

Clemas & Co Ltd

**Industrial Cleaning Equipment
Sales – Hire - Service**

PFWM165-18HA

Pressure Washer Operator Manual



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EAGLE

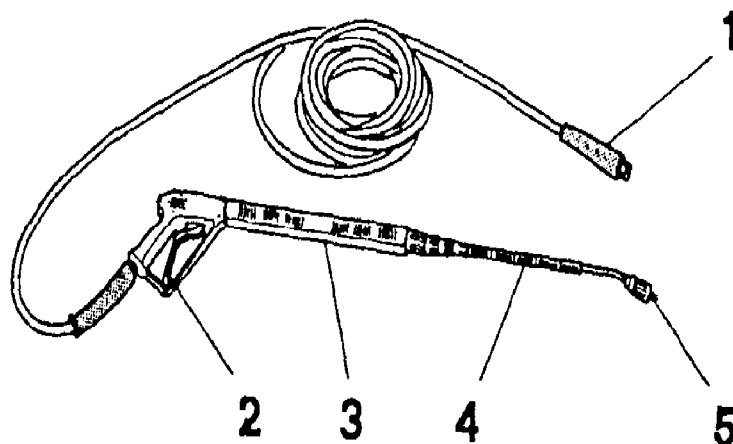
INSTRUCTIONS

First of all, we wish to congratulate you on choosing our machine that, thanks to its design concept and the quality of the materials used, will not fail to give you total satisfaction for a long time to come. In order to get the most from your purchase and to prevent errors from being made during use, please carefully read and follow the instructions contained in this manual.

Our sales and assistance service, specialised in providing technical help at all times, will not fail to offer you efficient assistance both during and after the guarantee period.

3 - STANDARD ACCESSORIES

1. HIGH PRESSURE HOSE
2. AUTOMATIC SPRAY GUN
3. FIXED PART OF LANCE
4. MOBILE PART OF LANCE
5. WATER NOZZLE



OPTIONAL ACCESSORIES

- CHIMNEY EXTENSION
- INTERNAL DIESEL FUEL TANK
- TURBO LANCE
- DRAIN CLEANING KIT
- ROTARY BRUSH
- WET SANDBLASTING KIT
- FIXED BRUSH
- FOAM LANCE
- END-PIECE FOR LANCE cm. 50
- END-PIECE FOR LANCE cm. 90
- END-PIECE FOR DOUBLE LANCE cm. 70
- HIGH PRESSURE HOSE m. 15, 20, 25, 30, 40, 50



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IMPORTANT ADVICE

- Read this manual carefully before installing and operating the cleaner.
- The machine must always be kept under supervision during use.
- The machine may only be moved by an authorised engineer
- The equipment must be firmly fixed to a solid platform
- The equipment must be protected from atmospheric agents (especially rain)
- Do not pull the cable to remove the plug.
- Do not make temporary repairs to the electric cable and make sure it is not damaged.
- Do not dismount machine parts and never carry out any maintenance operations without first removing the plug.
- Do not expose the machine to very low temperatures that may cause it to freeze.
- Provide sufficient ventilation when using the equipment in closed areas (danger of poisoning).
Furthermore, if the fumes need to be conveyed the outside by means of a flue extension, a special accessory (available on request) **MUST** be fitted to the boiler.
- The machine must not be installed in areas with a damp or aggressive atmosphere.
- If an electric cable extension is used, the relative instructions must be followed (see **electrical connection below**)
The use of a cable with incorrect specifications may decrease machine performance or even damage it.
- The machine must not be left working for more than 5 minutes with the spray gun closed, otherwise the temperature of the recirculated water will rapidly rise and may damage the sealing systems.
- Make sure that the machine is supplied with a continuous flow of water, otherwise serious damage may be caused to the sealing system.
- The jet of water leaves the nozzle at high pressure causing the spray gun to recoil. Therefore, make sure to firmly grip the lance and the spray gun.
- Never direct the jet of water towards yourself, other people, animals or the machine and electrical components.
- Do not use the jet of water to clean clothing or footwear when these are being worn by people.
- **ATTENTION!** Do not use the equipment when other people are present in the work area, unless they are wearing protective clothing.
- Never touch the jet of water with your hands
(danger of abrasions or scalds)
- The cleaner may not be used by children or unauthorised people in general (danger of accidents arising from the improper use of the machine).
- Vehicle tyres and valves may only be washed at a minimum spraying distance of 30 cm, otherwise they may be damaged by the high pressure jet; the first sign of damage to a tyre is dullness.
Damaged tyres are a mortal danger.
- It is forbidden to spray materials containing asbestos and other products that are dangerous to health.

- To protect yourself from rebounding elements always wear suitable protective clothing.
- Always make sure the flexible hoses are well connected.
- Do not block the spray gun lever during operation.
- Do not obstruct the exhaust fumes opening.
- When using boiling water/steam keep away from the exhaust fumes opening (danger of burns).
- Do not place material of any kind on the boiler flue.

