

# Clarke® *PUMP*



## SUBMERSIBLE WATER PUMPS



### Model Nos.

CS85S - CS85SA

CS120S - CS120SA

CS185S - CS185SA

CS240S - CS240SA

CS305S - CS305SA

## OPERATING & MAINTENANCE INSTRUCTIONS



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## SPARE PARTS & SERVICING

A range of suitable hose is available from your CLARKE dealer

For Spare Parts and Service, please contact your nearest dealer, or CLARKE International, on one of the following numbers.

**PARTS & SERVICE TEL: 020 8988 7400**

**PARTS & SERVICE FAX: 020 8558 3622**

or e-mail as follows:

**PARTS: [Parts@clarkeinternational.com](mailto:Parts@clarkeinternational.com)**

**SERVICE: [Service@clarkeinternational.com](mailto:Service@clarkeinternational.com)**

Thank you for purchasing this Clarke Submersible Pump.

These highly efficient pumps are designed for pumping clean water, or water containing sand or solids in suspension, (please see Features, page 5), and are ideally suited for draining ponds, pools, building excavations etc., where water temperature does not **exceed 50°C**.

***These pumps are NOT suitable for pumping salt water, or for permanent installation in fish ponds as the acidity, found in fish ponds, will damage the pump seals.***

Before attempting to operate your pump, please read this instruction manual thoroughly and follow all directions carefully. This is for your own safety and that of others around you, and to help you achieve long and trouble free service from your pump.

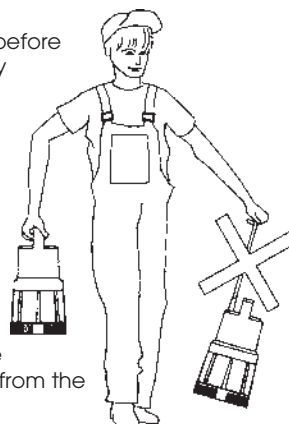
## GUARANTEE

This product is guaranteed against faults in manufacture for 12 months from purchase date. Keep your receipt as proof of purchase. This guarantee is invalid if the product has been abused or tampered with in any way, or not used for the purpose for which it is intended. The reason for return must be clearly stated. This guarantee does not affect your statutory rights.

Please note that dismantling this pump will invalidate the guarantee

## SAFETY PRECAUTIONS

1. These pumps are designed to pump **WATER ONLY**. Never use for pumping flammable liquids or chemicals of any kind.
2. Never run the pump dry.
3. An approved Residual Current Device (RCD) **MUST** be used when pumping from ponds or swimming pools.
4. Your submersible pump may **ONLY** be used for pumping water from a swimming pool when there is no person or animal in the pool.
5. Always disconnect the pump from the electrical supply before placing into, or removing from the water, and before any cleaning or maintenance of the pump.
6. Always use the handle, with a rope or chain attached when lifting the pump. **NEVER** lift the pump by the mains cable, or, where fitted, the float switch cable.
7. **DO NOT** run the pump with the body exposed for longer than 10 minutes.
8. **DO NOT** install the pump on sand, silt, mud etc., or ground which is likely to shift.
9. If pumping water which is below 0°C, the pump **MUST** be run continuously, otherwise the pump must be removed from the water and stored in a frost free location.
10. If the pump is to be used where there may be silt or mud (e.g., garden ponds), keep the pump clear of any sediment by standing it on a platform or brick or suspending from a rope attached to the handle



## ELECTRICAL CONNECTIONS

All models should have their mains lead connected to a standard 230Volt (50Hz) electrical supply through an approved plug or a suitably fused isolator switch. We recommend that these pumps be fitted with a Residual Current Device (RCD).

**NOTE: This is mandatory when pump is used for pumping swimming pools and ponds**

If the pump is to be connected to an outdoor electrical supply, make sure that both the plug and the socket are of a BS approved waterproof design.

In the event that the pump is hard wired into the electrical system, it must be carried out in accordance with IEE regulations.

If used for draining swimming pools or ponds, the pump **MUST** be fitted with a Residual Current Device (RCD), with a rated residual operating current of no greater than 30mA.

### WARNING: THIS APPLIANCE MUST BE EARTHED

**IMPORTANT:** The wires in the mains lead are coloured in accordance with the following code:

Green & Yellow	-	Earth
Blue	-	Neutral
Brown	-	Live

As the colours of the flexible cord of this appliance may not correspond with the coloured markings identifying terminals in your plug proceed as follows:

Connect GREEN & YELLOW cord to plug terminal marked with a letter "E" or Earth symbol  or coloured GREEN or GREEN & YELLOW.

Connect BROWN cord to terminal marked with a letter "L" or coloured RED

Connect BLUE cord to terminal marked with a letter "N" or coloured BLACK

### FUSE RATING

The fuse in the plug for this appliance must be rated at **13 amps**.

