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Air Driven Gas Booster

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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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SHINEEAST 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 SHINEEAST with its factories in Jinan city, China and is in the high speed development stage. SHINEEAST group offers to you

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

General Information

SHINEEAST –Air Driven Gas Boosters

SHINEEAST Air Driven Gas Boosters provide for pressures up to 80Mpa (11,600 psi). Used for virtually all known gases, these boosters are ideal for increasing gas pressure, transferring high pressure gas, charging cylinders and scavenging. Key features include:

- Air driven - no electricity required
- No airline lubricator required
- Hydrocarbon free - separation between air and gas sections
- Pressures to 80Mpa (11,600 psi)
- Wide range of models with different ratios
- Built-in-cooling on most models
- Easy to install, operate and maintain
- Best price / performance ratio
- No heat, flame or spark risk and explosion proof

Applications for Air Driven Gas Boosters

SHINEEAST Air Driven Gas Boosters provide for pressures up to 80Mpa. Used for oil free compression not only of air or Nitrogen, but also flammable and risk gases like hydrogen, oxygen and natural gas. These boosters are ideal for increasing gas pressure, transferring high pressure gas, charging cylinders and scavenging.

Air driven boosters are an efficient alternative instead of electrically driven products and can be used in explosion- proof areas.

As a result of the wide range of models it is possible to select the optimum booster for each application. Single stage, double acting or two stage boosters or a combination of these models can be used to achieve different operating pressures and flow capacities.

SHINEEAST Air Driven Gas Boosters are ideal and widely used for hydrostatic and burst testing for valves, pipes, tubings and pressure vessels; Calibration for safety valves; Automobile regulator detecting and telecommunication cable inflatable appliances.

Applications

- Pressure test with gas
- Gas transfer
- Gas recovery
- Charging of gas cylinder and accumulator with nitrogen
- Supply for isolating gas systems
- Gas assisted injection molding
- Transfer of oxygen cylinders
- Charging of breathing air bottles
- Leak test
- Hydrostatic Testing for valves, tanks, pressure vessels, pressure switches, hoses, pipes and tubing, pressure gauges, cylinders, transducers, well casings, BOPs, gas bottles and air craft components
- Safety valve adjusting

Operating Principle

SHINEAST air driven gas boosters feature a large air piston is charged with low pressure and works on a small area with high pressure. The continuous operation is achieved by a pilot operated 4/2 way valve. The outlet pressure is directly related to the set air drive pressure.

According to the formulas indicated in the table with technical features of the boosters, the static end pressure can be calculated. At this pressure a force balance between drive section and gas section is achieved. The booster stalls when this end pressure is reached, and does not consume any further air.

A pressure drop at the high pressure side or a pressure increase at the drive side starts the booster automatically until the force balance is achieved again.

Additionally the SHINEAST boosters can be switched on and off automatically through SHINEAST air pilot switches, contact gauges or external control devices.

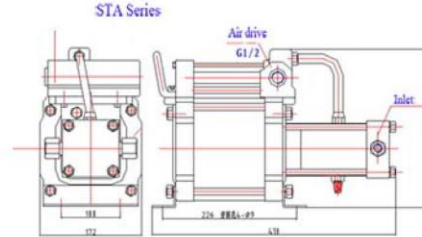
STA series: Pressures to 800 bar (11,600 psi)

STA series pumps are single acting model with single air drive head (except STA02 and STA05). For air drive pressure from 1 bar (14.5 psi) to 8 bar (116 psi). They should be prepressurized at inlet port so as to obtain required outlet pressure, which value will be variable for different requirement.

STA pumps

Single acting, single air drive head

Diameter of air drive plunger is 160mm



Key features:

- STA pumps are available with high quality seals, which provide significantly better service life as well.
- Pump head fitted with exhaust cooling devices.
- Provide for air drive pressures up to 10 bar (145psi). Suggest be not above 8 bar so as to protect pumps for long life durability.
- All parts in contact with the gas are made of aluminium or stainless steel.

