QuakerBlast.com

Built for Performance, Efficiency, Durability, and Reliability

Industrial Hot Water Electric Driven Natural Gas and Propane Fired

OWNER'S MANUAL

C ETL US LISTED
Intertek

1-877-461-3500 • sales@quakerblast.com • www.quakerblast.com

QuakerBlast Pressure Cleaning Systems

1-877-461-3500

This manual contains operational information that is specific for the gas fired, electric driven models.

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.

Table of Contents

IMPORTANT SAFETY INFORMATION

The safe operation of our pressure washing systems is the FIRST priority of QuakerBlast. 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.**

1. 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.

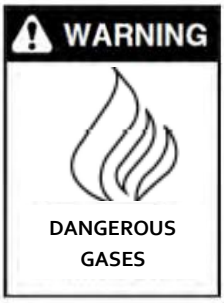
***WARNING*: Use protective eyewear and clothing when operating equipment in order to avoid personal iniuries.**

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

***WARNING*: Risk of explosion. Operate only where open flame or torch is permitted.**

***WARNING*: Flammable liquids can create fumes which can ignite, causing property damage or severe injury.**

2. Be thoroughly familiar with all controls and know how to stop the machine in the event of an emergency.



***WARNING*: Dangerous Gases**

3. If you smell gas, shut off the gas supply to the appliance, extinguish any open flame, and test all joints with a soap solution. If the odor persists, call your gas supplier immediately.

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

4. All electrically powered equipment must be grounded at all times to prevent fatal electric shocks. 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. Ensure machine is plugged into a ground fault interrupter.

***WARNING*: Risk of asphyxiation. Use this product only in a well-ventilated area.**

5. Use equipment in a well-ventilated area to avoid carbon monoxide poisoning or death. This machine must never be connected to a Type B gas vent.

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

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

***WARNING*: Risk of injury. Hot surfaces can cause burns.**

***WARNING*: Hot discharge fluid. Do not touch or direct discharge stream at persons.**

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

7. 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.

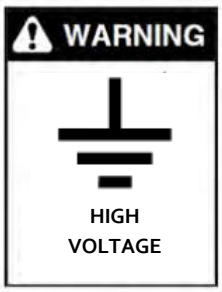
8. Make sure all quick coupler fittings are properly secured before operating pressure washer.

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

9. 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.**

10. 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.



***WARNING*: High Voltage**

11. For machines with an electric motor or 120v burner – THE MACHINE MUST BE ELECTRICALLY GROUNDED. Must be connected to a GFCI (Ground Fault Circuit Interrupter). All Service Must be done with the machine disconnected from the supply circuit.

12. Belt guard is integrated into shroud, revealing moving parts when opened. DO NOT OPERATE MACHINE WHEN SHROUD IS OPEN.

13. Protect high pressure hoses from sharp objects and vehicles. Inspect condition of hoses prior to use, or serious injury could occur.

14. Do not pass acids or other caustic or abrasive fluids through the pump.

15. Never run pump dry of water or oil or let the pump run with the trigger released for more than 2 minutes.

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

17. 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, 1-877-461-3500.

MODEL SPECIFICATIONS

Industrial Hot Water Electric – Natural Gas and Propane Fired				
MODEL*	**GPM**	**PSI**	**BTU**	**VOLTAGE**
QUAKER-10-GP	4	3000	400,000	7.5HP/220V/1 Phase 7.5HP-208/440/575V-3 Phase
QUAKER-10-GP-HR	4	3000	400,000	7.5HP/220V/1 Phase 7.5HP-208/440/575V-3 Phase
QUAKER-10-GP-SS	4	3000	400,000	7.5HP/220V/1 Phase 7.5HP-208/440/575V-3 Phase
QUAKER-10-GP-HR-SS	4	3000	400,000	7.5HP/220V/1 Phase 7.5HP-208/440/575V-3 Phase
QUAKER-11-GP	5	5000	500,000	20HP-208/440/575V-3 Phase
QUAKER-11-GP-HR	5	5000	500,000	20HP-208/440/575V-3 Phase
QUAKER-11-GP-SS	5	5000	500,000	20HP-208/440/575V-3 Phase
QUAKER-11-GP-HR-SS	5	5000	500,000	20HP-208/440/575V-3 Phase

***Quaker 10 add for Propane (- LP) and Natural Gas (-NG)**
***Quaker 11 add for Propane (- LP) and Natural Gas (-NG)**

INTRODUCTION

Thank you for selecting a quality QuakerBlast product. We are pleased to have you included among the many satisfied owners of QuakerBlast 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, remember 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 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 QuakerBlast 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 at 1-877-461-3500.

Our goal is that you will be satisfied with the performance, quality, and service you receive from QuakerBlast 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 DAMAGES TO FREIGHT CARRIER OR DEALER AND TO QUAKERBLAST TO PURSUE A CLAIM.

