





## OH-A2F 定量柱塞泵/马达

Fixed Displacement Piston Pump/Motor OH-A2F

### 说明

- ※斜轴式轴向柱塞元件，具有固定排量，在开式或闭式回路中用作静液压传动的泵或马达。
- ※作为泵工作时，流量与驱动转速和排量成正比。
- ※作为马达工作时，输出转速与流量成正比而与排量成反比。
- ※输出扭矩随高压侧与低压侧之间的压差增加而增大。



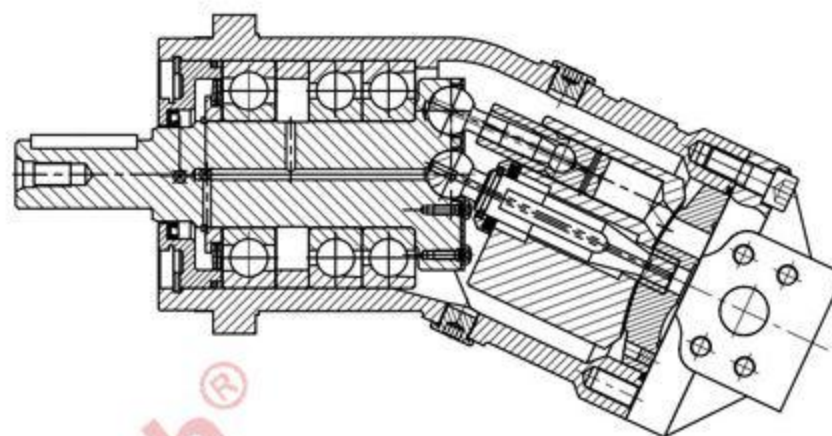
### Description

- ※Axial plunger element, with fixed displacement, used as hydrostatic drive pump or motor in open or closed loop.
- ※As a pump, the flow rate is proportional to the driving speed and displacement.
- ※As a motor, the output speed is proportional to the flow rate and inversely proportional to the displacement.
- ※The output torque increases with the pressure difference between the high pressure side and the low pressure side.

### 结构特点

- ※采用球面配流的转子组件具有自动对中、圆周速度低、效率高的优点。
- ※耐用的球轴承和滚子轴承促进长寿命工作。
- ※驱动轴能承受径向载荷。
- ※ISO安装法兰，与A6V变量马达一致。

### 剖视图 Section



### Special Features

- ※The rotor assembly of the spherical valve has the advantages of automatic, high efficiency, low peripheral speed.
- ※Durable ball bearings and roller bearings for long life work.
- ※The drive shaft can bear radial load.
- ※ISO mounting flange, consistent with the A6V variable motor.

### 技术参数 Technical Data

#### 1、工作压力范围（泵）Operation Pressure Range (Pump)

进口（S、A或B口）的工作压力

Import (A, B or S) working pressure

最低压力  $p_{s\ min}$  ..... 0.08MPa 绝对压力 absolute pressure

在闭式回路中，补油压力必须在0.2至0.6MPa之间，视泵的转速和液压油的粘度而定。

In the closed circuit, the oil pressure must be between 0.2 and 0.6MPa, depending on the pump's speed and the viscosity of the hydraulic oil.

#### 2、出口工作压力范围（马达）Outlet Operating Pressure Range (Motor)

额定压力  $p_n$  ..... 35MPa

最高压力  $p_{max}$  ..... 40MPa

A口和B口的压力之和不得超过70MPa，（每侧压力最高40MPa）。

The pressure at the mouth and A of the B and shall not exceed 70MPa, and the highest 40MPa per side pressure.

