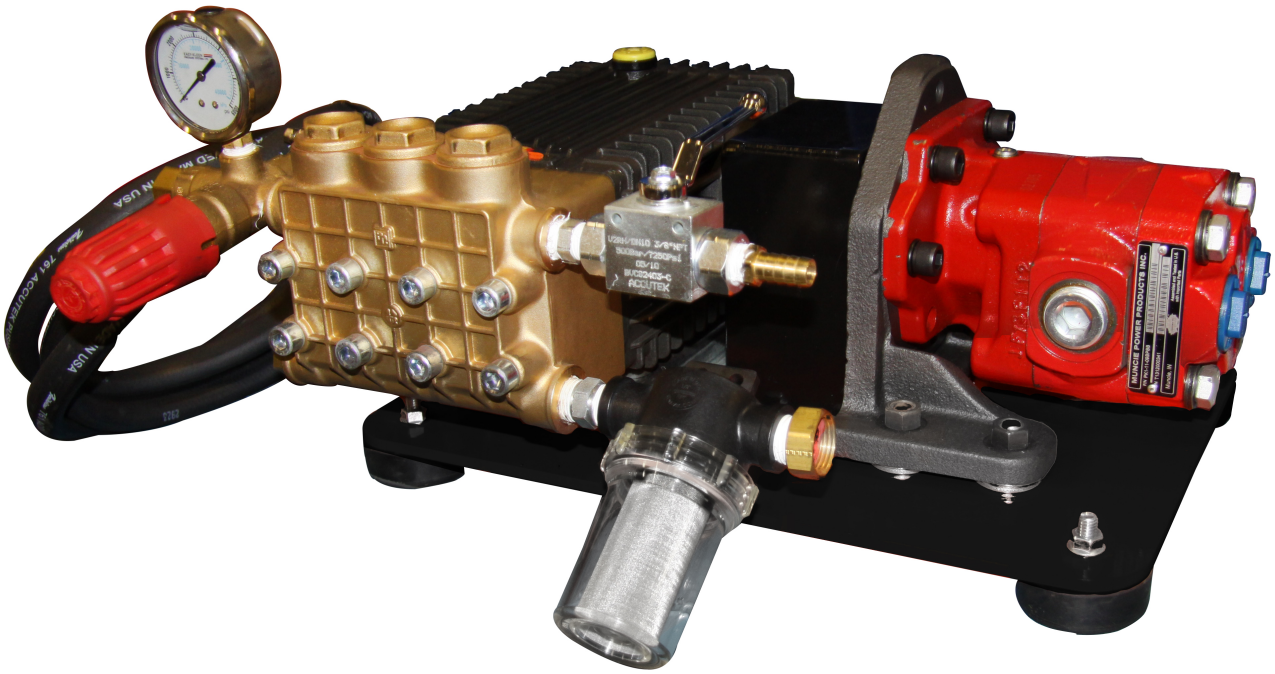
WATER CANNON

OWNER'S MANUAL

Hydraulic Driven
Pressure Washers



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WATER CANNON

1-800-333-9274

This manual contains operational information that is specific for commercial and industrial cold water, gas driven machines.

Read the following instructions carefully before attempting to assemble, install, operate or service this pressure washer. Failure to comply with these instructions could result in personal injury and/or property damage.

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IMPORTANT SAFETY INFORMATION

The safe operation of our pressure washing systems is the FIRST priority of WATER CANNON. This will only be achieved by following the operation and maintenance instructions as explained in this manual and all other enclosed manuals.

This manual contains essential information regarding the safety hazards, operations, and maintenance associated with this machine. The manual should always remain with the machine, including if it is resold.

ALL CAUTIONS AND SAFETY WARNINGS MUST BE FOLLOWED TO AVOID INJURY OR DAMAGE TO EQUIPMENT.

THIS EQUIPMENT IS TO BE USED ONLY BY TRAINED OPERATORS AND MUST ALWAYS BE ATTENDED DURING OPERATION.

***WARNING*: To reduce the risk of injury, read operating instructions carefully before using.**

Read the instructions in this manual carefully before attempting to assemble, install, operate or service this pressure washer. Failure to comply with the instructions could result in personal injury and/or property damage.

***WARNING*: Use protective eyewear and clothing when operating equipment in order to avoid personal injuries.**

***WARNING*: This machine exceeds 85db. Appropriate ear protection must be worn.**

***WARNING*: Keep water spray away from electrical wiring.**

All electrically powered equipment must be grounded at all times to prevent fatal electric shots. Do not spray water on or near electrical components. Do not touch electrical components while standing in water or when hands are wet. Always make sure machine is disconnected from power source before servicing.

