

Clariflo®

PUMP



BOOSTER PUMP

MODEL NO: CBM250SS

PART NO: 7238020

OPERATION & MAINTENANCE INSTRUCTIONS



ORIGINAL INSTRUCTIONS

GC1220

INTRODUCTION

Thank you for purchasing this CLARKE water pump. which is a general purpose pump, suitable for a variety of applications involving the transfer of clean, cold water ONLY (up to a maximum of 35°C) for domestic and gardening applications.

Please read this manual thoroughly and ensure you are familiar with all aspects relating to your particular pump before its connection and use. This will ensure the safe and proper installation of the pump and assist it in providing a long, trouble free performance.

Please keep these instructions in a safe place for future reference.

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.

ENVIRONMENTAL RECYCLING POLICY



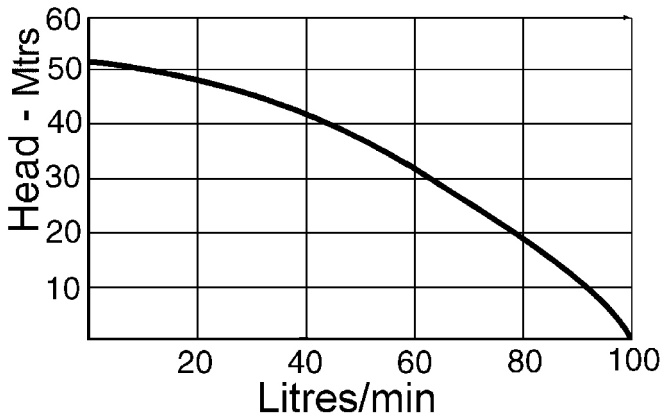
Through purchase of this product, the customer is taking on the obligation to deal with the WEEE in accordance with the WEEE regulations in relation to the treatment, recycling & recovery and environmentally sound disposal of the WEEE.

In effect, this means that this product must not be disposed of with general household waste. It must be disposed of according to the laws governing Waste Electrical and Electronic Equipment (WEEE) at a recognised disposal facility.

SPECIFICATION

Maximum Delivery	100 l/min
Maximum Head	60 m
Maximum Suction Lift	9 m
On/Off Pressure	3.5/5.2 Bar
Ingress Protection Rating	IPx4
Supply	230V ~ 50Hz
Rated Power	1250 W
Tank Capacity	24 Litres
Outlet Thread Size	1" BSP
Weight	19.2 kg
Sound Power Level	73 dB LpA

PUMP PERFORMANCE CURVE



GENERAL SAFETY PRECAUTIONS

Before using this equipment it is in your own interest to read and pay attention to the following safety rules.



WARNING: ALWAYS CONNECT THE PUMP TO AN EARTHED POWER SUPPLY VIA AN RCD.

1. ALWAYS keep the working area clean and well lit. Floors should always be kept clear. Cluttered or dark areas invite accidents.
 2. NEVER over-reach. Keep your proper footing and balance at all times when installing or maintaining the pump.
 3. NEVER direct any water discharge towards electrical wiring or equipment.
 4. ALWAYS thoroughly familiarise yourself with this pump & its operation, and follow all instructions in this manual. Never allow persons unfamiliar with these instructions to instal or operate the pump.
 5. ALWAYS ensure that the pump is properly installed to prevent it from moving during operation, and that the immediate area surrounding the pump is kept clear.
 6. ALWAYS maintain the pump with care and keep it clean for best / safest performance.
 7. NEVER modify this pump in any way. Use it ONLY for the purpose for which it is designed.
 8. NEVER use for pumping flammable liquids or corrosive chemicals. This pump is designed to pump clean water only.
 9. ALWAYS have the pump serviced by your local dealer, using only identical replacement parts. This will ensure the safety of the pump is maintained. The use of non standard parts could be hazardous.
 10. NEVER use this product if any part is damaged. Have it inspected and repaired by your local Clarke dealer. Always turn the pump off before carrying out any maintenance.
 11. NEVER allow the pump to run dry.
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CAUTION: THIS PUMP IS NOT A SUBMERSIBLE PUMP. ON NO ACCOUNT SHOULD IT EVER BE IMMERSSED IN WATER.

ELECTRICAL INSTALLATION



WARNING: READ THESE ELECTRICAL SAFETY INSTRUCTIONS THOROUGHLY BEFORE CONNECTING THE PRODUCT TO THE MAINS SUPPLY.