#### 3、允许壳体压力 Allowed Case Pressure

最高压力  $p_{L\ max}$  ..... 0.2MPa 绝对压力 absolute pressure



#### 4、参数表 Technical Date

| 规格 Size                                        |                         |                              |            | 10    | 12   | 23   | 28   | 45   | 55   | 63   | 80    | 107   | 125   | 160   | 200   | 250   | 355  | 500   |
|------------------------------------------------|-------------------------|------------------------------|------------|-------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|------|-------|
| 排量 Displacement                                | $V_g$                   | ml/r                         |            | 9.4   | 11.6 | 22.7 | 28.1 | 44.3 | 54.8 | 63   | 80    | 107   | 125   | 160   | 200   | 250   | 355  | 500   |
| 最高转速                                           | 闭式回路                    | close circuit                | $n_{max}$  | r/min | 7500 | 6000 | 5600 | 4750 | 3750 | 3350 | 3350  | 3000  | 3150  | 2650  | 2500  | 2500  | 2240 | 2000  |
| Max.speed                                      | 开式回路<br>open circuit    | 在 0.09MPa 下 <sup>1)</sup>    | $n_{0.09}$ | r/min | 4700 | 3750 | 3750 | 2800 | 2360 | 2360 | 2550  | 2120  | 1900  | 2120  | 1650  | 1700  | 1400 | 1250  |
|                                                |                         | 在 0.1MPa 下 <sup>1)</sup>     | $n_{0.1}$  | r/min | 5000 | 4000 | 4000 | 3000 | 2500 | 2500 | 2700  | 2240  | 2000  | 2240  | 1750  | 1800  | 1500 | 1320  |
|                                                |                         | 在 0.15MPa 下 <sup>1)</sup>    | $n_{0.15}$ | r/min | 6000 | 4900 | 4900 | 3600 | 3000 | 3000 | 3300  | 2750  | 2450  | 2750  | 2100  | 2180  | 1850 | 1650  |
| 最大流量                                           | 闭式回路                    | close circuit                | $Q_{max}$  | l/min | 71   | 70   | 127  | 133  | 166  | 206  | 252   | 268   | 321   | 394   | 424   | 500   | 625  | 795   |
| Max.flow                                       | 开式回路<br>open circuit    | 在 $n_{0.09}$ 下 <sup>2)</sup> | $Q_{0.09}$ | l/min | 43   | 42   | 83   | 76   | 122  | 125  | 156   | 164   | 197   | 257   | 256   | 330   | 340  | 430   |
|                                                |                         | 在 $n_{0.1}$ 下 <sup>2)</sup>  | $Q_{0.1}$  | l/min | 46   | 45   | 88   | 82   | 129  | 133  | 165   | 174   | 208   | 272   | 272   | 349   | 364  | 455   |
|                                                |                         | 在 $n_{0.15}$ 下 <sup>2)</sup> | $Q_{0.15}$ | l/min | 55   | 55   | 108  | 98   | 157  | 160  | 202   | 213   | 254   | 334   | 326   | 423   | 449  | 568   |
| 最大功率                                           | 闭式回路                    | close circuit                | $P_{max}$  | KW    | 41   | 41   | 74   | 78   | 97   | 120  | 147   | 156   | 187   | 230   | 247   | 292   | 365  | 464   |
| Max.power                                      | 开式回路<br>open circuit    | 在 $Q_{0.09}$ 下               | $P_{0.09}$ | KW    | 26   | 26   | 50   | 46   | 71   | 75   | 93    | 99    | 119   | 154   | 154   | 198   | 204  | 259   |
|                                                |                         | 在 $Q_{0.1}$ 下                | $P_{0.1}$  | KW    | 27   | 27   | 53   | 49   | 75   | 80   | 99    | 105   | 125   | 163   | 163   | 210   | 218  | 273   |
|                                                |                         | 在 $Q_{0.15}$ 下               | $P_{0.15}$ | KW    | 33   | 33   | 65   | 59   | 92   | 96   | 121   | 128   | 153   | 200   | 196   | 254   | 270  | 342   |
| 电机转速                                           | 流量                      | 闭式 close                     | $Q$        | l/min | 13.6 | 16.8 | 32.9 | 40.7 | 64.2 | 79.5 | 91.3  | 116   | 155   | 181.2 | 232   |       |      |       |
| Electric motor flow                            | 开式 2)open               | $Q_o$                        | l/min      | 13.2  | 16.3 | 31.9 | 39.5 | 62.3 | 77.1 | 88.6 | 112.5 | 150.5 | 175.8 | 225   |       |       |      |       |
| speed                                          | 功率 power                | $P$                          | KW         | 8     | 10   | 19   | 24   | 38   | 46   | 53   | 68    | 91    | 106   | 135   |       |       |      |       |
| $n=1450\text{rpm}$ ( $\Delta p=35\text{MPa}$ ) |                         |                              |            |       |      |      |      |      |      |      |       |       |       |       |       |       |      |       |
| 扭矩 Torque                                      | $\Delta p=10\text{MPa}$ | $M$                          | Nm         | 15    | 18.5 | 36   | 44.6 | 70.4 | 87   | 100  | 127.5 | 169.7 | 198   | 254   | 318.5 | 397.9 | 565  | 795.7 |
|                                                | $\Delta p=35\text{MPa}$ | $M_{max}$                    | Nm         | 52.5  | 64.5 | 126  | 156  | 247  | 305  | 350  | 446   | 594   | 693   | 889   | 1114  | 1393  | 1978 | 2785  |
| 近似重量                                           | Weight(approx.)         | kg                           |            | 5     | 5    | 12   | 12   | 23   | 23   | 33   | 33    | 44    | 63    | 63    | 88    | 88    | 138  | 185   |

