

Clarke® *PUMP*

ENGINE DRIVEN WATER PUMP

Model No. CM1



OPERATING & MAINTENANCE

INSTRUCTIONS

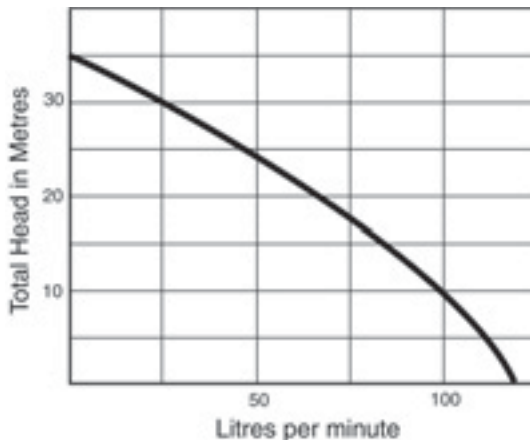


SPECIFICATIONS

Inlet/Outlet dia.	1" (25mm)
Engine Capacity	25.6cc
Fuel, 2-stroke mix.....	25:1
Fuel Capacity	0.6 Litre
Approx. running time on full tank	45 min
Max Head.....	35 Metres
Max Suction Height	8.0 Metres
Max. Delivery	115 litres/min
Weight.....	4.5 kg
Spound Power Level	104 dBLWA
Dimensions	315x225x340mm
Part No.	7140630

Please note that the details and specifications contained herein, are correct at the time of going to print. However, CLARKE International reserve the right to change specifications at any time without prior notice. Always consult the machine's data plate

Performance Curve





Thank you for purchasing this Clarke Water Pump.

This pumps is designed for pumping clean water ONLY. The pump is NOT self-priming, please see Installation instructions.

The suction strainer supplied, must always be used, to ensure that stones or other objects cannot be drawn up, as this would cause severe damage to the pump.

CAUTION! NEVER use for pumping solids in suspension - slurry, sludge, sand, or mud etc.

Please read this leaflet thoroughly and follow the instructions carefully, in doing so you will ensure the safety of yourself and that of others around you, and with correct handling and servicing, you can look forward to the pump giving you long and satisfactory service.

GUARANTEE

This CLARKE 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.

SAFETY PRECAUTIONS

WARNING

As with all machinery, there are certain hazards involved with their operation and use. Exercising respect and caution will considerably lessen the risk of personal injury. However, if normal safety precautions are overlooked, or ignored, personal injury to the operator, or damage to property may result.

1. These pumps are designed to pump **WATER ONLY**. Never use for pumping petrol (or other flammable liquids), or chemicals.
2. Before operating this pump, you should thoroughly familiarise yourself with all aspects of its' operation, and follow all instructions in this manual.
3. Never operate an engine driven unit in an explosive atmosphere, near combustible materials, or where there is insufficient ventilation.
4. Always ensure that the pump is properly secured and anchored where necessary to prevent it from moving during operation, and that the immediate area surrounding the pump is kept clear.
5. Do not over tighten drain or filler plugs. Excessive force may damage the threads or the pump body.
6. Observe all safety precautions for the handling of fuel. Never refuel the engine whilst it is running, and allow the engine to cool sufficiently before refuelling.
7. Whenever carrying out maintenance or making adjustments, the engine must be stopped.
8. Use at least 1ft (300mm) of flexible hose to make plumbing connections to the pump. Rigid piping will put stress on the pump, causing eventual damage.
9. Use only replacement parts supplied by the manufacturer. The use of non standard parts could be hazardous.
10. NEVER run the pump dry. Always fill the pump body with water before starting. When in regular use, it is not necessary to drain the pump body each time it is used, unless there is danger of freezing
11. ALWAYS use the strainer connected to the suction hose, to prevent stones and other solids from being drawn up, which could cause severe damage.
12. NEVER carry or transport the pump with the engine running.
13. ALWAYS check the pump for loose or missing screws before use.
14. Take great care when handling the pump after it has been in operation, the cylinder head and silencer will become very hot.
15. NEVER allow children or untrained persons to use this equipment.

