

Champion®

PUMP



ENGINE DRIVEN PUMP

MODEL NO: CHS2E

PART NO: 7230150

OPERATION & MAINTENANCE INSTRUCTIONS



ORIGINAL INSTRUCTIONS

GC0725 - Rev 3

INTRODUCTION

Thank you for purchasing this Clarke Water Pump, designed for pumping water or water containing sand or solids in suspension.

Please read this leaflet thoroughly and follow the instructions carefully, in doing so you will ensure the safety of yourself and that of others around you, and with correct handling and servicing, you can look forward to the pump giving you long and satisfactory service.

Keep these instructions for future reference.

GUARANTEE

This pump 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 pump has been abused, tampered with, or not used for its primary function.

Faulty goods must be returned to their place of purchase, no pump can be returned to us without prior permission.

This guarantee does not effect your statutory rights.

GENERAL SAFETY RULES



WARNING: WHEN USING PUMPS, ALWAYS FOLLOW BASIC SAFETY PRECAUTIONS TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK AND PERSONAL INJURY. READ ALL INSTRUCTIONS BEFORE YOU OPERATE THIS PUMP AND SAVE THEM FOR FUTURE REFERENCE.

1. **ALWAYS** make sure that you are familiar with this pump, and follow all instructions in this manual.
2. Keep the area adjacent to the pump clear.
3. **ALWAYS** connect the strainer to the suction hose to stop stones and other solids from being pulled into the pump. These can cause damage to the pump.
4. **ALWAYS** keep the pump dry and clear of discharge hose.
5. Only use parts supplied by the manufacturer. Using non-standard parts can be dangerous.

6. **ALWAYS** obey all safety precautions for the handling of fuel. Never refuel the engine whilst it is running and allow the engine to cool sufficiently before refuelling.
7. **ALWAYS** use at least 300mm of flexible hose to make plumbing connections to the pump. Rigid piping can put stress on the pump, causing damage. If you use rigid piping, it must be supported to eliminate stress on the connections.
8. **DO NOT** use to pump petrol (or other flammable liquids), or corrosive chemicals. The function of this pump is to pump WATER ONLY.
9. **DO NOT** operate this pump in an explosive atmosphere, near combustible materials, or where there is insufficient ventilation.
10. **DO NOT** let children use this pump.
11. **DO NOT** run the pump dry. Always fill the pump with water before starting.
12. **DO NOT** direct the discharge flow towards another person.
13. **DO NOT** over-tighten drain or filler plugs. Excessive force can damage the threads or the pump body.
14. **ALWAYS** ensure that the pump is properly secured and anchored where necessary to prevent it from moving during operation and that the immediate area surrounding the pump is kept clear.
15. **DO NOT** direct the water discharge towards electrical wiring or equipment.

GENERAL SAFETY IN THE WORKPLACE

1. **ALWAYS** keep work area clean & tidy. Cluttered work areas invite accidents.
2. **NEVER** over-reach. Keep proper footing and balance at all times.
3. **ALWAYS** make sure that the workplace is well lit. Make sure that that lighting is placed so that you will not be working in your own shadow.
4. Dress correctly. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
5. **ALWAYS** wear safety glasses. (Everyday glasses are not safety glasses).

