

## AN ENERGY EFFICIENT ALTERNATIVE TO HYDRAULIC CYLINDER

### OVERVIEW

The B-Series Air-Hydraulic Booster System is a more cost and energy efficient alternative compared to full hydraulic cylinders.

The B Series come in four sizes ranging from 2.5 ton to 15 ton capacity. Standard features include a full length power stroke and 2.0" adjustable down-stop, complete with mounting bracket, hoses, and fittings.

This package is ideal when your application requires a smooth stroke, typically offered by hydraulic cylinders, but avoids those troublesome specification requirements that are associated with hydraulic power systems.

### OPERATION

When the valve is energized, air enters the booster cylinder extending the booster ram. This transfers the oil into the ram cylinder, extending the cylinder rod down. Unlike other brands, hydraulic pressure is maintained throughout the entire stroke, not just a limited part of the stroke. When the valve is de-energized, the ram retract to full home position. (See *Technical Summary* page)

### ADVANTAGES

- Fewer moving parts
- Less maintenance, less down time
- Less noise
- Full length power stroke
- Less heat
- Cost less than hydraulic power system packages

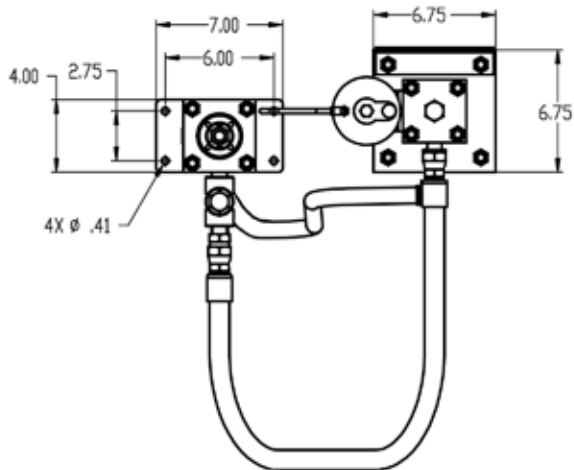


### SPECIFICATIONS

Description	Model B-250	Model B-300	Model B-400	Model B-500
Tons at 100 psi Air	2.5	5.5	10	15
Power Ratio (No. x air line psi = Approx. Force)	50	110	200	300
Max. Ram Stroke (adjustable 2" shorter)	5.187"	6"	4"	6"
Cubic in. of Pressurized Air Per Full Stroke Cycle	577	1562	1865	4521
Air Cyl. Port Pipe Size - 4 Way Control Valve (NPT)	.500"	.750"	.750"	1.0"
Return Force @ 100 psi	628	1080	1080	2003
<b>Booster Cylinder</b>				
Inside Diameter	6"	8"	8"	12"
Rod Diameter	2.125"	2.50"	1.875"	3.250"
Stroke	10.250"	15.625"	18.500"	20.187"
<b>Ram Cylinder</b>				
Inside Diameter	3"	4"	4"	5.750"
Top Rod Diameter	0.750"	1.000"	1.000"	1.250"
Bottom Rod Diameter	1.000"	1.500"	1.500"	2.750"
Net Weight	350 lbs.	500 lbs.	500 lbs.	800 lbs.

