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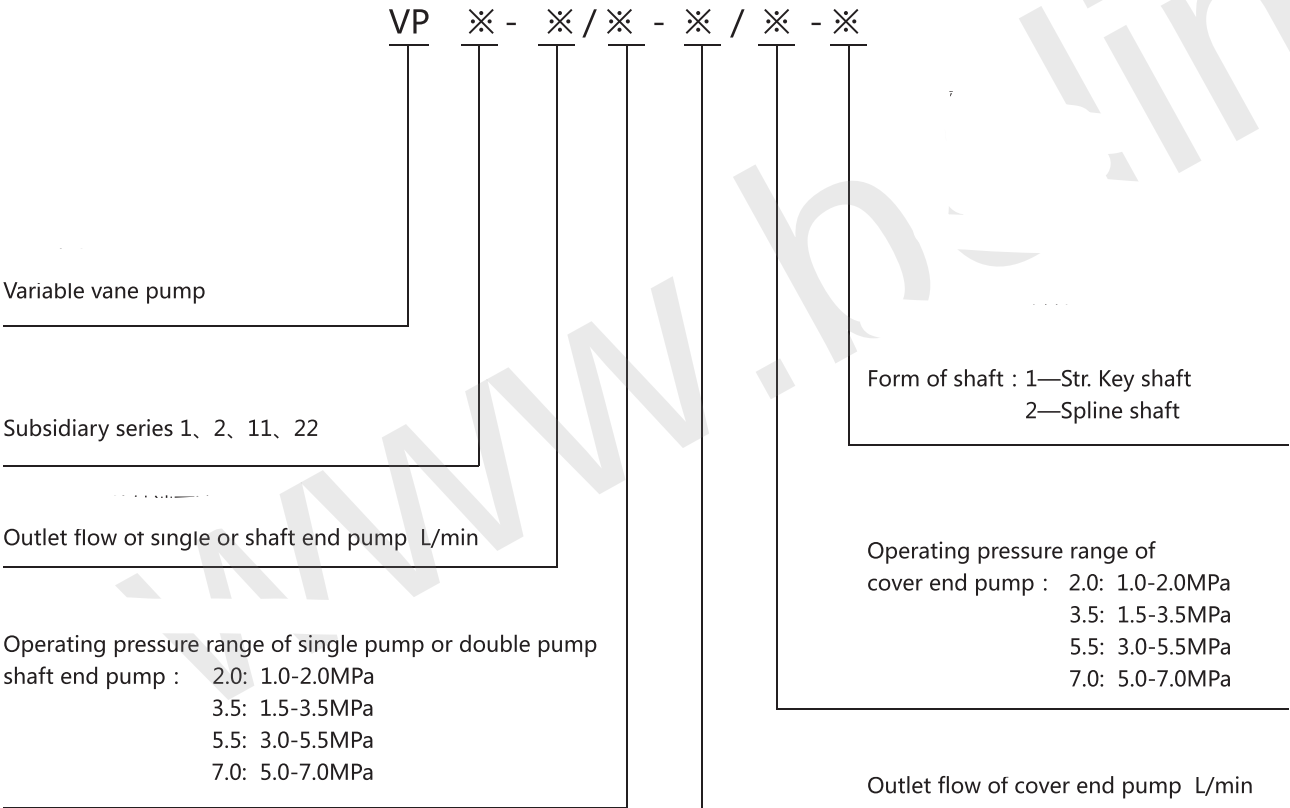
VP Series Variable Displacement Vane Pumps

产品简介 Products Introduction

VP Series variable Displacement vane pumps are the products with limiting pressure, equipped with both pressure and flow adjustment facilities. The outlet flow of the pump can regulate itself automatically according to the load, by which the outlet power and the working speed are in tune with the load. The pump is characterized by high efficiency, saving energy, safety and creditability and so on, and can be used in the hydraulic system for volumetric regulation, for instance, cutting machine tools, pressure and leather machinery, hydraulic station, and so on.



型号说明 Model Code



技术规格 Specifications

Single Pump

型号 Model	最大流量 Outlet flow L/min at 0.35MPa and 1800 r/min	压力调整 Operating pressure range MPa	转速范围 Range of speed r/min	旋转方向（从轴端看） Direction of rotation (Viewed from shaft end)	质量 Weight kg
VP1-8-20	8	1.0—2.0	800-1800	顺时针 Clockwise	5
VP1-8-35		1.5—3.5			
VP1-8-55		3.0—5.5			
VP1-8-70		5.0—7.0			
VP1-12-20	12	1.0—2.0			
VP1-12-35		1.5—3.5			
VP1-12-55		3.0—5.5			
VP1-12-70		5.0—7.0			
VP1-15-20	15	1.0—2.0			
VP1-15-35		1.5—3.5			
VP1-15-55		3.0—5.5			
VP1-15-70		5.0—7.0			
VP1-20-20	20	1.0—2.0			9
VP1-20-35		1.5—3.5			
VP1-20-55		3.0—5.5			
VP1-20-70		5.0—7.0			
VP2-30-20	30	1.0—2.0			
VP2-30-35		1.5—3.5			
VP2-30-55		3.0—5.5			
VP2-30-70		5.0—7.0			
VP2-40-20	40	1.0—2.0			
VP2-40-35		1.5—3.5			
VP2-40-55		3.0—5.5			
VP2-40-70		5.0—7.0			

