

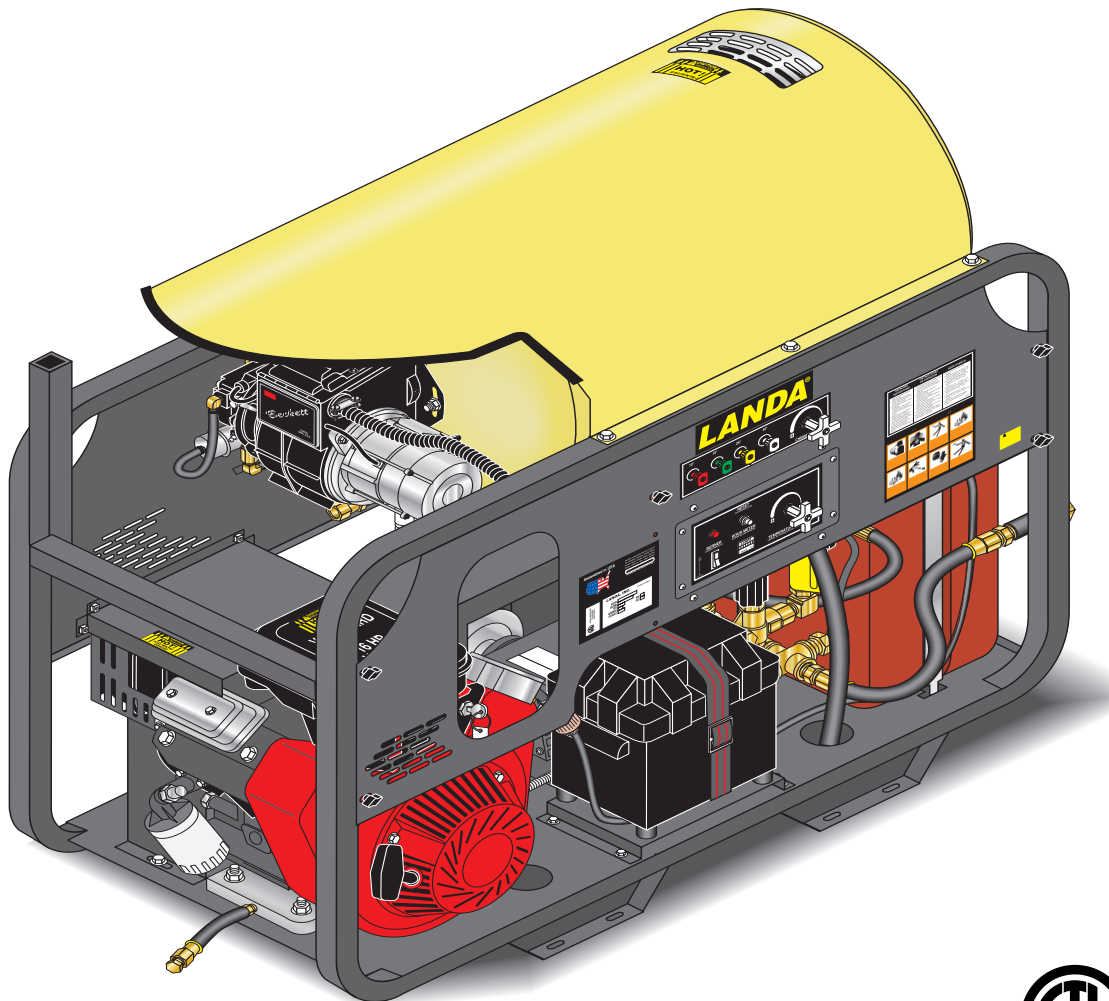
# LANDA<sup>®</sup> MHP

## OPERATOR'S MANUAL

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■ MHP4-3000 ■ MHP4-3500

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For technical assistance or the dealer nearest you,  
consult our web page at [www.landa.com](http://www.landa.com)

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Model Number \_\_\_\_\_

Serial Number \_\_\_\_\_

Date of Purchase \_\_\_\_\_

The model and serial numbers will be found on a decal attached to the pressure washer. You should record both serial number and date of purchase and keep in a safe place for future reference.

## INTRODUCTION & IMPORTANT SAFETY INFORMATION

Thank you for purchasing this Pressure Washer.

We reserve the right to make changes at any time without incurring any obligation.

### Owner/User Responsibility:

The owner and/or user must have an understanding of the manufacturer's operating instructions and warnings before using this pressure washer. Warning information should be emphasized and understood. If the operator is not fluent in English, the manufacturer's instructions and warnings shall be read to and discussed with the operator in the operator's native language by the purchaser/owner, making sure that the operator comprehends its contents.

Owner and/or user must study and maintain for future reference the manufacturers' instructions.

The operator must know how to stop the machine quickly and understand the operation of all controls. Never permit anyone to operate the engine without proper instructions.

**This manual should be considered a permanent part of the machine and should remain with it if machine is resold.**

**When ordering parts, please specify model and serial number. Use only identical replacement parts.**

**This machine is to be used only by trained operators.**

## IMPORTANT SAFETY INFORMATION

### ! WARNING



READ OPERATOR'S  
MANUAL THOROUGHLY  
PRIOR TO USE.

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

1. Read the owner's manual thoroughly. Failure to follow instructions could cause malfunction of the machine and result in death, serious bodily injury and/or property damage.
2. Know how to stop the machine and bleed pressure quickly. Be thoroughly familiar with the controls.
3. Stay alert — watch what you are doing.

### ! WARNING



KEEP WATER  
SPRAY AWAY FROM  
ELECTRICAL WIRING.

**WARNING: Keep wand, hose, and water spray away from electric wiring or fatal electric shock may result.**

4. All installations must comply with local codes. Contact your electrician, plumber, utility company or the selling distributor for specific details.

### ! WARNING



EAR PROTECTION  
MUST BE WORN

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

### ! WARNING



USE PROTECTIVE  
EYE WEAR  
AND CLOTHING  
WHEN OPERATING  
THIS EQUIPMENT.

**WARNING: High pressure spray can cause paint chips or other particles to become airborne and fly at high speeds. To avoid personal injury, eye, hand and foot safety devices must be worn.**

5. Eye, hand, and foot protection must be worn when using this equipment.

6. Keep operating area clear of all persons.

### ! 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.**

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

### ! WARNING



RISK OF FIRE.  
DO NOT ADD FUEL  
WHEN OPERATING  
MACHINE.

**WARNING: Risk of fire — Do not add fuel when the product is operating or still hot.**

**WARNING: Do not use gasoline crankcase draining or oil containing gasoline, solvents or alcohol. Doing so will result in fire and/or explosion.**

**WARNING: Risk of fire — Do not Spray flammable liquids.**

7. Allow engine to cool for 1-2 minutes before refueling. If any fuel is spilled, make sure the area is dry before testing the spark plug or starting the engine. (Fire and/or explosion may occur if this is not done.)

Gasoline engines on mobile or portable equipment shall be refueled:

- a. outdoors;
- b. with the engine on the equipment stopped;
- c. with no source of ignition within 10 feet of the dispensing point; and
- d. with an allowance made for expansion of the fuel should the equipment be exposed to a higher ambient temperature.

# IMPORTANT SAFETY INFORMATION

In an overfilling situation, additional precautions are necessary to ensure that the situation is handled in a safe manner.

**WARNING: Risk of injury. Disconnect battery ground terminal before servicing.**

8. When in use, do not place machine near flammable objects as the engine is hot.
9. Oil burning appliances shall be installed only in locations where combustible dusts and flammable gases or vapors are not present. Do not store or use gasoline near this machine.
10. Use No. 1 or No. 2 heating oil (ASTM D306) only. **NEVER** use gasoline in your fuel oil tank. Gasoline is more combustible than fuel oil and could result in a serious explosion. **NEVER** use crankcase or waste oil in your burner. Fuel unit malfunction could result from contamination.
11. Do not confuse gasoline and fuel oil tanks. Keep proper fuel in proper tank.



**WARNING: Risk of injury. Hot surfaces can cause burns. Use only designated gripping areas of spray gun and wand. Do not place hands or feet on non-insulated areas of the pressure washer.**

12. Transport/Repair with fuel tank EMPTY or with fuel shut-off valve OFF.



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

**WARNING: This machine produces hot water and must have insulated components attached to protect the operator.**

13. To reduce the risk of injury, close supervision is necessary when a machine is used near children. Do not allow children to operate the pressure washer. **This machine must be attended during operation.**



**WARNING: Grip cleaning wand securely with both hands before starting. Failure to do this could result in injury from a whipping wand.**

14. Never make adjustments on machine while in operation.

15. Be certain all quick coupler fittings are secured before using pressure washer.



**WARNING: High pressure developed by these machines will cause personal injury or equipment damage. Keep clear of nozzle. Use caution when operating. Do not direct discharge stream at people, or severe injury or death will result.**



**WARNING: Protect machine from freezing.**

16. To keep machine in best operating conditions, it is important you protect machine from freezing. Failure to protect machine from freezing could cause malfunction of the machine and result in death, serious bodily injury, and/or property damage. Follow storage instructions specified in this manual.

17. Inlet water must be clean fresh water and no hotter than 90°F.



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

18. Avoid installing machines in small areas or near exhaust fans. Adequate oxygen is needed for combustion or dangerous carbon monoxide will result.

19. Manufacturer will not be liable for any changes made to our standard machines or any components not purchased from us.

20. The best insurance against an accident is precaution and knowledge of the machine.



**WARNING: Be extremely careful when using a ladder, scaffolding or any other relatively unstable location. The cleaning area should have adequate slopes and drainage to reduce the possibility of a fall due to slippery surfaces.**

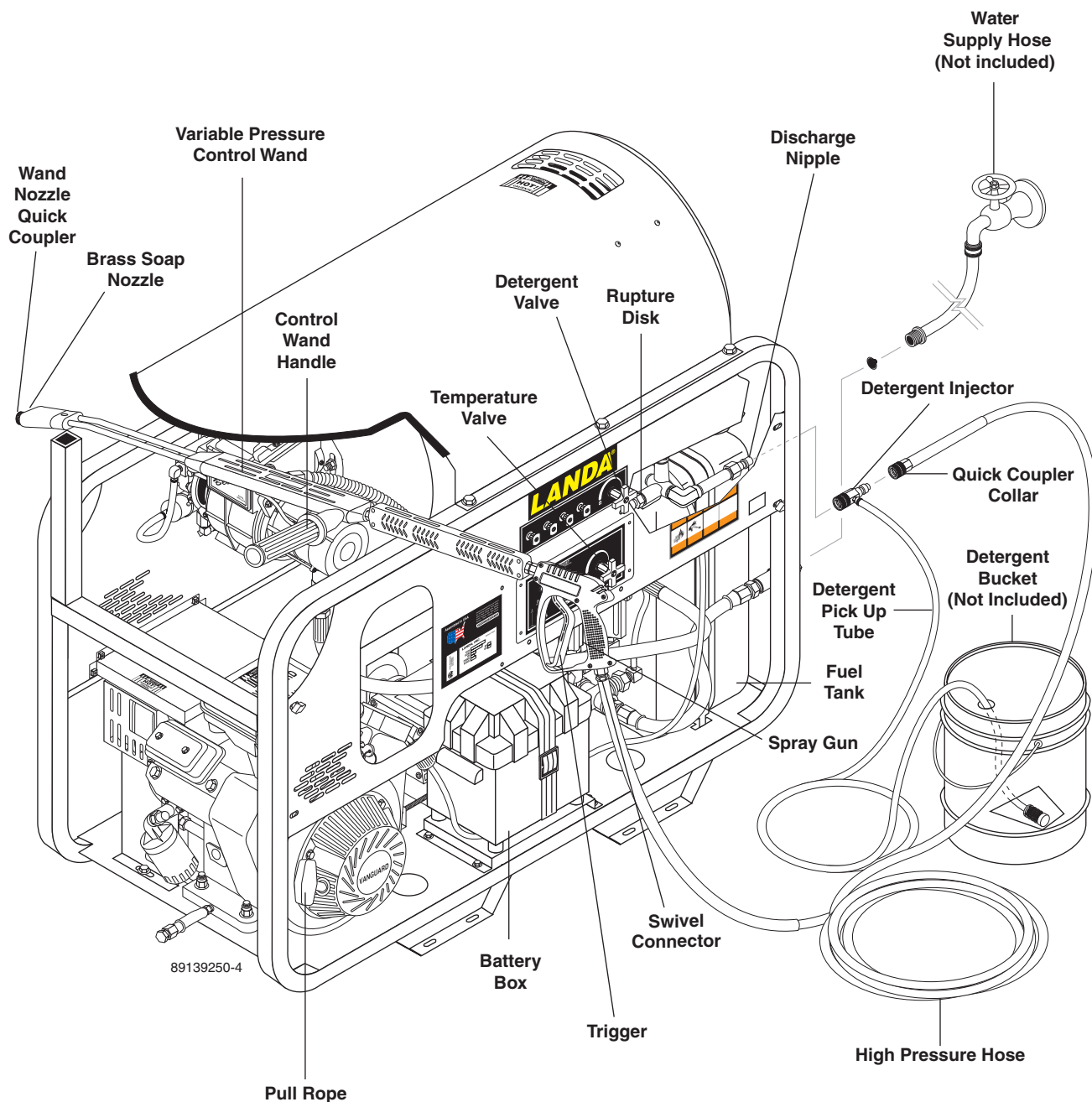
## IMPORTANT SAFETY INFORMATION

21. Do not allow acids, caustic or abrasive fluids to pass through the pump.
22. Never run pump dry or leave spray gun closed longer than 1-2 minutes.
23. Machines with shut-off spray gun should not be operated with the spray gun in the off position for extensive periods of time as this may cause damage to the pump.
24. Protect discharge hose from vehicle traffic and sharp objects. Inspect condition of high pressure hose before using or bodily injury may result.
25. Before disconnecting discharge hose from water outlet, turn burner off and open spray gun to allow water to cool below 100° before stopping the machine. Then open the spray gun to relieve pressure. Failure to properly cool down or maintain the heating coil may result in a steam explosion.
26. Do not overreach or stand on unstable support. Keep good footing and balance at all times.
27. Do not operate this machine when fatigued or under the influence of alcohol, prescription medications, or drugs.
28. In oil burning models, use only kerosene, No. 1 home heating fuel, or diesel. If diesel is used, add a soot remover to every tankful.



Follow the maintenance instructions specified in the manual.

# COMPONENT IDENTIFICATION



**Pump** — Delivers a specific gpm to the high pressure nozzle which develops pressure.

**Spray Gun** — Controls the application of water and detergent onto cleaning surface with trigger device. Includes safety latch.