***WARNING*: Risk of injection or severe injury to persons. Keep clear of nozzle spray.**

High pressure spray can cause serious injuries. Never point pressurized spray at any person or animal. Handle the spray assembly with care.

***WARNING*: Trigger gun kicks back. Hold with both hands.**

Hold firmly to the gun and wand during start up and operation of the machine. Do not attempt to make adjustments while the trigger gun is in operation.

Make sure all quick coupler fittings are properly secured before operating pressure washer.

***WARNING*: Risk of injury from falls when using ladder.**

Do not overreach or stand on anything unstable. Keep a good balance and make sure to keep a steady footing at all times.

***WARNING*: Protect from freezing.**

It is important to keep your machine from freezing in order to keep it in its best working condition. Failure to protect your machine from freezing may cause damage to the machine and personal injuries may occur as a result.

Do not attempt to operate this machine if fatigued or under the influence of alcohol, prescription medications, or drugs.

Some of the maintenance procedures involved in this machine require a certified technician (these steps are indicated throughout this manual). Do not attempt to perform these repairs if you are not qualified.

If you need further explanation of any of the information in this manual, suspend any activity involving the equipment and call our toll free number for assistance, 1-800-333-9274.

SPECIFICATIONS

Marine & Truck Series - Hydraulic				
MODEL	GPM	PSI	DRIVE	POWER
31HYD02	3	3000	COUPLING	6 GPM @ 2000 PSI
31HYD03	4	3500	COUPLING	7 GPM @ 2000 PSI
31HYD05	6	3500	COUPLING	9 GPM @ 2000 PSI
31HYD06	9	3000	COUPLING	16 GPM @ 2000 PSI
31HYD08	8	4000	V-BELT	18 GPM @ 2000 PSI
31HYD09	5	5000	COUPLING	18 GPM @ 2000 PSI
31HYD11	20	4000	COUPLING	54 GPM @ 2000 PSI

INTRODUCTION

Thank you for selecting a quality WATER CANNON product. We are pleased to have you included among the many satisfied owners of WATER CANNON cleaning machines. Years of engineering have gone into the development of these fine products and only top quality components and materials are used throughout. Each machine is carefully tested and inspected before leaving our plant to ensure years of dependable performance.

To continue to receive satisfactory performance, remembering that this machine represents a substantial investment on your part, and if properly cared for and maintained it will return this investment many times over. As with all mechanical equipment, your machine requires proper operation and maintenance as outlined in this manual for maximum trouble free life.

This manual has been prepared under the direction of our engineering and service technicians. Their experience in designing, manufacturing, installing and servicing our equipment from our company's inception is condensed in this manual. They know what information the end user needs in order to get the optimum performance from their pressure washer. Please read carefully.

This manual contains information that will be specific for your pressure washer, as well as similar models.

Carefully review any additional manuals that have been included with your system and follow ALL ADDITIONAL OPERATING INSTRUCTIONS AND SAFETY NOTICES. They are specific for the quality components that have been used to manufacture your machine and are an integral part of the operating and maintenance procedures.

The management & staff at WATER CANNON are proud of the equipment that we design and manufacture, and we thank you for making us your # 1 choice in pressure washers. If you have any questions please do not hesitate to call us, 1-800-333-9274.

Our goal is that you will be satisfied with the performance, quality, and service you receive from WATER CANNON and that if you need to replace this machine in years to come, you will give us the opportunity to continue supplying equipment to your company.

PLEASE READ MANUALS CAREFULLY BEFORE USING MACHINE. EXAMINE MACHINE AND CRATE CAREFULLY FOR SHIPPING DAMAGE OR MISSING PARTS. REPORT PROMPTLY ANY SHORTAGES OR DAMAGE CLAIMS TO FREIGHT CARRIER OR DEALER.

WINTER PUMP PROTECTION

The following procedure MUST be used when the pressure washing unit is stored at temperatures below freezing.

1. All water must be drained or blown (via compressed air) from system. Connect a short piece of male fitted ½" garden type hose on to the water inlet on the pump assembly.

2. Place the open end of the hose into a wide mouthed container of full strength, winter rated, vehicle windshield washing fluid or Anti-Freeze, **RATED FOR MINIMUM -40°C**.

3. Connect the pressure wand assembly.

4. Start the pump and engage trigger on the pressure gun. Operate the system until the fluid runs the same color as the windshield washing fluid. Your machine is now prepared for storage.

