

WPB COMMERCIAL INSTALLATION, OPERATION, & MAINTENANCE

HOW THE SYSTEM WORKS

The following PL&A publications are available on the Installation and Maintenance page of pacificliquid.com: WPB-COM Specifications ; Setup & Tuning of Pressure Switches and Hydropneumatic Tanks.

INSTALLATION

Install the system as shown in the drawing. Plumb the incoming water supply line into the threaded isolation valves on the suction side of each pump. (An approved backflow preventer may be required by your water authority. Check local codes.) Plumb the building supply line to the threaded isolation valve on each WPB discharge manifold. If an additional hydropneumatic tank is included, install it as shown in the drawing. Install a bypass line for use during electrical outages. A pressure reducing valve (PRV) is required if constant water pressure is desired. Refer to the drawing for location.

If a 24 hour lead pump alternator was specified, please refer to the instructions supplied with the control panel.

For standard systems connect separate 230 VAC, 15 AMP services to the outside terminals of the pressure switches. Install a good ground to the ground screw on the pressure switch housing. (A ground fault interruption device may be required. Check local codes.) Although 230 VAC is recommended, all WPB Systems will run on 115 VAC. 230VAC operation will increase motor life and reduce electrical consumption. If 115 VAC operation is desired, refer to the wiring diagram on the side of the motor. Please note that individual 30 AMP circuits are required for 115 VAC operation. Also, make sure that existing or new wiring is capable of carrying the higher current load at 115VAC.

START UP

The WPB Systems have been preset in our shop to specified cut in and cut out pressures. Cut in pressure of WPB-1 is usually set to the desired building pressure while cut out pressure is 15 to 20 PSI higher. WPB-2 cut in pressure is set 2-3 PSI lower than WPB-1. Tank pressures have been adjusted to 2 PSI below cut in pressure of WPB-2. If a change in the pressure switch setting is desired, refer to the PL&A publication entitled "SET UP AND TUNING OF PRESSURE SWITCHES AND HYDORPNEUMATIC TANKS".

Check and note the tank air pressures with a good quality digital tire pressure gauge. Open the drain valve located on the discharge manifold of WPB-1. Open the isolation valve on the suction side of the pump and allow water to enter the system. After all air is purged from the System close the drain valve. After the tank fills, the pressure gauge will indicate the static pressure of the water supply. Repeat this procedure for WPB-2.

Apply power to WPB-1. The pump will start and pressure will begin to rise. Allow the pump to fully pressurize the system. Note the cut out pressure. Open the drain valve and allow the system pressure to drop. Note the cut in pressure of the pump. Cut out pressure must be a minimum of 15 PSI above cut in pressure. Repeat this procedure for WPB-2.

When complete, open the discharge isolation valves and bleed air from the building plumbing. If a PRV is installed, set its discharge pressure to the cut in pressure of WPB-1. Observe several pump cycles. WPB-1 will always be the lead unit. WPB-2 will start only when building pressure drops 2-3 PSI below WPB-1 cut in.

TROUBLE SHOOTING

Your WPB System has been thoroughly tested prior to shipping. Although equipment failures can occur after testing, 99% of all operational problems are due to improper installation. Use the following list to trouble shoot a faulty installation. Please refer to

the System setpoints that were attached to the installation packet. It lists serial number, cut in/cut out pressure, tank precharge, and motor voltage. You will need to know these values when trouble shooting. If the following suggestions do not correct the problem, please contact your dealer or PL&A.

Pump doesn't run (all installations)

Make sure the proper voltage is applied to the outside terminals of the pressure switch.

If your system is direct connected, make sure that cut in pressure exceeds static pressure by at least 10PSI.

Pump doesn't cut off or restarts after a short period of time (all installations)

If the pressure switch has been readjusted, make sure that cut off pressure is not set too high.

Close the discharge isolation valve. If pressure rises and the pump shuts off properly, check for major leaks or open valves in the household plumbing. Use the same procedure with the discharge isolation valve to test for leakage back through the check valve. If the pressure rises and the pump shuts off properly, remove the check valve and check for debris.

Make sure the motor is set for the proper voltage. Incorrect voltage will cause the motor to run at a lower speed resulting in low pressure. Incorrect voltage will also damage the motor windings very quickly.

Pump cycles on and off rapidly

This condition is not uncommon and is usually due to water hammer that is often generated by the building piping (too many 90° bends or restrictions). If the pump cycles during cut in or cut out, make sure that cut in and cut out pressures differ by at least 15PSI. Increasing the differential pressure to 20PSI will often cure the problem. If this does not work and the piping problem cannot be corrected a surge arrestor must be installed on the pressure switch. Contact PL&A for the correct part.

MAINTENANCE

There are several preventive maintenance steps that will help insure a long life for your WPB system. Failure to follow them will shorten system life, reduce reliability, and possibly void your warranty.

If you nick or scratch the finish on the tank, touch it up immediately with a good enamel. Mild steel will rust quickly when exposed to Hawaii's corrosive environment.

