

LANDA

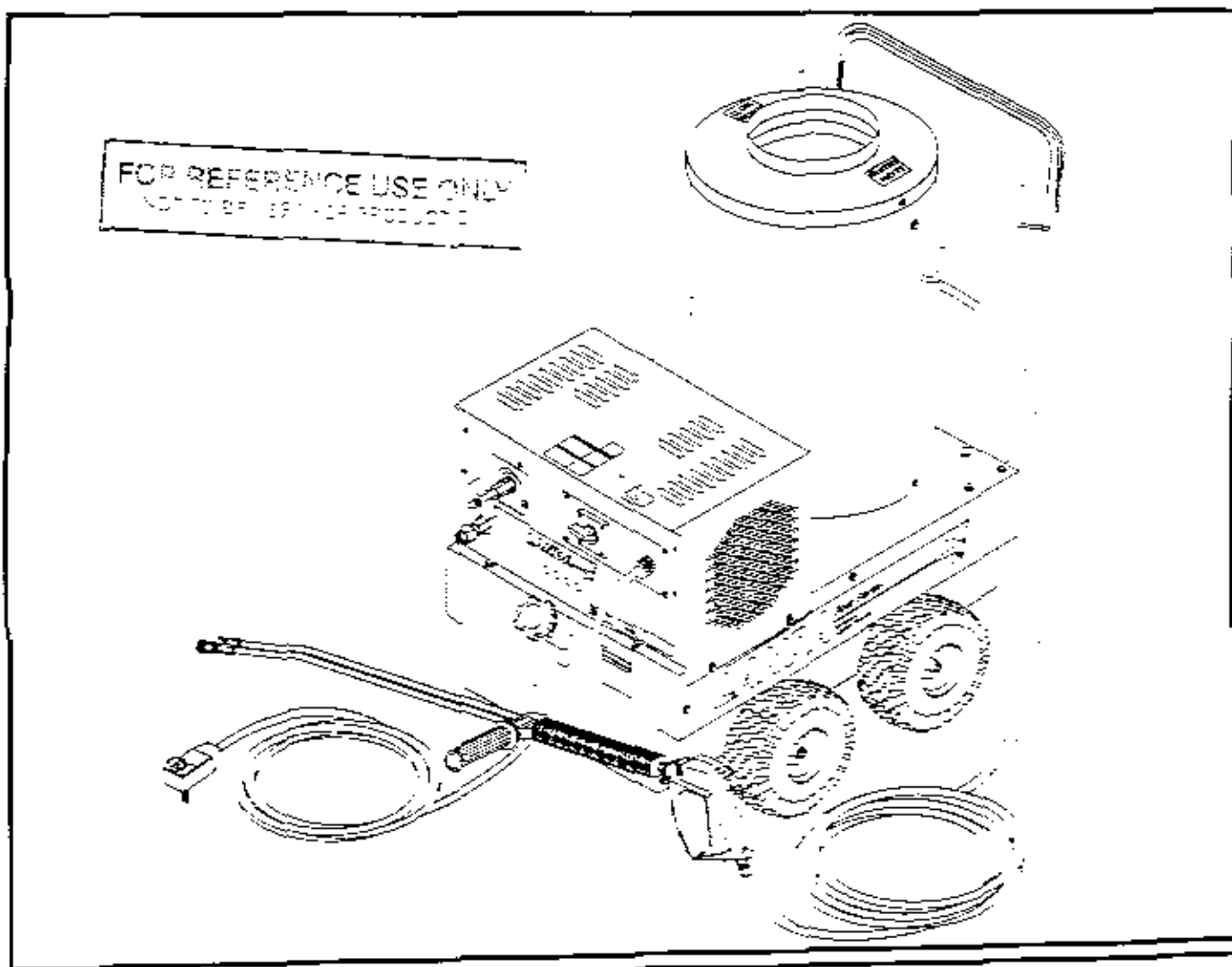
Gold Series

COMMERCIAL PRESSURE WASHERS



VHW SERIES OPERATOR'S MANUAL

- VHW2-11021D
- VHW3-70021D
- VHW4-20021A
- VHW2-14021D
- VHW3-15021A



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INTRODUCTION

Thank you for purchasing a Landa Pressure Washer.

This manual covers the operation and maintenance of the VHW2-11021D, VHW2-14021D, VHW3-70021D, VHW3-15021A, and VHW4-20021A washer. All information in this manual is based on the latest product information available at the time of printing.

Landa, Inc. reserves the right to make changes at any time without incurring any obligation.

The VHW Series was designed for commercial duty use of 4 hours per day, 5 days per week.

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

When ordering parts, please specify model and serial number.

Owner/User Responsibility

The owner and/or user must have an understanding of the manufacturer's operating instructions and warnings before using this Landa 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.

WARNING

IMPORTANT SAFETY INSTRUCTIONS

1. **CAUTION** — To Reduce the Risk of Injury, Read Operating Instructions Carefully Before Using." Failure to follow instructions could cause a malfunction of the pressure washer and result in death, serious bodily injury and/or property damage.
2. All installations must comply with local codes. Contact your electrician, plumber, utility company, or the selling distributor for specific details.

To comply with the National Electrical code (NFPA 70) and provide additional protection from risk of electric shock, this pressure washer is equipped with a UL approved ground fault circuit interrupter (GFCI) power cord.



WARNING: FLAMMABLE LIQUIDS CAN CREATE FUMES WHICH CAN IGNITE CAUSING PROPERTY DAMAGE OR SEVERE INJURY.

3. Oil-Burning appliances shall be installed only in locations where combustible dusts and flammable gases or vapors are not normally present.
4. In oil burning models, use only kerosene, No. 1 home heating fuel, or diesel.

DO NOT USE GASOLINE, CRANKCASE DRAININGS, OR OIL CONTAINING GASOLINE, SOLVENTS OR ALCOHOL. DOING SO WILL RESULT IN FIRE AND/OR EXPLOSION.

5. Risk of explosion - do not spray flammable liquids. Operate only where open flame or torch is permitted.



WARNING: KEEP WATER SPRAY, WAND, AND HIGH PRESSURE HOSE AWAY FROM ELECTRIC WIRING OR FATAL ELECTRIC SHOCK MAY RESULT. READ WARNING TAG ON ELECTRICAL CORD.

6. To protect the operator from electrical shock, the machine must be electrically grounded. It is the responsibility of the owner to connect this machine to a UL grounded receptacle of proper voltage and amperage ratings. Do not spray water on or near electrical components. Do not touch machine with wet hands or while standing in water. Always disconnect power before servicing.



WARNING: GUN KICKS BACK — HOLD WITH BOTH HANDS.

7. Grip cleaning wand securely with both hands before starting the cleaner. Failure to do this could result in injury from a whipping wand.



WARNING: HIGH PRESSURE STREAM OF FLUID THAT THIS EQUIPMENT CAN PRODUCE CAN PIERCE SKIN AND ITS UNDERLYING TISSUES, LEADING TO SERIOUS INJURY AND POSSIBLE AMPUTATION

8. High pressure developed by these units can cause bodily injury or damage. Use caution when operating. Do not point the gun at anyone or at any part of the body. This machine is to be used only by qualified operators.
9. Never make adjustments on machine while it is in operation.



WARNING: HIGH PRESSURE SPRAY CAN CAUSE PAINT CHIPS OR OTHER PARTICLES TO BECOME AIRBORNE AND FLY AT HIGH SPEEDS

10. Eye safety devices must be worn when using this equipment.



"WARNING — RISK OF ASPHYXIATION. USE THIS PRODUCT ONLY IN A WELL VENTILATED AREA."

11. When the unit is working, do not cover or place in a closed space where ventilation is insufficient.



"CAUTION — RISK OF FIRE. DO NOT ADD FUEL WHEN THE MACHINE IS OPERATING OR STILL HOT."

12. Units with spray guns should not be operated with the gun in the off position for extended periods of time as this may cause damage to the pump. Check to make sure burner shuts off when spray gun trigger is closed.
13. Protect from freezing.
14. To prevent a serious injury, be certain quick coupler on discharge hose has locked before using pressure washer.
15. Do not allow acids, caustic, or abrasive fluids to pass through the pump.
16. Inlet water must be cold.
17. Do not allow CHILDREN to operate the pressure washer at any time. THIS MACHINE MUST BE ATTENDED DURING OPERATION.
18. The best insurance against an accident is precaution, and knowledge of the machine.
19. Do not operate this product when fatigued or under the influence of alcohol or drugs. Keep operating area clear of all persons
20. Landa will not be liable for any changes made to our standard units, or any components not purchased from Landa.
21. Do not overreach or stand on unstable support. Keep good footing and balance at all times.
22. Follow the maintenance instructions specified in the manual.
23. When making repairs disconnect from electrical source.
24. Turn burner off and cool to 100° before turning machine off.
25. Before disconnecting high pressure hose from hot water outlet, turn off burner to allow water to cool to 100°, then turn off pump motor and water supply and open spray gun to relieve back pressure in hose. This will prevent coil damage from thermal expansion.

INSTALLATION

Place machine in a convenient location providing ample support, draining and room for maintenance.

LOCATION

The location should protect the machine from damaging environmental conditions, such as; wind, rain, and freezing.

1. The machine should be run on a level surface where it is not readily influenced by outside sources such as strong winds, freezing temperatures, rain, etc. The unit should be located considering accessibility for refilling of fuel, adjustments and maintenance. Normal precautions should be taken by the operator of the unit to prevent excess moisture from reaching the power unit or electrical controls.
2. It is recommended that a partition be made between the wash area and the machine to prevent direct spray from the gun to come in contact with the machine. Excess moisture reaching the power unit or electrical controls will reduce the unit life and may cause electrical shorts.
3. During installation of the unit, beware of poorly ventilated locations or areas where exhaust fans may cause an insufficient supply of oxygen. Sufficient combustion can only be obtained when there is a sufficient supply of oxygen available for the amount of fuel being burned. If it is necessary to install a unit in a poorly ventilated area, outside fresh air may have to be piped to the burner and a fan installed bringing the air into the unit.

AVOID SMALL AREAS OR NEAR EXHAUST FANS.

ELECTRICAL

The unit, when installed, must be electrically grounded in accordance to local codes. Check for proper power supply using a volt meter. The VHW2-11021D, VHW2-14021D and VHW3-70021D each require a 20 amp receptacle to comply with UL 1776 Standard.

PLACEMENT

Do not locate near any combustible material. Keep all flammable material at least 20 feet away.

Allow enough space for servicing the unit.

Local code will require certain distances from floor and walls. (Two feet away should be adequate.)

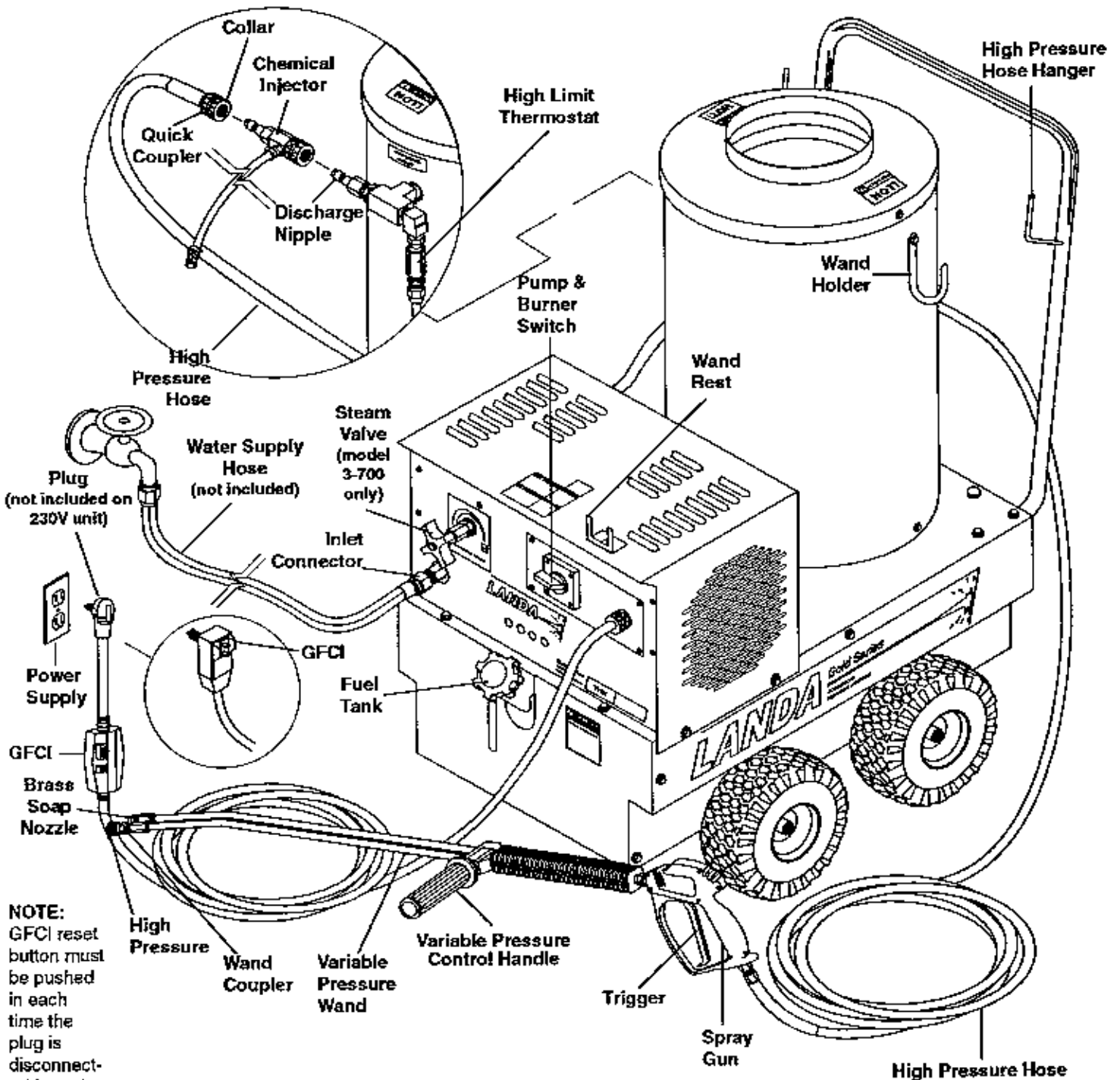
WATER SOURCE

Water source for unit should be supplied by a 5/8" I.D. garden hose with a city water pressure of not less than 30 psi. If the water supply is inadequate, or if the garden hose is kinked, the unit will run very rough and the burner will not fire.

CONNECTION

Connect the wand, nozzle, hose and gun (where applicable). On pipe thread connections, use teflon tape to avoid water leaks. (See Component Identification on page 3.)

COMPONENT IDENTIFICATION



NOTE:
 GFCI reset button must be pushed in each time the plug is disconnected from the power supply.

