Clarke®

PUMP

SUBMERSIBLE PUMPS

Model Nos:PSV3A, PSV4A, PSSV2A, PVP11A & PSD1A

Part Nos; 7236042, 7236044, 7236050, 7236060 & 7236070

OPERATING & MAINTENANCE INSTRUCTIONS

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INTRODUCTION

Thank you for purchasing this CLARKE submersible pump.

Before attempting to use this product, 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 product 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

Do not dispose of this product with general household waste at the end of its life. 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.

SPARES & SERVICE CONTACTS

For parts & servicing, 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
SERVICE: Service@clarkeinternational.com

TABLE OF CONTENTS

GENERAL SAFETY PRECAUTIONS

As with all machinery, there are certain hazards involved with its operation and use. Exercising caution will reduce the risk of personal injury.

WORK AREA

1. **Keep the work area clean and well lit.** Floors should always be kept clear. Cluttered or dark areas invite accidents.
2. **Keep children and bystanders away while operating the pump.** Distractions can cause loss of control.
3. Remember, the operator or user is responsible for accidents or hazards occurring to other people or their property.

PERSONAL SAFETY

1. **ALWAYS stay alert, watch what you are doing and use common sense when operating this pump.** Do not install the pump while you are tired or under the influence of medication, drugs or alcohol. A moment of inattention can result in personal injury.
2. **Do not over-reach**. Keep your proper footing and balance at all times when positioning the pump.
3. **NEVER** direct the water discharge towards electrical wiring or equipment.
4. **ALWAYS** store the pump out of reach of children and do not allow persons unfamiliar with these instructions to operate it.
5. **NEVER** direct the discharge flow towards another person.
6. **ALWAYS** thoroughly familiarise yourself with this pump & its operation and follow all instructions in this manual.
7. **ALWAYS** ensure that the pump is properly positioned where necessary to prevent it from moving during operation, and that the immediate area surrounding the pump is kept clear.

GENERAL USE AND CARE OF THE PUMP

1. An approved Residual Current Device (RCD) must be used when pumping from ponds or swimming pools.
2. **ALWAYS** lift the pump using the handle and use a rope or chain attached if necessary to lower it into the pit or excavation. Never lift or carry the pump by the power cable or by the float switch cable.
3. **NEVER** use this pump if any part is damaged. Have it inspected and repaired by your local Clarke dealer.
4. **ALWAYS** use an extension cable suitable for outdoor use when operating outdoors. Using the correct cable reduces the risk of electric shock.

5. **ALWAYS** maintain the pump with care and keep it clean.
6. **ALWAYS** use an approved cable extension suitable for the power rating of the 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.
7. **NEVER** use for pumping flammable liquids or corrosive chemicals. These pumps are designed to pump water only.
8. **NEVER** abuse the electrical cable. Never use the cable for pulling or unplugging the pump Damaged or tangled cables increase the risk of electric shock.
9. **NEVER** run the pump dry. Always ensure the pump is immersed in water before starting. Switch the pump OFF immediately the task is completed
10. **NEVER** pump water from a swimming pool when there is a person or animal still in the pool.
11. **NEVER** install the pump on sand, silt or mud which is likely to shift or collapse.
12. **NEVER** modify this pump in any way. Use it only for the purpose for which it is designed.

SERVICING & REPAIRS

1. **ALWAYS** have the pump serviced by your local CLARKE 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.
2. **NEVER** attempt any repairs yourself. If you have a problem with the pump contact your local CLARKE dealer.
3. **ALWAYS** disconnect the pump from the electrical supply before placing it into, or removing from the water, and before any cleaning or maintenance.
4. If the power cable becomes damaged, it must be replaced rather than repaired.

Your CLARKE water pump has been designed to give long and trouble free service. If, however, having followed the instructions in this booklet carefully, you encounter problems, take the unit to your local CLARKE dealer.

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

ELECTRICAL CONNECTIONS

WARNING! Read these electrical safety instructions thoroughly before connecting the product to the mains supply.

Before switching the machine on, make sure that the voltage of your electricity supply is the same as that indicated on the rating plate. This product is designed to operate on 230 VAC mains power. Connecting it to any other power source may cause damage.

This product may be fitted with a non-rewireable plug. If it is necessary to change the fuse in the plug, the fuse cover must be refitted. If the fuse cover becomes lost or damaged, the plug must not be used until a suitable replacement is obtained.

If the plug has to be changed because it is not suitable for your socket, or due to damage, it should be cut off and a replacement fitted, following the wiring instructions shown below. The old plug must be disposed of safely, as insertion into a mains socket could cause an electrical hazard.

