

MHP 3000 & 3500 Series
Hot Water -Gasoline Powered - Diesel/Oil Heated

LANDA®

Operator's Manual

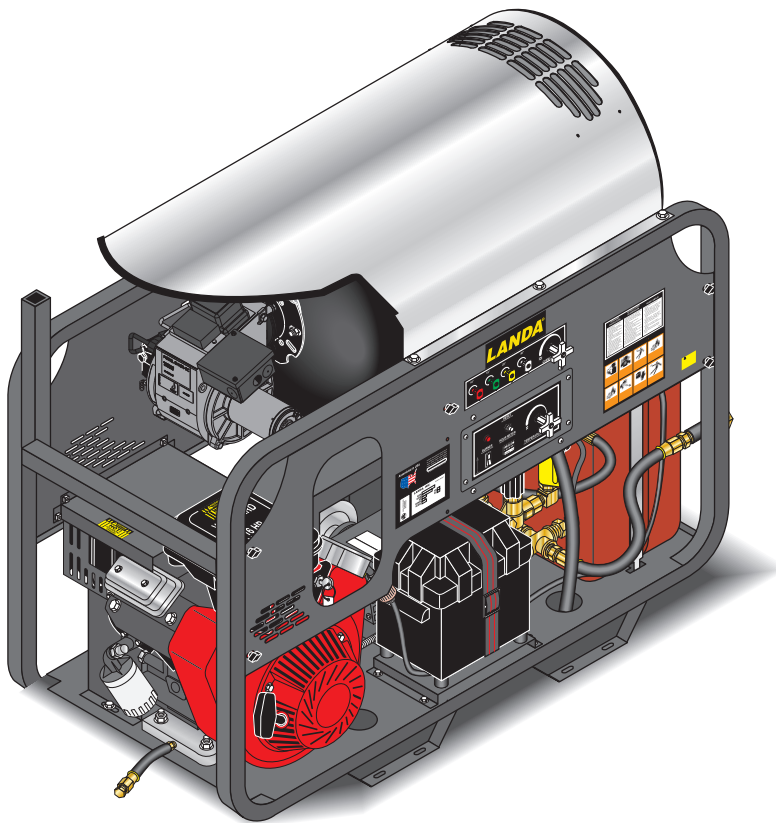
Pressure Washer

MODELS:

MHP4 30324E
1.110-501.0

MHP4 35324E
1.110-503.0

MHP4 35224E
1.110.502.0



For the Landa Dealer nearest you, consult our web page at www.landa.com

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8.913-925.0-AH 03/15/20

Machine Data Label

Model: _____

Date of Purchase: _____

Serial Number: _____

Dealer: _____

Address: _____

Phone Number: _____

Sales Representative: _____

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How To Use This Manual

This manual contains the following sections:

- How to Use This Manual
- Safety
- Operations
- Maintenance
- Parts List

The HOW TO USE THIS MANUAL section will tell you how to find important information for ordering correct repair parts.

Parts may be ordered from authorized dealers. When placing an order for parts, the machine model and machine serial number are important. Refer to the MACHINE DATA box which is filled out during the installation of your machine. The MACHINE DATA box is located on the inside of the front cover of this manual.

Model: _____
Date of Purchase: _____
Serial Number: _____
Dealer: _____
Address: _____
Phone Number: _____
Sales Representative: _____

The model and serial number of your machine is located on the back of the machine.

The SAFETY section contains important information regarding hazardous or unsafe practices of the machine. Levels of hazards are identified that could result in product damage, personal injury, or severe injury resulting in death.

The OPERATIONS section is to familiarize the operator with the operation and function of the machine.

The MAINTENANCE section contains preventive maintenance to keep the machine and its components in good working condition. They are listed in this general order:

- Storage
- Landa Sure Fire Oil Burner
- Maintenance Schedule
- Oil Change Record
- Troubleshooting

The PARTS LIST section contains assembled parts illustrations and corresponding parts list. The parts lists include a number of columns of information:

- **REF** – column refers to the reference number on the parts illustration.
- **PART NO.** – column lists the part number for the part.
- **QTY** – column lists the quantity of the part used in that area of the machine.
- **DESCRIPTION** – column is a brief description of the part.
- **NOTES** – column for information not noted by the other columns.

NOTE: If a service or option kit is installed on your machine, be sure to keep the KIT INSTRUCTIONS which came with the kit. It contains replacement parts numbers needed for ordering future parts.

NOTE: The manual part number is located on the lower right corner of the front cover.

Introduction & 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.

SAVE THESE 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: To reduce the risk of injury, read operating instructions carefully before using.

AVERTISSEMENT: Pour réduire le risque de blessures, lire attentivement les instructions de fonctionnement avant l'utilisation.

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.



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

DANGER: Garder la lance, le boyau et le jet d'eau à l'écart de tout câblage électrique ou des chocs électriques mortels pourraient survenir.

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



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

AVERTISSEMENT: Cette machine excède 85 dB et une protection de l'ouïe appropriée doit être portée.



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.

AVERTISSEMENT: Un jet haute pression peut écailler la peinture ou provoquer l'émission d'autres

particules dans l'air et leur Pour éviter les lésions corporelles, une protection des yeux, du visage,

des mains et des pieds doit être portée lors de l'utilisation de cet équipement. projection à hautes vitesses.

5. Always wear properly eye protection such as safety goggles or face shield while spraying. (Safety glasses do not provide full protection)
6. Keep operating area clear of all persons.

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

AVERTISSEMENT: Des liquides inflammables peuvent produire des vapeurs qui peuvent s'enflammer, causant ainsi des dommages à la propriété ou des blessures graves.



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

AVERTISSEMENT: Risque d'explosion - Utiliser uniquement dans des endroits où l'utilisation d'une flamme nue ou d'une torche est permise.



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

AVERTISSEMENT: Risque d'incendie - Ne pas ajouter de carburant pendant que la machine fonctionne ou est encore chaude.

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

AVERTISSEMENT: Ne pas utiliser d'essence, de drainage du carter de moteur ou d'essence contenant de l'huile, de solvants ou de l'alcool. Agir de la sorte risquerait de créer un incendie et/ou une explosion.

WARNING: Risk of fire - Do not Spray flammable liquids.

AVERTISSEMENT: Risque d'incendie - Ne pas pulvériser de liquides inflammables.

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.

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.

AVERTISSEMENT: Risqué de blessure. Débrancher la borne de mise à la terre de la batterie avant de procéder à des opérations d'entretien.

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.

AVERTISSEMENT: Risqué de blessure. Les surfaces chaudes peuvent causer des brûlures.

Utiliser uniquement les zones de prise désignées du pistolet pulvérisateur et de la lance. Ne pas placer les mains ou les pieds sur des endroits non isolés de la laveuse à pression.

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 or animals or severe injury or death will result.

ATTENTION: Liquide de décharge chaud. Ne pas toucher ou décharger directement le jet vers des personnes ou des animaux, car cela risquerait de causer des blessures graves ou même la mort.

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

AVERTISSEMENT: Cette machine produit de l'eau chaude et doit comporter des composants isolés attachés pour protéger l'opérateur.

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.

AVERTISSEMENT: Agripper la lance de nettoyage avec les deux mains avant de commencer. Le non-respect de cette consigne pourrait mener à des blessures causées par le mouvement violent de la lance.

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 animals, or severe injury or death will result.

AVERTISSEMENT: La haute pression générée par ces machines causera des lésions corporelles ou des dommages à l'équipement. Se tenir à l'écart de la buse. Faire preuve de prudence lors de l'utilisation. Ne pas décharger directement le jet vers des personnes ou des animaux, car cela risquerait de causer des blessures graves ou même la mort.



WARNING: Protect machine from freezing.

AVERTISSEMENT: Protéger la machine contre le gel.

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.



DANGER: Risk of asphyxiation. Running this product indoors can result in death due to carbon monoxide, a poison gas you cannot see or smell. Only use outdoors and far away from windows, doors, and openings or vents. Use this product only in a well ventilated area.

DANGER: L'utilisation de ce produit à l'intérieur peut causer la mort par monoxyde de carbone, un gaz toxique incolore et inodore. Utiliser uniquement à l'extérieur et à l'écart des fenêtres, des portes et des ouvertures ou fentes de ventilation. Utiliser ce produit uniquement dans un endroit bien ventilé.

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.

AVERTISSEMENT: Faire preuve d'une extrême prudence au

moment d'utiliser une échelle, des échafaudages

ou toute autre surface relativement instable. La zone de nettoyage doit avoir une pente et un drainage adéquats pour réduire la possibilité d'une chute due à une surface glissante.

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.



WARNING: Do not spray machine or any people, animals or electrical parts.

AVERTISSEMENT: Ne pas vaporiser sur la machine ou les gens, les animaux ou les pièces électriques.



WARNING: If connection is made to a potable water system, the system shall be protected against back flow.

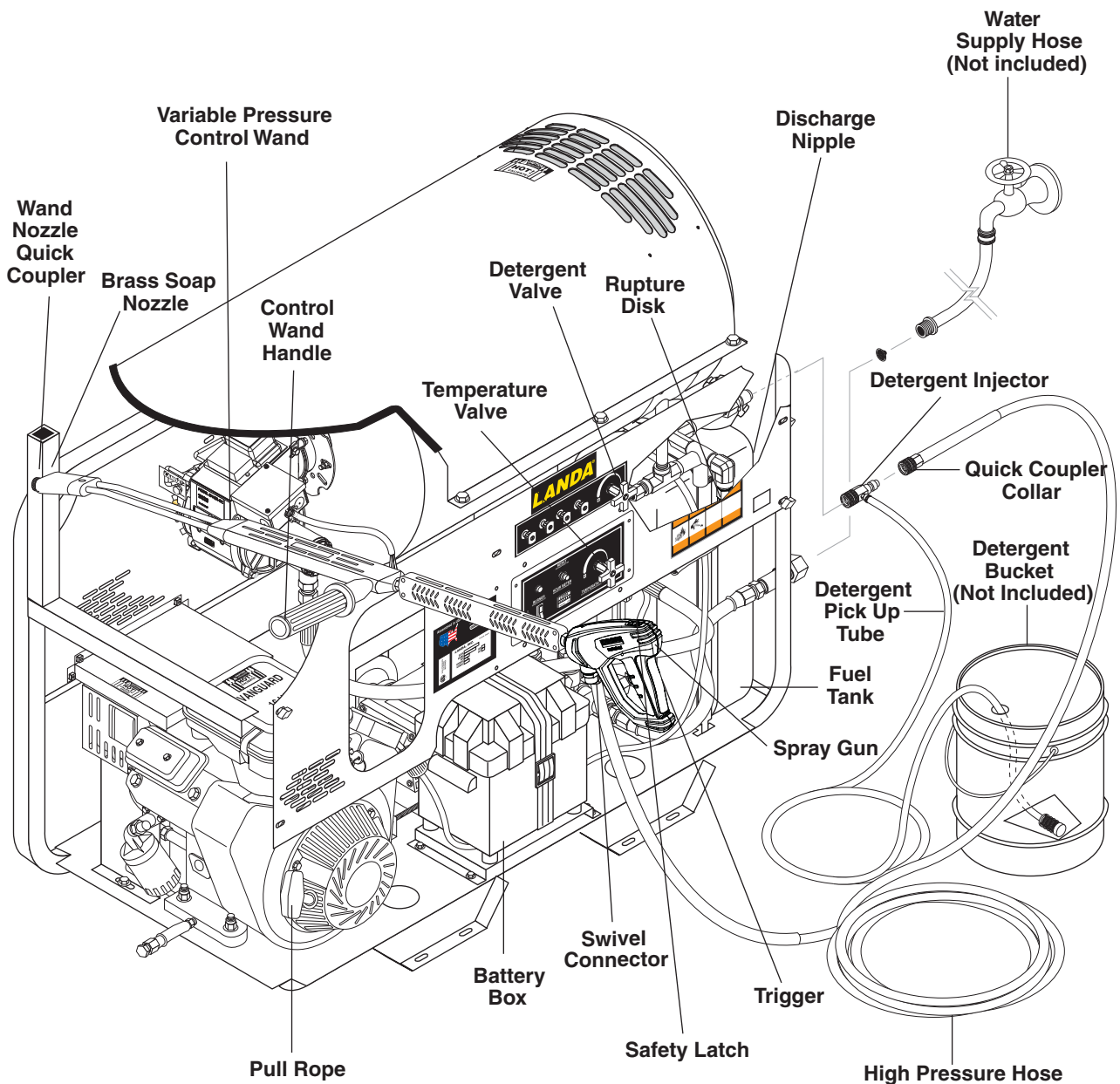
AVERTISSEMENT: Si une connexion est établie avec un réseau d'eau potable, le réseau doit être protégé contre le retour d'eau.



