

EN

Original Instructions
Version 1

DRAPER[®]

85L/min, 2.5HP

PETROL WATER PUMP

87680



**UK
CA** **CE**

These are the original product instructions. This document is part of the product; retain it for the life of the product, passing it on to subsequent holders. Read this manual in full before attempting to assemble, operate or maintain this product.

This Draper Tools manual describes the purpose of the product and contains all the necessary information to ensure its correct and safe use. Following all the instructions and guidance in this manual will ensure the safety of both the product and the operator and increase the lifespan of the product.

All photographs and drawings within this manual are supplied by Draper Tools to help illustrate correct operation of the product.

Every effort has been made to ensure the information contained in this manual is accurate. However, Draper Tools reserves the right to amend this document without prior warning. Always use the latest version of the product manual.

1.1 Product Reference

User Manual for: Petrol Water Pump, 85L/min, 2.5HP

Stock No: 87680

Part No: PWP27

1.2 Revisions

Version 1: July 2021

First release

Version 2: January 2024

General formatting and content updates

As our manuals are continually updated, always ensure that the latest version is used.

Please visit drapertools.com/manuals for the latest version of this manual and the associated parts list, if applicable.

1.3 Understanding the Safety Content of This Manual



WARNING! – Situations or actions that may result in personal injury or death.



CAUTION! – Situations or actions that may result in damage to the product or surroundings.

ATTENTION

Situations or actions that may result in damage to the product or surroundings.

Important: – Information or instructions of particular importance.

1.4 Copyright © Notice

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In all cases, this copyright notice must remain intact.

1. Preface	2	8. Maintenance and Troubleshooting	15-21
1.1 Product Reference	2	8.1 General Maintenance	15
1.2 Revisions	2	8.2 Cleaning Out Blockages	15
1.3 Understanding the Safety Content of This Manual	2	8.3 Draining the Fuel	16
1.4 Copyright © Notice	2	8.4 Draining the Engine Oil	17
2. Contents	3	8.5 Air Filter Care	17
3. Product Introduction	4	8.6 Spark Plug Care	18
3.1 Intended Use	4	8.7 Fuel Filter Care	18
3.2 Specification	4	8.8 Maintenance Schedule	19
4. Health and Safety Information	5-7	8.9 Storing the Product	19
4.1 General Health and Safety Precautions	5	8.10 Troubleshooting	20-21
4.2 Additional Health and Safety Instructions for this Water Pump	6	9. Spares, Returns and Disposal	21
4.3 Health and Safety Information for Machines With a Petrol Engine	7	10. Warranty	22
4.4 Residual Risk	7	11. Explanation of Symbols	23
5. Identification and Unpacking	8-9		
5.1 Product Overview	8		
5.2 What's in the Box?	9		
5.3 Packaging	9		
6. Preparing the Pump	10-12		
6.1 Hose Connection	10		
6.2 Fuelling the Pump	11		
6.3 Checking and Topping Up the Engine Oil	12		
6.4 Pre-Filling the Pump	12		
7. Basic Pump Operation	13-14		
7.1 Starting the Pump	13		
7.2 Stopping the Pump	14		

3.1 Intended Use

This product is designed for the transfer of clean water in environments in which access to mains power is limited. It is intended for frequent trade use, with the quality and features to meet and exceed expectations of the most demanding user.

Any other application beyond the conditions established for use will be considered misuse.

Draper Tools accepts no responsibility for improper use of this product.

Clear water pumps are suitable for use in pumping clear water from pools and garden ponds where the water is not muddied by sediment or algae and contains no visible particles. Draper Tools recommends that clear water pumps are used **ONLY** in reservoirs that are completely free from debris.

Read this manual in full before attempting to assemble, operate or maintain the product and retain it for later use.

3.2 Specification

Stock No.	87680
Part No.	PWP27
Engine:	2.5HP 4 stroke side valve
Fuel Type:	E10* (95 RON) Unleaded
Fuel Capacity:	3.6L
Oil Type:	SAE 10W-30
Oil Capacity:	0.45L
Suction aperture:	25mm (1")
Output aperture:	25mm (1")
Engine Capacity:	98cc
Max. flow:	85L/min
Max. head height:	10m
Max. suction head height:	6m
Guaranteed sound power level:	105dB(A)
Dimensions:	W 315 x H 350 x D 370mm
Application:	Clean water
Net weight:	11kg

*Draper Tools recommends using an additive or stabiliser with E10 petrol so the fuel can be safely stored in the fuel tank for longer.

Important: The declared noise emissions values have been measured in accordance with a standard test method and may be used for comparing one tool with another. These values may also be used in a preliminary assessment of exposure.



WARNING! The noise emissions during actual use of the product can differ from the declared values depending on the circumstances in which it is used. Before each use, estimate the likely exposure resulting from the actual conditions of use. Take into account all parts of the operation cycle in order to identify any safety measures required to protect the operator.

Important: Read all the Health and Safety instructions before attempting to operate, maintain or repair this product. Failure to follow these instructions may result in injury or damage to the user or the product.

4.1 General Health and Safety Precautions

Training and Inspection

- Only personnel who have read and understood this manual in full and are familiar with the operation, safe working techniques and safety features of this machine may operate, adjust or maintain this product.
 - **DO NOT** allow anyone who is unfamiliar with this product or unqualified in its use to operate this machine.
 - This machine is not intended for use by children or persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge unless they have been given supervision or instruction in its use by a person responsible for their safety.
- Observe all standard safety precautions and good practices when working with petrol engines and liquids.
- Before every use, inspect the product and all accessories for broken, cracked, loose or corroded parts and leakages.
- **Important: DO NOT** use this product if it is leaking or damaged in any way. Contact Draper Tools to discuss repair and replacement options.
- **DO NOT** allow familiarity or experience with this product to allow you to become complacent; remain alert at all times and **ALWAYS** adhere to the safety instructions listed in this manual.

Preparation and Intended Use

- Ensure that the surface onto which the machine is installed is flat, level, stable and capable of permanently supporting the weight of the machine.
- Ensure that the product is fully assembled, tightened and secure before use.
- **DO NOT** modify this product in any way and **ONLY** use spare parts supplied by Draper Tools.
- Use this product only in the manner described in this manual.