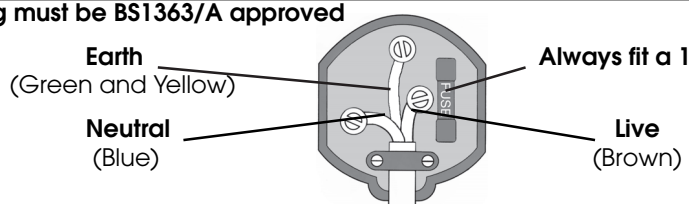
WARNING! The wires in the power cable of this product are coloured in accordance with the following code:

Blue = Neutral **Brown = Live** **Yellow and Green = Earth**

If the colours of the wires in the power cable of this product do not correspond with the terminal markings of your plug, proceed as follows.

- The wire which is coloured **Blue** must be connected to the terminal which is marked N or coloured **Black.**
- The wire which is coloured **Brown** must be connected to the terminal which is marked L or coloured **Red**.
- The wire which is coloured **Yellow and Green** must be connected to the terminal which is marked E or ⏚ or coloured **Green**.

Plug must be BS1363/A approved

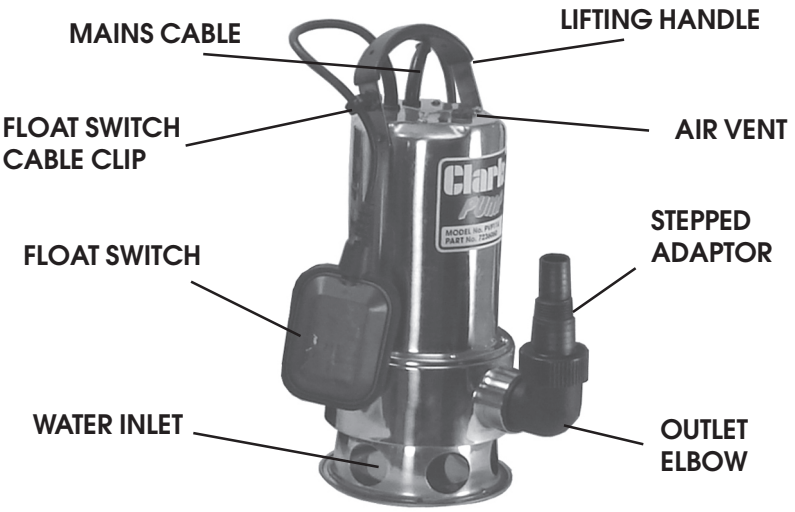


Ensure that the outer sheath of the cable is firmly held by the clamp

We strongly recommend that this machine is connected to the mains supply via a Residual Current Device (RCD).

If in doubt, consult a qualified electrician. DO NOT attempt repairs yourself.

OVERVIEW



This CLARKE range of submersible pumps are suitable for discharging pools, ponds, fountains, pits and any waste water drainage.

SUITABILITY

They can handle foul water containing suspended material including sand as listed in the specification, and may be used for pumping water, (including seawater) or water containing solids in suspension. The pumps are not suitable for handling inflammable, corrosive, explosive or dangerous liquids.

THE FLOAT SWITCH

The float switch enables the pump to stop and restart automatically as the surrounding water level changes. 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. This makes them suitable for permanent or semi-permanent installations, eg. installations where it is necessary to maintain water at a particular level without an operator in attendance.

THE THERMAL CUT-OUT

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

OPERATION

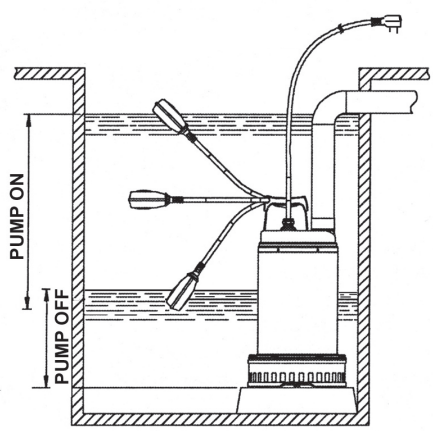
CONNECTION AND LOCATION

1. Screw the outlet elbow and stepped adaptor supplied, onto the outlet of the pump.
2. Connect the outlet adaptor to the largest diameter hose available, as any restriction will reduce capacity and put unnecessary strain on the motor.

- The stepped adaptor fitting allows for connection of 32 mm (1¼"), 25 mm (1"), or 19 mm hoses which should be secured with a hose clamp.

3. Ensure that the hose diameter is as large as possible if a long run of discharge hose is being used.
4. 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.
5. Keep the pump clear of 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).
6. Ensure the float switch has sufficient room to operate correctly if used in a confined space such as a shaft or sump.

