

# Clariflo®



## POWERWASHER

Model: PLV100LB

Part No: 7330658

### OPERATING & MAINTENANCE INSTRUCTIONS



0606

# Clarke<sup>®</sup>

## INTERNATIONAL

**This is an important document and should be retained**

### DECLARATION OF CONFORMITY



We declare that this product complies with the following standards/directives:

■ 98/37/EC

■ 2000/14/EC

Sound Power Level (guaranteed) 103dBLwa

Description: Power Washer

Model No: PLV100LB

Signed: \_\_\_\_\_

*Engineering Manager*

### Clarke<sup>®</sup> INTERNATIONAL

Hemnal Street, Epping, Essex CM16 4LG

Thank you for selecting this CLARKE Power Washer for your cleaning requirements.

This booklet contains important information about its operation and maintenance and should be read in conjunction with a similar guide produced by the manufacturers of the engine fitted to this particular unit.

Please read both of these carefully before using the machine.

**GUARANTEE**

This CLARKE product is guaranteed against faults in manufacture for twelve months from the date of purchase.

In case it is necessary to make a claim under this scheme, please retain your receipt or invoice to show when and where your purchase was made.

This guarantee will not be valid if the product is found to have been abused in anyway, or used otherwise than for its intended purpose.

Under the Terms of this Warranty, any repair or replacement can only be carried out by Clarke International Limited, or one of our authorised dealers.

Where possible any machine requiring attention should be returned to the dealer from whom it was purchased. Where this is not appropriate, please contact Clarke International, Service Department, Tel. 020 8988 7400

This guarantee does not affect your statutory rights.

**SPECIFICATIONS**

**Engine**

Type: ..... Briggs and Stratton

Rating: ..... 3.5 HP.

Lubrication: ..... SAE15-40 (0.61Ltr).

Fuel/Capacity: ..... Petrol/0.9Ltr)

**Pump**

Max Operating Pressure: ..... 1160psi (80 Bar).

Max Flow (Low Pressure): ..... 8.06 l/min.

Max Flow (High Pressure): ..... 7.5 l/min.

Max. Water temp: ..... 40°C.

**Hose**

Construction: ..... Internal hose PE - Nylon Frame external hose PVC.

I/D: ..... 6.35mm (¼").

Length: ..... 6M.

**Lance**

Type: ..... Two Piece.

Flow Settings: ..... High (Fan & Jet) and Low (Fan & Jet).

**General**

Sound Power Level (Guaranteed ): .. 103dBLa.

Weight: ..... 22.25kg.

Dimensions: ..... LxWxH, 630x494x918mm.

## GENERAL SAFETY PRECAUTIONS

### 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.

- X NEVER** direct the spray towards any person or animal.
- X NEVER** direct the spray towards electrical wiring or equipment.
- X NEVER** hold your finger over the high pressure nozzle.
- X NEVER** allow children to use this machine.
- X NEVER** operate the machine with any of the covers removed.
- X NEVER** attempt any repairs to this machine unless you are properly qualified.
- X NEVER** supply any liquid other than water to the water inlet.
- X NEVER** use the chemical injection facility to introduce solvents, e.g. paint thinners, petrol, oil etc.
- ✓ When making a connection directly to the water mains supply you must ensure that it incorporates a device suitable to prevent liquids syphoning back from the power washer into the mains pipework.
- ✓ After the engine has been stopped and the water supply turned off, but before disconnecting any hose or accessory, **ALWAYS** release any residual pressure in the system by operating the trigger.
- ✓ **ALWAYS** keep the machine itself dry and well clear of water spray
- ✓ When not in use, **ALWAYS** disconnect from the water supply, and ensure the system is completely drained. Store in a cool dry location.
- ✓ When using the chemical injection facility, use only the chemical cleaning agents (detergents), that are approved for power washers. CLARKE Traffic Film Remover or CLARKE Wash and WAX (available from your dealer), is recommended.

