



HYDR-STAR FLUID CONTROL COMPANY LIMITED



AIR-DRIVEN GAS BOOSTER



Waterjet Cutting



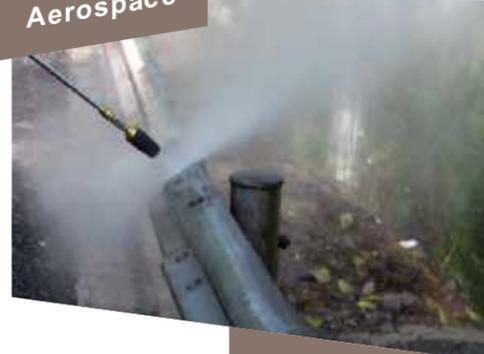
Aerospace



Chemical



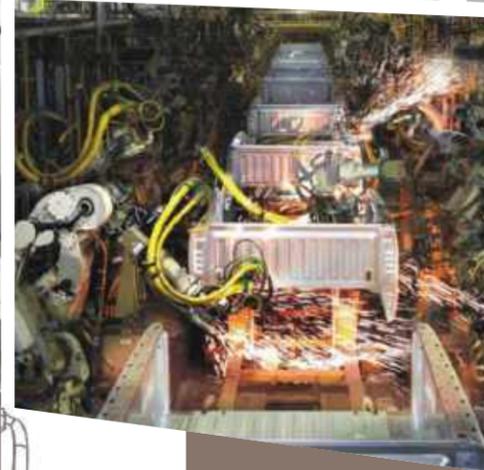
Petro



Waterblasting

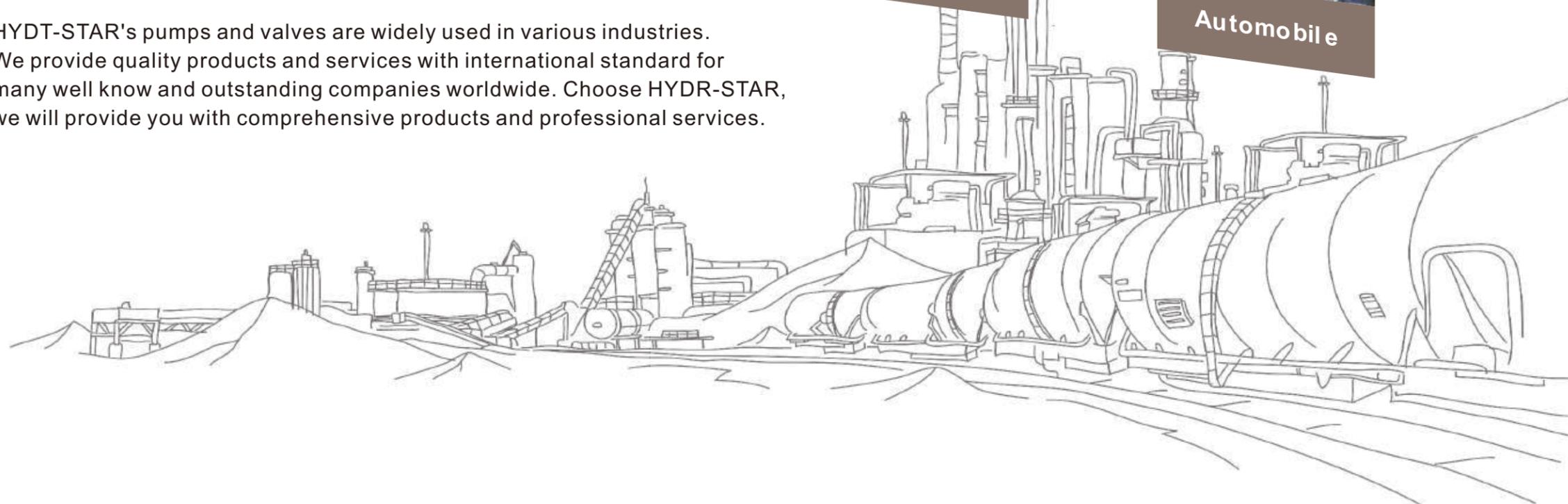


Process Controls



Automobile

HYDR-STAR's pumps and valves are widely used in various industries. We provide quality products and services with international standard for many well know and outstanding companies worldwide. Choose HYDR-STAR, we will provide you with comprehensive products and professional services.



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Gas Booster

Features

- ★ Suitable for most gases (Air, N₂, He, CO₂, Ne, Ar, O₂, H₂, CH₄, Natural Gas...).
- ★ Industrial gases like Argon, Helium and Nitrogen can be compressed to operating pressures of 25000 psig (1724 bar), Oxygen to 5000 psig (345 bar), Hydrogen to 15000 psig bar (1034 bar).
- ★ Single, double acting, and two-stage models.
- ★ Reliable, easy to maintain, compact and robust.
- ★ No heat, flame or spark risk.
- ★ Infinitely variable cycling speed and output.
- ★ Air driven boosters are an efficient alternative instead of electrically driven products and can be used in explosion proof areas.
- ★ Easy to apply automatic controls.
- ★ No limit or adverse affect to continuous stop/start applications.
- ★ Seal systems designed for long working life.
- ★ No airline lubricator required.
- ★ Separation between air and gas sections.
- ★ Built-in cooling.
- ★ Ability to stall at any predetermined pressure and hold the fixed pressure without consuming power or generating heat.
- ★ ATEX approved, CE certified.
- ★ There is no lubrication in the gas section. It will not pollute the gas and ensure the high purity of the gas.
- ★ The gas supply can be used to extremely low pressure, which improves the gas utilization.

Applications

- ★ Pressure test & leakage test with gas
- ★ Gas transfer
- ★ Charging of nitrogen accumulators
- ★ Supply for isolating gas systems
- ★ Gas assisted injection moulding
- ★ CO₂ foaming
- ★ Transfer of oxygen cylinders
- ★ Life Support Gas Transfer and Charging
- ★ Gas recovery: Pressurize the remaining lower pressure gases in the cylinder or pipeline and fill the gases into a cylinder.
- ★ Compressed Natural Gas (CNG) Boosting for vehicle refueling stations.
- ★ Hydrogen refueling station compresses hydrogen for fuel cell.

Technical specifications

There are two distinct sections: the air drive section and the gas barrel section.

Air Drive Section

Standard Air Drive Seals should perform reliably within a temperature range of (25°F to 150°F) (-4°C to 65°C). Lower temperatures will cause air/gas leakage; higher temperatures reduce seal life.

HYDR-STAR recommends a minimum Class 4 air quality per ISO 8573.1 standards. For operation at extremely low temperatures, consult factory.

Gas Barrel Section

Low temperatures normally have little effect on the operation of standard parts and seals. The heat from the compressing gas helps to balance out an acceptable temperature. Maximum average acceptable temperature 115°C (240°F). Generally, the built-in cooling adopts exhaust air cooling. That can keep the temperature not exceeding this value. Also cooling by water is available as an option.

Suction pressures lower than the indicated "Ps min" are not permitted and can cause damages on the unit. Because each booster has a fixed maximum compression ratio. When the air supply pressure is too low, the gas can not be pressurized to a certain pressure in the high-pressure barrel, causing the booster to reciprocate and fail to output gas. The gas will be compressed and released repeatedly in the high-pressure barrel.

stroke frequency

The maximum stroke frequency is at 100 cycles per minute for 50% duty cycle, It is recommended not to exceed 60 cycles/min for long-term operation or heavy-duty applications.

Air Driven Gas Booster Configurations

HYDR-STAR air driven gas boosters have 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.

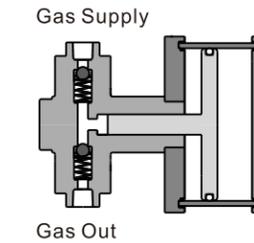
Single acting, single stage boosters are the base model.