STARTING AND OPERATING INSTRUCTIONS

TO START:

1. **STOP!** Read operator's manual before operating this machine. Failure to read operation and warning instructions may result in personal injury or property damage.
2. Connect water supply hose and turn water on.
3. Check fuel tank and pump oil levels.
4. Connect high pressure hose to discharge nipple by sliding quick coupler collar back. (If chemical is to be applied, insert a chemical injector as shown on page 5.)
5. Insert quick coupler onto discharge nipple and secure by pushing quick coupler collar forward.
6. Securely attach the desired high pressure nozzle into wand coupler as described in steps 4 and 5.
7. Connect the power cord into the proper electrical outlet, then push in the GFCI reset button. (Refer to serial plate for information.) The VHW2-11021D, VHW2-14021D and VHW3-70021D each require a 20 amp receptacle to comply with U.L. 1776 standard.
8. Grip spray gun handle securely and pull trigger. Then turn variable pressure control handle counter-clockwise.
9. Turn switch to pump position. When a steady stream of water flows from the gun and wand the unit is ready for cold water cleaning by turning the variable pressure control handle clockwise to raise the pressure.
10. For hot water washing, turn the switch to the burner position. (The burner will light automatically when the trigger on the spray gun is pulled.)

To Stop:

1. If using the chemical injector, place chemical line in a bucket of water allowing chemical to be flushed from system (see "How To Use The Chemical Injector").
2. Turn switch to pump position and continue spraying water allowing the water to cool.
3. After water has cooled to less than 100°, turn switch to the off position.
4. Turn water off. Open the spray gun to relieve remaining pressure.
5. Protect from freezing.

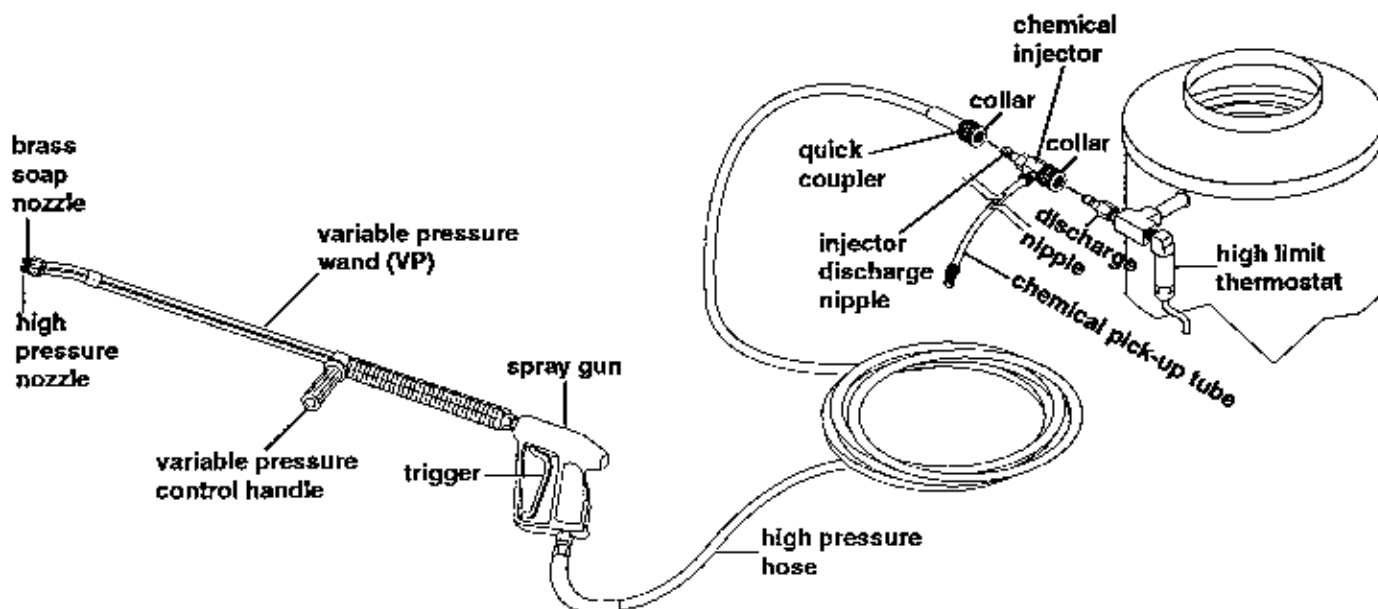
STEAM OPERATION INSTRUCTIONS

VHW3-70021D only

1. Turn steam valve counter clockwise on front control panel.
2. Water pressure will drop to about 350 psi and temperature will rise to about 240°.
3. After steam use, close the steam valve by turning clockwise. Turn switch to the pump position and continue spraying water, allowing water to cool to a minimum of 100° before turning machine off.

PREVENTATIVE MAINTENANCE

1. Use clean fuel - kerosene, No. 1 home heating fuel, or diesel. Clean or replace fuel filter every 100 hours of operation. Avoid water contaminated fuel as it will seize up the fuel pump. De-soot coils monthly or use an additive if diesel is being used.
2. Check to see that water pump is properly lubricated.
3. Follow winterizing instructions to prevent freeze damage to pump and coils.
4. Always flush chemicals from system after use.
5. If water is known to be high in mineral content, use a water softener on your water system or use a Landa recognized coil cleaning chemical.
6. Do not allow acidic, caustic or abrasive fluids to be pumped through system.
7. Always use high grade quality Landa cleaning chemicals.
8. Never run pump dry for extended periods of time.
9. Periodically delime coils as per instructions.
10. If machine is operated with smokey or eye-burning exhaust, coils will soot up not letting water reach maximum operating temperature. See section on Burner adjustments.
11. 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.
12. The areas around the Landa washer should be kept clean and free of combustible materials, gasoline and other flammable vapors and liquids.
13. The flow of combustion and ventilating air to the burner must not be blocked or obstructed in any manner.



WARNING: SOME CHEMICALS OR DETERGENTS MAY BE HARMFUL IF INHALED OR INGESTED, CAUSING SEVERE NAUSEA, FAINTING OR POISONING. THE HARMFUL ELEMENTS MAY CAUSE PROPERTY DAMAGE OR SEVERE INJURY.

HOW TO USE THE CHEMICAL INJECTOR

The machine can siphon and mix detergents with the use of Landa's chemical injector kit.

1. Pull chemical injector quick coupler collar back and secure on discharge nipple. Injector valve body arrow should point in direction of flow.
2. Connect high pressure hose to injector discharge nipple securing quick coupler.
3. Start machine as outlined in Operating Instructions.
4. Place chemical pick-up tube into container of chemical solution.
5. Turn pressure control handle counter clockwise on the Variable Pressure Wand which lowers the pressure by directing the water flow through the soap nozzle and allows the chemical injector to siphon soap.
6. Open trigger gun. Water chemical ratio is approximately 15 to 1.
7. When you finish washing, rinse by simply turning the variable pressure wand control handle clockwise to increase pressure

NOTE: The chemical injector will not siphon with water flowing through high pressure nozzle at the end of the wand. Also, when using the steam combination, the chemical injector will not siphon soap.

8. For clean up, place chemical pick-up tube into container of clear water and follow steps 5 and 6 to prevent chemical deposits from damaging the injector.

MAINTENANCE AND SERVICE

Unloader Valves

Unloader valves relieve pressure in the line when the trigger spray gun is closed. Machines with unloader valves are preset and tested at the factory before shipping. Occasional adjustment of the unloader may be necessary to maintain correct pressure. (See section in manual on unloaders for correct procedure in adjusting valve.)

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 mix a 50/50 solution of anti-freeze or windshield washer fluid with water in 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 anti-freeze 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 unit 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 20/30 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, or red dot visible through oil gauge window. Oil should be maintained at that level.

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 chemicals. 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 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 from gun assembly and put the gun into the container. Secure the trigger gun in 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 pump switch on, allowing solution to be pumped through coils back into the container. Solution should be allowed to circulate 2-4 hours.
- Step 4** After circulating solution flush entire system with fresh water. Reinstall wand into 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.

1. Remove the tank head assembly by unscrewing the three Tek screws and lifting the tank head off.
2. Remove the two pipe nipples and associated fittings.
3. Lift the coil out of the outer wrap. **Caution:** the coil weighs about 80 lbs. Use proper lifting techniques.
4. Clean, repair and replace the coil by reversing the above steps.

Pressure Relief Valve

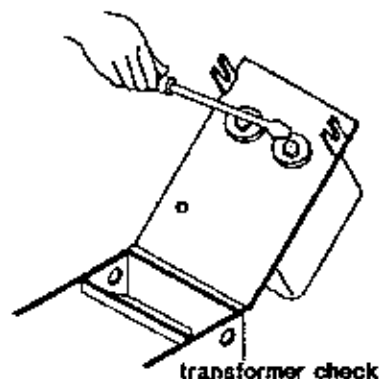
Each unit is equipped with a relief valve to relieve pressure in the system when higher than normal operating pressures are encountered. Unusually high pressures come from an object plugging the spray nozzle. This problem can easily be remedied by removing the obstruction. If operating pressure of unit is found to be normal and relief valve continues to leak, repair or replace valve.

Fuel

Use clean (not contaminated with water and debris) kerosene, No.1 home heating fuel or diesel. Drain fuel tank and replace fuel filter every 100 hours of operation.

Ignition Circuit

Periodically inspect wires, spring contact and electrodes for condition, security and proper spacing. Transformer test: (**CAUTION 10,000 VOLTS**) use defect free insulated screwdriver and keep fingers off blade! Lay blade across one contact: OK if arc will span 1/2" between end of blade and other contact. (See illustration)



connect it to the machine. Elevate the bucket and turn the pump on to siphon the anti-freeze 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.

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Pumps

Use only SAE 20/30 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, or red dot visible through oil gauge window. Oil should be maintained at that level.

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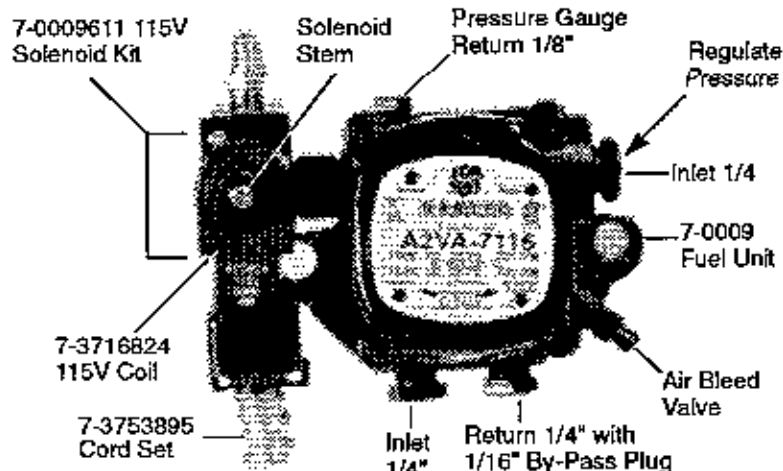
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PROBLEM	POSSIBLE CAUSE(s)	CORRECTIVE ACTION
LOW OPERATING PRESSURE	Faulty pressure gauge	Install new gauge
	Insufficient water supply	Use larger garden hose; clean filter washer at water inlet
	Old, worn or incorrect spray nozzle	Match nozzle number 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
LOW WATER TEMPERATURE	Soot buildup on coils not allowing heat transfer	Clean coils
	Lime deposits on inside of coil	Delime coil
WATER TEMPERATURE TOO HOT	Defective high limit switch	Replace
	Insufficient water supplied	Check water G.P.M. to machine
	Restricted water flow	Check nozzle for obstruction, proper size
CHEMICAL NOT DRAWING	Air leak	Tighten all clamps. Check chemical lines for holes
	Valve in the injector head may be blocked, dirty or damaged	Clean or replace valve in injector
	Filter screen on chemical suction hose plugged	Clean or replace
	Dried up chemical plugging metering valve	Disassemble and clean thoroughly

(con't next page)

PROBLEM	POSSIBLE CAUSE(s)	CORRECTIVE ACTION
CHEMICAL NOT DRAWING (Can't from previous page)	High viscosity of chemical	Dilute chemical to specifications
	Hole in chemical 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 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 replace if necessary
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
	Pump protector	Reduce inlet water pressure. Do not close trigger on spray gun for longer than five (5) minutes
OIL DRIPPING	Oil seal worn	Check and replace if necessary

PROBLEM	POSSIBLE CAUSE(s)	CORRECTIVE ACTION
BURNER WILL NOT LIGHT (continued from previous page)	Disconnected or short in electrical wiring	All wire contacts should be clean and tight. No breaks in wire
	Burner motor thermal protector tripped	If tripped, check voltage, connections, and extensions for cause. Check fuel pump shaft rotation for binding causing motor to overheat
	Flex-Coupling slipping on fuel pump shaft or burner motor shaft	Replace if needed
	On-Off Switch defective	Check continuity thru burner switch
	Heavy sooting on coil and burner, can cause interruption of air flow and shorting of electrodes	Clean as required
	Improper electrode setting	Clean and test according to diagram in Operators Manual
	Fuel not reaching combustion chamber	Check fuel pump for proper flow. Check solenoid flow switch on units with gun control, for proper on-off fuel flow control
	Clogged burner nozzle	Replace
	Water not turned on	Turn on water to activate burner pressure switch
	Flow switch malfunction	Remove test for continuity and replace as needed
	Fuel solenoid malfunction	Replace if needed
UNIT SMOKES	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 specification
	Air leaks in fuel lines	Check fuel lines for leaks or air bubbles. Tighten or replace as needed
	Plugged or dirty burner nozzle	Replace
	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	Realign electrodes to specifications
	Obstruction in smoke stack	Check for insulation blockage or other foreign objects

PROBLEM	POSSIBLE CAUSE	SOLUTION
LOW WATER TEMPERATURE	Improper fuel or water in fuel	Drain fuel tank and replace with 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	Clean coils with soot remover
	Lime build up in coils	Clean inside of coils using Landa's coil cleaner
	Improper burner nozzle	See specifications
WATER TEMPERATURE TOO HOT	Incoming water to unit warm or hot	Lower incoming water temperature
	Fuel pump pressure too high	See specifications for proper fuel pressure
	Fuel pump defective	Replace fuel pump
	Chemical line sucking air	Tighten all clamps. Check chemical line for holes
	Defective high limit switch	Replace
	Incorrect fuel nozzle size	See specifications for proper size
	Insufficient water supplied	Check with G.P.M. to machine
	Restricted water flow	Check nozzle for obstruction, proper size
PUMP MOTOR STOPS AFTER A FEW MINUTES OF OPERATION, OR STARTS SLOW	Insufficient voltage	Use heavier drop cord and check voltage at receptacle. Check name plate for amperage draw
	Plugged nozzle	Remove and clean nozzle. Turn on water pump and flush lines, replace nozzle
	Wrong spray nozzle	See serial plate for minimum nozzle size
	Automatic overload switch tripped	Allow motor to cool - switch will automatically reset Push Switch (reset button)
	Motor wet	Allow to dry
	Short in electrical wiring	Wire contacts should be clean and tight. No breaks in wires
	Coil liming up causing excessive pressure	See section on Preventative Maintenance
	Water pump low or out of oil causing the pump to bind up	Fill to correct level

