

AIR DRIVEN HYDRAULIC PUMPS



II

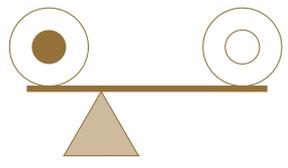
SR PUMPS_{PAT.P}

SR气动泵

SR040 Series

SR063 Series

SR100 Series



SR PUMPS

由气压作动力产生油压变得容易！简单！结构紧凑！
3个系列14个型号气动泵 可实现多种功能

To Hydraulic Pressure from Air Pressure! EASY! SIMPLE! COMPACT!

There series of a rich variation, a total of 14 models. Further highly efficient-ization is realized by full model change!!



概要 OUTLINE

SR泵是由压缩空气作为动力源产生高压油的连续动作型气动泵。
油压值是由气压通过减压阀来调整实现的，当气、液平衡时，泵自动停止打压。
当油压降低时泵会自动工作直到气、液平衡。

SR hydraulic pump series are air-over-hydraulic pumps operated with compressed air. Pump's discharge pressure is controlled by operating air pressure. Oil flow rate increases at the low hydraulic pressure and decreases at the high hydraulic pressure. When air pressure is balanced with hydraulic pressure, the pump stops automatically, and will start automatically when hydraulic pressure decreases. The pump, then, operates continuously until air pressure reaches equilibrium with hydraulic pressure.

特長 FEATURES

1. 吐出量提高：采用新型泵后气体循环加快，出油量是原来的1.5倍，夹紧器夹紧时间缩短了30%。
2. 小型化：和常规的SR50、70泵比较，容积率是原来的50~70%，提高出油量同时节省空间。
3. 超耐久性耐力测试：1) 在连续驱动，无载荷的情况下，可动作1000小时，1亿次。
2) 用夹紧器SY6 4个、LY4 4个做夹紧实验，可完成70000回次。
4. 噪音小：由于重量轻、增加了缓冲垫降低了惯性和排气部位消音器的改进，使噪音降低了5dB(A)。
5. 气动泵内置排气阀，排气更顺畅，降低了对周边环境的污染。

1. The increase in the amount of discharge
By adopting a new mechanism as an air drive part, a cycle increases and the amount of discharge becomes 1.5 times. So 30% shortening of clamp time is realized. (The conventional ratio of our company)
2. Miniaturization
The conventional SR50 and 70type pump is miniaturized (capacity ratio 50-70%). So space-saving correspondence is attained and the amount of discharge is also UP.
3. Super-durability
durability test : ①durable 1000 hours, 100 million cycles (in the state of a continuation drive of an oil pressure side by non-load)
②70,000 times (using a clamp system (SY6x4, LY4x4))
4. Low operation sound-ization
Light weight-izing of movable parts and the reduction in inertia by improvement of a cushion mechanism, and improvement of the air exhaust muffler parts silence method realize low operation sound-ization of about 5dB(A). (The conventional ratio of our company)
5. The built-in air omission valve
Air omission work is easy-ized on the pump itself , and it is surrounding pollution control.

通用参数 COMMON SPECIFICATION

Consult with us when operating it in other cases or spool type control VALVE than the following.

驱动流体：
空气、惰性气体（氮气）
使用气压范围：
0.2~0.7MPa (2~7kgf/cm²)
使用温度范围：
-5°C~+60°C (无冻结)
使用油：
一般液压油（ISO VG32~56）

■ Operating gas
Air inert gas (N₂)
■ Air pressure range
0.2~0.7MPa
■ Operating temperature range
-5°C~+60°C (No frozen drain)
■ Working oil
General hydraulic oil
(ISO VG32~56)
Silicone oil
Water glycol hydraulic oil

■ 空气耗量：
N (标准空气) : m³/min

■ Air consumption
N at standard cond.
N=m³/min.

