



FOR MODELS:

6000S, 6000S3, 65000S, 65000S3

TECHNICAL SUPPORT: +44 (0)1942 715 407

SAVE THESE INSTRUCTIONS. This manual contains important safety precautions which should be read and understood before operating the product. Failure to do so could result in serious injury. This manual should remain with the product.

Specifications, descriptions and illustrations in this manual are as accurate as known at the time of publication but are subject to change without notice.

INTRODUCTION

Thank you for purchasing our product.

This product is guaranteed against faulty manufacture for a period of 24 months from the date of purchase. Please keep your receipt as proof of purchase.

This guarantee is invalid if the product is found to have been abused or tampered with in any way, or not used for the purpose for which it was intended. **Faulty goods should not be returned to the place of purchase**, the generator should be returned to the supplier of the product. No product can be returned without prior permission. This guarantee does not affect your statutory rights.

When contacting WPE about parts and/or service, you will need to supply the complete model and serial numbers of your product. Transcribe the information found on your product's nameplate label to the table below

| |
|-----------------------------------|
| WPE TECHNICAL SUPPORT TEAM |
| 44(0)1942 715 407 |
| MODEL NUMBER |
| |
| SERIAL NUMBER |
| |
| DATE OF PURCHASE |
| |
| PURCHASE LOCATION |
| |

⚠ IMPORTANT

- Children should be kept at a safe distance from the generator and NEVER allowed to operate it.
- Your new generator needs a break in period of approx. 10 hours with NO more 75% maximum load being applied. After first 10 hours the oil MUST be changed, recommended oil 10W30 low or Non Synthetic.
- Don't touch the engine or muffler while generator is in operation. Please pay attention to warning and caution stickers on the generator.
- Electrical equipment (including cable and plug connecting component) should be in good condition before starting and inspected prior to use.
- If replacing circuit breaker it must be equivalent or better in specification of the one to be removed.
- Due to high mechanical stress, only rubber sheathed cables are recommended to be used.
- When using extension cords or mobile distribution cabinet, the wire with 1.5mm² cross section should not be longer than 50 metres; and for 2.5mm² cross section wire should not be longer than 100 metres in length.
- With manual starting, always use decompression lever. (ONLY on Open Frame Type)
- On standard working ambient conditions (minus 5 to 40 degree Centigrade), the generator can be operated at normal running loads. If the working condition of circumstance are not normal either too high or too low, the generator should be run at a lower output of no more than 75% maximum load. When temperature, altitude and humidity is higher than standard working condition, the generator MUST reduce the output load to no more than 75% maximum load.
- Before any inspection or maintenance of the generator, the engine must be stopped and allowed to cool for a minimum 30 minutes. Check and maintain the generator according to the period table and schedule sheet in the manual.
- Except the daily maintenance or cleaning, any inspection or readjustment should be conducted by authorized professional person and source the requested original components by them from the supplier. (Contact your local dealers).
- Your newly overhauled machine must endure a breaking-in period of at least 10 hours, the output should not exceed 75% of the maximum load.

FEATURES

WPE Diesel generator possesses the following features:

This series diesel generator adopts super-light type, air cooled, 4-stroke direct injection diesel engine and has two starting options:

- Recoil start
- Electric start.

They are equipped with large capacity fuel tank, circuit protector, A.C and sometimes D.C voltage outputs, low oil pressure alarm and automatic stopping device.

The diesel generator serves as an UPS stand-by power supply in many different applications including open working site, construction and field army. Emergency power of poultry farm, fishery, forestry, garden, hotel, shop, and office.

This operation manual tells you how to operate and service your new diesel generator. Please read it before using the diesel generator to ensure proper handling and operation. Following these instructions carefully will keep your diesel generator in the best working condition, allowing to prolong the life of your diesel generator.

If you have any questions concerning your new product or any of the information given in this manual, please contact 44(0)1942 715 407.

PARAMETERS

The generators can generate specified power when used in the following conditions:

Altitude: < 1000m
Ambient Temperature: 5 to 40°C
Relative humidity: <90%

⚠ IMPORTANT

Please read and understand this operation manual to insure safe operation, and pay high attention to the following main points of operation otherwise it may cause personal injury and damage to equipment.

Preventing fires

The fuel of diesel engine is light diesel fuel, so gasoline, kerosene etc. must NEVER be used.

