

# HIGH TEMPERATURE

# ELECTRIC PRESSURE WASHER

## *OPERATOR'S MANUAL*



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## **SAFETY FIRST**


 **SAFETY FIRST!** This symbol, the industry's "Safety Alert Symbol", is used throughout this manual to warn of the possibility of personal injury or equipment damage. Read these instructions carefully. It is essential that you read the operating instructions and safety instructions before you attempt to assemble or use this unit.


 **NEVER AIM SPRAYS AT YOU OTHER PEOPLE OR ANIMALS.** The high-pressure water stream can cause injury or death.


 **NEVER DIRECT SPRAY** at pressure washer unit.


 Failure to install the yellow-vented plug in the pump crankcase may cause personal injury, will damage the pump and void warranty.


 Failure to properly connect the high-pressure hose can result in injury.


 Unloader valve is preset for safe operation. It has been set so as to not exceed the maximum allowable water pressure for your unit. **DO NOT** attempt to tamper with the preset factory setting.


 To avoid injury and unintentional spraying, always engage the red trigger lock on the trigger of the gun when not spraying.

 After machine motor is stopped, failure to relieve the high pressure from the system before disconnecting any hoses may result in injury.


 When changing spray nozzles, always do so with the water turned off at the source, the pressure in the system relieved the motor switch in the "OFF" position, the motor unplugged, and the red safety latch engaged on the trigger gun.

 Always point the gun / wand away from you while connecting or disconnecting the nozzle.

 **INJECTION HAZARD.** To avoid personal injury, do not put hand or any part of your body near the spray nozzle

 **WARNING:** Do not pump flammable or explosive fluids such as gasoline, fuel oil, kerosene, etc. Only cold water is to be pumped through the pump itself.

## SPECIAL NOTES READ CAREFULLY

1. **AS A STANDARD PRACTICE DO NOT RUN WASHER** longer than 5 minutes with the gun closed, as this can result in damage of the seals. However, as a protection feature, your unit has a “Thermal Protector Valve” which will dump water into the atmosphere if the unit is left on, and the gun closed for longer than five minutes or so.
2. Make certain that the motor power source conforms to the requirements of your equipment. I.e. 208 volt is not compatible with 240 volt.
3. Disconnect power before servicing.
4. Release all pressure within the system before servicing any component.
5. Drain all liquids from the system before servicing any component.
6. Securely connect the discharge lines before starting the pump. An insecurely connected line may whip, causing personal injury and/or property damage.
7. Check hose for weak or worn condition before each use. Make certain that all connections are tight and secure. Replace if hose is frayed.
8. Periodically inspect the pump and the system components. Perform routine maintenance as required. Check Pump oil level daily.
9.  **Risk of Electric Shock!** Do not handle a pump or pump motor with wet hands, or when standing on a wet or damp surface, or when standing in water.
10. Do not use these pumps for pumping water or other liquids for human or animal consumption.
11. Protect portable water system against back flow.
12. When inserting or taking out the spray nozzles from the rubber grommet (located on the base) use a twisting action so that the rubber grommet does not disengage from the grommet hole.

# START UP AND OPERATION

## PUMP

1. Remove the shipping plug on your pump's crankcase and install the provided vented plug / dipstick (yellow).



**The vented plug / dipstick must be installed, by not doing so, may cause personal injury, cause damage to the pump and void its warranty.**

2. Check your pump oil level using the sight glass located on the side of the pump. The oil should be 1/2 way up on the sight glass of the dipstick provided.

## CONNECTIONS



When making any connections, do so with the pressure in the system relieved, the motor "OFF", and the red safety latch engaged on the trigger gun.



**WARNING:** Failure to properly connect the high-pressure hose, wand, and spray nozzle can result in injury.

1. Connect the wand to the spray gun with at least 8 wraps of TEFLON TAPE on the threads.
2. Models with dual lances come with 3 quick connect nozzles (0°, 15°, 25° nozzles) and a soap nozzle already installed on the dual lance (when replacing this soap nozzle, use TEFLON TAPE on the threads). Models with single lances come with 4 quick connect nozzles.