**Detergent Valve** — Allows you to siphon and mix detergents (Not Shown).

**Wand** — Must be connected to the spray gun.

**High Pressure Hose** — Connect one end to water pump high pressure discharge nipple and the other end to spray gun.

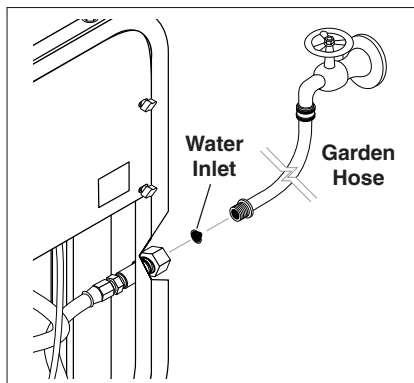
**Rupture Disk** — Secondary pressure release in the unlikely event the unloader valve fails.

**Unloader Valve** — Safety device which, when the spray gun closes, prevents over pressurization.

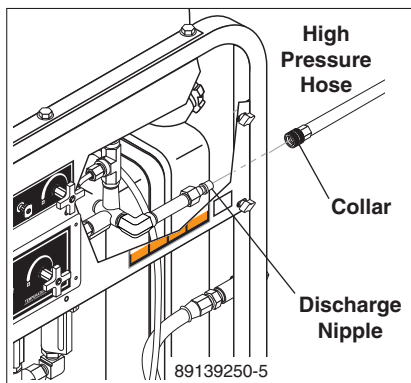
**NOTE:** If trigger on spray gun is released for more than 2 minutes, water will leak from the pump protector. Warm water will discharge from pump protector onto floor. This system prevents internal pump damage.



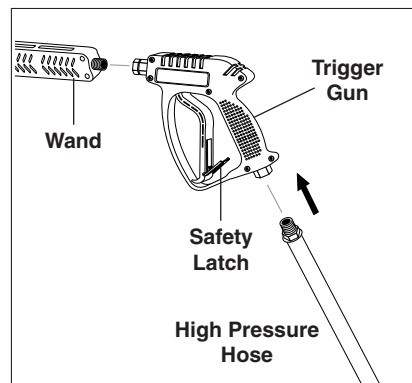
# ASSEMBLY INSTRUCTIONS



**STEP 1:** Attach a 5/8" water supply hose to inlet connector. Minimum flow should be 5 GPM.

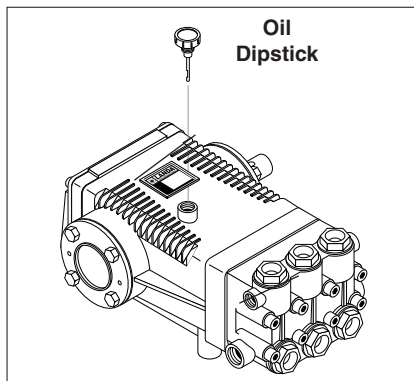


**STEP 2:** Attach high pressure hose to discharge nipple using quick coupler. Lock coupler securely into place by pulling back coupler collar and inserting it onto discharge nipple and then pushing coupler collar forward to lock in place.

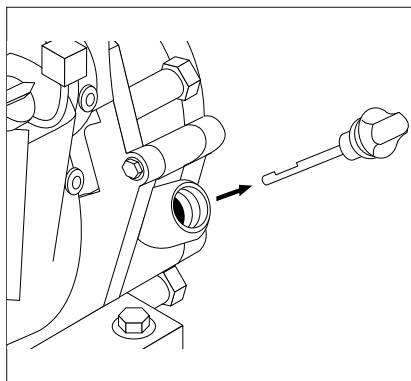


**STEP 3:** Attach variable pressure control wand to spray gun and swivel connector on high pressure hose to spray gun using teflon tape on threads to prevent leakage.

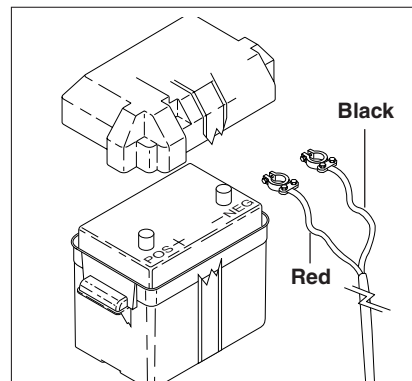
**CAUTION:** Engage the safety latch on the spray gun trigger.



**STEP 4:** Check oil level on sight glass on side of pump. Oil should be visible one-half way up sight glass (SAE 30W non-detergent). The oil level can also be checked by using the dipstick on the top of the pump.

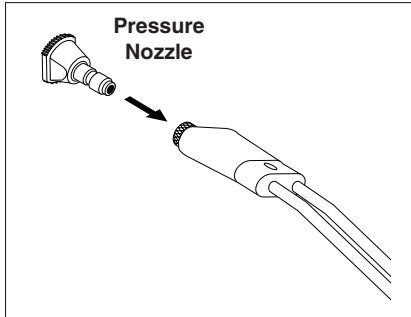


**STEP 5:** Fill gasoline tank and check engine oil level. Fill fuel oil tank. Do not confuse gasoline and fuel oil (diesel) tanks. Keep proper fuel in proper tanks.

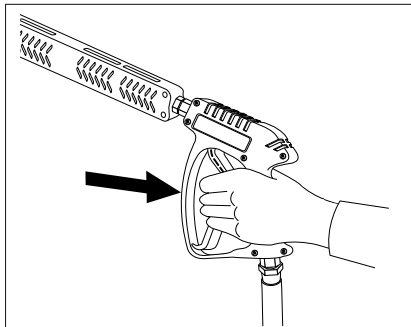


**STEP 6:** Install proper battery making sure that the red cable is attached to the positive terminal. Use a U1 30 amp garden tractor style battery (battery not included).

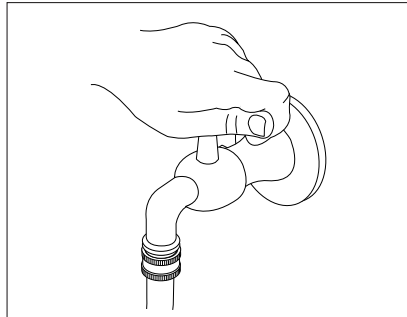
# OPERATING INSTRUCTIONS



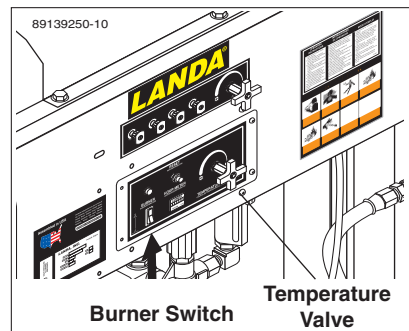
**STEP 1:** Read operator's manual before operating. Before installing nozzle, turn on water supply and run machine allowing water to flush through the system until clear. Pull wand coupler collar back, insert desired pressure nozzle into coupler, then secure by pushing collar forward. **CAUTION: Never replace nozzles without engaging the safety latch on the spray gun trigger.**



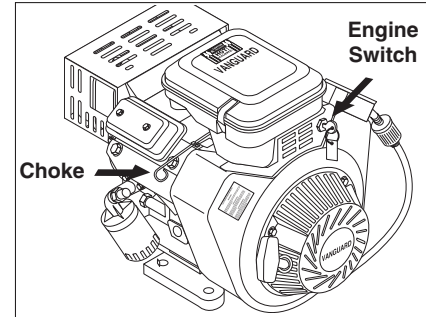
**STEP 4:** With spray nozzle pointed away from you or anyone else, press trigger on spray gun to obtain pressurized cold water spray.



**STEP 2:** Turn on water at faucet and pull trigger on spray gun allowing water to flow until all air has discharged from system. Check for water leaks; tighten as needed. **NOTE:** Variable pressure control wand handle must be turned clockwise to enable water to flow out of the high pressure nozzle.

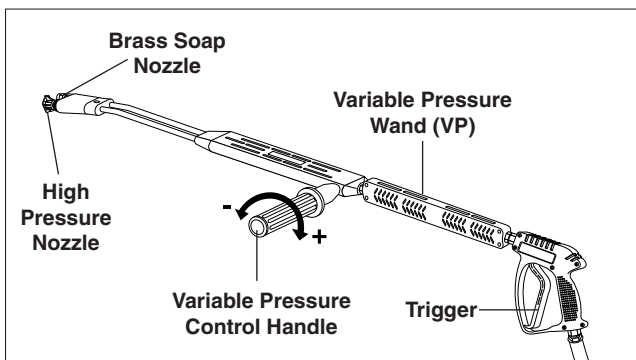


**STEP 5:** For hot water, turn the burner switch ON when a steady stream of water flows out of the spray gun. Burner will light automatically. For steam, open temperature valve counterclockwise. This lowers the pressure and raises the temperature. **NOTE:** Do not start machine with burner switch on.

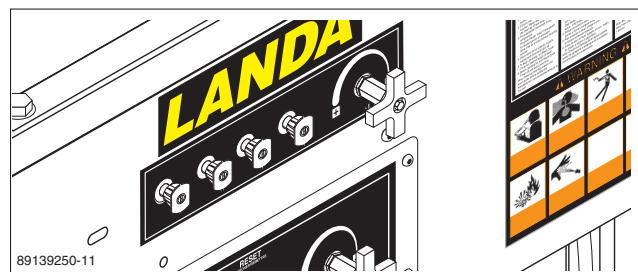


**STEP 3:** Read engine manual; turn engine gas shutoff valve (if equipped) and choke to run position. Turn the engine switch to the START position and hold it there until the engine starts. **NOTE:** Do not use the electric starter for more than five seconds at a time. If the engine fails to start, release the switch and wait ten seconds before operating the starter again. When the engine starts, allow the engine switch to return to the ON position. If the engine is to be started without the battery, turn switch to start position and pull rope to start. Turn off choke.

**CAUTION: Small engines may kick back. Do not hold pull rope tightly in hand.**



Selection of high or low pressure is accompanied by turning the handle. **NOTE:** High pressure nozzle must be inserted at end of wand to obtain high pressure. To apply soap, read washing techniques section.



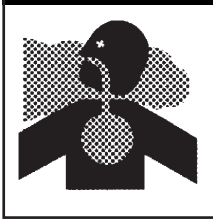
The four color-coded quick connect nozzles provide a wide array of spray widths from 0° to 40° and are easily accessible when placed in the convenient rubber nozzle holder, which is provided on the front of the machine.

**NOTE:** For a more gentle rinse, select the white 40° or green 25° nozzle. To scour the surface, select the yellow 15° or red 0° nozzle.

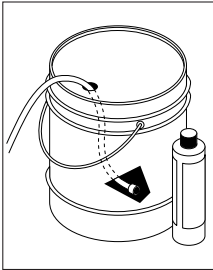


# DETERGENTS AND GENERAL WASHING TECHNIQUES

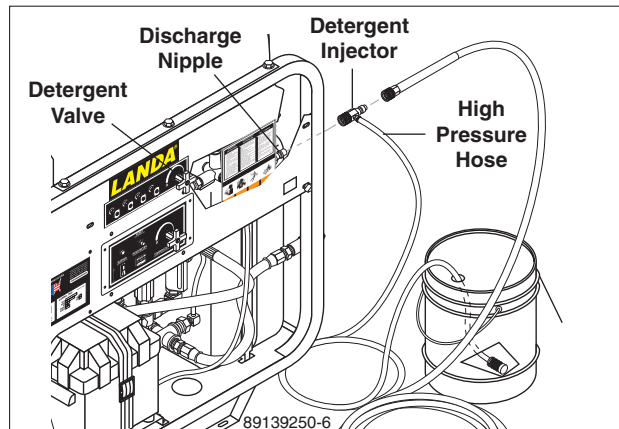
## WARNING



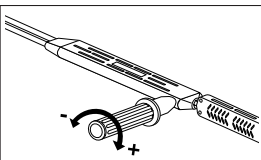
**WARNING:** Some detergents may be harmful if inhaled or ingested, causing severe nausea, fainting or poisoning. The harmful elements may cause property damage or severe injury.



**STEP 1:** Use detergent designed specifically for pressure washers. Household detergents could damage the pump. Prepare detergent solution as required by the manufacturer. Fill a container with pressure washer detergent. Place the filter end of detergent suction tube into the detergent container.



**STEP 2:** Connect detergent injector to discharge nipple on machine. Connect high pressure hose to injector with quick coupler (check to make sure locking coupler sleeves are in proper position before applying water pressure).



**STEP 3:** Open wand control valve for low pressure allowing detergent to siphon. Close control valve for rinsing at high pressure.

**OPTION:** Open detergent valve located on control panel. The detergent valve controls detergent flow by the number of turns of this valve. Close detergent valve to rinse.

**IMPORTANT:** You must flush the detergent after each use by placing the suction tube into a bucket of clean water, follow step 3 or open detergent valves then run the pressure washer for 1-2 minutes.

## THERMAL PUMP PROTECTION

If you run your pressure washer for 3-5 minutes without pressing the trigger on the spray gun, circulating water in the pump can reach high temperatures. When the water reaches this temperature, the pump protector engages and cools the pump by discharging the warm water onto the ground. This thermal device prevents internal damage to the pump.

## CLEANING TIPS

Pre-rinse cleaning surface with fresh water. Place detergent suction tube directly into cleaning solution and apply to surface at low pressure (for best results, limit your work area to sections approximately 6 feet square and always apply detergent from bottom to top). Allow detergent to remain on surface 1-3 minutes. Do not allow detergent to dry on surface. If surface appears to be drying, simply wet down surface with fresh water. If needed, use brush to remove stubborn dirt. Rinse at high pressure from top to bottom in an even sweeping motion keeping the spray nozzle approximately 1 foot from cleaning surface. Use overlapping strokes as you clean and rinse any surface. For best surface cleaning action spray at a slight angle.

## Recommendations:

- Before cleaning any surface, an inconspicuous area should be cleaned to test spray pattern and distance for maximum cleaning results.
- If painted surfaces are peeling or chipping, use extreme caution as pressure washer may remove the loose paint from the surface.
- Keep the spray nozzle a safe distance from the surface you plan to clean. High pressure wash a small area, check the surface for damage and if no damage is found, continue pressure washing.



## CAUTION - Never use:

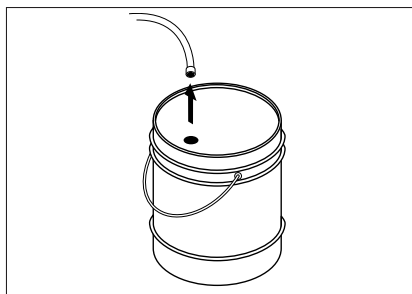
- Bleach, chlorine products and other corrosive chemicals
- Liquids containing solvents (i.e., paint thinner, gasoline, oils)
- Tri-sodium phosphate products
- Ammonia products
- Acid-based products

These chemicals will harm the machine and will damage the surface being cleaned.

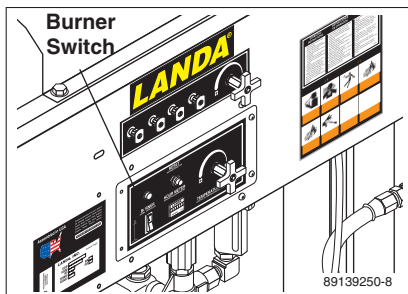
## RINSING

It will take a few seconds for the detergent to clear. Apply safety latch to spray gun and close detergent valve. Select and install the desired high pressure nozzle.

