

INTERNATIONAL STANDARD ◆ EXCELLENT QUALITY



Air Driven Hydraulic Pumps

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SHINEAST

济南赛思特流体系统设备有限公司
JINAN SHINEAST FLUID SYSTEMS EQUIPMENT CO.,LTD



تامین و تجهیز ابزار دقیق آرمه

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Welcome to SHINEAST



Jinan Shineeast Fluid Systems Equipment Co., Ltd., founded in 2001, is a professional manufacturer of highly engineered fluid and gas handling equipment designed to generate, store and control high pressure gases and liquids.

In addition to offering a comprehensive range of pneumatic driven liquid pumps, air pressure boosters, pneumatic driven gas boosters, high pressure valves, fittings and accessories, power packages and hydraulic presses, pressure test machines, valve and pipe fittings test equipments, fluid transfer pumps and related equipments, CNG vehicle refitting test equipments and the oil and gas field special controls and test equipments, we customize and build power packs and test rigs. Our main manufacturing locations are fully registered to ISO9001.

Our products are widely used in industry, machine tool industry, diesel engine industry, aerospace industry, automobile manufacturing, household electrical appliances, industrial electronics industry, shipbuilding industry, petrochemical industry, oil and gas field, CNG vehicle conversion industry, pressure test industry and other fields.

Shineeast also has a strong commitment to providing you with high quality products as well as excellent service and technical support; and we have built an enviable reputation for quality in the world market. This helps to keep Shineeast as the best choice for all of your high pressure requirements.

We are here to solve your problems. Please contact us to discuss your requirements or visit our website at www.shine-east.com for more information.

SHINEAST

SHINEAST has been developing and manufacturing components and complex systems for high pressure technology for nearly

ten years. Presently General Manager Mr. Bian is managing the SHINEAST with its factories in Jinan city in China and is in the high speed development stages.

SHINEAST group offers to you

- Years of experience in the high pressure technology.
- Quality management certified according to ISO9001.

General Information

Air Driven Liquid Pumps

SHINEEAST Company has more than ten years of hydraulic and pneumatic engineering experience in the design and manufacture of air driven liquid pumps. Continuous investment in new machinery and advanced technology imported keeps SHINEEAST at the forefront of the field. We offer the most complete range of models in the industry measured for:

- A. Capability of ultimate pressure, flow or output horsepower.
- B. Compatibility with a broad variety of liquids, such as oil, water and chemical applications.

SHINEEAST pumps are air driven at a drive air pressure of 2 to 10bar (29 to 145 psi). Basically the principle of operation is similar to a reciprocating amplifier where control of the piston at the end position is regulated by a pilot operated 4/2 way valve.

SHINEEAST pumps feature a large air piston joint to a smaller diameter plunger. The pressure ratio is the difference of these two areas and is the method of determining maximum outlet pressure. Higher pressure is obtained by using higher pressure ratios. SHINEEAST model numbers reflect the pumps nominal pressure ratios, while the technical data indicates exact ratios. The outlet pressure is easily to set through a simple air regulator. By multiplying the pressure ratio by the available shop air pressure, the nominal liquid pressure can be calculated.

SHINEEAST pumps are self priming. In general it is not necessary to use an air line lubricator. The liquid to be pumped, flows into the suction chamber by the up-stroke of the drive piston. By this suction effect, the inlet check valve is opened and the outlet check valve is closed. The down-stroke generates the pressure at the liquid side. The inlet check valve is closed and the outlet check valve is opened by the generated pressure. SHINEEAST liquid pumps cycle automatically, where the pressure is built up the numbers of cycles slow down, the pump stops automatically when the output pressure forces are equal. The pump restarts with a slight drop in the outlet pressure or an increase in the air drive pressure. Pump performance can be affected by a number of conditions, such as freezing of muffler or pilot valves (which is caused by moisture in air lines), inadequate inlet air line sizes and dirty filters. Don't reduce the indicated port sizes and consult SHINEEAST for exact flow conditions not shown in charts. SHINEEAST offers complete technical and service support for all SHINEEAST pumps.



Air driven hydraulic pumps display:

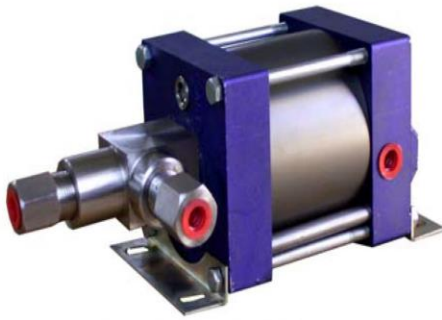


M Series Air Driven Liquid Pump
Four types Seventeen models

Why Use SHINEEAST Pneumatic Driven Pumps ?