Connect the mains lead to a standard, 230 Volt (50Hz) electrical supply through an approved 13 amp BS 1363 plug or a suitably fused isolator switch. If the plug has to be changed because it is not suitable for your socket, or because of damage, it must be removed and a replacement fitted, following the wiring instructions shown below. The old plug must be discarded safely, as insertion into a power socket could cause an electrical hazard.

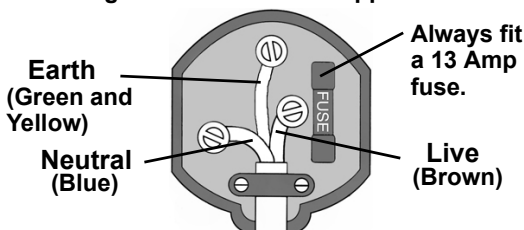


**WARNING: THE WIRES IN THE POWER CABLE OF THIS PRODUCT ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE:
BLUE = NEUTRAL BROWN = LIVE YELLOW AND GREEN = EARTH**

The colours of the wires in the power cable must agree with the markings on the plug.

- Connect the BLUE wire to the terminal marked N.
- Connect the BROWN wire to the terminal marked L.
- Connect the YELLOW AND GREEN wire to the terminal marked E or \perp .

Plug must be BS1363/A approved.



Ensure that the outer sheath of the cable is firmly held by the clamp

AN APPROVED RESIDUAL CURRENT DEVICE (RCD) WHICH HAS A TRIPPING CURRENT OF LESS THAN 30 mA MUST BE USED.

If you are not sure consult a qualified electrician.

INSTALLATION OF THE PUMP

IMPORTANT: The pump MUST NOT be connected to the mains power supply until all hose/pipe installations are completed.

If any part of the system is to be connected to the mains water supply, do ensure that you comply with your local water authority regulations.

Because of the variety of possible installations, no plumbing accessories are supplied as standard with your pump. However, accessories designed specifically for this range of pumps are available from your CLARKE dealer.

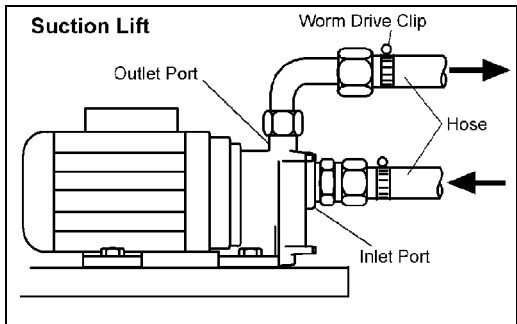
The pump must always be installed and operated in a horizontal position i.e. with the outlet port facing vertically upwards. The fixing holes in the base should be used as necessary to secure the pump firmly in its operating position. Also, ensure that there is adequate air circulation around the motor.

Avoid situations where there is the risk of water coming into contact with the outside of the pump. Neither the motor or the terminal box are designed to be waterproof.

These notes are for guidance on how to achieve a proper working system.

The schematic diagram opposite illustrates a typical pipework installation.

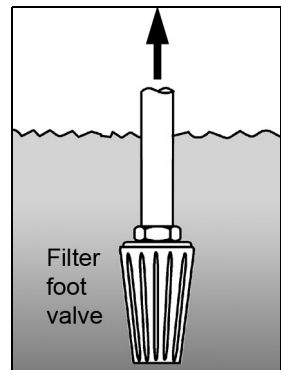
The suction lift i.e. the vertical distance between the water level and the pump should not exceed the distance specified for your pump.



A foot valve and filter should be fitted to the lower end of the suction hose, as illustrated below, so as to help retain water in the suction system and to prevent the possibility of large foreign bodies entering the pump body.

A 1" BSP hose adapter will be required for connection to the inlet port. This is available from your dealer.

The performance of your pump will be effected by the diameter of the inlet pipe - any restriction will greatly reduce the flow. We strongly recommend that you use a diameter pipe which is as large as practicable, with a suitable reducer for connection to the 1" BSP inlet adapter.



The delivery hose should be attached to the outlet adapter which is supplied.

A gate valve may be installed in-line on the delivery side of the pump which can be set as required to regulate the flow of water. Do not place any such restriction on the suction side of the pump unless it is an isolator valve in a gravity fed system.