If this appliance is fitted with a plug which is moulded onto the electric cable (i.e. non-rewirable) please note:

1. The plug must be thrown away if it is cut from the electric cable. There is a danger of electric shock if it is subsequently inserted into a socket outlet.
2. Never use the plug without the fuse cover fitted.
3. Should you wish to replace a detachable fuse carrier, ensure that the correct replacement is used (as indicated by marking or colour code).
4. Replacement fuse covers can be obtained from your local dealer or most electrical outlets
5. The fuse in the plug must be replaced with one of the same rating (**13 amps**) and this replacement must be ASTA approved to BS1362.

### IMPORTANT:

**If you are in any doubt regarding electrical installation, you should consult a qualified electrician.**

## FEATURES

These pumps are of rugged and durable construction, designed for long lasting continuous operation and their stainless steel bodies provide good anti corrosive properties. The motor is provided with built in overload protection.

For your information the charts, on pages 9 and 10, show the flow rate for each pump at various heads. (HEAD is the distance, or height, from the surface of the water to the point of discharge)

These pumps are designed to pump water containing solids in suspension. That is - with a maximum of 5% solid content, and a maximum 3mm solid dia.

***They are NOT designed for pumping slurry, sludge, mud or heavily polluted water, and should NOT be used for PERMANENT INSTALLATION in fish ponds or any water containing chemicals or other acidic contaminants including salt water.***

Whenever the pump is used to pump contaminated water, e.g. to drain fish ponds etc., you must ALWAYS immerse the pump in clean water and run it for a few minutes on completion, to ensure it is completely cleansed of all contaminants.

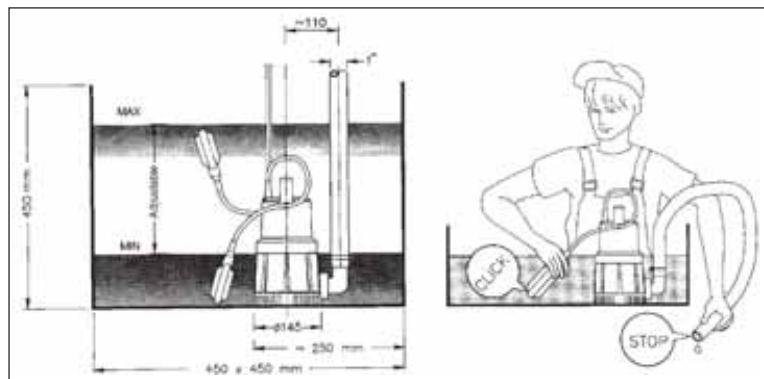
**The maximum depth to which these pumps should be submerged is 5 Metres.**

**Automatic Pumps**, i.e. those fitted with a Float Switch, denoted by an 'A' suffix to their model number, are suitable for permanent or semi-permanent installations, e.g. installations where it is necessary to maintain a water at a particular level.

As the water level rises, so will the float. At a certain point the switch will operate and start the pump. As the water level falls, so will the float until the switch operates again and stops the pump.

Float switches are adjusted at the factory to provide the correct ON-OFF switching mode, i.e. cut out when the depth of water is 40mm and will cut in again when the level reaches 300mm.

You can adjust the level at which the pump cuts out by sliding the float switch cable through the clip attached to the main body. Shorten or lengthen it as the case may be. The shorter it is, the earlier the pump will cut out, and the water therefore will be deeper at this point. Similarly, it will cut in earlier and the water will therefore be shallower when it does so.



It should not normally be necessary to change the length of cable (from the clamp to the float switch), but should you do so, remember that the cable length should NEVER be so long that the float switch fails to operate and switch the pump OFF. ALWAYS check its operation before use.

## INSTALLATION

All pumps are complete with an Outlet Hose Adapter which simply screws into the outlet port on top of the pump body.

**Model CS85** is provided with a 1" BSP threaded adapter which will accept a 1" I.D. hose.

**Models CS120 and 185** are provided with a 1 ¼" BSP threaded, two stage adapter, which will accept either a 1" or 1 ¼" I.D. hose.

**Models CS240 and 305** are provided with a 1 ½" BSP threaded adapter which will accept a 1 ½" I.D. hose.

Ensure the hose is secured with a suitable worm drive clip (not supplied).

If the pump is to be used for drainage purposes, or in situations that demand maximum efficiency, we strongly recommend that you connect the largest diameter hose possible to the outlet hose adapter, as small diameter hoses reduce capacity and put additional strain on the motor.

If a 1 ¼" hose is used with models **CS120 & 185**, it will be necessary to cut off the 1" diameter fitting at the joint between the two. Do not slide the 1 ¼" hose over the 1" fitting as the 1" fitting will act as a restriction.

