

Gladiator® POWER WASHER



PETROL PRESSURE WASHER MODEL NO: PLS180

PART NO: 7330422

OPERATION & MAINTENANCE INSTRUCTIONS



ORIGINAL INSTRUCTIONS

DL1224

INTRODUCTION

Thank you for purchasing this CLARKE Petrol Pressure Washer.

Before attempting to use this product, please read this manual thoroughly and follow the instructions carefully. In doing so you will ensure the safety of yourself and that of others around you, and you can look forward to your purchase giving you long and satisfactory service.

GUARANTEE

This product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase. Please keep your receipt which will be required as proof of purchase.

This guarantee is invalid if the product is found to have been abused or tampered with in any way, or not used for the purpose for which it was intended.

Faulty goods should be returned to their place of purchase, no product can be returned to us without prior permission.

This guarantee does not effect your statutory rights.

UNPACKING

Unpack your pressure washer and check to ensure the following items are present. Contact your CLARKE dealer immediately if any parts are missing or damaged.

1 x Petrol Pressure Washer	1 x Gun Side Handle
2 x Wheel/Tyre Assembly & Fixings	5 x Gun Nozzles
1 x Gun Assembly	1 x Rubber Foot c/w Fixings
1 x Lance Assembly	1 x Spark Plug Box Spanner
1 x High Pressure Hose (Outlet)	1 x Engine Manual
1 x Detergent Inlet Hose & Filter	1 x Nozzle Pin

GENERAL SAFETY RULES



WARNING: WATER AT HIGH PRESSURE CAN BE DANGEROUS AND CAN CAUSE DAMAGE TO PERSONS OR PROPERTY IF THE OPERATOR IS CARELESS. NEVER ALLOW ANYONE TO OPERATE THIS EQUIPMENT UNLESS THEY ARE THOROUGHLY RELIABLE, AND FAMILIAR WITH THE SAFETY PRECAUTIONS.

1. **DO NOT** point the spray at other people, animals, electrical equipment or the machine itself.
2. **DO NOT** hold your finger over the high pressure nozzle.
3. **DO NOT** let children or untrained personnel use this machine.
4. **DO NOT** operate the machine with any of the covers removed.
5. **DO NOT** try to repair this machine. **ALWAYS** refer to your CLARKE service department for all repairs.
6. **DO NOT** supply any liquid other than water to the water inlet.
7. **DO NOT** use the detergent pickup facility to introduce flammable liquids/solvents, e.g. paint thinners, petrol, oil as there is a risk of explosion.
8. **ALWAYS** release the remaining pressure in the system; turn off the water supply and operate the trigger before you remove hoses or accessories.
9. **ALWAYS** keep the machine dry and away from the water spray.
10. **ALWAYS** use protective clothing and safety glasses. Loose particles and other items can be propelled at high speed by the water spray.
11. **ALWAYS** hold the gun securely & expect it to 'kick' when you pull the trigger.
12. **ALWAYS** respect the requirements of the local water company. Pressure washers may only be connected to the mains water supply if a system separator (also known as a back-flow preventer) is installed in the supply hose.
13. **ALWAYS** disconnect from the water supply, and make sure that you drain the system when not in use. **KEEP** in a cool dry location.
14. **ONLY** use detergents that are suitable for pressure washers, we recommend that you use CLARKE Traffic Film Remover or CLARKE Wash and Wax (available from your dealer).
15. **WARNING** High pressure water jets can be dangerous, the jet must not be directed at a person or anything that they are wearing.
16. **WARNING** High pressure hoses, fittings and couplings are important for the safety of the machine. Use only hoses, fittings and couplings recommended by the manufacturer.
17. **WARNING** Water that passes through a system separator (also known as a back-flow preventer) is not safe to drink.
18. **DO NOT** use the pressure washer if there is damage to the inlet/outlet hose or the machine.

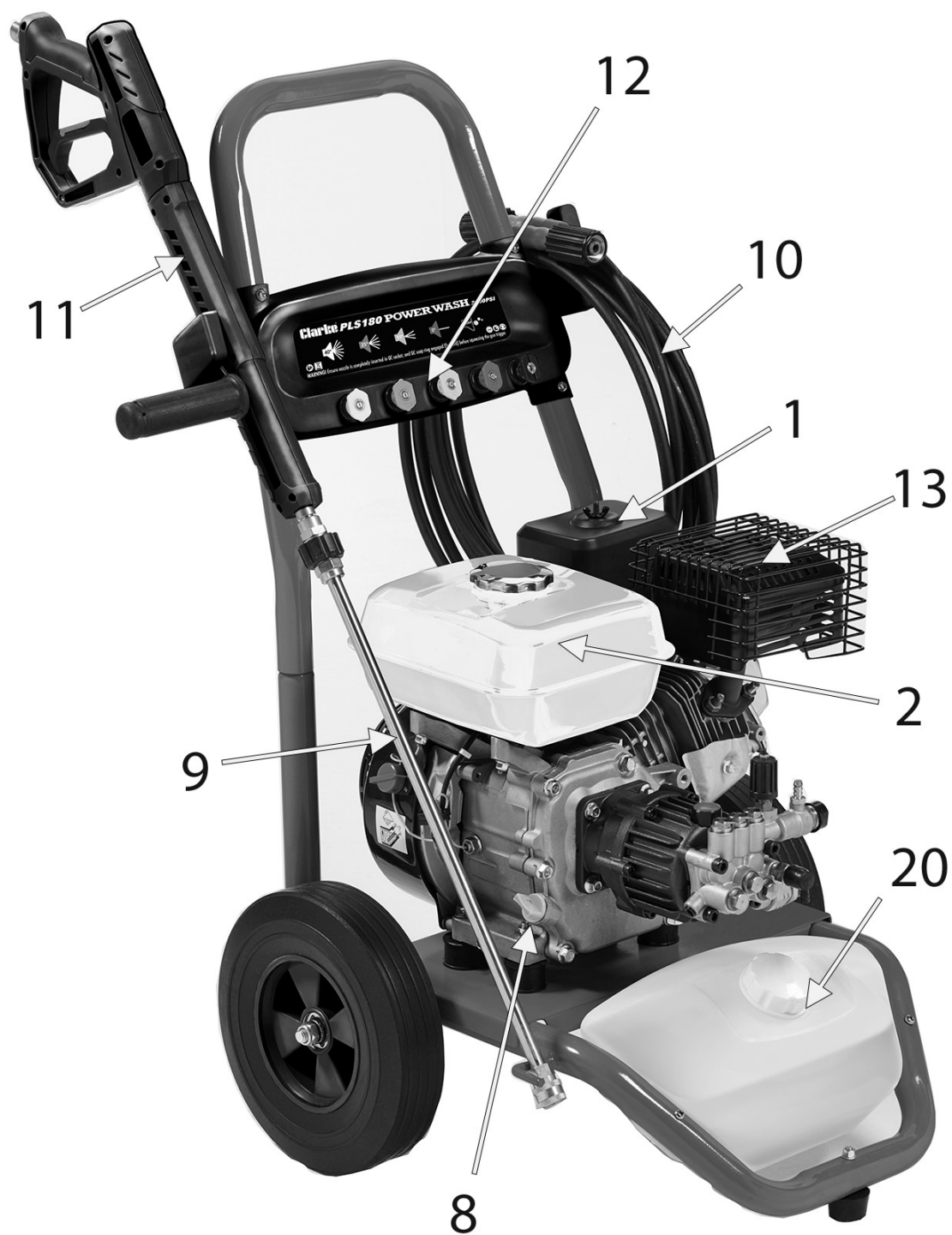
SAFETY SYMBOLS

	ALWAYS: Read this manual and make sure that all warnings and instructions are clear before you use this pressure washer.
	DANGER: Risk of fire or explosion. Stop the engine before you refuel the pressure washer. Keep flammable materials away from the work area. DO NOT spray flammable liquids.
	DANGER: Risk to breathing. Engine exhaust fumes can kill. For outdoor use only. Work in a well ventilated area.
	WARNING: Risk of injection or severe injury. DO NOT directly discharge stream at persons or animals. Keep clear of nozzle. This machine should only be used by qualified operators.
	WARNING: Risk of spray injury. Spray can propel objects. Always wear ANSI approved Z87.1 Safety Glasses.
	WARNING: Risk of Detergent burn. NEVER spray acids, corrosive or toxic Detergents. Use only cleaners formulated for pressure washers.
	WARNING: Risk of electrocution. Never direct the spray toward any electrical device or electrical outlet.
	WARNING: Risk of unsafe operation. Keep children and animals away from this equipment. Gun kicks back. Hold with both hands.
	WARNING: Risk of hot surfaces. Avoid contact with hot engine exhaust components. Don't allow hoses to contact the engine muffler during or after use.

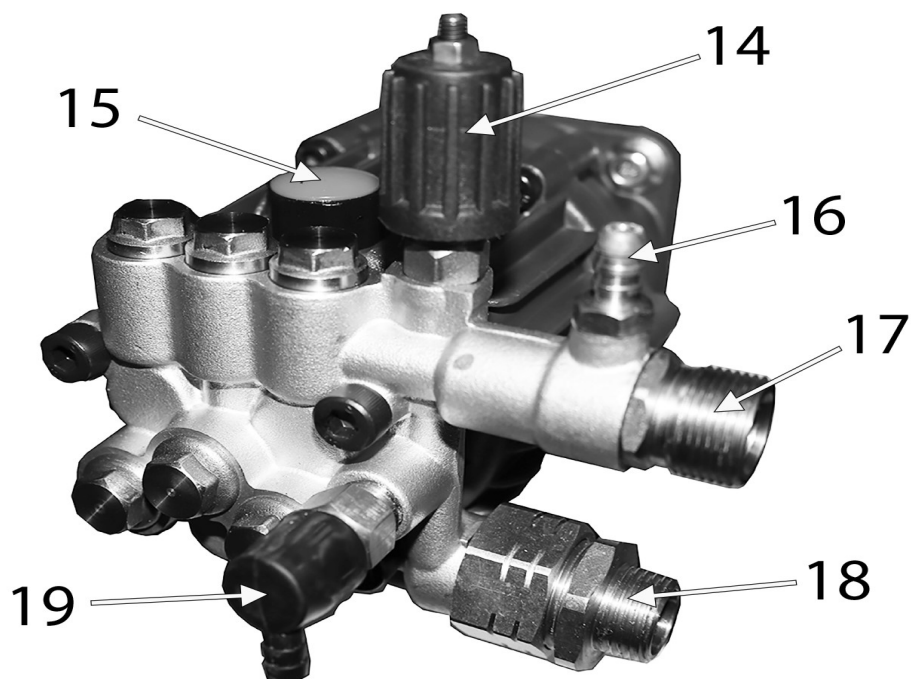
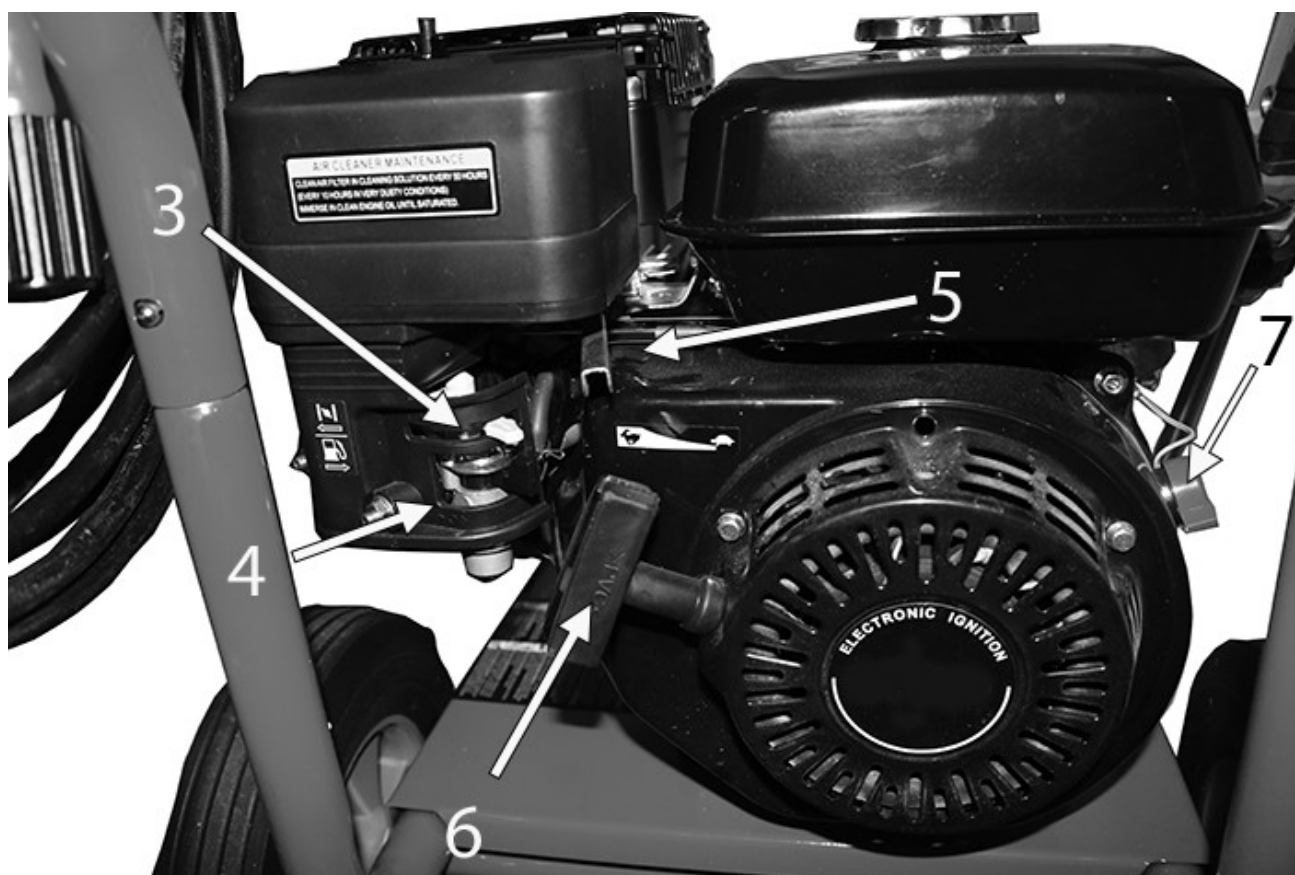
SPECIFICATIONS