Our pumps offer many advantages over electrically driven pumps:

- High quality product
- Outstanding life time
- Few moving parts
- Portable design



L Series Air Driven Liquid Pump
Eight types

- Easy to install and operate
- No electrical power required
- Economical source for pneumatic power
- Pressure held without energy consumption and without media heating
- Standard ratios available for pressures to 640Mpa (92,800 psi)
- Best price / performance ratio



S Series



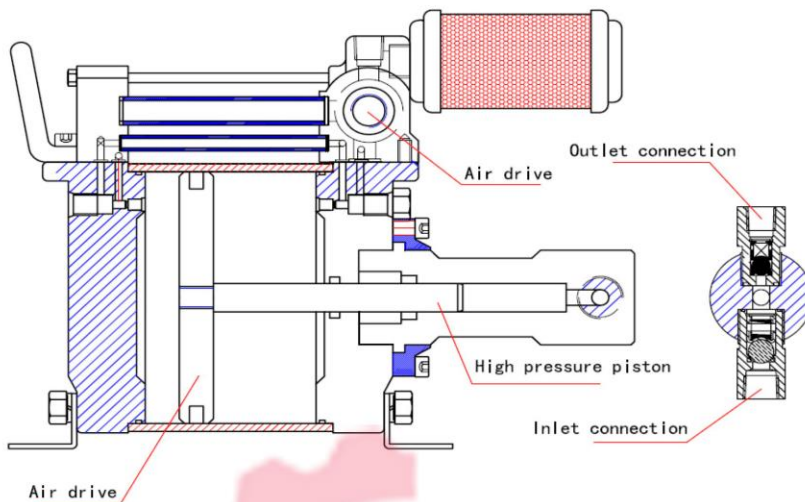
G Series

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Applications include:

- Pressure testing
- Work holding/power clamping
- Jacking/lifting
- Valve actuator control
- Hydraulic cylinder actuation
- Press safety overload devices
- Roller tensioning
- Metering
- Precision lubrication and spraying
- Liquefied gas transfer

Function scheme of the Air Driven hydraulic Pumps



Type code

E.g. M 10 W
1 2 3

The type code denotes the following

1. Type of construction
2. Pressure ratio
3. Operation medium

Operation medium

W ---water O ----oil F ---- corrosive liquid

How to select Air Driven Liquid Pumps

SHINEAST pumps are suitable for liquid applications. To select and order a hydraulic pump that is suitable the best for your applications, the following parameters have to be observed:

- **Liquid to be handled**

The type of liquid is essential to select a SHINEAST pump hence the wetted material of construction and compound of the seals are determined by the specific fluid. SHINEAST pumps are available for several services. The two most important we are offering standard pumps are for oil or water use, see also ordering codes.

- **Available air drive pressure**

SHINEAST pumps are designed for an air drive pressure of $p_L = 1$ to 8 bar (14,5 to 116 psi) maximum.

- **Required hydraulic outlet pressure and flow capacity**

The outlet pressures given in the technical pump tables are based upon a maximum air drive pressure of $p_L = 8$ bar. The real outlet pressure in your specific case is determined by air drive pressure multiplied by pressure ratio, $p_L * i$. The indicated flow capacities Q_{max} is the maximum value which can be reached at an outlet pressure of 0 bar and an air drive of $p_L = 6$ bar.

- **Size and weight**

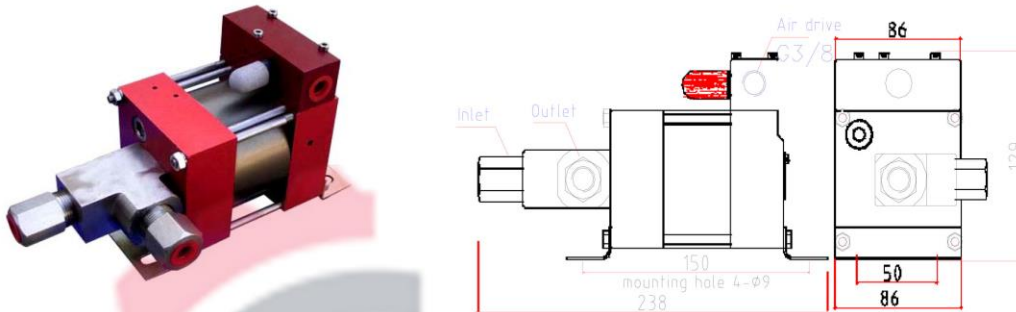
For some applications the size and weight are also important to select a pump.