- **NEVER** step, stand or sit on this product.
- **DO NOT** leave the machine running unattended under any circumstances; **ALWAYS** ensure that the pump is switched off, the hoses are disconnected and it has completely cooled before fuelling, maintaining or making any adjustment to the product.
- **DO NOT** exceed the maximum working capacities of this machine.

ATTENTION

This product is not weatherproof and **MUST NOT** be exposed to direct sunlight, high ambient temperatures, rain, frost or damp, wet and high-humidity environments.

Work Area Safety

- Keep your work environment clear and well-lit, with bystanders at a safe distance.
- Work only in daylight or in good artificial light.
- **DO NOT** use this product near open flames or sources of heat or ignition, or in any environment where explosive substances are present.
- **NEVER** operate the engine indoors or in any confined space where dangerous carbon monoxide fumes can collect; carbon monoxide is dangerous and can cause serious injury or death in a matter of minutes.
- Never transport the machine while the engine is running.
- Allow adequate space for the pump and hoses during use.

Personal Safety

- Wear suitable personal protective equipment, including ear defenders and protective gloves.
- Keep your hands, face and body away from heated and moving parts while the pump is in use.
- Keep long hair and loose clothing tied back to prevent it from catching in moving parts.
- **DO NOT** operate this machine if you are tired or under the influence of alcohol, drugs or other medication.

Electrical Safety



WARNING!

Risk of electric shock.

- This product produces enough electrical power to cause a serious shock or electrocution if it is misused.
- **NEVER** handle or operate this machine with wet hands.
- **NEVER** expose this machine to wet conditions or frost; **ONLY** the connected hoses and internal pumping system should come into contact with liquids.

Maintenance

- Maintain the machine appropriately and correctly to prevent damage to moving parts and mechanisms.
- Have the machine serviced **ONLY** by authorised and suitably qualified personnel.
- Remove all adjustment tools before use.
- **ALWAYS** switch off the product and allow it to completely stop and cool before attempting to refuel or perform any adjustment, maintenance or other inspection.
- Never store the equipment with petrol in the tank inside a building where fumes can reach an open flame or spark.
- Allow the engine to cool before storing it in any enclosure.
- To reduce the risk of fire, keep the engine, muffler and petrol storage area free of vegetative material and excessive grease.
- Replace worn or damaged parts for safety.
- If the fuel tank has to be drained, it must be done outdoors.

4.2 Additional Health and Safety Instructions for this Water Pump

- The engine speed has been set at the factory to ensure safe operation.
 - **DO NOT** adjust the throttle speed.
- **NEVER** use the pump if the stop switch is faulty, unusable, or missing.
- Ensure that the suction and discharge hoses are laid out flat and safely and do not create a trip hazard.
- **NEVER** operate the pump without first correctly priming it.

ATTENTION

NEVER operate the pump without water passing through it.

- **NEVER** obstruct the discharge outlet or hose as this may severely damage the product.
- **NEVER** allow the pump or its contents to freeze.
- **NEVER** use this product to pump corrosive or toxic materials.
- **DO NOT** cover or obstruct any ventilation points or grilles.
- **DO NOT** drop or strike the pump.
 - If sudden force is applied to the pump, **IMMEDIATELY** switch it off and inspect it for damage.



WARNING! DO NOT continue to use the pump if it has sustained any damage.

- Transport the pump using the designated handle; **DO NOT** attempt to move the pump by pulling on or lifting the hosing.



WARNING! This product is heavy. Use appropriate lifting equipment and ask for assistance if required.

- Ensure all appropriate safety precautions are observed when transporting the machine:
 - **ALWAYS** ensure that the machine is switched off and the spark plug cover is disconnected during transportation.
 - Drain all fuel and oil from the product before transporting it and ensure that all reservoir caps are tightly sealed.


Important: If transporting it in a vehicle, keep the transportation unit well-ventilated.

- When transporting the product by hand, maintain a firm grip on both handles and keep the machine level.
- When transporting the product in a vehicle, ensure it is kept level and strapped securely in place.
- Keep the pump upright at all times.
- Keep the pump out of direct sunlight during transportation.
- Remove the pump from the vehicle immediately upon arrival at your destination.

4.3 Health and Safety Information for Machines With a Petrol Engine

 **WARNING! During use, parts of this product become hot enough to ignite some materials.**

- **DO NOT** touch the engine or exhaust during or immediately after use and allow it to cool before refuelling.
- **NEVER** remove the fuel cap while the engine is running or immediately after use.
 - Take care when opening the fuel cap after use as hot vapour may be released from the opening.
- **NEVER** place objects on the engine while it is in use and keep all air vents clear of dust, dirt and other obstructions.
- Faulty mufflers must be replaced.
- **NEVER** store the machine with fuel in the tank inside any structure where petrol fumes could reach an open flame or spark.

 **WARNING! ALWAYS fuel the machine in a well-ventilated area away from sources of ignition. Store fuel only for short periods, away from direct sunlight and heat sources, and only in containers specifically designed for that purpose. Avoid prolonged contact with the skin and inhalation of petrol vapour.**

 **WARNING! Petrol is highly flammable:**

- Store fuel in containers specifically designed for this purpose.
- **NEVER** use this product in environments where there is a risk of explosion.
- **NEVER** smoke in the vicinity of the machine.
- Refuel outdoors only and do not smoke while refuelling.
- Add fuel before starting the engine; never remove the cap of the fuel tank or add petrol while the engine is running or when the engine is hot.
- **NEVER** start the engine if you can smell petrol vapour in the air.
- If petrol is spilled, do not attempt to start the engine but move the machine away from the area of spillage and avoid creating any source of ignition until petrol vapours have dissipated.
- Replace all fuel tank and container caps securely.

Important: E10 petrol is hygroscopic and attracts moisture. Read all the preparation and maintenance information relating to E10 fuel before using it in this machine. Draper Tools recommends using an additive or stabiliser with E10 petrol to extend the period that it can be safely stored in the fuel tank. **ALWAYS** read the label of any additive or stabiliser applied.