5. Disconnect fluid supply, blow out with compressed air, and cap end.

GENERAL MAINTENANCE

Water Condition

Use a softener on your water system if local water is known to be high in mineral content. The advantages of soft water are very beneficial: prevents scale buildup in heater coil, cleans better with considerably less detergent, and prevents streaking on painted surfaces and glass when rinsing.

MAINTENANCE CHECKLIST

Maintenance for Pump

Daily:

1. Check oil for proper level and adjust accordingly.

2. Examine the quality of the oil.

3. Check pump for oil and/or water leaks.

4. Inspect and clean inlet filters.

Weekly:

1. Examine all fittings, components, hoses, connections, and nozzles for damages, loose parts, or leaks. – Replace accordingly—

Recommendation for Oil Changes and Component Replacement:

1. Change the oil in the pump after the first 50 hours and every 500 hours after the initial oil change. Use SAE 30 W Non-Detergent for GP Pumps and Hydraulic 68 for EK Pumps.

2. Change all other components on the pump as needed.

GLOSSARY OF TERMS

PSI – Pounds per square inch. Pressure washers are designed and rated to operate at a specific PSI. Operating at pressures exceeding the maximum rating could result in damage to the unit and/or SEVERE PERSONAL INJURY.

GPM – Gallons per minute. The orifice on the pressure wand assembly has been selected to deliver up to the maximum GPM for your machine.

PRESSURE WAND ASSEMBLY – This refers to the gun, wand, and nozzle.

PUMP – The pump moves the water through the system and delivers it to the pressure wand assembly.

UNLOADER VALVE – Is a valve located at the head of the pump for unloading water back into the bypass when the trigger gun is shut off. It also reduces the load on pump when gun is off.

OIL, PUMP – The oil used within the pump to lubricate its operation. It is important to use only SAE 30 W Non Detergent (for GP Pumps) or Hydraulic 68 (for EK Pumps) in the pump.

BACK FLOW PREVENTER – Device to prevent flow backwards into potable water supply.

MAXIMUM WORKING PRESSURE - Each machine is equipped with a safety pressure relief valve which prevents over pressurization of the high pressure system. It is an important safety device and must not be tampered with in any way.

PRESSURE SWITCH - A pressure switch is used to control the motor for the auto stop/start feature (see diagram).

FLOW SWITCH – A flow switch is installed on the outlet of the water pump in auto stop/start models and will shut off the pump and motor in the absence of water flow as well as turning it back on when flow is detected (by squeezing the trigger).

WATER CANNON Pressure Washers

Service Manual

This manual is intended for technical personnel to assist in the diagnosis and repair of issues with pressure washers.

This manual is not intended for use by non-technical personnel.

It is advised to always refer to competent technical personnel when repairs are advised to avoid equipment damage or potential personnel injury.

If you have any technical questions please do not hesitate to call us at 1-800-333-9274.

TROUBLESHOOTING GUIDE FOR HYDRAULICS

Hydraulic analysis and proper repair require the use of a vacuum gauge and pressure gauge for testing.

POSSIBLE PUMP TROUBLE	CAUSE	CURE
Aeration and cavitation: noisy pump **Use Vacuum gauge to isolate problem.**	Low oil supply. Heavy oil / cold oil / wrong oil. Dirty suction strainer. Suction line too small. Restriction in suction line.	Fill to proper level. Change to proper oil. Clean and replace. Increase size. Remove and replace.
Pump takes too long to respond or fails to respond	Low oil supply. Insufficient relief valve pressure. Pump worn or damaged.	Fill to proper level. Use gauge to reset pressure. Repair or replace.
Oil heating up	Contamination in relief valve. Oil too light. Dirty oil. Oil level too low. Reservoir capacity too small. Insufficient relief valve pressure Pump slippage.	Remove. Drain and refill with proper oil. Drain, flush, refill with clean oil. Fill to proper level. Install oil cooler. Use gauge to reset pressure. or pressure too high. Repair or replace.
Oil foaming	Air leaking into suction line from tank to pump. Wrong kind of oil. Oil level too low. Improper tank or reservoir baffle. Return line above oil level. Damaged or worn shaft seal on pump.	Tighten all connections Drain & refill w/non-foaming oil. Fill to proper level. Baffle correctly. Install below oil level. Replace shaft seal(s).
Actuator slips	Contamination damages control valve and allows check valve to leak. Cylinder or piston packing defective. Valve is cracked. Spool not centering. Incorrect oil. Load check stuck.	Clean out the system. Repair or replace. Replace. Clean contaminants from valve or replace. Replace with correct oil. Open.