VHW PARTS LIST

ITEM	PART No.	DESCRIPTION	QTY
1	2-00089	Nipple, 1/2" x 2", Galv	2
2	2-0100	Coupling, 1/2" FIPT x FIPT, Pvc 40	1
3	2-01154	Tank, Fuel, VHW, 6 Gallon	1
4	2-01167	Cap, Fuel Tank, Plastic, Vented	1
5	2-0133	Screw, 10/32" x 1/2", Knob, Textured	4
6	2-1002	Nipple, 1/4" Close	1
7	2-1022	Elbow, 1/4" Street	3
8	2-1024	Elbow, 1/2" Street, Brass	1
9	2-1032	Tee, 1/2" Female, Pipe	1
10	2-1066	Elbow, 1/2" JIC x 1/2" FEM, 90°	1
11	2-1077	Bushing, 1/2" x 3/8" Pipe	1
12	2-1085	Hose Barb, 1/4" Barb x 1/4" ML Pipe	3
13	2-1088	Hose Barb, 1/4" Barb x 1/8" ML Pipe, 90°	2
14	2-10883	Dip tube, VHW 6-1/2" Fuel	1
15	2-1089	Hose Barb, 1/4" Barb x 1/4" Pipe 90°	1
16	2-2007	Nipple, 3/8" x 3/8" NPT ST MAL	1
17	2-3015	Valve/Control, Metering (3-700 only)	1
18	2-3028	Valve, Inline Metering	1
19	2-9000	Clamp, Screw, #4	8
20	2-99031	Filter, Diesel Fuel, Disposable	1
21	4-02011217	Hose, 1/4" x 17" 100R1, 1/4 NPT (3-700 only)	1
22	4-02037720	Hose, 20" x 3/8", 100R1, Pres Loop	1
23	4-02090000	Hose, 1/4" x 1/2" /ft, Braid Vinyl	4
24	4-0303	Wheel & Tire Assy, 4"	4
25	4-0509	Switch, Snap, 225° Hi Limit	1
	4-05091	Switch, Snap, 275° Hi-Limit (3-700 only)	1
26	2-1005	Nipple, 3/8" Hex	1
27	2-1031	Tee, 3/8" Female, Pipe	1
28	2-10311	Tee, 3/8" Female, Pipe, with 1/8" Hole (3-700 only)	1
29	2-0034	Tee, 1/4" Female, Pipe (3-700 only)	1
30	2-1051	Nipple, 1/2" JIC x 1/4" Pipe	1
31	2-1052	Nipple, 1/2" JIC x 3/8" Pipe	1
32	2-10633	Nipple, 1/2" JIC x 3/8" FP #46	1
33	2-10942	Swivel, 1/2" MP x 3/4" GHF w/Strainer	1
34	2-1902	Strainer, Inlet Garden Hose	1
35	2-0103	Grommet, 1/8" Rubber	1
36	2-1099	Coupling, 1/2" x 3/8", Reducing	1
37	2-00084	Nipple, 3/8" x 3", Galv.	1
38	2-00260	Elbow, 1/4", Male, Pipe	1
39	2-1105	Swivel, 1/2" JIC Fem, Push-On	2
40	2-300816	Pump Protector, 3/8" Short w/Barb 140D	1
41	4-02110000	Hose, 1/2" /ft, Push-On	1
42	5-1046	Mtr, 1.5 HP, 1 PH, C-Face, 34F316W448S2 w/Switch (2-1100, 3-700)	1
	5-1047	Mtr 2 HP 1 PH C-Face 35K894Y695, (2-1400)	1
	5-1048	Mtr 3 HP 1 PH C-Face 35L338Y771, (3-1500)	1
	5-1053	Mtr 5 HP 1 PH C-Face 35L358S214G1, (4-2000)	1
	10-99078	Δ Label, Motor Overload Reset	1
43	5-23001	Pump, General, TT9061EF-B (2-1100, 2-1400)	1

VHW PARTS LIST (continued)

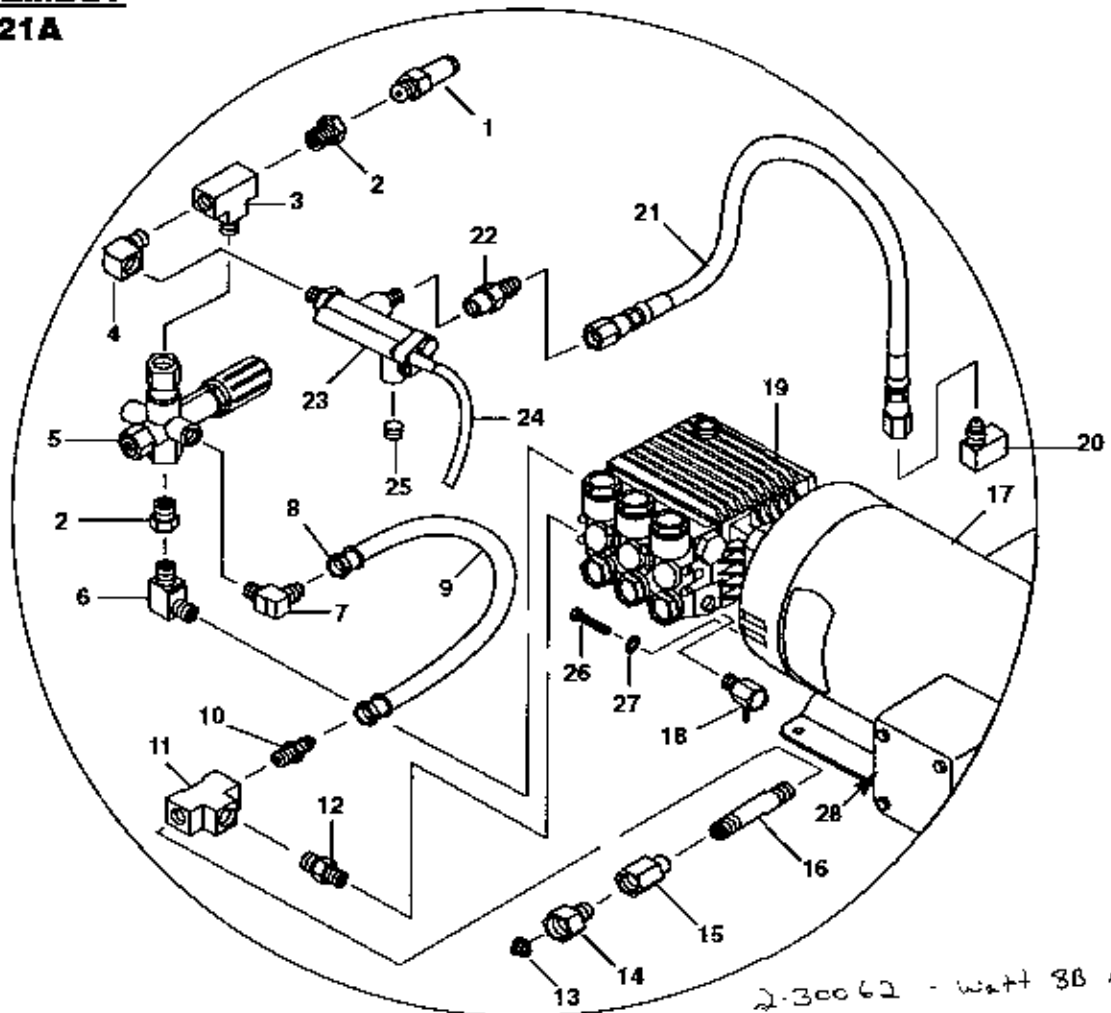
ITEM	PART No.	DESCRIPTION	QTY
43	5-23010	Pump, General, TT9071EF-B (3-700, 3-1500)	1
44	5-3201	Unloader, SMC, 0031790	1
	10-08018	Δ Label, Warning, Service Cord	1
45	6-01041	Cord, Electrical, 12/3 S.JOWA Blk /ft	3
46	6-02175	Switch, Flow, ST-6	1
47	6-02174	Switch, Reed, Replacement	1
48	6-0516	Δ Strain Relief, 1/2" Metal, Two Screw	5
49	6-0100	Cord, Service, SEO, 16/2 /ft.	2
50	6-01060	Cord, w/GFCI Plug Ericson, 120 V 20 Amp, 36' (2-1100, 2-1400, 3-700)	1
	6-01063	Plug, GFCI, 240V 20 Amp, (3-1500, 4-2000)	1
51	6-020201	Switch, 3 Pos, 115V-230V, 1 PH, Amer Sol	1
52	6-05152	Strain Relief, Plastic	1
53	6-0518	Strain Relief 1/2" LQ Tite 2521	1
	6-05181	Δ Locknut, 1/2" Conduit	1
54	7-00032	Burner Assy, Oil, .019 120V Sol (3-700)	1
	7-00033	Burner Assy, Oil, .021, 220 V w/115 V Sol, (3-1500, 4-2000)	1
	7-00035	Burner Assy, Oil, .025, 115 V w/120 V Sol, (2-1100, 2-1400)	1
55	7-01482	Insulation, Tank Bottom, VHW, 1" Blanket	1
56	7-014832	Insulation, Tank Head 16 OD x 8 ID	1
57	90-1006	Bolt, 5/16" x 3/4" NC GR 5 CS ZN	4
58	90-19710	Screw, 1/4" x 3/4" HH NC, Whiz Loc	9
59	90-19711	Screw, 1/4" x 1/2" HH NC, Whiz Loc	22
60	90-1991	Screw, 10/32" x 1/2" BHSOC Blk	8
61	90-1996	Screw, 3/8" x 3/4" HH NC, Whiz Loc	12
62	90-19961	Screw, 3/8" x 1-3/4" HH NC, Whiz Loc	7
63	90-2001	Δ Nut, 5/16", ESNA, NC	4
64	90-2002	Nut, 3/8", ESNA, NC	4
65	90-20041	Collar, 5/8" Bore Shaft 3010	4
66	90-2019	Nut, Cage, 3/8" x 12 Ga	15
67	90-1997	Screw, 10/32" x 3/4" BHSOC Blk Amer Sol	4
	17-22282	Nut, 10/32" Keps (2-1100, 2-1400, 3-700 - Qty 4) (3-1500, 4-2000 - Qty 7)	
68	90-2018	Nut, Cage, 10/32" x 16 GA	12
69	90-2022	Nut, Cage, 1/4" x 16 Ga	14
70	90-20231	Nut, Cage, 1/4" x 12 Ga	14
71	90-300210	Screw, #14 x 1" Tek Hex Head, Blk	3
72	90-4001	Δ Washer, 5/16", Flat, SAE	8
73	90-4002	Washer, 3/8", SAE, Flat	6
74	90-5006	Holder, Wand, VHW/VHP, Zinc	1
75	90-4005	Washer, 5/8", Flat, SAE	4
76	95-07121216	Coil, Dura 14.5" Dia, VHW/VHP	1
77	95-07290001	Panel, Control, VHW	1
	10-2021100	Δ Label, 2-1100 (Lexan)	1
	10-2021400	Δ Label, 2-1400 (Lexan)	1
	10-2031500	Δ Label, 3-1500 (Lexan)	1

VHW PARTS LIST (continued)

ITEM	PART No.	DESCRIPTION	QTY
77	10-2042000	Δ Label, 4-2000 (Lexan)	1
	10-203700	Δ Label, 3-700 (Lexan)	1
	10-99053	Δ Label PC Gold Series Label, 7/94	1
	10-09003	Δ Label, Cold Water Inlet, HS	1
	10-99062	Δ Label, PC Landa Spray, 7/94	1
	10-99071	Δ Label, VHP Steam Valve Label (3-700)	1
	10-020VHW	Δ Label, VHW, Lexan	1
78	95-07290002	Box, Electrical, VHW	1
	10-08021	Δ Label, Disconnect Power Supply	1
79	95-07290003	Cover, Electrical Box, VHW	1
	10-99068	Δ Label, VHW Operating Inst.	1
80	95-07290004	Cover, Pump/Motor, VHW	1
	10-99051	Δ Label, Hot Gold Series Label, 7/94 Eng/Spanish	2
81	95-07290005	Base, Main, VHW	1
82	95-07290006	Axle, Holder Assembly, VHW/VHP	2
83	95-07290007	Tab, Outer Wrap, VHW	4
84	95-07290008	Handle, Grab, VHW	1
85	95-07290009	Burner Adapter Assy, Oil Fired VHW	1
86	95-07290010	Panel, Chassis Back, VHW	1
87	95-07290012	Plate, Switch, VHW	1
88	95-07290013	Wrap, Outer Coil, VHW	1
	10-09004	Δ Label, Hot Water Outlet, HS	1
89	95-07290014	Axle, 5/8" x 24-1/2", VHW	1
90	95-07290029	Tank Head Assembly	1
	10-02025A	Δ Label, Warning "Hot"	2
91	95-07290030	Holder, Wand Bracket, VHW/VHP	1
92	95-07290032	Panel, Front Chassis, VHW	1
	10-020110	Δ Label, Use only Kerosene	1
93	95-07290033	Bracket, Fuel Tank, VHW	1
94	81-22550	Valve, Pop-Off, 1200 psi (2-1100, 3-700)	1
	81-22560	Valve, Pop-Off, 2400 psi (2-1400, 3-1500, 4-2000)	1
95	2-1023	Elbow 3/8" Street	1
96	2-1074	Bushing, 3/8" x 1/4", Pipe	1
97	2-1046	Plug, 1/4", Counter Sunk	1
98	1-99186700	Screw	4
99	1-96693800	Washer	4
100	6-02297	Fuse, GDL, 1/2 Amp, (3-1500, 4-2000)	3
	6-03561	Holder, Fuse Inline (3-1500, 4-2000)	3
101	6-052351	Transformer, 240/480 V to 120 V, .060, No Fuse (3-1500, 4-2000)	1
102	2-00301	Elbow, 1/4" x 3/8" Steel	1
	2-01403	Δ Bushing, 5/8" Snap	1
	6-0101	Δ Cord, Service, SEO, 16/3 ft.	3
	10-08014	Δ Decal, Landa Made in USA	1
103		Motor Overload Reset Button (obtain from local Motor Service Center)	1
104	95-07290053	Retainer, Burner Insulation	1

