

AIR DRIVEN

# Air Amplifiers & Systems



Single Acting and Double Acting

**AHB**  
TOOLING & MACHINERY

COMPLETE  
METALWORKING  
SOLUTIONS

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MAXPRO Technologies was founded in 1995 to serve as the exclusive North American distributor for quality **Maximator**® liquid pumps, gas boosters, air amplifiers. In 2007, our product line was expanded to include **Maximator**® high pressure valves, fittings and tubing. In 2011, we introduced our patented coning and threading machine. Our mission is to provide competitively priced, high-quality products backed by excellent customer service.

MAXPRO also provides regional sales and service through our location in Humble, TX. We also have a network of factory trained, independent distributors throughout the US, Canada and Mexico.

## Air Amplifiers

### Point-of-Use Air Solutions

**Maximator**® air amplifiers are designed to boost plant air pressure or increase the supply air pressure at work stations and pneumatically operated machinery when the available working pressure is insufficient. Air operated tools become more productive when coupled with air amplifiers. These amplifiers are capable of generating pressures from 30 psi to 4,350 psi.

Because they use the same compressed air source for both driving and amplifying, air amplifiers do not need electrical power. This ensures quick installation and enhanced production.

Air amplifiers can be controlled to automatically stop once the desired end pressure has been reached. **The amplifier will restart when a drop of only 1% from the stall pressure has been detected.**

Single stage - **single acting** and single stage - **double acting** air amplifiers are available to satisfy most pressure and flow demands. Amplifiers are ideal for intermittent pressure requirements.

MAXPRO offers complete **turnkey systems** for easy installation. Technical application and service support is available for all air amplifiers and turnkey systems.

#### Features

- Air pressures from 30 psi to 4,350 psi
- Easy installation and operation
- Compact, lightweight design
- Single or double acting
- No electrical power required
- “Stall” at target pressure, automatic restart after a drop of only 1% from target pressure
- PTFE SEALS
- Unregulated pilot air port for easy restart and better control on all DLA, SPLV2 and GPLV2 models (1/8” FNPT)
- Standard and custom application designed systems

#### Applications

- Boost insufficient shop air or air pressure
- Work benches and equipment with limited space
- High pressure air purging
- Drive pneumatic cylinders
- Improve efficiency of pneumatic tools and machinery
- Boost air for part removal, valve gates and/or automation equipment for injection molding

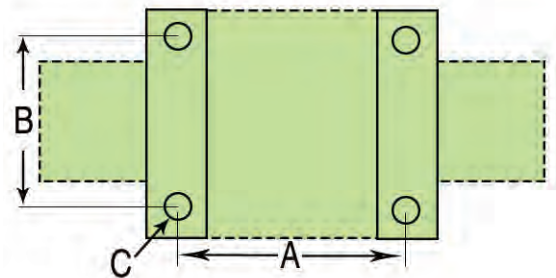
## How an Air Amplifier works

Air Amplifiers use incoming compressed air to provide both the power to operate the unit as well as provide the air to be amplified. Amplification is accomplished either using a larger air piston pushing a smaller piston and thus achieving a higher pressure (on DLA series), or, through the use of two fixed area pistons pushing one piston of the same area (on the PLV series). The low- and high-pressure sections typically share common volumes alternately of drive air and amplified air such that their use for other gases is not suitable. Reciprocation is achieved using tappet valves at the end of each stroke which provides an air shift signal to a four-way spool valve, which then relays drive air to alternate sides of the drive piston(s). The drive air is exhausted, and the amplified air is delivered to the outlet port. **NOTE:** The air to the amplifier should be filtered to between 5 $\mu$  and 40 $\mu$  and have a dew point between 0° and 50°F. Very moist air can wash out the seal lubricant and very dry air may require a Dry Air Spool (see p.11).

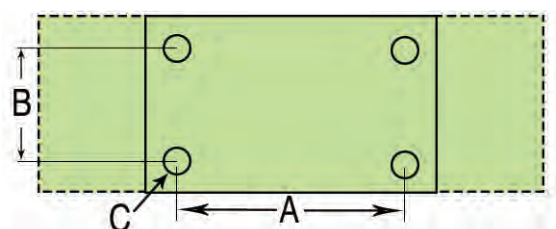
STYLE	CATALOG NUMBER	PRESSURE RATIO	COMPRESSION RATIO	SUPPLY PRESSURE (PSI)		MAX. RATED PRESSURE (PSI)	STALL PRESSURE	AIR AMPLIFIED CONNECTIONS		MAX. TEMP. F	WEIGHT (LBS.)
				MIN.	MAX.			INLET	OUTLET		
SINGLE ACTING	MPLV4-1	4:1	-	30	145	580	4Pa	3/8	3/8	140	7
	DLA5-1	5:1	15:1	30	725	725	5Pa	3/8	3/8	140	34
	DLA15-1	15:1	20:1	100	2,175	2,175	15Pa	1/4	1/4	210	29
	DLA30-1	30:1	20:1	220	4,350	4,350	30Pa	1/4	1/4	210	29
DOUBLE ACTING	MPLV2	2:1	-	15	150	300	Pa+Ps	1/4	1/4	180	12
	SPLV2	2:1	-	15	150	300	Pa+Ps	3/8	3/8	180	18
	GPLV2	2:1	-	15	150	300	Pa+Ps	3/8	3/8	180	40
	GPLV5	5:1	15:1	15	870	870	5.2Pa+Ps	1/2	1/2	140	30
	DLA5	5:1	15:1	30	1450	1450	5Pa+Ps	3/8	3/8	140	45
	DLA15	15:1	20:1	100	4,350	4,350	15Pa+Ps	1/4	1/4	210	40

