

ClarkeTM

PUMP



SUBMERSIBLE PUMPS HSE RANGE

OPERATING & MAINTENANCE INSTRUCTIONS



GC0514

INTRODUCTION

Thank you for purchasing this CLARKE submersible pump.

Before attempting to use the pump, please read this manual thoroughly and follow the instructions carefully. In doing so you will ensure the safety of yourself and that of others around you, and you can look forward to the submersible pump giving you long and satisfactory service.

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 affect your statutory rights.

ENVIRONMENTAL PROTECTION & RECYCLING



Do not dispose of this product with general household waste. It must be disposed of according to the laws governing Waste Electrical and Electronic Equipment, at a recognised disposal facility. Any old tools, accessories and packaging should be sorted and disposed of in an environmentally appropriate manner.

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.

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PUMP SAFETY INSTRUCTIONS

1. Only use the pump in the manner and for the functions described in these instructions.
2. These pumps are designed to pump water only. Never use for pumping flammable liquids or corrosive chemicals of any kind.
3. Never allow the pump to run dry. Switch the pump OFF immediately the task is completed.
4. An approved Residual Current Device (RCD) must be used when pumping from ponds or swimming pools.
5. The submersible pump may only be used for pumping water from a swimming pool when there is no person or animal in the pool.
6. Do not attempt to carry out any repairs on the pump until it is unplugged from the power supply.
7. Always lift the pump using the handle with rope or chain attached if necessary. Never lift or carry the pump by the power cable or by the float switch cable.
8. Always disconnect the pump from the electrical supply before placing it into, or removing from the water, and before any cleaning or maintenance of the pump.
9. Remember, the operator or user is responsible for accidents or hazards occurring to other people or their property.
10. Do not install the pump on sand, silt or mud which is likely to shift or collapse.
11. If the electrical cable becomes damaged, it must be replaced, - not repaired.
12. Keep the work area well lit. Dark areas invite accidents.
13. Do not over-reach. Keep your proper footing and balance at all times when handling the pump in waterlogged areas.
14. Store the pump out of the reach of children and do not allow persons unfamiliar with these instructions to operate the pump.
15. Do not abuse the electrical cable. Never use the cable for pulling or unplugging the pump. Damaged or tangled cables increase the risk of electric shock.
16. Check the pump for damage before use. Any damaged part should be inspected to ensure that it will operate properly and perform its intended function. Any damage should be properly repaired or the part replaced. If in doubt, DO NOT use the appliance. Consult your local dealer.
17. When operating outdoors, use an extension cable suitable for outdoor use. Using the correct cable reduces the risk of electric shock.

18. Always use an approved cable extension suitable for the power rating of this pump (see specifications), the conductor size should also be at least the same size as that on the pump, or larger. When using a cable reel, always unwind the cable completely.
19. Keep children and bystanders away while operating the pump.

Additionally, please keep these instructions in a safe place for future reference.

ELECTRICAL CONNECTIONS

All models EXCEPT HSE301A, 361A & HSEC651A should have their mains lead connected to a standard 230 volt (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.

Models HSE301, 361 & HSEC651A must be connected to a protected 110V supply, through a suitably approved connector. On no account must a 230V, 13amp 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 cable 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.

FUSE RATING

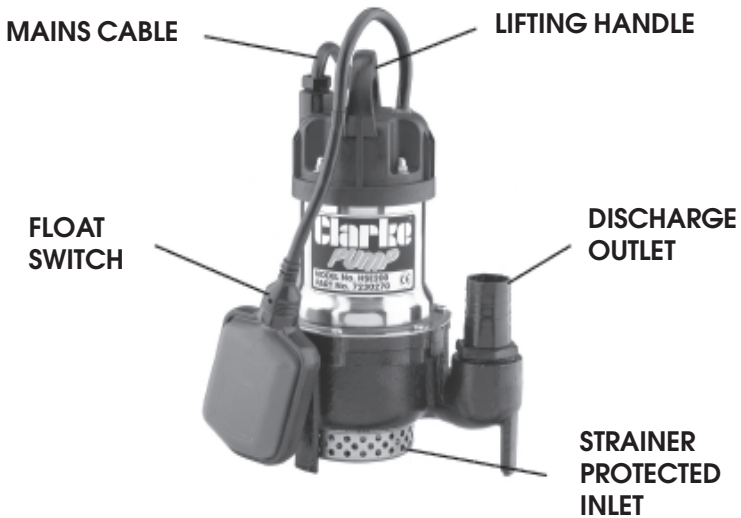
The fuse in the plug for this appliance must be rated according to the Technical Specification on page 16.