M pumps

Single acting, single air drive head

Diameter of drive plunger is 80mm

They are compact, lightweight, feature rugged construction and are available in several pressure ratios.



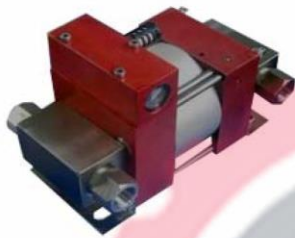
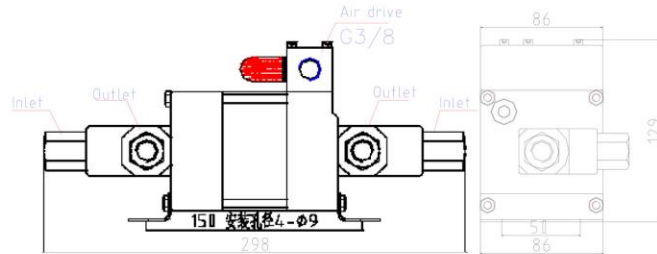
- They have aluminum bodies, with oxidation treatment and wetted materials of carbon steel or stainless steel, which depending on different service liquid. Material of stainless steel, making them an excellent choice of water application.
- All M pumps come standard with bottom inlet.
- Portable design.
- High quality seals, long service life available
- Easy to install, operate and maintenance.
- Explosion proof and no electrical power required.
- Suggest operation pressure be not above 8 bar so as to protect pumps for long life durability.
- Drive air of 7 bar will deliver approx. 15% more flow at 6 bar.
- Drive air of 5 bar will deliver approx. 15% less flow at 6 bar.

Technical Data

TYPE	Pressure Ratio	MAX Outlet Pressure(bar) *	Air drive	Connection Inlet A	Connection Outlet B	MAX Flow (L/min)**
M4	4:1	32	G3/8	G1	ZG1/2	15.07
M10	10:1	80	G3/8	ZG3/4	ZG1/2	5.88
M16	16:1	128	G3/8	ZG1/2	ZG1/2	3.76
M30	30:1	240	G3/8	ZG1/2	ZG3/8	1.85
M44	44:1	352	G3/8	ZG3/8	ZG3/8	1.35
M64	64:1	512	G3/8	ZG3/8	ZG3/8	0.94
M100	100:1	800	G3/8	ZG3/8	ZG3/8	0.60
M170	170:1	1360	G3/8	ZG3/8	ZG3/8	0.33

*Max. outlet pressure at an air drive of 8 bar/116 PSI

**Approximate flow at an air drive of 6 bar/87 PSI and an out pressure of 0 bar/PSI



MD pumps

Double acting, single air drive head

Diameter of drive plunger is 80mm

MD pumps are double acting, single air drive head type. They are characterized by the same features as the M series, but

- They have fewer pulsations and deliver approx. 50% more flow than the single acting M pumps.
- All MD pumps come standard with bottom inlet.
- High quality seals, long service life available
- Suggest operation pressure be not above 8 bar so as to protect pumps for long life durability.
- Drive air of 7 bar will deliver approx. 15% more flow at 6 bar.
- Drive air of 5 bar will deliver approx. 15% less flow at 6 bar.

Technical Data

TYPE	Pressure Ratio	MAX Outlet Pressure(bar)*	Air drive	Connection Inlet A	Connection Outlet B	MAX Flow (L/min)**
MD30	30:1	240	G3/8	1/2	3/8	3.23
MD44	44:1	352	G3/8	3/8	3/8	2.37
MD64	64:1	512	G3/8	3/8	3/8	1.65
MD100	100:1	800	G3/8	3/8	3/8	1.01
MD170	170:1	1360	G3/8	3/8	3/8	0.59