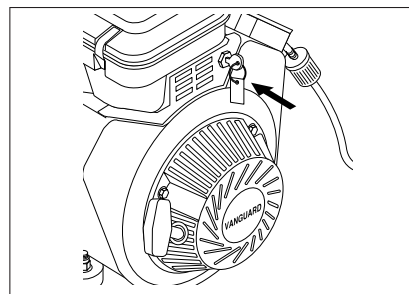
## SHUTTING DOWN AND CLEAN-UP



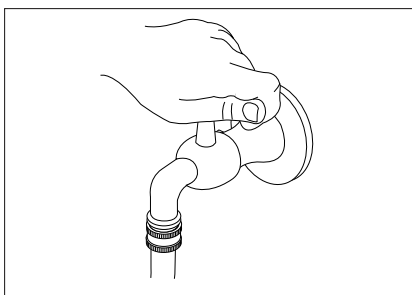
**STEP 1:** Remove detergent suction tube from container and insert into one gallon of fresh water. Open detergent valve, pull trigger on spray gun and siphon water for one minute.



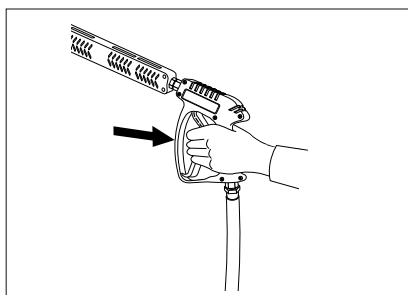
**STEP 2:** Turn burner switch off and continue spraying, allowing the water to cool below 100°F.



**STEP 3:** Turn engine off.



**STEP 4:** Turn off water supply.



**STEP 5:** Open spray gun to relieve remaining pressure.

## STORAGE

**CAUTION:** Always store your pressure washer in a location where the temperature will not fall below 32°F (0°C). The pump in this machine is susceptible to permanent damage if frozen. **FREEZE DAMAGE IS NOT COVERED BY WARRANTY.**

1. Stop the pressure washer, squeeze spray gun trigger to release pressure.
2. Detach water supply hose and high pressure hose.
3. Turn on the machine for a few seconds, until remaining water exits. Turn engine off immediately.
4. Drain the gas and oil from the engine.
5. Do not allow high pressure hose to kink.
6. Store the machine and accessories in a room which does not reach freezing temperatures.

**CAUTION:** Failure to follow the above directions will result in damage to your pressure washer.

When the pressure washer is not being operated or is being stored for more than one month, follow these instructions:

1. Replenish engine oil to upper level.
2. Drain gasoline from fuel tank, fuel line, fuel valve and carburetor.
3. Pour about one teaspoon of engine oil through the spark plug hole, pull the starter grip several times and replace the plug. Then pull the starter

grip slowly until you feel increased pressure which indicates the piston is on its compression stroke and leave it in that position. This closes both the intake and exhaust valves to prevent rusting of cylinder.

4. Cover the pressure washer and store in a clean, dry place that is well ventilated away from open flame or sparks. **NOTE:** The use of a fuel additive, such as STA-BIL®, or an equivalent, will minimize the formulation of fuel deposits during storage. Such additives may be added to the gasoline in the fuel tank of the engine, or to the gasoline in a storage container.

### After Extended Storage



**CAUTION:** Prior to restarting, thaw out any possible ice from pressure washer hoses, spray gun or wand.

### Engine Maintenance

During the winter months, rare atmospheric conditions may develop which will cause an icing condition in the carburetor. If this develops, the engine may run rough, lose power and may stall. This temporary condition can be overcome by deflecting some of the hot air from the engine over the carburetor area. **NOTE:** Refer to the engine manufacturer's manual for service and maintenance of the engine.

## TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
<b>LOW OPERATING PRESSURE</b>	Faulty pressure gauge	Install new gauge.
	Insufficient water supply	Use larger garden hose; clean filter washer at water inlet.
	Old, worn or incorrect spray nozzle	Match nozzle number to machine and/or replace with new nozzle.
	Plumbing or hose leak	Check plumbing system for leaks. Retape leaks with teflon tape.
	Faulty or misadjusted unloader valve (Where applicable)	Adjust unloader for proper pressure. Install repair kit when needed.
	Worn packing in pump	Install new packing kit.
	Fouled or dirty inlet or discharge valves in pump	Clean inlet and discharge valves.
	Worn inlet or discharge valves	Replace with valve kit.
	Leaking pressure control valve (Where applicable)	Rebuild or replace as needed.
	Gasoline Engine Altitude	The gasoline engine is preset for operation at altitudes below 1000 feet above sea level. If operated at higher altitudes, it may be necessary to install a high altitude main jet in the carburetor. Contact your local authorized engine sales and service center for details.
	Slow engine RPM	Set engine speed at proper specifications. (3400 - 3600 RPM.)
<b>BURNER WILL NOT LIGHT</b>	Little or no fuel	Fill tank with fuel.
	Improper fuel or water in fuel	Check and replace if necessary.
	Clogged fuel line	Clean or replace.
	Plugged fuel filter	Replace as needed.
	Misadjusted burner air bands	Replace air bands for clean burn.
	Little or no fuel pressure from fuel pump	Increase fuel pressure to specification and/or replace fuel pump.
	Faulty burner transformer	Test transformer for proper arc between contacts. Replace as needed.
	Disconnected or short in electrical wiring	All wire contacts should be clean and tight. No breaks in wires.
	Flex coupling slipping on fuel pump shaft or burner motor shaft	Replace if needed.
	On-Off switch defective	Check for electrical current reaching burner assembly with burner switch on.
	Heavy sooting on coil and burner can cause interruption of air flow and shorting of electrodes	Clean as required.
	Improper electrode setting	Check and reset according to diagram in Operator's Manual
	Fuel not reaching combustion chamber	Check fuel pump for proper flow. Check solenoid flow switch on machines with spray gun control, for proper on-off fuel flow control.

(Continued on next page)

## TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
<b>BURNER WILL NOT LIGHT</b>  (continued from previous page)	Clogged burner nozzle	Clean as required.
	Thermostat faulty or slow engine speed	Increase engine RPM to increase voltage.
	Flow switch malfunction	Remove, test for continuity and replace as needed.
	Flow solenoid malfunction	Replace if needed.
	25 Amp circuit breaker tripped	Push reset button.
	Bridge rectifier defective	Test and replace.
	12V DC relay defective	Test and replace.
	Fuel is not reaching combustion chamber	Check fuel pump for proper flow. Check solenoid flow switch on machines with spray gun control for proper on-off flow control.
<b>MACHINE SMOKES</b>	Improper fuel or water in fuel	Drain tank and replace contaminated fuel.
	Improper air adjustment	Readjust air bands on burner assembly.
	Low fuel pressure	Adjust fuel pump pressure to specifications.
	Plugged or dirty burner nozzle	Replace nozzle.
	Faulty burner nozzle spray pattern	Replace nozzle.
	Heavy accumulation of soot on coils and burner assembly	Remove coils and burner assembly, clean thoroughly.
	Misaligned electrode setting	Realign electrodes to specifications.
	Obstruction in smoke stack	Check for insulation blockage or other foreign objects.
	Low engine RPM	Increase RPM.
<b>LOW WATER TEMPERATURE</b>	Improper fuel or water in fuel	Replace with clean and proper fuel.
	Low fuel pressure	Increase fuel pressure.
	Weak fuel pump	Check fuel pump pressure. Replace pump if needed.
	Fuel filter partially clogged	Replace as needed.
	Soot build-up on coils not allowing heat transfer	Clean coils.
	Improper burner nozzle	See specifications.

## TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
<b>WATER TEMPERATURE TOO HOT</b>	Incoming water to machine warm or hot	Lower incoming water temperature.
	Fuel pump pressure too high	Call local Landa Dealer for proper fuel pressure.
	Fuel pump defective	Replace fuel pump.
	Detergent line sucking air	Tighten all clamps. Check detergent lines for holes.
	Defective high limit switch	Replace.
	Incorrect fuel nozzle size	See breakdown for model.
	Insufficient water supplied	Check water GPM to machine.
	Restrict water flow	Check nozzle for obstruction and proper size.
<b>DETERGENT NOT DRAWING</b>	Air leak	Tighten all clamps. Check detergent lines for holes.
	Valve in the injector head may be blocked, dirty or damaged	Clean or replace valve in injector.
	Filter screen on detergent suction hose plugged.	Clean or replace.
	Dried up detergent plugging metering valve	Disassemble and clean thoroughly.
	High viscosity of detergent	Dilute detergent to specifications.
	Hole in detergent line(s)	Repair hole.
	Low detergent level	Add detergent, if needed.
<b>PUMP RUNNING NORMALLY BUT PRESSURE LOW ON INSTALLATION</b>	Pump sucking air	Check water supply and possibility of air seepage.
	Valves sticking	Check and clean or replace if necessary.
	Unloader valve seat faulty	Check and replace if necessary.
	Nozzle incorrectly sized	Check and clean or replace if necessary. (See serial plate for proper size.)
	Worn piston packing	Check and replace if necessary.
<b>FLUCTUATING PRESSURE</b>	Valves worn	Check and replace if necessary.
	Blockage in valve	Check and replace if necessary.
	Pump sucking air	Check water supply and air seepage at joints in suction line.
	Worn piston packing	Check and clean or replace if necessary.
	Gasoline Engine Altitude	The gasoline engine is preset for operation at altitudes below 1000 feet above sea level. If operated at higher altitudes, it may be necessary to install a high altitude main jet in the carburetor. Contact your local authorized engine sales and service center for details.



## TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
<b>PUMP NOISY</b>	Air in suction line	Check water supply and connections on suction line.
	Broken or weak inlet or discharge valve springs	Check and replace if necessary.
	Excessive matter in valves.	Check and clean if necessary.
	Worn bearings	Check and replace if necessary.
<b>PRESENCE OF WATER IN OIL</b>	Oil seal worn	Check and replace if necessary.
	High humidity in air	Check and change oil twice as often.
<b>WATER DRIPPING FROM UNDER PUMP</b>	Piston packing worn	Check and replace if necessary.
	O-Ring plunger retainer worn.	Check and replace if necessary.
	Cracked piston	Check and replace if necessary.
	Pump protector	Lower water supply pressure. Do not run with spray gun closed longer than 5 minutes.
<b>OIL DRIPPING</b>	Oil seal worn	Check and replace if necessary.
<b>EXCESSIVE VIBRATION IN DELIVERY LINE</b>	Irregular functioning of valves	Check and replace if necessary.
<b>BURNER MOTOR WILL NOT RUN</b>	Fuel pump seized	Replace fuel pump.
	Burner fan loose or misaligned	Position correctly, tighten set screw.
	Defective control switch	Replace switch.
	Loose wire	Check and replace or tighten wiring.
	Defective burner motor	Replace motor
<b>RELIEF VALVE LEAKS WATER</b>	Relief valve defective	Replace or repair.

## PREVENTATIVE MAINTENANCE

1. Check to see that water pump is properly lubricated.
2. Follow winterizing instructions to prevent freeze damage to pump and coils.
3. Always neutralize and flush detergent from system after use.
4. If water is known to be high in mineral content, use a water softener on your water system, or de-scale as needed.
5. Do not allow acidic, caustic or abrasive fluids to be pumped through system.
6. Always use high grade quality Landa cleaning products.
7. Never run pump dry for extended periods of time.
8. Use clean fuel — kerosene, No. 1 fuel oil, or diesel. Replace fuel filter every 100 hours of operation. Avoid water contaminated fuel as it will seize up the fuel pump.
9. If machine is operated with smoky or eye burning exhaust, coils will soot up, not letting water reach maximum operating temperature. (See section on Air Adjustments).
10. Never allow water to be sprayed on or near the engine, the burner assembly or any electrical components.
11. Periodically delime coils per instructions.
12. Check to see that engine is properly lubricated.

It is advisable, periodically, to visually inspect the burner. Check air inlet to make sure it is not clogged or blocked. Wipe off any oil spills and keep this equipment clean and dry.

The areas around the Landa washer should be kept clean and free of combustible materials, gasoline and other flammable vapors and liquids.

The flow of combustion and ventilating air to the burner must not be blocked or obstructed in any manner.

## MAINTENANCE AND SERVICE

### Unloader Valves

Unloader valves relieve pressure in the line when a spray gun is closed. Unloader valves are preset and tested at the factory before shipping. Tampering with the factory setting may cause personal injury and/or property damage, and will void the manufacturer's warranty.

### Winterizing Procedure

Damage due to freezing is not covered by warranty. Adhere to the following cold weather procedures whenever the washer must be stored or operated outdoors under freezing conditions.

During winter months, when temperatures drop below 32°F, protecting your machine against freezing is necessary. Store the machine in a heated room. If this is not possible then mix a 50/50 solution of antifreeze and water into a 5 gallon bucket. Place a short section of garden hose into the bucket and connect it to the machine. Elevate the bucket and turn the pump on to siphon the antifreeze through the machine. If compressed air is available an air fitting can be screwed into the inlet connector and, by injecting compressed air, all water will be blown out of the system.

### High Limit Hot Water Thermostat

For safety, each machine is equipped with a high limit control switch. In the event the temperature of the water should exceed its operating temperature the high limit control will turn the burner off until the water cools.

### Pumps

Use only SAE 30 weight non-detergent oil. Change oil after first 50 hours of use. Thereafter, change oil every three months or at 500 hour intervals. Oil level should be checked through use of dipstick found on top of pump.

### Cleaning Of Coils

In alkaline water areas, lime deposits can accumulate rapidly inside the coil pipes. This growth is increased by the extreme heat build up in the coil. The best preventative for liming conditions is to use high quality cleaning detergents. In areas where alkaline water is an extreme problem, periodic use of Landa Deliming Powder (Landa Part #9-028008) will remove lime and other deposits before coil becomes plugged. (See Deliming Instructions for use of Landa Deliming Powder.)

### Deliming Coils

Periodic flushing of coils or optional float tank is recommended.

- Step 1** Fill a container with 4 gallons of water, then add 1 lb. of deliming powder. Mix thoroughly.
- Step 2** Remove wand assembly from spray gun and put spray gun into container or optional float tank. Secure the trigger on the spray gun into the open position.
- Step 3** Attach a short section (3-5 ft.) of garden hose to machine to siphon solution from an elevated container. Turn engine on, allowing solution to be pumped through coils back into the container. Solution should be allowed to circulate 2-4 hours.

## PREVENTATIVE MAINTENANCE

**Step 4** After circulating solution flush entire system with fresh water. Reinstall wand assembly to spray gun.

### Removal of Soot and Heating Coil

In the heating process, fuel residue in the form of soot deposits may develop between the heating coil pipe and block air flow which will affect burner combustion. When soot has been detected on visual observation, the soot on the coil must be washed off after following the coil removal steps (See Coil Removal on page 17).

