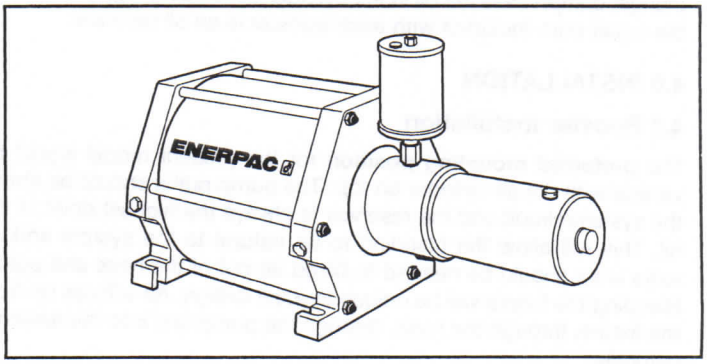
ENERPAC
Hydraulic Technology Worldwide

Instruction Sheet

AHB-17, AHB-34, AHB-46 AHB-66
Air / Hydraulic Boosters

EIS69.116-2 Rev. A 02/05

Index:



Repair Parts Sheets for this product are available from the Enerpac web site at www.enerpac.com, or from your nearest Authorized Enerpac Service Center or Enerpac Sales office.

1.0 IMPORTANT RECEIVING INSTRUCTIONS

Visually inspect all components for shipping damage. Shipping damage is not covered by warranty. If shipping damage is found, notify carrier at once. The carrier is responsible for all repair and replacement costs resulting from damage in shipment.

SAFETY FIRST

2.0 SAFETY ISSUES

Read all instructions, warnings and cautions carefully. Follow all safety precautions to avoid personal injury or property damage during system operation. Enerpac cannot be responsible for damage or injury resulting from unsafe product use, lack of maintenance or incorrect product and/or system operation. Contact Enerpac when in doubt as to the safety precautions and operations. If you have never been trained on high-pressure hydraulic safety, consult your distribution or service center for a free Enerpac Hydraulic safety course.

Failure to comply with the following cautions and warnings could cause equipment damage and personal injury.

A **CAUTION** is used to indicate correct operating or maintenance procedures and practices to prevent damage to, or destruction of equipment or other property.

A **WARNING** indicates a potential danger that requires correct procedures or practices to avoid personal injury.

A **DANGER** is only used when your action or lack of action may cause serious injury or even death.

WARNING: Wear proper personal protective gear when operating hydraulic equipment.

WARNING: Stay clear of loads supported by hydraulics. A cylinder, when used as a load lifting device, should never be used as a load holding device. After the load has been raised or lowered, it must always be blocked mechanically.

DANGER: To avoid personal injury keep hands and feet away from cylinder and workpiece during operation.

WARNING: Do not exceed equipment ratings. Never attempt to lift a load weighing more than the capacity of the cylinder. Overloading causes equipment failure and possible personal injury. The cylinders are designed for a max. pressure of 350 bar [5,000 psi]. Do not connect a jack or cylinder to a pump with a higher pressure rating.

Never set the relief valve to a higher pressure than the maximum rated pressure of the pump. Higher settings may result in equipment damage and/or personal injury.

WARNING: The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Install pressure gauges in the system to monitor operating pressure. It is your window to what is happening in the system.

CAUTION: Avoid damaging hydraulic hose. Avoid sharp bends and kinks when routing hydraulic hoses. Using a bent or kinked hose will cause severe back-pressure. Sharp bends and kinks will internally damage the hose leading to premature hose failure.

Do not drop heavy objects on hose. A sharp impact may cause internal damage to hose wire strands. Applying pressure to a damaged hose may cause it to rupture.

IMPORTANT: Do not lift hydraulic equipment by the hoses or swivel couplers. Use the carrying handle or other means of safe transport.

CAUTION: Keep hydraulic equipment away from flames and heat. Excessive heat will soften packings and seals, resulting in fluid leaks. Heat also weakens hose materials and packings. For optimum performance do not expose equipment to temperatures of 65 °C [150 °F] or higher. Protect hoses and cylinders from weld spatter.

DANGER: Do not handle pressurized hoses. Escaping oil under pressure can penetrate the skin, causing serious injury. If oil is injected under the skin, see a doctor immediately.

WARNING: Only use hydraulic cylinders in a coupled system. Never use a cylinder with unconnected couplers. If the cylinder becomes extremely overloaded, components can fail catastrophically causing severe personal injury.

IMPORTANT: Hydraulic equipment must only be serviced by a qualified hydraulic technician. For repair service, contact the Authorized ENERPAC Service Center in your area. To protect your warranty, use only ENERPAC oil.

WARNING: Immediately replace worn or damaged parts by genuine ENERPAC parts. Standard grade parts will break causing personal injury and property damage. ENERPAC parts are designed to fit properly and withstand high loads.

3.0 PRODUCT DESCRIPTION

These double-acting air operated hydraulic boosters convert low pressure air into high pressure hydraulic oil for operating cylinders, clamps or similar devices. Main booster components are: the air piston and the hydraulic plunger. Air pressure, into the booster, exerts a force against the air piston causing it to move forward. The forward motion moves the hydraulic plunger in the oil cylinder. The hydraulic plunger compresses the oil in the cylinder developing high pressure at the outlet port. Included with each booster is an oil reservoir.

4.0 INSTALLATION

4.1 Booster Installation

The **preferred mounting position** for the present model would be vertical with the air cylinder on top. The pump outlet should be above the system/circuit and the reservoir is always the highest point of the oil. This will allow the bleeding to be natural to the system and no extra work should be needed to bleed air out of the hose and pump. Bleeding the fixture will be unique to each design. Air will rise up from the fixture, through the hose, through the pump and into the reservoir naturally.