*Max. outlet pressure at an air drive of 8 bar/116 PSI

**Approximate flow at an air drive of 6 bar/87 PSI and an out pressure of 0 bar/PSI

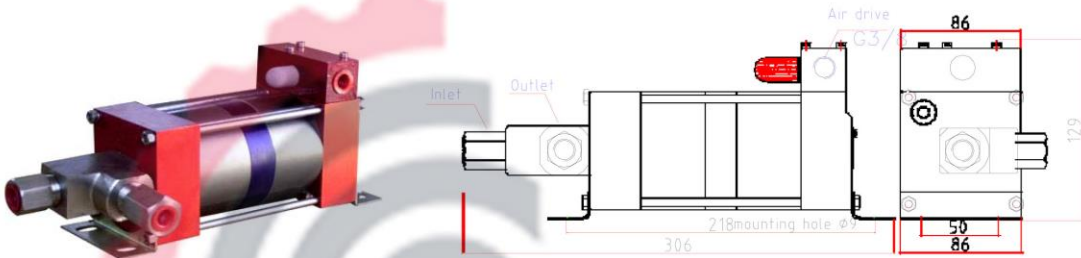
M...-2 pumps

Single acting, double air drive head

Diameter of drive plunger is 80mm

M...-2 pumps are single acting double air drive head pumps. Compared with the single acting single stage M series they reach double pressure at the same air drive pressure.

- All M...-2 pumps come standard with bottom inlet.
- High quality seals, long service life available
- Suggest operation pressure be not above 8 bar so as to protect pumps for long life durability.
- Drive air of 7 bar will deliver approx. 15% more flow at 6 bar.
- Drive air of 5 bar will deliver approx. 15% less flow at 6 bar.



Technical Data

TYPE	Pressure Ratio	MAX Outlet Pressure(bar) *	Air drive	Connection Inlet A	Connection Outletlet B	MAX Flow (L/min)**
M100-2	200:1	1600	G3/8	ZG1/4	M14X1.5	0.41
M170-2	340:1	2720	G3/8	ZG1/4	M14X1.5	0.23

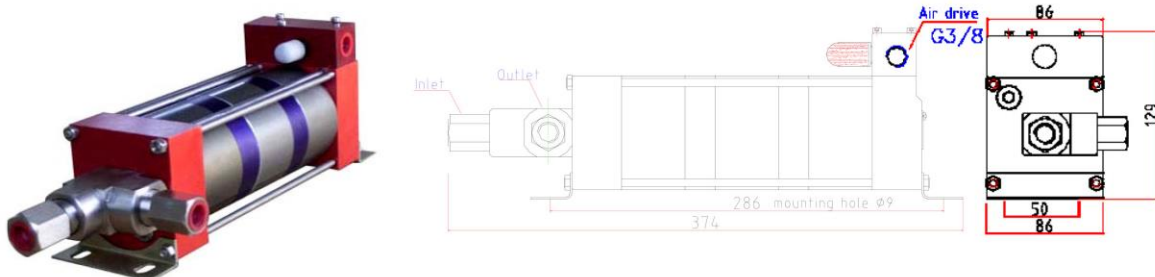
*Max outlet pressure at an air drive of 8 bar/116 PSI

**Approximate flow at an air drive of 6 bar/87 PSI and an out pressure of 0 bar/PSI

M...-3 pumps

Single acting, triple air drive head

Diameter of drive plunger is 80mm



M...-3 pumps are single acting triple air drive head pumps. Compared with the single acting single stage M series they reach triple pressure at the same air drive pressure.

- M...-3 pumps are available with polyurethane seals.
- All M...-3 pumps come standard with bottom inlet .
- Suggest operation pressure be not above 8 bar so as to protect pumps for long life durability.
- Drive air of 7 bar will deliver approx.15% more flow at 6 bar.
- Drive air of 5 bar will deliver approx.15% less flow at 6 bar.

Technical Data

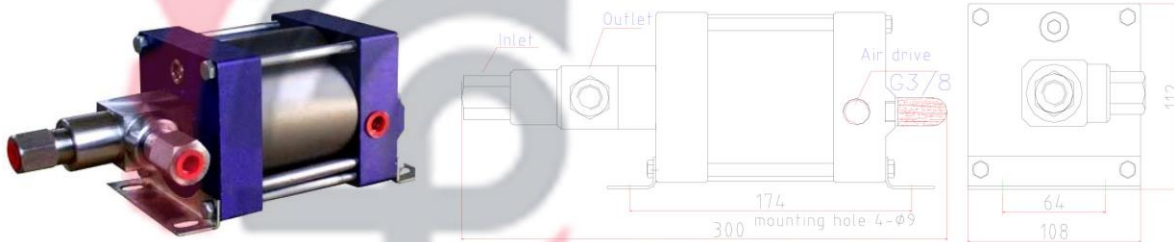
TYPE	Pressure Ratio	MAX Outlet Pressure(bar)	Air drive	Connection Inlet A	Connection Outlet B	MAX Flow (L/min)**
M100-3	300:1	2400	G3/8	1/4	M14X1.5	0.24
M170-3	510:1	4080	G3/8	1/4	M14X1.5	0.13

*Max. outlet pressure at an air drive of 8 bar/116 PSI **Approximate flow at an air drive of 6 bar/87 PSI and an out pressure of 0 bar/PSI

L pumps

Single acting, single air drive head

Diameter of drive plunger is 100mm



L series pumps are available as single acting models with single air drive heads.