Δ Not Shown

PUMP ASSEMBLY VHW4-20021A

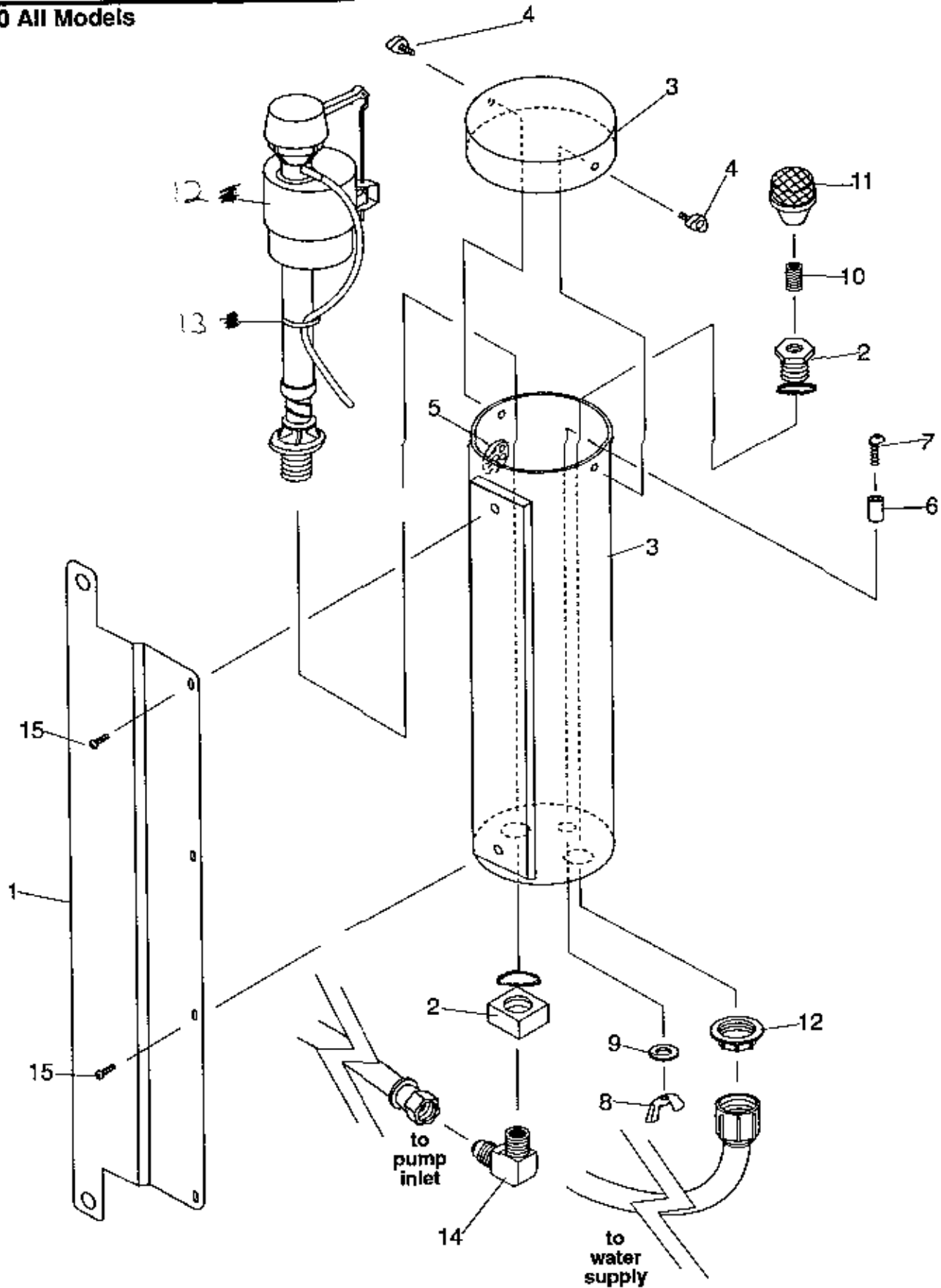


2-30062 - w/att 3B Anti-Siphon Valve II

ITEM	PART No.	DESCRIPTION	QTY
1	81-22560	Valve, Pop-Off, 2400 psi	1
2	2-1074	Bushing, 3/8" x 1/4", Pipe	2
3	2-1038	Tee, 3/8" Branch Male	1
4	2-1023	Elbow, 3/8", Street	1
5	5-3010	Unloader, J.E. Adams, 7100	1
6	2-00260	Elbow, 1/4" Male, Pipe	1
7	2-1061	Elbow, 1/2" JIC x 1/4" Pipe	1
8	2-1105	Swivel, 1/2" JIC Fem, Push-on	2
9	4-02110000	Hose, 1/2" Push-on /ft.	1
10	2-1052	Nipple, 1/2" JIC x 3/8" Pipe	1
11	2-1031	Tee, 3/8" Female, Pipe	1
12	2-1005	Nipple, 3/8" Hex	1
13	2-1902	Strainer, Inlet Garden Hose	1
14	2-10942	Swivel, 1/2" MP x 3/4" GHF w/Strainer	1
15	2-1099	Coupling, 1/2" x 3/8" Reducing	1
16	2-10051	Nipple, 3/8" x 3", Brass	1
17	5-1053	Mtr 5 HP 1 PH C-Face 35L3585214G1	1

ITEM	PART No.	DESCRIPTION	QTY
17	10-99078	Label, Motor, Overload Reset	1
18	2-300816	Pump Protector, 3/8" Short w/Barb 140D	1
19	5-2303	Pump, General TT2035EF-B	1
20	2-1066	Elbow, 1/2" JIC x 1/2" Fem 90°	1
21	4-02037720	Hose, 20" x 3/8", 100R1, Pres. Loop	1
22	2-10633	Nipple, 1/2" JIC x 3/8" F #46	1
23	6-02175	Switch, Flow, ST-6	1
24	6-02174	Switch, Reed, Replacement	1
25	2-1046	Plug, 1/4", Counter Sunk	1
26	1-99186700	Screw	4
27	1-95693800	Washer	4
28		Motor Overload Reset Button (obtain from local Motor Service Center)	1

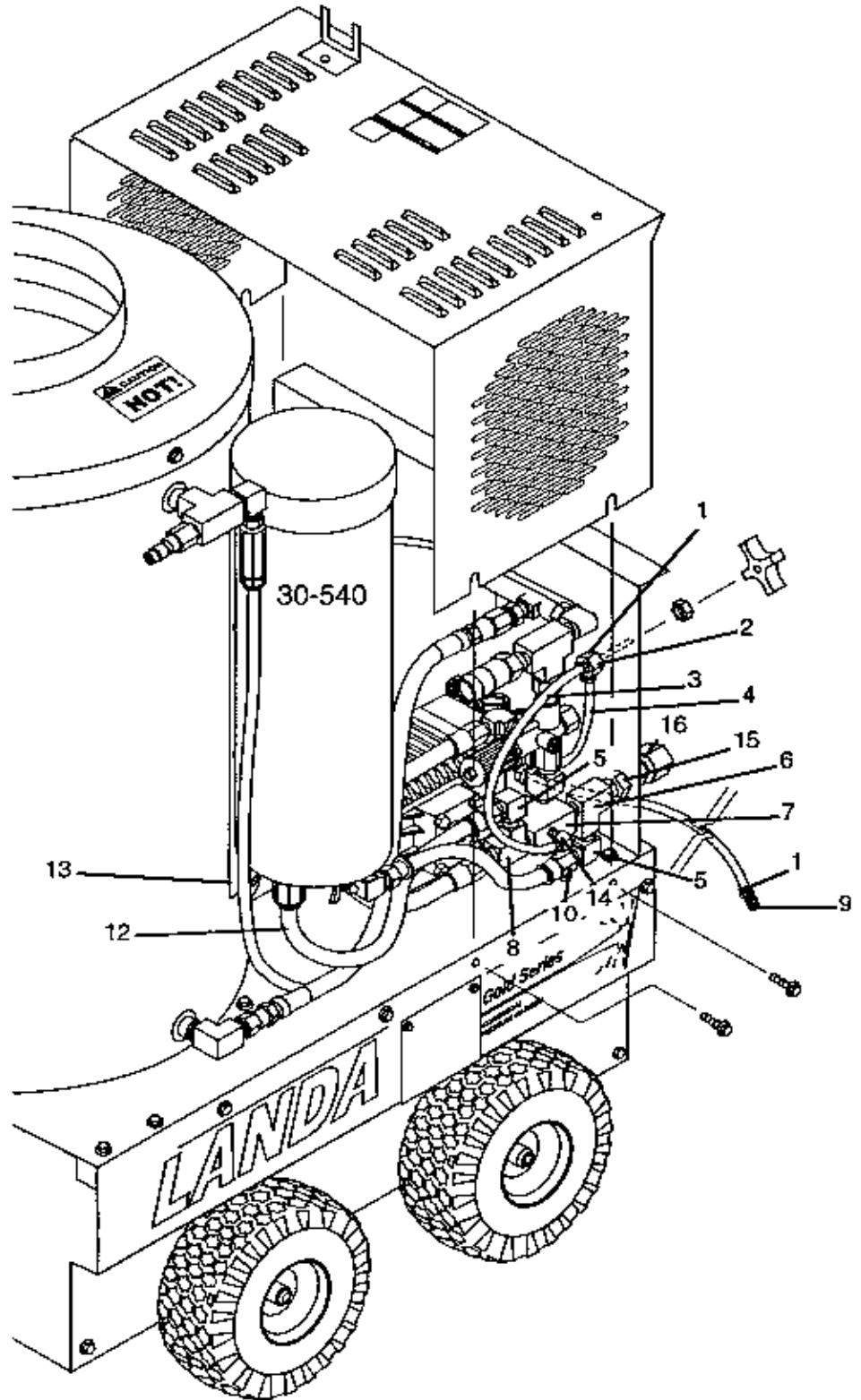
OPTIONAL FLOAT TANK ASSEMBLY 30-540 All Models



OPTIONAL FLOAT TANK ASSEMBLY
30-540 All Models

ITEM	PART NO.	DESCRIPTION	QTY
1	95-07290049	Bracket, Cylinder Float Tank	1
2	2-010049	Bulkhead, 1/2" PVC	1
3	2-011651	Float Tank, Cylinder, Polyethelene	1
4	2-0133	Screw, 10/32" x 1/2", Knob, Textured	2
5	2-0147	Plug, Overflow, Float Tank	1
6	2-0151	Plug, Float Tank	1
7	90-4031 1-51120022	Manifold, Aluminum Screw, 5/16" x 18 x 1/2" SS, BH	1
8	90-4031	Nut, 5/16" - 18, Wing, SS	1
9	90-4032	Washer, 5/16", SS	1
10	2-10061	Modified Close Nipple, 1/2" NPT 5/16"	1
11	2-1906	Strainer, 1/2" Basket	1
12	2-3014	Valve, Fluidmaster G100A Float 400A	1
13	6-05132	Wrap, Ty, 11 Black	1
14	2-1062	Elbow, 1/2" JIC x 1/2" 90°	2
15	90-1991	Screw, 10/32" x 1/2" Button Socket, Blk	2

OPTIONAL FLOAT TANK CONVERSION
30-545 VHW2-1100, 2-1400, 3-1500
30-546 VHW3-700
30-547 VHW4-2000



OPTIONAL FLOAT TANK CONVERSION

30-545 VHW2-1100, 2-1400, 3-1500

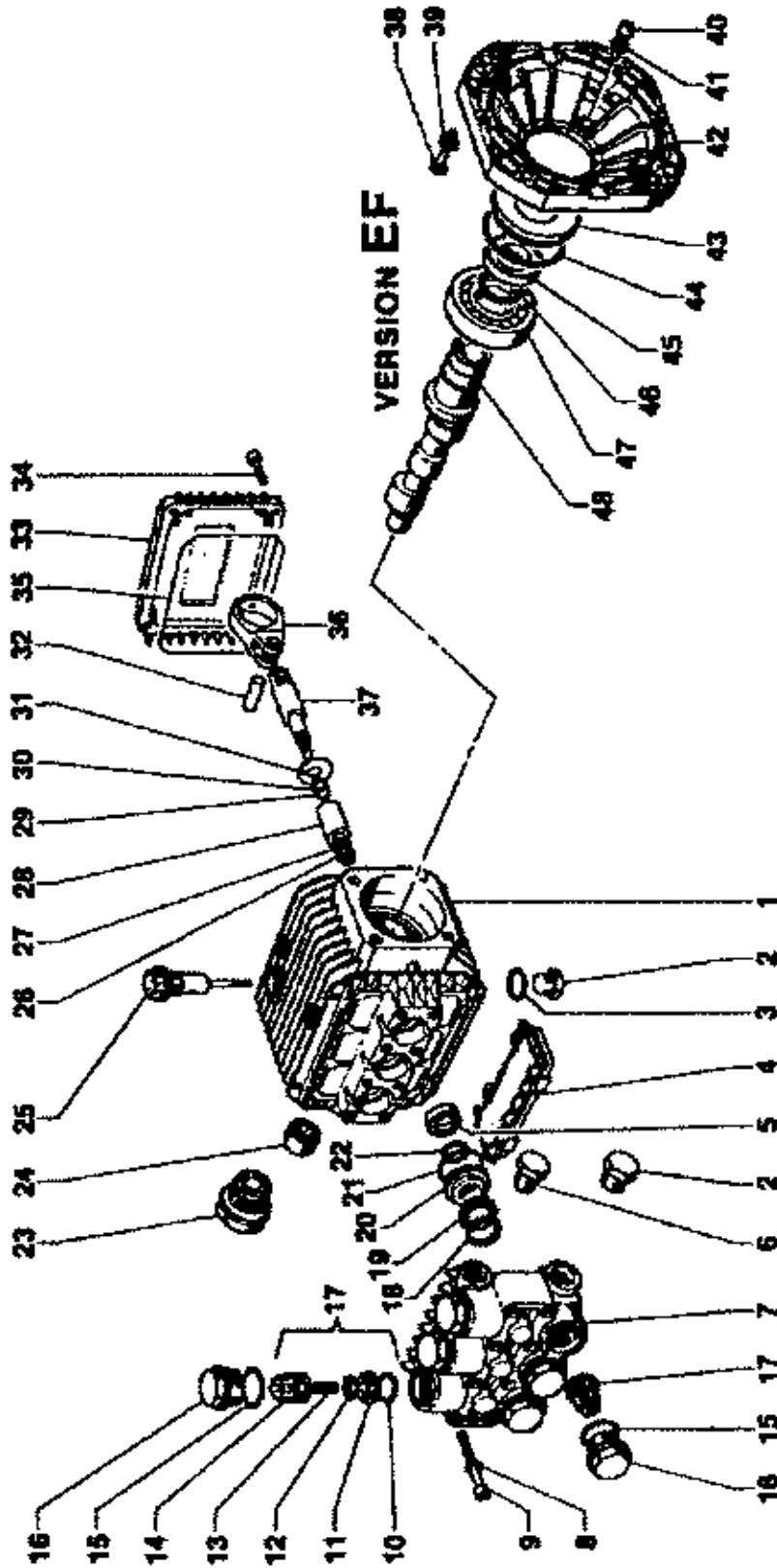
30-546 VHW3-700

30-547 VHW4-2000

ITEM	PART NO.	DESCRIPTION	QTY
1	2-9000	Clamp, Screw	4
2	2-30158	Valve, Metering, GTO	1
3	4-02090000	Hose, 1/4" x 1/2", Braid Vinyl /ft.	3
4	4-02080000	Tube, 1/4" x 1/2", Clear Vinyl /ft.	6
5	2-1060	Elbow, 1/2" JIC x 3/8" 90°	2
6	2-10411	Tee, 3/8" Street, Tapped Male	1
7	2-10312	Tee, 3/8" Female with 1/8" Hole	1
8	2-1041	Tee, 3/8" Street	1
9	2-1909	Strainer, 1/4" W/Chk Vinyl	1
10	2-1105	Swivel, 1/2" JIC FEM, Push-On	2
11	4-02110000	Hose, 1/2" Push-On /ft.	1
12	4-02100016	Inlet Hose, Supply Water 16"	1
13	95-07290049	Bracket, Cylinder Float Tank	1
14	2-1088	Hose Bar, 1/4" x 1/8"	1
15	2-11020	Adapter, 3/8" x 3/8"	1
16	2-1102	Adapter, 1/2" x 3/8"	1

