

**GENERATOR USE AND MAINTENANCE MANUAL**

**HG2500  
E3200  
E4000  
E5000  
E6900**

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Thank you for purchasing one of our generators. We would like to draw your attention to a few points concerning this manual:

- this manual gives useful guidelines for the correct use and maintenance of the generator set to which it refers: it is therefore essential to pay full attention to all those paragraphs that illustrate the simplest and safest ways of using the generator.
- This manual is to be considered an integral part of the generator and must be included at the moment of purchase.
- This publication may not be reproduced, either totally or in part, without written authorization from the makers.
- All information shown hereafter is based on the data available at the moment of printing; the makers reserve the right to make modifications to their products at any time, without warning and without incurring sanctions. You are therefore advised to check for subsequent updates frequently.

**KEEP FOR FUTURE REFERENCE**

**USE OF THE GENERATOR**

**THIS GENERATING PLANT IS DESIGNED TO SUPPLY EITHER SINGLE PHASE OR THREE PHASE ELECTRICAL POWER.  
NO OTHER APPLIANCES OTHER THAN THOSE INDICATED SHOULD BE USED.**

**2. GENERAL SAFETY INSTRUCTIONS:**

**ATTENTION: This manual contains operating and safety instructions which should be studied before using the generator. The manufacturer will not accept liability for any damage or injury incurred through improper use.**

**WARNING: Treat the electrical output from the generator with the same caution as from the mains supply, electric shocks can be fatal.**

- Do not operate in enclosed areas, exhaust gasses are a health risk. In areas of poor ventilation the exhaust gasses must be extracted or piped away from the work area. Operating in an enclosed area can also affect the performance of the engine due to restricted air flow.
- The generator must be operated on a level surface.
- The generator should be anchored securely if there is a risk of movement. i.e. units with unbraked chassis/frames should be 'chocked'
- Do not replenish fuel or oil while the generator is running.
- Do not allow unauthorised persons or children in the work area, even after the machine has stopped there is a risk of severe burns from hot parts of the machine.
- Maintenance or servicing should not be carried out with the machine running and only by experienced personnel.
- Where possible, ensure that the generator cannot be started by unauthorised persons (remove starter key or cover control panel etc.)
- Be familiar with how to turn off the machine quickly if necessary.
- Do not remove any protective devices or covers.
- The generator should be protected from heavy rain or snow.
- The machine does not need to be in a specially lighted area, however provide adequate lighting to comply with applicable working norms.
- Do not use the machine in an explosive atmosphere.
- In the case of fire, use only an extinguisher suitable for electrical fires. ( a powder loaded fire extinguisher, etc.).
- Whenever it is necessary to work in close proximity to the machine, ear protection should be used (head muffs, ear plugs, etc.).

**ATTENTION: Avoid any direct bodily contact with fuel, motor oil or battery acid. In case of contact with the skin wash with soap and water and rinse thoroughly; do not use organic solvents. In case of contact with the eyes, rinse thoroughly with water. In case of inhalation or swallowing, consult a medical practitioner.**

**3. IDENTIFICATION OF COMPONENTS AND CONTROLS:**

**E3200SHHPI / HG2500SHHPI**

**SEE PICTURE NO.A**

- 1 - THERMAL PROTECTION CIRCUIT BREAKER
- 2- SINGLE-PHASE SOCKET 110V 16A
- 3 – SINGLE PHASE SOCKET 220V 16A
- 4 – VOLTAGE CHANGEOVER SWITCH

**E4000SHHPI**

**SEE PICTURE Nos. B & D**

- 1 - THERMAL PROTECTION CIRCUIT BREAKER
- 2- SINGLE-PHASE SOCKET 110V 16A
- 3 – SINGLE PHASE SOCKET 220V 16A
- 4 – VOLTAGE CHANGEOVER SWITCH

