



# Gasoline Powered Pressure Washers

Product Manual

PW2770, PW3270 and PW4070

Please record Model No. and Serial No. for use when contacting the manufacturer:

Model No. \_\_\_\_\_ Purchase date \_\_\_\_\_

Serial No. \_\_\_\_\_ Purchase place \_\_\_\_\_

*For Information About This Product, call 1-800-330-0712*



Model PW2770



Model PW3270



Model PW4070

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

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

### ***Frequently Asked Questions***

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

1. Make sure you have gas and oil in the engine. The engine does not come with oil.
2. Turn the water on, then squeeze the trigger on the gun to make sure the water will flow smoothly out of the tip.
3. Put the engine throttle control fully to the left, in the "Fast/Start" position. Set the shut off switch to "ON."
4. Set the choke fully to the left. Set the fuel valve lever fully to the right in the "ON" position.
5. Pull the trigger (to relieve any back pressure in the pump) while pulling the starter cord.

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

Engine: The engine DOES NOT COME FILLED WITH OIL. See Page 10 for engine oil types and quantities.

Pump: The pump comes filled with the correct amount of oil and should not need changing or filling. Refer to Pages 9 and 10 of this manual for oil changing instructions, oil types and quantities.

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

- Is the water hose attached to the pressure washer?
- Is the water turned on?
- Check for any kinks, leaks, or blockage in the hoses, fittings, or the nozzle.
- Is the quick connect tip in place? (See Page 5 and 6).
- Is the inlet filter screen free of debris? Check and remove debris if needed.

#### **How do I get high pressure?**

- Use any color tip except black. The black tip is only used for low pressure detergent application.

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

1. Connect the clear plastic chemical suction tube to the plastic hose barb on pump, insert the other end into your detergent.
2. Install the black spray tip to apply low pressure detergent.

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

Detergents "bounce" off cleaning surfaces as fast as they are applied. The pressure washer's features allow for a detergent to be drawn while in low pressure mode only. By applying detergent at low pressure, the effect of "bouncing" is reduced. Also, detergents are only effective when time is allowed for them to work on the surface of whatever is being cleaned. After applying the detergent, wait 1-3 minutes while it works, and then proceed to 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.
5. Follow proper storage and winterizing instructions found on pages 8 and 9.

#### **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!**

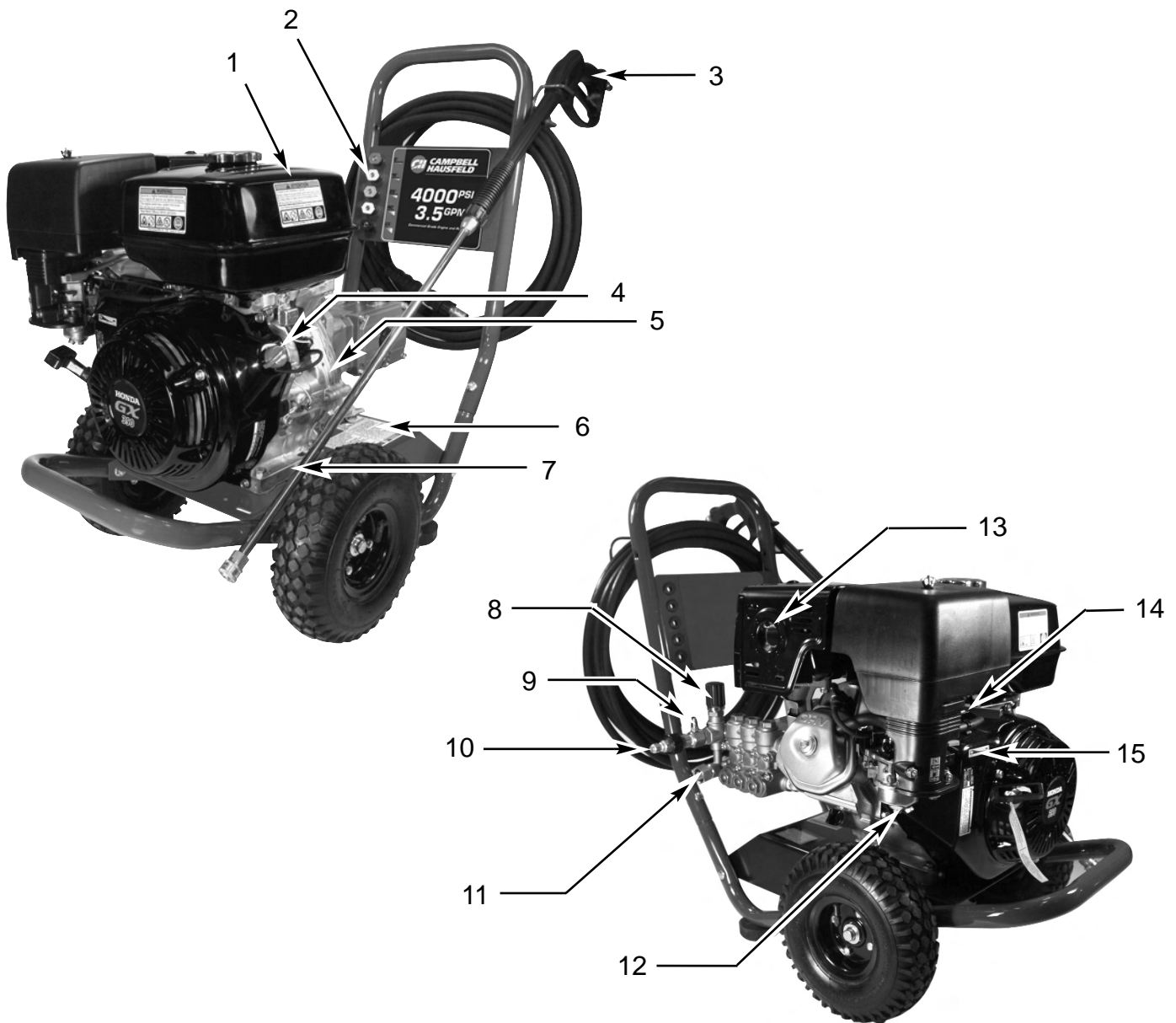
#### **Where can I buy accessories for my pressure washer?**

