Operation Manual

Gasoline High Pressure Washer

TABLE OF CONTENTS

SAFETY GUIDELINES/DEFINITIONS

This manual contains information that is important for you to know and understand. This information relates to protecting **YOUR SAFETY** and **PREVENTING EQUIPMENT PROBLEMS.** Please read the manual and attend to these sections.

⚠ CAUTION indicates an imminent hazardous situation which, if not avoided, willresult in death or serious injury.

⚠ WARNING indicates an potentially hazardous situation which, if not avoided, could rdsult in death or serious injury.

⚠ AUCTION indicates an potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

⚠ NOTE used without the safety alert symbol indiating potentially hazardous situation which, if not avoid, may result in property damage.

IMPORTANT SAFETY INSTRUCTIONS

⚠WARNING Read operation manual. Do not operate eqqipment until you have read operation manualfor safety, Assembly,operation, and maintenance instructions.

Hazard

⚠WARNING **RISK OF EXPLOSION OR FIRE**

WHAT CAN HAPPEN	HOW TO PREVENT IT
● Spilled gasoline and it's vapors can become ignited from cigarette sparks, electrical arcing, exhaust gases, and hot Engine components such as the silencer.	● Shut off engine and allow it to cool before adding fuel to the tank. ● Use care in filling tank to avoid spilling fuel. ● Move pressure washer away from fueling area before starting engine.
● Heat will expand fuel in the tank which could result in spillage and possible fire explosion.	● Keep maximum fuel level 1/2 below top of tank to allow for expansion.
● Operating the pressure washer in an explosive environment couldresult in fire	● Operate and fuel equipmentin well ventilated zones free from obstructions. Equip zone withfire extinguisher suitable for gasoline fires.
● Materials placed against or near the pressure washer can interfere with its proper ventilation causing overheating and possible ignition of the materials.	● Never operate pressure washer in an area containing dry brush or weeds.
● Silencer exhaust heat can damage painted surfaces, melt any material sensitive to heat (such assiding, plastic, rubber, or vinyl) and damage live plants.	● Always keep pressure washer a minimum of five feet away from surfaces (such as houses, automobiles, or live plants) that could be damaged from muffler exhaust heat.
● Improperly stored fuel could lead to accidental ignition.Improperly secured fuel could get into the hands of children or other unqualiffied persons.	● Store fuel in an approved container in a secure location away from work area.
● Use of acids, toxic or corrosive chemicals,poisons, insecticides,or any kind of flammable solvent with this product could result in serio-usinjury or death.	● DO not spray flammable liquids.

Hazard

⚠WARNING **RISK TO BREATHING**

WHAT CAN HAPPEN	HOW TO PREVENT IT
● Breathing exhaust fumes will cause serious injury even death!	● Operate pressure washer in a well ventilated area. ● Avoid enclosed areas such as garages, basements, etc. ● Never operate unit at location occupied by humans or animals.
● Some cleaning fluids contain substances that could cause injury to skin, eyes, or lungs.	● Use only cleaning fluids specifically recommended for high pressure washers. Follow manufactures recommendations. Do not use chlorine bleach or any other corrosive compound.

Hazard

⚠WARNING **RISK OF INJURY OR PROPERTY DAMAGE WHEN TRANSPORTING OR STORING**

WHAT CAN HAPPEN	HOW TO PREVENT IT
● Fuel or oil can leak or spill and could result in fire or breathing hazard,serious injury or death. Fuel or oil leaks will damage carpet, paint or other surfaces in vehicles or trailers.	● If pressure washer is equipped with a fuel shut-off valve, turn the valve to the off position before transportat to avoid fuel leaks, If pressure washer is not equipped with a fuel shut-off valve, drain the fuel from tank before transportation, only transport fuel in an approved container, always place pressure washer on aprotective mat when transporting to protect against damage to vehicle from leaks. Remove pressure washer from vehicle immediately upon arrival at your destination.

Hazard

⚠WARNING **RISKOF HOT SURFACES**

WHAT CAN HAPPEN	HOW TO PREVENT IT
● Contact with hot surfaces, such as engines exhaust components,could result in serious burn.	● During operation, touch only the control surfaces of the pressure washer, Keep children away from the pressure washer at all times. They are too young to recognize the hazards of this product.