## FEATURES

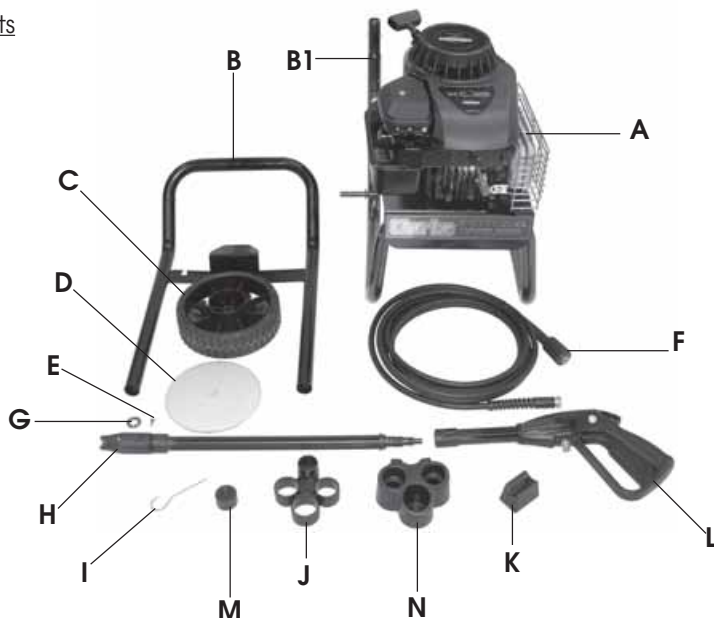
These fully portable machines incorporate a variable pressure control, together with a fan or jet spray, and may be used with or without a detergent. Although these machines were designed to operate using a mains water supply, they will also work satisfactorily with a supply which is under positive pressure, i.e. from an elevated water tank etc.

### IMPORTANT:

When using the mains water supply, you must ensure you comply with all local bye laws.

## ASSEMBLY and PREPARATION FOR USE.

### Contents



'A' Engine with Mounting Plate.

'B' Handle.

'B1' Engine Frame

'C' Wheel x 2.

'D' Wheel Cap x 2.

'E' Self tapping screw x 5.

'F' High pressure hose.

'G' Securing Washer x 2.

'H' Lance.

'I' Nozzle cleaning pin.

'J' Upper tool holder.

'K' Foot x 2.

'L' Gun.

'M' Wheel assembly drift.

'N' Lower tool holder.

The power washer requires a small amount of assembly before using as follows.

1. Carefully open the carton, remove all items and lay out for inspection.
2. Check for missing and/or damaged parts, any defects should be reported to your Clarke dealer ASAP.
3. Carefully lay the engine Frame on its back to gain access to the bottom, fit feet using 4 self tapping screws (supplied).

Fig. 1



4. Carefully turn the chassis onto one side to access the axle to enable wheel to be fitted. Slide wheel onto axle as shown, ensuring the flat side is on the inside as in **Fig. 2** to allow the cap to be fitted.



**Fig. 2**

5. Place the wheel securing washer in the drift as shown, ensuring the concave side faces outwards.



**Fig. 3**

6. Position the washer centrally on the axle, gently using a suitable hammer/mallet, drive the washer onto the axle as in **Fig. 4**. Take care not to drive it on too far, allow a slight sideways movement of the wheel.
7. Repeat 4, 5 & 6 for other wheel.
8. Fit the wheel caps by lining up the securing lugs on the inner flange and gently tap on by hand.
9. Turn the chassis over onto its wheels and feet.
10. Attach the motor, on its mounting plate to the frame, using the nuts, bolts and washers provided.



**Fig. 4**

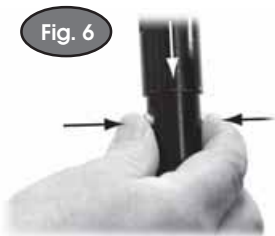


**Fig. 5**

11. Fit the lower tool holder to the frame by locating the holder lug into the smaller L/H slot on the bracket, rotate the holder until the R/H lug locks into position.

12. Slide the upper tool holder onto the chassis above the lower holder. Fit the handle by lowering onto chassis as far as the locking pins, depress pins and lower further until the pins click into position.

**NOTE:** Take care not to pinch fingers in the mechanism when carrying out this action.



**Fig. 6**

13. Slide the upper tool holder up into position and secure with self tapping screw.

Fig. 7



14. Assemble the lance to the gun with a simple bayonet connection **Fig. 8**. Attach one end of the high pressure hose to the gun **Fig. 8a** and tighten the securing nut using a 17mm open ended spanner, DO NOT overtighten. Connect other end of the high pressure hose to the pump **Fig. 8b**, hand tight only.