Follow the maintenance instructions specified in the manual.

Suivre les instructions d'entretien spécifiées dans le manuel.

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.

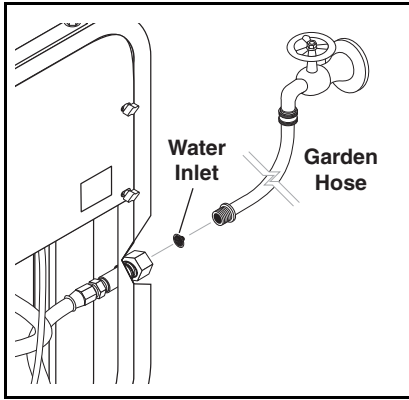
Rupture Disk — Secondary pressure release in the unlikely event the unloader valve fails.

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

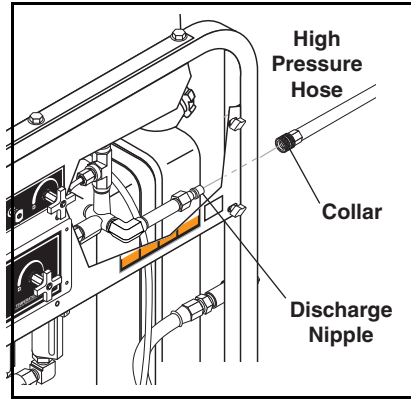
NOTE: If trigger on spray gun is released for more than 2 minutes, water will leak from the pump protector. Warm water will discharge from pump protector onto floor. This system prevents internal pump damage.

Operations

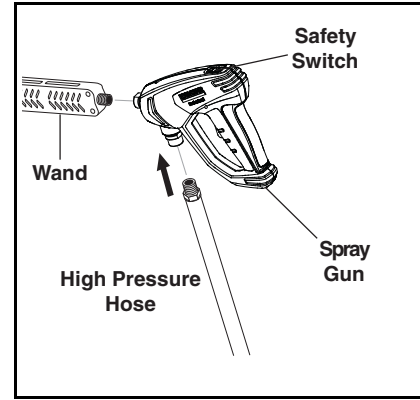
Assembly Instructions



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



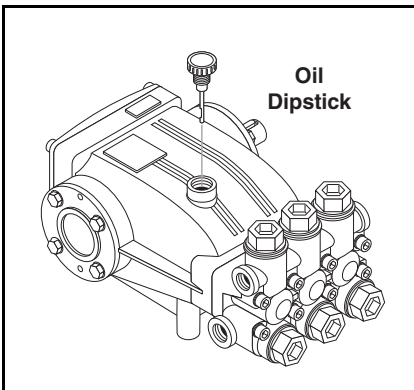
STEP 2: Attach high pressure hose to discharge nipple using quick coupler. Lock coupler securely into place by pulling back coupler collar and inserting it onto discharge nipple and then pushing coupler collar forward to lock in place.



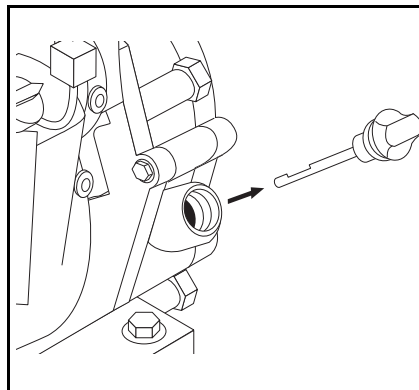
STEP 3: Attach variable pressure control wand to spray gun and swivel connector on high pressure hose to spray gun using teflon tape on threads to prevent leakage.

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

ATTENTION: d'abord mettre le dispositif de sécurité sur la détente du pistolet pulvérisateur.

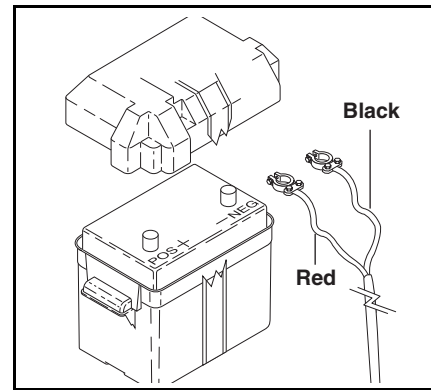


STEP 4: Check oil level on sight glass on side of pump. Oil should be visible one-half way up sight glass (SAE 10W-40 non-foaming). The oil level can also be checked by using the dipstick on the top of the pump.



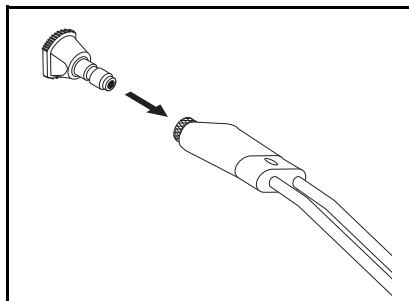
STEP 5: Fill gasoline tank and check engine oil level. Fill fuel oil tank. Do not confuse gasoline and fuel oil (diesel) tanks. Keep proper fuel in proper tanks.

Read engine operator manual for oil and other recommendations.



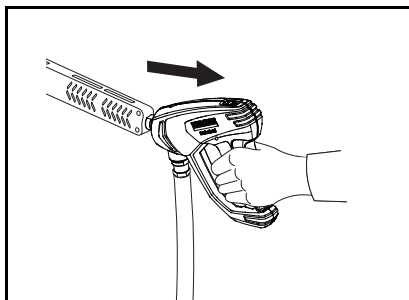
STEP 6: Install proper battery making sure that the red cable is attached to the positive terminal. Use a U1 30 amp garden tractor style battery (battery not included).

Operating Instructions

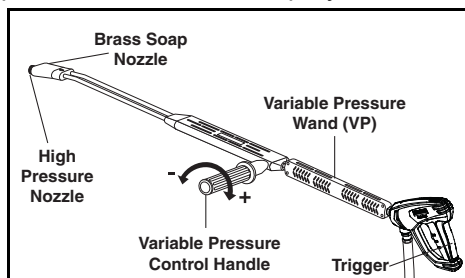


STEP 1: Read operator's manual before operating. Before installing nozzle, turn on water supply and run machine allowing water to flush through the system until clear. Pull wand coupler collar back, insert desired pressure nozzle into coupler, then secure by pushing collar forward. **CAUTION: Never replace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

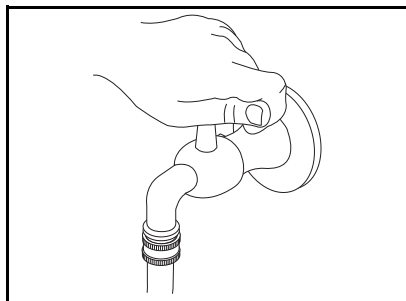
ATTENTION: Ne jamais remplacer les buses sans d'abord mettre le dispositif de sécurité sur la détente du pistolet pulvérisateur.



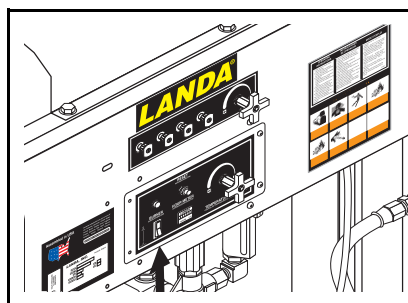
STEP 4: With spray nozzle pointed away from you or anyone else, press trigger on spray gun to obtain pressurized cold water spray.



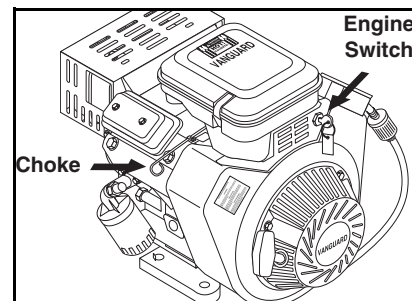
Selection of high or low pressure is accompanied by turning the handle. **NOTE: High pressure nozzle must be inserted at end of wand to obtain high pressure. To apply soap, read washing techniques section.**



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.**



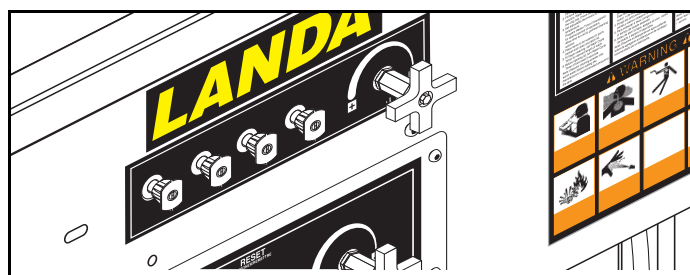
STEP 5: For hot water, turn the burner switch ON when a steady stream of water flows out of the spray gun. Burner will light automatically. For steam, open temperature valve counterclockwise. This lowers the pressure and raises the temperature. **NOTE: Do not start machine with burner switch on.**



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.

ATTENTION: Les petits moteurs peuvent présenter un risque de retour.



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.

Operations

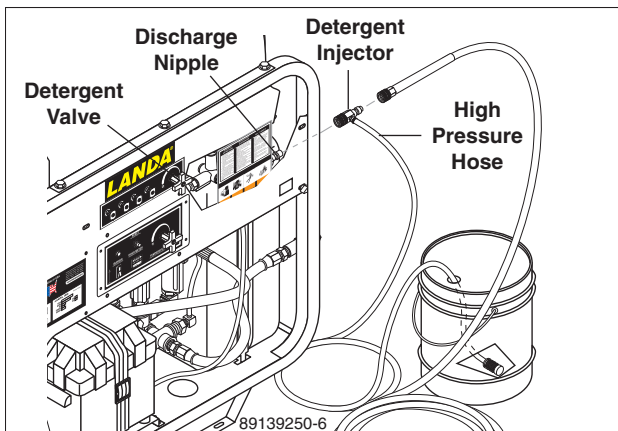
Detergents And General Washing Techniques



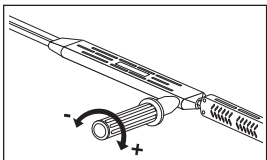
WARNING: Some detergents may be harmful if inhaled or ingested, causing severe nausea, fainting or poisoning. The harmful elements may cause property damage or severe injury.