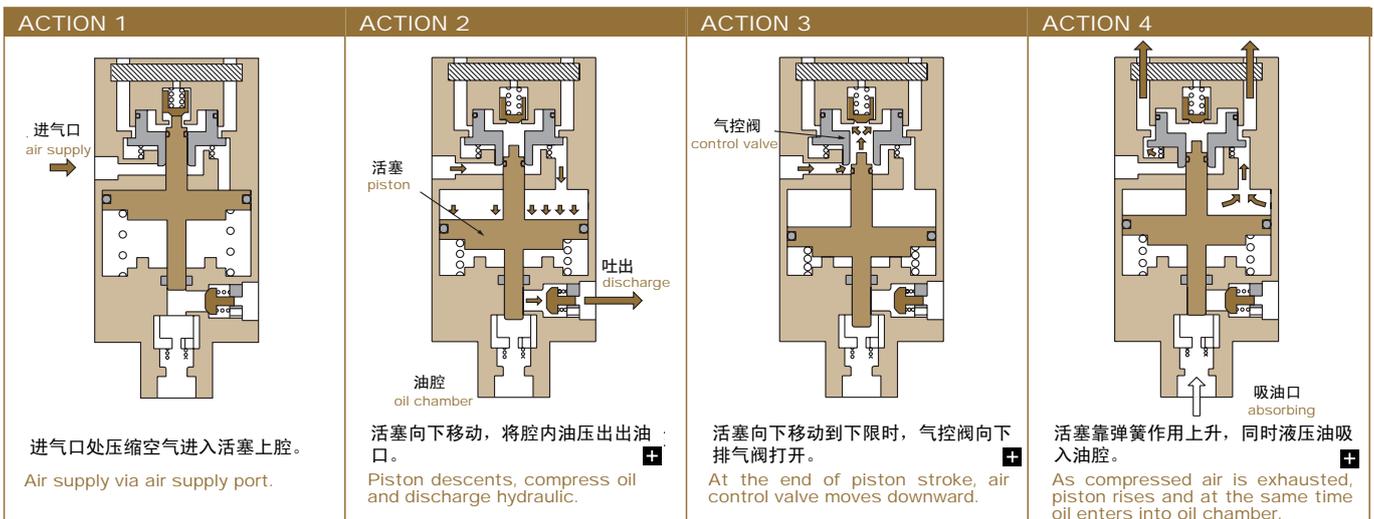
$$N = KQ (Pa + 0.1)$$

供给气源压力 (MPa)
Pa: Supply air pressure
出油量 (L/min)
Q: Oil discharge rate
气体消耗系数
K: Air consumption coef.

※ K、Q数值请查找各种型号的特性曲线表

Please, refer to the characteristic graph.

结构及工作原理 CONSTRUCTION AND OPERATING SEQUENCE



SR040 Series

通用参数

COMMON SPECIFICATION

型号 Type	质量 (kg) Mass	吸达行程 (m) Suction head
SR04005	1.2	0.5以内
SR04006		

型号表示方法

TYPE INDICATION

SR040□①②-A2

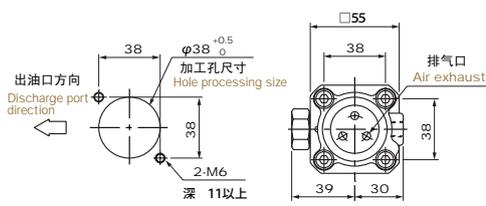
① 吸油柱塞直径 Diameter of oil pressure plunger

05	φ 5mm
06	φ 6mm

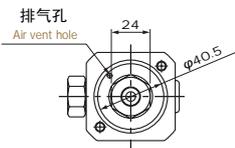
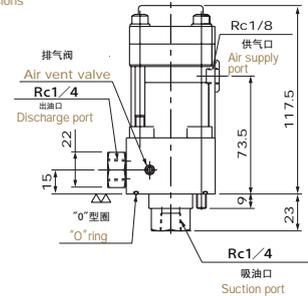
② 进气口位置 Air supply port position

A	参照右图位置
B	
C	
D	

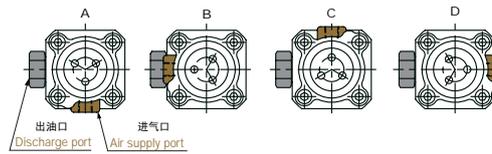
SR040 [05·06]



加工尺寸图
Mounting dimensions



【进气口位置】 [Air supply port position]



特性曲线查阅方法 HOW TO APPLY PUMP CHARACTERISTIC CHART

以SR04005□-A2泵为例

- 最终吐出压力 (Ph)
最终吐出压力即为泵平衡载荷压力, 使其停止工作时的压力。
下图曲线①是气压Pa=0.4MPa时, 吐出压力Ph=21.0MPa的曲线。
- 吐出量分为自由吐出量和负荷吐出量
自由吐出量是指在无负荷作用下的吐出量。
下图②是气压Pa=0.4MPa时, 吐出量为Q=0.6L/min。
负荷吐出量是指必须吐出压力时的吐出量。
下图③是气压Pa=0.4MPa和吐出压力Pc=10 MPa时, 相点是吐出量Q=0.37L/min。