### Rupture Disk

If pressure from pump or thermal expansion should exceed safe limits, the rupture disk will burst, allowing high pressure to be discharged through hose to ground. When the disk ruptures it will need to be replaced.

### Fuel

Use clean fuel oil that is not contaminated with water and debris. Replace fuel filter and drain tank every 100 hours of operation. Use No. 1 or No. 2 Heating oil (ASTM D306) only. **NEVER** use gasoline in your burner tank. Gasoline is more combustible than fuel oil and could result in a serious explosion. **NEVER** use crankcase or waste oil in your burner. Fuel unit malfunction could result from contamination.

### Fuel Control System

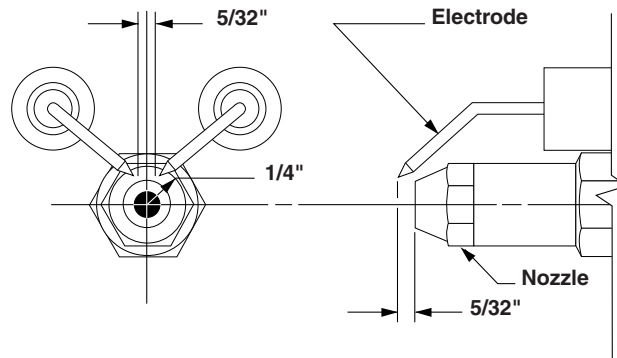
These machines utilize a fuel solenoid valve located on the fuel pump to control the flow of fuel to the combustion chamber. This solenoid valve, which is normally closed, is activated by a flow switch when water is flowing through it. When an operator releases the trigger on the spray gun, the flow of water through the flow switch stops, turning off the current to the fuel solenoid. The solenoid then closes, shutting off the supply of fuel to the combustion chamber. Controlling the flow of fuel in this way allows for an instantaneous burn or no burn situation, thereby eliminating high and low water temperatures, and combustion smoke normally associated with machines incorporating a spray gun.

**CAUTION:** Periodic inspection is recommended to insure that the fuel solenoid valve functions properly. This can be done by operating the machine and checking to see that when the trigger on the spray gun is in the off position, the burner is not firing.

### Fuel Pressure Adjustment

To adjust fuel pressure, turn the adjusting screw clockwise to increase, counterclockwise to decrease. Do not exceed 200 PSI.

**NOTE:** When changing fuel pump, a bypass plug must be installed in return port or fuel pump will not prime.



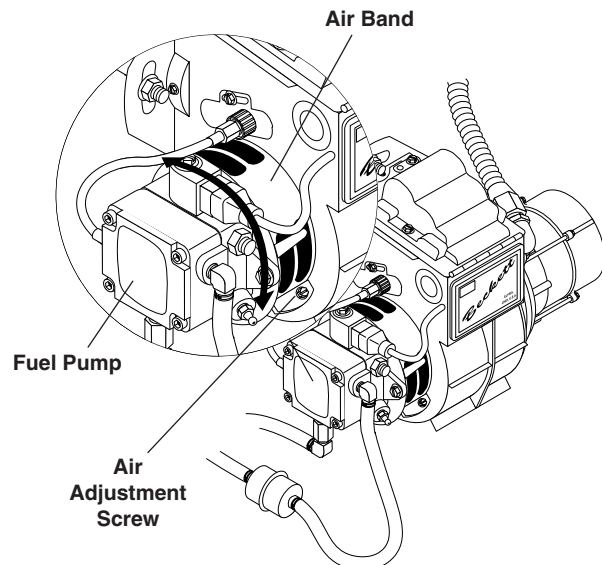
### Electrode Setting

#### Burner Nozzle

Keep the tip free of surface deposits by wiping it with a clean, solvent-saturated cloth, being careful not to plug or enlarge the nozzle. For maximum efficiency, replace the nozzle each season.

### Beckett Burner Air Adjustment

The oil burner on this machine is preset for operation at altitudes below 1000 feet. If operated at higher altitudes, it may be necessary to adjust the air band setting. Adjust air band for a #1 or #2 smoke spot on the Bacharach scale. A one-time initial correction for your location will pay off in economy, performance, and extended service life. If a smoky or eye-burning exhaust is being emitted from the stack, two things should be checked. First, check the fuel to be certain that kerosene or No. 1 home heating fuel is being used. Next, check the air adjustment on the burner.



## PREVENTATIVE MAINTENANCE

**Initial Air Adjustments:** Allow sufficient air to obtain a clean burning flame by loosening the lock screws and moving the air shutter and if necessary the bulk air band.

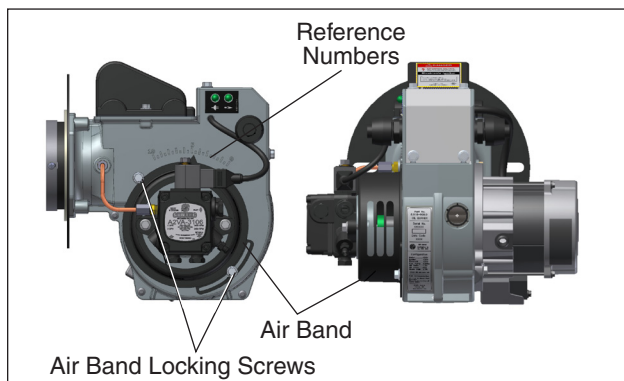
Reduce the air supply until the flame tips appear slightly smoky, then increase the air just enough to cause the flame tips to appear absolutely clean.

### Landa Sure Fire Oil Burner

**Burner Air Adjustment:** The oil burner on this machine is preset for operation at altitudes below 1000 feet. If operated at higher altitudes, it may be necessary to adjust the air band for a #1 or #2 smoke spot on the Bacharach scale.

To adjust, start machine and turn burner ON. Loosen two locking screws found on the air band and close air band until black smoke appears from burner exhaust vent. Note air band position. Next, slowly open the air band until white smoke just starts to appear. Turn air band halfway back to the previously noted position. Tighten locking screws.

### Burner Air Adjustment



**CAUTION:** *If white smoke appears from burner exhaust vent during start-up or operation, discontinue use and readjust air bands.*

**NOTE:** If a flue is installed, have a professional serviceman adjust your burner for a #1 or #2 smoke spot on the Bacharach scale.

### Coil Removal

Removal of coil because of freeze breakage, or to clean soot from it can be done quickly and easily.

- Step 1** Disconnect hose from pump to inlet side of the coil.
- Step 2** Disconnect electrical connection to the thermostat.
- Step 3** Remove quick coupler from discharge side of coil.
- Step 4** Remove burner assembly from combustion chamber.
- Step 5** Remove the 3-3/8" bolts from each side of coil and tank assembly (these bolts are used to fasten tank to chassis).
- Step 6** Disconnect 1/2" pipe nipples from inlet and discharge side of coil.
- Step 7** Remove top tank wrap exposing insulation and coil and fold back insulation.
- Step 8** Remove bolts that hold down coil to bottom wrap.
- Step 9** Remove coil.

Replace or repair any insulation found to be torn or broken.

### Coil Reinstallation

Reinstall new or cleaned coil by reversing the steps above.

### Final Note —

The DC motors used on 12V DC burners can draw as much as 20 amps! For the burner to run properly, the battery and engine charging system must be kept in good condition, and the engine must run fast enough to adequately charge the battery. Do not throttle down the engines for any length of time.

## PREVENTATIVE MAINTENANCE

This pressure washer was produced with the best available materials and quality craftsmanship. However, you as the owner have certain responsibilities for the correct care of the equipment. Attention to regular preventative maintenance procedures will assist in preserving the performance of your equipment. Contact your Landa dealer for maintenance. Regular preventative maintenance will add many hours to the life of your pressure washer. Perform maintenance more often under severe conditions.

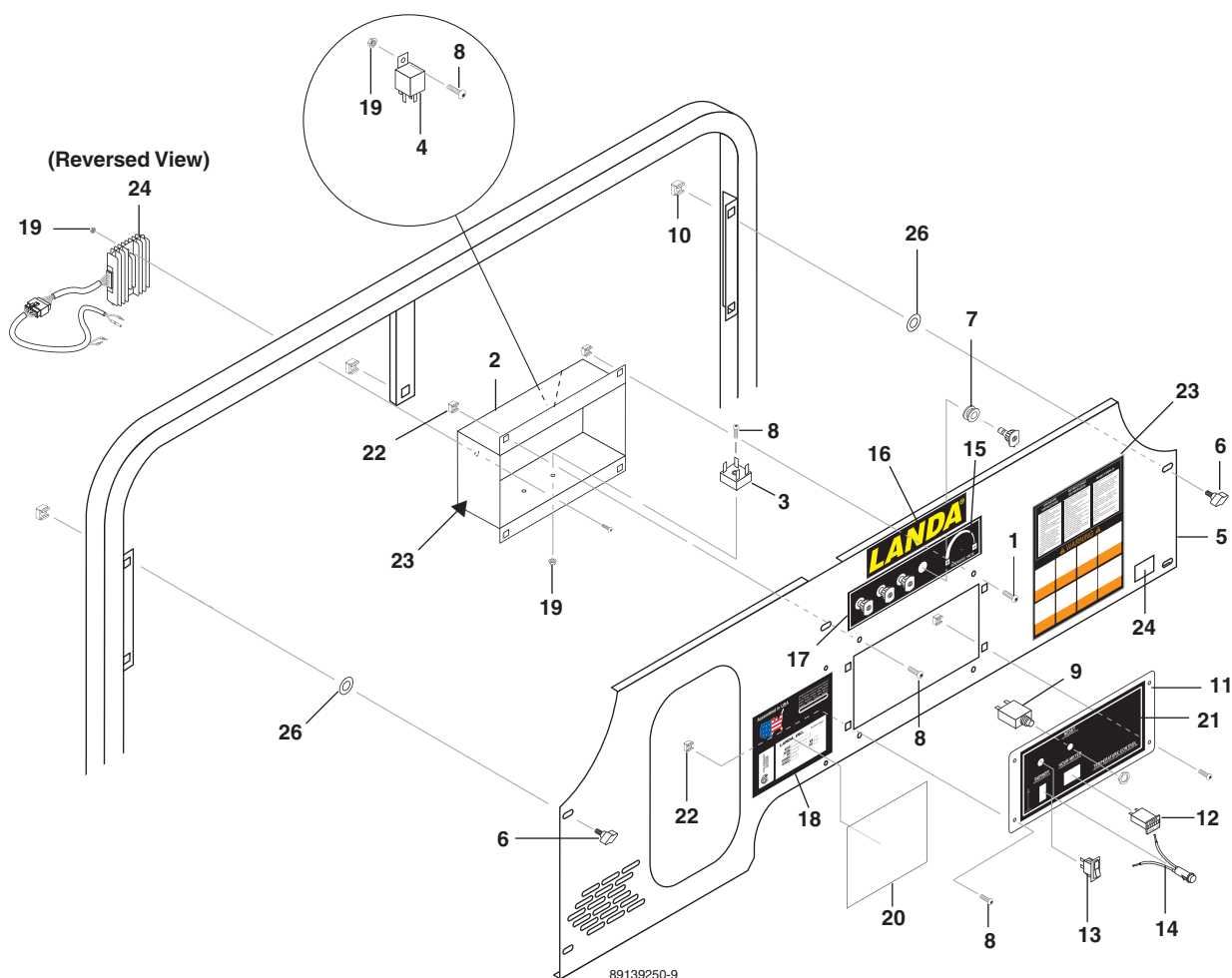
MAINTENANCE SCHEDULE		
Engine Oil	Inspect	Daily
	Change	Every 25 hours
	Filter	Every 50 hours
Air Cleaner	Inspect	Every 50 hours or monthly
	Clean	Every 3 months
Battery Level		Check monthly
Engine Fuel Filter		500 hours or 6 months
Spark Plug Maintenance		500 hours or 6 months
Clean Fuel Tank(s)		Annually
Replace Fuel Lines		Annually
Pump Oil (Non-detergent 10/40W)	Inspect	Oil level daily
	Change	After first 50 hours, then every 500 hours or annually
Clean Burner Filter		Monthly (More often if fuel quality is poor)
Remove Burner Soot		Annually
Burner Adjustment/Cleaning		Annually
Replace Burner Nozzle		Annually
Descale Coil		Annually (More often if required)
Replace High Pressure Nozzle		Every 6 months
Replace Quick Connects		Annually
Clean Water Screen/Filter		Weekly
Replace HP Hose		Annually

## OIL CHANGE RECORD

Date Oil Changed Month/Day/Year	Estimated Operating Hours Since Last Oil Change	Date Oil Changed Month/Day/Year	Estimated Operating Hours Since Last Oil Change