Technical parameters

Type	Pressure ratio	Min. gas inlet pressure P _A (bar)	Max. gas inlet pressure P _A (bar)	Max. gas outlet pressure P _B (bar)	Formula to calculate gas outlet pressure P _B	Connection: Gas Inlet / Gas outlet (NPT thread)	Max. flow at air drive pressure of 6bar (L/min)
STA0.6	0.6:1	0.1	4	4.8	0.6X P _L	1/2 / 1/2	1000 (at P _A of 6 bar)
STA02	2: 1	1.7	16	16	2X P _L	1/2 / 1/2	960(at P _A of 6 bar)
STA05	5: 1	3.5	40	40	5XP _L	1/2 / 1/2	360(at P _A of 6 bar)
STA10	10: 1	5.5	80	80	10XP _L	1/4/ 1/4	196(at P _A of 20 bar)
STA25	25: 1	10	200	200	25XP _L	1/4/ 1/4	81(at P _A of 20 bar)
STA40	40: 1	15	320	320	40XP _L	1/4/ 1/4	49(at P _A of 20 bar)
STA60	60: 1	25	480	480	60XP _L	1/4/ 1/4	61(at P _A of 40 bar)
STA100	100: 1	35	800	800	100XP _L	1/4/ M14X1.5	39(at P _A of 40 bar)

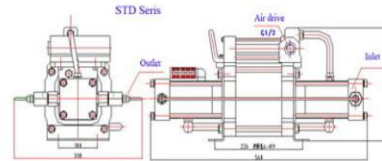
Note: P_L: air drive pressure P_A: gas inlet pressure P_B: gas outlet pressure

STD series: Pressures to 80Mpa (11,600 psi)

STD series pumps are double acting, single stage models with single air drive heads. For air drive pressure from 1 bar (14.5 psi) to 8 bar (116 psi). Provide for pressures up to 80MPa.

STD pumps

Double acting, single air drive head



Diameter of air drive plunger is 160mm

STD pumps are double acting, single stage with double air driven heads type. They are characterized by the same features as the STA series, and should be prepressurized at inlet port so as to obtain required outlet pressure, which will be variable for different requirement.

- STD pumps are available with high quality seals, which provide significantly better service life as well.
- Double pump heads with exhaust cooling devices.
- Provide for air drive pressures up to 10 bar (145psi). Suggest be not above 8 bar so as to protect pumps for long life durability.
- All components in contact with the gas are made of aluminium or stainless steel.
- Pipes mounting way are available as customized.

Technical parameters

Type	Pressure ratio	Min. gas inlet pressure P _A (bar)	Max. gas inlet pressure P _A (bar)	Max. gas outlet pressure P _B (bar)	Formula to calculate gas outlet pressure P _B	Connection: Gas Inlet / Gas outlet (NPT thread)	Max. flow at air drive pressure of 6bar (L/min)
STD04	4: 1	2	32	32	4XP _L + P _A	1/2/1/2	360 (at P _A of 6 bar)
STD06	6:1	4	48	48	6XP _L + P _A	3/8/3/8	300 (at P _A of 6 bar)
STD10	10:1	5	80	80	10XP _L + P _A	1/4/1/4	372(at P _A of 6 bar)
STD25	25:1	10	200	200	25XP _L + P _A	1/4/1/4	154(at P _A of 20 bar)
STD40	40:1	15	320	320	40XP _L + P _A	1/4/1/4	92(at P _A of 20 bar)
STD60	60:1	25	480	480	60XP _L + P _A	1/4/1/4	115(at P _A of 40 bar)
STD100	100:1	35	800	800	100XP _L + P _A	1/4/1/4	74(at P _A of 40 bar)

Note: P_L: air drive pressure P_A: gas inlet pressure P_B: gas outlet pressure

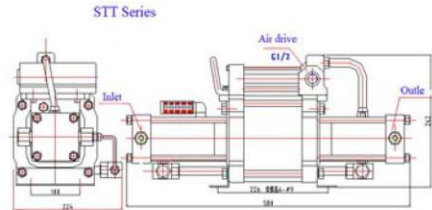
STT series: Pressures to 80Mpa (11,600 psi)

STT series pumps are double acting, double stage models with single air drive head. Gas inlet pressure is from 1 bar (14.5psi) to 10 bar (145 psi). Provide for pressures up to 80MPa.