Double acting, single stage provides twice the delivery of a single acting single stage booster.

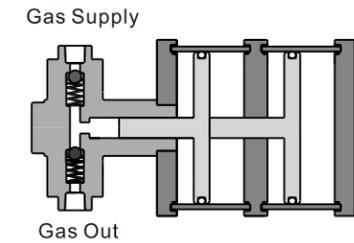
Two stage models are used for high gas compression ratios.

Types of the boosters

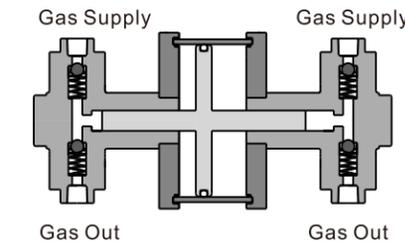
Single Drive, Single Acting



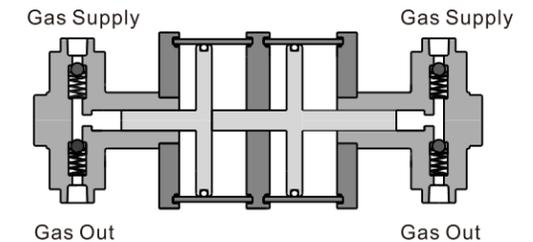
Double Drive, Single Acting



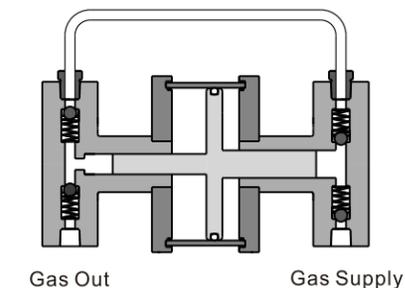
Single Drive, Double Acting



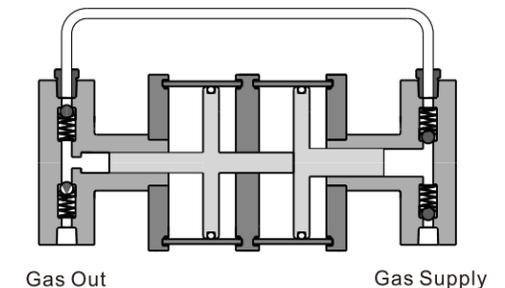
Double Drive, Double Acting



Single Drive, Two Stage



Double Drive, Two Stage





AGB06 Series

Single Drive Single Acting

Features

- ★ Choice of 5 ratios.
- ★ Max. air drive pressure Pa=150 psig(10.3 bar).
- ★ Choice of seal materials.
- ★ Pressure to 11,250 psig(776 bar).
- ★ No lubricator required.



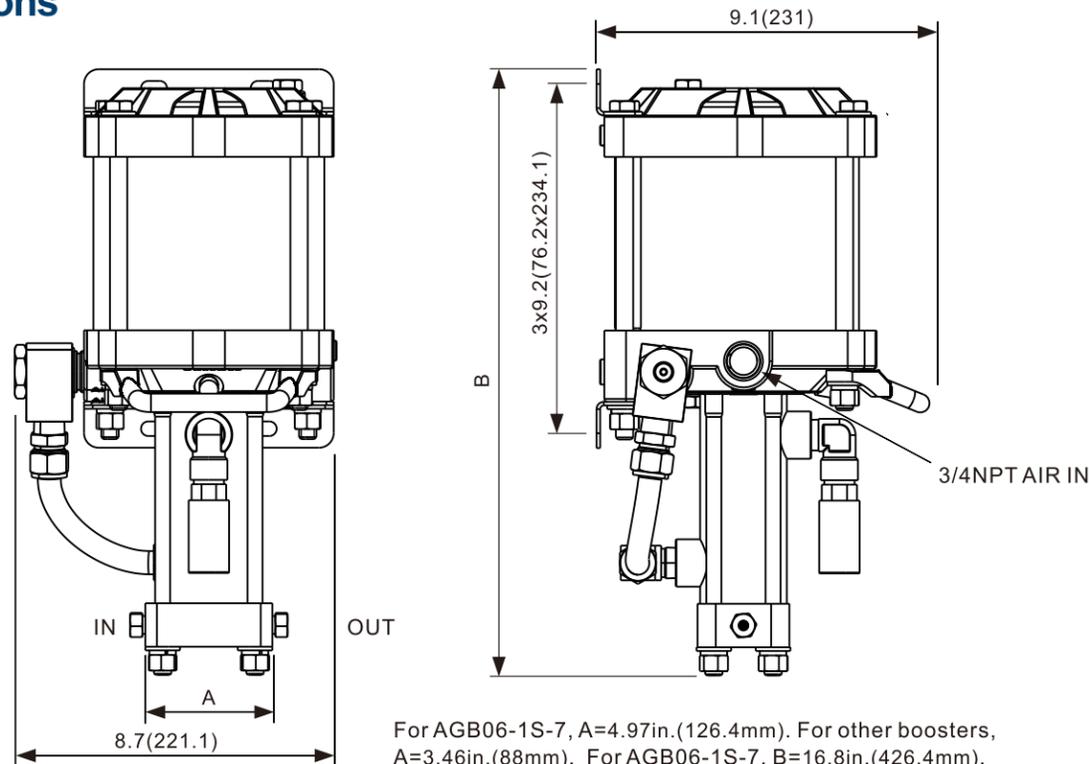
Performance and Specification

Booster Model Code	Max. Rated Gas Supply	Min. Rated Gas Supply	Max. Rated Gas Outlet (psig)			Actual ML Per Cycle	Outlet Stall Press. Formula	Compression Ratio Max.	Inlet & Outlet Gas Ports
			Inert Gas	Hydrogen	Oxygen				
AGB06-1S-7	1050psig	25psig	1050	1050	1050	216ML	7 Pa	20:1	3/8"FNPT
AGB06-1S-15	2250psig	50psig	2250	2250	2250	102ML	15 Pa	20:1	1/4"HF
AGB06-1S-30	4500psig	100psig	4500	4500	4500	51ML	30 Pa	25:1	1/4"HF
AGB06-1S-50	7500psig	100psig	7500	7500	5000	32ML	50 Pa	25:1	1/4"HF
AGB06-1S-75	11250psig	250psig	11250	11250	5000	20ML	75 Pa	25:1	1/4"HF