IMPORTANT: When mounting the booster, the air fill cap and oil level indicator must always remain visible and usable to permit checking and re-filling of the reservoir.

4.2 Incoming Air Supply

Compressed air, to the booster, must be clean, dry and lubricated to protect the booster components. If properly treated air is not available, install an ENERPAC filter lubricator in the air line leading to the booster control valve. The filter lubricator provides following advantages:

1. Removes dirt and moisture from the air.
2. Provides a mist of lubrication in the air supply which protects control valves and booster internal parts.
3. Contains an air regulator valve and gauge to adjust air pressure to the booster.

4.3 Air and Oil Connections

1. A 5-way, 2-position directional control valve is required to operate this double-acting booster.
2. Connect air supply line to input port on filter lubricator unit.
3. Install an air supply line from filter lubricator to the valve.
4. Install air supply lines from valve to booster.
5. Attach the hydraulic lines from booster to the system working components.
6. Mount oil reservoir. To fill booster, plunger must be in retracted position.
7. Fill booster hydraulic reservoir with ENERPAC hydraulic oil.

5.0 BOOSTER OPERATION

Booster operating speed depends on factors including working cylinder strokes, valving, hose lengths, port sizes and air supply flow.

1. Provide air supply of 1.4-8 bar (20-115 psi).
2. All hoses, fittings, piping and components must be pressure rated to withstand maximum system pressure. See specification chart.
3 Maintain booster oil level in the reservoir. Check oil level indicator frequently. Repair leaks immediately.
4. Prior to operation bleed system to remove air trapped in the hydraulic system. Refer to §5.1.

5.1 System Bleeding

1. Check oil reservoir level in booster. Fill to capacity if needed.
2. When using a booster in a horizontal position, the booster MUST be tilted with the air cylinder up and cycled a few times.This will remove the air in the booster and provide better performance from the pump. It should be noted that when the system is bled properly that the reservoir serves as a place for a small amount of oil to move into as the booster starts its strokes and it then supplies that same amount of oil on the return stroke. The reservoir also replenishes the oil lost through leakage. Note: The system should be designed to allow the air to rise naturally through the hydraulic system.
3. To bleed fixture, stroke booster and open one fitting at a time to bleed air then close fitting and retract booster. Repeat with each fitting starting with the closest and work to the farthest fitting. ***CAUTION should be used when releasing the hydraulic pressure to prevent injury.***
4. Always keep the oil reservoir full to capacity during bleeding and when the system is in use.

1 BAR = 14.5 PSI

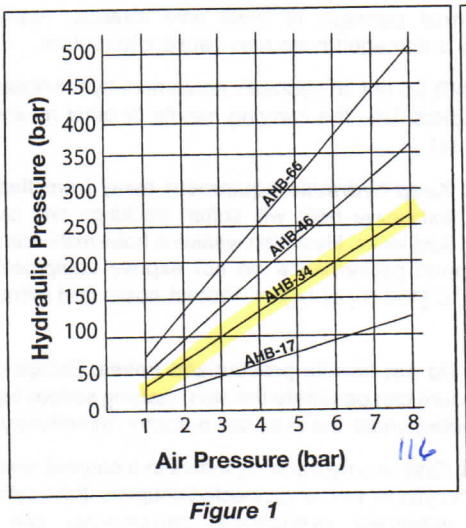


Figure 1

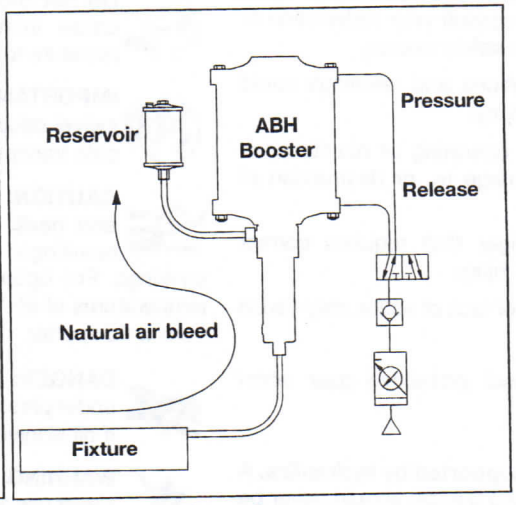


Figure 2

Table I - Specifications

Model No.	Pressure Ratio	Maximum Air Pressure bar [psi]	Oil Pressure at 6 Bar Air Pressure bar [psi]	Oil Pressure at Max. Air Pressure 8 Bar bar [psi]	Oil Volume at Full Stroke cm^3 [in^3]	Air Consumption at 6 Bar dm^3 [in^3]	Pneumatic Diameter mm [inch]	Effective Stroke mm [inch]	Weight kg [lbs]
AHB-17	16:1	8 [116]	96 [1390]	128 [1860]	295 [18]	62,6 [3820]	203 [8.0]	145 [5.7]	18,8 [41.4]
AHB-34	34:1	8 [116]	204 [2960]	272 [3940]	140 [8.5]	63,6 [3880]	203 [8.0]	145 [5.7]	16,9 [37.3]
AHB-46	46:1	8 [116]	276 [4000]	368 [5340]	100 [6.1]	63,9 [3900]	203 [8.0]	145 [5.7]	16,4 [36.2]
AHB-66	64:1	8 [116]	384 [5570]	512 [7420]	73 [4.5]	64,1 [3910]	203 [8.0]	145 [5.7]	16,1 [35.5]