- L series pumps have aluminum bodies, with oxidation treatment and wetted materials of stainless steel or carbon steel ,which depending on different service liquid. Materials of stainless steel, making them an excellence choice of water application. High quality seals, long service life available.
- Suggest operation pressure be not above 8 bar so as to protect pumps for long life durability.

Technical Data

TYPE	Pressure Ratio	MAX Outlet Pressure(bar)	Air drive	Connection Inlet A	Connection Outlet B	MAX Flow (L/min)**
L6	6:1	48	G3/8	ZG1	ZG1/2	16.57
L16	16:1	128	G3/8	ZG1/2	ZG1/2	6.47
L25	25:1	200	G3/8	ZG1/2	ZG3/8	4.14
L50	50:1	400	G3/8	ZG3/8	ZG3/8	2.03
L68	68:1	544	G3/8	ZG3/8	ZG3/8	1.49
L100	100:1	800	G3/8	ZG3/8	ZG3/8	1.03
L150	150:1	1200	G3/8	ZG3/8	ZG3/8	0.66
L270	270:1	2160	G3/8	ZG1/4	M14X1.5	0.37

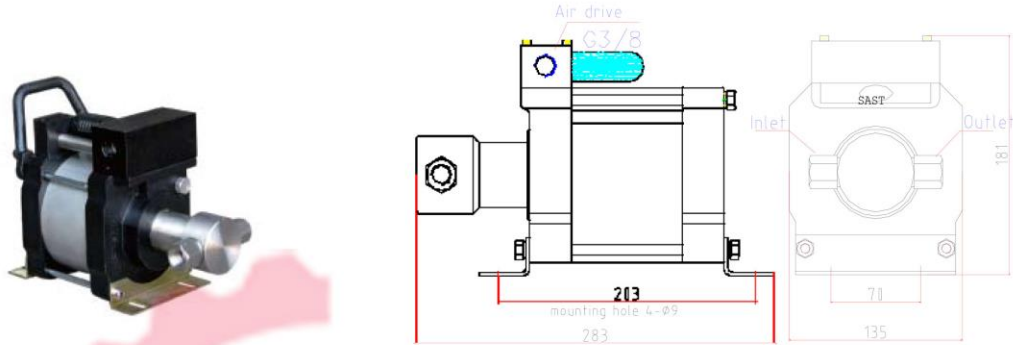
*Max. outlet pressure at an air drive of 8 bar/116 PSI

**Approximate flow at an air drive of 6 bar/87 PSI and out pressure of 0 bar/PSI

S series

Single acting, single air drive head

Diameter of drive plunger is 125mm



S series pumps have aluminum bodies and wetted materials of stainless steel or carbon steel, which depend on different service liquid. Materials of stainless steel, making them an excellent choice of water application. And they have

- Rustproof and beautiful blue appearance with oxidation treatment applying to aluminum parts.
- High quality seals, long service life available.
- Ideal for portable power packs.
- Suggest operation pressure be not above 8 bar so as to protect pumps for long life durability
- Drive air of 7 bar will deliver approx. 15% more flow at 6 bar.
- Drive air of 5 bar will deliver approx. 15% less flow at 6 bar.

Technical Data

TYPE	Pressure Ratio	MAX Outlet Pressure(bar)	Air drive	Connection Inlet A	Connection Outlet B	MAX Flow (L/min)**
S9	9:1	72	G1/2	ZG3/4	ZG1/2	16.95
S17	17:1	136	G1/2	ZG1/2	ZG1/2	9.53
S25	25:1	200	G1/2	ZG1/2	ZG1/2	6.62
S39	39:1	312	G1/2	ZG1/2	ZG1/2	6.10
S60	60:1	480	G1/2	ZG1/2	ZG3/8	2.71
S80	80:1	640	G1/2	ZG1/2	ZG3/8	2.07
S108	108:1	864	G1/2	ZG1/2	ZG3/8	1.52
S150	150:1	1200	G1/2	ZG1/2	ZG3/8	1.06
S240	240:1	1920	G1/2	ZG1/4	M14X1.5	0.67