START UP

Unpacking the machine

- If damage caused by transport is discovered when the machine is unpacked, inform your dealer immediately.

Checking the oil level in the high pressure pump

- Before starting the machine, open the cover and check the oil level (it should be halfway up the sight glass).
- Do not start the machine if the oil level has decreased but top up if necessary.
(See technical specifications, chapter 1).

Mounting standard accessories

- Hermetically connect the lance to the spray gun.
- Connect the high pressure nozzle to the lance.
- Firmly tighten the rotating connector of the machine/lance hose by hand and check the other parts of the lance are well tightened.

Fuel

- * **The machine must be connected to a suitable fuel tank.**
- The machine is supplied without the fuel tank (available separately on request). Before starting the machine, fill the tank with diesel fuel.

ATTENTION

- If the fuel tank is empty, the fuel pump will work dry and will break.
- Do not use unsuitable fuel, (e.g.: petrol (danger of explosion), biological derivatives (danger of clogging)).

Connection to water supply

- Connect the water supply hose to the machine and make sure the correct quantity of water reaches the machine.



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- If water is supplied at too high a pressure, adjust flow with a tap.
- If the water is taken from an uncovered tank:
 - move the pressure/flow regulation valve to max.
 - move the detergent flow valve to 0 (closed).
 - use a water supply hose with a minimum diameter of 3/4".
 - always use a filter in the water supply hose.

ATTENTION

- Never intake water from a drinking water tank.
- Never intake liquids containing solvents, such as thinners for paint, petrol, oil or unfiltered water. The machine seals are not resistant to solvents. Atomised solvents are highly inflammable, explosive and toxic.

Electrical connection

- Connect the machine to a mains power supply in compliance with current regulations.

- The voltage indicated on the rating plate must coincide with the voltage of the mains power supply.

power cable; the plug and socket must be waterproof.

- Move the power switch on the machine to "OFF" and then insert the plug into the socket.

ATTENTION

- The power supply cable must not be damaged.
- The use of an unsuitable cable may give rise to dangerous situations.
- Only connect the machine to correctly earthed power sources
- All parts under voltage in the work area must be protected against splashing water.
- Never touch electrical plugs with wet hands.
- A 30 mA differential overload cut out should be fitted up-line from the power socket or in the installation.
- The guarantee is not valid for unsuitable electrical connections.

Field of use

- Use the machine to wash cars, vehicles, etc. as long as they are not connected to the electrical power supply.
- Wash walls, terraces, and floors, etc. without detergent, just with a high pressure jet. For resistant dirt the optional rotating nozzle should be used.
- Engines should only be washed in areas provided with a suitable oil separator (environmental protection).
- If the equipment is used in petrol stations or in other places, current safety regulations must be respected.
- Observe noise regulations when using the machine in built up areas

OPERATING INSTRUCTIONS

Operating with cold water

- Move the thermostat to OFF.
- Turn off the burner switch.
- Insert the plug in the mains power socket after checking the voltage is correct.
- Move the pump switch to ON (or Pos.1 for other models)

How to remove air from the machine

- Open the water supply tap.
- Check the detergent tap is closed.
- Operate the machine without the high pressure hose until the water flows out without air bubbles.
- Then connect the high pressure hose.
- If the high pressure hose, lance and nozzle are already mounted, remove air as follows:
 - switch the machine on and off several times at 10 second intervals keeping the spray gun open until the water leaves the high pressure nozzle without air bubbles.

High pressure nozzle

- The spraying angle is decisive for the efficiency of the high pressure jet. A 15° flat jet nozzle is normally used (included in the supply).
- Different nozzles can be supplied as accessory equipment
 - Full jet nozzle (for resistant dirt)
 - 40° flat jet nozzle (for delicate surfaces)
 - Rotating jet nozzle (for thick layers of dirt)
- "Attention, this high power jet is dangerous".
- Variable angle nozzle with variable spraying angles.
- In order to prevent damage being caused by the high pressure jet, always start by aiming it towards the element to wash that is furthest away.
- Use a face mask when sandblasting.

Adjusting working pressure and flow

- Pump pressure and flow is progressively adjusted as follows:
 - screw up the adjustment handle to obtain greater pressure and flow.
 - unscrew the adjustment handle to obtain less pressure and flow.

Operating with hot water

- Move the thermostat to the required temperature.
 - 30 - 50°C for normal dirt.
 - 60 - 90°C for washing cars and machinery.
- Move the burner switch to "ON" (or pos.2 for other models).

Operating with steam

- Move the thermostat to 150°C.
- Rotate the handle of the steam valve anti-clockwise (or rotate the pressure adjustment handle to min. for other models).
- The following washing temperatures are recommended:
 - 100 - 110°C for dewaxing and concentrated dirt,
 - up to 140°C for dissolving additives and partly for washing walls.

