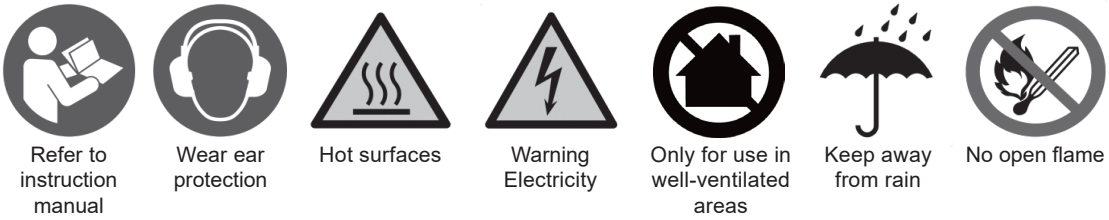
5000W DIESEL WELDER GENERATOR 4-STROKE ENGINE 110/230V

MODEL NO: **DG5000W**

Thank you for purchasing a Sealey product. Manufactured to a high standard, this product will, if used according to these instructions, and properly maintained, give you years of trouble free performance.

IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.



Refer to instruction manual | Wear ear protection | Hot surfaces | Warning Electricity | Only for use in well-ventilated areas | Keep away from rain | No open flame

Switch off the engine before refuelling | No oil in unit add oil | Breathing hazard | Fire hazard | Arc rays wear eye protection | Fumes/ gases use in ventilated area | Magentic fields produced

1. SAFETY

1.1. ELECTRICAL SAFETY

❑ **WARNING! It is the user's responsibility to check the following:**
✓ Check all electrical equipment and appliances to ensure that they are safe before using.
✓ Inspect power supply leads, plugs and all electrical connections for wear and damage.
✓ Ensure that the insulation on all cables and on the appliance is safe before connecting it to the power supply.
× **DO NOT** use worn or damaged cables, plugs or connectors.
✓ Ensure that any faulty item is repaired or replaced immediately by a Sealey qualified technician.
✓ If the cable or plug is damaged during use, switch off the electricity supply and remove from use.
✓ Sealey recommend that an RCD (Residual Current Device) is used with all electrical products.

1.2. GENERAL SAFETY

❑ **WARNING!** Ensure any Health & Safety, Government, or local authority regulations are adhered to when using this equipment.
❑ **WARNING!** Safe operation requires sufficient operator knowledge of the functions and positions of the controls and indicators or meters.
❑ **WARNING!** Generating sets should only be loaded up to their rated power under the rated ambient conditions.
❑ **WARNING!** Prior to commencing maintenance work it shall be ensured that untimely start-up is not possible.
✓ Familiarise yourself with the application and limitations, as well as the potential hazards, of the welder generator.
✓ Maintain the welder generator in good condition (use Sealey Service Centre). Replace or repair damaged parts. Use genuine parts only. Unauthorised parts may be dangerous and will invalidate the warranty.
✓ The installation and major repair work shall be carried out only by specifically trained personnel.
✓ This welder generator is designed and manufactured for specific applications. **DO NOT** attempt to modify the unit or use it for any application for which it is not designed. If you have any questions regarding the application of the unit please contact your local Sealey stockist.
❑ **WARNING! DO NOT** exceed the Wattage/Amperage capacity of the welder generator**.** Add rated wattage of all devices intended for connection at any one time, the total must not exceed rated wattage of welder generator (see specifications).
❑ **WARNING!** Some parts of the internal combustion engine are hot and may cause burns. Pay attention to the warnings on the generating set.
❑ **WARNING!** This is a heavy and unbalanced object. Handle with care and use two people when required.
❑ **WARNING!** Engine exhaust gases are toxic.
▲ **DANGER!** If this unit is used for back-up power in the event of a commercial power failure, the following steps must be taken. Before connecting the welder generator to the electrical system, open the main circuit breaker to isolate the welder generator and system from the commercial electric supply. Failure to do this may result in damage to the welder generator and may result in serious injury or fatality, due to a back-feed of electrical energy.
▲ **DANGER!** The welder generator produces a very powerful voltage that can cause a severe electrical shock. Avoid contact with bare wires, terminals etc. Never allow any unqualified person to operate or service the welder generator.
❑ **WARNING!** Fuel is highly combustible, never refuel during operation, when the engine is running or hot, while smoking, near open flames, or in a way that causes spills; always allow the engine to cool and leave space in the tank for fuel expansion.
❑ **WARNING!** Protect children by keeping them at a safe distance from the generating set.
❑ **WARNING!** Risk of burns. **DO NOT** touch the exhaust system or the drive unit.
✓ Operate the welder generator only on level surfaces (maximum allowable tilt is 10º) and where it will not be exposed to excessive moisture, dirt or corrosive vapours or be in the proximity of combustible material (flammable liquids, solids or gases).
× **DO NOT** tip or change the welder generator's position whilst it is operating.

✓ Remove ill fitting clothing, ties, watches, rings and other loose jewellery and contain long hair. Wear appropriate protective clothing.

× **DO NOT** use the welder generator for any purpose other than that for which it is designed.

× **DO NOT** operate the welder generator if any parts are missing or damaged, as this may cause failure and/or personal injury.

× **DO NOT** operate in the rain.

▲ **DANGER**! **DO NOT** tamper with the engine governed speed setting. Higher operating speeds are dangerous and increase the risk of personal injury and/or equipment damage. The welder generator supplies the correct rated frequencies and voltage only when running at the correct governed speed. Incorrect frequency and/or voltage can damage some connected electrical loads. Operating at excessively low speeds may result in shortened engine life. Over-speeding will invalidate the warranty.

× **DO NOT** operate the welder generator when you are tired, or under the influence of alcohol, drugs or intoxicating medication.

× **DO NOT** store welder generator with fuel in tank where fuel vapours might reach an open flame or spark.

❑ **WARNING!** To avoid carbon monoxide poisoning **DO NOT** use fuel- powered equipment inside any of the following; Home, garage, tent, camper van, mobile home, caravan or boat. This list is not exhaustive and if you are in any doubt contact your Sealey stockist.