**NOTE:** Pa = Air Drive Pressure (PSI) Ps = Supply Pressure (PSI)  
 Maximum air drive pressure 145 psi  
 Maximum operating and stall pressures must not be allowed to exceed output pressure rating.  
 Air drive inlet connection on MPLV4-1 and MPLV2 is 1/4" FNPT.  
 Air drive inlet connection on all other air amplifiers is 1/2" FNPT.  
 There is a 1/8" FNPT pilot port on all amplifiers, except MPLV4-1 and MPLV2, that must be plumbed from air source.

Mounting dimensions for amplifiers MPLV4-1, DLA5-1, DLA15-1, DLA30-1, MPLV2, DLA5, DLA15 and GPLV5



Mounting dimensions for MPLV2, SPLV2 and GPLV2



## OVERALL DIMENSIONS (Inches)

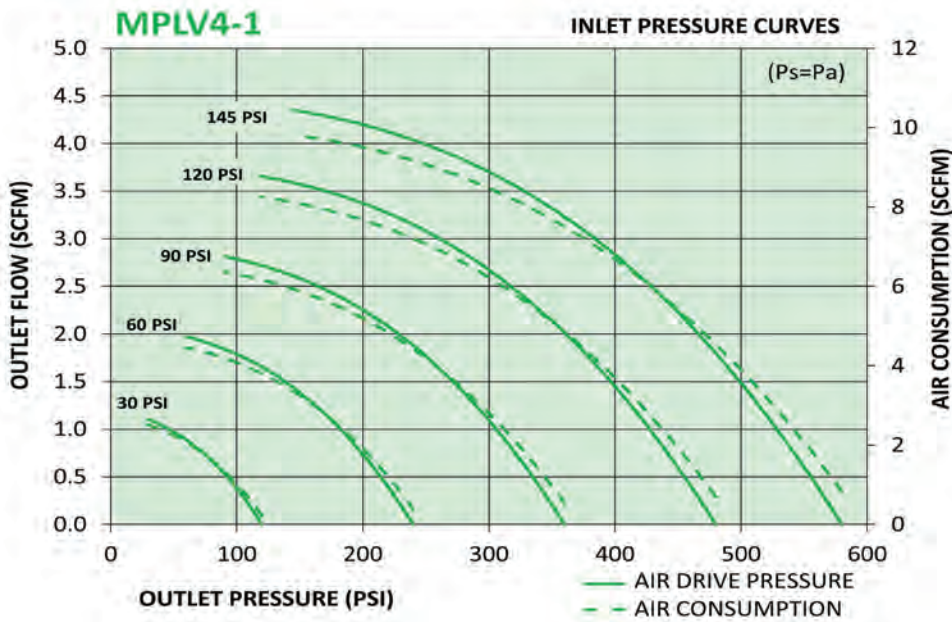
CATALOG NUMBER	LENGTH	WIDTH	HEIGHT	MOUNTING		
				A	B	C
MPLV4-1	8.75	3.94	3.34	6.81	2.00	0.38
DLA5-1	16.63	6.75	10.75	9.00	3.13	0.44
DLA15-1	17.00	6.75	10.75	9.00	3.13	0.44
DLA30-1	17.00	6.75	10.75	9.00	3.13	0.44
MPLV2	13.38	3.025	3.50	12.81	2.00	0.38
SPLV2	12.75	5.75	8.00	3.75	4.97	0.38
GPLV2	17.00	8.00	11.00	3.75	7.13	0.38
GPLV5	18.38	7.13	10.68	9.00	3.13	.44
DLA5	24.00	9.00	9.00	9.00	3.13	0.44
DLA15	24.25	9.00	9.00	9.00	3.13	0.44

