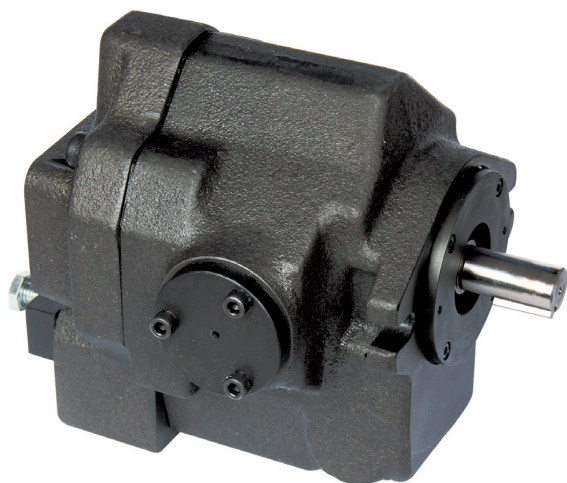


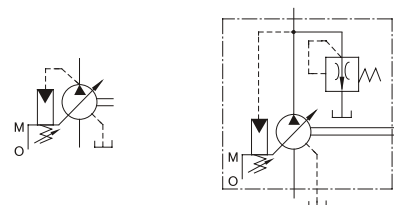
A Series Variable Displacement Piston Pumps – Single Pump, Pressure Compensator Type

A系列单泵、压力补偿控制型

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



JIS油壓圖形符號
JIS oil pressure graphic symbol

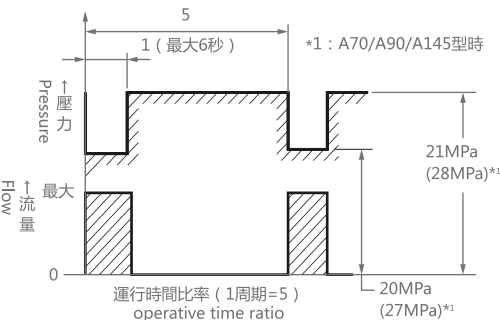


仅A220型
Only a220 type

■ 參數 Parameters

型號 Model	幾何排量 cm ³ /rev Geometric displacement	最小調節量 cm ³ /rev Minimum regulating flow cm ³ /rev	工作壓力 MPa Working pressure MPa		轉速範圍 r/min Rpm range r/min		質量kg Mass kg	
			額定 *2 Rated value	最高 *1 Maximum	最高 Maximum	最低 Minimum	法蘭安裝 Flange installation	底座安裝 Base installation
A10.fr01-※--12	10.0	2	16	21	1800	600	8.5(5.1) ^{*3}	-
A16-※-r-01-※--※-k-32	15.8	4	16	21	1800	600	16.5	18.7
A22-※-r-01-※--※-k-32	22.2	6	16	16	1800	600	16.5	18.7
A37-※-r-01-※--※-k-32	36.9	10	16	21	1800	600	28.0	32.3
A56-※-r-01-※--※-k-32	56.2	12	16	21	1800	600	35.0	39.3
A70-※-r01※s-60	70.0	30	25	28	1800	600	58.5	70.5
A90-※-r01※s-60	91.0	56	25	28	1800	600	72.5	93
A145-※-r01※s-60	145	83	25	28	1800	600	92.5	117.5

- ★ 1. 設定壓力時，必須確保全截流壓力不超過允許的最高工作壓力。
- ★ 2. 泵在高於額定值情況下使用時，泵工作條件應受到限制。例如，如果使用在右圖所示的工作情況，最大流量的運轉時間應限制為'週期的1/5且小於6秒。這條條件可按實際工作壓力、流量（斜盤的傾斜角），有所變化。詳情請和我們聯系。
- ★ 3. () 內的質量表示A10-FR01B。
- ★ 1. When setting the pressure, you must ensure that the full closure pressure doesn't exceed the maximum working pressure.
- ★ 2. When the pump is used on the condition that its value is higher than the rated value, the working condition of the pump should be limited. For example, if the working condition is that showed as the right picture, operative time of maximum flow should be limited to 1/5 of 1 cycle and less than 6 seconds. This condition can be changed according to actual working pressure, flow (tilt angle of incline plate). Please contact us for details.
- ★ 3. Mass in the brace shows that of a10-fr01b.



可提供下述大排量泵。 The following big displacement pumps can be provided.
詳情請和我們聯系。 Please contact us for details.

型號 Type	A220-※-r-01-c-k-10
最高工作壓力 MPa Maximum working pressure MPa	16
幾何排量 cm ³ /rev Geometric displacement cm ³ /rev	219
轉速範圍 r/min Rpm range r/min	600~1500



可提供新產品A45型(45.0cm³ / rev)泵。
詳情請和我們聯系。
The new pumps product of a45 type
(45.0cm³/rev) can be provided.
Please contact us for details.

