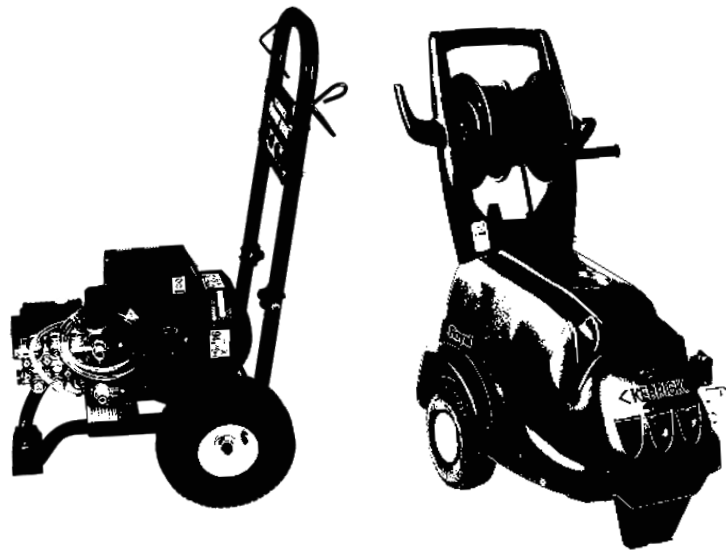




SAFETY AND OPERATING MANUAL



ELECTRIC COLD WATER BLASTERS

**Read Safety & Operating Instructions
Before Commencing Operation**

THESE INSTRUCTIONS MUST BE READ AND ADHERED TO BEFORE OPERATING THIS MACHINE.

SAFETY MANAGEMENT PROCEDURES

Failure to comply with safety recommendations may result in injury to the operator, nearby persons, or damage to property, or this machine.

- Always transport your machine in an upright and horizontal position.
- This machine can cause severe injury if the water jet is pointed at any party of the body, so keep hands, feet, other body parts and animals out of the pressure jet.
- **ALWAYS** wear protective goggles and suitable protective clothing when this operating appliance. Non-slip rubber footwear must be worn when operating this machine.
- **NEVER** let the electric motor switch or electrical cord get wet. **USE AN EARTH LEAKAGE DEVICE.**
- Do not touch the appliance with wet/damp hands or feet and do not use the appliance bare-footed or with unsuitable clothing.
- Do not pull the supply cable or the appliance itself in order to disconnect the plug from the electric supply.
- **NEVER** run the machine without water in the pump.
- Check engine and pump oil daily.
- Check that water connections are tight and that there are no leaks from the machine.
- **DO NOT** work the machine for more than 1 to 2 minutes with gun in **CLOSED** position.
- After switching machine '**OFF**' point lance in a safe direction and press trigger on gun handle to release any built-up pressure before moving or working on this unit.
- Protect machine from weather. **DO NOT** leave out in rain or freezing conditions. **DO NOT** use if water pipes have frozen or if temperatures fall below zero, without taking special precautions.
- In case of damage or malfunction, switch off the appliance and disconnect it from the mains electricity by removing the plug, then call an authorised service person.
- **DO NOT** attempt to fix or repair the unit. All adjustments or overhauls should be carried out by a Kerrick authorized service agent only.
- Use only Kerrick accessories which are designed to operate with your machine.

WARNING:

- Incorrect use or failure to follow operating and maintenance procedures may produce an injury to a person or damage to the equipment.

START UP PROCEDURES

CHECK CLEANER FOR DAMAGE CAUSED BY TRANSPORTATION, IMMEDIATELY AFTER UNPACKING. IF DAMAGE IS FOUND CONTACT SUPPLIER IMMEDIATELY.

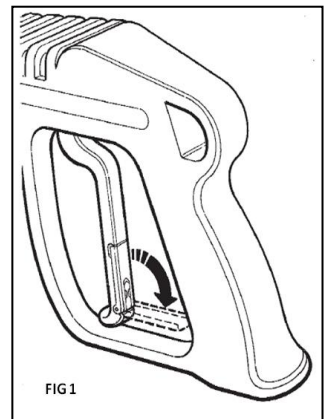
- a) Whilst setting up **keep machine switched off and unplugged** from mains.
- b) Connect water intake hose to pump.
- c) Fit discharge hose to quick release coupling and shut off gun.
- d) Check that pump has correct oil content – check sight glass. Oil should be half way up sight glass. Also check breath hole in oil cap is clear. To stop oil from spilling when transporting machine the breath hole may be closed by a pin, adhesive tape or a sealed cap. Remove pin, adhesive tape or replaced sealed cap with dip stick cap, so that breath hole is clear.
- e) Check electrical cords, switch and plugs for damage. **DO NOT USE** if damage is found or if electrical wiring is suspect. Call a Kerrick service agent if in doubt.
- f) Place detergent hose in drum or pail of correctly mixed detergent. Make sure detergent strainer is always submerged in detergent solution and that **NO AIR** is sucked up the detergent line. **USE KERRICK DETERGENTS FOR BEST RESULTS.**
- g) Turn on water supply. Inlet water flow rate should be at least 30 litres/min. Maximum inlet water temperature must not exceed 50° C.
- h) Check that there are no water leaks and ensure that hoses have no kinks or twists in them.
- i) Before starting, point the lance to a safe position and open gun trigger to release any built-up pressure in the system. **CHECK** water is flowing through the machine and out the lance prior to starting.
- j) Once all checks have been completed, plug the unit into the electrical mains supply.
 - With single phase machines an earth leakage device is recommended.
 - Never let electric cords lie in pools of water
 - Keep plugs and motor dry at all times
 - **DO NOT** use long extension cords
- k) Turn machine switch to the “**ON**” position while holding the trigger on the shut off gun open to relieve back pressure.
- l) Releasing the trigger will shut off the water flow.
- m) After turning unit off **ALWAYS** release pressure in gun. **DO NOT** leave pressure built up in the hose gun.