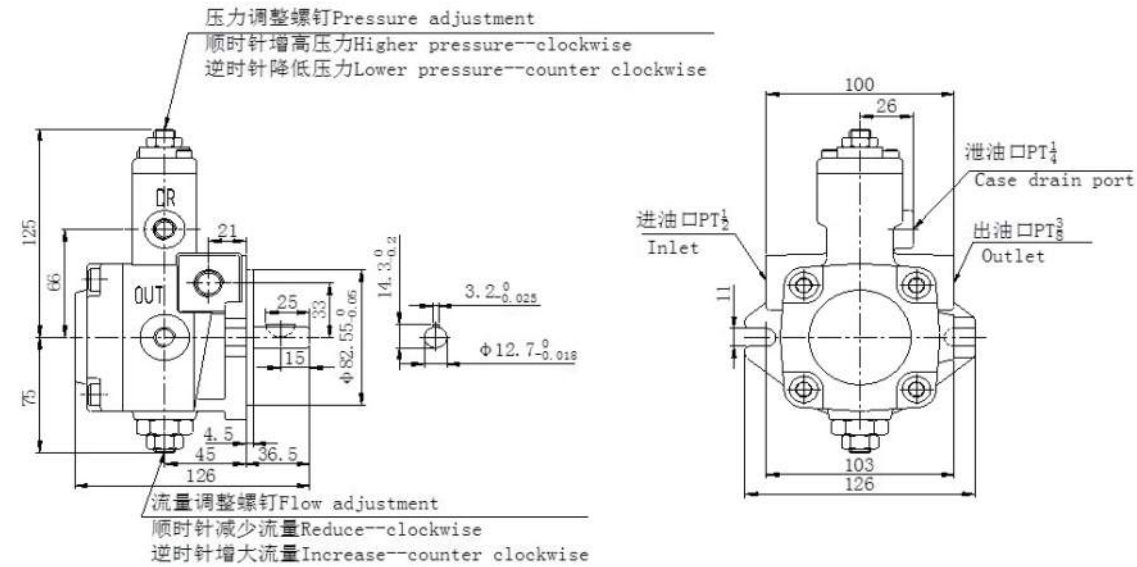
Double Pumps

型号 Model	轴端泵流量 Outlet flow of shaft end pump	盖端泵流量 Outlet flow of cover end pump
VP11	8、12、15、20	8、12、15、20
VP22	30、40	30、40

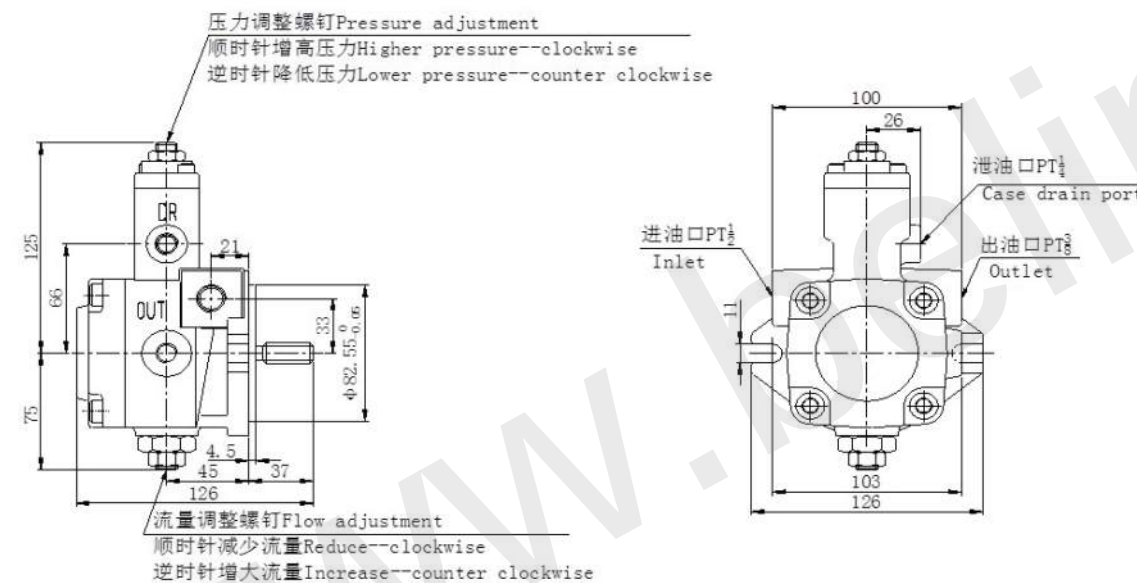
安装联接尺寸 Install Connection Dimensions

Single Pump

· VP1 (1- 平键轴 Str. Key shaft)



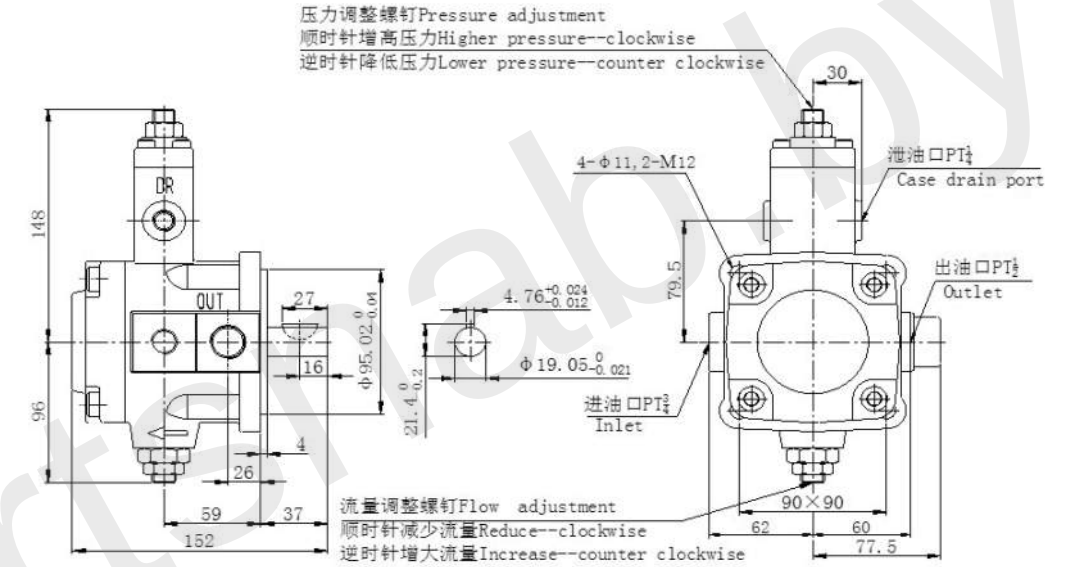
· VP1 (2- 花键轴 Spline shaft)