OPERATING INSTRUCTIONS

1. **Perform pre-start maintenance** inspection on all applicable systems prior to operating machine. This is essential for the safe, effective, and efficient operation. You will get optimum performance from your system ONLY if these instructions and inspections are followed. Any indication that the pressure washing system was not operated and maintained according to these instructions may cancel the manufacturers' warranty.

Location – See Installation Instructions in the included Water Heater Manual.

Controls – Make sure all controls are turned to off position.

Pump – Oil level - Level the pressure washer. Be sure oil level in pump is correct on dip stick. If the level is low, add the correct oil to the proper level. **USE ONLY SAE 30 W NON-DETERGENT OIL OR HYDRAULIC 68. DO NOT OVER FILL.**

Visually inspect all electrical components to assure they are in good condition, showing no signs of exposure, breakage or splicing.

Visually inspect all hoses, nozzles and guns to assure they are in good condition. If replacements are necessary they must be rated to withstand machine's maximum operating pressure and temperature.

2. **Attach high-pressure hose** to hot water outlet quick connector. Attach the other end of high pressure hose (with quick coupler) to spray gun. Ensure that quick disconnect connections are tightly locked together. Apply a sharp pull on hose to confirm they are secured.

Attach wand nozzle specific to task requirements (i.e. chemical or pressure wash).
[Quick Coupling Operation – Pull back sleeve end and insert male end into nozzle quick coupler, release sleeve and confirm connection by pulling on nozzle].

3. **Attach water source** to water inlet located in front of float tank. The water source must be attached with a good quality standard garden type hose (1/2" minimum is required). Connect male fitting into female pump inlet fitting. Make sure that the inlet screen/filter is intact and fitted correctly. Turn on water source. WATER MUST BE IN SUFFICIENT SUPPLY AND PRESSURE MUST BE BETWEEN 20 –60 PSI TO ENSURE PROPER AND SAFE OPERATION. Specific attention should be given if using a well water supply. Ensure water is flowing from end nozzle with the trigger gun pulled. Deplete system of all air.

4. **Start electric motor and switch on burner.** PUMP and BURNER switches are located on electrical box. For Manual Stop/Start: Turn BURNER switch to 'PUMP', adjust the burner thermostat to desired temperature, then turn BURNER switch to 'BURNER'.

For Auto Stop/Start: Turn PUMP switch to 'ON', adjust burner thermostat to desired temperature, then turn BURNER switch to 'ON'.

5. Burner operation
Be sure water is flowing through water heater coil before turning on burner switch. Turn thermostat to desired temperature. Burner will ignite and remain in operation as long as there is

sufficient water flow to satisfy pressure switch and outlet temperature is below the thermostat set point.

IF YOU EXPERIENCE IGNITION FAILURE, DO NOT ATTEMPT TO RESTART BURNER! EXCESS FUEL AND VAPORS MAY HAVE ACCUMULATED, AND THE CHAMBER MAY BE HOT. THE UNIT MUST COOL DOWN BEFORE RESTART CAN BE ATTEMPTED.

Warning: Condensation on Coil
When cold water is being pumped through heater coil, and burner is firing, condensation may form at times on coil and drip down into the burner compartment. This can be particularly noticeable on cold, humid days giving the false appearance of a leaking coil. A leaking coil or system will be evident if the pump keeps cycling with the wand off. Pump head pressure should read '0'.

WARNING: All electrically powered units must be provided with suitable overload and overcurrent protection in accordance with the Canadian Electrical Code part 1. Confirm the GFCI (Ground Fault Circuit Interrupter) is in good working order (press the test button and reset).

6. **Pressure adjustment** - The pressure regulator (unloader) is located on pump (see pump assembly diagram). It controls pressure being generated by the pressure washer. This regulator may be adjusted to desired pressure by turning the adjustment knob. Turning the adjustment knob clockwise will increase the pressure. **NEVER OPERATE SYSTEM AT A HIGHER PSI THAN THE MAXIMUM RATING**. This machine has been adjusted to operate at a specific maximum pressure as per machine specifications. Pressure may be reduced for lighter use by turning the Pressure Regulator/Unloader counter clockwise. If continuing to turn the unloader clockwise does not increase the pressure, then this implies the maximum has been reached for the system. Any further turning of the unloader will cause the pressure to spike when the wand trigger is released, resulting in possible damage to the machine. To avoid this effect, loosen the unloader (counter-clockwise) until the pressure just starts to drop (see pump head pressure gauge) and until it no longer exceeds the maximum pressure rating for the machine.

7. **You are now ready to start the cleaning operation** - Pull trigger on pressure wand assembly to start cleaning. To stop the pressurized water, release the trigger. DO NOT LEAVE UNIT RUNNING WHEN NOT IN USE.

8. **To stop Operation** – turn BURNER switch to 'OFF'. Allow motor to continue running. Pull gun trigger to allow water to run through coil for approximately 2 minutes prior to completely shutting off system. This process will allow coil to cool down. After the cooling period is complete, turn off motor and pump by turning PUMP switch to 'OFF'. Squeeze and release trigger for the second time in order to relieve pump system of pressure.