✓ Dispose of wast oil in accordance with local authority regulations.

1.3. ELECTRICAL SAFETY (GENERATOR)

✓ Before use, the generating set and its electrical equipment should be checked to ensure that they are not defective.

✓ The generating set shall not be connected to other power sources, such as the power company supply mains.

✓ Protection against electrical shock depends on circuit breakers specially matched to the generating set. If the circuit breakers require replacement, they should be replaced with a circuit breaker having identical ratings and performances characteristics. Due to high mechanical stresses, only tough rubber-sheathed flexible cable or the equivalent should be used.

✓ When using extension lines or mobile distribution networks the resistance value shall not exceed 1,5 Ω.

✓ The choice of protection arrangement to be carried out depending on characteristic of the generator, running conditions and scheme of grounded liaisons determined by the user.

✓ The protective measures the user must do When operating a 5000W generator with 110/230V output, safety is critical to prevent electrical hazards, fire risks, and mechanical failures.

❑ **WARNING!** The user shall conform to regulations of electrical safety applicable to the place where the generating sets are used.

❑ **WARNING!** Never start or stop the welder generator while electrical loads are connected. Start the engine, let it stabilise, then connect the electrical load. To stop engine, disconnect the electrical load and let engine stabilise before switching off.

❑ **WARNING! DO NOT** use worn, bare, frayed or otherwise damaged electrical cables with the welder generator. To do so may result in electric shock.

1.4. LIMITATIONS OF USE AT LOCATIONS WHERE THE RISK OF FIRE MAY BE HIGH

When operating a generator in areas with a high risk of fire, such as forests, grasslands, or near combustible materials, it is essential to follow strict safety precautions. Keep the unit at least 3 meters (10 feet) away from flammable materials, ensure a spark arrestor is installed if required by local laws, and store fuel at least 10 meters (30 feet) away in sealed containers. Position the generator on a stable, non-combustible surface like gravel or concrete, and ensure the exhaust is clear of vegetation or flammable surfaces. Never leave the generator unattended in such environments, and always have a suitable fire extinguisher or other firefighting equipment readily available.

1.5. INDICATIONS ABOUT THE HOT SURFACES AND THEIR GUARDS

During generator operation, several components can become extremely hot and pose burn hazards. Typical hot surfaces include the exhaust manifold, muffler or silencer, engine block, cylinder head, oil fill and drain areas, alternator housing (in air-cooled models), and the exhaust pipe or tailpipe outlet. These parts can reach temperatures between 200°C and 500°C (392°F–932°F), requiring caution to avoid contact. Proper guards or heat shields should be in place to prevent accidental burns and ensure safe operation and maintenance.

1.6. NECESSARY SPACE FOR THE MACHINE

A clearance space of at least 1.5 meters on all sides of the machine is essential. This open area allows for proper ventilation and cooling, ensures convenient access for both operation and routine maintenance, and helps minimise potential hazards such as fire risks or accidental injuries.

1.7. REASONABLY FORESEEABLE MISUSE

Reasonably foreseeable misuse of the generator includes overloading it, operating indoors or in enclosed spaces, and refuelling while the unit is running or still hot. Improper grounding or electrical connections, removing safety guards or covers, and operating in wet conditions also pose risks. Additionally, allowing children or untrained individuals to access the generator, or using it near flammable materials, are common misuses that must be avoided.

PROHIBITED USE OF THE MACHINE

The machine must never be used in indoor or enclosed spaces, near flammable or explosive atmospheres, or in wet, flooded, unstable, or sloped conditions. It should not be connected directly to building electrical systems without a proper transfer switch, nor used as a primary or backup power source for life-support equipment. Additionally, operation with damaged or underrated extension cables, charging lithium-ion batteries without proper regulation, running the unit below the minimum temperature without preheating, or allowing untrained or unauthorized personnel to use the machine are all strictly prohibited.

1.8. RISKS THAT CANNOT BE ELIMINATED

Certain risks associated with the machine cannot be completely eliminated. These include heat from the engine and exhaust, carbon monoxide emissions, electric shock, particularly in wet conditions-noise, and the potential for fire when handling fuel. Additionally, there are environmental impacts and the risk of mechanical injury from moving parts that must always be carefully managed.

1.9. NATURE OF INSPECTIONS FOR SAFETY FUNCTIONS

Safety inspections of the machine involve several key checks. Before each use, a visual safety inspection should be conducted, along with functional testing of all electrical safety devices. Hot surfaces and the exhaust system must be checked, mechanical guards and moving parts inspected, and fuel handling and fire safety measures verified. Additionally, noise and vibration levels should be monitored, and all inspections properly documented and recorded for reference.

1.10. LIST OF NECESSARY SAFETY CHECKS

Necessary safety checks begin with a thorough visual inspection of the welder generator. This includes examining the fuel system for leaks or cracks, checking oil lines for damage, and ensuring the exhaust system is clear and free of leaks. Electrical cables should be inspected for fraying or burns, while all guards and protective covers, such as fan and belt guards, must be securely in place. Additionally, all warning labels, including those for carbon monoxide hazards, grounding instructions, and no-smoking signs, should be intact and clearly legible.

1.11. FREQUENCY OF INSPECTIONS FOR SAFETY FUNCTIONS

Regular safety inspections ensure equipment operates reliably and safely. These include visual checks, electrical and mechanical inspections, exhaust and fuel system safety, noise and vibration monitoring, post-operation reviews, and periodic maintenance to prevent hazards and ensure long-term performance.

1.12. ADVISE ON NEED FOR PPE

It's essential to use Personal Protective Equipment (PPE) to protect against the risks associated with noise, vibration, mechanical hazards, and exposure to fumes.