Model	PLS180
Engine	
Engine Model	KB200
Power & RPM	5hp / 3.8kW / 3600rpm
Engine Type & Size	Petrol (unleaded), 196cc
Starting System	Pull / Recoil
Fuel Tank Capacity (L) & Fuel Consumption (L/Hr)	3.6 / 1.44
Oil Capacity (L) & Grade	0.6 / 10W40
Water supply	
Input Water Temperature	0°C - 30°C
Flow Rate (l/min) (Mains Supply/Barrel)	7.8 / 7.5
Water Pump	
Maximum Pressure	2596 Psi / 179 Bar
Working Pressure	2393 Psi / 165 Bar
Detergent Tank Capacity (L)	3
Dimensions & Environmental	
Dimensions (D x W x H)	730mm x 530mm x 900mm
Outlet Hose Length (metres)	8
Detergent Hose Length (metres)	1.5
Weight (kg)	35.3
Measured sound pressure level LWA dB	82.8
Guaranteed sound pressure level LWA dB	89
Uncertainty Factor LWA dB	3
Engine Emissions (CO/HC/Nox/HC+Nox/CO2)	289.55/5.53/2.75/8.28/693.68

OVERVIEW



OVERVIEW



OVERVIEW DESCRIPTIONS

NO	DESCRIPTION	NO	DESCRIPTION
1	Air Filter - Protects the engine by filtering dust and debris out of the intake air.	11	Spray Gun - Controls the application of water onto the cleaning surface with trigger. Includes safety latch.
2	Fuel Tank - Fill the tank with regular unleaded petrol. Always leave room for fuel expansion.	12	Spray Nozzles - 0/15/25/40 degree and detergent nozzle for various high pressure cleaning applications
3	Choke Lever - Prepares a cold engine for starting.	13	Engine Exhaust
4	Fuel Valve - Used to turn fuel on and off to engine.	14	Pressure Adjusting Knob - To raise and reduce the pressure by turning this knob.
5	Throttle Lever - Sets the engine in starting mode for recoil starter.	15	Shipping Plug - The pump is shipped with a shipping plug to prevent oil leaking during transportation. Replace with the attached pump breather plug/dipstick before using.
6	Recoil Starter - Use for starting the engine manually.	16	Detergent Injector - Used to syphon detergent or other pressure washer detergents into the low pressure stream.
7	Ignition Switch - Set this switch to 'ON' before using the recoil starter. Set switch to 'OFF' to switch off engine.	17	Water Outlet - To connect to the high pressure hose.
8	Oil Filler Cap - Fill the engine with oil here.	18	Water Inlet with Filter Screen - Connect garden hose here. Always have the filter screen present.
9	Gun Lance with Quick Connect - Attach the spray nozzles on to it.	19	Pump Head Built with Thermal Relief System.
10	High Pressure Hose - Connect one end to the water pump and the other end to the spray gun.	20	Detergent Tank - 3 Litre Capacity

ASSEMBLY

Your pressure washer requires some assembly before it is ready for use. You will require the following tools:

- Open Ended Spanner: 10mm
- Open Ended Spanner: 14mm
- Open Ended Spanner: 17mm

UNPACKING

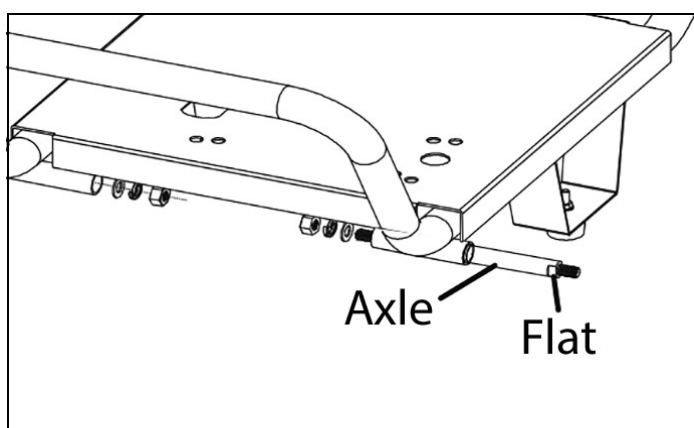


WARNING: PRESSURE WASHER IS HEAVY. DO NOT ATTEMPT TO LIFT AND REMOVE THE PRESSURE WASHER UNIT FROM THE CARTON WITHOUT ASSISTANCE FROM ANOTHER PERSON OR UNPACK AS INSTRUCTED BELOW.

1. Set the carton on a rigid, flat surface. Remove all loose parts and packing.
2. Leave pressure washer in the carton.
3. Using a box cutter, open the carton completely by cutting the four corners allowing the sides to lay flat.
4. Leave the pressure washer on the carton while you install the wheels and rubber feet.

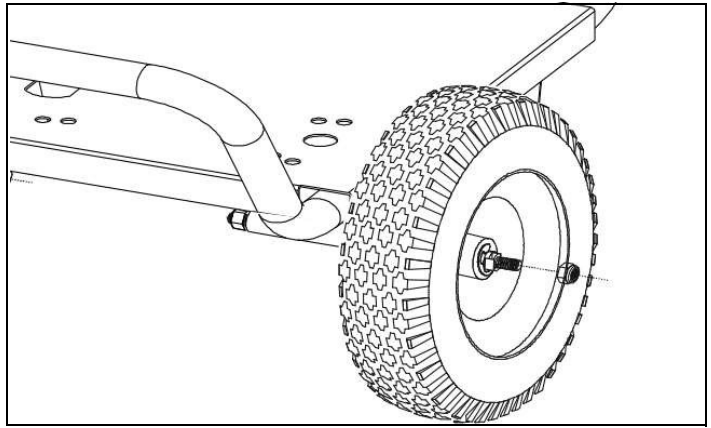
FITTING THE WHEELS

1. Fit the axles into the axle sockets as shown. Secure with the nuts and washers supplied,



2. Fit the wheels to the axles and secure with the nut and washer supplied.

NOTE: DO NOT over-tighten the nuts, as the wheels must be able to rotate freely.



FITTING THE RUBBER FOOT

1. Fit the rubber foot to the frame, in front of the detergent tank as shown.
 - Secure with the nut and spring washer supplied.



PREPARING THE PRESSURE PUMP



WARNING: FAILURE TO REMOVE THE SHIPPING PLUG AND REPLACE IT WITH THE DIPSTICK/OIL PLUG WILL DAMAGE THE PRESSURE PUMP. FAILURE TO ADD PUMP BREATHER PLUG WILL VOID THE WARRANTY.

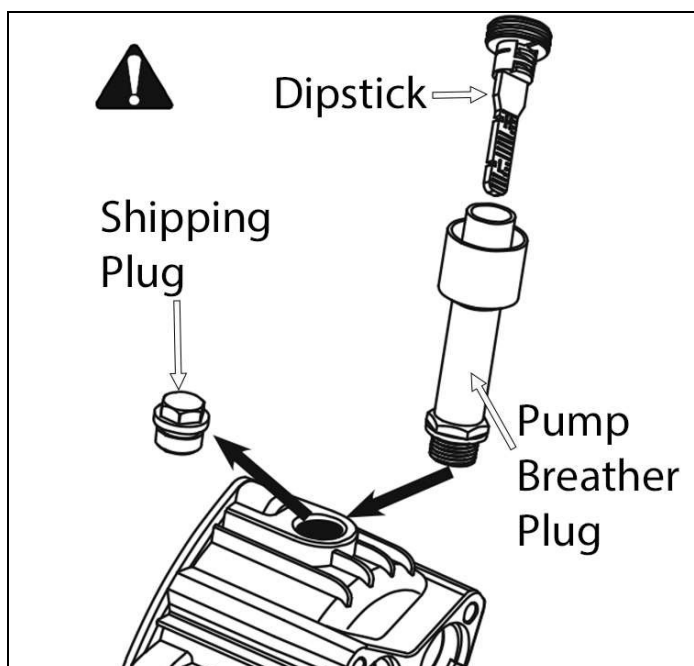
The pressure pump has a shipping plug inserted into the opening for the pump breather plug.

1. Using a 10mm open ended spanner or socket wrench, remove the shipping plug from the pressure pump.

NOTE: Save the shipping plug for future use.

2. Remove the pump breather plug with the dipstick from the parts bag.
3. Insert the breather plug into the oil filling hole and tighten it.

NOTE: Make sure the O-ring is present on the plug. Without the O-ring the oil will leak through the thread.

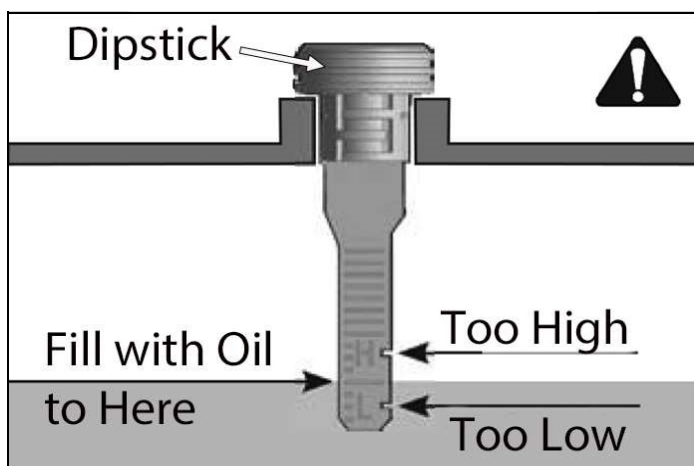


TO CHECK THE OIL LEVEL

1. Remove the dipstick from the breather plug, and remove the breather plug from the pump. Insert the dipstick and check the oil level, and add oil if the level is lower than recommended, and **DO NOT** over fill.