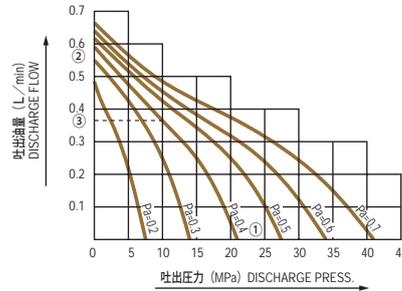
An explanation is given, referring to an example of SR04005 pump.

- Final discharge pressure (Ph). Final discharge pressure herein means the pressure when the pump balances load, stopping its operation. At (1) at below Fig., Ph=21.0MPa at Pa (air pressure) 0.4MPa.
- Discharges can be classified into such as free discharge and load one.
 - Free discharge means the discharge at no load operation. In (2) at below Fig., when Pa 0.4MPa, Q=0.6L/min.
 - Load discharge means the discharge flow rate at Pc=10.0MPa (required discharge pressure)

At (3) at below Fig., in Pa 0.4MPa, a point where a horizontal line is drawn at left side from the cross point with Pc=10.0MPa (Q=0.37L/min) denotes the then discharge.

SR04005□-A2

增压比 Pressure b.r.	约54倍
1个循环吐出量 1 cycle t. d.	0.25mL
空气消费系数K Air c. c.	1.095



SR063 Series

通用参数

COMMON SPECIFICATION

型号 Type	质量 (kg) Mass	吸达行程 (m) Suction head
SR06306	2.7	0.5以内
SR06308		2.3
SR06309		1以内
SR06314	2.7	
SR06322		

型号表示方法

TYPE INDICATION

SR063□①②-A2

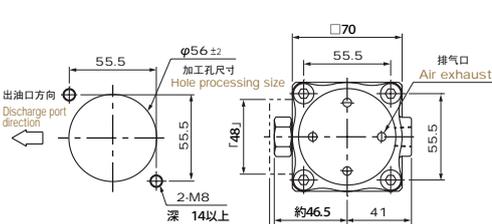
① 吸油柱塞直径 Diameter of oil pressure plunger

06	φ 6mm
08	φ 8mm
09	φ 9mm
14	φ 14mm
22	φ 22mm

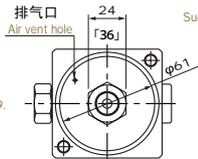
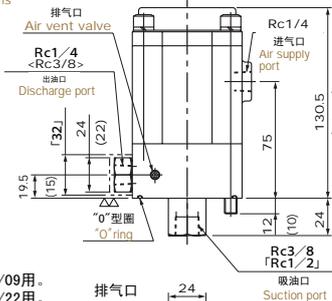
② 进气口位置 Air supply port position

A	参照右图位置
B	
C	
D	

SR063 [06·08·09·14·22]



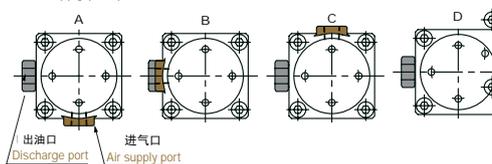
安装用加工尺寸图
Mounting dimensions



- () 内尺寸为SR06308/09用。
- [] 内尺寸为SR06314/22用。见双点划线处。
- () 内尺寸为SR06322用。

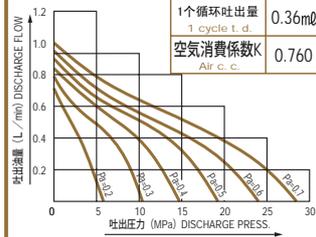
- () size shows in the case of SR06308/09.
- [] size and chain double-dashed line in the case of SR06314/22.
- () size shows in the case of SR06322.