PARTS IDENTIFICATION

Unpack and check the contents. Loose parts are identified as follows:

Fig.1

- A. 2x25mm hose connectors complete with rubber seals, plus 1x20mm tail connector
- B. 3x Hose Clips
- C. 1xSuction hose filter
- D. 1xCrosshead screwdriver
- E. Spark plug socket wrench



Fig.2

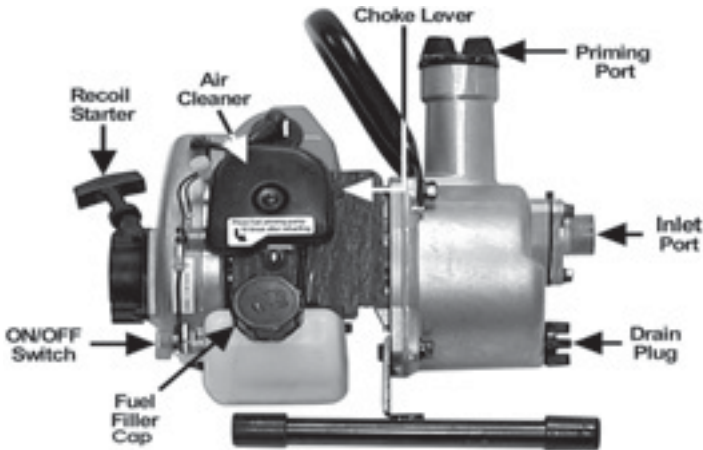
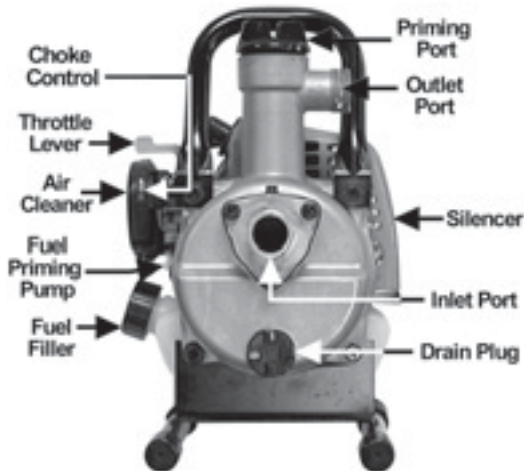


Fig.3



PREPARING THE PUMP FOR OPERATION

A. GENERAL.

Always prepare the site beforehand.

Ensure there is an adequate, firm foundation on which the pump may be located, and as near the water source as possible.

Ensure there is adequate drainage for the discharged water, and that there is no danger of damage to property as a result of the pumping operation.

B. THE ENGINE.

Fill the fuel tank with fuel as follows:

Mix: 25 parts Unleaded Petrol to 1 part 2-Stroke Oil
25:1

Use Clarke 2 stroke oil....Part No.3050870



WARNING:

1. Observe ALL necessary precautions when handling petrol.
2. Never run the engine in an enclosed space - ensure there is adequate ventilation.

C. THE PUMP

1. Place the unit on a firm level foundation, putting it as near as possible to the water source, and ensure it is anchored where necessary, to prevent it from moving during operation.
2. Connect the suction hose to the inlet port, using the adapter provided, ensuring the rubber seal is in place.

NOTE: 25mm or 20mm ID hose may be used...appropriate connectors are provided.

The hose must be completely sound, there must be no damage of any kind. The connection at the pump body, and all other connections, should there be any, **must be air tight.**

Hoses or pipes should be supported independently and not carried by the pump.

Flexible hose MUST be used at the pump connections

IMPORTANT : An air leak in the suction line will reduce the capacity of the pump. The vast majority of problems which may occur, are as a result of air leaks in the suction line.