NOTE: Oil Type: SAE10W30

NOTE: Max. Quantity: 120ml



BEFORE USE



WARNING: TO CARRY OUT THIS CHECK, PLACE THE PRESSURE WASHER ON LEVEL GROUND WITH THE ENGINE SWITCHED OFF.

WARNING: TAKE CARE NOT TO TOUCH ANY HOT PARTS OF THE PRESSURE WASHER WHEN CHECKING THE OIL LEVELS.

IMPORTANT: The engine is supplied without any oil in it and must be filled to the correct level before use, see below.

ADD ENGINE OIL



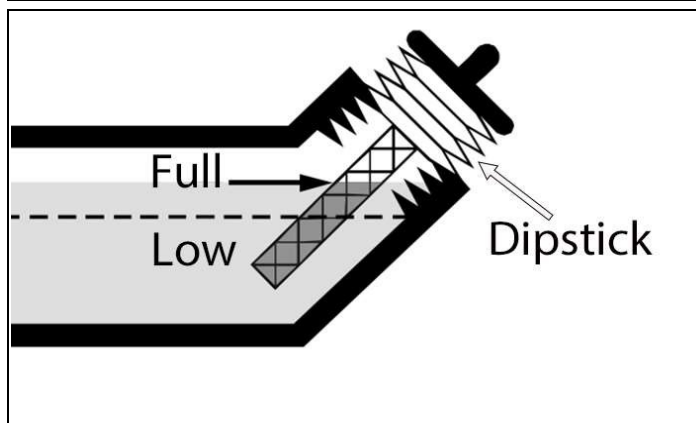
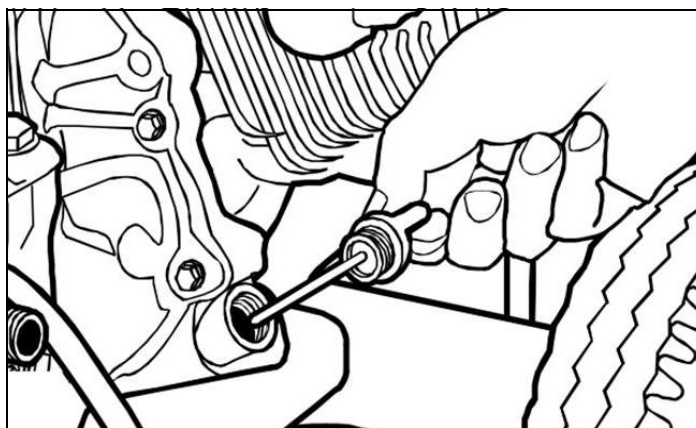
WARNING: RUNNING THE ENGINE WITH INSUFFICIENT OIL WILL CAUSE ENGINE DAMAGE.

1. Turn the oil filler cap/dipstick anti-clockwise and remove it from the oil filler tube.
2. Wipe the oil filler cap/dipstick with a clean cloth.
3. Insert the oil filler cap/dipstick back into the oil filler tube and then remove it again. Do not screw it in when doing this.
4. If the oil is at the low mark, fill the oil reservoir to the edge of the oil filler hole.

NOTE: Oil Type: SAE10W40

NOTE: Max. Quantity: 600ml

5. Replace the oil filler cap/dipstick.



ADD FUEL



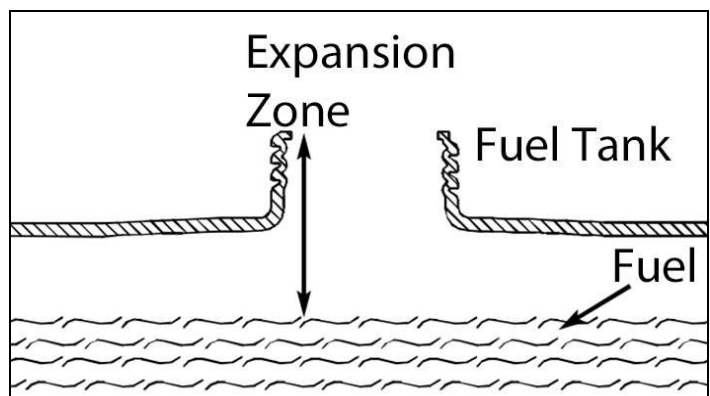
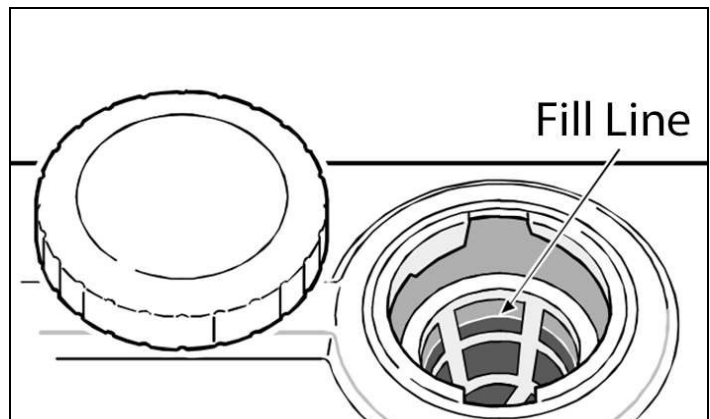
WARNING: ALWAYS REFUEL IN A WELL VENTILATED AREA AWAY FROM ANY SOURCES OF IGNITION AND HEAT.

WARNING: DO NOT SMOKE WHILE REFUELLING

WARNING: ALLOW THE UNIT TO COOL DOWN BEFORE REFUELLING.

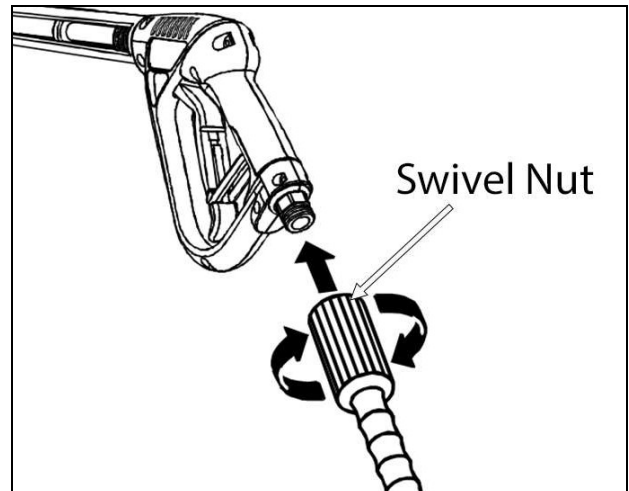
WARNING: DO NOT LEAVE FUEL WITHIN THE REACH OF CHILDREN.

- The engine is certified to run on standard unleaded petrol (E10).
 - **DO NOT** use unapproved petrol such as E85 (85% ethanol/15% petrol).
 - **DO NOT** mix oil with the petrol.
 - **DO NOT** modify the engine to run on alternative fuels
 - Mix in a fuel stabilizer, if required, when adding the fuel to the pressure washer to protect the fuel system from forming gum deposits (see 'Long Term Storage' on page 27).
 - If the engine doesn't run correctly after fueling, switch fuel brands.
1. Place the pressure washer on a flat level surface.
 2. Turn the pressure washer 'OFF' and let it cool for at least two minutes before removing the fuel cap.
 3. Clean the area around the fuel cap and loosen the fuel cap slowly to release the pressure.
 4. Slowly add unleaded petrol to the fuel tank. Use extreme caution not to over fill the tank above the fill line. This allows appropriate space for fuel to expand.
 5. Fit the fuel cap and allow any spilled fuel to evaporate or wipe clean before starting the engine.



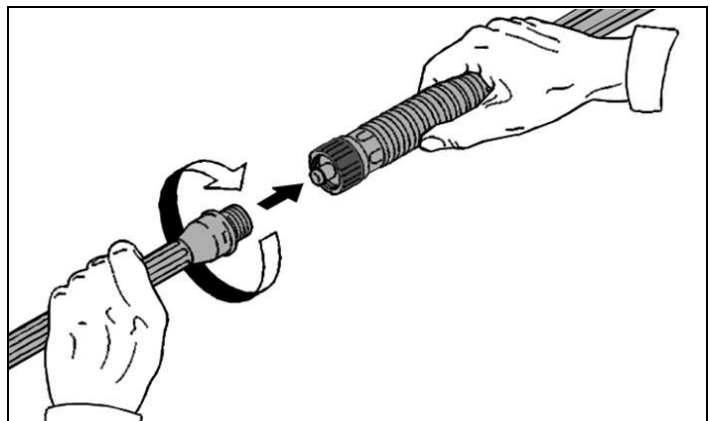
ATTACHING HIGH PRESSURE HOSE TO SPRAY GUN

1. Insert the hose fitting into the gun fitting port, as shown.
2. Turn the swivel nut clockwise tightly on the gun male fitting.



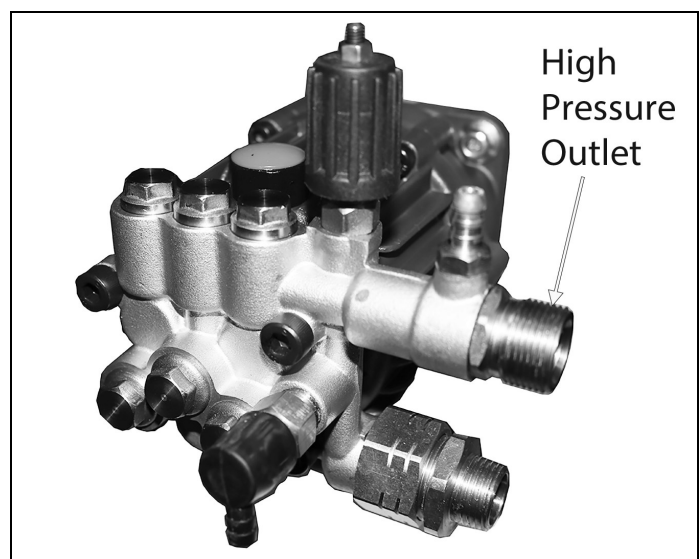
CONNECTING THE SPRAY LANCE TO SPRAY GUN

1. Push the spray lance onto the spray gun and twist, as shown.



CONNECT HOSE AND WATER SUPPLY TO PUMP

1. Attach the other end of the high pressure hose to the high pressure outlet on the pump. Pull on the hose to be sure of a tight and secure connection.
2. Before connecting the garden hose to the pressure washer, run water through it for 30 seconds to clean out any debris.

