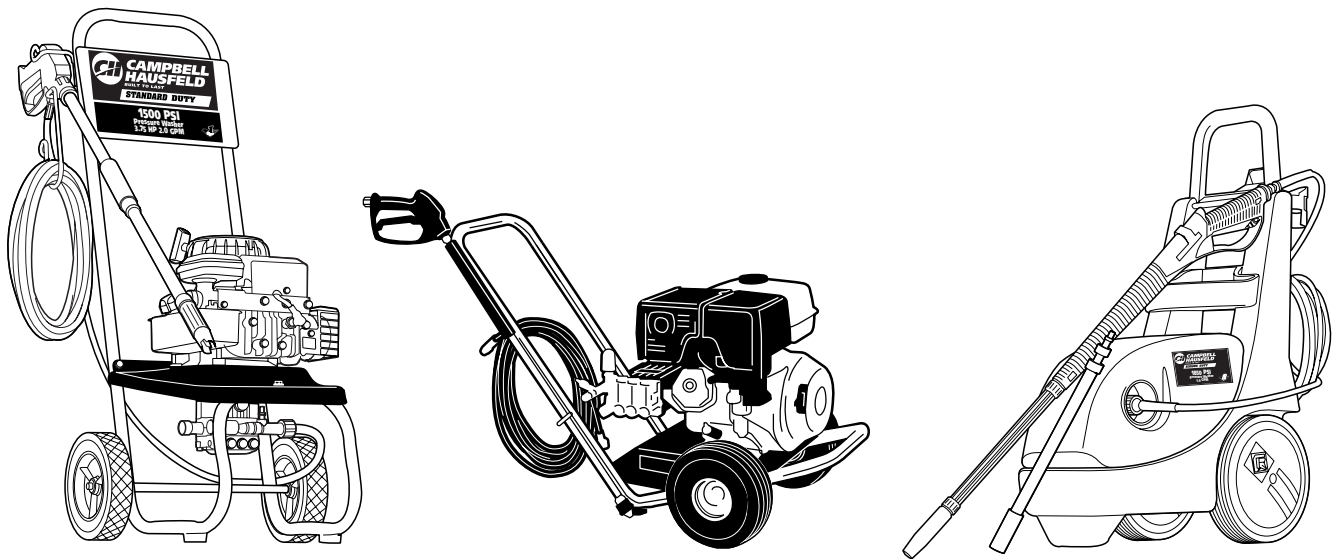




# Pressure Washers

## Product Manual



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Carefully read and understand these instructions before operating this pressure washer.

## Pressure Washers

### Ask Joe Campbell ...

#### How do I start my pressure washer?

1. Make sure you have gas and oil in the engine
2. Turn the water on, then trigger the gun to make sure the water will flow smoothly out of the nozzle
3. Put the engine throttle control in the "Fast/Start" position. Set shut off switch to "ON"
4. Push the engine primer bulb three times (if applicable) or set choke to "ON"
5. Pull the trigger (to relieve any back pressure in the pump) while pulling starter cord
6. If the engine does not start after three tries, repeat steps 4 and 5

#### What type of oil do I use?

The pressure washer pump uses a 30 weight non-detergent oil. See maintenance schedule (Assembly Instructions Manual) for oil change intervals. The engine oil should be changed according to the instructions in the included engine owner's manual (using a 30 weight detergent oil)

#### Why don't I have any water pressure?

- Is the water turned on? (It is a silly question- but I have to ask)
- Check for any kinks, leaks or blockage in hoses, fittings or nozzle
- Is the adjustable nozzle in the low psi position? If so, move it into the high psi position, (See page 6)

#### How do I get high pressure?

- For high pressure, engage the nozzle into the high psi position (See page 6)

#### How do I get the soap suction to work?

1. Connect clear plastic chemical suction tube to pump
2. Drop filter end of tube into detergent bottle. Make sure the filter is completely submerged in the detergent
3. Move the nozzle into the low psi position (See page 6)

#### Why doesn't the pressure washer apply detergents with high pressure?

The reason you don't apply detergents with high pressure is because the detergents "bounce" off the cleaning surface as fast as you apply them. Detergent is only effective when you allow it time to work on the surface of whatever you are cleaning. For best results: apply detergent at low pressure, wait 1-3 minutes to allow it to work, rinse the surface with high pressure