- The pump should only be placed in a sump which is large enough not to restrict the movement of the float switch.



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

USING THE PUMP

1. Plug in the pump and switch on the power supply,

- The pump will only run where there is sufficient water for the float switch to rise and activate the pump.

2. If required, the range of operation of the float switch can be manually adjusted by positioning the float switch cable within the retaining clip at the top of the pump. The switch will operate through its full range if left hanging free.
3. Run the pump continuously or remove from the water and store in a frost free location if the water is likely to freeze,
4. Never run the pump dry. Ensure the pump switches off when water has stopped flowing.

- The pump should be able to clear water down to a residual depth of approx 5mm, provided the float switch has been raised to keep the pump running. In this situation, air and residual water may be seen escaping from the vent valve.

5. Disconnect from the power supply when the water has been pumped out. Avoid running the pump continuously if the discharge hose has become obstructed and water is not flowing.

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 at 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.

CLEANING & MAINTENANCE

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

The pump should require no maintenance other than regular inspection and cleaning.

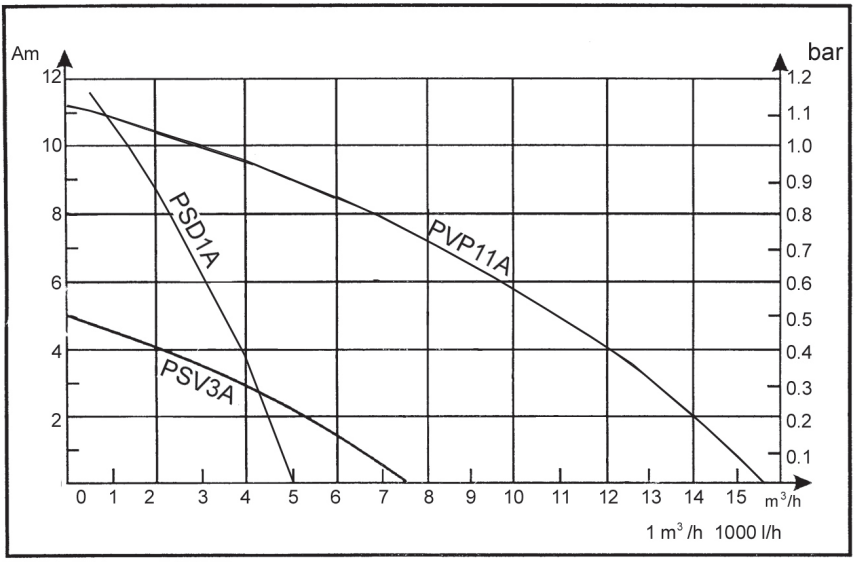
1. Inspect the pump prior to use and do not use the pump if there is any damage to the mains power cable or to the float switch or its connecting cable.
2. Check pump regularly to ensure the inlet is clear of leaves or other debris. It can be cleaned out either by back-flushing or by removing the base plate (after undoing the three retaining screws) and cleaning out by hand.
3. If the pump has been used for pumping swimming pool water or salty water likely to leave chemical residues, it should be flushed through with clean water before storage.
4. Store in a dry place after use.

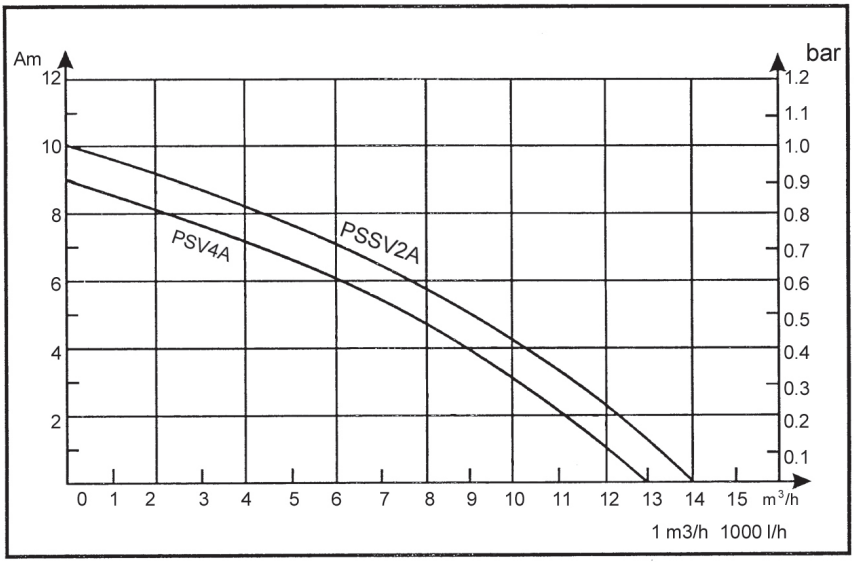
If the pump shows signs of wear or damage, contact your CLARKE dealer for advice. Do not attempt to repair the pump yourself, as you may damage the waterproof seals and invalidate your guarantee. Repairs should be carried out by your local CLARKE dealer, or contact the CLARKE Service Department on 020 8988 7400.

