

SYSTEM 3 INSTALLATION (115/230V OPERATION)

IN THE BEGINNING

Before installing or operating this system, familiarize yourself with these instructions. You will also need the instructions packed with the pumps and control panel.

BASIN LOCATION AND INSTALLATION

The fiberglass sewage basin may be installed as shown in the drawing or above ground. Above ground installation is often selected when the system can be hidden from view such as installation under the house. If an above ground installation is selected, a sturdy and level concrete pad is required to support the basin. Also inlet and discharge piping must be supported with pipe clamps or hangers.

Below ground installation is encouraged when the system will reside out in the open. A low structure should be constructed over the system to protect the discharge piping. Other basin sizes and designs, including underground discharge piping, are available. Contact PL&A for information.

Install the invert or inlet pipe as shown in the drawing. The basin is shipped with the caulking hub loose. This allows you to place it at the required height. Use the 4ADA adapter, included with the system, to seal the inlet pipe in the hub.

DISCHARGE PIPE INSTALLATION

Before placing the pumps in the basin install a length of 2" schedule 80 plastic pipe in the pump discharges. Heavy wall pipe is recommended so that the pumps can be removed from the basin via the discharge pipe. The discharge pipe should extend approximately 10" above the top of the basin. This allows the pump port cover to be lifted for float inspection and cleaning.

INSTALLING THE BASIN COVER, PUMPS, AND FLOAT SWITCHES

Remove the pump pull out ports from the basin cover and install the cover on the basin. Place the pumps in the basin in such a position that the inflow does not fall directly on the pumps. Place the pull out ports over the discharge pipes. Be sure to install the square cut O-Ring in the discharge pipe flange. Pull the pump power cord and two float switch cords through the hole in one of the pump pull out plates. Repeat this procedure for the other pump and remaining two float switches. Feed these cords through the rubber stoppers and place the stoppers in the hole. Use the two additional stoppers to close the unused holes.

Adjust the float switches in the following manner. Label one float "Pump Off" and set it so that is just above the pump discharge when hanging straight down. Label the second switch "Pump On" and set it so that it hangs level with the top of the pump. Label the third switch "Override" and set it 3" above the second float. Label the fourth float "alarm" and set it 3" above the third float. Secure each float cord with a nylon tie strap so that they will not slip back through the rubber stopper. The floats are narrow angle floats and revolve around the weight on the cord. They do not have to be strapped to the discharge pipe as seen in the drawing.

INSTALLING THE VENT PIPE, CHECK VALVES, AND GATE VALVES

Install the vent pipe as shown in the drawing. Check local codes for venting requirements. Install the check valves and gate valves as shown in the drawing. Insure that the check valves are in the horizontal position and oriented correctly (top up and flow arrow pointing away from the pump). Valves installed in the vertical position sometimes will not open due to solids trapped behind the flapper. A coupling is recommended between each threaded check valve and gate valve to facilitate pump removal. Compression style check valves do not require a coupling.

INSTALLING THE CONTROL PANEL

The NEMA 4X fiberglass control panel is designed for inside or outside installation. Locate the panel in an area where the alarm light can be seen if pump failure occurs. Install the control panel according to the instructions provided with the panel. The standard, 1/2 HP SYSTEM 3 requires a dedicated 230 VAC, 15 AMP circuit. If you have specified 115VAC a dedicated 30 amp circuit is required. Also note that the hot side of the 115VAC line must be connected to L1. Otherwise the control circuitry will not function. In either case a grounded neutral is required. Refer to the control panel instructions if your SYSTEM 3 includes pumps larger than 1/2 HP.

START UP

Switch on power to the control panel. Test operate each pump by momentarily placing each HOA switch in the *Hand* position. Place the HOA switches in the *Auto* position. Slowly fill the basin with water. Insure that the pumps are fully submerged before starting. If not, readjust the "pump on" float switch. During pumpdown insure that the water level does not fall below the pump discharge or the pump may become air locked the next time it starts. If it does, readjust the "pump off" float. Fill the basin again and insure that the pumps alternate. Switch both HOA switches to the off position and allow the basin to continue to fill. Insure that the alarm switch activates the alarm. Switch both pumps to auto. Both should start and continue to run during pumpdown.

If the pump starts but the water level does not drop, the pump may be air locked. Loosen the pipe coupling to vent the trapped air. If the level still does not drop, check the pumping elevation and orientation of the check valve.

TROUBLE SHOOTING

Your sewage pumps and control panel have been tested at the factory. Although failures do occur after installation, 99% of all initial

problems are due to improper installation. Use the following check list to trouble shoot your system. If the problem is not corrected, contact PL&A.

Pumps do not run

Make sure the supply and panel circuit breakers are on. If 115VAC power is installed, make sure the hot lead is connected to L1. Check that float switches are wired to the proper terminals. Make sure the "pump off" and "pump on" floats are positioned correctly. Check continuity of the floats.

Pumps run but do not pump

Make sure pumps are not air locked. Release the coupling to discharge trapped air. Check the check valves for proper orientation. Two valves are required. Check for blockage in the line. Make sure vertical elevation does not exceed the capacity of the pumps.

Pumps runs but pump slowly

Check for blockage or a partially closed valve. Make sure vertical elevation does not exceed pump operational head.

MAINTENANCE

The system requires very little maintenance. Two to three times a year, raise the pump ports and hose down the pumps, floats, and piping. This will remove sludge buildup that could cause plugging or float hang up. If you hear unusual noises or notice erratic pump operation, investigate the cause. Usually, most problems result from faulty or hanging float switches. Replace faulty switches before they damage the pumps. If the system trips a breaker during operation, check for pump damage or severe plugging.



PACIFIC LIQUID & AIR SYSTEMS
PUMPS • MOTORS • CONTROLS

761 Ahua Honolulu, HI 96819

Phone 808.536.7699 Fax 808.536.8761

www.pacificliquid.com