OIL RECOMMENDATIONS

Muncie does not promote specific manufacturers' brands of oil. Recommendations below are guidelines; consult oil manufacturer for exact application needs.

Viscosity Range:
- Viscosity Minimum: 50-60 SUS (7.5-10.5 cST)
- Viscosity Optimum Continuous: 60-100 SUS (10.5-21.6 cST)
- Viscosity Maximum @ Startup: 7500 SUS (1600 cST)
- Viscosity Index: 90 Minimum

Aniline Point: 175 Minimum

Pour Point: 15°F (-10°C) Maximum
Foam Resistance: Recommended
Rust Resistance Inhibitors: Recommended
Corrosion Resistance: Recommended
Oxidation Stability: Recommended
Anti-Wear Additive: .06% Zinc Minimum*

Note: Cold weather operation requires special oil considerations. Viscosity should not exceed 7500 SUS (1600 cST) at lowest startup temperature. Continuous operation should range between 60-1000 SUS (10.5-216 cST) for all temperature ranges. Never use diesel fuel or kerosene to thin oil.

*Anti-Wear Additives may be recommended by some motor manufacturers. However, they are optional and typically not required for gear pump or gear motors.

FLUID SYSTEM DIAGNOSTICS - Flow and Pressure

PROBLEM	POSSIBLE CAUSE	SOLUTION
No Flow	No power	Make sure pump is operating. Check drive belts, couplings and Hydraulic pressure, make necessary adjustments.
	Trigger gun valve	Check trigger gun, repair or replace.
	No water source	Ensure water supply is not restricted and hoses are in good repair and not kinked.
	Clogged spray nozzle	Check spray nozzle, repair or replace.
	Clogged inlet filter	Check inlet filter, repair or replace.
	Float Valve stuck (optional)	Float valves can become stuck in the "UP" position. Manually dislodge and inspect for problems.
	Faulty unloader valve	Remove and check for proper action, repair or replace.
Low pressure, adequate flow	Incorrect or no spray nozzle	Nozzle should be properly sized for the system. Low pressure indicates that the nozzle in use is too large.
	Worn spray nozzle	Replace nozzle when it shows signs of internal erosion.
	Debris in valves	Clean valves and check o-rings for pits and cracks.
	Lance on low pressure	Adjust pressure so the water flows through properly.
	Unloader is not adjusted correctly	Adjust unloader to proper level.
	Pressure gauge inaccurate	Use a new pressure gauge on a quick connect at outlet to check system pressure and replace if gauge is faulty.
	Pump packings bad	If low pressure persists, pump packings may need replaced.
Low pressure, low flow	Volume Improperly adjusted	If unit has volume adjustment, it may need readjustment
	Discharge leaks	Look for leaks on the discharge side of system.
	Downstream chemical injector (Dema)	Remove the injector and retest system. If the flow is restored, replace the injector.
	Loose drive belts	If belts do not have proper deflection, replace them.
	Pump not running at rated speed	Check engine throttle and see that the motor is rated for the same speed as the pump.
	Stripped pump drive coupling	Inspect coupling and repair or replace.
	Defective easy start valve (optional)	Check the start or throttle-back valve for proper operation.
	Malfunctioning motor or gear	Ensure that the motor or engine is working properly
	Unloader stuck in bypass	Piston assembly may be stuck or fouled
Low pressure, low flow - Bogs	Outlet restriction	Build up can restrict flow. If water is not flowing freely, flush with garden hose to isolate the clog or restriction.
	Clogged nozzle	Distorted spray pattern can indicate a clogged nozzle.
	Nozzle too small	Ensure nozzle is proper size for the system.
	Hose restriction	Correct any kinks or restrictions. Replace crushed hoses.
	Debris in the system	Debris can lodge in the discharge side of the system (valves, fittings, injectors, filters) Flushing with water may correct it.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Excessive pressure	Small spray nozzle	Nozzle must be properly sized for the rated flow and pressure. Reset unloader or pressure relief if nozzle size is changed.
	Faulty pressure gauge	Check the pressure gauge using a properly calibrated pressure gauge on quick connects at the equipment outlet.
	Improperly adjusted unloader	Adjust to the proper pressure using pressure gauge.
	Faulty unloader	Check the unloader action. If it is not working properly, it may need repaired or replaced.
Pump chatters, caviataion, vibration	Air in system	Inspect places where air can enter the system. i.e. fittings, hose, connections etc.
	Chemical line not submerged	If the chemical valve is on, ensure that the chemical line is fully submerged in the chemical
	Inlet line restricted	All inlet connections should be snug and not kinked to reduce the chances of pump starvation.
	Inadequate water supply	Water supply to the system must meet or exceed the rated flow (GPM) on the serial number plate. Faucet must be completely opened or water above the tank outlet in a gravity fed system.
	Float valve stuck (optional)	If float valve is stuck in the up position, water can not enter the float tank. Unstick valve if possible of replace if necessary.
	Turbulence in float tank (optional)	Excessive turbulence allows the pump to draw air into the system. Correct excessive turbulence.
	Inlet or inlet strainer clogged	Regularly clean the inlet and inlet strainer to keep debris from entering the float tank
	Water supply to hot	Inlet temperature should not exceed 140F - 160F range.
Inlet line vibrates	Air in system	Inspect places where air can enter the system, i.e.; fittings, hose, connections etc.
	Debris in inlet check valves	If there is no float tank and the outlet line does no vibrate, the inlet check valve may be clogged. Remove debris. Check o-rings under valves.
Outlet line vibrates	Air in system	Inspect places where air can enter the system, i.e.; fittings, hose, connections etc.
	Debris in inlet check valves	If there is no float tank and the outlet line does no vibrate, the inlet check valve may be clogged. Remove debris.
	Pump packing bad	If they show signs of ware or damage, replace them.
Inlet and outlet lines vibrate	Inlet and outlet check valves fouled	Look for the source of debris in the inlet and discharge check valves and remove.

