



Introduction of Piston Pump

GINKAI TECHNOLOGY (SHANGHAI) CO., LTD

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Category Introduction

Piston Pump Series

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1.25: 1



2: 1



3: 1



4: 1



5: 1



Double Inlet
& Outlet



12: 1

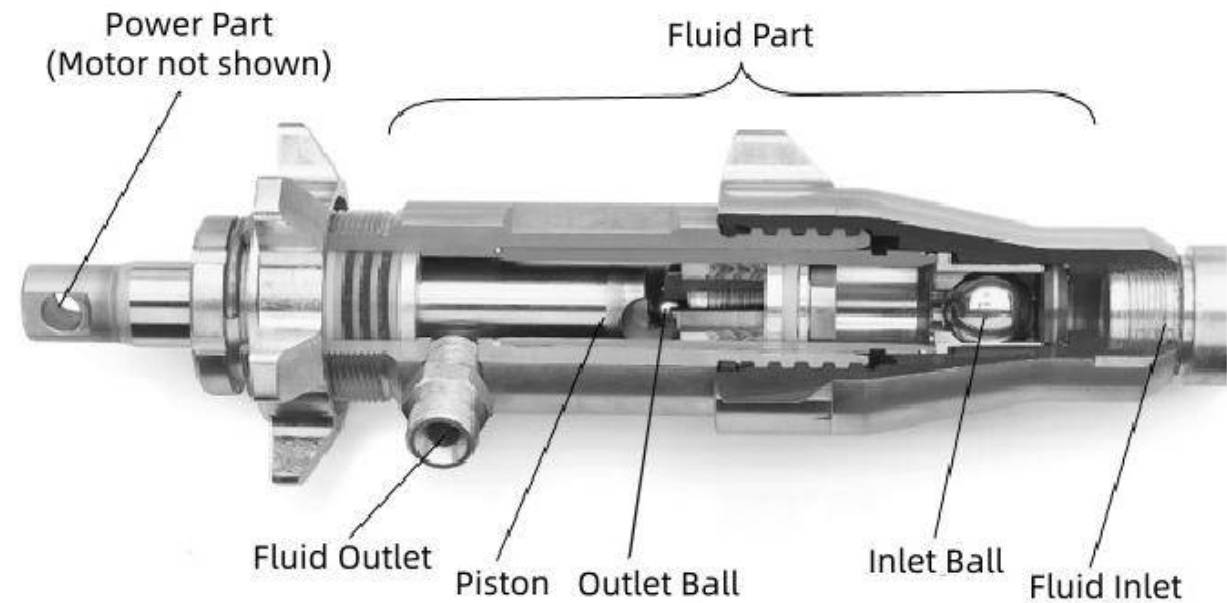
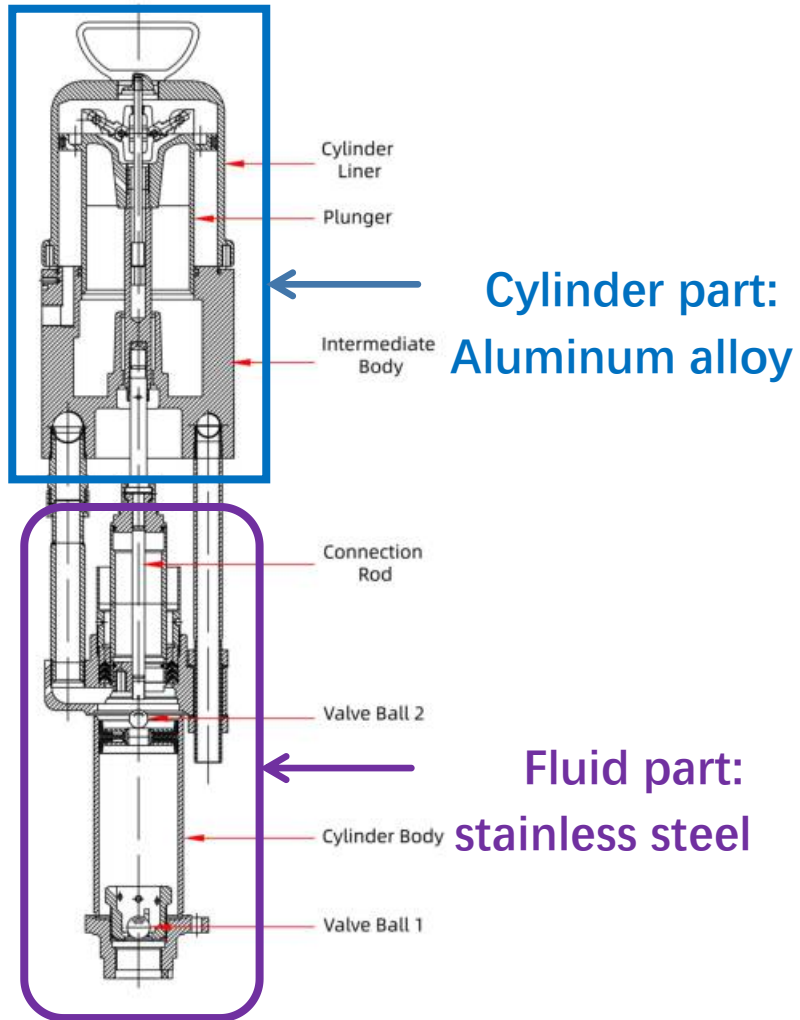
2

Product Structure

Core Structure



It is mainly composed of five parts: pneumatic motor, piston cylinder, pump body, valve assembly and control system.



★ Wearing parts: cylinder piston seal ring/filler/piston seal gasket

3

Working Principle

Working Principle

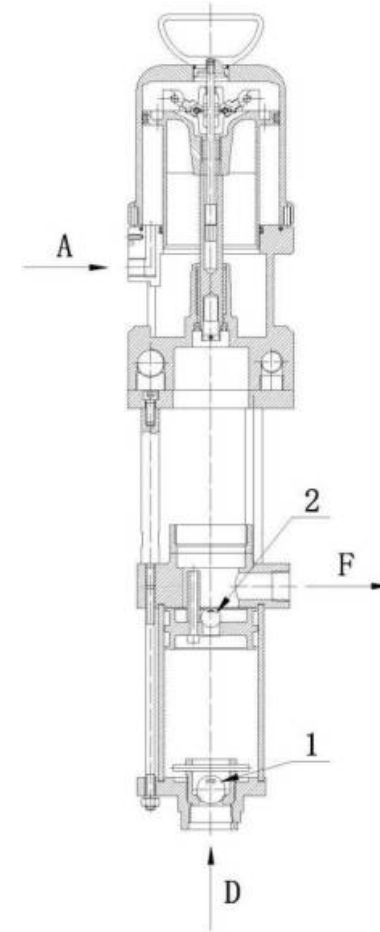


The pneumatic piston pump is a type of reciprocating pump, belonging to the volumetric pump. Its main feature is that the pump shaft drives the piston to make reciprocating linear motion. A one-way ball valve is designed at the inlet and outlet of the pump as a switch valve. The pump should be installed upright because the ball valve works by returning to its position by its own weight.

Cylinder Working Process: When the gas source interface A is connected to the gas, the cylinder moves upward under the action of air pressure, the upward air inlet is closed, and the downward exhaust port is opened.

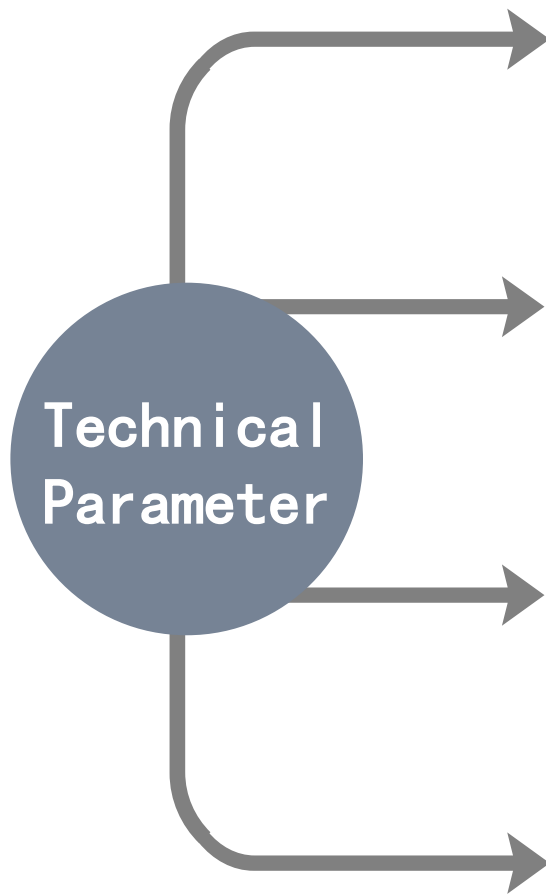
As the stroke reaches the limit, the elastic commutator reverses, the upward air inlet is opened, the downward exhaust port is closed, and the piston moves downward. As the stroke reaches its limit, the elastic commutator reverses and the piston completes a continuous up and down motion to complete the pump delivery.

Medium Working Process: When the cylinder piston moves upward, ball valve 1 opens, ball valve 2 closes, the medium enters the pump chamber from inlet D, and the medium is discharged from port F; when the piston moves downward, ball valve 1 closes, ball valve 2 opens, and the medium is discharged from port F.



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Technical Parameter

A central grey circle contains the text "Technical Parameter". Four grey arrows originate from the right side of the circle and point towards the four technical parameter boxes on the right. The arrows are of varying lengths and curves, creating a fan-like effect.

Technical Parameter

Flow Rate

Depending on the pressure ratio, the discharge flow rate will be different, with a flow range of 22.8 to 75lpm.