PUMP TT9061EF-B #5-23001
VHW2-11021D • VHW2-14021D

PUMP TT9071EF-B #5-23010
VHW 3-70021D • VHW3-15021A



PUMP TT9061EF-B #5-23001

VHW2-11021D • VHW2-14021D

PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	1-51010622	Crankcase	1
2	1-98210000	Plug	2
3	1-90383300	O-Ring	1
4	1-51209102	Protector	1
5	Kit #1-0083	Oil Seal	3
6	1-98204100	Plug	1
7	1-51120022	Manifold, Aluminum	1
	1-51120041	Manifold, Brass	1
8	1-96693800	Washer	8
9	1-99194300	Screw	8
10	1-90384100	O-Ring (Kit #1-0001)	6
11	Kit #1-001	Valve Seat	6
12	Kit #1-001	Valve Plate	6
13	Kit #1-001	Spring	6
14	Kit #1-001	Valve Cage	6
15	1-90384700	O-Ring (Kit #1-0084)	6
16	1-98221800	Valve Cap (Kit #1-0084)	6
17	1-36703201	Valve Assembly (Kit #1-0001)	6
18	Kit #1-0096, 1-0097	Head Ring	3
19	Kit #1-0096, 1-0097	Packing	3
20	Kit #1-0086, 1-0096	Packing Retainer	3
21	1-90360400	O-Ring (Kit #1-0086, 1-0096, 1-0097)	3
22	1-90383500	O-Ring (Kit #1-0086, 1-0096, 1-0097)	3

PUMP TT9071EF-B #5-23010

VHW 3-70021D • VHW3-15021A

PARTS LIST

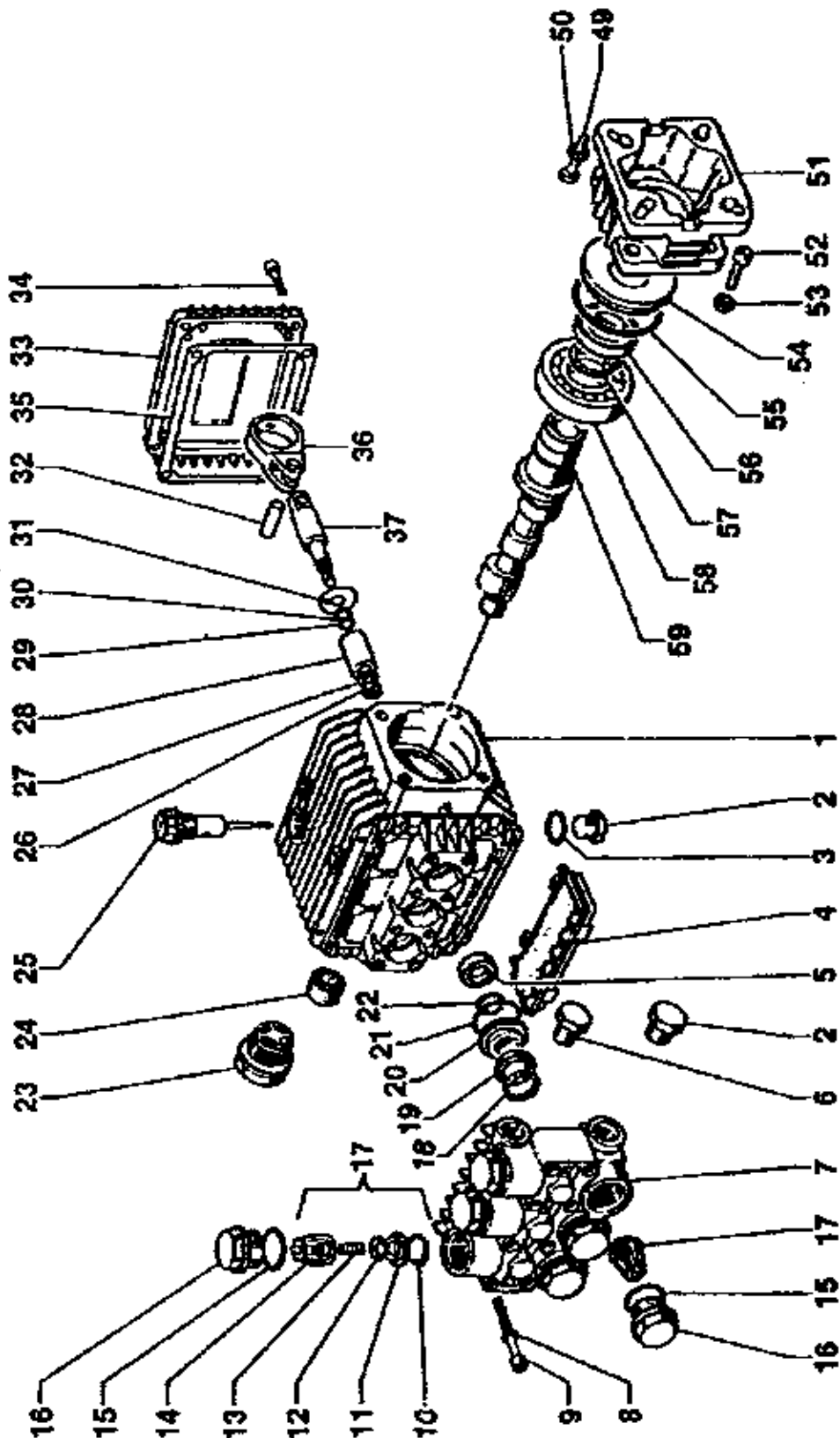
ITEM	PART NO.	DESCRIPTION	QTY
23	1-97596800	Sight Gauge	1
24	1-91801400	Needle Bearing	1
25	1-98210300	Oil Dip Stick	1
26	1-92221600	Nut	3
27	1-96700800	Washer	3
28	1-51040009	Plunger	3
29	1-90357200	O-Ring	3
30	1-90502200	Back Up Ring	3
31	1-96707000	Finger Washer	3
32	1-97731000	Connecting Rod Pin	3
33	1-51160022	Crankcase Cover	1
34	1-99186700	Screw	4
35	1-51210184	Cover Gasket	1
36	1-51030022	Connecting Rod End	3
37	1-51050056	Connecting Rod	3
38	1-99334500	Screw	4
39	1-96710400	Washer	4
40	1-99186700	Screw	4
41	1-96693800	Washer	4
42	1-10034422	Flange	1
43	1-50211551	Spacer	1
44	1-90409700	O-Ring	1
45	1-90164400	Oil Seal	1
46	1-90066700	Snap Ring	1
47	1-91837300	Bearing	1
48	1-51020835	Crankshaft (TT9061EF-B)	1
	1-51020935	Crankshaft (TT9071EF-B)	1

KITS AVAILABLE

Kit No.	1-0001	1-0083	1-0084	1-0085	1-0096	1-0097
DESCRIPTION	VALVE ASSEMBLY	PISTON OIL SEAL	VALVE CAP ASSEMBLY	PACKING RETAINER	PACKING ASSEMBLY	PACKING
ITEM NO.'S INCLUDED	10, 11 12, 13 14, (17)	5	15, 16	20, 21 22	18, 19 20, 21 22	18, 19 21, 22
NUMBER OF ASSEMBLIES	6	3	6	3	1	3
NUMBER OF CYLINDERS	1	1	1	1	3	1

PUMP TT2035EF-B, #5-2303

VHW4-20021A



VHW SERIES PRESSURE WASHER OPERATOR'S MANUAL

PUMP TT2035EF-B, #5-2303

VHW4-20021A • PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	1-51010622	Crankcase	1
2	1-98210000	Plug	2
3	1-90383300	O-Ring	1
4	1-51209102	Protector	1
5	Kit #1-0083	Oil Seal	3
6	1-98204100	Plug	1
7	1-51120041	Manifold, Brass	1
8	1-96693800	Washer	8
9	1-99194300	Screw	8
10	1-90384100	O-Ring (Kit #1-0001)	6
11	Kit #1-0001	Valve Seat	6
12	Kit #1-0001	Valve Plate	6
13	Kit #1-0001	Spring	6
14	Kit #1-0001	Valve Cage	6
15	1-90384700	O-Ring (Kit #1-0084)	6
16	1-98221800	Valve Cap (Kit #1-0084)	6
17	1-36703201	Valve Assembly (Kit #1-0001)	6
18	Kit #1-0096, 1-0097	Head Ring	3
19	Kit #1-0096, 1-0097	Packing	3
20	Kit #1-0086, 1-0096	Packing Retainer	3
21	1-90360400	O-Ring (Kit #1-0086, 1-0096, 1-0097)	3
22	1-90383500	O-Ring (Kit #1-0086, 1-0096, 1-0097)	3

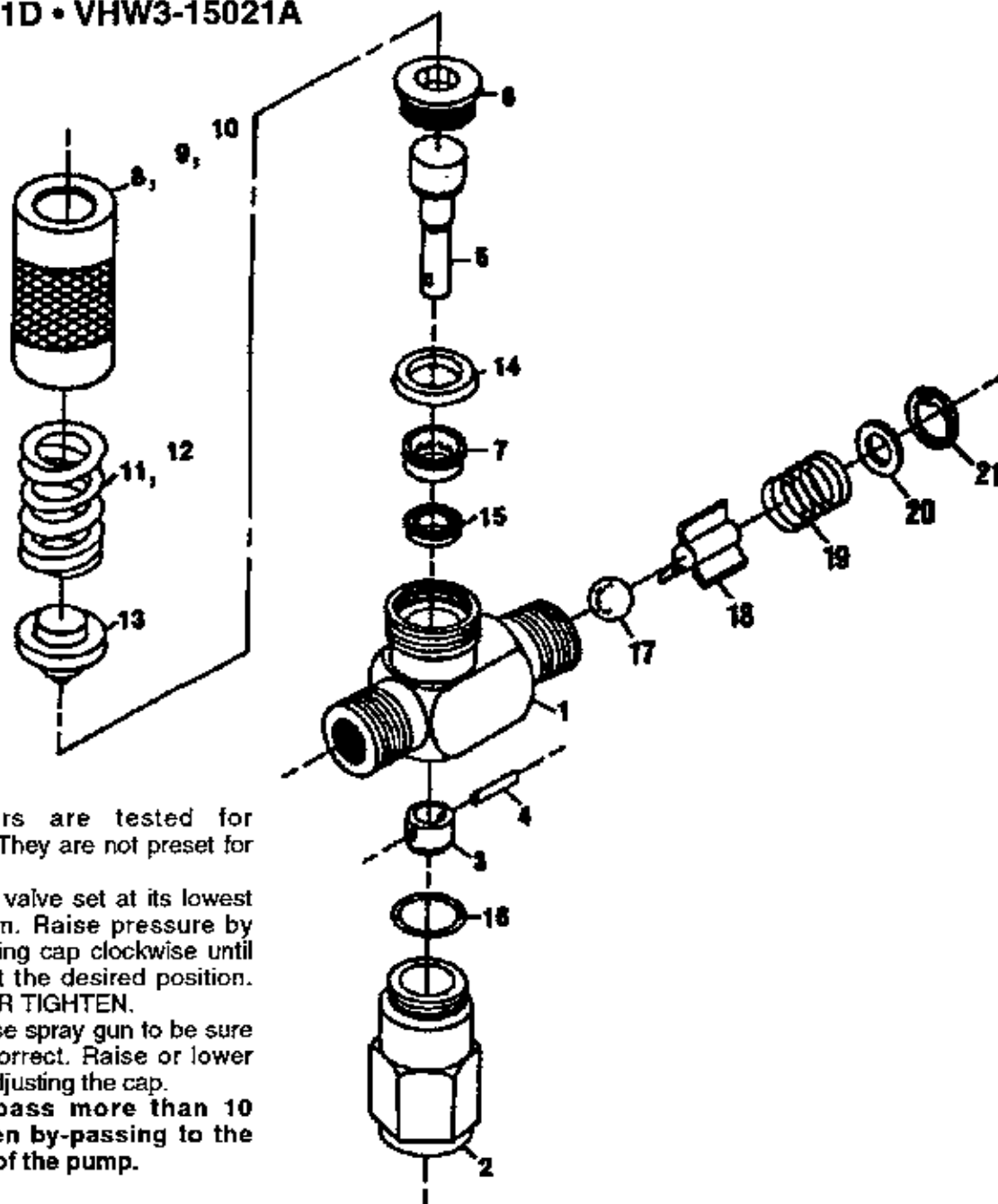
ITEM	PART NO.	DESCRIPTION	QTY
23	1-97596800	Sight Gauge	1
24	1-91801400	Needle Bearing	1
25	1-98210300	Oil Dip Stick	1
26	1-92221600	Nut	3
27	1-96700800	Washer	3
28	1-51040009	Plunger	3
29	1-90357200	O-Ring	3
30	1-90502200	Back Up Ring	3
31	1-96707000	Finger Washer	3
32	1-97731000	Connecting Rod Pin	3
33	1-51160022	Crankcase Cover	1
34	1-99186700	Screw	4
35	1-51210184	Cover Gasket	1
36	1-51030022	Connecting Rod End	3
37	1-51050056	Connecting Rod	3
49	1-99273000	Screw	4
50	1-96701400	Washer	4
51	1-10034422	Flange	1
52	1-99186700	Screw	4
53	1-96963800	Washer	4
54	1-50211551	Spacer	1
55	1-90409700	D-Ring	1
56	1-90164400	Oil Seal	1
57	1-90066700	Snap Ring	1
58	1-91837300	Bearing	1
59	1-51021835	Crankshaft	1