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

1. The plug must be thrown away if it is cut from the 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. Replacement fuse covers can be obtained from your local dealer or most electrical outlets.
4. The fuse in the plug must be replaced with one of the same rating and this replacement must be ASTA approved to BS1362.

IMPORTANT: If in doubt, consult a qualified electrician.

OVERVIEW



The CLARKE HSE range of submersible pumps are of rugged and durable construction, designed for long lasting continuous operation. They are suitable for discharging pools, ponds, fountains, pits and any waste water drainage. They can handle foul water containing sewage or other suspended material including sand up to a maximum of 3kg/m^3 to an amount stated in the specifications for each model. They may be used for pumping water, (including seawater) or water containing small solids in suspension with particle sizes of up to 6-10mm in diameter, dependant upon the size of pump. The pumps are not suitable for handling inflammable, corrosive, explosive or dangerous liquids.

The range includes models 130, 200, 300/301, 360/361 and 650/651 as itemised in the Technical Specification on page 16.

The HSEC650 & HSEC651A are fitted with a tungsten carbide cutter, and is specially suited for heavily polluted water and waste solids, such as sewage, light slurry, factory waste etc. The HSE200 is fitted with a strainer to prevent the ingress of foreign matter.

Float switches are fitted to those models bearing an 'A' suffix, meaning the pump will stop and restart automatically as the surrounding water level changes. This makes them suitable for permanent or semi-permanent installations, eg. installations where it is necessary to maintain a water at a particular level without an operator in attendance.

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 or the oil seal become damaged.

All HSE pumps are provided with a thermal overload cut-out, so that in the event the pump becomes overheated (due to becoming blocked etc.) the pump will shut off automatically. When the blockage has been cleared, the thermal overload will cool down and re-set and the pump can be re-started.

OPERATION

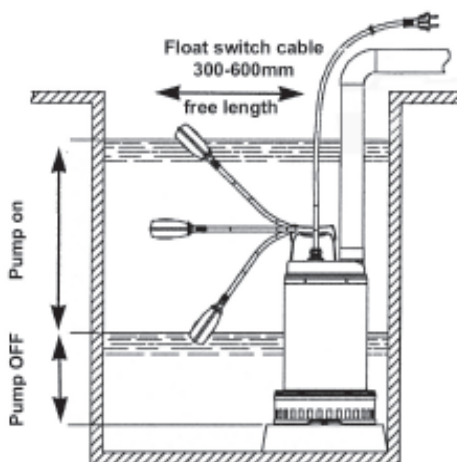
CONNECTION AND LOCATION

1. Place the pump in a vertical position resting on a firm, flat surface. If this is not available, sit the pump on timber or house bricks, but ensure they are not likely to collapse. Never install the pump on sand, silt, mud or ground that is likely to collapse.

Automatic versions should only be placed in a sump which is large enough not to restrict the movement of the float switch. It is advisable to use a strainer when using the pump as a sump pump.

2. Keep the pump clear of any sediment by standing it on a platform or brick or suspending from a rope attached to the handle if the pump is to be used where there may be silt or mud etc (e.g. garden ponds).

3. Connect the outlet to the largest diameter hose available, as any restrictions will reduce capacity and put further strain on the motor. The outlet hose diameter for each HSE pump is given in the Technical Specification on page 16.



4. Ensure that the hose diameter is equal to or greater than the diameter of the pump outlet if a long run of discharge hose is being used.
5. Ensure the float has sufficient room to operate correctly if used in a confined space such as a shaft or sump.

Note: When the pump is being used in a permanent or semi-permanent installation, a check valve must be fitted in the delivery hose. Suitable hoses are available from your Clarke dealer.

USING THE PUMP

1. Take all necessary precautions as described on page 4 before plugging in the pump and switching ON. Where the pump is an automatic unit fitted with a float switch, the pump will only run where there is sufficient depth of water for the float to rise and activate the pump.

2. If the water is likely to freeze, the pump must be run continuously, otherwise the pump must be removed from the water and stored in a frost free location.
3. Never run the pump dry. Never run the pump with the body exposed for more than 10 minutes.
4. When the water has been pumped out, disconnect from the power supply. Avoid running the pump continuously.