**E5000SHHPI / E4000SHHPI-OP2/E6900SHHPI**

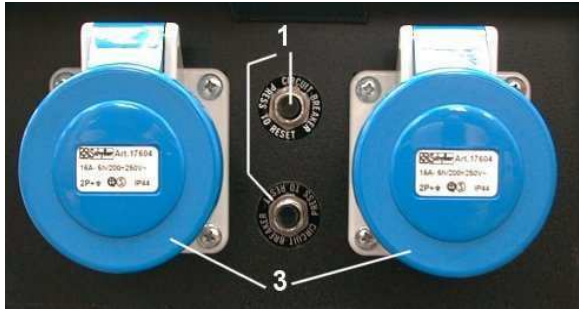
**SEE PICTURE NO. B & C**

- 1 - THERMAL PROTECTION CIRCUIT BREAKER
- 2- SINGLE-PHASE SOCKET 110V 16A
- 3 – SINGLE PHASE SOCKET 220V 16A
- 4 – VOLTAGE CHANGEOVER SWITCH
- 5 – SINGLE PHASE SOCKET 110V 32A

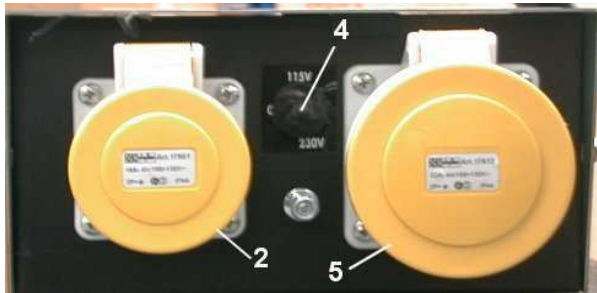
**A**



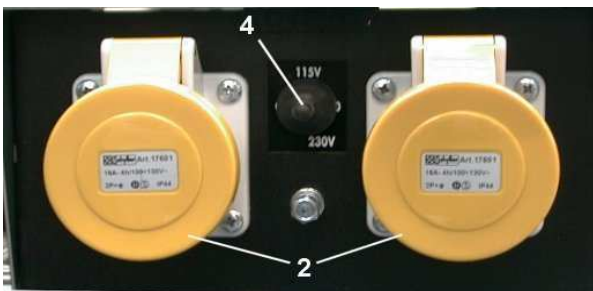
**B**



**C**



**D**



**LABELS ON THE GENERATOR:**

**TYPE OF FUEL: PETROL OR DIESEL**

The type of fuel to be used is indicated. The label is located next to the cap on the tank.



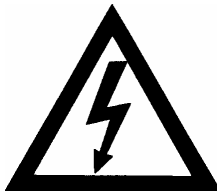
**AVOID SMOKING AND THE USE OF AN OPEN FLAME**

Warning label regarding re-fuelling. Label is located next to the cap on the fuel tank.



**ATTENTION: THE ELECTRIC PANEL IS LIVE**

Warning label indicating danger of electric shock. The label is located on the cover of the electric panel



**PE SYMBOL:**

The symbol is located next to the screw used for connecting the metal parts of the unit to earth when required, and is either on the frame or on the electric panel.



**NOISE LEVEL LABEL**

This certifies that the equipment will not exceed the relevant figure shown on the label. The label is located on the tubular frame or on the front panel of the machine.



**REGISTERED NUMBER**

This label indicates the name, registered number and the characteristics of the machine. The label is located

on the casing of the machine.



**CHARACTERISTICS OF THE ALTERNATOR**

This specifies the principal characteristics of the alternator. The label is located on the alternator casing.

TIPO	EG1	D	cos φ	0.9
POTENZA	kVA	3~	4.0	kVA
TENSIONE	V	3~	230	V
CORRENTE	A	3~	17.4	A
FREQUENZA	Hz		50	
GIRI / 1'			3000	
PESO	kg.		22	

**OIL WARNING LABEL**

This indicates that the machine is supplied without oil. The label is located on the engine.

ATTENZIONE !	ATTENTION !	ACHTUNG !	ATTENCION !	ATTENCION !
Prima di mettere in moto riempire di olio il motore. Vedere sul libretto istruzioni.	Before starting fill the motor with OIL. See Instruction Manual.	Vor Inbetriebnahme Öl in den motor einfüllen. Siehe Betriebsanleitung.	Faire le plein d'huile au moteur avant utilisation. Lire le mode d'emploi.	Antes de la puesta en marcha, echar aceite al motor. Vease instrucciones de servicio.