■ 型號說明 Type instruction

A16-A56型 A16-A56 type

A16	-F	-R	-01	-B	-S	-K	-32
系列號 Series no.	安裝形式 Installation form	旋轉方向 Rotation direction	控制形式 Control form	壓力調節範圍 MPa Pressure regulating range MPa	接口位置 Interface location	軸伸形式 Shaft stretch shape	設計號 Design no.
A16 (15.8cm³/rev)	F：法蘭安裝型	【從軸伸端看】 [see from shaft stretch end] *2 R：順時針方向 （標準） R: clockwise (standard)	01：壓力補償 控制型 01: pressure compensation control type	B：1.2-7 C：1.2-16 H：1.2-21	無標記：軸向 接口 No mark: axial interface S：側面接口 S: side interface	K：平健型 K: flat health type	32
A22 (22.2cm³/rev)	L：底座安裝型			B：1.2-7 C：1.2-16			32
A37 (36.9cm³/rev)	F: flange installation type			B：1.2-7 C：1.2-16 H：1.2-21			32
A56 (56.2cm³/rev)	L: base installation type						32

A10型、A70-A145型 A10 type, a70-a145 type

A70	-F	-R	01	B	S	-60
系列號 Series no.	安裝形式 Installation form	旋轉方向 Rotation direction	控制形式 Control form	壓力調節範圍 MPa Pressure regulating range MPa	接口位置 Interface location	設計號 Design no.
A10 (10.0cm³/rev)	F : 法蘭安裝型 *1 F: flange installation type	【從軸伸端看】 [see from shaft stretch end] *2 R : 順時針方向 (標準) R: clockwise (standard)	01 : 壓力補償 控制型 01: pressure compensation control type	B : 1.2-7 C : 2.0-16 H : 2.0-21	— —	12
A70 (70.0cm³/rev)	F : 法蘭安裝型 L : 底座安裝型			B : 1.2-7 C : 1.5-16 H : 1.8-21 K : 2.0-28	S : 側面接口 S: side interface	60
A90 (91.0cm³/rev)	F: flange installation type					60
A145 (145cm³/rev)	L: base installation type					60

★ 1. A10型泵使用底座安裝型時，請注明下表中的支架組件型號訂購。

1. When a10 type pump use the base installation type, please specify the bracket assembly type in the following table.

安裝支架型號 Installation bracket Model	包含零件 Included parts	質量 kg Mass kg
Lp-1a-10	安裝支架1個 1 installation bracket 六角螺釘2個 2 hex head screw 墊圈2個 2 gaske	2.2

★ 2. 可提供逆時針旋轉泵，詳情請和我們聯系。

2. The anticlockwise rotating pump can be provided. Please contact us for details.

■ 管法蘭組件 Pipe flange assembly

本泵不含管法蘭組件，訂購時注明下表中的組件號（但A10型不使用管法蘭）。

This pump doesn't include the pipe flange assembly and please specify the assembly number in the following table when subscribing (a10 type doesn't use the pipe flange).

泵型號 Pump Model	接口名稱 Interface name	管道法蘭組件號 Pipe flange assembly number		
		Rc(老PT)螺紋型 Rc (old pt) thread type	插焊型 * Insert welding type	對焊型 Butt welding type
A16-※-R-01	吸入口 Suction inlet	F5-06-A-10	F5-06-B-10	F5-06-C-10
A22-※-R-01	輸出口 Output port	F5-06-A-10	F5-06-B-10	F5-06-C-10
A37-※-R-01	吸入口 Suction inlet	F5-10-A-10	F5-10-B-10	F5-10-C-10
A36-※-R-01	輸出口 Output port	F5-10-A-10	F5-10-B-10	F5-10-C-10
A70-※-R-01	吸入口 Suction inlet	F5-12-A-10	F5-12-B-10	F5-12-C-10
	輸出口 Output port	F5-08-A-10	F5-08-B-10	F5-08-C-10
A90-※-R-01	吸入口 Suction inlet	F5-16-A-10	F5-16-B-10	F5-16-C-10
A145-※-R-01	輸出口 Output port	F5-10-A-10	F5-10-B-10	F5-10-C-10

★ 插焊型依據法蘭強度的關係工作壓力有限於低壓，輸出口選擇插焊型時要注意各管法蘭的最高工作壓力。

The flange strength of insert welding type limits the working pressure to low value and when the output port selects the insert welding type the maximum working pressure of each flange need to be paid attention to.



■ 響應特性 Response properties

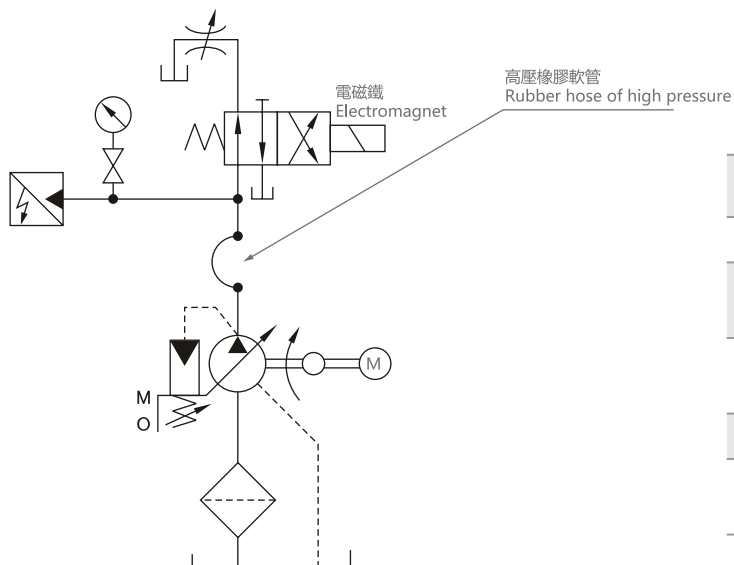
響應特性隨回路和工作條件而異，下示測試實例。

Response properties differ with the return and working condition and the test example is as follows:

■ 測試回路和條件 Test return and conditions

■ 測試結果 Test result

回路
Return



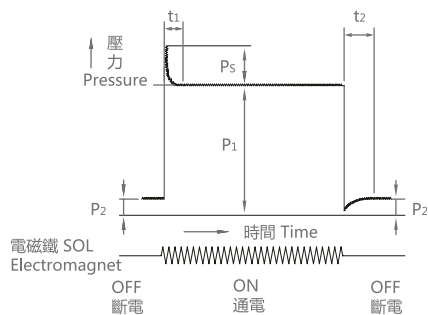
條件
轉速：1500r/min
油液：ISO VG32相當油
油溫：參見右表

Conditions
Revolution speed: 1500r/min
Oil: ISO VG 32 equivalent oil
Oil temperature: refer to the right table

