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# Clarke<sup>®</sup> PUMP

## SUBMERSIBLE WATER PUMP

Model Nos.

**HSE120 - 120A - 240 - 240A - 250A  
& HSEC 400A**



## OPERATING & MAINTENANCE INSTRUCTIONS



Thank you for purchasing this Clarke HSE Submersible Pump.

These highly efficient pumps are designed for pumping clean water, or water containing sand or solids in suspension, depending upon the model (please see below), and are ideally suited for draining ponds, pools, building excavations etc. Water temperature must not **exceed 35 C**.

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.

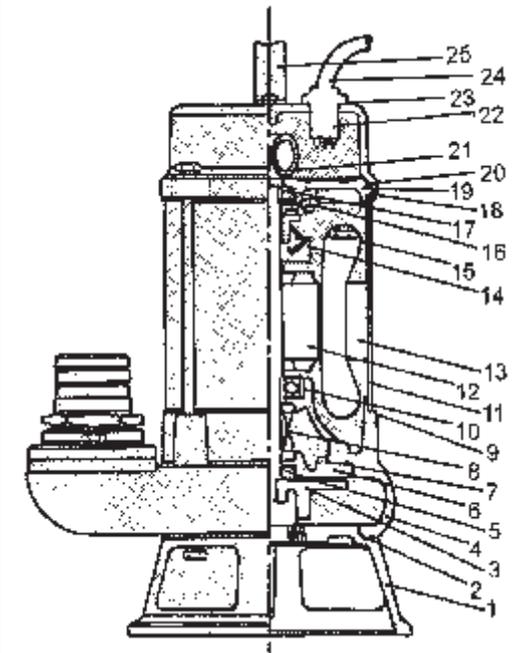
## SAFETY PRECAUTIONS

1. These pumps are designed to pump WATER ONLY. Never use for pumping flammable liquids or chemicals.
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 it into, or removing it from the water, and before any cleaning or maintenance of the pump.
6. Always use the moulded handle, with a rope or cord attached if necessary, when lifting the pump. Do not lift the pump by the mains cable, or, where fitted, the float switch cables.
7. DO NOT run the pump with the body exposed for longer than 10 minutes.
8. DO NOT install the pump on sand, or ground which is likely to shift.
9. Do not use the pump if the water is liable to freeze, as this can cause damage to the pump. Remove the pump from the water and store it in a frost free location.
10. If the pump is to be used where there may be silt or mud (for example, garden ponds), keep the pump clear of any sediment by standing it on a platform or brick.
11. Always disconnect the pump from the mains supply before placing it into or removing it from water, and before any cleaning or maintenance of the pump.

## PARTS LIST & DIAGRAM

## HSEC 400A

No.	Description	Part No.
1	Strainer	HG400A01
2	Strainer Packing	HG400A02
3	Impeller	HG400A13
4	Pump Casing	HG400A04
5	Oil Seal	HG400A05
6	Oil Cover	HG400A06
7	Oil Cover Packing	HG400A07
8	Mechanical Seal	HG400A08
9	Motor Casing Pkg	HG400A09
10	Lower Bearing	HG400A10
11	Motor Casing	HG400A11
12	Rotor Shaft	HG400A12
13	Stator Coil	HG400A13
14	Centrifugal Switch	HG400A14
15	Thermal Overload	HG400A15
16	Centrifugal Plate	HG400A16
17	Upper Bearing	HG400A17
18	Motor Casing Pkg	HG400A18
19	Inside Cover	HG400A19
20	Head Cover Pkg.	HG400A20
21	Capacitor	HG400A21
22	Cable Gland	HG400A22
23	Gland Packing	HG400A23
24	Power Cable	HG400A24
25	Handle	HG400A25
26	Outlet Discharge.	HG400A26

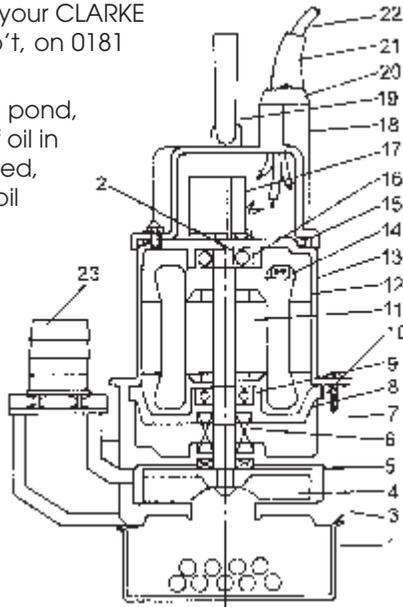


## SPECIFICATIONS

Model No.	HSE 120 HSE 120A HSE 200A	HSE 240 HSE 240A HSE 250A	HSEC 400A
Outlet Dia. (in/mm)	1¼/32	2/50	2/50
Motor Output (Watts)	150	400	400
Head Max. (M)	7	12	8
Capacity Max. (L/min)	120	240	240
Head Continuous (M)	4	8	5.5
Capacity at Cont. Head (L/min)	80	130	100
Dimensions LxWxH (mm)	180x130x310	240x180x430	230x170x420
Weight (kg)	7	15	18
Cable (Mxmm <sup>2</sup> )	10x1.00	10x1.00	10x1.00

you may damage the waterproof seal and invalidate your guarantee. Repairs must be carried out by your CLARKE dealer, or contact the CLARKE Service Dep't, on 0181 556 4443.