Hazard

⚠ WARNING **RISK OF FUILD INJECTION**

WHAT CAN HAPPEN	HOW TO PREVENT IT•
• Your washer operates at fluid pressures and velocities high enough to penetrate human and animal flesh, which could result in amputation or other serious injury. Leaks caused by loose fittings or damaged hoses can result in injection injuries. **DO NOT TREAT FLUID INJECTION AS A SIMPLE CUT!** See a physician immediately!	• Never place hands in front of nozzle. • Direct spray away from self or others. • Make sure hose and fittings are tightened and in good condition. Never hold onto the hose or fittings during operation. • Do not allow hose to contact muffler. • Never attach or remove spray wand or hose fittings while system is pressurized.
• Injuries can result if system pressure is not reduced before attempting maintenance or disassembly.	• Use only hose and accessories rated for pressure higher than your press washer's p.s.i.

Hazard

⚠ WARNING **RISK OF IN JURY FROM SPRAY**

WHAT CAN HAPPEN	HOW TO PREVENT IT
• High velocity fluid spray can cause objects to break, propelling particles at High speed. • Light or unsecured objects can become hazardous projectiles.	• Always wear approved safety glasses. • Wear protective clothing to protect against accidental spraying. • Never point spray wand at people or animals. • Always secure trigger lock when spray wand is not in service to prevent accidental operation. • Never permanently secure trigger in open position.

Hazard

⚠ WARNING **RISK OF CHEMICAL BURN**

WHAT CAN HAPPEN	HOW TO PREVENT IT
• Use of acids toxic or corrosive chemicals, poisons, insecticides, or any kind of flammable solvent with this product could result in serious injury or death.	• Do not use acids, gasoline, kerosene, or any other flammable materials in this product. Use only household detergents, cleaners and degreasers recommended for use in pressure washers. • Wear protective clothing to protect eyes and skin from contact with sprayed materials.

Hazard

⚠ WARNING **RISK OF UNSAFE OPERATION**

WHAT CAN HAPPEN	HOW TO PREVENT IT
• Unsafe operation of your pressure washer could lead to serious injury or death to you or others.	• Do not use chlorine bleach or any other corrosive compound. • Become familiar with the operation and controls of the prossure washer. • Keep operating area clear of all persons, pets and obatacles. • Do not operate the product when fatigued or under the influence of alcohol or drugs. Stay alert at all times. • Never defeat the saftey features of this product. • Do not operate machine with missing. broken, or unauthorized parts. • Never leave spray wand unattended while unit is running.
• If proper starting procedure is not followed, engine can kickback , causing serious hand and arm injury.	• If engine does not start after two pulls, squeeze trigger of gun to relieve pump pressure, pull starter cord slowly until resistance is felt. Then pull cord rapidly to avoid kickback and prevent hand or arm injury.
• The spray gun/spray wand is a powerful cleaning tool that could look like a toy to a child.	• Keep children away from the pressure washer at all times.
• Reactive force of spray will cause gun/wand to move, and could cause the operator to slip or fall, or misdirect the spray. Improper control of gun/spray wand can result in injury to self and others	• Do not overreach or stand on an unstable support. Grip gun/spray wand firmly with both hands. Expect the gun to kick when triggered.

Hazard

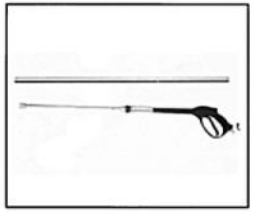
⚠ WARNING **RISK OF ELECTRICAL SHOCK**

WHAT CAN HAPPEN	HOW TO PREVENT IT
• Spray directed at electrical outlets or switches or objects connected to an electrical circuit, could result in a fatal electrical shock.	• Unplug any electrically operated product before attempting to clean it. Direct spray away from electric outlets and swiches.

CARTON CONTENTS

Note: photographs and line drawings used in this manual are for reference only and do not represent a specific model.





Manuals: Engine Manual
pressure washer operation manual

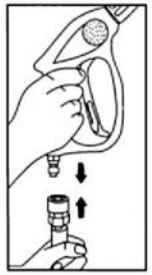
PRESSURE PUMP TECHNICAL PARAMETER

PRESSURE PUMP TECHNICAL PARAMETER AND PERFORMANCE

Model	Rated rotation speed	Permissible pressure	Max flow	Engine
G150A	3400	2900PSI 150BAR	4.0G.P.M (12.6L/min)	6.5HP
G200A	3400	2900PSI 200BAR	4.0G.P.M (15L/min)	9HP
G250A	3400	3600PSI 250BAR	4.0G.P.M (15L/min)	13HP
GE150A	3400	2900PSI 150BAR	4.0G.P.M (12.6L/min)	6.5HP
GE200A	3400	2900PSI 200BAR	4.0G.P.M (15L/min)	9HP
GE250A	3400	3600PSI 250BAR	4.0G.P.M (15L/min)	13HP

OPERATING INSTRUCTIONS

1.Attach high pressure hose to gun. Tighten securely.