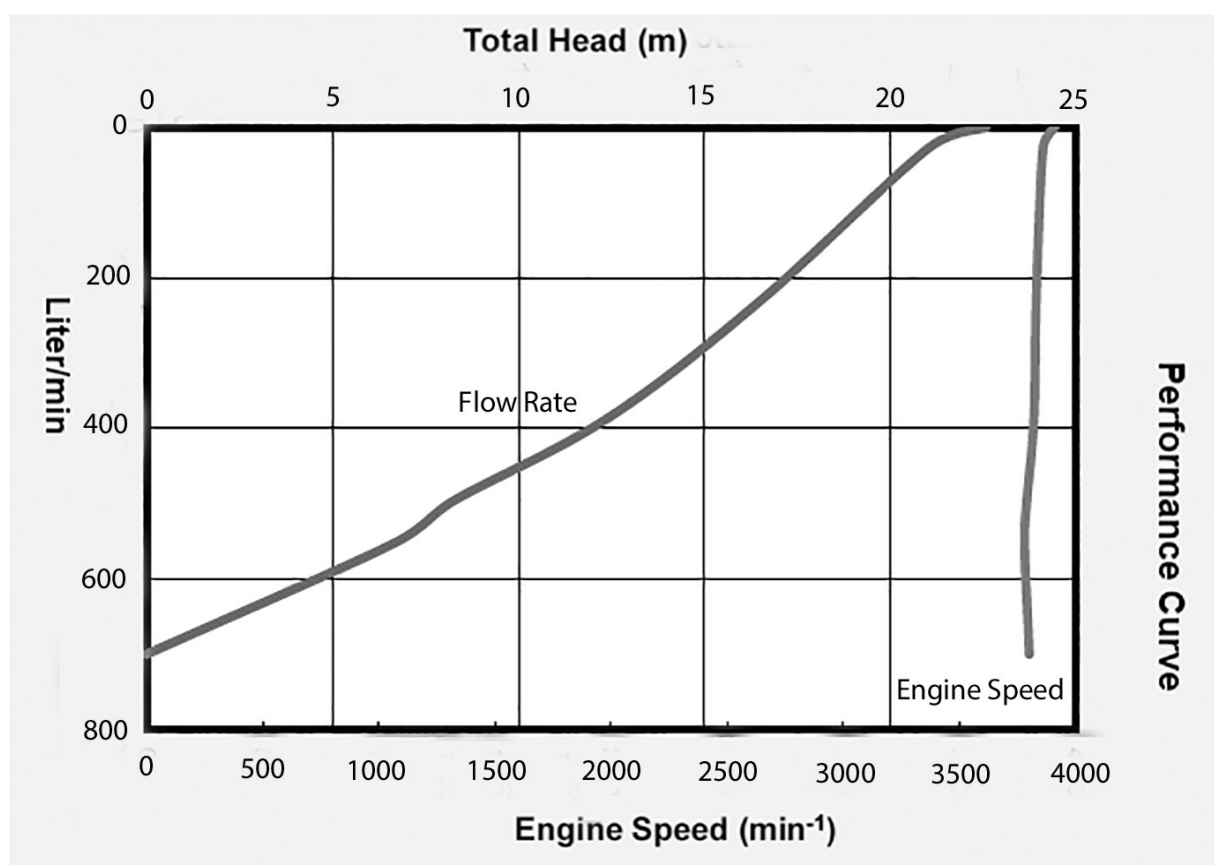
CARE OF WATER PUMPS

1. The CLARKE service department must replace damaged components.
2. **ALWAYS** examine the pump for damage that can effect the operation of the pump. Repair any damaged parts.
3. Have your pump repaired by a qualified person. Repairs must only be carried out by qualified persons using original spare parts.

SPECIFICATION

Item	Specified
Pump Dimensions (L X W X H)	429 x 368 x 344 mm
Pump Weight (Kgs)	21 kg
Water Classification	Dirty / Clean (Not sewage)
Max Solids in suspension	20 mm
Inlet/outlet Size	2" BSP
Maximum Flow	700 L/min
Max Head	23 m
Suction Height	7.5 m
Engine Type	Honda 4HP
Fuel Tank Capacity (Petrol)	3.6 L
Lubrication Oil Capacity/grade	0.6 L (SAE 15W40)

