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

MODEL NO: **DG5000**

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


Warning


Inhalation Risk


Hot surfaces


Warning Electricity


Never operate in non-ventilated rooms


Keep away from rain


No open flame


Wear ear protection


Switch off the engine before refuelling

1. SAFETY

- ❑ **WARNING!** Ensure any Health & Safety, Government, or local authority regulations are adhered to when using this equipment.
- ✓ Familiarise yourself with the application and limitations, as well as the potential hazards, of the generator.
- ✓ Maintain the generator in good condition (use an authorised service agent). Replace or repair damaged parts. Use genuine parts only. Unauthorised parts may be dangerous and will invalidate the warranty.
- ✓ This 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 dealer.
- ❑ **WARNING! DO NOT** exceed the Wattage/Amperage capacity of the generator**.** Add rated wattage of all devices intended for connection at any one time, the total must not exceed rated wattage of generator (see specifications).
- ❑ **WARNING!** Generator exhaust gases contain deadly carbon monoxide which must not be inhaled. Always allow sufficient ventilation.
- ❑ **WARNING!** If you decide to use an Earth Leakage Circuit Breaker (also referred to as an RCD or Ground Fault Circuit Interrupter), it is imperative that the neutral end of the power winding is connected to the frame of the generator set and that the earth lug on the frame is connected with a low impedance connector to the local earth via an earth spike or local protective earth conductor. This connection should only be attempted by a qualified electrician, after first having consulted your local dealer.
- ▲ **DANGER!** This generator is designed for outdoor use only. To use the generator inside any building or enclosure, including the generator compartment of a caravan, may result in fire or an explosion. No user performed modifications, including venting of the exhaust and/or cooling ventilation, will eliminate the danger.
- ▲ **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 generator to the electrical system, open the main circuit breaker to isolate the generator and system from the commercial electric supply. Failure to do this may result in damage to the generator and may result in serious injury or fatality, due to a back-feed of electrical energy.
- ▲ **DANGER!** The 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 generator.
- ❑ **WARNING!** Diesel is flammable. Do not permit smoking, naked flames, sparks or heat in the vicinity while handling Diesel. Avoid spilling Diesel onto a hot engine. Comply with all laws regulating storage and handling of fuels.
- ❑ **WARNING!** Risk of burns. **DO NOT** touch the exhaust system or the drive unit.
- ❑ **WARNING! NEVER** refuel when the engine is running or when the engine is hot. Allow cool down time.
- ✓ Operate the 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 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.
- ✓ Keep non-essential persons and children away from the working area.
- ❑ **WARNING!** Never start or stop the 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 generator. To do so may result in electric shock.
- × **DO NOT** use the generator for any purpose other than that for which it is designed.
- × **DO NOT** operate the generator if any parts are missing or damaged, as this may cause failure and/or personal injury.
- × **DO NOT** over-fill fuel tank. Always leave room for fuel to expand.
- × **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 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 generator when you are tired, or under the influence of alcohol, drugs or intoxicating medication.

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

× To avoid carbon monoxide poisoning **DO NOT** use Petrol/Diesel- 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'.

2. INTRODUCTION

Heavy-duty enclosed design features four wheels, a large handle at either end and lifting eye for portability. Suitable as a backup electrical supply for your business and home. Ideal for running power tools and lighting units. Long running - up to 7.5 hours on a full tank. Fitted with one 16A 110V, one 32A 110V and one 32A 230V socket. Powerful and reliable key start generator. Features low oil warning light, overload protection and fuel gauge. Overall dimensions: 940 x 540 x 705mm. Noise Rating: 97dB @ 7m. Continuous/ Maximum Power Rating: 4600/5000W. Supplied with tool bag including plugs to fit sockets, screwdriver, two spanners, 12V cable with plug clips and two start keys. This item is heavy. Extra assistance must be provided at the delivery point to help its safe delivery.

