

## 2.0 Operating Instructions



**WARNING** Reference the IMPORTANT SAFETY WARNINGS section of this manual before operating.

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### 2.1 Glossary of Terms

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**Air Filter** - Protects engine by filtering dust and debris out of intake air.

**Thermal Relief Valve** - Cycles cool water through pump when water reaches 140°F. Warm water will discharge from pump onto ground. This system prevents internal pump damage.

**Automatic Pressure Relief Valve (APR)** - Eliminates pressure in the pump while starting the engine making the unit to start easier

**Chemical Injection Siphon/Filter** - Use to siphon detergent or other pressure washer chemicals into the low pressure stream.

**Choke Lever** - Prepares a cold engine for starting.

**Data Plate** - Provides model, revision and serial number of pressure washer. Please have these readily available if calling for assistance.

**Fuel Tank** - Fill tank with regular unleaded fuel. Always leave room for fuel expansion.

**Fuel Valve** - Used to turn fuel on and off to engine.

**High Pressure Hose** - Connect one end to the water pump and the other end to the spray gun.

**High Pressure Outlet** - To connect high pressure hose.

**Nozzle Extension with Quick Connect** - Allows you to switch between four different spray tips.

**Oil Fill Cap** - Fill engine with oil here.

**Pump** - Develops high pressure.

**Recoil Starter** - Use for starting the engine manually.

**Safety Goggles (not included)** - Always use safety goggles or other eye protection when running your pressure washer.

**Gunvalve** - Controls the application of water onto cleaning surface with trigger device. Includes safety latch.

**Spray Tips** - 0°, 15°, 25°, 40°, and Chemical

**Throttle Lever** - Sets engine in starting mode for recoil starter and stops a running engine.

**Water Inlet** - Connect garden hose here

**Frame** - Supports the key working components of the machine.

**Overpressure Valve** - Designed to safely relieve system pressure in the case of unloader malfunction

**Unloader Valve** – Allows the pump to “by-pass” water through the pump when the gunvalve trigger is released. This allows the engine to continue to run when not spraying water.

**Wheels** – Enable pressure washer to be transported around work area and provide vibration absorption to minimize wear on mechanical components

**Belt Drive** - Belt driven units use pulleys and belts to slow the speed of the pump. This system ensures longer pump life over direct drive pumps of similar quality.

**Belt Cover** – Safety device to provide protection from moving components of belt drive system.

Under no circumstances should the pressure washer be operated without the belt cover securely in place.

## 2.0 Operating Instructions (cont.)

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### 2.2 Machine Preparation

1. Check oil level in the pump and fill with proper grade of oil (Fig. 2.1-1) (See Pump Maintenance).
2. Check engine oil level and fill with proper grade oil if necessary (Fig. 2.1-2).
3. Check fuel supply (Fig. 2.1-3). Fill if necessary (see engine owner's manual.)
4. Check the hose, gun, and accessories for damage or wear. Repair or replace if necessary.
5. Check the female quick-couplers for o-ring seals. Replace if necessary.



