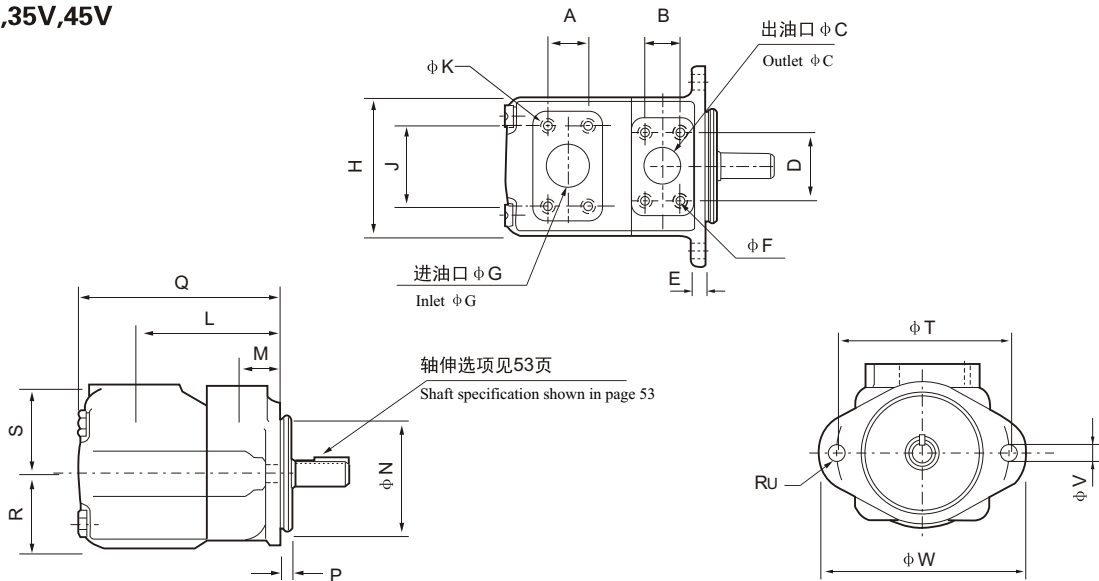


安装连接尺寸 Installation sizes

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 19.1depth	1/2-13UNC-2B x 23.8深 1/2-13UNC-2B x 23.8depth
35V	82.6	181	16	17.5	213	7/16-14UNC-2B x 22.3深 7/16-14UNC-2B x 22.3depth	1/2-13UNC-2B x 22.3深 1/2-13UNC-2B x 22.3depth
45V	93.7	181	16	17.5	213	1/2-13UNC-2B x 23.8深 1/2-13UNC-2B x 23.8depth	5/8-11UNC-2B x 30深 5/8-11UNC-2B x 30depth

V系列低噪音叶片泵

V Series Low Noise Vane Pumps

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：

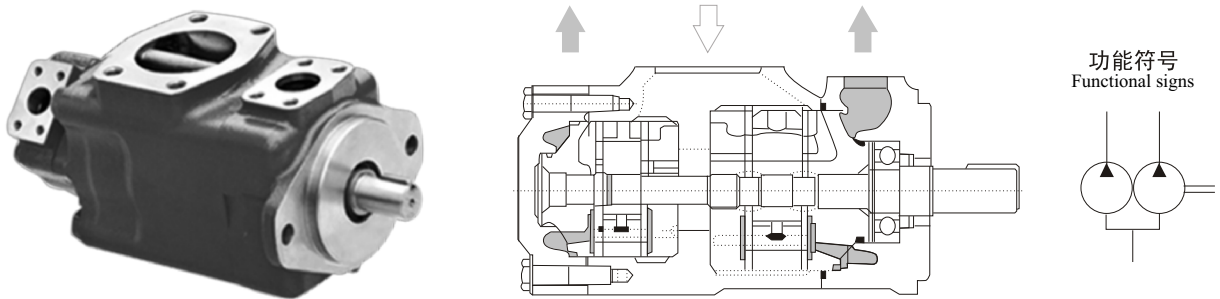
- 1、子母叶片的结构设计，减少了叶片对定子的冲击，在较高的工作压力和高转速下，性能更稳定，寿命更长。
- 2、子母叶片结构本身具有低噪音的特性。12叶片的设计、流量脉动很小，噪音更低。
- 3、多排量的选择，以及泵芯的插装式结构、使用户使用更灵活，维修更方便。

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:

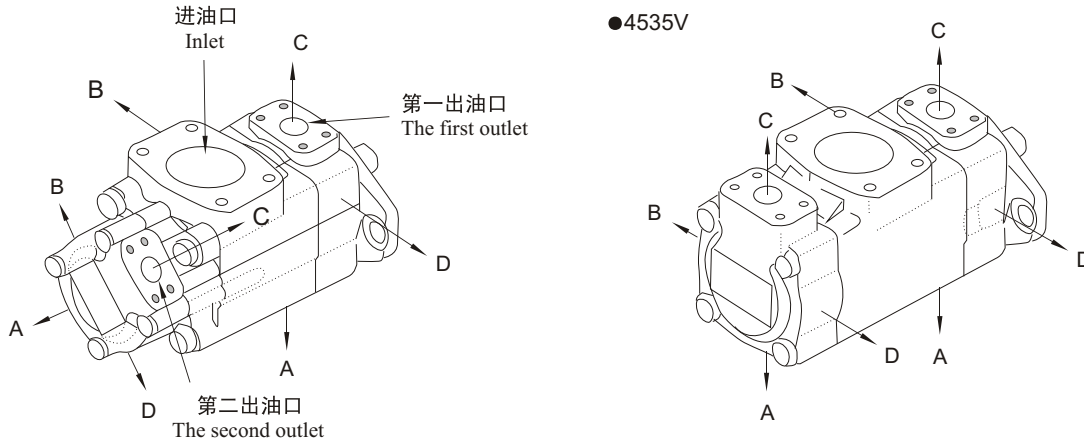
(F3-)	****V	**	A	**	(F)	-**	*	22	*
前注 Front marks	系列号 Code of series	▲排量代号轴端泵 Displacement code shaft end pump	油口连接 Pump port connection	▲排量代号盖端泵 Displacement code cover end pump	安装型式 Mounting type	轴伸形式 Shaft extension	油口位置 Pump position	设计号 Designing No.	旋转方向 Direction of rotation
无标记： 石油系油乳 化液水-乙 二醇 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	F- 脚座安装型 F- foot mounting				
	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)

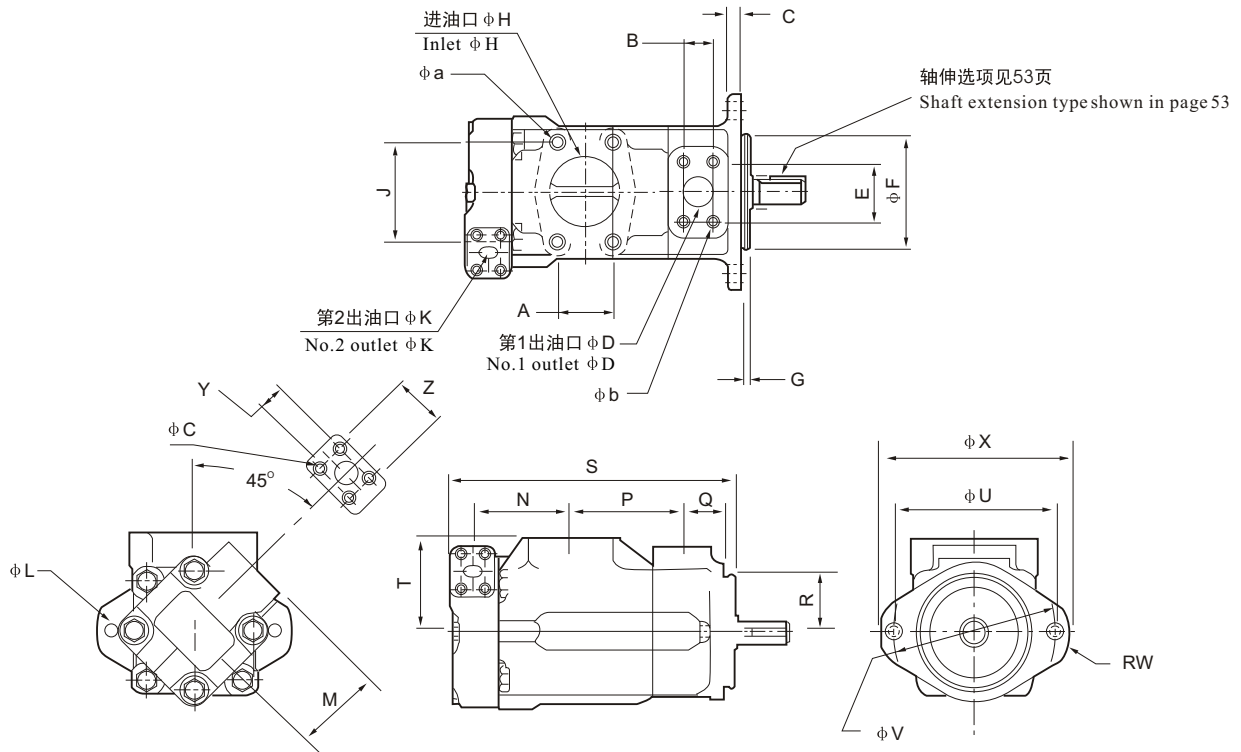


油口位置 Pump position		所有系列 (除4535V外) All series (except for 4535 V)	4535V
第一出油口 在进油口对侧 The first outlet is the opposition side of inlet.	AA	第二出油口在进油口逆时针转135° The second outlet is to counterclockwise rotation of 135° from inlet	第二出油口在进油口对侧 The second outlet is the opposition side of inlet.
	AB	第二出油口在进油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

V系列低噪音叶片泵 V Series Low Noise Vane Pumps

安装连接尺寸 Installation sizes

2520V, 35**V和452*V



型号 Models	$\phi a \times$ 全部螺纹深, 4孔 $\phi a \times$ all screw holes, 4 holes	$\phi b \times$ 全部螺纹深, 4孔 $\phi b \times$ all screw holes, 4 holes	$\phi c \times$ 全部螺纹深, 4孔 $\phi c \times$ 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	75.2	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	75.2	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	74.7	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	75.2	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	74.7	74.7	136	119.4	42.9

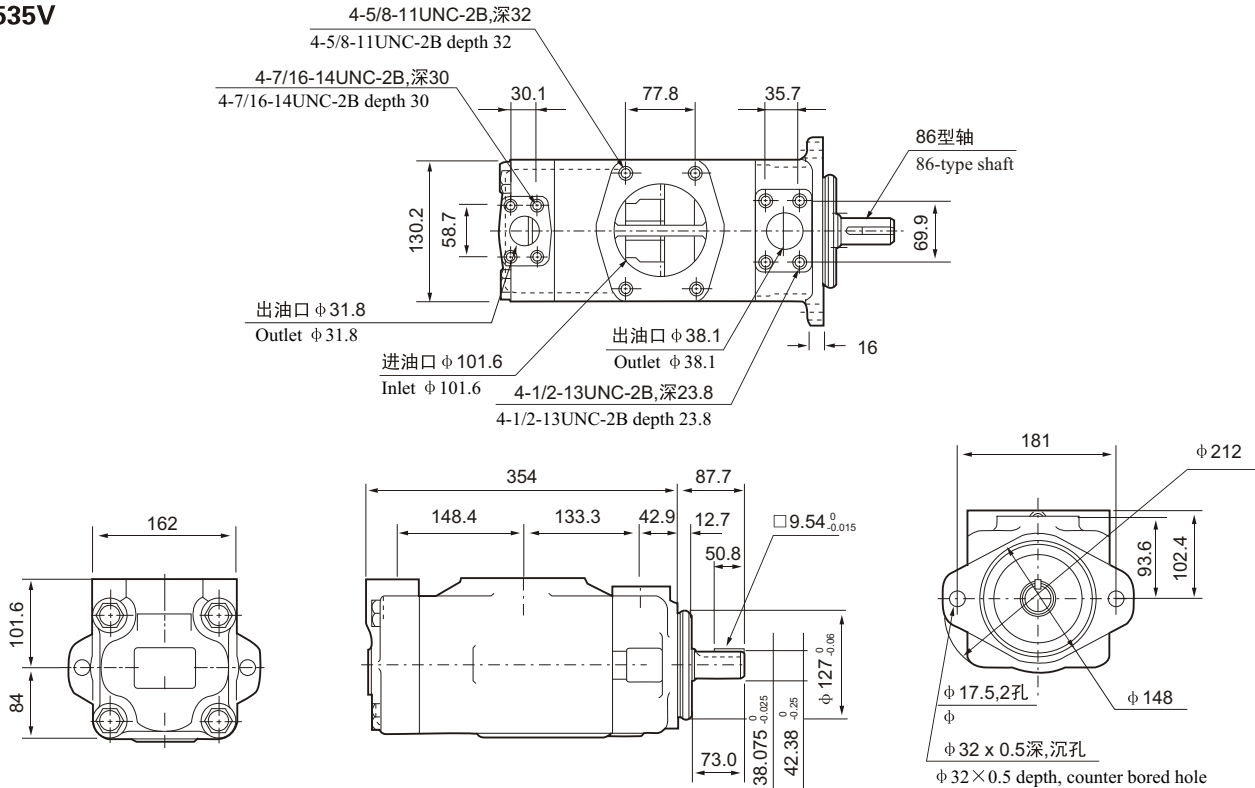
型号 Models	R	S	T	U	V	W	X	Y	Z
2520V	76.2	250	85.3	146.1	120	14	174.7	22.2	47.6
3520V	82.6	273.3	88.9	181	148	16	213	22.2	47.6
3525V	82.6	287.3	88.9	181	148	16	213	26.2	52.4
4520V	93.7	303.5	102.4	181	148	16	213	22.2	47.6
4525V	93.7	325	102.4	181	148	16	213	26.2	52.4

V系列低噪音叶片泵 V Series Low Noise Vane Pumps



安装连接尺寸 Installation sizes

4535V



使用与维护 Operation and Maintenance

● 液用油 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.

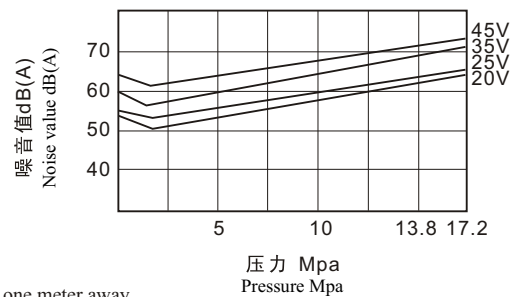
● 噪音数据 Noise data

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、静音试验室，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.



