

OPERATING INSTRUCTIONS

Air Pumps- 700 Bar (10,000 psi)

*Model No.: PA010, PA019, PA019-2, PA019-3, PA019-8, PAD019,
PAD019-3, PAD019-8, PAR019*



 **WARNING**

Read and follow all Safety Instructions, Warnings, Cautions and Important information provided in this manual before using the equipment. They are provided for the safety of those operating the equipment and to prevent personal injury and/or damage to property when using this equipment.

**THIS EQUIPMENT SHOULD ONLY BE USED BY OPERATORS
WHO HAVE BEEN TRAINED IN THE SAFE USE OF HIGH
PRESSURE HYDRAULIC EQUIPMENT**



WARNING:

- Always wear the correct personal protective equipment when operating high pressure hydraulic tools and equipment.
- Always stay clear of loads supported by hydraulic systems, the load must be secured mechanically before work can commence.
- Always keep your hands and feet clear of the work activity during operation to avoid personal injury.
- Never handle pressurised hydraulic hoses. Escaping oil under pressure can penetrate the skin causing serious injury. Contact a doctor immediately if oil is injected under the skin.
- Never operate the system above the maximum rated output pressure.
- Never connect to the system components, fittings, couplers, hoses, valves etc. that are NOT rated to the full system operating pressure.
- Never exceed equipment ratings. Never attempt to lift a load greater than the capacity of the cylinder. Overloading causes equipment to fail and possible personal injury or damage to equipment.
- Boss cylinders and pumps are designed to operate at a maximum of 700 bar (10,000 psi) unless specified. Never connect a cylinder to a pump with a higher output pressure.
- Never use pumps and cylinders with disconnected couplers. Always ensure where couplers are used that they are all fully engaged. Failure to do so can result in the system becoming overloaded and can result in a catastrophic component failure potentially causing severe personal injury.
- Always ensure the system has a stable set up before operating the equipment. Cylinders should be located on a flat surface that has the capacity to support the load, cylinder bases and other supports should be used where applicable. Avoid situations where the load is not directly centred on the cylinders. Loads that are off centre place considerable strain on the cylinder and piston. This can result in the load slipping or the cylinder failing with potentially dangerous results. Always distribute the load evenly across the entire surface of the cylinder saddle. Always use a saddle to protect the cylinder rod.



WARNING:

- Never weld to or modify cylinders, pumps or other system components as they have been engineered and tested to meet specific standards.
- Always immediately replace worn or damaged parts with genuine Boss Hydraulics parts. The use of non-genuine parts can result in failure potentially causing personal injury and/or property damage.



CAUTION:

- Avoid damage to hydraulic hoses from sharp objects, vehicles and heavy objects falling on them, never kink or fit hoses with a sharp bend in them. All of these things can cause internal damage to the hose leading to premature hose failure.
- Keep hydraulic equipment away from sources of heat and flames. Heat will soften seals and hoses which results in hydraulic fluid leaks. For optimum performance, equipment should not be exposed to temperatures of 65° C (150° F) or higher. Always protect hoses from weld splatter or sparks from cutting or grinding tools.



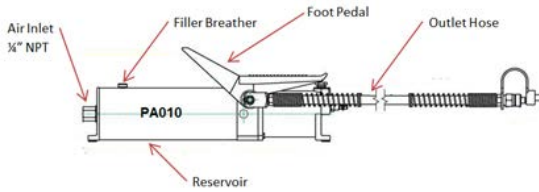
IMPORTANT:

- Never lift or carry hydraulic equipment by the hose or couplers. Use carry handles or another safe method to transport or lift components.
- High pressure hydraulic equipment should only be serviced, adjusted, repaired and tested by qualified hydraulic technicians.
- After unpacking the equipment it should be inspected by a qualified person to ensure there is no shipping damage or missing part.
- A gauge is highly recommended to be used, so the pressure in the hydraulic system can be monitored.

1. INSTALLATION

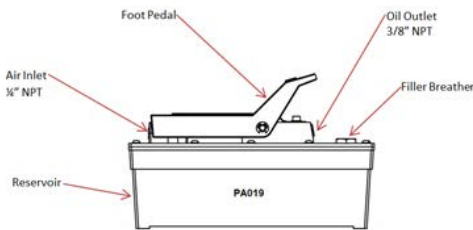
PA010

Diagram 1



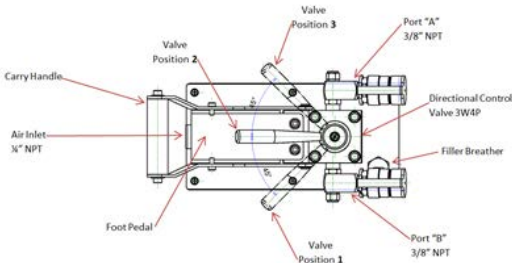
PA019

Diagram 2



PAD019

Diagram 3



- When connecting hoses, fittings or couplers to the threaded ports on the pump use a thread paste sealant that remains soft, it should be applied to the male thread being careful not to allow it into the hydraulic system. If using thread tape the first thread or 2 should be left completely free of tape so it does not end up in the hydraulic system and cause a failure, 1 or 2 layers of tape is sufficient to provide a seal. Threads should be tightened firmly 88-100Nm (65-75ft-lbs), overtightening can split housings.
- The power source for the pump is compressed air therefore it is essential that a filter regulator and lubricator (FRL) unit is fitted to the airline before the pump to remove

Dirt and water from the compressed air and add oil to lubricate the pump internals

- The lubrication oil for the air system should be SAE grade oil (5W-30W) or equivalent and it should be set at 1 drop per minute. The thread protector for the air inlet can be removed and replaced with an air connection that is used locally. The air connection should be tightened firmly 27-34Nm (20-25ft-lbs).
- PA010 and PA019 pumps are single acting and require only 1 hydraulic hose. PAD019 pumps are double acting will have an external 3 position valve and will require 2 hydraulic hoses which connect to the "A" and "B" ports on the valve.