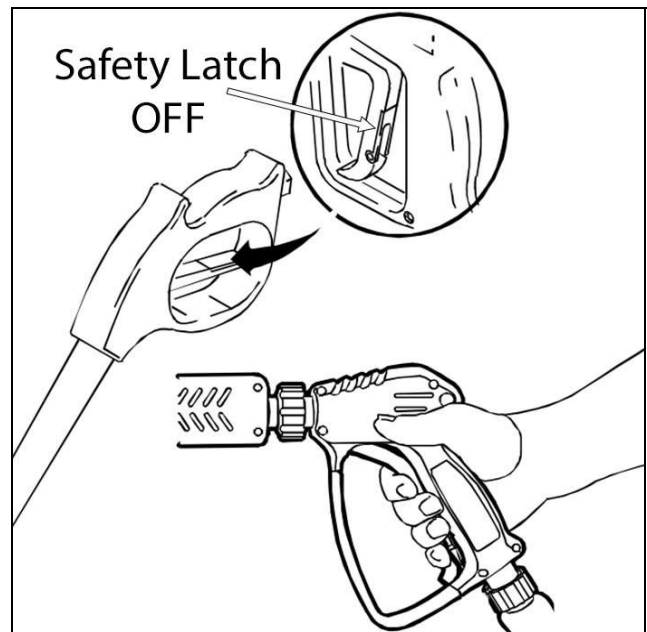
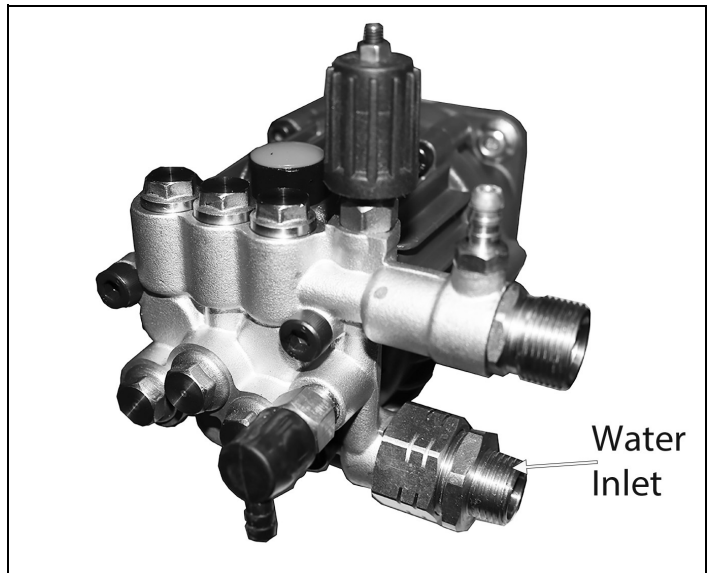


3. Before connecting the garden hose to the water inlet, inspect the inlet screen. Clean the screen if it contains any debris or replace if damaged.

NOTE: DO NOT run the pressure washer if the inlet screen is damaged or missing.

NOTE: DO NOT syphon standing water for the water supply. Use only cold water (less than 30°C).

4. Connect the garden hose (**DO NOT** exceed 50ft (15m) in length and diameter no less than 13mm) to the water inlet. Tighten by hand.
5. Turn on the water supply, set the safety latch to the 'OFF' position (lift latch up into the back of the handle) and squeeze the gun trigger to purge the pump system of air and impurities.



PRESSURE WASHER LOCATION

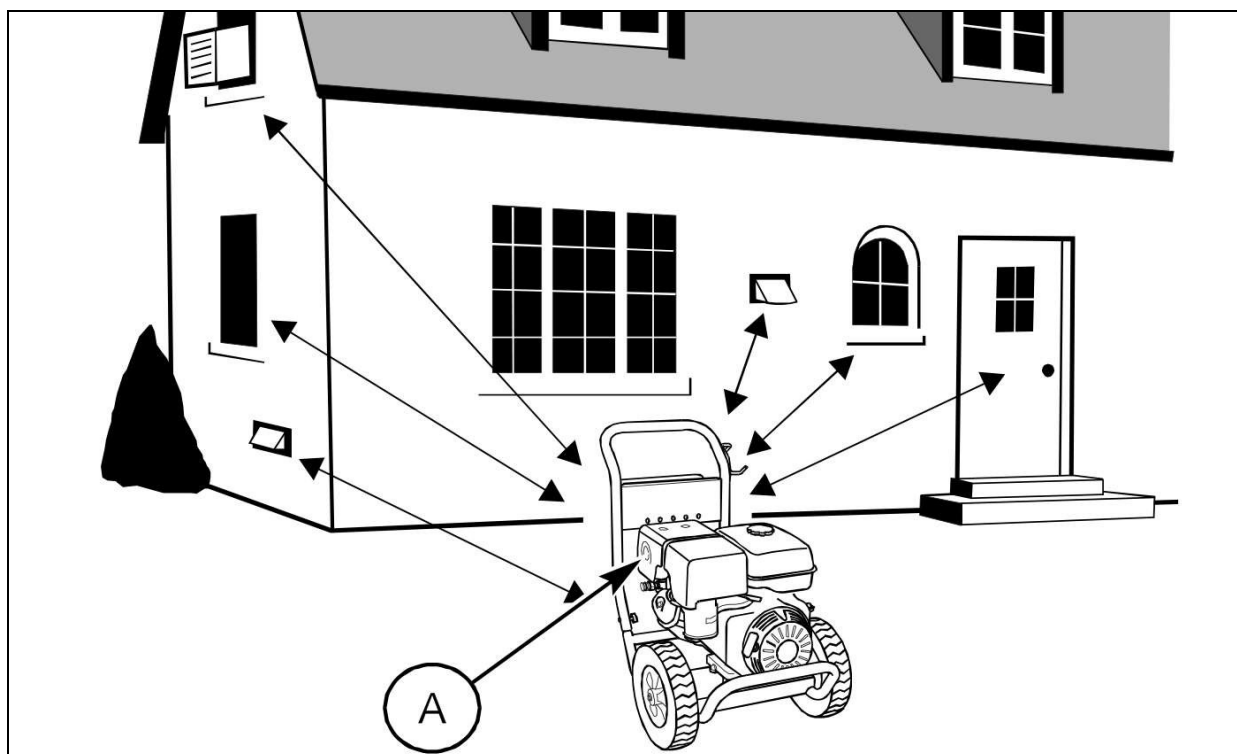


WARNING: EXHAUST HEAT/GASES CAN IGNITE COMBUSTIBLES, STRUCTURES OR DAMAGE THE FUEL TANK, CAUSING A FIRE. KEEP AT LEAST 5FT (1.5M) CLEARANCE ON ALL SIDES OF THE PRESSURE WASHER INCLUDING OVERHEAD.

Place the pressure washer in a well ventilated area. This will allow for removal of deadly exhaust gas. **DO NOT** place the pressure washer where gas could accumulate and enter inside or be drawn into a potentially occupied building. Ensure exhaust gas (A) is kept away from any windows, doors, ventilation intakes, or other openings that can allow exhaust gas to collect in a confined area. Prevailing winds and air currents should be taken into account.



WARNING: OPERATE THE PRESSURE WASHER ONLY OUTDOORS. DO NOT START OR RUN THE ENGINE INDOORS OR IN ENCLOSED AREAS, EVEN IF WINDOWS AND DOORS ARE OPEN.



STARTING & STOPPING YOUR PRESSURE WASHER

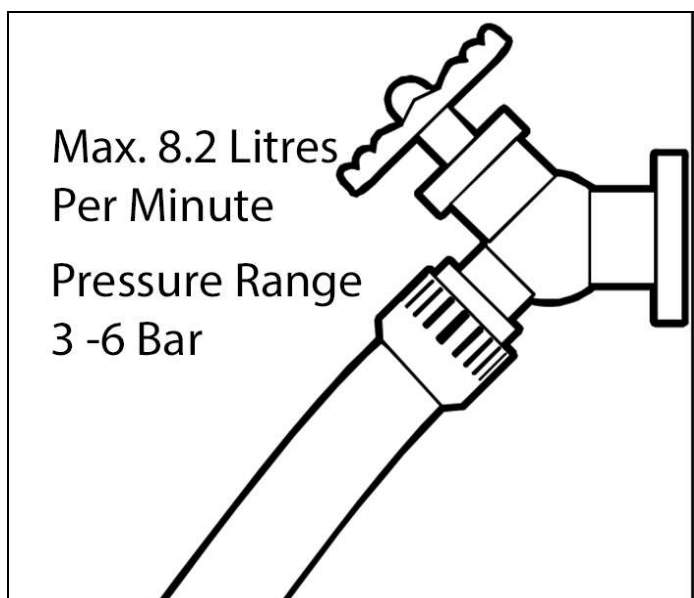


WARNING: DO NOT RUN THE PUMP WITHOUT THE WATER SUPPLY CONNECTED AND TURNED ON.

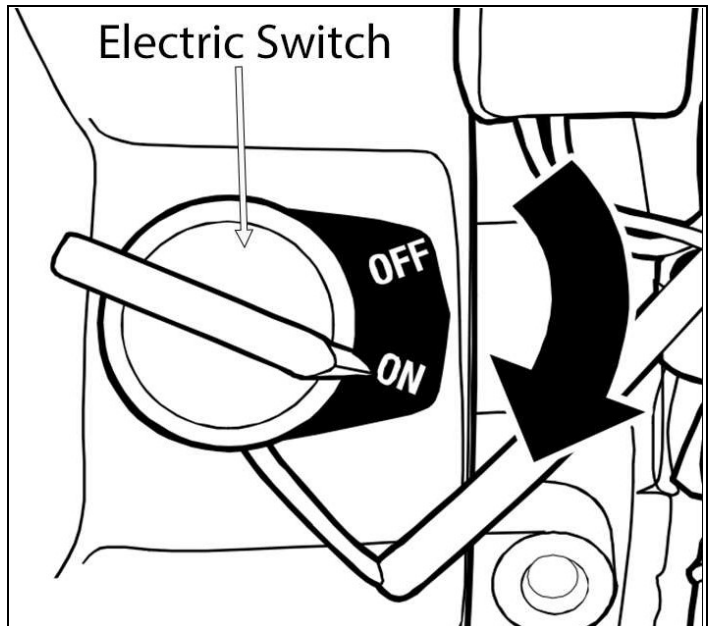
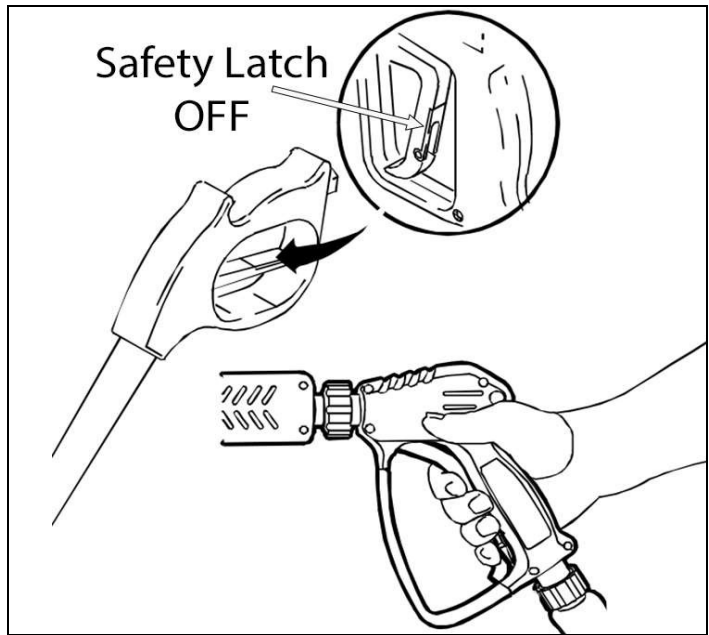
HOW TO START YOUR PRESSURE WASHER

To start your pressure washer for the first time, follow these instructions step by step. This starting information also applies if you have let the pressure washer sit idle for at least a day.

1. Place the pressure washer near an outside water source capable of supplying water at a maximum flow rate of 8.2 Litre per minute and pressure range of 3-6 bar (43-87psi).
2. Check that the high pressure hose is tightly connected to the spray gun and pump.
3. Make sure the washer is on a level surface.
4. Uncoil the high pressure hose completely before using the pressure washer.