It is **IMPORTANT** to note also that this pump should not be operated with the delivery valve completely closed.

To prevent unnecessary strain or possible distortion to the pump, ensure that adequate support is provided to the hoses and/or pipes. Remember they will be considerably heavier when filled with water.

Should sand, chemical or other contaminants come into contact with the pump, flush through with cold clean water as soon as possible.

Protect the pump and pipework from freezing. The formation of ice may cause serious damage.

Where the pump is to be a permanent fixture, the fittings to the pump **MUST** be flexible, i.e. a short piece of hose should be inserted between rigid metal pipework and the pump.

It is strongly recommended that in addition to the coarser foot filter, an inlet filter should be fitted to prevent the possibility of any foreign body from entering the pump. This is particularly important in the case of multi-stage pump such as the CBM250SS. A filter specifically designed for all pumps in the range is available from your CLARKE dealer.

The filter bowl is transparent allowing a visual check as to the condition of the filter cartridge. The filter cartridge is a washable net type with a rated filtration of 60 microns, suitable for the efficient removal of suspended particles such as sand. The filter is **NOT** designed to filter mud, sludge etc.

This pump is provided with a non-return valve connected to the inlet port. Screw the non return valve into the inlet port, ensuring the arrow, stamped on the valve points inwards towards the inlet port. Tighten the valve, **BUT DO NOT OVERTIGHTEN**, then screw the filter on to the valve - again **DO NOT OVERTIGHTEN**.

The filter should hang vertically when completed.

These units operate as **BOOSTER** pumps by utilising an air chamber with a pressure regulator to provide a constant pressure at the outlet.

The pump will automatically cut in when the water pressure reduces to 2.0 Bar, and cut out when the pressure reaches 3.5 Bar. (These pressures are 3.5 and 5.2 bar respectively for Model CBM250SS). These pressures are factory set and must not be altered. The pump may continue to operate for a short while, after the tap is turned off, until the cut-out pressure is reached.

In order for the system to operate correctly it is necessary to pressurise the air chamber to 1.5 Bar (22psi), which is carried out as follows:

Unscrew the large protection cap on the end of the air chamber to reveal the air valve and use an air line or foot pump to charge the chamber to the specified pressure, checking with a standard air pressure gauge until satisfied. Remember to replace the protective cap when completed.

IMPORTANT: This procedure MUST be carried out BEFORE connecting to the water supply.

PRIMING

When suction lift is used to draw water into the pump it is essential that all connections and hoses are completely air tight, otherwise the system will not work.

Although the pump is a 'self priming' type, it is nevertheless necessary to completely fill the inlet side of the pump with water before being started for the first time, or if the system has been drained for maintenance or repair purposes. This is known as priming the pump and is carried out as follows:-

1. Locate and remove the small filler plug, situated on the top of the pump chamber, and **slowly** fill the pump with water until all air is expelled.

NOTE: If a filter is fitted to your pump it is recommended that you remove the brass plug on top of the unit and fill the bowl with water.

2. Adjust any device which may be fitted to the outlet side of the pump, so as to ensure as great a flow as possible.
3. Switch on the pump and check for leaks. Water should start to flow through the system after a short while. If, after 2-3 minutes, depending upon the suction depth, water does not flow, check to ensure:
 - The inlet pipe is completely secure and completely free from defects. Even a pin hole could prevent the pump from drawing water. This is the most common problem encountered when operating water pumps.
 - The pump body has been primed correctly and is completely filled with water.

NOTE: If the pump is gravity or pressure fed, priming will not be necessary, as the pressure of water will purge the system of air.

It is essential that all connections and hoses are completely air tight, otherwise the system will not work.

TROUBLESHOOTING

Problem	Cause	Solution
Pump does not run.	Thermal protection has been activated.	If the motor has overheated, wait for it to cool down before trying again.
	Faulty power connection	Insert plug securely.
	No mains supply.	Check fused power supply and replace fuse if necessary (check fuse rating). Check circuit breaker.
	Impeller seized/blocked	Disconnect pump from power supply. Investigate cause and clear blockage
Pump fails to prime	Air leaks through suction hose joints (damaged hose or damaged clamp.)	Repair connections/ replace hose as necessary.
	Blocked inlet hose	Check pipeline for blockage. Check any inlet valve fitted is fully open.
Pump runs but gives poor output	Congested material inside pump	Clean out & backflush pump.
	Suction or delivery line obstructed.	Remove obstruction and ensure there are no kinks in delivery line.
	Inlet pipe leakage.	Check inlet pipe and connector for leaks. Tighten as required.
	Air leaks through damaged seal.	Renew seal.
	Impeller damaged and making poor seal.	Return to your CLARKE dealer for repair.
	Impeller / mechanical seal is badly worn.	Return to your CLARKE dealer for repair.