2. COMMISSIONING

- With the pump on a level surface the shipping plug should be removed from the filler breather port on the pump and the oil level checked. The oil level should be 20mm (3/4") below the pump lid if it is low top the level up with Boss Hydraulic oil .Then fit the filler breather.
- The pump can now be connected to a cylinder ensuring all couplings are fully engaged. For the first operation the cylinder should be positioned below the level of the oil in the pump.
- The airline can now be connected to the pump.
- For single acting PA010 and PA019 pumps depress the end of the foot pedal end marked "PUMP" the pump will operate and the cylinder will extent. To release the pressure in the system and retract the cylinder, depress the end of the foot pedal marked "RELEASE".
- For double acting PAD019 pumps which have a 3 position valve the hose connected to "A" port on the valve should be connected to the bottom or cap end of the cylinder.
- The hose connected to "B" port on the valve is the connected to the top or rod end on the cylinder. With the valve handle in position 1 depress the end of the foot pedal closest to the air inlet and the cylinder will extend.

- To retract the cylinder place the valve handle in position 3 and depress the foot pedal. Placing the valve handle in position 2 will block "A" and "B" ports and depressing the foot pedal will circulate oil back to the reservoir.
- For both single acting and double acting pumps they should be operated through 3 or 4 cycles initially to remove any air from the system.

3. OPERATION

- Prior to each use the pump, hoses and any gauges and accessories should be visually inspected and any damaged components replaced.
- The oil level should be checked regularly and when necessary topped up with Boss Hydraulic oil.
- Do not attempt to connecting unretracted cylinders as they can cause the reservoir to overflow.
- The pump output pressure can be controlled by adjusting the input air pressure with an air pressure regulator however a hydraulic pressure regulator fitted to the pump output is a better option.

4. MAINTENANCE

- Clean after use with warm soapy water being careful not to introduce the water to the oil in the reservoir through the filler breather.
- When not in use pumps should be stored in a cool dry area free from dust.
- The air filter should be cleaned and drained of water frequently both prior to use and during long periods of use.
- Change oil after 250 hours use or every 2 years, more frequently in dusty environments.
- Servicing should be carried out by a qualified hydraulic technician.

4. TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Pump will NOT start	Low air supply	Check air supply
Pump stalls under load	Low air pressure	Check air supply
Pump operates but cylinder doesn't move	Low oil level	Check oil level
	Coupling not fully connected	Check couplings
	Overloaded at maximum pressure	Check system pressure
	External leak	Check hoses, couplers and connectors
	Internal leak	Contact a Boss Hydraulics Authorised Service Centre
	Suction blocked	Contact a Boss Hydraulics Authorised Service Centre
	Breather blocked	Contact a Boss Hydraulics Authorised Service Centre
Pump fails to build full pressure	Low air pressure	Check air pressure
	External leak	Check hoses, couplers and connectors
	Internal leak	Contact a Boss Hydraulics Authorised Service Centre

4. TROUBLESHOOTING (CONTINUED)

PROBLEM	CAUSE	SOLUTION
Pump achieves full pressure but doesn't hold	External leak	Check hoses, couplers and connectors
	Internal leak	Contact a Boss Hydraulics Authorised Service Centre
Pump operated but cylinder moves slower than normal	Low air supply/ Dirty air filter	Check air supply/ air filter
	Poor connection	Check hoses, couplers and connectors
	Restriction in the hydraulic line	Check hydraulic lines for blockages or damage
	Leak in the system	Check for external leaks
Cylinder will not return	May require a load to retract	Check cylinder type
	Poor connection	Check coupler
	Restriction in the hydraulic line	Check hydraulic lines for blockages or damage
	Blockage in the pump valve	Contact a Boss Hydraulics Authorised Service Centre
	Broken spring in the cylinder	Contact a Boss Hydraulics Authorised Service Centre

5. SPECIFICATIONS

Model	Input air pressure (bar)	Air consumption (cfm)	Oil Cap. (cc)	Useable Oil (cc)	Weight (kg)
PA010	7-10	9	850	750	5.4
PA019	7-10	9	1600	1300	7.3
PAR019	7-10	9	1600	1300	8.5
PA019-2	7-10	9	2600	2000	9.1
PA019-3	7-10	9	3000	2500	9.3
PA019-8	7-10	9	8000	7200	14
PAD019*	7-10	9	1600	1300	9.1
PAD019-3*	7-10	9	3000	2500	12
PAD019-8*	7-10	9	8000	7200	17

* Suitable for both Single and Double Acting Cylinders.



BOSS HYDRAULICS:

Head Office: 19 Ricketts Road, Mt Waverley VIC 3149 | P: 1300 BOSS HYD (1300 267 749)

E: sales@bosshydraulics.com.au | W: www.bosshydraulics.com.au