Fig. 8



Fig. 8a

Detergent Hose

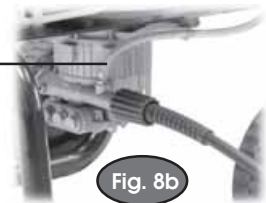


Fig. 8b

15. Refer to the engine manufacturers handbook regarding topping up oil and fuel. Once the oil and fuel levels are OK, the pressure washer is ready for use.

## OPERATION.

**NOTE:** Before connecting the garden hose, unscrew and remove the hose connector which is located on the opposite side of the pump to the high pressure hose connector **Fig.8b**, check that the water filter is in place and is not damaged.

1. Connect the garden hose to the water inlet (hand tight only).
2. Connect the other end of the garden hose to the mains water supply and turn ON.
3. Depress the gun trigger to clear any trapped air, keep depressed until a steady flow of water emerges from the spray nozzle.

4. Refer to engine handbook on starting the engine. Move the throttle control lever to the run position.



Fig. 9a



Fig. 9

5. Slowly press the primer ball 3 times, waiting 3 seconds between each press. In cold weather conditions, press the ball 5 times.

6. Pull the starter with a quick firm action. Allow the cord to recoil fully into its housing whilst retaining a grip on the handle. Repeat operation until the engine starts.

As soon as the engine starts, slowly move the throttle lever back towards stop until the engine is running at a reasonable tick over speed and not racing flat out.



Fig. 10

**NOTE:**

1. *If there is any difficulty in starting the engine, get an assistant to fully depress the gun trigger whilst you attempt to start. This will relieve any load on the engine, making for an easier start.*
2. *Be aware that the pump delivers a considerable pressure. If the lance is set to high pressure and the trigger is depressed, you will experience a kick back. Ensure you are prepared for this, and hold the lance firmly. DO NOT allow children to hold or operate the lance.*

When ready, pull the trigger, taking into account the notes above, and water at pressure will be ejected. Note that it may be necessary to unlock the trigger by pushing in the yellow button, above the trigger. This should be set to ensure the gun is not 'fired' accidentally.

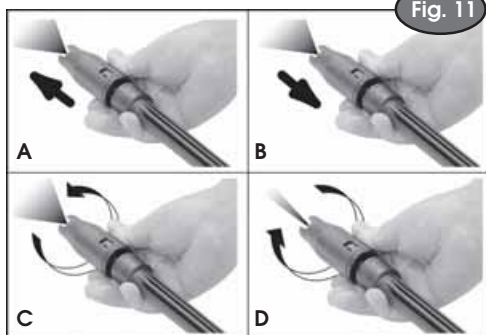


Fig. 11

The spray pattern can be adjusted to create various patterns and pressures, see Fig. 11. Pull nozzle out (A) for high pressure and in (B) for low.

Rotate the nozzle to vary the spray from a fan to a straight jet.

Rotate the nozzle anticlockwise (C) for fan pattern and clockwise (D) for a straight jet.

## CHEMICAL CLEANING AGENTS

To improve cleaning qualities, chemical cleaning agents (detergents) may be injected into the low pressure spray. This is particularly useful for washing cars, greasy engine parts, oil spots on concrete etc.

To inject a detergent, insert the clear plastic hose into the detergent container, ensuring it is completely submerged, also check the other end is securely attached to the pump shown in Fig. 8b.

**NOTE:** *Use ONLY detergents designed for use with power washers. We recommend the use of CLARKE Traffic Film Remover, which is a powerful low foaming agent, for car cleaning, as well as other cleaning tasks.*

When detergent injection is required, adjust the nozzle to the low pressure setting, the detergent will automatically be drawn into the water supply when sprayed.

Spray the detergent on to the vehicle, patio etc., and allow it to work itself into the grime.

To rinse, set the lance to its' high pressure setting, and blast off the dirt.

After cleaning, suspend the detergent hose in a container of clean water. Set the lance to low pressure with the engine running and the mains water supply 'on'. Depress the trigger of the lance, and thoroughly flush out the system.



## MAINTENANCE

Very little regular maintenance is required, other than general cleaning on the outside of the machine. Wipe over with a clean dampened soft cloth, use a mild household detergent if necessary. Never use harmful chemicals.

If detergents have been used in the washer, it is important to flush the system with clean water for a few minutes after use.

If there is a danger of freezing, anti freeze should be mixed with the flush water, or the system must be completely drained.

### Storage

Store in an upright position, completely drained of water, in a dry frost free location.

### Engine

Refer to the engine handbook, and service accordingly.