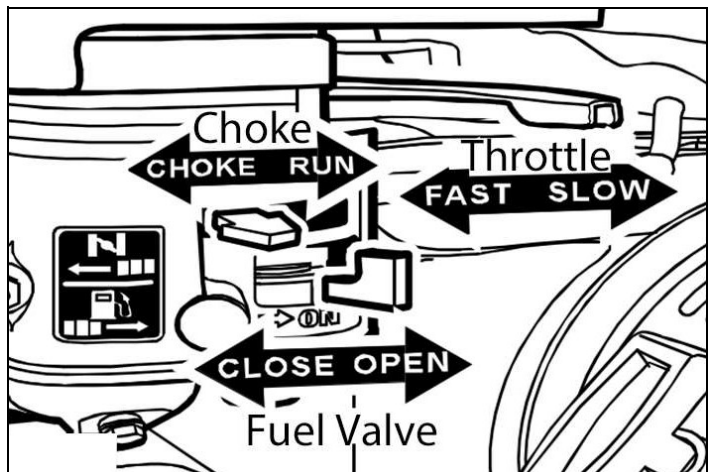


5. Connect the garden hose to the water inlet on the pressure washer.
6. Turn 'ON' the water supply, take the safety latch 'OFF', point the gun in a safe direction and squeeze the trigger to purge the pump of air and impurities.
7. Attach the lance to the spray gun. Tighten by hand.
8. Choose the nozzle you want to use, pull back on the collar of the quick release connector, insert the nozzle and release the connector. Tug on the nozzle to make sure it is securely in place.
9. Rotate the electric switch to the 'ON' position.



10. Move the throttle control lever to the 'FAST' position, shown on the engine as a rabbit.
11. Move the choke lever to the 'CHOKE' position and the fuel valve to the 'OPEN'.

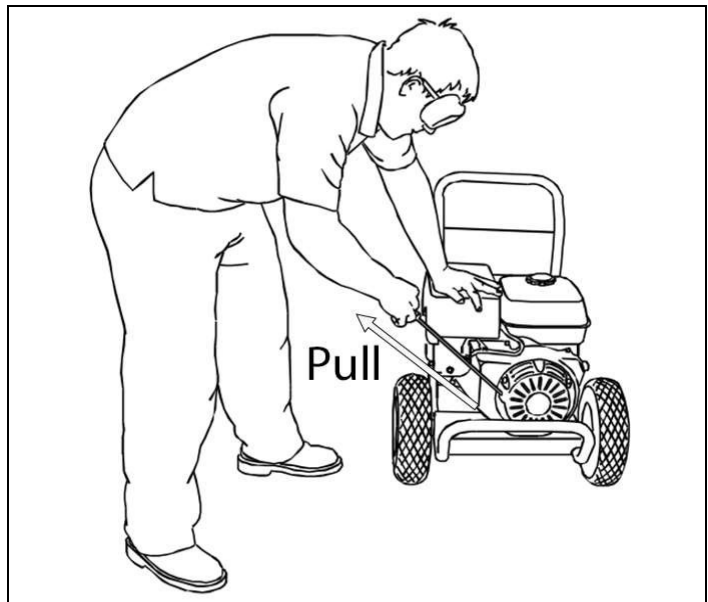
NOTE: For a warm engine, be sure the choke lever is in the 'RUN' position.



12. When starting the engine, position yourself as shown and grasp the starter grip handle and pull slowly until you feel some resistance. Then pull rapidly to start the engine.

13. Return the starter grip handle slowly. **DO NOT** let the rope snap back against the starter.

14. When the engine starts, slowly move the choke lever to the 'RUN' position, as the engine warms. If the engine falters, move the choke lever to the 'CHOKE' position, then back to the 'RUN' position.



15. After each starting attempt where the engine fails to run, always point the gun in a safe direction and squeeze the trigger to release any high pressure build up.

16. If the engine fails to start after six pulls, move the choke lever to the 'RUN' position and repeat steps 12 to 15.

NOTE: Allow the engine to run at no load, low pressure for five minutes after each start up so the engine can stabilize.

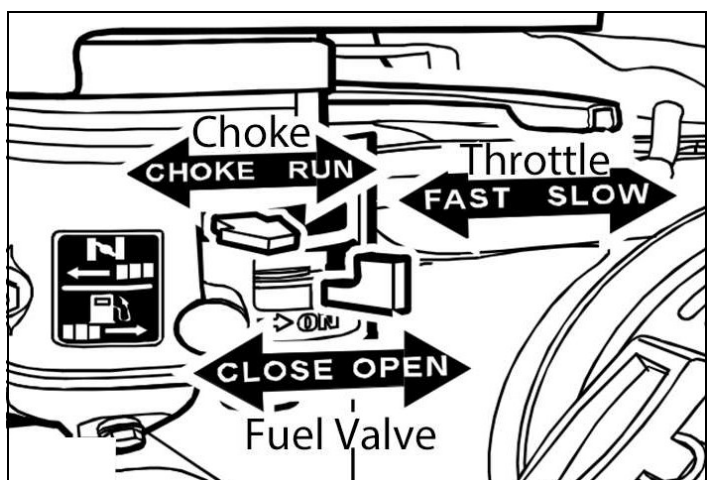
HOW TO STOP YOUR PRESSURE WASHER

1. Release the spray gun trigger and let the engine idle for two minutes.

2. Move the throttle lever on the engine to the 'SLOW' position.

3. Move the fuel valve lever on the engine to the 'CLOSE' position.

4. ALWAYS point the spray gun in a safe direction, press the red button and squeeze the trigger to release retained high water pressure.



NOTE: The spray gun traps high water pressure, even when the engine has stopped and the water supply has been disconnected.

NOTE: For an emergency switch off, rotate the electric switch to the 'OFF' position.

APPLYING DETERGENTS

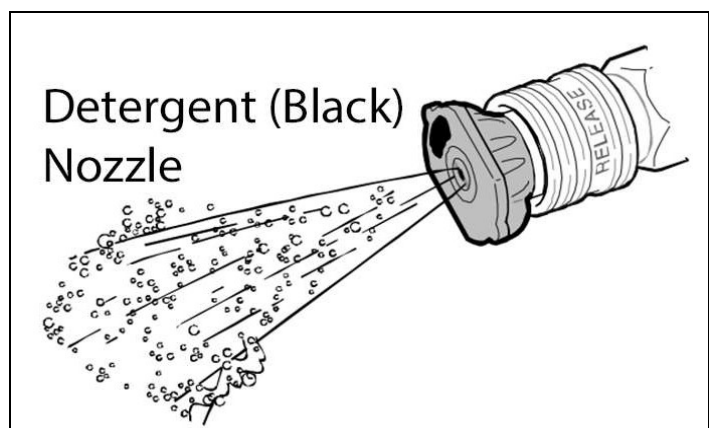
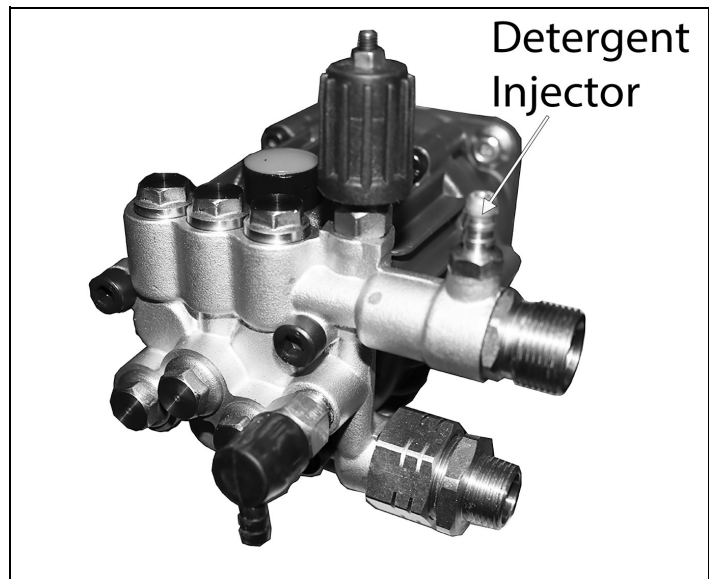
NOTE: Use only detergents designed for pressure washers; household detergents, acids, alkaline, bleaches, solvents, flammable material or industrial grade solutions can damage the pump. Many detergents may require mixing prior to use. Prepare cleaning solutions as instructed on the solution bottle.

TO APPLY DETERGENTS

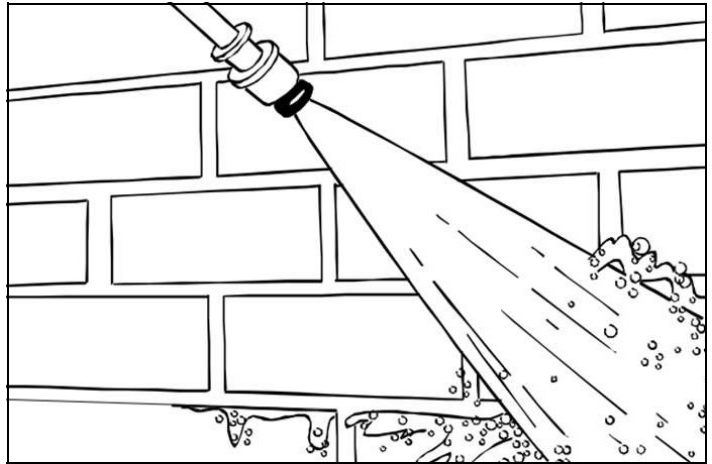
1. Press the detergent hose onto the barbed detergent injector fitting located on top of the high pressure hose connection (Water Outlet).
2. Remove the cap from the detergent tank located at the front of the washer.
3. Fill the tank with detergent of choice, making sure you follow the detergent instructions.
4. Place the other end of the detergent hose, with filter, into the detergent tank holding the detergent or cleaning solution, making sure the filter is fully submerged.
5. Install the detergent (black) nozzle on the end of the spray gun.

NOTE: Detergents should not be applied with any of the high pressure nozzle tips (white, green, yellow or red).

6. Make sure the garden hose is connected to the water inlet. Check that the high pressure hose is connected to the spray gun and pump. Turn on the water supply and start the engine.



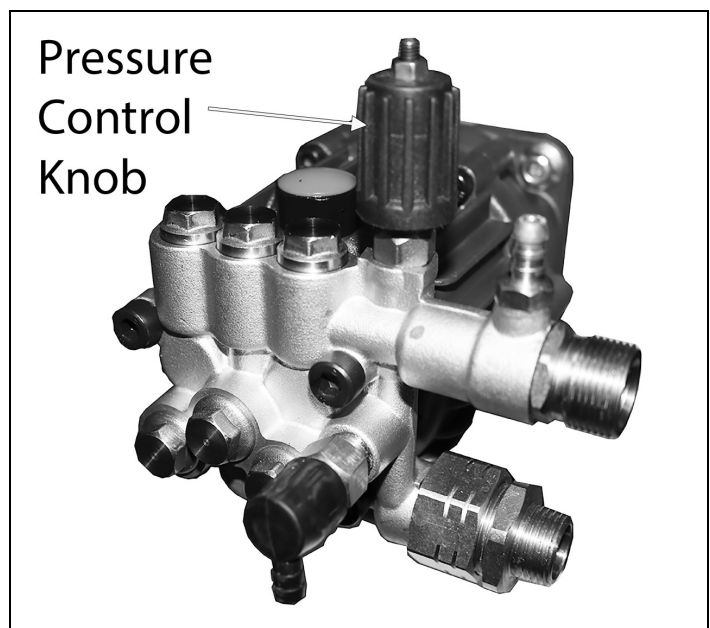
7. Apply the detergent to a dry surface, starting at lower portions of the area to be cleaned and work upwards using long even overlapping strokes.
8. Allow the detergent to soak in for 3-5 minutes before washing and rinsing. Reapply as needed to prevent surface from drying.
DO NOT allow detergent to dry on to prevent streaking.



NOTE: You must flush the detergent syphoning system after each use by placing the filter and detergent hose in a bucket of clean water, then run the pressure washer at low pressure for 1-2 minutes.