2.Connect spray wand to gun. Tighten securely.

3.Assemble grommet kit and quick-connect nozzles as described in the instructions supplied.

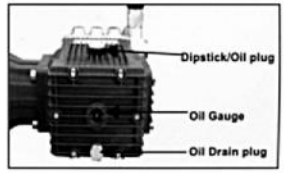
4.Add engine oil (supplied) to engine.Refer to engine owners manual supplied by engine manufacturer for correct procedure.

⚠ NOTE There will be a slight amount of oil in the engine from factory testing.

⚠ WARNING The shipping plug must be removed and replaced with the dipstick/ oil plug before operating pressure washer.

5.Using a 17 mm wrench, remove shipping plug from pump by turning it counterclockwise.Discard plug.

6.Remove dipstick/oil plug from plastic bag and install into pump, tighten securely.



READ THIS OWNER'S MANUAL AND SAFETY RULES BEFORE OPERATING YOUR UNIT. compare the illustrations with your unit to familiarize yourself with the location of various controls and adjustments .save this manual for future reference.

BASIC ELEMENTS OF A PRESSURE WASHER

High Pressure Pump: Increases the pressure of the water

Engine: Drives the high pressure pump.

High Pressure Hose: Carries the pressurized water from the pump to the gun and spray wand.

Spray Gun: Connects with spray wand to control water flow rate, direction, and pressure.

Quick Connect Spray Wand: Spray wand is equipped with a female quick connect coupler on the end. This allows the user to quickly change out

High-pressure nozzle for different spray patterns and change the soap nozzle for the low pressure and chemical /soap applications .see how to use spray wand paragraph in this section.

Chemical Hose: Feeds cleaning agents into the pump to mix the pressurized water. see how to apply chemical /cleaningsolvent in this section of this Manual.

BASIC ELEMENTS OF ENGINE

Refer to the engine manual for location and operation of engine

Choke Control Lever: Controls engine speed.

Starter Grip: Pulling starter grip operates recoil starter to crank engine.

Fuel Valve Lever: Opens\Closes connection between fuel tank and carburetor.

Engine Switch: Enables and disables igniton system.

PRESSURE WASHER TERMINOLOGY

PSI: Pounds per square inch . the unit of measure for water pressure ,also used for air pressure hydraulic pressure, etc.

GPM: Gallons per minute, the unit of measure for the flow rate of water

CU: Cleaning units. gpm multiplied by psi

Bypass Mode: In bypass mode , the pump is recirculating water because the trigger of the spray gun is not pulled. If unit is left in bypass mode for more than two(2)minutes, the water temperature will rise to a dangerous level and could damage internal components of the pump .Any damage topump due to these causes will not be covered under warranty.

⚠ WARNING Do not allow unit to operate in bypass mode for more than two minutes at any time. Overheating of pump can cause damage to pump.

Thermal Relief Valve: In an effort to prevent extreme damage, pumps are equipped with a thermal relief valve. This valve will open when the temperature inside the pump rises too high. This valve will then release a gush of water in an effort to lower the temperature inside the pump. Immediately after this occurs, the valve will close.

Chemical Injection System: Mixes cleaners or cleaning solverts with the pressurized water to improve cleaning effectiveness.

Water Supply:All pressure washers must have a source of water . the minimum requirements for a water supply are 20PSI and 5gallon per minute.

PRESSURE WASHER OPERATING FEATURES

PRESSURE AD JUSTMENTS

The pressure setting is preset at the factory to achieve optimum pressure and cleaning. if you need to lower the pressure. it can be accomplished by these methods

1. Back away from the surface to be cleaned. The further away you are, the less the pressure will be on the surface to be cleaned

⚠ WARNING Do not attempt to increase pump pressure. A higher pressure setting than the factory set pressure may damage pump.

2. **Reduce the speed the gasoline engine (RPM).** Slow the engine down and the water pressure will go down with it
3. **Change to the 40° white nozzle,** This nozzle delivers a less powerful stream of water and a wider spray pattern
4. **Adjust the pressure regulator on the pump.** Turn the pressure regulator knob counterclockwise to lower pressure. once you have finished using your pressure washer , return the pressure regulator to its original position by turning it clockwise.