FLUID SYSTEM DIAGNOSTICS - Unloader

PROBLEM	POSSIBLE CAUSE	SOLUTION
Very low or no flow	Unloader stuck in bypass	Isolate the flow problem. If it occurs before the unloader discharge point, check the piston assembly to see if it is fouled or stuck in bypass mode.
Unloader will not unload	Debris in unloader	Take bottom nut off unloader, identify ball, spring and seat. Clean out any debris and
	Sever leak on the outlet of unit	Check for leaks and repair.
Unloader (flow) cycles with system under pressure	Improper flow	Any variation in flow form what the orifice is sized can cause cycling. System must produce the rated flow constantly.
	Nozzle to small	A nozzle that is too small can cause the flow to be reduced.
	Nozzle clogged	A distorted spray pattern indicates a clogged nozzle.
	Improper unloader orifice	The systems rated output should indicate the proper sized orifice for your system.
	Unloader orifice clogged	Check the orifice for clogs and clear out any debris.
	Injector orifice clogged	If the system has a Venturi injector downstream of the unloader, check the orifice for clogs.
	Other downstream restriction	Scale buildup can restrict flow. Check; controls, valves, switches, trigger gun, and lance. Descale as necessary and begin preventive maintenance program for scale prevention.
	Pump not delivering the rated pressure	See low pressure or low flow diagnostics.
	High water supply pressure	Check inlet water supply for excessive pressure.
Unloader (flow) cycles with system in bypass	No restrictions on the unloader	Check unloader bypass port to see if a flow restrictor is properly installed. Install one if none is present.
	Downstream leakage (excessive)	Causes the unloader to since a continuing flow and divert it to the closed gun. Repair or replace.
	Accumulator downstream (option)	Remove the accumulator from the system.
Unloader (pressure) produces smooth flow & low volume	Unloader adjusted too low	Adjust the unloader using the pressure gauge for the correct pressure.
	Spray nozzle clogged	A distorted spray pattern indicates a clogged nozzle.
	Spray nozzle too small	A small nozzle causes a reduced flow and cycling may result.
	Injector orifice blocked	If the system has a Venturi injector downstream of the unloader, check the orifice for clogs.
	System not delivering rated flow	See flow diagnostics.
Unloader (flow) produces smooth flow & low volume	Unloader adjusted too low	Adjust unloader and regulator until proper pressure is achieved.
	Unloader valve stuck in bypass	If unloader is sticking, repair or replace as necessary.
	Restriction in system	Downstream restrictions can cause a reduction in flow. Check; controls, valves, switches, trigger gun, and lance. Descale as necessary and begin preventive maintenance program for scale prevention.