型號 Model	高壓橡膠軟管尺寸 Rubber hose of high pressure
A10	$\frac{3}{8}$ Bx 800mm
A16 A22	$\frac{3}{4}$ Bx 700mm
A37 A56	$\frac{3}{4}$ Bx 2000mm
A70	$\frac{3}{4}$ Bx 3500mm
A90 A145	$\frac{3}{4}$ Bx 3000mm+1 $\frac{3}{4}$ Bx 2000mm

型號 Model	油溫 Oil temperature
A10~A56	50°C (20mm ² /s)
A70~A145	40°C (32mm ² /s)

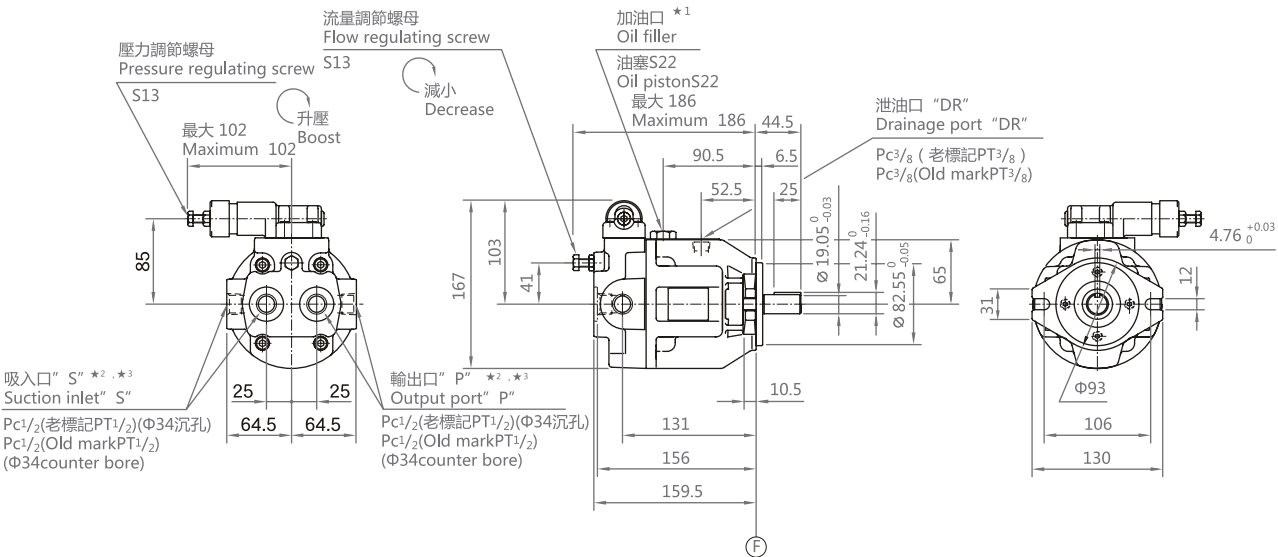
■ 測試結果 Test result



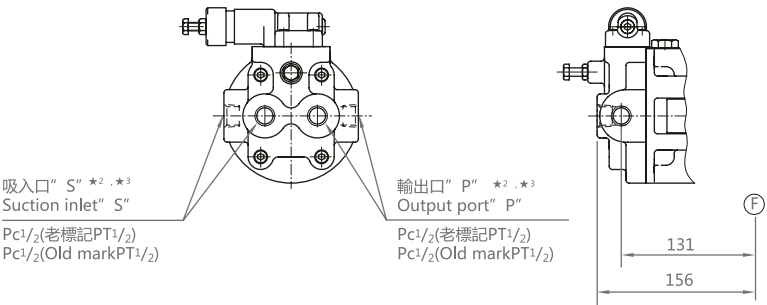
型號 Model	全截流壓力P ₁ MPa Full closure pressure P ₁ MPa	最大流量時的壓力P ₂ MPa Maximum flow pressure p ₂ MPa	響應時間 Ms Response time Ms		上沖壓力P ₁ MPa Uprush pressure P ₁ MPa
			t ₁	t ₂	
A10	21	2	100	75	2.6
A16	16	2	38 *	59 *	3.6
A22	16	2	30 *	72 *	5.9
A37	16	2	40 *	78 *	7.8
A56	16	2	38 *	88 *	7.6
A70	25	2	80	100	7.8
A90	25	3	90	110	7.9
A145	25	3	100	150	8.8

★ A16 ~ A56的響應時間由斜盤傾斜角行程測得。
The response time of a16-a56 is measured by swash plate angle.