Pay particular attention to the following:

- a. Use sealant on all threaded connections.
 - b. Always ensure the rubber seal is in place and correctly fitted.
 - c. Always use a flexible hose at the pump body connection, of at least 1ft (300mm).
 - d. Keep all pipes/hoses as short and straight as possible, and avoid sharp bends.
 - e. If a flexible hose must be laid across a roadway, protect it with planking. (Instantaneous shut off pressure, applied when a vehicle runs across an unprotected hose, will cause "hydraulic shock", which can damage the pump and/or the hose).
3. The suction strainer **MUST** be attached to the end of suction hose, to prevent large stones etc., from being drawn up which could cause severe damage. Keep the strainer clean. If it is likely to clog with dirt or debris, proceed as follows:
- a. Prepare a bed of stones on which to rest the strainer.
 - or b. Tie the strainer so that it stays off the bottom of the pit, pond or excavation.
 - or c. Tie the strainer inside a basket or bucket.
4. Remove the Priming Plug, on top of the pump case, and fill the pump and suction hose with water, leaving no air gap.
- Remember the pump is self-priming **ONLY** when it has been filled. Once filled, a non-return valve will maintain water within the pump body should it be necessary to stop the motor (for refuelling etc.). Priming is **ONLY** necessary therefore when the pump has been drained.
5. Ensuring there is adequate drainage for the discharged water, attach the discharge hose using a 25mm ID hose.

ALWAYS check to ensure the delivery hose is adequately supported, and protected to avoid, for example, the possibility of vehicles passing over it, which could damage both the hose AND the pump.

Properly fuelled and connected, your pump will run without attention for approximately 45 minutes on a full fuel tank.

OPERATION

Ensuring the site, and pump is prepared as detailed on pages 5 & 6, proceed as follows:


1. STARTING.

Ensuring there is sufficient fuel in the tank, press the priming pump, see illustration opposite, at least 10 times.

NOTE: This is NOT necessary if the unit has not previously been drained of fuel.

1.1 Set the choke lever to 'Start', see Fig.5.

If the engine is warm, set to 'Normal Running position'..... 

If the engine and ambience is cold, set to 'Cold Start' position..... 

1.2 Set the Throttle to approximately half open...midway between cold start and normal.

1.3 Switch ON at the ON/OFF switch.

1.4 Hold down the pump and pull the starter recoil rope firmly until the engine starts.

IMPORTANT: Do not snatch at the starter rope, and allow it to retract slowly after each pull.

1.5 Once the engine starts, set the choke progressively to the 'Normal Running position', and the engine throttle to a low speed setting, and allow to run for about 1 minute.

NEVER set the throttle to a high speed position until the engine has warmed up.

2. CONTROLS.

On high suction lifts, a higher engine speed is necessary than on low lifts. On shallow lifts therefore, or when there is little water to pump, preserve fuel and engine wear, by reducing engine speed. **NEVER** run at an unnecessarily high speed.

3. STOPPING.

GRADUALLY reduce engine speed to minimum, and stop the engine by switching OFF the ignition switch.

4. BLOCKAGES

In the event of blockages, where debris has entered the suction chamber, remove the suction chamber bolts, disconnect the suction hose and flush out the pump body.

Fig.4

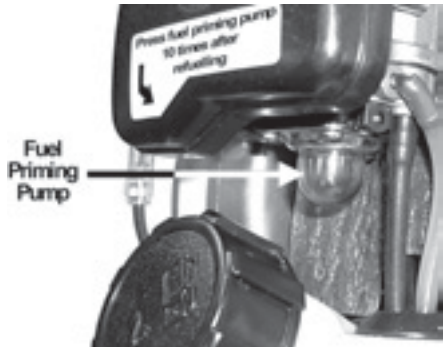
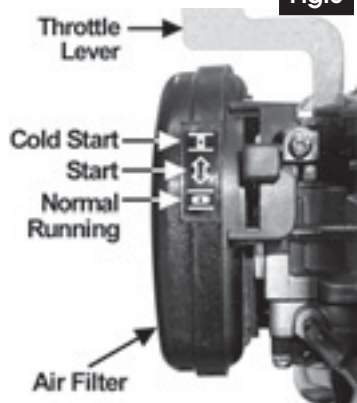


Fig.5



MAINTENANCE

DAILY, before use.

Check for any loose bolts/screws, or leaking fuel and rectify before proceeding. Ensure there is sufficient fuel in the tank.