3. SPECIFICATION

Model No:	DG5000
Continuous Power Rating:	4600W
Dimensions (W x D x H):	940 x 540 x 705mm
Displacement (cc):	418
Fuel Tank:	14.5L
Fuel:	Diesel
IP Rating:	IP23
Maximum Power Rating:	5000W
Maximum Running Time:	7.5 Hrs
Motor Power:	4.6kW/3000rpm
Motor Type:	4 Stroke Diesel
Noise Rating:	97dB
Output:	110/230V

4. FEATURES

4.1. **STARTER SWITCH (SW) (fig.1)**

4.1.1. The engine starter switch controls the ignition. In the 'OFF' Position the ignition circuit is switched off and the engine will not run.

4.1.2. In the 'ON' position the engine is ready for starting.

4.1.3. In the 'START' position (pushed against spring tension) the starter motor is engaged and the machine will start.

4.2. OIL WARNING SYSTEM

4.2.1. When the pressure switch senses low oil pressure engine will stop automatically. Unless you refill with oil the engine will not start again.(see 5.3.4)

4.3. AC SWITCH (BREAKER) (fig.2)

4.3.1. The AC Switch (Breaker) will turn 'OFF' automatically when the load exceeds the generator output.

4.3.2. If AC switch turns 'OFF' then before resetting remove some of the load and keep below the rated output of the machine.

4.3.3. **DO NOT** Connect the generator to Mains AC sockets in your building – commonly known as 'back feeding' it is extremely dangerous and illegal.

fig.1

fig.2

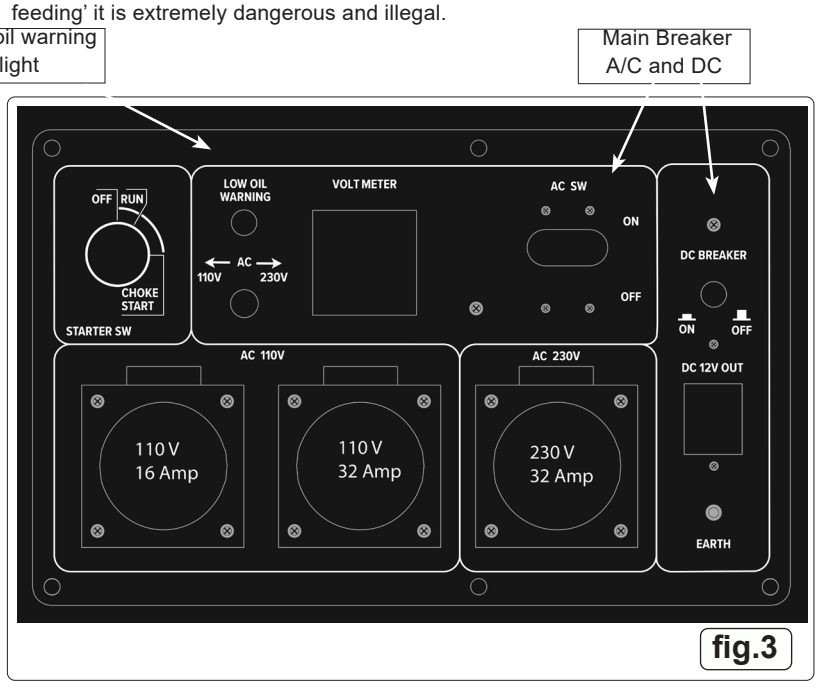
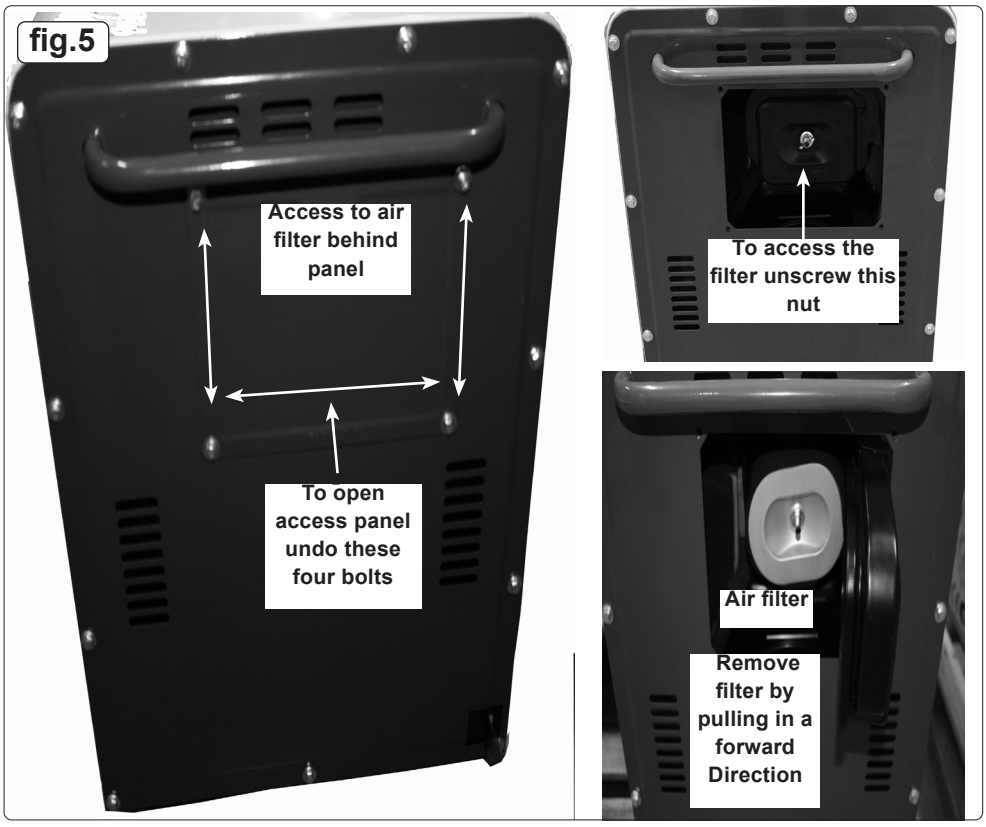