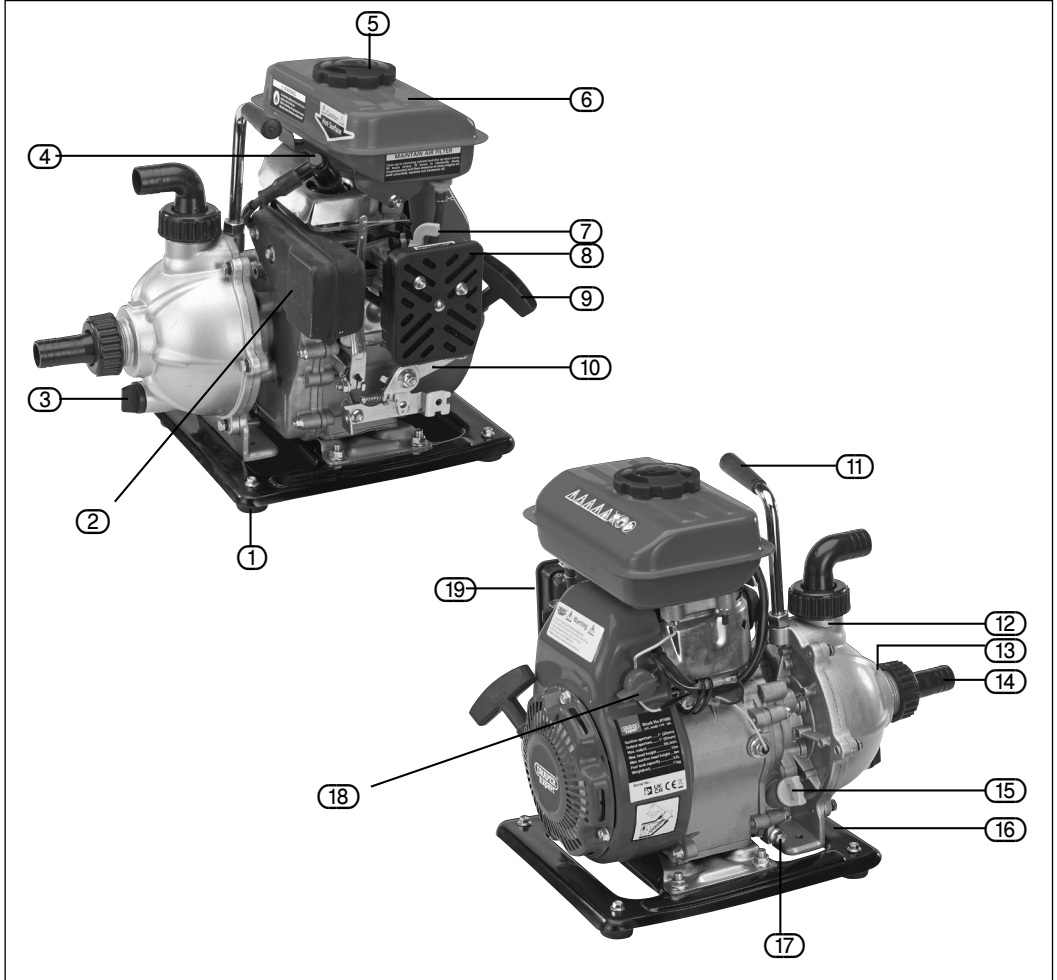
 **WARNING! The machine exhaust emits toxic carbon monoxide: a colourless, odourless gas.**

Breathing exhaust fumes can cause loss of consciousness, permanent respiratory damage and eventually death. **ONLY** operate this machine in a well-ventilated outdoor environment, well away from windows and doors. If you inhale carbon monoxide, move to a ventilated area and seek immediate medical attention.

4.4 Residual Risk

The safety instructions in this manual cannot account for all possible conditions and situations that may occur. Exercise common sense and caution when using this product and protect against any additional conceivable risks.

5.1 Product Overview



- (1) Feet
- (2) Exhaust and muffler
- (3) Water drain
- (4) Spark plug cover
- (5) Fuel tank cap
- (6) Fuel tank
- (7) Choke lever
- (8) Air filter housing
- (9) Recoil starter
- (10) Throttle lever

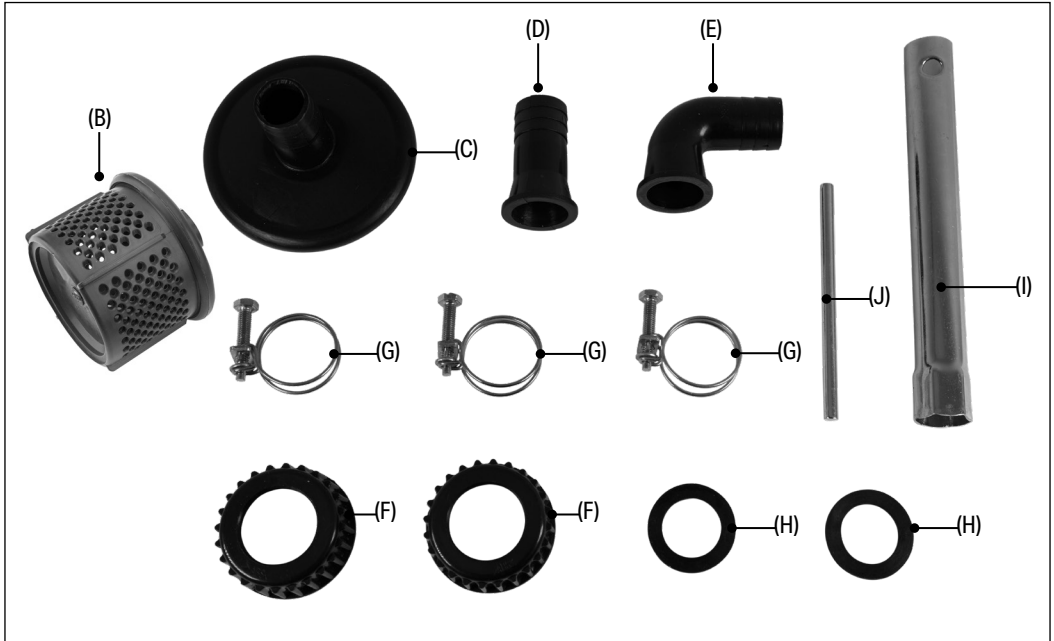
- (11) Transport handle
- (12) Pump outlet
- (13) Pump Inlet (suction)
- (14) Hose barb
- (15) Oil filler cap with dipstick
- (16) Base frame
- (17) Oil drain bolt
- (18) Engine power switch
- (19) Fuel lever

5. Identification and Unpacking

5.2 What's in the Box?

Carefully remove the product from the packaging and examine it for any signs of damage that may have occurred during shipment.