Pressure

The maximum working pressure can reach 15 to 144 bar.

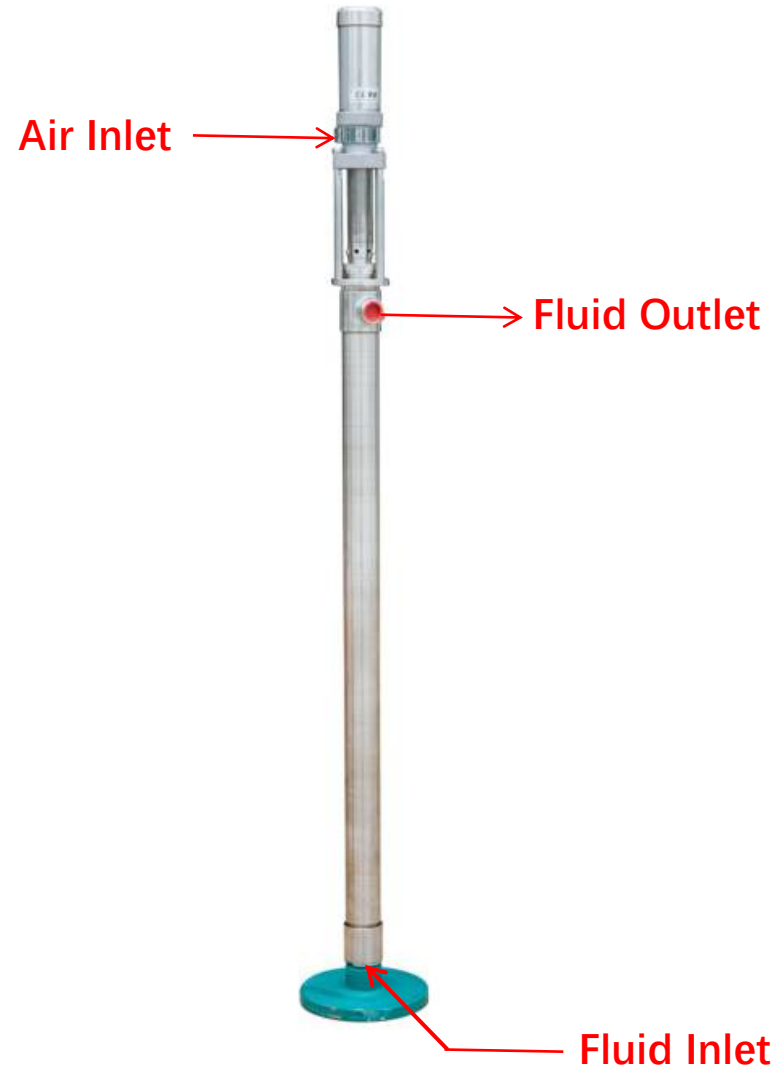
Piston Diameter and Stroke

It affects the pump displacement and working efficiency.

Air Source Pressure

The air supply pressure ranges from 2 to 12 bar to ensure the normal operation of the pump.

GK 1.25:1 Pneumatic Piston Pump



● Technical Parameter

Max. Working Pressure: 174psi(1.2Mpa, 12bar)

Max. Flow Rate: 6 gpm(22.8 lpm)

Max. Suction Height: 5m

Max. Permitted Grain: 2.5mm

Fluid Outlet Size: 3/4in

Fluid Inlet Size: 1-1/2in

Max. Air Consumption: 34scfm(17L/s)

Air Inlet Size: 1/4in

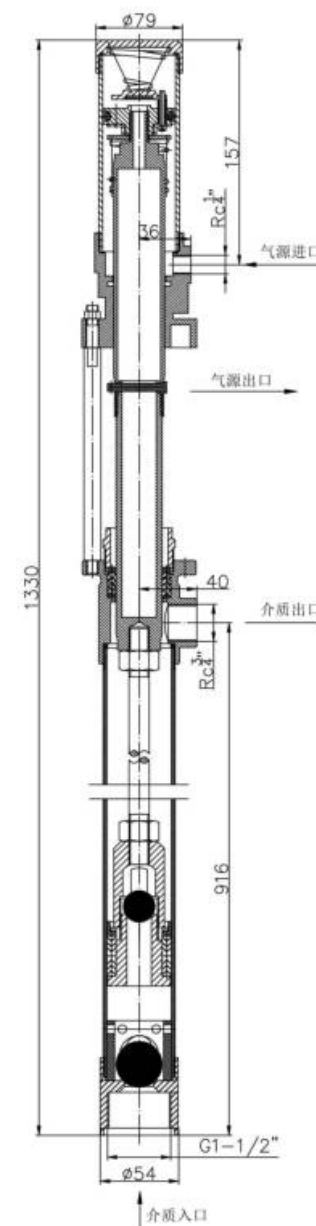
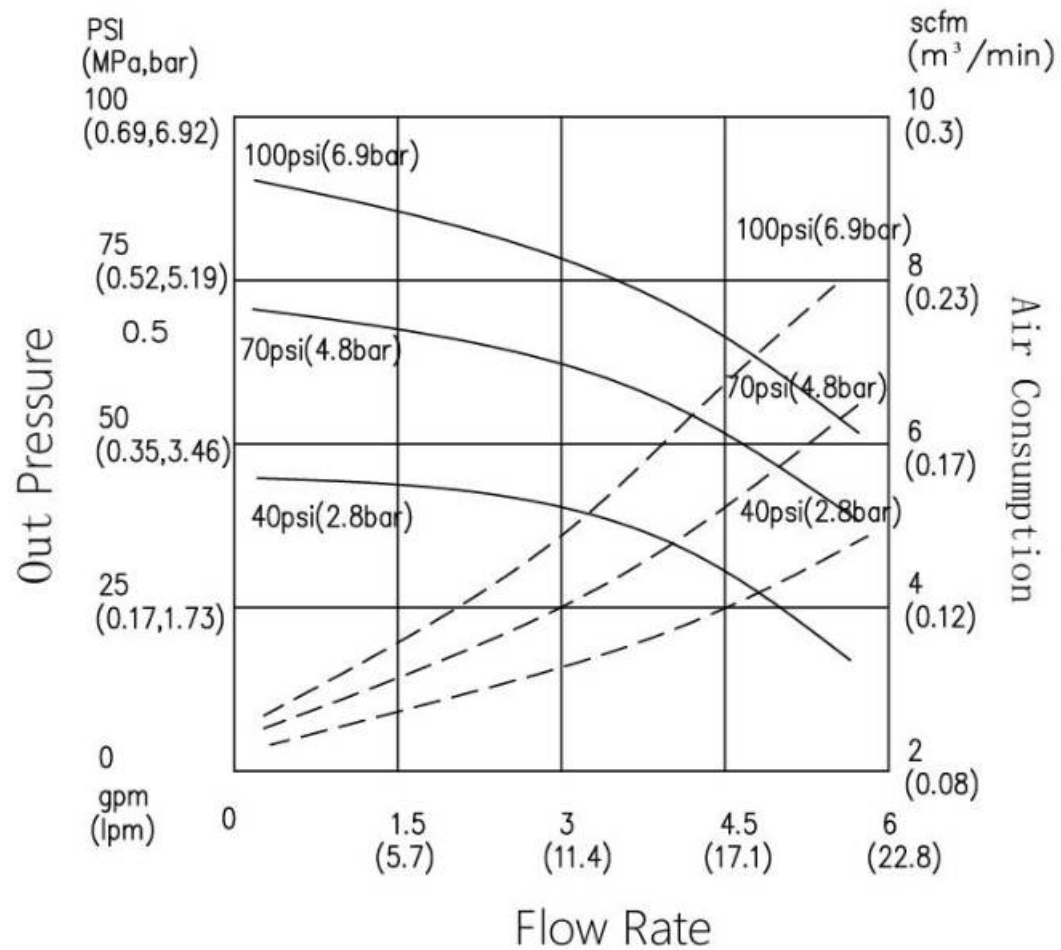
Connection: Female thread