## B-SERIES BOOSTER SYSTEM DIMENSIONS

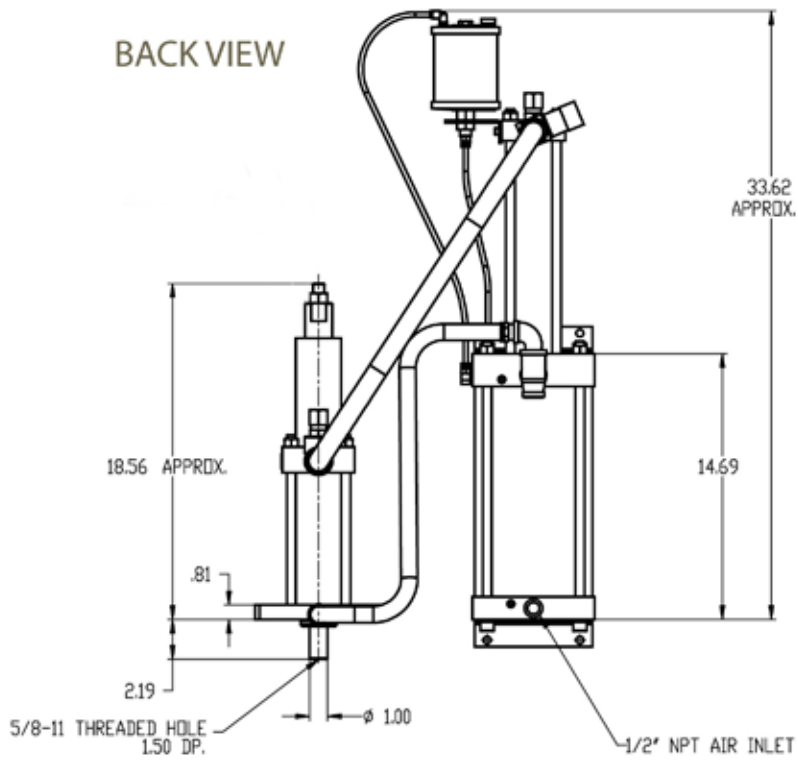
TOP VIEW



Air-Hydraulic Booster System

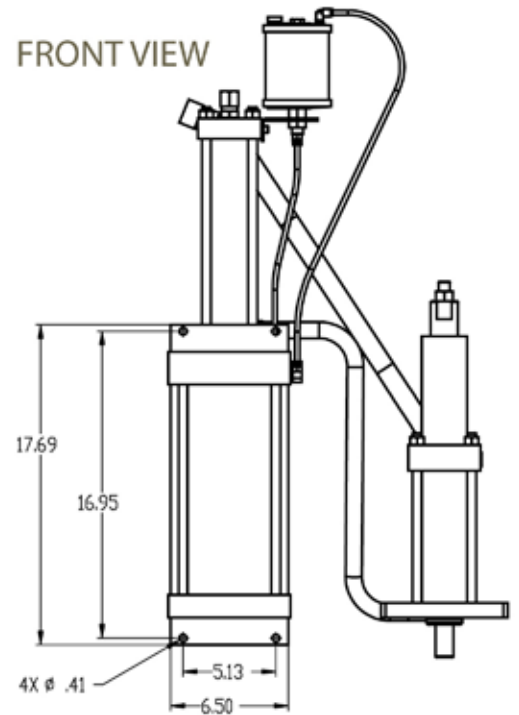
**Model B-250**

BACK VIEW



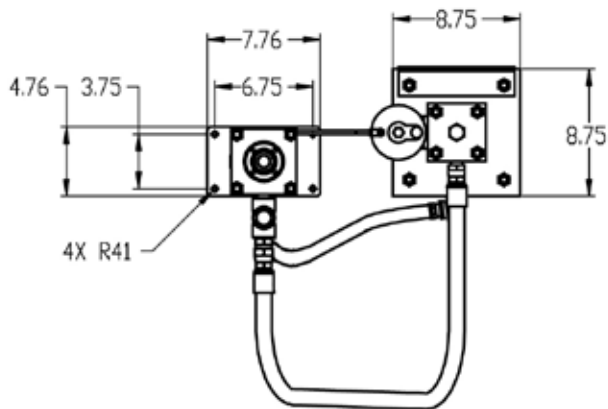
STANDARD PISTON ROD STROKE IS 5-3/16"