A10-FR01※ (法蘭安裝型)
A10-FR01※ Flange installation type
A10-FR01C/H



A10-FR01B

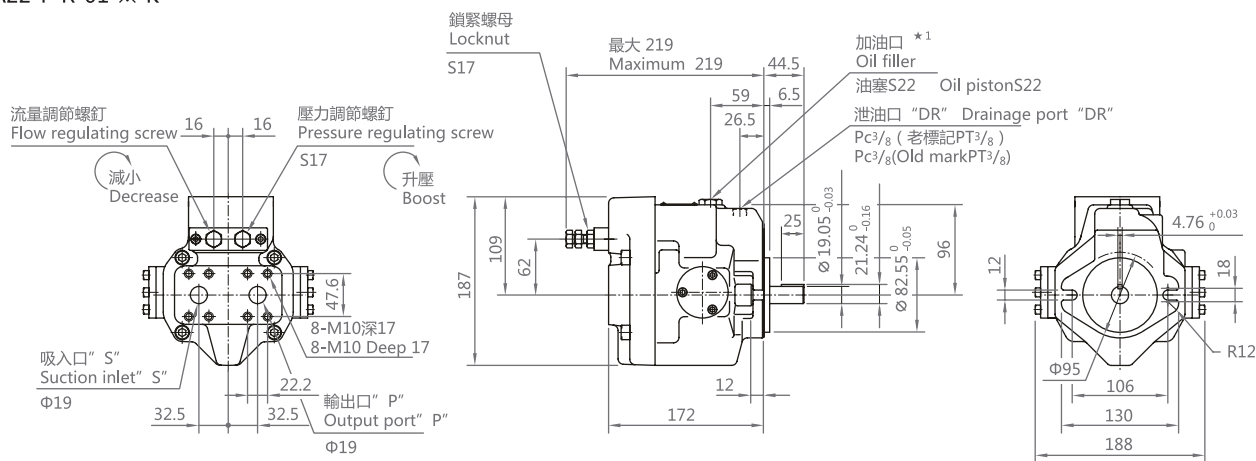


- ★ 1.安裝泵時，使加油口在頂部。
- ★ 2.可使用端蓋的端面或側面的各吸入口和輸出口，但不用的口用油堵堵住。
- ★ 3.吸入口、輸出口、泄油口接頭的擰緊扭矩如下所示。
- ★ 1.When installing the pump, the oil filler should be kept in the top.
- ★ 2.It can use the suction inlet and output port on the end face or side of end cover, but the deserted port should be blocked with greasy blockage.
- ★ 3.The tighten torque of suction inlet, output port and drainage port as follows.

接 口 Connector	接頭擰緊扭矩 Nm Joint tightening torque Nm
吸入口Suction inlet 輸出口Output port	65~75
泄油口Drainage port	40~50

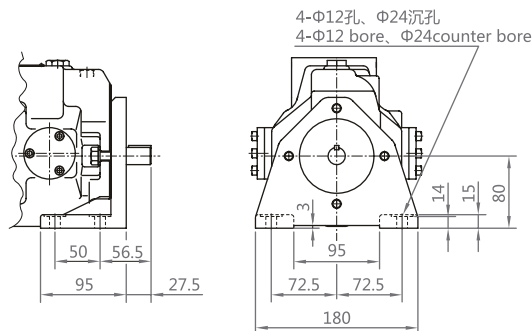
軸向接口型 Axial interface type

A16-F-R-01-※-K (法蘭安裝型) (Flange installation type)
A22-F-R-01-※-K



- ★ 1. 安裝泵時，使加油口在頂部。
- ★ 1. When installing the pump, the oil filler should be kept in the top. follows.

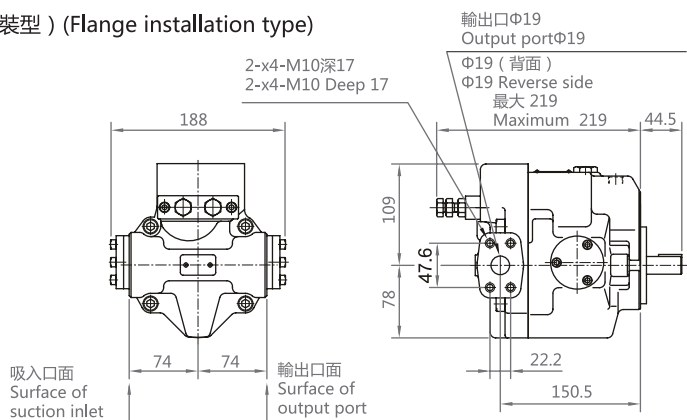
A16-F-R-01-※-K (底座安裝型) (Pad mounted type)
A22-F-R-01-※-K



其余尺寸請參見法蘭安裝型。
Please see flange installation type for the rest of the size.

側面接口型 Axial interface type

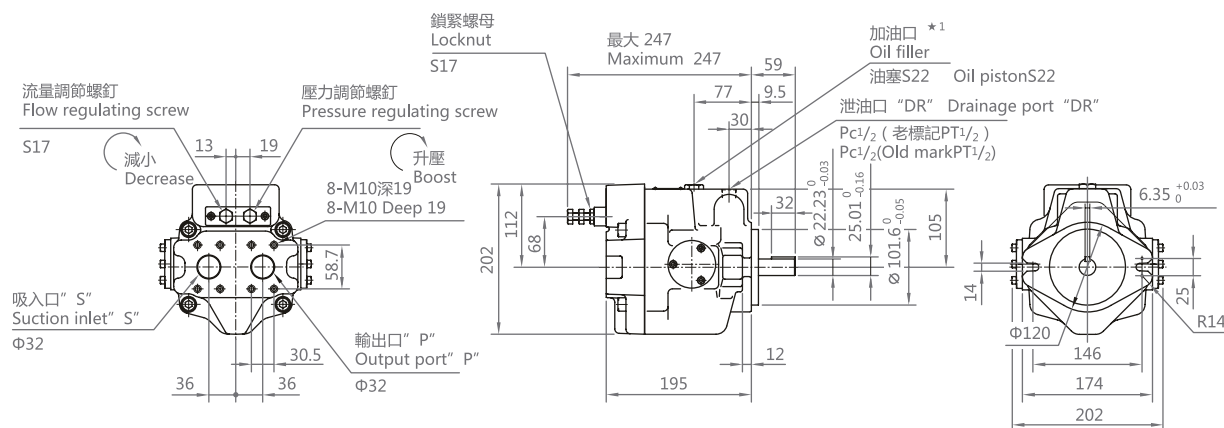
A16-F-R-01-※-S-K (法蘭安裝型) (Flange installation type)
A22-F-R-01-※-S-K



其余尺寸請參見軸向接口型。
Please see axial interface type for the rest of the size.