AVERTISSEMENT: Certains détergents peuvent être dangereux s'ils sont inhalés ou ingérés,

provoquant de fortes nausées, des évanouissements et l'empoisonnement. Les éléments dangereux peuvent causer des dommages à la propriété ou des blessures graves.



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 or acid-based products
- These chemicals will harm the machine and will damage the surface being cleaned.



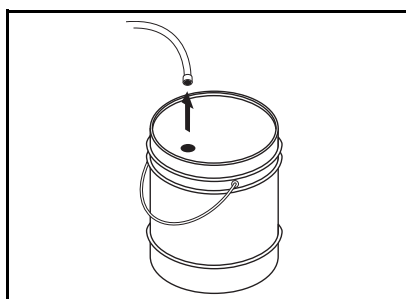
ATTENTION - Ne jamais utiliser :

- Eau de Javel, produits à base de chlore et autres produits chimiques corrosifs
- Liquides contenant des solvants (c.-à-d. diluant à peinture, essence, huiles, etc.)
- Produits à base de tripolyphosphate de sodium
- Ammoniac ou produits à base d'acide

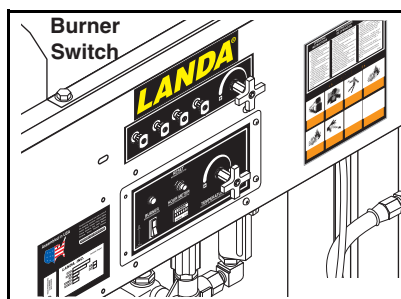
Rinsing

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.

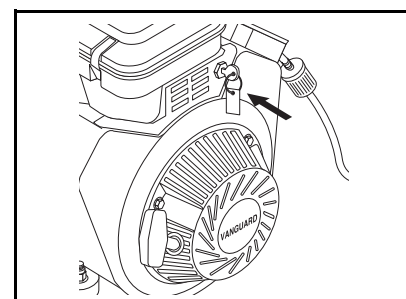
Shutting Down And Clean-up



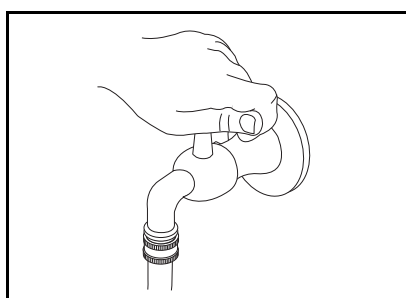
STEP 1: Remove detergent suction tube from container and insert into one gallon of fresh water. Open detergent valve, pull trigger on spray gun and siphon water for one minute.



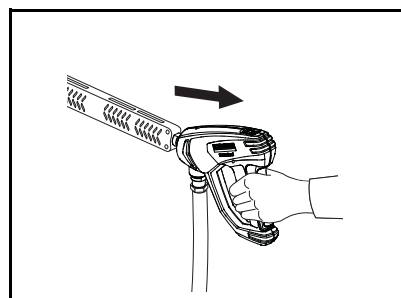
STEP 2: Turn burner switch off and continue spraying, allowing the water to cool below 100°F.



STEP 3: Turn engine off.



STEP 4: Turn off water supply.



STEP 5: Open spray gun to relieve remaining pressure.

Maintenance

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.**

ATTENTION: Toujours entreposer la laveuse à pression dans un endroit où la température ne sera pas inférieure à 32°C (0 °F). La pompe sur cette machine est susceptible de subir des dommages si elle est exposée au gel. **LES DOMMAGES DUS AU GEL NE SONT PAS COUVERTS PAR LAGARANTIE.**

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.

ATTENTION: Le non-respect des directives cidessus entraînera des dommages à la laveuse à pression.

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.

ATTENTION: Avant de redémarrer, faire fondre la glace se trouvant sur les boyaux, le pistolet pulvérisateur ou la lance de la laveuse à pression.

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.

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 10W-40 weight non-foaming oil. Change oil after first 50 hours of use. Thereafter, change oil every year 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 Coil Descaler (Landa Part #8.914-296.0) will remove lime and other deposits before coil becomes plugged.

Periodic descaling of the heating coil is recommended so please consult your local Lander Dealer for instructions.

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).

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.

Maintenance

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.*

ATTENTION: *Une inspection périodique est recommandée pour assurer que l'électrovalve d'alimentation en carburant fonctionne correctement. Cela peut être effectué en utilisant la machine et en s'assurant que le brûleur n'est pas allumé lorsque le pistolet pulvérisateur se trouve en position d'arrêt.*

Fuel Pressure Adjustment

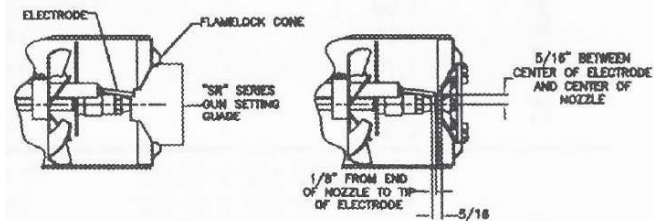
To adjust fuel pressure, First install a pressure gage into the port just after the pump fuel exit. Turn the adjusting screw (located at the regulator port) clockwise to increase, and counterclockwise to decrease. Do not exceed 200 psi or lower the pressure below 130 PSI, when checked at the post-pump pressure port.

The fuel pressure may need to be adjusted due to altitude. For every 500 ft altitude above sea level, the boiling point of water goes down 1 °F. At high altitude environments, this boiling point change may require the heat input to be lowered so the water input does not turn to steam earlier than at the factory settings and activate the pressure sensors and pressure relief equipment when the unit is operated and much higher altitudes from factory settings or local dealer site settings. Check with your dealer before making local site fuel pressure adjustments.

Also, as ambient temperature changes seasonally, the fuel temperature in the feed tank and air temperature inlet can impact fuel flow. In more extreme tempera-

tures, this local-site adjustment may also require different fuel nozzles for fuel inlet temperatures that are at seasonal extremes (higher or lower) in locations where the temperature changes are beyond moderate temperatures of between 40°F and 90°F. Colder temperatures will make for a thicker flow and less fine a fuel spray while hotter temperatures will make for a thinner flow a more fine spray with the same nozzle. Consider alternate nozzle configurations from the baseline factory-supplied nozzle for operating in such temperature extremes if performance is not meeting needs with air band and fuel pressure settings alone.

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



Gun Setting Instructions For EHASR Only

SR-Series gage KNA Part
Number 8.717-379.0

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.

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.

Burner Air Adjustment

The oil burner on this machine is preset for operation at altitudes below 500 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.

For higher altitudes, the air band opening may need to be increased; for lower altitude, the air band may need to be decreased.

For higher humidity, the air band opening may need to be increased; for lower relative humidity, the air band may need to be decreased.

For higher ambient temperatures the air band opening may need to be increased; for lower ambient temperatures, the air band opening may need to be decreased.

Adjust to your operating location's environment as needed for best smoke spot and performance compliant with local, state, and federal regulations

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

ATTENTION: L'élimination inappropriée du réservoir de propane peut être illégale dans certaines régions.

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.

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		
Pump Oil	Inspect	Oil level daily
(Non-foaming) SAE 10W-40	Change	After first 50 hours, then every 500 hours or annually
Replace High Pressure Nozzle		Every 6 months
Replace Quick Connects		Annually
Clean Water Screen/Filter		Weekly
Replace HP Hose		Annually

Maintenance

Troubleshooting

PROBLEM	POSSIBLE CAUSE	SOLUTION
LOW OPERATING PRESSURE	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.)
BURNER WILL NOT LIGHT	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)		

PROBLEM	POSSIBLE CAUSE	SOLUTION
BURNER WILL NOT LIGHT	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.
(continued from previous page)	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.
MACHINE SMOKES WHILE BURNER UNIT IS RUNNING OR UNIT SMOKES AT COLD-START ONLY WHEN BURNER IS OFF	Improper fuel or water in fuel	Drain tank and replace contaminated fuel.
	Improper air adjustment	Readjust air bands on burner assembly.
	Low fuel pressure, below 140 psi	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.
	High fuel pressure, if above 140 psi, when unit is cold-started and burner is off	Adjust fuel pump pressure down and/or adjust air band higher
LOW WATER TEMPERATURE	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.

Maintenance

PROBLEM	POSSIBLE CAUSE	SOLUTION
WATER TEMPERATURE TOO HOT	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.
DETERGENT NOT DRAWING	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.
PUMP RUNNING NORMALLY BUT PRESSURE LOW ON INSTALLATION	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.
FLUCTUATING PRESSURE	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.

PROBLEM	POSSIBLE CAUSE	SOLUTION
PUMP NOISY	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.
PRESENCE OF WATER IN OIL	Oil seal worn	Check and replace if necessary.
	High humidity in air	Check and change oil twice as often.
WATER DRIPPING FROM UNDER PUMP	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.
OIL DRIPPING	Oil seal worn	Check and replace if necessary.
EXCESSIVE VIBRATION IN DELIVERY LINE	Irregular functioning of valves	Check and replace if necessary.
BURNER MOTOR WILL NOT RUN	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
RELIEF VALVE LEAKS WATER	Relief valve defective	Replace or repair.