**SINGLE STAGE  
SINGLE ACTING**

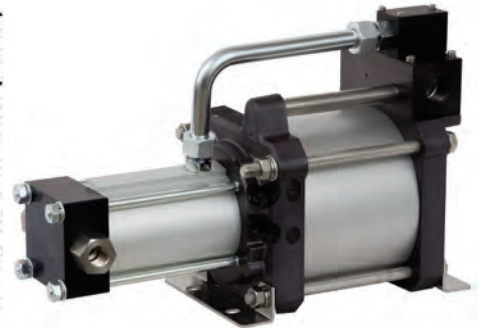
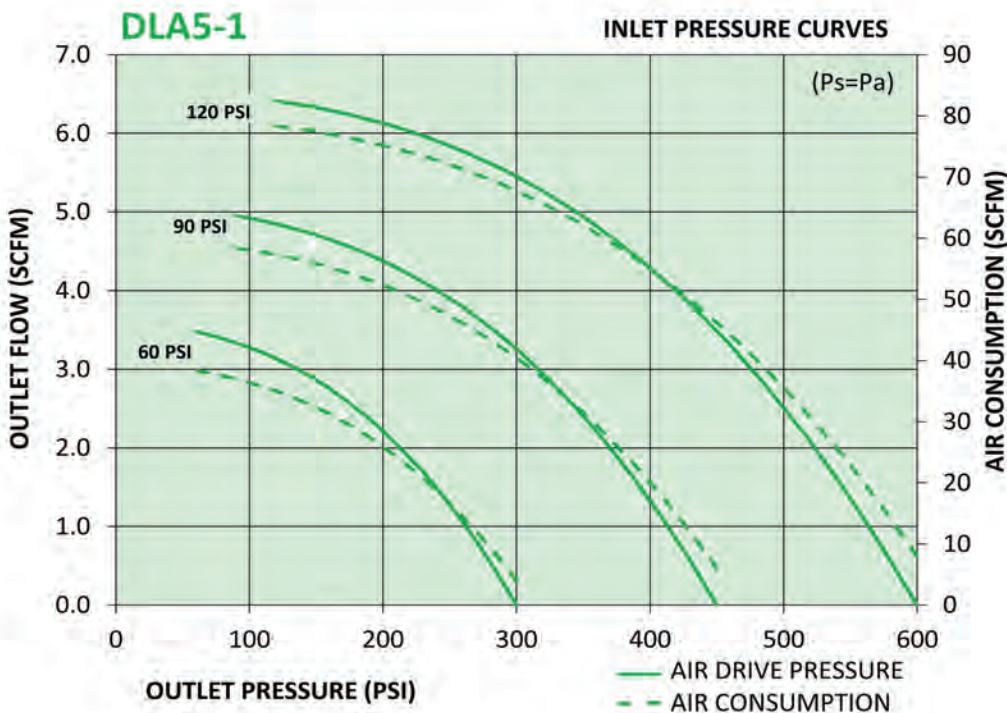
**MAXIMATOR® AIR AMPLIFIERS**

MAXPRO offers four air amplifier models in a single stage - single acting configuration. Single acting models include the MPLV4-1, DLA5-1, DLA15-1 and DLA30-1. These units provide high pressure air amplification to 4,350 psi.

Maximator air amplifiers are compact and lightweight for easy installation and operation. The miniature MPLV4-1 is approximately 7" high and 3" square and is ideal for light duty and boosting air in tight spaces such as work benches or pneumatic machinery. The DLA5-1, DLA15-1 and DLA30-1 are ideal for industrial applications.



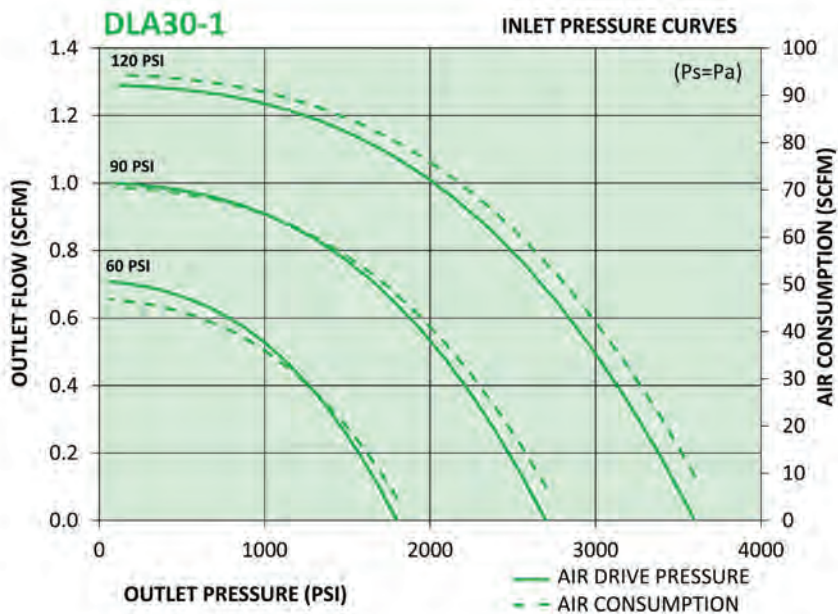
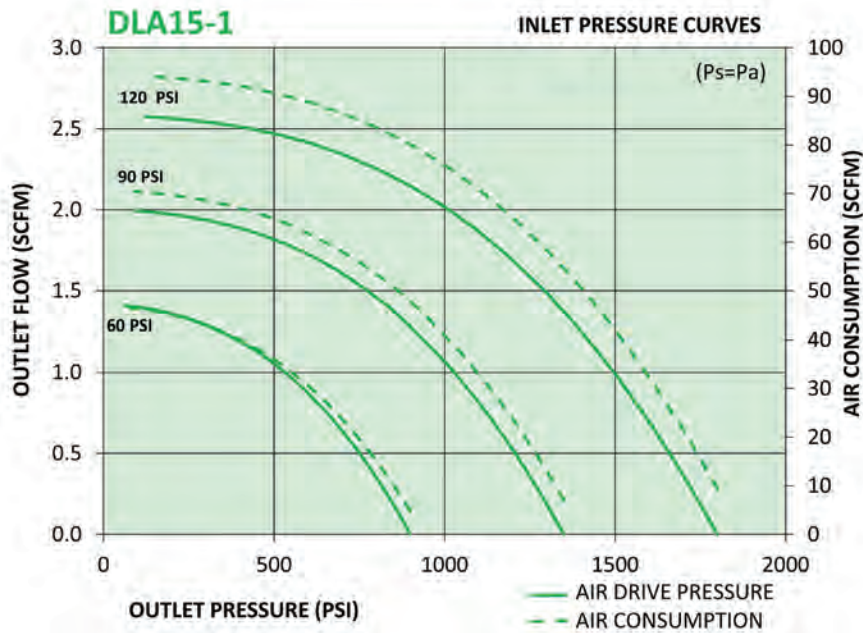
LIGHT DUTY SMALL VOLUME USE ONLY