fig.3



5. OPERATION

5.1. **PREPARATION BEFORE STARTING**

× **DO NOT** exceed individual socket amp ratings.

5.2. **FUEL**

× **DO NOT** refill tank while engine is running or HOT.

× **DO NOT** overfill the diesel tank and make sure the filler cap is securely closed after refueling.Diesel can expand in hot weather and overflow. Always leaving a 25mm gap above the fuel level.

5.2.1. Take care not to spill fuel when refuelling. If any fuel is spilled, make sure the area is clean and dry before starting the engine.

5.2.2. Wear suitable P.P.E.

5.2.3. Only use standard specification diesel, this can be red or white.

5.2.4. Keep dust and water out of the fuel.

5.2.5. When filling the fuel tank from drums, make sure that no dust or water is mixed in with the fuel. This can cause serious damage to the fuel injection pump or the injector nozzle.

5.3. **OIL CHECKS (fig.4).**

5.3.1. Always check the engine oil level with the generator on a flat, level surface before starting or refilling the machine.

5.3.2. If an insufficient amount of engine oil is used, damage to the engine may result.

5.3.3. Do not overfill the engine with oil check on dipstick (fig.4)

5.3.4. This generator is equipped with a low oil pressure switch this system will stop the engine automatically when the oil pressure falls below the minimum pressure required.(fig.3)

5.3.5. This prevents damage such as bearing seizures etc. However, this should not be relied upon and the engine oil level should be checked and topped up if required, daily.

5.3.6. CHECK AND REFILL THE ENGINE OIL. (fig.4).

5.3.7. To ensure the generator maintains an optimum performance and the life of the generator is as long as possible, it is important to use the correct engine oil – SAE10W/30 – SAE15W/40 (API CH-4/CF/SJ/SL diesel engine oil or higher grade) and change after the first 20 hours, then every 100 hours. If the correct engine oil is not used, or the engine oil is not replaced every 100 hours, as required, the risk of crankshaft bearing failure, piston seizure, piston ring sticking and accelerated wear of the cylinder liner, main bearing and failure of other moving components increases significantly. The generator lifespan will be greatly reduced if oil level and oil changes are reduced.