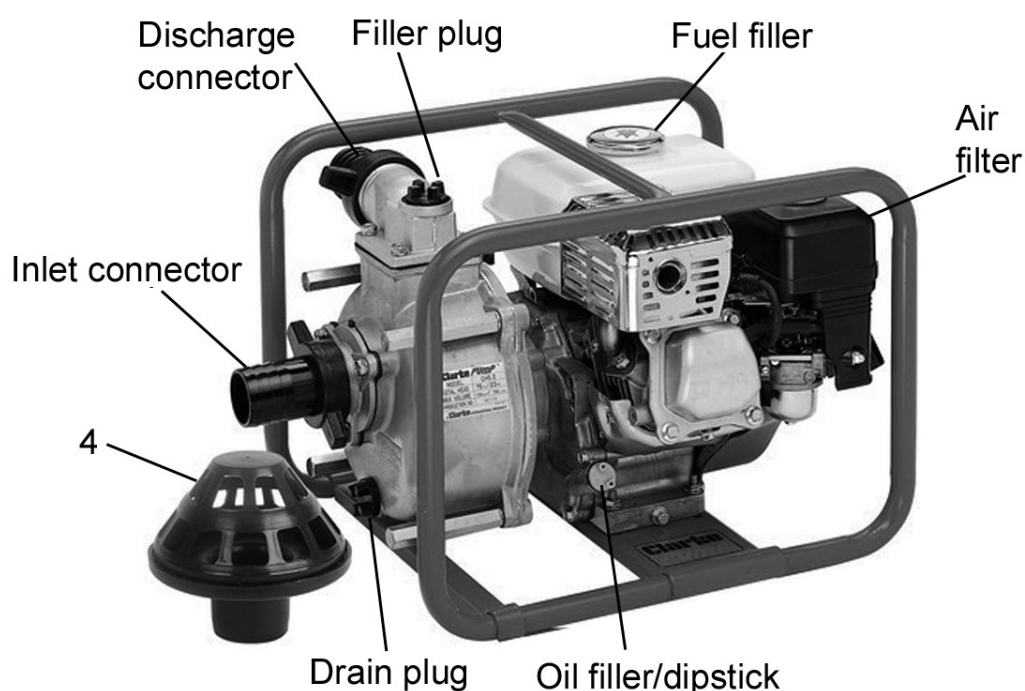
PUMP PERFORMANCE CURVE



INTRODUCTION

This self-priming centrifugal pump is designed for pumping water or water containing small solids in suspension. The pump is self-priming and an open impeller with small solids handling capacity is fitted (see specification). The suction strainer supplied, must always be used to ensure that large stones or other objects cannot be drawn up as this would cause severe damage to the pump.

REMEMBER: Contaminated water is water containing small solids in suspension, NOT slurry, sludge, sand, or mud.



INVENTORY

The items are supplied in the carton.

1 x Petrol Powered Water Pump	1 x Tommy Bar
1 x Spark Plug Box Wrench	2 x Rubber Sealing Rings
2 x 3" BSP Hose adaptors	2 x 3" BSP Locking Rings
1 x Plastic Inlet Strainer	3 x Hose Clips

Speak to your CLARKE dealer If items are missing or damaged.

PREPARING FOR USE

POSITIONING

Place the pump on a firm, level foundation, putting it as near as possible to the water source. Ensure it is anchored where necessary, to prevent it from moving during operation.

Ensure there is adequate drainage for the discharged water and that there is no danger of damage to property as a result of the pumping operation.

ENGINE OIL

This pump is not supplied with engine oil or fuel. Fill the engine crankcase with oil as specified in the engine manual.

CHECKING THE ENGINE OIL LEVEL

1. Turn the oil filler cap anti-clockwise and remove from the oil fill tube.
2. Clean the dipstick with a clean cloth.
3. Put the dipstick into the oil fill tube and then remove it again. Do not screw in the oil filler cap/dipstick when doing this.
4. If the oil level is at or below the 'L' mark on the dipstick, add oil to the crankcase.
 - Fill until the oil touches the threads in the oil fill tube.
 - We recommend you use SAE10W30 oil in this pump. available from your CLARKE dealer.
5. Replace the oil filler cap.

FILLING THE FUEL TANK WITH PETROL



WARNING: REFUEL IN A VENTILATED AREA, AWAY FROM SOURCES OF IGNITION.

WARNING: IF THE ENGINE IS HOT, LET IT COOL BEFORE REFUELING.

WARNING: KEEP FUEL OUT OF THE REACH OF CHILDREN.

Only use unleaded petrol.

1. Remove the fuel tank cap.
 - In the fuel tank is a fuel filter which collects contaminants as you refuel.
2. Slowly add fuel to the fuel tank.