KITS AVAILABLE

Kit No.	1-0001	1-0083	1-0084	1-0086	1-0096	1-0097
DESCRIPTION	VALVE ASSEMBLY	PISTON OIL SEAL	VALVE CAP ASSEMBLY	PACKING RETAINER	PACKING ASSEMBLY	PACKING
ITEM NO.'S INCLUDED	10, 11 12, 13 14, (17)	5	15, 16	20, 21 22	18, 19 20, 21 22	18, 19 21, 22
NUMBER OF ASSEMBLIES	6	3	6	3	1	3
NUMBER OF CYLINDERS	3	3	3	3	1	3

UNLOADER #5-3201

VHW2-11021D, VHW2-14021D,
VHW 3-70021D • VHW3-15021A



ADJUSTING

- All unloaders are tested for performance. They are not preset for pressure.
- Start with the valve set at its lowest spring tension. Raise pressure by turning adjusting cap clockwise until pressure is at the desired position. **DO NOT OVER TIGHTEN.**
- Open and close spray gun to be sure pressure is correct. Raise or lower pressure by adjusting the cap.
- **Do not by-pass more than 10 minutes when by-passing to the suction side of the pump.**

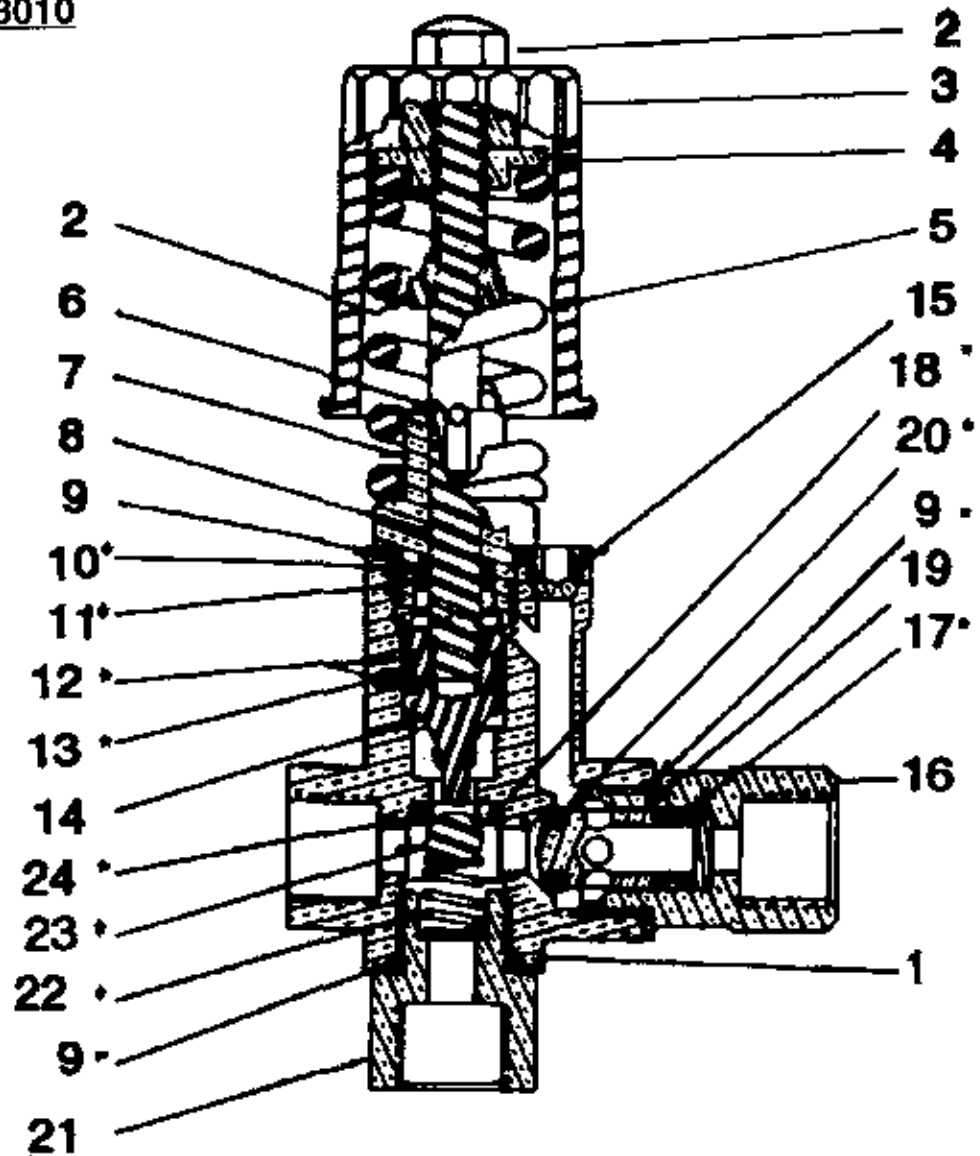
Parts available only in Kit.

REPAIR KIT #8-0032090

Cup-item	#14
Cup-item	#15
O-Ring	#16

UNLOADER #5-3010

VHW4-20021A

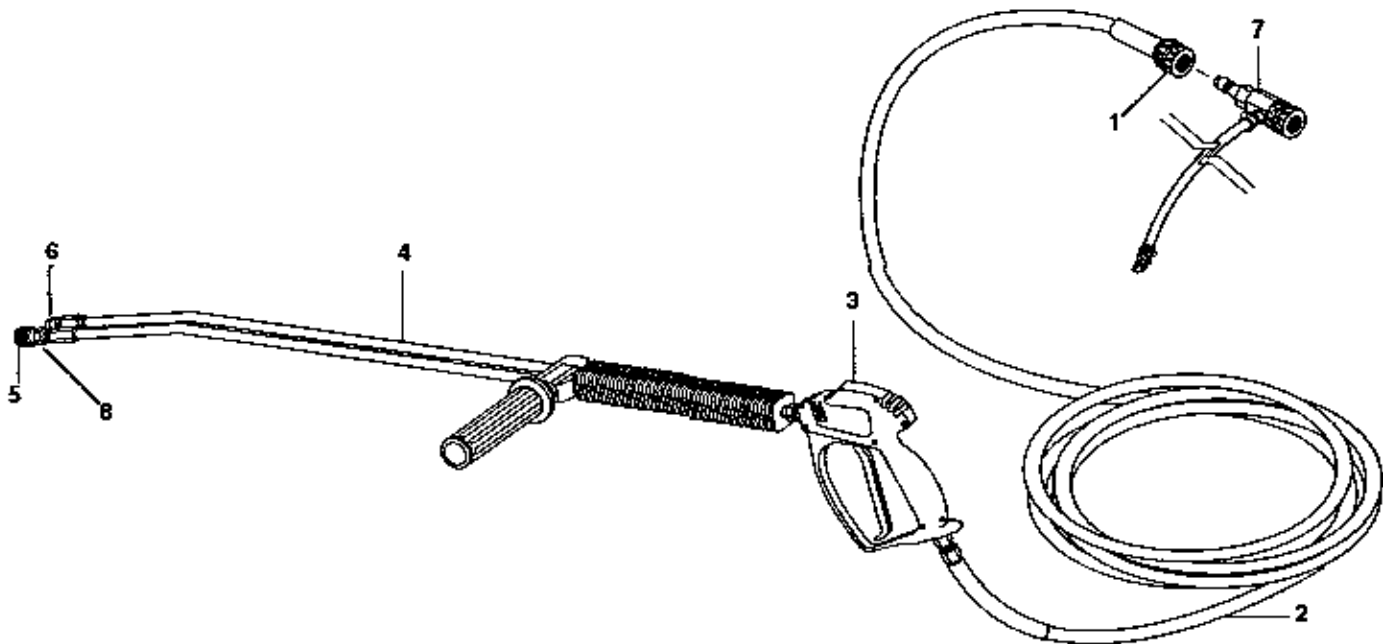


ITEM	PART NO.	DESCRIPTION	QTY
1	85-7101	Unloader Body	1
2	85-7102	Locknut	2
3	85-7103	Control Knob (7100 only)	1
4	85-7104	Spring Guide	1
5	85-7105	Spring (7100 only)	1
6	85-7106	Roll Pin	1
7	85-7107	Actuator Fitting	1
8	85-7108	Actuator Rod	1
9	85-7109-D1	* "O" Ring	3
10	85-7112-D2	* Backing Ring	1
11	85-7109-D2	* "O" Ring	1
12	85-7112-D1	* Backing Ring	2
13	85-7109-D3	* "O" Ring	1

ITEM	PART NO.	DESCRIPTION	QTY
14	85-7114	Actuator Plunger	1
15	85-7115	Set Screw	1
16	85-7116	Discharge Fitting	1
17	85-7117	Δ Plunger Spring	1
18	85-7109-D10	Δ "O" Ring	1
19	85-7119	Check Plunger	1
20	85-7109-D4	Δ "O" Ring	1
21	85-7121	Inlet Fitting	1
22	85-7123	Δ Return Spring	1
23	85-7124	Δ Check Ball	1
24	85-7118	Δ SST Seat	1

Δ Items provided in Kit 85-7130

HOSE & GUN ASSEMBLY All Models



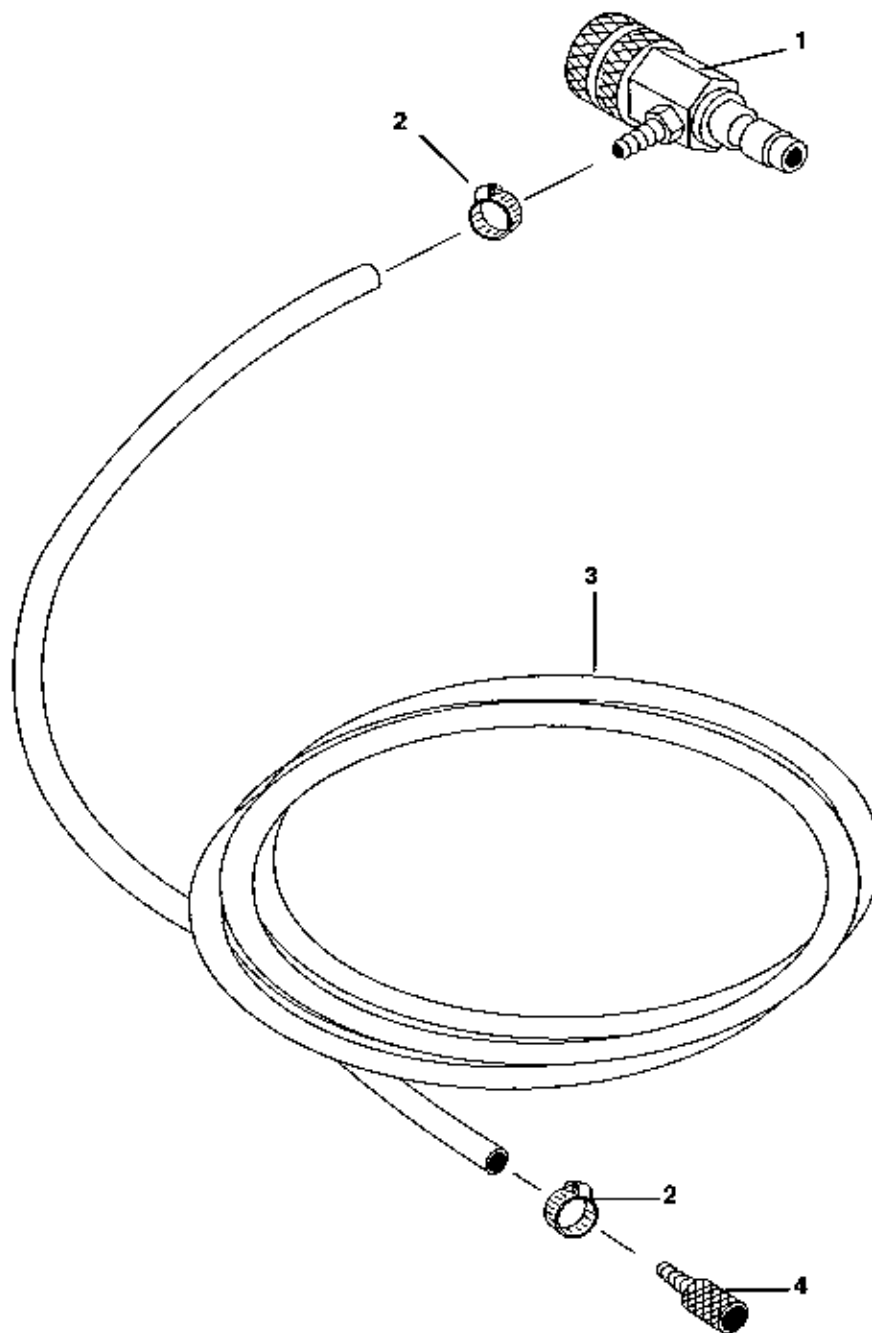
ITEM	PART NO.	DESCRIPTION	QTY
1	2-2002	Coupler, 3/8" Female	1
	2-0121	Δ Quick Coupler O-Ring Large	1
2	4-02033450	Hose, 50' x 3/8" 100R1	1
	4-02173350	Hose, 50' x 3/8" Combo (VHW3-70021D only)	1
3	4-01212	Gun, Spray, YG2600 (VHW2-11021D, VHW2-14021D, VHW3-15021A)	1
	4-01215	Gun, Spray, YG3600 (VHW3-70021D, VHW4-20021A)	1
4	4-011138	Wand only, VP, AR	1
5	4-12803015	Nozzle, SAQC MEG 1503, Yellow (VHW2-14021D)	1
	4-12804015	Nozzle, SAQC, MEG 1504, Yellow (VHW2-11021D)	1
	4-12804515	Nozzle, SAQC MEG 15045, Yellow (VHW3-15021A)	1
	4-12805015	Nozzle, SAQC MEG 1505, Yellow (VHW4-20021A)	1
	4-12806515	Nozzle, SAQC MEG 15065, Yellow (VHW3-70021D)	1
6	4-06540	Brass Soap Nozzle	1
7	4-011183	Chemical Injector (VHW2-11021D, VHW2-14021D, VHW3-70021D, VHW3-15021A)	1
	4-011184	Chemical Injector (VHW4-20021A)	1
8	2-2001	Coupler, 1/4" Male	1
	2-0119	Δ Quick Coupler O-Ring Small	1