- If you can't find accessories at the store where you purchased your pressure washer, call Campbell Hausfeld 1-800-330-0712 or visit our website at [www.chpower.com](http://www.chpower.com).

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

**Call Campbell Hausfeld 1-800-330-0712 (U.S.A.)**

## Getting to Know Your Pressure Washer



- |                               |                                      |
|-------------------------------|--------------------------------------|
| 1 Fuel Tank                   | 9 Injection Tube                     |
| 2 Tip Holder with Spray Tips  | 10 Connection for High Pressure Hose |
| 3 Gun with Trigger            | 11 Inlet Connection for Garden Hose  |
| 4 Engine switch - On/Off      | 12 Fuel Valve - On/Off               |
| 5 Engine Oil Fill             | 13 Muffler                           |
| 6 Serial Number/Product Decal | 14 Throttle Control                  |
| 7 Lance                       | 15 Choke                             |
| 8 Pressure Adjusting Knob     |                                      |

## 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.*

**NOTICE** *Notice indicates important information, that if not followed, may cause damage to equipment.*

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

### Important Safety Instructions

#### SAVE THESE INSTRUCTIONS

#### CALIFORNIA PROPOSITION 65

**⚠ WARNING** *This product or its power cord may contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.*

#### **⚠ 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 the product is used near children.
3. Follow all safety codes as well as the Occupational Safety and Health Act (OSHA).
4. Ensure safety devices are operating properly before each use. DO NOT remove or modify any part of the gun or unit.

5. Know how to stop this product and bleed pressure quickly. Be thoroughly familiar with the controls.
6. Stay alert – watch what you are doing.
7. Do not operate the product when fatigued or under the influence of alcohol or drugs.
8. Keep operation area clear of all persons.
9. Do not overreach or stand on unstable support. Keep good footing and balance at all times.
10. Follow the maintenance instructions specified in the manual.

**⚠ 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 a person, animal, or yourself.
- 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** *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.
- 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 the 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.).

**NOTICE** *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 one minute. Resulting heat buildup will damage the pump.
- NEVER store the pressure washer outdoors or where it could freeze. Freezing temperatures can seriously damage the pump.
- Release the trigger when changing from high to low pressure modes. Failure to do so could result in damage to the nozzle.

## Pre-Operation

**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.*

### UNPACKING

Remove the equipment and all parts from the carton. The carton should contain the following.

- One pressure washer (pump, engine, cart base)
- One cart handle assembly
- One spray gun and quick connect lance
- Five spray tips
- One high pressure hose
- One pack of nuts, bolts, and manuals

If any parts are missing, **DO NOT RETURN THE UNIT TO THE RETAILER.** Know the unit's model number (located on the serial number tag on the pressure washer frame) and call 1-800-330-0712 for replacement parts.

After unpacking the product, inspect it carefully for any damage that may have occurred during transit. Make sure to tighten fittings and bolts before using the pressure washer.

**WARNING** *Do not operate the unit if it's damaged during shipping, handling, or use. Damage could result in bursting and cause injury or property damage.*

### ASSEMBLY

Use 1/2 in. wrench to assemble the pressure washer.

1. Slide the handle assembly over the lower legs of the cart base. Use the (supplied) standard nuts and bolts to secure the handle to the legs (See Figure 1).