Ratio: 1.25:1

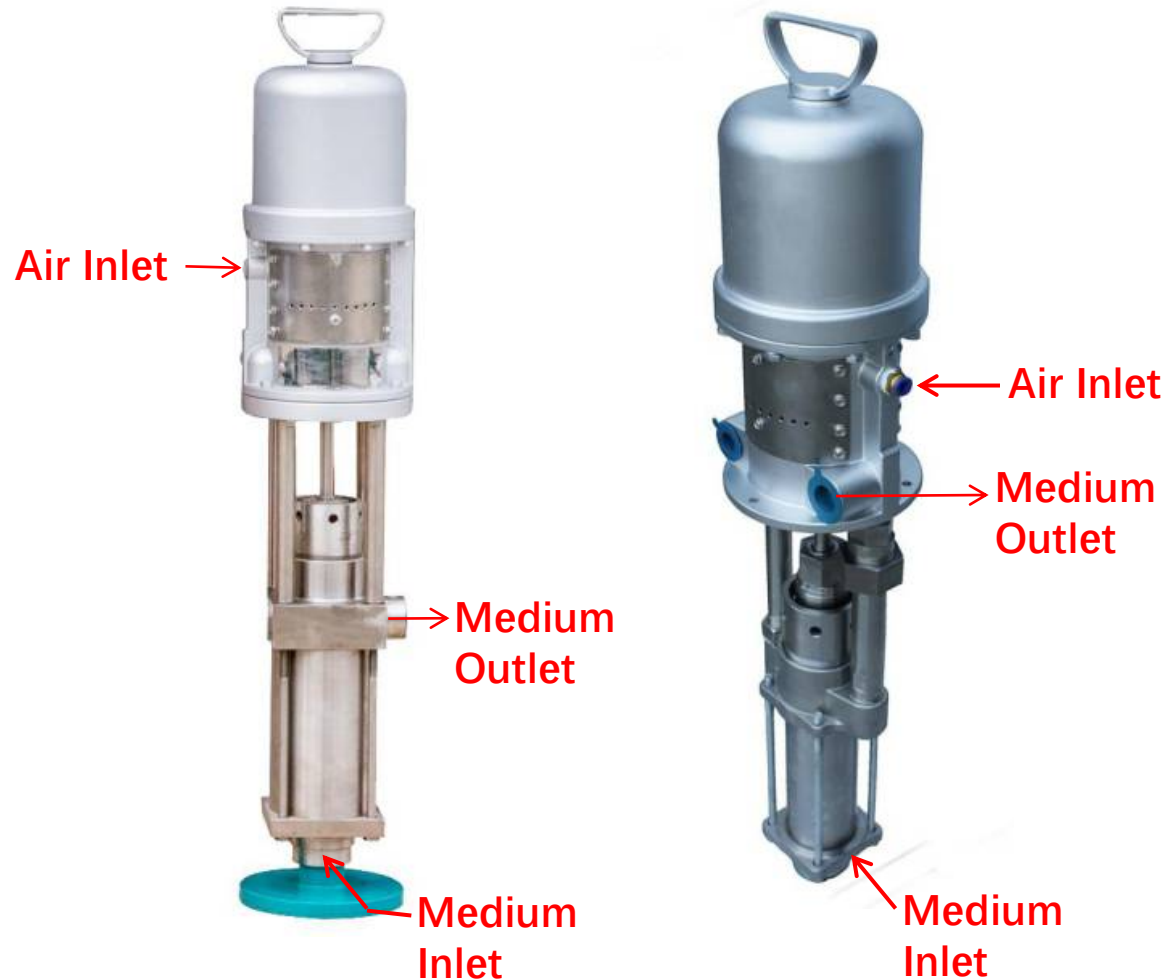
Feature: Small and exquisite

GK 1.25:1 Pneumatic Piston Pump

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GK 2:1 Pneumatic Piston Pump



● Technical Parameter:

Max. Working Pressure: 290psi(2.0Mpa,20bar)

Max. Flow Rate: 20 gpm(75 lpm)

Max. Suction Lift: 6m

Max. Permitted Grain: 3mm

Fluid Outlet Size: 1-1/2in

Fluid Inlet Size: 1-1/2in

Max. Air Consumption: 70scfm(35L/s)

Air Inlet Size: 1/2in

Connection: Female thread

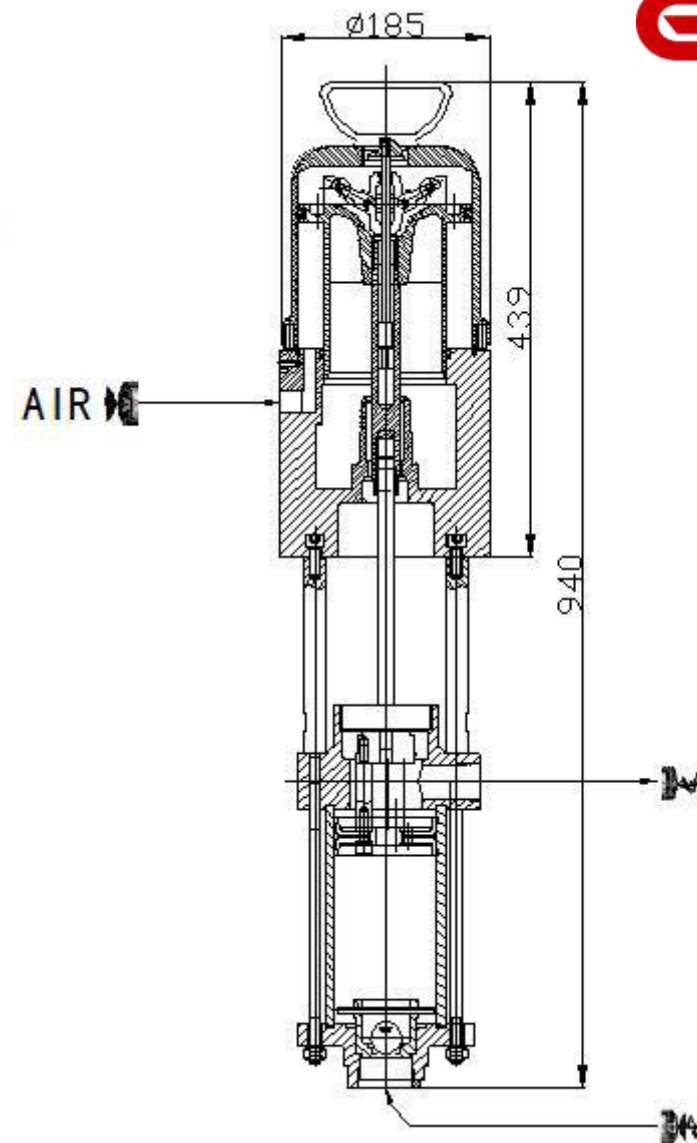
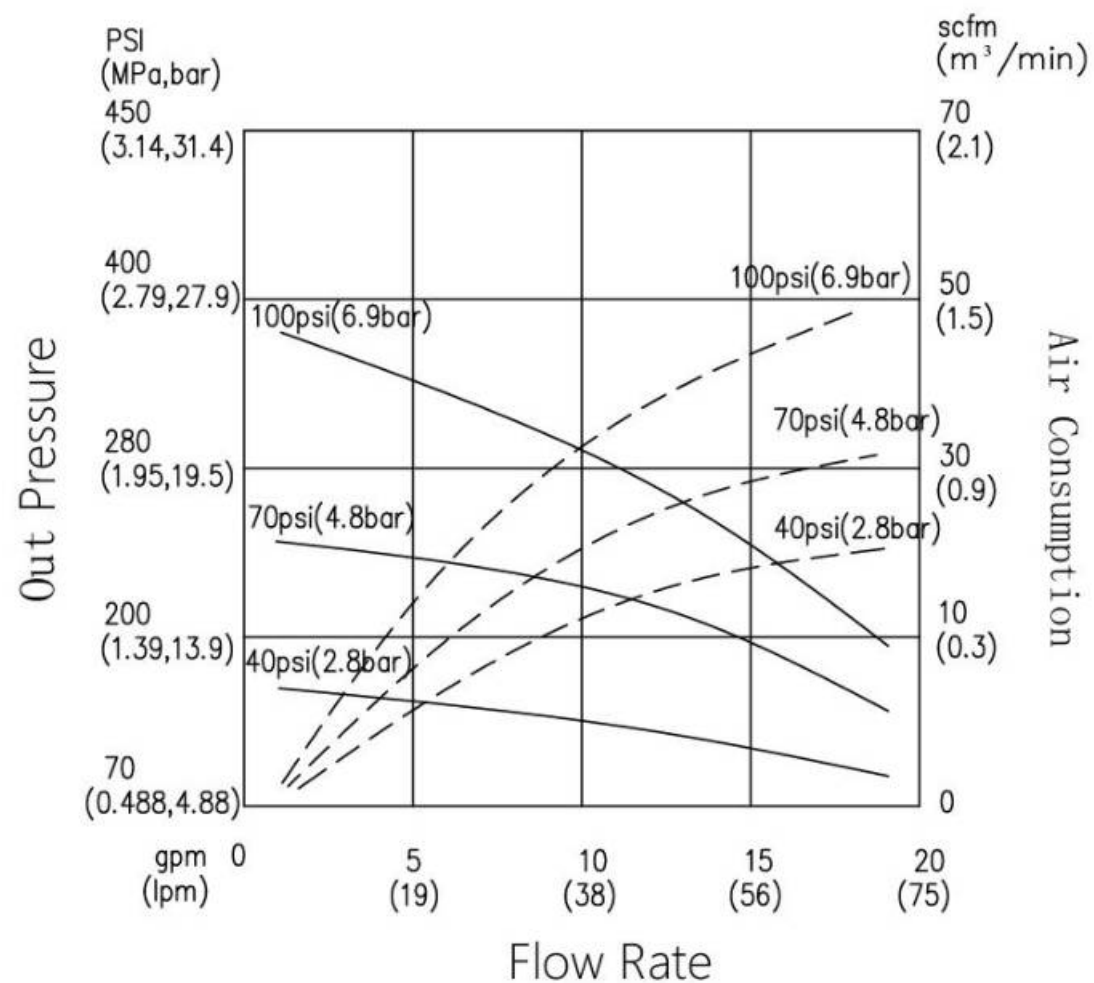
Ratio: 2:1

Feature: For the same cylinder, the pressure ratio can

be selected

GK 2:1 Pneumatic Piston Pump

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GK 3:1 Pneumatic Piston Pump



● Technical Parameter:

Max. Working Pressure: 435psi(3.0Mpa,30bar)

Max. Flow Rate: 14 gpm(53 lpm)

