

# Model Number 42AAV48

## Gas Pressure Booster



Model 42AAV48-AC with optional air controls

The Model 42AAV48 gas pressure booster system uses shop air to boost the pressure of an air or gas stream. The drive air piston reciprocates automatically and drives the gas compressor piston. The booster is non-lubricated and uses filled Teflon® piston seals and rod seals. It requires no electricity, cooling water, or air-line lubricator and is explosionproof.

For air pressure boosting the maximum discharge pressure is equal to 5.0 times the shop air pressure.

For gas pressure boosting, the maximum discharge pressure is equal to the sum of the gas supply pressure plus 4.0 times the drive air pressure.

The graphs which follow show the maximum flowrate capability for a range of air and gas supply pressures and discharge pressures.

The boosted gas flowrate and discharge pressure can be controlled by throttling the drive air flowrate and/or regulating the drive air pressure. When there is no demand for high pressure gas, the booster stalls when it reaches the maximum discharge pressure. When there is a need for high pressure gas the pressure in the discharge line drops which causes the booster to restart automatically.

*5/1 Maximum boost ratio*

*Shop air driven*

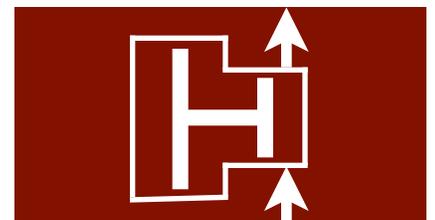
*No electricity is required*

*Explosionproof*

*Aluminum construction*

*Stainless steel hardware*

**MPS**  
MIDWEST  
PRESSURE  
SYSTEMS



Gas Boost Cylinder Specifications	Model Number 42AAV48
Bore diameter & stroke - in (mm)	2 (50.8) & 4.8 (122)
Maximum gas discharge pressure - psi (bar)	696 (48)
Gas temperature range - °F (°C)	-15 to 250 (-26 to 121)
Maximum recommended cycle rate - cpm (Note 1)	100
Gas displacement per cycle - cf (l)	0.016 (0.453)
Maximum gas displacement - cfm (lpm)	1.6 (45.3)
Maximum Pressure boost (multiple of drive air pressure)	4
Gas inlet and discharge connection FNPT	1/4
Seal vent connections FNPT	1/8
Air Drive Cylinder Specifications	
Bore diameter & stroke - in (mm)	4 (102) & 4.8 (122)
Maximum drive pressure - psi (bar) (Note 2)	125 (8.6)
Air temperature range - °F (°C)	32 to 167 (0 to 75)
Air displacement per cycle - cf (l)	0.069 (1.95)
Maximum air displacement - cfm (lpm)	6.9 (195)
Drive air inlet connections FNPT	1/2
Drive air exhaust connections FNPT	1/2

**Note 1:**

A cycle consists of a forward and reverse stroke.

**Note 2:**

Nitrogen or clean inert gas may also be used for the drive gas.

