GRETEC™

High Pressure Technology

Product Catalogue

Air Driven

AIR AMPLIFIERS

High Performance

Measured for capability of ultimate pressure, flow & output horsepower.

High Quality

From design to construction, quality is paramount.

Complete Range

Delivering a comprehensive range of flows and pressures.

Accessories & Spares

Access all the valves, fittings and spare parts you'll need.

Systems

All pumps, boosters and amplifiers available in systems.

Guarantee

Full year warranty on all products. See Warranty page 5.

COMPANY PROFILE - GRETEC

GRETEC High Pressure Technology Inc. has more than 40 years of hydraulic and pneumatic application experience in the design and manufacture of pumps and systems for pressure testing and chemical injection.

We offer one of the most complete ranges of Air Driven Air Amplifiers, Liquid Pumps & Gas Boosters in the industry measured for:

- Capability of ultimate pressure, flow or output horsepower.
- Compatibility with a broad variety of liquids and gases.

With a predominately online sales channel that allows us to keep costs down, we provide full technical support for via:

- Online selection guides (liquid pumps & gas boosters) and product comparison chart
- 24/7 technical email support system
- Phone-based technical support
- Web-based technical chat facility

Our History

GRETEC High Pressure Technologies is a brand that was developed through reverse engineering, AI procedures and dedicated Offshore manufacturing to provide 10 years of quality products. This allowed a dedicated opportunity to produce similar products to those manufactured in Japan, Germany, and USA. Our suppliers provide continuous investments in new machinery and advanced technology keeping our products at the forefront of our field. Our supplier's roots go back over 10 years, mainly as a ***technical distributor*** for Haskel pumps, gas boosters, air amplifiers and HP valves.

We offer *lower cost* and *reasonable* delivery worldwide.

GRETEC roots go back over 40 years, mainly as the ***technical distributor*** for Air Driven Air Amplifiers, Liquid Pumps, Gas Boosters and High Pressure Valves and Fittings. Brand names included Teledyne Sprague (now Graco) Haskel, Maximator and Hydraulics International. Applications were designed for numerous high and low pressure hydraulic, chemical, liquid and gas booster systems, including Oxygen, CO2, and Hydrogen.

USEFUL INFORMATION

A Note on Ratios.....4
A Note on Air Consumption, Air Quality and Warranty 5
How the Air Drive Section Works.....6
How the Gas Section Works (Gas Boosters) 7
How the Hydraulic Section Works (Liquid Pumps) 8

AIR AMPLIFIERS

GAB, G4AB, Series - Air Pressure Amplifiers.....9,10,11

Contacts.....12

A Note on Ratios

All GRETEC Air Driven Air Amplifiers, Gas Boosters and Liquid Pumps operate using the RATIO principal. The ratio is that between a larger diameter (area) lower pressure compressed air drive piston (within the air drive) and a mechanically connected higher pressure but smaller diameter (area) piston or plunger within the liquid/gas section. They all reach a stall condition when the opposing forces, created between the lower pressure air drive and the higher pressure fluid outlet, become balanced. This stall pressure is the maximum that can be attained for the given actual ratio of the device and the compressed air drive pressure used. At this stall point, the pump can hold the stall pressure but delivers zero flow. The ratio referred to in the part numbering system (nominal ratio) for most liquid pumps is generally about 10% lower than the actual ratio. This allows slightly higher stall pressures to be reached and allows the unit to continue to cycle and deliver fluid past the pressure reached when the nominal ratio is multiplied by the air drive pressure.

As an example, a liquid pump driven with 8 Bar air supply and an actual ratio of 25:1 and will stall at a fluid outlet pressure of 200 Bar rather than 176 Bar as the nominal ratio implies. By using an air pressure regulator on the air drive supply line, the desired stall pressure can be set to any point less than the maximum air supply pressure multiplied by the actual ratio of the pump.

It stands to reason that the higher the nominal ratio of the device, the higher fluid *or gas* outlet pressure can be achieved. The GRETEC range includes several different series of pumps and boosters each having larger diameter air drives. Each series has numerous nominal ratios so that, with careful selection, the correct unit can be selected for a given flow vs pressure application.