Max. Permitted Grain: 3mm

Max. Suction Lift: 7m

Fluid Outlet Size: 1in

Fluid Inlet Size: 1-1/2in

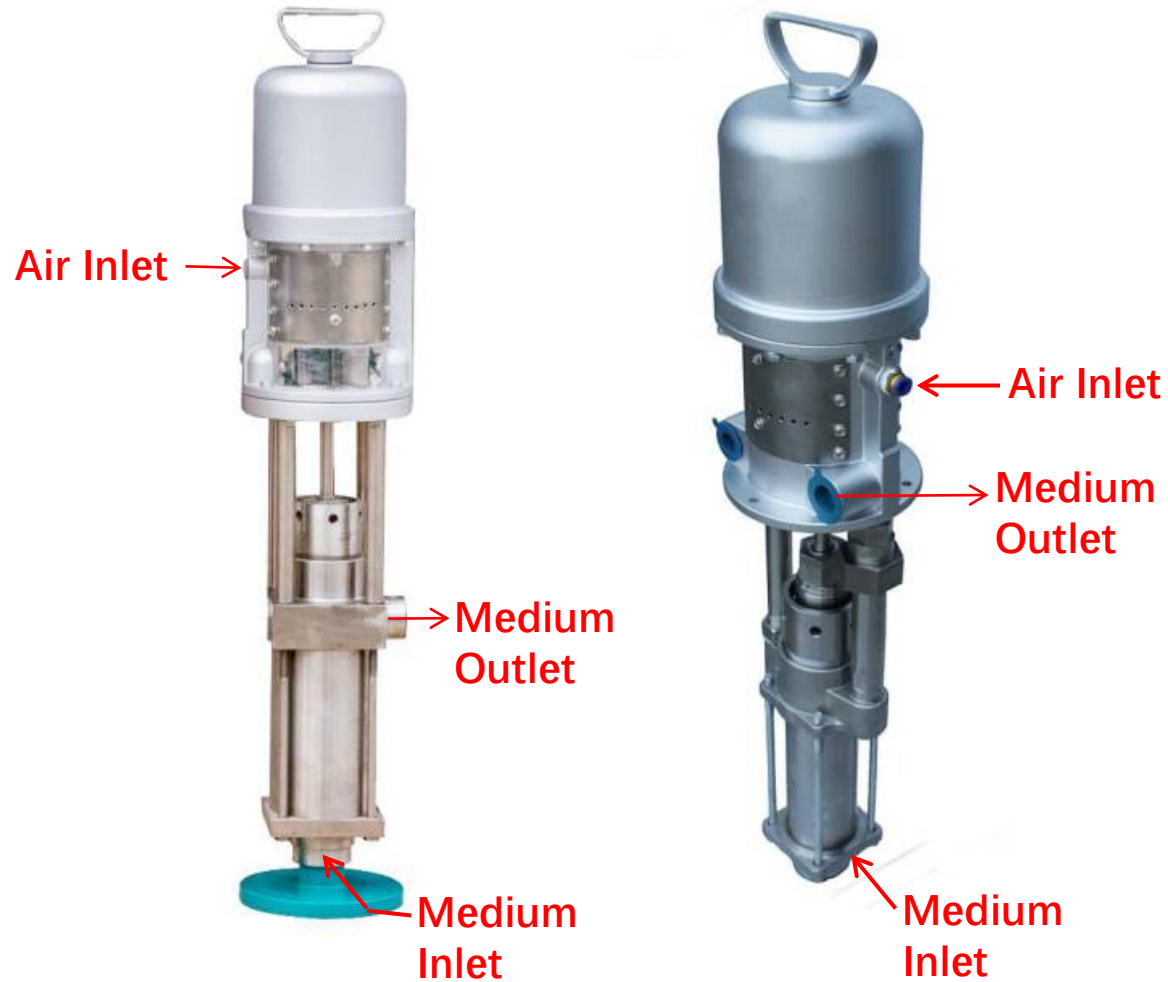
Max. Air Consumption: 60scfm(28L/s)

Air Inlet Size: 1/2in

Connection: Female thread

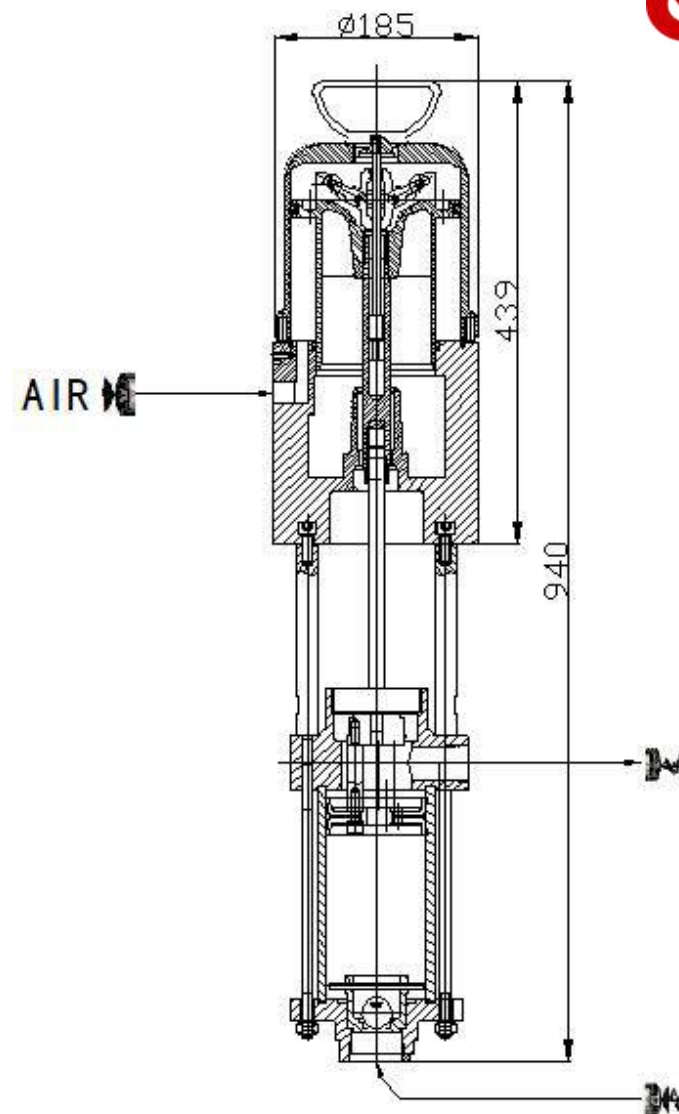
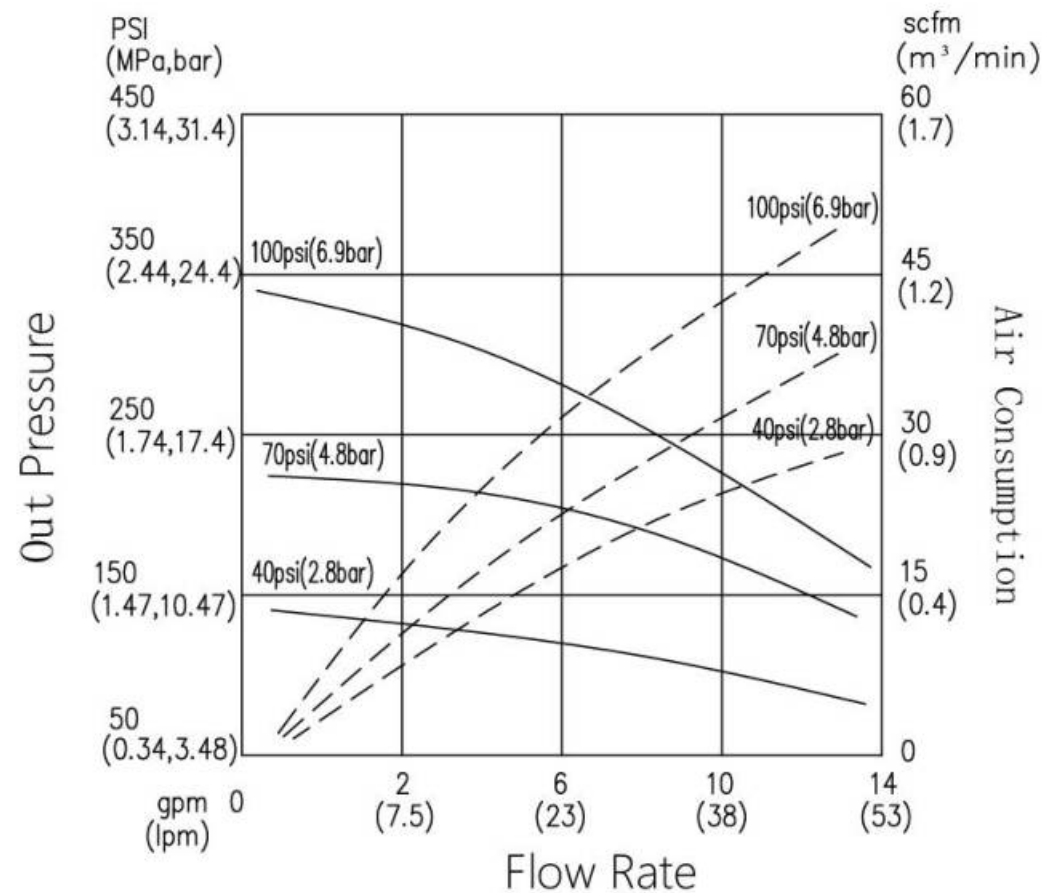
Ratio: 3:1