ACCESSORIES

A wide range of accessories is available from your nearest CLARKE dealer, including hoses and hose adaptors.

PUMP PERFORMANCE





FAULTFINDING

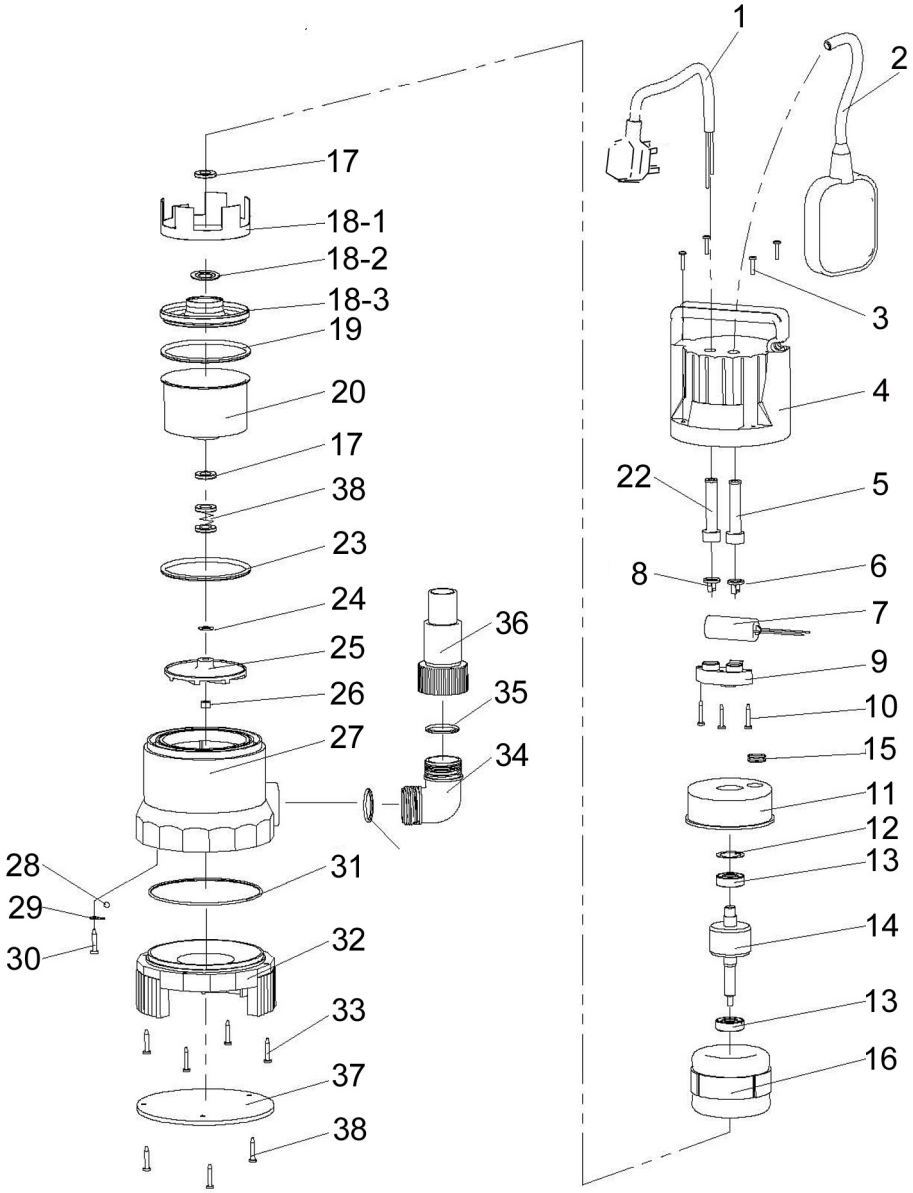
PROBLEM	POSSIBLE CAUSES
Pump hums but does not run.	• Impeller partially clogged. Raise pump & clean. • If pump is clear, motor could be defective.
Pump runs but does not deliver water.	• Check valve (if fitted to discharge hose) is installed backwards. Arrow on valve should point in direction of flow. • Discharge shut-off valve (if used) may be closed. • Impeller partially clogged. Raise pump & clean. • Pump is air-locked. Start and stop several times by plugging in and unplugging. Check for clogged air vent in pump casing. • Inlet at the base of pump is blocked. Remove pump and clean openings. • Vertical pumping distance too high. Reduce height or change the pump discharge fitting.
Pump runs but does not stop.	• Float switch is stuck in the UP position. Be sure that float switch moves freely. • Defective float 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 height or change the pump discharge fitting. • Inlet at the base are clogged. Remove pump and clean the openings. • Pump impeller is partially clogged with foreign matter, causing motor to run slowly and overload. Remove pump and clean inlet and impeller.
Fuse blows or circuit breaker trips when pump starts.	• Motor may be defective. • Fuse size or circuit breaker may be too small. • Pump clogged. Raise pump & clean inlet/impeller.
Motor runs for a short time, then stops.	• Inlet in pump base clogged. Remove pump and clean out the openings. • Pump impeller is partially clogged with foreign matter, causing motor to run slowly and overload. Remove pump and clean out. • Motor may be defective. • Thermal overload cut-out has operated due to one of the above reasons. • Float switch has cut in.