## How to use Curves

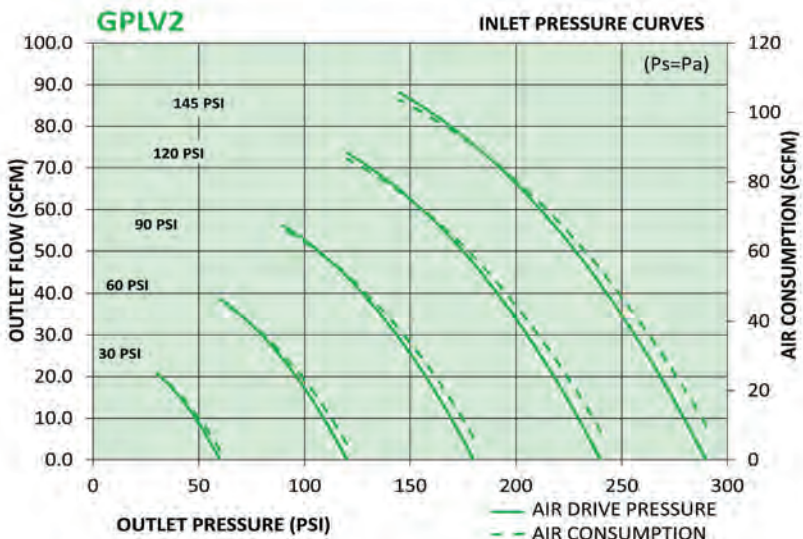
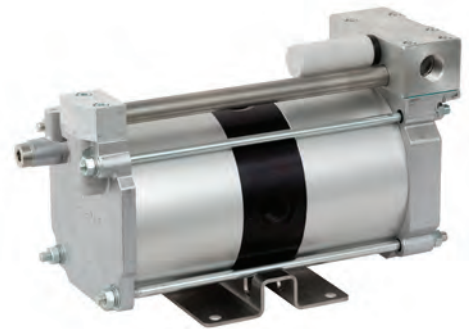
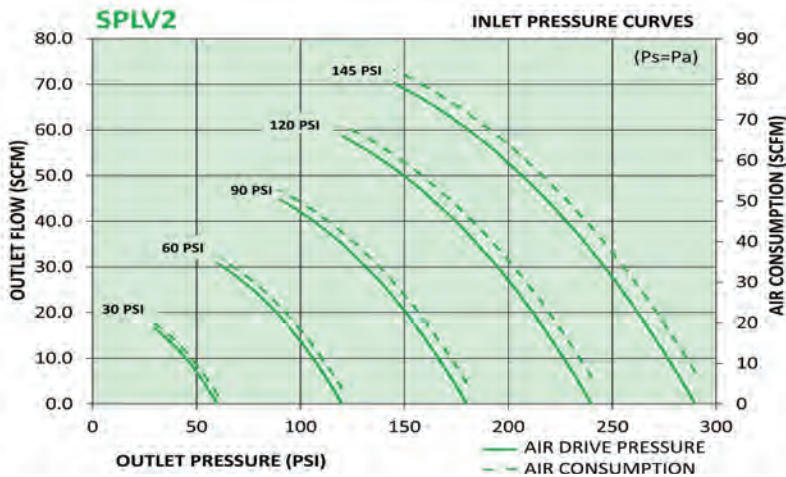
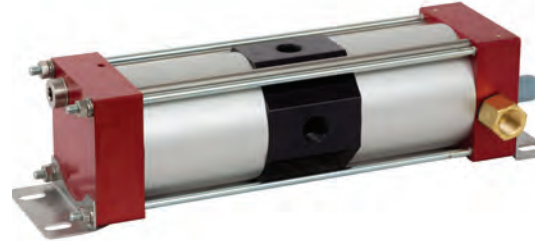
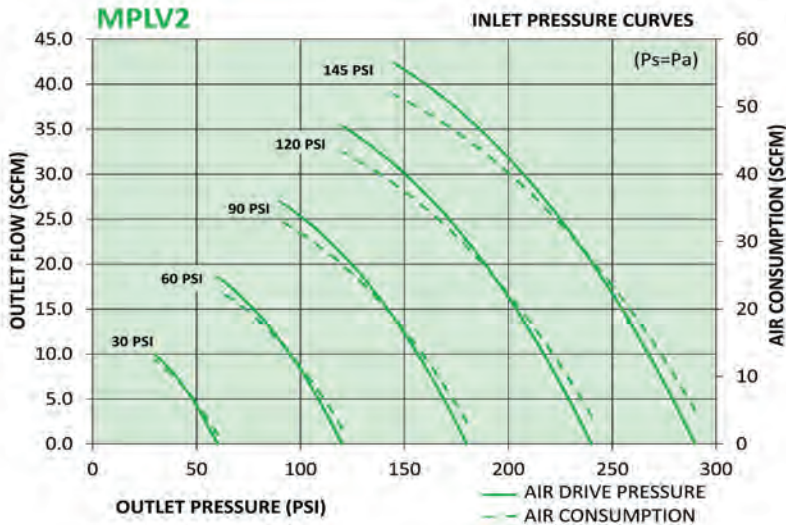
To find output flow rate from graphs below, locate desired outlet pressure on bottom axis. Move vertically from that point until you intersect the solid curve for the inlet air pressure you have available. At this point, move horizontally to the left axis. That point is the value of the outlet flow rate. To obtain the air consumption value to drive the amplifier, move vertically up from the desired outlet pressure until you intersect the dashed curve for the inlet air pressure available. From this point move horizontally to the right axis. That point is the air consumed. The total air flow required to the amplifier is the sum of the outlet flow plus the air drive flow.