5.4. **REMOVE OIL FILLER CAP AND CHECK ENGINE OIL LEVEL (fig.4).**

5.4.1. If oil level is below the lower level line, refill with SAE API CH-4/CF/SJ/SL diesel engine oil on dipstick, or to the top of filler neck. N.B. do not screw oil filler in the oil filler cap when checking oil level.

5.4.2. Drain and change contaminated oil.

5.5. SERVICE THE AIR CLEANER (fig.5).

5.5.1. DO NOT wash air filter with detergent**.**

5.5.2. Replace the air filter if the engine output decreases or excessive exhaust smoke is noticed.

5.5.3. Never run the generator without the air filter otherwise rapid engine wear will result.

5.5.4. Remove the access panel to reveal air filter cover. (As per fig.5).

5.5.5. Undo the nut (anti-clockwise) and remove the air cleaner cover and take out the element.

5.5.6. Clean the air filter at regular intervals, and replace it if necessary. Do not use abrasive cleaning agents or petrol to clean the elements. Clean the elements by tapping them on a flat surface.

5.5.7. Reattach the air filter cover and screw on the nuts.

6. STARTING PROCEDURE

NOTE: Generator should be earthed to prevent electric shocks. Turn off the main breaker switch and remove all loads.(fig.3) Before starting the engine, be sure to switch OFF any appliances connected to it. Ensure that the breaker switch is OFF before switching between 115v/230v.

STARTING

6.1. Turn the main AC switch to the 'OFF' position.(fig.1). Make sure that the machine has fuel for the task. Be sure the emergency STOP switch is out (turn anti-clockwise).(fig.4)

6.1.1. Set the engine speed lever is set to 'RUN' (fig.4,fig.6).

6.1.2. Turn the starting key clockwise to the 'START' position.

6.1.3. Remove your hand from the key as soon as the engine starts.

6.1.4. 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.

6.1.5. If it does not start after 3 attempts, or runs intermittently with excessive smoke check that the fuel system is fully primed.

6.1.6. Turn the main AC switch to the 'ON' position and turn the electrical appliance on.
DO NOT loosen or readjust either the engine speed limiting bolt (fig.8) or the fuel injection limiting bolt as this will cause the performance of the generator to be affected.

6.1.7. **PRIMING (fig.7)** Before starting to prime make sure that there is fuel in tank and that you can contain any fuel spilt.

6.1.8. It is done by releasing the pipe clip on the diesel fuel line connected to the injector pump. Make sure you pinch the fuel line and then release slowly until all air is released and fuel appears.

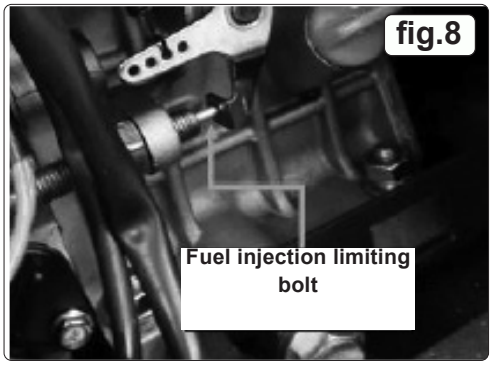
6.1.9. When fuel appears replace pipe onto the injector pump and replace clip.

6.1.10. Clear up any fuel spills before restarting.

6.1.11. The above may be necessary when new, or if the machine runs out of fuel.

Towel to collect spilt fuel | Injection pump inlet | No Fuel | Fuel showing

6.2. Always leave the key in the on position whilst the engine is running. Run machine for two minutes before applying load. Insert the plug into the socket you are about to use.
NOTE: If the engine has been running, the exhaust will become very hot. Be careful not to touch the exhaust until it has had time to fully cool down.