All GRETEC Pumps consist of a lower pressure (<10 Bar) linear reciprocating air motor (air drive) directly connected to a higher-pressure fluid end. In the case of most liquid pumps, the fluid ends mainly use plungers while all gas boosters use pistons.

A Note on Air Consumption & Air Quality

To obtain maximum continuous performance of our pumps and boosters, we recommend the use of an air compressor with a minimum free air delivery (FAD) to the pump that corresponds to the pressure you wish to use. The table below can be used as a guide.

Series	FAD required at the inlet of the pump
GM/GAB	30 scfm (48 nm3/hr)
GXH/GXT	45 scfm (72 nm3/hr)
GAH/GAT/GZB GGB/GGBD/GGBT	70 scfm (113 nm3/hr)
G2AH/G2AT G2GB/G2GBD/G2GBT	85 scfm (137 nm3/hr)
GGT/GGH	225 scfm (362 nm3/hr)

Air line filters are recommended and should be installed to ensure clean, dry air is supplied to the pump or booster. Additionally, air line pressure regulators should be used to ensure the air drive pressure is not higher than is recommended or required.

A Note on PRODUCT WARRANTY

WARRANTY POLICY

GRETEC, GUARANTEES ITS GOODS TO BE FREE FROM DEFECTS IN WORKMANSHIP OR MATERIAL FOR A PERIOD OF ONE (1) YEAR FROM DATE OF SHIPMENT. THIS WARRANTY DOES NOT INCLUDE: PACKINGS, SEALS, NOR FAILURES CAUSED BY LACK OF PROPER MAINTENANCE; INCOMPATIBLE FLUIDS; FOREIGN MATERIALS IN THE DRIVING MEDIA OR IN THE PUMPED MEDIA; OR APPLICATION OF PRESSURES, TEMPERATURES, AND CYCLES BEYOND SPECIFICATION OR CATALOG RATINGS.

GOODS BELIEVED TO BE ORIGINALLY DEFECTIVE MAY BE RETURNED BY THE ORIGINAL BUYER, TRANSPORTATION CHARGES PREPAID, ONLY UPON RECEIPT OF A RETURNED MATERIALS AUTHORIZATION NUMBER FROM THE PROPER PERSONNEL AT GRETEC. THE RETURN SHOULD INCLUDE THE FOLLOWING: THE ORIGINAL PURCHASE DATE AND ORDER NUMBER, SERIAL NUMBER, MODEL NUMBER, AND OTHER PERTINENT DATA TO ESTABLISH WARRANTY CLAIM, AND TO EXPEDITE THE RETURN OR REPLACEMENT TO THE BUYER.

EXCEPT FOR THE WARRANTIES SPECIFICALLY SET FORTH HEREIN, THERE SHALL BE NO EXPRESS OR IMPLIED WARRANTIES OF ANY KIND, NOR SHALL THERE BE A WARRANTY OF MERCHANTABILITY WITH RESPECT TO THE GOODS. FURTHERMORE, GRETEC MAKES NO WARRANTY THAT THE GOODS ARE FIT FOR ANY PARTICULAR PURPOSE. COMPLAINTS REGARDING DEFECTS MUST BE MADE BY BUYER WITHIN ONE (1) YEAR FROM THE DATE OF SHIPMENT. GRETEC RESERVES THE RIGHT TO ACT AS SOLE JUDGE IN DETERMINING THE NATURE AND CAUSE OF THE DEFECT AND SHALL DO SO UPON RECEIVING AND INSPECTING THE RETURNED GOODS. GRETEC IS NOT LIABLE FOR UNAUTHORIZED DISASSEMBLY, REPAIR, ALTERATION, AND DEFECTS OR DAMAGE RESULTING FROM MISUSE, NEGLECT OR MISAPPLICATION OF THE GOODS. IN ADDITION, IT IS EXPRESSLY AGREED BY BUYER, IN PURCHASING THE GOODS THAT THE LIABILITY OF GRETEC, IF ANY, SHALL BE LIMITED SOLELY TO THE REPLACEMENT AND REPAIR OF THE GOODS IN ACCORDANCE WITH THE WARRANTIES SPECIFICALLY AND EXPRESSLY SET FORTH HEREIN. THE REMEDIES OF THE BUYER ARE THE EXCLUSIVE AND SOLE REMEDIES AVAILABLE, AND, IN THE EVENT OF A BREACH OR REPUDIATION OF ANY PROVISION OF THIS AGREEMENT BY GRETEC, BUYER SHALL NOT BE ENTITLED TO RECEIVE ANY INCIDENTAL DAMAGES AS THAT TERM IS DEFINED IN SECTION 2-715 OF THE UNIFORM COMMERCIAL CODE. BUYER WAIVES THE BENEFIT OF ANY RULE THAT DISCLAIMER OF WARRANTY SHALL BE CONSTRUED AGAINST GRETEC AND AGREES THAT SUCH DISCLAIMERS HEREIN SHALL BE CONSTRUED LIBERALLY IN FAVOR OF GRETEC.