9. **Prior to storage** – Inspect the pressure washer for any damage or required maintenance. Do not expose machine to temperatures below freezing (0ºC/32ºF).

10. **Warning** – If unit is left running while not in use, pump damage will occur. Do not leave unit running while not in use!

CHEMICAL APPLICATION

Downstream Chemical Injection: Standard (Direct Drive Units) High Pressure Soap (Belt and Flange Driven Units)

NOTE: Do not remove back flow preventer as chemical may flow back into potable water source. For standard chemical injection, ensure the black nozzle is properly fitted at the end of the wand. The chemical injector will not function if this nozzle is not fitted.

1. Chemical preparation – Select detergent/chemical that best suits your cleaning task. Prepare dilution according to the manufacturer's instructions. The volume of chemical being used may be adjusted at valve located on the chemical injector. Note: for EK Pumps, the volume is preset and cannot be adjusted.

2. Insert the intake hose, located on the chemical injector at the pump, into the chemical being used.

3. Fit black nozzle on the standard wand, or for the dual wand, turn adjustment knob on, and adjust for required flow rate. For high pressure soap systems, the black nozzle is not needed; use one of the other wand nozzles.

4. To apply chemical, engage trigger on pressure wand assembly. Turn chemical injector's nipple to adjust flow. For the high pressure soap systems, open ball valve and engage trigger.

5. Chemical can now be applied through pressure wand assembly. It will take 5 – 15 seconds for chemical to travel to spray nozzle. The volume of chemical being used may be adjusted at the chemical injector.

6. For best results apply chemical from bottom to top, and allow for proper penetration time prior to rinsing. Do not allow chemical to dry. Rinse from bottom to top and then top to bottom.

GENERAL MAINTENANCE

Burner Maintenance

Repair of the burner is to be done by authorized and trained burner professionals only. See the included hot water heater manual for more information.

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, prevents streaking on painted surfaces and glass when rinsing.

Descaling Heater Coil

Descaling of the heater coil is to be done by authorized and trained burner professionals only. See the included water heater manual for more information.

MAINTENANCE CHECKLIST

Daily

1. Check pump oil for proper level and adjust accordingly.

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

3. 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

AUTO START/STOP – Unit will automatically start when the trigger is pulled, and it will stop the motor on time delay after the trigger has been released in order to prevent the pump from bypassing and overheating.

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 (GP Pump) or Hydraulic 68 (EK Pump) in the pump.

BURNER – The burner heats the water in hot water pressure washers. It is located under the coil.

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

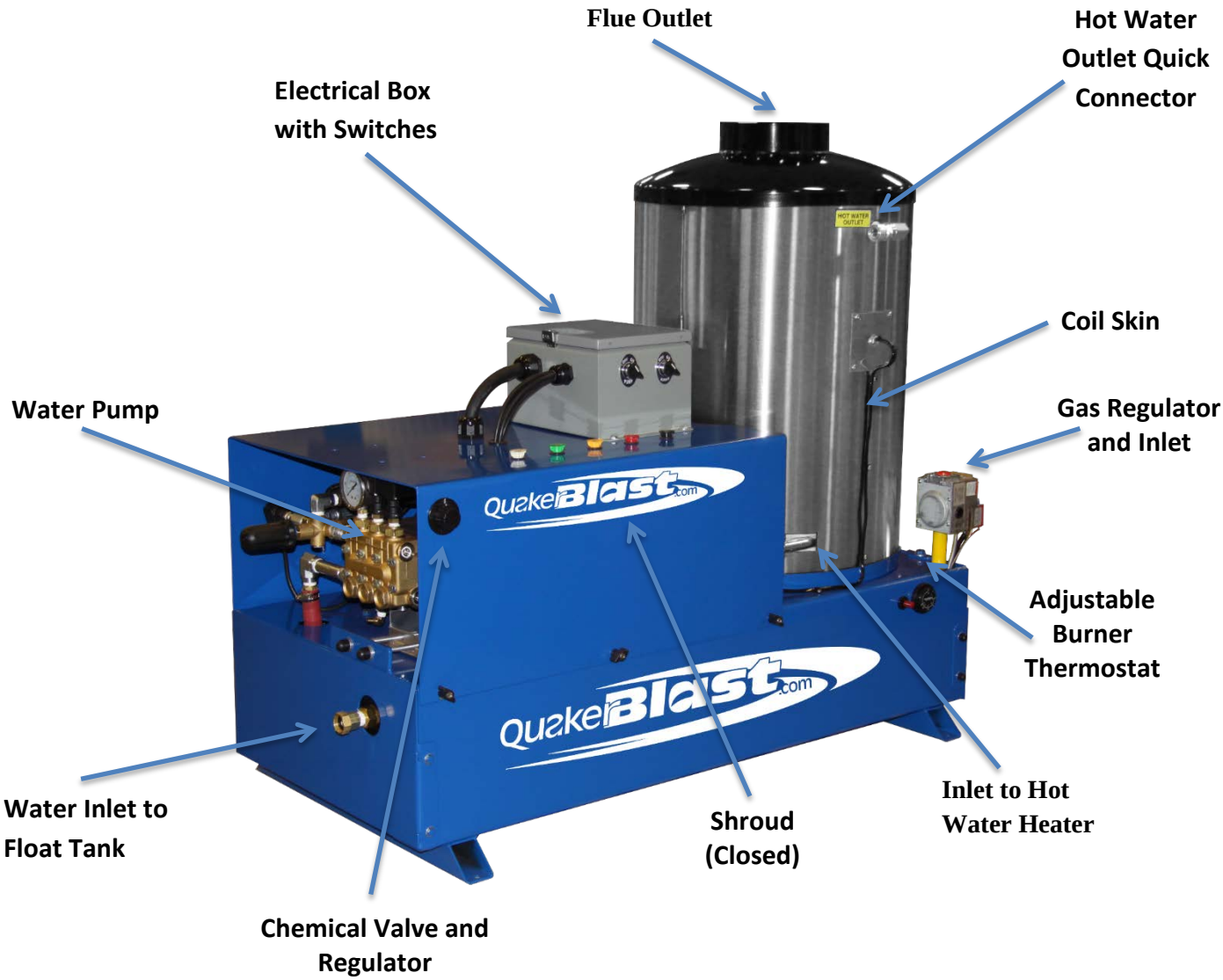
MAXIMUM WORKING PRESSURE - The water heater coils are designed to operate safely at normal working pressures. Each machine is equipped with a safety pressure relief valve which prevents over pressurization of the high pressure system. It is an important safety device and must not be tampered with in any way.