**HEAT**

This indicates the hot parts. the label is located next to the exhaust silencer.



**4. PRELIMINARY CHECKS:**

- Make sure these operations are carried out with the generator placed on a horizontal and stable surface.
- Oil is the most important element influencing the efficiency and life of the engine, the engine manual gives details of the type of oil to use and the correct oil level for this generator.

**ATTENTION: Running the engine with insufficient oil could cause serious damage.**

- Check the fuel level: use only clean and water-free fuel (it is better to use lead-free petrol or petrol with a low lead content, in order to minimize the deposits in the combustion chamber).

**ATTENTION: Fuel is highly inflammable and explosive under certain conditions.**

**Refuel in a well ventilated area with the engine switched off, do not smoke or approach the equipment with an open flame.**

**Do not overfill the tank (do not fill up to the cap), because vibration could cause fuel spillage.**

**Avoid spilling fuel while filling the tank. Ensure that the cap is correctly screwed down after filling. If fuel has been spilt, ensure that the area is completely dry before starting the engine.**

**Avoid any skin contact with the fuel and do not inhale the vapour. It is important to keep the fuel in a place inaccessible to children. The fuel fumes are highly inflammable.**

- Check the air filter: make sure that it is in good condition and free from dust and dirt. To locate the filter consult the engine manual.

**ATTENTION: do not use the generator without the air filter: the life of the engine and the generator will be reduced!**

- Activate the battery: fill the compartments to their maximum level with a 30/40% sulphuric acid solution and wait at least two hours before using.

**ATTENTION: do not touch the acid and do not smoke or use naked lights: battery fumes are highly inflammable. Keep the acid out of reach of children.**

**5. STARTING THE GENERATOR:**

- Ensure that no appliance is plugged into the generator.
- For generators with electric starters turn the key to the "START" position and release it as the machine starts.
- To start the recoil operated generators, turn choke to on position, pull the cord handle until resistance is felt, then pull energetically.

**ATTENTION: Do not allow the recoil handle to rewind quickly, feed back manually to avoid damage to the starter.**

When the engine has warmed up, turn off the choke, the generator is now ready for use. –

- For Yanmar diesel engines refer to label located on rear of tank for starting procedure.

*NOTE: If the generator is used at high altitudes or temperatures, the air-fuel mix ratio may be too rich; this will cause higher consumption and lower performance. Check the effective power of the generator by means of the following correction factors:*

*HEIGHT: Power diminishes on average by 1% for every 100 m of height above sea level;*

*TEMPERATURE: Power diminishes on average by 2% for every 5 degrees centigrade of temperature above 20 degrees centigrade. If the generator is used above an altitude of 2000 m, consult the manufacturer for advice on the fuel mix for best performance.*

**6. USING THE GENERATOR:**

*NOTE: The generator is built to current standards and has been designed to satisfy a very wide range of applications.*

*It should be remembered that every application is subject to specific electrical, accident prevention and environmental standards; for this reason the generator should be considered as an integral part of the complete installation, which should be designed, tested and approved by qualified technicians and/or companies.*

- Cables plugs, sockets and cable couplers should be suitable for the environmental conditions. Cables should be preferably flexible, and contain a metallic screen. Plugs and sockets should conform to BS4343. If metallic screen cable is not available, a cable with high abrasion resistance, with a separate protective conductor should be utilised. Cables should be as short as practicable, and routed to avoid possible accidental damage. All cables, plugs, sockets and connectors should be inspected regularly.

- Industrial and hand-held tools(110v) and domestic portable electrical equipment(220v) should preferably be of Class II construction.

- NEVER overload sockets ! Maximum outputs are :-

110v – 16amp Socket 2KW, 32amp Socket 4 KW : 220v – 16amp Socket 4KW, 32amp Socket 8KW.

- In order to avoid electrical accidents, all connections to the distribution panel must be carried out by qualified technicians. Incorrect connections can harm people and damage the generator.

Protection against electric shock: all generators rely on their electrical insulation, however, on request, they can be supplied with various additional protection options e.g. earth leakage breaker, insulation monitor (isometer), or they can be protected in the same way during installation by the user.