Parts

LANDA MHP

MHP4 30324E

1.110-501.0

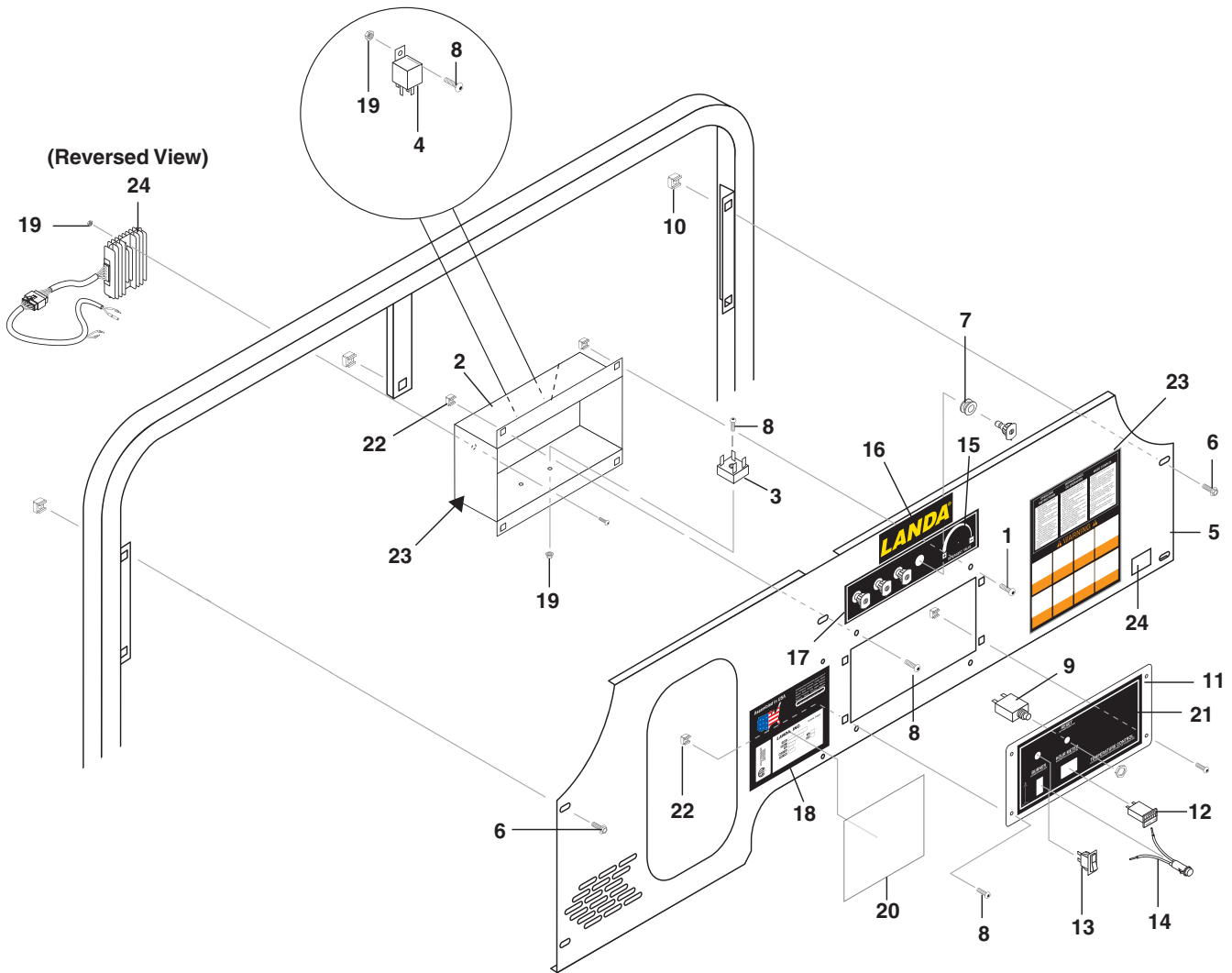
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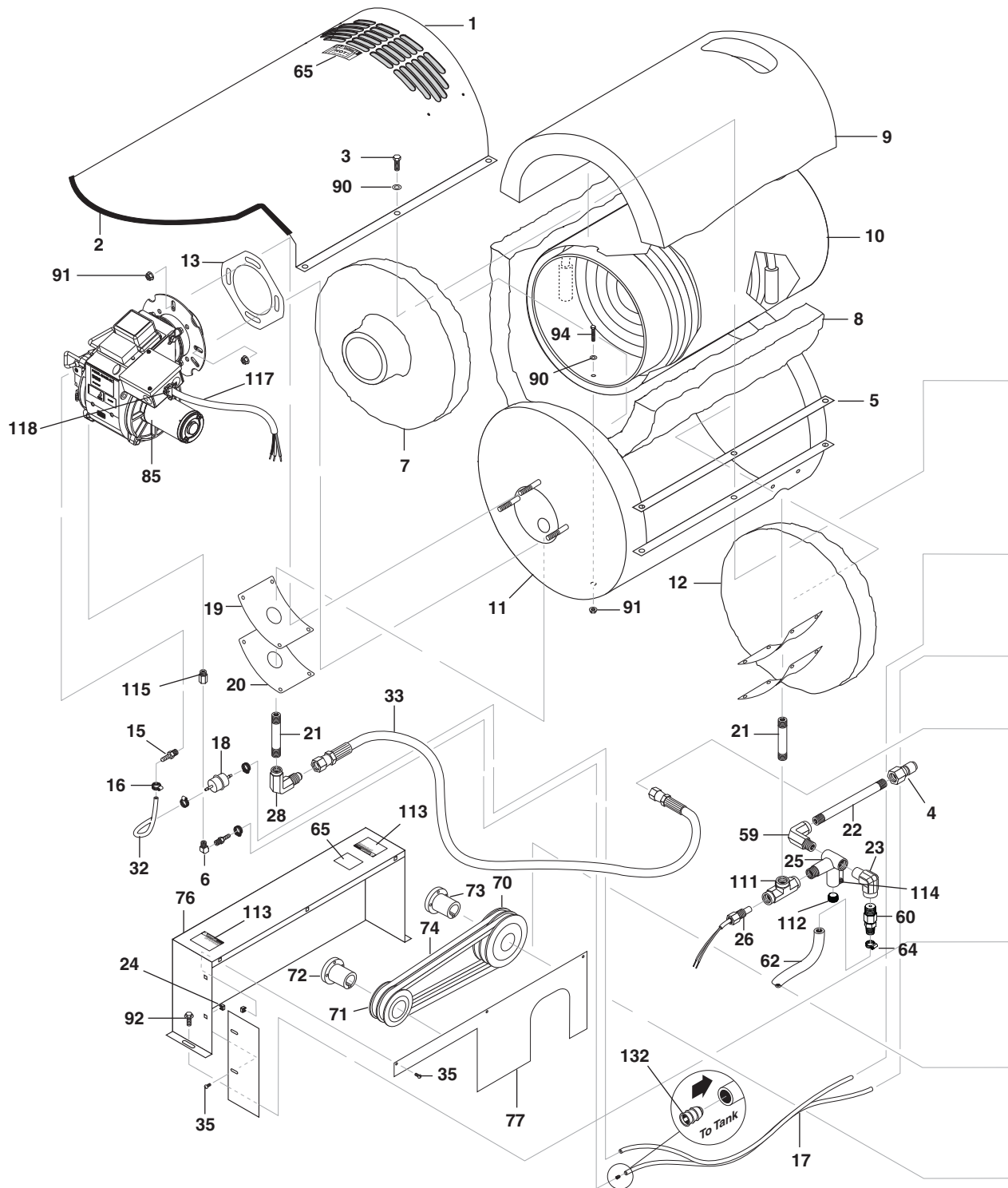
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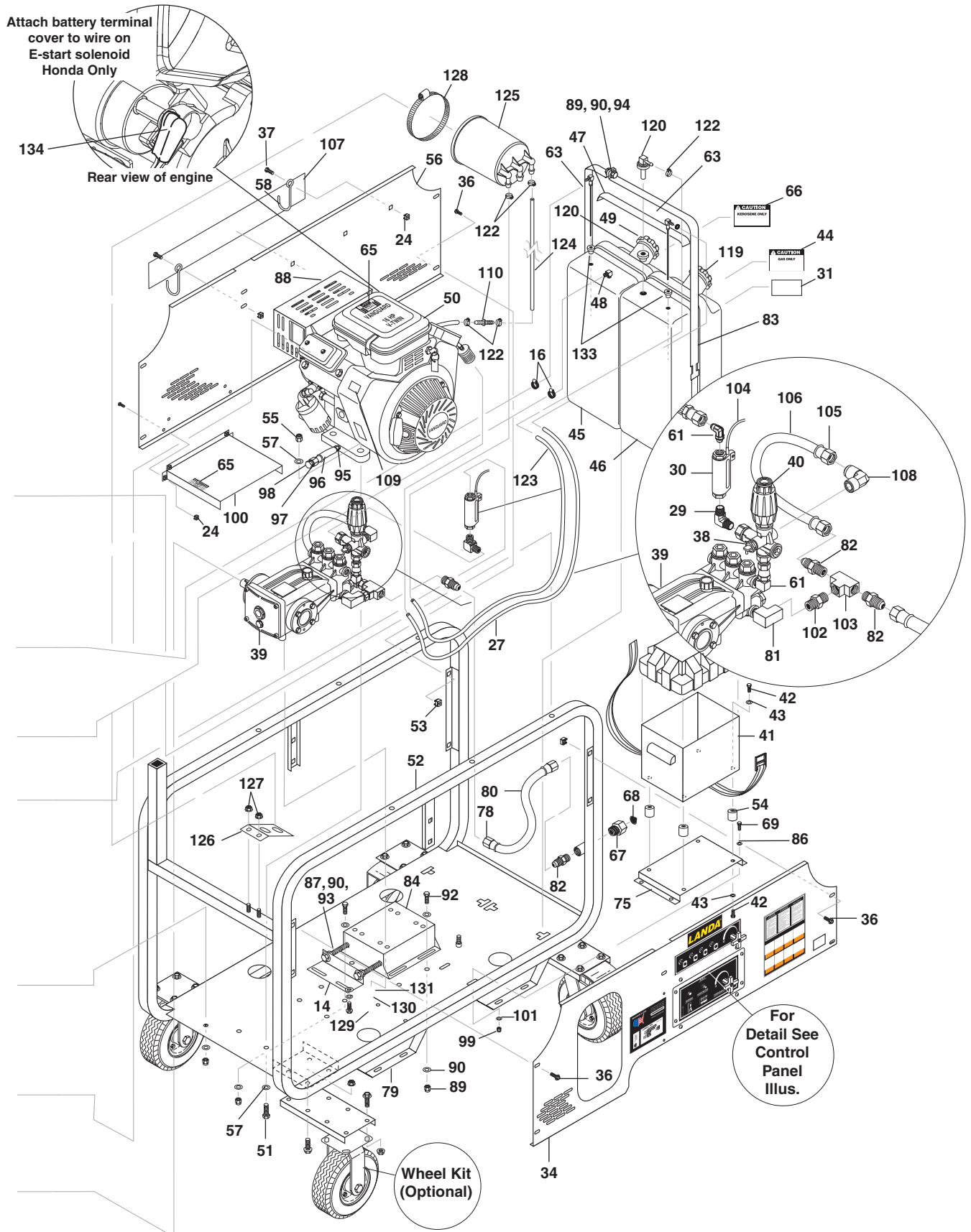
Control Panel



REF	PART NO.	QTY	DESCRIPTION	NOTES
1	9.802-771.0	3	SCREW, 10/32" X 3/4" BH SOC	
2	8.912-711.0	1	BOX, MHP ELECTRICAL, WELDED	
3	9.802-530.0	1	RECTIFIER, BRIDGE, MB156, 12 VDC, 30 AMP	
4	9.802-470.0	2	RELAY, P & B/VF41F11, 12 VDC, 40 AMP	
5	8.912-705.0	1	PANEL, MHP CONTROL	
6	8.750-246.0	5	SCREW, 1/4" X 1/2" WHIZ LOC	
7	9.802-064.0	4	GROMMET, 1/8" RUBBER	
8	9.802-759.0	7	SCREW, 10/32" X 1/2" BHSOC BLK	
9	9.802-485.0	1	BREAKER, CIRCUIT, 25 AMP	
10	9.802-794.0	13	NUT, CAGE, 1/4" X 12 GAUGE	
11	8.912-712.0	1	COVER, MHP CONTROL	
12	9.802-283.0	1	METER, HOUR	
13	9.802-453.0	1	SWITCH, CURVETTE 120 V & 220 V	
14	9.802-456.0	1	LIGHT, INDICATOR, GREEN 12 VDC	
15	8.902-427.0	1	VALVE ASSY, CHEMICAL, SKID	NOT SHOWN
16	8.900-300.0	1	LABEL, LANDA LOGO	
17	8.900-297.0	1	LABEL, NOZZLE/DET VALVE, MHP	
18	8.932-968.0	1	LABEL, "OUTDOOR USE"	
19	9.802-695.0	5	NUT, 10/32"	
20	9.800-034.0	1	LEXAN, COVER, OUTDOOR	
21	8.900-296.0	1	LABEL, CONTROL BOX	
22	9.802-791.0	4	NUT, CAGE, 10/32" 16 GAUGE	
23	9.800-094.0	1	LABEL, INSTRUCTION/WARNING	
24	9.800-049.0	1	LABEL, MANUF. CLEANING SOLUTION	