Unloader (pressure) produces low flow and normal pressure	Unloader adjusted too low	If the unloader is diverting flow to bypass it may be adjusted too low, readjust as necessary.
	Spray nozzle to large	Ensure the proper nozzle is installed on system.
	Internal nozzle erosion	The number of hours of usage can give you a clue to the extent of the ware. If in doubt, change
	Insufficient pump pressure	Check pump seals and packings and tighten drive belts.
Unloader (flow) produces low flow & normal pressure	Unloader adjusted too low	If unloader is diverting flow to bypass, readjust using the pressure gauge.
	Nozzle too large	Ensure the proper sized nozzle is being used.
Unloader (pressure) leaks from main spring or adjusting bolt	Shaft O-ring in valve body warn	Check O-rings for ware or damage and replace as necessary.
Unloader (flow) pressure increases when trigger released	Unloader piston stuck or frozen	Check unloader shaft for proper action. Unstick piston and shaft or replace unloader.
	Bypass port clogged or restricted	Ensure that unloader bypass port is not clogged
	Excessive tension on main spring	If tension is incorrect, adjust or replace as necessary.
Unloader (flow) leaks water around adjusting bolt	Sleeve O-ring worn	Check O-rings for ware or damage and replace as necessary.

FLUID SYSTEM DIAGNOSTICS - Leaking

ANY LEAKS SHOULD BE REPAIRED ASAP TO PREVENT DAMAGE TO THE SYSTEM.

PROBLEM	POSSIBLE CAUSE	SOLUTION
From inlet	Garden hose washer	Ensure the washer is present and in good condition.
From low pressure (inlet) line fittings	Loose clamps or connections	Low pressure line should be properly sealed on barb and tightly clamped.
From float tank (option)	Float tank full of water or stuck	If float is not floating above water, check the float to see if it has filled up with water. If necessary, drain and seal.
From pressure fittings	Fittings not tightened or taped, or cracked	Usually metal to metal fittings should be taped with Teflon tape or lock tight to provide a tight seal. (unless
From quick connects	Bad o-rings	If quick connect o-ring shows wear or damage, replace it.
From pump	Bad packing	If the seal leak is detected under the pump manifold, packing may be worn and in need of replacement.
From trigger gun	Bad rod o-ring	If o-rings show wear or damage, they may need replaced.
	Stripped connectors	Physical damage may not be apparent, but unseen warping from freezing or extreme pressure can still cause leakage.
From nozzle	Weep gun (optional)	If a weep gun has been installed, check the gun valve seat to ensure it is functioning properly.
	Damage gun valve ball or seat	Inspect trigger gun valve assembly for damage or ware to ball or seat. Lodged debris can stop valve from closing. Repair with kit or replace.
From unloader	Bad o-rings or seals	If quick connect o-ring shows wear, damage or improper seating.
From variable pressure Lance (option)	Bad o-rings at adjusting knob	Inspect o-rings for ware or damage and replace as necessary.
Unloader will not unload	Debris in unloader	Take bottom nut off unloader, identify ball, spring and seat. Clean out any debris and reassemble.
	Sever leak on the outlet of unit	Check for leaks and repair.
From pressure relief valve	System over pressure	See pressure and flow diagnostics to find the cause of the excessive pressure and correct it.
	Clogged nozzle	Spray pattern will be distorted if nozzle is clogged, clean out.
	Trigger gun valve not working	If trigger gun valve action is not correct, repair or replace.
	Excessive pressure spike	If water spurts from valve when trigger is released, check unloader adjustment. Pressure spike should be below the level where pressure relief valve is activated.
	Wear or damage to ball or seal	Inspect ball and seal for damage and adjust as necessary.
	Improper relief valve adjustment	Adjust valve properly.