- Make sure that the fuel level is not above the maximum fuel level mark in the fuel filter.
3. Replace the fuel tank cap.

Consult the engine manual and carry out all checks and prepare for use as specified.

CONNECTING THE HOSES

1. Put the rubber washer into the inlet and discharge adaptors making sure they are seated correctly.
2. Screw each adaptor onto the pump securely.
3. Slide each hose on to the adaptor and lock in position with a jubilee clip.
4. Install the strainer on to the other end of the inlet hose.
5. Hoses or pipes should be supported independently and not carried by the pump.

IMPORTANT: An air leak in the suction line will prevent priming, and reduce the capacity of the pump. The vast majority of problems which may occur, are as a result of air leaks in the suction line.

Pay particular attention to the following:

- Use sealant on all threaded connections.
 - Always ensure the quick release gasket is in place, and correctly fitted.
 - Always use a flexible hose of at least 1ft (300mm) at the pump body connection.
 - Keep all pipes/hoses as short and straight as possible and avoid sharp bends.
 - If a flexible hose must be laid across a roadway, protect it with planking. (Instantaneous shut off pressure, applied when a vehicle runs across an unprotected hose, will cause "hydraulic shock", which can damage the pump and/or the hose).
6. The suction strainer MUST be attached to the end of suction hose, to prevent large stones etc., from being drawn up which could cause severe damage. Keep the strainer clean. If it is likely to clog with dirt or debris, proceed as follows:
 - Prepare a bed of stones on which to rest the strainer.
 - Tie the strainer so that it stays off the bottom of the pit, pond or excavation.
 - Tie the strainer inside a basket or bucket.

PREPARING THE PUMP

1. Remove the filler plug on top of the pump case and fill the pump with water, leaving no air gap. Remember the pump is self-priming only when the pump is

filled. It will prime and re-prime itself without refilling. Refilling is necessary only if the pump has been drained or if the water has been lost. Never run the pump dry.

2. If the discharge line runs vertically more than 30ft it is advisable to install a check valve in the discharge line near the pump to stop destructive liquid hammer when the pump is shut down. If a check valve is installed, it may also be necessary to vent the top of the pump so that air can be expelled during automatic re-priming. This air bleed may be accomplished by providing a 1/4" line from the top of the pump back to the liquid source. We will not assume any responsibility for damage to the pump if no check valve is used in the discharge line.

Properly fueled and lubricated, your pump will run without attention.

OPERATION



WARNING: WHEN YOU OPERATE THE PUMP, THE EXHAUST MUFFLER WILL BE VERY HOT.

WARNING: DO NOT OPERATE THE ENGINE IN A CLOSED SPACE, MAKE SURE THAT THERE IS SUFFICIENT AIRFLOW AROUND THE PUMP.

PRIMING THE PUMP

1. The pump MUST be primed before use.
2. Before starting the engine, remove the filler cap from the pump chamber.
3. Fill the pump chamber and inlet hose with water.

NOTE: A foot valve (not supplied) connected to the lower end of the inlet hose between the hose and the strainer will help to maintain priming.

4. Replace the filler cap and tighten it securely.



WARNING: OPERATING THE PUMP DRY WILL DESTROY THE PUMP SEAL. IF THE PUMP IS OPERATED DRY, STOP THE ENGINE IMMEDIATELY, AND LET THE PUMP COOL BEFORE PRIMING

With a suction lift from 5 to 10ft the pump should discharge liquid in less than a minute. A suction lift of 25ft (at sea level) should require not more than 2 minutes for initial prime. To further reduce priming time the engine speed may be increased, after the engine is properly run in. If pumping does not start within this time, shut off engine and check carefully to find the problem, (See TROUBLESHOOTING GUIDE).

NOTE: Filling the suction pipe with water will speed up the priming process, and it is recommended that a foot valve (non-return valve) be fitted to the end of the suction pipe.

STARTING

Refer to the Engine Manual. Pay particular attention to "running in" the engine. Do not exceed the recommended engine speeds or running duration.