RINSING

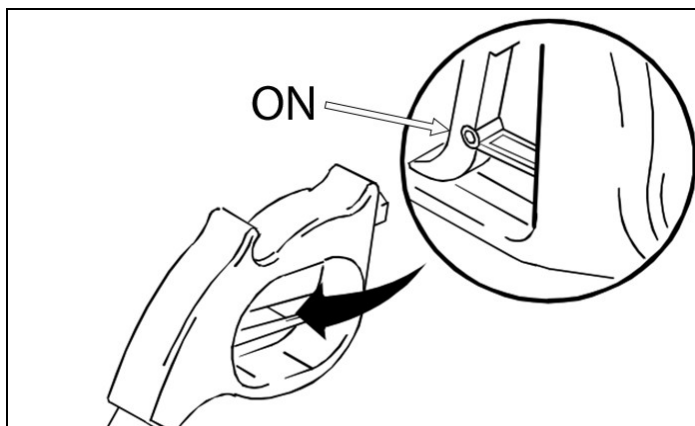
1. Disconnect the detergent hose from the inlet and remove from the detergent tank. Replace the tank cap.
2. Remove the black nozzle tip from the spray gun.
3. Select and install the desired high pressure nozzle tip.
4. Decrease the spray pressure by turning the pressure control knob counterclockwise, or clockwise for increased pressure.
5. Use lower pressure to wash items such as a car or boat. Use the higher pressure to strip paint and degrease driveways.
6. Apply a high pressure spray to a small area and then check the surface for any damage. If no damage is found, you can assume it is OK to continue rinsing.
7. Start at the top of the area to be rinsed, working down with the same overlapping strokes as you used for cleaning.



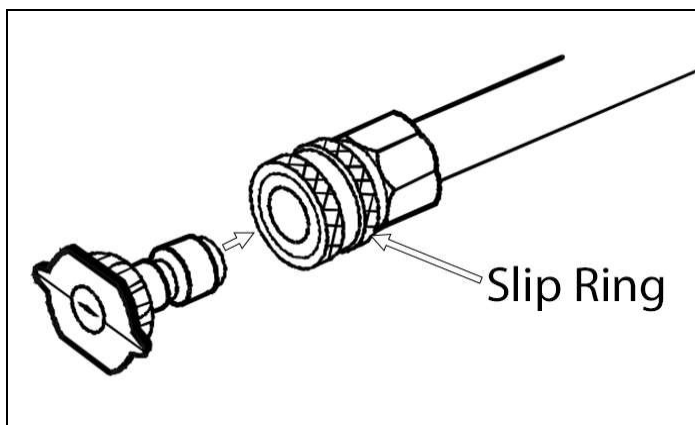
USING THE NOZZLE TIPS

ATTACHING/CHANGING PRESSURE NOZZLES TO SPRAY LANCE

1. **ALWAYS** make sure the safety latch on the gun trigger is in the 'ON' position before changing a nozzle.



2. Pull back the slip ring on the female quick release fitting of the spray lance.
3. Insert the male quick release fitting on the pressure nozzle into the female quick release on the spray lance.
4. Release the slip ring and twist. Listen for a click to ensure both quick release sections are coupled.



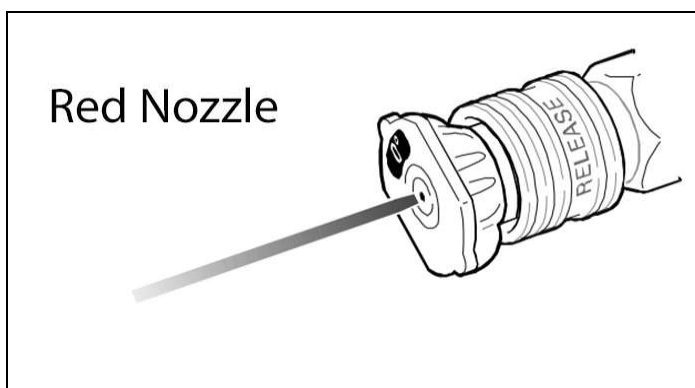
5. To remove a nozzle, repeat steps 1 - 4 in reverse order.

NOZZLE TYPES

The pressure washer comes with five spray nozzles. Each nozzle is colour coded and delivers a specific spray pattern and pressure for a particular cleaning job. The size of the nozzle determines the size of the fan spray and the pressure out of the nozzle.

0° NOZZLE - RED

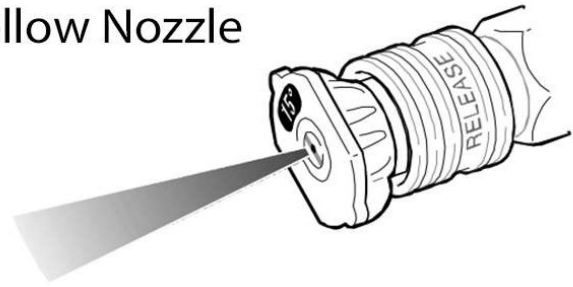
This nozzle delivers a pinpoint stream of pressurised water and is extremely powerful. It covers only a small area of cleaning. This nozzle should only be directed at surfaces that can withstand high pressure such as metal or concrete. **DO NOT** use this nozzle to clean wood.



15° NOZZLE - YELLOW

This nozzle delivers a powerful 15° spray pattern for intense cleaning of small areas. This nozzle should only be used on areas and materials that can withstand high pressure.

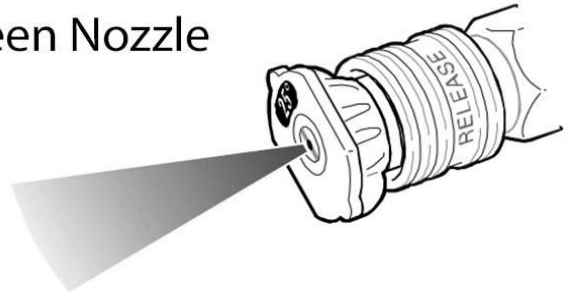
Yellow Nozzle



25° NOZZLE - GREEN

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

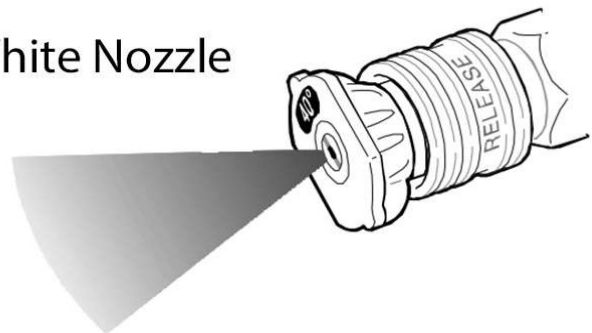
Green Nozzle



40° NOZZLE - WHITE

This nozzle delivers a 40° spray pattern and a less powerful stream of water. This nozzle can cover a wide area and should be used for most general cleaning jobs.

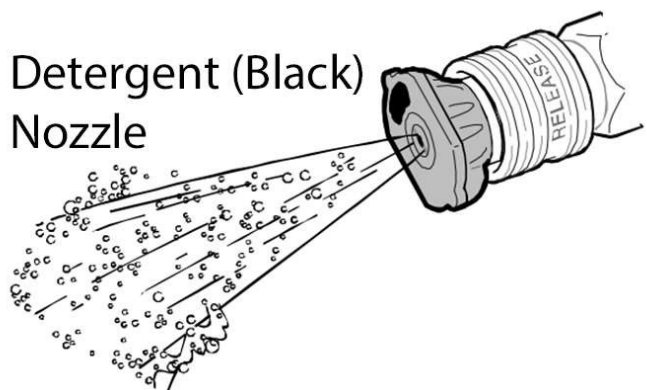
White Nozzle



DETERGENT NOZZLE - BLACK

This nozzle is used to apply special detergents and cleaning solutions. This nozzle produces the weakest pressure stream of the five nozzles.

Detergent (Black)
Nozzle



MAINTENANCE

GENERAL RECOMMENDATIONS

Regular maintenance will improve the performance and extend the life of the pressure washer.

The pressure washer's warranty does not cover items that have been subjected to operator abuse or negligence. To receive full value from the warranty, the operator must maintain the pressure washer as instructed in this manual and in the engine manual, including correct storage as detailed in the storage section of this manual.

NOTE: Should you have any questions about replacing components on the pressure washer, please contact the CLARKE service department.

- Some adjustments will need to be made periodically to properly maintain your pressure washer. Check the spray gun and extension lance assembly for wear.
- All maintenance in this manual and the engine operator's manual should be made at least once each season.
- Once a year you should clean or replace the spark plug and clean or replace the air filter. A new spark plug and clean air filter will assure proper fuel-air mixture and help your engine run better and last longer. Please refer to the engine operators manual for more details.

PRESSURE WASHER MAINTENANCE

CLEAN DEBRIS

Daily or before use, clean accumulated debris from the cleaning system. Keep the linkage, spring and controls clean. Keep the area around and behind the muffler free from any combustible debris. Inspect cooling air slots and openings on the pressure washer. These openings must be kept clean and unobstructed.

- Use a damp cloth to wipe exterior surfaces clean.
- Use a soft bristle brush to loosen caked on dirt, oil, etc.
- Use a vacuum cleaner to pick up loose dirt and debris.
- **NEVER** use the pressure washer to clean itself.

CHECK AND CLEAN THE INLET SCREEN

Examine the screen on the pump water inlet (see item 18 on pages 6/7). Clean it if the screen is clogged or replace it if the screen is damaged.

CHECK HIGH PRESSURE HOSE

The high pressure hose can develop leaks from wear, kinking or abuse. Inspect the hose each time before using it. Check for cuts, leaks, abrasions or bulging of the

cover, damage or movement of couplings. If any of these conditions exist, replace the hose immediately.



WARNING: NEVER REPAIR THE HIGH PRESSURE HOSE, ALWAYS REPLACE IT. REPLACEMENT HOSE RATING MUST EXCEED THE MAXIMUM PRESSURE RATING OF THE WASHER.

CHECK DETERGENT SYPHONING TUBE

Examine the filter on the detergent tube and clean if clogged. The tube should fit tightly on the ridged fitting (see item 16 on pages 6/7). Examine the tube for leaks or tears. Replace the filter or tube if either is damaged.

CHECK GUN

Examine the hose connection to the spray gun and make sure it is secure, and make sure the safety latch is present and working correctly. Replace the spray gun immediately if the safety latch is damaged or not working.

CHECK SPRAY LANCE

Occasionally, the spray lance can become clogged with foreign materials such as dirt. When this happens, excessive pressure can develop. Whenever the pressure nozzle becomes partially clogged the pump pressure will pulsate. If this happens, it should be immediately cleaned.

NOZZLE MAINTENANCE

A pulsing sensation felt while squeezing the spray gun trigger may be caused by excessive pump pressure. The principal cause of excessive pump pressure is a spray tip clogged or restricted with foreign materials, such as dirt, etc. To correct the problem, immediately clean the spray tip following these instructions.

1. Shut off the engine and turn off the water supply.
2. **ALWAYS** point the spray gun in a safe direction; squeeze the trigger to release retained high water pressure.
3. Remove the spray nozzle from the end of the nozzle extension (see page 22).
4. Use the nozzle pin to free any foreign material clogging or restricting the spray tip.
5. Remove the lance from the spray gun.
6. Using a garden hose, remove additional debris by back flushing water through the lance.
7. Reinstall the nozzle onto the lance.
8. Reconnect the lance top the spray gun.
9. Make sure the garden hose is connected to the water inlet.
10. Check that the high pressure hose is connected to the spray gun and pump.

11. Turn on water supply.
12. Start the engine.
13. Test pressure washer by operating with each quick connect spray nozzle.