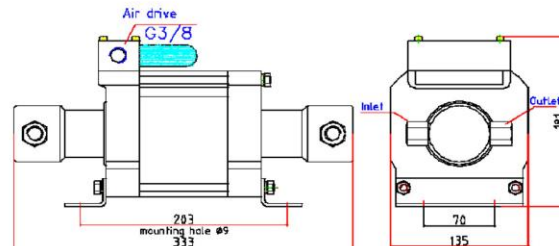
*Max. outlet pressure at an air drive of 8 bar/116 PSI

**Approximate flow at an air drive of 6 bar/87 PSI and an out pressure of 0 bar/PSI

SD pumps

Double acting, single air drive head

Diameter of drive plunger is 125mm



SD pumps are double acting, single air drive head type. They are characterized by the same features as the S series, and

- Rustproof and beautiful blue appearance with oxidation treatment applying to aluminum parts.
- High quality seals, long service life available.
- They have less pulsations and deliver approx. 50% more flow than the single acting pumps.
- Suggest operation pressure be not above 8 bar so as to protect pumps for long life durability.

Technical Data

TYPE	Pressure Ratio	MAX Outlet Pressure(bar)	Air drive	Connection Inlet A	Connection Outlet B	MAX Flow (L/min)**
SD9	9:1	72	G1/2	ZG3/4	ZG1/2	30.14
SD17	17:1	136	G1/2	ZG1/2	ZG1/2	16.95
SD25	25:1	200	G1/2	ZG1/2	ZG1/2	11.77
SD39	39:1	312	G1/2	ZG1/2	ZG1/2	7.53
SD60	60:1	480	G1/2	ZG1/2	ZG3/8	4.82
SD80	80:1	640	G1/2	ZG1/2	ZG3/8	3.69
SD10	108:1	864	G1/2	ZG1/2	ZG3/8	2.71
SD15	150:1	1200	G1/2	ZG1/2	ZG3/8	1.88
SD24	240:1	1920	G1/2	ZG1/4	M14X1.5	1.20

*Max. outlet pressure at an air drive of 8 bar/116 PSI

**Approximate flow at an air drive of 6 bar/87 PSI and an out pressure of 0 bar/PSI

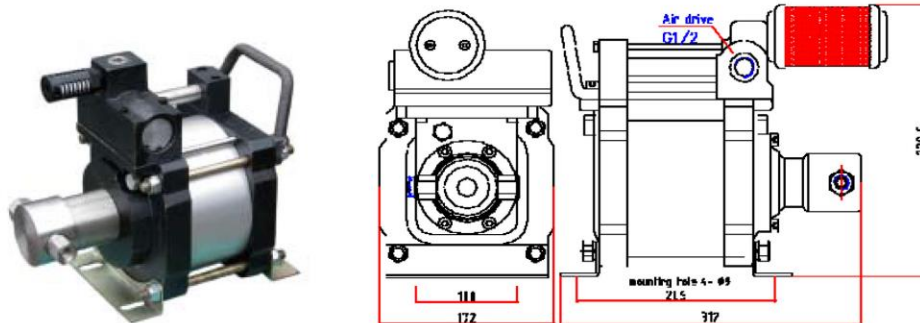
G pumps

Single acting, single air drive head

Diameter of drive plunger is 160mm

- G pumps have aluminum bodies and wetted materials of stainless steel or carbon steel, which depends on different service liquid. Materials of stainless steel, make them an excellent choice of water application. High quality seals, long service life available.
- Rustproof and beautiful blue appearance with oxidation treatment applying to aluminum parts.
- Suggest operation pressure be not above 8 bar so as to protect pumps for long life durability.

- Drive air of 7 bar delivers approx. 15% more flow at 6 bar. Drive air of 5 bar delivers approx. 15% less flow at 6 bar.



Technical Data

TYPE	Pressure Ratio	MAX Outlet Pressure(bar)	Air drive	Connection Inlet A	Connection Outlet B	MAX Flow (L/min)**
G6	6:1	48	G1/2	G1	ZG3/4	29.91
G10	10:1	80	G1/2	G1	ZG3/4	18.84
G16	16:1	128	G1/2	G1	ZG3/4	12.05
G28	28:1	224	G1/2	ZG1/2	ZG3/8	6.78
G40	40:1	320	G1/2	ZG1/2	ZG3/8	4.71
G64	64:1	512	G1/2	ZG1/2	ZG3/8	3.01
G80	80:1	640	G1/2	ZG1/2	ZG3/8	2.44
G100	100:1	800	G1/2	ZG1/2	ZG3/8	1.92
G130	130:1	1040	G1/2	ZG1/2	ZG3/8	1.47
G175	175:1	1400	G1/2	ZG1/2	ZG3/8	1.08
G255	255:1	2040	G1/2	ZG1/4	M14X1.5	0.75
G400	400:1	3200	G1/2	ZG1/4	M14X1.5	0.48