Before assembling the product, lay the contents out and check them against the parts shown below. If any part is damaged or missing, do not attempt to use the product. Please contact the Draper Helpline; contact details can be found at the back of this manual.



- (A) 1 x Pump unit (not shown)
- (B) 1 x Strain filter
- (C) 1 x Strain filter cap
- (D) 1 x Inlet hose barb
- (E) 1 x Outlet hose barb
- (F) 2 x Hose barb couplings

- (G) 3 x Hose clamps
- (H) 2 x O-ring seals
- (I) 1 x Spark plug spanner body
- (J) 1 x Spark plug spanner handle

5.3 Packaging

Keep the product packaging for the duration of the warranty period for reference should the product need to be returned for repair.

WARNING! Keep packaging materials out of reach of children. Dispose of packaging correctly and responsibly and in accordance with local regulations.

Please visit drapertools.com for our full range of accessories and consumables.

6. Preparing the Pump

Important: The pump must be correctly prepared before use. Read this section in full before attempting to use this product.

6.1 Hose Connection

Use a solid wall (reinforced) hose to stop the hose from collapsing on the suction side of the pump. Please check drapertools.com for the recommended suction hose.

1. Pass the inlet hose barb (D) through the threaded side of the hose barb coupling (F) so that the thread sits away from the hose barb.
2. Place an O-ring seal (H) inside the hose barb coupling so that it rests against the hose barb.

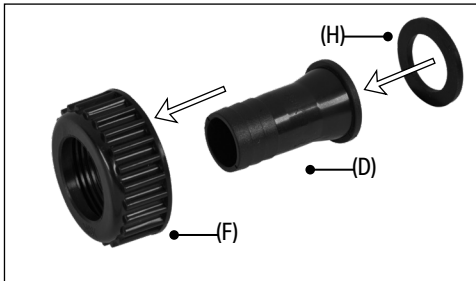


Fig. 1

3. Screw the hose barb assembly onto the pump inlet (13).

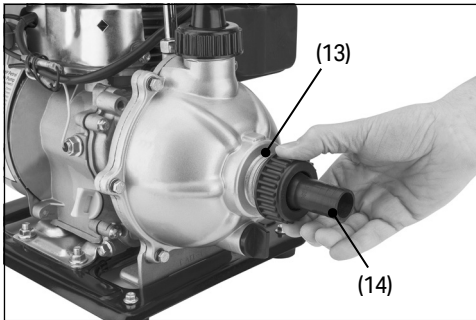


Fig. 2

4. Slide a hose clamp (G) over one end of the solid wall hose (not supplied) and push that end of the hose as far as possible onto the hose barb (14).
5. Move the hose clamp so that it sits centrally on the covered hose barb and tighten the clamp screw until the hose is held securely in place.

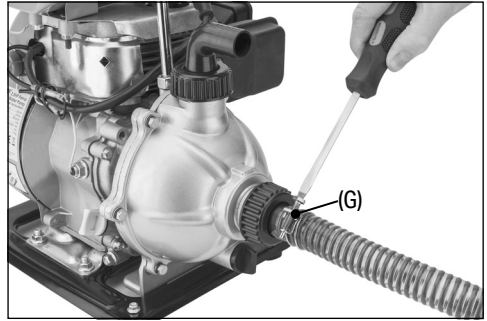


Fig. 3

6. Push the filter cap (C) onto the open end of the strain filter (B).

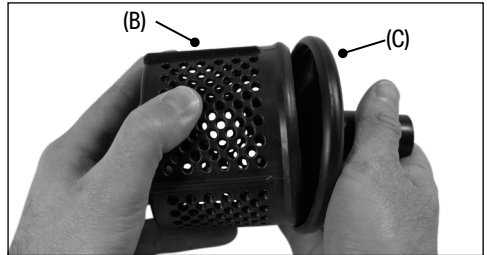


Fig. 4

7. Slide a hose clamp (G) onto the other end of the solid wall hose and push the hose onto the filter cap barb as far as possible.
8. Place the hose clamp centrally on the filter cap barb and tighten until secure.



Fig. 5

9. Using the outlet hose barb (E), repeat steps 1–6 for the discharge hose (not supplied) if required and connect the discharge hose to the pump outlet (12).
- Draper Tools recommends installing a non-return valve into the suction line to prevent the pump from losing its prime.

6. Preparing the Pump

6.2 Fuelling the Pump

ATTENTION

This machine is shipped **WITHOUT** fuel. Check the fuel level before **EVERY** use and top up as appropriate. **NEVER** attempt to run the engine on an empty fuel tank.

Important: This product must be used with high-quality unleaded fuel **ONLY**. **ALWAYS** use automotive petrol suitable for four-stroke engines; **DO NOT** mix fuel and oil.

- Draper Tools recommends E10 (95 RON) automotive fuel, with an appropriate additive or stabiliser, for use with this product. Additives and stabilisers are widely available and can extend the length of time that E10 petrol can be safely stored in a product fuel tank. Damage caused by failure to add fuel or using incorrect or poor-quality fuel is not covered by your warranty.
- E10 petrol should be used within 30 days of purchase. Do not use fuels with more than 10% ethanol in Draper products.

To fuel the machine:

1. Disconnect the spark plug cover (4).
2. Remove the fuel tank cap (5).

 **WARNING! If the tool has been recently used, hot steam may vent from the fuel tank outlet. Take care when opening the fuel tank.**

3. Ensure that the fuel filter (K) is in place.

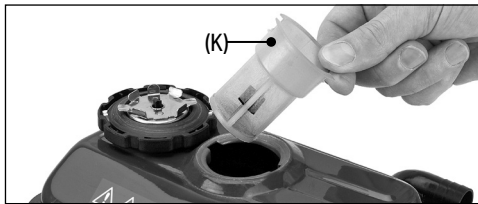


Fig. 6

Important: **DO NOT** add fuel to the tank if the fuel filter is missing or damaged.