FIGURE 2.1 - CHECK MACHINE

### 2.3 Hose Connections

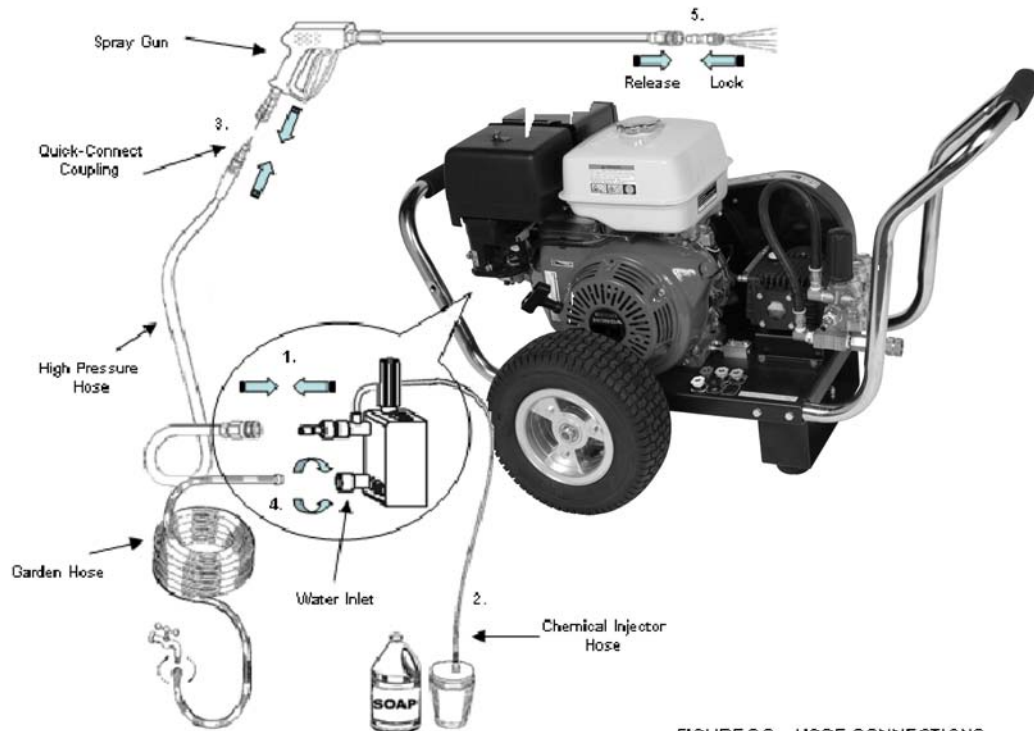


FIGURE 2.2 - HOSE CONNECTIONS

## 2.0 Operating Instructions (cont.)

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### 2.3 Hose Connections (cont.)

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1. Connect discharge hose to machine outlet. (Fig. 2.2-1)
2. If optional low pressure downstream, in-line chemical injector is to be used (i.e. a Simpson SC 242 or 252 Series chemical injector) connect the injector at this time (Fig. 2.2-2). For instructions on connections and use, see in-line chemical injector operating instructions
3. Connect trigger gun to discharge hose with quick coupler (Fig. 2.2-3). **DO NOT INSTALL CLEANING NOZZLE AT THIS TIME.** Quick coupler sleeves must be pushed into locked position to prevent accidental uncoupling (Fig. 2.2-5).
4. Check inlet water filter for blockage then connect water supply hose to machine. Use a 3/4" I.D. or larger hose with standard 3/4" garden hose fittings. (Fig. 2.2-4)

Incoming water supply must deliver gallons per minute greater than machine capacity. If questionable, check supply at machine. If supply is insufficient, do not operate from this outlet. For residential use, the outlet closest to the meter tap will usually deliver the highest gallons per minute output. **DO NOT** connect to shallow wells used for lawn sprinkling. Connect only to clean city water supply or deep domestic well.

**NOTICE**

**⚠ CAUTION**

The discharge hose supplied with the machine is designed for use on cold water high pressure cleaners only. Special care, handling and maintenance are required to provide proper and safe operation. The following guidelines must be followed to ensure safe operation and provide the maximum hose service life.

- Use only hoses with proper pressure and temperature ratings. **NEVER** exceed published ratings.
- **DO NOT** route the hose in a manner that will cause sharp bending, kinking, cutting, abrasion, or other exterior damage.
- **DO NOT** pull on the hose to move the machine, untangle knots or use any other excessive pulling stress.
- **DO NOT** use the hose if any reinforcement is exposed.
- **DO NOT** attempt field repairs through an unauthorized hydraulic hose repair shop. Special couplings and crimping specifications are required for high pressure discharge hose.
- Always examine hose quick couplers and fittings before each operation. If leaking is evident, **DO NOT** use.
- **NEVER** leave discharge hose lying on the floor or ground to be driven over by vehicles or damaged by falling objects. **ALWAYS** coil and hang the hose immediately after use. If there is any doubt about hose condition, replace the hose immediately.

## 2.0 Operating Instructions (cont.)

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### 2.4 Before Starting Machine

**DANGER**

**DO NOT OPERATE GASOLINE AND DIESEL ENGINES IN ENCLOSED AREAS! OPERATE IN WELL VENTILATED AREAS ONLY!**



FIGURE 2.3 - GUNVALVE, EXTENSION, & NOZZLE

1. Locate machine on a level plane.
2. Turn on water supply. There should be no nozzle in the extension at this point.
3. Pull gun trigger, allowing air in system to escape.
4. When water flows in a full steady stream, release gun trigger. (Fig. 2.3)