If using this pump to pump out a garden pond, please note that there is a small quantity of oil in the pump seal. If the pump or seal is damaged, possibly caused by running the pump dry, oil may leak out, and appear as a film on the surface of the water. Although harmless to people, the oil must be cleared to prevent any possible harm to pond life. Disconnect the pump from the electrical supply, remove it from the pond, and clear the oil, then contact your CLARKE dealer for advice.



## PARTS LIST & DIAGRAM HSE 200 & HSE 400 Series

Item Description	Part No.				
	HSE 120	HSE 120A	HSE 240	HSE 240A	HSE 250A
1 Strainer	HG12001	HG120A01	HG24001	HG240A01	HG250A01
2 Centrifugal Switch	HG12002	HG120A02	HG24002	HG240A02	HG250A02
3 Pump Housing	HG12003	HG120A03	HG24003	HG240A03	HG250A03
4 Impeller	HG12004	HG120A04	HG24004	HG240A04	HG250A04
5 Lip Seal	HG12005	HG120A05	HG24005	HG240A05	HG250A05
6 Mechanical Seal	HG12006	HG120A06	HG24006	HG240A06	HG250A06
7 Oil Chamber	HG12007	HG120A07	HG24007	HG240A07	HG250A07
8 Bottom Motor Plate	HG12008	HG120A08	HG24008	HG240A08	HG250A08
9 Lower Bearing	HG12009	HG120A09	HG24009	HG240A09	HG250A09
10 'O' Ring	HG12010	HG120A10	HG24010	HG240A10	HG250A10
11 Rotor Shaft	HG12011	HG120A11	HG24011	HG240A11	HG250A11
12 Stator	HG12012	HG120A12	HG24012	HG240A12	HG250A12
13 Motor Case	HG12013	HG120A13	HG24013	HG240A13	HG250A13
14 Overload Protector	HG12014	HG120A14	HG24014	HG240A14	HG250A14
15 'O' Ring	HG12015	HG120A15	HG24015	HG240A15	HG250A15
16 Upper Bearing	HG12016	HG120A16	HG24016	HG240A16	HG250A16
17 Capacitor	HG12017	HG120A17	HG24017	HG240A17	HG250A17
18 Upper Cover	HG12018	HG120A18	HG24018	HG240A18	HG250A18
19 Handle	HG12019	HG120A19	HG24019	HG240A19	HG250A19
20 Gland Cover	HG12020	HG120A20	HG24020	HG240A20	HG250A20
21 Cable Gland	HG12021	HG120A21	HG24021	HG240A21	HG250A21
22 Power Cable	HG12022	HG120A22	HG24022	HG240A22	HG250A22
23 Discharge Outlet	HG12023	HG120A23	HG24023	HG240A23	HG250A23

## ELECTRICAL CONNECTIONS

All models **EXCEPT HSE 250A**, 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.

Model HSE250A **must** be connected to a protected 110V supply, through a suitably approved connector. On no account must a 230V, 13amp (BS1363) plug be used.

**NOTE:** If a portable 110V transformer is used, make sure it has a rated capacity sufficient to take the load of the pump.

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 coloured 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

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
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 in doubt, consult a qualified electrician.**

## FEATURES

The pumps are of rugged and durable construction, designed for long lasting continuous operation, and the motor is provided with a built in overload protector.

Except for model HSEC 400A, the pumps should be used **ONLY** for pumping water, or water containing small solids in suspension. NOT for pumping slurry, mud or heavily polluted water.

The HSEC 400A is fitted with a Tungsten Carbide cutter, and is specially suited for heavily polluted waste water and waste solids, such as sewage, light slurry, factory waste etc.

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, eg. installations where it is necessary to maintain a water at a particular level.

As the water level rises, the switch will float, and start the pump. As the water level falls, so will the float switch, until it stops the pump.

Float switches are factory set to provide the correct ON-OFF switching mode.

It is not recommended that these pumps be used for pumping drinking water, as there is a remote possibility of water contamination due to leakage of pump lubricant, should the pump malfunction.

## INSTALLATION

The pumps are completely submersible, and should be placed in a vertical position, on a solid flat surface. If this is not available, sit the pump on timber, or house bricks, but ensure they are not likely to shift.

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

Connect the outlet to the largest diameter hose possible, any restrictions will reduce capacity, and put additional strain on the motor.

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

**SUITABLE HOSE, FOR ALL PUMPS, IS AVAILABLE FROM YOUR CLARKE DEALER**

## TROUBLESHOOTING

### 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 cut-out has not re-set. Leave for 5 minutes and try again.
- 1.5 The Impeller may be jammed. Disconnect from the mains supply, re move 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 - switch in OFF position.

### B. PUMP WILL START BUT NOT PUMP

1. Water level too low.
2. Check to ensure strainer is not blocked.
3. Check to ensure impeller is not jammed as in 1.5 above.
4. Check to ensure impeller is not damaged, and replace if necessary.
5. 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 specification chart).

### 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.

## MAINTENANCE

Check 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 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 5 minutes) before attempting to re-start.

This pump 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