How the Air Drive Section Works

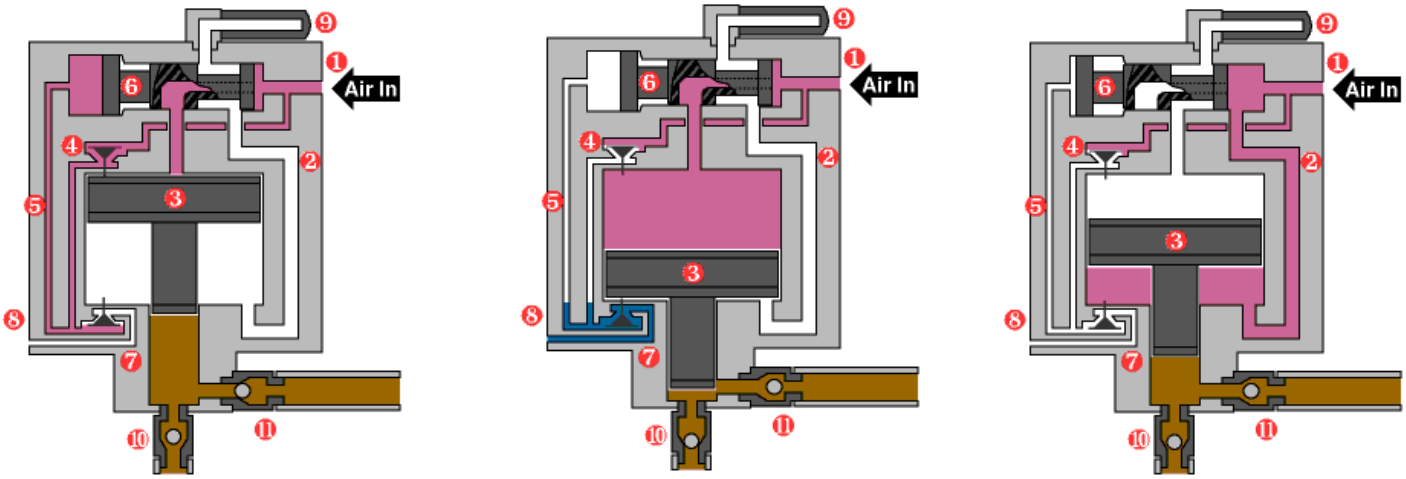
The air drive section consists of a lightweight piston complete with seals running inside an aluminum barrel.

When compressed air is supplied to the pump, the air pushes the air piston (3) down on a compression stroke, which forces fluid out of the liquid end for Liquid Pumps; or gas out of the gas end for Gas Boosters and Air Amplifiers (11).

Under the control of pilot pins (7 & 4) triggered at each end of the stroke, the air is then diverted by way of a flow tube (2) to drive the air piston up on a suction stroke, which pulls fluid into the liquid end for Liquid Pumps; or gas into the gas end for Gas Boosters and Air Amplifiers (10).

The automatic cycling characteristics are enabled by use of an unbalanced, internally pilot operated spool (6) that directs the air through a 4-way cycling sleeve to either side of the air piston. The operation of the cycling spool is controlled by 2 pilot pins. The air is exhausted through the spool and then to atmosphere via the provided muffler (9).

The air drive section of the pump is pre-lubricated at assembly and as such, air line lubrication is neither required nor recommended.