Like any tire valve the Shrader valve on the tank will leak. Also the bladder or diaphragm is a semipermeable membrane and will pass some air over time. **Annually** shut off the discharge and suction isolation valves, disconnect power, and drain the system. Check the air pressure and add air if the tank pressure has dropped. It should be 2 PSI below cut in pressure of WP-1. **Failure to do this will void your tank warranty**.

Check the system for leaks and repair immediately. Leaks will cause rust and possible motor damage. Pressure switch settings drift over time. If the pump seems to run longer than it did originally, check the cut in and cut out pressure and readjust the switch if necessary.

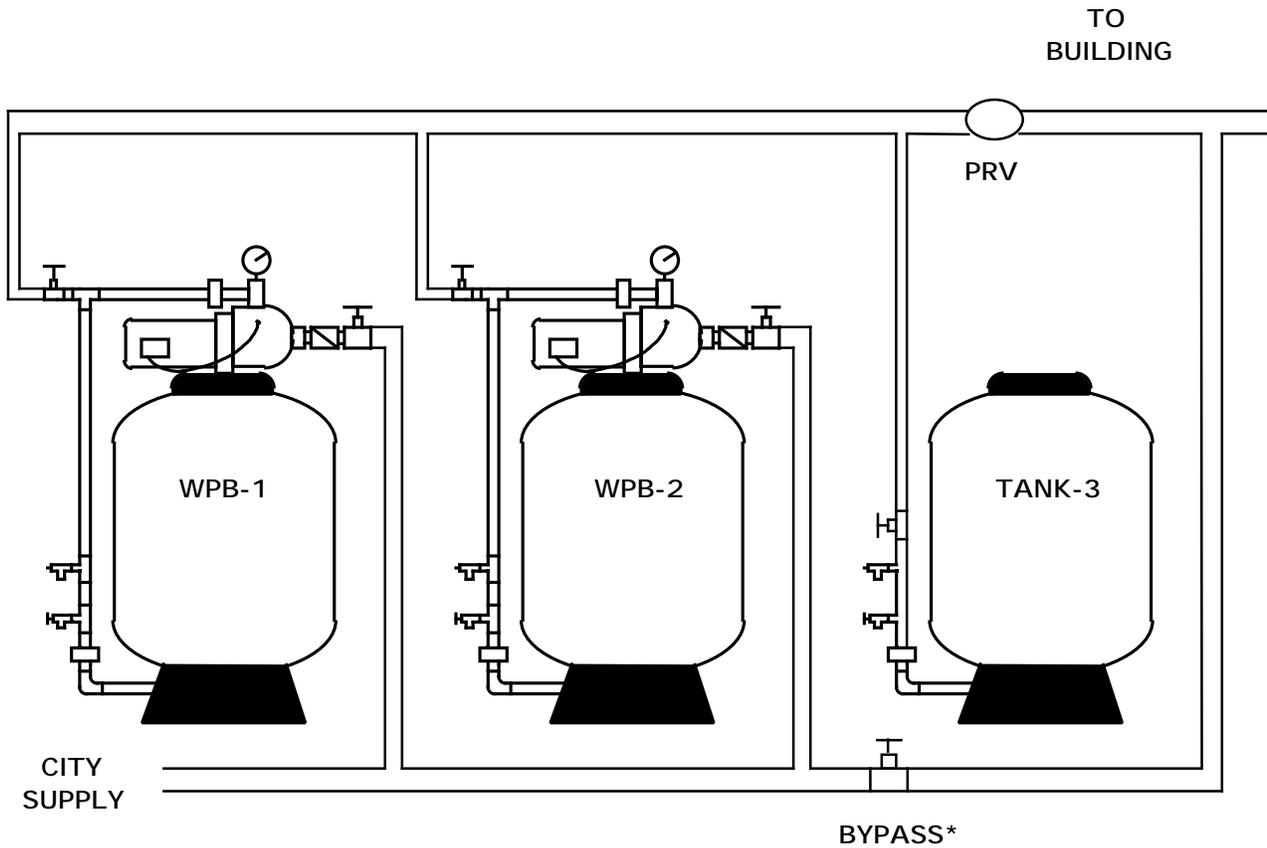
Replace faulty or broken pressure gauges immediately. A working pressure gauge is the best tool for diagnosing system problems



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WPB-COM COMMERCIAL BOOSTERS



WPB-COM-1	50 GPM @ 45 PSI BOOST	1 HP, 115/230 VAC, 50 GAL TANK
WPB-COM-2	60 GPM @ 45 PSI BOOST	1 HP, 115/230 VAC, 85 GAL TANK
WPB-COM-3	80 GPM @ 45 PSI BOOST	1.5 HP, 115/230 VAC, 85 GAL TANK
TANK -3	50 - 119 GALLON DEPENDING UPON PRESSURE & FLOW	

*During bypass conditions, open bypass valve and isolate WP-1, WP-2, & Tank 3



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