## EXPLODED VIEW - CONTROL PANEL

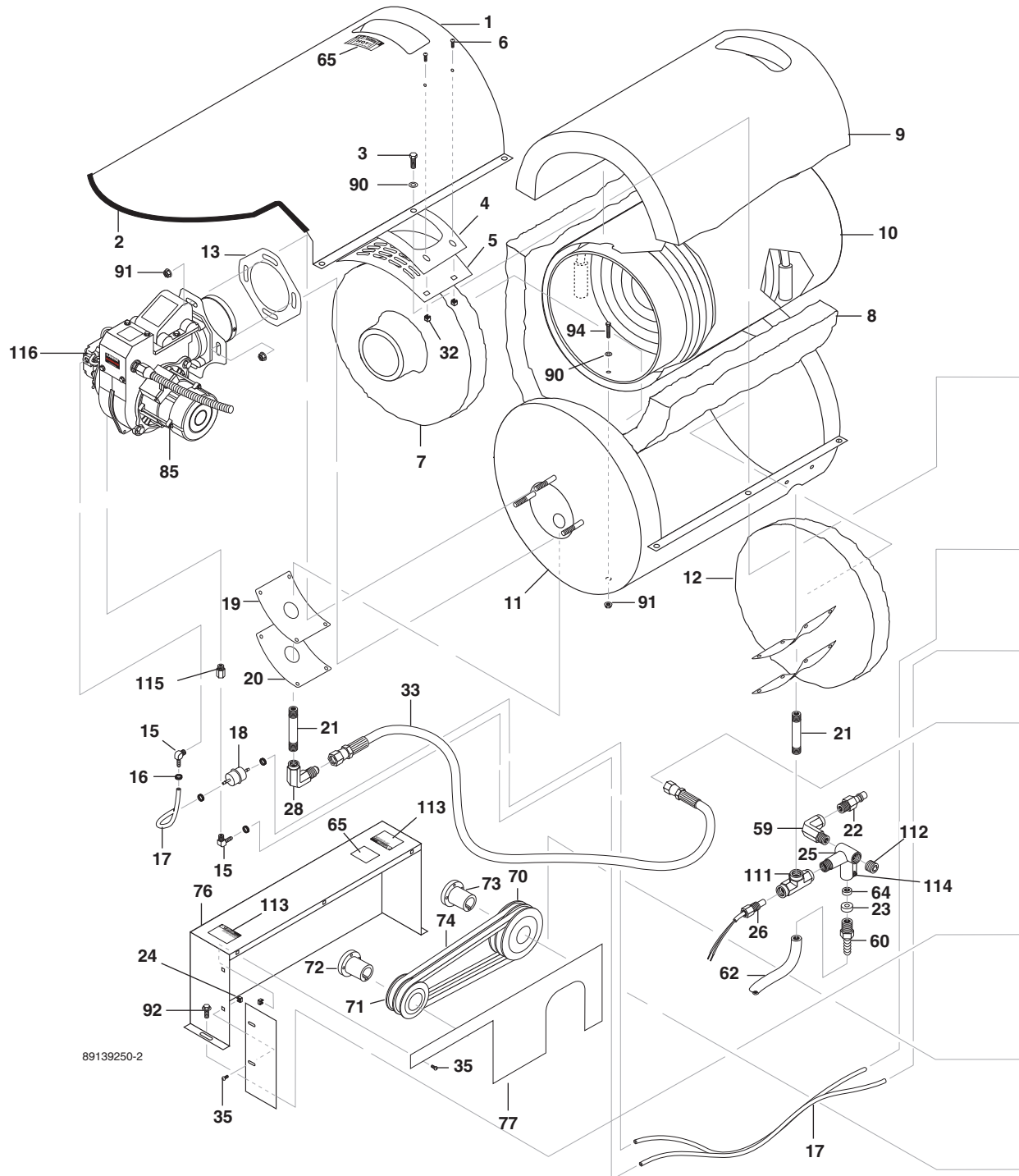


## CONTROL PANEL PARTS LIST

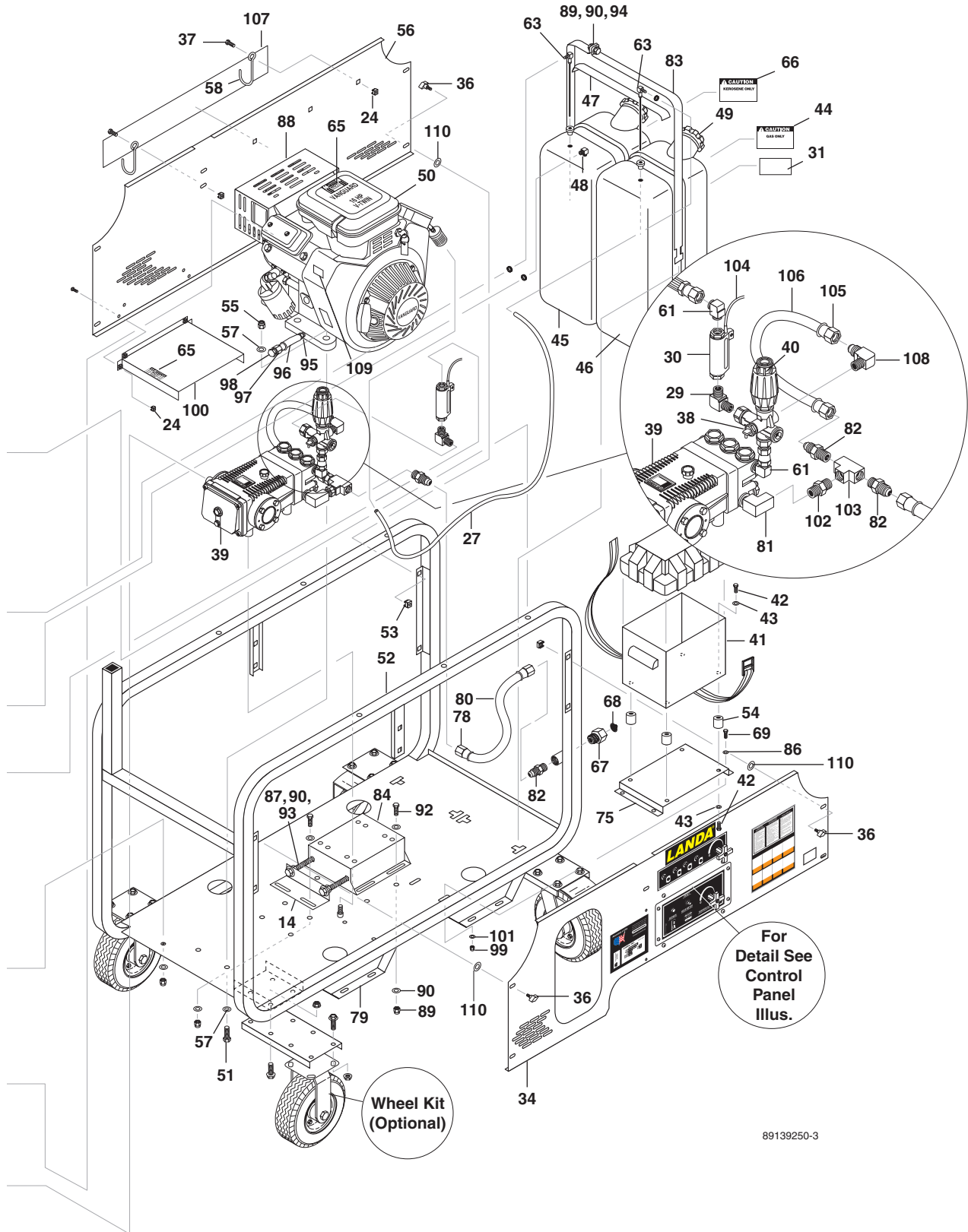
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	9.802-771.0	Screw, 10/32" x 3/4" BH SOC	3	13	9.802-453.0	Switch, Corvette 120 V & 220 V	1
2	8.912-711.0	Box, MHP Electrical, Welded	1	14	9.802-456.0	Light, Indicator, Green 12 VDC	1
3	9.802-530.0	Rectifier, Bridge, MB156, 12 VDC, 30 Amp	1	15	8.902-427.0	▲ Valve Assy, Chemical, Skid	1
4	9.802-470.0	Relay, P & B/VF41F11, 12 VDC, 40 Amp (11, 13 HP Honda)	1	16	8.900-300.0	Label, Landa Logo	1
	9.802-471.0	Relay, 24 V DC, 40 Amp (16 HP Vanguard)	1	17	8.900-297.0	Label, Nozzle/Det Valve, MHP	1
5	8.912-705.0	Panel, MHP Control	1	18	8.932-968.0	Label, "Outdoor Use"	1
6	9.802-746.0	Screw, Thumb 1/4" x 1/2"	5	19	9.802-695.0	Nut, 10/32"	4
7	9.802-064.0	Grommet, 1/8" Rubber	4	20	9.800-034.0	Lexan, Cover, Outdoor	1
8	9.802-759.0	Screw, 10/32" x 1/2" BHSOC Blk	6	21	8.900-296.0	Label, Control Box	1
9	9.802-485.0	Breaker, Circuit, 25 Amp	1	22	9.802-791.0	Nut, Cage, 10/32" 16 Gauge	8
10	9.802-794.0	Nut, Cage, 1/4" x 12 Gauge	13	23	9.800-094.0	Label, Instruction/Warning	1
11	8.912-712.0	Cover, MHP Control	1	24	9.800-049.0	Label, Manuf. Cleaning Solution	1
12	9.802-283.0	Meter, Hour	1				

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# EXPLODED VIEW - LEFT SIDE



# EXPLODED VIEW - RIGHT SIDE



89139250-3

## EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	8.912-186.0	Wrap, Top (All) Yellow	1
2	9.802-071.0	Trim, 1/16", Black, 750 - B2	3 ft.
3	9.802-766.0	Screw, 3/8" x 1" HX	6
4	8.717-424.0	Insulation, Gasket, Skid, Stackless Top	1
5	8.911-304.0	Exhaust, Plate	1
6	8.718-812.0	Screw, Cap, 10/32" x 3/4" SS	4
7	9.802-894.0	Insulation, Burner Head, w/Hole	1
8	9.802-896.0	Insulation, Blanket, No Foil, 24" x 57"	1
9	9.802-902.0	Insulation, Blanket Die Cut, 28" x 24"	1
10	8.912-239.0	Coil Replacement Schedule 80 w/Aluminum Steel Wrap	1
11	8.912-188.0	Wrap, Bottom Yellow	1
12	9.802-883.0	Insulation, Front Head, No Hole	1
13	9.802-653.0	Gasket, Mounting	2
14	9.803-136.0	Retainer, Pump Take Up	1
15	8.706-958.0	Hose Barb, 1/4" Barb x 1/4" ML Pipe2	
16	6.390-126.0	Clamp, Hose, .46-, .54 ST (11, 13 HP) (16 HP)	6 8
17	9.802-254.0	Hose, 1/4", Push-On	7 ft.
18	8.709-152.0	Filter, Fuel, Disposable	1
19	8.933-009.0	Gasket, Burner Plate	2
20	9.803-132.0	Insulation Retainer Plate	2
21	9.802-015.0	Nipple, 1/2" x 4", Galvanized	2
22	8.918-432.0	Nipple, 3/8" x 3/8" NPT, St	1
23	9.184-030.0	Spacer, Rupture Disk	1
24	9.802-794.0	Nut, Cage, 1/4" x 12 Gauge	10
25	9.149-003.0	Manifold, Coil Outlet	1
26	8.712-185.0	Switch, Snap, 225 DR HI Limit	1
27	9.802-254.0	Hose, Push-On, (16 HP)	5.5 ft.
28	9.802-043.0	Elbow, 1/2" JIC x 1/2 Fem, 90°	1
29	8.706-168.0	Elbow, 3/8" Male	1
30	8.933-006.0	Switch, Flow MV60	1
31	9.800-080.0	Label, Danger, Cool Engine	1
32	9.802-791.0	Nut, Cage 10/32" x 16 Gauge	4
33	8.918-432.0	Hose, 18" x 3/8", Pressure Loop	1
34	8.912-705.0	Panel, MHP Control	1
35	9.802-754.0	Screw, 1/4" x 1/2" HH, NC, Whiz Loc	4
36	9.802-746.0	Screw, Thumb 1/4" x 1/2"	10

ITEM	PART NO.	DESCRIPTION	QTY
37	9.802-753.0	Screw, 1/4" x 3/4" HH, NC, Whiz Loc	2
38	8.707-254.0	Pump Protector, 3/8" PTP	1
39	See Pump Specifications, Page 28-29		1
40	8.750-299.0	Unloader, VRT 3, 8 GPM @ 4500 PSI	1
41	8.706-652.0	Box, Battery	1
	9.802-091.0	▲ Plate, Battery Box, Small, Polypro	1
42	9.803-541.0	Bolt, 5/16" x 1/2", Button Head	4
43	9.803-542.0	Washer, 5/16", Star	4
44	9.800-001.0	Label Gasoline Only (16, 20HP)	1
45	8.706-611.0	Tank, Fuel, 5 Gal, Poly, Yellow	1
46	8.706-604.0	Tank, Fuel, 5 Gal, Red (16 HP)	1
47	9.802-193.0	Gasket, Fuel Tank, 7" (11, 13 HP) (16 HP)	1 2
48	9.802-054.0	Elbow, Fuel Tank	1
49	9.802-089.0	Cap, Fuel Tank, Plastic, H60-AR (11, 13 HP) (16 HP)	1 2
50	See Engine Specifications, Page 28-29		1
51	9.802-714.0	Bolt, 5/16" x 1-3/4", NC HH	4
52	8.912-704.0	Cage, MHP, Assembly	1
53	9.802-794.0	Nut, Cage, 1/4" x 12 Gauge	11
54	9.803-532.0	Isolator, 5/16", F x F, 1"	4
55	9.802-776.0	Nut, 5/16", ESNA, NC	4
56	8.912-707.0	Panel, MHP Rear	1
57	8.718-980.0	Washer, 5/16" Flat	8
58	8.719-968.0	Holder, Wand, Zinc	2
59	8.706-207.0	Elbow, 3/8" Street	1
60	8.707-019.0	Hose Barb, 1/2" Barb x 3/8" MPT, Push-On	1
61	9.802-039.0	Elbow, 1/2" JIC x 3/8", 90°	2
62	9.802-259.0	Hose, 1/2" Push-On	1.75 ft.
63	8.706-496.0	Diptube, Plastic (11, 13 HP) (16 HP)	1 2
	9.802-259.0	▲ Bushing, Rubber, Nitrate (11, 13 HP) (16 HP)	2 3
64	8.725-944.0	Rupture Disk Assy, 8000 PSI	1