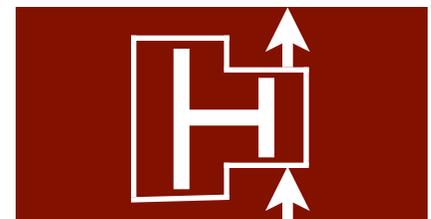
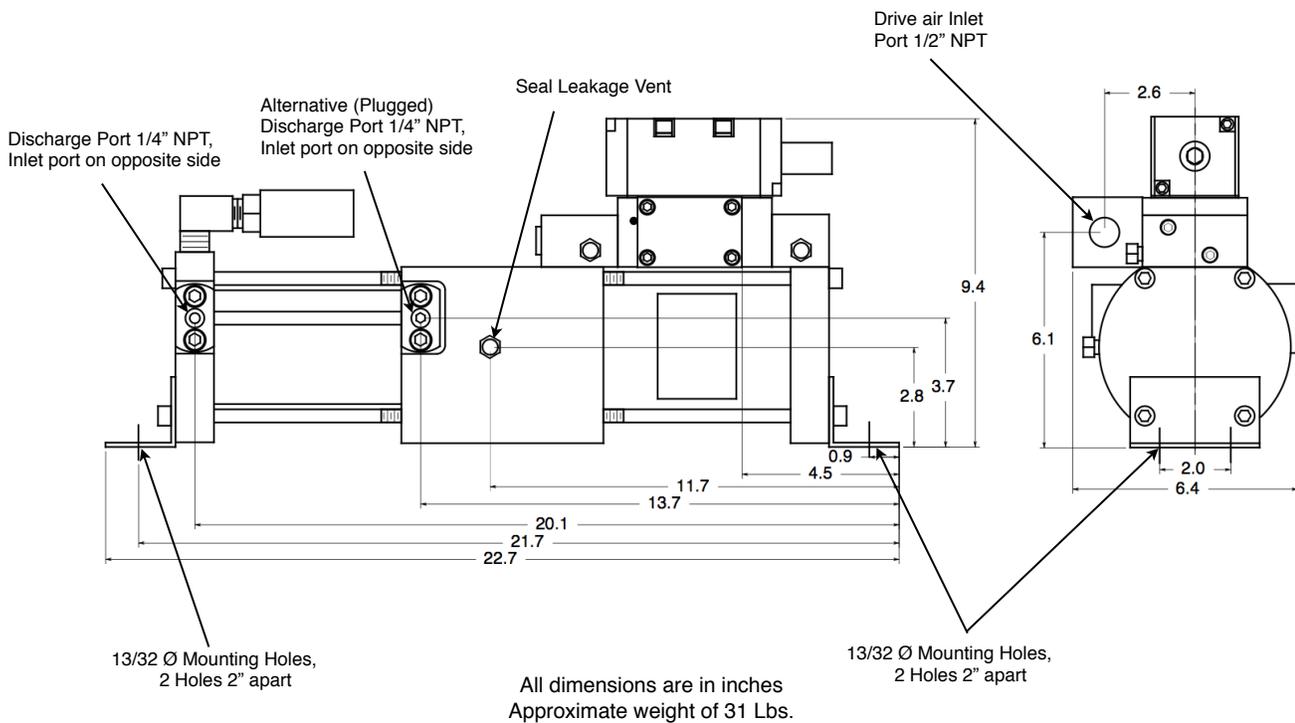
**OPTIONS**

**-AC**

Air controls for air pressure booster consisting of filter, pressure regulator, drive pressure gauge, shutoff valve and boost air connection.