It is important therefore, to follow the instructions as below:

1) Standard generator: protected by electrical insulation. This equipment has a thermal protection device and/or a thermomagnetic device to protect against a current surge, overload or short-circuit. This is known as a 'floating' system.

In this case the generator winding must not be earthed using the terminal "PE" or with any other part of the generator.

2) Generator with optional switchboard (or with other devices installed by the user): must be protected using a circuit breaker' which automatically cuts off the power supply.

This has thermal overload protection devices and/or thermomagnetic combinations with earth-leakage circuit breakers or insulation monitors (isometer), which automatically cut off the power supply in the event of a breakdown of the insulation. When fitted with an earth leakage breaker the unit must be earthed using the PE terminal. If an isometer is fitted this connection is NOT required.

**IMPORTANT: In the event of the user installing earth-leakage circuit-breakers, it is important for its correct functioning that:**

**A) For single phase generators the neutral of the output must be connected to earth. B) For three phase generators the neutral (star point) should be connected to earth.**

**In the case of a three phase delta connection, it is not possible to install an earth-leakage circuit-breaker.**

**Contact our technical office for further information if required.**

- The generator is provided with a PE connection screw to ensure that the unit can be earthed as shown by the label, which also ensures that all metal parts of the generator are simultaneously earthed.

- **CTE (Centre Tapped to Earth) generators should be earthed at all times.**

- Do not connect accessories with unknown electrical specifications to the generator.

- The electrical circuit of the generator is protected by a switch, which is either thermomagnetic, earth-leakage-thermomagnetic or thermal, an overload or a short circuit will cut off the flow of current.

To reset, disconnect all appliances, check the cause of the short-circuit or overload and switch back on.

- If using the generator as a battery charger, place the battery at least 1 m from the unit, making sure that the filling plugs are removed from the cells.

- Take care to observe the battery polarities, incorrect connection of positive and negative poles could cause the battery to explode.

**ATTENTION: During charging, the battery gives off inflammable vapour. Therefore observe the maximum caution during charging and keep children far away.**

- When the generator is in use, do not place any objects on the frame or directly on the engine: any foreign bodies may impair performance.
- Do not hinder the normal vibrations that the generator makes when in use. The anti-vibration mounts are selected to work properly.

#### **7. STOPPING THE GENERATOR:**

- Switch off or disconnect all the accessories powered by the generator: then stop the engine after letting it idle for 2-3 minutes to cool down; to stop the generator turn off the switch.

With electric start generators, turn the key to the "OFF" position.

**ATTENTION: the engine will remain hot even after being switched off: make sure the generator is well ventilated even after engine shut down.**

#### **8. MAINTENANCE:**

**As regards this important paragraph please carefully consult the engine manual: if you spend some time now you will save money later!**

**ATTENTION: WHEN REQUESTING SPARES CHECK REQUIREMENTS AGAINST PARTS LIST SUPPLIED WITH UNIT.**

- Normal battery, alternator and frame maintenance operations are reduced to a minimum: keep the battery terminals well greased and top up with distilled water when the plates are uncovered.

- When requesting spare parts, as shown in the attached current Manual, it is essential that they are quoted in sequential order, supplying the code number of the piece required, the registered number of the generator.

- *NOTE: When disposing of used oil or residual fuel, respect the environment. We suggest collecting waste product in drums for delivery at a later date to a nearby Waste Transfer Station. Do not deposit oil and residual fuel into the earth or into unsuitable receptacles.*

*NOTE: Defective operation of the generator due to faults in the engine (oscillation, low revs, etc.) is the responsibility of the service department of the engine manufacturer both during and after the warranty period. Unauthorised Tampering will invalidate the conditions of guarantee.*

*Malfunction of the generator due to faults in the electrical circuits and in the frame is the responsibility of the makers' customer service department. Repairs carried out by unauthorized personnel, substitution of components with unoriginal spare parts and tampering with the generator will invalidate the conditions of warranty. The makers do not accept any liability arising out of faults or accidents due to neglect, overloading or installation by unqualified technicians.*

#### **9. TRANSPORTATION:**

- Ensure that the generator cannot turn over during transportation.
- Remove all fuel and ensure that acid or fumes do not leak from the battery (where applicable).
- Do not overload the transport vehicle. Under no circumstances should the generator be started while inside a truck.
- The generator is a heavy item ; movement is to be carried out under the guidelines of the Health & Safety At Work Act.
- Lifting eyes where fitted are to be checked at regular intervals to ensure they are damage free and tight ; **NEVER** stand beneath a lifted generator or anywhere inside its lifted danger area.