TEMPERATURE CONTROL - The water heater is equipped with a temperature control which shuts down the burner in the event of excessive outlet temperature caused by insufficient water flow through the heater coil.

PRESSURE SWITCH - A high pressure switch is used to control the burner. It is part of the burner control system (see pump assembly diagram).

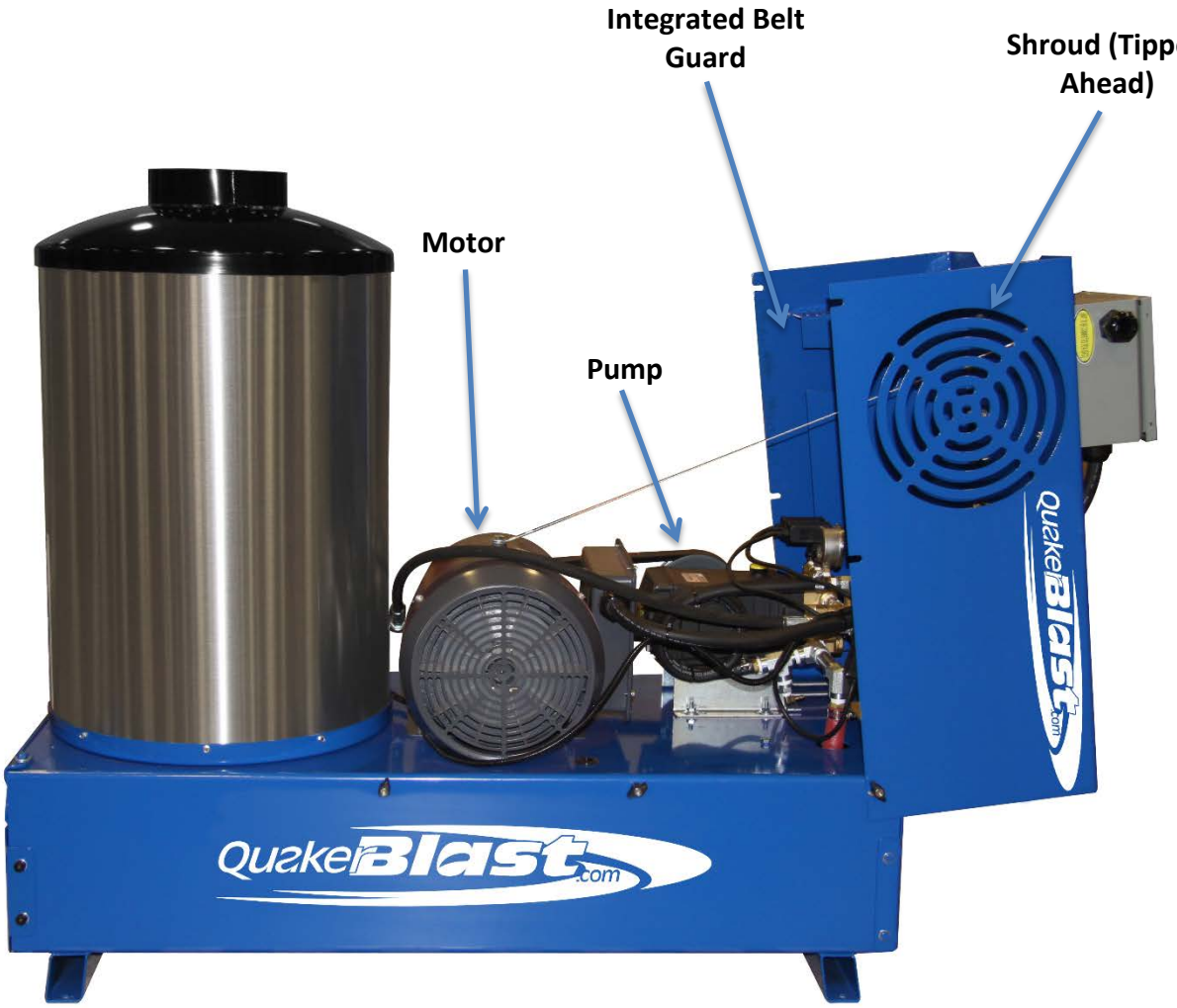
FLOW SWITCH - A flow switch is installed on the outlet of the water pump and will shut off the pump and motor in the absence of water flow as well as turning it back on when flow is detected (by squeezing the wand trigger).