How the Gas Section Works (Gas Boosters)

The gas section of a GRETEC air driven gas booster consists of 4 main pieces, the gas barrel, the piston, the check valves and the main high-pressure seal. The gas piston is directly linked to the air piston and it is housed inside the gas barrel and its movement up and down creates the gas flow into and out of the booster through the check valves. The check valves are spring loaded and on the suction stroke the inlet check valve opens to the maximum allowing gas into the gas barrel and on the compression stroke the inlet check valve closes and the discharge check valve opens forcing the pumped gas into the process.

The main high-pressure seal is located on the gas piston and they seal against the gas barrel during operation. There are different materials and designs of high-pressure seals depending on the gas being pumped and the maximum pressures of the pump, however the standard PTFE seals are suitable for the vast majority of gases encountered.

Other materials of construction can be supplied to meet more aggressive services. The standard series of boosters are NOT suitable for underground coal mine applications. GRETEC do manufacture models of air driven gas boosters that are suitable for underground coal mine applications, please enquire with our technical staff.

The gas booster cycles automatically. As the outlet pressure increases, the resistance also increases and the cycle rate decreases until the output pressure forces are equal and the pump stops automatically. This is referred to as the stall condition. The pump will restart with a slight drop in the outlet pressure or an increase in the air drive pressure. Booster performance can be affected by several conditions, such as freezing of the exhaust muffler or pilot valves (which is caused by moisture in air lines), inadequate inlet air line sizes and dirty filters. When operating the boosters on a continuous basis, we recommend you use a maximum cycle rate of 50-60 cycles per minute. This will both increase service intervals and assist in preventing ice forming at the exhaust. An air supply dryer will also assist in reducing icing up.

GRETEC gas boosters have a 120mm stroke, which reduces cycle rates at any given flow and pressure when compared with most other brands. This lower respective cycle rate results in a reduction in freeze-up condition.

To obtain the best overall performance, do not reduce the indicated port sizes.

We offer complete technical and service support for all GRETEC gas boosters.

How the Hydraulic Section Works (Liquid Pumps)

The hydraulic section of a GRETEC air driven liquid pump consists of 4 main pieces, the hydraulic body, the piston/plunger, the check valves and the main high-pressure seal. The hydraulic piston/plunger is directly linked to the air piston and it is housed inside the hydraulic body and its movement up and down creates the liquid flow into and out of the pump through the check valves. The check valves are spring loaded and on the suction stroke the inlet check valve opens to the maximum allowing fluid into the hydraulic body and on the compression stroke the inlet check valve closes and the discharge check valve opens forcing the pumped fluid into the process.

The main high-pressure seal is located within the hydraulic body and the piston/plunger seals against this during operation. There are different materials and designs of high pressure seals depending on the fluid being pumped and the maximum pressures of the pump, however the standard seals are suitable for both water and hydraulic fluid use. All wetted materials are of stainless steel and are suitable for water and hydraulic fluid applications in their standard form.

Other materials of construction can be supplied to meet more aggressive services. The standard series of pumps are NOT suitable for underground coal mine applications. GRETEC do manufacture models of air driven liquid pumps that are suitable for underground coal mine applications including a range suitable for chemical injection, please enquire with our technical staff.

The liquid pump cycles automatically. As the outlet pressure increases, the resistance also increases and the cycle rate decreases until the output pressure forces are equal and the pump stops automatically. This is referred to as the stall condition. The pump will restart with a slight drop in the outlet pressure or an increase in the air drive pressure. Pump performance can be affected by conditions such as freezing of the exhaust muffler or pilot valves (due to moisture in air lines), inadequate inlet air line sizes, and dirty filters. When operating the pumps on a continuous basis, we recommend you use a maximum cycle rate of 50-60 cycles per minute. This will both increase service intervals and assist in preventing ice forming at the exhaust. An air supply dryer will also assist in reducing icing up.

GRETEC pumps have an 80mm stroke, which reduces cycle rates at any given flow and pressure when compared with most other brands. This lower respective cycle rate results in a reduction in freeze-up condition.

To obtain best overall performance, do not reduce the indicated port sizes.

We offer complete technical and service support for all GRETEC Liquid Pumps.