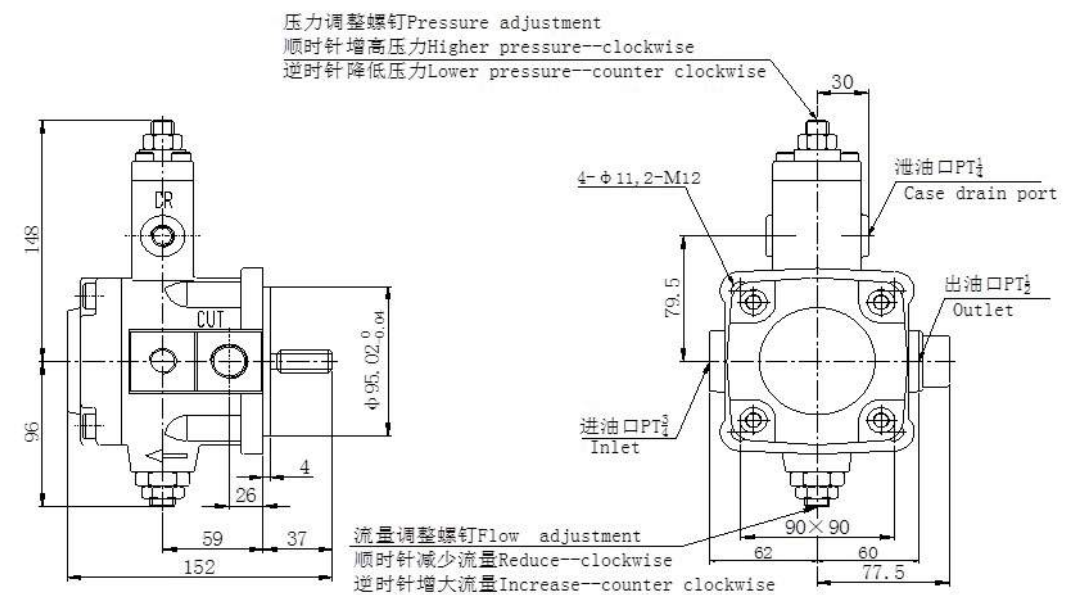
According to the US ANSI B92.1 specifications Class of accuracy: Class 5

模 数	Module	D. P. 16/32
压力角	Pressure Angle	30°
齿 数	Number of Teeth	9
节圆直径	Pitch Diameter	$\phi 14.2875$
最大直径	Maximum Diameter	$\phi 15.875_{-0.05}^0$
最小直径	Minimum Diameter	$\phi 11.811$ (MAX)

· VP2 (1- 平键轴 Str. Key shaft)



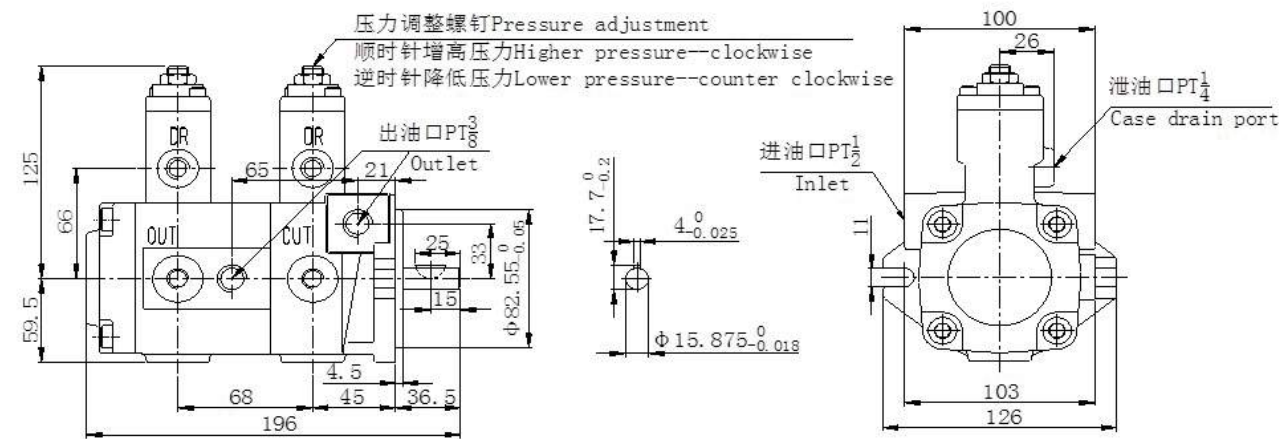
· VP2 (2- 花键轴 Spline shaft)