1.13. FIRE AND BURN HAZARDS

✓ The exhaust system gets hot enough to ignite some materials.
✓ Keep the welder generator at least one meter away from buildings and other equipment during operation and maintenance.
✓ Some parts of the internal combustion engine are hot and may cause burns. Pay attention to the warnings on the generating set.
× **DO NOT** enclose the welder generator in any structure.
✓ Keep flammable materials away from the welder generator.
✓ The exhaust becomes very hot during operation and remains hot for a while after stopping the engine. Be careful not to touch the exhaust whilst is hot. Let the welder generator cool before storing the welder generator indoors.
✓ Fuel is extremely flammable and explosive under certain conditions. **DO NOT** smoke or allow sparks where the welder generator is refuelled or where the fuel is stored. Refuel in a well-ventilated area with the engine stopped.
❑ **WARNING!** Fuel vapours are extremely flammable and may ignite after the engine is started. Make sure that any spilled fuel has been wiped off before starting the engine.
❑ **WARNING!** Always use Class C fire extinguisher that are specifically designed for fires involving energised electrical equipment.

1.14. BATTERY SAFETY

✓ Check the Battery Regularly.
✓ Inspect the battery for any signs of damage, corrosion, or leakage. Ensure that the terminals are clean and all connections are tight. If required, top up the battery with distilled water to maintain proper electrolyte levels, following the manufacturer's guidelines.
✓ Avoid Sparks and Flames.
✓ Keep the battery away from open flames or sparks. Batteries emit hydrogen gas, which is highly flammable.
✓ Use Proper Ventilation.
✓ Always operate and charge the battery in a well-ventilated area to prevent gas build up.
❑ **WARNING!** Wear Protective Gear when handling the battery, wear safety glasses and gloves to protect against acid leaks or accidental short circuits.
✓ Disconnect When Servicing.
✓ Always disconnect the battery terminals before performing any maintenance on the welder generator.
✓ Correct Polarity, ensure the battery is connected with the correct polarity, positive (+) to positive, and negative (–) to negative.
✓ Charge Safely, use a compatible charger and follow the manufacturer's instructions when charging the battery.
❑ **WARNING!** Keep batteries out of reach of children. Batteries contain hazardous chemicals and an electrical charge. Store them safely to prevent accidental exposure or injury.

1.15. CENTRE OF GRAVITY

The centre of gravity of the welder generator is generally located near the geometric centre of the unit's mass, slightly offset toward the engine side due to its weight distribution. Since this model is not equipped with a lifting eye, appropriate lifting methods must be used to maintain balance during handling and transport. Use suitable lifting equipment such as slings or a spreader bar positioned evenly to support the welder generator's weight, ensuring the load remains stable and level. Avoid tilting or uneven lifting to prevent damage or accidents.

2. INTRODUCTION

Supplies both 110V and 230V AC for flexible power options on-site. Built-in electric welding capability with adjustable current ranges from 80–180A, suitable for electrodes from Ø2.5-4mm. Driven by a 418cc single-cylinder, 4-stroke diesel engine delivering 5.0kW. Manual recoil start and key start function. 15L fuel tank allows extended operation without frequent refuelling. Rugged frame with two pull handles and four 4 wheels for easy transportation around the worksite. Perfect for construction, agricultural, and industrial applications. Supplied with two Keys, 2.8m electrode holder and 2.8m earth clamp.

3. SPECIFICATION

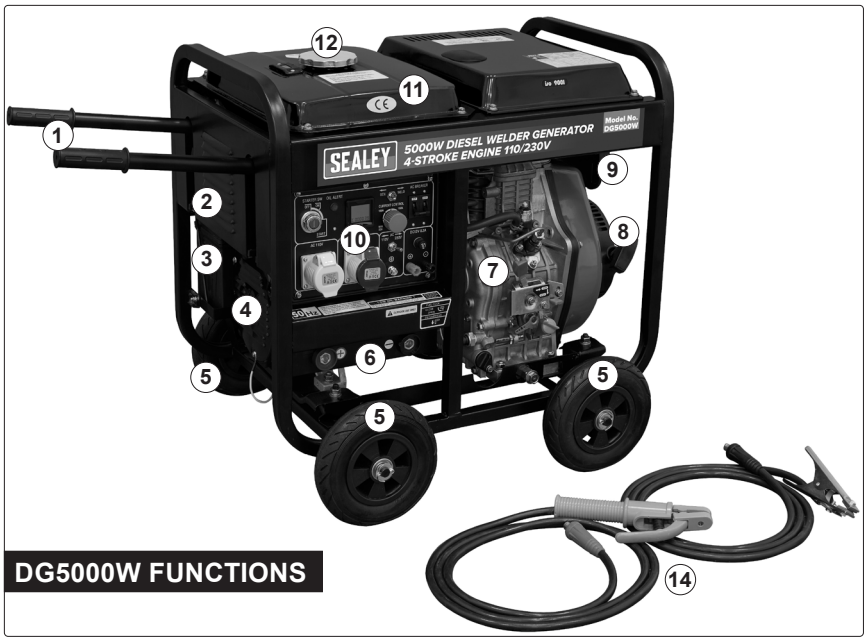
Model No:	**DG5000W**
Continuous Power Rating:	4600W
Current Rating:	20A
Declaration of Conformity	BS EN ISO 8528-13:2016
Dimensions (W x D x H):	720 x 485 x 600mm
Displacement (cc):	418ml
Electrical Class:	F
Fuel:	Diesel
IP Rating:	IP23

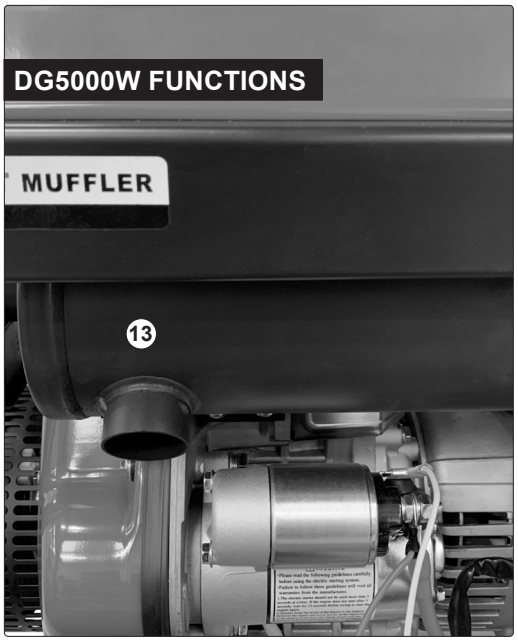
Maximum Running Time:	12hrs
Motor Power:	5.7kw/3600rpm
Motor Type:	4 Stoke Diesel
Noise Rating:	97dB(A)
Nett Weight:	120kg
Oil Capacity:	1.65L
Output:	110/230V
Recommended Oil:	CC or CD Grade
Welding Current:	80-180A
Electrode Capacity:	1.6-4mm

Under the given conditions, the welder generator will output the specified power in the table listed below.

