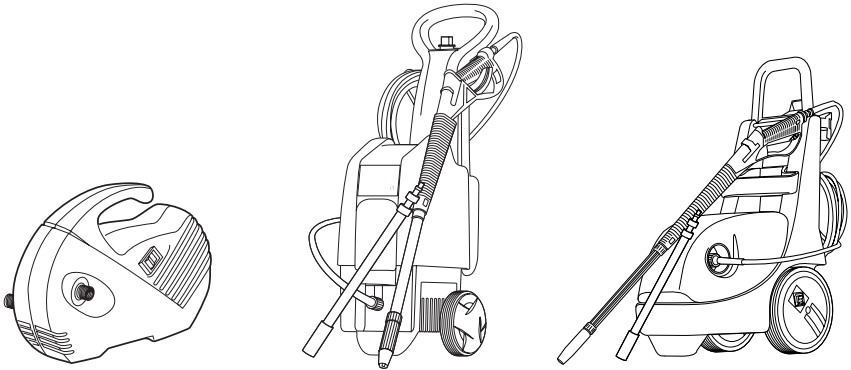




Electric Pressure Washers

Operating Instructions

See Warranty on page 12 for important information about commercial use of this product.



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

REMINDER: Keep your dated proof of purchase for warranty purposes! Attach it to this manual or file it for safekeeping.

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 imminently 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 before disassembling or repairing the unit.
4. Follow all safety codes as well as the Occupational Safety and Health Act (OSHA).
5. Ensure safety devices are operating properly before each use. DO NOT remove or modify any part of the gun or unit.
6. Know how to stop this product and bleed pressure quickly. Be thoroughly familiar with the controls.
7. Stay alert – watch what you are doing.

8. Do not operate the product when fatigued or under the influence of alcohol or drugs.
9. Keep operation area clear of all persons.
10. Do not overreach or stand on unstable support. Keep good footing and balance at all times.
11. Follow the maintenance instructions specified in the manual.
12. This product shall be connected to a power supply receptacle protected by a ground fault circuit interrupter (GFCI).
13. 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 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

In a double-insulated product, two systems of insulation are provided instead of grounding. No grounding means are provided for a dou-

Safety and Warning Information (Continued)

ble-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

⚠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 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 one (1) minute. Resulting heat buildup will damage pump.
- Pressure washer is not meant to pump hot water. NEVER connect it to a hot water supply as it will significantly reduce the life of the pump.
- NEVER store the pressure washer outdoors or where it could freeze. The pump will be seriously damaged.
- Release trigger when changing from high to low pressure modes. Failure to do so could result in damage

⚠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 of an extension cord is not recommended. If one is used, then use only wire sizes and lengths shown in chart below.

Use only extension cords intended for outdoor use. These are identified by the marking "Acceptable for use with outdoor appliances; store indoors while not in use." Use only extension cords having an electrical rating equal to or more than the rating of the product. Do not use

Safety and Warning Information (Continued)

damaged extension cords. Examine extension cord before using and replace if damaged. Do not abuse extension cord. Do not pull on the cord to disconnect. Keep cord away from heat and sharp edges. Always disconnect cord from receptacle before disconnecting product from extension cord.

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

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

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



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

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

Pre-Operation

ADJUSTING FAN PATTERN

The angle of spray coming out of the lance may be adjusted on some lances 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.)

A narrow stream has high impact force on the cleaning surface and results in maximum deep cleaning in a concentrated area. However, this

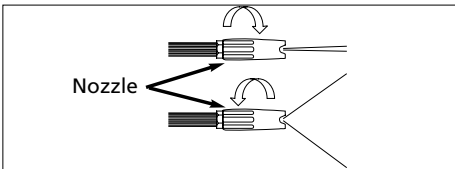


Figure 2 - Adjusting nozzle for fan pattern (not applicable on some nozzles)

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



Figure 3 - Narrow high impact stream



Figure 4 - Wide fan pattern

Pre-Operation (Continued)

of surface damage. Large surface areas can be cleaned more quickly using a wide fan pattern.