#### What maintenance do I need to perform on my pressure washer?

1. After turning off the pressure washer and the water, depressurize the hose by triggering the gun
2. Remove the garden hose and high pressure hose from the pump
3. Pull the start rope slowly five times to purge water from the pump. This will help protect the pump from damage
4. Do not store your pressure washer in an area where the temperature will drop below 32° F

#### What do I do if I'm missing a part?

Call Campbell Hausfeld at 1-800-330-0712 and we will promptly replace your missing parts. **DO NOT RETURN THE PRESSURE WASHER TO THE RETAILER!**

#### Where can I buy accessories for my pressure washer?

- If you can't find accessories at the store where you purchased your pressure washer, call Campbell Hausfeld at 1-800-330-0712

#### Who do I call if have questions or problems?

**1-800-330-0712 (U.S.)**

## Safety and Warning Information

### Safety Guidelines

This manual contains information that is very important to know and understand. This information is provided for SAFETY and to PREVENT EQUIPMENT PROBLEMS. To help recognize this information, observe the following symbols.

**⚠ DANGER** *Danger indicates an imminent hazardous situation which, if not avoided, WILL result in death or serious injury.*

**⚠ WARNING** *Warning indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.*

**⚠ CAUTION** *Caution indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury.*

**NOTE:** Information that requires special attention.

### Important Safety Instructions

**SAVE THESE INSTRUCTIONS**

### ⚠ WARNING

When using this product, basic precautions should always be followed, including the following:

1. Read all instructions before using the product.
2. To reduce the risk of injury, close supervision is necessary when a product is used near children.
3. ALWAYS disconnect power (electric units) before disassembling or repairing the unit.

## Safety and Warning Information (Continued)

- Follow all safety codes as well as the Occupational Safety and Health Act (OSHA).
- Ensure safety devices are operating properly before each use. DO NOT remove or modify any part of the gun or unit.
- Know how to stop this product and bleed pressure quickly. Be thoroughly familiar with the controls.
- Stay alert - Watch what you are doing.
- Do not operate the product when fatigued or under the influence of alcohol or drugs.
- Keep operation area clear of all persons.
- Do not overreach or stand on unstable support. Keep good footing and balance at all times.
- Follow the maintenance instructions specified in the manual.
- This product shall be connected to a power supply receptacle protected by a ground fault circuit interrupter (GFCI) (electric powered pressure washers only).
- If product is provided with a GFCI, be sure to inspect cord and GFCI prior to use. Any repair or replacement of the power cord must be performed by a qualified (licensed or certified) electrical technician.

**⚠ WARNING** *Risk of injection or severe injury. Keep clear of nozzle. Do not discharge streams at persons. This product is to be used only by trained operators. Always remove lance from gun before cleaning debris from tip.*

- Keep clear of nozzle. NEVER direct high pressure spray at any person, animal or self.
- Always wear safety glasses or goggles and protective equipment (hearing protection, gloves, rubber boots, protective clothing) when operating or performing maintenance.
- Never put hand or fingers over the spray tip while operating the unit.
- Never try to stop or deflect leaks with any body part.
- Always engage the trigger safety latch in the safe position when

spraying is stopped even if only for a few moments.

- Always follow detergent manufacturer's label recommendations for proper use of detergents. Always protect eyes, skin, and respiratory system from detergent use.

### ⚠ WARNING

#### SERVICING OF A DOUBLE-INSULATED APPLIANCE (ELECTRIC UNITS ONLY)

In a double-insulated product, two systems of insulation are provided instead of grounding. No grounding means are provided for a double-insulated product, nor should grounding means be added to the product. Servicing a double-insulated product requires extreme care and knowledge of the system, and should be done only by qualified service personnel. Replacement parts for a double-insulated product must be identical to the original parts. A double-insulated product is marked with the words "Double Insulation" or "Double Insulated". Product may also be marked with symbol shown in Figure 1.

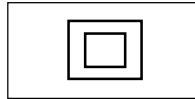


Figure 1 - Double Insulated symbol

**⚠ WARNING** *Do not use pressure that exceeds the operating pressure of any of the parts (hoses, fittings, etc.) in the pressurized system. Ensure all equipment and accessories are rated to withstand the maximum working pressure of the unit.*

**⚠ WARNING** *Explosion hazard.*

- NEVER spray flammable liquids or use pressure washer in areas containing combustible dust, liquids or vapors.
- Never operate this machine in a closed building or in or near an explosive environment
- Do not remove fuel tank cap or fill fuel tank while engine is hot or running (allow engine to cool two minutes before refueling). Always fill the tank slowly.