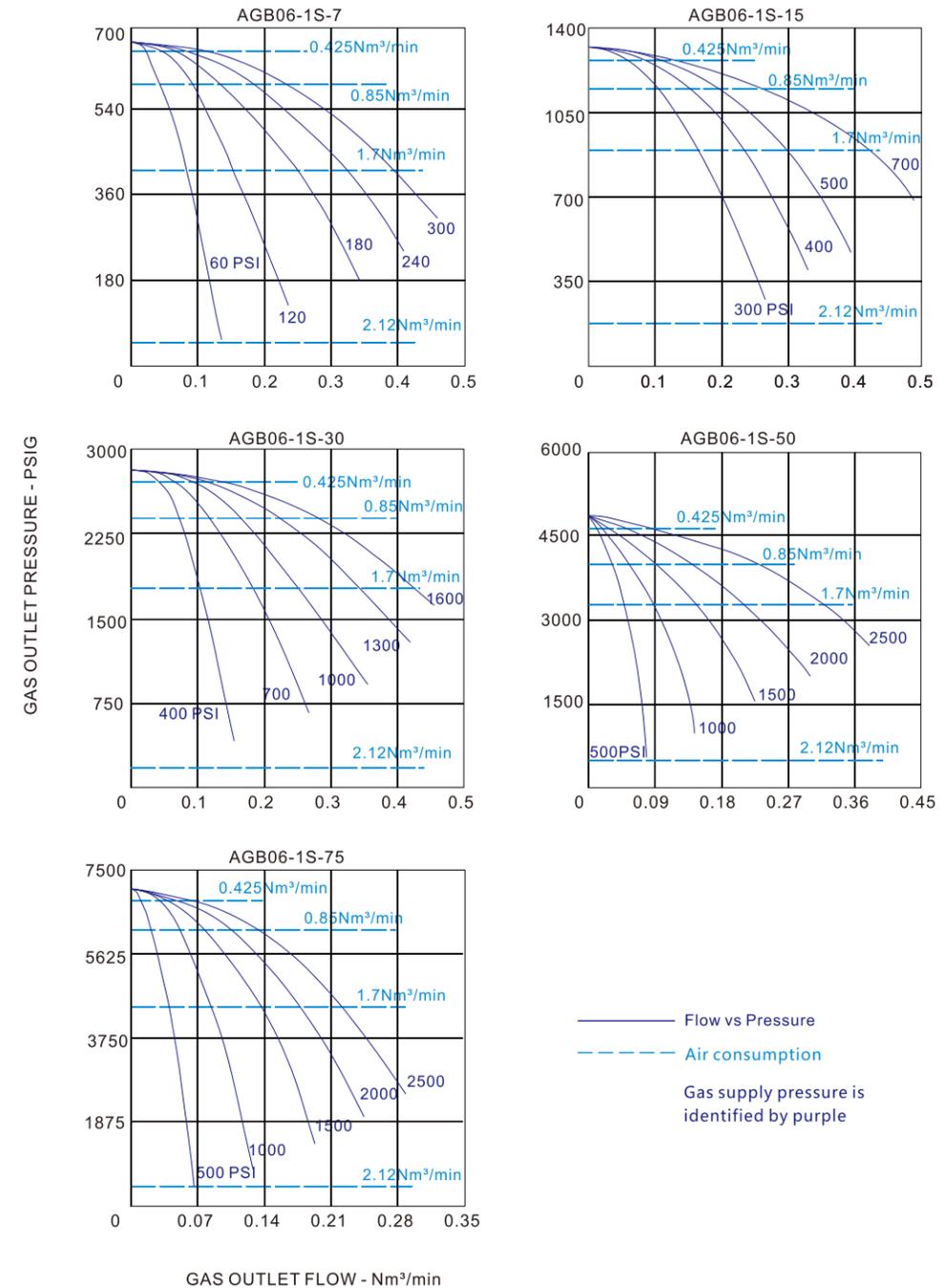
HF means female high pressure connection.

Dimensions

in.(mm)

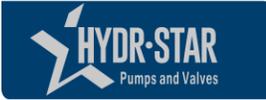


Performance Curves — air drive source of approximately 90 psig



EXPLAIN

- All model code listed are standard.
 Oxygen gas service add "-O" after the model codes.
 Hydrogen gas service add "-H" after the model codes.
 Replaces all Buna static and dynamic seals in the drive section of the gas booster add "-V" after the model codes.
 With external pilot port on air drive section add "-X" after the model codes.
 With external pilot port on air drive section & pressure switch add "-XS" after the model codes.
- Other sizes, materials and types are available upon request. For special requirements, please contact us.



AGB06 Series

Double Drive Single Acting

Features

- ★ Choice of 3 ratios.
- ★ Max. air drive pressure Pa=150 psig(10.3 bar).
- ★ Choice of seal materials.
- ★ Higher outlet pressure to 20000 psig(1379 bar).
- ★ No lubricator required.



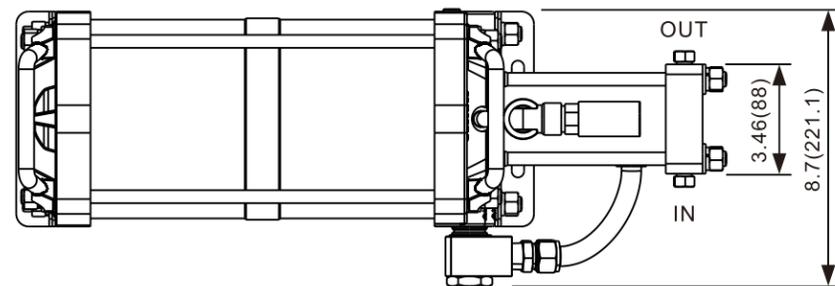
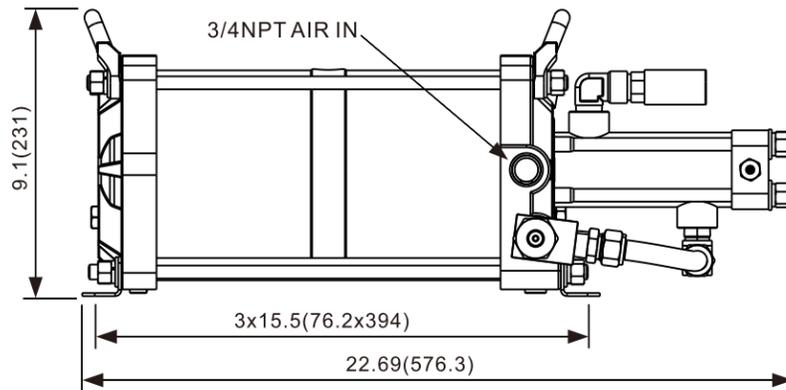
Performance and Specification

Booster Model Code	Max. Rated Gas Supply	Min. Rated Gas Supply	Max. Rated Gas Outlet (psig)			Actual ML Per Cycle	Outlet Stall Press. Formula	Compression Ratio Max.	Inlet & Outlet Gas Ports
			Inert Gas	Hydrogen	Oxygen				
AGB06-2S-60	9000psig	200psig	9000	9000	5000	51ML	60 Pa	25:1	1/4"HF
AGB06-2S-100	12000psig	100psig	12000	12000	5000	32ML	100 Pa	25:1	1/4"HF
AGB06-2S-150	20000psig	250psig	20000	15000	5000	20ML	150 Pa	25:1	1/4"HF

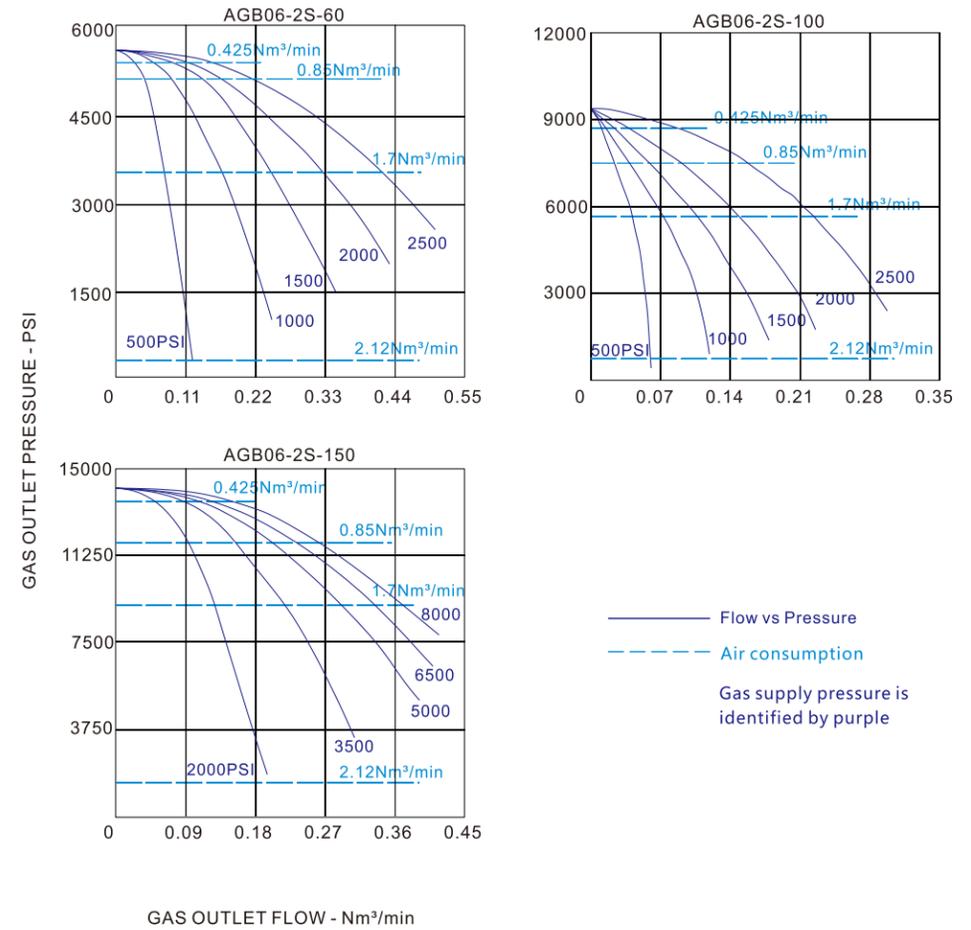
HF means female high pressure connection.