Figure 1 - Assemble Handle

2. Slide clear plastic detergent hose onto brass hose barb (See Figure 2).

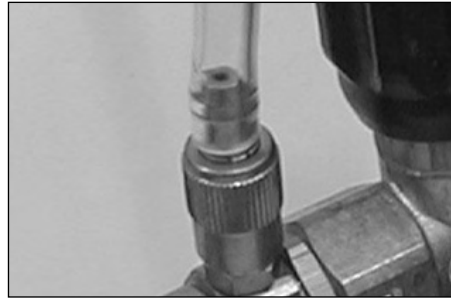


Figure 2 - Attach suction tube to barb fitting

3. Insert quick connect spray tips into rubber holders on front of the placard. (See Figure 3).



Figure 3 - Insert spray tips into the holder

4. Secure garden hose (not included) to the inlet connection on pump (See Figure 4).

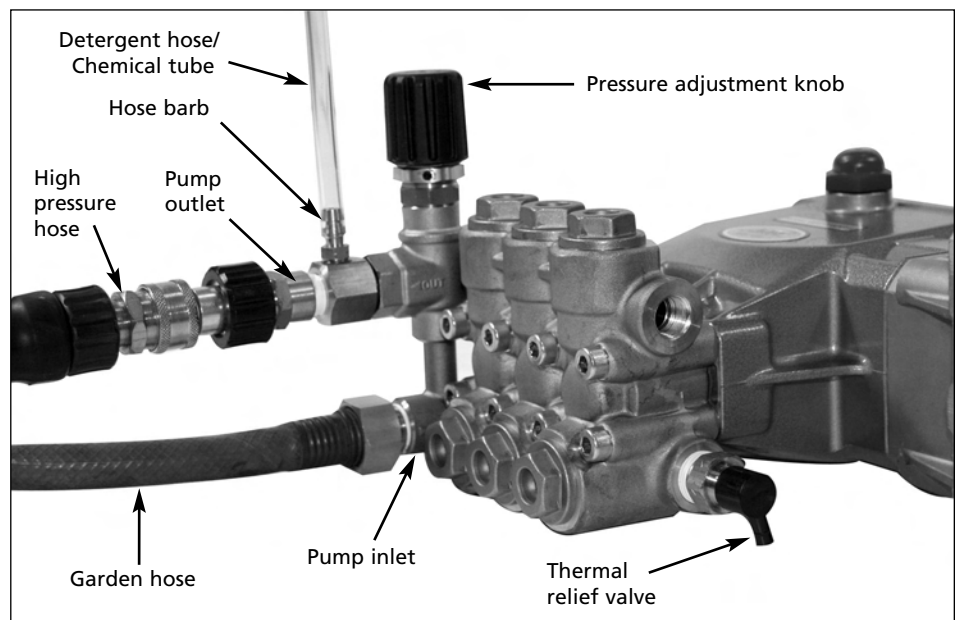


Figure 4 - Pump hook up

5. Connect the high pressure hose to the pump outlet (See Figures 4 and 5).

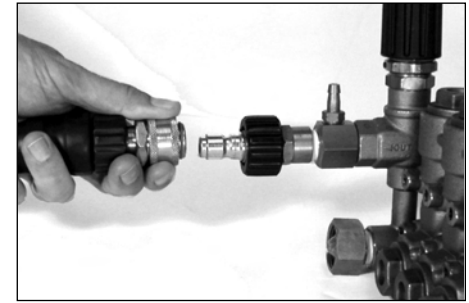


Figure 5 - Connect High pressure hose to pump

6. Attach the lance to the gun (See Figure 6).

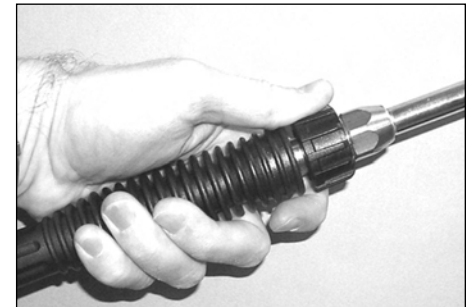


Figure 6 - Attach lance to gun

## Pre-Operation (Continued)

7. Install quick connect tip (See Figure 7).

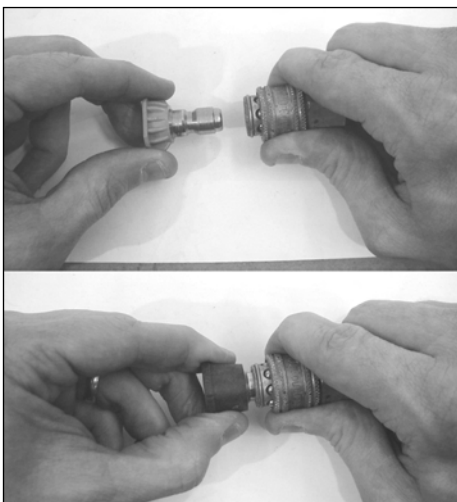


Figure 7 - Quick Connect Tip

### TRIGGER SAFETY LATCH

In the engaged position, the trigger safety latch prevents the gun from being triggered accidentally. Push the latch fully

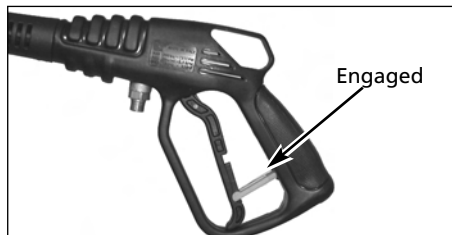


Figure 8 - Trigger locked

up to engage it (See Figure 8 and 9).