FLUID SYSTEM DIAGNOSTICS - Trigger Gun/Spray Nozzle

PROBLEM	POSSIBLE CAUSE	SOLUTION
No nozzle flow from nozzle when trigger depressed.	Broken piston rod in trigger gun	If water flows through discharge hose without gun, check trigger gun valve piston rod and replace if necessary.
	Missing metal insert in trigger gun (European style gun)	Inspect to assure insert is in place.
	Blockage in system past gun	Check nozzle or spray accessory for blockage and clear it.
Excess pressure when trigger gun is released	Excessive pressure spikes	After unloader increases pressure to a maximum, further adjustment will only increase the pressure spikes. Re-adjust.
Flow not stopping when trigger gun released	Broken return spring on trigger gun	If trigger action is too loose, return spring may need replaced.
	Debris in gun valve	Debris in gun valve can stop piston return. Clear debris.
Trigger action sticks	Keeper plug too tight	It may be possible to loosen plug slightly without leakage but it will likely need replaced.
Trigger gun leaks	Worn or bad o-ring	Check trigger gun o-rings for ware or damage and replace.
	Stripped or loose connections	Physical damage may not be apparent but unseen warping from freezing or sever overpressure may still cause leaking.
No chemical	Chemical valve closed Black nozzle	Open chemical valve. If It chatters with no chemical delivery, air is being drawn from the upstream side of the pump. Check fittings, connections and ensure the inlet line is fully submerged into the chemical jug.
	Chemical dried up in the injector	Inspect and clean as necessary.
	Chemical foot strainer clogged	May be a strainer or check valve. Ensure that the ball is not stuck or clogged.
	Chemical line kinked	Chemical line kinking or binding prevents chemical delivery.
	Chemical line too long	An overly long chemical line can prevent the pump from drawing chemical into the system. Try installing a shorter line.
	Chemical too dilute	Verify chemical strength.
	No adjustment for low pressure	Downstream injectors only - Low pressure is required for most injectors to draw chemical. If no adjuster exists it may need low pressure spray nozzle installed on the lance.
	Incorrect injector orifice	If not properly sized for the systems rated output, chemical delivery problems will result. Check serial plate for specs.
Excessive chemical	Valve improperly adjusted, check knob on injector	To properly adjust, a chemical flow meter may be used to precisely measure chemical flow.
	Chemical dilution to strong	Verify chemical strength.
Spray pattern irregular	Clogged nozzle	Spray pattern will be distorted if nozzle is clogged.
Volume proper, pressure low	Nozzle to large	Ensure that the nozzle is sized properly sized for the system
	Internal nozzle wear	A loss of pressure may result form gradual nozzle wear. Replace a nozzle of correct size.
Pressure proper, volume low	Clogged nozzle	Spray pattern will be distorted if nozzle is clogged. Check nozzle for clogging if the unit has a pressure unloader.

MANUFACTURER'S WARRANTY

Thank you for your purchase of a Water Cannon pressure cleaning system. All original equipment are warranted for a specific period and on the conditions set forth, that the product is free from defect in materials and workmanship as follows:

AUG 1st, 2019

Electric Motors	Electric Motors	18 Months
	3 Phase (Manufactures Warranty)	36 Months
	For warranty for these items manufacturer needs to be contacted	
Oil Burners	Igniters, Fuel Solenoid, Burner Motor, Fuel Assembly, Drive Shaft, Electrodes Blower, Wheel Fuel Pump	1Year Parts
Propane / Natural Gas Burners	Burner Rings, Gas Valves, Gas Valve Control Board	1Year
Fitting	All Fittings, Brass Stainless Steel, Steel, Etc.	30 Days
Heating Coils	5 Years Prorated	
	1Year Replacement	
	25% Year each year for 4 Years	
Gas Motors	Honda and Kohler have manufacture warranty. Manufacturer does not cover fuel systems.	
Lifan Motor	Contact Water Cannon for Warranty	1Year (for commercial use)
Frames	Limited warranty on Frames, Belt Guard, Welds due to manufacture defect.	
	Paint is not covered under the manufacture warranty due to the aggressive environment or natural wear.	
Plastic Tanks	Water or Fuel	1Year
Accessories/ Wear Items	Unloader, Regulating Valves, Safety Valves, Jetter Valves, Check Valves, Foot Valves, Pulsation Dampeners, Trigger Guns, Rotary Nozzles, Chemical Injectors, Hose, Hose Reels, Sandblast Kits, Surface Cleaner, Water Broom, Water Strainer, Belts, Ball Valves, Swivels, Balanced Relief Valves, Accumulator Lances	90 Days
Electrical Components	Switches, Time Over Loads, Contactors, Transformer, Thermostat, Vacuum Switches, Flow and Pressure Switches, Relays	90 Days
No Warranty Items	Fuel Filters, Nozzles, O- Rings, Thermo Relief Valves (Pump Seals, Valves, Plungers)	
ANY PARTS NOT LISTED ABOVE CALL FOR WARRANTY TIME FRAMES		

NOTE* Due to original equipment manufacturer's requirements, Water Cannon is not permitted to perform warranty repairs or claims for electrical motors, gas, or diesel engines. Please contact Water Cannon service department for a local warranty representative.