1)这些数值适用于吸油管S有绝对压力并用矿物油工作时

These values are valid provided there is an absolute pressure at suction inlet S and when operated on mineral oil.

#### 5、安装 Install

安装位置任选。壳体必须始终充满油液。 Installation location option. Shell must always be filled with oil.

#### 6、液压油 Hydraulic oil

a-粘度范围 Viscosity range

$v_{min} = 10\text{mm}^2/\text{s}$  短时

$v_{max} = 1000\text{mm}^2/\text{s}$  短时

最佳工作粘度 Best working viscosity

$v_{opt} = 16 \sim 36\text{mm}^2/\text{s}$

b-油温范围 Temperature range

$\theta_{min} = -25^\circ\text{C}$

$\theta_{max} = +80^\circ\text{C}$

c-油液选择推荐粘度等级 Viscosity grade of oil selection

| 工作温度范围<br>Operating temperature range | 粘度等级<br>Viscosity grade | 40℃时粘度<br>Viscosity at 40℃ |
|---------------------------------------|-------------------------|----------------------------|
| $\geq 30 \sim 40^\circ\text{C}$       | VG22                    | $22\text{mm}^2/\text{s}$   |
| $\geq 40 \sim 50^\circ\text{C}$       | VG32                    | $32\text{mm}^2/\text{s}$   |
| $\geq 50 \sim 60^\circ\text{C}$       | VG46                    | $46\text{mm}^2/\text{s}$   |
| $\geq 60 \sim 70^\circ\text{C}$       | VG68                    | $68\text{mm}^2/\text{s}$   |
| $\geq 70 \sim 80^\circ\text{C}$       | VG100                   | $100\text{mm}^2/\text{s}$  |

液压油过滤 Hydraulic oil filter

推荐过滤精度为 $10\mu\text{m}$ 。 Recommended filter accuracy is  $10\mu\text{m}$ .



型号说明 Type Code

OH-

A2F

125

R

2

P

1

1

2

3

4

5

6

泵 / 马达型号 Pump/Motor Type

定量泵 / 马达 Fixed displacement pump/motor

规格 Size

(9.4)

(11.6)

(22.7)

(28.1)

(44.3)

(54.8)

(63.0)

(80.0)

(107)

(125)

(160)

(200)

(250)

(355)

(500)

(排量 displacement ml/r)

后盖 Port Plate

见下 below 后盖 Port Plate

后盖 Port Plate

后盖 Port Plate

后盖 Port Plate

轴伸 Shaft End

平键 keyed shaft GB1096-79

花键 splines shaft DIN 5480

花键 splines shaft GB 3478.1-83

结构形式 Series

见下 see below 结构 Series

结构 Series

结构 Series

结构 Series

结构 Series

旋转方向 Direction of Rotation

从轴端看 viewed on drive shaft

顺时针 clockwise

逆时针 anti-clockwise

双向 alternating

1

2

3

4

P

Z

S

1

2

3

4

5

R

L

W

订货示例:

A2F.55.R.2.P.1

A2F定量马达

规格55, 顺时针旋转, 2结构, 平键

1号后盖

Ordering Example:

A2F.55.R.2.P.1

Fixed displacement motor A2F

size55, clockwise rotation, series 2, keyed shan, port plate 1

(不适用于开式回路中的泵) (not for pumps in open circuit)

1-结构型式 Machinery Type

|                                                                |     |
|----------------------------------------------------------------|-----|
| 轴向柱塞, 斜轴式, 定量泵/马达 Axial piston, bent axis, Ration pump / motor | A2F |
|----------------------------------------------------------------|-----|

2-规格 Size

|    |      |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |
|----|------|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|
| 规格 | Size | 10 | 12 | 23 | 28 | 45 | 55 | 63 | 80 | 107 | 125 | 160 | 200 | 250 | 355 | 500 |
|----|------|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|