Always engage the trigger safety latch when the unit is not in use.

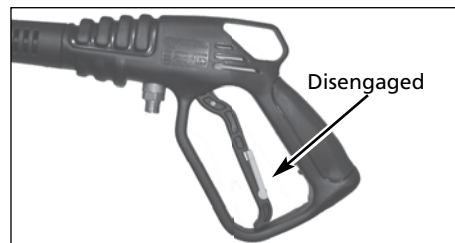


Figure 9 - Trigger unlocked

## Operation

### 1. Surface Preparation

The following cleaning procedure will help you organize your cleaning task and ensures that you will achieve the best results in the shortest amount of time. Remember to use the spraying / cleaning techniques mentioned in the following section.

Before starting a pressure washer cleaning job, prepare the surface you intend to clean. Clear furniture from the area and make sure that all windows and doors are closed tightly. Also, protect all plants and trees near the cleaning area with a drop cloth. A covering ensures that your plants won't be sprayed by the detergents.

### 2. Start Up

ALWAYS use this start up procedure to ensure that the unit is started safely and properly.

**NOTICE** *If water has frozen in the pressure washer, thaw the pressure washer in a warm room before starting. DO NOT pour hot water on or into the pump; internal parts will be damaged.*

1. Check engine oil levels. Add oil as necessary.
2. Check fuel level. Add unleaded gasoline (rated 86 octane or higher) as required.

**WARNING** *DO NOT refuel a hot engine. Refueling a hot engine could cause a fire. Use only fresh, clean regular or unleaded gasoline. Close the fuel shutoff valve during refueling.*

3. Attach a garden hose to the inlet side of the pump and connect it to the water supply. Use a hose with an internal diameter (I.D.) of 5/8 in. (1.58 cm) and a length of 50 ft. (15 m) or less.

**NOTICE** *Some local plumbing codes require backflow prevention when connecting to a fresh water supply. Install a backflow preventer upstream from the pump if necessary.*

- a. If inlet water pressure is over 100 psi, install a regulating water valve at the garden hose connection.
- b. Do not exceed 100° F (38° C) inlet water temperature.

**NOTE:** The inlet water supply must have a minimum flow rate of 5 gpm (19 lpm).

4. Turn the water supply ON.

**NOTICE** *Never run the unit dry. Be sure the water supply is completely turned on before operating the unit.*

5. Trigger the gun until water sprays from the tip indicating that all air is purged from the system. Set the trigger safety latch.
6. Open the fuel shutoff valve by turning the lever to the right/"ON" position. Close the choke (if the engine is cold) by moving the choke lever fully to the left. Move the throttle fully to the left to the "Run" or "Rabbit" position. Turn the ON/OFF switch to the "ON" position.



Figure 10 - Throttle

## Operation (Continued)

7. Start the engine: Unlock the trigger safety latch on the gun. Grasp the starter rope and brace one foot on the chassis. While squeezing the trigger on the gun, pull the starter rope rapidly and firmly. Continue holding the rope as it returns. Repeat these steps until the engine starts.

**CAUTION** *When pulling the starter rope, make sure to keep your hand and arm clear of the engine and cart components.*

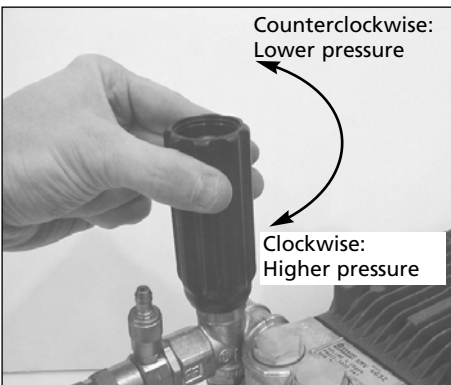
**NOTICE** *Never let the starter rope return by itself. Doing so could jam the recoil system.*

8. If the engine does not start after two or three pulls or if the rope is hard to pull, squeeze the gun trigger to release the pressure that has built up in the high pressure hose. Repeat Steps 7 and 8 until the engine starts.

### 3. Initial High Pressure Rinse

Spray the cleaning surface with water to clear off any dirt or grime that may have collected on the surface. Doing so allows the detergent to attack the deep down dirt that has worked its way into the cleaning surface.

After the engine starts, trigger the gun 3 to 5 times to get any trapped air out of the system. After the spray becomes constant, you may need to adjust the pressure.