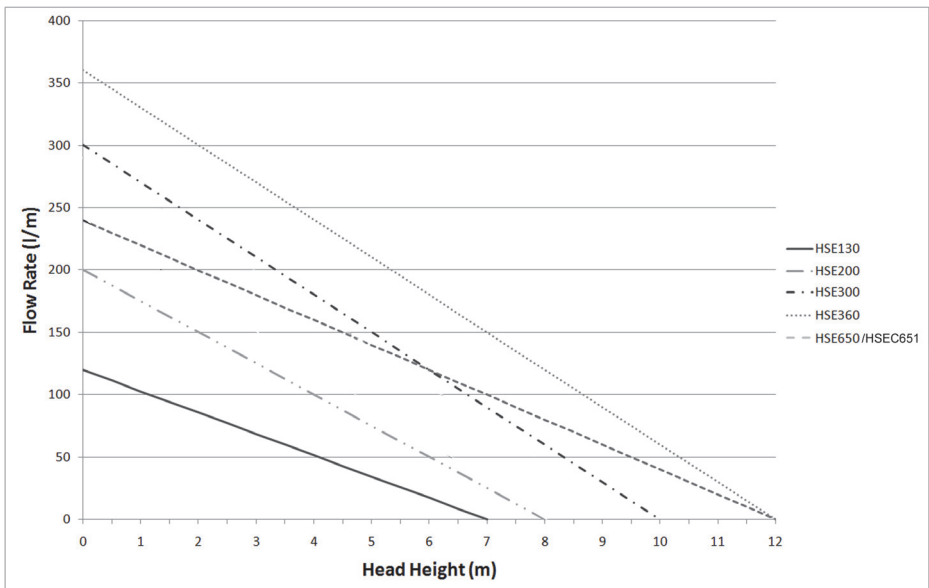
AUTOMATIC THERMAL OVERLOAD

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 restart, by which time the cut-out will have reset.

ACCESSORIES

A wide range of accessories is available from your nearest CLARKE dealer, for further information, contact your nearest dealer, or telephone CLARKE International Sales department on 01992 565300.

PUMP PERFORMANCE



CLEANING & MAINTENANCE



WARNING: MAKE SURE THAT THE PUMP IS DISCONNECTED FROM THE MAINS SUPPLY BEFORE CLEANING, OR PERFORMING ANY MAINTENANCE.

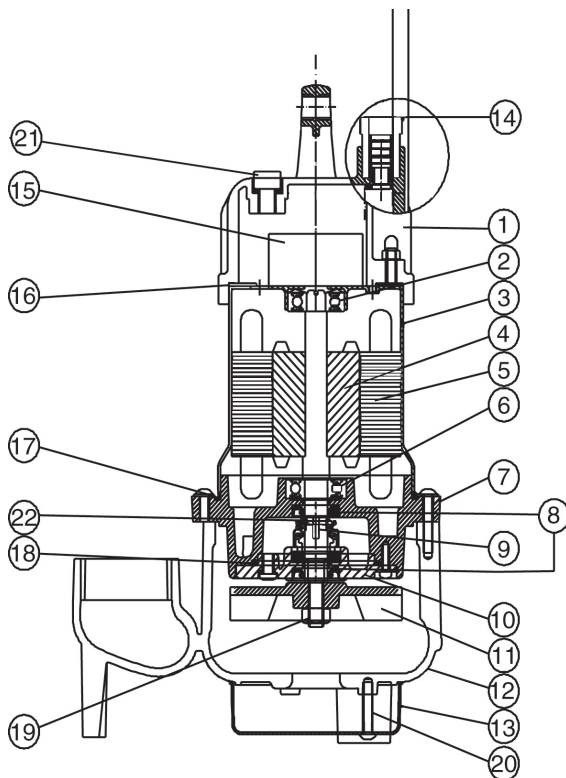
- This pump should require no maintenance other than regular cleaning. If the pump starts to show signs of wear or damage, contact your CLARKE dealer for advice.
- Do not use the pump if there is any damage to the mains power cable, or to the float switch or it's connecting cable.
- Check pump installation regularly to ensure the base inlet is clear of leaves or other debris.
- 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 020 8988 7400.

If using this pump to empty 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. 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.