## SINGLE STAGE SINGLE ACTING



## SINGLE STAGE DOUBLE ACTING

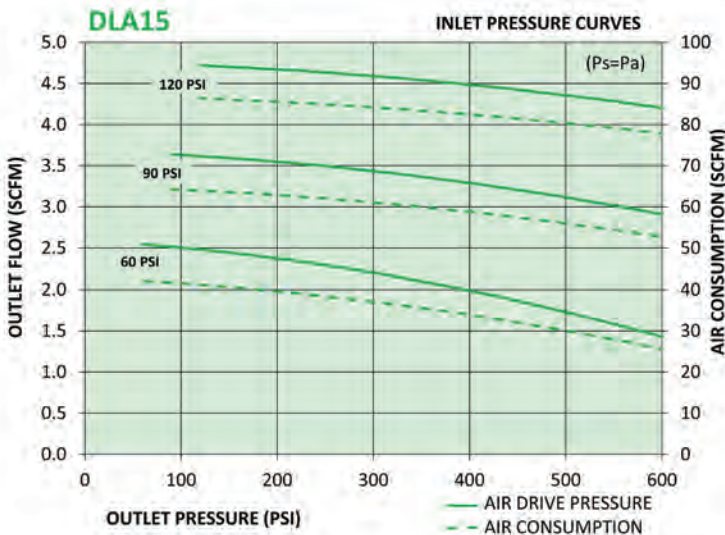
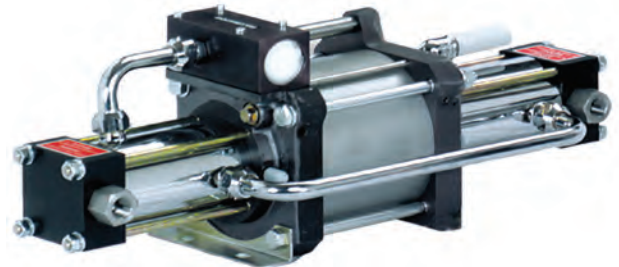
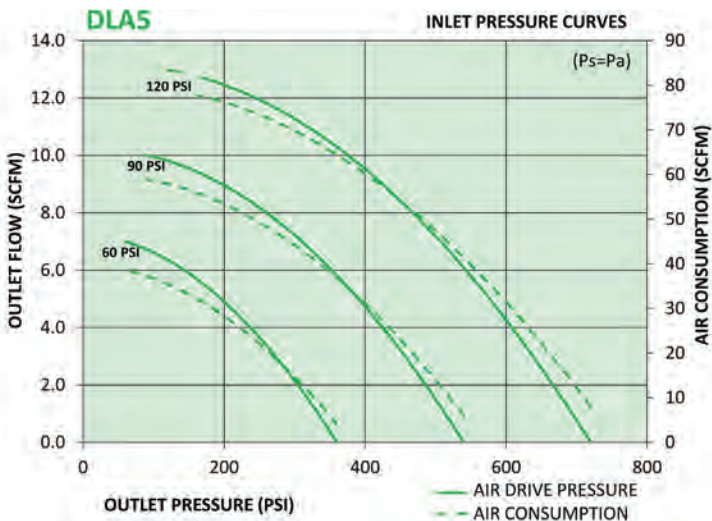
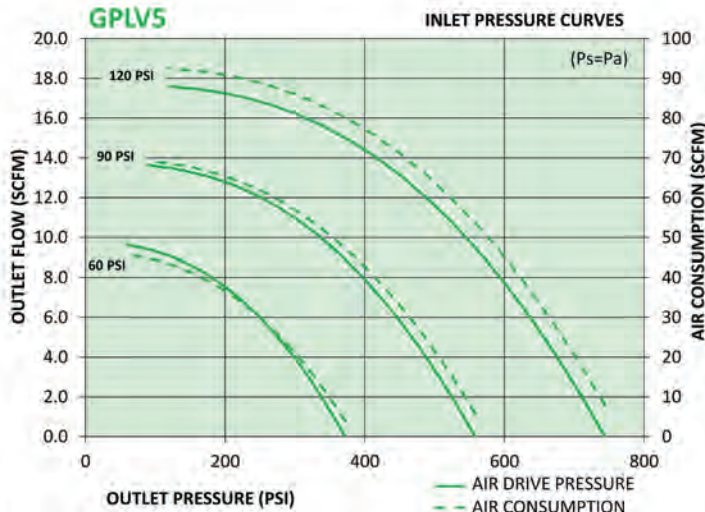
For applications demanding a high flow rate as well as increased air pressure, MAXPRO offers single stage - double acting air amplifiers. Double acting models include the MPLV2, SPLV2, GPLV2, GPLV5, DLA5 and DLA15. These air amplifiers are a safe and efficient solution to insufficient air pressures at work stations. The 2:1 air amplifiers can deliver twice the amount of supply pressure, up to 300 psi, with flow rates up to 90 SCFM for a single unit. Amplifiers can be combined in parallel to increase flow capability.