Feature: For the same cylinder, the pressure ratio can be selected

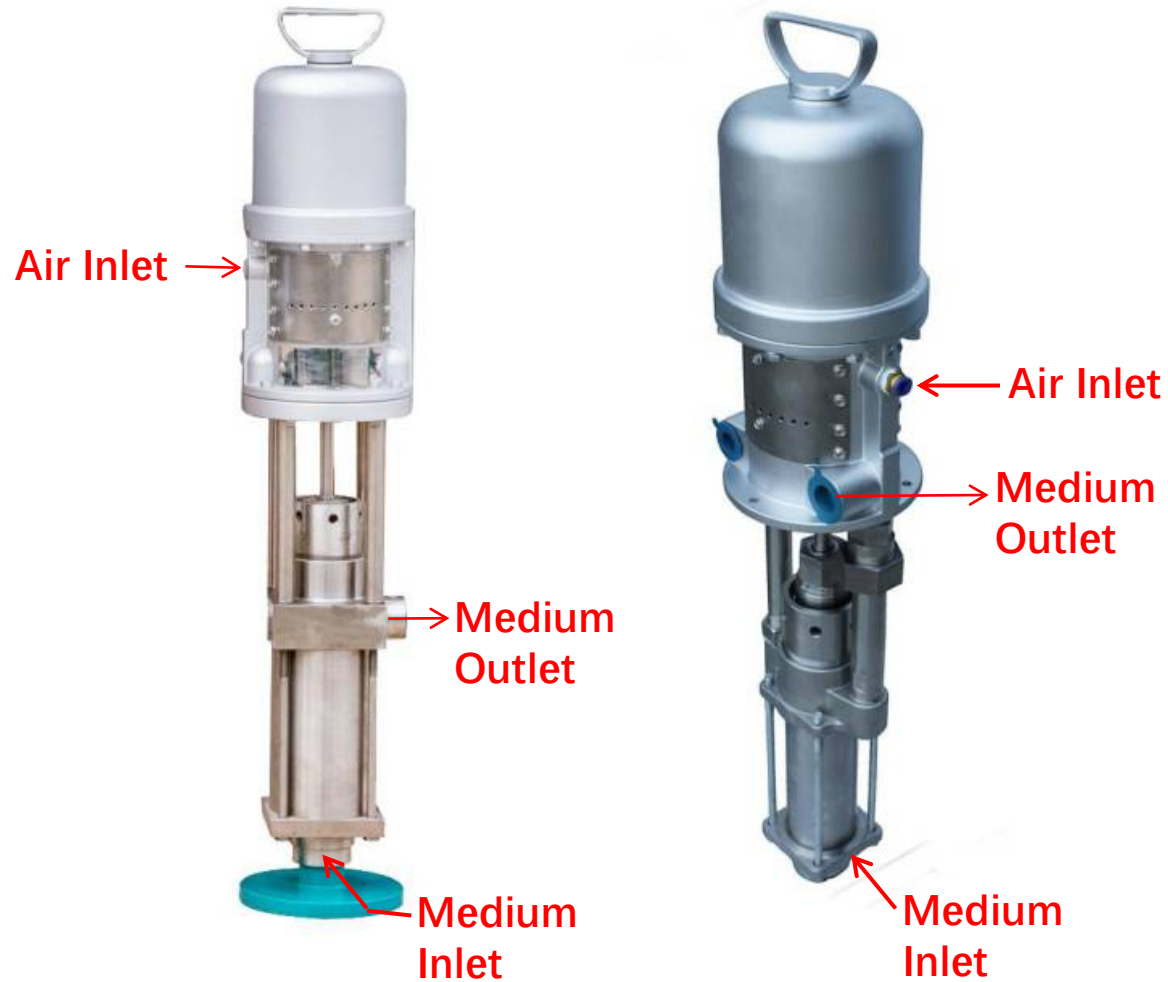


GK 3:1 Pneumatic Piston Pump

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GK 4:1 Pneumatic Piston Pump



● Technical Parameter:

Max. Working Pressure: 580psi(4.0Mpa,40bar)

Max. Flow Rate: 18 gpm(38 lpm)

Max. Permitted Grain: 3mm

Max. Suction Lift: 6m

Fluid Outlet Size: 1-1/2in

Fluid Inlet Size: 1-1/2in

Max. Air Consumption: 40scfm(20L/s)

Air Inlet Size: 1/2in

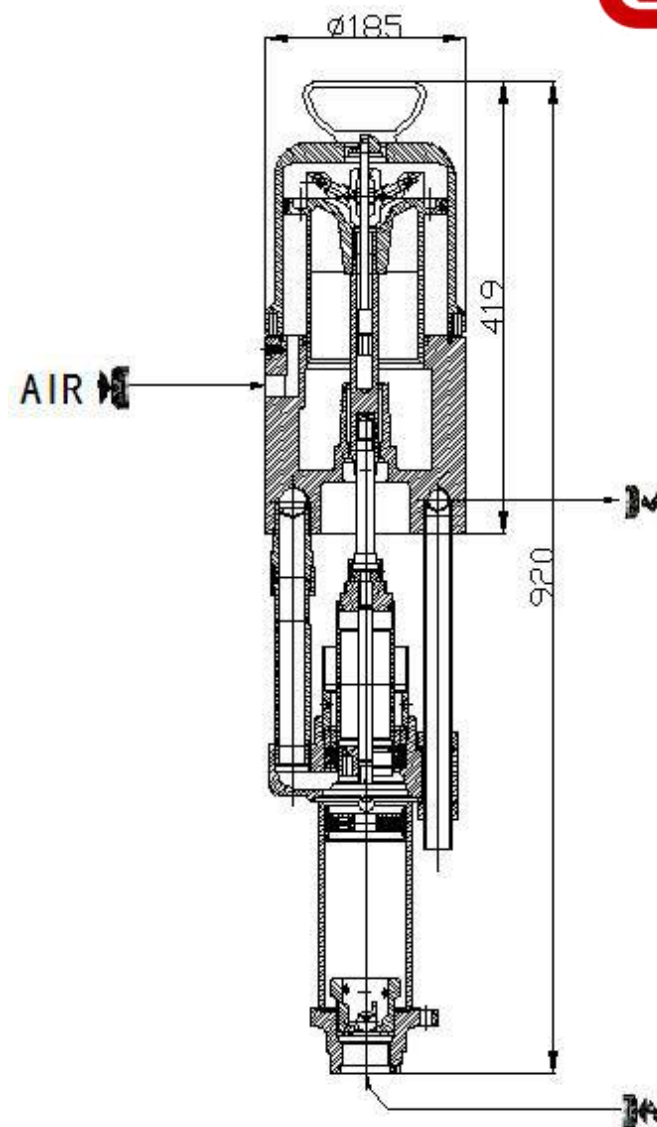
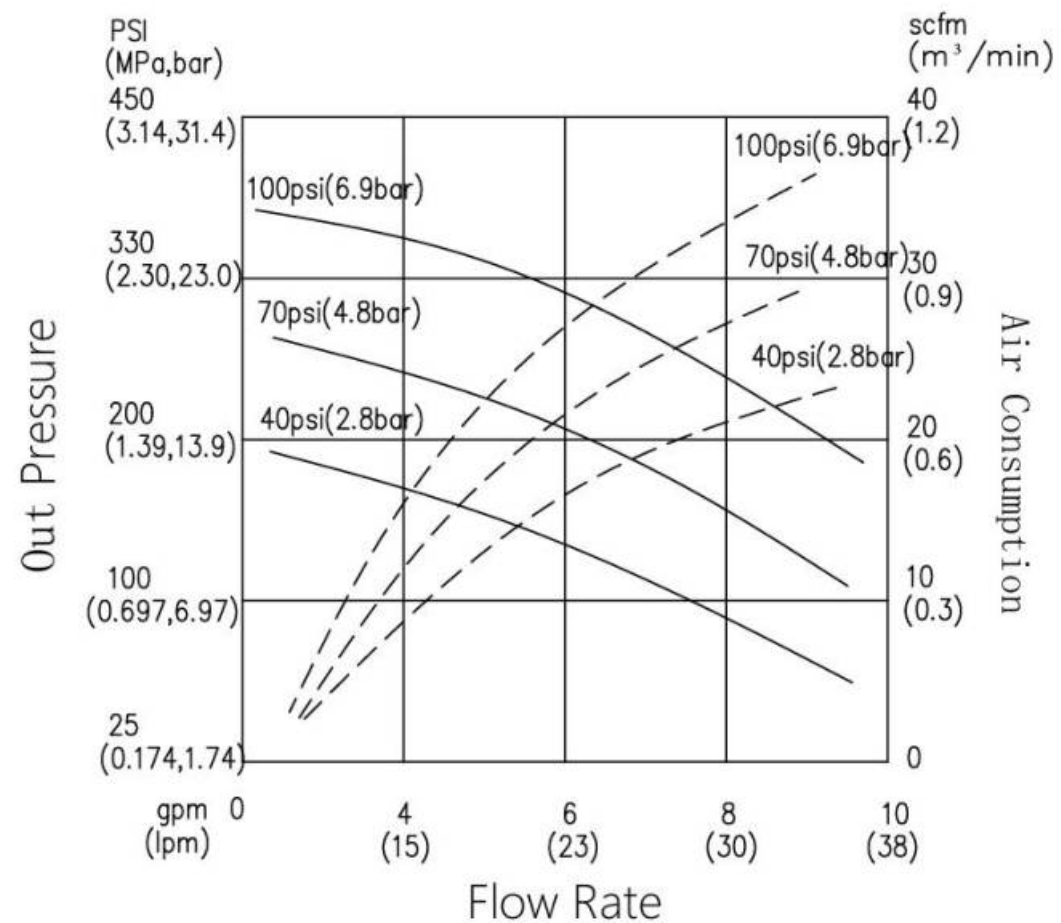
Connection: Female thread