【进气口位置】 [Air supply port position]



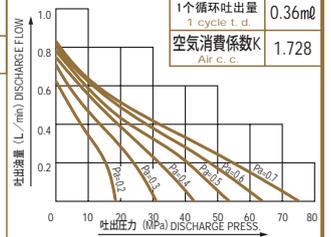
SR04006□-A2

增压比 Pressure b.r.	约38倍
1个循环吐出量 1 cycle t. d.	0.36mL
空气消费系数K Air c. c.	0.760



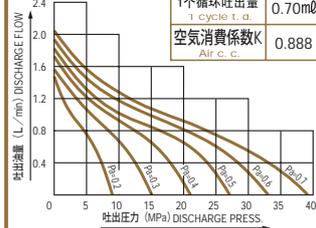
SR06306□-A2

增压比 Pressure b.r.	约105倍
1个循环吐出量 1 cycle t. d.	0.36mL
空气消费系数K Air c. c.	1.728



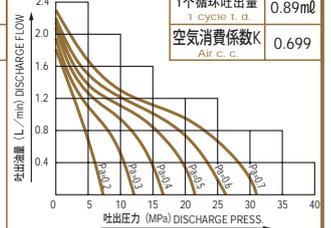
SR06308□-A2

增压比 Pressure b.r.	约53.5倍
1个循环吐出量 1 cycle t. d.	0.70mL
空气消费系数K Air c. c.	0.888



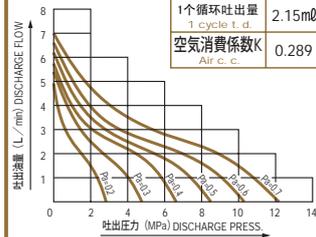
SR06309□-A2

增压比 Pressure b.r.	约42.5倍
1个循环吐出量 1 cycle t. d.	0.89mL
空气消费系数K Air c. c.	0.699



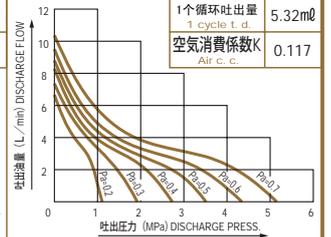
SR06314□-A2

增压比 Pressure b.r.	约16.5倍
1个循环吐出量 1 cycle t. d.	2.15mL
空气消费系数K Air c. c.	0.289



SR06322□-A2

增压比 Pressure b.r.	约7倍
1个循环吐出量 1 cycle t. d.	5.32mL
空气消费系数K Air c. c.	0.117



特性曲线表的数据是在温度20°C、液压油ISO VG32的条件下测定的。
The value indicated in the characteristic graph shows in the case of using general oil (ISO VG32)

SR100 Series

SR100 (09·10·12·15·20·25·30)

通用参数

COMMON SPECIFICATION

型号 Type	重量 (kg) Mass	吸込行程 (m) Suction Head
SR10009		
SR10010		
SR10012		
SR10015	約9.7	1以內
SR10020		
SR10025		
SR10030		

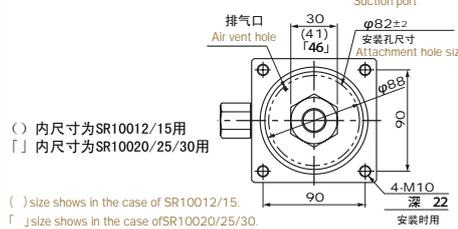
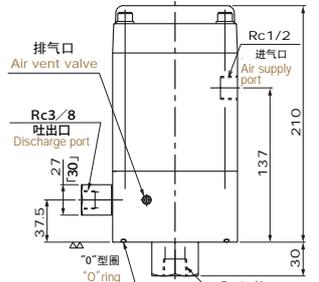
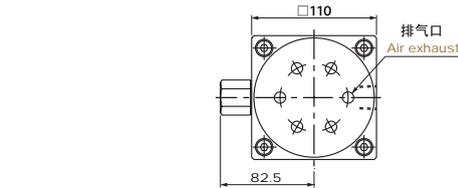
型号表示方法

