



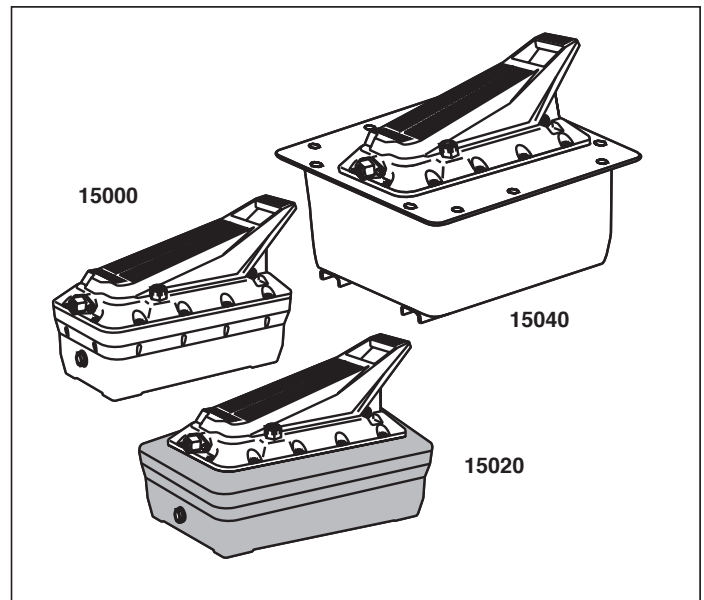
## Instruction Sheet

### 15000, 15020, 15040 AIR HYDRAULIC PUMP

#### 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.

Warranty of this unit will be void on any part if the unit subjected to misuse due to overloading, abuse, lack of maintenance and unauthorized modifications. No warranty – verbal, written or implied – other than the official, published AME new machinery and equipment warranty will be valid with this unit. In addition, it is your responsibility to be aware of existing Federal, State and Local codes and regulations governing the safe use and maintenance of this unit.



#### 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. AME cannot be responsible for damage or injury resulting from unsafe product use, lack of maintenance or incorrect product and/or system operation. Contact AME 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 AME 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.



**WARNING: USE ONLY RIGID PIECES TO HOLD LOADS.** Carefully select steel or wood blocks that are capable of supporting the load. Never use a hydraulic cylinder as a shim or spacer in any lifting or pressing application.



**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 700 bar [10,000 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.



**CAUTION:** Air Hydraulic Pumps and all tire tools should be used only by persons properly trained according to OSHA regulation No. 29CFR1910.177, "Servicing Single-piece and Multi-piece Wheels."



**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.



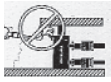
**CAUTION:** Avoid damaging hydraulic hose. Avoid sharp bends and kinks when routing hydraulic hoses. Using a bent or kinked hose will cause severe back-pressure. Sharp bends and kinks will internally damage the hose leading to premature hose failure.



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.



**WARNING: BE SURE SETUP IS STABLE BEFORE LIFTING LOAD.** Cylinders should be placed on a flat surface that can support the load. Where applicable, use a cylinder base for added stability. Do not weld or otherwise modify the cylinder to attach a base or other support.



**Avoid** situations where loads are not directly centered on the cylinder plunger. Off-center loads produce considerable strain on cylinders and plungers. In addition, the load may slip or fall, causing potentially dangerous results.



Distribute the load evenly across the entire saddle surface. Always use a saddle to protect the plunger.



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



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

### 3.0 DESCRIPTION

The 10,000 psi 15000 Air Pumps have an operating pressure of 10,000 psi at 85 psi inlet pressure. They are suited for plant maintenance, fabrication, production, bolting, vehicle repair, and any task that requires hydraulic pressure from air input.

### SPECIFICATION TABLES

| Model No. | Weight-add 1 lb. (.5 kg) for bracket | Reservoir Capacity | Useable Oil Horizontal Mount | Usuable Oil Vertical Mount |
|-----------|--------------------------------------|--------------------|------------------------------|----------------------------|
| 15000     | 18 lbs. [8,2 Kg]                     | 150 cu.in          | 127 cu.in                    | 70 cu.in                   |
|           |                                      | (2.5 liters)       | (2.1 liters)                 | (1.2 liters)               |
| 15020     | 22 lbs. [10,0 Kg]                    | 255 cu.in          | 230 cu.in                    | 180 cu.in                  |
|           |                                      | (4.2 liters)       | (3.8 liters)                 | (3.0 liters)               |
| 15040     | 40 lbs. [18,1 Kg]                    | 2.11 Gal           | 1.85 Gal.                    | N/A                        |
|           |                                      | (8.0 liters)       | (7.0 liters)                 | N/A                        |

| Hydraulic Air Ratio | Hydraulic Output Ports | Oil Flow @ 100 psi (6.9 bar)    | Oil Flow @ 10,000 psi (700 bar)  | Air Pressure Range        | Air Consumption 100 psi (6.9 bar) | Operating Noise Level (dBA) |
|---------------------|------------------------|---------------------------------|----------------------------------|---------------------------|-----------------------------------|-----------------------------|
| 100:1               | .375-18 NPTF           | 60 cu.in/min. (1.0 liters/min.) | 10 cu.in/min. (0.16 liters/min.) | 25-125 psi ( 1,7-8,6 bar) | 12 SCFM (0.34 cu.m/min)           | 76                          |

### 4.0 SPECIFICATIONS

See table below.