	High friction losses in the suction line.	Avoid unnecessary curves, restrictions or valves
	Pump badly sited resulting in suction lift too high	Set pump as close as possible to the level of the water to be pumped
Sudden loss of flow.	Blockage of inlet pipe	Check pipeline for blockage.
Undue vibration or noise.	Excessive flow of water.	Decrease flow of water. by adjusting inlet/outlet valves in system.
	Resistance in inlet pipe caused by obstruction.	Check pipe and clean out as necessary
	Loose rotating component	Return to your dealer for repairs.
	Installation of pump is unstable.	Stop pump and re-position.
	Air pocket in pump or pipeline.	Release plug in impeller housing to release air.
	Damaged impeller	Return to your CLARKE dealer for repair.

MAINTENANCE & CLEANING

The only maintenance required is a regular inspection to ensure that debris is not blocking the passage of water through the pump.

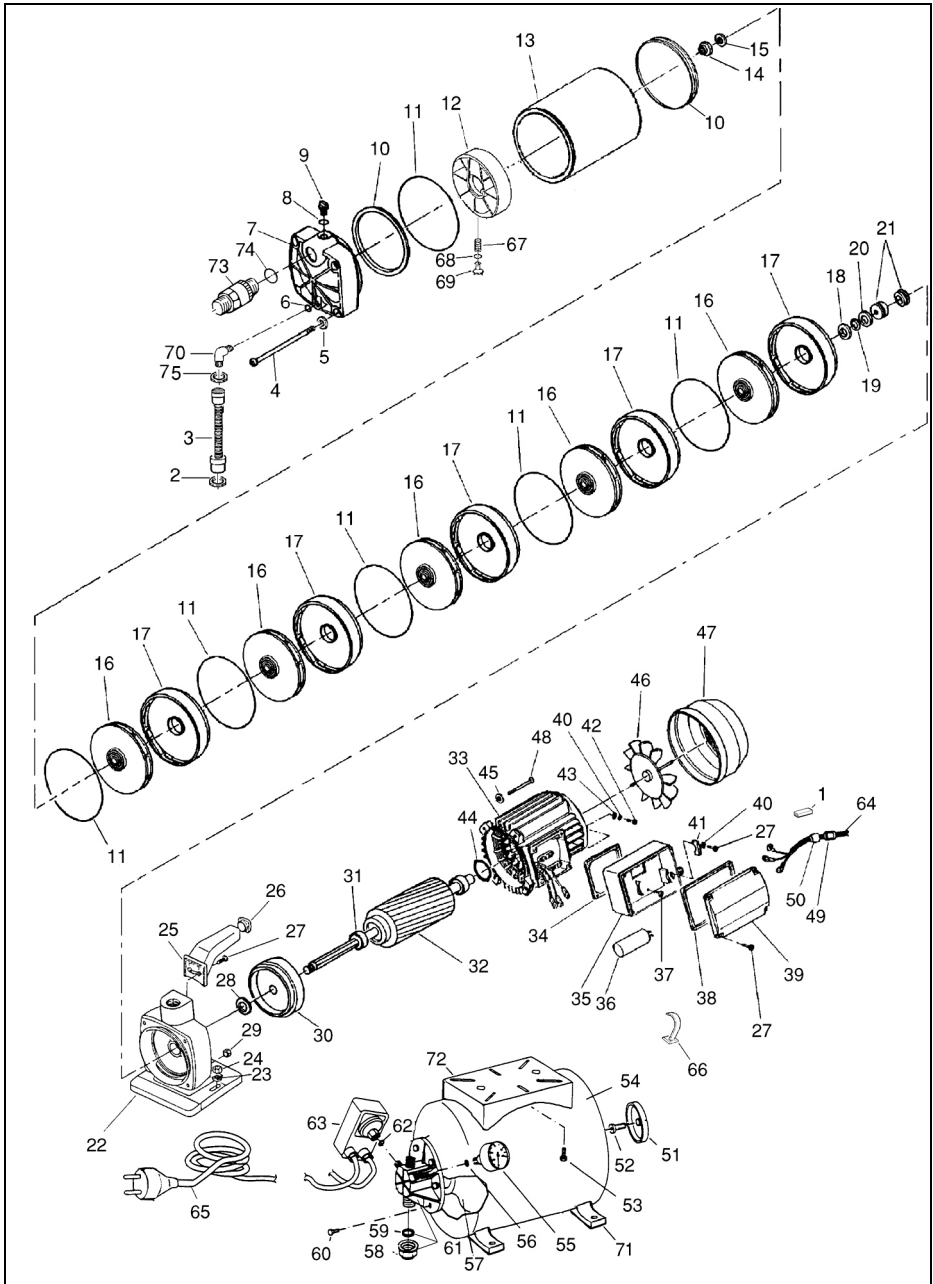
If you suspect the pump is blocked by silt, leaf debris etc, disconnect it from the power supply and back-flush to clear any blockage using a garden hose.