ADJUSTABLE PRESSURE NOZZLE (NOT INCLUDED WITH ALL MODELS)

The adjustable pressure nozzle allows you to vary the pressure of your spray by turning the blue end of the nozzle. Turning the blue end fully clockwise will reduce the pressure to its

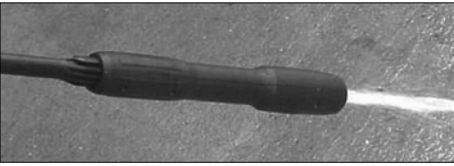


Figure 5 – Low Pressure Spray

minimum. If the pressure washer has a detergent tank system you must use this minimum pressure setting in order to suction detergent. Turning the blue end fully counter-clockwise will increase the pressure to its maximum for

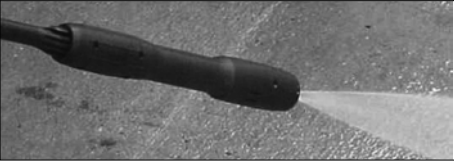


Figure 6 – High Pressure Spray

greatest cleaning efficiency. Turning the blue end changes the pressure but not the fan pattern.

NOZZLE CLEANING INSTRUCTIONS

A clogged or partially clogged nozzle can cause a significant reduction of water coming out of the nozzle and cause the unit to pulsate while spraying.

To clean out the nozzle:

- Turn off and unplug unit.
- Turn off water supply. Relieve any pressure trapped in the hose by squeezing trigger 2-3 times.
- Separate lance from gun.

- Rotate nozzle to the narrow stream setting. This opens up the fan blades.
- Using included tip cleaner, or an un-folded paper clip, insert wire into the nozzle hole and move back and forth until debris is dislodged. (See Figure 7.)
- Remove additional debris by back-flushing water through the nozzle. To do this, place end of a garden hose (with water running) to end of nozzle for 30 – 60 seconds.

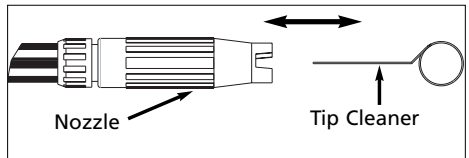


Figure 7 – Insert tip cleaner in nozzle hole and move back and forth until debris is dislodged.

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.



Figure 8 – Optimum Angle to Cleaning Surface

Pre-Operation (Continued)

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 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 surest way to avoid damaging surfaces is to follow these steps:

1. Before triggering the gun, adjust the nozzle to a wide fan pattern.
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, is a very effective tool that can significantly reduce cleaning time. The turbo nozzle

combines the power of a narrow high impact stream and the efficiency of a 25 degree fan pattern. This swirls the 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 it 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. Some 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 work 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

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.

1. Surface Preparation

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

Operation (Continued)

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.

NOTE: Test detergent in an inconspicuous area before use.

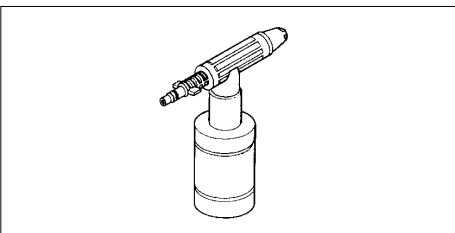


Figure 9 – Detergent application

Units with Detergent Applicator Included

Follow manufacturer's label directions for mixing correct concentrations of soap/detergents. The

soap/detergent to water ratio through the pressure washer is approximately 5.4% (1 to 19).

MODELS WITHOUT DETERGENT TANK

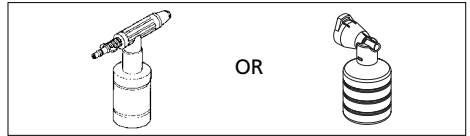


Figure 10 – Detergent Applicators

1. Unscrew top of detergent applicator and fill applicator with detergent.
2. Replace top on applicator.
3. Remove lance from gun.
4. Attach detergent applicator to gun. (See Figure 11.)