**Figure 11 - Camshaft pump pressure adjustment**

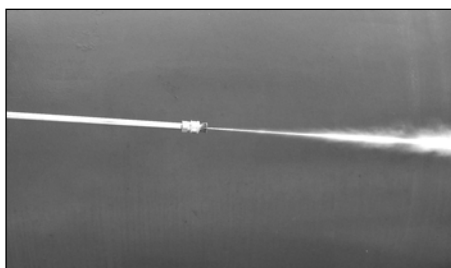
### PRESSURE ADJUSTMENT

Please refer to your CAT pump manual for specific pressure adjustment details.

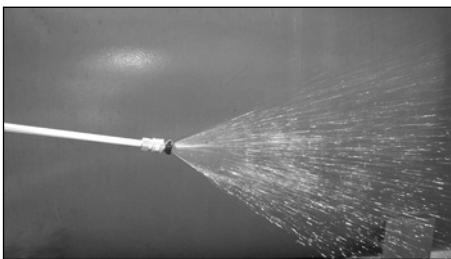
### ADJUSTING THE SPRAY FAN ANGLE

Five quick connect tips are included with this pressure washer. The tips have a range of spray fan angles, ranging from 0°, narrow high impact, to a 65° wide fan spray.

Pressure can also be adjusted by moving closer or further away from the cleaning surface and by adjusting the spray fan angle as shown.



**Figure 12 - Narrow high impact stream**



**Figure 13 - Wide fan pattern**

### ANGLE TO THE CLEANING SURFACE

When spraying water against a surface, you can generate maximum impact by striking the surface head on. However, this type of impact can cause dirt particles to embed in the surface and can prevent the desired cleaning action.

The optimum angle for spraying water against a cleaning surface is 45 degrees.

Spray water against a surface at a 45 degree angle to achieve the most beneficial impact force and to efficiently remove debris.

### DISTANCE FROM CLEANING SURFACE

The distance between the spray tip and the cleaning surface is another factor that affects the impact force of the water. The impact force of the water increases as the tip is moved closer to the surface.



**Figure 14 - Optimum angle to cleaning surface**

### HOW TO AVOID DAMAGING SURFACES

Damage to cleaning surfaces occurs because the impact force of the water exceeds the durability of the surface. You can vary the impact force by controlling the spray tip angle to the cleaning surface and the distance from the cleaning surface and by changing the spray tip. NEVER use a narrow high impact stream on a surface that is susceptible to damage. Avoid spraying windows with a narrow high impact stream. Doing so may break the window. The most sure way to avoid damaging surfaces is to follow these steps:

1. Before triggering the gun, make sure the quick connect tip you are using is appropriate for the application.
2. Place the spray tip approximately 4-5 feet (1,22-1,52 m) away from the cleaning surface. Then hold the lance and spray tip at a 45 degree angle to the cleaning surface. 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.

## Operation (Continued)

### 4. Detergent Application

**NOTE:** Use only detergents formulated for pressure washers. Test detergent in an inconspicuous area before use.

#### DETERGENTS

The use of detergents can dramatically reduce cleaning time and assist in the removal of difficult stains. Many detergents are customized for pressure washer use on specific cleaning tasks. Pressure washer detergents are as thick as water. Using thicker detergents – like dish soap – will clog the chemical injection system and prevent the application of the detergent.

Once applied to a cleaning surface, detergents take time to break down dirt and grime. Detergents work best when applied at low pressure.

You can effectively clean surfaces by combining the chemical action of detergents with high pressure rinses. On vertical surfaces, apply the detergent starting at the bottom and work your way upward. This method prevents the detergent from sliding down and causing streaks. Begin high pressure rinsing at the bottom and work your way upward. On particularly tough stains, use a brush in combination with detergents and high pressure rinsing.

1. Follow manufacturer's label directions for mixing correct concentrations of soap/detergents. The soap detergent to water ration through the pump is approximately 10% (1 to 10).
2. Insert the filter end of the clear plastic detergent tube into the detergent container.
3. Use the BLACK 65° quick connect spray tip.
4. Adjust the detergent injection flow by turning the collar of the injector. Turning collar clockwise increases detergent flow.

#### GENERAL CLEANING TIPS

1. 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. Use a brush to lightly scrub heavily soiled areas. NEVER allow the detergent to dry on the cleaning surface.

2. To rinse: replace black 65° spray tip with another color tip.

**⚠ WARNING** *Never replace quick connect tip when gun is triggered. Always engage trigger lock on gun before removing or installing quick connect tips.*

3. After using detergents, flush the suction system by placing the detergent suction tube into a bucket of clean water and spraying with the black spray tip.

### 5. Cleaning Power

The easiest way to regulate the cleaning power of your pressure washer is by changing the distance from the surface you are cleaning. Begin spraying with a wide fan pattern while standing several feet from the surface. Slowly move closer to the object you are cleaning, adjusting the spray pattern as necessary, until you find the most effective cleaning technique.