(RED) 0° gives a straight stream  
(YELLOW) gives a 15° degree fan pattern  
(GREEN) gives a 25° degree fan pattern  
(BLACK) Soap (ONLY ON SINGLE LANCE MODELS)

3. Before installing one of the desired quick connect nozzles, follow the instructions below:



When installing or changing any spray nozzle, always do so with the water turned off at the source, the pressure in the system relieved, the engine turned "OFF", and the red safety latch engaged on the trigger gun.



Always point the gun / wand away from you while connecting or disconnecting the nozzle.

4. Connect the desired quick connect nozzle to the spray gun by pulling the collar on the socket back, insert the nozzle and slide collar back into place. Pull sharply on the connection to ensure connection is made. **WARNING:** Poorly mounted nozzle can become a projectile.



Ensure that the connection is securely made.

5. Make sure that the red safety latch on the trigger gun is engaged.
6. Connect high-pressure hose to high pressure quick connect fitting on pump.
7. Connect water supply hose to lower water inlet fitting on pump. Make sure the inlet strainer is in place on the inlet of pump. Failure to use the inlet strainer could reduce pump operating efficiency and void warranty.
8. Turn on water to the maximum level.

### **STARTING UP**

1. Plug in your unit into a receptacle that meets all electrical codes. Do not modify the plug to fit into other receptacles.



**DO NOT TURN YOUR MOTOR ON YET.**

2. Disengage safety latch on gun trigger.
3. Pull trigger on gun to allow the air trapped in the system to bleed out. A constant flow of water should flow from the nozzle.
4. After you see constant flow of water from the nozzle, then release trigger.
5. Engage red safety latch on the trigger gun.
6. Now turn on your motor.
7. Your unit is equipped with a variable unloader valve .The pressure can be reduced by turning the unloader knob in a counter-clockwise direction.

### **PRESSURE WASHING**

1. To begin spraying and high-pressure washing, disengage safety latch on the gun, and trigger the gun. Hold gun and lance firmly.



**WARNING:** To avoid injury always engage the red safety latch located on the spray gun when not in use or when not spraying.

2. The spray pattern of the high-pressure spray can be changed by selecting another quick connect nozzle, which has been supplied.
3. To change the quick connect nozzle selection, follow the instructions:



When installing or changing any spray nozzles, always do so with the water turned off at the source, the pressure in the system relieved, the engine "OFF", and the red safety latch engaged on the trigger gun.



Always point the gun / wand away from you while connecting or disconnecting the nozzle.

4. You are now ready to change the nozzle

To change the quick connect nozzle, remove existing spray nozzle by pulling the socket back and taking the nozzle out. Connect the desired nozzle to the spray gun by pulling the collar on the socket back, insert desired nozzle and slide collar back into place. Pull sharply on the connection to ensure connection is made.

5. Your unit is equipped with a variable unloader valve. The pressure can be reduced by turning the unloader knob in a counter-clockwise direction. Turning the unloader knob in a clockwise direction can increase the pressure.



**WARNING:** The unloader valve is factory preset for safe operation. Do not attempt to change or block this valve for higher pressure. This can cause serious personal injury or serious damage to the unit.

## **STOPPING**

1. Turn motor switch to "OFF" position and unplug motor.
2. Turn off water supply at the source.
3. Pull the trigger to release any left over pressure in the system.
4. Engage red safety latch on trigger gun.
5. Disconnect all hoses and store equipment on the cart.