FRONT VIEW



## B-SERIES BOOSTER SYSTEM DIMENSIONS

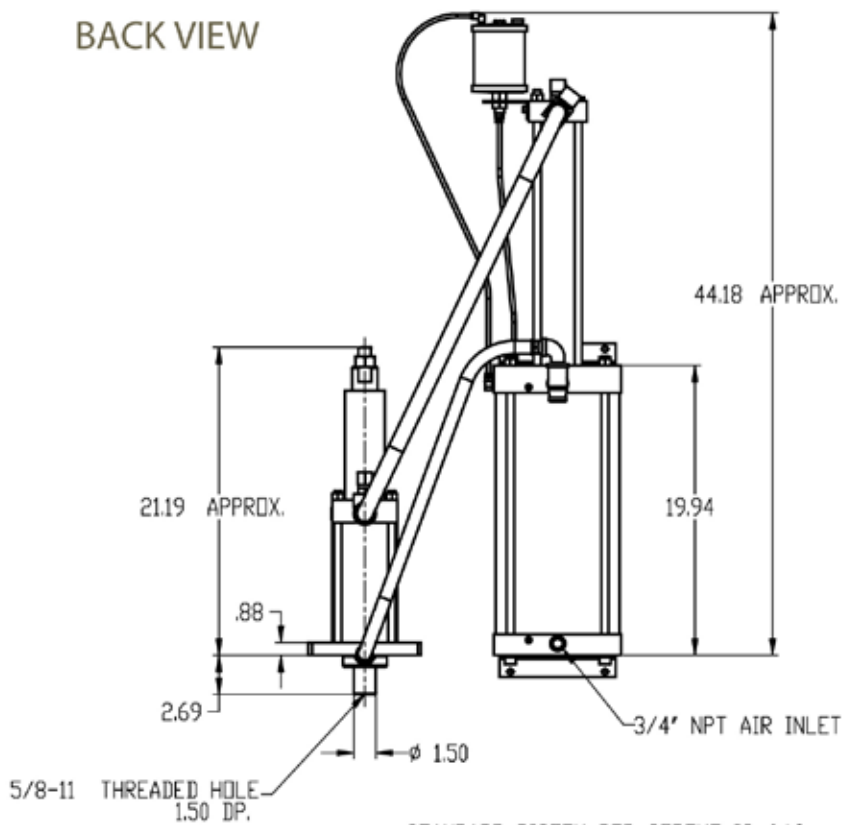
TOP VIEW



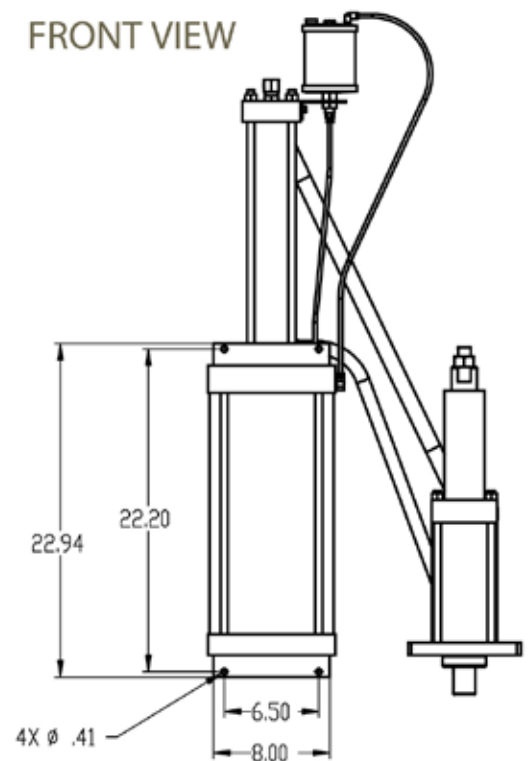
Air-Hydraulic Booster System

**Model B-300**

BACK VIEW

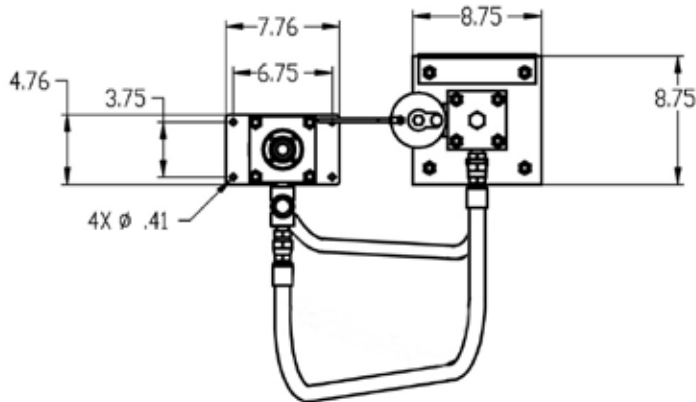


FRONT VIEW



## B-SERIES BOOSTER SYSTEM DIMENSIONS

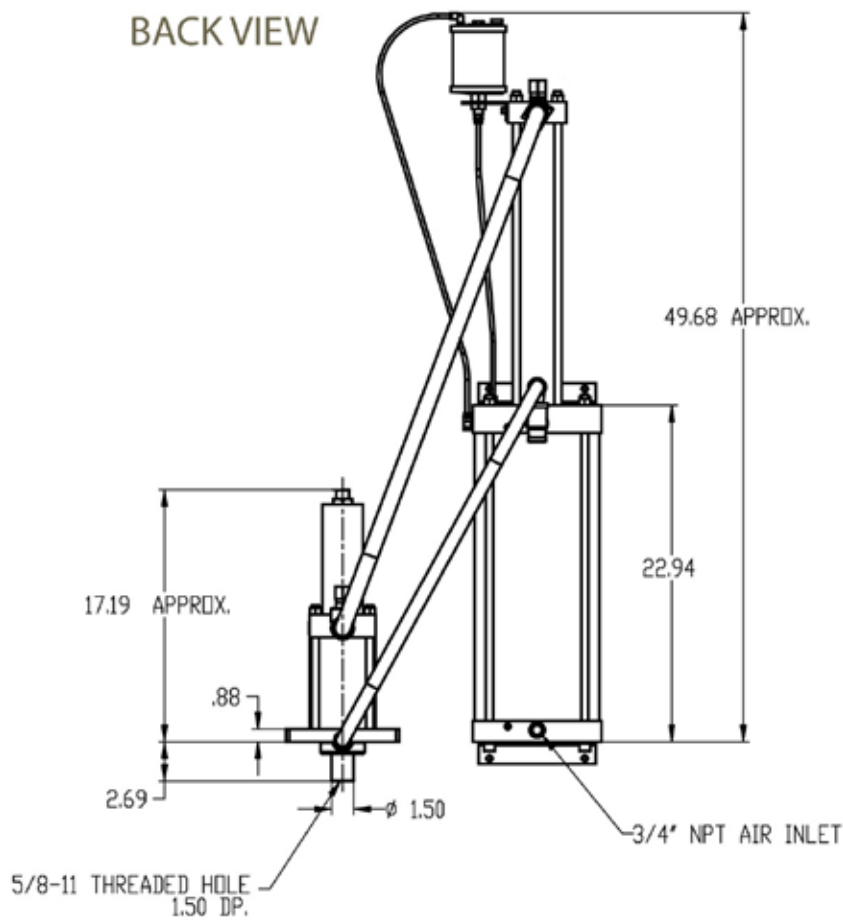
TOP VIEW