V系列低噪音叶片泵 V Series Low Noise Vane Pumps

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	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
	双联泵轴端泵芯 Shaft end core of double vane pumps	25V	10,12,14,15,17,19,21		
	PCT-双联泵盖端泵芯 PCT-cover end core of double vane pumps	35V	21,25,30,32,35,38,45		
		45V	42,45,50,57,60,66,75		

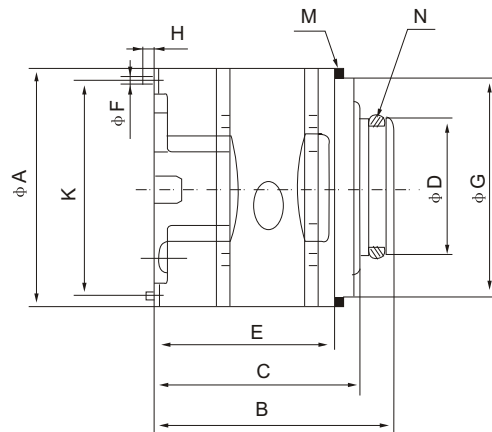
▲在1200r/min和0.69Mpa (100psi) 下的额定排量Usqpm。

The rated displacement(Usqpm) 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

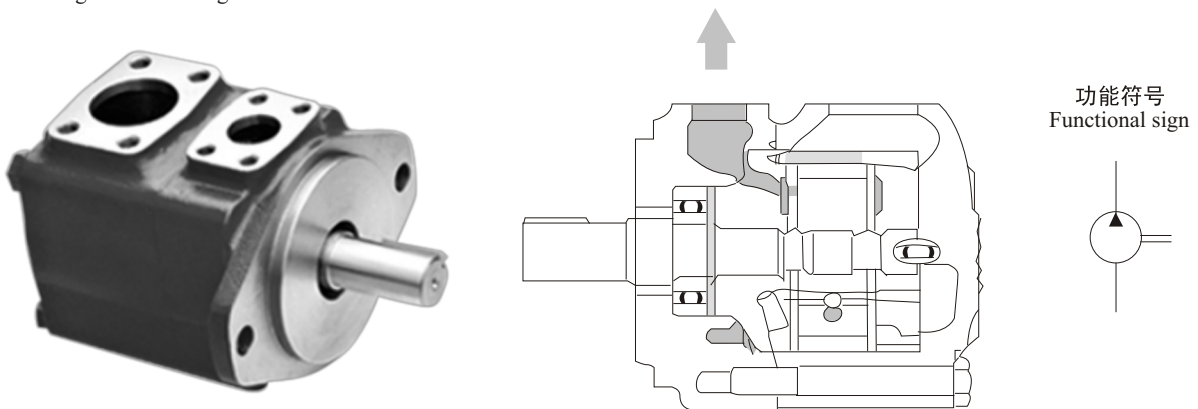
VQ 系列单泵 VQ series single pumps

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 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: 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
	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。

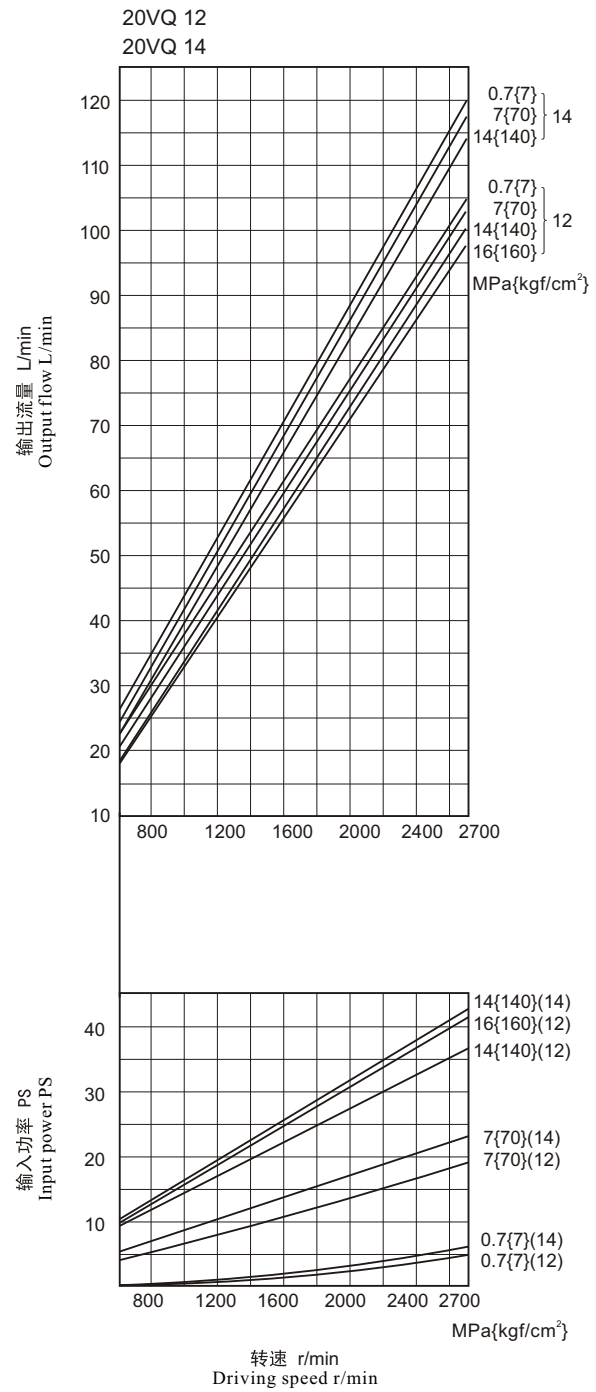
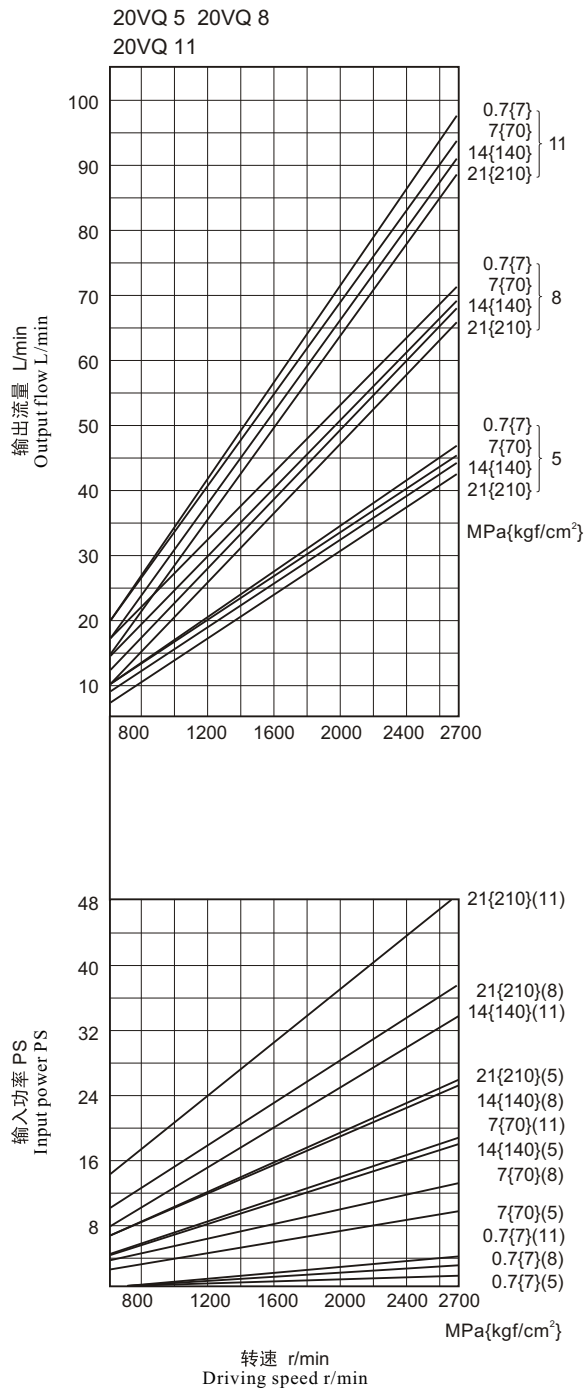
Performance parameters: SAE 10W hydraulic fluid ▲82°C (180°F), pump inlet ▲0 PSIG (14.71/Psia) Notes: The pressure of outlet port must be higher than the one of inlet port.



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

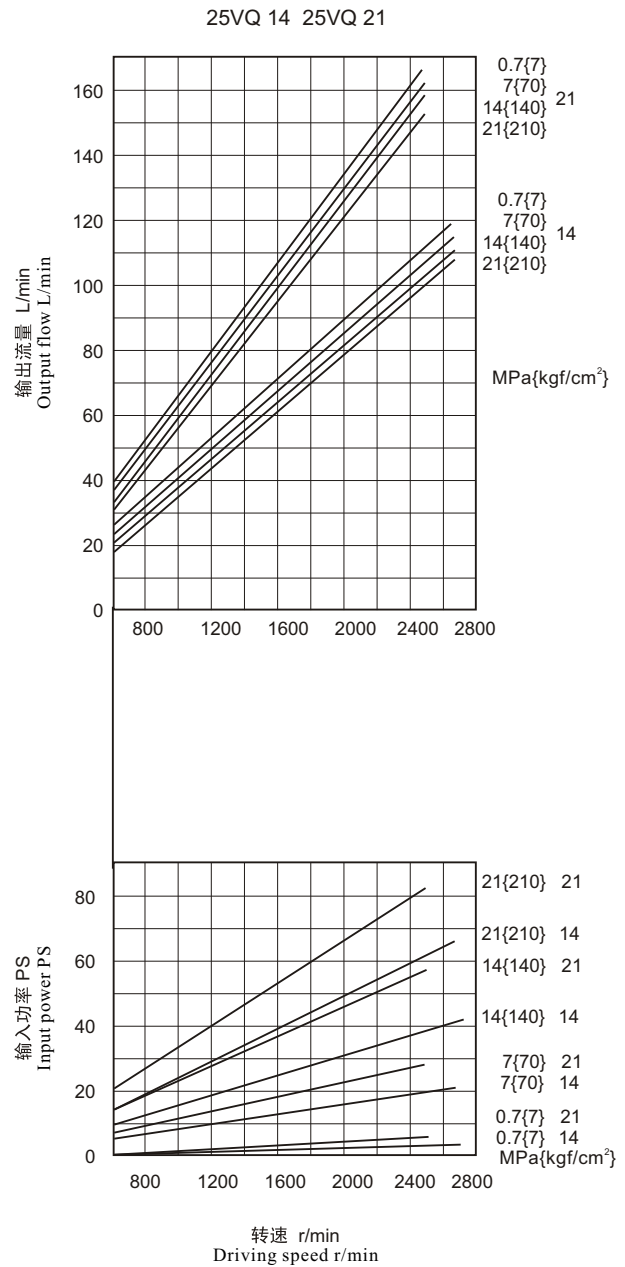
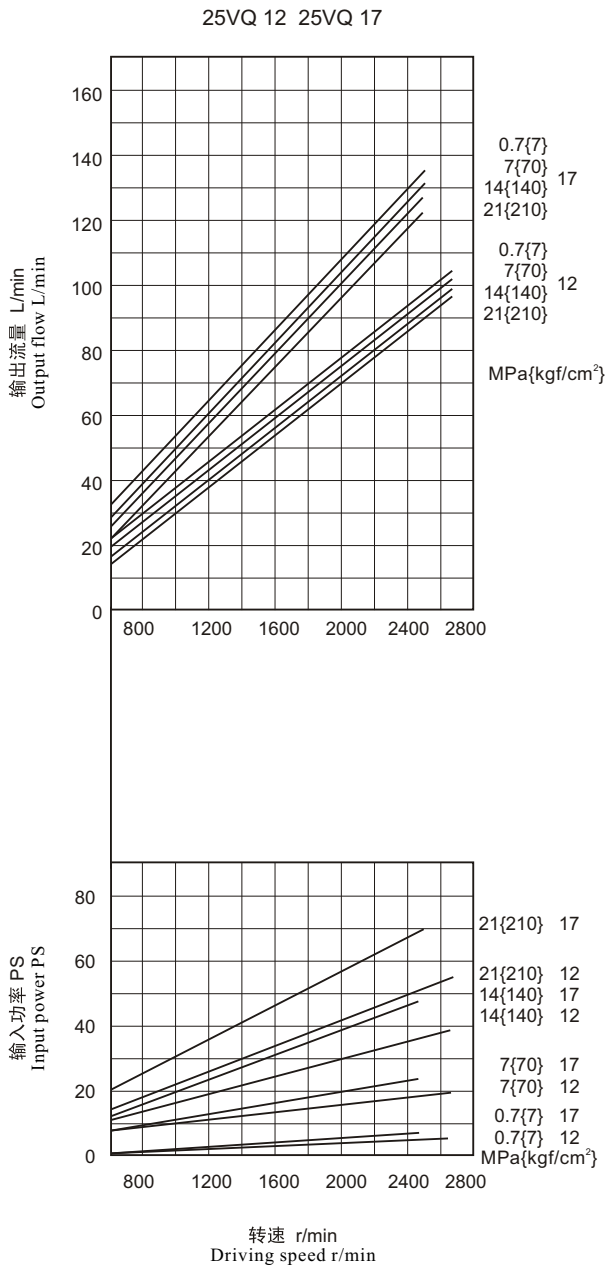


特性曲线 [50°C, 10W油 (26cst) 进油口压力0MPa]

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





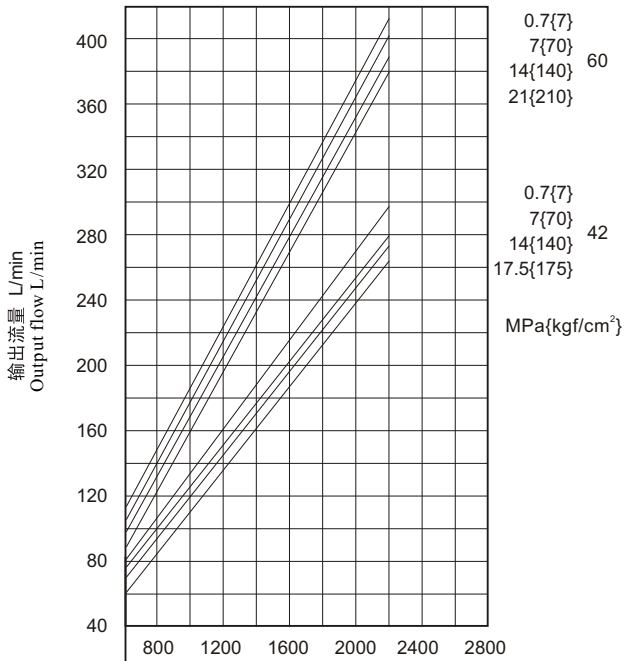
特性曲线 [50°C, 10W油 (26cst) 进油口压力0MPa]

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

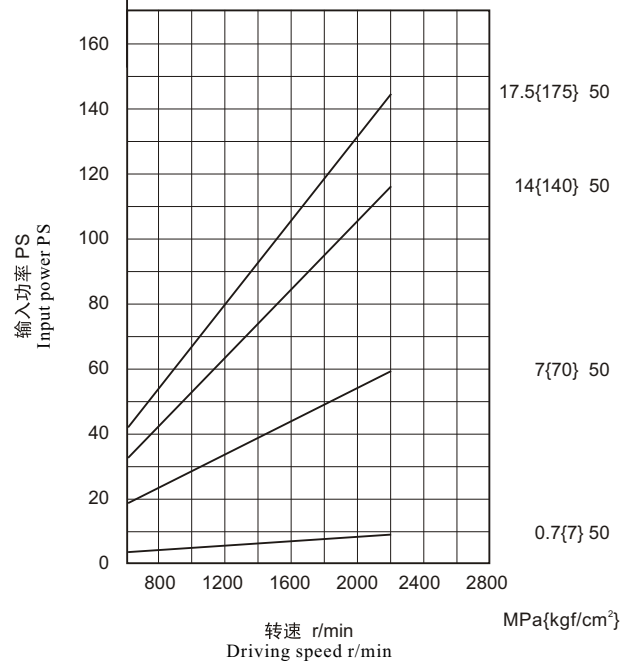
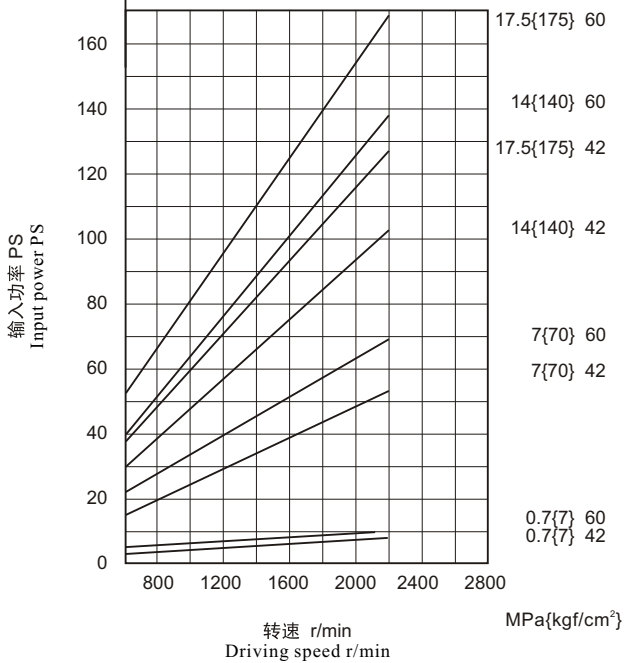
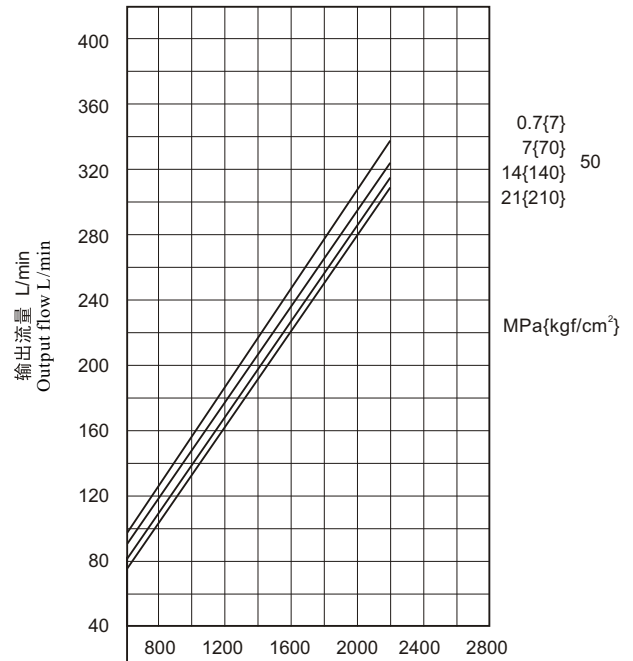
45VQ 输出流量, 输入功率