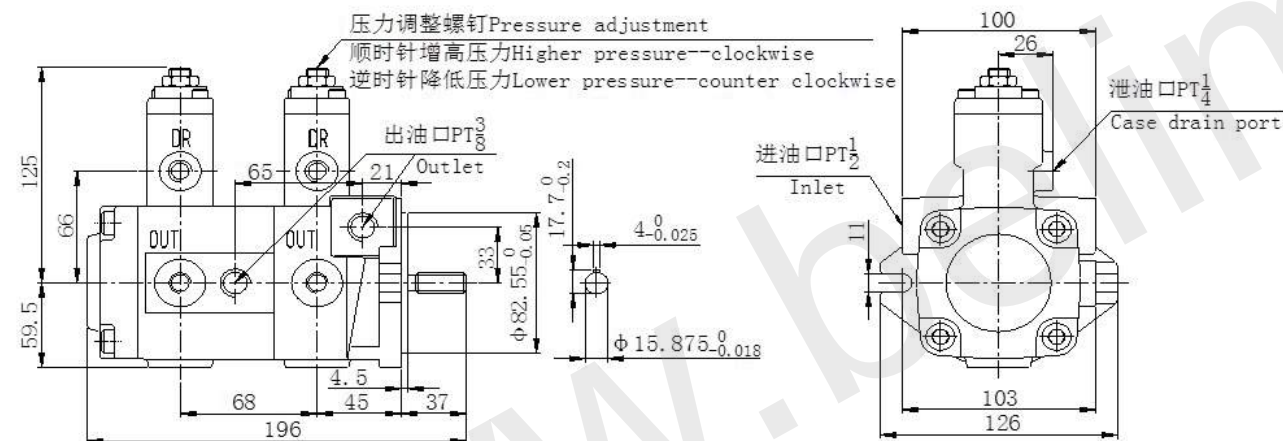
According to the US ANSI B92.1 specifications Class of accuracy: Class 5

模 数	Module	D. P. 16/32
压力角	Pressure Angle	30°
齿 数	Number of Teeth	9
节圆直径	Pitch Diameter	$\phi 14.2875$
最大直径	Maximum Diameter	$\phi 15.875_{-0.05}^0$
最小直径	Minimum Diameter	$\phi 11.811$ (MAX)

- 双联泵 Double Pumps
- VP11 (1- 平键轴 Str. Key shaft)



- VP11 (2- 花键轴 Spline shaft)

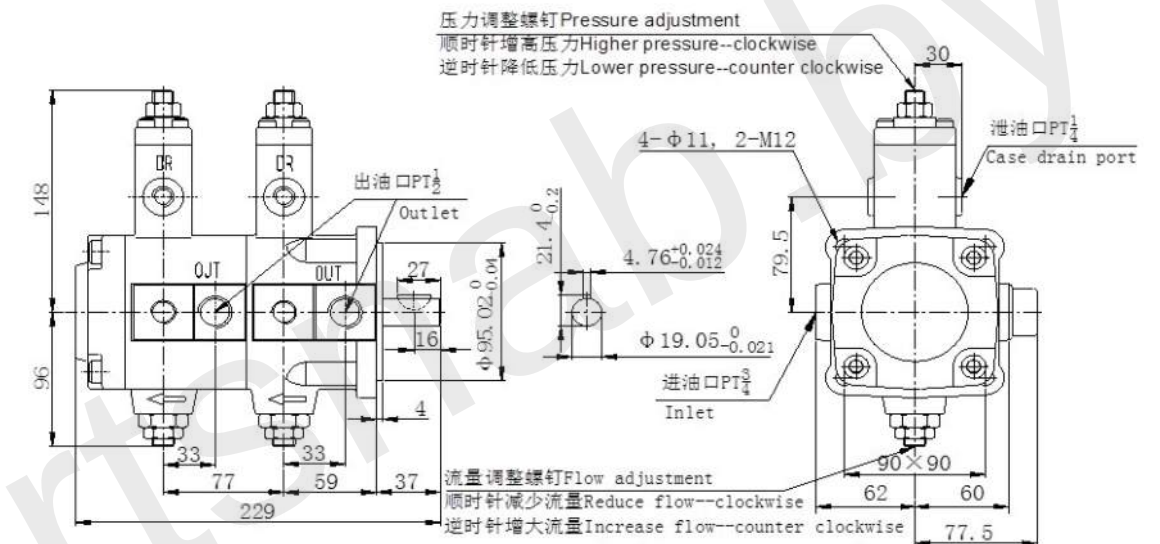


依美国ANSI B92.1规范 精度等级: 5级

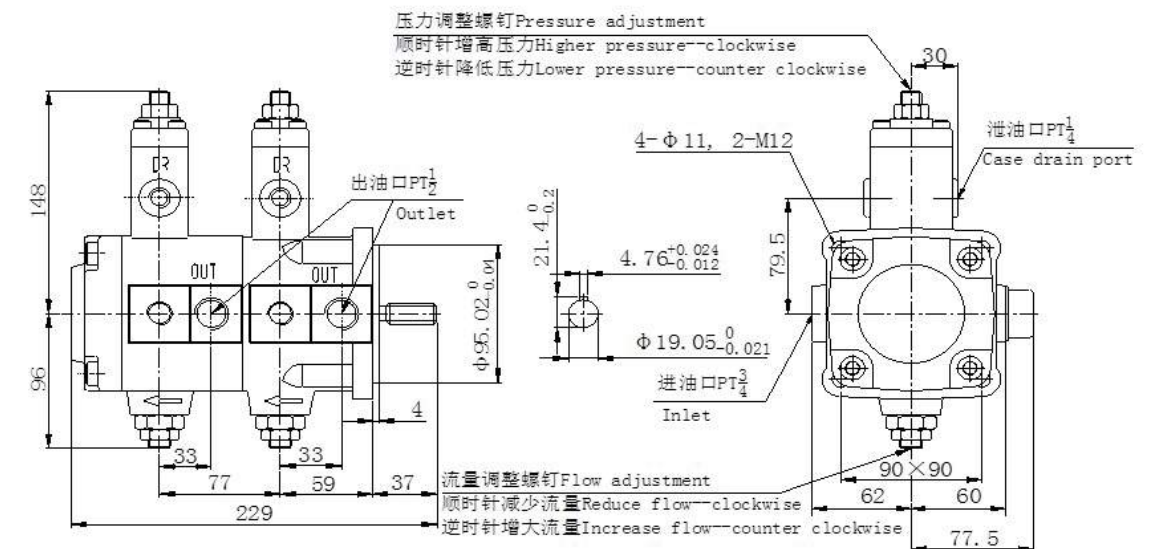
According to the US ANSI B92.1 specifications Class of accuracy: Class 5