MONTHLY or every 20 Hours

Clean the Air Filter as follows:

Remove centre screw and pull off the air filter cover.

Remove sponge filter and wash in warm soapy water. Rinse thoroughly and allow to dry before reassembling.

6 MONTHLY or every 50 hours

Ensure the engine is cold before performing the following tasks.

1. Clean and adjust the Spark Plug:

Pull off the spark plug lead and, using the socket wrench supplied, unscrew and remove the spark plug.

Clean using a wire brush. When all carbon has been removed, adjust the gap to 0.6 - 0.7mm, using an appropriate gauge, available from all tool retailers.

2. Clean the Fuel Filter:

Remove the fuel filler cap completely, then, using a piece of wire with a hooked end, pull out the fuel filter and hose, as shown in Fig.6.

Clean the filter thoroughly using clean petrol. If it is badly contaminated, renew it.

Before reinstalling the filter, clean out the fuel tank, ensuring there is no sediment collecting in the bottom.



STORAGE:

Should the pump be stored for any period, you should proceed as follows:

Once the engine has cooled, disconnect all hoses and remove the pump drain plug, Drain the pump completely, and, **importantly**, flush with CLEAN water thoroughly, then replace the drain plug.

Drain the fuel tank completely, then, start the engine in the normal manner and allow it to run until it stops due to lack of fuel.

NOTE: If prolonged storage is probable, fuel could congeal, causing the components to 'gum up', which would be very problematic.

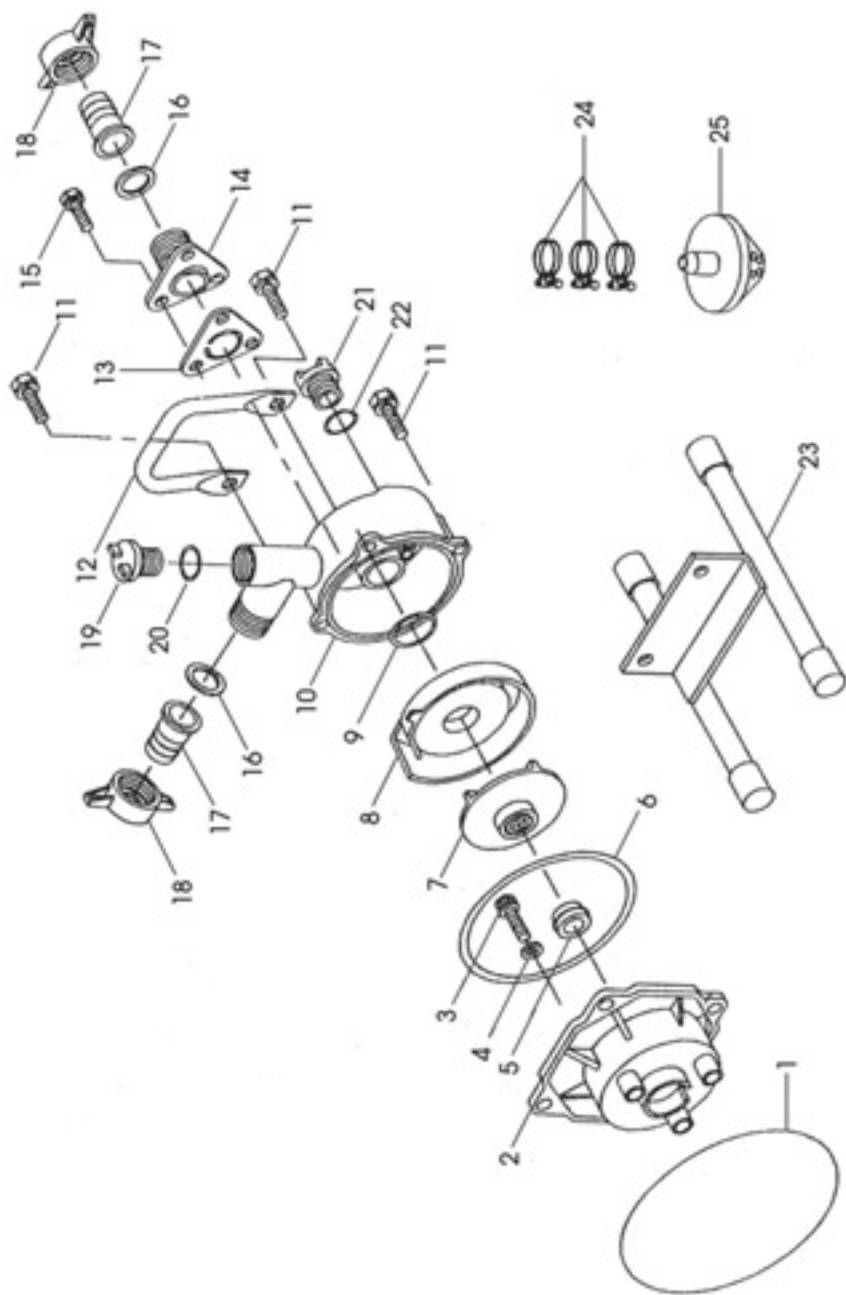
Remove the spark plug and pour in a teaspoonful of engine oil, then, gently pull the recoil starter a few times so that the oil is deposited on the cylinder walls, before replacing the spark plug.