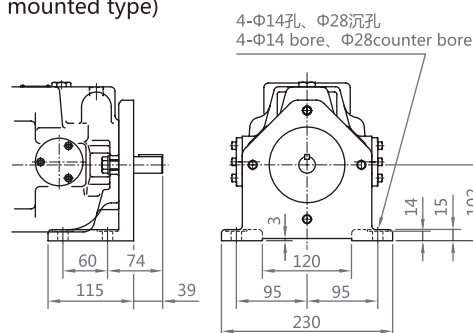
軸向接口型 Axial interface type

A37-F-R-01-※-K (法蘭安裝型) (Flange installation type)



- ★ 1. 安裝泵時，使加油口在頂部。
- ★ 1. When installing the pump, the oil filler should be kept in the top. follows.

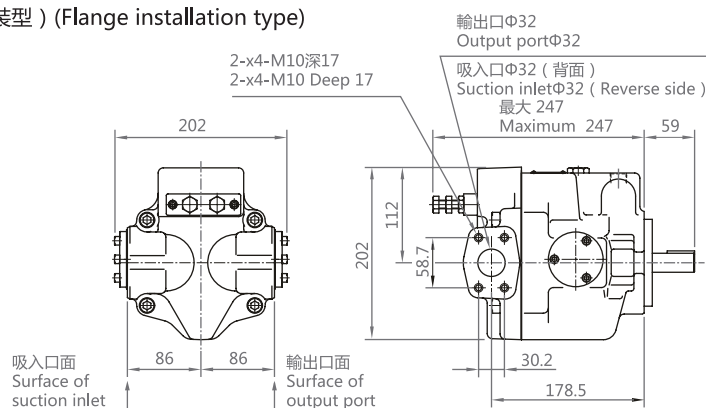
A37-L-R-01-※-K (底座安裝型) (Pad mounted type)



其余尺寸請參見法蘭安裝型。
Please see flange installation type for the rest of the size.

側面接口型 Axial interface type

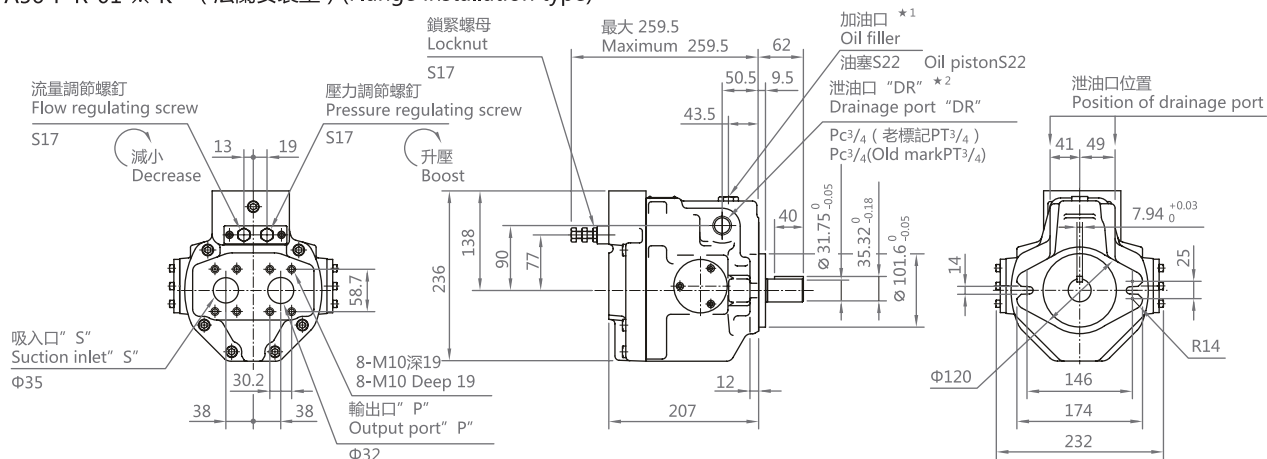
A37-F-R-01-※-S-K (法蘭安裝型) (Flange installation type)



其余尺寸請參見軸向接口型。
Please see axial interface type for the rest of the size.

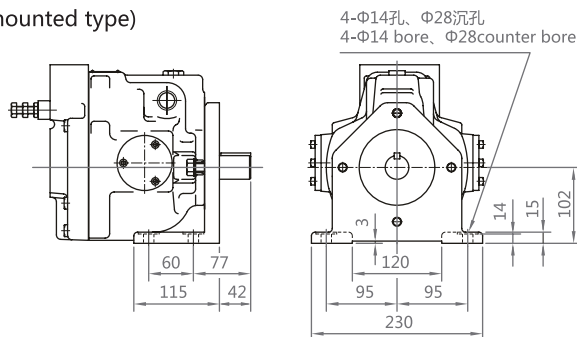
軸向接口型 Axial interface type

A56-F-R-01-※-K (法蘭安裝型) (Flange installation type)



- ★ 1. 安裝泵時，使加油口在頂部。
- ★ 2. 可按需要使用兩個泄油口中的任何一個，但另一個必須堵住。
- ★ 1. When installing the pump, the oil filler should be kept in the top.
- ★ 2. Either of the drainage port can be used according to requirement, but the other one should be blocked.