模 数	Module	D.P. 16/32
压力角	Pressure Angle	30°
齿 数	Number of Teeth	9
节圆直径	Pitch Diameter	φ 14.2875
最大直径	Maximum Diameter	φ 15.875 ⁰ _{-0.05}
最小直径	Minimum Diameter	φ 11.811 (MAX)

- VP22 (1- 平键轴 Str. Key shaft)



- VP22 (2- 花键轴 Spline shaft)



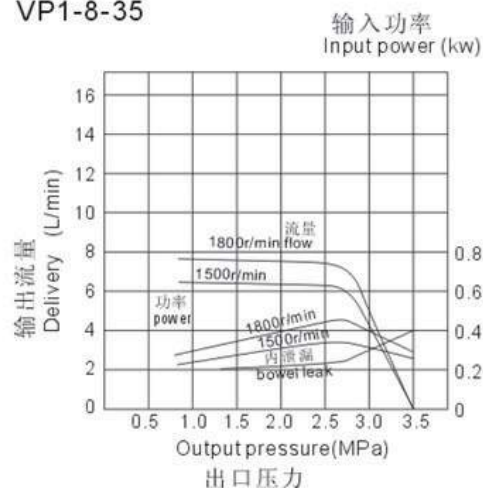
依美国ANSI B92.1规范 精度等级: 5级

According to the US ANSI B92.1 specifications Class of accuracy: Class 5

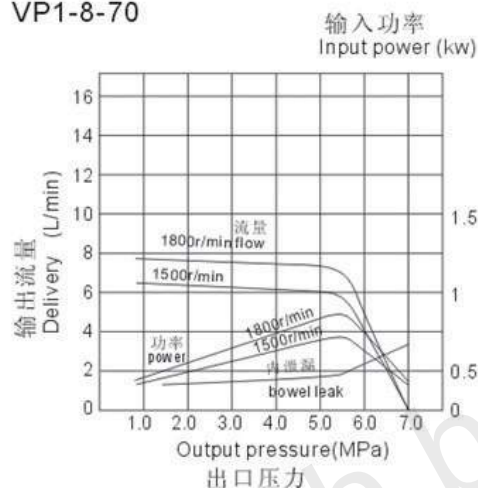
模 数	Module	D.P. 16/32
压力角	Pressure Angle	30°
齿 数	Number of Teeth	9
节圆直径	Pitch Diameter	φ 14.2875
最大直径	Maximum Diameter	φ 15.875 ⁰ _{-0.05}
最小直径	Minimum Diameter	φ 11.811 (MAX)