# How to use Curves

To find output flow rate from graphs below, locate desired outlet pressure on bottom axis. Move vertically from that point until you intersect the solid curve for the inlet air pressure you have available. At this point, move horizontally to the left axis. That point is the value of the outlet flow rate. To obtain the air consumption value to drive the amplifier, move vertically up from the desired outlet pressure until you intersect the dashed curve for the inlet air pressure available. From this point move horizontally to the right axis. That point is the air consumed. The total air flow required to the amplifier is the sum of the outlet flow plus the air drive flow.

## SINGLE STAGE DOUBLE ACTING



# Air Amplifier Systems

If you need to boost plant air pressure to operate tools, pneumatic clamps, or cylinders, a MAXPRO Air Amplifier System would be an ideal turnkey addition to your workstation. Our systems provide short-term high flow air or constant flow with reserve at a constant regulated output pressure. Our storage tanks are ASME Code stamped and most have a Canadian Registration number (CRN). The tanks come complete with a safety relief valve, drain valve and pressure gauge.

The 200 psi and 250 psi systems are equipped with an inlet air filter and outlet pressure regulator with gauge mounted on a common base. The 600 psi systems are equipped with an inlet air filter and inlet air pressure regulator with gauge. A 500 psi outlet regulator with gauge is available as an option (add “-R” for a 1/4” FNPT regulator or “-1/2 R” for a 1/2” FNPT high flow regulator to the system catalog number). MAXPRO Air Amplifier Systems are available in several standard configurations. Custom designed units are also available to meet your specific flow and pressure requirements. Please contact us today to discuss your requirements.