⚠ WARNING **Do not try to turn pressure regulator knob past the built-in stop or damage to pump will result**

TO USE SPRAY WAND

Your pressure washer is equipped with up to five spray nozzles. Each nozzle is color coded and delivers a specific spray pattern for a particular cleaning purpose. The size of the nozzle determines the size of the fan spray and the pressure out of the nozzle. The **0°, 15° , 25° , and 40°** nozzles are high pressure nozzles ,the chemical nozzle is a low pressure nozzle.

The nozzles are housed in receptacles on the panel of the pressure washer handle. Colors on the panel identify nozzle location and spray pattern.

⚠ WARNING **Risk of injection or injury to person. Do not direct discharge stream toward persons, unprotect skin, eyes, or any pets or any animals. Serious injury can occur.**

CHANGING NOZZLES

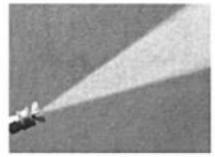
⚠ WARNING **DO NOT attempt to change nozzles while pressure washer is running. Turn engine off before changing nozzles**

1.Pull quick connect coupler back and insert nozzle

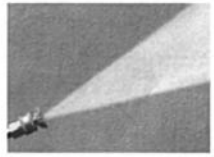
2.Release quick connect coupler and twist nozzle to make sure it is secure in coupler.

⚠ WARNING **RIsk of injury.Ensure nozzle is completely inserted in QC socket and QC snap ring is fully engaged (forward) before squeezing gun trigger**

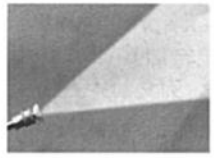
0° nozzle-red. This nozzle delivers a pinpoint stream and is extremely powerful. It covers a very small area of cleaning. This nozzle should only be used on surface that can withstand this high pressure such as metal or concrete. Do not use on wood.



15°nozzle-yellow. This nozzle delivers a powerful 15 degree spray pattern for intense cleaning of small areas. This nozzle should only be used on areas that can withstand the high pressure from this nozzle.



25°nozzle-green. This nozzle delivers a 25 degree spray pattern for intense cleaning of larger areas. This nozzle should only be used on areas that can withstand the pressure from this nozzle.



40°nozzle-white. This nozzle delivers a 40 degree spray pattern and a less powerful stream of water. It covers a wide area of cleaning, this nozzle should be used for most general cleaning jobs.

Chemical nozzle-black. This nozzle is used to apply chemicals or cleaning solutions. It has the least power stream.

HOW TO APPLY CHEMICALS AND CLEANING SOLVENTS

⚠ WARNING **Applying chemicals or cleaning solvents is a low pressure operation.**

⚠ WARNING Use only soaps and chemicals designed for pressure washer use. **Do not use bleach.**

To apply chemicals:

1.Press chemical hose onto barbed fitting located near high pressure hose connection of pump as shown.

2.Place other end of chemical hose with filter on it into container holding chemical/cleaning solution.

⚠ NOTE The chemical/water ratio is 7:1,for every 7 gallons of water pumped, 1 gallon of chemical/ cleaning solution will be used.

3.Install low pressure (black) nozzle into quick connect fitting of spray wand, see How To

Use Spray Wand paragraph in this section.

4.After use of chemicals, place chemical hose into container of clean water and draw clean water through chemical injection system to rinse system thoroughly. If chemicals remain in the pump it could be damaged. Pumps damaged due to chemicals will not be covered under warranty.

⚠ NOTE Chemicals and soaps will not siphon when spray wand is in the high pressure setting.

READ AND UNDERSTAND ALL WARNINGS BEFORE STARTING UNIT

⚠ DANGER **When using the high pressure setting, DO NOT** allow the high pressure spray to come in contact with unprotected skin, eyes, or with any pets or animals. Serious injury can occur.

Your washer operates at fluid pressures and velocities high enough to penetrate human and animal flesh, which could result in amputation or other serious injury. Leaks caused by loose fittings or worn or damaged hoses can result in injection injuries. **DO NOT TREAT FLUID INJECTION AS A SIMPLE CUT! See a plysician immediately!**

⚠ WARNING **NEVER** fill fuel tank when engine is running or hot. Do not smoke when filling fuel tank.

NEVER fill fuel tank completely. Fill tank to 1/2 below bottom of filler neck to provide space for fuel expansion. Wipe any fuel spillage from engine and equipment before starting engine.