FAULT FINDING

PROBLEM	POSSIBLE CAUSES
Pump hums & does not run.	Line circuit breaker is off or fuse is burned or loose. Water level in sump has not reached turn-on level. Float is stuck. (It should operate freely in a basin of water). If all the above are OK, motor could be defective.
Pump runs but does not deliver water.	Check valve (if fitted) is installed backwards. Arrow on valve should point in direction of flow. Discharge shut-off valve (if used) may be closed. Impeller or volute openings are fully or partially clogged. Remove pump & clean out. Pump is air-locked. Start and stop several times by plugging in and unplugging. Check for clogged air vent in pump casing. Inlet holes at the base are clogged. Remove pump and clean the strainer and openings. Vertical pumping distance is too high. Reduce distance or change the discharge fitting of the pump.
Pump runs & pumps out sump but does not stop.	Float is stuck in the UP position. Be sure that float operates freely in sump. Defective float switch. Replace with new switch. Defective power switch. Replace with new switch.
Pump runs but delivers only a small amount of water.	Pump is air-locked. Start and stop several times by plugging in and unplugging cable. Check for clogged vent in pump case. Vertical pumping distance is too high. Reduce distance or change the discharge fitting of the pump. Inlet holes at the base are clogged. Remove pump and clean the strainer and openings. Impeller or volute openings are fully or partially clogged. Remove pump and clean. Pump impeller is partially clogged with paint, tar, etc, causing motor to run slowly and overload. Remove pump and clean. Pump impellor is clogged.
Fuse blows or circuit breaker trips when pump starts.	Motor stator may be defective. Fuse size or circuit breaker may be too small. Impeller or volute opening are fully or partially clogged. Remove pump and clean.
Motor runs for a short time, then stops.	Inlet holes in pump base are clogged. Remove pump and clean out the openings. Pump impeller is partially clogged with tar or paint, causing motor to run slowly and overload. Remove pump and clean out. Motor stator may be defective. Impeller or volute openings are fully or partially clogged. Remove pump and clean. Thermal overload cut-out has operated due to one of the above reasons. Float switch has cut in.

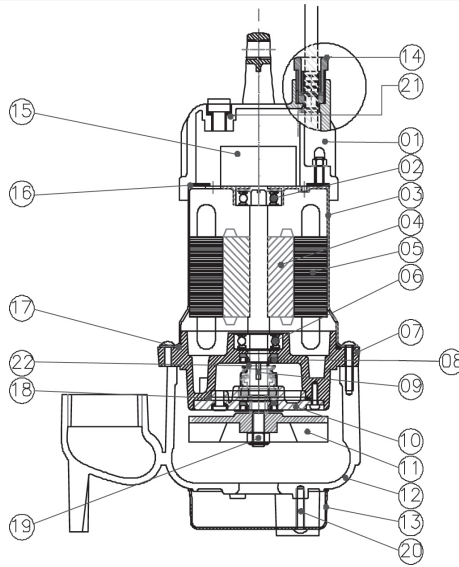
PARTS LIST & DIAGRAM HSE130



NO	DESCRIPTION	PART NO
1	Top Cover	HG13001
2	Upper Bearing	HG13002
3	Motor Housing	HG13003
4	Shaft	HG13004
5	Stator	HG13005
6	Lower Bearing	HG13006
7	Seal Plate	HG13007
8	Oil Seal	HG13008
9	Mechanical Seal	HG13009
10	Seal Cover	HG13010
11	Impeller	HG13011