3-旋转方向（从轴端看） Rotating Direction (View on Shaft End)

|                                                              |   |
|--------------------------------------------------------------|---|
| 顺时针 Clockwise                                                | R |
| 逆时针 Counterclockwise                                         | L |
| 双向（不适用于开式回路中的泵） Two way (not suitable for open circuit pump) | W |

4-系列 Series

| 结构型式 Series |              | 4  |    | 2/3 |    | 1/2 | 1/2 | 2  |    | 1/2 | 2   |     | 5   |     |     |     |
|-------------|--------------|----|----|-----|----|-----|-----|----|----|-----|-----|-----|-----|-----|-----|-----|
| 规格          | Size         | 10 | 12 | 23  | 28 | 45  | 55  | 63 | 80 | 107 | 125 | 160 | 200 | 250 | 355 | 500 |
| 后盖          | port plate 1 | 1  | ●  | ●   | ●  | ●   | ●   | ●  | ●  | ●   | ●   | ●   | ●   | ●   | ●   | ●   |
|             |              | 2  |    |     | ●  | ●   | ●   | ●  | ●  | ●   | ●   | ●   | ●   | ●   | ●   | ●   |
|             |              | 3  |    |     |    | ●   | ●   | ●  | ●  | ●   | ●   | ●   |     |     |     |     |
|             |              | 4  | ●  | ●   | ●  | ●   |     |    |    |     |     |     |     |     |     |     |

5-轴伸 Shaft End

|                             |   |
|-----------------------------|---|
| 平键 Keyed shaft GB1096-79    | P |
| 花键 Splined shaft DIN 5480   | Z |
| 花键 Splined shaft GB 3478. 1 | S |

6-后盖 Port Plate

| 规格                                                                           | Size                   | 10-160                                                                               | 200-500                                                                               |
|------------------------------------------------------------------------------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 封闭式回路泵工况<br>和马达工况<br>pump operation in closed<br>circuit and motor operation | 1 螺纹<br>metric threads |  | 1 法兰 Flange                                                                           |
|                                                                              | 2 SAE 法兰<br>Flange     |  |  |
| 开式回路泵工况<br>pump operation<br>in open circuit                                 | 3 法兰<br>Flange         |  | 2 法兰 Flange                                                                           |
|                                                                              | 4 螺纹<br>metric threads |  |  |