Store the pump, preferably under cover, not exposed to the elements, and in a clean dry environment.

TROUBLESHOOTING

FAULT	PROBLEM	REMEDY
<p>A) Pump fails to prime</p>	<ol style="list-style-type: none"> 1. Priming chamber not filled correctly. 2. Air leaks through the suction line joints (broken/damaged screws or, rubber hoses, loose or broken hose clamps 3. Suction or delivery line obstructed 4. Pump speed too low. 5. Worn or broken impeller. 6. Air leaks through damaged mechanical seal. 7. Suction strainer clogged 	<ol style="list-style-type: none"> 1. Fill priming chamber leaving no air gap. 2. Carry out repairs as necessary 3. Remove obstruction and ensure there are no kinks in delivery line. 4. Increase engine speed. 5. Renew Impeller. 6. Renew Seal. 7. Clean strainer, and ensure it is not submerged in mud or sediment etc.
<p>B) Low output</p>	<ol style="list-style-type: none"> 1. Suction strainer clogged. 2. Suction or delivery line obstructed 3. High friction losses in the suction line. 4. Suction lift too high. 5. Pump speed too low. 6. Impeller clogged. 	<ol style="list-style-type: none"> 1. Clean strainer, and ensure it is not sub merged in mud or sediment etc. 2. Remove obstruction and ensure there are no kinks in delivery line. 3. Avoid unnecessary curves, restrictions or valves. 4. Set pump as near as possible to the level of the liquid to be pumped. 5. Increase engine speed. 6. Disassemble pump, and clean.