1. With the fuel cock open, pull the starter recoil rope slowly two or three times to allow fuel to reach the carburettor.
2. Hold down the pump, and with the ignition switch ON and choke and throttle, set according to the engine manual, pull the starter recoil rope firmly until the engine starts. Do not snatch at the starter rope, and allow it to retract slowly after each pull.
3. Once the engine starts, set the choke according to the manual, and use the engine throttle to gradually increase engine speed.

CONTROL

On high suction lifts, a higher engine speed is necessary than on low lifts. On shallow lifts therefore, or when there is little water to pump, preserve fuel and engine wear, by reducing engine speed. (See engine manual supplied).

STOPPING

1. Gradually reduce engine speed to minimum and stop the engine by switching OFF the ignition switch.
2. Use the throttle lever to decrease engine speed to minimum.
3. Set the engine switch to "OFF".
4. Turn the fuel valve to "OFF".

AFTER USE

1. Remove the pump drain plug and drain the pump chamber.
2. Remove the filler cap and flush the pump chamber with clean, fresh water.
 - Allow the water to drain from the pump chamber.
3. Reinstall the filler cap and drain plug.

MAINTENANCE

CLEARING BLOCKAGES

1. Remove the hoses and adaptors from the pump.
2. Remove the four bolts securing the front cover.
3. Clear debris and clean the inner parts using clean water.
4. Replace the front cover and secure using the four bolts.

CHANGING THE ENGINE OIL



CAUTION: PROLONGED EXPOSURE TO USED ENGINE OIL IS DANGEROUS, ALWAYS WASH YOUR HANDS THOROUGHLY AFTER HANDLING USED ENGINE OIL.

Change the oil in the engine after the first 20 hours use and thereafter every 6 months or 100 running hours.

1. Unscrew and remove the oil filler cap/dipstick.
2. Put a oil collection tray below the drain plug.
3. Unscrew the drain plug and let the used engine oil drain from the crankcase into the oil collection tray.

NOTE: Drain the engine oil when the engine is warm to help the oil flow out faster.

4. Replace the drain plug.
5. Fill the crankcase with engine oil until the oil touches the threads in the oil filler tube.
 - We recommend that you use SAE10W30 oil in this pump available from your CLARKE dealer.
6. Replace the oil filler cap/dipstick.

CHANGING THE SPARK PLUG

Replace the spark plug after the first month or every 50 hours of use.

1. Remove the spark plug cap from the spark plug.
2. Use the spark plug spanner supplied to remove the spark plug.
3. Remove any carbon that has collected around the electrode.
4. Check the spark plug gap (a) which should be between 0.7 and 0.8 mm. Adjust if necessary.

5. Check the overall condition of the spark plug for erosion or pitting and replace if necessary.
6. Refit the spark plug and replace the spark plug cap.

CLEANING/CHANGING THE AIR FILTER

Clean the air filter after 50 hours of operation (or more often in unusually dusty conditions) as follows.

1. Remove the air filter cover
2. Remove the air filter element.
3. Clean the air filter or replace if necessary.
 - If the filter is dirty, wash the filter in a solution of warm water and mild detergent and rinse thoroughly. Leave the filter to dry completely.
4. Once it is dry, dip in clean engine oil and squeeze out excess oil.
 - Do not operate the pump without the air cleaner installed as this will cause premature wear to the engine.

STORAGE

Always maintain the pump in a clean condition, checking regularly for loose bolts etc. Additionally, drain the pump body whenever there is danger of freezing and if the pump has been used with contaminated or salty water it should be thoroughly flushed with clean water immediately after use, both inside and out.

If the pump is not to be used for some time, it should be prepared as follows:

1. Drain the fuel tank and carburetor completely.
2. Remove the spark plug, and pour 2 - 3 teaspoons of light oil into the cylinder through the spark plug hole.
3. Pull the starter recoil rope slowly, 2 or 3 times, so that the oil is deposited on the cylinder walls and replace the spark plug.