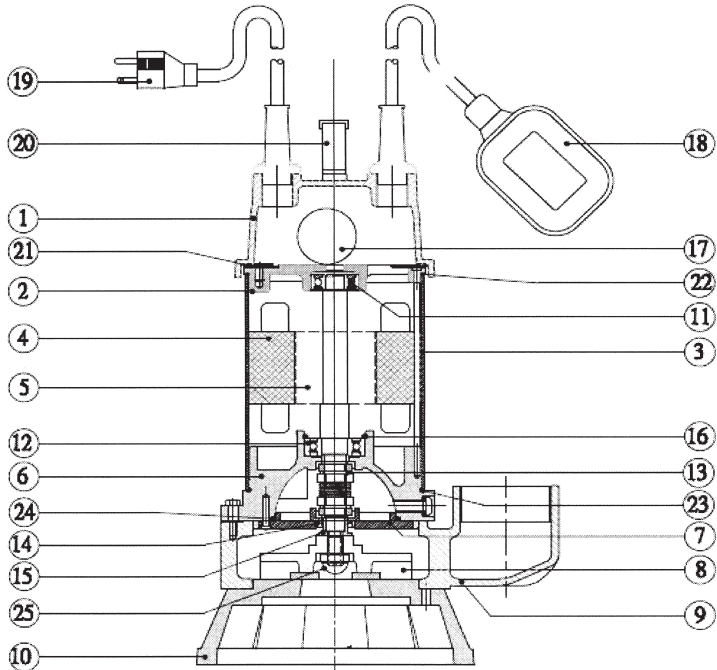
NO	DESCRIPTION	PART NO
12	Pump Casing	HG13012
13	Strainer	HG13013
14	Power Cable	HG13014
15	Capacitor	HG13015
16	Cap Packing	HG13016
17	O-Ring	HG13017
18	O-Ring	HG13018
19	Nut	HG13019
20	Setting Screw	HG13020
21	Screw-in Plug	HG13021
22	Retaining Ring	HG13022

PARTS LIST & DIAGRAM:- HSE200/300/301/360



		HSE200	HSE300	HSE301	HSE360	HSE361
1	Top Cover	HG20001	HG30001	HG30101	HG36001	HG36101
2	Upper Bearing	HG20002	HG30002	HG30102	HG36002	HG36102
3	Motor Housing	HG20003	HG30003	HG30103	HG36003	HG36103
4	Shaft	HG20004	HG30004	HG30104	HG36004	HG36104
5	Stator	HG20005	HG30005	HG30105	HG36005	HG36105
6	Lower Bearing	HG20006	HG30006	HG30106	HG36006	HG36106
7	Seal Plate	HG20007	HG30007	HG30107	HG36007	HG36107
8	Oil Seal	HG20008	HG30008	HG30108	HG36008	HG36108
9	Mech. Seal	HG20009	HG30009	HG30109	HG36009	HG36109
10	Seal Cover	HG20010	HG30010	HG30110	HG36010	HG36110
11	Impeller	HG20011	HG30011	HG30111	HG36011	HG36111
12	Pump Casing	HG20012	HG30012	HG30112	HG36012	HG36112
13	Strainer	HG20013	HG30013	HG30113	HG36013	HG36113
14	Power Cable	HG20014	HG30014	HG30114	HG36014	HG36114
15	Capacitor	HG20015	HG30015	HG30115	HG36015	HG36115
16	Cap Packing	HG20016	HG30016	HG30116	HG36016	HG36116
17	O-ring	HG20017	HG30017	HG30117	HG36017	HG36117
18	O-ring	HG20018	HG30018	HG30118	HG36018	HG36118
19	Nut	HG20019	HG30019	HG30119	HG36019	HG36119
20	Setting Screw	HG20020	HG30020	HG30120	HG36020	HG36120
21	Screw-in Plug	HG20021	HG30021	HG30121	HG36021	HG36121
22	Retaining Ring	HG20022	HG30022	HG30122	HG36022	HG36122

PARTS LIST & DIAGRAM:- HSEC650A/651A



No	HSEC650	HSEC651A	DESCRIPTION	No	HSEC650	HSEC651A	DESCRIPTION
1	HG650A01	HG651A01	Upper Cover	14	HG650A14	HG651A14	Oil Seal
2	HG650A02	HG651A02	Top Bearing Cover	15	HG650A15	HG651A15	Sleeve
3	HG650A03	HG651A03	Motor Housing	16	HG650A16	HG651A16	Lock Ring
4	HG650A04	HG651A04	Stator	17	HG650A17	HG651A17	Capacitor
5	HG650A05	HG651A05	Rotor	18	HG650A18	HG651A18	Float Switch
6	HG650A06	HG651A06	Seal Cover	19	HG650A19	HG651A19	Power Cable
7	HG650A07	HG651A07	Seal Plate	20	HG650A20	HG651A20	Handle
8	HG650A08	HG651A08	Impeller	21	HG650A21	HG651A21	Packing
9	HG650A09	HG651A09	Pump Casing	22	HG650A22	HG651A22	O-ring
10	HG650A10	HG651A10	Strainer	23	HG650A23	HG651A23	O-ring
11	HG650A11	HG651A11	Top Bearings	24	HG650A24	HG651A24	O-ring
12	HG650A12	HG651A12	Lower Bearing	25	HG650A25	HG651A25	Nut
13	HG650A13	HG651A13	Double Mech Seal				