特性曲线 Characteristic Curves

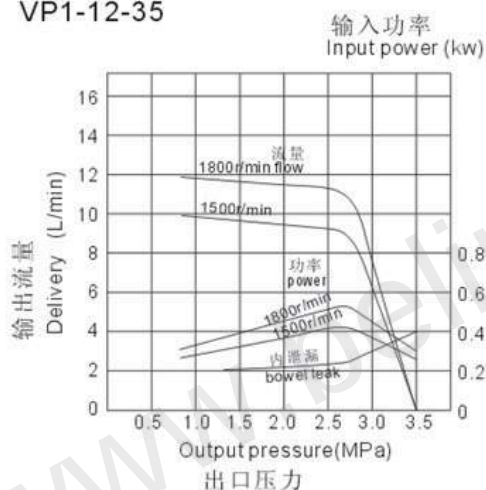
VP1-8-35



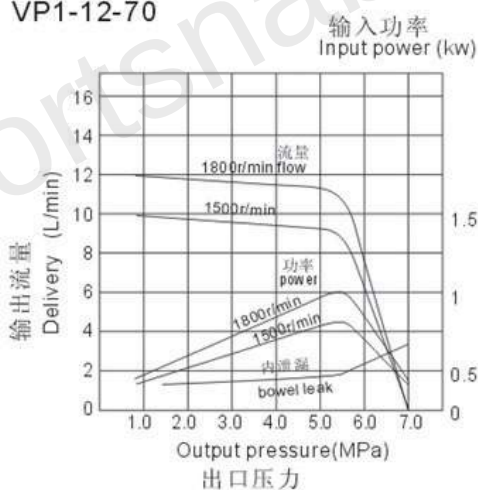
VP1-8-70



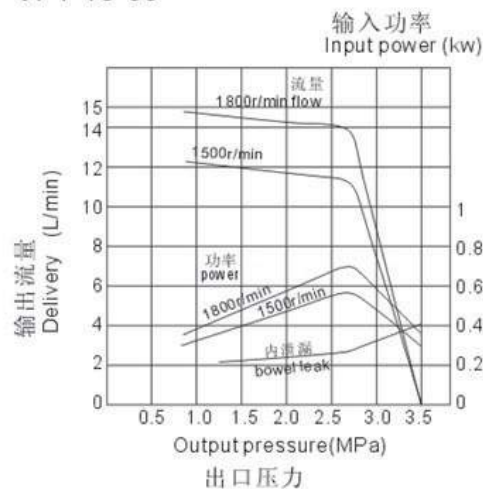
VP1-12-35



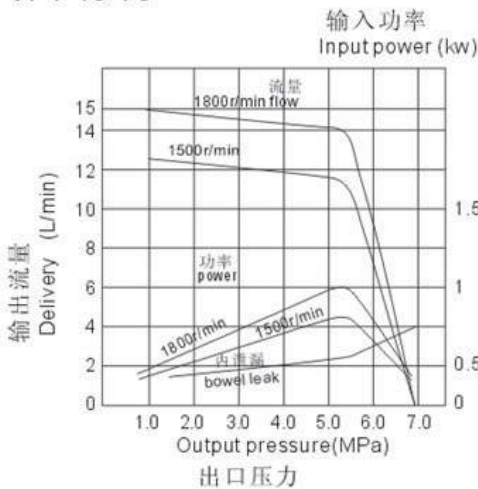
VP1-12-70



VP1-15-35

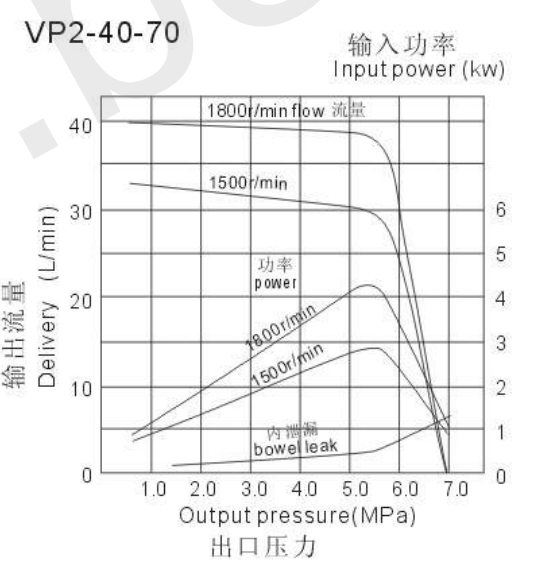
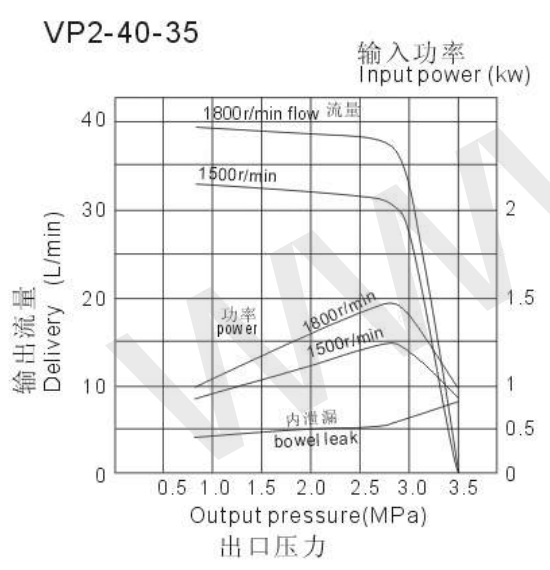
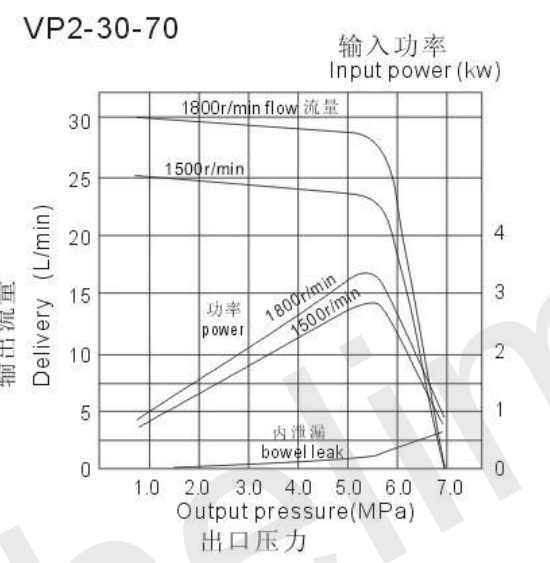
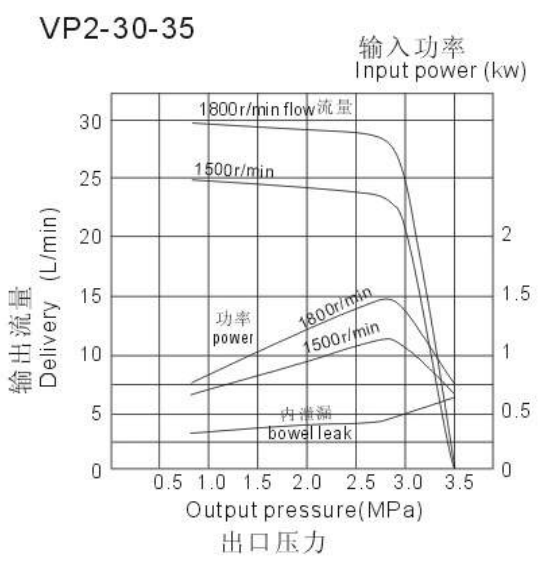
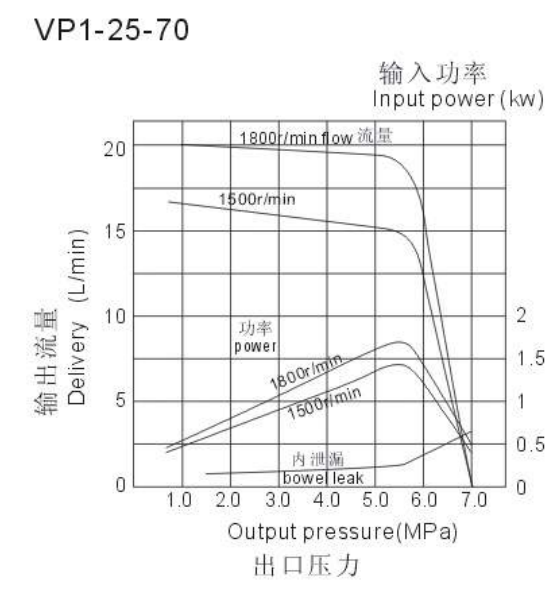
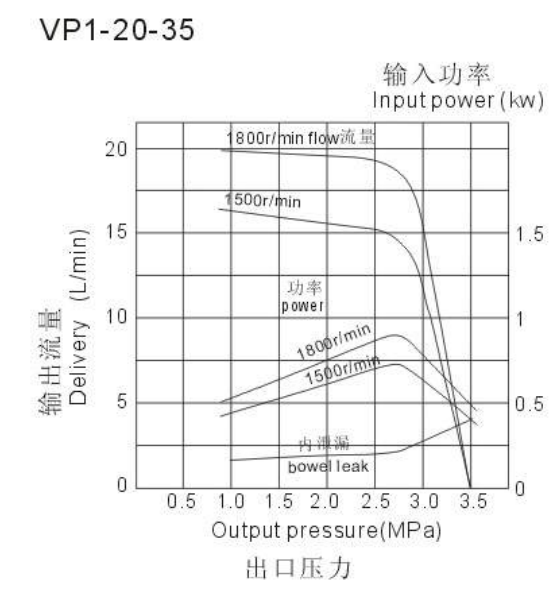