4. Carefully pour fuel into the tank until the level reaches the red marker inside the fuel filter.

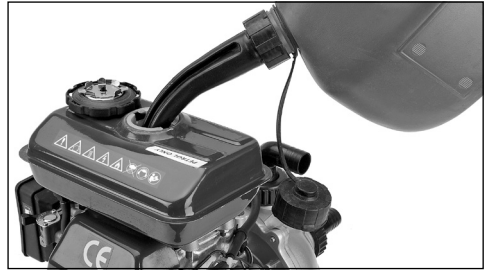


Fig. 7

ATTENTION

DO NOT overfill the fuel tank; always leave an air gap above the fuel level. **NEVER** allow dust, dirt, water or dirty fuel to enter the fuel tank. Clean up any spillages **IMMEDIATELY**.

5. Reattach the fuel tank cap, ensuring it is properly fitted and securely tightened.

Important: Ensure that the notches in the fuel filter lip are correctly aligned before attaching the fuel tank cap.

6. Reconnect the spark plug cover when the machine is ready for use.

Important: Move the pump at least 4m (12') away from the fuelling area before starting the engine.

6. Preparing the Pump

6.3 Checking and Topping Up the Engine Oil

ATTENTION

This machine is **NOT** supplied with engine oil. Check the engine oil level before every use. Running the machine with a low oil level oil may cause serious damage to the engine and is not covered by your warranty.

Important: Use SAE 10W-30 oil with this machine.

Important: The motor on this engine is fitted with a low oil sensor. If the oil level drops too low, the engine will stop and cannot be started until the oil level is topped up.

1. Ensure that the pump is switched off and has completely cooled, then place it on a stable and level surface.
2. Rotate the oil filler cap (15) anticlockwise to remove it from the reservoir and clean it. Insert the oil filler cap back into the reservoir and remove it again.



Fig. 8

Important: DO NOT screw the filler cap into place when checking the oil level; insert the cap into the reservoir and remove it again.

3. Inspect the oil level on the oil filler cap against the MIN and MAX level markings:
 - a. If the oil is below the MIN level marking, top up with SAE 10W-30 to the Max level.
 - b. If the oil has become contaminated or discoloured, drain and replace the oil; see **8.4 Draining the Engine Oil**.

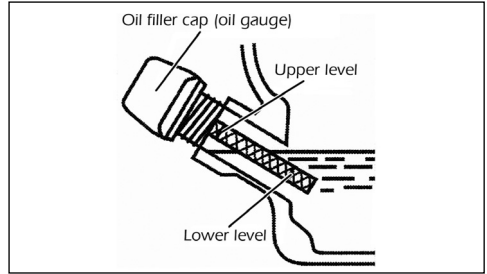


Fig. 9

6.4 Pre-Filling the Pump

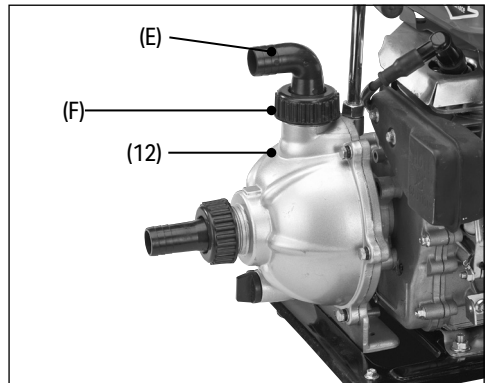


Fig. 10

1. Unscrew the discharge hose barb coupling (F) from the pump outlet (12).
2. Remove the outlet hose barb (E) and hose and fill the outlet with water, leaving no air gap.

Important: Take care that the O-ring is not lost when the hose barb is removed from the outlet.

3. Reconnect the discharge hose and fill the suction hose with water.

Important: Once switched on the pump may take up to 10 minutes to begin pumping water depending on the distance from the source of water. Always position the pump as close to the source of water to be pumped as possible and ensure that all connections are airtight.

Important: The housing must be refilled if the pump is drained or water is lost from the suction hose. **NEVER** run the pump dry.

7. Basic Pump Operation

Important: Before operating this product, read and understand all the safety instructions listed in this manual. Ensure that the pump is correctly prepared before use; see **6. Preparing the Pump**.

Important: Place the pump on a firm and level surface during use. Keep in mind that the length of the hoses and the difference in elevation between the pump and the source and delivery reservoirs may impact the flow rate.

7.1 Starting the Pump

ATTENTION

Check the fuel tank and the engine oil before starting the pump, top up if necessary.

Important: DO NOT start the pump until it is in its operating position. **NEVER** travel with the machine switched on.

1. Pre-fill the pump; see **6.4 Pre-Filling the Pump**.
2. Ensure that the spark plug cover (4) is connected.
3. Slide the fuel lever (19) to the right to open the fuel supply.
4. Slide the throttle lever (10) downwards to open the throttle slightly.
5. Move the choke lever (7) to the appropriate position:
 - **Cold start:** Closed (left) position
 - **Warm start:** Open (right) position

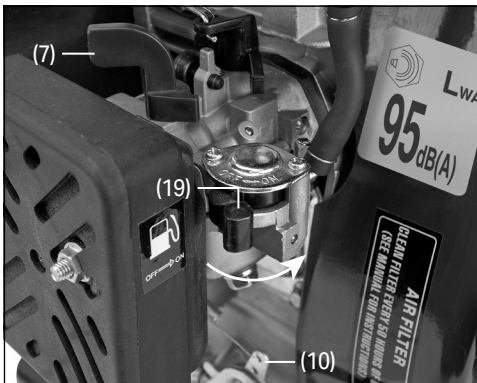


Fig. 11

6. Turn the engine power switch (18) to the ON position.

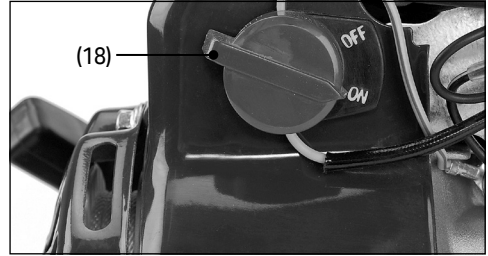


Fig. 12

7. Slowly pull on the recoil starter (9) until resistance is felt, then pull it out rapidly to start the engine.



Fig. 13

Important: You may need to do this several times.

ATTENTION

DO NOT attempt to start the engine when the recoil starter is fully retracted. **DO NOT** allow the recoil starter to snap back against the engine. Return it gently to prevent damage to the starter.

8. If you are performing a cold start:
 - a. Allow the engine to run with no load for a few minutes to allow it to warm up.
 - b. Move the choke lever to the open (right) position.
9. Increase the throttle speed to begin pumping.