45VQ output flow, input power

45VQ 42 45VQ 60



45VQ 50

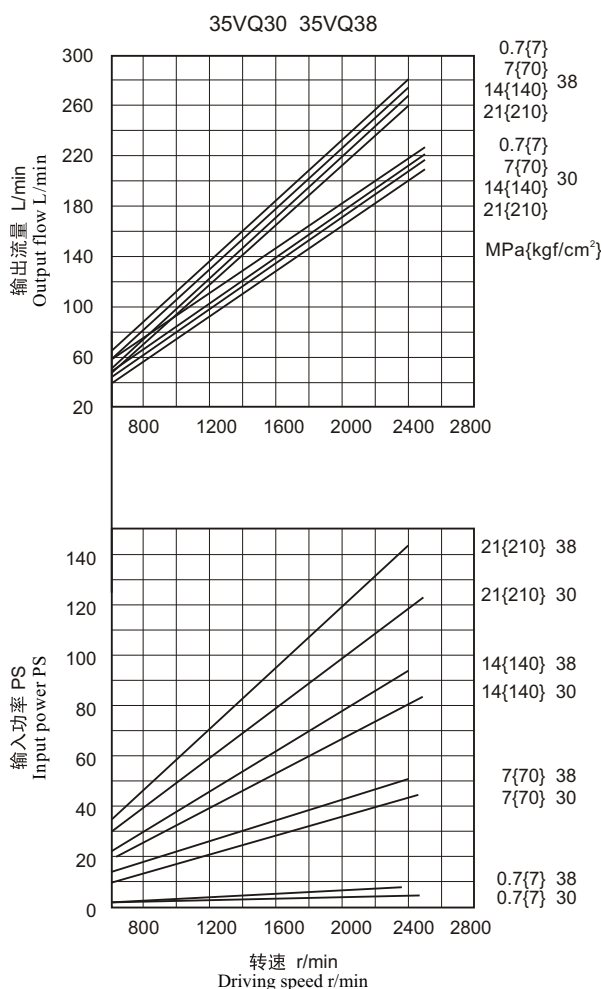
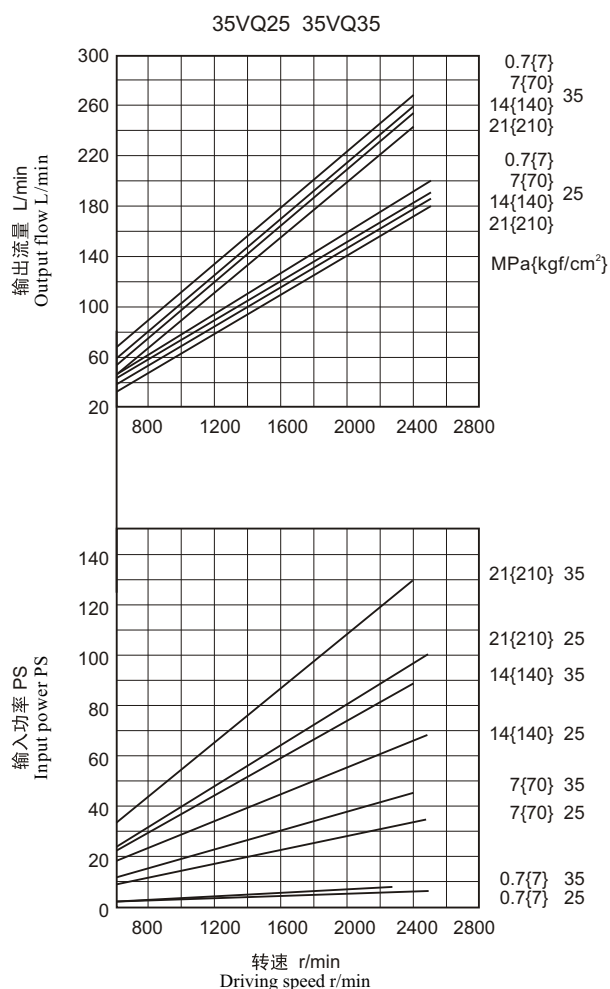


特性曲线 [50°C, 10W油 (26cst) 空载]

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.

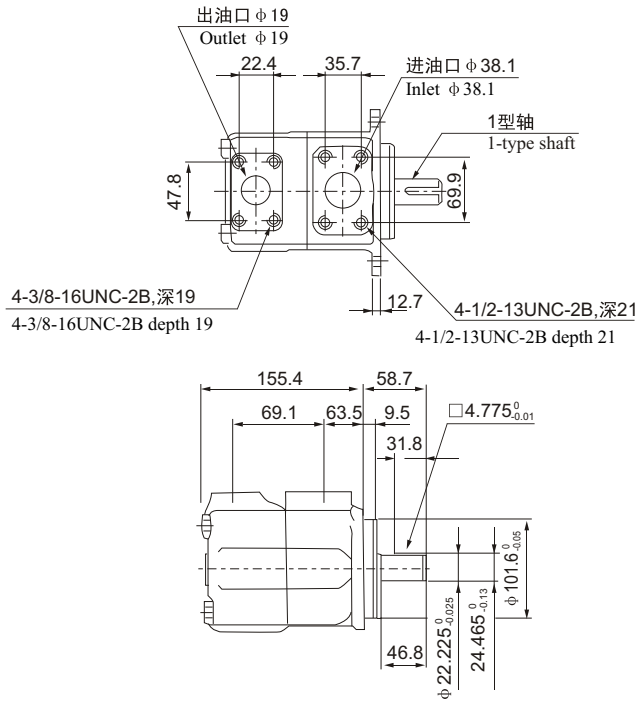
● 高温运行 High temperature operation

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。

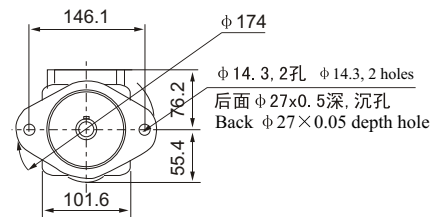
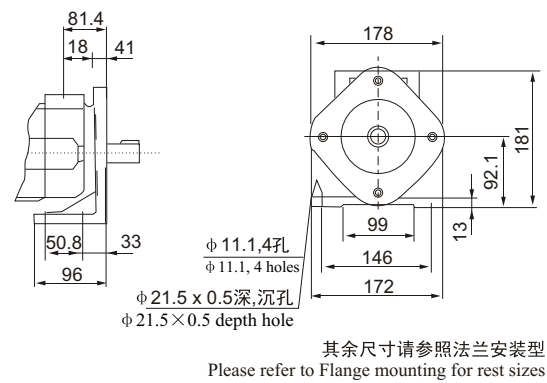
While working under high temperature, the viscosity shall not be less than 13cst, and the temperature shall not exceed 99°C. Otherwise, the service lifetime of pump core components and sealing parts will be reduced.

安装连接尺寸 Installation sizes

20VQ法兰安装 20VQ Flange mounting

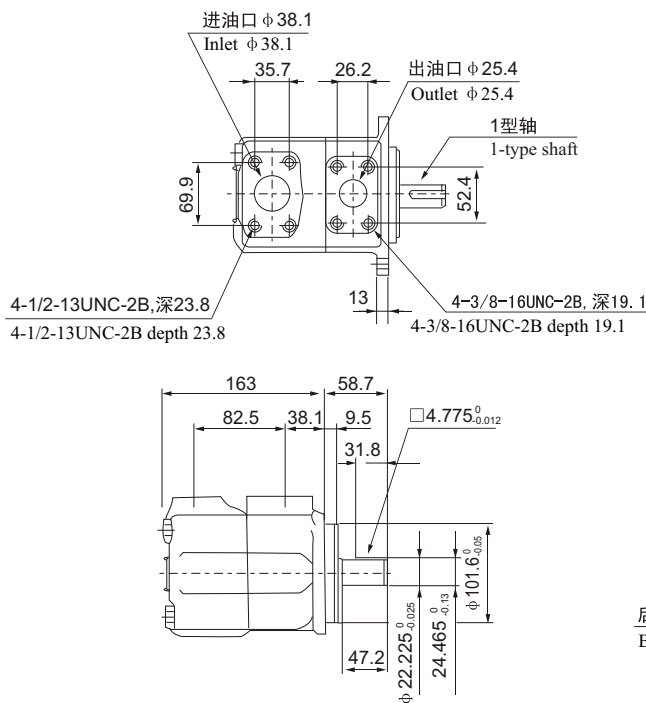


20VQ脚座安装 20VQ foot mounting

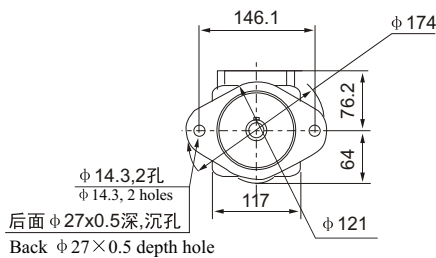
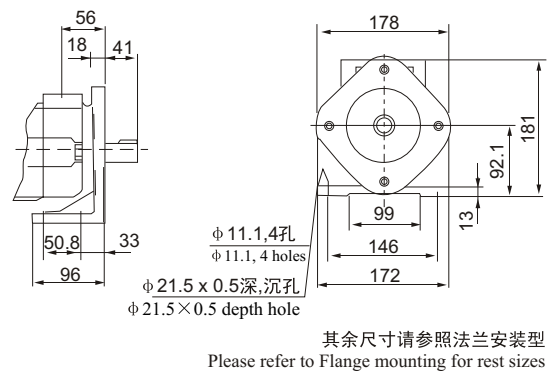


其它轴伸尺寸请参见53页
Please refer to shaft extension sizes in page 53 for rest sizes

25VQ法兰安装 25VQ Flange mounting



25VQ脚座安装 25VQ foot mounting



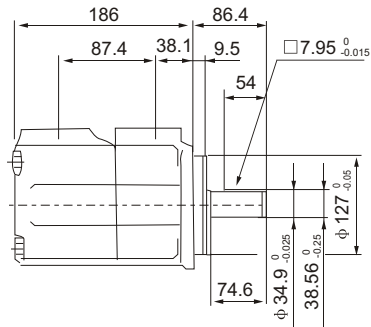
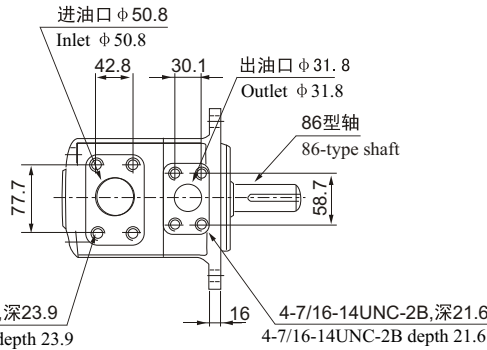
其它轴伸尺寸请参见53页
Please refer to shaft extension sizes in page 53 for rest sizes

VQ系列叶片泵 VQ series vane pumps

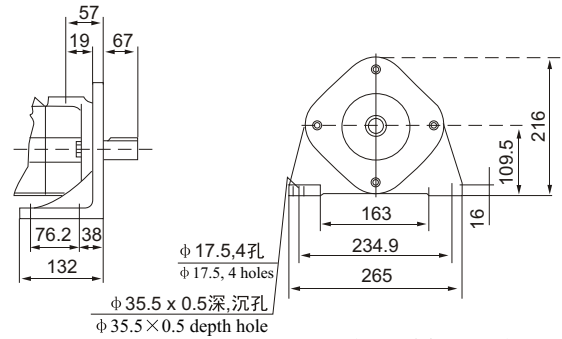


安装连接尺寸 Installation sizes

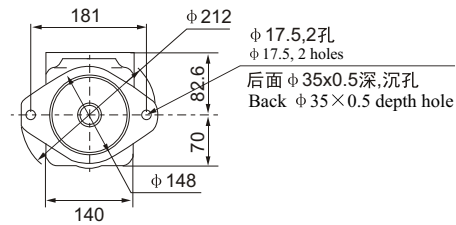
35VQ法兰安装 35VQ Flange mounting



35VQ脚座安装 35VQ foot mounting

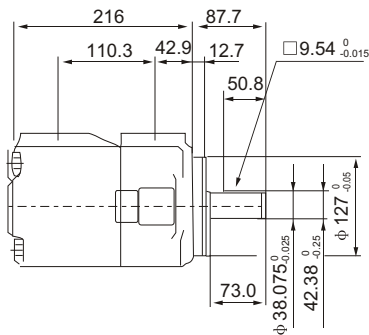
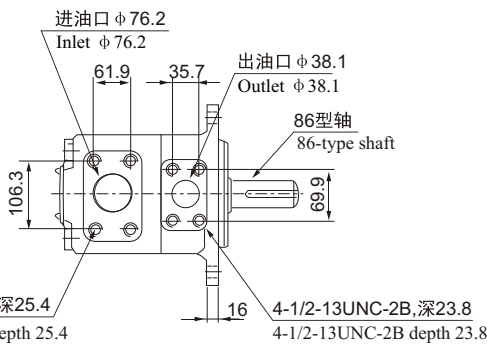


其余尺寸请参照法兰安装型
Please refer to Flange mounting for rest sizes

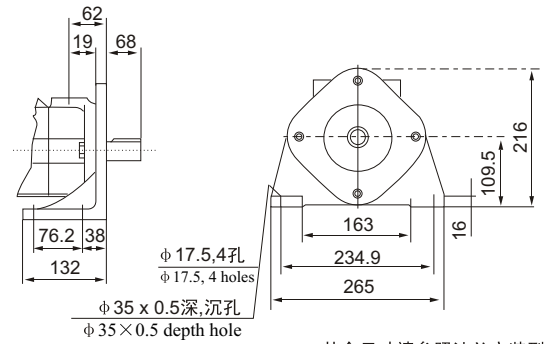


其它轴伸尺寸请参见53页
Please refer to shaft extension sizes in page 53 for rest sizes

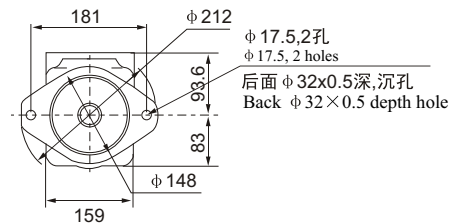
45VQ法兰安装 45VQ Flange mounting



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



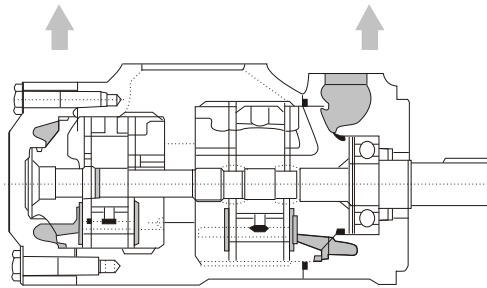
VQ系列双联泵 VQ series double pumps

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

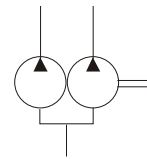
产品外观及简介 Shape and introduction

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.