Height above sea level (in)	Ambient temperatures (°F)	RH
0	+60 (+20°C)	60%
39370.08 (<1000m)	41~104 (5~40°C)	90%

4. FEATURES AND FUNCTIONS





FUNCTIONS	
1	Handles
2	Air Vent Grill
3	Battery
4	Generator Motor
5	Wheel
6	Welder Terminals
7	Engine
8	Optional Pull Starter
9	Air Filter
10	Control Panel
11	Diesel Fuel Tank
12	Fuel Cap
13	Exhaust Muffler
14	Welding Cables

CONTROLS	
1	STARTER SWITCH
2	OIL ALERT
3	DIGITAL METER
4	SWITCH BETWEEN GENERATOR OR WELDER
5	WELDER CURRENT CONTROL

CONTROLS	
6	AC BREAKER
7	AC OUTPUTS
8	TRANSFORM SWITCH 110/230V
9	GROUND CONNECTION
10	DC 12V OUTPUT

5. TRANSPORT/STORAGE

5.1. When transporting the welder generator, always turn the engine switch and fuel valve OFF, and keep the unit level to prevent fuel spillage or vapour ignition. Use the handles on the frame (Fig.1) for safe movement, and ensure the wheels are locked to prevent unintended rolling. Allow the engine and exhaust system to cool completely before handling to avoid burns or fire hazards. Handle the generator carefully, avoid dropping it, striking it, or placing heavy objects on top. For storage, keep the welder generator in a cool, dry, and well-ventilated area, away from heat sources, flammable materials, and direct sunlight. If possible, store it off the ground in a rodent-proof location to prevent moisture damage and wiring issues during long-term storage.

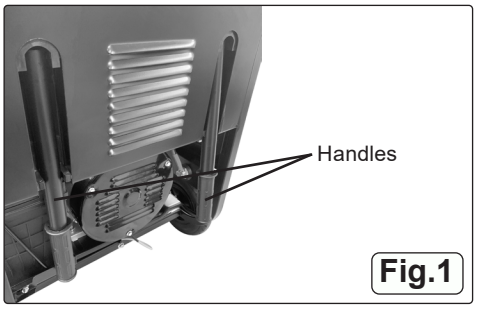


Fig.1

6. PREPARATION

❑ **WARNING!** Generator is shipped without oil. Add oil before starting. See fig.2 below

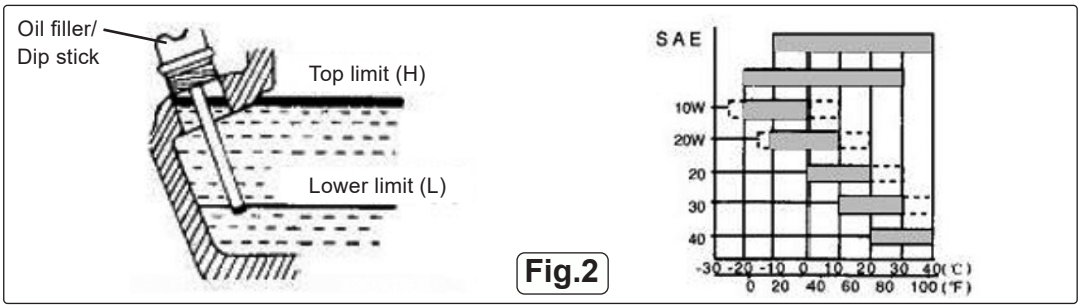


Fig.2

Engine oil is one of the most critical factors affecting the lifespan of your engine. Using poor-quality oil or failing to change it regularly can lead to rapid wear or seizure of the piston and cylinder, and can also shorten the life of other internal components such as bearings and rotating parts. Although a low-oil-pressure alarm is provided, it is still important to manually check the oil level before each start; if the level is low, fill it before operating the engine. The best time to drain the oil is when the diesel engine is still warm, as fully cooled oil drains more slowly and may leave impurities inside the engine. Proper oil selection and maintenance are essential for long-term reliability and performance.

❑ **WARNING!** Always ensure the welder generator is positioned on level ground when adding or filling engine oil to prevent inaccurate readings and avoid overfilling. Never add or fill engine oil while the engine is running.

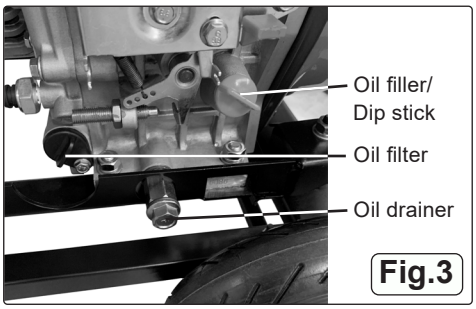


Fig.3

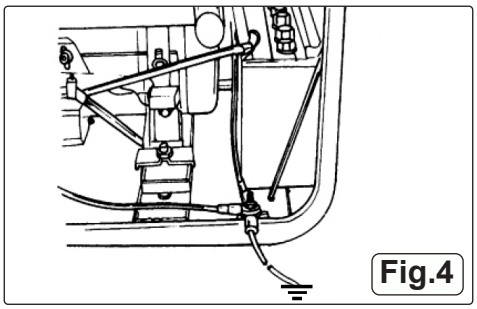


Fig.4

6.1.1. INSTALLATION AND COMMISSIONING OF THE WELDER GENERATOR

For proper installation and commissioning, place the generator on a flat, solid, and vibration-resistant surface in a well-ventilated area. Ensure there is at least one meter of clearance on all sides and keep it away from flammable materials, excessive dust, moisture, and direct rain. The location should also provide easy access for operating the unit and performing inspections and maintenance.