Dimensions

in.(mm)



Performance Curves — air drive source of approximately 90 psig



EXPLAIN

- All model code listed are standard.
 - Oxygen gas service add "-O" after the model codes.
 - Hydrogen gas service add "-H" after the model codes.
 - Replaces all Buna static and dynamic seals in the drive section of the gas booster add "-V" after the model codes.
 - With external pilot port on air drive section add "-X" after the model codes.
 - With external pilot port on air drive section & pressure switch add "-XS" after the model codes.
- Other sizes, materials and types are available upon request. For special requirements, please contact us.



AGB06 Series

Single Drive Double Acting

Features

- ★ Higher efficiency than single-acting boosters.
- ★ Max. air drive pressure Pa=150 psig(10.3 bar).
- ★ Less restriction on gas supply pressure Ps.
- ★ Choice of seal materials.
- ★ Pressure to 15000 psig(1034 bar).
- ★ No lubricator required.



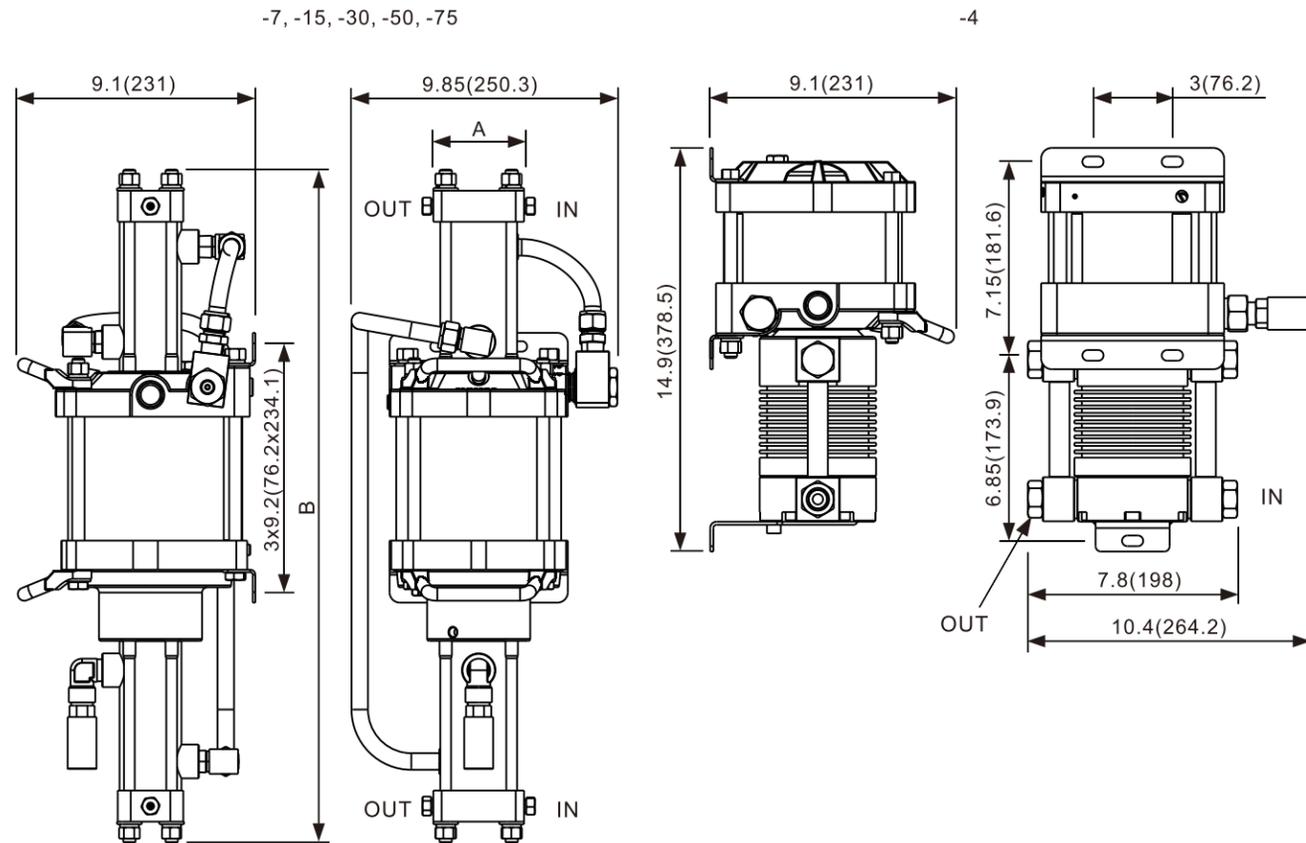
Performance and Specification

Booster Model Code	Max. Rated Gas Supply	Min. Rated Gas Supply	Max. Rated Gas Outlet (psig)			Actual ML Per Cycle	Outlet Stall Press. Formula	Compression Ratio Max.	Inlet & Outlet Gas Ports
			Inert Gas	Hydrogen	Oxygen				
AGB06-1D-4	1250psig	ATM	1250	1250	1250	316ML	4 Pa+Ps	10:1	3/8"FNPT
AGB06-1D-7	2500psig	25psig	2500	2500	2500	432ML	7 Pa+Ps	20:1	3/8"FNPT
AGB06-1D-15	5000psig	50psig	5000	5000	5000	203ML	15 Pa+Ps	20:1	1/4"HF
AGB06-1D-30	9000psig	100psig	9000	9000	5000	102ML	30 Pa+Ps	25:1	1/4"HF
AGB06-1D-50	15000psig	100psig	15000	15000	5000	64ML	50 Pa+Ps	25:1	1/4"HF
AGB06-1D-75	15000psig	250psig	15000	15000	5000	39ML	75 Pa+Ps	25:1	1/4"HF

HF means female high pressure connection.