NEVER run engine indoors or in enclosed, poorly ventilated areas. Engine exhaust contains carbon monoxide, an odourless and deadly gas.

DO NOT let hoses come in contact with very hot engine muffler during or immediately after use of your pressure washer. Damage to hoses from contact with hot engine surfaces will **NOT** be covered by warranty.

⚠ CAUTIOIN **NEVER** pull water supply hose to move pressure washer. This could damage hose and pump inlet.

DO NOT use hot water,use cold water only.

NEVER run water supply off while pressure washer engine is running or damage to pump will result.

DO NOT stop spraying water for more than two minutes at a time. Pump operates in bypass mode when spray gun trigger is not pressed. If pump is left in bypass mode for more than two minutes internal components of the pump can be damaged.

STARTING

Prior to starting, refer to your engine manual for proper starting procedures for your engine type.

1. In a well ventilated outdoor area add fresh, high quality, unleaded gasoline with a pump octane rating of 86 or higher, Do not overfill. Wipe up spilled fuel before starting the engine. Refer to Engine Owners Manual for correct procedure.
2. Check engine oil level. See Engine Owners Manual for correct procedure.

⚠ NOTE **There will be a slight amount of oil in the engine from factory testing.**

3. Verify the filter screen is in water inlet of pump.

⚠ NOTE **Cone side faces out.**

4. Connect water source to pump inlet.

⚠ NOTE **Water source must provide a minimum of 5 gallons per minute at 20 p.s.i.**

5. Connect high pressure hose to pump outlet.
6. If applying a chemical or cleaning solution, see How To Apply Chemicals /Cleaning Solvents in Operation section of this manuall
7. Turn water source on.

⚠ NOTE **Failure to do so could cause damage to the pump.**

8. Start engine. See Engine Owners Manual for correct procedure.

⚠ NOTE **If the engine does not start after two pulls, pull the trigger to relieve the pressure.**

9. Depress trigger on gun to start water flow.

⚠ NOTE **Stand on a stable surface and grip gun/spray wand firmly with both hands. Expect the gun to kick when triggered.**

10. Release trigger to stop water flow.
11. Adjust spray for the task being performed by changing quick connect nozzle. See How To Use Spray Wand instructions in this section.

SHUTTING DOWN

1. After each use, if you have applied chemicals, place chemical hose into container of clean water and draw clean water through chemical injection system to rinse system thoroughly.

⚠ NOTE **Failure to do so could cause damage to thepump.**

2. Turn engine off. See engine owner's manual.

⚠ NOTE **NEVER turn the water off with the engine running.**

3. Turn water source off.
4. Pull trigger on spray gun to relieve any water pressure in hose or spray gun.
5. See storage section in this manual for proper storage procedures.

MAINTENANCE

⚠ WARNING

When performing maintenance, you may be exposed to hot surfaces, waterpressure, or moving parts that can cause serious injury or death!

Before performing any maintenance or repair , disconnect spark plug wire, let engine cool and release all water pressure. The engine contains flammable fuel. DO NOT smoke or work near open flames while performing maintenance

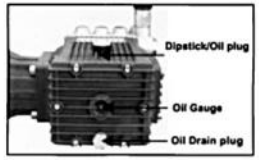
To ensure efficient operation and longer life of your pressure washer, a routine maintenance schedule should be prepared and followed. if the pressure washer is used in unusual conditions, such as high- temperature of dusty conditions, more frequent maintenance checks will be required

ENGINE

Consult the engine owners manual for the manufactures recooommendations for any and all Maintenance.

TO CHECK OIL

1. Remove dipstick/oil plug from pump and wipe clean.
2. Insert dipstick/oil plug fully into pump, then remove it.
3. Oil level is correct when oil covrs the lower 1/2 inch of end of dipstick /oil plug.



HOW TO CHANGE PUMP OIL

1.Loosen dipstick/oil plug
2.Place a container under the oil drain plug
3.Rremove oil rain plug
4.After oil is drained replace oil drain plug. tighten securely
5.Remove dipstick/oil plug and fill with recommended oil, see the pump oil chart for the correct amount and type of oil
6.Replace dipsticlk/oil plug and tighten securely

Model number	Oil type
200	30#
250	30#
150	30#

SPRAY WAND

If the nozzle becomes clogged with foreign materials such as dirt, excessive pressure may develop.if the nozzle becomes partially clogged or restricted, the pump pressure will pulsate .clean the nozzle immediately using the nozzle kit supplied and the following instructions:

1. Shut off the pressure washer and turn off the water supply.
2. Pull trigger on gun handle to relieve any water pressure.
3. Disconnect the spray wand from the gun.
4. Remove the high-Pressure Nozzle From the spray wand. Remove any obstructions with the nozzle cleaning tool provided and backflush with clean water.
5. Direct water supply into spray wand end to backflush loosened particles for 30 seconds.