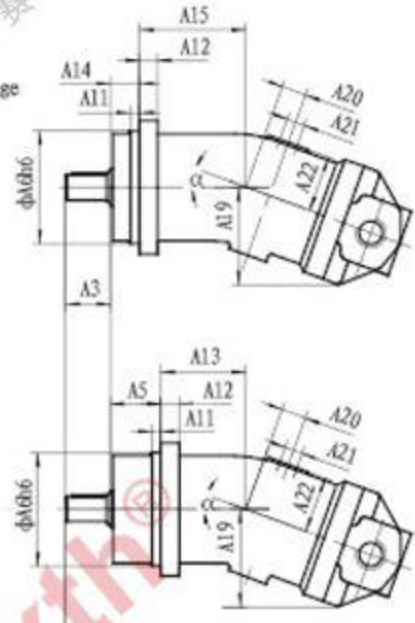


# 外形尺寸 Dimensions Size

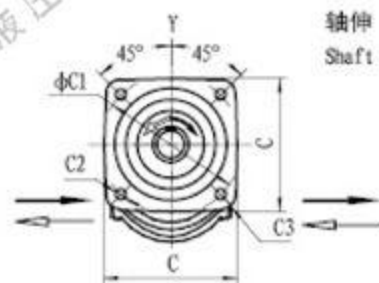
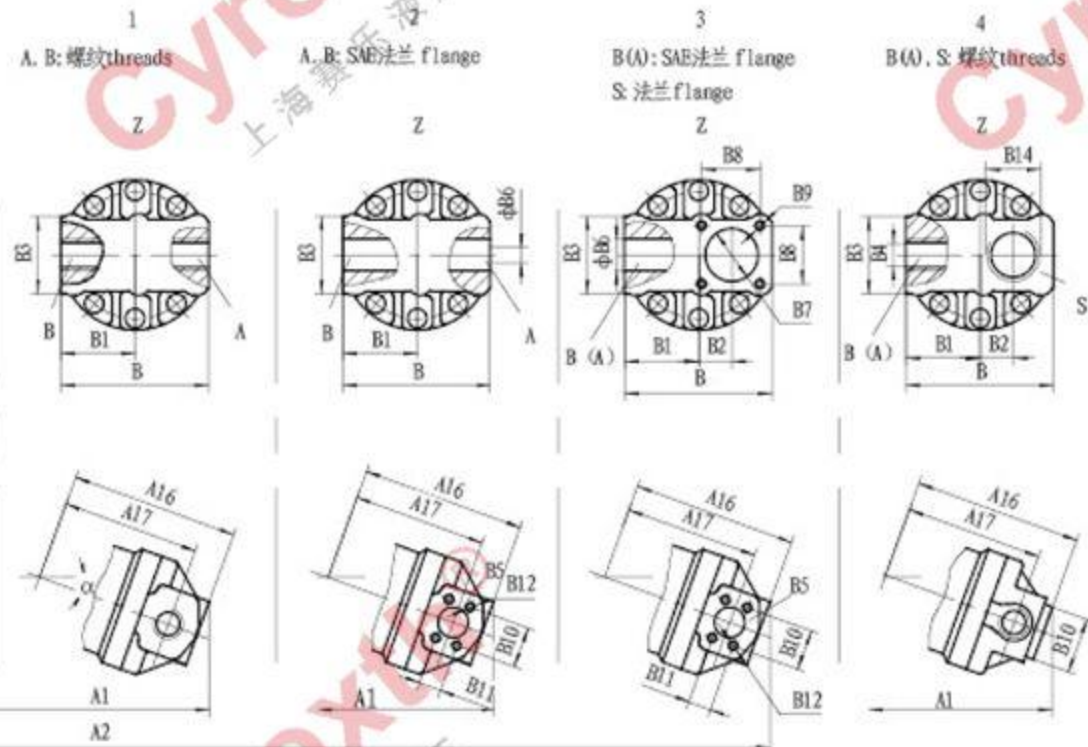
外形尺寸 Unit Dimensions  
规格 Size 10~160

结构2  
Series  
ISO法兰 flange

结构1  
Series  
结构3  
Series  
结构4  
Series



后盖 Port Plates

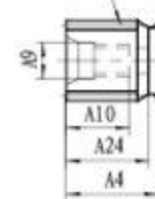


轴伸  
Shaft Ends



平键 GB/T1096-79 P  
keyed shaft

花键 GB3478.1-83 Z (Splined shaft GB3478.1-83)  
花键 DIN5480 S (Splined shaft DIN 5480)



★A5, A13不用于结构2. A5, A13 not for series 2  
A14, A15不用于结构1. A14, A13 not for series 1

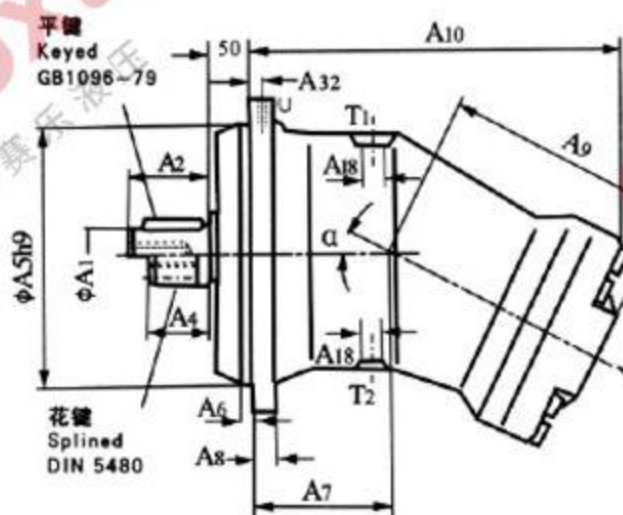
| 规格   | Size | 结构形式   | 后盖型式        | A1   |      | A2   |      |    |    |    |     |      |    |     |     |     |      |     |     |     |     |  |  |
|------|------|--------|-------------|------|------|------|------|----|----|----|-----|------|----|-----|-----|-----|------|-----|-----|-----|-----|--|--|
| α20° | α25° | Series | Port Plates | α20° | α25° | α20° | α25° | A3 | A4 | A5 | A6  | A7   | A8 | A9  | A10 | A11 | A12  | A13 | A14 | A15 | A16 |  |  |
| 10   | 12   | 4      | 1、4         | 235  | 232  | —    | —    | 40 | 34 | 40 | 80  | 22.5 | 20 | M6  | 16  | 8   | 12.5 | 42  | —   | —   | 112 |  |  |
| 23   | 28   | 3、2    | 1、4         | 296  | 293  | —    | —    | 50 | 43 | 50 | 100 | 27.9 | 25 | M8  | 19  | 8   | 16   | 50  | 25  | 75  | 145 |  |  |
| 45   | 55   | 1、2    | 1、2、3       | 384  | 381  | 378  | 376  | 60 | 35 | 63 | 125 | 32.9 | 30 | M12 | 28  | 10  | 20   | 77  | 32  | 108 | 183 |  |  |
| 63   | 80   | 2      | 1、2、3       | 452  | 450  | 447  | 444  | 70 | 40 | —  | 140 | 38   | 35 | M12 | 28  | 10  | 23   | —   | 32  | 137 | 213 |  |  |
| 87   | 107  | 2、1    | 1、2、3       | 480  | 476  | 473  | 468  | 80 | 45 | 80 | 160 | 43.1 | 40 | M12 | 28  | 12  | 25   | 90  | 40  | 130 | 230 |  |  |
| 125  | 160  | 2      | 1、2、3       | 552  | 547  | 547  | 540  | 90 | 50 | —  | 180 | 48.5 | 45 | M16 | 36  | 10  | 28   | —   | 40  | 156 | 262 |  |  |