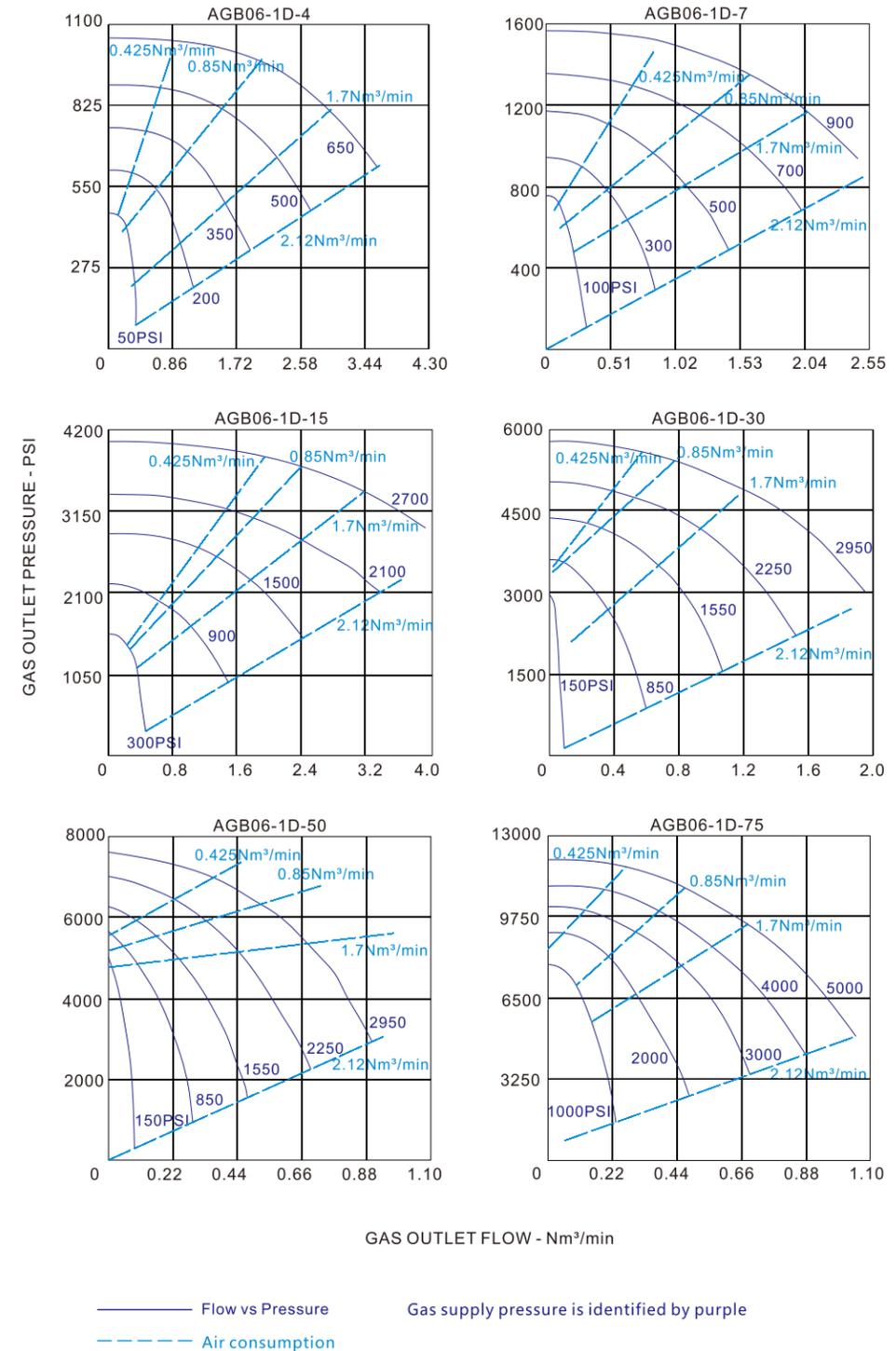
Dimensions

in.(mm)



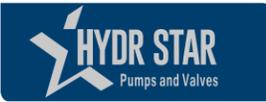
-7 Boosters: A=4.97in.(126.4mm). -15, -30, -50, -75 Boosters : A=3.46in.(88mm).
 -7 Boosters: B=26.3in.(668mm). -15, -30, -50, -75 Boosters : B=25.5in.(648mm).
 3/4 female NPT AIR IN for all models.

Performance Curves — air drive source of approximately 90 psig



EXPLAIN

- All model code listed are standard.
 Oxygen gas service add "-O" after the model codes.
 Hydrogen gas service add "-H" after the model codes.
 Replaces all Buna static and dynamic seals in the drive section of the gas booster add "-V" after the model codes.
 With external pilot port on air drive section add "-X" after the model codes.
 With external pilot port on air drive section & pressure switch add "-XS" after the model codes.
- Other sizes, materials and types are available upon request. For special requirements, please contact us.



AGB06 Series

Double Drive Double Acting

Features

- ★ Higher efficiency than single-acting boosters.
- ★ Max. air drive pressure Pa=150 psig(10.3 bar).
- ★ Less restriction on gas supply pressure Ps.
- ★ Choice of seal materials.
- ★ Higher outlet pressure to 25000 psig(1724 bar).
- ★ No lubricator required.



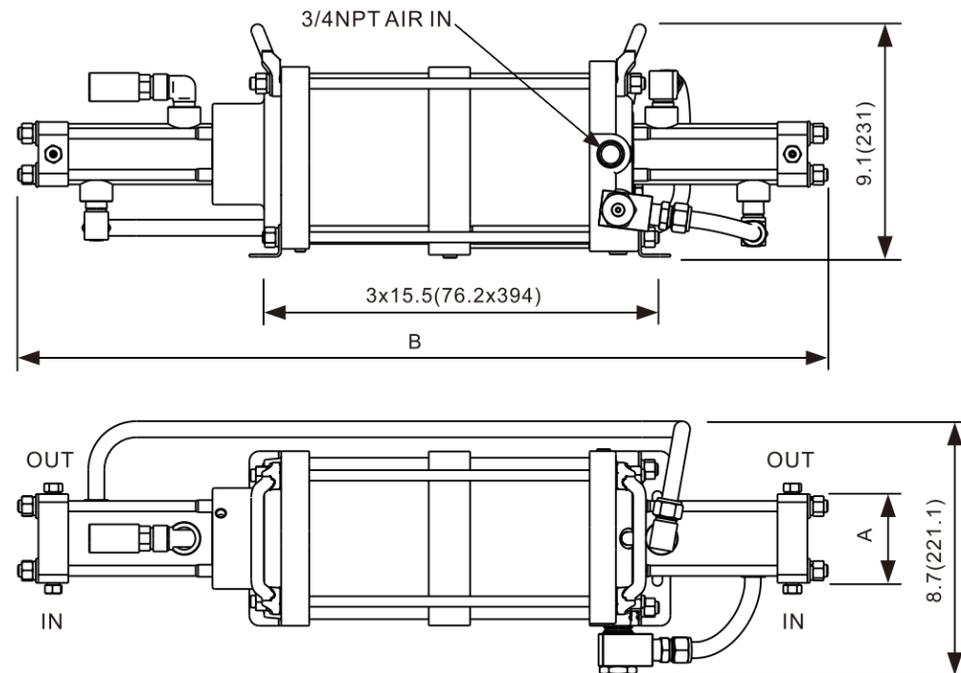
Performance and Specification

Booster Model Code	Max. Rated Gas Supply	Min. Rated Gas Supply	Max. Rated Gas Outlet (psig)			Actual ML Per Cycle	Outlet Stall Press. Formula	Compression Ratio Max.	Inlet & Outlet Gas Ports
			Inert Gas	Hydrogen	Oxygen				
AGB06-2D-14	3500psig	25psig	5000	5000	5000	432ML	14 Pa+Ps	20:1	3/8"FNPT
AGB06-2D-30	5000psig	50psig	5000	5000	5000	203ML	30 Pa+Ps	20:1	1/4"HF
AGB06-2D-60	9000psig	200psig	9000	9000	5000	102ML	60 Pa+Ps	25:1	1/4"HF
AGB06-2D-100	15000psig	100psig	15000	15000	5000	64ML	100 Pa+Ps	25:1	1/4"HF
AGB06-2D-150	25000psig	250psig	25000	15000	N/A	39ML	150 Pa+Ps	25:1	1/4"HF

HF means female high pressure connection.