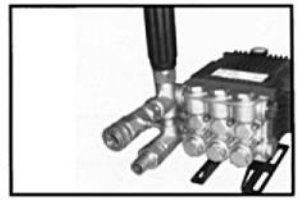
6. Reassemble the nozzle to the spray wand.
7. Reconnect spray wand to gun and turn on water supply.
8. Start pressure washer and place wand into high pressure setting to test.

HOW TO CLEAN THE WATER INLET FILTER

This screen filter should be checked periodically and cleaned if necessary.

1. **Remove filter** by grasping end and removing it from water inlet of pump as shown.
2. **Clean filter** By flushing it with water on both sides.
3. **Re-insert filter** into water inlet of pump. note : cone side faces out.

NOTE: Donot operate pressure washer without filter properly installed.



STORAGE

ENGINE

Consult the owners manual of the manufacturers recommendations for storage.

PUMP

1. **Drain all water from high Pressure hose , coil it, and store it in cradle of the pressure washer handle.**
2. **Drain all water from spray gun** and spray wand by holding spray gun in a vertical position with nozzle end pointing down and squeezing trigger. Store in gun/hose holder.
3. **Store chemical hose,** high pressure hose, spray wand so they are protected from damage, such as being run over.

It is Recommended That you follow these steps to protect the internal seals of the pressure washer when STORING THE UNIT FOR MORE THAN 30 DAYS AND/ OR WHEN FREEZING TEMPERATURES ARE EXPECTED.

4. **Obtain a funnel,** six ounces of RV antifreeze, and approximately 36 inches of garden hose With a male hose connector attached to one end.

⚠ CAUTIOIN Use only RV antifreeze. Any other antifreeze is corrosive and can damage pump.

5. **Disconnect spark plug wire,**
6. **Connect 36 inch length of hose** to water inlet of pump.
7. **Add RV antifreeze** to hose as shown.
8. **Pull engine starter rope slowly several times** until antifreeze comes out of high pressure hose connection of pump.
9. **Remove short hose** from water inlet of pump.
10. **Reconnect spark plug wire.**