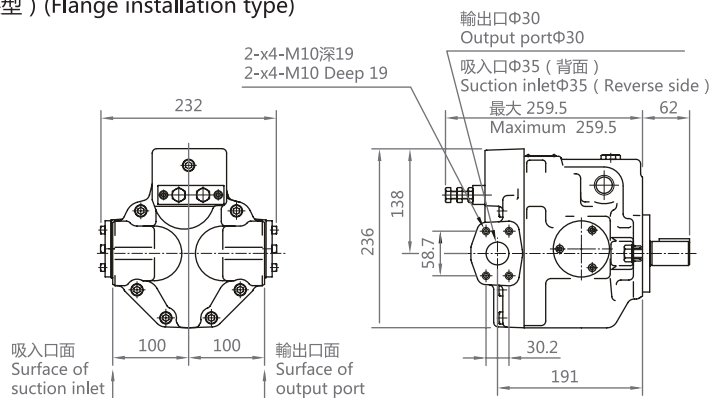
A56-L-R-01-※-K (底座安裝型) (Pad mounted type)



其余尺寸請參見法蘭安裝型。
Please see flange installation type for the rest of the size.

側面接口型 Axial interface type

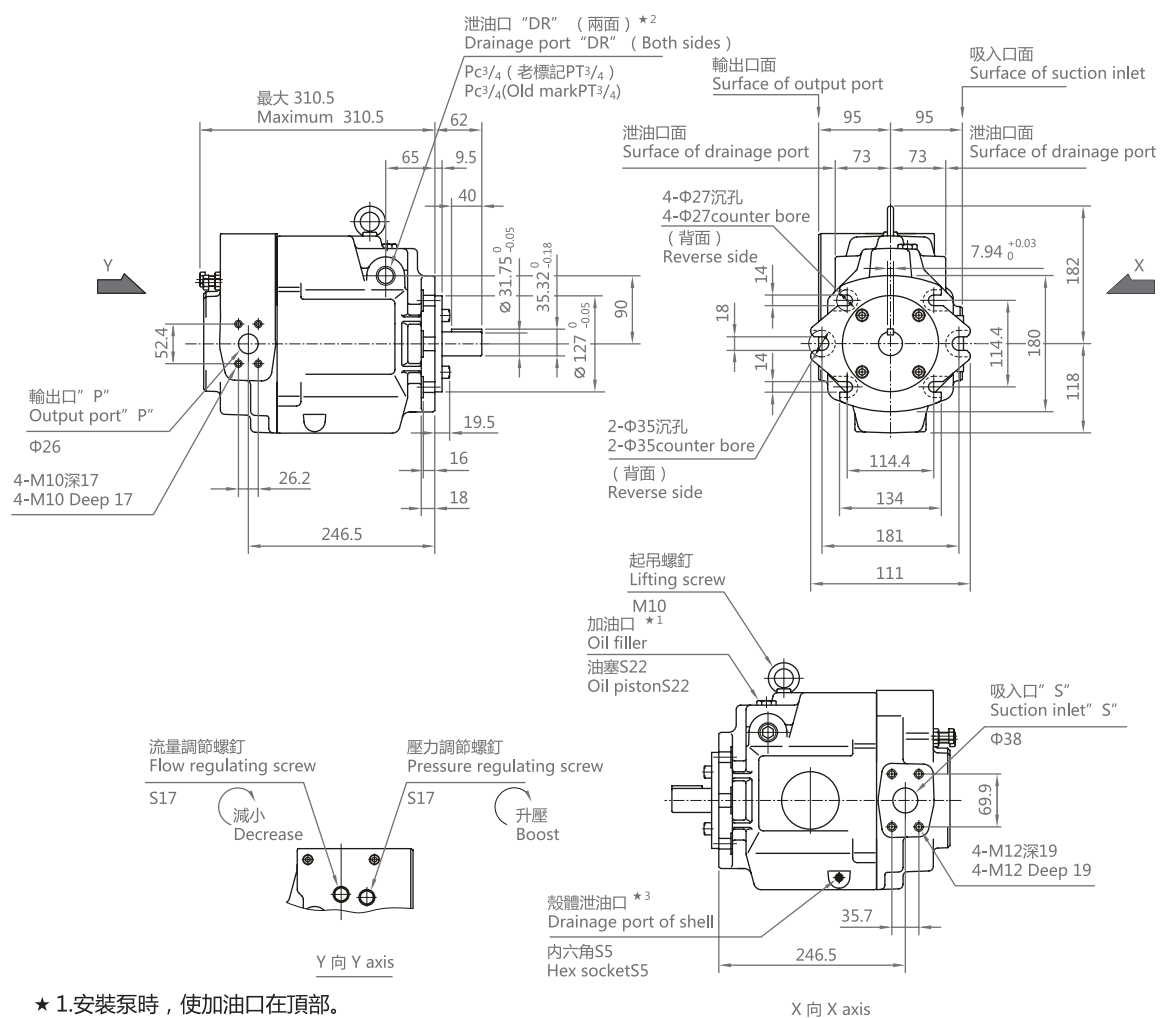
A56-F-R-01-※-S-K (法蘭安裝型) (Flange installation type)



其余尺寸請參見軸向接口型。
Please see axial interface type for the rest of the size.