TYPE INDICATION

SR100□①②-A2

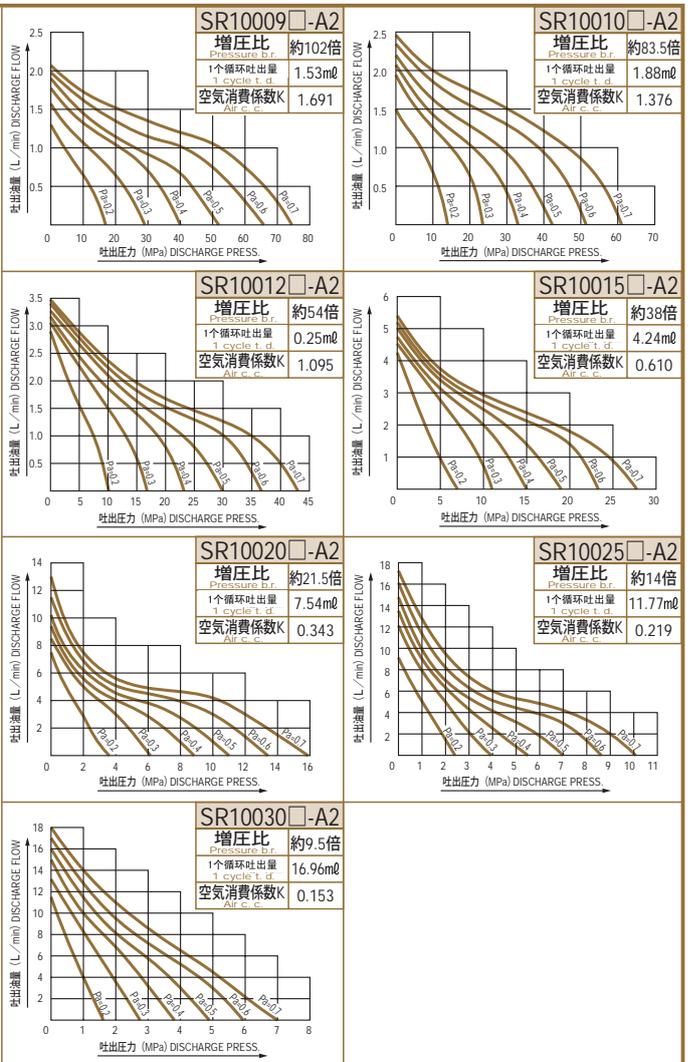
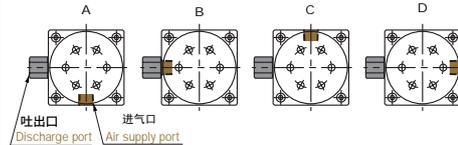
① 吸油柱直径 Diameter of oil pressure plunger	
09	φ 9mm
10	φ 10mm
12	φ 12mm
15	φ 15mm
20	φ 20mm
25	φ 25mm
30	φ 30mm

② 进气口位置 Air supply port position	
A	参照右 图位置
B	
C	
D	



【进气口位置】

[Air supply port position]



特性曲线表的数据是在温度20°C、液压油ISO VG32的条件下测定的。
The value indicated in the characteristic graph shows in the case of using general oil (ISO VG32)

安装注意事项 HANDLING INSTRUCTION

- 安装
 - 安装位置没有特殊的限定(不可反向安装)
- 吸油口配管
 - 使用通用钢管标准80系列或与之相匹配的。
 - 避免杂质被吸入管路内, 必须使用吸油过滤器(网眼为150滤网)。
 - 吸油管的长度必须在吸油冲程以下。
 - 滤网和油位下限之间必须大于15mm。
- 气源
 - 尽可能用于干燥气体。
 - 安装润滑装置(根据用途有时可省略)。
 - 用一般液压油(ISO VG32)作润滑油, 不用锭子油。
 - 供油管路管径采用与SGP相对应的管径。
- 使用温度范围
 - 使用的温度范围为-5°C ~ +60°C。但如果连续高频使用, 需有冷却装置防止热膨胀, 同时供给气源必须充分排气。特别是在雨季或冬季, 因温度较低, 使得动力性能降低, 所以请采用防冻剂等措施。

- Re: Installation
 - No particular restriction
 - However vertical position is recommended.
 - Please consult with SR Engineering if installation is to be in opposite position.
- Re: Suction piping
 - Use STPG schedule 80 or equivalent.
 - Make sure to use suction strainer -150-mesh size.
- Re: Compressed air supply
 - Use dry air as much as possible.
 - Use pipe with diameter corresponding to SGP of supply piping dia.
- Ambient temperature
 - Applicable temperature range is -5°C ~ +60°C.
 - However, under the continuous operation, due to thermal expansion, cooling condition may be prevailed. Therefore, air supply line should be drained frequently, particularly in rainy season and in wintertime. Anti-freezing agent may be used.

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因品质的改良, 尺寸变化不另行通知, 使用前请与我们确认。

Because of improvement of product quality, the dimensions in the specification are subject to change without notice.