Operating with detergent

- Fill the detergent tank
- Move the detergent flow valve to the required concentration.
- To intake the detergent (with water tank) move the flow valve to the required concentration.
- To intake the detergent (without water tank) move the flow valve to the required concentration and adjust the head of the lance to lower the pressure.
- After using detergent, close the valve and rinse the machine for about a minute, keeping the spray gun open.
- For environmental reasons detergent should be used sparingly. Use the recommended doses indicated on the detergent packs.



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· Unsuitable detergents can damage both the machine and the objects washed.

· The following cleaning method should be used:

Phase 1: spray a little detergent and leave it to dissolve the dirt for 1 - 5 minutes.

Phase 2: remove the dirt with the high pressure jet.

Temporary interruptions (Total-stop version)

- When the spray gun lever is released the machine will stop.
- When the lever is pressed once again, the machine will start.

Switching off the machine

- Move the thermostat to OFF and switch off the burner switch.
- Leave the water pump working until the boiler coil has cooled down.
- Switch off the machine by moving the switch to OFF and remove the electric plug from the socket.
- Close the water supply.
- Press the spray gun lever until the machine is depressurised.
- Use the safety device to make sure the spray gun lever cannot be accidentally opened.

CARE AND MAINTENANCE

VERY IMPORTANT !!!!

*** THE FIRST (AND MOST IMPORTANT) OIL CHANGE MUST BE CARRIED OUT AFTER 20HRS USE.**

ATTENTION

· BEFORE CARRYING OUT ANY MAINTENANCE WORK REMOVE THE PLUG AND MAKE SURE THAT THE MACHINE IS NOT PRESSURISED.

· A maintenance contract may be stipulated with your dealer.

Weekly

· Control the oil level
If the oil is milky (water in the oil), contact the technical service centre immediately.

· Clean the water inlet filter situated in the HEADER TANK.

Monthly

· Clean the detergent intake tube filter.
THIS OPERATION MUST BE CARRIED OUT BY THE TECHNICAL SERVICE CENTRE – Clean and adjust the electrodes and replace them if necessary following the relative assembly diagram (See chapter 12).

Yearly and after 500 operating hours or whenever necessary

· Change the oil.
Unscrew the oil drain cap and send the used oil to an authorised collection centre for disposal (environmental protection).
After the oil has been completely drained, screw the drain cap back on and slowly introduce the new oil until it reaches the position indicated

on the sight glass located on the pump cover (eliminate any air bubbles).

· For the quantity and type of oil to use see the technical specifications chapter 1.

Removing soot from the coil

· If after a short while the heating coil gets covered with soot ask the technical service centre to control the regulation of the burner. Incorrect burner regulation increases fuel consumption and aggravates environmental pollution pointlessly.

Descaling the coil

· If the machine, at maximum operating pressure, switches off and on continuously, or if the pressure gauge reads an increase of over 10 bar, without the high pressure hose, in the presence of the maximum quantity of water, this indicates the presence of internal deposits/calcification.

· This operation should be entrusted to your authorised technical service centre as in this case the flow of the water softening liquid should be controlled.

Cleaning the fuel tank

· Dismount the machine tank

Dispose of the remaining fuel in special containers (environmental protection).

· Carefully wash the tank. If water is used, make sure the tank is perfectly dry afterwards.

· Replace the fuel filter if necessary.

High pressure hose

· Carefully control the H.P. hoses.

· Every H.P. hose must comply with safety standards and must be marked with the approved pressure and the maker's name.

· H.P. hoses may never be bent, pulled, crushed or damaged in any way.

· H.P. hoses are dangerous and must be replaced immediately.

· H.P. hoses with insufficient pressure sealing or irregular repairs are dangerous.

Only use approved and marked H.P. hoses (original H.P. hoses comply with safety standards).

Power cable

· THIS OPERATION MUST BE CARRIED OUT BY THE TECHNICAL SERVICE CENTRE – The power cable must not be damaged (risk of electric shock). A damaged power cable must be immediately replaced by the technical service centre or an authorised technician.

Protection against freezing

· If machines are not completely drained of water, they may be subject to freezing. During winter, the machine should be kept in an area sheltered from the frost; otherwise it should be drained or washed with antifreeze.

· Emptying the equipment

- Unscrew the water supply hose and the high pressure hose from the machine.

- Unscrew the intake hose from the bottom of the boiler and drain the water from the coil.

Operate the machine, (max. 1 minute) until the pump and the hoses are drained.

· Antifreeze

In case of long periods of inactivity, an anti-freeze product should be pumped into the machine.

This also give fair protection against corrosion.

Long period of inactivity

· If the machine remains inactive for a long time, some scaly sediment may form that may make the machine difficult and damaging to start. In these cases, in order to prevent irregular current input with consequent voltage drops, the motor shaft should be moved before the machine is started.

· This will also allow you to discover if the machine is frozen or blocked by deposits and consequently prevent it from being damaged.