TECHNICAL SPECIFICATIONS

Model	PSV3A	PSV4A	PSSV2A	PVP11A	PSD1A
CLARKE part no	7236042	7236044	7236050	7236060	7236070
Outlet Thread Dia (mm)	$1^1/_2$" BSP	$1^1/_2$" BSP	$1^1/_2$" BSP	$1^1/_2$" BSP	$1^1/_4$" BSP
Outlet Size	38 mm	38 mm	38 mm	38 mm	34 mm
Motor Voltage	230 VAC	230 VAC	230 VAC	230 VAC	230 VAC
Motor Wattage@ max flowrate	400 W	750 W	900 W	1100 W	800 W
Fuse Rating (Amps)	13	13	13	13	13
Cable Length (m)	10	10	10	10	10
IP Rating	IPX8	IPX8	IPX8	IPX8	IPX8
Max. Head	8 m	8 m	8 m	11 m	30 m
Max.Flow Rate (L/min)	133	216	208	258	91
Max Depth	5 m	5 m	5 m	5 m	7 m
Solid Particle Dia (max)	35 mm	35 mm	35 mm	35 mm	5 mm
Dimensions Dia x Height (mm)	170 x 343	160 x 364	157 x 357	167 x 385	150 x 340
Weight (kg)	4.15	5.15	6.25	6.95	7.2
Max Water Temperature	35° C	35° C	35° C	35° C	35° C

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.