The pumps are completely submersible and must be placed in a vertical position on a solid flat surface. If this is not available, sit the pump on house bricks, or something similar, and ensure that this type of support is not likely to shift.

The pump should be well clear of silt, mud or any type of marine growth.

### IMPORTANT:

**ALWAYS** raise and lower the pump using a rope attached to the lifting eye, where fitted, or to the lifting handle, **NEVER** by the power cable.

Automatic versions should be placed in a sump which has adequate dimensions so as not to restrict the movement of the float switch.

Please note that the symbol  $\nabla$  on the pumps' Rating Plate, denotes the **MAXIMUM** depth to which the pump may be submerged, in metres.

Take all necessary precautions as described on page 2 before plugging in, and switching ON.

**SUITABLE HOSE, and SPARE/REPLACEMENT HOSE ADAPTERS ARE AVAILABLE FROM YOUR CLARKE DEALER**

## MAINTENANCE

### WARNING

Before checking the condition of the pump, ensure it is unplugged from the mains supply. If the unit is hard wired, ensure the circuit breaker is open.

Check the pump installation regularly to ensure the base inlet is clear of leaves or other debris.

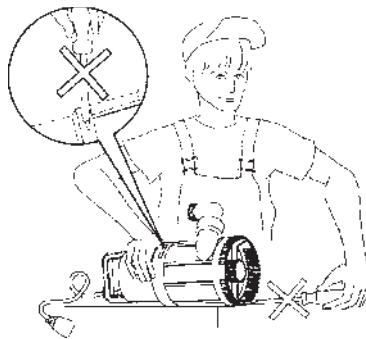
Note that these pumps are fitted with automatic thermal overload protection. If the pump overheats due to an obstruction in the pump, or pumping warm water in excess of 50°C for example, it will shut off automatically. Switch the pump OFF and disconnect from the mains supply. Check for blockages and allow the motor to cool (at least 15 minutes) before attempting to restart.

These pumps should require no maintenance other than regular cleaning. If the pump starts to show signs of wear or damage, contact your CLARKE dealer for advice. Do not use the pump if there is any damage to the mains supply cable, or to the float switch or its cable.

Do not attempt to repair the pump yourself, as you may damage the waterproof seal and invalidate your guarantee. Repairs must be carried out by your CLARKE dealer, or contact the CLARKE Service Department, on **0208 556 4443**.

If the pump becomes badly clogged, the stainless steel strainer may be removed and cleaned by removing the screws, on the underside of the strainer, which secure it to the main body.

Back flush the pump by removing the inlet hose adapter and directing a jet of clean water through the inlet port.



### IMPORTANT

Do not attempt to strip the pump further as this will invalidate the guarantee

## **TROUBLE SHOOTING**

### **A. PUMP WILL NOT START**

#### **1. Manual type (i.e. without float switch)**

- 1.1 Check to ensure Power is switched on.
- 1.2 Check fuse (consult an electrician if in doubt).
- 1.3 If extension lead is fitted, check connections (consult an electrician if in doubt).
- 1.4 Internal thermal cutout has not reset. Leave for 5 minutes and try again.
- 1.5 The Impeller may be jammed. Disconnect from the mains supply, remove the bottom strainer and remove any objects that may be obstructing the impeller. Replace the strainer and try again.

If the pump still fails to start, consult your CLARKE dealer for advice.

#### **2. Automatic Type (with float switch)**

- 2.1 Check all above.
- 2.2 Float switch may be jammed against side wall, or prevented from moving.
- 2.3 Water level too low - float switch in OFF position - Lift float to check switch.

### **B. PUMP WILL START BUT NOT PUMP**

1. Water level too low - below the minimum suction level (Manual type).
2. Check to ensure strainer is not blocked.
3. Discharge tube clogged or obstructed.
4. The head may be too great, i.e. you are trying to lift the water too great a distance for the pump to cope with. (See specifications pages 9 -10 ).
5. Air bubble in the pump, produced during the plunge. Plunge the pump again, at an angle, and shake it whilst lowering to remove any air trapped in the system.
6. Impeller may be damaged - Consult your CLARKE dealer

### **C. AUTOMATIC PUMP WILL NOT STOP**

1. Float switch may be prevented from moving to the fully down position.
2. Float switch may be faulty. Consult your CLARKE dealer for advice.

### **D. PUMP STOPS RUNNING**

1. Thermal overload has operated. If this condition persists, investigate the cause. Are you attempting to pump liquid which is too heavy for the pump (mud, slurry etc.)
2. Pump has run dry, or float switch has cut in.
3. A foreign object has jammed the impeller.