Δ Not Shown

DOWNSTREAM INJECTOR ASSEMBLY

Assy #1 • #4-011183 • VHW2-11021D, VHW2-14021D, VHW 3-70021D, VHW3-15021A

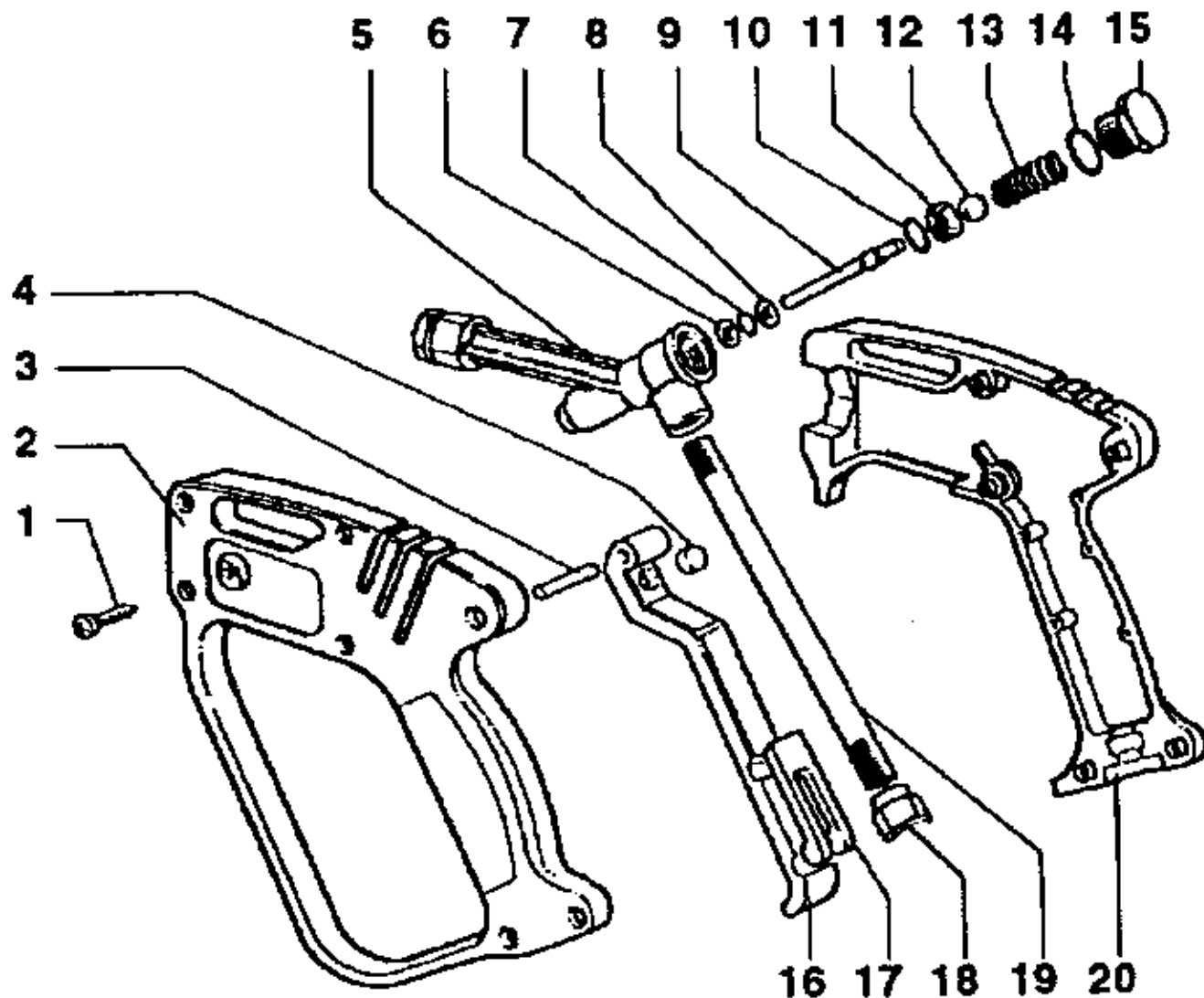
Assy #2 • #4-011184 • VHW4-20021A



ITEM	PART NO.	DESCRIPTION	QTY
1	3-1202	Injector, Chem, Non Adjust, #1	1
	3-12021	Injector, Chem, Non Adjust, #2	1
2	2-9000	Clamp, Screw, #4	2
3	4-02080000	Tube, 1/4" x 1/2", Clear Vinyl ft.	6
4	2-1907	Strainer, 1/4", Hose Barb	1

SPRAY GUN #4-01212

VHW2-11021D, VHW2-14021D, VHW3-15021A

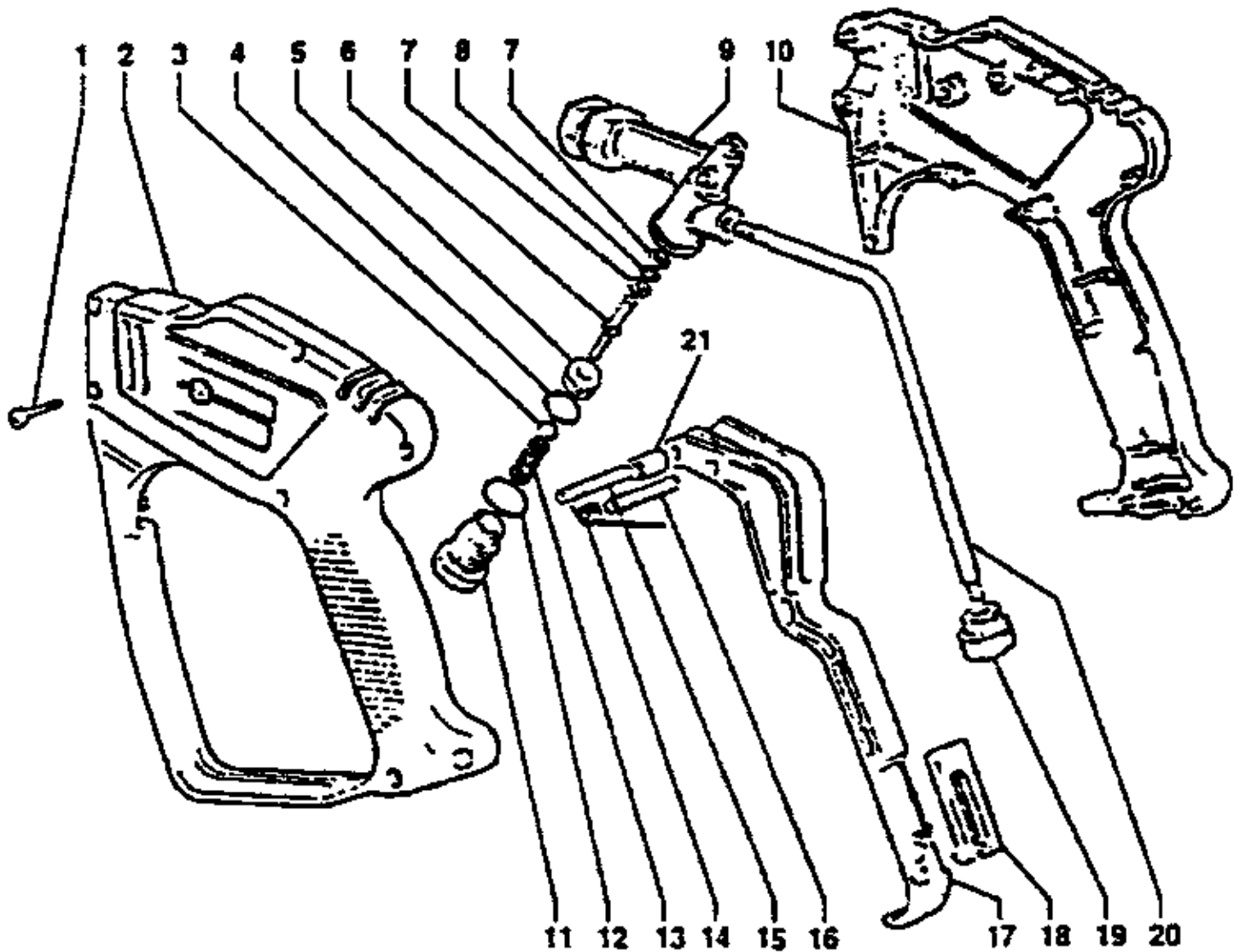


ITEM	PART NO.	DESCRIPTION	QTY
1	1-16307700	Screw, M3.5 x 19	7
2	1-30070884	Housing, Left Plastic, Black	1
3	1-30050931	Pin, M5 x 24.5, Brass	1
4	1-30067151	Striker, SS	1
5	1-30071635	Housing, Brass	1
6	1-10401800	*O-Ring, Back-up, Teflon/Bronze	1
7	1-10316500	*O-Ring, .112 x .103, Viton	1
8	1-14355900	*Washer, M3, Brass	1
9	1-30070451	*Pin, SS	1
10	1-10305501	*O-Ring, .302 x .070, Buna-N	1

ITEM	PART NO.	DESCRIPTION	QTY
11	1-30051251	Seat, SS	1
12	1-14744800	Ball, 5/16", SS	1
13	1-30070351	Spring, SS	1
14	1-10306001	*O-Ring, .489 x .070, Buna-N	1
15	1-30070231	Plug, M14 x 1, Brass	1
16	1-30071084	Trigger, Black	1
17	1-30070984	Latch, Safety, Black	1
18	1-30071761	Nipple, 3/8-BSP-F, Brass	1
19	1-30070666	Tube, 1/8, SS	1
20	1-30070784	Housing, Right, Plastic, Black	1
	1-YKITG2600	*Repair Kit	

SPRAY GUN #4-01215

VHW3-70021D, VHW4-20021A

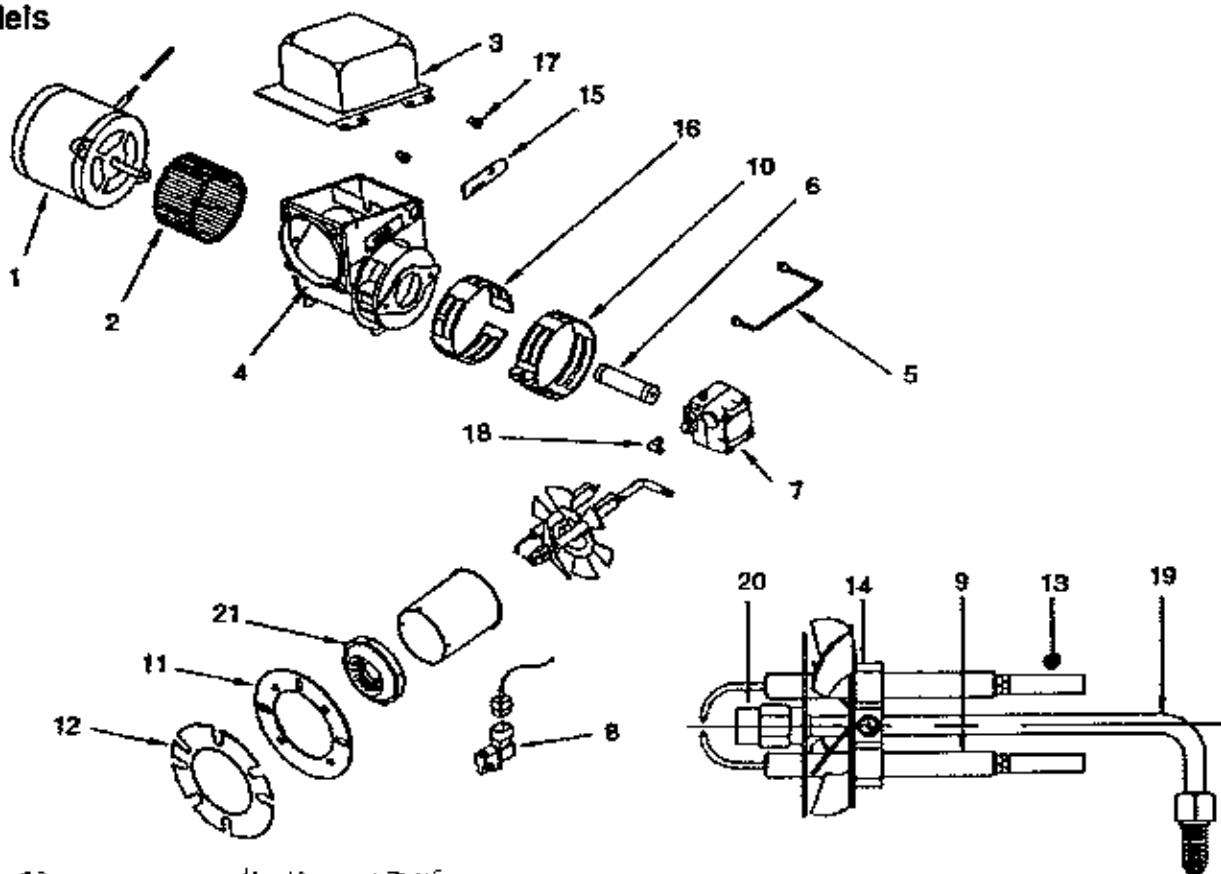


ITEM	PART NO.	DESCRIPTION	QTY
1	1-16307700	Screw	7
2	1-30150184	Left Housing	1
3	1-14744310	Δ Ball	1
4	1-10305901	Δ O-Ring	1
5	1-30201251	Δ Seat	1
6	1-30150251	Δ Pin	1
7	1-10400400	Δ Back-up Ring	1
8	1-10310990	O-Ring	1
9	1-30151935	Housing	1
10	1-30150684	Right Housing	1
11	1-30150831	Plug	1

ITEM	PART NO.	DESCRIPTION	QTY
12	1-10306401	Δ O-Ring	1
13	1-30150751	Spring	1
14	1-30151351	Spring	1
15	1-30150451	Pin	1
16	1-30021231	Pin	1
17	1-30150984	Trigger	1
18	1-30151084	Locking Lever	1
19	1-30151731	Inlet Fitting	1
20	1-30151156	Inlet Tube	1
21	1-30150351	Bushing	1
Δ	1-YKITG4550	Repair Kit	

BURNER ASSEMBLY

All Models



7-00052 115V, 1/8 HP 3450 RPM

ITEM	PART NO.	DESCRIPTION	QTY
1	7-00051	Motor 1/8 HP 3450 RPM 3450 115V/230V	1
2	7-21854001	Fan, Burner 6"	1
	7-20288	Fan Burner 5" (2-1100, 2-1400)	1
3	7-20358	Transformer, Burner 115V	1
	7-21153	Transformer, Burner, 240V	1
4	7-4725	Burner Housing	1
5	7-0020	Fuel Line, Copper	1
6	7-13279	Coupling, Fuel Pump to Motor	1
7	7-0009	Fuel Pump	1
8	7-0009611	Solenoid Kit w/115V Coil	1
9	7-13286	Electrode, Burner	2
10	7-2668-002	Air Adjustment Band, Outer	1
11	7-21526	Cast Flange	1
12	7-12484	Burner Gasket	2
13	7-12945	Buss Bar	2
	7-14296	Δ Nut, Gun Assembly	1
	7-100418-003	Δ Screw, Electrode Clamp	1