PARTS LIST PSV3A & PSV4A



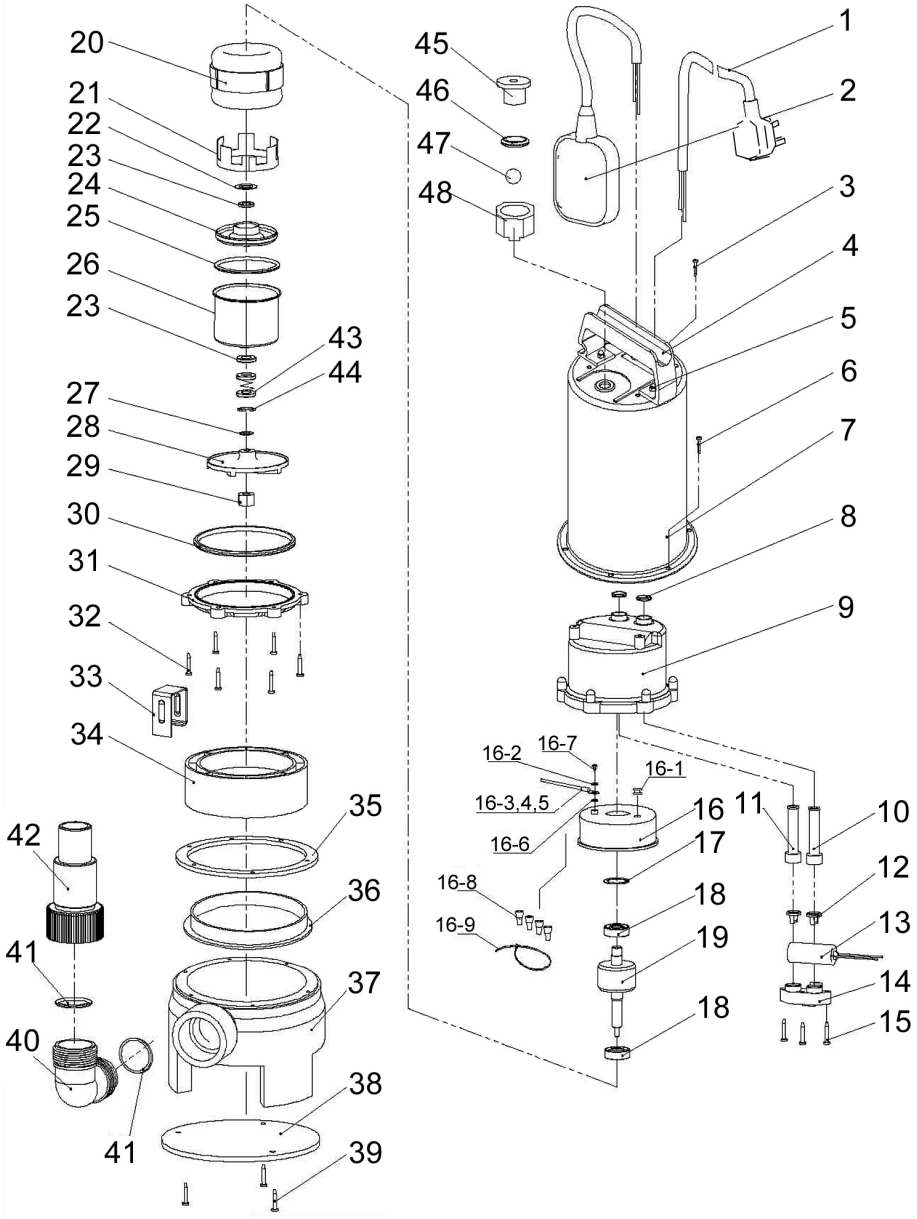
PARTS LIST PSV3A & PSV4A

No	Description
1	Power cable
2	Float Switch
3	Screw (3x-head)
4	Rear Pump Hosing
5	Cable Entry Sheath
6	Cable Gland
7	Capacitor
8	Cable Gland
9	Cable Block
10	Screw
11	Rear Motor Cover
12	Wave Washer
13	Bearing
14	Motor Rotor
15	Grommit
16	Motor Stator
17	Frame Seal
18	Front Bush Assembly
19	O-Ring

No	Description
20	Motor Front Cover
21	Washer
22	Cable Sheath
23	O-Ring
24	Adjusting Shim Washer
25	Impeller
26	Nut
27	Main Pump Housing
28	Steel Ball
29	Washer
30	Screw
31	O-Ring
32	Pump Base
33	Screw
34	Outlet Elbow
35	O-Ring
36	Reducing Adaptor
37	Base Plate
38	Self-tapping Screw

When requesting spare parts, please quote NJP/PSV3A/01 etc.