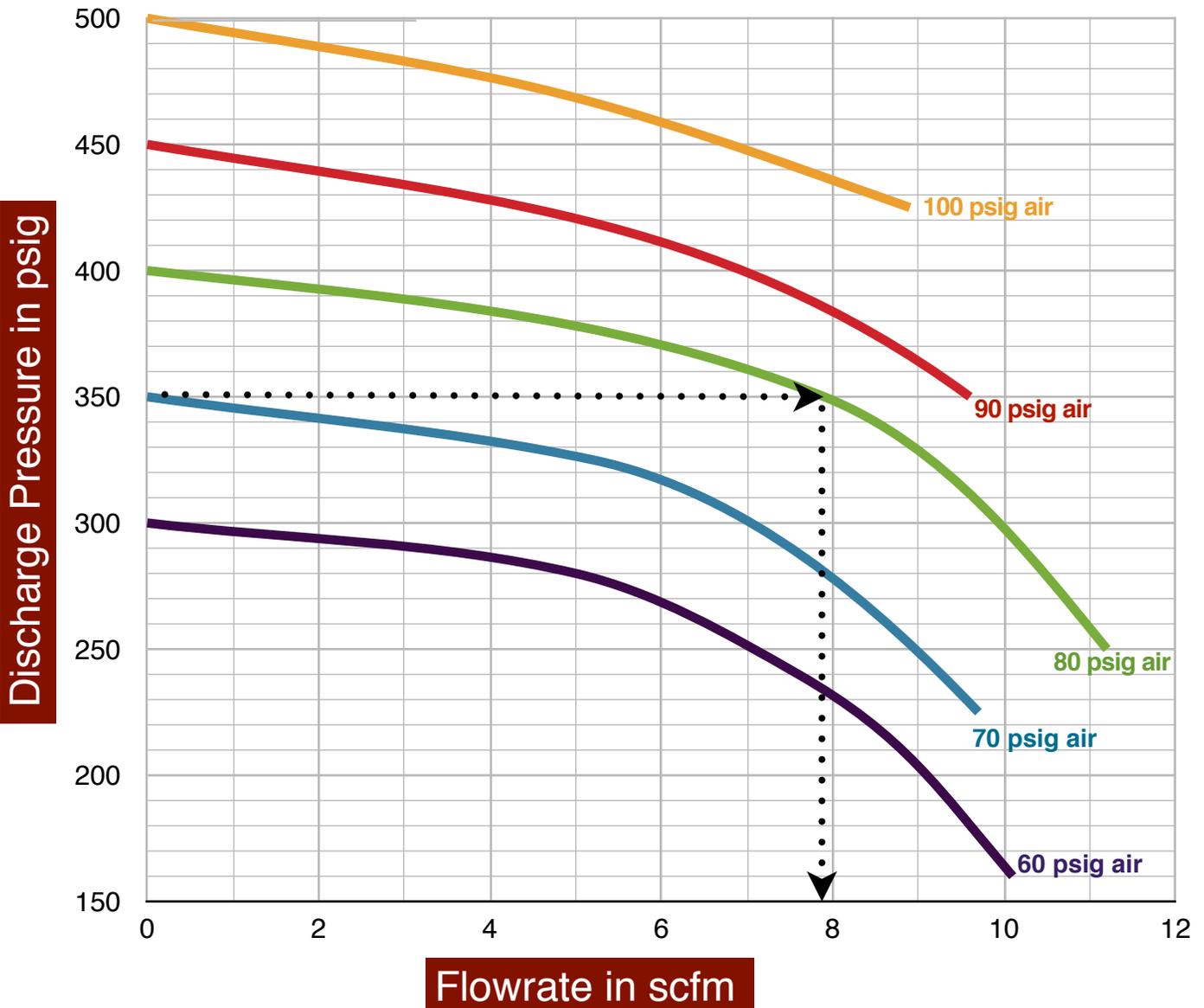
**-ACG**

Air controls for gas pressure booster consisting of filter, pressure regulator, drive pressure gauge and shutoff valve.



