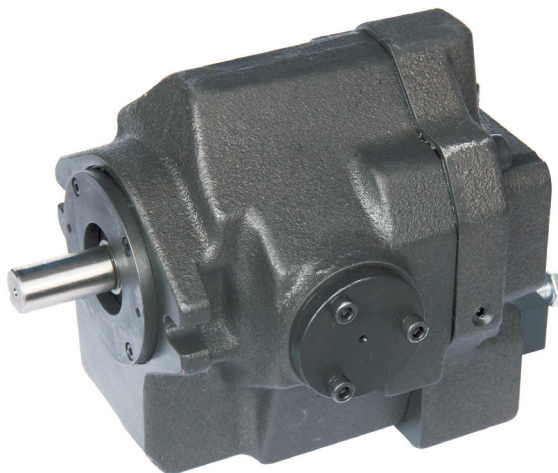


AR Series Variable Displacement Piston Pumps

AR系列變量柱塞泵

■ AR系列變量柱塞泵 AR Series Variable Displacement Piston Pumps



型號 Model	JIS液壓圖形符號 JIS hydraulic graphic symbol	幾何排量 cm³/rev Geometric displacement cm³/rev							最高工作壓力 Maximum working pressure MPa	
		1	2	5	10	20	50	100		150
AR系列 變量柱塞泵 “AR” series variable displacement piston pumps					AR16	AR22				16

■ AR系列變量柱塞泵的液壓油液 The Hydraulic Oil of AR Series Variable Displacement Piston Pumps

■ 液壓油液 The hydraulic oil

可使用溫度為0~60℃時油的粘度範圍為20~400mm²/s、清潔的石油基液壓油。

The viscosity range of the oil is between 20 and 400mm²/s when the applicable temperature is between 0 and 60°C and clean petroleum base hydraulic oil is used here.

■ 防止雜物混入 To prevent the debris from entering

油液的污染會引起泵的故障和縮短壽命的原因。必須注意油液的污染控制，請保持污染度在NAS10級以內。

吸油口必須安裝至少為100μm（150目）油箱過濾器。回油路必須安裝一個小於10μm的管道式濾油器。

The pollution of the oil can lead to the breakdown of pumps and shortness of the service life. The pollution control of the oil must be paid attention to and the pollution degree should be kept within the grade of NAS10.

The tank filter of more than 100μm (150 meshes) must be equipped in the suction orifice and the pipeline filter of less than 10μm must be installed in the return oil line.

■ AR系列變量柱塞泵使用注意事項 The notes for use of AR series variable displacement piston pumps

■ 泵安裝 Installation of pumps

安裝泵時加油口位置應向上。

The oil filler should face upward when installing pumps.

■ 軸的對中 Alignment of the shaft

盡可能使用撓性聯軸節，以避免由于彎曲或推力引起的任何應力。注意，最大允許不同軸度誤差TIR (Total Indicator Reading) 小于0.1mm，最大允許角度誤差小于0.2°。

Use the flexible coupling as much as possible to avoid any stress caused by bending or thrust. Attention, the maximum allowable different axis deviation TIR (total indicator reading) should be less than 0.1mm and maximum allowable angle deviation should be less than 0.2°.

■ 吸入壓力 Suction pressure

泵入口處允許吸入壓力在-16.7~+50kPa之間。吸入口配管的直徑要與所規定的管法蘭的直徑相同。泵的吸入口高度離油箱液面必須小于1m。

The suction pressure in the inlet of pumps is allowed between -16.7 and +50kpa. The diameter of the suction inlet should be the same as that of the specified pipe flange. The distance from the suction inlet of pumps to the liquid level of the tank must be less than 1m.

■ 配管須知 Piping requirements

在吸入口或輸出口使用鋼管時，由于配管對泵的額外負載可產生噪聲的原因。為了避免額外的負載，請使用橡膠軟管。

When steel pipes are used in the suction inlet or outlet, for the piping can generate noise to the additional load of pumps, the rubber hose should be used to avoid the additional load.

■ 吸入管 Suction pipe

如泵高于液面安裝時，吸入管和吸入管濾油器不要高于泵的接口位置，以防止空氣進入吸入管。

If the pump is mounted above the liquid level, the suction pipe and its oil filter should be below the interface location of the pump to prevent air entering the suction pipe.

■ 泄油管 Oil drain pipe

按照下表安裝泄油管路，並應保證泵腔內的壓力保持低于0.1MPa的正常壓力，沖擊壓力小于0.5MPa。

配管長度小于1m，要單獨安裝不要與返油管合流，管末端應浸沒在油中。

The oil drain pipeline is mounted according to the following table and the pressure in the pump chamber should be ensured to keep below the normal pressure of 0.1MPa and the surge pressure should be less than 0.5MPa.