TECHNICAL SPECIFICATIONS

Model	HSE130 HSE130A	HSE200A	HSE300 HSE300A HSE301A	HSE360 HSE360A HSE361A	HSEC650A HSEC651A
CLARKE part no	7230215 7230217	7230270	7230255 7230260 7230265	7230275 7230280 7230285	7230290 7230295
Outlet Dia (mm/inches)	32 / 1-1/4"	38 / 1-1/2"	50 / 2"	50 / 2"	50 / 2"
Motor Voltage	230V/50hz	230V/50hz	230V/50hz 110V/50hz *	230V/50hz 110V/50hz *	230V/50hz 110V/50Hz*
Motor Wattage@ max flowrate	283	420	720	960	665
Fuse Rating (amps)	5	5	13	13	13
Cable length (m)	10	10	10	10	10
IP Rating	IP68	IP68	IP68	IP68	IP68
Max. Head (m)	7	8	10	12	9.5
Max.Flow Rate (L/min)	140	200	300	360	290
Dimensions LxWxH (mm)	305x188x133	197x135x314	225x141x350	225x141x365	240x180x420
Weight (kg)	7	8.1	12	12	17
Maximum Depth (m)	10	10	10	10	5

*** 301A,361A & 651A model only.** Please note that details & 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 data plate.

DECLARATION OF CONFORMITY



Clarke[®]
INTERNATIONAL

Hemnoll 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):

- 89/336/EEC *Electromagnetic Compatibility Directive, (amended 93/68/EC).*
98/37/EC *Machinery Directive.*
2006/95/EC *Low Voltage Equipment Directive, (amended 93/68/EEC).*
2002/95/EC *Restriction of Hazardous substances.*

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

- EN 55014-1:2000+A1+A2, EN 55014-2:1997+A1, EN 61000-3-2:2000, EN 61000-3-3:1995+1995+A1
BS EN 60335-1:2002+A1+A2, BS EN 60335-2-41:2002.*

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: 2006

Product Description: Submersible Water Pump with and without float switch
Model number(s): HSE130/A, 200A, 300/A, 301A, 360/A, 361A
Serial / batch Number: N/A
Date of Issue: 08/04/09

Signed:

A.C. Aiken
Senior Manager

DECLARATION OF CONFORMITY



Clarke[®]
INTERNATIONAL

Hemnall Street, Epping, Essex CM16 4LG

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2002/95/EC *Restriction of Hazardous substances*

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

EN 55014-1:2000+A1+A2, EN 55014-2:1997+A1, EN 61000-3-2:2000, EN 61000-3-3:1995+1995+A1
BS EN 60335-1:2002+A1+A2, BS EN 60335-2-41:2003

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: 2006

Product Description: 110V Cutter Pump
Model number(s): HSEC-651A
Serial / batch Number: N/A
Date of Issue: 20/03/09

Signed:

J.A. Clarke
Managing Director

DECLARATION OF CONFORMITY



DECLARATION OF CONFORMITY

This is an important document and should be retained.



We declare that this product complies with the following directives:

89/336/EEC *Electromagnetic Compatibility directive, (amended 2004/108/EC).*

2006/95/EC *Low Voltage Equipment directive (amended by 93/68/EEC).*

98/37/EC *Machinery Directive*

2002/95/EC *Restriction of Hazardous substances*

The Following Standards have been applied to the product:

EN 55014-1:2001+A1+A2, EN 55014-2:1997+A1 EN 61000-3-2:2000

EN 61000-3-3:1995+A1

The technical documentation required to demonstrate that the products meet the requirements of the Low Voltage Equipment directive has been compiled and is available for inspection by the relevant enforcement authorities.

The CE mark was first applied in: 2006

Product Description: Submersible Water Pump

Model number(s): HSEC650A

Serial / batch Number: Current Manufacture.

Date of Issue: 23/07/2009

Signed

A handwritten signature in black ink, appearing to read "A. Aiken".

A.C. AIKEN

Senior Manager Clarke International.

A SELECTION FROM THE VAST RANGE OF

Clarke®

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AIR COMPRESSORS

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