Landa MHP Left





REF	PART NO.	QTY	DESCRIPTION	NOTES
1	8.912-192.0	1	WRAP, TOP STAINLESS STEEL	
2	9.802-071.0	36"	TRIM, 1/16", BLACK, 750 - B2	
3	9.802-766.0	6	SCREW, 3/8" X 1" HX	
4	9.802-170.0	1	COUPLER, 3/8" PLUG, FEMALE	
5	8.928-283.0	2	SPACER, COIL WRAP, SS	SS BOTTOM WRAP OPTION
6	8.757-198.0	1	ELBOW, 1/4" STREET, BRASS	
7	9.802-894.0	1	INSULATION, BURNER HEAD, W/HOLE	
8	9.802-896.0	1	INSULATION, BLANKET, NO FOIL, 24" X 57"	
9	9.802-902.0	1	INSULATION, BLANKET, DIE CUT, 28" X 24"	
10	8.912-239.0	1	COIL REPLACEMENT SCHEDULE 80 W/ ALUMINUM STEEL WRAP	
11	8.916-486.0	1	WRAP, BOTTOM BLACK	
-	8.916-514.0	1	WLMT, BOTTOM WRAP, STAINLESS	SS OPTION
12	9.802-883.0	1	INSULATION, FRONT HEAD, NO HOLE	
13	9.802-653.0	2	GASKET, MOUNTING	
14	9.803-136.0	1	RETAINER, PUMP TAKE UP	
15	8.757-199.0	1	HOSE BARB, 1/4" BARB x 1/4" M-NPTF, BRASS	
16	8.706-069.0	6	CLAMP, SCREW 5/16"W, 1/4-5/8" D, SS	HONDA
-	-	8	CLAMP, SCREW 5/16"W, 1/4-5/8" D, SS	BRIGGS
17	9.802-254.0	2	HOSE, 1/4", PUSH-ON	38" LONG
18	8.709-152.0	1	FILTER, FUEL, DISPOSABLE	
19	8.933-009.0	2	GASKET, BURNER PLATE	
20	9.803-132.0	2	INSULATION RETAINER PLATE	
21	8.757-232.0	2	NIPPLE, 1/2" X 4", TAGGED	
22	8.757-230.0	1	NIPPLE, 3/8" X 8", TAGGED	
23	8.757-239.0	1	ELBOW, 3/8" MPT x 1/2" FPT ST, STEEL, W/TAG	
24	9.802-794.0	10	NUT, CAGE, 1/4" X 12 GAUGE	
25	8.757-240.0	1	MANIFOLD, COIL OUTLET DISCHARGE, W/TAG	
26	8.712-185.0	1	SWITCH, SNAP, 225 DR HI LIMIT	
27	9.802-254.0	44"	HOSE, 1/4" PUSH-ON	BRIGGS
28	8.757-363.0	1	ELBOW, 90°, 3/4-16 JIC X 1/2 NPTF (F) 90°	
29	8.757-511.0	1	ELBOW, 3/8", STEEL	
30	8.933-006.0	1	SWITCH, FLOW MV60	
31	9.800-008.0	1	LABEL, DANGER, COOL ENGINE	
32	9.802-254.0	5"	HOSE, 1/4" PUSH-ON, /FT	
33	8.918-432.0	1	HOSE, 18" X 3/8", PRESSURE LOOP	
34	8.912-705.0	1	PANEL, MHP CONTROL	
35	9.802-754.0	4	SCREW, 1/4" X 1/2" HH, NC, WHIZ LOC	
36	8.750-246.0	10	SCREW, 1/4" X 1/2" WHIZ LOC	
37	9.802-753.0	2	SCREW, 1/4" X 3/4" HH, NC, WHIZ LOC	
38	8.707-254.0	1	PUMP PROTECTOR, 3/8" PTP	

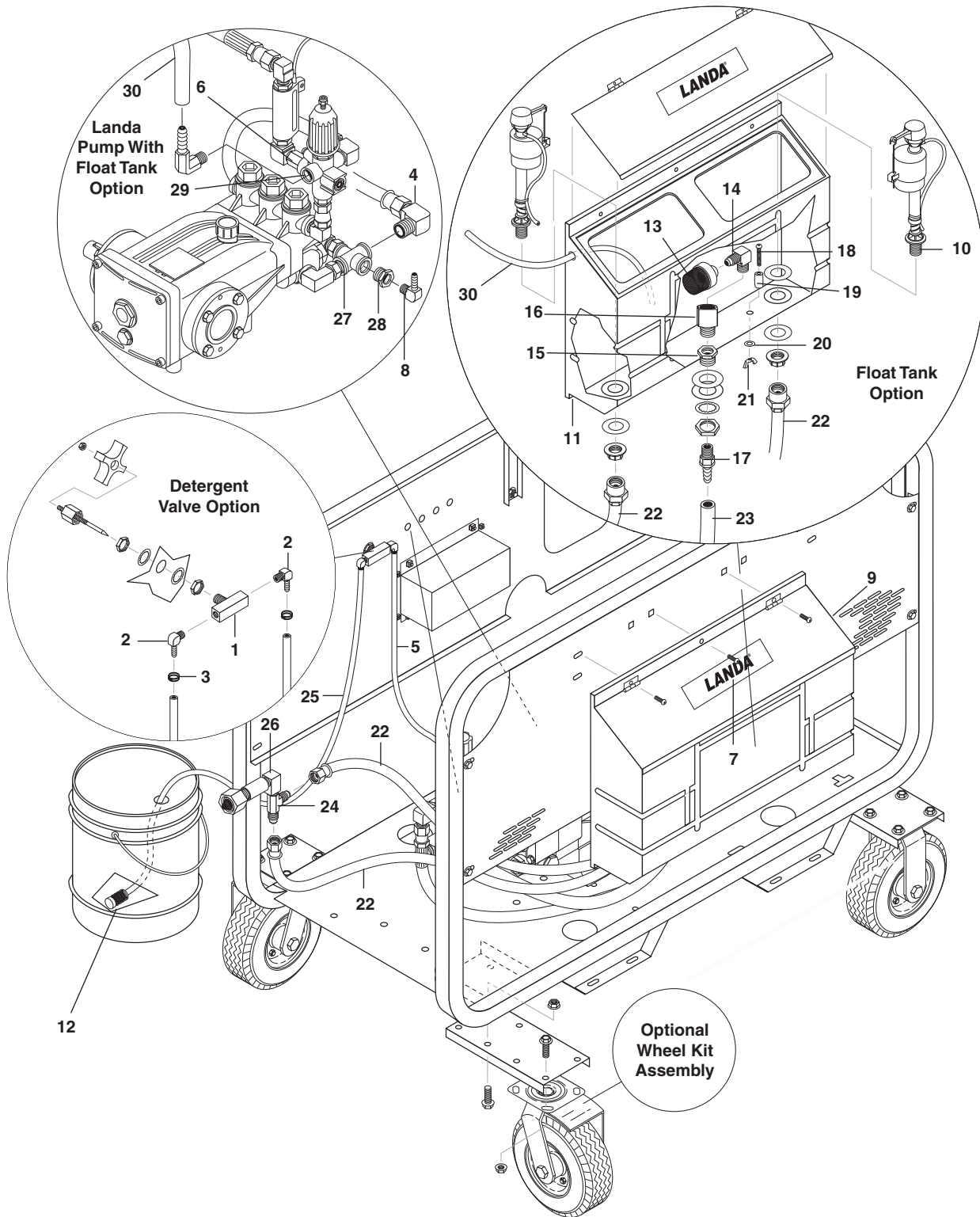
REF	PART NO.	QTY	DESCRIPTION	NOTES
39	-	1	PUMP	SEE SPECIFICATIONS PAGE
40	8.750-299.0	1	UNLOADER, VRT 3, 8 GPM @ 4500 PSI	
41	8.706-652.0	1	BOX, BATTERY	
-	9.802-091.0	1	PLATE, BATTERY BOX, SMALL, POLYPRO	NOT SHOWN
42	9.803-541.0	4	BOLT, 5/16" X 1/2", BUTTON HEAD	
43	9.803-542.0	4	WASHER, 5/16", STAR	
44	9.800-001.0	1	LABEL GASOLINE ONLY	BRIGGS
45	8.752-186.0	1	TANK, DIESEL, 4.75 GALLON	
46	8.751-406.0	1	TANK, FUEL, 4.75 GALLON, LOW-PERM	
47	9.802-193.0	1	GASKET, FUEL TANK, 7"	HONDA
-	-	2	GASKET, FUEL TANK, 7" -	BRIGGS
48	9.802-054.0	1	ELBOW, FUEL TANK	
49	9.802-089.0	1	CAP, FUEL TANK, PLASTIC, H60-AR	
50	-	1	ENGINE	SEE SPECIFICATIONS PAGE
51	9.802-714.0	4	BOLT, 5/16" X 1-3/4", NC HH	
52	8.912-704.0	1	CAGE, MHP, ASSEMBLY	
53	9.802-794.0	11	NUT, CAGE, 1/4" X 12 GAUGE	
54	9.803-532.0	4	ISOLATOR, 5/16", F X F, 1"	
55	9.802-776.0	4	NUT, 5/16", ESNA, NC	
56	8.912-707.0	1	PANEL, MHP REAR	
57	8.718-980.0	8	WASHER, 5/16" FLAT	
58	8.719-968.0	2	HOLDER, WAND, ZINC	
59	8.757-340.0	1	ELBOW 3/8", STREET 90 DEG, STEEL, W/SLNT	
60	8.757-351.0	1	RUPTURE DISC ASSY, 8500#, W/SLNT	
61	8.757-616.0	2	ADAPTER 1/2 JIC (M) X 3/8 BSPP (M) 90°	
62	9.802-260.0	21"	HOSE, 5/8" PUSH-ON	
63	8.706-496.0	1	DIPTUBE, PLASTIC	HONDA
-	-	2	DIPTUBE, PLASTIC	BRIGGS
-	-	3	BUSHING, RUBBER, NITRATE	BRIGGS
64	9.803-559.0	1	CLAMP, SCREW, 9/16" W, 1-1/4"OD, SS	
65	9.800-006.0	4	LABEL, "HOT/CALIENTE"	
66	9.800-002.0	1	LABEL, USE ONLY KEROSENE/DIESEL	NOT SHOWN
67	8.757-203.0	1	SWIVEL, 1/2" M-NPTF x 3/4" GHF	
68	8.707-055.0	1	STRAINER, INLET GARDEN HOSE	
69	8.718-618.0	4	BOLT, 5/16" X 3/4"	
70	-	-	PUMP PULLEY	SEE SPECIFICATIONS PAGE
71	-	-	ENGINE PULLEY	SEE SPECIFICATIONS PAGE