LIMITATIONS OF LIABILITY

Water Cannon liability for special, incidental, or consequential damages is expressly disclaimed. In no event shall Water Cannon's liability exceed the purchase price of the product in question. Water Cannon makes every effort to ensure that all illustrations and specifications are correct, however, these do not imply a warranty that the product is merchantable or fit for a particular purpose, or that the product will actually conform to the illustrations or specifications. Our obligation under this warranty is expressly limited at our option to the replacement or repair at our manufacturer location, is such part or parts at inspection shall disclose to have been defective. Water Cannon does not authorize any other party, to make any representation or promise on behalf of Water Cannon or to modify the terms, conditions, or limitations in any way. It is the buyer's responsibility to ensure that the installation and use of Water Cannon products conform to local codes. While Water Cannon attempts to ensure that its products meet national codes, it cannot be responsible for how the customer chooses to use or install the product. THE WARRANTY CONTAINED HEREIN IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY.

Water Cannon reserves the right to make any changes to a Water Cannon product at any time without incurring any obligation with respect to any product previously, ordered, sold, or shipped.

PUMP WARRANTY TIME LINE		
Cat Pumps	Direct Drive Pumps	2 Years
	Car Wash Pumps (Including all models used in Car Wash or Portable Fresh Water Pressure Cleaning applications	5 Years
	All other pumps not listed above	1 Year
Giant Pumps	Pressure Washer and Self- Serve Car Wash Applications	5 Years
	All other Giant Pumps, Industrial and Consumer Pumps	1 Year
	Lifetime on Manifolds due to Manufacture defects	
AR Pumps	Plunger Pumps	5 Years
	Axial Pumps	1 Year
	AR Accessories	90 Days
General Pumps	Manifolds	5 Years
	Pressure Washer Pumps	5 Years
EK Pumps	Manifolds	5 Years
	Pumps	1 Year
	Accessories	90 Days
	Manufacturer does not cover wet end of Pump Seals, Valve Plungers.	

WARRANTY REPAIRS

Warranty claims must first contact Water Cannon's Service Department to be issued a preauthorized repair number (PARN). You will need a copy of your invoice and the equipment serial number.

If new parts are needed, they will be invoiced to you as normal. Defective parts are to be sent to us PREPAID for warranty and consideration. If a part is found to be defective, a credit will be issued to cover the costs of parts. All work is be performed at the manufacturers' place of business when returned PREPAID. This warranty will not cover labor if warranty work is conducted at the customer's place of business. Road service will be charged at the normal rate in these situations.

WARRANTY DOES NOT COVER:

- When warranty part is warrantied the warranty time frame does not re-start.
- Warranty freight cost will be covered by Water Cannon for the first 30 days of sale of the machine due to manufacture defect or workmanship.
- Neglect of the periodic maintenance as specified in the owner's manual.
- Improper repair or maintenance.
- Operating methods other than those indicated in the owner's manual.
- The use of non-genuine Water Cannon parts or accessories other than those approved by Water Cannon
- Exposure of chemical agents, such as: Sea Water, Sea Breeze, Salt, or other environmental phenomenon.
- Collision, fuel contamination or deterioration, neglect, unauthorized alteration or misuse.
- Warranty does not cover travel or time if a service call is needed.
- Warranty does not apply when pump or accessory is altered or used in excess of recommended speeds, pressure, temperatures, or handling fluids not suitable for pump or accessory material.
- Construction warranty does not apply to normal wear.
- Warranty does not apply to normal wear (such as but limited to seals, packing valves, plungers and sealing O-Rings), freight damage, freezing damage or damage caused by parts or accessories not supplied by Water Cannon.
- After 30 days freight will become chargeable.
- Warranty covers In-House Labour and Parts if manufacture defect at a Water Cannon Service Center.

WARRANTY DOES NOT COVER DEFECTS CAUSED BY:

- Improper or negligent operation or installation, accident, abuse, misuse, neglect, unauthorized modifications, including, but not limited to, the failure of the customer to comply with recommended product maintenance schedules.
- Improper repairs
- Neglected maintenance/incorrect operation (specified in the Owner/Operator's Manual
- Unapproved devices or attachments
- Water sediments, rust corrosion, thermal expansion, scale deposits or a contaminated water supply or use of chemicals not approved or recommended by Water Cannon Pressure Systems Ltd.
- Improper voltage, sudden voltage spikes or power transients in the electrical supply
- Usage which is contrary to the intended purpose of the equipment
- Natural calamities or disasters including, but not limited to, floods, fires, wind, freezing*, earthquakes, tornados, hurricanes and lightning strikes

*Includes damage done to components that come in contact with water as a result of freezing in a non-winterized machine.