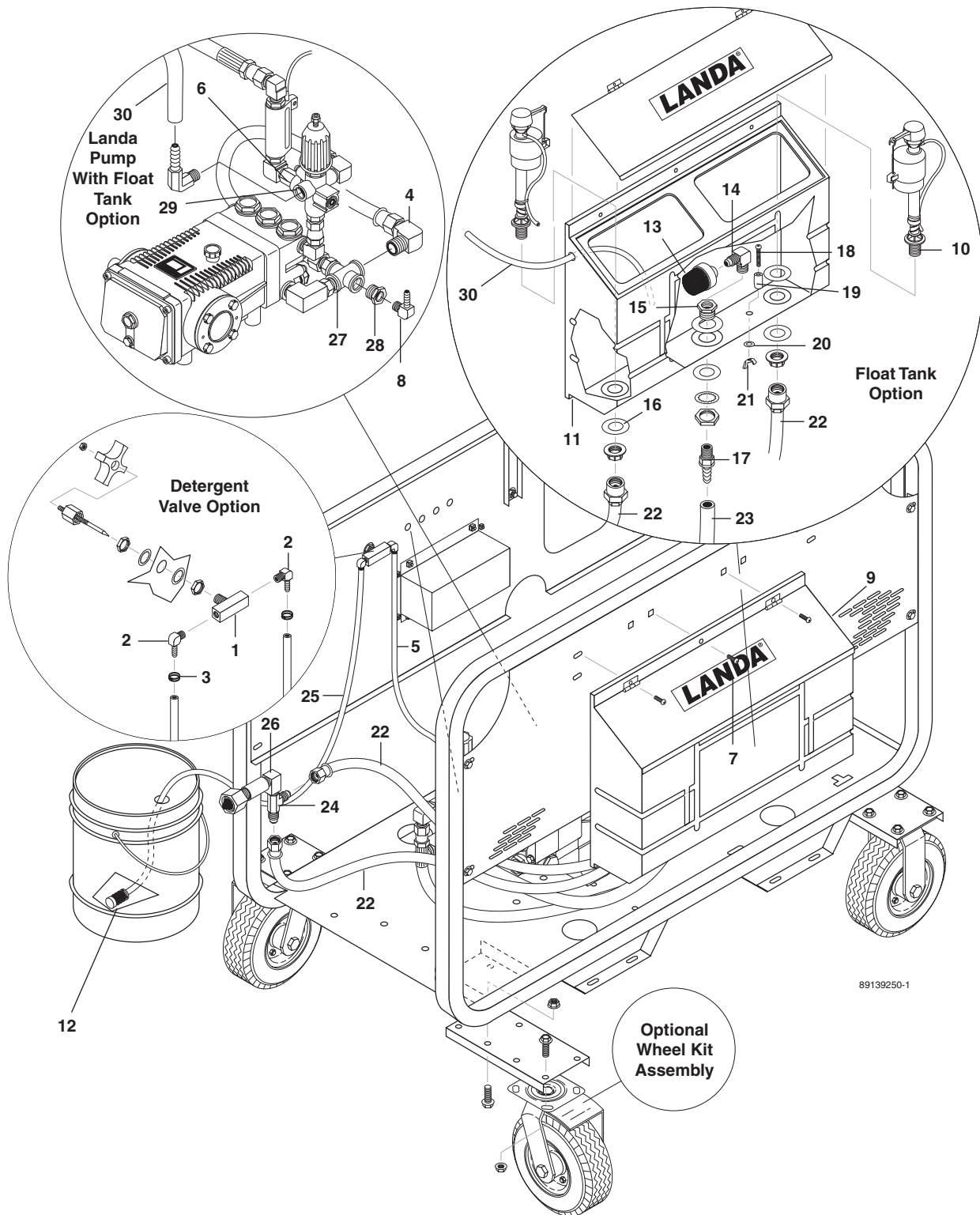
## EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
65	9.800-006.0	Label, "Hot/Caliente"	4	88	9.802-867.0	Guard, Muffler 16 HP (Vanguard)	1
66	9.800-002.0	▲ Label, Use Only Kerosene/Diesel	1		9.802-868.0	▲ Brace (Vanguard) Muffler	
67	9.802-146.0	Swivel, 1/2" MP x 3/4" GHF	1		9.802-672.0	▲ Muffler (Vanguard)	1
68	8.707-055.0	Strainer, Inlet Garden Hose	1	89	8.725-395.0	Nut, 3/8" ESNA	9
69	8.718-618.0	Bolt, 5/16" x 3/4"	4	90	9.802-807.0	Washer, 3/8" Flat	30
70	See Pump Pulley Specifications, Pages 28-29			91	9.802-781.0	Nut, 3/8", Whiz Loc	5
71	See Engine Pulley Specifications, Pages 28-29			92	9.802-720.0	Bolt, 3/8" x 1" NC HH	8
72	See Engine Bushing Specifications, Pages 28-29			93	9.802-733.0	Bolt, 3/8" x 3-1/2", Tap	2
73	See Pump Bushing Specifications, Pages 28-29			94	9.802-727.0	Bolt, 3/8" x 1-3/4", Tap	3
74	See Belt Specifications, Pages 28-29			95	9.802-154.0	Push-on, Male (11, 13 HP)	1
75	8.912-714.0	Bracket, Battery	1		8.707-019.0	Push-on, 3/8" Male (16 HP)	1
76	8.912-715.0	Belt Guard (11, 13, 16 HP)	1	96	9.802-259.0	Hose, 1/2" Push-on (16 HP)	5"
77	8.912-719.0	Plate, Face (11, 13, 16 HP)	1		9.802-254.0	Hose, 1/4" Push-on (11, 13 HP)	5"
78	9.802-151.0	Swivel, 1/2" JIC, Push-On	2	97	9.802-153.0	Swivel, 1/4" JIC FEM, Push-on (11, 13 HP)	1
79	8.912-722.0	Foot, MHP	4		9.802-151.0	Swivel, 1/2" JIC FEM, Push-on (16 HP)	1
	9.802-767.0	▲ Screw, 3/8" x 3/4" Whiz Loc	8	98	9.802-126.0	Plug, 1/2" JIC, Flare (16 HP)	1
	9.802-781.0	▲ Nut, 3/8" Whiz Loc	8		9.802-125.0	Plug, 1/4" JIC, Flare (11, 13 HP)	1
80	9.802-259.0	Hose, 1/2", Push-on	1.5 ft.	99	9.802-776.0	Nut, 5/16", ESNA, NC	4
81	8.706-829.0	Elbow, Street, Brass	1	100	8.912-723.0	Shield, Heat, MHP	1
82	9.802-128.0	Nipple, 1/2" JIC x 1/2" Pipe (Landa Pump)	3	101	9.802-813.0	Washer, 5/8", Lock	4
83	8.912-699.0	Strap, MHP Fuel Tank (11, 13 HP)	2	102	8.706-797.0	Nipple, 1/2" Hex	1
		(16 HP)	1	103	8.706-844.0	Tee, 1/2" Female, Pipe	1
	8.912-701.0	Strap, MHP Fuel Tank, Long (16 HP)	1	104	8.724-844.0	Switch, Reed Replacement, MV60	1
84	9.803-131.0	Rail, Pump Combo	1	105	9.802-151.0	Swivel, 1/2" JIC Fem, Push-On	2
85	9.802-559.0	Burner Assy, Beckett, 12 VDC	1	106	9.802-259.0	Hose, 1/2", Push-On	1.42 ft.
	8.918-919.0	Burner, Landa Sure Fire 12VDC	1	107	8.916-090.0	Label, Landa Logo	1
	9.802-668.0	▲ Electrode, Pair Beckett	1	108	9.802-129.0	Elbow, 1/2" JIC x 3/8", 90°	1
	9.802-638.0	▲ Motor, Burner Beckett	1	109	9.801-252.0	Label, Maintain Engine Speed	1
	9.802-562.0	▲ Pump, Fuel Beckett	1	110	8.718-976.0	Washer, 1/4" Retainer	10
	9.802-639.0	▲ Solenoid Coil, 12V	1	111	8.706-216.0	Tee, 1/2 Female, Steel	1
	9.802-636.0	▲ Blower Wheel Beckett	1	112	8.706-248.0	Plug, 3/8" Allen	1
	9.802-637.0	▲ Coupling, Fuel Beckett	1	113	8.932-965.0	Label, Warning Exposed Pulley	2
	9.802-663.0	▲ Ignitor, Assembly Beckett	1	114	9.196-012.0	Screw, 10-24 x 1/4	1
	8.717-273.0	▲ Nozzle, Burner 2.00 x 90° B (4-3000, 4-3500)	1	115	8.706-996.0	Adapter, 1/4" x 1/4"	1
86	8.718-980.0	Washer, 5/16", Flat	4	116	9.801-265.0	Label, Landa Sure Fire	1
87	9.802-789.0	Nut, 3/8" Hex	2				

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# EXPLODED VIEW - DETERGENT/FLOAT TANK



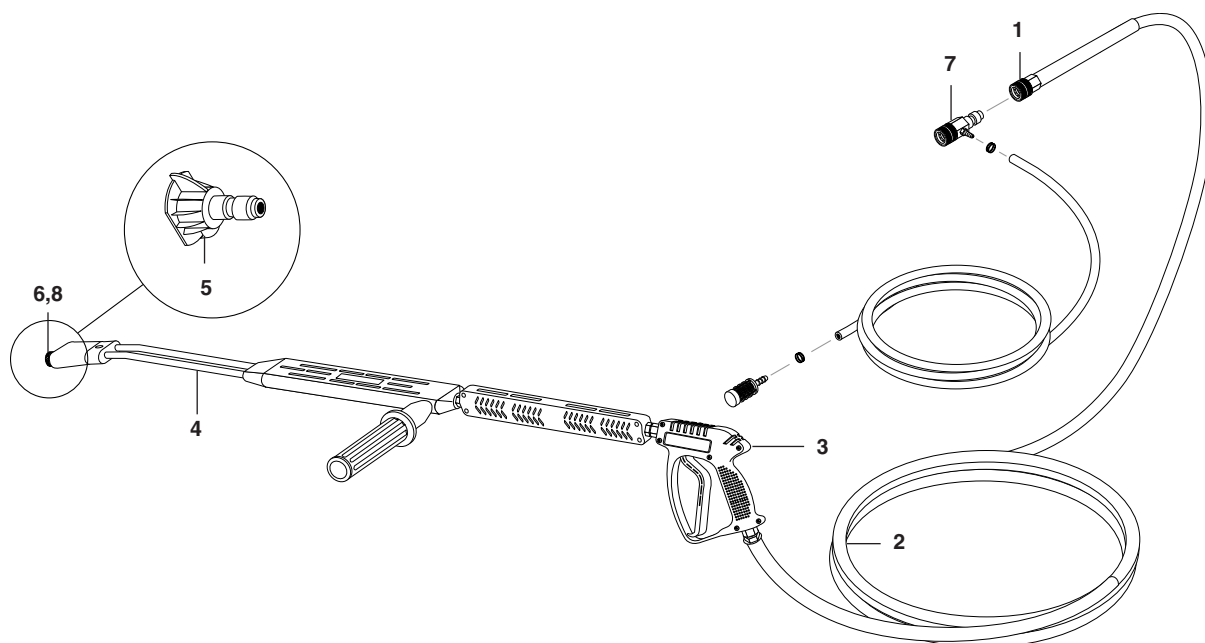
## DETERGENT/FLOAT TANK PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	8.707-317.0	Valve/Control, Metering	1
	9.802-810.0	▲ Washer, 5/8" SAE Flat Zinc	1
	8.719-011.0	▲ Washer, 5/8" Interval Star Zinc	1
2	8.706-958.0	Hose Barb, 1/4" Barb x 1/4" Pipe, 90°	2
3	6.390-126.0	Clamp, Hose, .46-, .54 ST	2
4	9.802-132.0	Elbow, 3/4" JIC x 1/2" Male 90°	1
5	9.802-254.0	Hose, 1/4", Push-On	2.5 ft.
6	9.802-152.0	Swivel, 3/4" JIC Fem, Push-On	1
7	8.916-090.0	Label, Landa Logo	1
8	8.706-958.0	Hose Barb, 1/4" Barb x 1/4" ML Pipe, 90°	1
9	8.912-233.0	Lid & Hinges, Plastic Ft. Tank	1
10	9.802-185.0	Valve, Fluidmaster 400A Float	2
11	9.802-084.0	Tank, Plastic Universal Float	1

ITEM	PART NO.	DESCRIPTION	QTY
12	8.707-058.0	Strainer, 1/4" Hose Barb	1
13	8.707-061.0	Strainer, 1/2" Basket	1
14	9.802-131.0	Elbow, 1/2" JIC x 1/2", 90°	1
15	8.707-000.0	Connector, 1/2" Anchor	1
16	8.719-039.0	Washer, 1-3/16" x 2-1/4", STL RBR	1
17	8.707-020.0	Push-On, 3/4" x 1/2" Male	1
18	9.802-822.0	Screw, 5/16" - 18 x 1-1/2" SS, Button Socket	1
19	9.802-106.0	Plug, Float Tank	1
20	9.802-824.0	Washer, 5/16" SS	1
21	9.802-823.0	Nut, 5/16" - 18, Wing SS	1
22	9.802-258.0	Inlet Hose, Supply Water, 45"	2
23	9.802-261.0	Hose, 3/4", Push-On	2.5 ft.
24	9.802-134.0	Tee, 1/2" x 1/2" JIC 51#	1
25	9.802-251.0	Tube, 1/4" x 1/2" Clear Vinyl	8 ft.
26	8.706-829.0	Elbow, 1/2" Street, Brass	1
27	9.802-119.0	Cross, 1/2" Female, Cast	1
28	8.706-915.0	Bushing, 1/2 x 1/4 Brass	1
29	8.706-965.0	Hose Barb 1/4" x Barb x 3/8" NPT	1
30	9.802-254.0	Hose, 1/4" Push-on	6'

▲ Not Shown

## EXPLODED VIEW - HOSE & SPRAY GUN

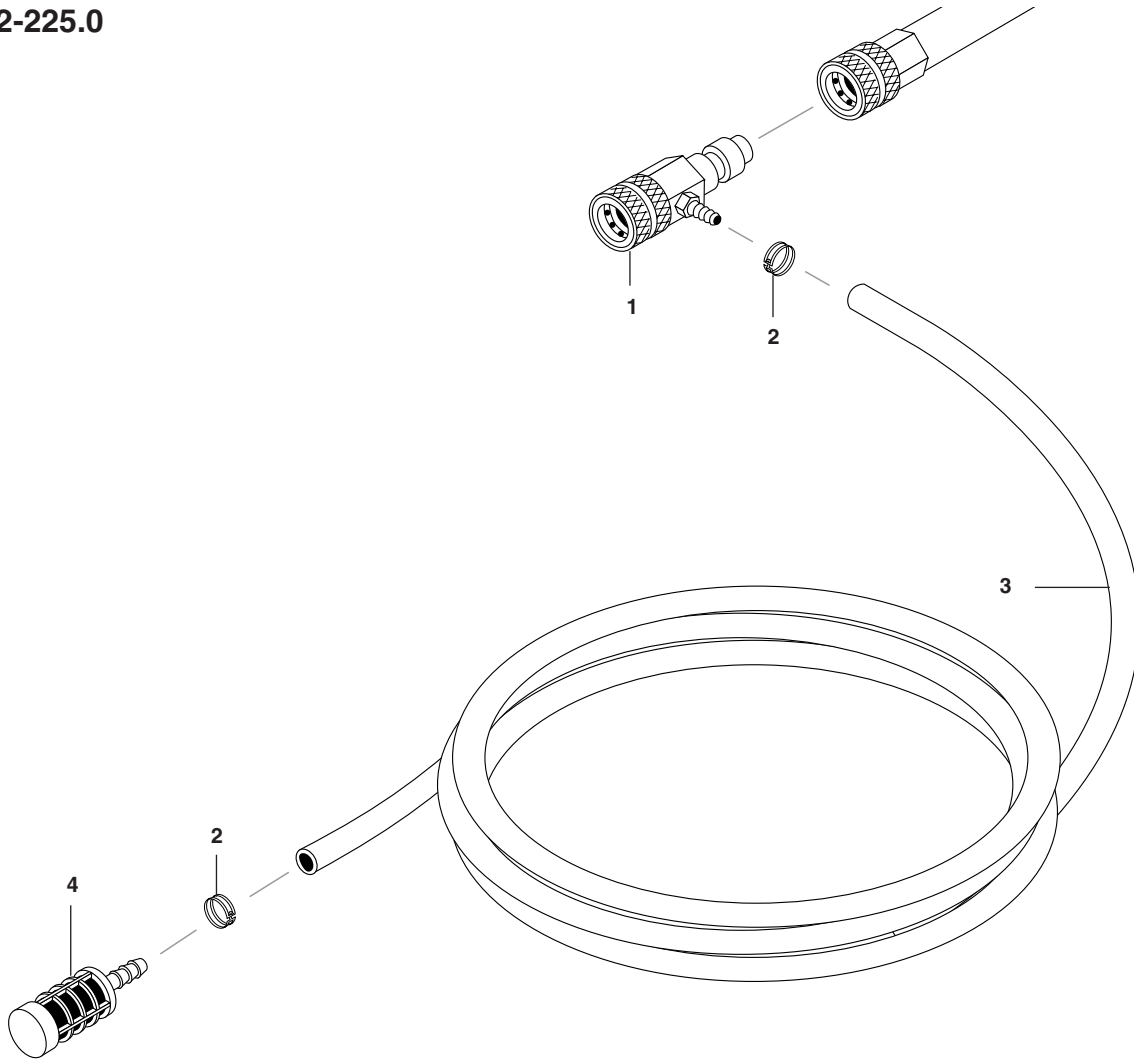


## HOSE & SPRAY GUN PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	9.802-166.0	Coupler, 3/8" Female	1	5	8.712-350.0	Nozzle, SAQC MEG 1545	1
	9.802-100.0	▲ Quick Coupler O-Ring Lg	1		8.712-351.0	Nozzle, SAQC MEG 2545	1
2	8.739-213.0	Hose, 3/8" x 50', 2 Wire Tuff Skin	1		8.712-352.0	Nozzle, SAQC MEG 4045	1
3	8.751-234.0	Gun, Landa, L1050 5000 PSI, 10.4 GPM	1		8.712-349.0	Nozzle, SAQC MEG 0045	1
4	8.711-293.0	Wand, VP, Zinc (AL 344) w/Coupler, w/Soap Nozzle	1			Red, General Pump (5-3500)	1
	83-SSVPKIT	▲ Repair Kit, Wand, AR, SS, Seat (AL344)	1	6	9.802-286.0	▲ Brass Soap Nozzle Only, 1/8"	1
5	8.712-346.0	Nozzle, SAQC MEG, 1504, Yellow (4-3000, 4-3500)	1	7	9.802-225.0	Detergent Injector (All Models)	1
	8.712-347.0	Nozzle, SAQC MEG 2504, Green (4-3000, 4-3500)	1	8	9.802-165.0	▲ Coupler, 1/4" Female	1
	8.712-348.0	Nozzle, SAQC MEG 4004 White (4-3000, 4-3500)	1		9.802-096.0	▲ Quick Coupler O-Ring, Sm	1
	8.712-345.0	Nozzle, SAQC MEG 0004, Red (4-3000, 4-3500)	1			▲ Not Shown	