To eliminate any impurities or air bubbles from the water circuit we advise starting the cleaner for the first time without the lance and letting the water run out for a few seconds. Impurities could block the nozzle and cause malfunction.

ALWAYS TURN OFF POWER SUPPLY AT THE WALL SOCKET AFTER USE, OR IF MACHINE FAILS TO OPERATE.

WARNINGS:

- **Never let the unit run for more than 1 to 2 minutes with the gun closed.** Water will recycle within the pump head and heat up, causing damage to seals.
- **Never let pump run dry of water** as this can cause catastrophic damage to the pump.
- When your water blaster is not in use, close the safety device on the handle (FIG 1).

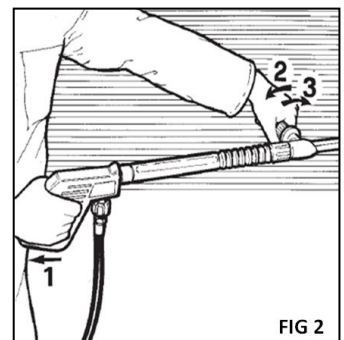


PRESSURE REGULATING VALVE (Bypass/unloader)

This machine may be equipped with a bypass/unloader valve to protect your unit from excess pressure fluctuations. If the nozzle becomes blocked or a restriction occurs on the discharge side of the pump a buildup of pressure will form in the system, the bypass/unloader valve will then activate to relieve the excess pressure. **DO NOT TAMPER WITH THE UNLOADER VALVE.** Call Kerrick or a Kerrick Service Agent should adjustment become necessary.

DETERGENT APPLICATION (If chemical injection is fitted)

- a) A low pressure chemical injector is fitted between the pump and high pressure hose.
- b) Mix chemicals according to the manufacturer's instructions and then pour into the water blaster's detergent container.
- c) Place the injector hose with filter into the detergent container.
- d) Opening the variable nozzle or the low pressure on the dual lance (position 3, FIG 2), will activate the low pressure injector allowing automatic intake of the chemical.
- e) Putting acids, solvents or highly corrosive materials through the pump will result in damage to the pump.



IMPORTANT:

- To extend the life of your cleaner, run the machine with clean water after every application of chemical.

GENERAL CARE & MAINTENANCE

GENERAL CARE: This machine should be cleaned daily after use, and checked for any maintenance requirements. After using the detergent system it should be flushed with clean water. Simply stand the detergent intake in a clean bucket of water and run the machine with the pump nozzle or valve open for one minute.

Release any pressure in the hoses by depressing the trigger on the gun. Drain surplus water from hoses and check for damage before storage. If the hoses are damaged in anyway, replace immediately. Make sure hoses are stored with no kinks in them.

Check oil levels in both pump and motor. Allow motor to cool down before storage.

Store your cleaner indoors and in a dry area. Never leave equipment outside unprotected from the elements. In particular do not leave equipment in low or sub-zero temperatures. In very cold conditions it may be necessary to protect equipment by flushing it with antifreeze. When storing the cleaner for long periods we also recommend the use of antifreeze solution in order to avoid corrosion and drying up of the pump seals.

To do so:

- a) Mix up antifreeze mixture in a separate container, as per manufacturer's instructions.
- b) Couple container to intake of machine and gravity feed to pump.
- c) Run machine for one minute to ensure system is primed with antifreeze mixture.
- d) On stopping machine, release pressure in hose by pulling trigger.

Remember: If machine is operated in an area where freezing occurs, always check that water lines are not frozen and take precautions to ensure that water does not freeze with the pump. **Before starting** check that the water flow is normal. If in doubt do not use the machine.

ROUTINE MAINTENANCE

- a) Check pump oil level every time the appliance is used. Change oil initially after first 20 hours; thereafter change at 2 -3 monthly intervals or 200 hours. Use Kerrick oil CC500 or Telus 150C. Oil should sit halfway up the sight glass. Motor oil is not recommended for use in pumps.
- b) Change the motor oil after the first 20 hours, then consult the maintenance section of Engine Owner's Manual for oil change recommendations.
- c) Check and clean the water inlet filter on a weekly basis.
- d) Regularly check and clean the detergent injection filter, if fitted.
- e) Check the nozzle for wear and blockages, replace if necessary.