Dimensions

in.(mm)

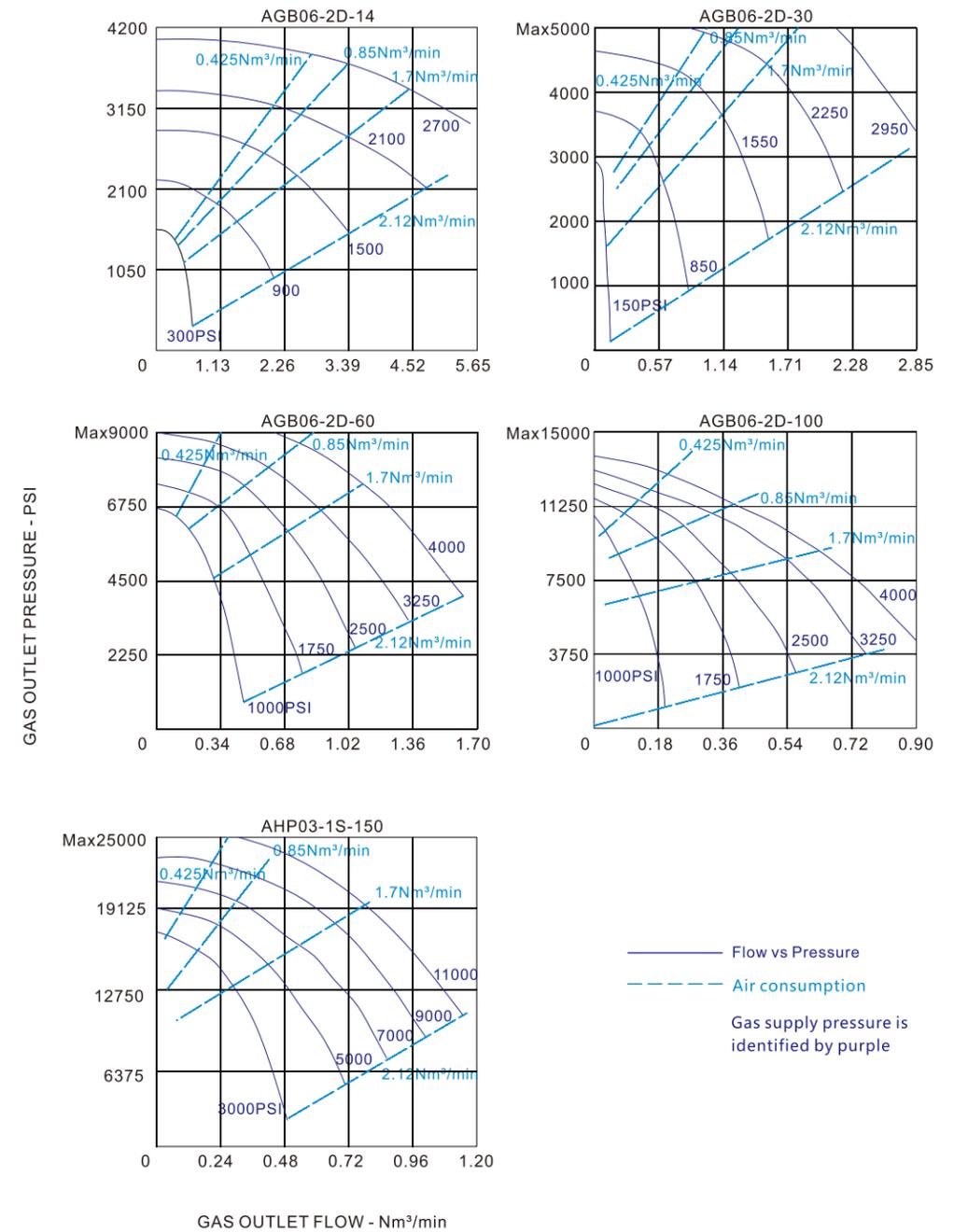


For AGB06-2D-14, A=4.97in.(126.4mm). For other boosters, A=3.46in.(88mm).
 For AGB06-2D-14, B=32.64in.(829mm). For other boosters, B=31.85in.(809mm).

EXPLAIN

- All model code listed are standard.
 Oxygen gas service add "-O" after the model codes.
 Hydrogen gas service add "-H" after the model codes.
 Replaces all Buna static and dynamic seals in the drive section of the gas booster add "-V" after the model codes.
 With external pilot port on air drive section add "-X" after the model codes.
 With external pilot port on air drive section & pressure switch add "-XS" after the model codes.
- Other sizes, materials and types are available upon request. For special requirements, please contact us.

Performance Curves — air drive source of approximately 90 psig





AGB06 Series

Single Drive Double Stage

Features

- ★ Because it has a higher compression ratio, it can work at lower gas supply pressure Ps.
- ★ Max. air drive pressure Pa=150 psig(10.3 bar).
- ★ Choice of seal materials.
- ★ Pressure to 15000 psig(1034 bar).
- ★ No lubricator required.