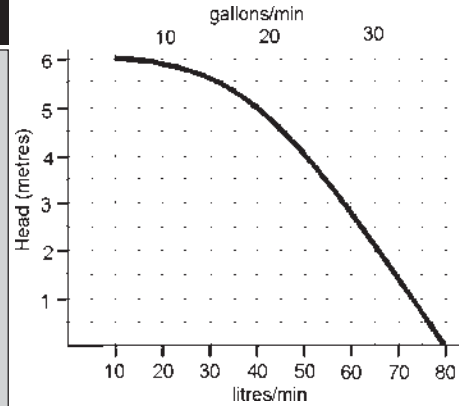


## PUMP PERFORMANCE DATA

### CS85S & CS85SA

Outlet Dia. ....	1" / 25mm
Motor Output .....	250Watts
Motor Speed .....	2,800RPM
Head Max. ....	6M
Max. Submersion Depth .....	5M
Max. Capacity .....	80L/min
Weight .....	3.3/3.5kg
Cable .....	10M
Dimensions* .....	155x212mm
Part No. CS85S .....	7239100
CS85SA .....	7239105

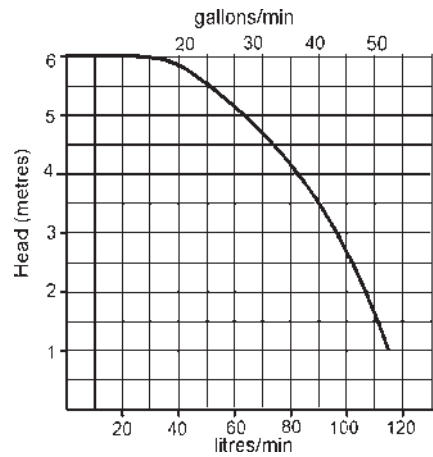
\*Diameter x Height



### CS120S & CS120SA

Outlet Dia. ....	1 1/4" / 32mm
Motor Output .....	300Watts
Motor Speed .....	2,800RPM
Head Max. (M) .....	6M
Max. Submersion Depth .....	5M
Max. Capacity .....	115L/min
Weight .....	5.2/5.5kg
Cable .....	10M
Dimensions* .....	154X238mm
Part No. CS120S .....	7239110
CS120SA .....	7239115

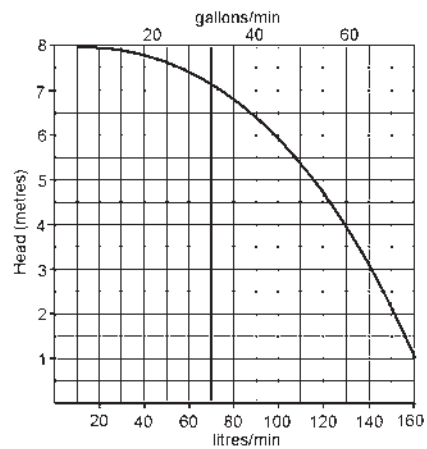
\*Diameter x Height



### CS185S & CS185SA

Outlet Dia. ....	1 1/4" / 32mm
Motor Output .....	450Watts
Motor Speed .....	2,800RPM
Head Max .....	8M
Max. Submersion Depth .....	5M
Max. Capacity .....	160L/min
Weight .....	5.9/6.2kg
Cable .....	10M
Dimensions* .....	154x238mm
Part No. CS185S .....	7239120
CS185SA .....	7239125

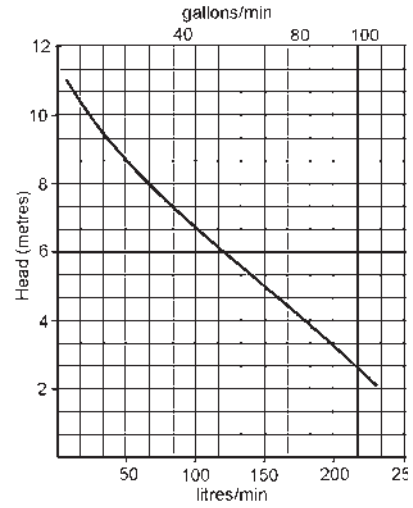
\*Diameter x Height



## CS240S & CS240SA

Outlet Dia. ....	1½" / 38mm
Motor Output .....	600Watts
Motor Speed .....	2,800RPM
Head Max. ....	11M
Max. Submersion Depth .....	5M
Max. Capacity .....	215L/min
Weight .....	8.7/9.0kg
Cable .....	10M
Dimensions* .....	212x290mm
Part No. CS240S .....	7239130
CS240SA .....	7239135

\*Diameter x Height



## CS305S & CS305SA

Outlet Dia. ....	1½" / 38mm
Motor Output .....	750Watts
Motor Speed .....	2,800RPM
Head Max. ....	14M
Max. Submersion Depth .....	5M
Max. Capacity .....	300L/min
Weight .....	10.7/11.0kg
Cable .....	10M
Dimensions* .....	212x290mm
Part No. CS305S .....	7239140
CS305SA .....	7239145

\*Diameter x Height