### 5.0 INSTALLATION

#### 5.1 Air Supply

Pump operates with 25-125 psi [1,7-8,6 bar] air pressure. A regulator/ filter/lubricator should be installed upstream from pump to provide clean, lubricated air and allow for air pressure adjustment.

#### 5.2 Air Connections

See Figure 1, page 5. Attach air supply to the 1/4 NPT swivel connection on the end of the pump. Use Teflon tape or similar thread sealant. Torque to 20-25 ft. lbs [27-34 Nm].

#### 5.3 Hydraulic Connections

See Figure 2, page 5. Thread hose(s) into outlet port of pump (A). Hose fittings must be torqued.

**NOTE:** Use 11/2 wraps of Teflon tape the NPTF hose fittings only, leaving the first complete thread free of tape to ensure that pieces of tape do not break off and enter the system. Torque: 65-75 Ft-lbs [88-102 Nm].

**NOTE:** Valve block or treadle should be restrained when torquing fittings. The reservoir base should not be bolted down or restrained to compensate for the fitting installation torque.

#### 5.4 Venting

This pump must always be vented prior to use. Use either the "Vent Screw" or "Vent/Fill Plug".

**a) Vent Screw:** See Figure 3, item 1, page 5. The vent screw is the primary means to vent the reservoir when the pump is operated in the horizontal position. It is located near the hydraulic outlet port on top of the reservoir. To use this plug, open the screw 1-2 turns. To avoid damaging the threads when closing the vent screw, tighten only until screw head contacts the reservoir cover. The vent screw can NOT be used when pump is mounted vertically! When mounting in the vertical position, use the vent/fill plug.

**b) Vent/Fill Plug:** See Figure 4, item 2, page 5. The Vent/Fill plug is located on the air inlet end of the pump, opposite the vent screw. This plug serves 3 functions; vent plug, fill port, and return-to-tank port.

To use as a vent (for vertical applications or temporary venting) pull up on hex plug until first detent is reached (see Figure 5). This is the vented position.

To use as a return-to-tank port, remove flush plug from hex and install compatible return line. Torque return line to 15-20 ft. lbs. [20-27 Nm] in hex plug.



**CAUTION:** Pump reservoir must be vented using one of the two vent options. Failure to do so may cause cavitation and pump damage.

## 5.5 Mounting Pump

**15000:** Pump can be mounted horizontally or vertically. If mounted vertically, position pump with hydraulic outlet port(s) facing down.

**15000 and 15020:** The four holes in the bottom of the reservoir should be used for bolting through the mounting surface into the reservoir. Use the #10 x 5/8" fasteners included with pump, or allow no more than 3/4" [19 mm] thread engagement into reservoir.



**CAUTION:** When mounting the pump in the vertical position, the vent screw must remain closed.

**15040:** The U-shaped mounting rails on the bottom of the reservoir have four .26 in. [6,6 mm] holes for mounting.

## 5.6 Oil Level

Always check oil level with all cylinders or tools in the fully retracted position. If they are advanced when the pump is filled, the reservoir will be over-filled when they are retracted.

Use the low-level sight glass on the end of the pump to check the oil level. When the pump is mounted horizontally, the reservoir is full when oil is at the bottom of the fill port. If oil is not visible, then oil must be added. To add oil, remove Vent/Fill plug from reservoir (See section 5.4b).

When the pump is mounted vertically, 15000 the oil level should be checked periodically by removing the pump and placing it on a horizontal surface.

**NOTE:** Prior to mounting the 15000 pump in the vertical position, oil volume in the reservoir must be reduced to 127 in<sup>3</sup> [2,1 L] prevent leakage through the vent/fill plug. See the specification table on page 2 for usable oil capacity in vertical position.

## 6.0 OPERATION

### 6.1 Oil Level

Check the oil level of pump and add oil if necessary (See Installation section, step 5.6).

### 6.2 Venting Pump

Make sure the pump reservoir is vented (See Installation section, step 5.4).

### 6.3 Treadle Operation

See figure 6.