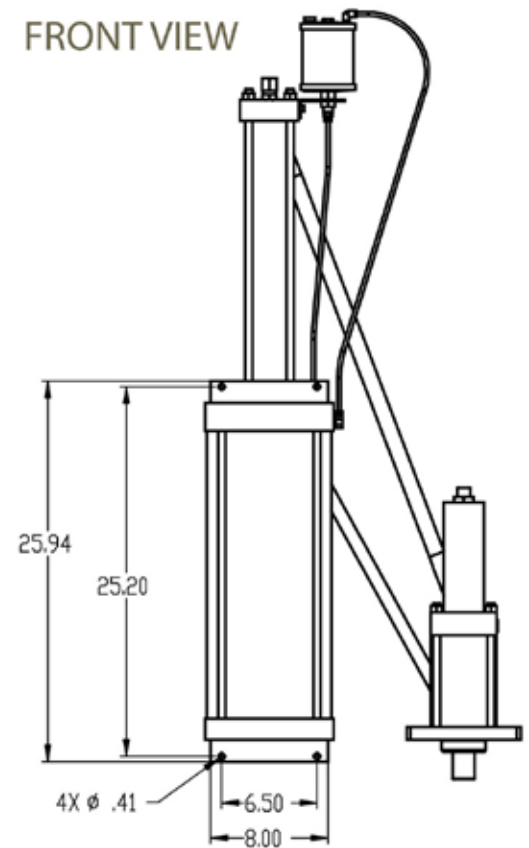
Air-Hydraulic Booster System

**MODEL B-400**

BACK VIEW

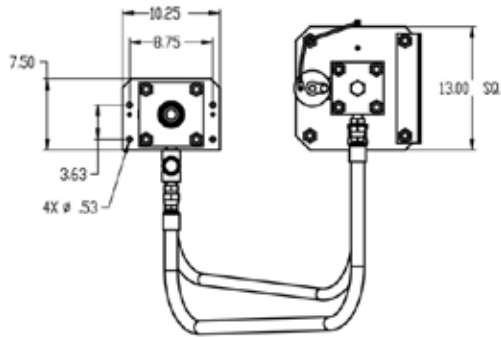


FRONT VIEW



## B-SERIES BOOSTER SYSTEM DIMENSIONS

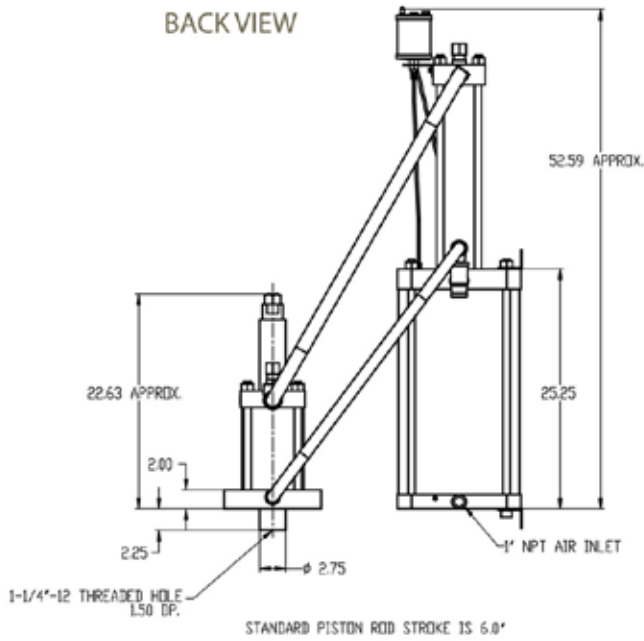
TOP VIEW



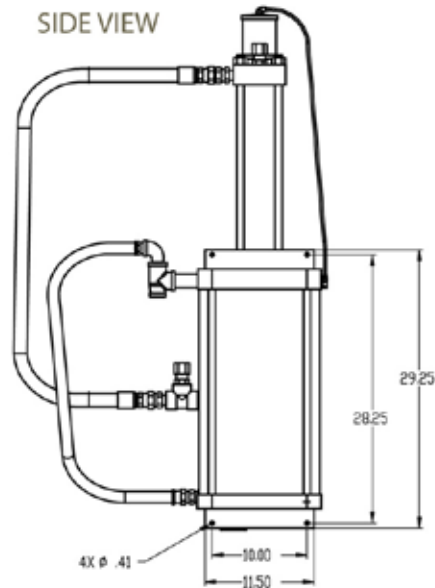
Air-Hydraulic Booster System

**MODEL B-500**

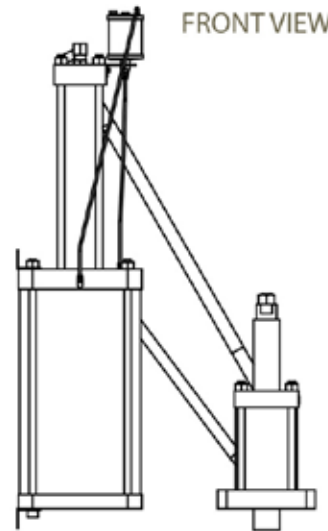
BACK VIEW



SIDE VIEW



FRONT VIEW



**B-SERIES FEATURES & OPTIONS**

Our objective is to offer you a solution to your assembly and forming needs. If our standard features or available options do not meet your application requirements, please consult our factory to see about us offering an affordable solution to meet your design needs.