Landa MHP

REF	PART NO.	QTY	DESCRIPTION	NOTES
72	-	-	ENGINE BUSHING	SEE SPECIFICATIONS PAGE
73	-	-	PUMP BUSHING	SEE SPECIFICATIONS PAGE
74	-	-	BELT	SEE SPECIFICATIONS PAGE
75	8.912-714.0	1	BRACKET, BATTERY	
76	8.912-715.0	1	BELT GUARD	
77	8.912-719.0	1	PLATE, FACE	
78	9.802-151.0	2	SWIVEL, 1/2" JIC, PUSH-ON	
79	8.912-722.0	4	FOOT, MHP	
-	9.802-767.0	8	SCREW, 3/8" X 3/4" WHIZ LOC	NOT SHOWN
-	9.802-781.0	8	NUT, 3/8" WHIZ LOC	NOT SHOWN
80	9.802-259.0	18"	HOSE, 1/2", PUSH-ON	
81	8.706-829.0	1	ELBOW, STREET, BRASS	
82	8.757-200.0	3	ADAPTER, 1/2" 45° SAE x 1/2" M-NPTF BRASS	
83	8.912-699.0	2	STRAP, MHP FUEL TANK	HONDA
-	-	1	STRAP, MHP FUEL TANK	BRIGGS
	8.912-701.0	1	STRAP, MHP FUEL TANK, LONG	BRIGGS
84	9.803-131.0	1	RAIL, PUMP COMBO	
85	8.756-480.0	1	BURNER, EHASR 12VDC DO 2T 12VDC S	
-	8.756-491.0	1	FUEL NOZZLE, 2.25 X 80 BZ W/ 100 PSI CHECK VALVE	NOT SHOWN
86	8.718-980.0	4	WASHER, 5/16", FLAT	
87	9.802-789.0	2	NUT, 3/8" HEX	
88	9.802-867.0	1	GUARD, MUFFLER 16 HP (VANGUARD)	
-	9.802-868.0	1	BRACE (VANGUARD) MUFFLER	NOT SHOWN
-	9.802-672.0	1	MUFFLER	BRIGGS NOT SHOWN
89	9.802-779.0	9	NUT, 3/8" ESNA	
90	9.802-807.0	30	WASHER, 3/8" FLAT	
91	9.802-781.0	5	NUT, 3/8", WHIZ LOC	
92	9.802-720.0	8	BOLT, 3/8" X 1" NC HH	
93	9.802-733.0	2	BOLT, 3/8" X 3-1/2", TAP	
94	9.802-727.0	3	BOLT, 3/8" X 1-3/4", TAP	
95	9.802-154.0	1	PUSH-ON, MALE	HONDA
-	8.757-487.0	1	HOSE BARB, 1/2" BARB X 3/8", BRASS	BRIGGS
96	9.802-259.0	5"	HOSE, 1/2" PUSH-ON	BRIGGS
-	9.802-254.0	5"	HOSE, 1/4" PUSH-ON	HONDA
97	9.802-153.0	1	SWIVEL, 1/4" JIC FEM, PUSH-ON	HONDA
-	9.802-151.0	1	SWIVEL, 1/2" JIC FEM, PUSH-ON	BRIGGS
98	9.802-126.0	1	PLUG, 1/2" JIC, FLARE	BRIGGS
-	9.802-125.0	1	PLUG, 1/4" JIC, FLARE	HONDA
99	9.802-776.0	4	NUT, 5/16", ESNA, NC	

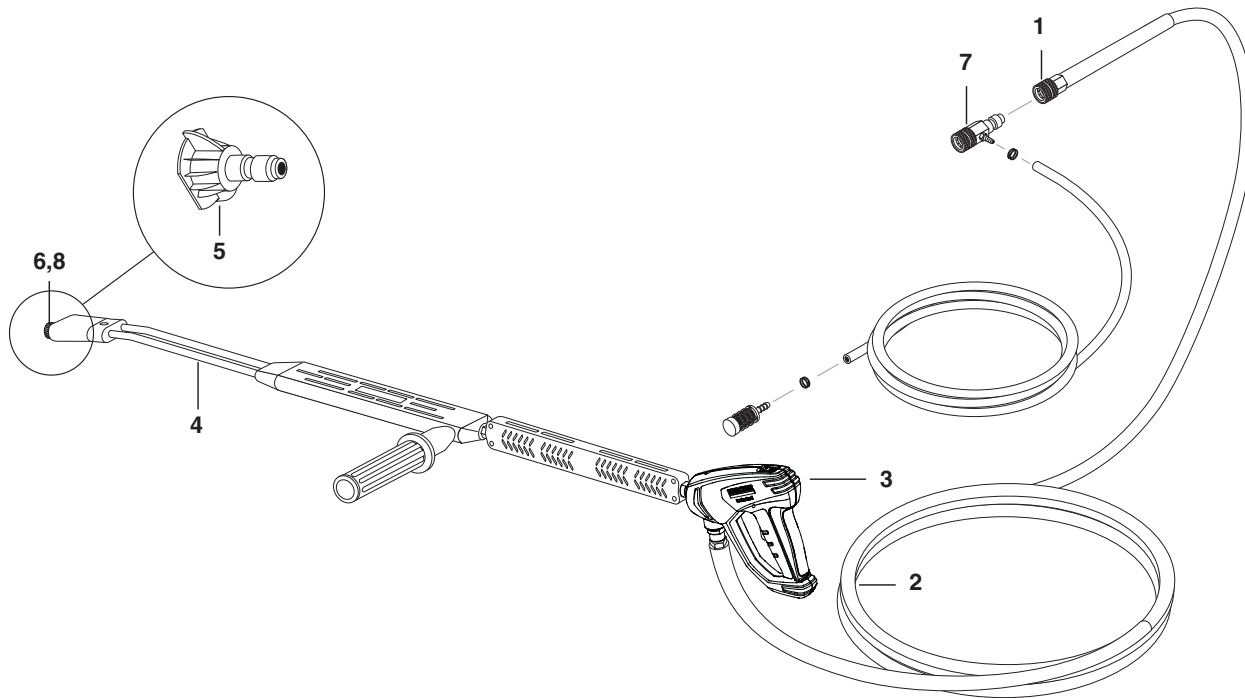
REF	PART NO.	QTY	DESCRIPTION	NOTES
100	8.912-723.0	1	SHIELD, HEAT, MHP	
101	9.802-813.0	4	WASHER, 5/8", LOCK	
102	8.757-196.0	1	NIPPLE, 1/2" HEX, BRASS	
103	8.757-485.0	1	TEE, 1/2", BRASS	
104	8.724-844.0	1	SWITCH, REED REPLACEMENT, MV60	
105	9.802-151.0	2	SWIVEL, 1/2" JIC FEM, PUSH-ON	
106	9.802-259.0	18"	HOSE, 1/2", PUSH-ON	
107	8.916-090.0	1	LABEL, LANDA LOGO	
108	8.757-262.0	1	ELBOW, 1/2" 45° SAE X 3/8" M-NPTF, BRASS	
109	9.801-252.0	1	LABEL, MAINTAIN ENGINE SPEED	
110	8.753-269.0	1	REDUCER, CONNECTOR 1/4 X 3/16"	
111	8.757-615.0	1	Tee steel 1/2" NPTF (F)	
112	8.757-241.0	1	PLUG, 3/8" ALLEN COUNTER SUNK, W/TAG	
113	8.932-965.0	2	LABEL, WARNING EXPOSED PULLEY	
114	9.196-012.0	1	SCREW, 10-24 X 1/4	
115	8.757-643.0	1	ADAPTER BRASS 1/4 X 1/4	
116	8.924-773.0	2	SHIM, STAINLESS OPT, TOP WRAP	NOT SHOWN
117	9.802-428.0	52"	CORD, 12/3	
118	9.802-519.0	1	STRAIN RELIEF, 2 SCREW METAL	
119	8.750-674.0	1	CAP, RATCHET 225, NON-VENT	BRIGGS
120	8.751-215.0	1	GROMMET, REMOTE VENT	BRIGGS
121	8.751-059.0	1	VENT, REMOTE ASSY	BRIGGS
122	8.751-066.0	5	CLAMP, 1 EAR 12.6-14.5 MM	BRIGGS
123	9.802-254.0	50"	HOSE, 1/4", PUSH-ON	BRIGGS
124	9.802-254.0	42"	HOSE, 1/4", PUSH-ON	BRIGGS
125	8.751-380.0	1	CARBON CANISTER, 850CC	
126	8.922-633.0	1	BRKT, CARBON CANISTER, WRINKLE BLACK	
127	9.802-775.0	2	NUT, 1/4" FLANGE	
128	8.752-913.0	1	CLAMP, HOSE #64	
129	9.802-744.0	4	BOLT, 10MM X 20MM, ZINC	
130	8.718-961.0	4	WASHER, M10, SPLIT ZINC	
131	9.802-807.0	4	WASHER 3/8" FLAT ZINC	
132	8.754-911.0	1	CHECK VALVE, 1 WAY, 1/4" BARB	
133	9.802-259.0	2	BUSHING, RUBBER, NITRATE	HONDA NOT SHOWN
134	9.804-615.0	1	COVER, BATTERY TERMINAL, RED	HONDA ONLY