**⚠ WARNING** *Do not spray electrical apparatus and wiring.*

- Never disconnect the high pressure discharge hose from the machine

while the system is pressurized. To depressurize machine, turn power and water supply off, then press gun trigger 2-3 times.

- Never permanently engage the trigger mechanism on the gun.
- Never operate the machine without all components properly connected to the machine (handle, gun/wand assembly, nozzle, etc.).

**⚠ WARNING** *Equipment damage.*

- ALWAYS turn water supply "ON" before turning pressure washer "ON". Running pump dry causes serious damage.
- Do not operate the pressure washer with the inlet water screen removed. Keep screen clear of debris and sediment.
- NEVER operate pressure washer with broken or missing parts. Check equipment regularly and repair or replace worn or damaged parts immediately.
- Use only the nozzle supplied with this machine.
- Never leave the wand unattended while the machine is running.
- Never tamper with the engine governor or attempt to alter factory settings. Altering factory settings could damage the unit and will void the warranty.
- Always hold gun and wand firmly when starting and operating the machine.
- NEVER allow the unit to run with the trigger released (off) for more than two minutes. Resulting heat buildup will damage pump.
- NEVER store the pressure washer outdoors or where it could freeze. The pump will be seriously damaged.
- Release the trigger when changing from high to low pressure modes. Failure to do so could result in damage to the nozzle.
- This unit must always be used in the horizontal position.

## Pressure Washers

### Safety and Warning Information (Continued)

**CAUTION** *Keep hose away from sharp objects. Bursting hoses may cause injury. Examine hoses regularly and replace if damaged. Do not attempt to mend a damaged hose.*

#### EXTENSION CORDS

**DANGER** *If using an extension cord, use only grounded, three wire extension cords that are in good condition.*

Use only extension cords that are intended for outdoor use. These extension cords are identified by a marking "Acceptable for use with outdoor appliances; store indoors while not in use".

Use only extension cords having an electrical rating not less than the rating of the product.

Extension Cord size	Allowable length	
	25'	50'
14 AWG	Yes	No
12 AWG	Yes	Yes

Do not use damaged extension cords. Examine extension cord before using and replace if damaged. Do not abuse extension cord and do not pull on the cord to disconnect. Keep cord away from

heat and sharp edges. Always disconnect the cord from the receptacle before disconnecting the product from the extension cord.

**Note:** Do not use 16 or 18 AWG extension cords on this product.

**DANGER** *Failure to follow these instructions can result in serious injury, including death.*

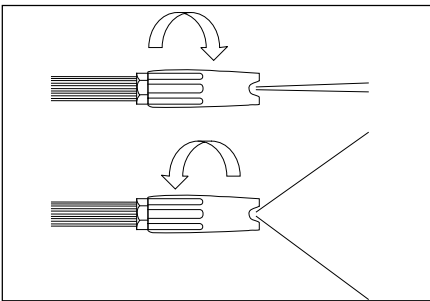
**REFER TO ASSEMBLY INSTRUCTIONS FOR ASSEMBLY, SET-UP AND CONNECTION PROCEDURES**

### Pre-Operation

**WARNING** *To reduce the risk of electrocution, keep all connections dry and off the ground. Do not touch plug with wet hands.*

#### ADJUSTING FAN PATTERN

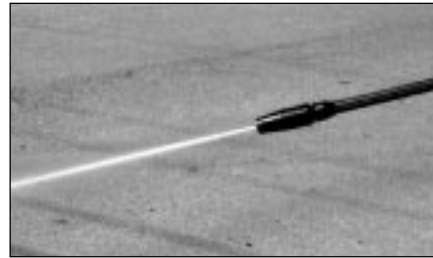
The angle of spray coming out of the lance may be adjusted by rotating the nozzle. This will vary the spray pattern from approximately a 0° narrow high impact stream to a 60° wide fan spray (See Figure 2).



**Figure 2 - Adjusting nozzle for fan pattern**

A narrow stream has high impact force on the cleaning surface and results in maximum deep cleaning in a concentrated area. However, this narrow high impact spray must be used cautiously, as it may damage some surfaces.

A wide "Fan" pattern, will distribute the impact of the water over a larger area resulting in excellent cleaning action with a reduced risk of surface damage. Large surface areas can be cleaned much quicker using a wide fan pattern.



**Figure 3 - Narrow high impact stream**



**Figure 4 - Wide fan pattern**

#### ANGLE TO THE CLEANING SURFACE

When spraying water against a surface, maximum impact is generated when the water strikes the surface "Head On". However, this type of impact tends to cause dirt particles to imbed in the surface, thereby preventing the desired cleaning action.