Ratio: 4:1

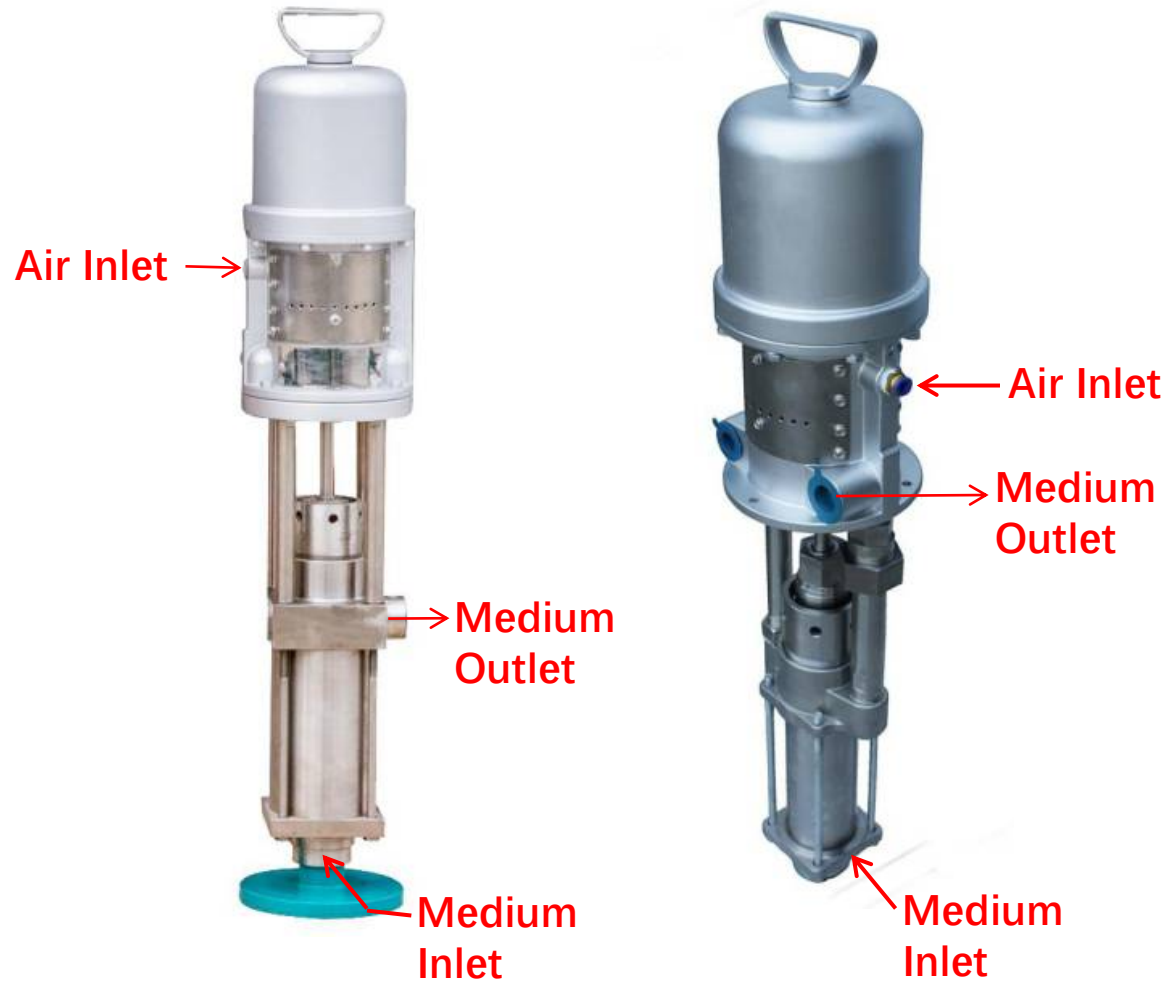
Feature: For the same cylinder, the pressure ratio can be selected

GK 4:1 Pneumatic Piston Pump

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GK 5:1 Pneumatic Piston Pump



● Technical Parameter:

Max. Working Pressure: 725psi(5.0Mpa,50bar)

Max. Flow Rate: 15L/min

Max. Permitted Grain:

Max. Suction Lift: 8m

Fluid Outlet Size: 1-1/2in

Fluid Inlet Size: 1-1/2in

Max. Air Consumption: 35scfm(19L/s)

Air Inlet Size: 1/2in

Connection: Female thread

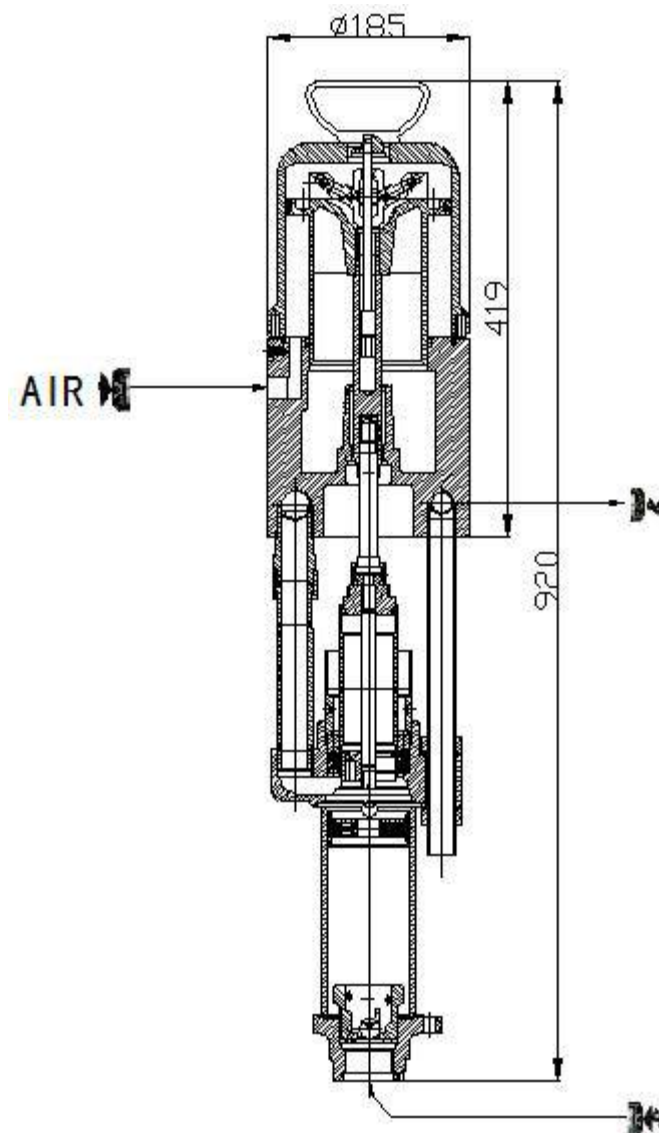
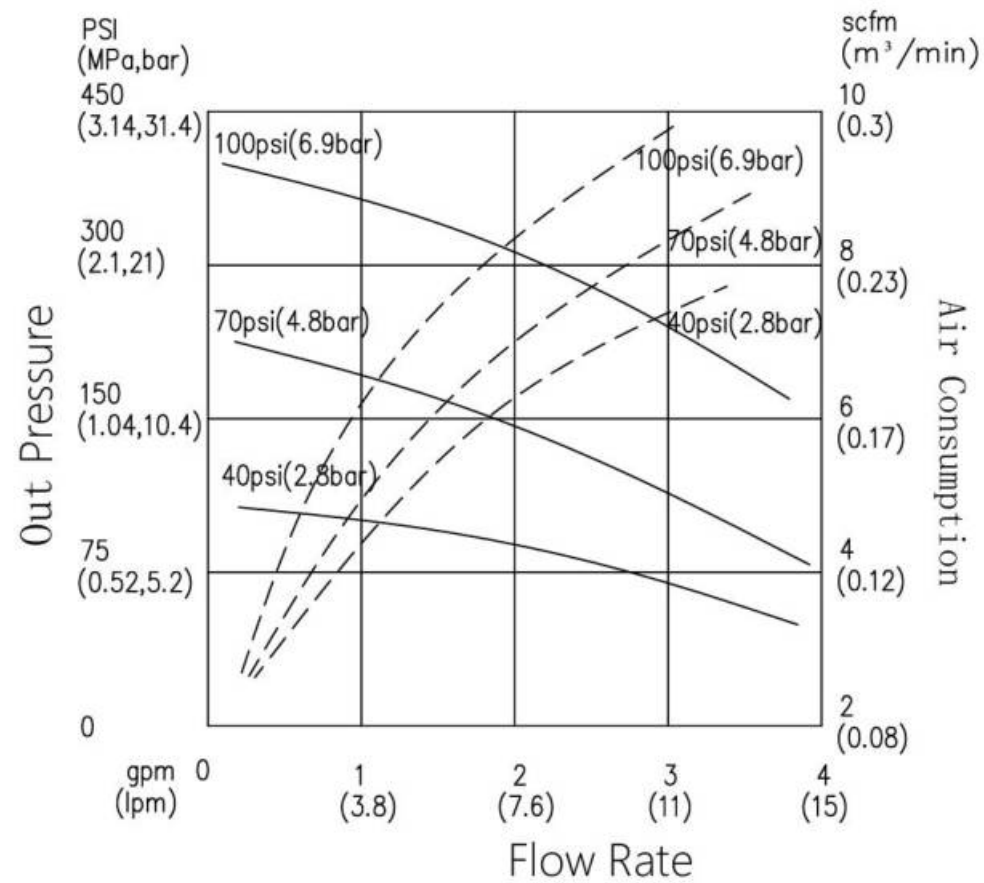
Ratio: 5:1

Feature: For the same cylinder, the pressure ratio

can be selected

GK 5:1 Pneumatic Piston Pump

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GK 12:1 Pneumatic Piston Pump



● Technical Parameter:

Max. Working Pressure: 1800psi(12.5Mpa, 125bar)

Max. Flow Rate: 19L/min

Max. Suction Lift: 10m

Max. Permitted Grain: 2.5mm

Fluid Outlet Size: 1in

Fluid Inlet Size: 1-1/2in

Max. Air Consumption: 80scfm(2.2m³/min)