Detergent / Float Tank

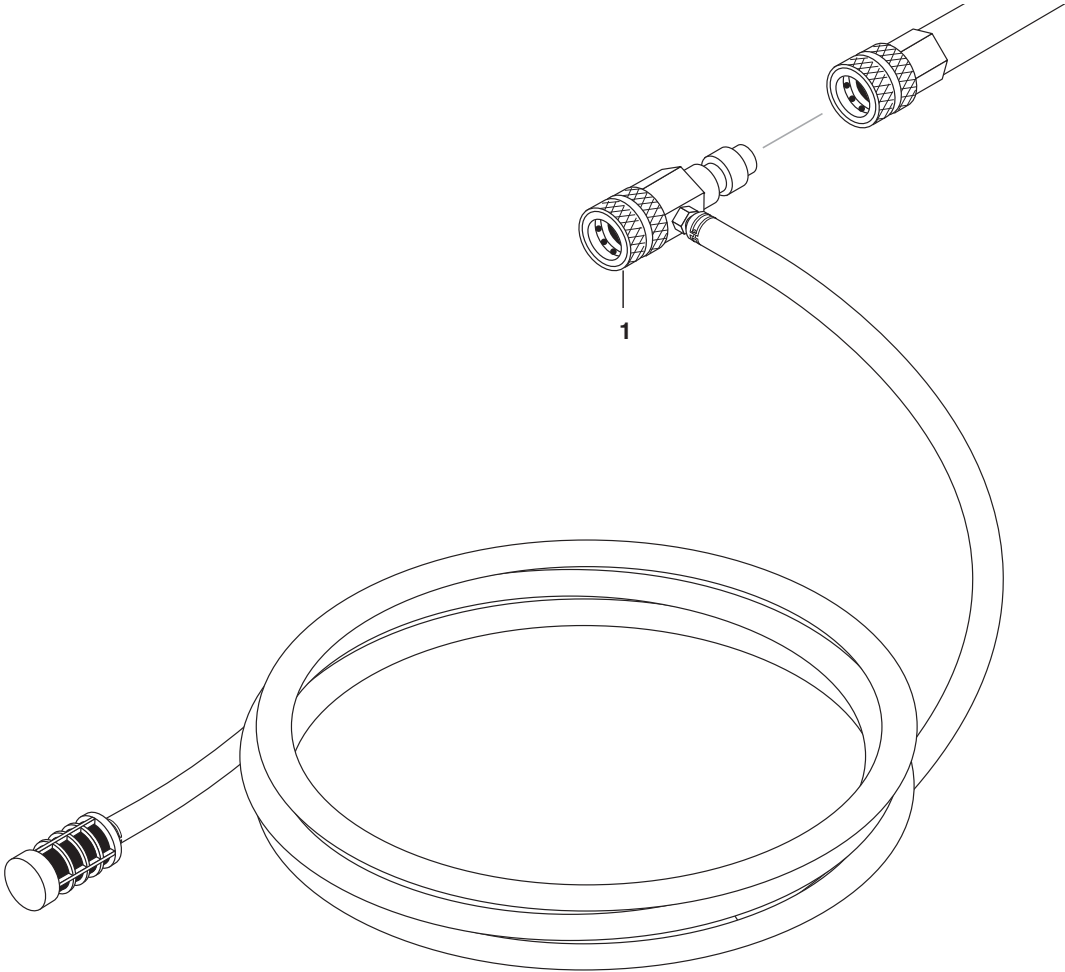


REF	PART NO.	QTY	DESCRIPTION	NOTES
1	8.707-317.0	1	VALVE/CONTROL, METERING	
-	9.802-810.0	1	WASHER, 5/8" SAE FLAT ZINC	NOT SHOWN
-	8.719-011.0	1	WASHER, 5/8" INTERVAL STAR ZINC	NOT SHOWN
2	8.757-205.0	2	HOSE BARB, 1/4" BARB x 1/4" M-NPTF, 90°	
3	6.390-126.0	2	CLAMP, HOSE, .46-, .54 ST	
4	8.757-202.0	1	ELBOW, 3/4" 45° SAE X 1/2" M-NPTF, BRASS	
5	9.802-254.0	2.5 ft.	HOSE, 1/4", PUSH-ON	
6	9.802-152.0	1	SWIVEL, 3/4" JIC FEM, PUSH-ON	
7	8.916-090.0	1	LABEL, LANDA LOGO	
8	8.757-205.0	1	HOSE BARB, 1/4" BARB x 1/4" M-NPTF, 90°	
9	8.912-233.0	1	LID & HINGES, PLASTIC FT. TANK	
10	9.802-185.0	2	VALVE, FLUIDMASTER 400A FLOAT	
11	9.802-084.0	1	TANK, PLASTIC UNIVERSAL FLOAT	
12	8.707-058.0	1	STRAINER, 1/4" HOSE BARB	
13	8.707-061.0	1	STRAINER, 1/2" BASKET	
14	8.757-391.0	1	ELBOW, 1/2" M SAE x 1/2" NPTF (M)	
15	8.750-743.0	1	BULKHEAD, 1/2" POLYPRO	
16	8.757-193.0	1	ADAPTER, 1/2" F-NPTF x 1/2" M-NPTF, BRASS	
17	8.757-505.0	1	HOSE BARB, 3/4" BARB X 1/2", BRASS	
18	9.802-822.0	1	SCREW, 5/16" - 18 X 1-1/2" SS, BUTTON SOCKET	
19	9.802-106.0	1	PLUG, FLOAT TANK	
20	9.802-824.0	1	WASHER, 5/16" SS	
21	9.802-823.0	1	NUT, 5/16" - 18, WING SS	
22	9.802-258.0	2	INLET HOSE, SUPPLY WATER, 45"	
23	9.802-261.0	2.5 ft.	HOSE, 3/4", PUSH-ON	
24	9.802-134.0	1	TEE, 1/2" X 1/2" JIC 51#	
25	9.802-251.0	8 ft.	TUBE, 1/4" X 1/2" CLEAR VINYL	
26	8.706-829.0	1	ELBOW, 1/2" STREET, BRASS	
27	9.802-119.0	1	CROSS, 1/2" FEMALE, CAST	
28	8.757-343.0	1	BUSHING, 1/2" X 1/4", BRASS	
29	8.757-644.0	1	HOSE BARB BRASS 1/4 X 3/8 NPTF (M) 90°	
30	9.802-254.0	6'	HOSE, 1/4" PUSH-ON	

Hose & Spray Gun



REF	PART NO.	QTY	DESCRIPTION	NOTES
1	9.802-166.0	1	COUPLER, 3/8" FEMALE	
-	9.802-100.0	1	QUICK COUPLER O-RING LG	NOT SHOWN
2	8.739-213.0	1	HOSE, 3/8" X 50', 2 WIRE TUFF SKIN	
3	4.775-054.0	1	EASY! FORCE ADVANCED KNA	
4	8.711-293.0	1	WAND, VP, ZINC (AL 344) W/COUPLER, W/SOAP NOZZLE	
-	83-SSVPKIT	1	REPAIR KIT, WAND, AR, SS, SEAT (AL344)	NOT SHOWN
5	8.712-346.0	1	NOZZLE, SAQC MEG, 1504, YELLOW	(4-3000, 4-3500)
-	8.712-347.0	1	NOZZLE, SAQC MEG 2504, GREEN	(4-3000, 4-3500)
-	8.712-348.0	1	NOZZLE, SAQC MEG 4004, WHITE	(4-3000, 4-3500)
6	9.802-286.0	1	BRASS SOAP NOZZLE ONLY, 1/8	NOT SHOWN
7	9.802-225.0	1	DETERGENT INJECTOR	(ALL MODELS)
8	9.802-165.0	1	COUPLER, 1/4" FEMALE	NOT SHOWN
-	9.802-096.0	1	QUICK COUPLER O-RING, SM	NOT SHOWN
9	8.707-139.0	1	COUPLER, 1/4"PLUG, MALE, STEEL/ZINC	NOT SHOWN
10	9.802-164.0	1	COUPLER, 1/4"SOCKET, FEMALE, BRASS	NOT SHOWN



REF	PART NO.	QTY	DESCRIPTION	NOTES
1	8.756-797.0	1	INJECTOR, CHEMICAL, NON ADJ 0.083(2.1MM)	

Specifications

PUMP				ENGINE			
Model	Model	Part #	Pulley	Pulley Part #	Bushing	Bushing Part #	Belt Size/Qty
MHP4-30324E	LT4540	8.921-710.0	2AK84H	9.802-375.0	25mm	9.802-403.0	AX38 (2)
MHP4-35224E	LT4540	8.921-710.0	2BK90	8.715-593.0	25mm	9.802-403.0	BX44 (2)
MHP4-35324E	LT4540	8.921-710.0	2BK90	8.715-593.0	25mm	9.802-403.0	BX39 (2)

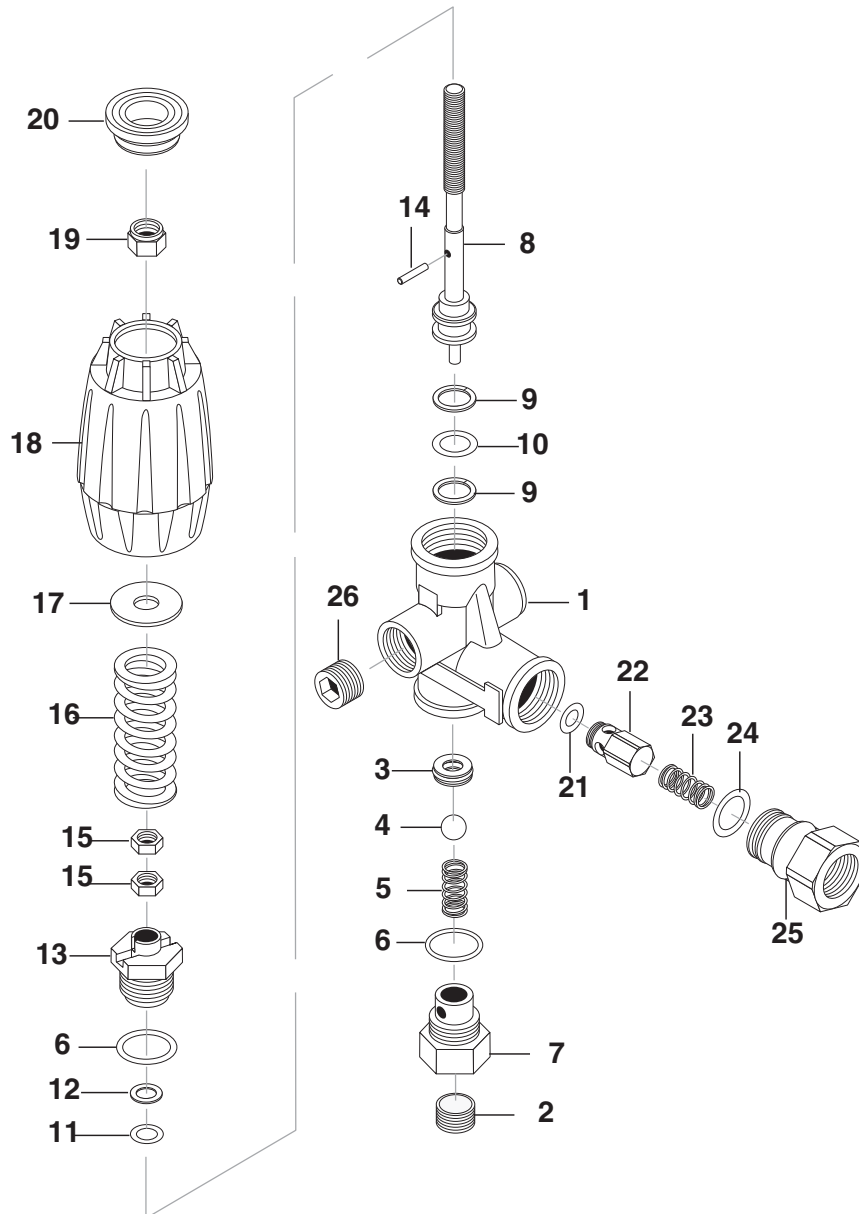
ENGINE (CON'T)					CONTROLS		
Model	Belt Part #	Model	Type	Part #	Pulley	Pulley Part #	Bushing Part#
4-30324E	9.802-410.0	GX340 (389cc)	HONDA	8.750-578.0	2AK30	9.803-298.0	HX1" 5-11100
4-35224E	8.715-705.0	Vanguard (570cc)	BRIGGS	8.754-819.0	2BK32	8.715-576.0	HX1" 5-11100
4-35324E	8.750-579.0	GX390 (389cc)	HONDA	8.750-579.0	2BK32	8.715-576.0	HX1" 5-11100

VRT3 Unloader

8.750-297.0, 8 GPM, 2320 PSI

8.750-298.0, 8 GPM, 3630 PSI

8.750-299.0, 8 GPM, 4500 PSI



REF	PART NO.	QTY	DESCRIPTION	NOTES
25	8.750-713.0	1	OUTLET FITTING	
18	8.750-712.0	1	KNOB, UNLOADER	
-	8.750-709.0	-	REPAIR KIT, VRT3, 2320/3630 PSI	
-	8.750-710.0	-	REPAIR KIT, VRT3, 4500 PSI	
-	-	-	(KIT ITEMS: 3, 4, 6, 9-12, 21, 24)	