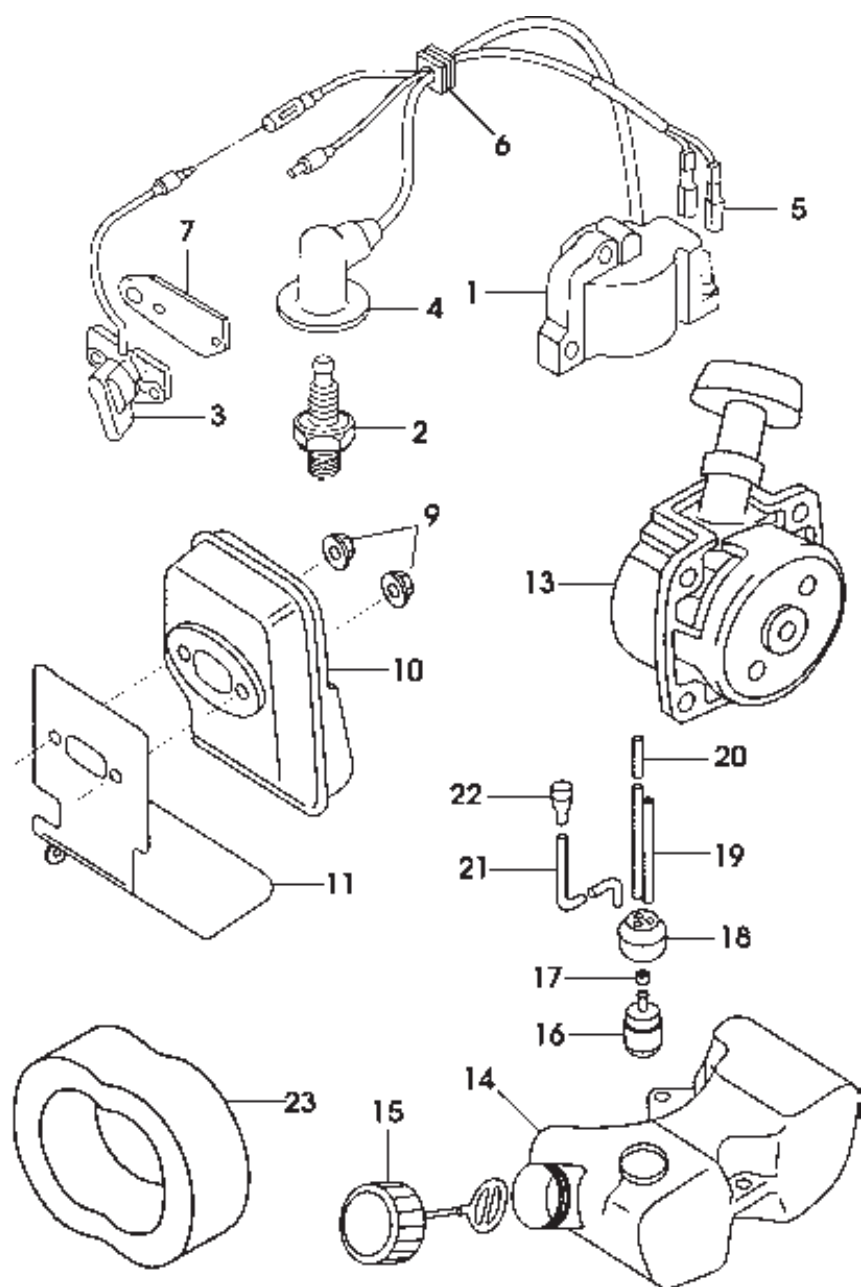
SPARE PARTS -PUMP



SPARE PARTS -PUMP

No.	Description	Part No.
1	Engine Complete	DSCM101
2	End Cover	DSCM102
3	Bolt	DSCM103
4	Al. Washer	DSCM104
5	Mechanical Seal	DSCM105
6	Packing	DSCM106
7	Impeller	DSCM107
8	Inner Pump Casing	DSCM108
9	Packing - Inner	DSCM109
10	Main Casing	DSCM110
11	Bolt	DSCM111
12	Handle	DSCM112
13	Check Valve	DSCM113
14	Inlet Housing	DSCM114
15	Hex. Bolt	DSCM115
16	Rubber Seal	DSCM116
17	Hose Coupling	DSCM117
18	Locking ring	DSCM118
19	Priming Plug	DSCM119
20	Seal	DSCM120
21	Drain Plug	DSCM121
22	Seal	DSCM122
23	Base	DSCM123
24	Hose Clip	DSCM124
25	Strainer	DSCM125

SPARE PARTS - ENGINE



SPARE PARTS - ENGINE

No.	Description	Part No.
1	Ignition Coil	DSCM101E
2	Spark Plug	DSCM102E
3	Stop Switch	DSCM103E
4	Plug Cap	DSCM104E
5	Wire Lead	DSCM105E
6	Grommet	DSCM106E
7	Bracket	DSCM107E
9	Flange Nut	DSCM109E
10	Silencer	DSCM110E
11	Gasket	DSCM111E
13	Recoil Starter Compl.	DSCM113E
14	Fuel Tank Assy.	DSCM114E
15	Fuel Cap Assy.	DSCM115E
16	Fuel Filter	DSCM116E
17	Bush	DSCM117E
18	Grommet	DSCM118E
19	Tube	DSCM119E
20	Tube	DSCM120E
21	Tube	DSCM121E
22	Breather Valve	DSCM122E
23	Air Cleaner Element	DSCM123E