Important: When the pump is not in use, lower the throttle to idle (up position) or switch off the engine. **NEVER** leave the pump running unattended.

7.2 Stopping the Pump

Important: Before stopping the engine, lower the throttle to idle and allow the engine to run for a few minutes.



Fig. 14

If the pump is being stopped temporarily, slide the fuel lever (19) to the off position and turn the engine power switch (18) to the OFF position.

If the pump is being stopped and then stored, slide the fuel lever to the OFF position and wait for the engine to cut out before turning the engine power switch to the OFF position. Open the water drain (3) to allow any residual water in the impeller housing to leave the pump.

In the event of an emergency, turn the engine power switch to the OFF position immediately.

Important: Maintenance and repairs should be carried out **ONLY** by authorised and suitably qualified personnel.

WARNING! ALWAYS turn off the engine and allow it to cool before maintaining or storing this product. If the engine must be run for testing, ensure that this is carried out in a well-ventilated environment that allows carbon monoxide from the exhaust to dissipate quickly.

For optimal performance and a longer lifespan, maintain the pump according to the schedule outlined in this section. If the pump is used in abnormally hot or dusty environments, increase the frequency of each aspect of the maintenance schedule.

8.1 General Maintenance

- Keep all air vents clean and free from obstructions at all times.
- Protect the pump and its components from adverse environmental and weather conditions, both during use and when stored.
- Clean the engine unit with a damp cloth.

Important: DO NOT use solvents as this may damage any plastic or uninsulated parts.

- Use **ONLY** spare parts supplied by Draper Tools.

8.2 Cleaning Out Blockages

WARNING! ALWAYS ensure that the pump is switched off and has completely stopped before opening the impeller housing.

1. Detach the strain filter (B) from the suction hose.
2. Remove the strain filter cap (C) and clean all parts of the filter with warm soapy water and a soft brush.

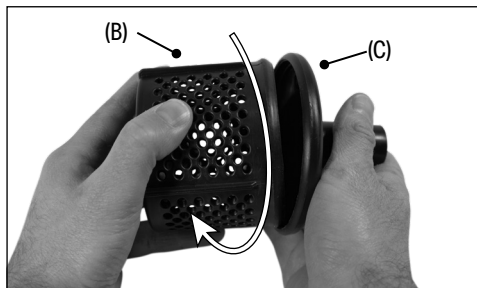


Fig. 15

3. Reassemble the strain filter and attach it correctly to the suction hose; see **6.1 Hose Connection**.
4. To open the impeller housing, remove the six bolts surrounding the inlet (13) and pull the cover away from the pump.

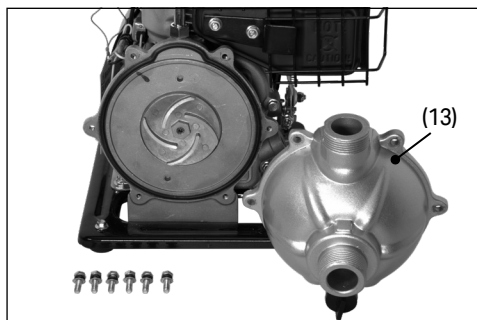


Fig. 16

5. Clean inside the housing and around the impeller.
6. Screw the cover back into place, ensuring a tight fit.

8.3 Draining the Fuel

Important: Fuel should be stored in the tank for no more than four weeks. Draper Tools recommends draining the fuel from the pump before storage, particularly if it will be stored for long periods.

Important: Read all the Health and Safety guidance for the use of petrol as a fuel before filling or draining this product.

WARNING!
NEVER drain the fuel tank indoors.

To drain the fuel:

1. Turn the fuel lever (19) to the closed position.
2. Use a siphon (not supplied) to extract the fuel into a suitable container.



Fig. 17

Identify the fuel line to the carburettor and detach it.

Important: The fuel line may leak when detached. Catch any discharged fuel in a suitable container.

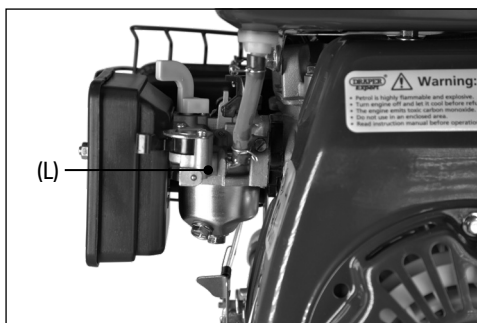


Fig. 18

3. Position a funnel (not supplied) to direct the fuel into a suitable container.
4. Open the fuel lever and allow the remaining fuel to drain from the fuel tank.
5. When the fuel is drained, close the fuel lever.
6. Loosen the float bowl drain bolt (L) and allow the fuel to drain into a suitable container.
7. Move the fuel lever to the open position and allow the fuel to drain from the tank.
8. When the fuel has drained, tighten the float bowl drain bolt and wipe up any spillages.
9. Start the engine and allow it to run until it exhausts the residual fuel in the system.

Important: ALWAYS dispose of waste fuel responsibly and in accordance with local regulations.

8.4 Draining the Engine Oil

Important: The engine oil level and condition should be inspected before every use and replaced every three months or after 50 hours of use. It should additionally be replaced after the first month or 20 hours of use, and if it becomes contaminated with water or debris.

Drain the oil before the engine has completely cooled to allow faster and more thorough drainage.

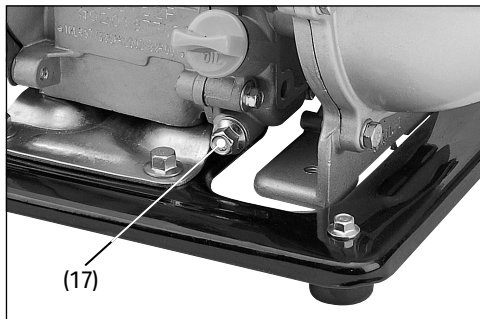


Fig. 19

WARNING! ALWAYS wear protective gloves when draining the oil as the oil and reservoir will be hot.

1. Position the pump on level ground and start the engine normally.
2. Allow a few minutes for the engine to warm up, then switch off the pump.
3. Remove the oil filler cap.

WARNING! Be mindful of hot vapours escaping from the oil reservoir when the filler cap is removed.