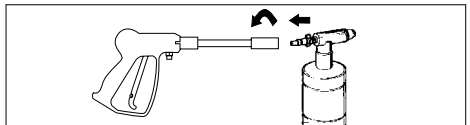


Figure 11 – Attach applicator to gun

5. For detergent applicators that fit on end of lance, turn lance to obtain wide fan pattern. (**Detergent suction will not work when lance is adjusted to provide a narrow pattern.**) Connect applicator to end of lance. Make sure connection is secured correctly. (See figure 12.)

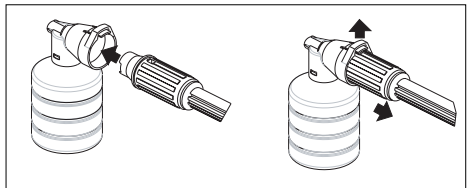


Figure 12 – Turn lance to obtain wide fan pattern.

Operation (Continued)

6. Apply detergent so it thoroughly covers cleaning surface. Apply from bottom to top to prevent detergent from sliding down and streaking.
 7. Allow 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 detergent to dry on the cleaning surface.
 8. Remove detergent applicator from gun and replace with the lance, or remove applicator from end of lance.
9. Rinse detergent from surface.

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

Units with Detergent Tank

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% (1 to 8).

MODELS THAT DO NOT USE A DETERGENT APPLICATOR

1. Remove cap from detergent tank and pour in pressure washer detergent. Replace cap.
2. Turn OFF/ON switch to the ON position.
3. Slide nozzle to low pressure position (See Figure 13.) and apply detergent so that it thoroughly covers the cleaning surface.

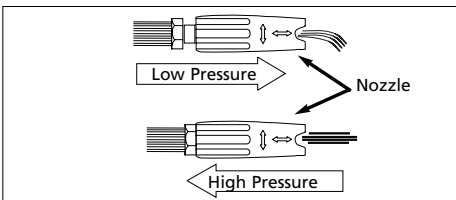


Figure 13 – Adjusting nozzle for pressure

Apply 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 dirt and grime. This is a good time to use a brush to lightly scrub heavily soiled areas. Never allow detergent to dry on cleaning surface.

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

- Detergent injection may not work with extension hose or replacement hoses longer than 25 feet.
4. To rinse or return to high pressure, release trigger and slide nozzle to high pressure position.

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

4. Final Rinse

Start final rinse at bottom and work upward. Make sure 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 motor.
3. Turn off water supply.
4. After motor and water supply are turned off, trigger gun to depressurize system.

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

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

Operation (Continued)

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

6. Storage

- Do not store pressure washer outdoors.
- Do not store pressure washer where it might freeze.

TIPS FOR EXTENDING THE LIFE OF YOUR PRESSURE WASHER

1. Never operate unit without water.
2. Pressure washer is not meant to pump hot water. Never connect to hot water supply – this will significantly reduce life of the pump.
3. Using detergents other than Campbell Hausfeld's brand may cause damage to pump components (o-rings, seals, etc.). This also applies to chemicals such as bleach, dish soap, etc.
4. Never operate unit for more than one (1) minute without spraying water. Resulting heat buildup will damage pump.
5. Before adjusting nozzle for pressure (high-to-low or low-to-high) release trigger. Failure to do so will reduce life of o-rings in lance.