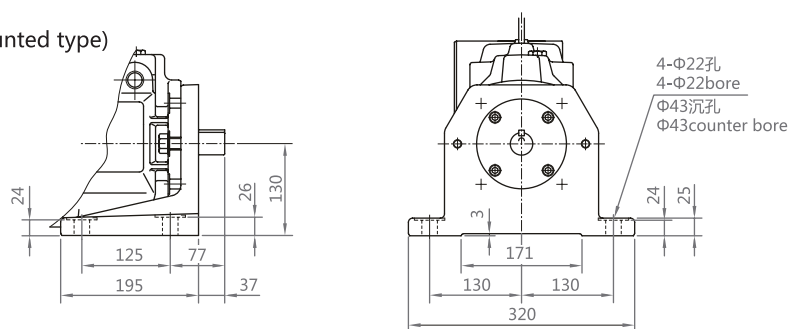
側面接口型 Axial interface type

A70-FR01※S (法蘭安裝型) (Flange installation type)



- ★ 1. 安裝泵時，使加油口在頂部。
- ★ 2. 可按需要使用兩個泄油口中的任何一個，但另一個必須堵住。
- ★ 3. 殼體泄油口用于放出泵殼內的油液。
- ★ 1. When installing the pump, the oil filler should be kept in the top.
- ★ 2. Either of the drainage port can be used according to requirement, but the other one should be blocked.
- ★ 3. The drainage port of shell is used for releasing the oil in the shell.

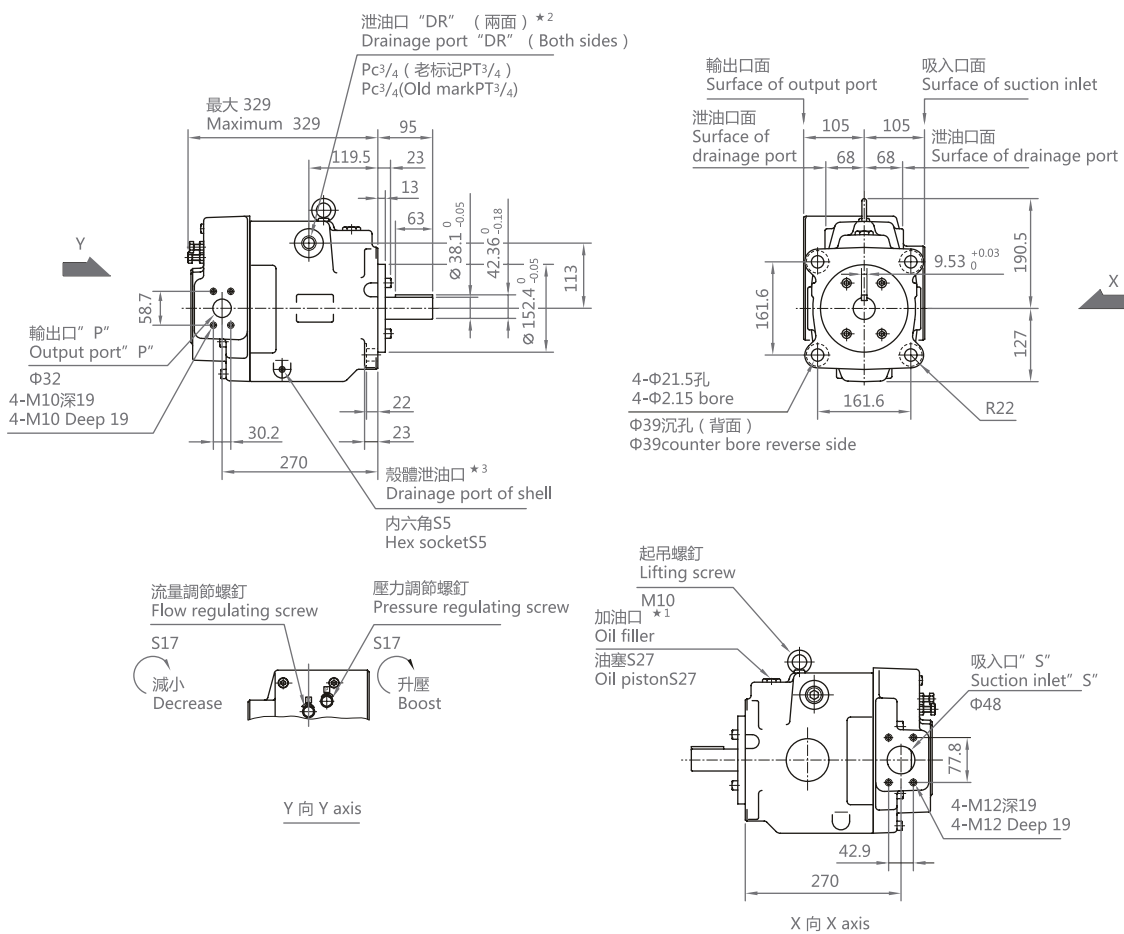
A70-LR01※S (底座安裝型) (Pad mounted type)



其余尺寸請參見法蘭安裝型。
Please see flange installation type for the rest of the size.

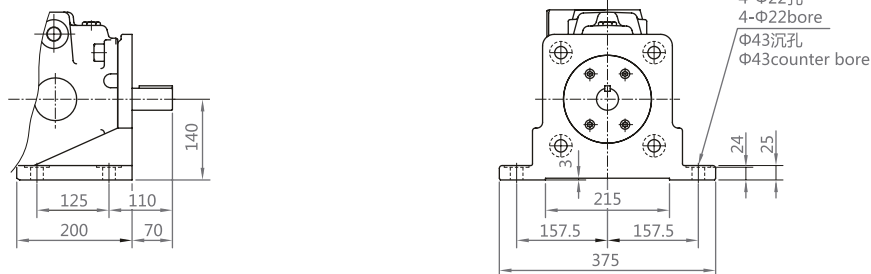
側面接口型 Axial interface type

A90-FR01※S (法蘭安裝型) (Flange installation type)



- ★ 1. 安裝泵時，使加油口在頂部。
- ★ 2. 可按需要使用兩個泄油口中的任何一個，但另一個必須堵住。
- ★ 3. 殼體泄油口用于放出泵殼內的油液。
- ★ 1. When installing the pump, the oil filler should be kept in the top.
- ★ 2. Either of the drainage port can be used according to requirement, but the other one should be blocked.
- ★ 3. The drainage port of shell is used for releasing the oil in the shell.