功能符号
Functional sign



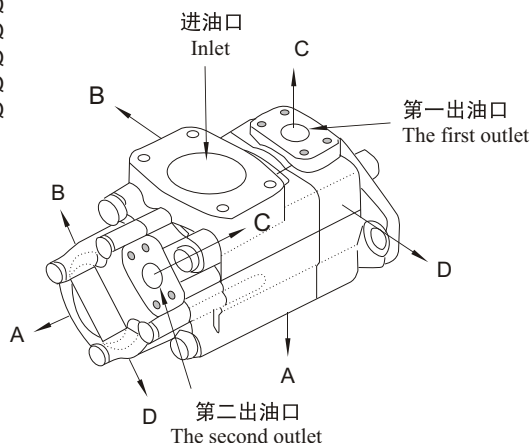
型号说明 Model descriptions:

(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 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	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					
	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							

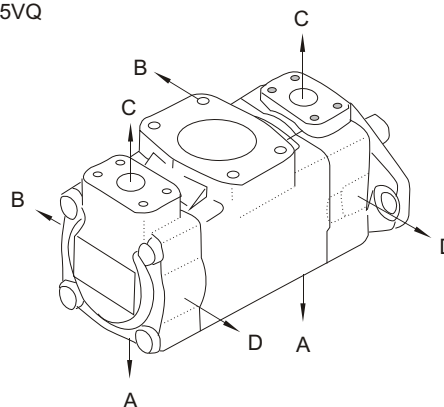
▲在1200r/min和0.69MPa(100psi)下的额定排量USgpm。
The rated displacement (USgpm) is under the conditions of 1200r/min and 0.69 Mpa(100psi).

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

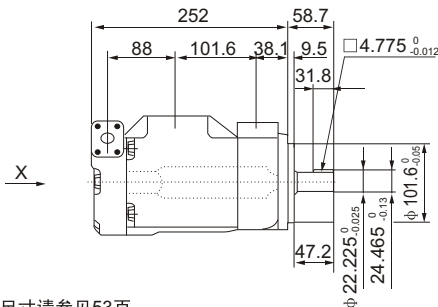
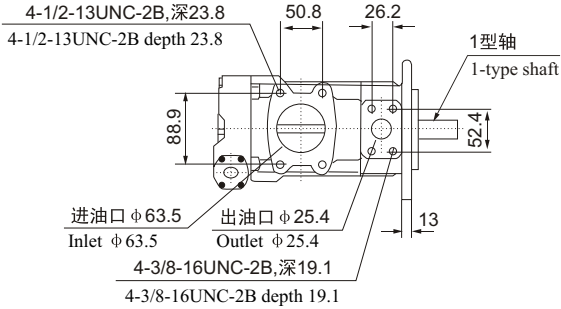
VQ系列叶片泵

VQ series vane pumps



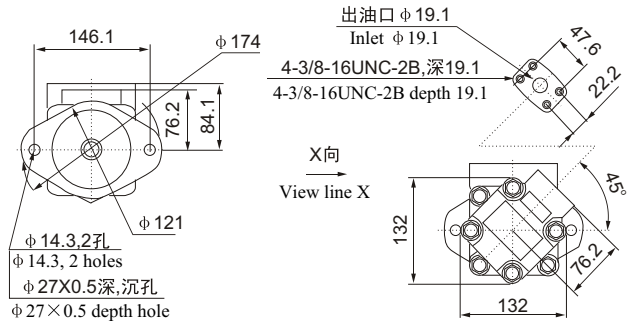
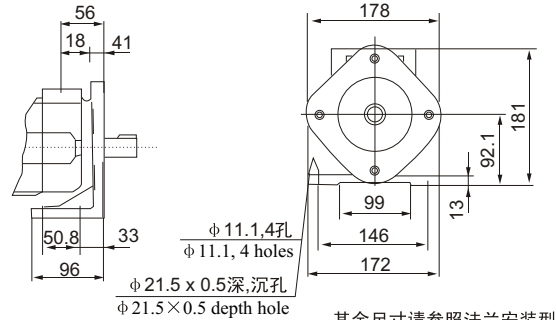
安装连接尺寸 Installation sizes

2520VQ法兰安装 2520VQ Flange mounting

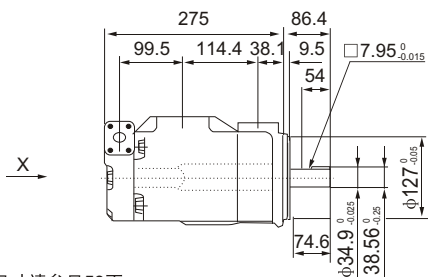
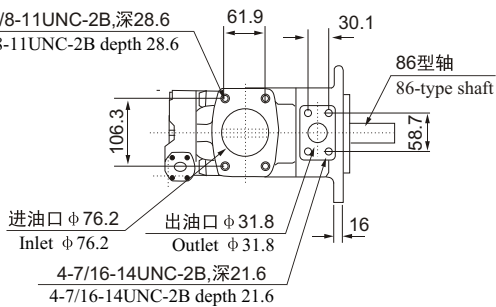


其它轴伸尺寸请参见53页
Please refer to shaft extension sizes in page 53 for rest sizes

2520VQ脚座安装 2520VQ foot mounting

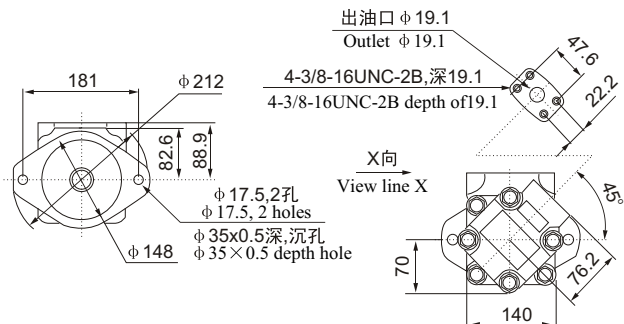
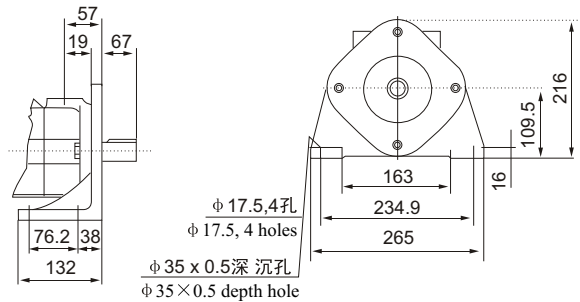


3520VQ法兰安装 3520VQ Flange mounting



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

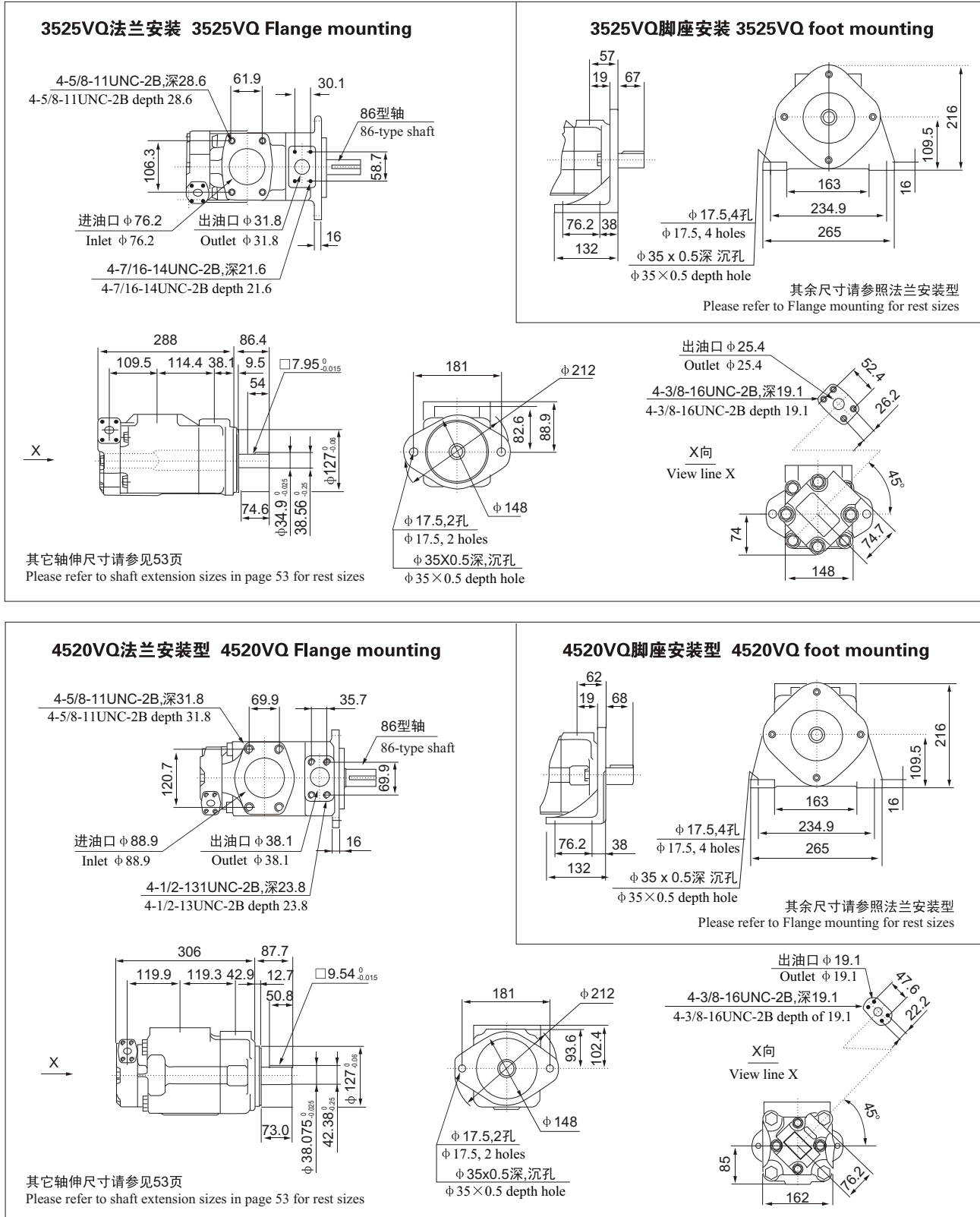
3520VQ脚座安装 3520VQ foot mounting



VQ系列叶片泵

VQ series vane pumps

安装连接尺寸 Installation sizes

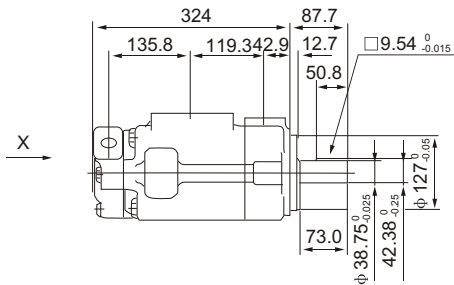
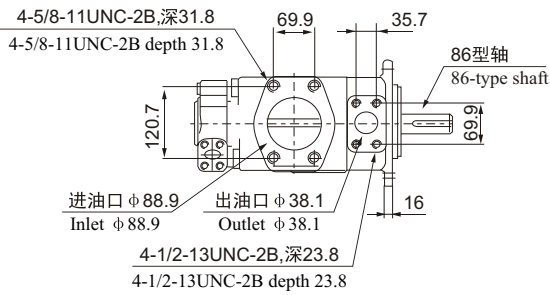


VQ系列叶片泵 VQ series vane pumps



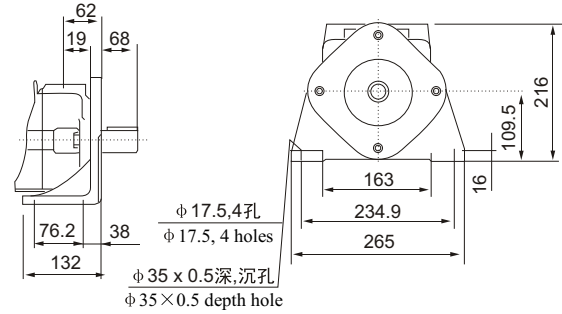
安装连接尺寸 Installation sizes

4525VQ法兰安装 4525VQ Flange mounting

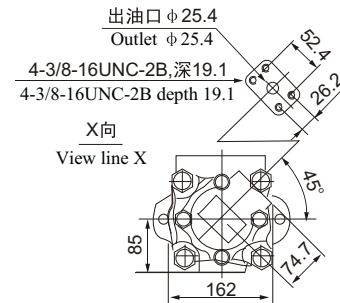
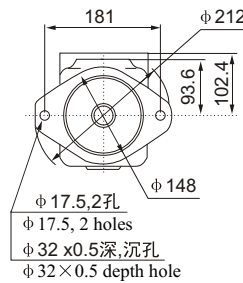


其它轴伸尺寸请参见53页
Please refer to shaft extension sizes in page 53 for rest sizes

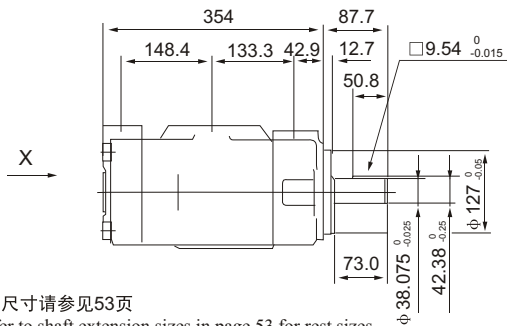
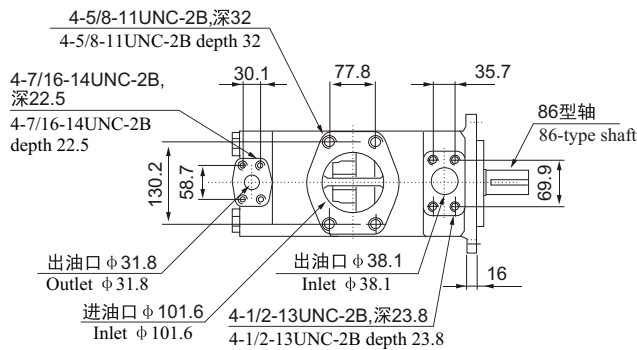
4525VQ脚座安装 4525VQ foot mounting



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

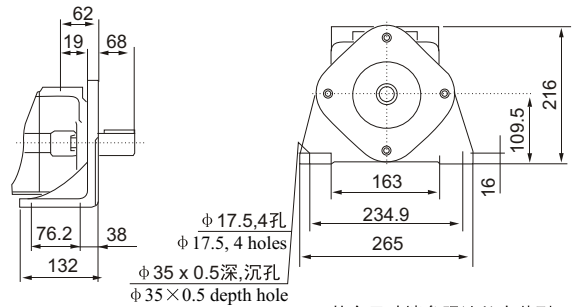


4535VQ法兰安装型 4535VQ Flange mounting

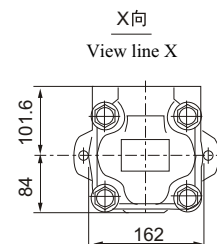
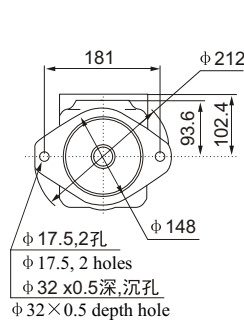


其它轴伸尺寸请参见53页
Please refer to shaft extension sizes in page 53 for rest sizes

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		

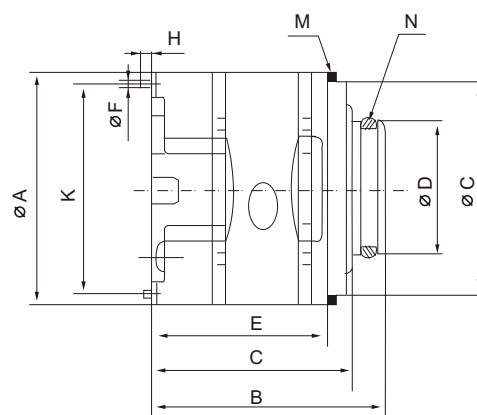
▲在1200r/min和0.69Mpa (100psi) 下的额定排量Usqpm。