PUMP OIL MAINTENANCE

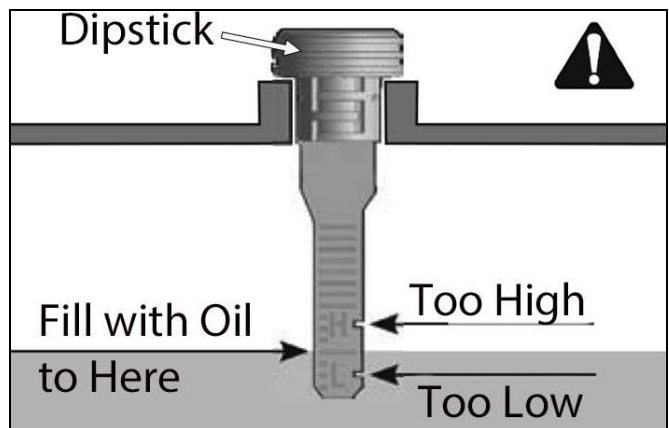
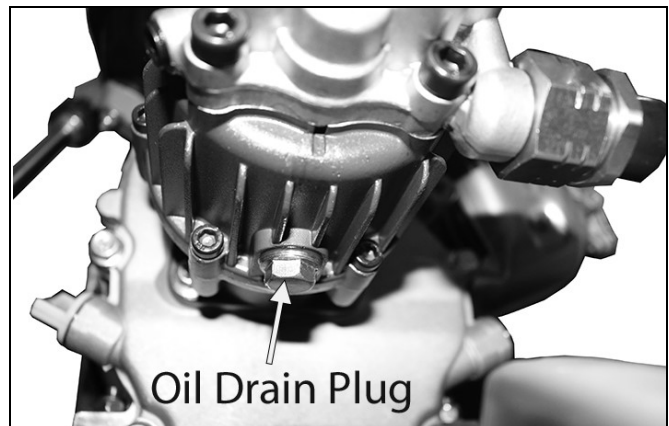
CHANGING PUMP OIL

Change the pump oil after the first 25 hours of operation and then every 50 hours or 3 months, whichever occurs first.

NOTE: When changing the pump oil, use only high quality SAE10W30 oil. Use no special additives.

CHANGING PUMP OIL AS FOLLOWS

1. Clean area around the oil drain plug at the bottom of the pump.
2. Remove oil drain plug. Drain oil completely into an approved container.
3. When oil has completely drained, reinstall the oil drain plug and tighten firmly.
4. Clean the area around the pump oil breather plug/dipstick. Remove the dipstick and fill the pump with the recommended oil.
5. Reinstall the pump oil dipstick.
6. Wipe up any spilled oil.



PUMP OIL CAPACITY AND TYPE

1. The oil capacity is 150ml
2. Below 40°F (4°C) the use of SAE30 will result in difficult starting. Above 80°F (27°C) the use of 10W30 may cause increased oil consumption. Check oil level more frequently.

ENGINE MAINTENANCE

Consult the engine operator manual for more information.

STORAGE

LONG TERM STORAGE

Petrol fuel can become stale when stored over 30 days. Stale fuel causes acid and gum deposits to form in the fuel system or crucial carburetor parts. To keep fuel fresh, add a fuel stabilizer liquid additive to the fuel. The fuel stabilizer is available at most auto part stores.

Draining the petrol is unnecessary if the fuel stabilizer is used according to the instructions that come with it.

Run the engine for a minimum of two minutes after the stabilizer has been added, to allow it to circulate throughout the engine. The engine and fuel can be stored up to 24 months.

TO PROTECT AGAINST RUST FORMATION DURING STORAGE

OIL THE CYLINDER BORE

1. Remove the spark plug and pour approximately 1/2oz (15ml) of clean engine oil into the cylinder.
2. Reinstall the spark plug and pull the starter handle slowly to distribute the oil. **DO NOT** start the engine at this time.
3. Slowly pull the recoil starter 2 or 3 times to distribute and coat the cylinder bore with oil.

STORAGE OF PRESSURE PUMP

1. Drain all the water from the high pressure hose, coil it and store it in the cradle of the pressure washer handle.
2. Drain all the water from the spray gun and lance by holding the spray gun in a vertical position with the nozzle pointed downwards. Squeeze the trigger to remove fluids from the spray gun and lance. Store the gun and lance in the cradle on the side of the washer.
3. Store the detergent hose, high pressure hose and spray gun so they are protected from damage, such as being run over.

OTHER STORAGE TIPS

1. **DO NOT** store petrol from one season to another unless its been treated with a fuel stabilizer.
2. Replace fuel container, if metal, and it begins to rust. Rust, dirt and debris can contaminate the fuel supply and components resulting in poor performance and/or internal damage to the engine.

3. Cover the pressure washer with a suitable cover that does not retain moisture such as a plastic or plastic coated tarpaulin.
4. Let the pressure washer cool before covering it.
5. Store the pressure washer in a clean and dry area.
6. **DO NOT** let the pressure washer freeze.

RECOMMENDATION

It is recommended that you follow these steps to protect the internal seals of the pressure washer when storing the unit for more than 30 days and/or when freezing temperatures are expected.

1. Obtain a funnel, 6oz (175ml) of Recreational Vehicle (RV) antifreeze (ethanol and propylene glycol) and approximately 36 inches of garden hose with a male hose connector on one end.



WARNING: USE ONLY RV ANTIFREEZE (ETHANOL AND PROPYLENE GLYCOL). ANY OTHER TYPE OF ANTIFREEZE IS CORROSIVE AND CAN DAMAGE THE PRESSURE PUMP

2. Disconnect the spark plug. Ensure the cap cannot touch any metal on the pressure washer.
3. Connect the 36 inch length of garden hose to the water inlet of the pressure pump and place the funnel at the other end.
4. Add the RV antifreeze to the funnel and hose.
5. Pull the engine starter handle slowly several times until the antifreeze comes out of the pressure hose connection of the pump.
6. Remove the hose from the water inlet of the pump.
7. Reconnect the spark plug.

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Engine will not start; or starts and runs rough	Rocker switch set to 'OFF' position	Set switch to 'ON' position
	Fuel valve is in the 'OFF' position	Turn fuel valve to 'ON' position
	Dirty air filter	Clean or replace air filter
	Out of fuel	Fill fuel tank
	Stale fuel	Drain fuel tank and carburetor; fill with fresh fuel
	Spark plug wire not connected to spark plug	Check and/or connect wire to spark plug
	Bad spark plug	Replace spark plug
	Water in fuel	Drain fuel tank and carburetor; fill with fresh fuel
	Flooded carburetor	Wait 5 minutes and re-crank engine
	Excessively rich fuel/air mixture	Contact the CLARKE service department
	Intake valve stuck open or closed	Contact the CLARKE service department
	Engine has lost compression	Contact the CLARKE service department
	Low engine oil	Add oil
	Wrong fuel	Use recommended fuel
	Engine is too hot	Allow engine to cool
	Choke is in wrong position	Check choke position
	Pressure build up after 2 pulls of recoil starter or after initial use	Squeeze gun trigger to relieve pressure

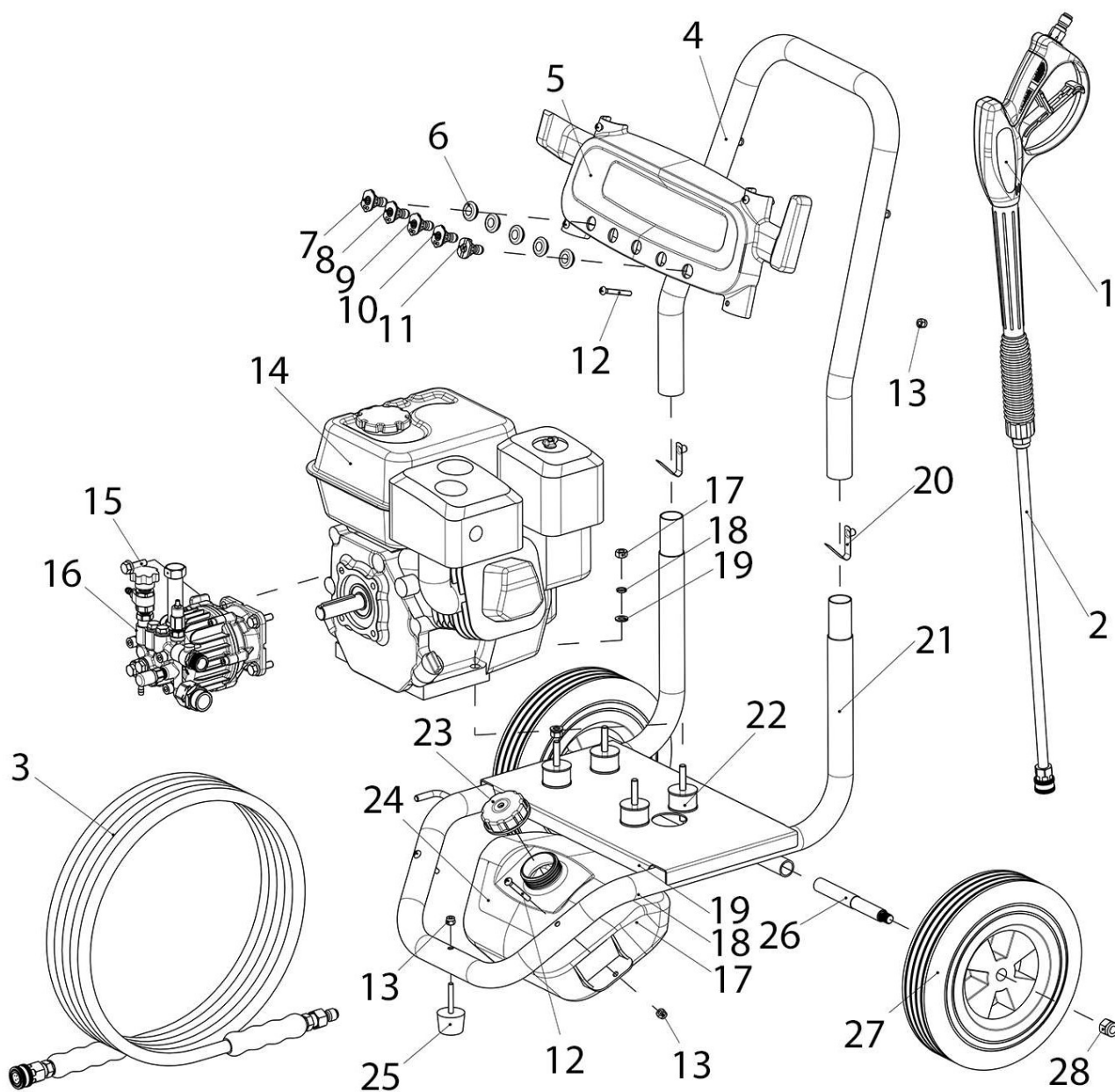
PROBLEM	CAUSE	SOLUTION
Engine shuts down when running	Out of fuel	Fill fuel tank
	Low engine oil	Add oil
Engine hunts or falters	Carburetor is running too rich or too lean	Contact the CLARKE service department
Engine lacks pressure	Cylinder pressure is low	Contact the CLARKE service department
	Dirty air filter	Clean or replace air filter
No pressure or low pressure	Spray lance not set to high pressure	See 'Using The Nozzle Tips' section on page 22/23
	Low water supply	Water supply should be a maximum of 8.2 l/min @ 3-6 bar pressure.
	Hose fitting leaks during high pressure	Tighten hose fittings. Use thread sealant tape if necessary
	Nozzle obstructed	See 'Nozzle Maintenance' section on page 25
	Water filter screen obstructed	Remove and clean filter
	Defective thermal relief valve	Contact the CLARKE service department
	Air in hose	Stop engine and water source. Disconnect water source from pump inlet and turn water source to 'ON' to remove all air from hose. When steady stream of water is present, turn water source to 'OFF'. Reconnect water source to pump inlet and turn on water source. Squeeze trigger to remove remaining air
	Choke lever in choke position	Move choke to 'NO CHOKE' position
	Throttle control lever is hot to touch in fast position	Move throttle control lever to slow position. If it still remains hot contact the CLARKE service department
	High pressure hose too long	Use high pressure hose under 300ft (105m)

PROBLEM	CAUSE	SOLUTION
No or low pressure (after period of normal use)	Worn seal or packing	Have parts cleaned or replaced by CLARKE service department
	Worn or obstructed valves	
	Worn unloader piston	
	Worn E-Z start valve	
Pump will not draw detergents	Spray lance not set to low pressure	See 'Applying Detergents' section on page 20/21
	Detergent filter clogged	Clean filter
	Detergent screen not in detergent	Ensure end of detergent hose is fully submerged into detergent
	Detergent solution too thick	Dilute detergent. Detergent solutions should have same consistency as water
	Pressure hose too long	Lengthen water supply hose instead of pressure hose
	Detergent build up in detergent injector	Have parts cleaned or replaced by CLARKE service department
Water leaking at spray gun/spray lance connection	Worn or broken O ring	Check and replace O ring
	Lose hose connection	Tighten hose connections
Water leaking at pump	Loose connections	Tighten connections
	Piston packings worn	Have parts cleaned or replaced by CLARKE service department
	Worn or broken O Ring	Check and replace O ring
	Pump head or tubes damaged from freezing	Have parts cleaned or replaced by CLARKE service department

PROBLEM	CAUSE	SOLUTION
Oil leaking at pump	Oil seals worn	Have parts cleaned or replaced by CLARKE service department
	Loose drain plug	Tighten drain plug
	Worn drain plug O Ring	Inspect and replace O ring
	Worn fill plug O Ring	Inspect and replace O ring
	Pump overfilled	Check for correct amount of oil
	Incorrect oil used	Drain and refill with correct type and amount of oil
	Vent plug clogged	Clean vent. Use air hose to clear blockage. If problem persists, replace vent plug
Pump pulsates	Nozzle obstructed	See 'Using The Nozzle Tips' section on page 22/23

If the following does not solve your problem, please contact the CLARKE service department.