The optimum angle for spraying water against a cleaning surface is 45 degrees. Spraying water against a surface at this angle provides for the most beneficial impact force combined with efficient removal of debris from the surface.

#### DISTANCE FROM CLEANING SURFACE

Another factor that determines the impact force of the water is the distance



**Figure 5 - Optimum Angle to Cleaning Surface**

from the spray nozzle to the cleaning surface. The impact force of the water is increased as the nozzle is moved closer to the surface.

#### HOW TO AVOID DAMAGING SURFACES

Damage to cleaning surfaces occurs because the impact force of the water exceeds the durability of the surface. The impact force can be varied by controlling the three previously noted items. Never use a narrow high impact stream, or a Turbo/rotary nozzle on a surface that is susceptible to damage. Avoid spraying windows with a narrow high impact stream or turbo nozzle as this may cause breakage. The most sure way to avoid damaging surfaces is to follow these steps:

1. Before triggering the gun, adjust the nozzle to a wide fan pattern.

## Pre-Operation (Continued)

2. Place the nozzle approximately 4-5 feet from and 45 degrees to the cleaning surface, and trigger the gun.
3. Vary the fan pattern spray angle and the distance to the cleaning surface until optimum cleaning efficiency is achieved without damaging the surface.

### TURBO NOZZLE (NOT INCLUDED WITH ALL MODELS)

A turbo nozzle, sometimes referred to as a rotary nozzle, can be a very effective tool that can significantly reduce cleaning time. The turbo nozzle combines the power of cleaning with a narrow high impact stream with the efficiency of cleaning with a 25 degree fan pattern. This is accomplished by swirling a narrow

high impact stream into a cone shape that cleans a larger area. **Caution:** Since a turbo nozzle uses a narrow high impact stream, only use a turbo lance in applications where the cleaning surface cannot be damaged by narrow high impact spray. Additionally, the Turbo Nozzle is NOT adjustable and cannot be used to apply detergent.

### DETERGENTS

The use of detergents can dramatically reduce cleaning time and assist in the removal of difficult stains. Many detergents have been customized for pressure washer use on specific cleaning tasks. These detergents are approximately as thick as water. The use of thicker detergents, such as dish soap, will clog the

chemical injection system and prevent the application of the detergent.

The cleaning power of detergents comes from applying them to a surface and giving the chemicals time to break down the dirt and grime. Detergents work best when applied at low pressure.

The combination of chemical action and high pressure rinsing is very effective. On vertical surfaces, apply the detergent starting at the bottom and working your way upward. This will prevent the detergent from sliding down and causing streaks. High pressure rinsing should also progress from the bottom to top. On particularly tough stains, it may be necessary to use a brush in combination with detergents and high pressure rinsing.

## Operation

### 1. Surface Preparation

The following cleaning procedure will help you to organize your cleaning task, and ensure that you achieve the most beneficial results in the shortest amount of time. Remember to use the spraying/cleaning techniques previously listed.

Before starting a pressure washer cleaning job, it is important to prepare the surface that is to be cleaned. This is done by clearing the area of furniture, and making sure that all windows and doors are closed tight. In addition, you should make sure that all plants and trees adjacent to the cleaning area are protected by a drop cloth. This will ensure that your plants won't be sprayed by the detergents.

### 2. Initial High Pressure Rinse

The next step is to spray the cleaning surface with water to clear off any dirt or grime that may have collected on the surface. This will allow your detergent to attack the deep down dirt that has worked its way into the cleaning surface. Before triggering the gun, adjust the nozzle to a wide fan pattern and slowly adjust to the desired spray pattern. This will help you avoid applying too much

concentrated spray to the surface which could cause damage.

### 3. Detergent Application

#### USE THE INSTRUCTIONS APPROPRIATE FOR MODEL PURCHASED

**NOTE:** Use only detergents formulated for pressure washers.



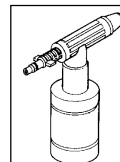
Figure 6 - Detergent application

**NOTE:** Test detergent in an inconspicuous area before use.

#### Electric Units with Detergent Applicator (Included)

FOR MODELS WITHOUT DETERGENT TANK

1. Unscrew the top of the detergent applicator and fill container with undiluted detergent.



Detergent Applicator

2. Replace the top to the applicator.
3. Remove the lance from the gun.
4. Attach the detergent applicator to the gun as pictured in Figure 7.