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
The engine does not start.	No fuel in tank.	Add fuel.
	Fuel valve is set to OFF	Set the fuel valve to ON
	Engine switch is in the OFF position.	Set engine switch to the ON position.
	Lack of spark at the spark plug.	Make sure that the spark plug cover is fitted on to the plug. With the engine switch in the ON position, hold the spark plug electrode against the engine and pull the starter cord. If a spark is present but engine will not start, consult your CLARKE dealer.
The engine stops and will not restart.	No fuel in tank.	Add fuel to the tank.
The pump fails to prime.	Priming chamber not filled correctly.	Fill priming chamber leaving no air gap.
	Air leaking due to damaged hose, broken hose clamps, split/ill-fitting gasket.	Repair as necessary.
	Blocked inlet hose.	Clean strainer and make sure that it is not submerged in mud or sediment. Make sure that there are no kinks in the delivery hose.
	Engine speed too low.	Increase engine speed.
	Damaged impeller.	Disassemble the pump and replace the impeller.
	Air leaking through damaged seal.	Replace seal.

PROBLEM	CAUSE	SOLUTION
Low output from pump.	The engine speed is too low.	Increase the engine speed.
	Pickup or delivery hose obstructed.	Clear obstruction and make sure that there are no kinks in hose.
	Suction lift too high.	Set the pump nearer to the water level.
	Congested material inside pump.	Disassemble the pump and clean out.
	Damaged impeller.	Disassemble the pump and replace the impeller.

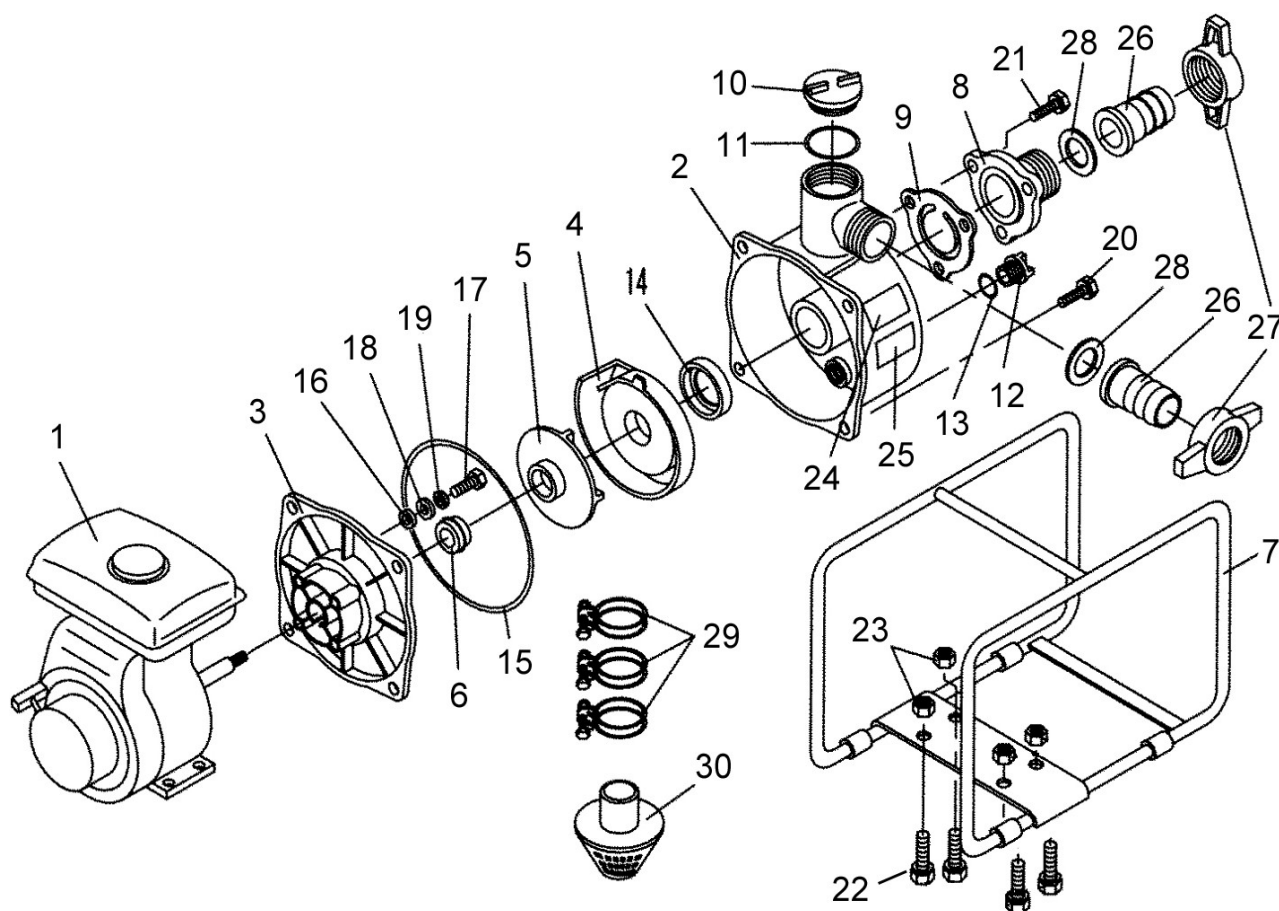
If you cannot correct the fault, speak to your local dealer or the CLARKE International service department.

