


RICE HYDRO, INC.
PCH-11/550 MANUFACTURER'S OPERATING INSTRUCTIONS
PIPELINE CHLORINATOR / DECHLORINATOR
HYDROSTATIC TEST PUMP
FOR WARRANTY REGISTRATION CALL: 1-800-245-4777

 **WARNING:** Operating, servicing and maintaining this equipment can expose you to chemicals including engine exhaust, carbon monoxide and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, operate and service your equipment in a well-ventilated area and wear gloves or wash your hands frequently when servicing your equipment. For more information go to: www.p65warnings.ca.gov

Operating the Pipeline Chlorinator

Cautions:

1. Chlorine is a hazardous material, do not ingest internally, avoid inhalation and skin or eye contact. Inhalation will cause shortness of breath and nausea. Use only in well-ventilated areas and wear protective gear.
2. Check ALL fluid levels prior to operating the unit.
3. Check battery charge level, verify the battery is producing at least 12 Volts, or the injection pump will not function properly.
4. **Only** adjust the dial on the injection pump while it is running.
5. Flush diaphragm pump and chlorine injection pump with clean water to neutralize residual chlorine and sodium thiosulfate, to prolong its service life. Protect pump from freezing, flush with biodegradable antifreeze and store away from freezing conditions.

Connecting the Chlorinator:

1. Turn on battery inverter, verify battery is producing at least 12 Volts.
2. Close outlet gate valve on the PCH manifold.
3. Connect one end of an 1½" hose to hydrant or other pressurized water source, connect the other end of hose to the inlet of the PCH manifold.
4. Confirm inlet gate valve on the PCH manifold is open.
5. Connect an 1½-inch hose to the outlet of the PCH manifold, connect the other end of the hose to the chlorination test environment.

Operating the Chlorinator:

1. Carefully pour chlorine into the tank marked "CHLORINE".
2. Open the water supply at source and inlet gate valve on the PCH manifold turn the injection pump on.
3. Open outlet gate valve on the PCH manifold.
4. Prime the injection pump. Open bleed valve on back of injection pump, bleed all air off feedline from the tank to the pump.
5. Once chlorine is flowing freely from the tank to the pump, **close the bleed valve** and adjust the dial on pump based upon observed flowrate and corresponding PPM chlorination rate from chart on unit.
6. Adjustments to GPM can be made at the inlet gate valve to fine tune chlorine injection rate per the PPM chlorination chart.

7. Once the flow and PPM rate are established, open the petcock on outlet of the manifold. Use chlorine test strip to confirm target PPM is achieved.
8. Once test environment is filled bleed all air from the system.
9. Once chlorination is complete, disconnect the PCH from the water supply and the chlorine test environment.
10. Soak chlorination test environment per local regulations or inspector's mandate.
11. Drain chlorine from tank. Place the drain tube into a suitable container, open the valve and carefully drain the remaining chlorine from the tank.
12. Flush the injection pump with water to eliminate residual chlorine or sodium thiosulfate to prolong its service life.

Operating the Hydrostatic Test Pump

Cautions:

1. Check oil level in engine crankcase, use (10W30) as needed.
2. Check test pump thru reservoir sight glass. Popper level is half-way to the top, use (30W non-detergent oil) as needed.
3. Check oil level in the gear reduction, use (90W) as needed. Oil should be level with the side plugs.

Connecting the Test Pump:

1. Close outlet gate valve on the PCH manifold.
2. Connect an 1&1/2-inch hose from hydrant or other pressurized water source and the other end of hose to the inlet of the PCH manifold.
3. Connect your 1/2-inch high-pressure outlet hose to the test pump and the test environment.

Operating the Test Pump:

1. With water flowing from hydrant or other pressurized water source open the inlet gate valve on the PCH manifold. Make sure the 1/2 inch outlet ballvalve on the test pump is open and start engine.
2. Begin building pressure in the test environment. Be sure to bleed air from the test pump at the hosebib under the gauge at least once during this process. It also necessary to ensure that all air is also bled from the test environment.
3. When your test pressure has been reached, close the outlet ballvalve and shut-off engine. An inline checkvalve prevents water pressure from bleeding back into the pump.
4. Once the outlet ballvalve is closed and your test begins, you have now isolated the test pump from the test environment. Any loss of pressure is due to leaks or trapped air in system.