## EXPLODED VIEW - DETERGENT INJECTOR

9.802-225.0



## DETERGENT INJECTOR PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	9.802-216.0	Injector, Detergent, Non Adjust, #3	1
2	6.390-126.0	Clamp, Hose, .46-, .54 ST	2
3	9.802-251.0	Tube, 1/4" x 1/2", Clear Vinyl	6 ft.
4	8.707-057.0	Strainer, 1/4", Hose Barb	1

# SPECIFICATIONS

## PARTS SPECIFICATIONS: LANDA PUMP

		PUMP		ENGINE			
Model	Model	Part #	Pulley	Pulley Part #	Bushing	Bushing Part #	Belt Size/Qty
MHP4-30324E	LT4035	8.904-869.0	2AK84H	9.802-375.0	25mm	9.802-403.0	AX38 (2)
MHP4-35224E	LT4035	8.904-869.0	2BK90	8.715-593.0	25mm	9.802-403.0	BX44 (2)
MHP4-35324E	LT4035	8.904-869.0	2BK90	8.715-593.0	25mm	9.802-403.0	BX39 (2)

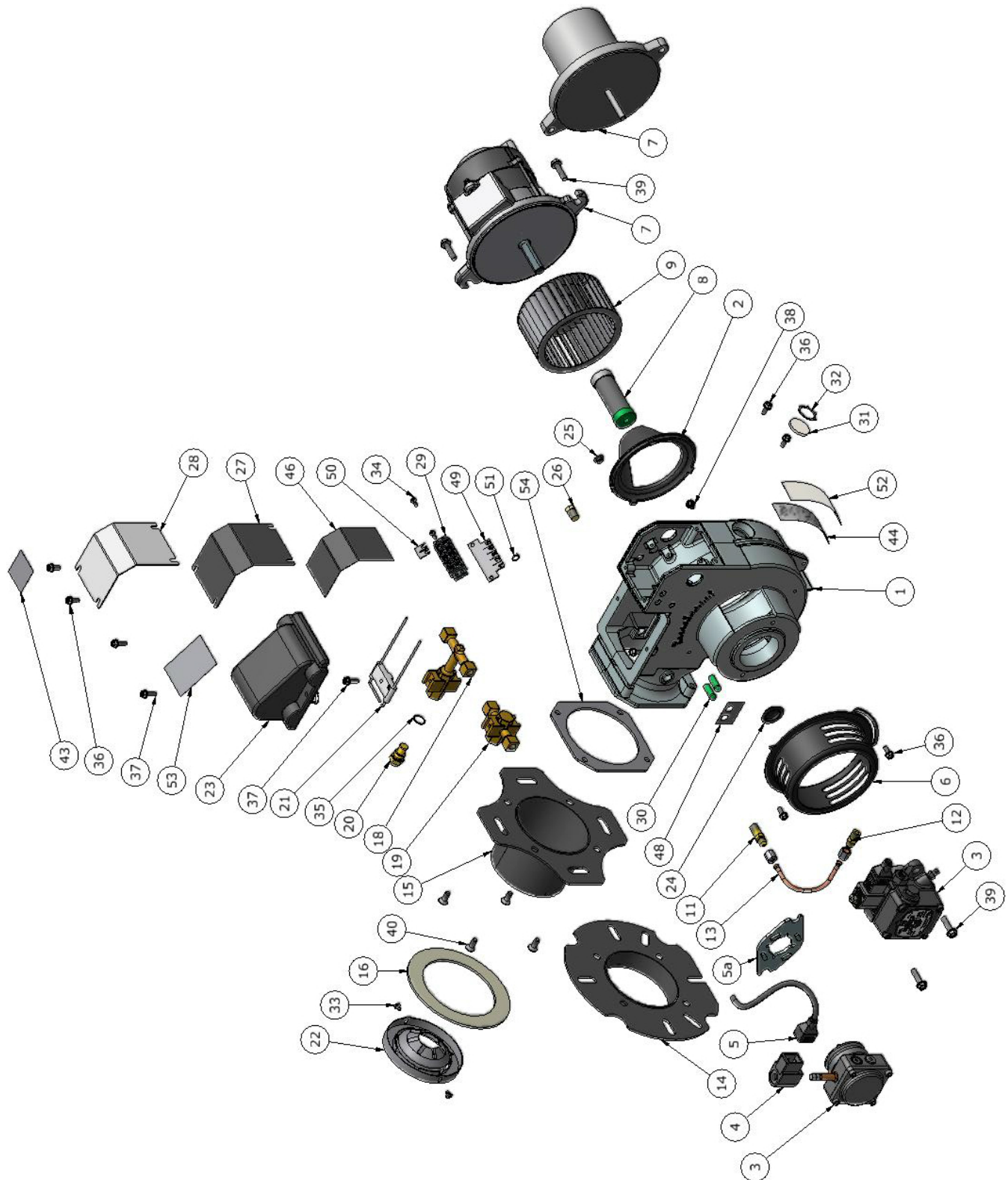


# SPECIFICATIONS

ENGINE (CON'T)					CONTROLS				
Model	Belt Part #	Model	Type	Part #	Pulley	Pulley Part #	Bushing	Part#	
4-30324E	9.802-410.0	GX340 (389cc)	HONDA	8.750-578.0	2AK30	9.803-298.0	HX1"	5-11100	
4-35224E	8.715-705.0	Vanguard (479cc)	BRIGGS	9.802-325.0	2BK32	8.715-576.0	HX1"	5-11100	
4-35324E	5-604039	GX390 (389cc)	HONDA	8.750-579.0	2BK32	8.715-576.0	HX1"	5-11100	

# LANDA SURE FIRE BURNER REPLACEMENT PARTS

For best performance specify genuine Landa Sure Fire replacement parts



# LANDA SURE FIRE BURNER REPLACEMENT PARTS

For best performance specify genuine Landa Sure Fire replacement parts

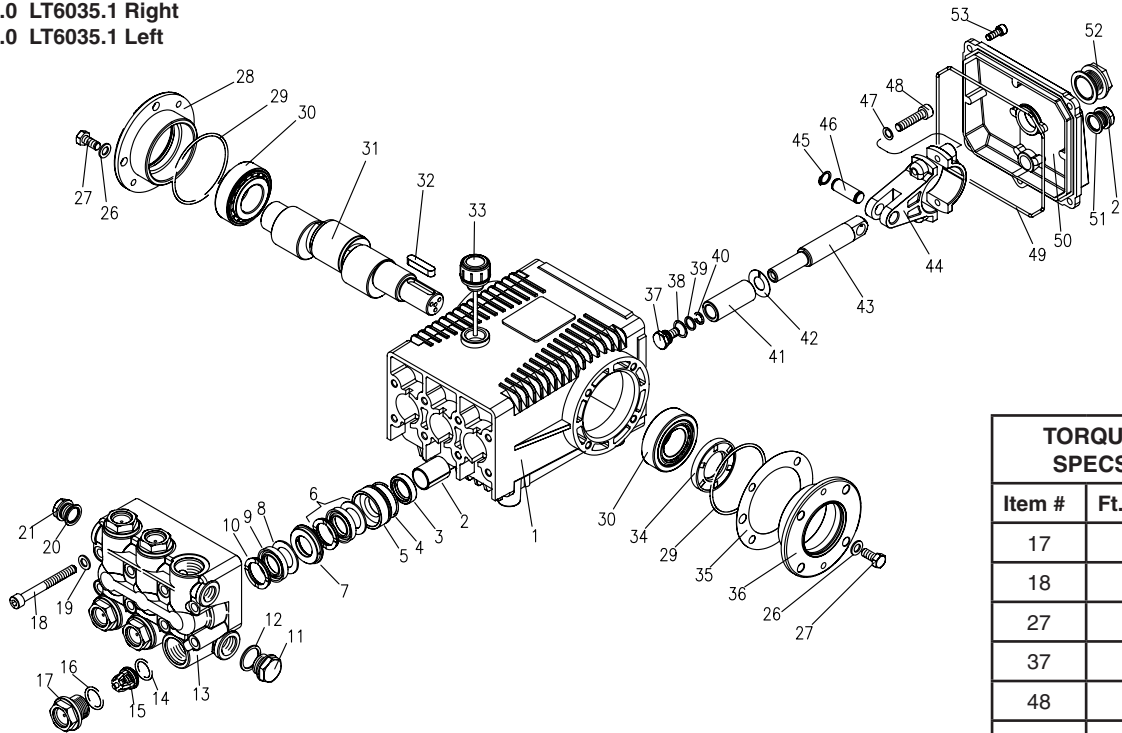
Item #	Part #	Description	Qty
25	8.750-830.0	PLUG, HOLE 0.285 PLASTIC	1
26	8.751-134.0	PLUG, 1/8" NPT x HEX SHOULDER	1
27	8.918-454.0	GASKET, JUNCTION BOX	1
28	8.750-542.0	COVER, JUNCTION BOX	1
29	8.750-116.0	BLOCK, TERMINAL, 5 POLE	1
30	8.750-817.0	LIGHT, INDICATOR, GREEN 14V	2
30	8.750-818.0	LIGHT, INDICATOR, GREEN 28V	1
30	8.750-819.0	LIGHT, INDICATOR, GREEN 125V	1
30	8.750-820.0	LIGHT, INDICATOR, GREEN 250V	1
31	8.750-784.0	SITE GLASS	1
32	8.750-785.0	RING, PUSH ON INTERNAL, 1305-112	1
33	8.733-001.0	SCREW, 8 x 1/4" HI LOW THREAD CUT, PPH	2
34	8.718-762.0	SCREW, 8-32 X 1/2", M PH RDH PL	2
35	8.752-137.0	WASHER, COPPER	1
36	8.718-810.0	SCREW, 10/32 x 1/2", WHIZ LOC FLANGE	6
37	8.750-770.0	SCREW, 10/32 x 5/8", WHIZ LOC FLANGE	3
38	8.750-816.0	SCREW, 10/32 X 1/4" GROUNDING	1
39	8.750-768.0	SCREW, 1/4-20 x 1", WHIZ LOC FLANGE	4
40	8.750-771.0	SCREW, 1/4-20 X 1/2", PHIL FHMS	4
42	—	LABEL, BRAND NAME	1
43	9.801-268.0	LABEL, DISCONNECT POWER SUPPLY	1
44	—	LABEL, SERIAL PLATE	1
46	9.807-339.0	LABEL, WIRING DIAGRAM, BURNER 115V-115V	1
46	9.807-340.0	LABEL, WIRING DIAGRAM, BURNER 230V-230V	4
46	9.807-341.0	LABEL, WIRING DIAGRAM, BURNER 230V-115V	1
46	9.807-342.0	LABEL, WIRING DIAGRAM, BURNER 115V-24V	1
46	9.807-343.0	LABEL, WIRING DIAGRAM, BURNER 230V-24V	1
46	9.807-344.0	LABEL, WIRING DIAGRAM, BURNER 12VDC	1
48	9.801-274.0	LABEL, BURNER LIGHTS	1
49	8.919-105.0	PLATE, TERMINAL BLOCK NUMBERS	1
50	8.716-451.0	TERMINAL, JUMPER SPADE	1
51	9.802-510.0	CABLE, TIE, 4" BLACK	2
52	9.807-348.0	LABEL, CLEAR MYLAR	1
53	9.807-345.0	LABEL, IGNITER 120V	1
53	9.807-346.0	LABEL, IGNITER 230V	1
53	9.807-347.0	LABEL, IGNITOR 12VDC	1
54	8.751-354.0	GASKET, BURNER TUBE	1