❑ **WARNING!** Operating on an incline can disrupt the lubrication system, potentially leading to engine failure.

6.1. FUEL

Use only clean, properly filtered light diesel fuel to ensure reliable operation of the welder generator. Prevent dust or water from entering the fuel tank, as contamination can clog fuel lines and nozzles, reduce engine performance, and damage the injection pump. Always store and handle diesel carefully to protect the system and prolong the life of the welder generator.

× **DO NOT** overfill fuel tank. Never exceed the red piston in the filter.

6.2. FUEL AND SAFETY PRECAUTIONS

Safety Guidelines:

Keep all flammable fuels away from the welder generator, as it may produce sparks that could ignite fuel vapours. To reduce fire hazards and ensure proper ventilation for both the welder generator and operators, maintain at least 1.5 meters of clearance from buildings, walls, or other equipment.

6.3. ELECTRIC SHOCK AND SHORT CIRCUITS

Electrical Safety Precautions

Never touch the welder generator if it is wet, or if your hands are wet.

× **DO NOT** operate the welder generator in rainy, snowy, foggy, or any wet weather conditions, as exposure to moisture greatly increases the risk of electric shock and can lead to serious equipment damage. Always keep the unit dry and protected to ensure safe operation.

6.4. GROUND TERMINAL

Is to prevent electrical shock from faulty appliances, the welder generator should be grounded. Connect a length of heavy wire between the ground terminal and the ground source. The welder generator has a system ground that connects the welder generator frame components to the ground terminals in the AC output receptacles. The system ground is not connected to the AC neutral wire. If the welder generator is tested by a receptacle tester, it will not show the same ground circuit condition as for a home receptacle. Fig.4

6.5. CONNECTING THE WELDER GENERATOR TO A POWER SUPPLY

Before connecting the welder generator to a power supply, ensure all loads and connected equipment are switched off. Verify that the generator's output voltage matches the voltage requirements of your tools or power system. Always use approved, properly rated power cables with adequate insulation and ampacity, and make sure all plugs and sockets are clean, dry, and free from damage to ensure safe and reliable operation.

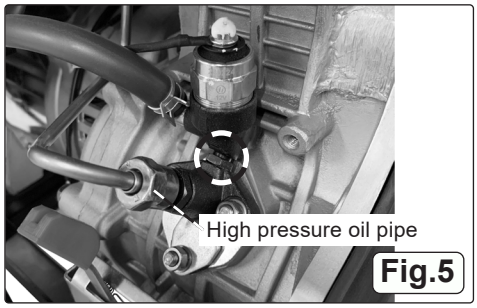
Connect to Output Terminals or Sockets

When connecting the welder generator, ensure all loads are turned off and verify that the output voltage matches your equipment. Use approved power cables and connect to the AC outlets or output terminals, making sure all terminals are securely tightened. Always ground the welder generator using a proper earth ground before operation. Once all connections are secure, start the welder generator and allow it to stabilize for 1-2 minutes before switching on equipment one at a time. Never connect the welder generator directly to household wiring without a transfer switch, and do not overload the unit. Remember that the welder generator is shipped **without** engine oil-fill it to the correct level before starting.

Perform essential checks such as oil level, air filter condition, grounding, and ensuring the air switch is OFF before starting. Regular maintenance, including proper oil changes, air filter care, and observing the low-oil-pressure system, will help protect the engine. During the 20-hour run-in period of a new engine, avoid heavy loads and change the oil after the first 20 hours or one month for optimal performance and longevity.

6.6. PRIMING THE ENGINE BEFORE STARTING FOR THE FIRST TIME

Before starting the engine for the first time, fill the fuel tank and add engine oil to the proper level. Check the fuel system for any air bubbles, and if found, loosen the connecting nut between the fuel injection pump and the fuel pipe to allow the air to bleed out until fuel flows smoothly with no bubbles. Once all air is expelled, tighten the connecting nut securely and clean up any spilled fuel before attempting to start the engine. Fig.5



6.7. CHECKING THE OPERATION OF THE DIESEL ENGINE

6.7.1. LOW PRESSURE ALARM SYSTEM

The diesel engine is equipped with a low-oil-pressure sensor that automatically shuts the engine off if the oil pressure becomes too low. This system helps prevent severe damage, such as the engine seizing. If the engine does not have enough oil, the remaining oil will overheat and lose its ability to lubricate properly. Conversely, if there is too much oil, it can create excess resistance inside the engine, causing it to run poorly or slow down significantly. Maintaining the correct oil level is essential for safe and efficient operation.

6.8. ENGINE BREAK-IN

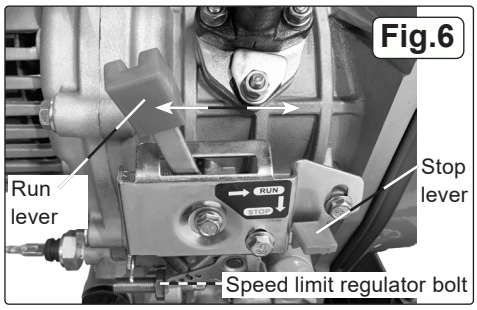
When using a brand-new engine, it must be properly broken in to ensure long-term performance and reliability. The break-in period is approximately 20 hours. During this time, avoid overloading the engine and operate it under light to moderate loads only. Follow the recommended oil change schedule, replace the oil after the first 20 hours of operation or within the first month. For engines already in regular use, change the oil every 100 hours or every three months to maintain optimal engine health.