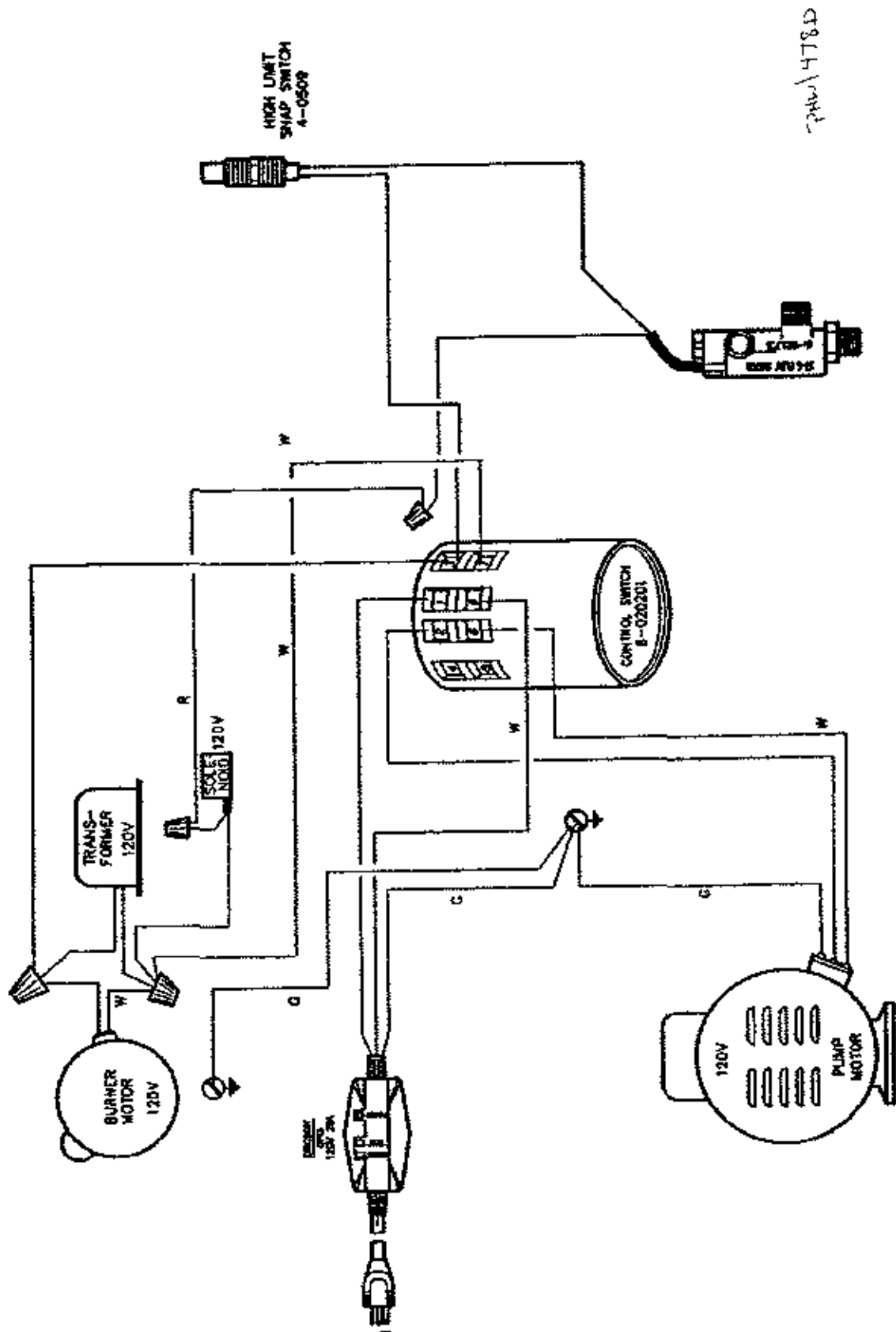
ITEM	PART NO.	DESCRIPTION	QTY
14	7-100675-001	Clamp, Electrodes	1
15	7-13392	Adjustment Plate, Gun Assembly	1
16	7-2669-002	Air Band, Inner	1
17	7-13045	Bolt, Transformer Hinge	2
	7-13360	Δ Bolt, Transformer Clip	1
	7-100689-001	Δ Hold Down Clip, Transformer	1
18	7-13494	Brass Elbow, Fuel Pump	1
19	7-30540003	Gun Assembly, Complete	1
20	7-21913-001	Adapter, Nozzle	1
	Machine Model	Nozzle, Fuel Burner	1
21	7-14160	Cone, Air, 4A (3-700, 3-1500, 4-2000)	1
	7-14365	Cone, Air, 6A (2-1100, 2-1400)	1

Δ Not Shown

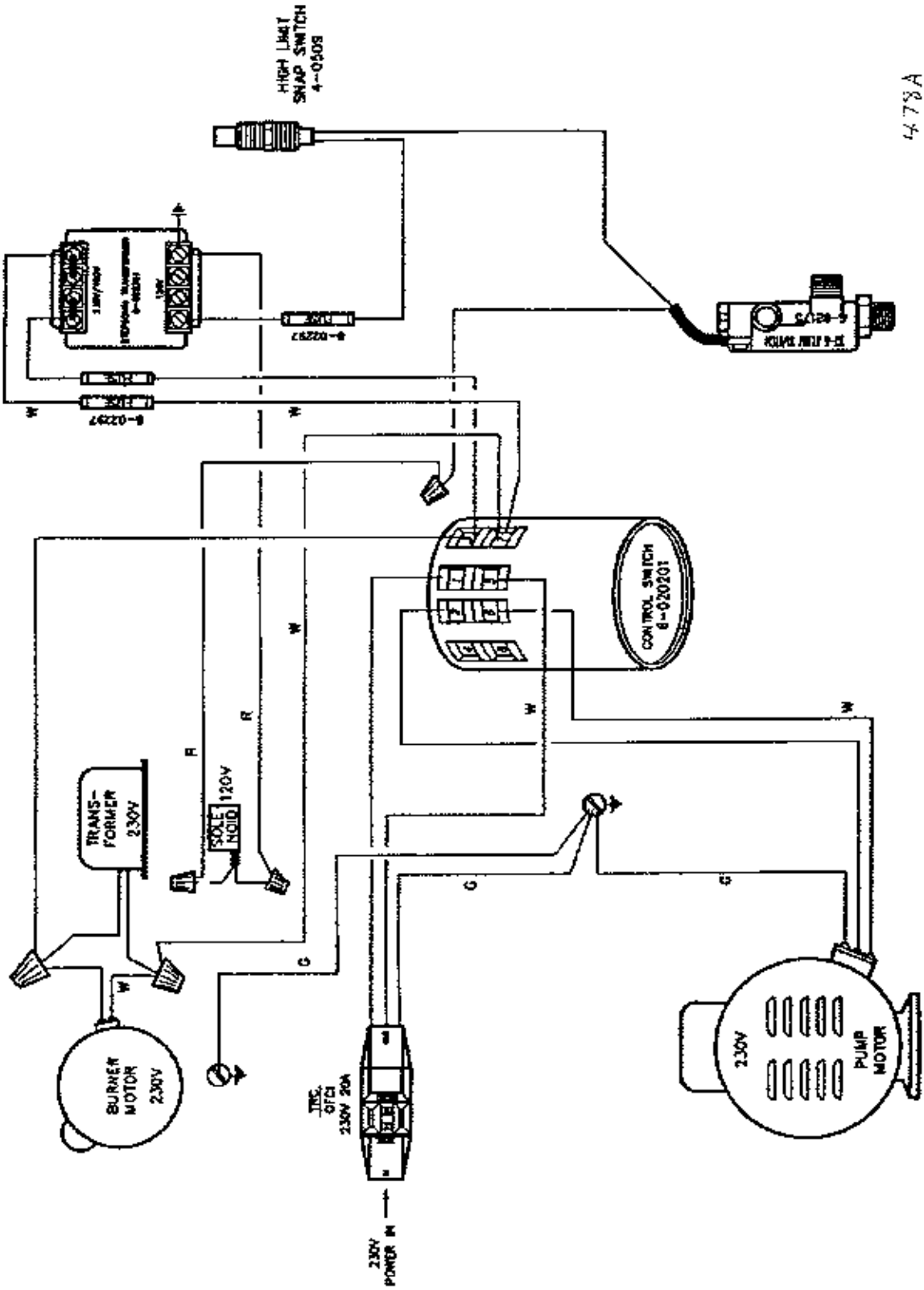
MACHINE MODEL	PART NO.	BURNER NOZZLE	QTY
VHW2-11021D	7-0106	1.20/70°	1
VHW2-14021D	7-0105	1.00/70°	1
VHW3-70021D	7-0107	1.75/70°	1
VHW3-15021A	7-0107	1.75/70°	1
VHW4-20021A	7-0107	1.75/70°	1

WIRING DIAGRAM 120V 1 PH

VHW2-11021D, VHW2-14021D,
VHW3-70021D



WIRING DIAGRAM 230V 1PH
VHW3-15021A, VHW4-20021A



4478A

MACHINE SPECIFICATIONS

MODEL		VHW2-1100	VHW2-1400	VHW3-700	VHW3-1500	VHW4-2000
DISCHARGE	GPM	2.0	1.8	2.8	2.8	3.6
OPERATING PRESSURE	PSI	1000	1400	700/250	1500	2000
OPERATING TEMPERATURE	*	200°		250°	200°	
BTU PER HOUR		168,000	140,000	245,000	245,000	375,000
BURNER		Oil Fired Automatic Light				
FUEL TYPE		Kerosene, Stove Oil, Diesel				
FUEL CONSUMPTION	GPH	1.30	1.10	1.85	1.85	2.35
FUEL TANK CAPACITY	Gal	6	6	6	6	6
BURNER MOTOR		.2	.2	.2	.2	.2
VOLTS/PHASE		120 V 1 PH	120 V 1 PH	120 V 1 PH	230 V 1 PH	230 V 1 PH
IGNITION		Transformer				
COIL A 53-1/2"		Sch 40				
PUMP		Tri-plunger, Oil Bath				
PUMP MOTOR	HP	1.5	2	1.5	3	5
CORD		36' GFCI Plug 20 Amp			36' GFCI Plug not supplied	
TOTAL AMPERAGE		17	20	17	14	19
PAINT		Epoxy Powder Coating				
HOSE		Single Braid Wire 3/8" x 50'		Steam Combo 3/8" x 50'	Single Braid Wire 3/8" x 50'	
GUN		Insulated Spray				
NOZZLES		Hardened Stainless Steel 15°				
PRESSURE CONTROL		Variable Pressure Wand				
CHEMICAL CONTROL		Down Stream Injection				
WHEELS		2 Ply Pneumatic 10 x 4.00 Stance				
LENGTH/WIDTH/HEIGHT		30" x 19" x 28"				
NET WEIGHT	lbs	341	351	343	365	372

ETL Certified to UL1776 Standards

*Operating temperature may vary depending on incoming water temperature.

Note: There may be slight variances in gallonage and pressures due to variances allowed by manufacturers of our machine components. We attempt to keep our machine performance \pm 5% of listed specifications.

LANDA LIMITED NEW PRODUCT WARRANTY

Subject to the terms and conditions stated herein, Landa warrants to the original purchaser that each new Landa Product will be free from defects in materials and workmanship for a period of one year from the date of purchase with the following limitations:

Warranty extended to two years from date of purchase for parts only:

1. Coils
2. Fabricated components, i.e., frames, chassis, handles, bumper wraps, etc.
3. Pumps (oil end only)

Warranty limited to ninety (90) days from date of purchase:

1. Components subject to water contact (except coils). Examples are pumps (water end only), unloaders, hoses, guns, valves, injectors, and wand.
2. All electrical components.
3. Industrial, commercial, rental or farm use of Handyman Series Models.

Warranty provided by other manufacturers:

Motors, generators and engines are warranted by their respective manufacturers. Your authorized Landa Dealer can help you obtain service through these manufacturer's local authorized service centers.

WHAT THIS WARRANTY COVERS

During the term of this warranty and subject to its limitations, we will repair or replace, at our option, any part which is defective, malfunctions or otherwise fails under normal use. Motors, generators and engines, which are warranted by their respective manufacturers, are serviced through these manufacturer's local authorized service centers. Landa, Inc. cannot provide warranty on these items.

WHAT YOU MUST DO TO OBTAIN WARRANTY SERVICE

While not required for warranty service, we request that you register your Landa Product by returning the completed registration card. In order to obtain warranty service on items warranted by Landa, you must return the product to your local Landa Dealer, freight prepaid, with proof of purchase, within the warranty period. If the product is permanently installed, you must notify your local Landa Dealer of the alleged defect. Your local Landa Dealer will file a claim with Landa, Inc., which must subsequently verify the defect. For warranty service on parts warranted by other manufacturer's your authorized Landa Dealer can help you obtain warranty service through these manufacturer's local authorized service center. If you are unable to resolve the warranty claim satisfactorily, write to Landa at 18705 NE Airport Way, Portland, OR 97228-1088, detailing the nature of the defect, the name of the local Landa Dealer and a copy of the purchase invoice.

WHAT THIS WARRANTY DOES NOT COVER

This warranty does not cover the following:

1. Used products and remanufactured equipment used prior to purchase by the end user.
2. Damage or malfunctions resulting from accidents, abuse, modifications, alterations, improper installation or improper servicing.
3. Freezing or chemical deterioration.
4. Units altered in any way that deviate from original manufacturer's specifications.
5. Damage to components from fluctuations in electrical or water supply.
6. Normal maintenance service, including but not limited to adjustments, fuel system cleaning and bearing adjustment of castings.
7. Replacement of maintenance items, including but not limited to springs, rollers, filters, nozzles.
8. Thermal expansion caused by not cooling the oil after use or by oil restriction.
9. Field labor charges in connection with adjustments, disassembly or reassembly.
10. Transportation charges in connection with the repair or replacement of defective parts.
11. Freight damage. If products are damaged in transit, you must file a claim with the carrier.

THIS IS THE ONLY EXPRESS WARRANTY ON OUR PRODUCTS

LANDA, Inc. does not authorize any other party, including authorized Landa Dealers, to make any representation or promise on behalf of Landa, Inc. or to modify the terms, conditions or limitations in any way.

LIMITATION OF RESPONSIBILITY

LANDA, Inc.'s liability shall be limited to repair or replacement of defective parts pursuant to the terms of this warranty and does not include replacement of complete products. Landa, Inc. shall not be liable for special, incidental, or consequential damages, however caused, including but not limited to loss of use, lost profits or damage to property, occasioned by, or arising out of the operation, use, installation, repair or replacement of the Landa Product. Landa makes every effort to ensure that all illustrations and specifications are correct; however, these do not form 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. THE WARRANTY CONTAINED HEREIN IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. In no event shall Landa, Inc.'s liability exceed the purchase price of the product in question. It is the buyer's responsibility to ensure that the installation and use of Landa Products conforms to local codes. While Landa, Inc. attempts to assure that its products meet national codes, it cannot be responsible for how the customer chooses to use or install the product.