VP1-15-70



安装使用 Installation and Use

1. 泵的转向从轴端看为右转（顺时针方向）。
2. 泵轴要水平安装。泵轴与电机轴的偏芯误差在 0.05mm 以内，角度误差为 1°以内。轴端应避免增加径向和轴向负荷。同时应选用有足够刚性材料作为安装台架。
3. 按泵的油口尺寸配接管径，特别是进油管。进油管路要严格密封，不得漏气；
系统应设有冷却装置（如无冷却装置，则应加大油箱容积）；
油箱应设有隔板，用来分隔回油带来的气泡与脏物；
回油管口应低于液面，浸入油液的最小深度为 50mm，即使在较低的允许液面高度时也是如此，以避免形成泡沫；
泵的吸入口压力为 - 0.03 ~ +0.03MPa；当泵安装在油箱液面以上时，推荐吸入口离油液液面高度小于 500mm。
4. 泄油管务必直接连接到油箱油面下，配管阻力应在 0.03MPa 以下。
5. 出厂时 P-Q 的设定：
 - 流量设定 = 产品样本的指定型号设定的最大流量；
 - 压力设定 = 压力调整范围的最小值。
6. 流量与压力调整：
调整流量与压力时，先松开锁紧螺母，再旋转调整螺钉；调整完毕，拧紧锁紧螺母。
 - 顺时针旋转流量调整螺钉，流量减少；逆时针旋转，流量增加。
 - 顺时针旋转压力调整螺钉，压力增加；逆时针旋转，压力减少。
7. 止推螺栓：
止推螺栓在泵组装时已设定好，请不要调整。
8. 液压油：
 - 请使用 40℃时粘度为 30 ~ 50cSt(ISO VG32) 的液压油。
 - 液压油温度范围为 15 ~ 60℃。初始油温在 15℃以下时，请用低压预运行使油温达到 15℃。
9. 保持油液清洁，管路和油箱必须彻底洗净；系统中应安装精过滤器，建议为 25μm，油液精度等级应在 NSA10 级以内；同时，应在泵吸入口端安装足够容量的滤油器（其额定通流量应大于泵流量的两倍），建议精度为 100μm（150 目），滤油器距油箱底部应大于 50mm。
10. 为保证泵滑动面充分润滑，运行前请向泵体内注油。
11. 初次使用：请在无负载状况下先行反复启动马达，以排出泵内和油管内的空气。当确认油泵排出油后，为确保排除系统中所含的空气，最好继续无负荷运转 10 分钟。对于排气困难的管道，请安装排气阀。
1. Clockwise rotation viewed from shaft end is standard.
2. The pump shaft must be horizontally installed. For proper alignment of pump and electric motor shaft,the eccentricity between them must be kept within 0.05mm and the eccentric angle error between them must be kept within 1 °. The shaft ends avoid increasing radial and axial loads. In addition , please use sufficient rigid material as the mounting bracket.
3. Fix pipes, especially inlet pipes, in accordance with the size of port ; Inlet pipes must be strictly sealed with no leakage; System should be equipped with cooling device (without cooling unit, should increase fuel tank volume); The fuel tank shall be equipped with a diaphragm to separate the bubbles and dirt from the oil; The oil return nozzle should be lower the fluid surface, the minimum depth of 50mm, even in a low, too, when the permissible level of to avoid the formation of bubbles; Inlet port pressure should be -0.03 to +0.03MPa ; In case where the pump is installed on the tank or at the position higher than the tank top cover, the height of the suction port of the pump should be less than 500mm.
4. Drain connection must be piped directly to tank and below the oil level with a back pressure not exceed 0.03MPa.
5. The setting value of P-Q at the factory:
Flow setting : The max. flow as catalogue shown.
Pressure setting : The min. operating pressure range.
6. Flow and pressure adjustment:
For adjusting them, first loosen the tightly locked nut, and then spin screws, After adjustment, tighten the lock nut.
The flow will be reduced when the flow adjusting screw is turned clockwise and increased when anti-clockwise.
The pressure will be increased when the pressure adjusting screw is turned clockwise and reduced when anti-clockwise.
7. Thrust bolt:
The thrust bolts are set when the pump is assembled , Please do not adjust.
8. Hydraulic oil:
Use the hydraulic oil of 30 ~ 50cSt (ISO VG32) at 40℃ .
The hydraulic oil temperature range of 15 ~ 60 ℃ . Initial oil temperature below 15 ℃, please use the low voltage operation to oil temperature 15 ℃.
9. Oil should be kept clean, pipes and tanks must be thoroughly cleaned. Precise filters should be assembled with the advised precision of 25μm in the system, the cleanness level of oil should be within NSA10; Fix the sufficient-volume filter (the rated flow rate should be greater than twice the pump flow)at the inlet of the pump 50mm above the bottom of the tank, with the suggested precision of 100μm(150 mesh).
- 10.To ensure adequate lubrication of the pump sliding surface, please fill the pump body before running.
11. First use :Start up the pump under No-Load condition and repeat to start and stop the motor several times to extract the air from inside of the pump and piping. Then keep a 10 minutes continuous running for a better de-airing. For exhaust pipes, install an exhaust valve.