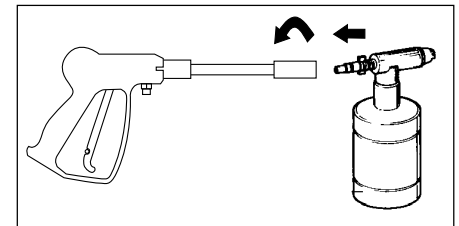


Figure 7

5. Apply the detergent so that it thoroughly covers the cleaning surface. Apply from bottom to top to prevent the detergent from sliding down and streaking.
6. Allow the detergent to remain on the surface for a few minutes. This is a good time to use a brush to lightly scrub heavily soiled areas. Never allow the detergent to dry on the cleaning surface.
7. Remove the detergent applicator from the gun and replace with the lance.
8. Rinse detergent from surface.

**Note:** Flush the detergent applicator with clear water following each use.

## Pressure Washers

### Operation (Continued)

#### Electric Units with Detergent Tank

THESE MODELS DO NOT REQUIRE A DETERGENT APPLICATOR

1. Remove the cap from the detergent tank and pour in UNDILUTED pressure washer detergent. Replace cap.
2. Turn the OFF/ON switch to the ON position.
3. Slide nozzle to the low pressure position as shown in Figure 8 and apply the detergent so that it thoroughly covers the cleaning surface.

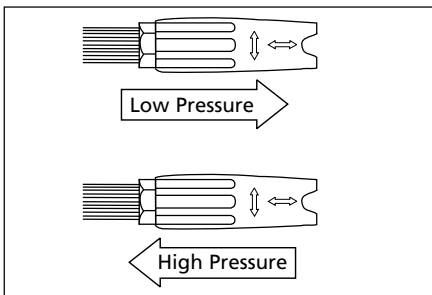


Figure 8 - Adjusting nozzle for pressure

Apply the detergent from bottom to top to prevent the detergent from sliding down and streaking. Wait a couple of minutes for the detergent to break down the dirt and grime. This is a good time to use a brush to lightly scrub heavily soiled areas. Never allow the detergent to dry on the cleaning surface.

**IMPORTANT:** Unit will only apply detergent when adjustable nozzle is used and the nozzle is in the low pressure position.

4. To rinse or return to high pressure, release the trigger and slide the nozzle to the high pressure position.

**▲NOTICE** *Never slide the nozzle from low to high or high to low pressure when the gun is triggered.*

#### Gasoline Powered Units Equipped with Adjusting Nozzle

GASOLINE POWERED UNITS DO NOT REQUIRE A DETERGENT APPLICATOR OR HAVE A DETERGENT TANK

1. Follow manufacturer's label directions for mixing correct concentrations of soap/detergents. The soap detergent to water ratio through the pressure washer is approximately 12%.
2. Insert the filter end of the clear plastic detergent line into the detergent container.
3. To draw soap/detergent, release the trigger and slide the nozzle into the low pressure position (See Figure 8). Detergent suction will function ONLY with the nozzle in low pressure position. This also allows detergent application without heavy loss to over-spray.
4. Apply the detergent so that it thoroughly covers the cleaning surface. Apply the detergent from bottom to top to prevent the detergent from sliding down and streaking. Wait a couple of minutes for the detergent to break down the dirt and grime. This is a good time to use a brush to lightly scrub heavily soiled areas. Never allow the detergent to dry on the cleaning surface.
5. To rinse or to return to high pressure, release the trigger and slide the nozzle to the high pressure setting.

**▲CAUTION** *Never make the nozzle pressure adjustment with the gun triggered. Adjusting the high-low nozzle when the gun is triggered can result in damage to the seals in the nozzle.*

6. After using detergents, flush the suction system by placing the detergent suction tube into a bucket of clean water.

#### Gasoline Powered Units Equipped with Interchangeable Spray Tips

**QUICK CONNECT NOZZLE (IF APPLICABLE)**

**▲WARNING** *To avoid serious bodily injury or fluid injection, trigger safety latch must be on before adjusting or changing spray nozzles.*

**▲CAUTION** *Keep hands and fingers clear of nozzle tip. Relieve system pressure and keep gun pointed away from all persons or animals when changing nozzles.*

1. To activate detergent suction, the large diameter (black) nozzle tip must be used. Pull coupler ring back

to remove current nozzle tip (See Figure 9). Install black tip and then release ring. Be sure nozzle tips are securely positioned before spraying. Change back to desired tip to rinse cleaning area.