**NOTE:** The unit also has a pressure adjustment knob on the pump that can adjust the pressure.

### 6. Final Rinse

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

### 7. Pressure Relief Procedure

To reduce the risk of bodily injury or property damage, always follow this procedure whenever spraying is stopped, when work is completed, and before checking or repairing any part of the system.

1. Engage the trigger safety latch.
2. Turn the unit off.
3. Shut off the water supply.
4. Disengage the trigger safety latch and trigger the gun to relieve pressure.
5. Re-engage the trigger safety latch.
6. When checking or repairing unit, remove the ignition cable from the spark plug.

7. Before overnight storage, long term storage, or transporting unit, disconnect the water supply and turn off the fuel supply valve.

### 8. Shutdown

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

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

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

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

### 9. Storage

- Do not store the pressure washer outdoors.
- Do not store the pressure washer where it might freeze unless it has been properly winterized.

#### LONG TERM STORAGE INSTRUCTIONS (MORE THAN 30 DAYS IN STORAGE)

1. Remove fuel from the tank and run the pressure washer in a normal operating mode until the engine stops from a lack of fuel. Normal operating mode means actually spraying water from the gun while the engine is running.  
*Alternate method* – Add fuel stabilizer to gas in the tank and run in normal operating mode for at least five minutes.
2. Stop the engine, turn off the water supply, and trigger the gun to release pressure in the high-pressure hose.
3. Disconnect the water supply and high pressure hose from the pump.
4. Allow the engine to cool.



## Operation (Continued)

5. Disconnect the spark plug wire and remove the spark plug.
6. Pour 1/2 oz. of engine oil into the spark plug hole.

**⚠ WARNING** *Never pull the starter rope on the engine when the spark plug is removed unless the spark plug hole is covered. Fuel vapor from the hole can ignite by a spark.*

7. Place a rag over the spark plug hole and slowly pull the starter rope several times to distribute the oil.

### WINTERIZING INSTRUCTIONS

1. Follow and complete the Long Term Storage Instructions above.
2. Disconnect the spark plug wire.
3. Disconnect the high pressure hose from the pump.

4. Insert a 12 in. to 14 in. piece of garden hose into the pump inlet.
5. Place a funnel in the other end of the garden hose.

**NOTICE** *Read the manufacturer's instructions for safe handling and disposal of RV antifreeze.*

6. Pour approximately 6 oz. of RV antifreeze into the funnel.
7. Pull the starter rope several times until the RV antifreeze comes out of the pump outlet.
8. Disconnect the high pressure hose from the gun and drain the hose. Hold the gun and lance in a vertical position and squeeze the trigger to drain the water out.

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

1. Never operate the unit without water.
2. 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.
3. Running the unit for more than one minute without spraying water causes heat to build up in the pump. Running the unit without spraying water can damage pump components.

## Maintenance

Observe regular maintenance intervals to ensure maximum performance and life from the pressure washer. Refer to the schedule for recommended maintenance. If you operate the pressure washer in dusty conditions, perform maintenance checks more often.

### ENGINE OIL CHANGING INSTRUCTIONS

**⚠ CAUTION** *Before tipping the engine or equipment to drain oil, drain fuel from the fuel tank.*

**NOTE:** Change oil while the engine is cool.

1. Disconnect the spark plug wire from the spark plug.
2. Locate and remove the engine oil drain plug (See Figure 15).

3. Drain old oil.
4. Replace the drain plug and set the unit upright.
5. Refill the unit with new oil of a recommended type and quantity. Fill the unit to the bottom edge of the oil fill neck.

### PUMP OIL CHECKING/ CHANGING INSTRUCTIONS

Please refer to provided CAT Pump Specification page provided with your Pressure Washer for details.

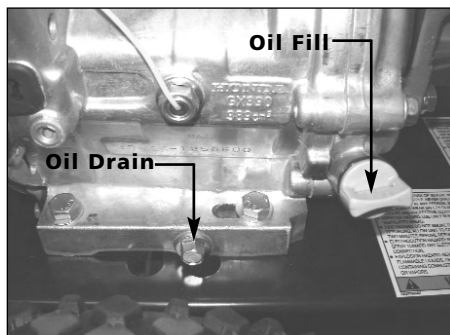


Figure 15 - Oil drain and fill locations

## Maintenance (Continued)

### Maintenance Schedule

Maintenance Schedule	Action needed
Daily	<ul style="list-style-type: none"> <li>• Check water inlet screen and filter.</li> <li>• Check engine oil levels. Fill as necessary.</li> <li>• Check gasoline level. Fill as necessary.</li> </ul>
After first 5 hours of operation	<ul style="list-style-type: none"> <li>• Change engine break-in oil. Use 10W-30 automotive detergent oil. See your Honda Owner's manual for specific information.</li> </ul>
Every 25 hours of operation	<ul style="list-style-type: none"> <li>• Change oil if operating under heavy load or high ambient temperature.</li> <li>• Clean or replace paper air cleaner cartridge. Tap gently to remove dirt.</li> </ul>
Every 50 hours of operation	<ul style="list-style-type: none"> <li>• Change oil.</li> <li>• Replace spark plug.</li> </ul>
Each 100 hours of operation or every 3 months	<ul style="list-style-type: none"> <li>• Replace paper air cleaner cartridge.</li> <li>• Change engine oil.</li> </ul>