STT pumps

Double acting, double stage, single air drive head

Diameter of air drive plunger is 160mm



STT pumps are double acting, double stage with single air drive head pumps. They can provide for super high pressure with very low inlet pressure.

- STT pumps are available with high quality seals, which provide significantly better service life as well.
- Double pump heads with exhaust cooling devices.
- Provide for air drive pressure up to 10 bar (145psi). Suggest be not above 8 bar so as to protect pumps for long life durability.
- All parts in contact with the gas are made of aluminium or stainless steel.

Technical parameters

Type	Pressure ratio	Min. gas inlet pressure P _A (bar)	Max. gas Inlet pressure P _A (bar)	Max.gas outlet pressure P _B (bar)	Formula to calculate gas outlet pressure P _B	Connection: Gas Inlet / Gas outlet(NPT tread)	Max. flow at air drive pressure of 6 bar (L/min)
STT25	25:1	0.1	10	200	25XP _L +3.5XP _A	1/4/ 1/4	136(at P _A of 8 bar)
STT40	40:1	0.1	10	320	40XP _L + 6XP _A	1/4/ 1/4	124(at P _A of 8 bar)
STT10/60	10:1/60:1	0.1	10	480	60XP _L +6X P _A	1/4/ 1/4	84(at P _A of 8 bar)
STT25/60	25:1/60:1	10	25	480	60XP _L +2.5XP _A	1/4/ 1/4	80(at P _A of 15 bar)
STT100	100:1	0.1	10	800	100XP _L +10XP _A	1/4/ 1/4	63(at P _A of 8 bar)

Note: P_L: air drive pressure P_A: gas inlet pressure P_B: gas outlet pressure

PSA series: Pressures to 480 bar (6,960 psi)

PSA series pumps are single acting models with single air drive heads. Air drive pressure is from 1 bar (14.5 psi) to 8 bar (116 psi).

PSA pumps

Single acting, single air drive head

Diameter of air drive plunger is 125mm



PSA pumps are single acting single air drive head pumps.

- PSA pumps are available with high quality seals, which provide significantly better service life as well.
- Pump head with exhaust cooling device.
- Provide for air drive pressures up to 10 bar (145psi). Suggest be not above 8 bar so as to protect pumps for long life durability.
- All parts in contact with the gas are made of aluminium or stainless steel.

Technical parameters

Type	Pressure ratio	Min. gas inlet pressure P_A (bar)	Max. gas Inlet pressure P_A (bar)	Max.gas outlet pressure P_B (bar)	Formula to calculate gas outlet pressure P_B	Connection: Gas Inlet / Gas outlet(NPT thread)	Max. flow at air drive pressure of 6 bar (L/min)
PSA02	2:1	2.1	16	16	$2P_L$	3/8/3/8	206(at P_A of 6 bar)
PSA06	5:1	4.3	48	48	$6 P_L$	3/8/3/8	84(at P_A of 8 bar)
PSA15	15:1	6.8	120	120	$15 P_L$	1/4/1/4	196(at P_A of 20 bar)
PSA25	25:1	12.5	200	200	$25 P_L$	1/4/1/4	48(at P_A of 20 bar)
PSA40	40:1	18.5	320	320	$40 P_L$	1/4/1/4	49(at P_A of 20 bar)
PSA60	60:1	31	480	480	$60P_L$	1/4/1/4	61(at P_A of 40 bar)

Note: P_L : air drive pressure P_A : gas inlet pressure P_B : gas outlet pressure

PSD series: Pressures to 480 bar (6,960 psi)

PSD series pumps are double acting, single stage models with single air drive head. Air drive pressure is from 1 bar (14.5 psi) to 8 bar (145 psi).