PARTS DIAGRAM - PSSV2A



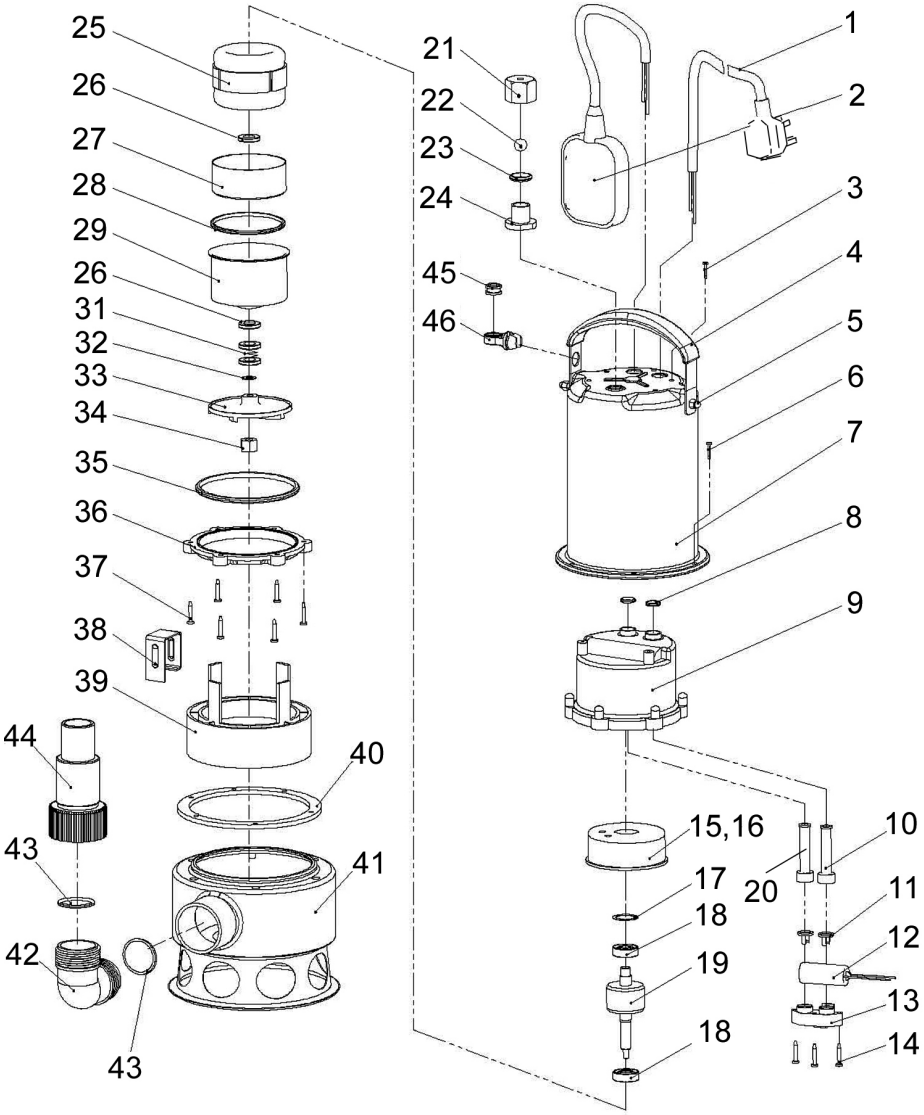
PARTS LIST - PSSV2A

No	Description
1	Power cable
2	Float Switch
3	Dome-Headed Bolt
4	Handle
5	Nut
6	Bolt
7	Main Pump Body
8	O-Ring
9	Pump Rear Housing
10	Cable Entry Sheath
11	Cable Sheath
12	Cable Gland
13	Capacitor 8uF
14	Cable Block
15	Bolt
16	Rear Motor Cover
17	Wave Washer
18	Bearing
19	Motor Rotor
20	Motor Stator
21	Bush
22	Washer
23	Frame Seal
24	Aluminium Bush

No	Description
25	O-Ring
26	Motor Front Cover
27	Shim Washer
28	Impeller
29	Nut
30	O-Ring
31	Compression Ring
32	Bolt
33	Ground Bracket
34	Locating Ring
35	Sealing Washer
36	Base Cover Ring
37	Pump Base
38	Base Plate
39	Self-tapping Screw
40	Outlet Elbow
41	O-Ring
42	Reducing Adaptor
43	Mechanical Seal
44	Protective Ring
45	Air Vent
46	Steel Ball
47	O-Ring
48	Air Vent Nut

When requesting spare parts, please quote NJP/PSSV2A/01 etc.