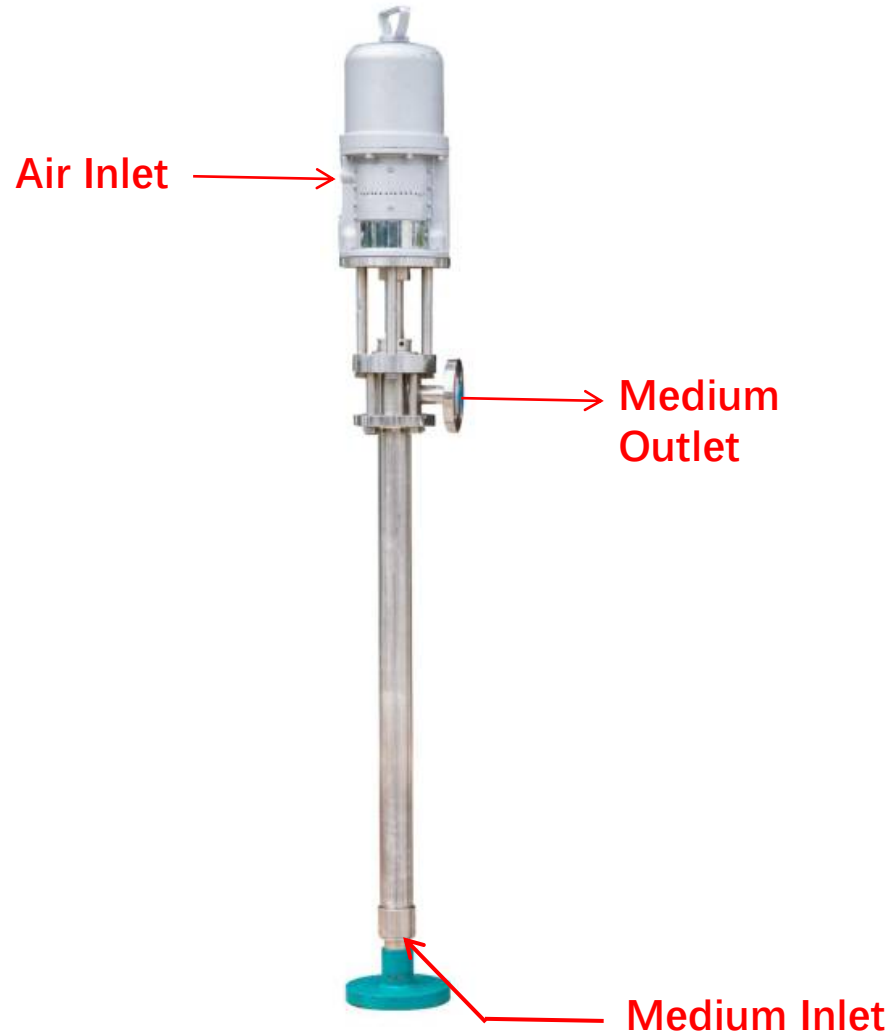
Air Inlet Size: 1/2in

Connection: Flange

Body Material: SS304/SS316

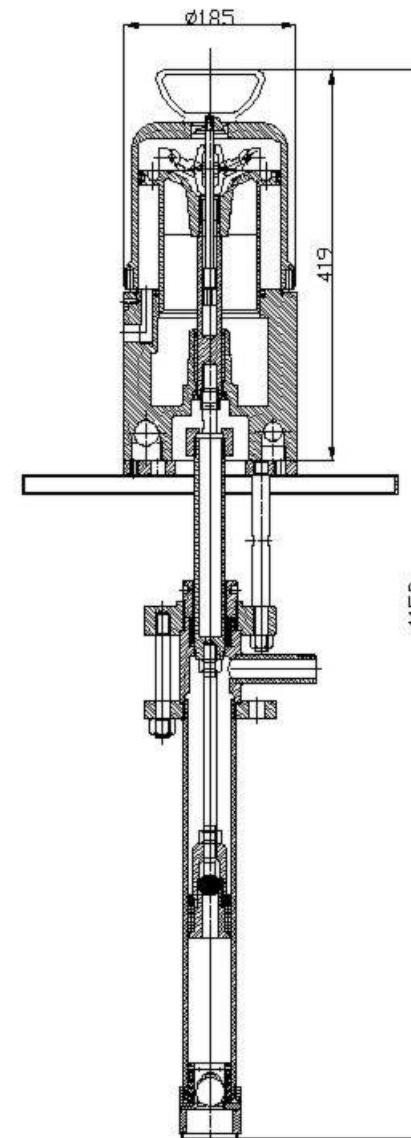
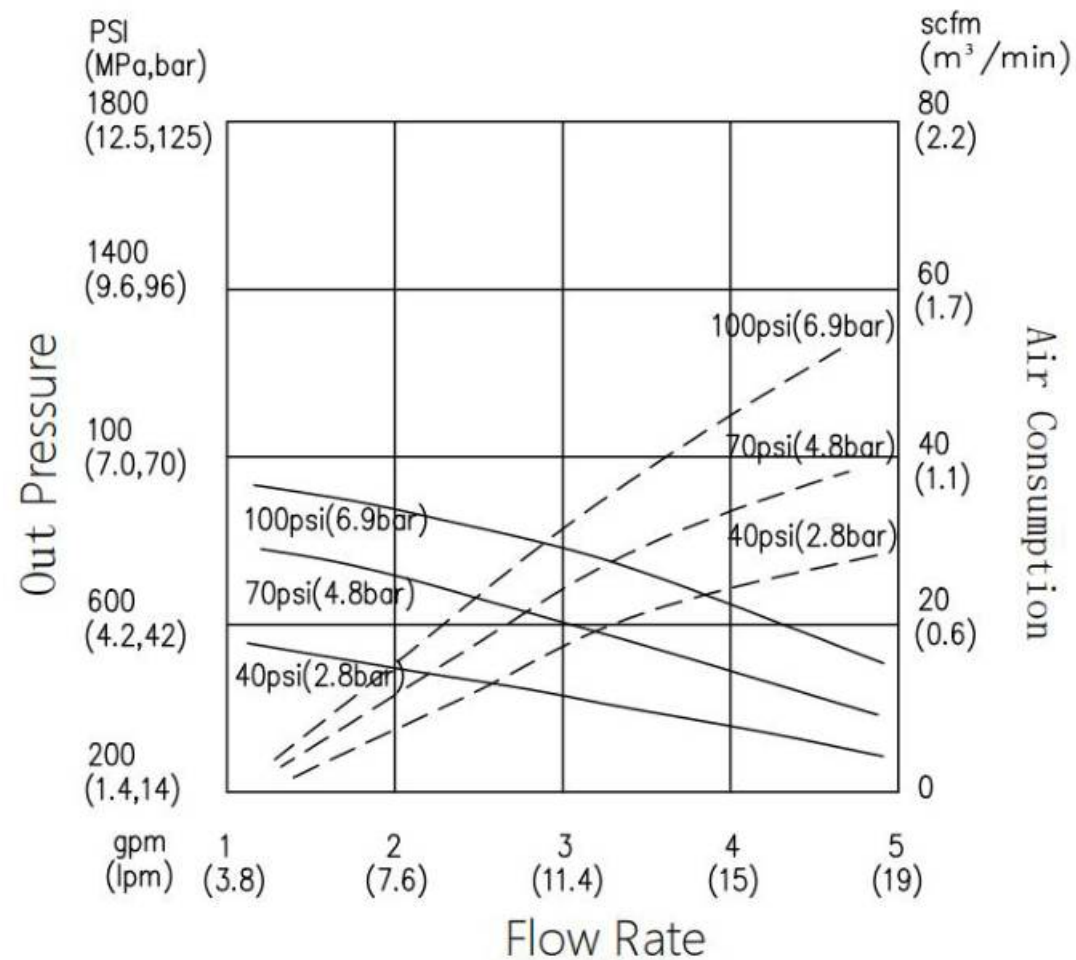
Ratio: 12:1

Features: Small pump barrel, high pressure ratio, optional pump barrel length.

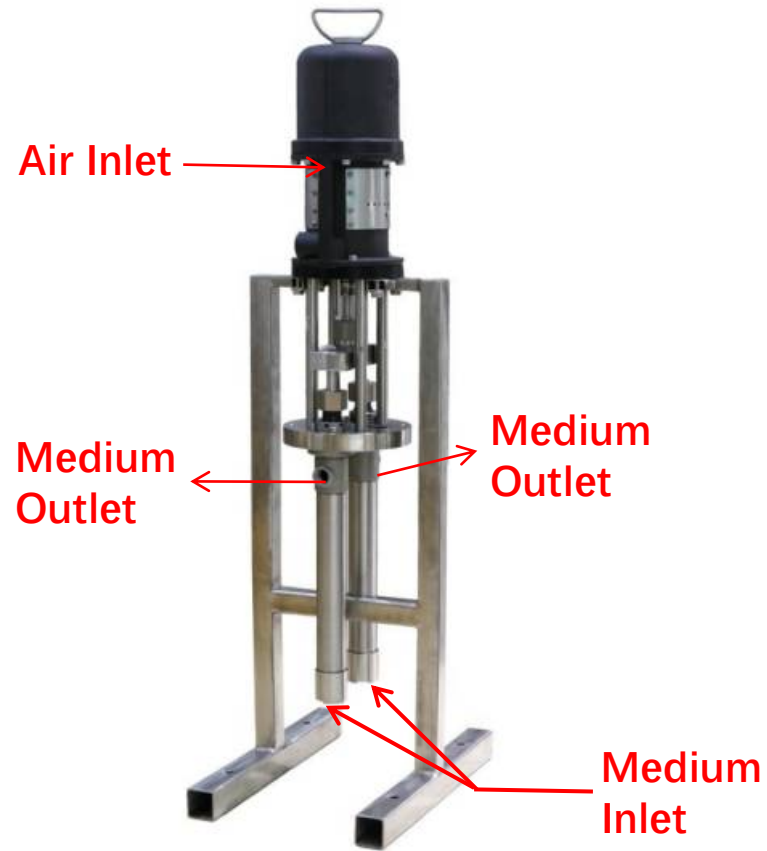


GK 12:1 Pneumatic Piston Pump

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GK Double Inlet & Outlet Pneumatic Piston Pump