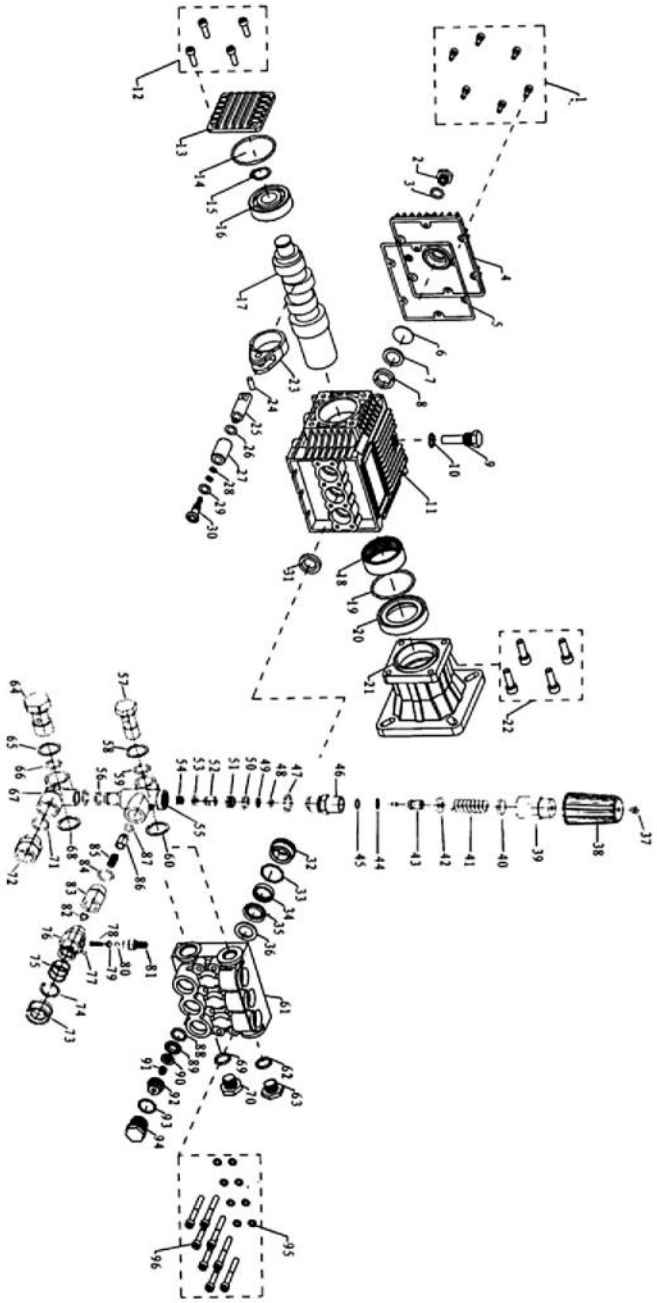
TROUBLE SHOOTING GUDIE

Problem	Cause	Correction
Engine will not start (see engine manual for further.engine troubleshooting)	No fuel	Add fuel.
	Low oil	Add required amount of oil.
	Pressure builds up after two pulls on the recoil starter or after initial use.	Squeeze gun trigger to relievet pressure.
	Choke lever in the no choke position	Move choke to the choke position.
	Spark plug wire not at	Attach spark plug wire.
	Engine ON/OFF switch in OFF position	Place engine ON/OF switch in on position.
	Choke lever in the choke position on a hot engine or an engine that has been exposed to thermal heat for a long pericd of time.	Move choke to the NO CHOKE position.
	Fuel valve closed.	Move fuel valve lever to the open position
No or low pressure (initial use)	Spray wand not in high pressure.	See how to use spray wand paragraph in the operation section.
	Lower water supply	Water supply must be at least 5 GPM and 20psi.
	Leak at high pressure hose fitting.	Tighten.Apply sealant tape if necessary.
	Nozzle obstructed.	See spray wand paragraph in the maintenance section for the correct procedure.
	Water filter screen clogged.	Remove and clean filter.
	Defective E-Z start valve.	Check with authorized warranty service center(AWSC)
	Air in hose.	Turn off the engine, then the water source. Disconnect the water source from the pump inlet and turn the water source on to remove all air from the hose. When there is a steady stream of water present, turn water source off. Re-connect water source to pump inlet and turn on water source. Squeeze trigger to remove remaining air.
	Choke lever in the choke position.	Move choke to the NO CHOKE position.
	Throttle cohtrol lever is hot in the Fast position	Move throttle control lever to thefast position.
	High pressure hose is too long.	Use high pressure hose under 100feet.

Problem	Cause	Correction
Will not draw chemicals	Spray wand not in low pressure	See how to use spray wand paragraph in the operation section.
	Chemical filter clogged.	Clean filter.
	Chemical screen not in chemical.	Ensure end of chemical Hose is fully submerged into chemical.
	Chemical too thick.	Dilute chemical. Chemical should be the same consistency as water.
	Pressure hose is too long.	Lengthen water supply hose instead of high pressure hose.
	Chemical build up in chemical injector.	Have parts cleaned or replaced by AWSC.
No orlow pressure (after period of normal use)	Worn seal or packing	Have replaced by AWSC.
	Worn or obstructed valves.	Have replaced by AWSC.
	Worn unloader piston.	Have replaced by AWSC.
	Worn E-Z start valve.	Have replaced by AWSC.
Water leaking at Gun/spray wand connection	Worn or broken o-Ring.	Check and replace.
	Loose hose connection	Tighten.
Water leaking at pump	Loose connections.	Tighten.
	Piston packings worn.	Have replaced by AWSC.
	Worn or broken o-Rings	Have replaced by AWSC.
	Pump head or tubes damaged from freezing.	Have replaced by AWSC.
Oil leaking at pump	Oil seals worn.	Have replaced by AWSC.
	Loose drain plug.	Tighten.
	Worn drain plug, o-ring.	Check and replace.
	Worn fill plug o-ring	Check and replace.
	Pump overfilled	Check for correct amount.
	Incorrect oil used.	Drain and fill with correct amount and type of oil.
	Vent plug is clogged.	Clean vent plug; blow air through it to remove any blockage. If problem persists, replace plug.
Pump pulsates	Nozzle obstructed.	See spray wand paragraph in the maintenance section for the correct procedure.