| 规格 Size | 深 deep | A17 | A18 | A19   | A20  | A21       | A22 | A23 | A24  | B   | B1   | B2   | B3 | B4        | 深 deep | Flange | B6 | B7 | B8 |
|---------|--------|-----|-----|-------|------|-----------|-----|-----|------|-----|------|------|----|-----------|--------|--------|----|----|----|
| 10 12   | 90     | —   | 69  | 75    | 10   | M12 × 1.5 | 40  | —   | 22   | 89  | 42.5 | 18   | 40 | M22 × 1.5 | 14     | —      | —  | —  | —  |
| 23 28   | 118    | —   | 88  | 95    | 25   | M16 × 1.5 | 50  | —   | 28   | 106 | 53   | 25   | 47 | M27 × 2   | 16     | 1/2"   | 13 | —  | —  |
| 45 55   | 150    | 178 | 110 | 118   | 31.5 | M18 × 1.5 | 63  | 115 | 28   | 132 | 63   | 29   | 53 | M33 × 2   | 18     | 3/4"   | 19 | 50 | 48 |
| 63 80   | 173    | 208 | 126 | 140   | 36   | M18 × 1.5 | 77  | 173 | 33   | 156 | 75   | 35.5 | 63 | M42 × 2   | 20     | 1"     | 25 | 56 | 60 |
| 87 107  | 190    | 225 | 138 | 149   | 40   | M18 × 1.5 | 80  | 190 | 37.5 | 165 | 80   | 35.5 | 66 | M42 × 2   | 20     | 1"     | 25 | 63 | 60 |
| 125 160 | 212    | 257 | 159 | 173.5 | 45   | M22 × 1.5 | 93  | 212 | 42.5 | 195 | 95   | 42.2 | 70 | M48 × 2   | 22     | 1 1/4" | 32 | 70 | 75 |