ENVIRONMENTAL PROTECTION

At the end of its working life, do not discard this pump or its components with general household waste. Packaging must be taken to a recycling centre and discarded appropriately.

One of the most dangerous sources of pollution is oil. Do not discard used oil with domestic refuse or flush down a sink or drain. Collect the oil in a leak-proof container and take it to your local waste disposal site.

COMPONENT PARTS (PUMP ONLY)



1	Engine
2	Casing
3	End cover
4	Inner casing
5	Impeller
6	Mechanical seal
7	Frame
8	Valve case
9	Check valve
10	Filler plug
11	Packing
12	Drain plug
13	Packing
14	Packing
15	Packing

16	Seal packing
17	Bolt M8x48
18	Plain washer
19	Spring washer
20	Bolt
21	Bolt
22	Bolt M8x40
23	Nut M8
24	Data plate
25	Name plate
26	Hose connector
27	Coupling
28	Coupling washer
29	Hose clip
30	Strainer

DECLARATIONS OF CONFORMITY



DECLARATION OF CONFORMITY

This is an important document and should be retained.

We hereby declare that this product(s) complies with the following legislation: The following standards have been applied to the product(s):

Noise Emission in the Environment by Equipment for use Outdoors Regulations 2001

EN 809:1998+A1:2009/AC:2010, EN ISO 14982:2009, EN ISO 3744:2010

2014/30/EU Electromagnetic Compatibility Directive

2006/42/EC Machinery Directive

2016/1628 Particulate Emission and Type-Approval for Non-Road Mobile Machinery Regulation

2011/65/EU Restriction of Hazardous Substances (RoHS) Directive

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned legislation has been compiled and is available for inspection by the relevant enforcement authorities.

The UKCA mark was first applied in: 2025

Manufacturer: Clarke International Ltd, Hemnall Street, Epping, Essex, CM16 4LG, United Kingdom

Notified Body: N/A

Product Description: Engine Driven Water Pump

Assessment Procedure: Annex V of above noise legislation

Model Number(s): CHS2E

Measured LWA: 86.90 dB

Serial/Batch Number: Refer to product/package label

Guaranteed LWA: 89 dB

Document Holder: Alan Pond

Signed:

J.A Clarke

Date of Issue: 17/07/2025

Director

CHS2E UKCA Clarke DOC 071725

Page 1 of 1



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The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned legislation has been compiled and is available for inspection by the relevant enforcement authorities.

The CE mark was first applied in: 1998

Manufacturer: Clarke International Ltd, Fitzwilliam Hall, Fitzwilliam Place, Dublin 2, Republic of Ireland

Notified Body: N/A

Product Description: Engine Driven Water Pump

Assessment Procedure: Annex V of above noise legislation

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Measured LWA: 86.90 dB

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CHS2E CE Clarke DOC 071725

Page 1 of 1

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