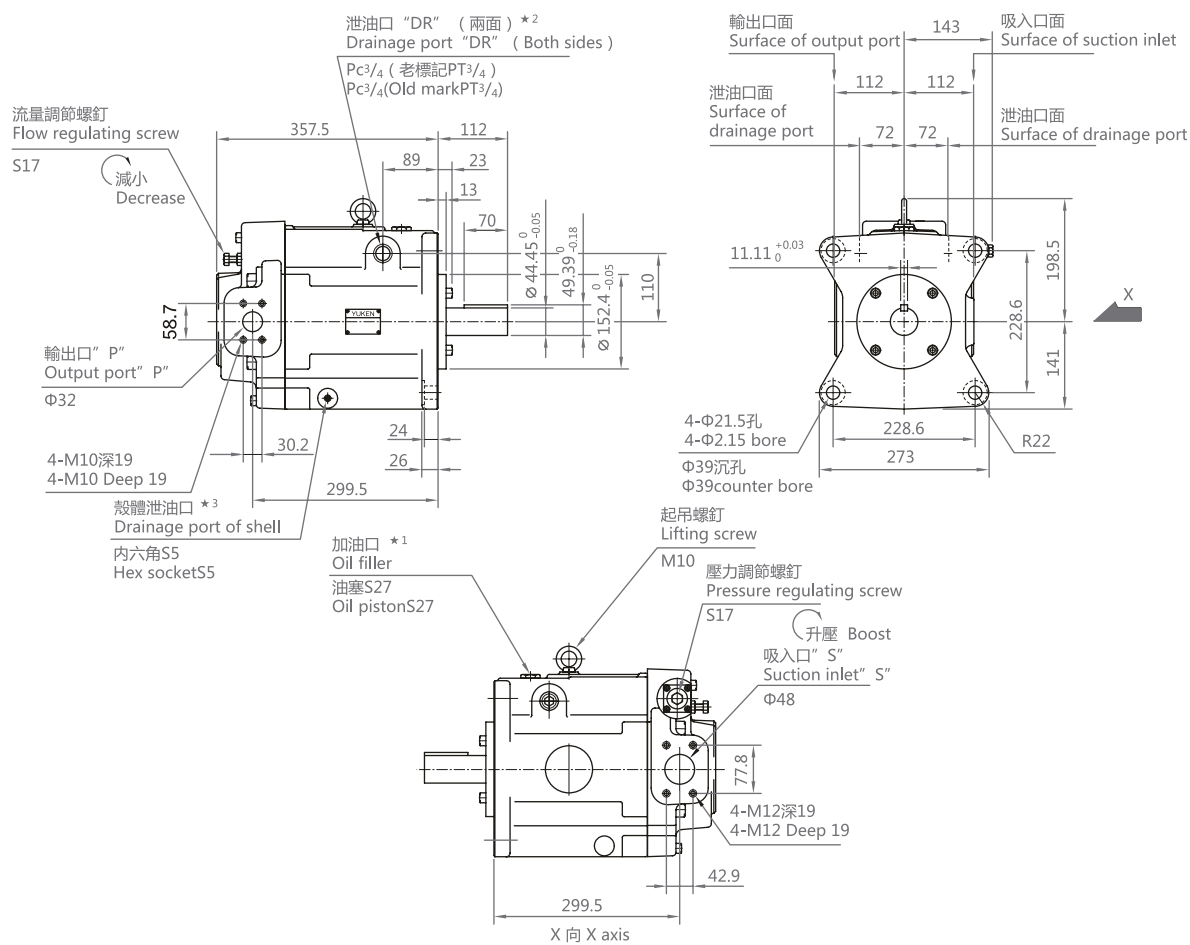
A90-LR01※S (底座安裝型) (Pad mounted type)



其余尺寸請參見法蘭安裝型。
Please see flange installation type for the rest of the size.

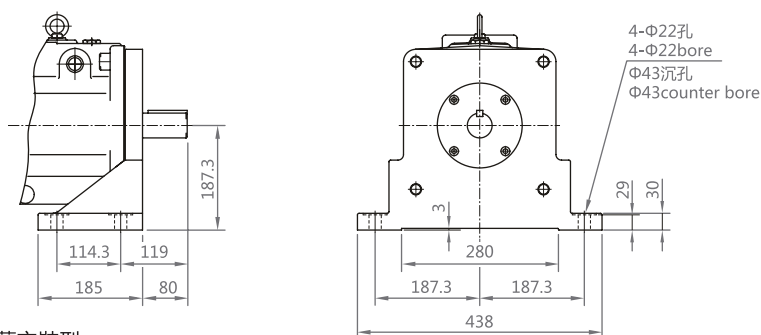
側面接口型 Axial interface type

A145-FR01※S (法蘭安裝型) (Flange installation type)



- ★ 1. 安裝泵時，使加油口在頂部。
- ★ 2. 可按需要使用兩個泄油口中的任何一個，但另一個必須堵住。
- ★ 3. 殼體泄油口用于放出泵殼內的油液。
- ★ 1. When installing the pump, the oil filler should be kept in the top.
- ★ 2. Either of the drainage port can be used according to requirement, but the other one should be blocked.
- ★ 3. The drainage port of shell is used for releasing the oil in the shell.

A145-LR01※S (底座安裝型) (Pad mounted type)



其余尺寸請參見法蘭安裝型。
Please see flange installation type for the rest of the size.