*Max. outlet pressure at an air drive of 8 bar/116 PSI

**Approximate flow at an air drive of 6 bar/87 PSI and an out pressure of 0 bar/PSI

GD pumps

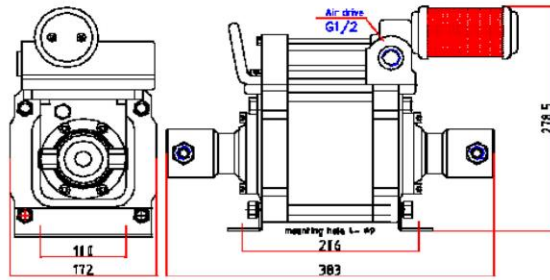
Double acting, single air drive head

Diameter of drive plunger is 160mm

They are characterized by the same features as the G pumps single acting, single air drive head types, but they have less pulsations and deliver approx. 50 % more flow.



GD04 LPG pump



Technical Data

TYPE	Pressure Ratio	MAX Outlet Pressure(bar)	Connection Inlet A	Connection Outlet B	Air drive	MAX Flow (L/min)**
GD4	4:1	32	ZG1/2	ZG1/2	G1/2	70.0
GD6	6:1	48	ZG1/2	ZG1/2	G1/2	48.60
GD10	10:1	80	ZG1/2	ZG1/2	G1/2	30.61
GD16	16:1	128	ZG1/2	ZG1/2	G1/2	19.73
GD28	28:1	224	ZG1/2	ZG3/8	G1/2	11.30
GD40	40:1	320	ZG1/2	ZG3/8	G1/2	7.69
GD64	64:1	512	ZG1/2	ZG3/8	G1/2	4.94
GD80	80:1	640	ZG1/2	ZG3/8	G1/2	3.96
GD100	100:1	800	ZG1/2	ZG3/8	G1/2	3.13
GD130	130:1	1040	ZG1/2	ZG3/8	G1/2	2.4
GD175	175:1	1400	ZG3/8	M14X1.5	G1/2	1.81
GD255	255:1	2040	ZG1/4	M14X1.5	G1/2	1.23
GD400	400:1	3200	ZG1/4	M14X1.5	G1/2	0.79

*Max. outlet pressure at an air drive of 8 bar/116 PSI

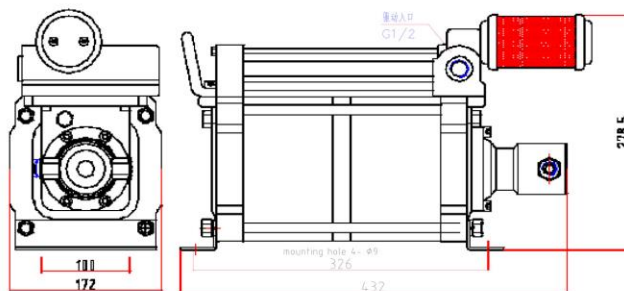
**Approximate flow at an air drive of 6 bar/87 PSI and an out pressure of 0 bar/PSI

G-2 pumps

Single acting, double air drive head

Diameter of drive plunger is 160mm

Compared with the single acting single air drive head G pumps , they reach double pressure at the same air drive pressure.



Technical Data

TYPE	Pressure Ratio	MAX Outlet Pressure(bar)	Connection Inlet A	Connection Outlet B	Air drive	MAX Flow (L/min)**
G130-2	260 : 1	2080	ZG1/4	M14x1.5	G1/2	1.29
G175-2	350 : 1	2800	ZG1/4	M14x1.5	G1/2	0.94
G255-2	510 : 1	4080	ZG1/4	M14x1.5	G1/2	0.65
G400-2	800:1	6400	ZG1/4	M14x1.5	G1/2	0.42

*Max. outlet pressure at an air drive of 8 bar/116 PSI **Approximate flow at an air drive of 6 bar/87 PSI and an out pressure of 0 bar/PSI



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Further general suggestions to operate the Air Driven Liquid Pumps properly

Assembly positions

SHINEAST pumps can, in principle, be installed in any position, but a maximum service life of the seals is achieved in a vertical one.

Port sizes Important!

Please observe that **only** screws and tubing are fitted that are suitable for the pressure range of the pump. To ensure an optimum operation (pressure and flow) of the pumps, the port sizes of the pumps shall not be reduced.