● Technical Parameter:

Max. Working Pressure: 5.0Mpa

Max. Flow Rate: 60L/min

Max. Suction Lift: 3m

Max. Permitted Grain: 2.5mm

Fluid Outlet Size: 3/4in

Fluid Inlet Size: 1-1/2in

Fluid Inlet Size: 1/2in

Connection: Female thread

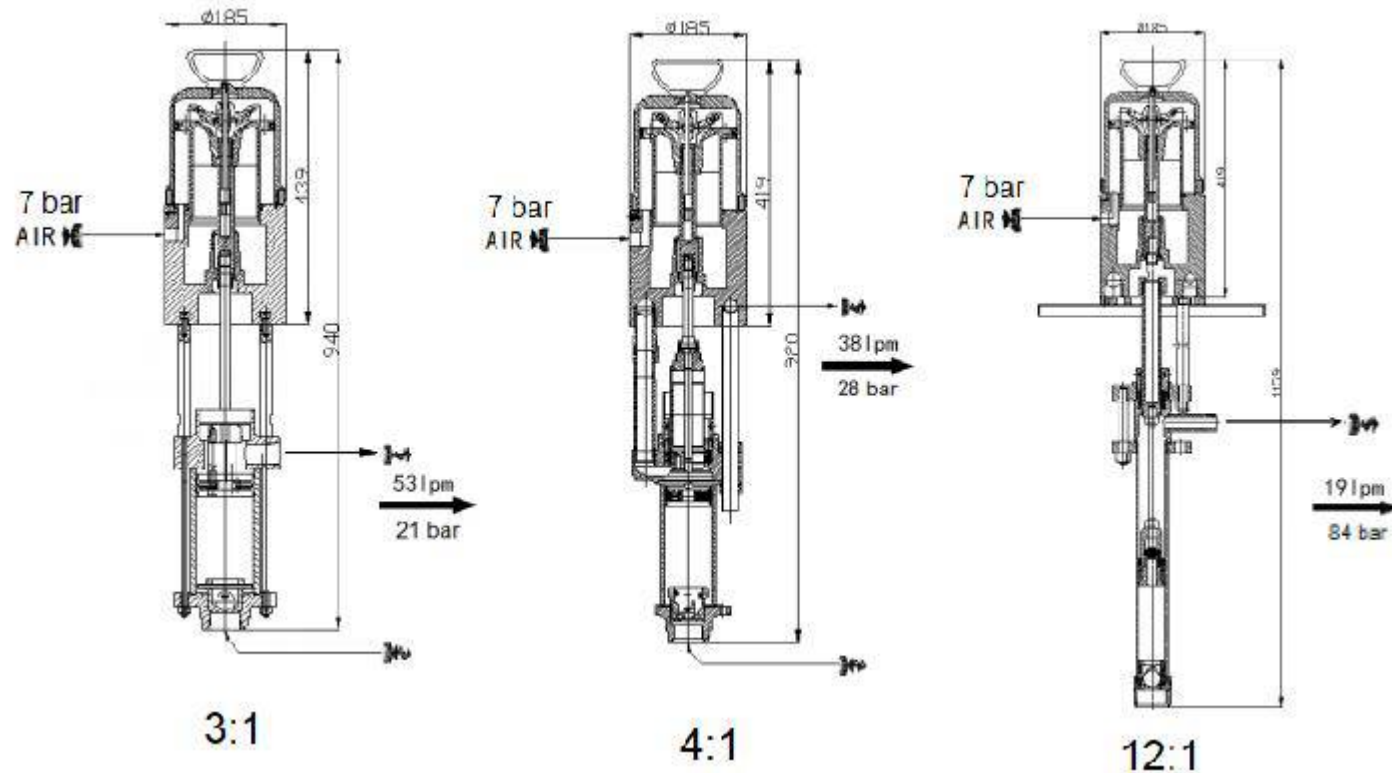
Features: It can convey 2 kinds of materials at the same time.

It can also suck in 2 kinds of materials and discharge one kind of material with a complete proportion, thus reducing energy efficiency and saving costs.

Pressure Ratio Calculation of Piston Pump



Pump Pressure Ratio: It is determined by dividing the effective area of the cylinder piston by the effective area of the pump body piston.



Calculate: Ratio/Pressure

Pump Pressure Ratio: 4:1

Air Inlet Pressure: 100-psi

Calculate:

4:1

Pressure Ratio

x 100-psi

Air Inlet Pressure

= 400

Fluid Outlet Pressure

★ The same air motor, different pressures correspond to different flow rates

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Product Features

General Features



1. Transporting ultra-high viscosity materials

For high viscosity fluids, the conveying viscosity can reach 20,000CPS.

2. Good Stability/Simple Structure

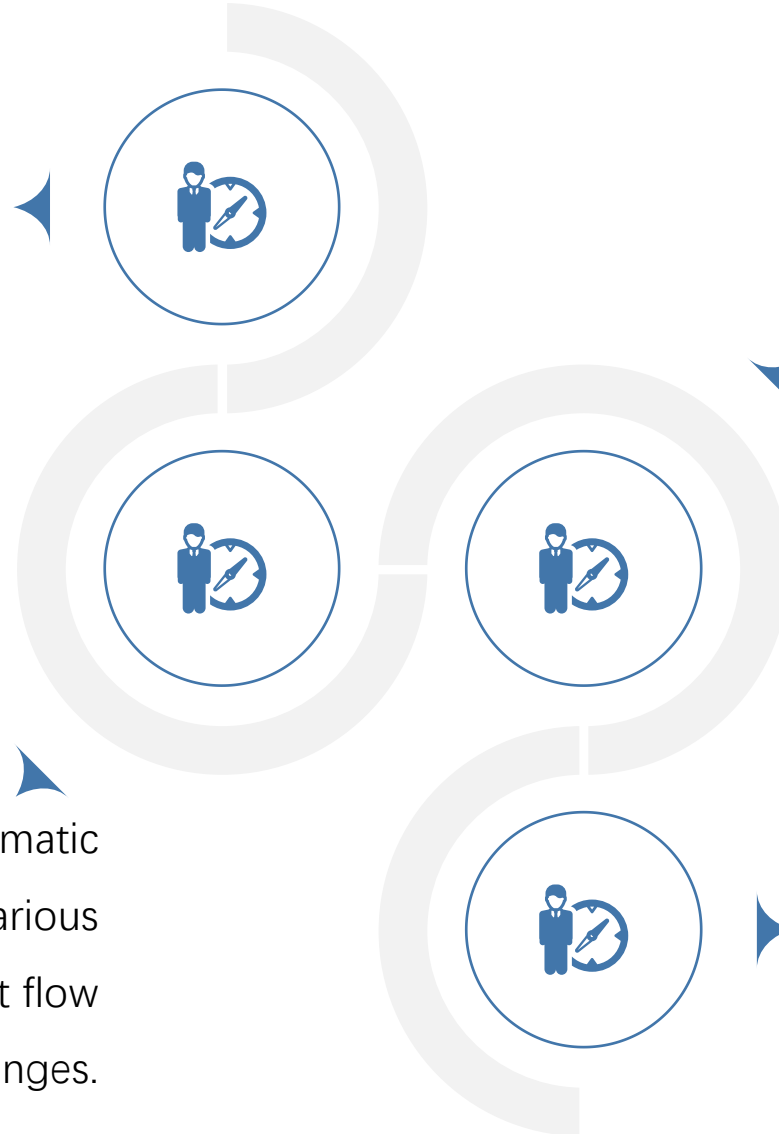
The cavity and piston of the piston pump are constant, the running stroke is also specified, and the flow stability of the pump is much higher than that of the pneumatic diaphragm pump. There is no transmission device such as motor and reducer, and the pump is small in size, light in weight, and easy to install and maintain.

3. Various Types of Air Motors

We can provide various types of pneumatic motors and piston pumps made of various materials to meet the needs of different flow ranges and pressure ranges.

4. Corrosion-Resistant, High-Temperature-Resistant, Explosion-Proof

It can be applied in printing, coatings, textiles, and chemicals.



Viscosity of Topic Products

Low	Ether	0.2cp	< 100cps
	Benzene	0.6cp	
	Carbon tetrachloride	0.9cp	
	Beer	1.1cp	
	Alcohol	1.2cp	
	Milk	3cps	
Medium	Vegetable oil	34cps	> 100cps, < 1000cps
	Ketchup	176cps	
High	Glycerin	1500cps	> 1000cps
	Molasses	1760cps	
	Glue/honey	3000cps	
	Syrup	8640cps	
	Sour cream	15200cps	

6

Application Fields

Actual User Site



Coatings



Spraying



Environmental Protection

A complex geometric diagram is centered on the page. It features two large, white-outlined triangles that overlap. Inside these triangles, there are several smaller white triangles and two solid green triangles. Arrows of various sizes and colors (white and green) point in different directions, creating a sense of movement and flow. The diagram is set against a blue background that has a subtle, diagonal line pattern.

**IF YOU ARE INTERESTED, FEEL FREE TO
CONTACT US FOR MORE INFORMATION.**

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