The length of pipes should be less than 1m, they should be mounted individually and not interflow with oil return pipes and their pipe end should immerse in the oil.

■ 泄油管尺寸推薦值 The oil drain pipe size recommendation

型號 Model	配管·接頭尺寸 Piping connector size	配管內徑 Piping inner diameter
AR16, AR22	3/8 (內徑大于Φ8.5) 3/8 (inner diameter more thanΦ8.5)	大于Φ10 More thanΦ10

■ 排氣 Exhaust

為避免泵殼內和管路內的混入空氣引起振動，有必要放氣，為此推薦輸出管路處使用排氣閥。

To avoid the vibration caused by the mixed air in the pump shell and pipeline, it is necessary to deflate and recommended to use the vent valve in the output pipeline.

■ 啟動時注意 Notes when starting

在第一次啟動前，通過加油口將清潔的上作油液注入430cm³。

為了避免第一次啟動時的氣堵現象，調節液壓回路使泵輸出的油直接回油箱，或用換向閥使執行元件在空載情況下運行。

Before the first start, infuse the clean working oil by 430cm³ through the oil filler.

To avoid the air blocking phenomenon for the first start, regulate hydraulic return line to make the output oil of pumps return directly the tank or use the reversing valve to let the actuator run under the no-load state.

■ 壓力、流量的調節 Regulation of pressure and flow

出廠時，泵調整在最大流量和最小壓力。可依工作情況調節流量和壓力。

When leaving the factory, pumps are regulated to keep at the maximum flow and minimum pressure. The flow and pressure can be regulated according to the working condition.

■ 壓力調節 Pressure regulation

順時針調節壓力調節螺釘，壓力增加。

調節螺釘的'轉相應的調節量見下表。

調節後一定要擰緊螺釘。

Regulate the pressure regulating screw clockwise and pressure increases.

Adjustment corresponding to 1 revolution of the screw can be seen in the following table.

The screw must be tightened after regulating.

■ 相當于壓力調節螺釘1轉的調節量

Adjustment corresponding to 1 revolution of the pressure regulating screw

型號 Model	相當于1轉的調節量MPa Adjustment corresponding to 1 revolution MPa
AR16/AR22-FR01B	2.9
AR16/AR22-FR01C	5.4

■ 流量調節 Flow regulation

順時針調節壓力調節螺釘，流量減少。

調節螺釘的1轉相應的調節量見下表。

調節後一定要擰緊螺釘。

Regulate the pressure regulating screw clockwise and flow reduces.

Adjustment corresponding to 1 revolution of the screw can be seen in the following table.

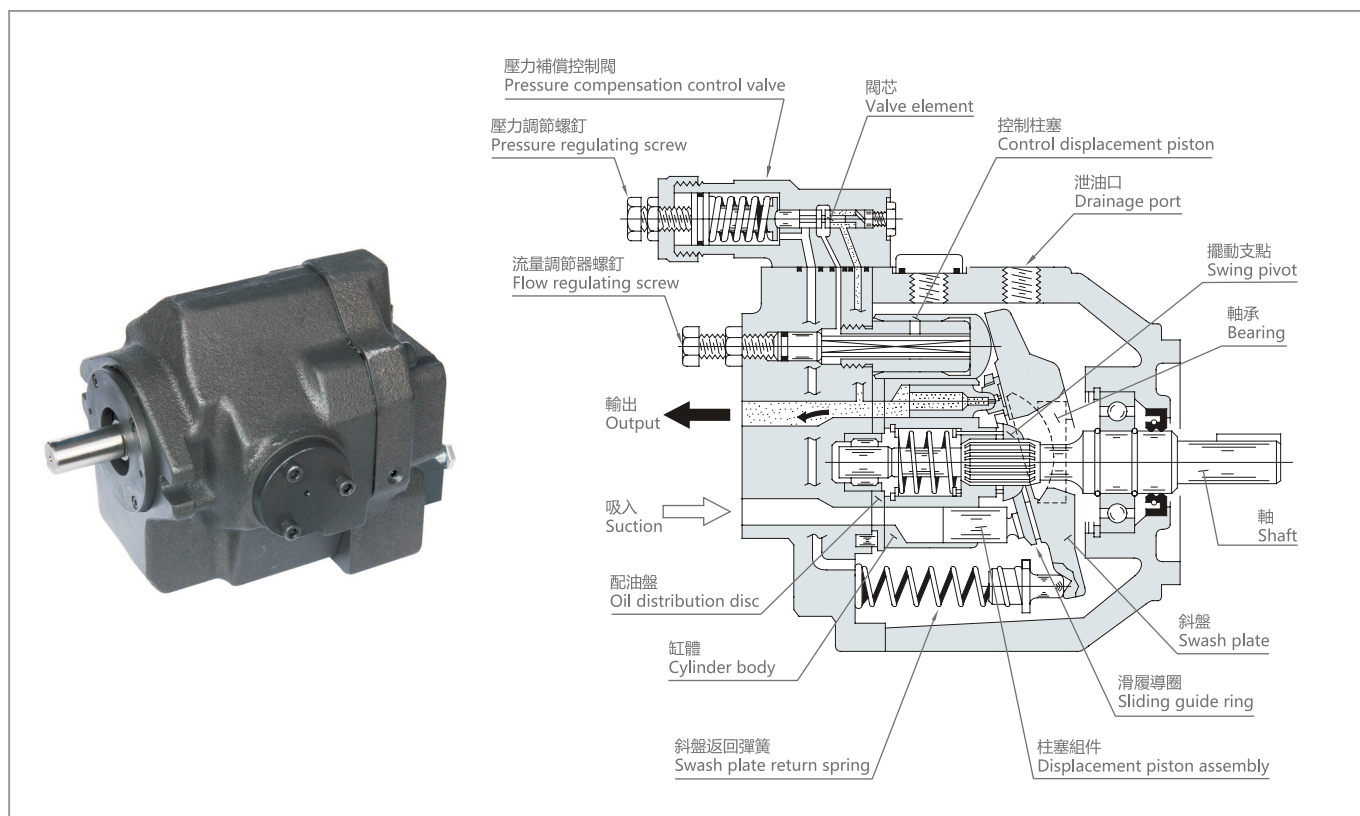
The screw must be tightened after regulating.