Pressure Washers

Troubleshooting Chart

Symptom	Possible Cause(s)	Corrective Action(s)
Pressure washer does not start up	<ol style="list-style-type: none">1. Unit is pressurized2. GFCI has tripped (If so equipped)3. Plug is not well connected or electric socket is faulty4. Extension cord too long or wire size too small5. Main voltage supply too low6. Thermal safety switch has tripped	<ol style="list-style-type: none">1. Squeeze trigger on gun2. Push reset button on plug3. Check plug, socket and fuses4. Remove extension cord (see page 4)5. Check that main supply voltage is adequate6. Switch off unit and allow motor to cool down
Pump does not reach necessary pressure	<ol style="list-style-type: none">1. Water inlet filter is clogged2. Pump sucking air from hose connections3. Nozzle worn or not correct size4. Unloader clogged or worn5. Valves clogged or worn	<ol style="list-style-type: none">1. Clean water inlet filter2. Check that connections and locking ring are properly tightened3. Call 1-800-330-07124. Call 1-800-330-07125. Call 1-800-330-0712
Fluctuating pressure	<ol style="list-style-type: none">1. Pump sucking in air2. Clogged nozzle3. Valves dirty, worn or stuck4. Water seals worn	<ol style="list-style-type: none">1. Check that hoses and connections are tight2. Clean with tip cleaner (see page 5)3. Call 1-800-330-07124. Call 1-800-330-0712
Motor stops suddenly	<ol style="list-style-type: none">1. Extension cord too long or wire size too small2. Thermal safety switch has tripped due to overheating	<ol style="list-style-type: none">1. Remove extension cord (see page 4)2. Check that main supply voltage corresponds to specifications

Pressure Washers

Troubleshooting Chart

Symptom	Possible Cause(s)	Corrective Action(s)
No detergent suction – units with tanks	<ol style="list-style-type: none">1. Lance nozzle not in low pressure position2. Using high pressure extension hose or high pressure hose is too long3. Injector clogged on pump	<ol style="list-style-type: none">1. Slide lance nozzle into low pressure position (see page 8)2. Remove high pressure extension hose or use high pressure hose shorter than 25 feet3. Call 1-800-330-0712
No detergent suction – units with attachable applicators	Detergent applicator clogged	<ol style="list-style-type: none">1. Clean applicator with warm water2. Replace applicator
Unit begins to smoke	Overheated, overloaded or damaged motor	Turn off unit and call 1-800-330-0712

Limited Warranty

1. **DURATION:** From the date of purchase by the original purchaser as follows: Standard Duty - One Year, Serious Duty - Two Years, Extreme Duty - Three Years.
 2. **WHO GIVES THIS WARRANTY (WARRANTOR):** Campbell Hausfeld / Scott Fetzer Company, 100 Production Drive, Harrison, Ohio, 45030, Telephone: (800) 330-0712
 3. **WHO RECEIVES THIS WARRANTY (PURCHASER):** The original purchaser (other than for purposes of resale) of the Campbell Hausfeld pressure washer.
 4. **WHAT PRODUCTS ARE COVERED UNDER THIS WARRANTY:** Any Campbell Hausfeld Pressure Washer supplied or manufactured by the Warrantor.
 5. **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.
 6. **WHAT IS NOT COVERED UNDER THIS WARRANTY:**
 - A. 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.
 - B. 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.
 - C. 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.
 - D. Pre-delivery service, i.e. assembly, oil or lubricants and adjustment.
 - E. Items or service normally required to maintain the pressure washer.
 - F. 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.
 - G. Additional items not covered under the warranty:
 1. Normal wear items such as high pressure hoses, water and oil seals, o-rings, valves, lances and spray tips.
 2. Motor brushes (Electric models only).
 3. Cosmetic defects that do not interfere with functionality.
 4. Rusted components.
 5. Pump wear or valve damage caused by using improper oil, oil contamination or by failure to follow proper oil maintenance guidelines.
 7. **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.
 8. **RESPONSIBILITIES OF PURCHASER UNDER THIS WARRANTY:**
 - A. Provide dated proof of purchase and maintenance records.
 - B. 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.
 - C. Use reasonable care in the operation and maintenance of the pressure washer as described in the owner's manual(s).
 9. **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.
- This Limited Warranty applies in the U.S., Canada and Mexico only and gives you specific legal rights. You may also have other rights which vary from state to state or country to country.