TO FIND ALOCAL AUTHORIZED SERVICE CENTER NEAT YOU FOR REPAIRS AND SERVICE PART PURCHASES.

GAS	Use fresh high quality unleaded gas. Add stabilizer to fuel tank and run engine for 5 minutes before storage.
OIL	Pump oil: refer to owners manual supplied with this unit. Engine oil: refer to engine manual supplied with his unit. Some units are equipped with a low oil sensor and adequate oil must be added or the unit will not start.
WATER	Use only cold water. Do not operate unit with clogged or missing water filter/screen. Do not operate unit without adequate water supply to pump. Adequate water supply is a minimum of20 psi and 5 gpm..
PRESSURE ADJUSTMENT	The pressure setting is preset at the factory to achieve optimum cleaning. If you need to lower the pressure setting, refer to the operation manual for proper procedure.
PUMP	Pull gun trigger every 2 minutes while engine is renning. Do not allow water to freeze in pump. For cold weather or long term storage refer to the operation manual for proper procedure.
BY-PASS MODE	Never leave unit running for more than 2 minutes without pulling gun trigger. doing so could cause damage to pump and avoid warranty.
THERMAL RELIEF VALVE	Pump is equipped with a thermal relief valve. If the water overheats, this valve will open and allow a gush of water to escape. Once the water is released, the valve closes allowing the pump To operate normally.
HOSE	Do not allow hoses to contact the hot engine muffler during or after use. Never pull the hose to move the unit.
ENGINE	Do not adjust orattempt maintenance without consulting engine manual or an authorized engine service center. Add stabilizer to fuel tank and run engine for 5 minutes before storage. Always turn on the water before starting the engine
SOAP/CHEMICALS	Use only soaps and chemicals designed for pressure washer use.
NOZZLE	Keep nozzle unclogged. Refer to manual for cleaning procedures. Chemical/ soap cannot be applied in high pressure setting. Only in low setting.
MAINTENANCE	Follow recommended maintenance schedule for engine & pump.Refer to manuals.
STORAGE OR WINTERIZING	Draw clean water through chemical inlet. Add stabilizer to fuel tank and run engine for 5 minutes before storage. Do not allow water to freeze in pump,gun, spray wand or hoses. For cold weather or long term storage refer to the operation manual for proper procedure.



Exploded view of the pump

1	bolt, cover of crank case	49	backup ring
2	oil drain plug	50	o-ring
3	sheet of oil drain plug	51	seat, valve body
4	crank case cover	52	water return valve core
5	slip crank case cover	53	o-ring
6	oil lever lence	54	water return valve seat
7	gasket, lence	55	water outlet T connector
8	lence cap	56	o-ring
9	oil inlet plug	57	bolt of water outlet T connector
10	gasket, oil inlet plug	58	bolt sheet
11	crank case	59	o-ring
12	bolt, crank shaft cover	60	o-ring
13	crank shaft cover	61	cylinder
14	seal, gasket bearing cover	62	o-ring
15	bearing clip	63	inlet screw cap
16	ball bearing	64	bolt of water inlet T connector
17	crank shaft	65	bolt sheet
18	needle rotter bearing	66	o-ring
19	flange ring	67	water inlet T connector
20	gasket, crank shaft	68	o-ring
21	flange	69	o-ring
22	bolt, flange	70	inlet screw
23	connecting rod	71	o-ring
24	connecting rod pin	72	water inlet connector
25	plunger rod	73	quick connector cap
26	copper sheet	74	bearing clip
27	ceramic plunger	75	spring
28	plunger, screw cap ring	76	quick connector
29	copper sheet	77	steel ball
30	plunger, screw cap	78	spring, injector
31	oil seal, plunger	79	gasket, detergent injector
32	locating ring, compaction ring	80	steel ball
33	o-ring	81	injector nozzle
34	low pressure seal	82	water shooting nozzle
35	high pressure seal	83	water outlet joint
36	supporting ring	84	o-ring
37	fix screw, pressure adjustment	85	spring water outlet cone valve
38	pressure adjustment handle	86	water outlet cone valve
39	pressure adjusting seat	87	o-ring
40	Upper washer, spring	88	o-ring
41	pressure adjusting spring	89	washer check valve
42	under washer, spring	90	check valve flake
43	water return valve rod	91	spring check valve
44	adjustment valve seat	92	check valve cage
45	o-ring	93	o-ring
46	water return valve jacket	94	check valve compaction cap
47	o-ring	95	sheet
48	o-ring	96	bolt cylinder