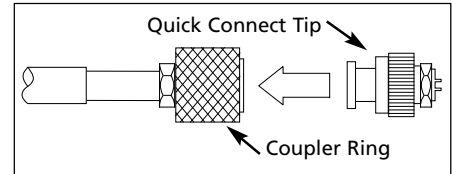


Figure 9

**▲CAUTION** *Never operate unit without a nozzle tip securely mounted in the quick coupler.*

2. Let detergent soak briefly, then convert spray back to high pressure to rinse the surface from top to bottom. If soil remains, repeat procedure allowing detergent to soak longer. Stubborn soil can be removed with a stronger, heated cleaning solution. Protect surfaces that will be damaged by the stronger cleaning solution or the high pressure spray. BE SURE to rinse the work area before detergent dries.
3. After using detergents, place the detergent suction tube into a bucket of clean water and flush the system of all detergent.

#### 4. Final Rinse

The final rinse should start at the bottom and work upward. Make sure that you thoroughly rinse the surface and that all detergent has been removed.

#### 5. Shutdown

1. Be sure all detergent is flushed from system.
2. Turn off engine/motor.
3. Turn off water supply.
4. After engine/motor and water supply are turned off, trigger the gun to depressurize the system.

**▲CAUTION** *NEVER turn the water supply off before turning the enginelmotor off. Serious damage could occur to the pump and/or enginelmotor.*

## Operation (Continued)

**⚠ WARNING** NEVER disconnect the high pressure discharge hose from the machine while the system is pressurized. To depressurize, turn engine/motor off, turn water supply off and squeeze gun trigger 2-3 times.

- After each use, wipe all surfaces of the pressure washer with a clean, damp cloth.

### 6. Storage

- Do not store the pressure washer outdoors.

- Do not store the pressure washer where it might freeze unless it has been properly winterized. A winterizing kit is available for cold weather storage.

#### TIPS FOR EXTENDING THE LIFE OF YOUR PRESSURE WASHER

- Never operate the unit without water.
- Your pressure washer is not meant to pump hot water. Never connect your pressure washer to a hot water supply

as it will significantly reduce the life of the pump.

- Running the unit for more than 2 minutes without spraying water causes heat to build up in the pump. This is hard on many of the pump components and this practice should be avoided.
- Release the trigger prior to switching lance between high and low pressure. Failure to do so may reduce the life of the o-rings in the lance.

## Troubleshooting Chart - Electric Pressure Washers Only

Symptom	Possible Cause(s)	Corrective Action(s)
Pressure washer does not start up	<ol style="list-style-type: none"> <li>Plug is not well connected or electric socket is faulty</li> <li>The main voltage supply is too low</li> <li>Thermal safety switch has tripped</li> <li>GFCI has tripped (If so equipped)</li> </ol>	<ol style="list-style-type: none"> <li>Check plug, socket and fuses</li> <li>Check that the main supply voltage is adequate</li> <li>Switch off the unit and allow the motor to cool down. Leave the lance open.</li> <li>Push reset button</li> </ol>
Pump does not reach necessary pressure	<ol style="list-style-type: none"> <li>Water inlet filter is clogged</li> <li>Pump sucking air from connection or hoses</li> <li>Suction delivery valves are clogged or worn out</li> <li>Lance nozzle not correct or worn out</li> <li>Unloader clogged or worn</li> </ol>	<ol style="list-style-type: none"> <li>Clean water inlet filter</li> <li>Check that connections and locking ring are properly tightened</li> <li>Call 1-800-330-0712</li> <li>Call 1-800-330-0712</li> <li>Call 1-800-330-0712</li> </ol>
Fluctuating pressure	<ol style="list-style-type: none"> <li>Pump sucking in air</li> <li>Valves dirty, worn out or stuck</li> <li>Water seals worn out</li> <li>Tip (nozzle) clogged</li> </ol>	<ol style="list-style-type: none"> <li>Check that hoses and connections are tight</li> <li>Call 1-800-330-0712</li> <li>Call 1-800-330-0712</li> <li>Clean tip (nozzle) w/tip cleaner</li> </ol>
Excessive water leaking from pump	Water seals worn out	Call 1-800-330-0712
Motor stops suddenly	Thermal safety switch has tripped due to overheating	<ol style="list-style-type: none"> <li>Check that the main supply voltage corresponds to the specifications</li> <li>Switch the unit off and let it cool down</li> </ol>