7. OPERATION

7.1. MANUAL STARTING

To start and stop the engine in accordance with procedures below

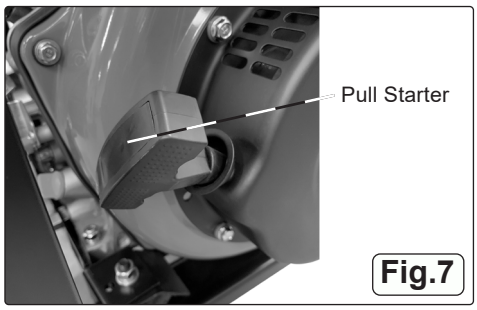
7.1.1. To start the engine, follow the procedures below. Push the Run lever to the “RUN” position (Fig.6). Pull the recoil starter slowly until you feel resistance, then give a firm pull to start the engine. Allow the recoil starter to return to its original position slowly to avoid damaging the recoil mechanism and to prolong the life of the starter (Fig.7).



7.2. ELECTRIC STARTING

7.2.1. Before starting, turn the main starter switch to the ‘OFF’ position (Fig.8) and ensure the generator has sufficient fuel. Set the engine run lever to the ‘RUN’ position (Fig.6). Turn the starting key clockwise to the ‘START’ position, release the key immediately once the engine starts to avoid damage to the starter system.

NOTE: If the engine does not start after 10 seconds, wait 15 seconds before trying again. Excessive start attempts will cause the battery to go flat. If it does not start after 3 attempts, or runs intermittently with excessive smoke check that the fuel system is fully primed.



❑ **WARNING! DO NOT** adjust the speed limit regulator bolt or the fuel adjustment bolt. These bolts are factory-set, and altering them can negatively affect engine performance and may cause damage or unsafe operation.

7.3. STOPPING THE WELDER GENERATOR

7.3.1. To stop the engine, press the ‘STOP’ lever down to safely turn off the generator. This lever also functions as an emergency stop in case of urgent shutdowns. Fig.6

7.4. CONNECTING EQUIPMENT

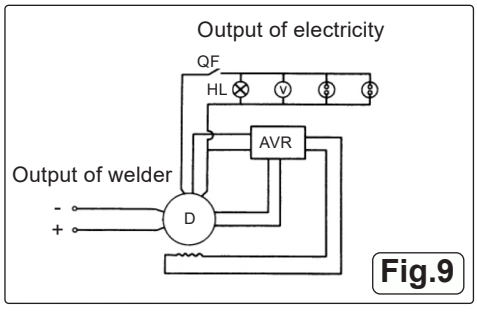
7.5. Connecting the loads with the largest motor, then the smaller items. If the welder generator is overloaded the main breaker will trip. To reset the breaker do the following; Turn OFF and disconnect all loads. Reset breaker, and add load onto the circuit to within 50% to 75% of rated output. Wait a few minutes before resuming operation.

7.6. CHECK DURING ENGINE OPERATION

During engine operation, it is essential to remain alert for abnormal noises, irregular performance, or unusual exhaust emissions. Knocking, grinding, or unstable RPMs may signal mechanical problems, while excessive black or white smoke can indicate fuel, air intake, or coolant issues. If any of these warning signs appear, stop the engine immediately, investigate the cause, and resolve the fault. Should the issue persist or remain unidentified, seek assistance from your local stockist or Sealey service centre.

7.7. LOADING

When loading the generator, always ensure the connected electrical demand matches its rated output to prevent overload. Avoid applying sudden or excessive loads, as this can cause voltage or frequency instability. Instead, gradually increase the load to allow the engine and alternator to stabilize and deliver consistent performance. Fig.9



7.8. OUTPUT OF ELECTRICITY

Measure the voltage.

Look at the voltmeter reading

For a 50 Hz system, the voltage should be 230 V ± 5%.

For a 60 Hz system, the voltage should be 240 V ± 5%.

❑ **WARNING! DO NOT** start multiple electrical products all at once:
When electrical devices,especially those with motors like compressors or pumps, are switched on, they draw a high inrush current. Starting too many at the same time can overload the welder generator, leading to drops in voltage or frequency, and may even trip breakers or damage connected equipment.
Start them one by one:
This helps distribute the load gradually, allowing the welder generator to stabilize after each item is powered on.
Avoid using a floodlight with other devices:
The floodlight likely draws a significant amount of power, and running it alongside other equipment could exceed the generator's 5000W capacity.

7.9. SWITCHING THE SELECTOR TO GENERATOR

Switching the selector to "GEN" enables electrical power output. While this provides enough power for electric welding, the available output current is limited. Only welding rods 3.2 mm or smaller should be used, and the welding machine should be rated below 130 A. During welding, the total load on the output terminal must not exceed 1 kW. To ensure the generator operates safely, always consider the combined load of the welding machine and any other equipment connected to the generator.
NOTE: When the welder generator is used only for electricity generation, the welding cables must be disconnected. If it is being used only for welding, ensure that it is properly isolated from other electrical loads to prevent a short circuit at the output terminals.

7.10. SWITCHING THE SELECTOR TO WELDER

When "WELD" mode is selected, the welder generator supplies power only for welding, and no voltage will be available at the standard outlet sockets. The welding current needed for different electrode sizes and welding tasks is adjusted using the current control knob on the control panel. Once the current is set to the required level, welding can begin. The welder generator can deliver a maximum welding current of 210–220 A, but this maximum should not be used for long periods, as it may cause overheating or damage.
NOTE: Before operating the welder generator, ensure that the welding cables are tightly and securely connected to the terminals. Loose or poor connections can create high resistance, which may overheat and damage the terminals.
A table showing the recommended welding current for different diameters of welding rods is provided in the table below.

Dia. of electric welding rod	1.6	20	2.5	3.2	4
Power supply for welding	25-40	40-65	50-80	100-130	160-210

7.11. VENTILATION AND SAFETY

Operate the welder generator in a well-ventilated area to ensure proper cooling and safe performance. Make sure there is plenty of airflow around it to prevent overheating, and never cover the welder generator with any materials while it is running, as adequate ventilation is essential for both safety and reliability.