GRETEC Air Pressure Amplifiers

Intrinsically safe - no heat, sparks of flames produced

No Contamination - separation between gas and pneumatic seals

No Lubrication Required - on air/gas drive section

Built-in Cooling of Gas Barrels - available on most models

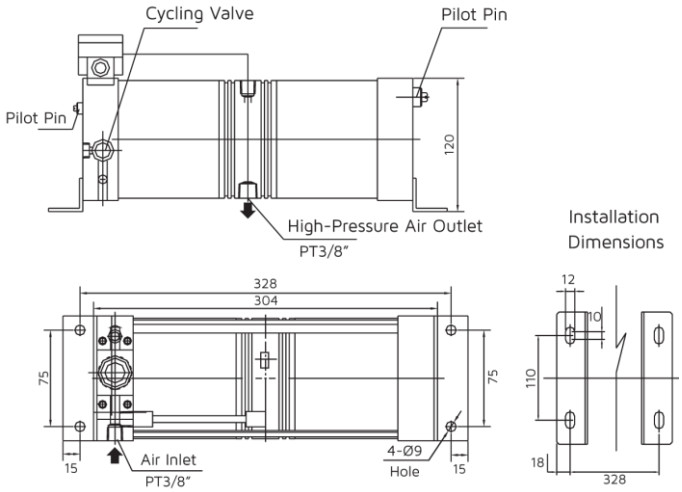
Increased Life - 120mm stroke reduces cycle rate

Hazardous Area Suitability - for most applications

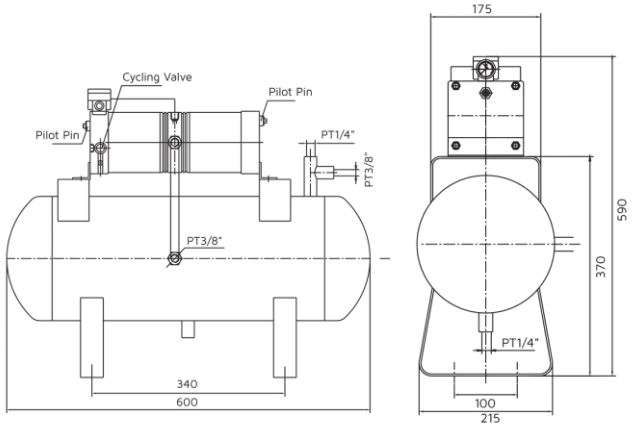
GAB Series - Air PRESSURE Amplifiers

The GRETEC Air Amplifier is designed to increase (boost) the drive air pressure that is applied to the unit within the scope of the nominal ratio of the particular model. Many machines require a supply pressure greater than the "plant" air supply and amplifiers offer a simple inexpensive solution. No airline lubrication is required for the air amplifier and its outlet pressure can be regulated with a simple air line pressure regulator.

GAB02

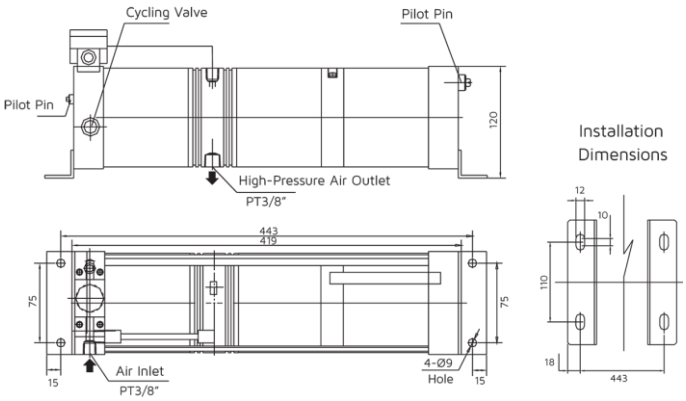


GAB02 - 20L



GAB02 model has a receiver mounted to the air amplifier to allow storage of the higher pressure air.