4. Open the oil drain bolt (17) and allow the oil to drain into a suitable container.
5. Refit the drain bolt, then refill the oil and check the level (see 6.3 Checking and Topping Up the Engine Oil).
6. Tighten the oil filler cap securely in place.

Important: ALWAYS dispose of waste oil responsibly and in accordance with local regulations.

8.5 Air Filter Care

Clean the air filter chamber and element at least after every 50 hours of use or every three months to ensure consistent airflow into the carburettor. Increase the frequency of cleaning when working in dusty environments.

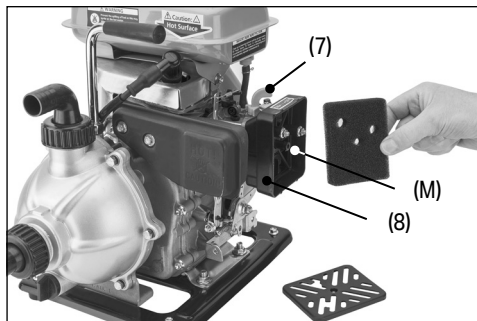


Fig. 20

WARNING! NEVER use petrol or solvents to clean the air filter elements as they may damage the filter or result in a fire when the machine is next used.

ATTENTION

NEVER run the machine without the air filter element in place as this may cause the engine to degrade rapidly.

1. Ensure that the choke lever (7) is in the closed (right) position to prevent any debris from entering the carburettor.
2. Loosen and remove the centre screw (M) of the air filter housing (8).
3. Remove the filter element and inspect it for holes, tears and obstructions.

Important: If the foam element is damaged, replace it with a new one. **DO NOT** use the machine if the air filter is damaged.

4. Wash the element in warm soapy water and allow it to dry thoroughly.

Important: **DO NOT** use solvents to clean the element.

5. Clean the compartment and covers of any dust, dirt or other obstructions.

6. Reassemble the air filter and screw the cover securely in place, ensuring it is correctly seated around the housing.

8.6 Spark Plug Care

Ensure that the spark plug is clean and has the correct gap. The spark plug may become contaminated over time if the machine is run with part-throttle for prolonged periods.

Important: Replace the spark plug after every 50 hours of use or every three months.

1. Remove the spark plug cover (4).



Fig. 21

Important: DO NOT use tools to remove the cover as it may damage the HT lead.

2. Pass the spark plug spanner handle (J) through the holes across the spark plug spanner body (I) and use the assembled spanner to remove the spark plug.

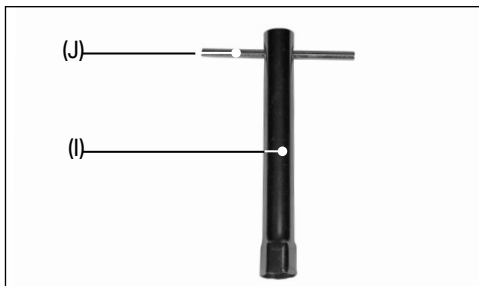


Fig. 22

3. Visually inspect the spark plug and replace it if the ceramic insulator is cracked or chipped.
4. Measure the spark plug gap using a feeler gauge (not supplied) and correct as appropriate by gently bending the electrode into position.

Important: The gap should be 0.7–0.8mm.

5. Screw the spark plug into place using 20Nm (2mkg, 14ftlb) of torque and replace the spark plug cover securely.

ATTENTION

The spark plug **MUST** be correctly tightened. Loose spark plugs can become very hot and cause damage to the engine. **NEVER** use a spark plug with a heat range that is not appropriate for the machine in which it is used.

8.7 Fuel Filter Care

The fuel filter (N) sits inside the fuel tank (6) opening and ensures that the fuel remains clean. It must be checked regularly and replaced when it becomes clogged.

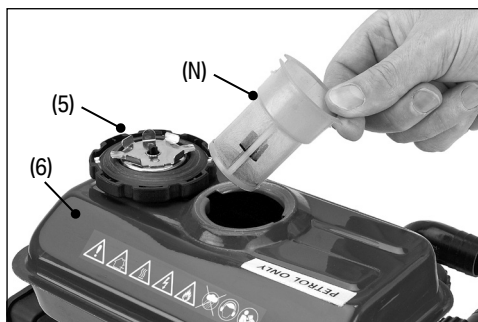


Fig. 23

Important: Wear protective gloves to protect your hands from the fuel.

1. Disconnect the spark plug cover (4).
2. Drain the fuel from the tank; see **8.3 Draining the Fuel**.
3. Remove the fuel tank cap (5) and extract the fuel filter.
4. Inspect the filter for damage and clean or replace it as necessary:
 - Thoroughly clean the filter using warm soapy water and allow it to dry completely.

Important: DO NOT use solvents to clean the element.

 - Replace the filter if it is damaged or clogged.
5. Insert the fuel filter back into the opening and replace the fuel tank cap securely.

8.8 Maintenance Schedule

Item	Remarks	Pre-operation check (daily)	Initial 1 months or 20Hr	Every 3 months or 50Hr	Every 6 months or 100Hr	Every Year or 300Hr
Spark plug	Check condition, adjust gap and clean. Replace if necessary.			●		
Engine oil	Check oil level.	●				
	Replace.		●		●	
Air filter	Clean. Replace if necessary.			●		
Fuel filter	Clean fuel drain filter. Replace if necessary.				●	
Valve clearance	Check and adjust when engine is cold.					●
Fuel line	Check fuel hose for crack or damage. Replace if necessary.	●				
Exhaust system	Check for leakage. Re-tighten or replace gasket if necessary.	●				
	Check muffler screen. Clean/replace if necessary.				●	
Carburettor	Check choke operation.	●				
Starting system	Check key start ignition operation.	●				
Decarbonisation	More frequently if necessary.					●
Fittings/fasteners	Check all fittings and fasteners correct if necessary.				●	

8.9 Storing the Product

Important: ALWAYS ensure that the engine has completely cooled before storing the machine.

- Prepare the machine correctly for storage:
 - Ensure that the engine power key switch is in the OFF position.
 - Disconnect the spark plug cover (4).
 - Drain the fuel from the tank and carburettor.
 - Tighten all reservoir caps and leakage points.
 - Cover the machine with a plastic sheet to protect it against dust and moisture.
- Store the machine and attachments in a dry and dust-free environment, out of reach of children.
- Store the machine at a temperature of 0–30°C.
- Start the engine at periodic intervals and allow it to run for several minutes to prevent seizure within the engine.

