



Quick Start Up Guide – Pumps

Installation:

The Sprague pump only requires bolted attachment to a base plate and three plumbing connection lines.

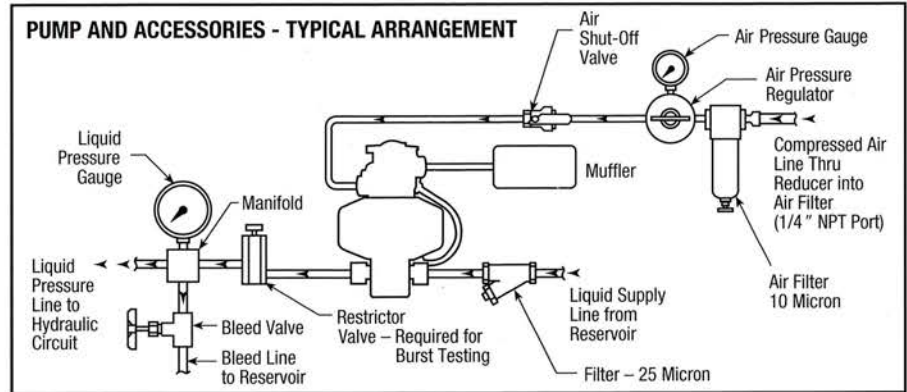
- 1) From driving air source to pump air inlet port.
- 2) From fluid source to pump fluid inlet port.
- 3) From pump fluid outlet port to working system.

For maximum performance, keep fluid inlet port below fluid level:

Filtration: 10 micron air – 25 micron fluid.

Plumbing: All plumbing must be rated to at least to 1-1/2 times maximum operating pressure.

Exhaust: Muffler needed for noise reduction, Low restrictive style recommended.



Pump installed in a typical circuit with recommended accessories many of which are available from Sprague Products. Complete power units with all components assembled and tested are also available. Please refer to the website for additional information www.cw-valvegroup.com/sprague.

Operation:

Start Up Procedure

- a) Close air shut-off valve between pump & pressure regulator.
- b) Turn on driving air supply.
- c) Adjust air pressure regulator at air control unit (Filter Regulator) to 15-25 psig (1-1.7 Bar).

⚠ DANGER

Do not exceed 100 psi pump air inlet pressure. Failure to do so may result in equipment damage and/or serious injury or death.

- d) To prime the pump, open bleed valve in hydraulic circuit to allow free liquid flow.
- e) Slowly open the air-shut-off valve to start the pump cycling.
- f) After the pump has been primed, close bleed valve in hydraulic circuit. High pressure pumps may require positive pressure at liquid inlet.

- g) Check hydraulic and air circuits for leaks in lines, fittings and etc.

⚠ WARNING

Injection injury potential - Do not check for leaks by hand. Failure to comply may result in amputation of injured member.

- h) With pump and circuit operating properly, readjust air pressure regulator until desired pump discharge pressure is reached. (The regulated air drive psi x actual pump ratio = the pump fluid outlet pressure.) The hydraulic circuit is ready to operate.

NOTICE

Written authorization is required prior to disassembly of any Sprague Product. Failure to do so may void warranty.

Shut Down Procedure

- a) Close air shut-off valve. Normally after driving air supply has been adjusted, the pump can be on-off controlled or reduced in pumping rate at the air shut-off valve.

⚠ DANGER

Before attempting any maintenance or repair, disconnect the compressed air inlet and bleed all the air and fluid pressure from the pump and associated hydraulic circuit.

- b) After stopping pump, bleed off hydraulic pressure before disconnecting the hydraulic circuit.

NOTICE

Failure to use Sprague OEM parts can create dangerous operating conditions, poor pump performance and will void the warranty.

Trouble Shooting Guide

Problem	Cause	Remedy
Pump cycles but does not build pressure (pump running)	A. Water valve closed B. Drain valve open C. Foreign matter inside check valve D. Reservoir fluid supply is low E. Inlet check valve stuck, closed	A. Turn on (open) water supply valve to pump B. Close drain valve tightly C. Remove pump check valves, clean & replace o-ring seals D. Add fluid as required E. Remove inlet line and manually open check valve with a small rod
Pump continues to cycle under pressure	A. Leak from component being tested B. Leak in portable pump piping C. Faulty pump check valve seal	A. Check component for leaks B. Check hydro pump fittings and tubing for leaks C. Remove pump check valves, clean and replace o-ring seal
Excessive water coming out from pump muffler	A. Excessive water in the air lines B. Damaged high pressure seal	A. Drain water from air lines, use air dryer B. Replace pump seals, use recommended seal kit
Pump cannot reach maximum rated pressure	A. Insufficient shop air pressure B. Damaged pressure gauge	A. Check shop air, 40 psi to 100 psi recommended B. Check pressure gauge for proper functioning
Pump is not delivering fluid (Pump not running)	A. Driving air supply is disconnected, air shut-off valve closed or air filter clogged B. Air pressure regulator not adjusted C. Air shuttle is sticking D. Connecting rod is improperly adjusted or bent (may occur after pump overhaul) J Pump E. Spring in shuttle is broken J Pump F. Air pilot valve damaged or sticking G. Air pilot valve springs broken (PowerStar)	A. Reconnect line. Open valve clean filter B. Adjust regulator C. Remove and clean air valve and housing, assembly and its shuttle valve components D. Readjust rod and nut, straighten or replace rod E. Replace spring F. Remove and clean or replace as required G. Replace spring
Pump running rapidly fluid flow is reduced (Short cycling) PowerStar	A. Air pilot valves damaged or sticking B. Air pilot valve o-ring damaged C. Air pilot valve spring broken D. Air shuttle valve manifold seals damaged or missing E. End plate air seals damaged or missing	A. Remove or clean or replace B. Replace C. Replace D. Replace E. Replace
Pump will not stall	A. Leakage in liquid section B. Leakage in test circuit	A. Check for external leaks, damaged high pressure seal, or damaged inlet check valve B. Check for system leak
Pump fails to generate flow, flow is reduced	A. Leakage or blockage at inlet or outlet check valves B. Damaged high pressure seal, piston or cylinder C. Liquid in air section	A. Remove and clean check valves. Look for foreign matter lodged in seating areas. B. Replace C. Damaged high pressure seals
Hydraulic fluid in exhaust air	A. Damaged high pressure seal	A. Replace
Air in test fluid	A. Air leak in suction line or low liquid level	A. Repair suction line or fill reservoir
Minipump appears to cough	A. Leakage in air valve	A. Replace o-ring in air valve
Pump operates slow or low output	A. Incorrect air pressure B. Icing	A. Check and adjust drive air B. Let system warm, move muffler farther from pump



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