### Technical and Consumer Information

Horizontal Oriented Pressure Washers	
<b>Engine Oil Type</b>	SAE 10W-30 (See Honda's Owner Manual)
<b>Engine Oil Capacity</b>	
Honda GX160	20 fl. oz.
Honda GX270	37 fl. oz.
Honda GX390	37 fl. oz.
<b>Engine Fuel Capacity</b>	
Honda GX160	3.3 US quarts (3.1 L)
Honda GX270	5.6 US quarts (5.3 L)
Honda GX390	6.4 US quarts (6.1 L)
<b>Pump Oil Type</b>	CAT pump oil
<b>Pump Oil Capacity</b>	
CAT Pumps	
3DNX25	8.5 fl. oz.
3SPX30	10.15 fl. oz.
66DX35	18 fl. oz.
<b>Pump Detergent Suction</b>	
Water to detergent ratio	10 to 1 (10% detergent)
<b>Water Supply Requirements</b>	
Minimum inlet pressure	20 psi
Maximum inlet pressure	100 psi
Maximum inlet temperature	100° F
Minimum inlet flow rate	5 gpm
Inlet garden hose size	5/8 in. I.D.
Maximum inlet garden hose length	50 ft

## Service Record

Date	Maintenance performed	Replacement components required
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
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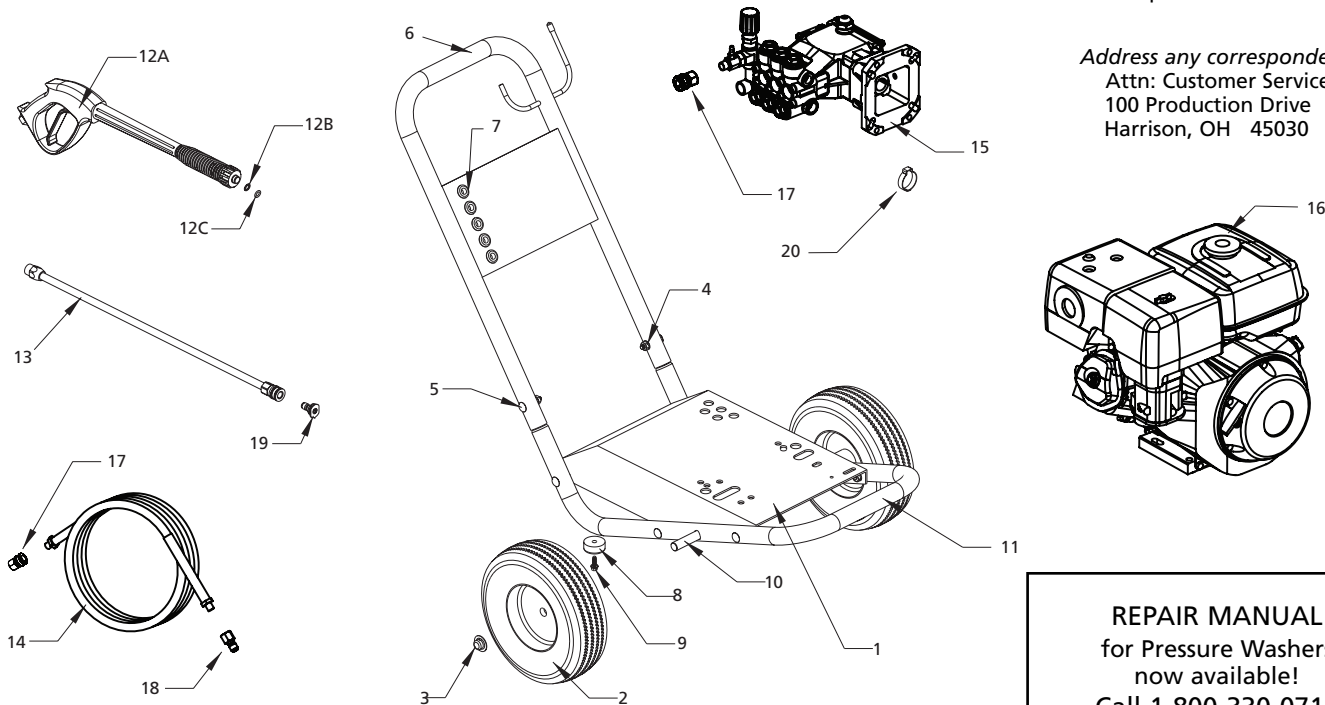
**Replacement Parts List**

**For replacement parts or technical assistance,  
call 1-800-330-0712**

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

Address any correspondence to:  
Attn: Customer Service  
100 Production Drive  
Harrison, OH 45030 U.S.A.