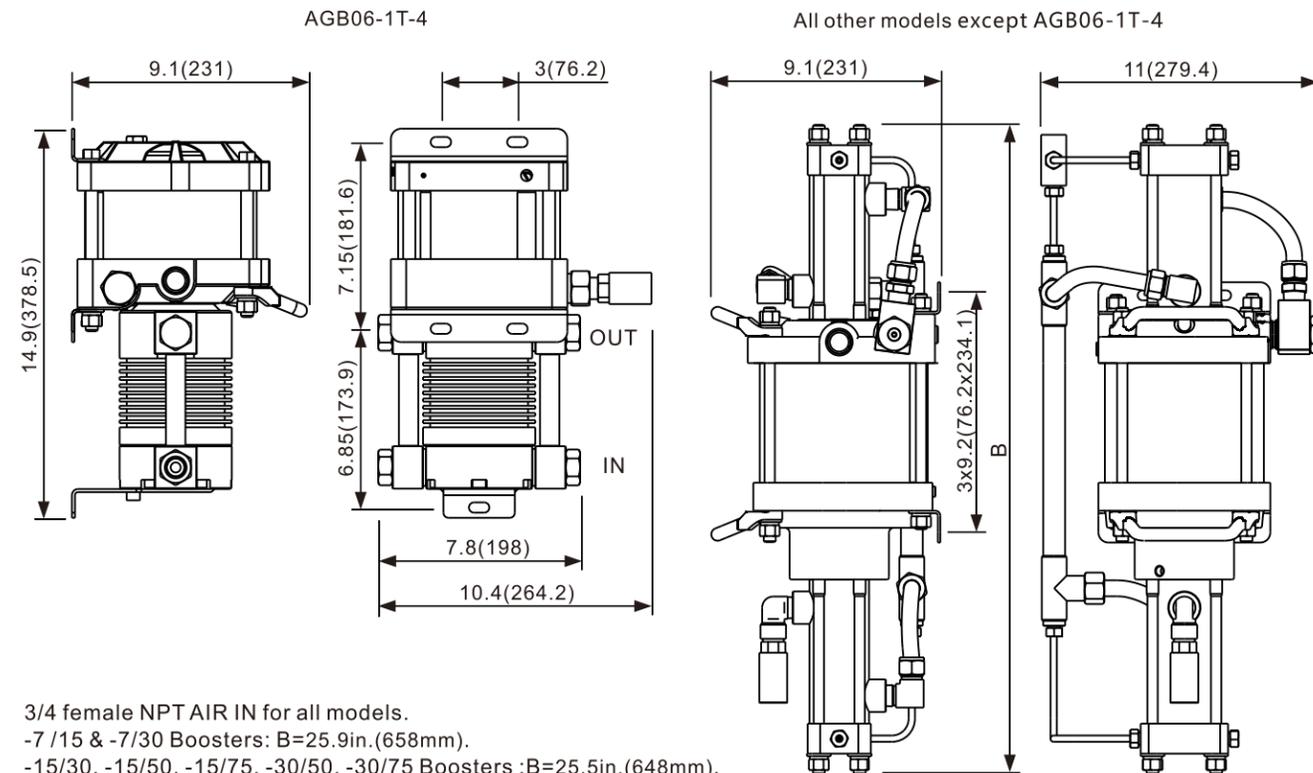
Performance and Specification

Booster Model Code	Max. Gas Supply	Min. Gas Supply	Max. Rated Gas Outlet (psig)			Actual ML Per Cycle	Outlet Stall Press. Formula	Compression Ratio Max.	Max. barrel Safe Pressure	
			Inert Gas	Hydrogen	Oxygen				First stage	Second stage
AGB06-1T-4	1250psig	1/4ATM	1250	1250	1250	164ML	4 Pa+Ps	100:1	1250psig	1250psig
AGB06-1T-7/15	6 Pa	25psig	4050	4050	4050	216ML	15 Pa+2 Ps	50:1	2500psig	5000psig
AGB06-1T-7/30	2 Pa	25psig	5700	5700	5000	216ML	30 Pa+4 Ps	100:1	2500psig	9000psig
AGB06-1T-15/30	15 Pa	50psig	7500	7500	5000	102ML	30 Pa+2 Ps	50:1	5000psig	9000psig
AGB06-1T-15/50	6.5 Pa	100psig	10700	10000	5000	102ML	50 Pa+3.3 Ps	75:1	5000psig	15000psig
AGB06-1T15/75	3.5 Pa	100psig	15000	15000	5000	102ML	75 Pa+5 Ps	100:1	5000psig	25000psig
AGB06-1T-30/50	45 Pa	100psig	15000	15000	5000	51ML	50 Pa+1.6 Ps	40:1	9000psig	15000psig
AGB06-1T30/75	20 Pa	100psig	15000	15000	5000	51ML	75 Pa+2.5 Ps	60:1	9000psig	25000psig

When the pressure of the first stage exceeds the Max. barrel Safe Pressure listed in the table. Install interstage relief valve set at this pressure.

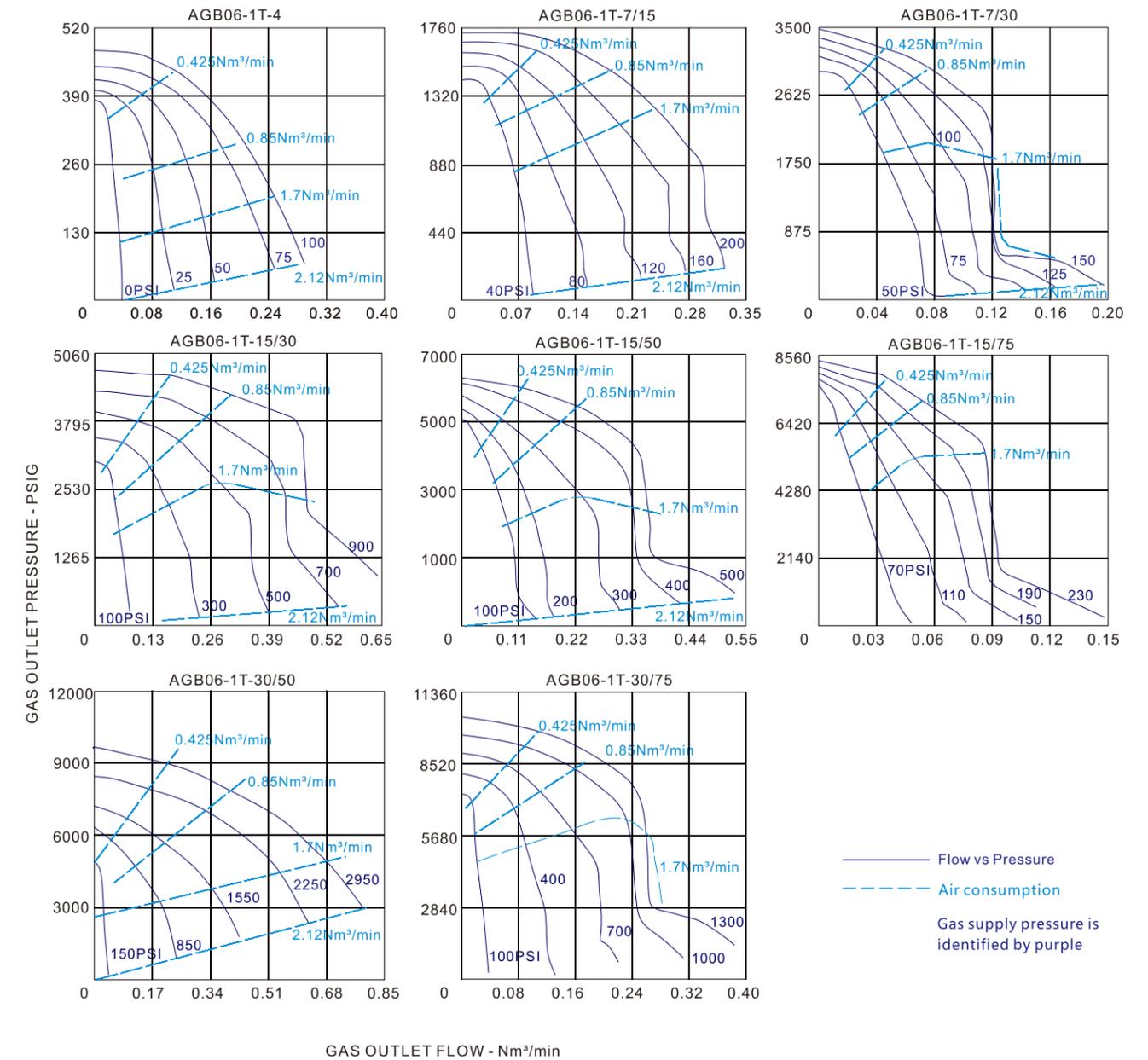
Dimensions

in. (mm)



3/4 female NPT AIR IN for all models.
 -7 /15 & -7/30 Boosters: B=25.9in.(658mm).
 -15/30, -15/50, -15/75, -30/50, -30/75 Boosters :B=25.5in.(648mm).
 For AGB06-1T-7 /15 & AGB06-1T-7/30 & AGB06-1t-4 the inlet ports are 3/8 female NPT. For other boosters the inlet port are 1/4 female high pressure connection. For AGB06-1t-4 the outlet port is 3/8 female NPT. For all the other boosters the outlet ports are 1/4 female high pressure connection.

Performance Curves — air drive source of approximately 90 psig



EXPLAIN

- All model code listed are standard.
 Oxygen gas service add "-O" after the model codes.
 Hydrogen gas service add "-H" after the model codes.
 Replaces all Buna static and dynamic seals in the drive section of the gas booster add "-V" after the model codes.
 With external pilot port on air drive section add "-X" after the model codes.
 With external pilot port on air drive section & pressure switch add "-XS" after the model codes.
- Other sizes, materials and types are available upon request. For special requirements, please contact us.



AGB06 Series

Double Drive Double Stage

Features

- ★ Because it has a higher compression ratio, it can work at lower gas supply pressure Ps.
- ★ Max. air drive pressure Pa=150 psig(10.3 bar).
- ★ Choice of seal materials.
- ★ Pressure to 25000 psig(1724 bar).
- ★ No lubricator required.