#### **10. STORAGE:**

- If you do not intend to use the generator for more than thirty days, it is advisable to completely drain the fuel tank.

For petrol engines it is also important to drain the carburator float chamber: petrol left in contact with components for a long period will cause them to deteriorate.

**ATTENTION: Petrol is extremely inflammable and explosive under certain conditions. Avoid smoking and sparks in the vicinity.**

- Substitute the engine with oil if it is finished: when the engine is not in use, old oil can cause sludge which can block up oilways.
- Clean the generator thoroughly, disconnect the battery cables (where applicable) and cover well to protect from dust and damp.

#### **11. WARRANTY:**

The makers, Pramac (UK) Ltd. guarantee their machines for the parts of their own production for a period of 12 (twelve) months beginning from the date of purchase.

The warranty is limited to replacement or reparation of the parts which at irrevocable judgement of the makers' technical department or of an authorized person are defective either in regard to incorrect production or assembly. Any other responsibility and/or obligation for further expenses, damages and direct or indirect losses due to the use or the impossibility to use the entire or part of the machine, is excluded.

Repairs under warranty are free at our plant, therefore any transport or packing charges concerning the repair itself is at purchaser's expense.

The warranty automatically expires when the twelve months period has passed or when any one of the following conditions occurs:

- A) NO OR INCORRECT MAINTENANCE
- B) TAMPERING WITH AFFIXED SEALS
- C) USE OFF UNSUITABLE FUELS OR LUBRICANTS
- D) OVERLOADING OR IMPROPER USE
- E) REPAIRS CARRIED OUT BY UNAUTHORIZED PERSONNEL AND/OR USE OF UNAPPROVED SPARE PARTS.
- F) PHYSICAL DAMAGE, FIRE OR OTHER ACCIDENTS

Furthermore the warranty does not apply in cases of damages due to normal wear and tear and to electrical parts.