## Troubleshooting Chart - Gasoline Powered Pressure Washers Only

Symptom	Possible Cause(s)	Corrective Action(s)
Engine will not start or is hard to start	<ol style="list-style-type: none"> <li>No gasoline in fuel tank or carburetor</li> <li>Low oil</li> <li>Start/Stop switch in stop position</li> <li>Water in gasoline or old fuel</li> <li>Dirty air cleaner filter</li> <li>Spark plug dirty, wrong gap or wrong type</li> <li>Spray gun closed</li> <li>Other causes</li> </ol>	<ol style="list-style-type: none"> <li>Fill the tank with gasoline, open fuel shut off valve. Check fuel line and carburetor</li> <li>Check oil level. Fill if necessary</li> <li>Move switch to start position</li> <li>Drain fuel tank and carburetor. Use new fuel and dry spark plug</li> <li>Remove and clean</li> <li>Clean, adjust the gap or replace</li> <li>Trigger spray gun</li> <li>See engine owner's manual</li> </ol>
Engine misses or lacks power	<ol style="list-style-type: none"> <li>Partially plugged air cleaner filter</li> <li>Spark plug dirty, wrong gap or wrong type</li> </ol>	<ol style="list-style-type: none"> <li>Remove and clean</li> <li>Clean, adjust the gap or replace</li> </ol>
Low pressure and/or pump runs rough	<ol style="list-style-type: none"> <li>Worn or wrong size tip</li> <li>Inlet filter clogged</li> <li>Worn packings, abrasives in water or natural wear</li> <li>Fouled or dirty inlet or discharge valves</li> <li>Restricted inlet</li> <li>Worn inlet or discharge valves</li> <li>Leaking high pressure hose</li> <li>Pump drawing in air</li> <li>Unloader valve seat faulty or worn</li> </ol>	<ol style="list-style-type: none"> <li>Replace with tip of proper size</li> <li>Clean. Check more frequently</li> <li>Check filter. Replace packings. See service center</li> <li>Clean inlet and discharge valve assemblies. Check filter</li> <li>Check garden hose, may be collapsed or kinked. Check inlet water flow</li> <li>Replace worn valves</li> <li>Replace high pressure hose</li> <li>Ensure hoses and fittings are tight</li> <li>Check and replace</li> </ol>

## Pressure Washers

### Troubleshooting Chart (Continued) - Gasoline Powered Pressure Washers Only

Symptom	Possible Cause(s)	Corrective Action(s)
Water leakage from under pump manifold	Worn packings	Install new packings. See service center
Water in pump crankcase (milky oil)	<ol style="list-style-type: none"> <li>Humid air condensing inside crankcase</li> <li>Worn packings</li> <li>Oil seals leaking</li> </ol>	<ol style="list-style-type: none"> <li>Change oil as specified in maintenance schedule</li> <li>Install new packings. See service center</li> <li>Install new oil seals. See service center</li> </ol>
Frequent or premature failure of the packings	<ol style="list-style-type: none"> <li>Scored damaged or worn plungers</li> <li>Abrasive material in the fluid</li> <li>Inlet water temperature too high</li> <li>Overpressurizing pump</li> <li>Excessive pressure due to partially plugged or damaged tip</li> <li>Pump running too long without spraying</li> <li>Pump running dry</li> </ol>	<ol style="list-style-type: none"> <li>Install new plungers. See service center</li> <li>Install proper filtration on pump inlet plumbing</li> <li>Check water temperature; may not exceed 100° F.</li> <li>Do not modify any factory set adjustments.</li> <li>Clean or replace tip.</li> <li>Never run pump more than 2 minutes without spraying</li> <li>Do not run pump without water</li> </ol>
Strong surging at the inlet and low pressure	Foreign particles in the inlet or discharge valve or worn inlet and/or discharge valves	Clean or replace valves. See service center
Oil leakage between the engine and the pump	Worn oil seals and/or o-ring	Replace oil seals and/or o-ring. See service center
Fluctuating pressure	<ol style="list-style-type: none"> <li>Valve worn, dirty or stuck</li> <li>Pump drawing in air</li> <li>Tip clogged</li> </ol>	<ol style="list-style-type: none"> <li>Check and replace</li> <li>Ensure hoses and fittings are tight. Purge air from garden hose</li> <li>Check or replace</li> </ol>
Pressure drops after period of normal use	<ol style="list-style-type: none"> <li>Worn piston packing</li> <li>Nozzle worn</li> <li>Valve worn, dirty or stuck</li> <li>Unloader valve seat worn or dirty</li> <li>Nozzle in low PSI position</li> </ol>	<ol style="list-style-type: none"> <li>Check and replace</li> <li>Check and replace</li> <li>Check, clean or replace</li> <li>Check, clean or replace</li> <li>Pull back nozzle to high pressure position</li> </ol>
Pump noisy / pump runs rough	<ol style="list-style-type: none"> <li>Pump drawing in air/low water supply</li> <li>Valves dirty or worn</li> <li>Worn bearings</li> <li>Water too hot</li> </ol>	<ol style="list-style-type: none"> <li>Ensure fittings are tight. Increase water pressure</li> <li>Check, clean or replace</li> <li>Check and replace</li> <li>Reduce temperature below 100° F</li> </ol>