If the machine is to be stored for a prolonged period, ensure that the engine cylinder is sufficiently lubricated to prevent it from seizing:

1. Remove the spark plug; see **8.6 Spark Plug Care**.
2. Pour a few drops of SAE 5W-30 oil into the socket.
3. Pull the recoil starter (9) slowly to distribute the oil.
4. Return the spark plug securely to the socket.
5. When restarting after storage:
 - a. Remove the spark plug.
 - b. Hold a cloth around the spark plug socket opening.

Important: DO NOT smother or completely cover the opening.
 - c. Pull on the recoil starter several times and catch any ejected oil using the cloth. Do this until no more oil is ejected from the opening.
 - d. Return the spark plug securely to the socket
 - e. Start the engine in the usual way; see **7.1 Starting the Pump**.

8.10 Troubleshooting

Problem	Possible cause	Remedy
The engine does not start.	The engine power key switch is in the OFF position.	Press the engine power key switch to the ON position.
	The fuel or oil level is too low.	Check and top up the fuel and oil levels as appropriate (see 6.2 and 6.3).
	The fuel lever is in the closed position.	Move the fuel lever to the open position.
	The spark plug electrode has been fouled or the gap is set incorrectly.	Repair or replace the spark plug.
	The spark plug H.T. lead is not connected correctly.	Press the spark plug cover on firmly and ensure that the housing is not interfering with the connection.
	The choke is set incorrectly for the starting conditions.	Ensure that the choke lever is set in the open position for a warm start or closed for a cold start.
	The air filter is clogged.	Clean or replace the air filter (see 8.5).
The engine stutters or runs roughly after starting.	The fuel filter is clogged.	Replace the fuel filter (see 8.7).
	The choke lever is set in the closed position.	Move the choke lever to the open position and retry.
	Parts of the engine require maintenance.	Clean or replace the air filter, fuel filter and spark plug (see 8.5 and 8.6).
The engine fails during use.	The fuel has been stored for too long and has deteriorated.	Drain the fuel (see 8.3) and clean the fuel filter (see 8.7), then refuel the pump (see 6.2).
	The fuel level has dropped too low.	Check and top up the fuel tank (see 6.2).
The engine fails during use.	The priming water level is low.	Check the pump housing water and top it up if necessary; (see 6.4).
	The strainer filter is clogged.	Remove the strainer filter from the suction hose and clean them if they are blocked.
	The hoses are not airtight.	Ensure that the hose clamps are securely fastened and check the hoses for damage and splits.

Problem	Possible cause	Remedy
	The suction hose is blocked.	Check that the end of the suction hose is not submerged in solid or viscous matter and ensure that the hose is not bent or crushed.
	The impeller is blocked or damaged.	Clean or replace the impeller; (see 8.2).
The engine runs with low power.	Parts of the engine require maintenance.	Clean or replace the air filter, fuel filter and spark plug.
	The choke is closed.	Open the choke after the engine has run for a few seconds.
The pump is leaking oil.	An O-ring seal is damaged or failing.	Replace the faulty part; contact Draper Tools for support.
	There are loose bolts in the engine.	Tighten all bolts and fittings.

9. Spares, Returns and Disposal

For spare parts, servicing, and repair and replacement options, please contact the Draper Tools Product Helpline for details of your nearest authorised agent.

Draper Tools will endeavour to hold any spare parts, if applicable, for seven years from the date that it sells the final matching stock item.

Any servicing or repairs carried out by unauthorised personnel or installation of spare parts not supplied by Draper Tools will invalidate your warranty.

Important: For safety, **ALWAYS** drain and clean the product of any oil, fuel, chemicals or other substances before returning it to Draper Tools or its authorised agent. Store these materials in suitable containers and dispose of them in accordance with local regulations. Draper Tools and its agents cannot be responsible for the disposal of these substances.

At the end of its working life, dispose of the product responsibly and in line with local regulations. Recycle where possible.

- **DO NOT** dispose of this product with domestic waste; most local authorities provide appropriate recycling facilities.
- **DO NOT** burn or mutilate batteries; this may release toxic or corrosive substances.
- Dispose of oil separately and in accordance with local regulations; **DO NOT** abandon it in the environment.



Draper Tools products are carefully tested and inspected before shipment and are guaranteed to be free from defective materials and workmanship.

Should the tool develop a fault, return the complete tool to your nearest distributor or contact Draper Tools directly. Contact information can be found at the back of this manual.

Proof of purchase must be provided.

If, upon inspection, it is found that the fault occurring is due to defective materials or workmanship, repairs will be carried out free of charge. This warranty period covers parts and labour for 12 months from the date of purchase. Where tools have been hired out, the warranty period covers 90 days from the date of purchase.

This warranty does not apply to any consumable parts, batteries or normal wear and tear, nor does it cover any damage caused by misuse, careless or unsafe handling, alterations, accidents, or repairs attempted or made by any personnel other than the authorised Draper Tools repair agent.

In all cases, to make a claim for faulty workmanship or materials within the standard warranty period, please contact or return the product to the place of purchase. Proof of purchase may be required.

If the place of purchase is no longer trading or if you experience any difficulties with your warranty, please contact Customer Services with the product details and your proof of purchase. Contact details can be found at the back of this manual.

If the tool is not covered by the terms of this warranty, repairs and carriage charges will be quoted and charged accordingly.

This warranty supersedes any other guarantees expressed or implied and variations of its terms are not authorised.

Your Draper Tools guarantee is not effective until you can produce, upon request, a dated receipt or invoice to verify your purchase within the guarantee period.

Please note that this warranty is an additional benefit and does not affect your statutory rights.

Draper Tools Limited

11. Explanation of Symbols



Read the instruction manual



Wear face mask and safety glasses



Wear ear defenders



Wear protective gloves



Do not abandon in the environment



Keep out of the reach of children



Warning!



Do not incinerate or throw onto fire



For outdoors use only.



Danger!
Highly flammable liquid



CAUTION!
Risk of electric shock



Engine & Exhaust become hot during use. Hot surfaces, do not touch

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Please contact the Draper Tools Product Helpline for repair and servicing enquiries.