**NOTE: Engine oil should be checked before each use.**

### Pump

Change the oil after the first 50 hours of service, and every 500 hours thereafter.

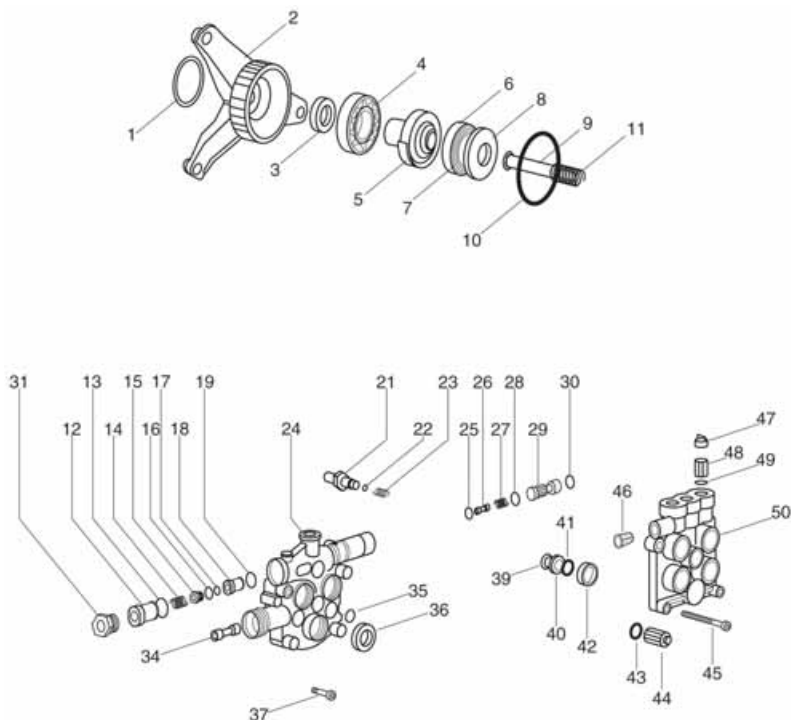
DO NOT attempt to carry out any mechanical repairs yourself. Please contact your CLARKE dealer for Service and repairs. If the pump is ever dismantled for servicing and/or repair, remember to top up with 15w/40 non synthetic oil (100ml).

Periodically unscrew and remove the hose connector from the pump to expose the suction filter, carefully remove filter inspect for damage and signs of wear etc, clean filter by holding under the tap and allow the running water to flush out any impediment, DO NOT use tools to clean the filter or damage will occur. When clean refit to the pump body followed by the hose connector.

## TROUBLE SHOOTING

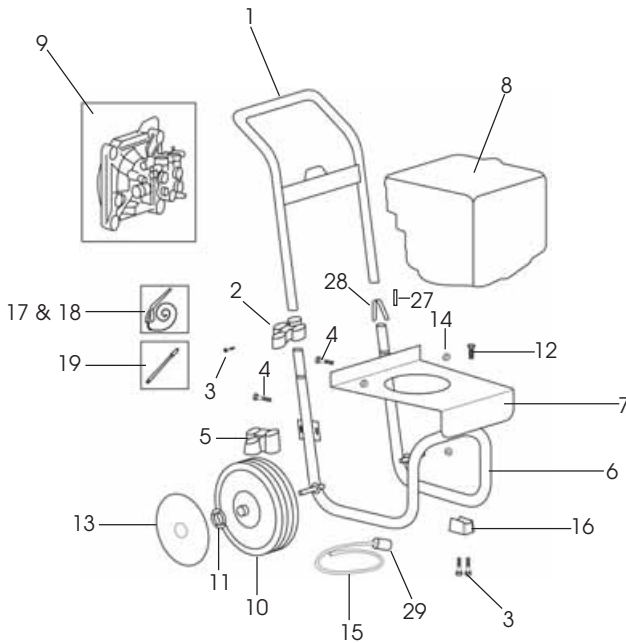
FAULT	PROBABLE CAUSE	REMEDY
The pump doesn't reach the necessary pressure.	Water inlet clogged. Suction/ delivery valves are clogged or worn out. Lance nozzle incorrect or worn out.	Clean the water inlet filter. Clean or replace valves.  Check and/or replace.
Fluctuating pressure.	Pump sucking air from connections or hoses. Regulating valve sticking.	Check all connections and tighten if necessary. Slacken off regulating screw, then retighten.
Water leaking from the pump.	Worn seals.	Check and replace if necessary.
Machine becomes noisy.	Worn bearings.	Check and replace if necessary.
No water from nozzle when trigger is operated..	Nozzle blocked.	Clean nozzle with the nozzle cleaning pin supplied.