EXPLODED DIAGRAM - FRAME

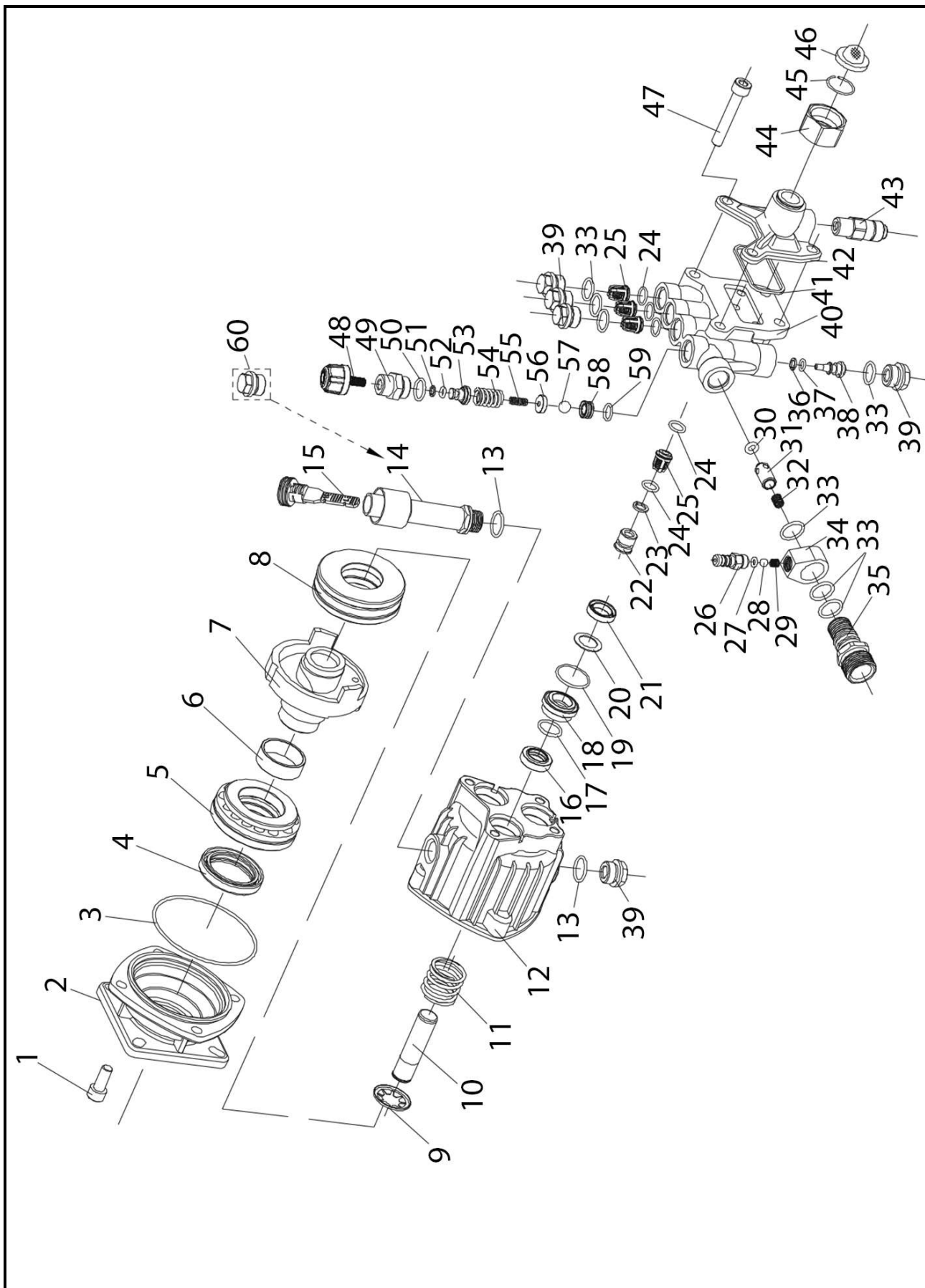


PARTS LIST- FRAME

1	Spray Gun
2	Lance
3	High Pressure Hose
4	Handle
5	Nozzle Panel
6	Nozzle Grommet
7	0° Nozzle
8	15° Nozzle
9	25° Nozzle
10	40° Nozzle
11	Detergent Nozzle
12	Screw M6 x 45
13	Nut M6
14	Engine

15	Bolt M8 x 25
16	Pump
17	Nut M8
18	Spring Washer D8
19	Plain Washer D8
20	Push Clip
21	Lower Frame
22	Engine Mount Rubber Feet
23	Detergent Tank Cap
24	Detergent Tank
25	Rubber Foot
26	Axle
27	Wheel
28	Nut M12

EXPLODED DIAGRAM - PUMP







PARTS LIST- PUMP

1	Screw M8 x 16
2	Mounting Flange
3	O Ring 80 x 2.4
4	Radial Shaft Seal
5	Rear Bearing
6	Sheath
7	Wobble Plate
8	Front Bearing
9	Spring Disc
10	15mm Plugger
11	Plunger Spring
12	Crankcase
13	O Ring 14.2 x 1.9
14	Pump Breather Plug
15	Dipstick
16	Oil Seal
17	O Ring 15 x 2.2
18	Spacer
19	O Ring 22 x 2
20	Pressure Ring
21	Water Seal
22	Inlet Valve Plug
23	Backup Ring
24	O Ring
25	Check Valve
26	Detergent Inlet
27	O Ring 4.47 x 1.78
28	Ball
29	Cone Spring
30	O Ring

31	Outlet Valve
32	Valve Spring
33	O Ring
34	Siphon Body
35	Outlet Connector
36	Backup Ring
37	O Ring
38	Valve Core
39	Plug
40	Pump Manifold
41	Seal Gasket
42	Water Inlet Body
43	Thermal Relief Valve
44	Inlet Swivel Nut
45	Clip Ring
46	Water Filter
47	Manifold Bolt
48	Screw
49	Screw Plug
50	O Ring
51	Backup Ring
52	O Ring
53	Spring Holder
54	Large Pressure Spring
55	Small Pressure Spring
56	Ball Holder
57	Ball
58	Valve Port
59	O ring
60	Oil Plug (for Shipping)

ASSOCIATED PRODUCTS

Economy Snow Foam Cherry Fragrance - SFEC5	Heavy Duty Snow Foam - SFHD5
	
<ul style="list-style-type: none"> • Powerful cleaner with finishing gloss treatment • Contains no caustic or harmful chemicals • 5 Litres • Part No. 3050805 	<ul style="list-style-type: none"> • Suitable for off-road vehicles, tractors, trucks and motorbikes • Raw cleaning power to lift the toughest dirt • 5 Litres • Part No. 3050807
Traffic Film Remover	Wash & Wax Car Shampoo - PWWS2L
	
<ul style="list-style-type: none"> • Used to clean grime off all vehicles • Will also clean engines and chassis • 5 Litres • Part No. 3050821 	<ul style="list-style-type: none"> • Lifts any damaging particles to leave a glossy finish on chrome and bodywork • Mild nature of the product ensures paintwork and fittings are not affected • 2 Litres • Part No. 3050807

DECLARATION OF CONFORMITY - UKCA



DECLARATION OF CONFORMITY

This is an important document and should be retained.

We hereby declare that this product(s) complies with the following legislation: The following standards have been applied to the product(s):

Noise Emission in the Environment by Equipment for use Outdoors Regulations 2001

IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-6:2015, IEC 62321-7-1:2015,

The Electromagnetic Compatibility Regulations 2016

EN 1679-1:1998+A1:2011, IEC 62321-7-2:2017, EN 60335-2-79:2012, EN ISO 12100:2010,

The Supply of Machinery (Safety) Regulations 2008

EN 55012:2007+A1:2009, IEC 62321-8:2017, EN ISO 3744:2010

The Non-Road Mobile Machinery (Type-Approval and Emission of Gaseous and Particulate Pollutants) Regulations 2018

The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned legislation has been compiled and is available for inspection by the relevant enforcement authorities.

The UKCA mark was first applied in: 2024

Manufacturer:

Clarke International Ltd, Hemnall Street, Epping,
Essex, CM16 4LG, United Kingdom

Notified Body:

N/A

Product Description:

Pressure Washer

Assessment Procedure:

Annex V of above noise legislation

Model Number(s):

PLS180

Measured LWA:

85.80 dB

Serial/Batch Number:

Refer to product/packaging label

Guaranteed LWA:

89 dB

Document Holder:

Alan Pond

Signed:


J.A Clarke
Director

Date of Issue:

23/09/2024

PLS180 UKCA Clarke DOC 092324

Page 1 of 1

DECLARATION OF CONFORMITY - CE

CE

Clarke
INTERNATIONAL

DECLARATION OF CONFORMITY

This is an important document and should be retained.

We hereby declare that this product(s) complies with the following legislation: The following standards have been applied to the product(s):

2000/14/EC	Outdoor Noise Directive	IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-6:2015, IEC 62321-7-1:2015,
2014/30/EU	Electromagnetic Compatibility Directive	EN 1679-1:1998+A1:2011, IEC 62321-7-2:2017, EN 60335-2-79:2012, EN ISO 12100:2010,
2006/42/EC	Machinery Directive	EN 55012:2007+A1:2009, IEC 62321-8:2017, EN ISO 3744:2010
2016/1628	Particulate Emission and Type-Approval for Non-Road Mobile Machinery Regulation	
2011/65/EU	Restriction of Hazardous Substances (RoHS) Directive	

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned legislation has been compiled and is available for inspection by the relevant enforcement authorities.

The CE mark was first applied in: 2024

Manufacturer:	Clarke International Ltd, Fitzwilliam Hall, Fitzwilliam Place, Dublin 2, Republic of Ireland	Notified Body:	N/A
Product Description:	Pressure Washer	Assessment Procedure:	Annex V of above noise legislation
Model Number(s):	PLS180	Measured LWA:	85.80 dB
Serial/Batch Number:	Refer to product/packaging label	Guaranteed LWA:	89 dB
Document Holder:	Alan Pond	Signed:	 J.A Clarke Director
Date of Issue:	23/09/2024		

PLS180 CE Clarke DOC 092324

Page 1 of 1

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