PARTS DIAGRAM - PVP11A



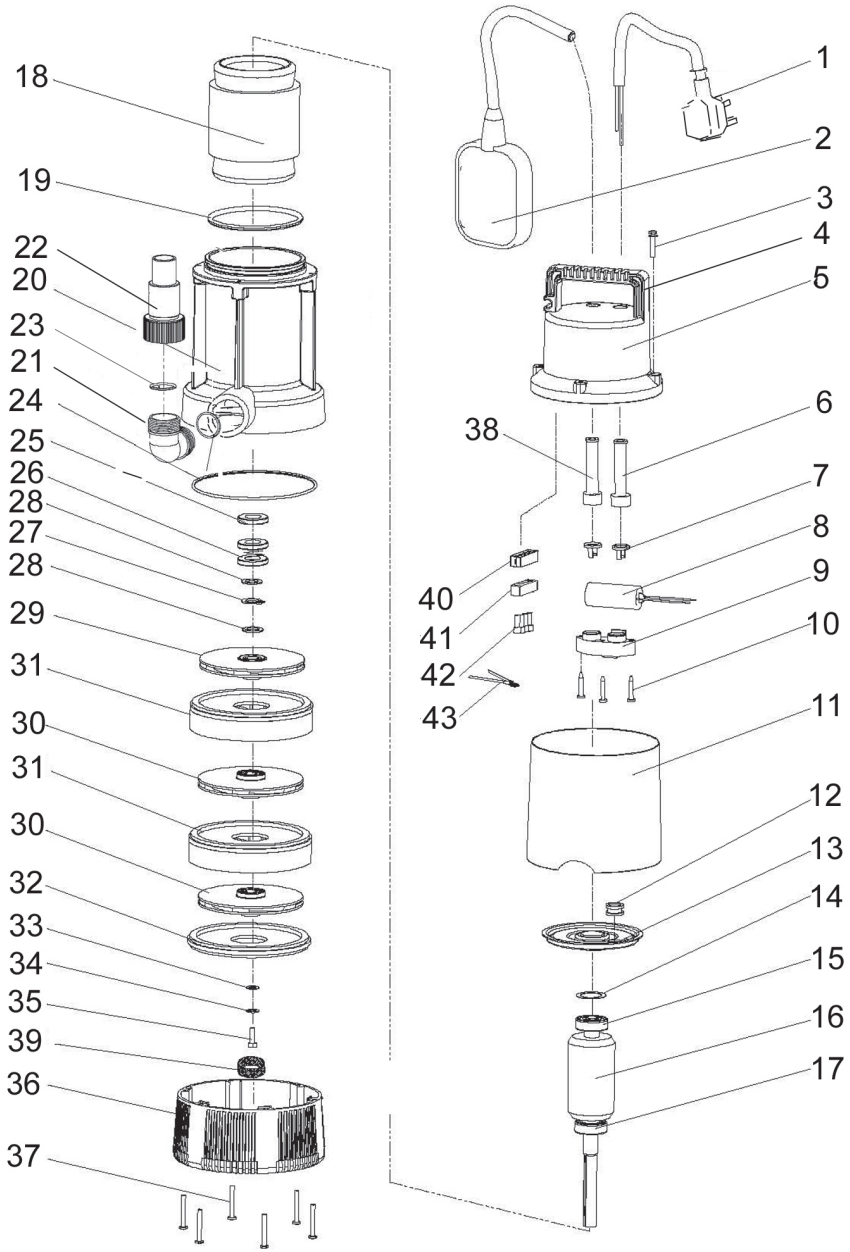
PARTS LIST - PVP11A

No	Description
1	Power cable
2	Float Switch
3	Screw (3x-head)
4	Handle
5	Nut
6	Self-tapping Screw
7	Main Pump Body
8	O-Ring
9	Pump Rear Housing
10	Cable Entry Sheath
11	Cable Gland
12	Capacitor 8uF
13	Cable Block
14	Screw
15	Rear Motor Cover
16	Cable Gland
17	Wave Washer
18	Bearing
19	Motor Rotor
20	Cable Sheath
21	Air Vent Nut
22	Steel Ball
23	O-Ring

No	Description
24	Air Vent
25	Motor Stator
26	Frame Seal
27	Front Motor Bush
28	O-Ring
29	Front Motor Cover
30	Mechanical Seal
31	Adjusting Shim Washer
32	Shim Washer
33	Impeller
34	Nut
35	O-Ring
36	Compression Ring
37	Screw
38	Grounding Bracket
39	Securing Ring
40	Sealing Washer
41	Pump Base
42	Outlet Elbow
43	O-Ring
44	Reducing Adaptor
45	Cable Gland
46	Cable Clamp

When requesting spare parts, please quote NJP/PVP11A/01 etc.

PARTS DIAGRAM - PSD1A



PARTS LIST - PSD1A

No	Description
1	Power cable
2	Float Switch
3	Screw (3x-head)
4	Handle
5	Housing Cover
6	Cable Entry Sheath
7	Cable Holder Block
8	Capacitor 8uF
9	Cable Holder
10	Screw
11	Stainless Steel Cover
12	Gland
13	Rear Cover
14	Wave Washer
15	Bearing
16	Motor Rotor
17	Bearing
18	Stator
19	O-Ring Seal
20	Motor Housing (Aluminium)
21	Elbow
22	Stepped Adaptor

No	Description
23	Outlet O-Ring
24	O-Ring Seal
25	Frame Seal Ring
26	Mechanical Seal
27	Retainer
28	Shim Washer
29	Upper Impeller
30	Lower Impeller
31	Diffuser
32	Diffuser Plate
33	Flat Washer
34	Washer
35	Bolt
36	Pump Base
37	Screw
38	Cable Sheath
39	Lower Sealing Pad
40	Connecting Block
41	Motor Brush
42	Motor Clip
43	Motor Fixing

When requesting spare parts, please quote NJP/PSD1A/01 etc.

DECLARATION OF CONFORMITY

CE

Clarke®
INTERNATIONAL

Hemnall 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):

2004/108/EC *Electromagnetic Compatibility Directive.*

2006/95EC *Low Voltage Equipment Directive.*

2002/95/EC *Restriction of Hazardous substances.*

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

EN 60335-1:2002+A1+A11+A12+A13, EN 60335-2-41:2003+A1, EN 62233:2008, EN 55014-1:2006, EN 55014-2:1997+A, EN 61000-3-2:2006, EN 61000-3-3:1995+A1+A2.

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: 2008

Product Description:	Submersible Pumps
Model number(s):	PSV3A,4A, PSSV2A, PVP11A, PSD1A
Serial / batch Number:	n/a
Date of Issue:	30/10/2010

Signed:

J.A. Clarke
Director

Sub pump PSV3A4A PSSV2A PVP11A PSD1A (rv1) Page 1 of 1

NOTES

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