- To Advance Cylinder: Depress the "PRESSURE" end of treadle and the pump will start to pump hydraulic oil to the system.
- To Hold The Cylinder Position: The pump will stop and hold pressure when the treadle is in the free/neutral position (treadle is not depressed in either "PRESSURE" or "RELEASE" positions.)
- To Retract Cylinder: Depress the "RELEASE" end of the treadle to retract cylinder. To stop the cylinder from retracting, release the treadle and return it to the hold position.

## 6.4 Priming

Priming of the hydraulic pump is normally not required. If the air motor runs very fast, but no hydraulic pressure is built, the pump may have lost its prime. This pump can lose prime if it is run completely out of oil or if an air bubble is trapped in the pumping chamber. An air bubble could occur during shipment, or when the shipping plug is removed while the pump is held in the vertical (shipping plug up) position.

- Place the pump on a flat, horizontal surface. Remove the shipping plug only when in a horizontal position! Attach an approved 10,000 psi rated hydraulic hose and cylinder assembly to the hydraulic outlet 3/8" NPT port. Torque fittings to 65-75 ft.lbs. (88-102 Nm.)
- Attach air supply to the 1/4" NPT swivel connection. Torque to 20-25 ft. Lbs (27-34 Nm.).
- Fill pump with only high-quality hydraulic Oil, 32 cSt hydraulic oil.
- Prime the pump with air pressure set to 30-40 psi. If air pressure is different than 30-40 psi follow the procedure below:
  - ON MODELS WITH TREADLE:** While holding the treadle down firmly in the RELEASE position, slowly depress the PRESSURE button located under the toe of the treadle near the air supply fitting. Try to get the air motor to operate one or two cycles at a time. Slowly depressing the PRESSURE button will allow you to "throttle" the inlet air pressure
  - Pressing the operating buttons in this manner effectively draws oil through the intake tube to refill the pressure chamber. You may need to hold the treadle and "throttle" the PRESSURE button for a few minutes to completely remove the air and prime the pump models with an air pendant, hold "RET" button down while cycling
  - ON MODELS WITH 4-WAY VALVES:** Shift valve to neutral position, press the treadle, and run the pump momentarily several times.
  - On models with an air pendant, hold "RET" button down while cycling "ADV" button momentarily several times.
  - To verify that the pump is primed, operate as normal with cylinder attached. If cylinder does not advance, repeat step 6.4g or 6.4h.

## 7.0 MAINTENANCE

### 7.1 Maintaining Proper Oil Level

Check the oil level of the pump prior to start-up, and add only high-quality hydraulic oil, if necessary, by removing the vent/fill plug (refer to Installation section, step 5.6).

### 7.2 Cleaning The Muffler

Clean the muffler every 250 hours, or more frequently if pump is used in dirty environments. First remove 2 shoulder bolts (A) and treadle (B). See Figure 7. To expose the muffler, remove 2 screws (C) holding down muffler plate. See Figure 8. Wash muffler element in soapy water, dry, and reassemble, installing screws hand tight.

### 7.3 Changing The Oil

Change the oil every 250 hours. The vent/fill plug serves as a drain plug for use in changing oil. Refill pump with only high-quality hydraulic oil. Dispose of used oil properly.

### 7.4 Cleaning The Air Inlet Filter

Remove the swivel air connector by removing the two cap screws and pulling air filter out of cavity. Using an air nozzle blow debris off filter. (Always use proper eye protection). Re-install filter and swivel connector. Torque cap screws to 16-18 in.lbs [1,8-2,0 Nm].

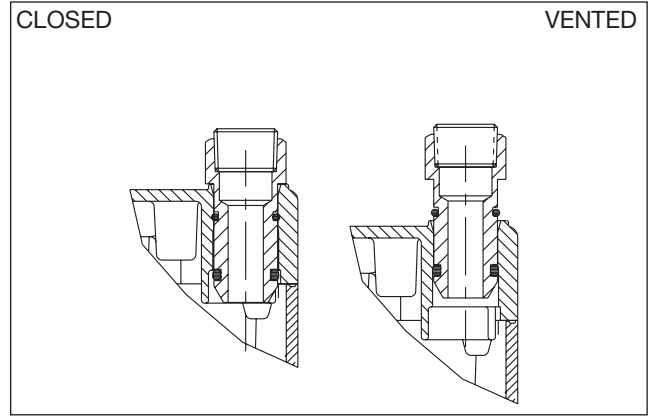
## 8.0 TROUBLESHOOTING

Only qualified hydraulic technicians should service the pump or system components. A system failure may or may not be the result of a pump malfunction. To determine the cause of the problem, the complete system must be included in any diagnostic procedure. The following information is intended to be used only as an aid in determining if a problem exists. DO NOT disassemble the pump.