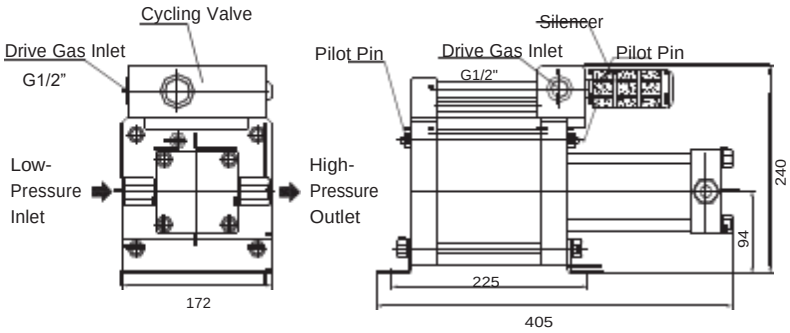
GAB03

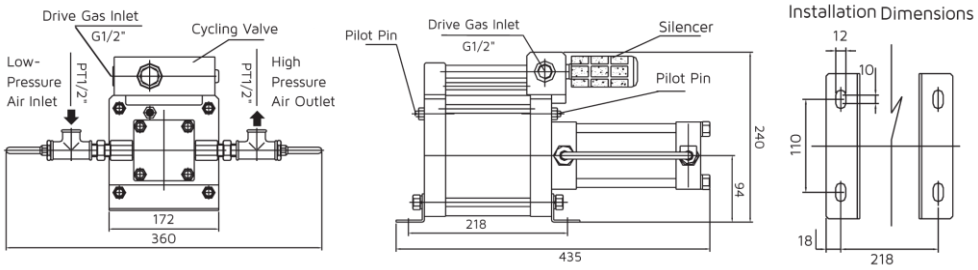


All dimensions are in mm unless otherwise stated.

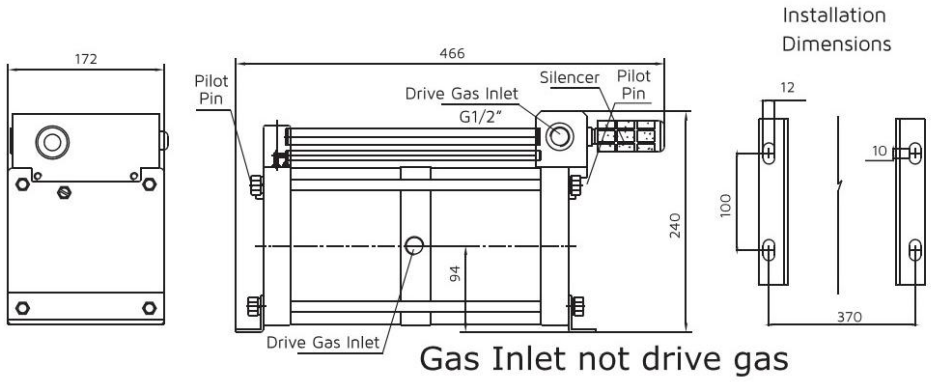
GAB Series - Air Pressure Amplifiers

GAB04 | GAB07 GAB10
GAB15





G4AB02



GAB Series Technical Data

Model	Actual Ratio	Displacement Per Cycle -ml	Minimum Gas Inlet Pressure **(Pi)** -Bar	Maximum Gas Outlet Pressure **(Po)** - Bar	Po Formula (where **Pa**=air drive pressure)	Gas Inlet	Gas Outlet	Flow (where **Pa** = 7 Bar) - NL/min
GAB02	2:1	235	1.0	16.6	2Pa	NPT3/8"	NPT3/8"	513@ Pi=7
GAB3	3:1	402	1.0	24.9	3Pa	NPT3/8"	NPT3/8"	420@ Pi=7
G4AB02	2:1	1963	1.0	16.6	2Pa	NPT1/2"	NPT1/2"	1450@ Pi=7
GAB04	4:1	402	1.7	33.2	4Pa	NPT3/8"	NPT3/8"	382@ Pi=7
GAB05T	5:1	321	1.7	41.5	4Pa+Pi	NPT1/2"	NPT1/2"	710@ Pi=7
GAB07	7:1	229	3.4	58.1	7Pa	NPT3/8"	NPT3/8"	274@ Pi=7
GAB08T	8:1	201	3.4	66.4	7Pa+Pi	NPT3/8"	NPT3/8"	482@ Pi=7
GAB10	10:1	241	3.4	83.0	10Pa	NPT3/8"	NPT3/8"	225@ Pi=7
GAB15	15:1	160	8.1	124.5	15Pa	NPT3/8"	NPT3/8"	185@ Pi=7

The maximum acceptable air drive pressure (**Pa**) is 8.3 Bar.

GRETEC
HPT - High Pressure Technology

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