Closed Shroud:

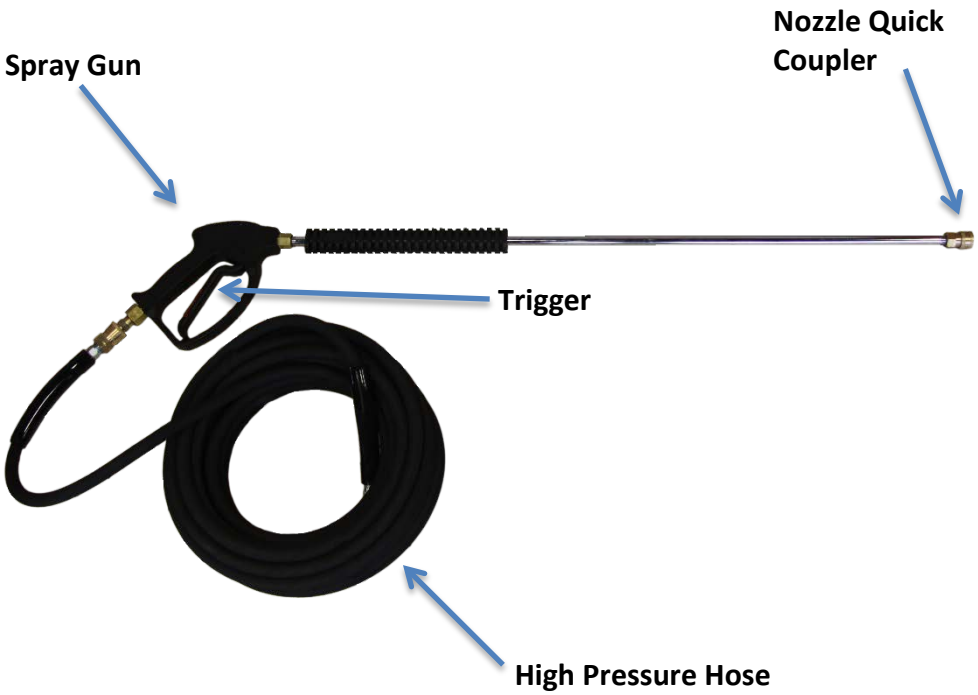


PUMP & BURNER Switches

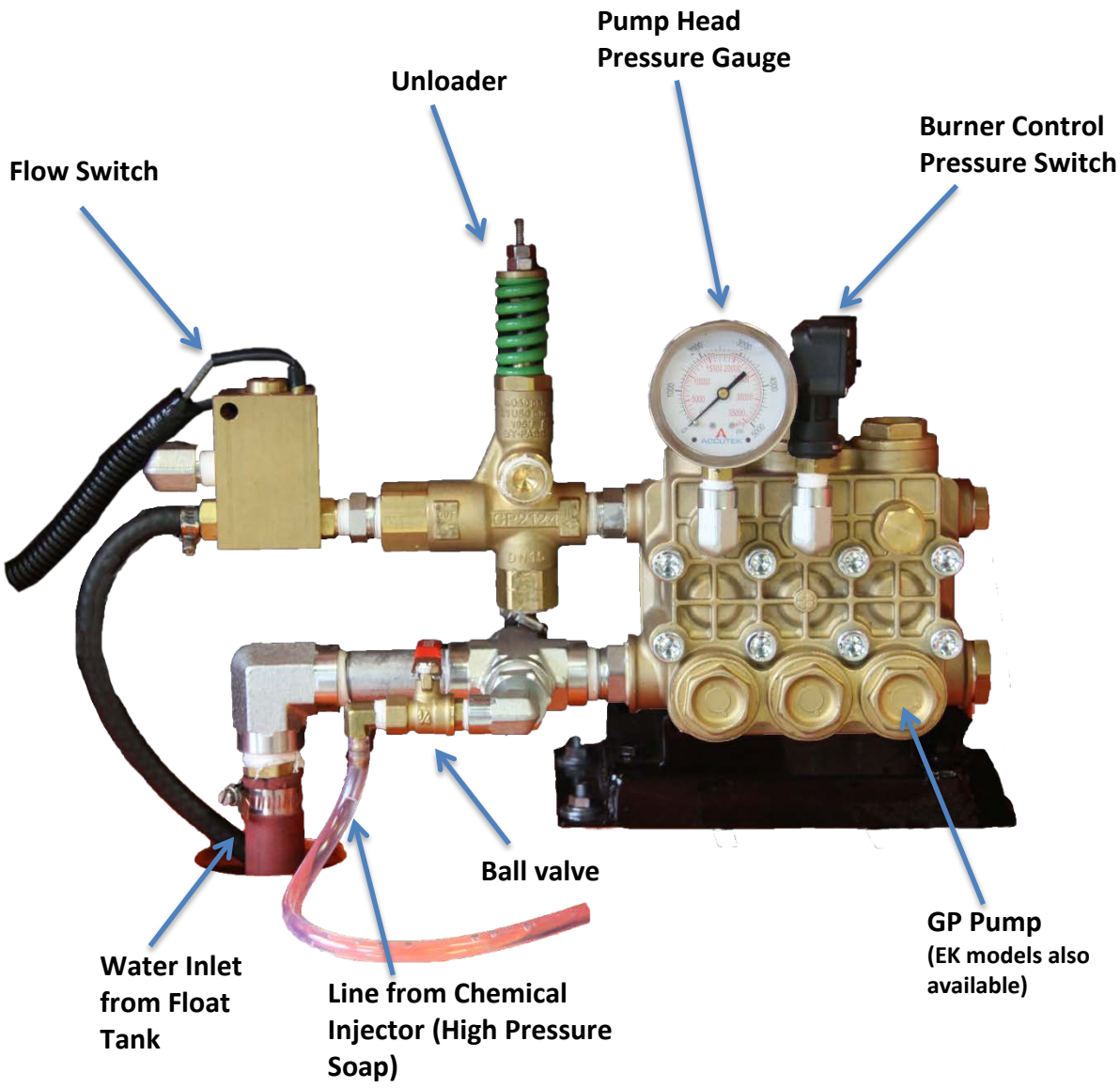
Open Shroud:


Integrated Belt Guard
Shroud (Tipped Ahead)
Motor
Pump
QuakeBlast.com
QuakeBlast.com

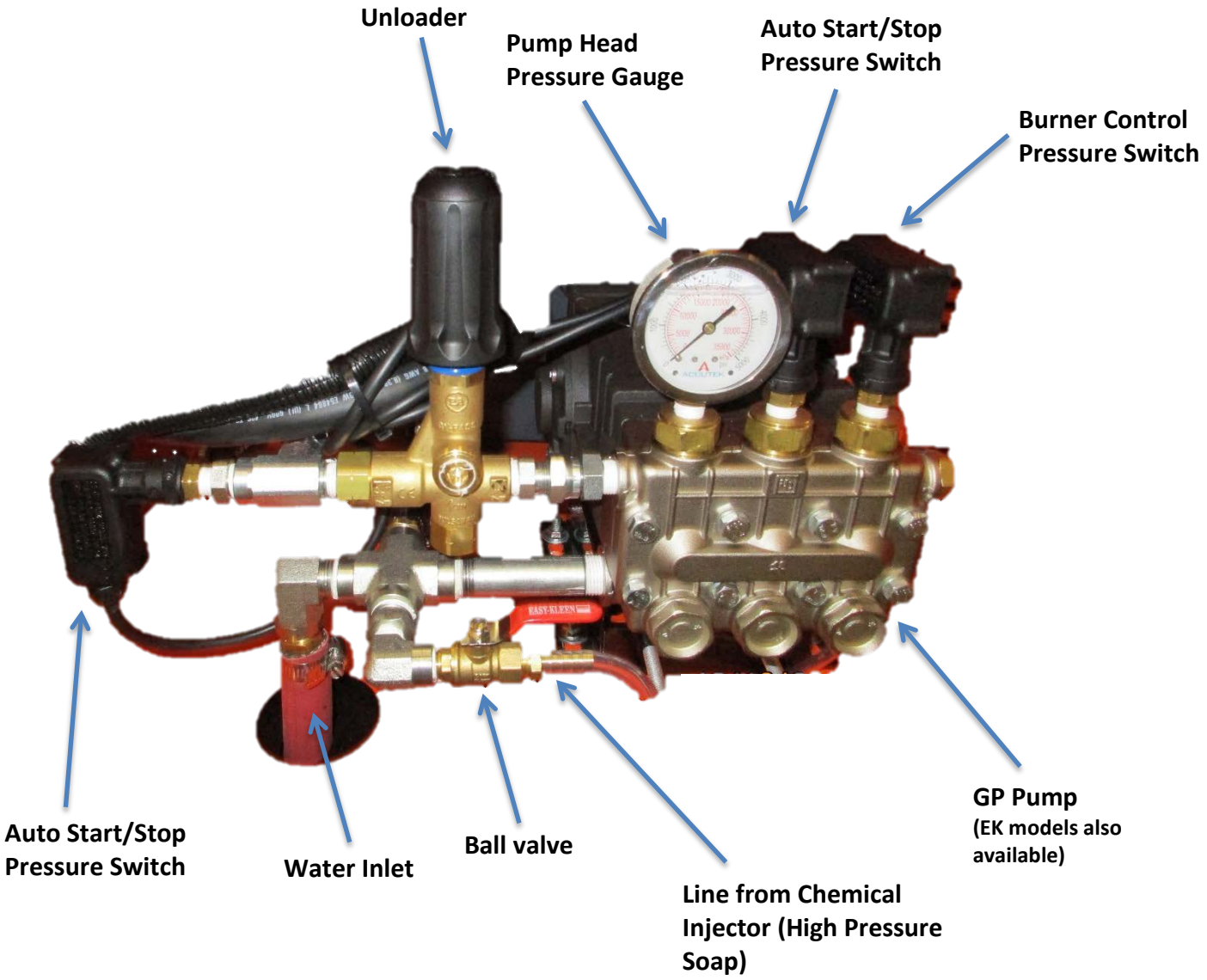
Pressure Wand Assembly:



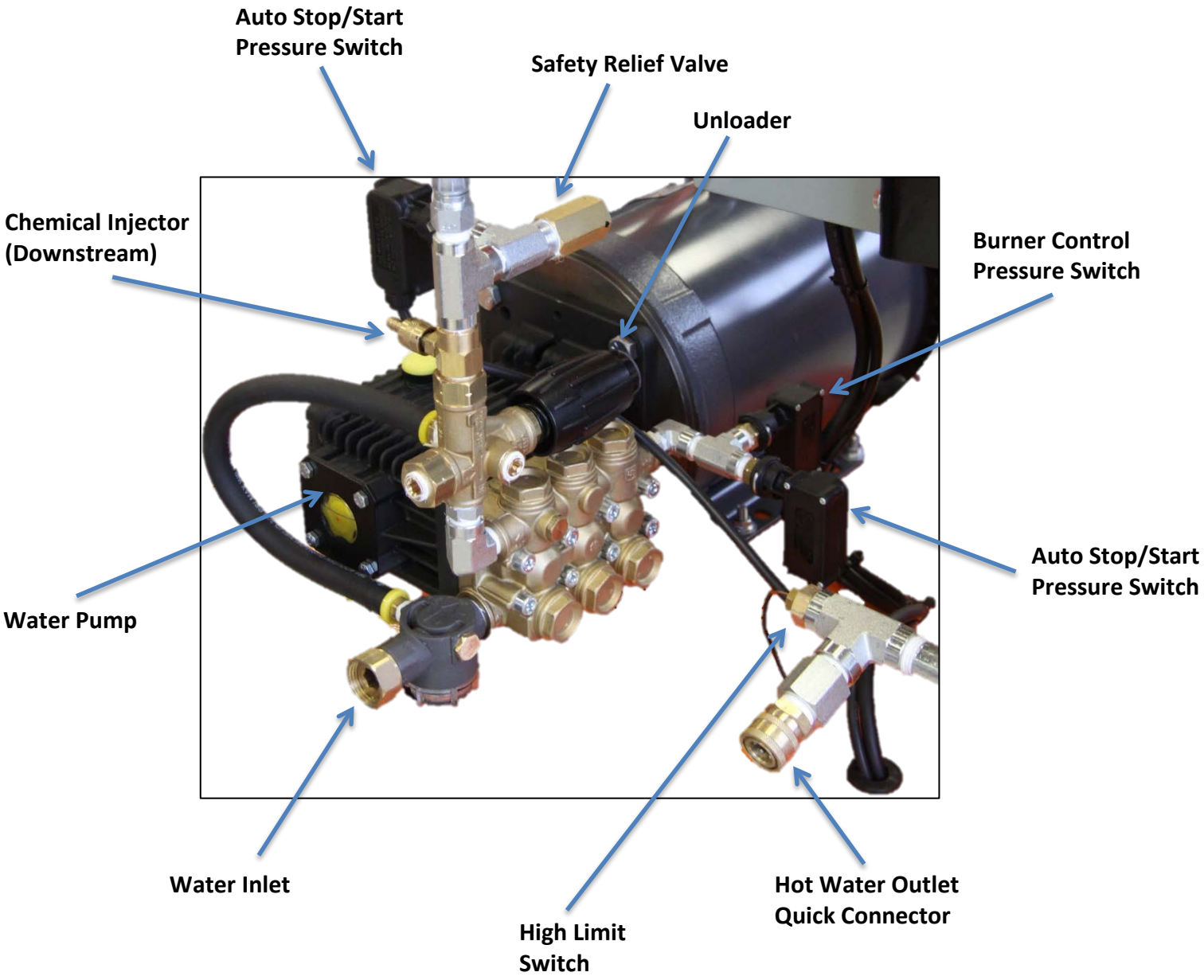
Flow Activated Pump Assembly:



Pressure Switch Pump Assembly:



Direct Driven Pressure Switch Pump Assembly:



QUICK DIAGNOSTICS AND SOLUTIONS GUIDE

PUMP		TYPE OF OIL
EK Pump		**Hydraulic 68 (650ml)**
GP Pump		**30W SAE Non-Detergent**
PROBLEM	**POSSIBLE CAUSES**	**SOLUTIONS**
PRESSURE		
No pressure or Very low pressure	**Metal in oil**	- Examine oil in pump to see if there is metal in the oil. - If you find traces or pieces of metal, your pump has damaged components.
	Dirt in water	- Verify if there is dirt in nozzle tip or in valves in the pump. - If nozzle is plugged, clean it or replace it. - If valves in pump are clogged, clean valves. - If the valves in pump are damaged or pitted, replace valves.
	Wrong nozzle size	- Make sure you have the right nozzle size. The black nozzle will drop pressure in order to use chemical injector and is only for soap or chemical. If you are not using soap, use a different color.
Pressure too high	**Wrong nozzle size**	- Make sure you have the right nozzle size.
	Unloader adjusted improperly or damaged	- Check pressure of pump with a pressure gauge and adjust to desired pressure. - If you cannot reduce pressure, replace unloader.

PROBLEM	POSSIBLE CAUSES	SOLUTIONS
BURNER		
No hot water	**Damaged thermostat**	- Make sure thermostat is connected properly. - If burner fan does not come on when you turn the thermostat dial, replace thermostat.
	Damaged pressure switch	- Make sure the pressure switch is connected properly to burner unit. Take cover off pressure switch by unscrewing the 4 screws on the front part of the switch (switch is located on pump). Without touching the contacts that conduct current, push on the little button found on the micro switch (button is located directly above the part that attaches directly into pump). - If burner comes on, replace pressure switch. - If burner does not come on, make sure there is current going through switch (consult a professional for this if you do not know how to do this properly as you can get severely injured by the electrical current connected to your machine). If current properly flows through pressure switch to burner, check ignitor.

Built for Performance, Efficiency, Durability, and Reliability

MANUFACTURER'S WARRANTY

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

Pump: Crankshaft, Manifold, Crankcase, Bearings, Connecting Rods	7 Years Parts 1 Year Labor
Heating Coils	1 Year over 5100 PSI, Lifetime Limited under 5100 PSI, 1 Year Labor
Honda Engine *Kohler Engine * Others	2 Years or as otherwise stated by the engine manufacturing policy
Electric Motor/Generators	2 Years/1 Year Warranty from individual manufacturer of component
Frame and Body Materials	Lifetime Limited Warranty
Burners: fuel pumps, ignitor, fuel solenoid coil, burner motor, gas valve	1 Year Parts 1 Year Labor
Electric Components: switches, GFCI, therm-ostats, transformers, flow & pressure switch	90 day, Manufacturing Defect
Accessories: Unloader, Safety Valves, Pulleys, Thermometers	90 day, Manufacturing Defect
Wear Items: trigger guns, wands, water strainers and filters; seals, lights, gaskets; belts, check valves; nozzles; o-rings; quick couplers, packings and seals on wet-end of pump, high pressure discharge hose; chemical injectors and fuel filters; fittings	90 day, Manufacturing Defect

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

LIMITATIONS OF LIABILITY

QuakerBlast's liability for special, incidental, or consequential damages is expressly disclaimed. In no event shall QuakerBlast's liability exceed the purchase price of the product in question. QuakerBlast 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. QuakerBlast does not authorize any other party, to make any representation or promise on behalf of QuakerBlast 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 QuakerBlast products conform to local codes. While QuakerBlast 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 MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY.

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

WARRANTY REPAIRS

Warranty claims must first contact QuakerBlast's Service Department to be issued a pre-authorized 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 and shipping. All work is to 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:

- **Abnormal wear-and-tear: Our warranty covers material and manufacturing defects only**
- **Components or other devices not manufactured by QuakerBlast including, but not limited to gasoline, diesel engines, electric motors, generators, pumps, etc.**
- **Pickup and/or delivery of the equipment**
- **Rental or replacement equipment during the repair period**
- **Overtime labor charges**
- **Freight charges for replacement parts (customer responsibility)**
- **Travel time or mileage**
- **Service calls**
- **Transportation of equipment for service**
- **Consequential Damage or Liability that occurs as a result of original defect**

WARRANTY DOES NOT COVER DEFECTS CAUSED BY:

- **Improper or negligent operation or installation, accident, abuse, misuse, neglect, unauthorized modifications**
- **Improper repairs**
- **Neglected recommended 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 QuakerBlast 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.**

service@quakerblast.com **1-877-461-3500** **www.quakerblast.com**