**REPAIR MANUAL**  
for Pressure Washers  
now available!  
Call 1-800-330-0712

**Replacement Parts List**

Ref. No.	Description	Part Numbers			Qty.
		PW2770	PW3270	PW4070	
1	Base Plate	PM237600SJ	PM237600SJ	PM237600SJ	1
2	Pneumatic Wheel	WA005620AV	WA005620AV	WA005620AV	2
3	Pushnut	AL066300AV	AL066300AV	AL066300AV	2
4	5/16 in. -18 Nut	PM031100AV	PM031100AV	PM031100AV	8
5	5/16 in. -18 Rounded square neck bolt	MJ101206AV	MJ101206AV	MJ101206AV	8
6	Handle	PM344845AJ	PM344845AJ	PM344845AJ	1
7	Quick Connect Tip Grommet	MJ110200AV	MJ110200AV	MJ110200AV	5
8	Rubber Bumper	AL062300AV	AL062300AV	AL062300AV	2
9	1/4 in. -20 x 3/4 in. Self-tapping screw	MJ102100AV	MJ102100AV	MJ102100AV	2
10	Axle rod	PM090010AV	PM090010AV	PM090010AV	1
11	Frame	PM343705AV	PM343705AV	PM343705AV	1
12a	Gun	PM005133AV	PM005133AV	PM005133AV	1
12b	Gun o-ring	PM345402SV	PM345402SV	PM345402SV	2
12c	Gun back-up o-ring	PM232211SV	PM232211SV	PM232211SV	1
13	Lance	PM035120AV	PM035120AV	PM035120AV	1
14	High pressure hose	PM005010AV	PM005012AV	PM005012AV	1
15	Pump Assembly	PM347000SJ	PM347100SJ	PM347200SJ	1
16	Engine	See note below	See note below	See note below	1
17	Socket - Quick connect	PM068070AV	PM068070AV	PM068070AV	2
18	Plug - Quick connect	PM068066AV	PM068066AV		1
19	Quick Connect Tips				
	0 (Red)	PM039870AV	PM039700AV	PM039700AV	1
	15 (Yellow)	PM039880AV	PM039710AV	PM039710AV	1
	25 (Green)	PM039890AV	PM039720AV	PM039720AV	1
	40 (White)	PM039900AV	PM039730AV	PM039730AV	1
	Detergent (Black)	PM039820AV	PM039820AV	PM039820AV	1
20	1 in. Hose clamp	▲	▲	▲	1

▲ Standard hardware item

**Note:** For engine service or replacement parts, call Honda at 1-800-426-7701

## 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 or replace</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 or replace</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 on pump clogged</li> <li>Worn water seals, 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 water seals. 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>
Water leakage from under pump manifold	Worn water seals	Install new water seals. See service center
Water in pump crankcase (milky oil)	<ol style="list-style-type: none"> <li>Humid air condensing inside crankcase</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 oil seals. See service center</li> </ol>
Frequent or premature failure of the pump water seals	<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 pump water seals</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>

**Troubleshooting Chart - Gasoline Powered Pressure Washers Only**

<b>Symptom</b>	<b>Possible Cause(s)</b>	<b>Corrective Action(s)</b>
Pump noisy / pump runs rough	<ol style="list-style-type: none"> <li>1. Pump drawing in air/low water supply</li> <li>2. Valves dirty or worn</li> <li>3. Worn bearings</li> <li>4. Water too hot</li> </ol>	<ol style="list-style-type: none"> <li>1. Ensure fittings are tight. Increase water pressure</li> <li>2. Check, clean or replace</li> <li>3. Check and replace</li> <li>4. Reduce temperature below 100° F</li> </ol>
Pressure washer will not spray detergent	<ol style="list-style-type: none"> <li>1. Not using soap tip</li> <li>2. Clog, kink, or hole in detergent suction hose</li> <li>3. Hose length too long</li>   <li>4. Lance not functioning properly</li> </ol>	<ol style="list-style-type: none"> <li>1. Install 65 degree (black) soap tip</li> <li>2. If clean, unkink or replace hose.</li> <li>3. Use only hose length provided with initial purchase of pressure washer. Detergent suction will not function if more than one section of hose is attached to unit.</li> <li>4. Remove lance from gun. If detergent is dispensed through gun, the lance must be replaced. If no detergent is dispensed through gun, remove 1" tapered detergent barb from pump. Clean the barb, and make sure that ball and spring are properly aligned with tapered portion of the spring facing the ball. The ball should be on top of the spring.</li> </ol>

**Notes**

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## **Limited Warranty**

1. **DURATION:** From the date of purchase by the original purchaser as follows: Three Years
2. **WHO GIVES THIS WARRANTY (WARRANTOR):** Campbell Hausfeld / Scott Fetzer Company, 100 Production Drive, Harrison, OH 45030, Telephone: 1-800-330-0712
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. 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.