## PARTS LIST & DIAGRAM (PUMP)



No.	Description	Qty	Part No.	No.	Description	Qty	Part No.
1	Gasket	1	LW4.008.0288	25	'O' Ring 4 x 2.5	1	LW3.200.0036
2	Flange with 'O' ring	1	LW5.0090.408	26	Non Return Valve	1	LW4.008.0648
3	Oil Seal D.17X35X7	1	LW3.2010.011	27	Spring	1	LW4.007.0324
4	Bearing 6205-2Z	1	LW3.0010.018	28	Gasket	1	LW3.200.0017
5	Vertical Plate	1	LW4.0050.213	29	Injector	1	LW5.009.0560
6	Bearing Disk AS4565	1	LW3.0010.003	30	'O' Ring 18.72 x 2.62	1	LW3.200.0029
7	Needle Bearing	1	LW3.0010.025	31	Valve Cap	1	LW4.006.0303
8	Thrust Shoe D.65	1	LW4.0070.001	34	Suction Filter	1	LW4.008.0031
9	Piston Assembly	3	LW5.0090.452	35	'O' Ring Gasket	1	LW3.200.0013
10	'O' Ring Gasket	1	LW3.2000.014	36	Oil Seal D.12	3	LW3.201.0014
11	Piston Recall Spring	3	LW4.0070.025	37	Screw M6 x 30	3	LW3.002.0094
12	Seal Seat	1	LW4.0080.779	39	Oil Seal Spacer D.12	3	LW4.008.0657
13	'O' Ring Gasket	1	LW3.2000.113	40	Brass Spacer D.12	3	LW4.006.0247
14	Spring X.T.S.	1	LW4.0070.309	41	Piston Guide	1	LW5.007.0198
15	Brass Piston D.11	1	LW4.0060.268	42	Water Seal D.12	3	LW3.201.0020
16	'O' Ring 7.66 x 1.78	1	LW3.2000.059	43	Valve 'O' Ring Gasket	3	LW3.200.0019
17	'O' Ring X.T.S.	1	LW4.6080.153	44	Complete Suction Valve	3	LW5.009.0015
18	Piston & Valve Seat	1	LW4.0080.780	45	Screw M6 x 70	3	LW3.002.0130
19	Gasket	1	LW3.2000.118	46	1/8" Tapered Cap	1	LW4.006.0109
21	Rubber Holder	1	LW5.0090.503	47	Cap Valves	3	LW5.009.0101
22	Sphere	1	LW3.0050.006	48	Delivery Valve	3	LW5.009.0005
23	Inox Spring	1	LW4.0070.014	49	'O' Ring Gasket	3	LW3.200.0019
24	Piston Guide	1	LW4.0050.216	50	Partner Head D.12	1	LW4.005.0187

## PARTS LIST & DIAGRAM (CHASSIS)



No.	Description	Qty	Part No.	No.	Description	Qty	Part No.
1	Handle	1	LW5.013.0049	13	Wheel Cap	2	LW3.099.0095
2	Upper Lance Holder	1	LW4.008.0732	14	Nut	6	LW3.003.0017
3	Self Tapping Screw	5	LW3.002.0024	15	Detergent Hose	1	LW4.008.0005
4	Screw M8 x 60	3	LW3.002.0120	16	Foot	2	LW4.008.0730
5	Lower Lance Holder	1	LW4.008.0731	17	Gun	1	LW6.001.0046
6	Lower Frame	1	LW5.013.0048	18	High Pressure Hose	1	LW4.008.0780
7	Motor Support	1	LW4.007.0313	19	Lance	1	LW6.002.0194
8	Engine Complete	1	**	27	Key	1	LW3.099.0093
9	Pump	1	LW5.099.0087	28	Spring Clip	2	LW4.007.0277
10	Wheel	2	LW3.006.0033	29	Detergent Filter	1	LW4.008.0006
11	Retaining Washer	2	LW3.099.0051	-	Quick Coupling (not shown)	1	LW3.100.X005
12	Screw M8 x 50	3	LW3.002.0121				

\*\* Please refer to CLARKE dealer