❑ **WARNING! NEVER REFUEL THE FUEL TANK WHILST THE ENGINE IS STILL RUNNING.**

6.3. RUNNING-IN PERIODS OF OPERATION.

6.3.1. The first 20 hours are the break-in period of the engine. For this reason, it is important to follow the following instructions during this period.

6.3.2. Warm up the engine 5 minutes after the initial starting, before applying load.

6.3.3. Avoid applying loads above 3kw during the first 20 hours of operation.

6.3.4. It is important to replace the engine oil on time.

6.3.5. REPLACE THE ENGINE OIL WHILST THE ENGINE IS WARM, AFTER 20-HOURS RUNNING.

6.3.6. Ensure that old engine oil is drained out completely.

6.4. BATTERY

6.4.1. Do not connect tools or any other appliances to the generator before starting.

6.4.2. Explosive gases are given off when charging battery. Only charge in a well-ventilated area, away from sparks and naked flames.

6.4.3. When you first install the battery, ensure that the battery's polarity is the same as the generator's battery leads. - Black = negative, + Red = positive.

6.4.4. Using a voltmeter - check the voltage is 12.3V+, if lower, the battery must be charged before use.

6.4.5. Check that the voltage is correct every use and every month. The battery should be between 12.5v and 13.6v. When the engine is running it should re-charge the battery.

6.4.6. Make sure battery is free from damage and is not leaking. If battery shows signs of damage or leaking – **DO NOT** continue to use. Instead replace battery immediately.

6.4.7. Make sure that all battery acid spills are correctly cleaned up straight away.

6.4.8. The battery should be stored in a charged condition.

6.4.9. The battery is a 12V 36Ah sealed lead acid battery and requires no maintenance other than; ensuring battery terminal's are kept clean, kept tight and covered to prevent short circuiting.

6.4.10. Keep the battery in a cool, dry place. It is important to clean the battery every three months and charge every six months.

7. CHECK LIST WHILST RUNNING.

7.4.1. During each use make sure that there are no abnormal sounds or vibration.

7.4.2. Check that the engine is running smoothly normally.

7.4.3. Check that there is no excessive smoke from the exhaust after ten minutes of running, and the engine has reached working temperature.

7.4.4. Check that there are no oil or fuel leaks.

7.4.5. If you notice any of the above, stop the engine and locate the fault. Please contact your Sealey Stockist.

8. OPERATING PROCEDURE 230V

8.1. Follow starting procedure (6.1) then switch ON the main breaker switch, and with the engine running check the voltage reading when in 'Voltage Mode'. It should read 230v ± 5% (50Hz) (fig.9).

8.2. The Digital panel only becomes active when the Main breaker is in the 'ON' position. The following will be displayed by successive presses of the 'M' or mode button.

Voltage mode **Frequency mode**

Event timer Mode **Total run mode**

Lamp Illuminated	Indicating
V	Voltage
Hz	Frequency
V1	Event timer- or current running time (hours) This will reset to zero when main breaker is 'OFF'
V2	Total run time

fig.9

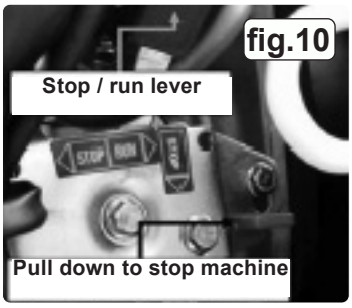
9. CONNECTING EQUIPMENT

9.2.1. Connecting the loads with the largest motor, then the smaller items.
9.2.2. If the generator is overloaded the main breaker will trip.
9.2.3. To reset the breaker do the following; Turn OFF and disconnect all loads. Reset breaker, (fig.3) and add load onto the circuit to within 50% to 75% of rated output. Wait a few minutes before resuming operation.
9.2.4. Electrical appliances, particularly motor driven equipment, will have a very high start- up current. The table below provides reference for connecting these appliances to the generator.