NOTE: Incorrect use or failure to follow operating and maintenance procedures may produce an injury to a person or damage to the equipment.

REMEMBER:

- Follow safety instructions.
- Open trigger on gun when starting up and shutting down to back off pressure.
- Do not run unit dry of water and check oil levels regularly.
- Do not leave running with shut off gun closed for more than 1 or 2 minutes
- Keep electric motor, switch, electric lead and plugs dry.
- Use an earth leakage device.

TROUBLE SHOOTING

WATER SYSTEM AND WATER PUMP		
Trouble	Possible Cause	Remedy
Low Pressure	Worn nozzle	Replace nozzle with correct size
	Poor water supply	Increase inlet pressure. Check for restrictions
	Air or water leak in inlet plumbing	Disassemble, reseal, and reassemble
	Relief valve stuck, partially plugged or improperly adjusted: valve seat worn	Clean, lube, adjust or replace. NB: Incorrect adjustment can damage pump or motor
	Inlet suction strainer clogged or improper size	Clean. Use adequate size. Check more frequently
	Worn packing. Abrasives in pumped fluid or severe cavitation	Install proper filter available to pump
	Fouled or dirty inlet or discharge valves	Clean inlet and discharge valve assemblies
	Worn inlet or discharge valves	Replace worn valves, valve seats and/or discharge hose
Leaky discharge hose	Secure leak or replace hose	
	Pump runs extremely rough, pressure low	Restricted inlet or air entering the inlet plumbing
	Inlet restrictions and/or air leaks. Stuck inlet or discharge valve	Proper size inlet plumbing; check for air-tight seal
Water leakage from under the manifold	Leaking HP seals	Clean out foreign material, replace worn valves
	Worn packing	Replace seals.
Oil leak between crankcase and pumping section	Worn crankcase piston rod seals	Install new packing
Oil leaking in the area of the crankshaft	Worn crankshaft seal or improperly installed oil seal retainer O-ring	Replace crankcase piston rod seals
	Bad bearing	Remove oil seal retainer and replace damaged O-ring and/or seals
Excessive play in the end of the crankshaft pulley – if belt driven	Worn main bearing from excessive tension on drive belt	Replace bearing
	May be caused by humid air condensing into water inside the crankcase	Replace bearing. Properly tension belt
Water in crankcase	Leakage of packing seals	Change oil at 3 month or 500 hour intervals
		Replace packing

WATER SYSTEM AND WATER PUMP CONTINUED...

Trouble	Possible Cause	Remedy
Oil leaking at the rear portion of the crankcase	Damaged or improperly installed crankcase rear cover O-ring, and drain plug O-ring	Replace cover O-ring, and drain plug O-ring
Oil leakage from drain plug	Loose drain plug or worn drain plug O-ring	Tighten drain plug or replace O-ring
Loud knocking noise in pump	Pulley loose on crankshaft (if fitted). Broken or worn bearing	Check key and tighten set screw. Replace bearings
Frequent or premature failure of the packing	Machine left running without being used	Always turn unit off when not being used
	Scored plungers	Replace plungers
	Over pressure to inlet manifold	Reduce inlet pressure per instructions
	Damaged or worn plungers	Replace plungers
	Abrasive materials in the fluid being pumped	Install proper filtration on pump inlet plumbing
	Excessive pressure and/or temperature of fluid being pumped	Check pressures and fluid inlet temperature; be sure they are within specified range
	Over pressure of pumps	Reduce pressure
	Running pump dry	Do not run pump without water
Strong surging at the inlet and low pressure on the discharge side	Foreign particles in the inlet or discharge valve or worn inlet and/or discharge valves	Check for smooth lap surfaces on inlet and discharge valve seats. Discharge valve seats and inlet valve seats may be lapped on a very fine oil stone.
Regulating unloader hunts or surges	Restricted gun nozzle, air in system or suction side of pump, e.g. Gland lead on soap valve	Clean or replace gun nozzle. Check for suction leaks.
Insufficient soap at gun outlet	Solution drum or can empty or insufficient compound used	Mix new solution or add more compound
	Soap filter clogged	Clean soap filter
	Venturi jammed	Free up ball in Venturi
	Dump nozzle or valve not operated	Open dump nozzle or valve to drop pressure and operate Venturi

ELECTRICAL SYSTEM

Trouble	Possible Cause	Remedy
Motor fails to start	Switch off	Switch On
	Loose electrical fitting	Call electrician. DO NOT repair yourself!
Motor cuts out on overload	Electric lead too light/long	Avoid long leads. Use heavy duty leads and plugs
	Motor too hot	Pressure set to high. Replace nozzle/adjust unloader

KERRICK SERVICING

Kerrick's workshop facilities are staffed by experienced technicians providing servicing, repair and manufacturing for a range of products including; water blasters, vacuum cleaners, extractors, pressure cleaners, pumps and more.

We work on everything from commercial and light industrial to large heavy duty equipment and offer customized design build services. We also warehouse and ship a comprehensive range of spare parts for your convenience.

For more information on your product, to book in a service or repair or to order spare parts give Kerrick a call or send through and enquiry on our website. Contact details can be seen below:

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