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

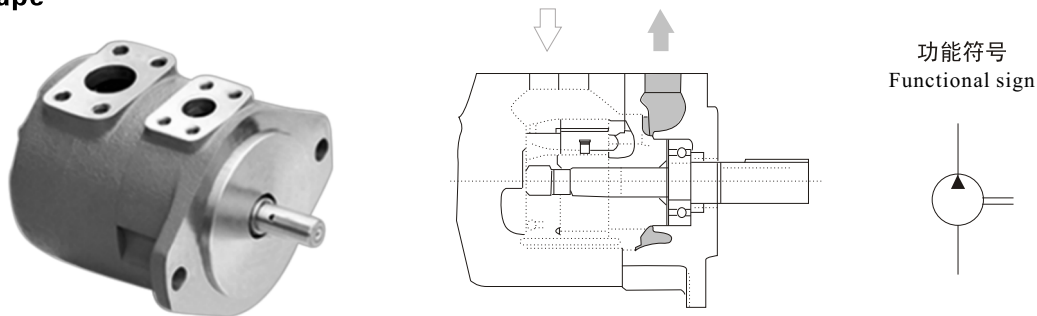
SQP系列叶片泵

SQP series vane pumps



SQP系列单泵 SQP series single pumps

产品外观 Shape



本系列是专为低噪音工况而开发的高压高性能子母叶片泵。适用于塑料机械，压铸机械，机床以及工程机械等要求噪音较低的液压系统中。其主要特点：

- 1、泵芯使用V系列子母叶片泵泵芯，完全互换，使用更灵活方便。
- 2、增加了脉动衰减结构的设计，极大降低了压力的脉动，使噪音更低，音质更流畅。
- 3、使用加厚的外壳设计，增加了泵的强度和抗震性，同时消音性能更优越。

SQP series single pumps are composition vane pumps with high pressure resistance and high performance, especially developed for application in the industries of plastic machinery, forging machinery, machine tool industry and engineering machinery, where lower noise is required. The main features are as follows:

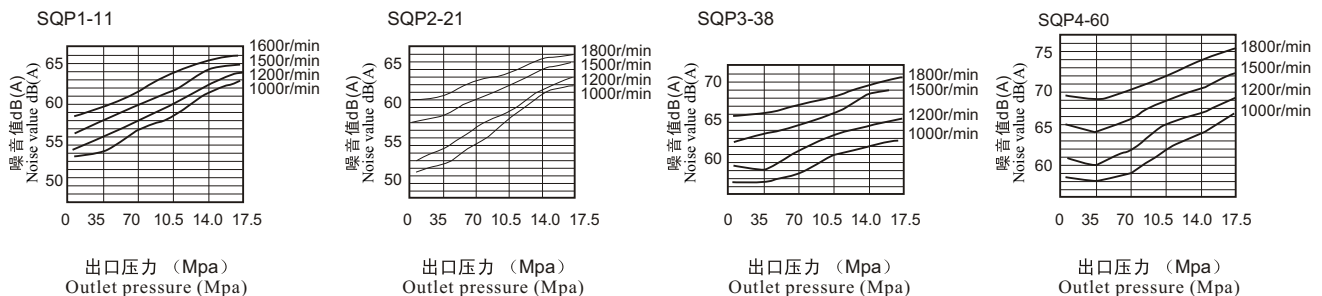
1. Adopt V series composition vane pump core, making the application flexible by its complete interchangeable advantage.
2. Adopt the structure of pulsation attenuation, dramatically reducing the pulsation of pressure with lower noise.
3. Adopt the designing with thick pump casing, making the pump with stronger strength, stronger vibration resistance and better performance of silencing.

型号说明 Model descriptions

(F3-)	SQP2	-21	-86	C	(F)	(LH)	-18
前注、油液相容性 Front marks, compatibility between hydraulic oil and fluid	泵壳号 Pump shell No	▲排量代号 Displacement codes	轴伸形式 Shaft extension	出口口位置 Outlet port position	安装型式 Mounting type	旋转方向 Direction of rotation	设计号 Designing No.
无标记-使用抗磨液压油或磷酸脂液 No marks- use anti-wear hydraulic oil or F11-使用水乙二醇液 F11- use water- glycol fluid F3- 使用油包水乳化液 F3- use water-in-oil emulsion	SQP1 SQP2 SQP3 SQP4	2,3,4,5,6,7,8,9 10,11,12,14 10,11,12,14,15,17,19,21 21,25,30,32,35,38,45 42,45,50,57,60,66,75	1带键直轴 1 straight shaft with key 86-重型带键直轴 86- heavy-duty straight shaft with key	(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	无标记法 兰安装 No mark Flange mounting F: 脚座安装型 foot mounting	(从泵的盖端看) (from cover end pump) LH-逆时针旋转 LH- counterclockwise rotation 无标记 No mark 顺时针旋转 Clockwise rotation	15 18

▲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).

噪音数据 测试条件ISO VG32、(50°C), 距离1m
Noise data testing conditions ISO VG32,(50°C), distance of 1m





SQP系列叶片泵

SQP series vane pumps

工作参数 Operating parameters

泵壳号 Pump shell No	●排量代号 Displacement code	几何排量 Geometric displacement (mL/r)	SQP		F11-SQP		F3-SQP		最低转速 Mini speed (r/min)
			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)	
SQP1	2	7.5	13.8	1800	13.8	1200	13.8	1200	600
	3	10.2							
	4	12.8							
	5	16.7							
	6	19.2							
	7	22.9							
	8	26.2	17.2						
	9	28.8							
	10	31.0							
	11	35.0							
	12	37.9	15.7		15.7				
14	44.2	13.8	13.8						
SQP2	10	32.5	17.2	1800	17.2	1200	13.8	1200	600
	12	38.3							
	14	43.3							
	15	46.7							
	17	52.5							
	19	59.2							
	21	65.0							
SQP3	21	66.7	17.2	1800	17.2	1200	13.8	1200	600
	25	79.2							
	30	95.0							
	32	100							
	35	109							
	38	118							
	45	140							
SQP4	42	134	17.2	1800	17.2	1200	13.8	1200	600
	45	140							
	50	156							
	57	178							
	60	189							
	66	207							
	75	237							

●在1200r/min和0.69MPa(100psi)下的额定排量USgpm。▲0.5秒内，允许超过最高压力10%的瞬时压力。

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

The instantaneous pressure is allowed to exceed 10% of the Max pressure for within 0.5 seconds long.



工作参数 Operating parameters

特定转速下的典型流量，测试条件：50°C，空载，26cSt下的10W液压油

Typical flow at certain rotations speed under the testing conditions of 50°C, no load, 10W type hydraulic oil with viscosity of 26cst

泵壳号 Pump shell No	转速 Driving speed r/min	输出流量L/min Output flow L/min				输入功率KW Input power KW			
		0.69MPa	6.9MPa	13.8MPa	17.2MPa	0.69MPa	6.9MPa	13.8MPa	17.2MPa
SQP1-2	1000	7.5	6.0	4.5		0.2	1.2	2.1	
	1200	9.5	8.5	6.5		0.3	1.5	2.5	
	1500	11.2	9.3	7.5		0.3	1.8	3.2	
	1800	13.5	11.2	9.0		0.4	2.2	3.8	
SQP1-3	1000	10.2	8.8	7.4		0.3	1.5	3.1	
	1200	12.5	11.0	9.5		0.4	1.8	3.7	
	1500	15.3	13.7	12.1		0.5	2.3	4.7	
	1800	18.4	16.9	15.3		0.5	2.7	5.6	
SQP1-4	1000	12.8	12.3	10.8	10.0	0.4	1.8	3.7	4.5
	1200	16.0	15.0	13.5	13.0	0.5	2.2	4.4	5.5
	1500	19.2	17.7	16.2	15.7	0.6	2.7	5.6	6.9
	1800	23.1	21.3	19.5	19.0	0.7	3.2	6.7	8.3
SQP1-5	1000	16.7	15.7	14.7	14.2	0.4	2.8	4.8	6.0
	1200	20.0	19.0	18.0	17.5	0.5	3.2	5.8	7.2
	1500	25.0	24.0	23.0	22.5	0.6	3.9	7.3	9.0
	1800	30.0	29.0	28.0	27.5	0.6	4.2	8.6	10.7
SQP1-6	1000	19.2	18.2	17.0	16.2	0.4	3.0	5.5	6.6
	1200	23.0	22.0	20.5	20.0	0.5	3.5	6.5	7.9
	1500	28.5	27.5	26.0	25.0	0.6	4.3	8.1	9.8
	1800	34.5	33.5	32.0	31.0	0.7	5.2	9.7	11.8
SQP1-7	1000	22.9	21.4	19.9	18.9	0.5	3.4	6.2	7.6
	1200	27.5	26.0	24.5	23.5	0.6	4.0	7.4	9.1
	1500	34.4	32.9	31.4	30.4	0.7	5.0	9.2	11.3
	1800	41.3	39.8	38.3	37.3	0.8	5.9	11.0	13.6
SQP1-8	1000	26.2	24.2	22.7	21.2	0.5	3.9	6.7	8.3
	1200	31.5	29.5	28.0	26.5	0.6	4.5	8.0	10.0
	1500	39.4	37.4	35.9	34.4	0.8	5.5	10.0	12.5
	1800	47.2	45.2	43.7	42.2	0.8	6.6	11.8	14.8
SQP1-9	1000	28.8	26.8	25.3	23.8	0.5	4.2	7.0	8.6
	1200	34.5	32.5	31.5	30.0	0.6	5.0	8.5	10.5
	1500	43.2	41.2	39.7	38.2	0.8	5.9	10.4	12.9
	1800	51.8	49.8	48.3	46.8	0.9	7.1	12.3	15.3
SQP1-10	1000	31	29	26.5	25.5	0.6	4.8	9.1	11.3
	1200	37.2	35.2	32.7	31.7	0.8	5.7	11.0	13.7
	1500	46.5	44.5	42.0	41.0	0.9	6.8	13.7	17
	1800	55.8	53.6	51.5	50.1	1.0	8.3	16.2	20.3
SQP1-11	1000	35.0	33.0	30.5	29.5	0.7	4.9	9.2	11.4
	1200	42.0	40.0	37.5	36.5	0.8	5.7	11.0	13.7
	1500	52.5	50.5	48.0	47.0	1.0	6.9	13.8	17.1
	1800	63.2	61.0	58.5	57.5	1.0	8.3	16.2	20.3
SQP1-12	1000	37.9	36.4	34.4		0.7	5.6	10.4	
	1200	45.5	44.0	42.0		0.9	6.5	12.5	
	1500	56.9	55.4	53.4		1.1	7.9	15.6	
	1800	68.2	66.7	64.7		1.1	9.4	18.4	
SQP1-14	1000	44.2	42.7	40.7		1.0	6.6	12.2	
	1200	53.0	51.5	49.5		1.1	7.8	14.6	
	1500	66.0	64.0	62.0		1.3	9.6	18.2	
	1800	79.5	77.5	75.5		1.4	11.5	21.7	

SQP系列叶片泵

SQP series vane pumps



工作参数 Operating parameters

特定转速下的典型流量，测试条件：50°C，空载，26cSt下的10W液压油

Typical flow at certain rotation speed under the testing conditions of 50°C, no load, 10W type hydraulic oil with viscosity of 26cst

泵壳号 Pump shell No	转速 Driving speed r/min	输出流量L/min Output flow L/min				输入功率KW Input power KW			
		0.69MPa	6.9MPa	13.8MPa	17.2MPa	0.69MPa	6.9MPa	13.8MPa	17.2MPa
SQP2-10	1000	32.5	29.5	26.0	24.5	0.9	4.9	9.3	11.3
	1200	39.0	36.0	32.5	31.0	1.0	5.8	11.1	13.5
	1500	48.8	45.8	42.3	40.8	1.2	7.2	13.8	16.8
	1800	58.5	55.5	52.0	50.5	1.3	8.5	16.5	20.1
SQP2-12	1000	38.3	35.9	33.3	31.8	1.0	5.7	10.9	13.4
	1200	46.0	43.6	41.0	39.5	1.1	6.5	13.0	16.0
	1500	57.5	55.1	52.5	51.0	1.3	8.3	16.1	19.9
	1800	69.0	66.6	64.0	62.5	1.4	9.8	19.3	23.8
SQP2-14	1000	43.3	40.2	36.8	35.8	1.2	6.4	12.2	15.1
	1200	52.0	48.5	45.5	44.5	1.3	7.5	14.5	18.0
	1500	65.0	61.9	58.5	57.5	1.5	9.4	18.0	22.4
	1800	78.0	74.9	71.5	70.5	1.7	11.1	21.5	26.7
SQP2-15	1000	46.7	43.7	40.7	39.2	1.2	6.8	13.0	15.9
	1200	56.0	53.0	50.0	48.5	1.3	8.0	15.5	19.0
	1500	70.0	67.0	64.0	62.5	1.5	9.9	19.3	23.6
	1800	84.0	81.0	78.0	76.5	1.7	11.8	23.0	28.3
SQP2-17	1000	52.5	49.7	46.5	44.5	1.4	7.4	14.3	17.6
	1200	63.0	60.6	57.0	55.0	1.5	9.0	17.0	21.0
	1500	78.8	76.0	72.8	70.8	1.7	10.8	21.1	26.1
	1800	94.5	91.7	88.5	86.5	1.9	12.9	25.1	31.2
SQP2-19	1000	59.2	56.2	53.2	50.2	1.5	8.5	16.0	20.1
	1200	71.0	68.0	65.0	62.0	1.7	10.0	19.0	24.0
	1500	88.7	85.7	82.7	79.7	1.9	12.3	24.1	29.8
	1800	106.5	103.7	100.7	97.7	2.2	14.7	28.2	35.7
SQP2-21	1000	65.0	62.2	59.0	57.0	1.6	9.2	17.6	21.8
	1200	78.0	75.0	72.0	70.0	1.8	11.0	21.0	26.0
	1500	97.5	94.7	91.5	89.5	2.1	13.4	26.1	32.3
	1800	117	114	111	109	2.3	16.0	31.1	38.6



工作参数 Operating parameters

特定转速下的典型流量，测试条件：50°C，空载，26cSt下的10W液压油

Typical flow at certain rotationspeed under the testing conditions of 50°C, no load, 10W type hydraulic oil with viscosity of 26cst

泵壳号 Pump shell No	转速r/min Driving speed r/min	输出流量L/min Output flow L/min				输入功率KW Input power KW			
		0.69MPa	6.9MPa	13.8MPa	17.2MPa	0.69MPa	6.9MPa	13.8MPa	17.2MPa
SQP3-21	1000	66.7	60.7	54.7	51.7	1.6	8.9	16.8	20.6
	1200	80.0	74.0	68.0	65.0	1.8	10.5	20.0	24.5
	1500	100	94.0	88.0	85.0	2.0	12.9	24.8	30.4
	1800	120	114	108.0	105.0	2.3	15.4	30.5	36.4
SQP3-25	1000	79.2	73.5	67.2	54.2	1.8	10.7	20.5	25.1
	1200	95.0	89.0	83.0	80.0	2.0	12.5	24.5	30.0
	1500	119	113	107.0	104.0	2.3	15.7	30.4	37.3
	1800	142	136	130.0	127.0	2.6	18.7	36.4	44.6
SQP3-30	1000	95.0	86.4	81.0	78.0	1.8	12.6	24.7	30.5
	1200	114	107	100	97.0	2.0	15.0	29.5	36.5
	1500	142	136	128	125	2.4	18.6	36.7	45.5
	1800	171	164	157	154	2.7	22.2	44.0	54.5
SQP3-32	1000	100	92.0	85.0	82.0	2.1	13.5	26.0	32.2
	1200	120	112	105	102	2.3	16.0	31.0	38.5
	1500	150	142	135	132	2.7	19.8	38.6	47.9
	1800	180	172	165	162	3.1	23.6	46.1	57.4
SQP3-35	1000	109	103	95.2	92.2	2.2	14.2	27.6	34.3
	1200	131	124	117	114	2.5	17.0	33.0	41.0
	1500	164	157	150	147	2.9	20.9	41.0	51.0
	1800	196	189	182	179	3.3	24.9	50.4	61.1
SQP3-38	1000	118	111	102	99.3	2.7	15.5	29.8	36.9
	1200	142	134	126	123	3.0	18.5	35.5	44.0
	1500	177	170	161	158	3.4	22.7	44.0	54.7
	1800	213	205	197	194	3.9	27.0	52.6	65.4
SQP3-45	1000	140	131	121	116	2.9	17.9	35.4	43.7
	1200	168	159	149	144	3.2	21.2	42.2	52.2
	1500	210	201	190	185	3.7	26.2	53.5	64.9
	1800	252	243	233	228	4.2	31.2	62.7	77.7
SQP4-42	1000	134	125	115	110	2.7	17.7	35.2	43.5
	1200	161	152	142	137	3.0	21.0	42.0	52.0
	1500	201	192	182	177	3.5	26.0	52.3	64.7
	1800	241	232	222	217	4.0	31.0	62.5	77.5
SQP4-45	1000	140	131	121	116	2.9	17.9	35.4	43.7
	1200	168	159	149	144	3.2	21.2	42.2	52.2
	1500	210	201	190	185	3.7	26.2	53.5	64.9
	1800	252	243	233	228	4.2	31.2	62.7	77.7
SQP4-50	1000	156	147	137	132	3.1	20.2	39.4	49.3
	1200	187	178	168	163	3.5	24.0	47.0	59.0
	1500	234	225	215	210	4.0	29.7	58.5	73.4
	1800	280	271	261	256	4.7	35.4	69.9	87.9
SQP4-57	1000	178	168	157	151	3.8	22.9	45.1	53.7
	1200	213	203	192	186	4.3	27.3	55.2	65.8
	1500	269	259	248	242	5.0	36.6	66.3	82.5
	1800	320	310	299	292	5.7	43.3	75.5	97.3
SQP4-60	1000	189	178	166	160	4.0	24.4	46.9	58.6
	1200	227	216	204	198	4.5	29.0	56.0	70.0
	1500	284	273	261	255	5.2	35.8	69.6	87.1
	1800	340	329	317	311	5.9	42.7	83.2	104
SQP4-66	1000	207	195	182	174	4.4	26.7	51.4	62.9
	1200	248	236	223	215	4.9	31.6	61.2	76.0
	1500	310	298	285	277	5.6	39.0	76.0	94.6
	1800	372	360	347	339	6.4	46.7	91.0	113.3
SQP4-75	1000	237	223	208	200	5.0	30.5	58.7	73.2
	1200	284	269	255	247	5.6	36.1	70.0	87.3
	1500	355	340	326	318	6.5	44.5	86.9	108.0
	1800	426	411	397	389	7.3	53.5	104.1	130.0