■ 相當于流量調節螺釘1轉的調節量

Adjustment corresponding to 1 revolution of the flow regulating screw

型號 Model	相當于1轉的調節量cm³/rev Adjustment corresponding to 1 revolution cm³/rev	最小調節量cm³/rev Minimum regulation flow cm³/rev
AR16	1.5	6.0
AR22	2.1	8.5

■ AR系列變量柱塞泵 “AR” Series Variable Displacement Piston Pumps



■ 特點 Features

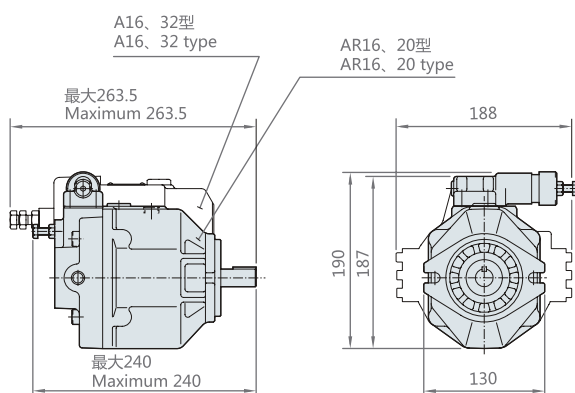
■ 小型、輕量 Small and light

采用小型輕量化泵體設計，AR16比A16型（32設計號型）更小型化。
AR16質量也比A16型更輕。

The small and light pump body design is adopted and ar16 model is smaller than a16 model (32 design type).

Ar16 model is lighter than a16 model, too.

■ AR16和A16型的比較 Comparison between ar16 and a16 model

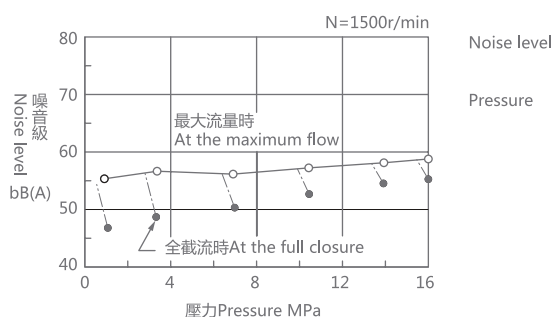


■ 低噪聲 Low noise

采用半圓柱型斜板式軸承，降低了振動、噪聲。並實現了緊湊化。

The half cylinder swash plate type bearing is adopted to reduce the vibration and noise and realize the coMPact.

■ AR16型噪音測定例 Noise measurement example of ar16 model



■ 可靠性高 High reliability

AR系列的主要內藏零件與具有豐富實際成績的A16和A22型泵通用，因此可靠性出群。

The main built-in parts are universal in AR series and a16 and a22 type pumps with abundant actual achievement, so the reliability is outstanding.