## TECHNICAL DATA

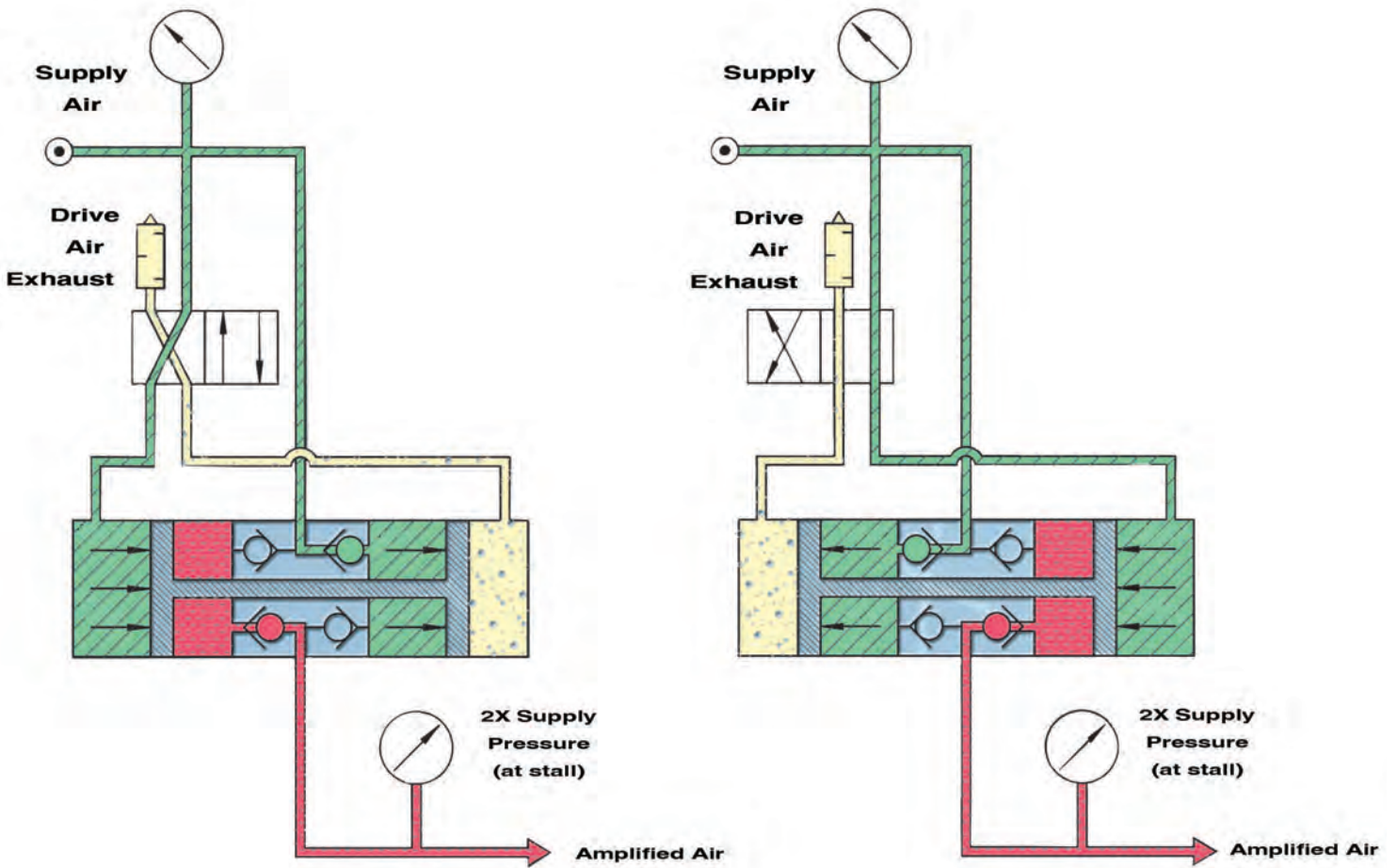
SYSTEM CATALOG NUMBER	AIR AMPLIFIER TYPE	TANK SIZE (GAL.)	SYSTEM RATING (PSI)	SYSTEM CONNECTIONS		OVERALL SIZE (IN.)	WEIGHT (LBS.)	MOUNTING DIMENSIONS (IN.)
				INLET (FNPT)	OUTLET (FNPT)			
<b>2:1 Ratio Systems</b>								
AS-MPLV2-1GH	MPLV2	1.6	250	½	½	21L X 11W X 11H	60	7.13 X 9.00 X 0.38
AS-MPLV2-4G*	MPLV2	4	250	½	½	22L X 15W X 18H	72	5.00 X 12.25 X 0.44
AS-MPLV2-10GH	MPLV2	10	200	½	½	36L X 14W X 18W	63	9.25 X 18.00 X 0.44
AS-SPLV2-4G*	SPLV2	4	250	½	½	22L X 16W X 22H	78	5.00 X 12.25 X 0.44
AS-SPLV2-10GH	SPLV2	10	200	½	½	36L X 14W X 22H	71	9.25 X 18.00 X 0.44
AS-SPLV2-15GH	SPLV2	15	200	½	½	39L X 14W X 24H	86	11.00 X 20.00 X 0.44
AS-SPLV2-30GH	SPLV2	30	200	½	½	44L X 18W X 29H	140	12.81 X 20.00 X 0.44
AS-GPLV2-4G*	GPLV2	4	250	½	½	22L X 20W X 26H	110	5.00 x 12.25 x 0.44
AS-GPLV2-15GH	GPLV2	15	200	½	½	39L X 15W X 26H	113	11.00 X 20.00 X 0.44
AS-GPLV2-30GH	GPLV2	30	200	½	½	44L X 17W X 32H	165	12.81 X 20.00 X 0.44
AS-2GPLV2-15GH	(2) GPLV2	15	200	(2) ½	½	39L x 18W x 26H	165	11.00 x 20.00 x 0.44
AS-2GPLV2-30GH	(2) GPLV2	30	200	(2) ½	½	44L x 18W x 32H	215	12.81 X 20.00 X 0.44
<b>5:1 RATIO SYSTEMS</b>								
AS-DLA5-15GH-200	DLA5	15	200	½	½	39L X 15W X 26H	118	11.00 X 20.00 X 0.44
AS-DLA5-30GH-200	DLA5	30	200	½	½	44L X 17W X 32H	170	12.81 X 20.00 X 0.44
AS-DLA5-4G*	DLA5	4	600	½	½	20L X 26W X 26H	115	5.00 X 12.25 X 0.44
AS-DLA5-20V*	DLA5	20	600	½	½	20L X 28W X 52H	170	12.00 X 12.00 X 0.38
AS-GPLV5-20GV	GPLV5	20	600	½	½	30L X 14W x 38H	150	9.50 x 16.78 x .38

**Note:** See curves for Air Amplifier flow rates on previous pages.  
Weights & dimensions are approximate. Consult factory.  
\*Consult Maxpro for CRN tank availability