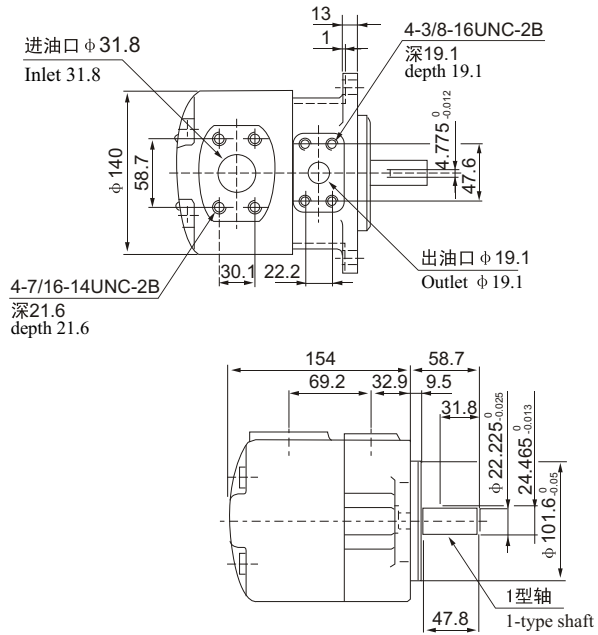
SQP系列叶片泵

SQP series vane pumps

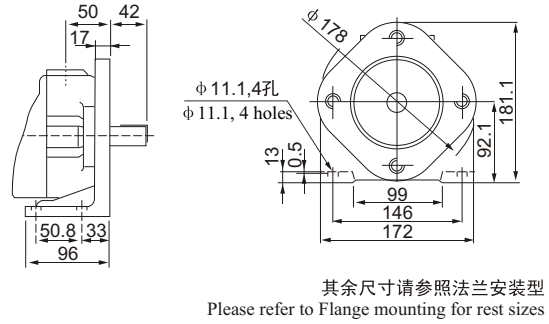


安装连接尺寸 Installation sizes

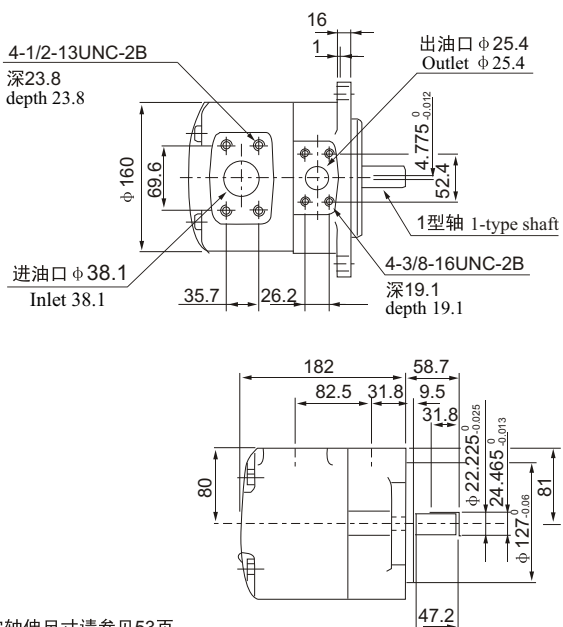
SQP1法兰安装型 SQP1 Flange mounting



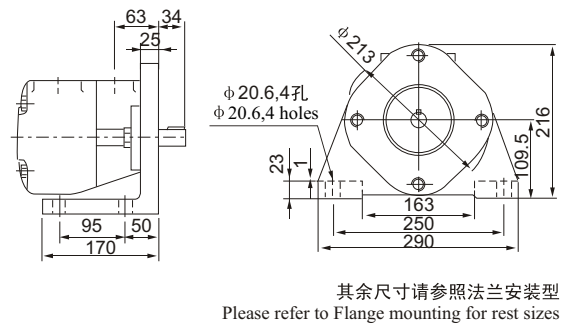
SQP1脚座安装型 SQP1 foot mounting



SQP2法兰安装型 SQP2 Flange mounting

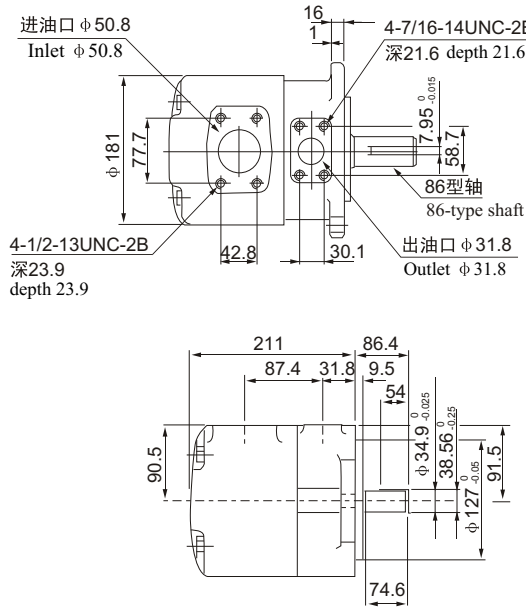


SQP2脚座安装型 SQP2 foot mounting



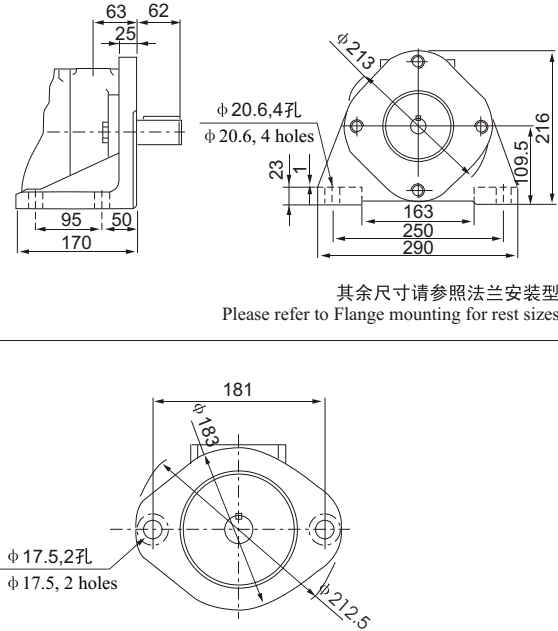
安装连接尺寸 Installation sizes

SQP3法兰安装型 SQP3 Flange mounting

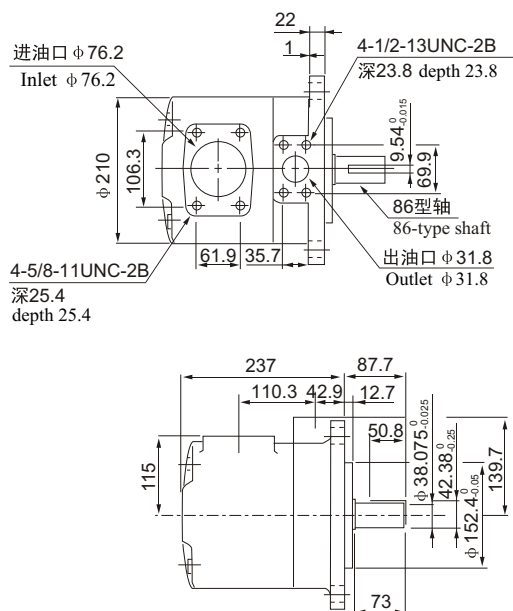


其它轴伸尺寸请参见53页
Please refer to shaft extension sizes in page 53 for rest sizes

SQP3脚座安装型 SQP3 foot mounting

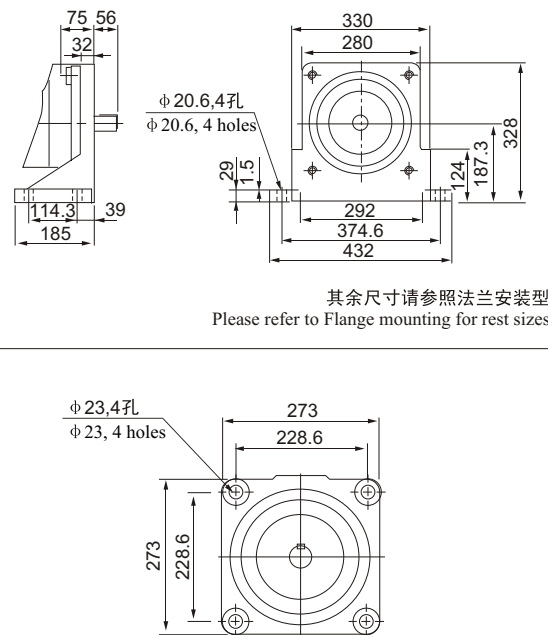


SQP4 法兰安装型 SQP4 Flange mounting



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

SQP4 脚座安装型 SQP4 foot mounting



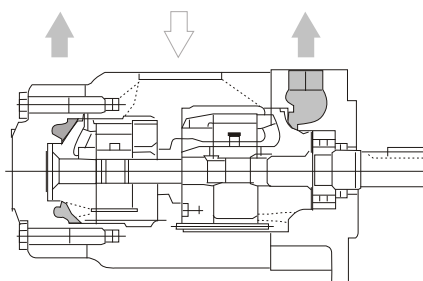
SQP系列叶片泵

SQP series vane pumps

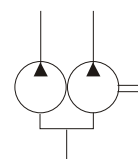


SQP系列双联泵 SQP series double vane pumps

产品外观 Shape



功能符号
Functional signs



型号说明 Model descriptions:

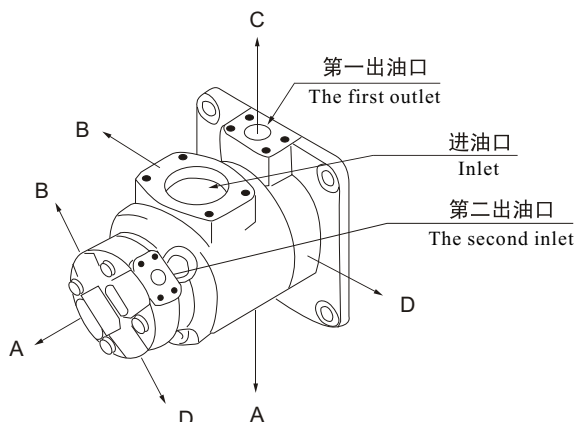
(F3)	SQP32	35	17	86	CD	(F)	-(LH)	18
前注 Front marks	系列号 Code of series	▲排量代号轴端泵 Displacement code Shaft end pump	▲排量代号盖端泵 Displacement code cover end pump	轴伸形式 Shaft extension	油口位置 Pump position	安装型式 Mounting type	旋转方向 Direction of rotation	设计号 Designing No.
无标记- 使用抗磨液 油或磷酸酯液 No mark-anti- wear hydraulic oil or Sul phosuccinic ester fluid F11- 使用水乙二 醇液 F1-adopt water -glycol F3- 使用油包水乳 化液 F3- water-in-oil emulsion	SQP21 SQP31 SQP32 SQP41 SQP42 SQP43	10,12,14,15,17, 19,21 21,25,30,32,35, 38,45 21,25,30,32,35, 38,45 42,45,50,57,60, 66,75 42,45,50,57,60, 66,75 42,45,50,57,60, 66,75	2,3,4,5,6,7,8,9, 10,11,12,14 2,3,4,5,6,7,8,9, 10,11,12,14 10,12,14,15,17, 19,21 2,3,4,5,6,7,8,9, 10,11,12,14 10,12,14,15,17, 19,21 21,25,30,32,35, 38,45	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	无标记- 法兰安装型 No marks- Flange mounting F- 脚座安装型 foot mounting	(从泵的轴端看) (from shaft end pump) LH-逆时针旋转 LH-counterclockwise rotation 无标记 逆时针旋转 No marks counterclockwise rotation	18

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

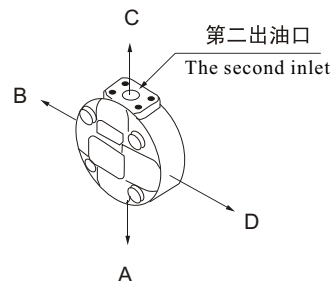
The rated displacement USgpm is under the conditions of 1200r/min and 0.69Mpa(100psi).