The pressure regulator has been preset at the factory. To change this setting, you must make this adjustment while the water is flowing freely, and under **NO pressure**.

To adjust the pressure and perform a self-test:

1. Loosen the locknut.
2. Turn the T-handle clockwise to increase and counterclockwise to decrease the pressure.

3. Place a ballvalve or similar open and close valve at the end of the high-pressure outlet hose, open and close this valve and the hosebib multiple times to release excess air from piping and ensure accurate pressure gauge readings.
4. Check pressure setting and re-adjust as necessary.
5. Upon reaching the desired pressure, tighten locknut. Your pressure setting is now locked in.

Care and Maintenance

1. Protect the test pump/chlorinator from freezing, and to eliminate residual chlorine, flush the test pump with biodegradable antifreeze, to prolong its service life. Store away from freezing conditions.
2. Change engine oil after the first 80 hours of operation, thereafter every 250 hours of use or every season.
3. Change the oil in the pump body after the first 50 hours of operation thereafter every 250 hours.

Operating the Pipeline Dechlorinator

Cautions:

1. Sodium Thiosulfate is a hazardous material, do not ingest internally, avoid inhalation and skin or eye contact. Inhalation will cause shortness of breath and nausea. Use only in well-ventilated areas and wear protective gear.
2. Check ALL fluid levels prior to operating the unit.
3. Check battery charge level, verify the battery is producing at least 12 Volts, or the injection pump will not function properly.
4. **Only** adjust the dial on the injection pump while it is running.
5. Flush diaphragm pump and chlorine injection pump with clean water to neutralize residual chlorine and sodium thiosulfate to prolong its service life. Protect pump from freezing, flush with biodegradable antifreeze and store away from freezing conditions.

Connecting the Dechlorinator:

1. Move PCH to the discharge end of the chlorine test environment.
2. Turn the inverter on, verify at least 12 Volt charge on battery.
3. Attach an 1&1/2-inch hose to the discharge end of the chlorination test environment.
4. Connect the other end of the hose to the inlet of the PCH manifold.
5. Attach an 1&1/2-inch hose to the outlet of the PCH manifold.
6. Place the discharge end of this hose into a large enough tank or other suitable vessel.

**Note you must consider GPM flow rate when choosing size of tank or vessel to avoid discharging chlorinated water directly to the ground.

Operating the Dechlorinator:

1. Carefully pour Sodium Thiosulfate solution into the tank marked "CHLORINE".
2. Open the water supply at the source and the outlet gate valve on PCH manifold.
3. Turn the injection pump on.
4. Prime the injection pump. Open bleed valve on back of injection pump, bleed all air off feedline from the tank to the pump.

5. When sodium thiosulphate is flowing freely into injection pump, **close the bleed valve** and open the petcock on outlet of manifold. Use chlorine test strip to confirm a safe discharge PPM has been met per local regulations.
6. Once acceptable PPM is achieved you may remove hose from the tank and discharge water directly to the ground per local regulations.
7. Disconnect the PCH from the water supply and the chlorine test environment.
8. Flush the injection pump with clean water.

TROUBLE SHOOTING INJECTION PUMP

1. If pump is not turning on, check battery charge level, must be producing at least 12 volts.
2. If pump is not priming, be sure the bleed valve is closed and check for loose connections.

TROUBLE SHOOTING THE HYDROSTATIC TEST PUMP

IF PUMP FAILS TO BUILD PRESSURE:

1. Look for leaks in water supply hose and connections.
2. Possible loose piping or connections.
3. T-handle on pressure regulator may be set incorrectly.
4. Faulty pressure gauge, replace.
5. Pump is running too slow. Advance throttle on engine to between 3400-3600 RPM, but no higher.
6. Pipeline being tested may have leaks, or an open valve. Isolate the pump and do a self-test, by placing a ballvalve at the end of the outlet hose.
7. Foreign material may be lodged in a valve, preventing the valve from seating properly. Remove valve plugs, clean and replace.
8. Airlock. With pump running, open and close bleed valves several times to remove the air that may be trapped in the piping.
9. Diaphragms may be ruptured, oil sight glass will be milky white. Drain oil from pump and install new diaphragms.