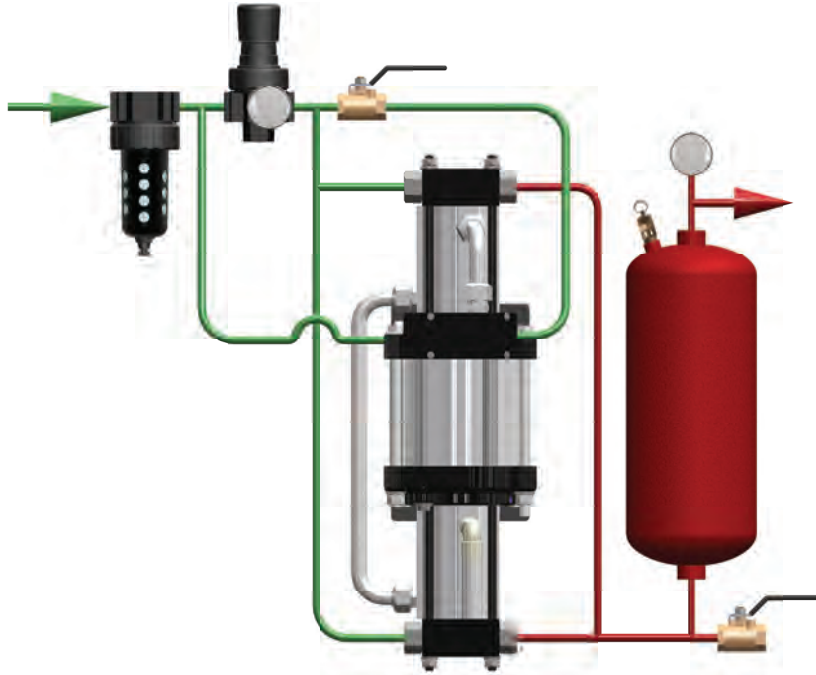
## 2:1 Ratio Systems

### 2:1 Air Amplifier Operation



### Multiple Ratio Systems

AS-DLA5-4G AS-DLA5-20G AS-DLA5-15GH-200 AS-DLA5-30GH-200 AS-GPLV5-20GV



Basic Air Amplifier System Design

### Custom Air Amplifier Systems

MAXPRO custom air amplifier systems are designed to suit your specific flow and pressure requirements. As with all custom MAXPRO systems, the design may incorporate a number of options unique to your application. Specifications may include overall size, inlet or outlet size, air amplifier type, tank size, psi rating and required flowrate.

MAXPRO custom air amplifier systems are ideal for boosting pressure to pneumatic tools, clamps and cylinders. These systems will also maintain elevated pressures to machinery and test equipment, and provide high pressure air for robotics and injection molding. Contact us today to discuss your requirements.



## ACCESSORIES

### Air Pilot Pressure Switches



- Air pilot pressure switches are pressure sensing devices with an air valve, used to turn air driven gas boosters, liquid pumps and air amplifiers on/off at a desired set pressure by controlling a pneumatic signal to the unit's air pilot control feature.
- Units can operate at their maximum drive air pressure, achieving desired outlet set pressure as rapidly as possible.
- Switch resets in approximately 10% drop in set pressure, for the controlled unit restart.
- Externally adjustable under pressure
- Normally Open switches close upon reaching set pressure (typically used to stop on pressure increase when the desired high pressure is achieved).
- Normally Closed switches open upon reaching set pressure (typically used to stop unit on pressure decrease, such as low bottle supply pressure).
- Standard materials: aluminum body (316 stainless steel optional), 440B piston, PTFE/Turcon/Buna-N seals, 303 SS gland.

### MAXPRO Relief Valves



- \* Designed to protect systems and components against over-pressure for gas and liquid applications
- \* The unique poppet design allows for chatter-free pressure release and excellent deadband pressure control
- \* Designed to open gradually as the pressure increases
- \* Not recommended for full capacity at a given pressure and are not ASME Code certified
- \* Externally adjustable
- \* Safety weep hole for seal area leak detection
- \* Temperature range: 0°F to 200°F
- \* Factory pressure setting available
- \* Preset and locked cracking pressure available (-L)
- \* 316L stainless steel body
- \* Nylon Seats (MT3RV, MT10RV & MT25RV)
- \* Seat materials are PTFE/EPDM

Catalog #	Inlet	Outlet	Service	Min Setting (PSI)	Max Setting (PSI)
MT3RV	1/4" FNPT (2)	1/4" FNPT	Liquid/Gas	500	3,000
MT10RV	1/4" FNPT (2)	1/4" FNPT	Liquid/Gas	1,000	10,000
MT25RV	1/4" HP	1/4" FNPT	Liquid/Gas	2,500	25,000
MT66RV	1/4" UHP	1/4" FNPT	Liquid/Gas*	10,000	66,000

\* not bubble tight on gas service

### Air Control Packages



All MAXPRO air amplifiers are available with an optional air control unit - ACP (except for the MPLV2 which uses -ACM). This package consists of an air filter, regulator with gauge, shut-off valve and necessary fittings and hose for plumbing the unregulated pilot port on all DLA, SPLV2, GPLV2 and GPLV5.

MAXPRO offers a wide variety of other accessories to assist with the installation of your Air Amplifier, such as relief valves, regulators, filters, receiver/tanks, gauges, valves and fittings.

### Dry Air Spool- For severe duty service

In applications where very dry air or nitrogen is used to drive Maximator pumps or boosters there is a spool seal option available to provide longer duty between maintenance.

The Dry Air Spool (DAS) option should be considered for extreme operating conditions involving air or gas drive mediums below 0°F. dewpoint, and similarly, very cold climate applications (-40°C.).

This new design can be retrofitted to existing pumps and boosters as it only involves the spool, spool sleeve, and seals. The spool block remains the same. Be sure to use an appropriate tool to pull the spool sleeve! Minimum air drive with this option is 30 psig.

To order with an air amplifier, simply add -DAS to the model number. To retrofit an existing unit, order "Dry Air Spool" and specify the pump model and serial number.



# OTHER PRODUCTS

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## Valves, Fittings & Tubing

- Highest quality for superior product performance
- Standard metals of stainless steel
- Pressures to 152,000 PSI



## Gas Boosters & Systems

- Air driven to 21,750 PSI
- Ideal for gas salvage
- Requires no lubrication or electrical power
- Unit is contaminant free
- For use with a variety of gases



## Liquid Pumps & Systems

- Air driven to 101,000 PSI
- Economic hydraulic power
- Interchangeable with other leading pumps
- Require no electrical power
- Variety of sizes and styles to suit your application



## Repair Service Available

- Guaranteed quality workmanship
- Cost effective quick turnaround
- Use original manufacture parts
- Factory support



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All technical and dimensional information subject to change.

All general terms and conditions of sale, including limitations of our liability, apply to all products and services sold.

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