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



SQP43



油口位置 Pump position		所有系列 (除SQP43外) All series (except for SQP43)	SQP43
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

SQP系列叶片泵

SQP series vane pumps



主要工作参数 Main operating parameters

泵壳号 Pump shell No	轴端泵 (第一出油口) Shaft end pump (the first outlet)			盖端泵 (第二出油口) Cover end pump (the first outlet)			最高转速 Max driving speed (r/min)	最低转速 Mini driving speed (r/min)												
	●排量代号 Displacement codes	几何排量 Geometric displacement (ml/r)	最大压力 Max pressure (Mpa)	●排量代号 Displacement codes	几何排量 Geometric displacement (ml/r)	最大压力 Max pressure (Mpa)														
SQP21	10	32.5	▲17.2 F3=16.9 F11=15.7	2	7.5	▲13.8 F3=6.9 F11=13.8	1800 F3=1200 F11=1200	600												
	12	38.3		3	10.2															
	15	43.3		4	12.8	▲17.2 F3=6.9 F11=13.8														
	15	46.7		5	16.7															
	17	52.5		▲17.2 F3=16.9 F11=15.7	6	19.2			▲20.7 F3=6.9 F11=15.7											
	19	59.2			7	22.9														
21	65.0	8	26.2																	
SQP31	21	66.7	9		28.8	▲15.7 F3=6.9 F11=13.8														
	25	79.2	10		31.0															
	30	95.0	11		35.0															
	32	100	12	37.9	▲13.8 F3=6.9 F11=13.8v															
	35	109	14	44.2																
	38	118	▲17.2 F3=16.9 F11=15.7	10 12 14	32.5 38.3 43.3		▲17.2 F3=6.9 F11=15.7													
45	140	15 17 19 21				46.7 52.5 59.2 65.0														
SQP41	42							134	▲17.2 F3=16.9 F11=15.7	21 25 30 32 35 38	66.7 79.2 95.0 100 109 118									
	45							140				15 17 19 21	46.7 52.5 59.2 65.0							
	50							156						▲17.2 F3=16.9 F11=15.7	21 25 30 32 35 38	66.7 79.2 95.0 100 109 118				
	57							178									15 17 19 21	46.7 52.5 59.2 65.0		
	60		189	▲17.2 F3=16.9 F11=15.7	21 25 30 32 35 38		66.7 79.2 95.0 100 109 118													
	66	207	15 17 19 21			46.7 52.5 59.2 65.0														
75	237	▲17.2 F3=16.9 F11=15.7						21 25 30 32 35 38	66.7 79.2 95.0 100 109 118											
SQP42	42									134	▲17.2 F3=16.9 F11=15.7	21 25 30 32 35 38	66.7 79.2 95.0 100 109 118							
	45									140				15 17 19 21	46.7 52.5 59.2 65.0					
	50									156						▲17.2 F3=16.9 F11=15.7	21 25 30 32 35 38	66.7 79.2 95.0 100 109 118		
	57			178	15 17 19 21		46.7 52.5 59.2 65.0													
	60		189	▲17.2 F3=16.9 F11=15.7		21 25 30 32 35 38				66.7 79.2 95.0 100 109 118										
	66	207	15 17 19 21					46.7 52.5 59.2 65.0												
	75	237							▲17.2 F3=16.9 F11=15.7										21 25 30 32 35 38	66.7 79.2 95.0 100 109 118
	SQP43	42																		
45		140									15 17 19 21	46.7 52.5 59.2 65.0								
50		156											▲17.2 F3=16.9 F11=15.7	21 25 30 32 35 38	66.7 79.2 95.0 100 109 118					
57		178														15 17 19 21	46.7 52.5 59.2 65.0			
60		189			▲17.2 F3=16.9 F11=15.7		21 25 30 32 35 38											66.7 79.2 95.0 100 109 118		
66		207		15 17 19 21		46.7 52.5 59.2 65.0														
75		237	▲17.2 F3=16.9 F11=15.7					21 25 30 32 35 38		66.7 79.2 95.0 100 109 118										

●在1200r/min和0.69Mpa (100psi) 下的额定排量USgpm. ▲0.5秒内, 允许超过最高压力10%的瞬时压力。

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

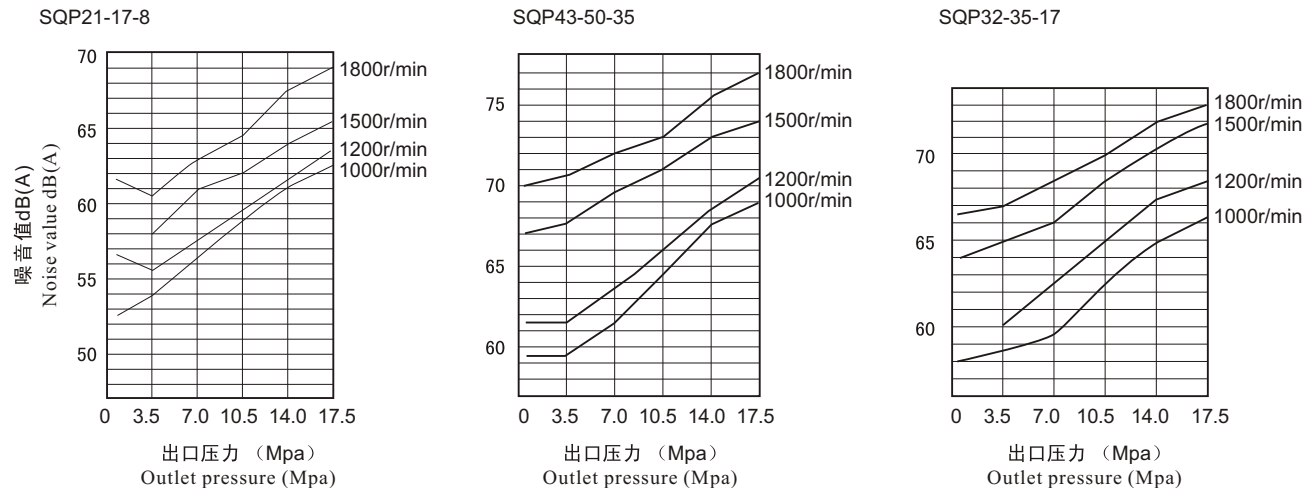
▲The instantaneous pressure is allowed to exceed 10% of the Max pressure for within 0.5 seconds long.

工作参数 Operating parameters

泵壳号 Pump shell No	流量及功率特性 Flow and power features		重量kg Weight kg
	轴端泵 Shaft end pump	盖端泵 Cover end pump	
SQP21	数据与SQP2相同 The same data with SQP2	数据与SQP1相同 The same data with SQP1	31.5kg
SQP31	数据与SQP3相同 The same data with SQP3		46kg
SQP32	数据与SQP3相同 The same data with SQP3	数据与SQP2相同 The same data with SQP2	48kg
SQP41	数据与SQP4相同 The same data with SQP4	数据与SQP1相同 The same data with SQP1	74kg
SQP42		数据与SQP2相同 The same data with SQP2	80kg
SQP43		数据与SQP3相同 The same data with SQP3	88.5kg

噪音数据 测试条件: ISO VG32 (50°C) 距离泵盖1m

Noise data testing conditions: ISOVG32 (50°C) the distance is 1m from pump cover.



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。

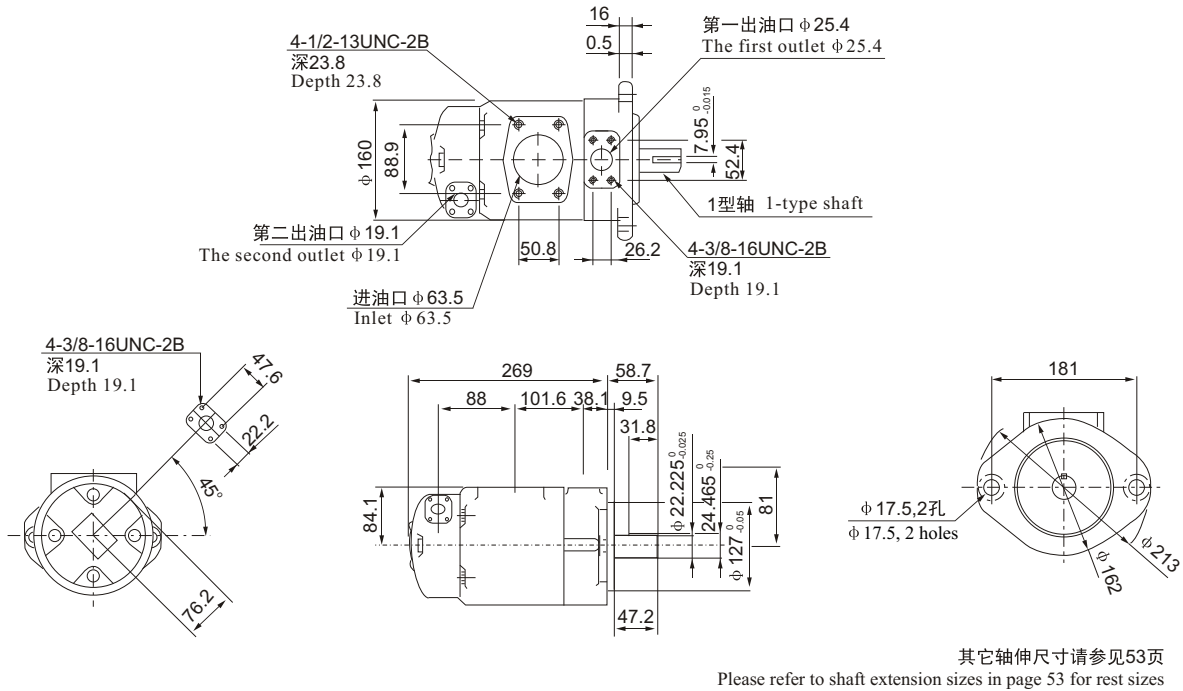
While working under high temperature, the viscosity shall not be less than 13cst, and the temperature shall not exceed 99°C. Otherwise, the service lifetime of pump core components and sealing parts will be reduced.