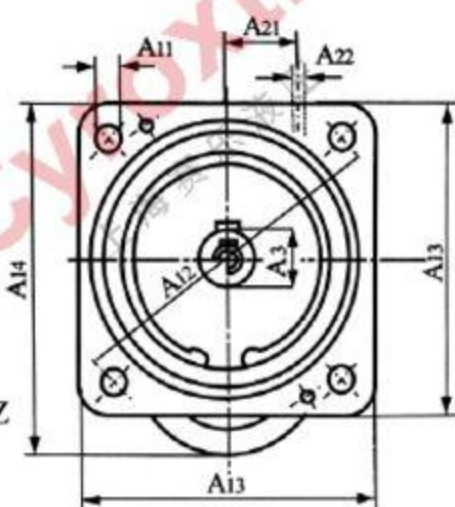
| 规格 Size | 深 deep | B9 | B10  | B11  | B12 | 深 deep | B13 | B14     | 深 deep | B15 | C   | C1  | C2   | C3 | 平键 keyed<br>GB1096-79 | 花键 Splined<br>DIN5480 | 花键 Splined<br>GB3478.1-83 | 重量 Weight<br>kg |
|---------|--------|----|------|------|-----|--------|-----|---------|--------|-----|-----|-----|------|----|-----------------------|-----------------------|---------------------------|-----------------|
| 10 12   | —      | —  | —    | —    | —   | —      | 42  | M33 × 2 | 18     | —   | 95  | 100 | 9    | 10 | 键 6 × 32              | W20 × 1.25 × 14 × 9g  | EXT14Z × 1.25m × 30R × 5f | 5.5             |
| 23 28   | —      | —  | 40.5 | 18.2 | M8  | 15     | 53  | M42 × 2 | 20     | 120 | 118 | 125 | 11   | 12 | 键 8 × 40              | W25 × 1.25 × 18 × 9g  | EXT18Z × 1.25m × 30R × 5f | 12.5            |
| 45 55   | M10    | 16 | 50.8 | 23.8 | M10 | 16     | —   | —       | —      | 126 | 150 | 160 | 13.5 | 16 | 键 8 × 50              | W30 × 2 × 14 × 9g     | EXT14Z × 2m × 30R × 5f    | 23              |
| 63 80   | M12    | 18 | 57.1 | 27.8 | M12 | 16     | —   | —       | —      | 156 | 165 | 180 | 13.5 | 16 | 键 10 × 56             | W35 × 2 × 16 × 9g     | EXT16Z × 2m × 30R × 5f    | 33              |
| 87 107  | M12    | 18 | 57.1 | 27.8 | M12 | 18     | —   | —       | —      | 160 | 190 | 200 | 17.5 | 20 | 键 12 × 63             | W40 × 2 × 18 × 9g     | EXT18Z × 2m × 30R × 5f    | 42              |
| 125 160 | M16    | 24 | 66.7 | 31.8 | M14 | 21     | —   | —       | —      | 190 | 210 | 224 | 17.5 | 20 | 键 14 × 70             | W45 × 2 × 21 × 9g     | EXT21Z × 2m × 30R × 5f    | 63              |



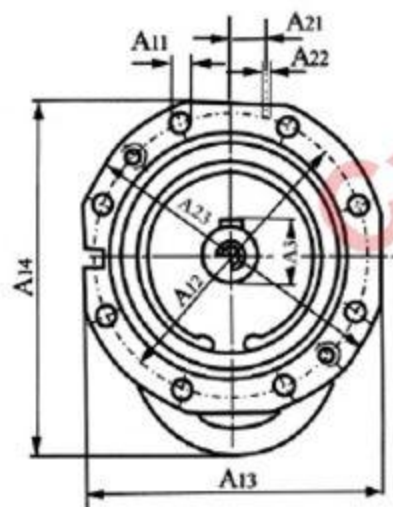
元件尺寸 Unit Dimensions



规格 Sizes 200-250



规格 Sizes 355-500



Z向

Viewed on Z

后盖

Port Plate

用于马达工况for motor operation

用于泵工况for pump operation

(闭式回路)(closed circuit)

1

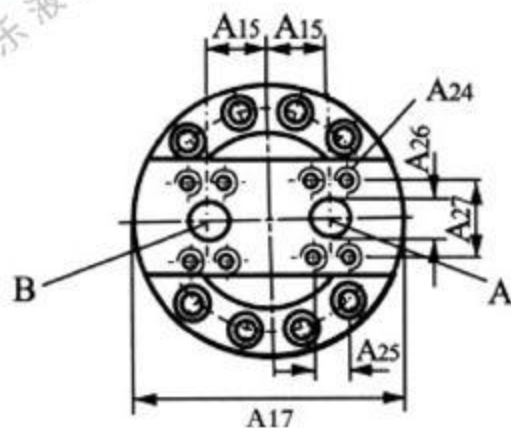
后盖

Port Plate

用于泵工况for pump operation

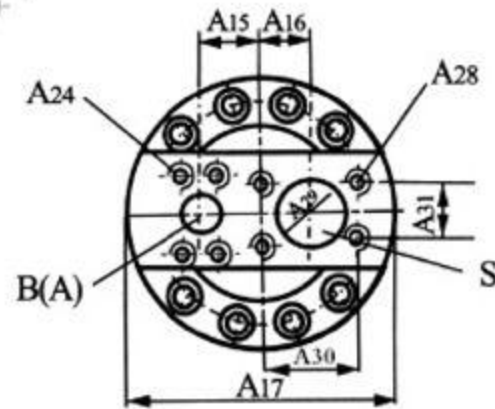
(开式回路)(open circuit)

2



油口Ports A, B:  
SAE法兰flange 6000 psi  
见A19  
(see dimension A19)

