



Hydraulic Powered Pressure Washer

SAFETY INSTRUCTIONS

1. Water is discharged from this machine at very high pressure. Never point the spray wand at persons or any part of the human body. High pressure water may result in severe personal injury.
2. Never tie open the spray gun trigger or start the machine with the spray gun unattended. High-pressure flow could cause the gun and wand to fly around causing personal injury or property damage.
3. Do not run acids, petroleum-based solvents, highly chlorinated materials or insecticides through this pump. Damage to internal parts could result. Use only detergents formulated for use with pressure washers and follow the manufacturer's instructions.
4. When using this machine, wear goggles or a face shield to protect eyes from spray, chemicals or back-spattered materials.

OPERATION

1. Fill tank with water or turn on water supply. (Pump must have positive head pressure.)
2. Hook up hydraulic hoses.
3. With machine at idle, engage hydraulics, then increase engine rpm until desired water psi is reached.
4. Grasp gun firmly. Point wand at object to be cleaned and squeeze the trigger. Experimenting with the distance the nozzle tip is held from the surface to be cleaned is recommended. The closer the tip, the greater the impact; however, as the tip is moved farther back a larger area can be covered. Avoid opening and closing the trigger gun in rapid succession, as this is hard on the unloader valve.
5. Pump must be horizontal when operating.

MAINTENANCE

1. Before shut down, wash off the pump and orbit motor to rinse off any foreign material.
2. Wipe down hose and coil for storage. Inspect hose daily for cuts or abrasions.
3. Change pump oil every 200 hours. Check oil level daily and "Top Off" as required. Use 30-weight non-detergent oil.

PROTECT AGAINST FREEZING TEMPERATURES

1. Remove suction hose from water supply and place hose in a container of ethylene glycol anti-freeze.
2. Start the machine. When you see anti-freeze coming from the nozzle, trigger the gun a couple of times. This will allow the unloader valve to be purged.

NOTE: After water is purged from the system, anti-freeze can be captured for reuse.



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TROUBLE SHOOTING

(Both hydraulic and water systems)

Symptom	Probable Cause	Corrective Action
Pump runs but produces no flow	Pump is not primed	Flood suction line then restart pump. Check the screen in the pump inlet hose fitting.
	Nozzle in low PSI mode	Pull or push nozzle into High PSI mode.
	Nozzle plugged	Clean nozzle. (see nozzle-cleaning brochure)
Pump loses prime Chattering noise, pressure fluctuates	Air leak in suction hose or inlet fittings	Remove suction hose and test for leaks by pressurizing with water. Make sure thread sealant has been used on all fittings.
	Suction line is blocked, collapsed, or too small	Inspect it for a loose liner, kinks or debris lodged in hose.
	Clogged suction strainer	Clean strainer.
Low pressure at nozzle	Unloader valve is by-passing	Make sure unloader is adjusted properly and by-pass seat is not leaking.(unloader valve adjustment brochure)
	Incorrect or worn nozzle	Make sure nozzle is matched to the flow and pressure of the pump. If the nozzle is worn, replace it.
	Restricted intake	Refer to priming info.
	Dirt in check valves	Clean check valves. (see check valve cleaning brochure)
Unit makes knocking noises	Almost always caused by not being able to get enough water at the inlet	Check the suction line for kinks, restrictions, clogged inlet line or strainer, too many elbows, or a reducer fitting installed in the line somewhere.
	The water suction line is too Small for its length	A ¾" diameter line is recommended. If the line is real long, 1" diameter may be needed.
	The water level in the supply tank is too low	The pump should always be below the water level in the supply tank.
The unit makes chattering noise	The unloader valve on the water pump is unloading	Try adjusting the unloader valve to reduce its pressure setting. This can also be caused by the vehicle's hydraulic system relief valve being set too close to The operating pressure required by the pressure Washer. The hydraulic relief valve must be set at Least 300 PSI above the operating pressure of the washer. This should be checked with a pressure gauge.
	Particles of dirt or sand in the spray tip orifice	Remove spray tip orifice and clean.
	Dirt in check valves	Clean check valves. (see check valve cleaning brochure)
Unit doesn't develop good pressure	Not enough oil getting to the hydraulic motor/flow meter	Increase vehicle RPM. Check circuit with a hydraulic flow meter to assure that the flow meets minimum requirements.
	Hydraulic motor slowing or stalling	Vehicle system pressure relief valve may be set to low. It should be checked with a pressure gauge to assure that it is set at a high enough pressure.
	The spray nozzle orifice may be wore out	Inspect this orifice for wear or incorrect sizing and replace if necessary.