SQP系列叶片泵

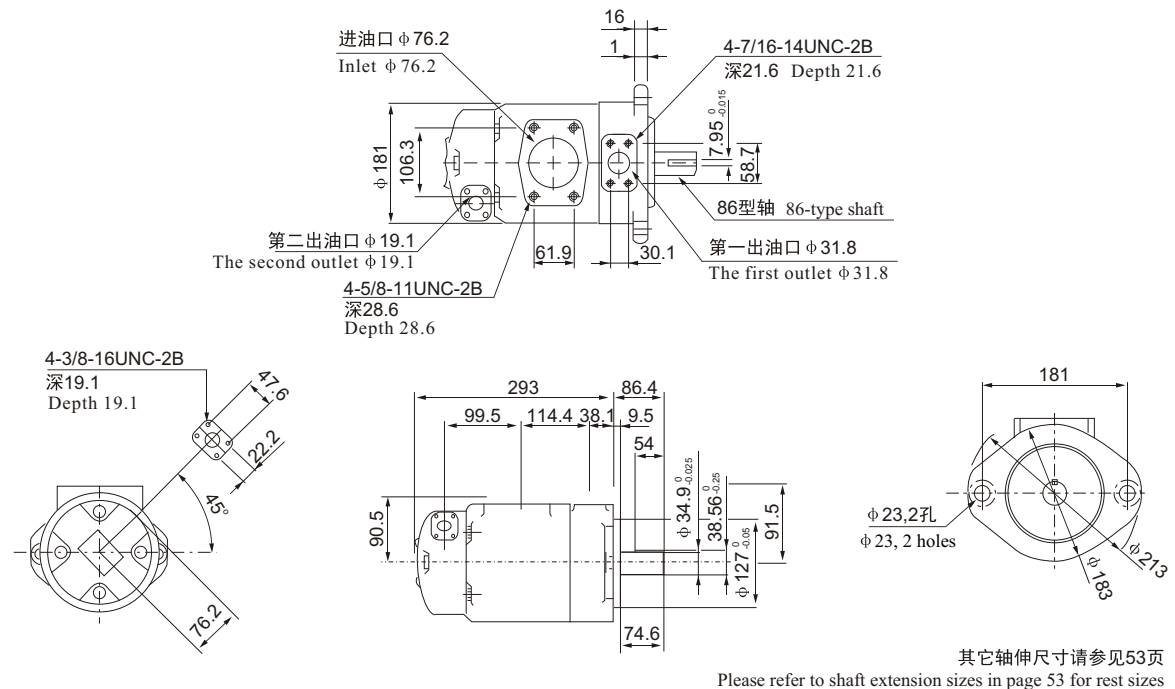
SQP series vane pumps

安装连接尺寸 Installation sizes

SQP21法兰安装型 SQP21 Flange mounting

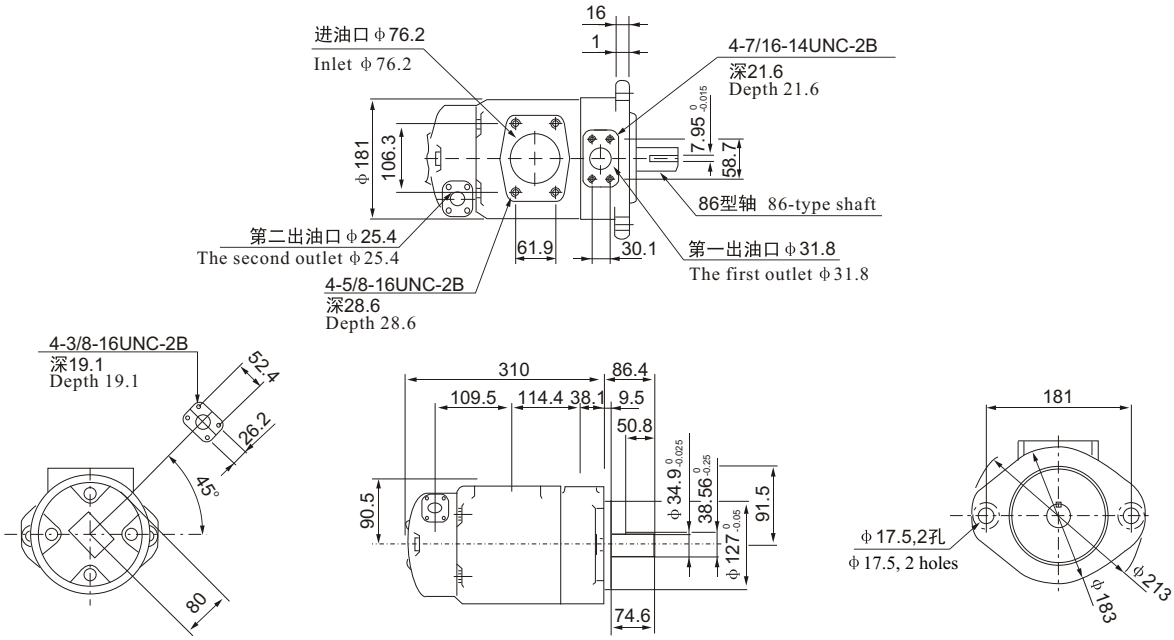


SQP31 法兰安装型 SQP31 Flange mounting

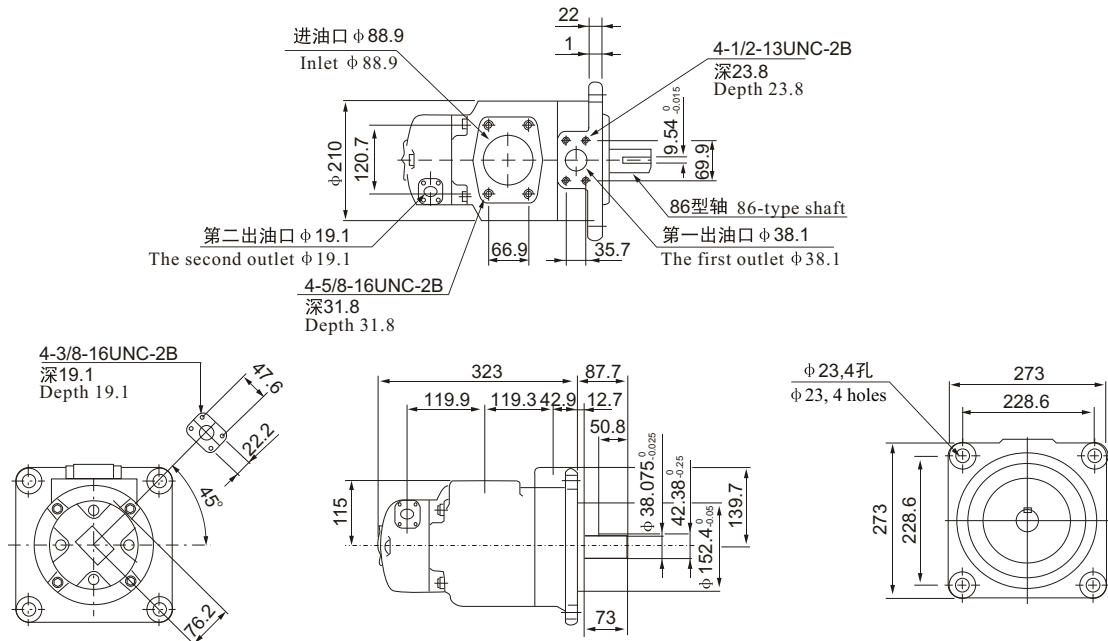


安装连接尺寸 Installation sizes

SQP32法兰安装型 SQP32 Flange mounting



SQP41法兰安装型 SQP41 Flange mounting



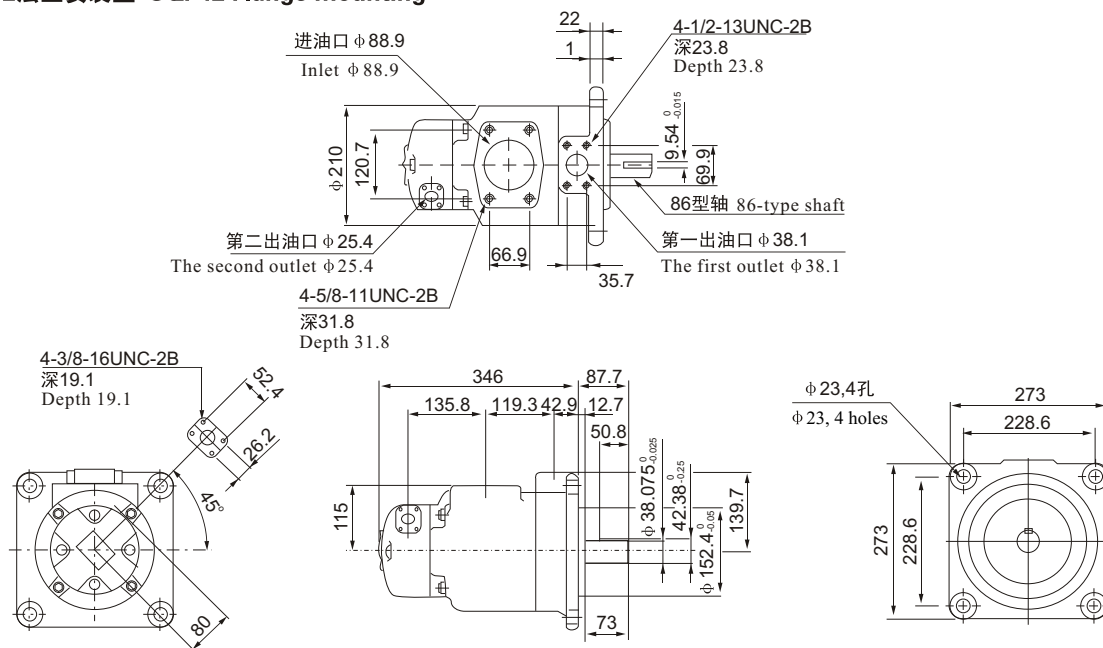
SQP系列叶片泵

SQP series vane pumps

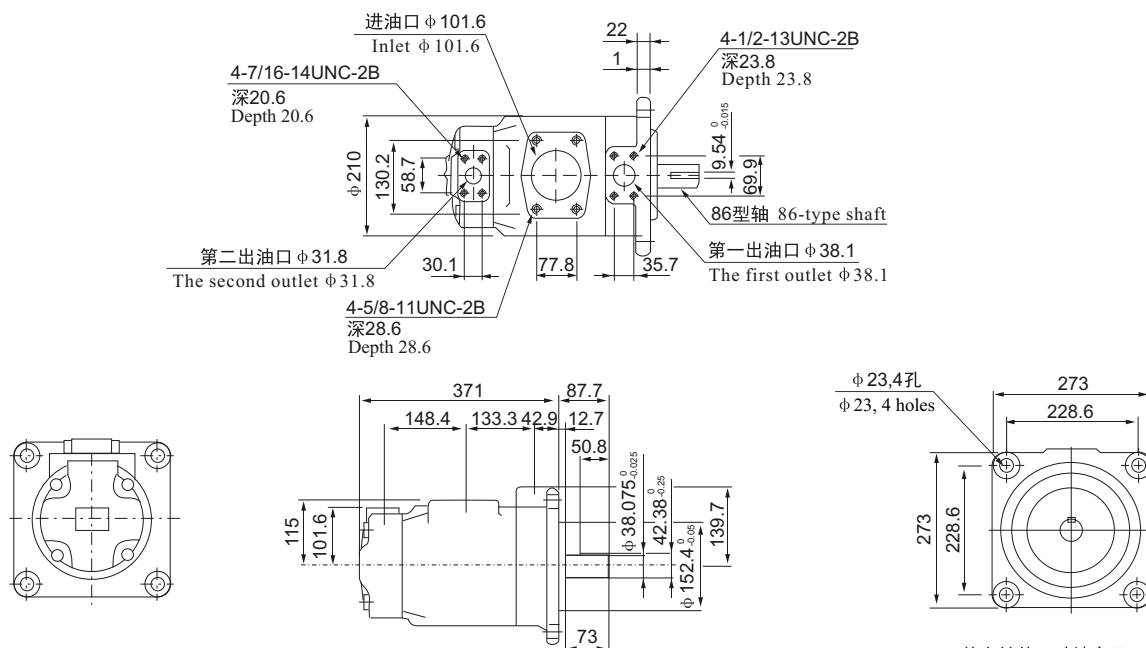


安装连接尺寸 Installation sizes

SQP42法兰安装型 SQP42 Flange mounting



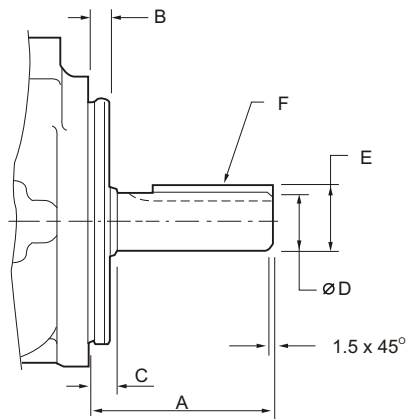
SQP43 法兰安装型 SQP43 Flange mounting



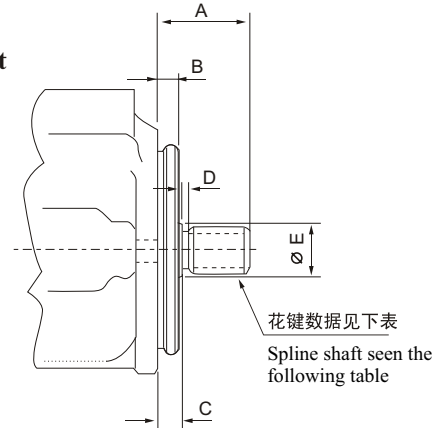


V/VQ/SQP系列叶片泵可选轴伸形式 V/VQ/SQP series vane pump shaft extension type

平键直轴
Straight shaft



花键轴
Spline shaft



平键直轴 Straight shaft with key

型号 Models			轴伸代号 Shaft code	A	B	C	D	E	F键宽×长 F key width × length
V	VQ	SQP							
20V	20VQ	SQP1	1	59	9.53	12.1	22.23/22.20	24.5/24.4	4.76×32
25V 2520V	25VQ 2520VQ	SQP2	1	59	9.53	11.1	22.23/22.20	24.5/24.4	4.76×32
		SQP21	86	78	9.53	11.1	25.37/25.35	28.3/28.1	6.36×50.8
35V 352*V	35VQ 352*VQ	SQP3	1	73.2	9.53	11.1	31.75/31.70	35.36/34.10	7.94×38.1
		SQP3*	86	86	9.53	11.1	34.90/34.67	38.6/38.3	7.94×54
45V 45**V	45VQ 45**VQ	SQP4	1	62	12.7	14.22	31.75/31.70	35.36/34.10	7.94×28.5
		SQP4*	86	87.4	12.7	14.22	38.07/38.05	42.4/42.1	9.54×50.8

花键轴 Spline shaft

型号 Models		轴伸代号 Shaft code	A	B	C	D	E	花键数据（见下表） Spline data (see the following table)
V	VQ							
20V	20VQ	151	41.1	9.53	11.1	3.9	27.8	A
25V 2520V	25VQ 2520VQ	11	44.5	9.53	11.1	3.9	27.8	A
35V 352*V	35VQ 352*VQ	11	58.7	9.53	11.1	6.35	35.1	C
45V 45**V	45VQ 45**VQ	11	61.9	12.7	14.3	9.7	39.6	C

花键数据表（渐开线花键） Spline data (Involute spline)

花键数据标记 Spline data tags	齿数 Teeth No	径节 Diametral pitches	大径 Major diameters	成形直径 Forming diameters	小径 Minor diameters	平齿根配合 Match with flat teeth
A	13	16/32	22.17 22.15	19.03	18.63 18.35	大径配合 Match with major diameter
C	14	12/24	31.7 31.67	27.2	26.99 26.64	大径配合 Match with major diameter

安装、使用与维修

工作介质

1、防止杂物混入

液压油液的污染可引起叶片泵故障和降低其寿命。应对液压油液实行有效的污染控制，使污染度保持在NAS10级以内（使用25μ滤网以概略评估等级即可）。同时，应在吸入口端安装一个150μ（150目）的油箱用滤油器（其额定通流量应不小于泵流量的两倍）。滤油器离油箱底部应大于50mm。

2、油液种类

本系列叶片泵适应于多种油液。包括石油系液液压油、含水液液压油、合成液液压油等。使用不同种类的油液，油泵的额定压力和最高转速亦不同（见技术参数表）。为提高油泵性能，延长使用寿命，推荐使用抗磨液液压油（如ISOVG32或ISOVG46）。油液粘度30cst时为最佳（保持温度在10~60℃范围内，最佳为35~50℃）。

泵的安装

1、油泵支架座要牢固，刚性好。并能充分吸收振动。

2、泵和电机轴同轴度应控制在0.1mm以内。最大角度误差应小于0.2°；尽可能采用柔性联轴节。以避免因弯曲或侧向力引起的任何应力。

3、油泵的吸入管道通径应不小于泵入口通径，吸油滤油器流量应不低于油泵流量的两倍。

4、泵安装在油箱液面以上时，吸入口离油液液面高度应小于0.5m，最好使吸油口低于油箱液面，吸入口正压力 $\geq 0.03\text{MPa}$ 。

5、当泵的工作转速 $< 1200\text{r/min}$ 时，安装时应将泵吸入口向上，以便起动时易于吸油。环境温度较低时，推荐使用VG32抗磨液液压油。

6、注意进油口处连接法兰、接头以及整个吸油管道必须严格密封，防止漏气，否则将会引起噪声，系统振动，并使油箱内产生大量泡沫，降低泵的寿命。

7、油箱应设有隔板，用来分隔回油带来的气泡与脏物。回油管应伸到油面以下(不得直接和泵的入口相连)，防止回油气溅引起气泡。

泵的启动

1、油泵启动前，应检查进、出油口。切勿搞错方向，泵旋转方向应与标牌指示方向一致。

2、初次启动最好向泵里注满油，并用手转动联轴节，旋转力量应感觉均匀，灵活。

3、在初次工作或长期停车后再启动时，泵可能吸油较困难，为此，应预先在输出口端安装排气阀或稍松开输出口端的接头以排出空气，并尽可能地在空载情况下以点动方式对泵进行启动。

泵的维护

1、用户配管时，残留在油箱与管道中的铁屑与残渣尤其是布条等，往往会引起油泵发生故障，必须彻底清除。

2、安全阀调节压力不应过高，一般为泵额定压力的1.1倍。

3、保持油温在10-60℃范围内(最佳为35~50℃)内，尤其避免高温连续运行，否则油泵寿命将大大缩短。必要时设置加热器和冷却器予以调节油温。

4、保持正常油面高度，配管和油缸的容量很大时，最初虽然放入足够量的油，在启动之后，由于进入管道和油缸，也会发生油面下降，滤油器露出油面，因此，必须再一次补油。在使用过程中，还会发生泄漏，应该在油箱中设置油面计，以便经常观察和补油。

5、要定期检查油液性能，达不到规定要求时要及时予以更换，并清洗油箱。

6、滤油器应经常清洗，以保证油液吸入通畅。

7、油泵工作一段时间后，由于振动等原因，安装螺钉或法兰螺钉可能松动，要注意检查，并拧紧防松。

8、如需改变油口方向时，先退出相关泵体螺钉，确保油泵前后泵体之间无缝的情况下，用力旋转后泵，并保证泵芯与后泵体一起旋转至所需位置，然后对角逐渐拧紧。

9、由于本系列叶片泵内脏件采用组合式结构，因此正常维修只需更换泵芯即可。更换时要小心，应注意检查密封圈是否平整，防止切边，拧紧外壳体连接螺钉时，应按对角方向，用力均匀，逐渐拧紧。



Installation, Operation and Maintenance

Working medium

1. To prevent debris mixed into the medium

Hydraulic fluid contamination will cause vane pump failure and reduce its lifetime. Effective pollution control of hydraulic fluid shall be taken to keep the pollution level within class NAS10, which can be evaluated roughly with 25u filter mesh. Meanwhile, an immersion filter with the specification of 150u, whose rated flow shall be not less than twice of the one of pump, shall be installed on the suction port of the pump with the distance more than 50mm from the bottom of the tank.

2. Hydraulic fluid type

These series vane pumps adapt to a variety of hydraulic fluids, including mineral oil (petroleum series hydraulic fluid), water-based hydraulic fluid, synthetic hydraulic fluid, etc. Adopting different kind of hydraulic fluid, the rated pressure and maximum rotation speed of oil pump will be different as shown in the technical parameters sheet. The anti-wear hydraulic oil, such as the type of ISOVG32 or ISOVG46, is recommended for the purpose to improve the performance of oil pump and extend its service life. The optimal oil viscosity should be 30cst, when the temperature ranges 10~60°C with the optimal range of 35~50°C.

Installation

1. The supporting of oil pump shall be firmly fixed with strong rigidity, and shall absorb vibration fully.
2. The shaft concentricity between pump and motor should be controlled within 0.1mm. Maximum angle deviation shall be less than 0.2°. Adopt flexible couplings as much as possible to avoid any stress causing by bending or lateral force.
3. The nominal diameter of pump suction pipe shall be not less than the nominal diameter of pump inlet port. The flow of suction filter shall be not less than twice of the flow of oil pump.
4. In the case when the pump is installed higher than the fluid level of fuel tank, the height of suction inlet port shall be less than 0.5m from the fluid level. It will be better to make the suction port lower than the tank fluid level and the positive pressure of suction greater than 0.03Mpa.
5. In the case when the pump operating rotation speed <1200r/min, the inlet port of pump shall be mounted upwards for easy suction of oil during start up. If the ambient temperature is low, it is recommended to adopt anti-wear hydraulic oil of VG32 type.
6. Note that the flanges, the connectors and the suction pipelines around the inlet port must be hermetically sealed with no air leakage. The air leakage will cause noise and vibration of system, and will generate a large number of bubbles within the fuel tank, which will reduce the service lifetime of the pump.
7. The fuel tank should set a clapboard to separate the bubbles as well as dirty debris from returning fluids. The returning pipe shall be immersed under the fluid level, which is forbidden to directly connecting to the pump inlet port, to prevent producing bubbles by returning air and fluid.

Start up

1. Check the inlet and outlet ports before start up the oil pump. Make sure that the rotation direction of pump is consistent with the direction of indicator.
2. Before first time start up, please fill the pump fully with hydraulic oil, and rotate the coupling by hand with evenly strength until flexible.
3. There will be possible difficulty in oil absorption of pump during the first time start up or re-start up after long-time stop. Considering this respect, the outlet port of the pump shall loose its connecting fittings or install discharge valve for the purpose of discharging the air in advance. Also, it is recommended to start up pump in jog mode with no load as much as possible.

Maintenance

1. The remaining scrap iron and especially fabric residues in the fuel tank and pipelines after user piping, which will cause failure of pump, must be cleaned up.
2. The relief pressure of safety valve shall not be too high, but usually 1.1 times of rated pressure of the pump.
3. Keep the temperature of oil around 10~60°C with optimal range of 35~50°C. Pay particular attention to avoid continuous overheating operation, which will reduce pump service lifetime greatly. If necessary, heater or cooler should be set to adjust the temperature of hydraulic fluid.
4. Keep the fluid level high enough regularly. After start up, the hydraulic fluid will run through into the pipeline and cylinder, if which space is quite large enough, then the filter will expose out of the declining fluid level, although the amount of fluid is enough at first. So it is necessary to charge fluid again. An oil level indicator should be set in fuel tank for regular observation and oil recharge, as there also will be possible leakage in operation.
5. Check the performance of hydraulic fluid regularly. Replace promptly those hydraulic fluid failed to meet the requirements, and clean the fuel tank.
6. The filter should be cleaned regularly to ensure smoothly suction of hydraulic fluid.
7. Check and tight regularly the mounting bolts and flange bolts, as which will loose because of vibration after operation for a period of time.
8. In the case to adjust the direction of oil port, the concerning bolts that is to connect pump casings should be screwed out first, and make sure there is seamless between front pump and back pump when rotating the back pump with strength to make the pump core and back pump move together to target position. Finally, screw and tight the bolts back diagonally and gradually.
9. As the internal parts of this series vane pump adopt composite modular structure, so the replacement of pump core will meet the requirement for ordinary maintenance purpose. Note that the sealing ring should be smoothly flattened with no edge cutting. Screw and tight the bolts to connect pump casings with evenly force diagonally and gradually.



普林斯液压

精细品质
Fine Quality

永恒追求
Eternal Pursuit