油口Port B(A):  
SAE法兰flange 6000 psi  
见尺寸A19  
(see dimension A19)



油口Port S: SAE法兰flange  
规格Sizes 200-355; 2500psi  
规格Sizes 500 | 200psi  
见尺寸A20  
(see dimension A20)

逆时针旋转时后盖 2 旋转180°

For anti-clockwise rotation  
port plate 2 is rotated 180°

| 规格   |          |                  |                |                |                |                |                |                |                |                |                 |                 |                 |                 |                 |                 |                 |                 |                 |                   |                   |
|------|----------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|
| Size | $\alpha$ | A <sub>1</sub>   | A <sub>2</sub> | A <sub>3</sub> | A <sub>4</sub> | A <sub>5</sub> | A <sub>6</sub> | A <sub>7</sub> | A <sub>8</sub> | A <sub>9</sub> | A <sub>10</sub> | A <sub>11</sub> | A <sub>12</sub> | A <sub>13</sub> | A <sub>14</sub> | A <sub>15</sub> | A <sub>16</sub> | A <sub>17</sub> | A <sub>18</sub> | A <sub>19</sub>   | A <sub>20</sub>   |
| 200  | 21°      | 50 <sub>K6</sub> | 82             | 53.5           | 58             | 224            | 9              | 134            | 25             | 232            | 368             | 22              | 280             | 252             | 300             | 55              | 45              | 216             | M22 × 1.5       | 1 $\frac{1}{4}$ " | 2 $\frac{1}{2}$ " |
| 250  | 26.5°    | 50 <sub>K6</sub> | 82             | 53.5           | 58             | 224            | 9              | 134            | 25             | 232            | 370             | 22              | 280             | 252             | 314             | 55              | 45              | 216             | M22 × 1.5       | 1 $\frac{1}{4}$ " | 2 $\frac{1}{2}$ " |
| 355  | 26.5°    | 60 <sub>m6</sub> | 105            | 64             | 82             | 280            | 15             | 160            | 28             | 260            | 422             | 18              | 320             | 335             | 380             | 60              | 50              | 245             | M33 × 2         | 1 $\frac{1}{2}$ " | 2 $\frac{1}{2}$ " |
| 500  | 26.5°    | 70 <sub>m6</sub> | 105            | 74.5           | 82             | 315            | 15             | 175            | 30             | 283            | 462             | 22              | 360             | 375             | 420             | 65              | 55              | 270             | M33 × 2         | 1 $\frac{1}{2}$ " | 3"                |

| 规格   |                 |                 |                 |                 | 深    |                 |                 |                 |                 | 深    |                 |                 |                 |                 | keyed Shaft |                   | Splined Shaft |     | (kg) |
|------|-----------------|-----------------|-----------------|-----------------|------|-----------------|-----------------|-----------------|-----------------|------|-----------------|-----------------|-----------------|-----------------|-------------|-------------------|---------------|-----|------|
| Size | A <sub>21</sub> | A <sub>22</sub> | A <sub>23</sub> | A <sub>24</sub> | deep | A <sub>25</sub> | A <sub>26</sub> | A <sub>27</sub> | A <sub>28</sub> | deep | A <sub>29</sub> | A <sub>30</sub> | A <sub>31</sub> | A <sub>32</sub> | GB1096-79   | DIN5480           |               |     |      |
| 200  | 70              | M14 × 1.5       |                 | M14             | 22   | 31.8            | 32              | 66.7            | M12             | 18   | 63              | 88.9            | 50.8            | 13              | 键 14 × 80   | W50 × 2 × 24 × 9g |               | 88  |      |
| 250  | 70              | M14 × 1.5       |                 | M14             | 22   | 31.8            | 32              | 66.7            | M12             | 18   | 63              | 88.9            | 50.8            | 13              | 键 14 × 80   | W50 × 2 × 24 × 9g |               | 88  |      |
| 355  | 35              | M14 × 1.5       | 360             | M16             | 24   | 36.6            | 40              | 79.4            | M12             | 18   | 63              | 88.9            | 50.8            | 14              | 键 18 × 100  | W60 × 2 × 28 × 9g |               | 138 |      |
| 500  | 35              | M18 × 1.5       | 400             | M16             | 24   | 36.6            | 40              | 79.4            | M16             | 24   | 75              | 106.4           | 62              | 15              | 键 20 × 100  | W70 × 3 × 22 × 9g |               | 185 |      |