Type	Wattage		Typical Appliance	Example		
Lighting Heating appliance	**Starting**	**Rated**	Incandescent lamp or heating appliance	**Appliance**	**Starting**	**Rated**
	X 1	X 1		Incandescent lamp 1000 watts	100vA	100vA
Fluorescent lamp	X 2	X 1 to 1.5	Fluorescent lamp	Fluorescent lamp	80vA	40 to 60 vA
Motor driven equipment	X 3.5	X 1 to 2	Refrigerator, Electric fan, Compressor, grinder	Refrigerator 150 watts	450 to 750 vA	150 to 30 vA

9.1. STOPPING THE MACHINE

9.1.1. **DO NOT** stop the engine suddenly or whilst under load. This can damage the automatic voltage regulator and cause damage to the alternator through overheating.
9.1.2. **DO NOT** stop the engine with the decompression lever. (fig10)
9.1.3. Switch OFF equipment connected to the generator.
9.1.4. Turn off the main breaker switch.
9.1.5. Run the generator without load for three minutes.
Turn the electric key start switch to the 'OFF' position, alternatively press or pull down the stop lever.(fig.4)



10. MAINTENANCE

Item	Daily	First month or 20 hours	Every 100 hours	Every 250 hours	Every 500 hours	Every year or 1000 hours
Check and refill with diesel	Yes					
Check and refill with engine oil	Yes					
Check for oil leakage	Yes					
Check and tighten fastening parts	Yes					
Check and tighten head bolts					Yes	
Replace engine oil		Yes First oil change	Yes			
Clean engine oil filter			Yes			
Replace engine oil filter			Yes			
Replace air filter			Yes			
Replace fuel filter			Yes			
Check Fuel injection pump						Yes
Check injector nozzle						Yes
Check fuel pipes						Yes
Adjust clearance of intake and exhaust valves		Yes – First time				Yes
Grind intake/exhaust valves						Yes
Replace piston rings						Yes
Check battery condition			Yes			
Check carbon brushes and slip rings					Yes	

- **WARNING!** Ensure the engine is off before performing any service. If the engine must be run, make sure that the area is well ventilated. The exhaust contains poisonous carbon monoxide gas. Maintenance After engine has been run prior to changing the oil will be very hot. Wear appropriate PPE. **DO NOT** allow any dust, dirt or any other debris enter oil or crankcase.

11. LONG TERM STORAGE

11.1. If storing the generator for long periods of time, make the following operations.
11.1.1. Operate the engine for 10 minutes and then stop the engine.
11.1.2. Drain the engine oil whilst the engine is still warm and refill with fresh oil.
11.1.3. Turn the engine for 2-3 seconds with the decompression lever set at the non- compression position and the starting key set at the 'START' position. (Do not start the engine.)
11.1.4. Wipe off the oil and dirt from the engine and store in a dry place.

12. TROUBLE SHOOTING

NOTE: All corrective actions should be carried out by suitably qualified person/s.

Problem	Possible fault/cause	Remedy
The Diesel engine will not start	The governor lever is not at START position	Set lever to START position
	Emergency STOP button activated(depressed)	Re-set emergency STOP button
	Insufficient fuel	Refill with fuel
	Fuel injection pump does not deliver fuel or delivers insufficient fuel	Remove the injector pump and have it tested
	Check the engine oil level	The specified oil level should be to the upper lever
	The injector has severe carbon build-up	Clean the injector
	The start motor turns slowly	Check battery performance and all connections
	The battery is flat	Charge or replace with a new one
The generator is not producing power	Main breaker switch has not been turned ON	Turn the main breaker to the ON position
	Alternator brushes worn	Replace the brushes
	The contact in the socket is not good	Make sure plugs are fully inserted into sockets
	The rated sped is too HIGH or too LOW	Adjust engine speed to produce 52 Hz with no load
	AVR is damaged	Replace AVR

13. SERVICE RECORD SHEET

Date	Hours	Maintenance undertaken	Name

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 notice.
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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