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For spare parts and servicing, please contact your nearest dealer, or Clarke International on

020 - 8988 - 7400

e-mail: Parts@clarkeinternational.com e-mail: Service@clarkeinternational.com

Clarke® 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.

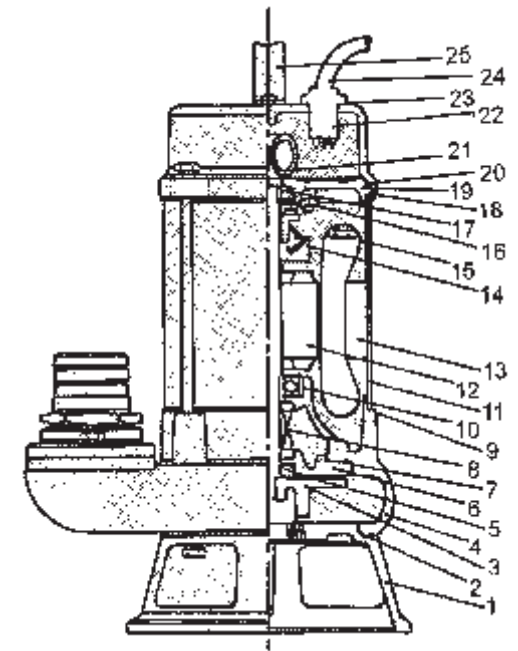
SAFETY PRECAUTIONS

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 |

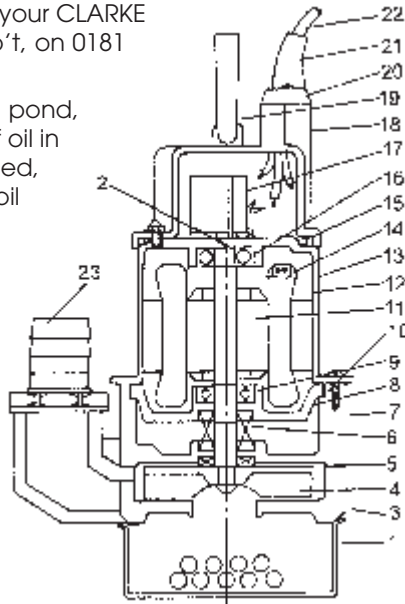


SPECIFICATIONS

| 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 ²) | 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