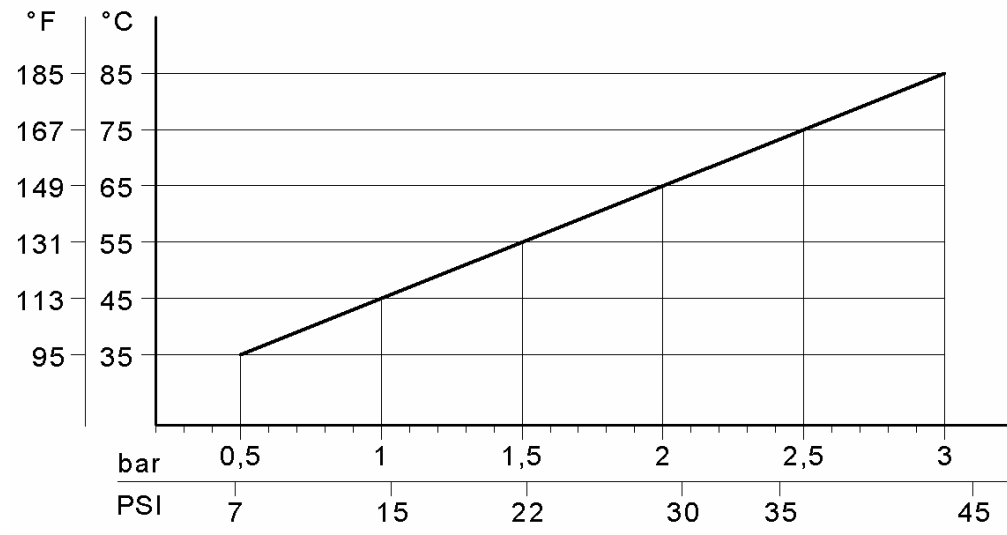
## **STORAGE**

1. In climates with winter conditions, extra precautions will be required to store the unit. If possible, store the unit in a location free from freezing.
2. If the unit will be stored in a location where freezing may occur, follow these steps:
3. Disconnect and drain all hoses.
4. Turn your motor on for a short period of time until all water in the pump exits the outlet fittings.
5. Using a short piece of hose with a male garden hose fitting attach it to the inlet fitting on your pump. Making sure the hose is upright; fill it with a 50/50 mixture of automotive coolant anti-freeze and water. Keep the hose upright and turn pump on for a short period of time till the pump outlet "spits" out antifreeze. When the outlet fitting spits out the antifreeze solution it has been distributed throughout the pump and it can now be shut down. Your unit is now protected from freezing.

## Installation Instructions for High Temperature pumps.

The HT (high temperature) pump series have been specially designed for use with pre-heated water temperatures of 85°C (185°F). In order to maintain maximum performance with regards to the seals, and check valves it is necessary to respect a few simple rules when installing this type of system.

- 1) In order to avoid damage caused by cavitation, the pump must be fed with suitable inlet pressure and flow. The higher the inlet pressures the longer the life of all the wet end of the pump. When working at 85 °C (185 °F), the minimum feed pressure measured directly in the inlet port of the pump when it is working is 3 bar (45 psi). The minimum pressure according to the different temperatures are:



Naturally, if the application allows to feed the pump with 45 PSI even at low temperatures (for example: 115°F) the life of the wet end of the pump will be even longer.

- 2) The plumbing, which feeds the pump, must be as short and as straight as possible, preferably in an upward direction to facilitate the expulsion of eventual air bubbles, and must be of a diameter at least equal to the inlet port to be compatible with the requirements of the system.

It is always recommended to put a filter at the inlet of the pump. The filter must have a flow capacity 4 to 5 times that of the pump. For example, for a 4 GPM pump the filter would need to be 16 to 20 GPM with a mesh size of 0.016".

- 3) It is recommended that the first oil change be done after 50 hours, with the pump off and the oil still warm. This oil change is recommended due to the impurities that have gotten into the oil resulting from the break-in phase of the pump. If these impurities are not removed, they will cause premature wear of the moving parts and oil seals. The oil can then be changed every 500 hours.