**STANDARD FEATURES**

- Full Length Hydraulic Power Stroke Using Factory Supplied Air
- 2.0" Positive Downstop Adjustment (Stroke Adjustment)
- Booster Mounting Bracket
- Sensing Ports
- 5/8"-11 Female Ram Thread for B-250, B-300 & B-400 models
- 1 1/4"-12 Female Ram Thread for B-500 models
- Includes Pneumatic & Hydraulic Hoses, Plus Fittings

**AVAILABLE OPTIONS**

- Pressure Sensor
- Increased Stroke Lengths
- Pneumatic Flow Control Valve
- F-R-L Power System Package

**OPTIONAL LOAD CELL AND LINEAR TRANSDUCER**

- Includes an internal low voltage linear position transducer that provide an analog output signal for the capability of monitoring cylinder travel
- Includes rod end load cell for monitoring cylinder force
- Optional Programmable Signature Analysis touch screen monitor that captures and displays the entire press force/distance waveform (Process Monitoring)

**B-SERIES TECHNICAL SUMMARY****Air-Hydraulics Booster Systems Models: B-250, B-300, B-400 and B-500**

Our B-Series Air-Hydraulic Booster System comes complete with a proprietary work cylinder and booster/intensifier. This system employs common shop air (60 to 100 psi), as the input or power source. The output is low-pressure hydraulics, which is commonly used to power its proprietary air over oil hydraulic work cylinder. This system can create forces up to 15 tons from the start of the stroke, continuing throughout the 6.00" plus stroke or path of the cylinder. The system is self-bleeding, in the unlikely event air may work its way into the closed hydraulic circuit. This system is NOT your typical fluid power intensifier! It gives full force throughout the entire stroke of the cylinder, unlike other in-line intensifier cylinders or other intensifiers.

This system is ideal for machine tool builders who need to use a hydraulic cylinder, but who don't have the space or money to use a hydraulic power unit and electrical apparatus which must accompany the power unit. It's ideal when one needs a smooth stroke and force that the hydraulic cylinder offers, but it avoids the troublesome specification requirements that are associated with hydraulic power systems. The system is pneumatically powered, which allows specifications to be more easily met. There is no contending with noisy motors, leaky hydraulic tanks or pumps, drip pans and heat issues with coolers. This quiet running system uses less energy than a hydraulic unit, only utilizing shop air when cycling. Additionally, there is no noise or air consumed when the system is sitting idle.

Selecting a size is easy with four intensifying system options: 2.5 ton, 5.5 ton, 10 ton, and 15 ton –all operating at 100 psi. Similar to the operation of pneumatics, one can adjust the force by turning a regulator knob, which can be located for easy accessibility. No more reaching into the power unit to adjust the relief valve. The stroke of the cylinder varies from 4" to 6", depending on the system purchased. Additional stroke or shorter stroke work cylinders are available upon request.

Model #	Description	Force @100 psi
B-250	Intensifier System, 2.5 tons, 5.187" Stroke, .500" NPT ports	5,000
B-300	Intensifier System, 5.5 tons, 6.0" Stroke, .750" NPT ports	11,000
B-400	Intensifier System, 10 tons, 4.0" Stroke, .750" NPT ports	20,000
B-500	Intensifier System, 15 tons, 6.0" Stroke, 1.00" NPT ports	30,000

The complete system includes an easy-to-mount booster cylinder, a work cylinder with a double ended rod employing a 2" precision adjustable down stop, 4 ft. of flexible hydraulic and pneumatic hose, a hydraulics flow control valve to adjust the speed of the work cylinder and fittings. All are completely assembled and ready to install. One only needs an air preparation system, which includes a filter, regulator and lubricator (F-R-L), and an air directional spool valve, 2 or 3 position (if 3-position, it must be closed centered), 4/5 way, electric or pneumatic, with an adequate volume of air flow.

**ISO 9001 REGISTERED (WITH DESIGN)**

Air-Hydraulics is committed to delivering quality products on time to achieve customer satisfaction. Air-Hydraulics uses a process approach to achieve this policy in accordance with ISO 9001 and is committed to continually improve at this process.

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