#### Limited Warranty

- DURATION:** From the date of purchase by the original purchaser as follows: Standard Duty - One Year, Serious Duty - Two Years, Extreme Duty - Three Years.
- WHO GIVES THIS WARRANTY (WARRANTOR):** Campbell Hausfeld / Scott Fetzer Company, 100 Production Drive, Harrison, Ohio, 45030, Telephone: (800) 330-0712
- WHO RECEIVES THIS WARRANTY (PURCHASER):** The original purchaser (other than for purposes of resale) of the Campbell Hausfeld pressure washer.
- WHAT PRODUCTS ARE COVERED UNDER THIS WARRANTY:** Any Campbell Hausfeld Pressure Washer supplied or manufactured by the Warrantor.
- WHAT IS COVERED UNDER THIS WARRANTY:** Substantial defects on material and workmanship which occur within the duration of the warranty period with the exceptions noted below.
- WHAT IS NOT COVERED UNDER THIS WARRANTY:**
  - Implied warranties, including those of merchantability and FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED FROM THE DATE OF ORIGINAL PURCHASE AS STATED IN THE DURATION. If this pressure washer is used for commercial, industrial or rental purposes, the warranty will apply for ninety (90) days from the date of purchase. Some States do not allow limitation on how long an implied warranty lasts, so the above limitations may not apply to you.
  - ANY INCIDENTAL, INDIRECT, OR CONSEQUENTIAL LOSS, DAMAGE, OR EXPENSE THAT MAY RESULT FROM ANY DEFECT, FAILURE, OR MALFUNCTION OF THE CAMPBELL HAUSFELD PRESSURE WASHER. Some States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.
  - Any failure that results from shipping damage, accident, purchaser's abuse, neglect or failure to install and operate pressure washer in accordance with instructions provided in the owner's manual(s) supplied with product.
  - Pre-delivery service, i.e. assembly, oil or lubricants and adjustment.
  - Items or service normally required to maintain the pressure washer.
  - Gasoline engine and components are expressly excluded from coverage under this limited warranty. Such components should be returned by the purchaser to the original manufacturer or to its authorized repair stations for service.
  - Additional items not covered under the warranty:
    - Normal wear items such as high pressure hoses, water and oil seals, o-rings, valves, lances and spray tips.
    - Motor brushes (Electric models only).
    - Cosmetic defects that do not interfere with functionality.
    - Rusted components.
    - Pump wear or valve damage caused by using improper oil, oil contamination or by failure to follow proper oil maintenance guidelines.
- RESPONSIBILITIES OF WARRANTOR UNDER THIS WARRANTY:** Repair or replace, at Warrantor's option, pressure washer or component which is defective, has malfunctioned and/or failed to conform within duration of the warranty period.
- RESPONSIBILITIES OF PURCHASER UNDER THIS WARRANTY:**
  - Provide dated proof of purchase and maintenance records.
  - Deliver or ship the Campbell Hausfeld pressure washer or component to nearest Campbell Hausfeld Authorized Service Center. Freight costs, if any, must be borne by the purchaser.
  - Use reasonable care in the operation and maintenance of the pressure washer as described in the owner's manual(s).
- WHEN WARRANTOR WILL PERFORM REPAIR OR REPLACEMENT UNDER THIS WARRANTY:**
  - Repair or replacement will be scheduled and serviced according to the normal work flow at the servicing location, and depending on the availability of replacement parts.
  - If the purchaser does not receive satisfactory results from the Authorized Service Center, the purchaser should contact Campbell Hausfeld (see paragraph 2).

Limited Warranty applies in the U.S. and Canada only and gives you specific legal rights. You may also have other rights which vary from state to state or country to country.