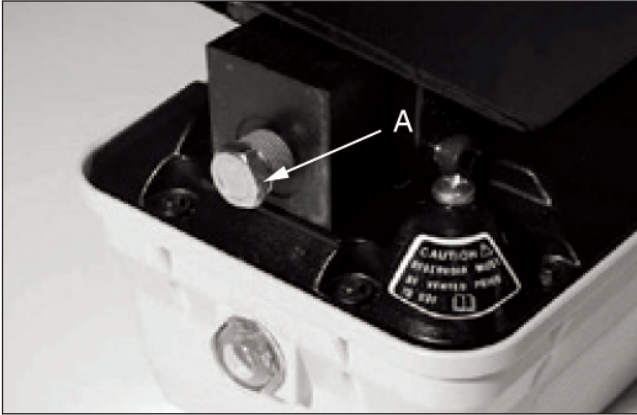
| PROBLEM  |                       | CAUSE   |
|--|-----------------------|---|
| 1) Pump will not start   |                       | Air turned off or line blocked  |
| 2) Motor stalls under load   |                       | Low air pressure*<br>Inlet filter plugged, insufficient air flow  |
| 3) Pump fails to build pressure  |                       | External leak in system<br>Internal leak in pump<br>Internal leak in system component<br>Low oil level  |
| 4) Pump builds less than full pressure   |                       | Low air pressure*<br>Internal relief valve set low<br>External system leak<br>Internal leak in system component                                   |
| 5) Pump builds pressure, but load does not move  |                       | Load greater than cylinder capacity at full pressure<br>Flow to cylinder blocked  |
| 6) Cylinder drifts back on its own   |                       | External system leak<br>Internal leak in system component   |
| 7) Cylinder will not return  | A) Single-acting type | Return flow or coupler restricted/blocked<br>No load on a "load return" cylinder<br>Return spring broken on cylinder<br>Release Valve Malfunction |
|  | B) Double-acting type | Return flow or coupler restricted/blocked<br>Valve malfunction  |
| 8) Low oil flow rate   |                       | Reservoir not vented<br>Inadequate air supply<br>Dirty air filter<br>Clogged inlet filter   |
| * 85 psi (5,86 Bar) air pressure required to obtain 10,000 psi (700 Bar) hydraulic pressure. |                       |   |



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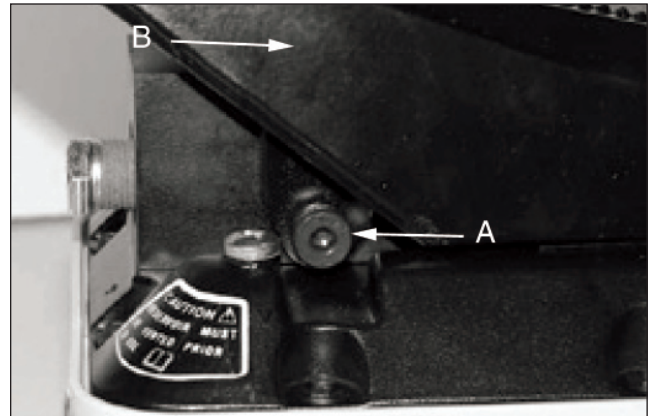
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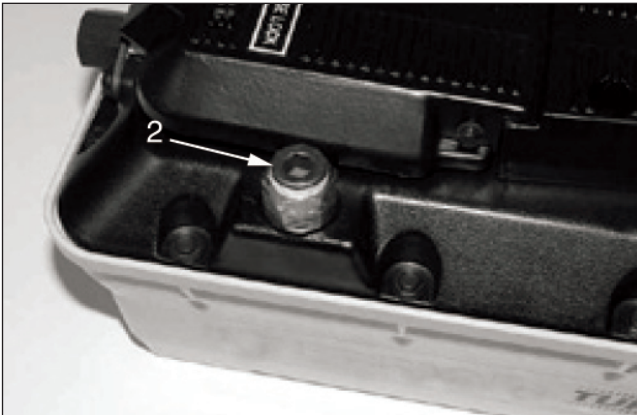
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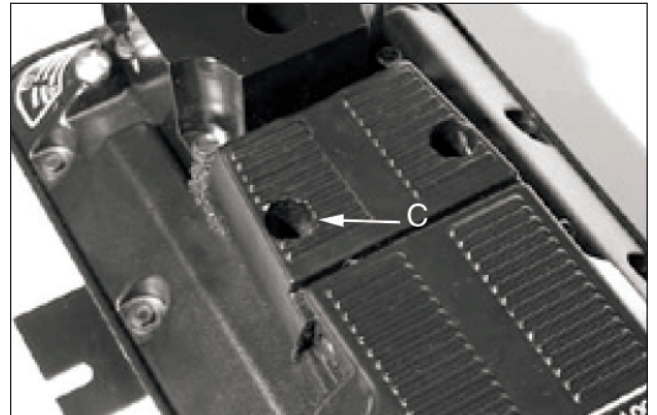
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