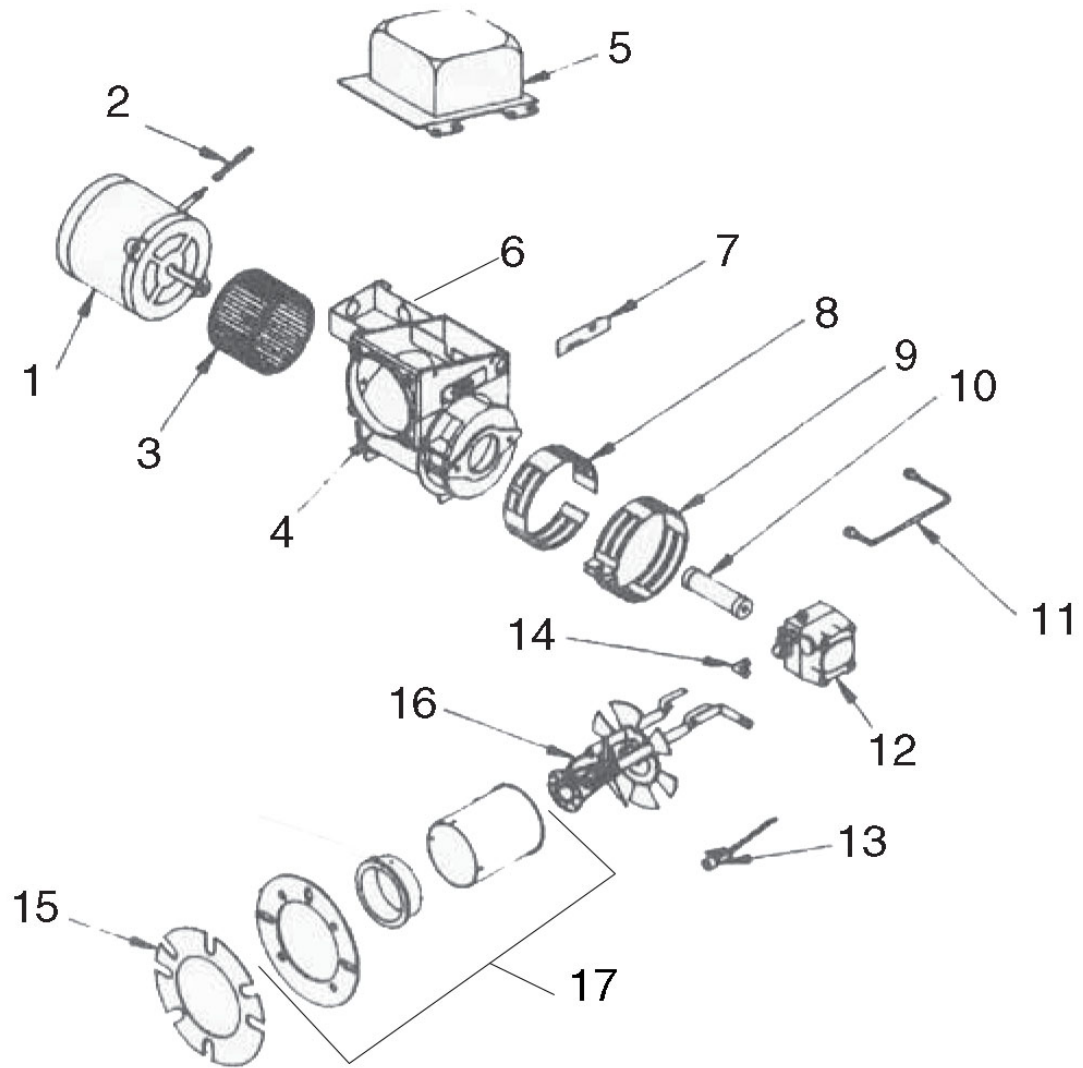
Unloader Adjustment Procedures

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.

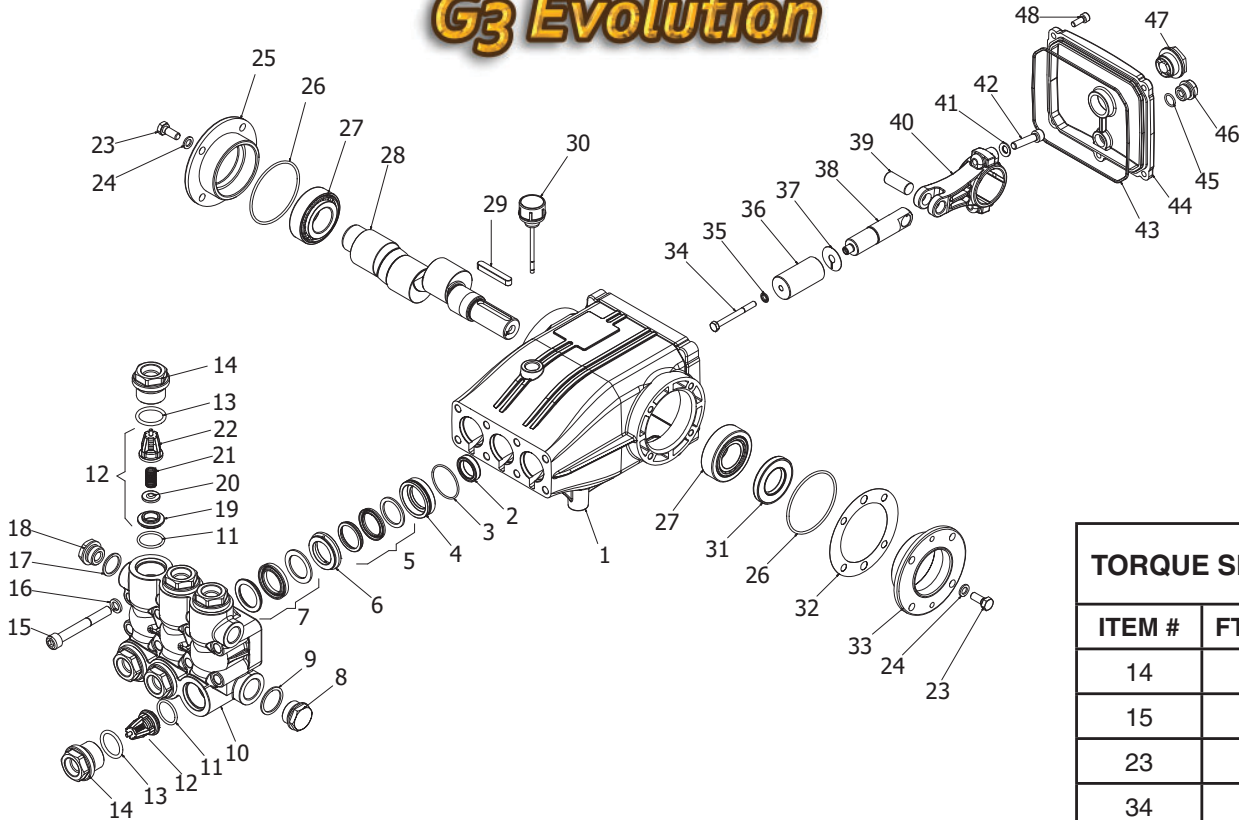
MHP Series Wayne "EHASR" Burner



MHP Series Wayne "EHASR" Burner

REF	PART NO.	QTY	DESCRIPTION	NOTES
1	8.756-716.0	1	MOTOR, 1/4 13.5VDC AMETEK	
2	13121	1	MOTOR CORD COVER	
3	8.756-726.0	1	FAN, 3.44"W X 5.25"D 5/16" BORE	
4	8.700-735.0	1	BURNER HOUSING EHASR	
5	9.107-507.0	1	IGNITOR, 12VDC, LOW AMP	
6	8.756-741.0	1	JUNCTION BOX, EHASR, BLACK COVER	NOT SHOWN
-	8.756-742.0	1	JUNCTION BOX, EHASR, BLACK BODY	
-	8.756-743.0	1	PLUG, HOLE, JUNCTION BOX, M&E	NOT SHOWN
7	13392	1	SLOT COVER PLATE	
8	8.700-732.0	1	BAND, AIR BURNER INNER EHA/SR	
9	8.700-729.0	1	AIR BAND 8 HOLE OUTER EHA/SR	
10	8.700-715.0	1	COUPLING, "E" DC	
11	8.700-704.0	1	OIL LINE, 6'	
12	8.756-437.0	1	PUMP - COMBO 12V/24V	
13	8.700-819.0	1	CAD CELL	
-	8.756-661.0	1	TIMER, DROP-OUT	NOT SHOWN
14	13494	1	BRASS 90° ELBOW	
15	8.700-692.0	2	GASKET	
16	8.756-299.0	1	GUN ASSEMBLY, BURNER-RG/*CST/GBB	
17	8.756-305.0	1	FLANGE, AIR TUBE, WELDED 1.75" "E"	(ALL PGHW'S)
-	8.700-724.0	1	AIR CONE 4A	

G3 Evolution



TORQUE SPECS	
ITEM #	FT. LBS.
14	95
15	45
23	8
34	10
42	30
48	8

REF	PART NO.	QTY	DESCRIPTION	NOTES
1	8.752-825.0	1	CRANKCASE	
2	-	3	PLUNGER OIL SEAL	SEE KITS TABLE
3	-	3	O-RING Ø1.78 X 37.82	SEE KITS TABLE
4	-	3	PRESSURE RING, 18MM	SEE KITS TABLE
5	-	3	U-SEAL, 18MM	SEE KITS TABLE
6	-	3	INTERMEDIATE RING, 18MM	SEE KITS TABLE
7	-	3	U-SEAL, 18MM	SEE KITS TABLE
8	9.802-926.0	1	BRASS PLUG G1/2	
9	9.803-199.0	1	COPPER WASHER 1/2	
10	8.753-816.0	1	MANIFOLD HOUSING	
11	9.804-498.0	6	O-RING Ø2.62 X 25.1	SEE KITS TABLE
12	-	6	VALVE ASSEMBLY	SEE KITS TABLE
13	9.803-193.0	6	O-RING 3068	SEE KITS TABLE
14	9.802-928.0	6	VALVE PLUG	
15	8.753-817.0	8	MANIFOLD STUD BOLT	
16	9.802-890.0	8	LOCK WASHER	
17	8.719-008.0	1	COPPER WASHER 3/8	
18	8.707-262.0	1	BRASS PLUG 3/8	

REF	PART NO.	QTY	DESCRIPTION	NOTES
19	-	6	VALVE SEAT	SEE KITS TABLE
20	-	6	VALVE PLATE	SEE KITS TABLE
21	-	6	VALVE SPRING	SEE KITS TABLE
22	-	6	VALVE CAGE	SEE KITS TABLE
23	8.752-830.0	8	HEX SCREW	
24	9.802-884.0	8	WASHER	
25	9.803-182.0	1	CLOSED BEARING HOUSING	
26	9.803-186.0	2	O-RING Ø2.62 X 71.12	
27	9.803-160.0	2	ROLLER BEARING	
28	8.753-818.0	1	CRANKSHAFT Ø25	(4540)
-	8.752-827.0	1	CRANKSHAFT Ø25	(6036)
29	9.803-167.0	1	CRANKSHAFT KEY	
30	8.752-834.0	1	OIL DIP STICK	
31	9.803-139.0	1	CRANKSHAFT SEAL	
32	9.803-177.0	2	SHIM	
33	9.803-181.0	1	BEARING HOUSING	
34	8.752-841.0	3	PLUNGER BOLT	SEE KITS TABLE
35	8.752-820.0	3	BONDED SEAL	SEE KITS TABLE
36	8.753-819.0	3	PLUNGER, 18MM	SEE KITS TABLE
37	8.752-823.0	3	COPPER SPACER	SEE KITS TABLE
38	8.753-820.0	3	PLUNGER ROD	
39	8.752-822.0	3	CONNECTING ROD PIN	
40	8.752-821.0	3	CONNECTING ROD	
41	9.802-889.0	6	SPRING WASHER	
42	9.802-937.0	6	CONNECTING ROD SCREW	
43	9.803-194.0	1	O-RING Ø2.62 X 152.07	
44	8.752-826.0	1	CRANKCASE COVER	
45	9.803-906.0	1	O-RING Ø2.62 X 1.78.14.00	
46	8.707-262.0	1	BRASS PLUG G3/8	
47	9.803-202.0	1	SIGHT GLASS G3/4	
48	8.752-824.0	5	COVER SCREW	

KIT NUMBERS	8.753-821.0	8.753-822.0	8.753-823.0	8.753-824.0	8.752-835.0
KIT DESCRIPTION	Plunger Seals 18 mm	Seal Packing 18 mm	Plunger 18 mm	Complete Valve	Plunger Oil Seals
ITEMS NUMBERS INCLUDED	3, 5, 7	3, 4, 5, 6, 7,	34, 35, 36, 37	11, 12, 13	2
NUMBER OF CYLINDERS KIT WILL SERVICE	3	1	1	6	3

LANDA[®]

8.913-925.0 • Printed in U.S.A.