7.12. RESETTING AFTER INTERVENTION

If an overload causes the welder generator to shut down, let the machine sit for several minutes before restarting.

7.13. CHARGING THE BATTERY

The welder generator is equipped with an electric starter, and the 12V battery charges automatically while the welder generator is running through the built-in voltage regulator.
Battery care during long-term storage
If the welder generator will not be used for an extended period, disconnect the battery to prevent gradual energy loss or deep discharge.
Avoid short-circuiting the battery
Never connect the positive (+) and negative (−) terminals together. Doing so will result in a short circuit and damage the battery.
Correct polarity is essential
When connecting battery cables, ensure correct polarity:
Red cable to positive (+)
Black cable to negative (−)
Reversing polarity can damage both the battery and the electric starter system.
Safety during charging
During battery charging, flammable gases are released. **DO NOT** smoke or expose the battery to open flames or sparks, as this can lead to fire or explosion.

7.14. CONNECTING AND DISCONNECTING BATTERY CABLES SAFELY

To handle the battery safely and avoid sparking, first connect the cables to the battery terminals and then to the motor. When disconnecting, reverse the order by first removing the cables from the motor and then from the battery terminals.

❑ **WARNING!** Always ensure the welder generator is turned off before making or breaking any battery connections.

7.15. STOPPING THE WELDER GENERATOR

Remove the electrical load
Turn off or unplug all devices connected to the welder generator to unload the welder generator before shutdown.
Turn off the welder generator AC breaker
Switch off the circuit breaker or main output switch to fully disconnect electrical output.
Allow engine to cool down
After removing the load, move the run handle to the "RUN" position and let the engine continue running for about 3 minutes before shutting it down. **DO NOT** stop the diesel engine immediately, as sudden shutdown can cause a temperature spike that may damage the injector nozzle or other internal components. Allowing the engine to cool gradually helps protect its parts and extend its service life. press the 'STOP' lever to stop the engine. Turn the starter key to the "OFF" position to stop the ignition circuit.

7.16. IF ENGINE WILL NOT STOP

If the run handle is in the "STOP" position but the engine continues running, you should first remove any load before attempting to stop it. The engine can also be stopped by loosening the high-pressure fuel line nut, (fig.4) but this should only be done as a last resort, as it may cause fuel leakage or damage if not handled carefully. Always follow safe procedures to avoid engine or component damage.

7.17. PREPARE THE ENGINE FOR STORAGE (anti-rust step)

Slowly pull the recoil handle until you feel resistance-this indicates the piston is at the compression stroke (both intake and exhaust valves are closed). This step helps seal the combustion chamber, preventing internal rusting during periods of non-use.

8. MAINTENANCE

8.1. PERFORM AND ROUTINE MAINTENANCE

Regular maintenance of your welder generator is essential to ensure safe, efficient operation and extend its service life. Maintenance should cover all major components, including the diesel engine, generator unit, control panel, and the frame and structural parts.

8.2. MAINTENANCE SCHEDULE FOR DIESEL WELDER GENERATOR

Interval of maintenance Item	Everyday	1st month or after 20 hours	3rd month or 100 hours	6th month or 500 hours	Every year or 1000 hours
Check and fill fuel	O				
Empty fuel		O			
Check and fill engine oil	O				
Check for oil leaks	O				
Check and Tighten Fastened Parts	O			● Check torque on cylinder head	
Change engine oil		O (1st time)	O (2nd time)		
Clean oil filter				O (Replace)	
Change air filter element	If the welder generator is operated in dusty or sandy environments, the maintenance intervals should be shortened			O (Replace)	
Clean fuel filter				O	● (Replace)
Check high pressure oil pump				●	
Check nozzle				●	
Check fuel pipe				● (If necessary Replace)	
Adjust the Air Intake and exhaust gates		● (1st time)		●	
Service the Air Intake and Exhaust Gates					●
Replace piston ring					●
Check brushes and slide ring				●	
Check insulation resistance	After 10+ Days of Inactivity O				

NOTE: mark "●" indicates that it needs a special wrench, please contact Sealey Service Centre.

8.3. INITIAL OIL CHANGE

To maintain welder generator performance, the engine oil should be changed regularly. An initial oil change is required after the first 20 hours of operation, followed by routine changes every 100 hours. The procedure involves warming the engine, draining the old oil, securely reinstalling the drain plug (FIG. 2), refilling with the recommended oil to the correct level, and replacing the oil filter. The oil filter should also be replaced every six months or after 500 hours of operation (see FIG.3 for location). Always take care to avoid burns from hot oil and engine parts during maintenance.

8.4. AIR FILTER ELEMENT

The air filter element is a dry-type component and must not be washed with water or detergent. To inspect or replace it, first loosen the butterfly nut and the securing nut on the air filter element (Fig.10), then remove the element carefully. If engine performance decreases or exhaust colour becomes abnormal, the filter may be clogged or damaged and should be replaced immediately. Never operate the engine without the air filter installed, as this can cause severe internal damage. The air filter should be cleaned every six months or after 500 hours of operation, whichever comes first, and replaced if it remains dirty or damaged. Maintaining a clean air filter is essential for optimal engine performance and fuel efficiency.

Fig.10

8.5. FUEL FILTER MAINTENANCE

Regular fuel filter maintenance is essential to ensure optimal engine performance and prevent fuel flow problems. The fuel filter should be cleaned every six months or after 500 hours of operation by draining the tank, removing the filter, and cleaning it with clean diesel fuel, never with water or detergents. Additionally, fuel injectors should be cleaned every three months or after 100 hours to remove carbon buildup around the nozzle. All fuel system maintenance must be carried out in a well-ventilated area, away from open flames or sparks, to ensure safety.

8.6. CYLINDER HEAD BOLT TENSION

The cylinder head bolts must be tightened to the specified torque settings to ensure proper engine performance and to prevent damage or leaks. Contact Sealey Service Centre.

❑ **WARNING!** Improper torque can cause engine failure, warping, or gasket leaks. Always follow the manufacturer's guidelines precisely.