PSD pumps

Single acting, single air drive head

Diameter of air drive plunger is 125mm

PSD pumps are double acting, single stage with single air drive head type.

- PSD pumps are available with high quality seals, which provide significantly better service life as well.
- Double pump heads with exhaust cooling devices.
- Provide for air drive pressures up to 10 bar (145psi). Suggest be not above 8 bar so as to protect pumps for long life durability.
- All parts in contact with the gas are made of aluminium or stainless steel.

Technical parameters

Type	Pressure ratio	Min. gas inlet pressure P _A (bar)	Max. gas Inlet pressure P _A (bar)	Max.gas outlet pressure P _B (bar)	Formula to calculate gas outlet pressure P _B	Connection: Gas Inlet / Gas outlet(NPT thread)	Max. flow at air drive pressure of 6 bar (L/min)
PSD15	15:1	6.8	120	120	15P _L +P _A	1/4/1/4	372(at P _A of 20 bar)
PSD25	25:1	12.5	200	200	25P _L +P _A	1/4/1/4	91(at P _A of 20 bar)
PSD40	40:1	18.5	320	320	40P _L +P _A	1/4/1/4	55(at P _A of 20 bar)
PSD60	60:1	31	480	480	60P _L +P _A	1/4/1/4	68(at P _A of 40 bar)

Note: P_L: air drive pressure P_A: gas inlet pressure P_B: gas outlet pressure

PST series: Pressures to 80Mpa bar (11,600 psi)

PST series pumps are double acting, double stage models with single air drive head. Gas inlet pressure is from 0.2 bar (2.90 psi) to 10 bar (145 psi).

PST pumps

Double acting, double stage, single air drive head

Diameter of air drive plunger is 125mm

PST pumps are double acting, double stage and single air drive head pumps. Provide for super high pressure with very low inlet pressure.

- PST pumps are available with high quality seals, which provide significantly better service life as well.
- Double pump heads with exhaust cooling devices.
- Provide for air drive pressures up to 10 bar (145psi). Suggest be not above 8 bar so as to protect pumps for long life durability.
- All parts in contact with the gas are made of aluminium or stainless steel.

Technical parameters

Type	Pressure ratio	Min. gas inlet pressure P_A (bar)	Max. gas inlet pressure P_B (bar)	Max.outlet pressure P_B (bar)	Formula to calculate gas outlet pressure P_B	Connection: Gas Inlet /: Gas outlet(NPT thread)	Max. Flow at air drive pressure of 6bar in L/min
PST25	25:1	0.2	10	200	$25P_L+3.5P_A$	1/4/1/4	83(at P_A of 8 bar)
PST40	40:1	0.2	10	320	$40P_L+6P_A$	1/4/1/4	75(at P_A of 8 bar)
PST60	60:1	0.2	10	480	$60P_L+6P_A$	1/4/1/4	51(at P_A of 8 bar)
PST100	100:1	0.2	10	800	$100P_L+10P_A$	1/4/1/4	38(at P_A of 8 bar)

Note: P_L : air drive pressure P_A : gas inlet pressure P_B : gas outlet pressure

Gas Boosters with double air drive heads

SHINEAST will also provide Gas Boosters with double air drive heads models. They are individually characterized by the same features as the STA, STD and STT series. Compared with the single acting single stage series they reach double pressure at the same air drive pressure. Provide for gas outlet pressure up to 160Mpa. But the gas consumption will be 80% more than the corresponding series with single air drive head. So for the required pressure with one air drive head, they're not ideal options.