### 2.5 Starting Gasoline / Diesel Engine Machines

1. Check position of fuel valve, and if closed, open valve. For more detailed information on starting the machine's engine, see engine instruction manual.
2. Choke: Close choke on carburetor by moving lever in proper direction. If engine is warm or air temperature is high, close choke valve half-way, or keep it open fully.
3. **BE CERTAIN** the gun trigger remains in an open position while starting the engine. Brace yourself as the gun will kick-back from the high pressure created by the pump once the engine has started.
4. Machines with recoil start: Turn engine ON/OFF switch to the "ON" position. Pull the recoil starter grip lightly until resistance is felt, then pull briskly.
5. **MACHINES WITH OPTIONAL ELECTRIC START:** Check to make sure that battery terminals and cables are free of residue or corrosion, that all connections are secure and that cables are connected to the proper terminals. Check battery to see that it has a sufficient charge. Turn key switch to "ON".

**WARNING**

Rapid retraction of starter coil (kickback) will pull hand and arm toward engine faster than you can let go. Read and understand the engine manual to reduce the risk of injuries.

**NOTICE**

Machines without APR (Automatic Pressure Relief): If the engine fails to start after 1 or 2 pulls of the recoil, pressure will build-up in the system. To relieve the pressure squeeze the gunvalve trigger and allow water to flow freely. There should be **NO** nozzle or obstruction at the end of the extension.

6. After engine starts, open choke gradually.
7. Let engine warm up to normal operating temperature.

## 2.0 Operating Instructions (cont.)

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### 2.6 Pressure Washing

**WARNING WEAR PROPER FACE PROTECTION WHEN OPERATING A PRESSURE WASHER!**

1. Select the cleaning nozzle or accessory best suited for the cleaning job.  
NOTE: Some accessory nozzles function as both a high pressure cleaning nozzle and low pressure chemical injector nozzle (i.e. vari-tip nozzles). See specific accessory nozzle operating instructions for more information.
2. PUT GUNVALVE TRIGGER IN LOCKED POSITION (Fig. 2.4).
3. Connect cleaning nozzle, chemical injector control nozzle, or accessory nozzle or attachment to gunvalve extension quick coupler (Fig. 2.2).
4. Push quick coupler sleeve into LOCKED position to prevent accidental loss of nozzle. Then unlock gunvalve trigger.
5. Check the system for water leaks, fuel leaks, oil leaks, hose kinks, etc. Correct any problems before proceeding.
6. Machine is now ready for operation.

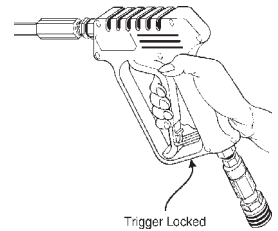


FIG. 2.4 - GUNVALVE SAFETY TRIGGER

**WARNING HIGH PRESSURE SPRAY CAN PENETRATE THE SKIN AND CAUSE SERIOUS INJURY! NEVER POINT THE SPRAY GUN AT YOURSELF, OTHER PEOPLE, OR ANIMALS. SHOULD SPRAY PENETRATE THE SKIN, SEEK MEDICAL ATTENTION IMMEDIATELY!**

### 2.7 Stopping the Machine

1. If you have been using a chemical injector, be sure to flush out the chemical by running clean water through the system.
2. Allow machine to run for 1 minute without load to cool before stopping.
3. Operate "STOP" lever or switch to shut off machine (See engine instruction manual).
4. Pull recoil starter until compression resistance is felt. Store the machine in this position to help prevent valve warpage or sticking.
5. Close Fuel Valve. For Electric Models Turn "ON/OFF" switch on machine to the "OFF" position.

**WARNING FAILURE TO CLOSE THE FUEL VALVE ON THE ENGINE CAN CAUSE FUEL LEAKAGE WHEN THE MACHINE IS BEING TRANSPORTED!**

6. Turn off water supply.
7. Remove the cleaning nozzle or accessory from the extension quick coupler.
8. Pull gunvalve trigger to release all pressure in the system, then LOCK THE GUNVALVE TRIGGER (Fig. 2.4).
9. Hoses may now be disconnected from the machine.

**WARNING** High pressure water can remain in the unit even after it has been shut off. Always relieve the pressure in the system immediately after shutdown.

#### NOTICE

Failure to release pressure before disconnecting the hose quick coupler will result in the quick coupler o-ring seal blowing out. This o-ring must be replaced before operating machine.