8.7. BATTERY MAINTENANCE

For electric start welder generators, regular battery maintenance is essential.

8.8. COOLING SYSTEM

For air-cooled welder generators, the cooling system requires regular cleaning of fins and air ducts to maintain proper airflow. The electrical and output system should be checked by testing voltage and frequency under load, inspecting wiring, terminals, and outlets for wear or corrosion, and monitoring the control panel for error codes or warning lights.

8.9. MAINTENANCE PLANNING:

Proper maintenance planning ensures equipment reliability and safety. Maintenance logs should record service intervals, components inspected, and responsible personnel signatures. Operators must be trained and knowledgeable about start-up, shutdown, and safety procedures. A sufficient inventory of spare parts, such as oil and filters, should be maintained to minimise downtime. The emergency stop function must be tested regularly, and all lubrication, electrical, and mechanical inspections should follow documented schedules based on operating hours.

8.10. PREVENTATIVE MAINTENANCE MEASURES TO BE OBSERVED

Preventative maintenance keeps welder generators safe and reliable. Daily checks include fuel, oil, air filter, battery, and connections, along with using proper PPE and cleaning surfaces. Weekly or every 10–20 hours, voltage is tested, the welder generator runs under load, and fuel system condensation is drained to ensure proper operation.

8.11. FAULT IDENTIFICATION AND LOCATION FOR REPAIR

To identify and locate faults on a welder generator, follow a systematic diagnostic process. Begin with safety: disconnect all loads, switch off the welder generator, allow it to cool, ensure proper grounding, and wear appropriate PPE. Check the engine oil level, pressure, and condition, as low oil pressure can cause the welder generator to shut down. This step-by-step approach ensures faults are identified accurately and repairs can be carried out safely.

8.12. REDUCTION IN POWER DUE WHEN IN USE IN HIGH TEMPERATURE, ALTITUDE AND HUMIDITY

The welder generator power decreases under high temperature, altitude, and humidity. Most welder generators are rated at 25°C (77°F) and must be derated above this, typically by ~3% for every 10°C. At higher altitudes, output is reduced by ~3–4% per 300 m (1,000 ft) above 1,000 m (3,280 ft). High humidity (>90%) can further reduce output by 1–2%, especially when combined with heat and altitude. Approximate total derating can be calculated by adding the temperature, altitude, and humidity factors.

8.13. OPERATION METHOD IN THE EVENT OF AN ACCIDENT OR BREAKDOWN

In the event of an accident or breakdown, immediately shut down the welder generator and disconnect it from all loads to prevent further damage or risk. Keep clear of moving parts, sparks, or leaking fuel, and do not attempt to restart the unit until the cause of the problem is identified. Inspect the welder generator for visible issues and report the incident to a qualified technician or service personnel for proper repair. Always follow safety procedures and use caution to protect both personnel and equipment.

IMPORTANT: Always ensure the diesel engine is turned off and has cooled down before beginning any maintenance work.

8.14. DISMANTLING, DISABLING, AND SCRAPPING

Before dismantling or scrapping the welder generator, ensure all power sources are disconnected, including the battery and any mains connection if used with an ATS. The welder generator must be fully shut down, allowed to cool, and placed in a well-ventilated area. Wear appropriate PPE, such as gloves, safety glasses, and steel-toe boots. All fluids, including engine oil and fuel, must be drained beforehand and disposed of according to local environmental regulations using approved containers. Once these precautions are taken, the generator can be dismantled safely and in compliance with environmental standards.

9. TROUBLESHOOTING

9.1. DIESEL ENGINE MALFUNCTIONS AND THEIR REMEDIES

	CAUSE	REMEDY
Engine cannot be started	Not enough fuel.	Add fuel to fuel tank.
	The high-pressure pump or nozzle may fail to deliver fuel, or the amount of fuel injected may be insufficient.	Clean or replace the nozzle, bleed the fuel line, replace the filter, ensure clean fuel, and repair or replace the pump if necessary.
	Speed control lever is not at “RUN” position.	Slide speed control lever to “RUN” position.
	Oil level low.	Check the oil level using the dipstick. If it is low, top it up to the correct level.
	The recoil starter is not easy to pull and does not provide strong resistance.	A difficult or weak recoil starter can be fixed by inspecting and replacing a worn or broken spring, checking and replacing a damaged rope, lubricating the starter mechanism, ensuring the engine turns freely, and removing any obstructions around the starter pulley.
	Dirt in injector nozzle.	Clean the injector nozzle using fresh diesel.
	The battery has no charge.	Check and clean the terminals, ensure all connections are secure, charge the battery fully, and replace it if it fails to hold a charge.
Generator cannot generate electricity/No welding voltage	The generator’s carbon brushes are worn, resulting in poor electrical contact.	Contact Sealey Service Centre.
	The socket has a poor or loose electrical connection.	Contact Sealey Service Centre.
	The engine is not reaching its full operating speed.	Ensure proper fuel supply, clean or replace filters, service the engine as needed. Contact Sealey Service Centre.
	The generator’s AVR or automatic governor is damaged, causing unstable voltage and incorrect engine speed.	Contact Sealey Service Centre.
	The potentiometer used to adjust the welding current is faulty or not working properly.	Contact Sealey Service Centre.

If problems persist, contact the Sealey Service Centre or your place of purchase for further assistance.

9.2. QUESTIONS AND SUPPORT

If you have any questions or do not fully understand any part of this manual, please contact your local stockist or our Sealey Customer Support directly. When requesting assistance, please have the following information ready:

1. The model number of the diesel welder generator and the engine model.
2. Your location or area of residence.
3. The total operating hours of the equipment and a description of the problem.
4. Detailed conditions at the time the problem occurred, including weather, temperature, and environment.

ENVIRONMENT PROTECTION

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.

REGISTER YOUR PURCHASE HERE

Note: It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior Important: No Liability is accepted for incorrect use of this product.
Warranty: Guarantee is 12 months from purchase date, proof of which is required for any claim.

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