Item #	Part #	Description	Qty
1	8.919-050.0	BURNER HOUSING ASSEMBLY	1
2	8.751-160.0	AIR GUIDE	
3	8.700-758.0	FUEL PUMP, SUNTEC A2VA-3106 12-24V SOL	1
3	8.700-759.0	FUEL PUMP, SUNTEC A2VA-3106 120V SOL	1
3	8.700-760.0	FUEL PUMP, SUNTEC A2VA-3106 230V SOL	1
3	8.753-000.0	FUEL PUMP, DANFOSS 071N1298	1
4	8.750-762.0	COIL, SOLENOID DANFOSS 230V	1
4	8.750-763.0	COIL, SOLENOID DANFOSS 115V	1
4	8.750-764.0	COIL, SOLENOID DANFOSS 12-24V	1
5	8.750-765.0	CABLE, SOLENOID COIL, DANFOSS	1
5a	8.750-783.0	MOUNTING KIT, FLANGE/HUB, DANFOSS	1
6	8.750-541.0	AIR BAND	1
7	8.750-517.0	MOTOR, 1/6 HP 115V 60Hz	1
7	8.750-518.0	MOTOR, 1/6 HP 230V 60Hz	1
7	8.751-074.0	MOTOR, 1/7 HP 12VDC AMETEK	1
8	8.750-543.0	COUPLING, FLEX, 1/2" x 5/16"	1
8	8.751-073.0	COUPLING, FLEX, 5/16" x 5/16"	1
9	8.750-520.0	FAN, 4.53" X 2.42", 1/2" BORE, F115-62S	1
9	8.751-072.0	FAN, 4.53" x 2.42" x .313 BORE, F115-62S	1
11	8.750-547.0	CONNECTOR, 37 DEG FLARE X 1/8" NPT, LONG	1
12	8.750-545.0	CONNECTOR, 37 DEG FLARE X 1/8" NPT	1
13	8.749-000.0	FUEL LINE ASSEMBLY	1
14	8.752-034.0	FLANGE, KNA BURNER, 1" TUBE ASSY	1
15	8.752-035.0	FLANGE, KNA BURNER, 3" TUBE ASSY	1
16	8.750-539.0	GASKET, FLANGE	1
18	8.750-526.0	GUN, ELECTRODE / NOZZLE, 3"	1
19	8.750-525.0	GUN, ELECTRODE / NOZZLE, 1"	1
20	Varies	NOZZLE, FUEL	1
21	8.750-778.0	ELECTRODE, IGNITION, AC	1
21	8.751-342.0	ELECTRODE, IGNITION, DC	1
22	8.750-779.0	CONE, AIR F4	1
22	8.750-782.0	CONE, AIR F6	1
22	8.750-780.0	CONE, AIR F12	1
22	8.750-781.0	CONE, AIR F22	1
23	8.919-114.0	IGNITOR, BURNER 120V	1
23	8.919-115.0	IGNITOR, BURNER 230V	1
23	8.919-116.0	IGNITOR, BURNER 12VDC	1
24	8.751-165.0	PLUG, HOLE 0.875 PLASTIC	1

## LT.1 SERIES PUMP EXPLODED VIEW

8.904-869.0 LT4035.1 Right  
 8.904-870.0 LT4035.1 Left  
 8.904-871.0 LT4040.1 Right  
 8.904-872.0 LT4040.1 Left  
 8.904-874.0 LT5030.1 Right  
 8.904-879.0 LT5030.1 Left  
 8.904-881.0 LT6035.1 Right  
 8.904-883.0 LT6035.1 Left

**G3 Evolution**



TORQUE SPECS	
Item #	Ft.-Lbs.
17	75
18	45
27	18
37	10
48	30
53	7.6

## LT.1 SERIES PUMP EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	9.803-163.0	Crankcase	1	19	9.802-890.0	Washer	8
2	9.803-195.0	Plunger Guide	3	20	9.803-198.0	Copper Washer 3/8"	1
3*	See Kit	Plunger Oil Seal	3	21	9.802-925.0	Brass Plug 3/8"	1
4*	See Kit	O-Ring Ø1.78 x 31.47	3	26	9.802-884.0	Washer	8
5*	See Kit	"Pressure Ring, Brass	3	27	9.802-944.0	Hexagonal Screw	8
6*	See Kit	"U" Seal Low Pressure	3	28	9.803-182.0	Closed Bearing Housing	1
7*	See Kit	Intermediate Ring, Brass	3	29	9.803-186.0	O-Ring Ø2.62 x 71.12	2
8*	See Kit	Support Ring, Teflon Bronze	3	30	9.803-160.0	Roller Bearing, Tapered	2
9 *	See Kit	"U" Seal High Pressure	3	31	9.803-148.0	Crankshaft (GT4040.1, 5030.1, 6035.1)	1
10*	See Kit	Support Ring	3		9.803-149.0	Crankshaft (GT 4035.1)	
11	9.802-926.0	Brass Plug, 1/2"	1	32	9.803-167.0	Crankshaft Key	1
12	9.803-199.0	Copper Washer 1/2"	1	33	9.802-923.0	Oil Dip Stick	1
13	9.802-933.0	Manifold Head	1	34	9.803-139.0	Crankshaft Seal	1
14*	See Kit	O-Ring Ø2.62 x 17.13	6	35	9.803-177.0	Shim	2
15*	See Kit	Valve Assembly	6	36	9.803-181.0	Bearing Housing	1
16*	See Kit	O-Ring Ø2.62 x 20.29	6	37*	See Kit	Plunger Bolt	3
17	9.802-928.0	Valve Plug	6	38*	See Kit	Copper Spacer	3
18	9.802-943.0	Manifold Stud Bolt	8				

## LT.1 SERIES PUMP PARTS LIST (CONT)

ITEM	PART NO.	DESCRIPTION	QTY
39*	See Kit	O-Ring Ø1.78 x10.82	3
40*	See Kit	Teflon Ring	3
41*	See Kit	Plunger	3
42*	See Kit	Copper Spacer	3
43	9.803-143.0	Plunger Rod	3
44	9.803-157.0	Connecting Rod	3
45	9.802-912.0	Snap Ring	6
46	9.802-915.0	Connecting Rod Pin	3
47	9.802-889.0	Spring Washer	6
48	9.802-937.0	Connecting Rod Screw	6
49	9.803-194.0	O-Ring Ø2.62 x 152.07	1
50	9.803-166.0	Crankcase Cover	1
51	9.803-197.0	Gasket, G3/8	1
52	9.803-202.0	Sight Glass G3/4	1
53	9.802-939.0	Cover Screw	5

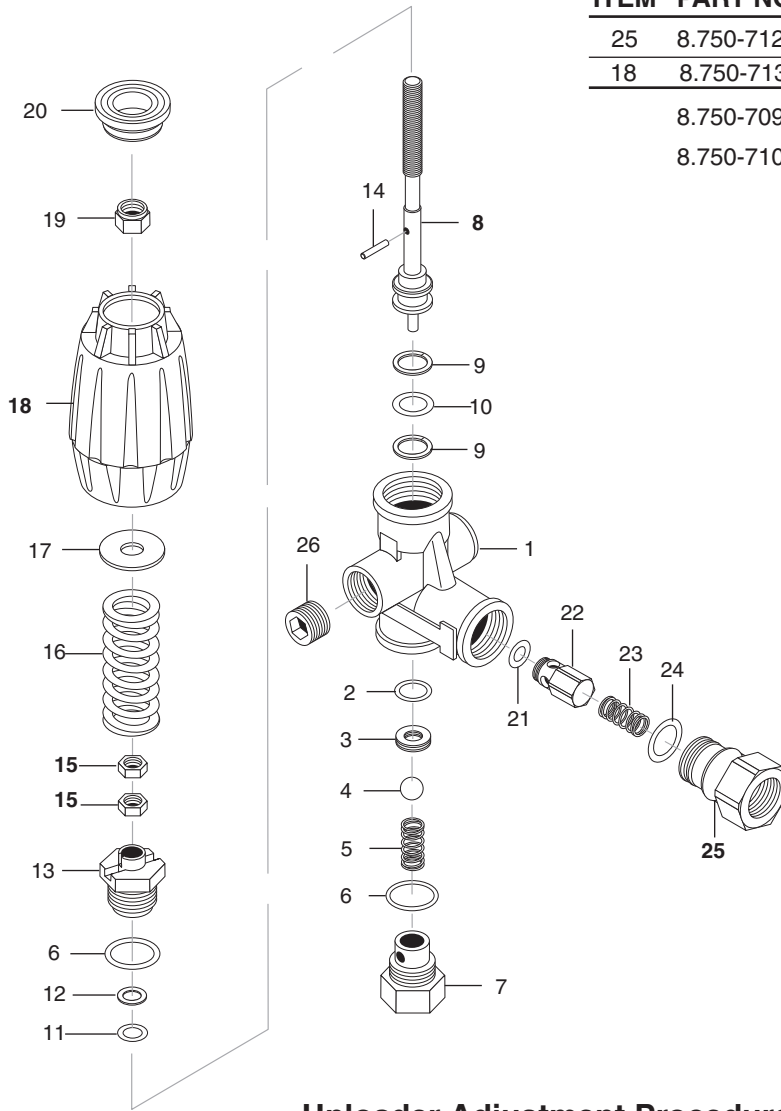
\* Part available in kit (See below)

REPAIR KIT NUMBER	8.916-488.0	8.916-487.0	8.916-322.0	8.916-323.0	9.802-607.0	9.802-611.0
KIT DESCRIPTION	Plunger "U" Seal 20mm LT-4040.1, LT-6035.1 LT-4035.1	Plunger "U" Seal 22mm LT-5030.1	"U" Seal Packing Assy 20mm LT-4040.1 LT-6035.1 LT-4035.1	"U" Seal Packing Assy 22mm LT-5030.1	Plunger 20mm LT-4040.1 LT-6035.1 LT-4035.1	Plunger 22mm LT-5030.1
ITEM NUMBERS INCLUDED	4, 6, 8, 9, 10	4, 6, 8, 9, 10	4, 5, 6, 7, 8, 9,10	4, 5, 6, 7, 8, 9,10	37, 38, 39, 40, 41, 42	37, 38, 39, 40, 41, 42
NUMBER OF CYLINDERS KIT WILL SERVICE	3	3	1	1	1	1

REPAIR KIT NUMBER	9.802-603.0	9.802-606.0
KIT DESCRIPTION	Complete Valve (all pumps)	Plunger Oil Seals (all pumps)
ITEM NUMBERS INCLUDED	14, 15, 16	3
NUMBER OF CYLINDERS KIT WILL SERVICE	6	3

# VRT3 UNLOADER EXPLODED VIEW AND PARTS LIST

8.750-297.0, 8 GPM, 2320 PSI  
 8.750-298.0, 8 GPM, 3630 PSI  
 8.750-299.0, 8 GPM, 4500 PSI



ITEM	PART NO.	DESCRIPTION	QTY
25	8.750-712.0	Outlet Fitting	1
18	8.750-713.0	Knob, Unloader	1
	8.750-709.0	Repair Kit, VRT3, 2320/3630 PSI	
	8.750-710.0	Repair Kit, VRT3, 4500 PSI	
		(Kit Items: 1, 4, 8-12, 16, 21-22)	

## Unloader Adjustment Procedures

1. Remove lock nut (Item 19).
2. Remove adjustment knob (Item 18).
3. Loosen the two (2) nuts (Item 15), move them upward on stem (Item 8) until you see 4 or more threads below the nut.
4. Re-attach adjusting knob (Item 18).
5. Start machine. Open the trigger of the spray gun. Increase pressure by turning adjustment knob (Item 18) clockwise until pressure is at the desired operating pressure.
6. Remove the adjustment knob (Item 18), tighten the lower nut (Item 15) tightly against the upper nut (Item 15). Re-attach adjustment knob (Item 18) and screw down until contact is made with the nuts (Items 15). Screw down lock nut (Item 19) onto the stem (Item 8) until the threads cut into the nylon insert of the lock nut (Item 19).

\*If adjustment knob (Item 18) **DOES NOT** make contact with upper nut (Items 15), remove adjusting knob (Item 18), re-adjust (raise) nuts (Items 15) on stem (Item 8) and re-attach adjustment knob (Item 18), then repeat step #6.

\*\*If adjustment knob (Item 18) **DOES** make contact with upper nut; release the trigger of the spray gun and watch the pressure gauge for the pressure increase ("spike"). This "spike" **SHOULD NOT** exceed 500 psi above the operating pressure. If "spike" pressure exceeds the 500 psi limit, remove the adjusting knob (Item 18) and re-adjust (lower) the nuts (Items 15) on the stem (Item 8). Re-attach the adjusting knob (Item 18), then repeat step #6.





## LANDA LIMITED NEW PRODUCT WARRANTY PRESSURE WASHERS WHAT THIS WARRANTY COVERS

All LANDA pressure washers are warranted by LANDA to the original purchaser to be free from defects in materials and workmanship under normal use, for the periods specified below. This Limited Warranty is subject to the exclusions shown below, is calculated from the date of the original purchase, and applies to the original components only. Any parts replaced under this warranty will assume the remainder of the part's warranty period.

### SEVEN YEAR PARTS AND ONE YEAR LABOR WARRANTY:

Components manufactured by LANDA, such as frames, handles, top and bottom wraps, float tanks, fuel tanks, belt guards, and internal components on the oil-end of Landa manufactured pumps. General, AR, Liberty, Comet and swash and wobble plate pumps have a one year warranty. Heating coils have a five year warranty from date of original machine purchase.

### ONE YEAR PARTS AND ONE YEAR LABOR WARRANTY:

All other components, excluding normal wear items as described below, will be warranted for one year on parts and labor. Parts and labor warranty on these parts will be for one year regardless of the duration of the original component manufacturer's part warranty.

### WARRANTY PROVIDED BY OTHER MANUFACTURERS:

Motors, generators, and engines, which are warranted by their respective manufacturers, are serviced through these manufacturers' local authorized service centers. LANDA is not authorized and has no responsibility to provide warranty service for such components.

### WHAT THIS WARRANTY DOES NOT COVER

This warranty does not cover the following items:

1. Normal wear items, such as nozzles, spray guns, discharge hoses, wands, quick couplers, seals, filters, gaskets, O-rings, packings, pistons, pump valve assemblies, strainers, belts, brushes, rupture disks, fuses, pump protectors.
2. Damage or malfunctions resulting from accidents, abuse, modifications, alterations, incorrect installation, improper servicing, failure to follow manufacturer's maintenance instructions, or use of the equipment beyond its stated usage specifications as contained in the operator's manual.
3. Damage due to freezing, chemical deterioration, scale build up, rust, corrosion, or thermal expansion.
4. Damage to components from fluctuations in electrical or water supply.
5. Normal maintenance service, including adjustments, fuel system cleaning, and clearing of obstructions.
6. Transportation to service center, field labor charges, or freight damage.

### WHAT YOU MUST DO TO OBTAIN WARRANTY SERVICE

While not required for warranty service, we request that you register your LANDA pressure washer by returning the completed registration card. In order to obtain warranty service on items warranted by LANDA, you must return the product to your Authorized LANDA Dealer, freight prepaid, with proof of purchase, within the applicable warranty period. If the product is permanently installed, you must notify your Authorized LANDA Dealer of the defect. Your Authorized LANDA Dealer will file a claim with Landa, who must subsequently verify the defect. In most cases, the part must be returned to LANDA freight prepaid with the claim. For warranty service on components warranted by other manufacturer's, your Authorized LANDA Dealer can help you obtain warranty service through these manufacturers' local authorized service centers.

### LIMITATION OF LIABILITY

LANDA'S liability for special, incidental, or consequential damages is expressly disclaimed. In no event shall LANDA'S liability exceed the purchase price of the product in question. LANDA 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 and specifications. Our obligation under this warranty is expressly limited at our option to the replacement or repair at a service facility or factory designated by us, of such part or parts as inspection shall disclose to have been defective. **THE WARRANTY CONTAINED HEREIN IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY.** LANDA does not authorize any other party, including authorized LANDA Dealers, to make any representation or promise on behalf of LANDA, 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 LANDA products conforms to local codes. While LANDA attempts to assure that its products meet national codes, it cannot be responsible for how the customer chooses to use or install the product. Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

LANDA

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