Please note: If the pump works in ambient conditions with high humidity and with sharp temperature changes it is possible that condensation appears inside the crankcase, which mixing with the oil can change the lubricating properties of the oil. This is easy to see because



the oil changes to a white milky colour. If the pump has excessive water leakage from the pump packings the oil can also become milky. The oil will have to be changed more frequently. The percentage of water in the oil must not exceed 20%. Use mineral oil per the following chart

CHART OF COMPATIBLE OILS SAE 15W40	
INTERPUMP	X99 ORIGINAL
AGIP	F1 SUPERMOTOR OIL
BP	VISCO 2000
CASTROL	CWX
ELF	SPORT ST
ESSO	UNIFLO
FIAT (FL)	VS MAX
IP	AZZURRO SUPER OIL
MOBIL	SUPER
Q8	Q8 FORMULA RALLYE
ROLOIL	SUPERMULTIGRADE
SHELL	HELIX SUPER
TOTAL	QUARTZ 4000 - 5000

## TRANSPORT



Before transport, make sure that the unit is not under pressure and that the unit is in a secure and upright position.

## WARRANTY

This product is warranted to be free from defects in materials and workmanship under normal use and service, for a period of one year from the date of purchase, when operated and maintained in accordance with the Maintenance and Operation Instructions supplied with the unit. The warranty does not cover misuse or negligence.

This warranty is extended only to the original purchaser. Hoses, spray guns, wands and other accessories are warranted for 30 days. Warranty is void if repairs are attempted by anyone other than an Authorized Service Centre.

If a difficulty develops with the product, you should contact the nearest Authorized Repair Centre. Only these locations are authorized to make repairs to the product or replacement of defective parts, which will be done at no charge within a reasonable time after receipt of the product. Units or parts should be returned at the customer's expense to the nearest Authorized Service Centre. Pack unit in a strong carton and pad tightly to avoid damage. Damage in transit is not covered by warranty. Include original purchase receipt with any claim (but keep a copy for your files).

Liability under warranty is limited to repair of the product and/or replacement of parts and is given to the purchaser in lieu of all other remedies including incidental and consequential charges. There are no express warranties other than those specified herein.

### On Demand Application

If this pumping system is used in a critical process in which down time can never take place. It is recommended to purchase a number of repair parts with the machine. The recommended spares are shown in the table below. Repairs can be rushed in however this service is not covered by warranty

Part Number	Description	Recommended Quantity
RKI123	Check valve repair kit	1
RKI204	Packing repair kit	1
60004124P (A5004E17HSS)	Unloader repair kit	1
1/4MEG1511LV (A5004E17HSS)	High Pressure Nozzle	1
6000524P (A1904E17HSS)	Unloader repair kit	1
1/4MEG1506LV (A1904E17HSS)	High Pressure Nozzle	1

## TROUBLESHOOTING

Symptom	Probably Cause(s)	Corrective Action
Pump running normally but low pressure at nozzle.	Unloader valve has not been properly set	Make sure unloader is adjusted properly
	Worn nozzle	If the nozzle is worn, replace it.
	Incorrect sized nozzle being used	Make sure nozzle is matched to the flow and pressure of the pump
	Soap nozzle being used	Replace soap nozzle with proper nozzle
Pressure drops after period of normal use	Nozzle worn	Check and replace nozzle
Pump producing chattering noise	Pump sucking air	Check that hoses and fittings are air tight
Pulsating when gun is off.	Leaks downstream of unloader	Check for leaks downstream of the unloader valve  If no leaks, unloader may have to be serviced
	Nozzle plugged	Remove obstruction
	Nozzle being used may be too Small	Replace with properly sized Nozzle
Fluctuating Pressure while spraying	Pump sucking air	Check that hoses and fittings are air tight
Water in crankcase	High humidity in the air	Change oil intervals
	Worn packings	Replace packings
No soap injection	Soap nozzle not being used	Replace the spray nozzle with the soap nozzle