Drive air connection and initial operation

The air drive connection is located at the spool valve housing.

Operating temperatures for SHINEAST pumps

In general, the operating temperature is between -20°C to $+80^{\circ}\text{C}$ (standard). The pumps with $-VE$ seal version can be operated up to max. $+60^{\circ}\text{C}$, at short term up to $+80^{\circ}$ would be acceptable.

For outdoor service at temperatures of 0°C and below, special versions are available on request.

Solids: maximum particle size 5 μ

Maximum particle concentration 5 mg/m³

Dew point: $+10^{\circ}$ = water content of 9.4 g/m³ to $+2^{\circ}\text{C}$ = water content of 5.6 g/m³

Oil content: 1.0 to 5 mg/m³

Please note that by using humid air of high humidity in continuous operation the problem of icing could occur.

We suggest install a water separator and a dryer in the drive air line.

If the drive air is too dry and has got a dew point lower than -40°C , we suggest to use an oiler or air preparation.

Recommended hydraulic oil

Proper operation and efficiency of the pumps is mainly depending on the quality of the used hydraulic liquid.

We recommend hydraulic oils with a viscosity between 46 – 68 cst, i. e.

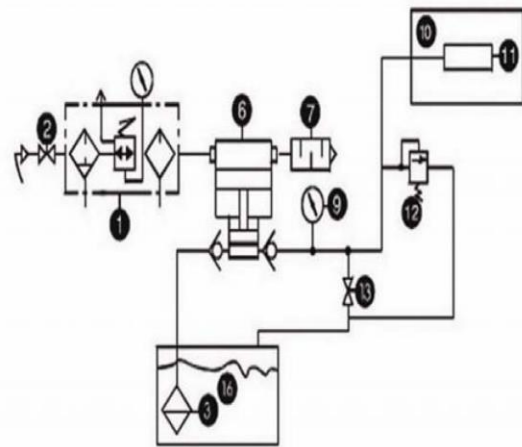
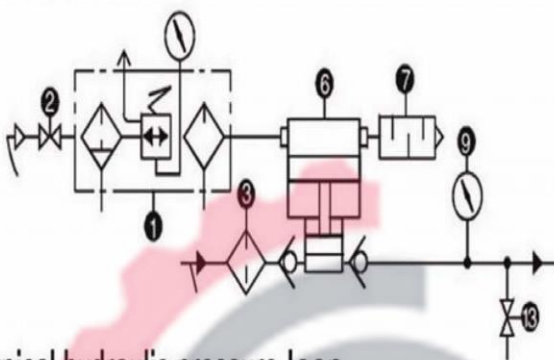


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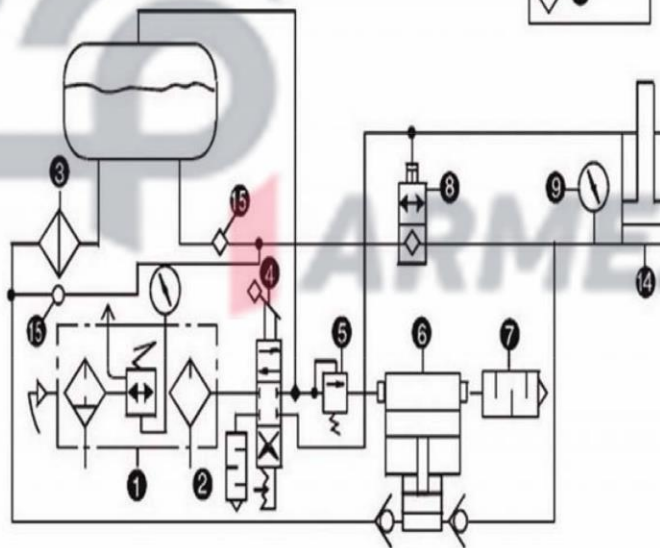
Typical application function scheme

Typical mounting loop

Typical hydrostatic pressure testing



Typical hydraulic pressure loop



- | | | | |
|--------------------|------------------------------|-------------------|-----------------------------|
| 1. Air preparation | 2. Driven air switch | 3. Fluid filter | 4. Manual four-way valve |
| 5. Sequence valve | 6. Air driven hydraulic pump | 7. Muffer | 8. Pneumatic unloader valve |
| 9. Pressure gauge | 10. Test cabinet | 11. Test piece | 12. Safety relief valve |
| 13. Drain valve | 14. Fluid pressure | 15. One-way valve | 16. Reservoir tank |