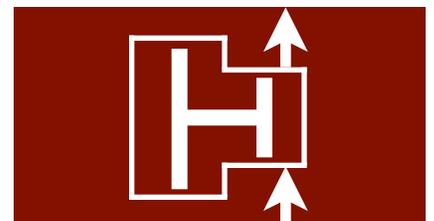
# Shop Air Pressure Boosting

Drive air pressure and supply pressure are the same



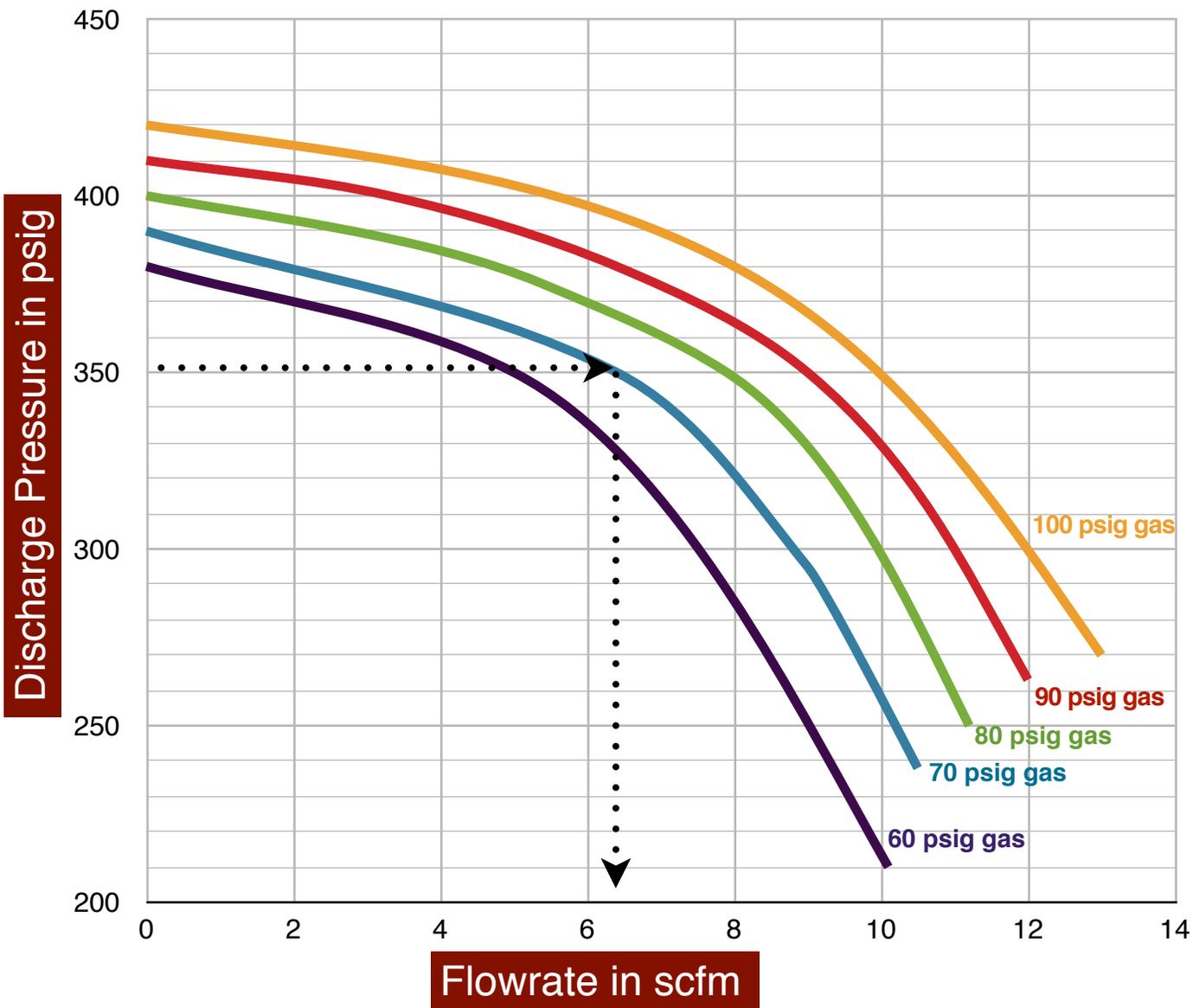
Use the curves above to determine the Model 42AAV48 air pressure booster maximum discharge flowrate for a given set of operating conditions. In the example shown above, a maximum discharge pressure of 350 psig is desired and 80 psig supply air is available. Follow the 350 psig line until it intersects with the 80 psig supply

air curve. Draw a vertical line from the intersection down to the bottom line to determine the maximum flowrate of 7.9 scfm. The booster can operate at any flowrate from zero to the maximum flowrate. It will automatically adjust its operating speed as long as the required flowrate is in this range.



# Gas Pressure Boosting

Drive air pressure is 80 psig - Gas supply pressures from 60 to 100psig



Use the curves above to determine the Model 42AAV48 gas pressure booster maximum discharge flowrate for a given set of operating conditions. In the example shown above, a maximum discharge pressure of 350 psig is desired. Note that the drive air pressure is 80 psig for all points on the curves. For a gas supply pressure of 70 psig, follow the

350 psig line until it intersects with the 70 psig supply gas curve. Draw a vertical line from the intersection down to the bottom line to determine the maximum flowrate of 6.3 scfm. The booster can operate at any flowrate from zero to the maximum flowrate. It will automatically adjust its operating speed as long as the required flowrate is in this range.