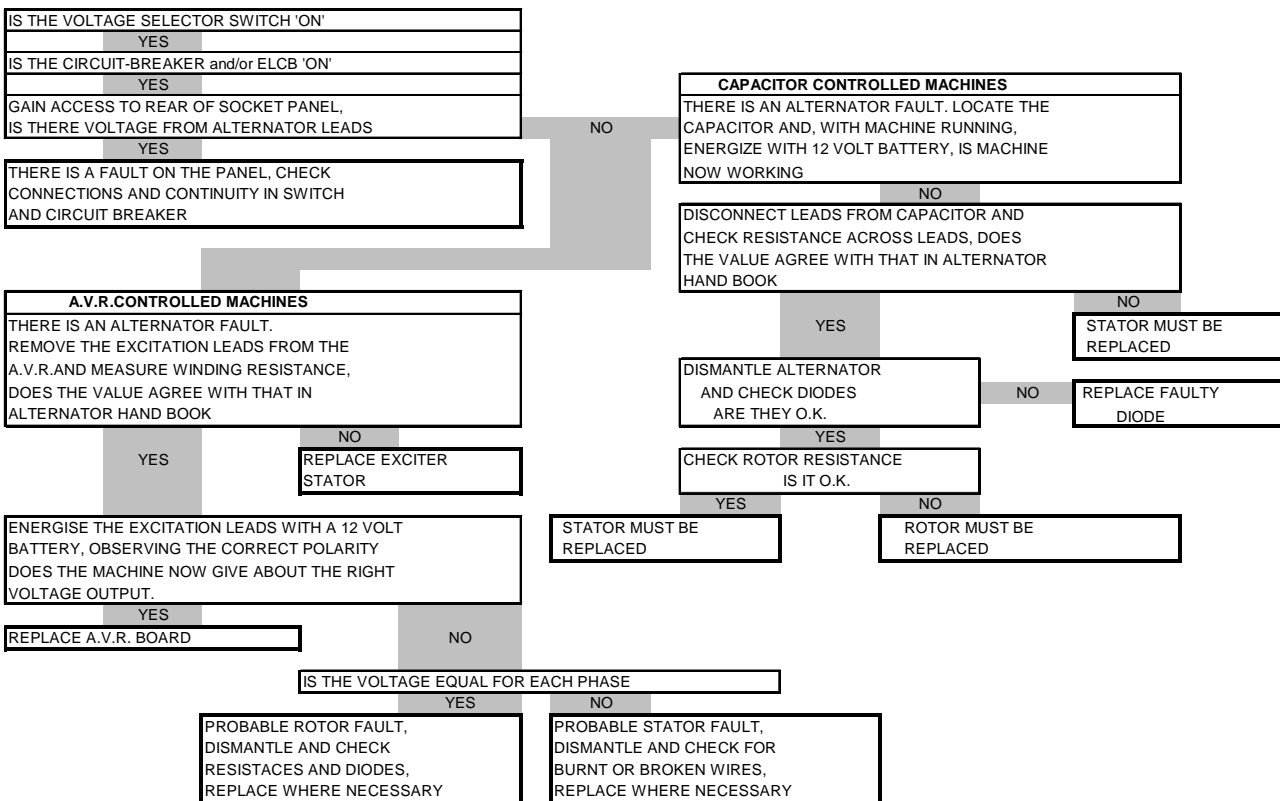
The warranty of engines, alternators and pump-units is guaranteed within the limits, that the makers obtain from the manufacturers of said parts.

This warranty annuls and voids any other expressed or implied warranty and cannot be modified unless in writing.

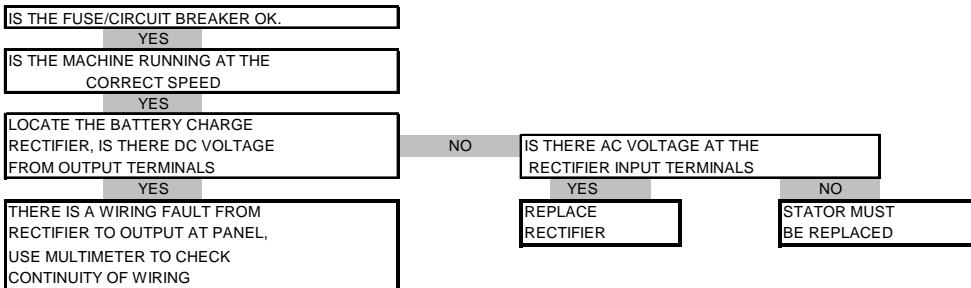
**TROUBLE SHOOTING:**

**WHILE MACHINE IS UNDER WARRANTY, CHECK WITH SUPPLIER BEFORE DISMANTLING ANY PART OF THE GENERATOR ASSEMBLY.**

**NO OUTPUT VOLTAGE FROM SOCKETS:**



**NO BATTERY CHARGER OUTPUT:**



IF PROBLEM CANNOT BE SOLVED, CONTACT SUPPLIER'S SERVICE DEPARTMENT

**ENGINE WILL NOT START: ASSUMING, ON ELECTRIC START MACHINES, THAT THE STARTER MOTOR WORKS OK.**

FIRST CHECK THE FOLLOWING:

- IS THERE FUEL IN THE TANK
- IS THE FUEL TAP ON
- IS THERE OIL IN THE SUMP
- ENSURE THERE IS NO WATER IN THE FUEL
- IS THE CHOKE ON \*
- IS THE SPARK PLUG WORKING \*
- HAS THE PRE-HEAT BEEN OPERATED
- DOES THE FUEL SYSTEM NEED 'BLEEDING TO REMOVE AIR

\* PETROL MACHINES ONLY

IF PROBLEM CANNOT BE SOLVED, CONTACT ENGINE SERVICE AGENT

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