- You will need to disconnect the outlet hose to do this.

Always keep the pump in a clean condition, checking regularly for loose bolts or a damaged power cable etc.

The pump should not be taken apart by the user if overhaul is required, but should be taken to your nearest CLARKE dealer for repair.

COMPONENT PARTS CBM250SS



COMPONENT PARTS LIST

ID	DESCRIPTION	ID	DESCRIPTION
1	Terminal	31	Bearing
2	Joint	32	Shaft with bearings
3	Flexible pipe	33	Stator
4	Cross screw	34	Gasket
5	Spring washer	35	Capacitor holder
6	O-ring	36	Capacitor
7	Flange MC1" gas	37	Screw
8	O-ring	38	O-ring
9	Screw 3/8" gas	39	Capacitor holder cover
10	Joint	40	Spring washer
11	O-ring	41	Cable fastener
12	Counterflange	42	Screw
13	Cylinder	43	Washer
14	Nut	44	Wave washer
15	Washer	45	Spring Washer
16	Impellor	46	Fan Blades
17	Diffuser	47	Fan Cover
18	Washer	48	Screw
19	Ring	49	Nut
20	Washer	50	Joint
21	Mechanical Seal	51	Valve Cap
22	Pump Housing	52	Valve
23	Washer	53	Screw
24	Nut	54	Tank Shell SS
25	Handle	55	Pressure gauge (manometer)
26	Handle Cap	56	O-ring
27	Screw	57	Gauge
28	Joint	58	1" Cap
29	Nut	59	O-ring
30	Anterior Flange	60	Screw

ID	DESCRIPTION	ID	DESCRIPTION
61	4-way Flange	69	Adjuster
62	O-ring	70	Elbow
63	Pressure Switch	71	Foot
64	Cable	72	Bracket
65	Cable	73	Non-return valve
66	Clip	74	O-ring
67	Spring	75	Joint
68	O-ring		

ACCESSORIES

1" BSP Hose adaptor 90° bend (female)	Part No:7950190
1" BSP Plastic Foot Valve Filter FVF10	Part No:7950680
1" dia Reinforced Suction/Delivery Hose	Part No:7955010
1" dia Layflat Delivery Hose	Part No:7955110

DECLARATION OF CONFORMITY



Clarke[®]
INTERNATIONAL

Hemnal Street, Epping, Essex CM16 4LG

DECLARATION OF CONFORMITY

This is an important document and should be retained.

We hereby declare that this product(s) complies with the following directive(s):

- 2014/30/EU *Electromagnetic Compatibility Directive.*
- 2014/35/EU *Low Voltage Equipment Directive.*
- 2011/65/EU *Restriction of Hazardous Substances (amended by (EU) 2015/863).*
- 2000/14/EC *Noise Emissions Directive, (amended by 2005/88/EC).*

The following standards have been applied to the product(s):

EN 12050-2:2015, EN 60335-1:2012+A13:2017, EN 60335-2-41:2003+A2:2010.

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

The CE mark was first applied in: 2019

Product Description: Stainless Steel Booster Water Pump
Model number(s): CBM250SS
Serial / batch Number: N/A
Date of Issue: 11/12/2020

Signed:

J.A. Clarke
Director

A SELECTION FROM THE VAST RANGE OF

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