12 叶片泵转油口安装指南

A guide for adjusting oil port position of vane pump

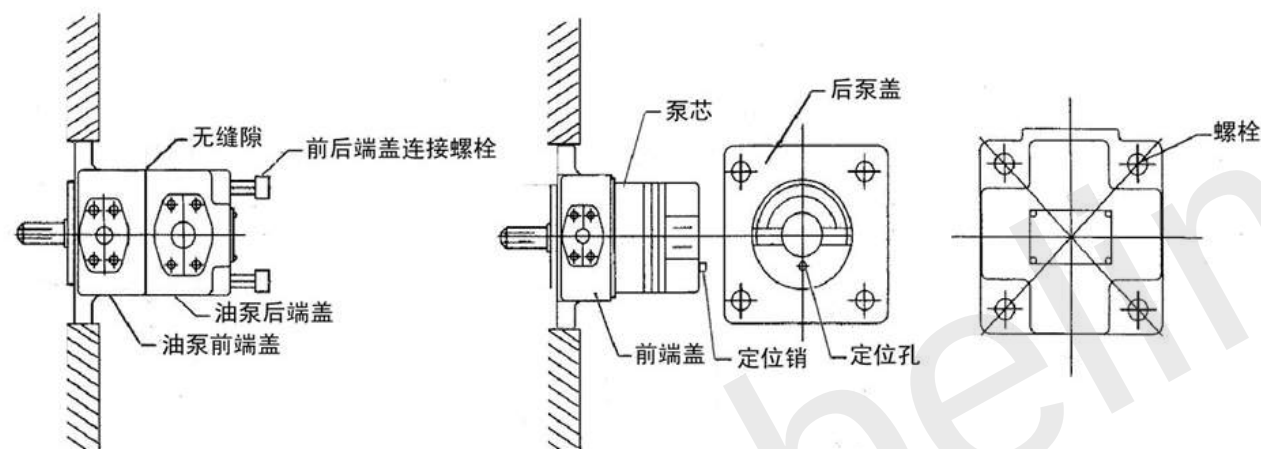
叶片泵在公司检测合格后出厂时，油泵油口位置有不同型式，客户订货可指定油口位置。如果所供的油泵与实际安装所需要的油口位置不符，客户也可进行调整。

调整必须按下列步骤：

1. 固定好油泵，旋开泵相应壳体四个连接螺栓（如图 1，图示为单泵情况）。
2. 确保油泵相应左右体之间脱离缝隙为小于 2mm 的情况下，四个连接螺栓脱离壳体结合处，用力旋转壳体至所需位置（**注意旋转时要保证壳体与泵芯一起旋转**）。

如果将油泵壳体拆卸过，必须将泵芯定位销装入泵腔定位孔，确保壳体与泵芯一起旋转（如图 2），不得损坏密封件，防止漏气。

3. 对角、均匀拧紧四个连接螺栓即可（如图 3）。



警告：若在油泵左右体之间有较大缝隙的情况下旋转壳体，可能会造成泵芯定位销与壳体定位孔错位，导致泵芯的吸入口与泵壳的吸入口不在同一位置或定位销顶住壳体，当启动电机时，会造成油泵工作异常，甚至在短时间（仅几分钟）内被损坏。

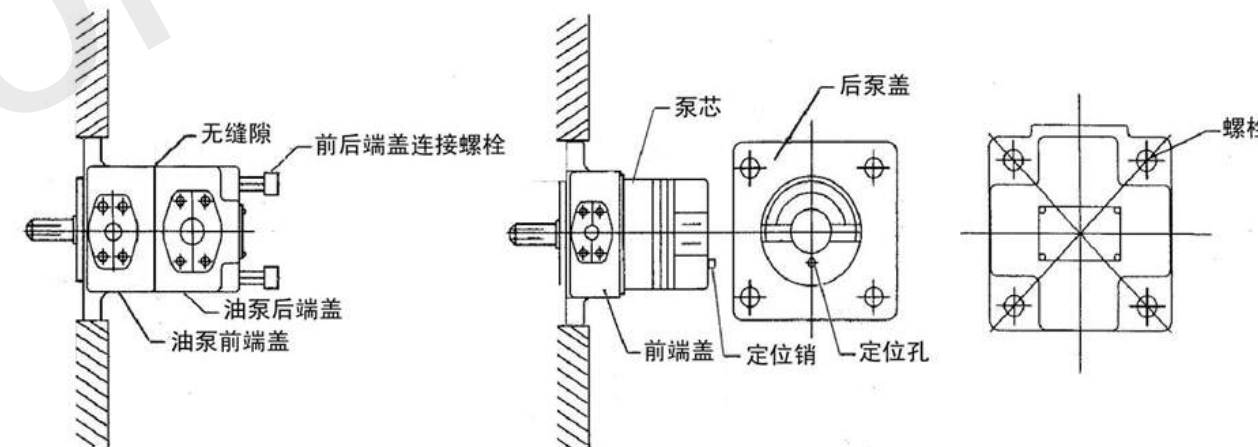
After being tested qualified, our products will be sold, and there are different forms of oil port locations, customers can specify the oil port when ordering. And if the location doesn't conform, you can also adjust it yourself.

And here are the steps:

1. First, fix the pump ,and then loosen the bolts which is used for cooperating pump.
2. A : Ensure the clearance between the pump body less then 2mm and the bolts not interfere with the adjustments. Then rotate the pump body to the desired location (make sure that pump core is moving together with pump body when adjusting)

If the pump had been disassembled before, you must install the dowel the pump core into the location hole which is inside the pump body. Confirm that pump body and pump core can move together. And do not spoil the seals in case of leakage.

3. Finally , tighten the bolts symmetrically and evenly to complete the assembling



Warning: in the case of large gap between pump body, do adjustment may lead to dislocation between the dowel and location hole, which could cause the inlets of pump core and pump body not be in the same location or the dowel will hold the pump body. so as soon as the motor is started, exceptions will occur to the pump which even can be damaged for short time.