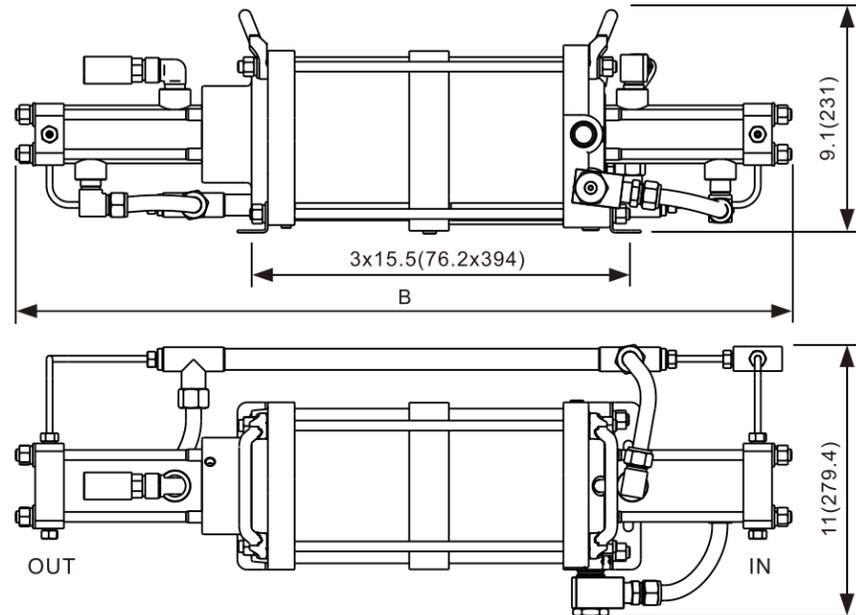
Performance and Specification

Booster Model Code	Max. Gas Supply	Min. Gas Supply	Max. Rated Gas Outlet (psig)			Actual ML Per Cycle	Outlet Stall Press. Formula	Compression Ratio Max.	Max. barrel Safe Pressure	
			Inert Gas	Hydrogen	Oxygen				First stage	Second stage
AGB06-2T-14/30	12 Pa	25psig	5000	5000	5000	216ML	30 Pa+2 Ps	50:1	2500psig	5000psig
AGB06-2T-14/60	4 Pa	25psig	9000	9000	5000	216ML	60 Pa+4 Ps	100:1	2500psig	9000psig
AGB06-2T-30/60	30 Pa	100psig	9000	9000	5000	102ML	60 Pa+2 Ps	50:1	5000psig	9000psig
AGB06-2T-30/100	13 Pa	100psi	14500	14500	5000	102ML	100 Pa+3.3 Ps	75:1	5000psig	15000psig
AGB06-2T-30/150	7 Pa	100psig	15000	15000	5000	102ML	150 Pa+5 Ps	100:1	5000psig	25000psig
AGB06-2T-60/100	90 Pa	100psig	15000	15000	5000	51ML	100 Pa+1.6 Ps	40:1	9000psig	15000psig
AGB06-2T-60/150	40 Pa	100psig	25000	15000	N/A	51ML	150 Pa+2.5 Ps	60:1	9000psig	25000psig

When the pressure of the first stage exceeds the Max. barrel Safe Pressure listed in the table. Install interstage relief valve set at this pressure.

Dimensions

in.(mm)



3/4 female NPT AIR IN for all models.

For AGB06-2T-14 /30 & AGB06-2T-14/60 : B=32.24in.(819mm). For other boosters : B=31.85in.(809mm).

For AGB06-2T-14 /30 & AGB06-2T-14/60 the inlet port are 3/8 female NPT. For other boosters the inlet port are 1/4 female high pressure connection. For all the boosters the outlet ports are 1/4 female high pressure connection.

EXPLAIN

1. All model code listed are standard.

Oxygen gas service add "-O" after the model codes.

Hydrogen gas service add "-H" after the model codes.

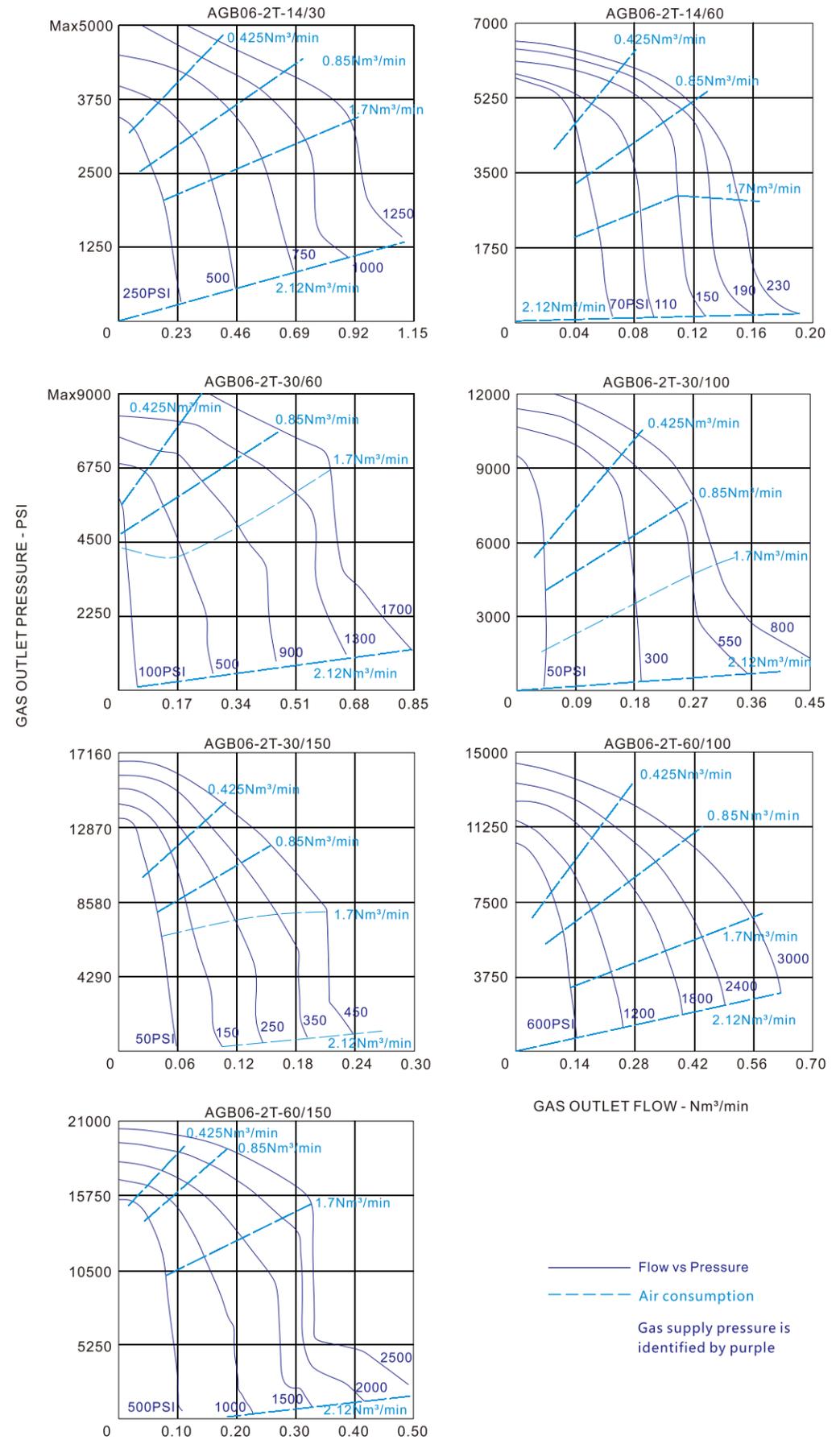
Replaces all Buna static and dynamic seals in the drive section of the gas booster add "-V" after the model codes.

With external pilot port on air drive section add "-X" after the model codes.

With external pilot port on air drive section & pressure switch add "-XS" after the model codes.

2. Other sizes, materials and types are available upon request. For special requirements, please contact us.

Performance Curves — air drive source of approximately 90 psig



— Flow vs Pressure
 - - - Air consumption
 Gas supply pressure is identified by purple