Wipe away all fuel spills with a clean cloth. Keep gasoline, kerosene, matches and other explosives and inflammable substance away from the generator, because the temperature around the exhaust muffler is very high during operation. To prevent fire hazards and to provide adequate ventilation, keep the generator at least 1.5 meter away from buildings, structures and other equipment during operation.

Operate the generator on a flat level surface, there may be fuel spillage or poor operation if the generator is tilted.

Preventing exhaust gas inhalation

Exhaust gas contains poisonous carbon monoxide. Never use the generator in poorly ventilated locations. Generators MUST never be use indoors, garages, cabins, out building, sheds or any building that doesn't have adequate ventilation.

Preventing burns

Never touch the muffler, muffler cover while the engine is running or hot.

Electric shocks, short circuits

In order to avoid electric shocks or short circuit, do not touch the generator, when either it or your hands are wet.

This generator is not waterproof, so it should NEVER be used in a place exposed to rain, snow or water sprays. The generator should be ground to prevent electric shocks. Please connect a length of heavy wire between the generator's ground terminal and an external ground device, ground rod or stake - minimum 200mm deep.

Do not connect any equipment to the generator before you start it.

⚠ WARNING

Most appliance motors require more than their rated wattage for start up. Do not exceeded the current limit specified for any one socket.

Charging the battery

Battery electrolyte contains sulphuric acid. Protect your eyes, skin and clothing. In case of contact, flush thoroughly with water and get prompt attention, especially if your eyes are affected.

Batteries generate hydrogen gas, which can flames or sparks near a battery, especially during charging.

Charge the battery in a fully ventilated area.

⚠ WARNING

Know how to stop the generator quickly, and understand how to operate all of the controls. Never permit anyone to operate the generator without proper instruction.

Always wear a helmet, safety shoes and proper clothing. Keep pets and children away from the generator when it is in operation.

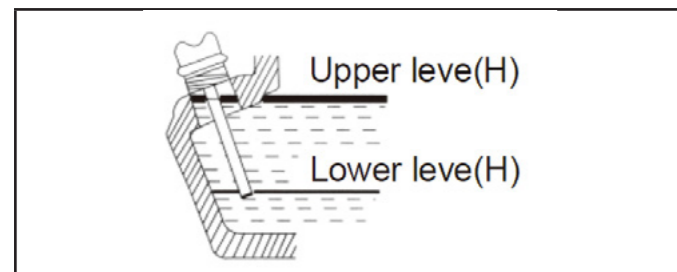
PREPARATION BEFORE START

Selection and handling of fuel

- Only light diesel fuel can be used.
- The fuel must be filtered .
- Fuel should be free of water or dust because these can contaminate the fuel injection system.
- Do not overfill the tank beyond the top of the red plug inside the fuel tank filter, use fuel gauge on top of tank.
- Do not smoke and allow sparks in the area where the engine is refueled or where gasoline is stored.
- Do not spill fuel when refueling, make sure the filter cap is securely closed.

Selection and handling of oil

- Set the generator on a level surface.
- Fill the engine oil into the inlet.
- To check the oil level, simply dip the dipstick into the pan. Do not screw in the dipstick when checking.



🗨 NOTICE

Nothing effects the performance and durability of the generator more than the oil you use. If inferior oil is used or if your engine oil is not changed regularly, the risk of piston seizure, piston ring sticking and accelerated wear of the cylinder liner, bearings and other moving components increase significantly.

- Make sure to check the oil level and to refill with oil to the specified level before starting the generator, even though it is equipped with a low oil pressure warning system.
- If your generator doesn't start by the 5th attempted or starts and cuts out, your oil level is to low and needs to topped up.

🗨 NOTICE

Oil should be changed after the first 20 hours (or 1 month) of use and then every 3 months or 100 hours of use.

Be sure to drain the oil while the engine is warm but not hot . It is difficult to drain the oil completely after cooling.

⚠ WARNING

NEVER add or attempt to change oil into the generator while the engine is running.

Check air filter

- Loosen the wing nut, detach the cover of air cleaner and remove the element. Do not wash air cleaner element with detergent . Use water or petrol (MUST allow to dry before replacing).
- The air cleaner element must be changed when the output of engine decreases or the color of exhaust is abnormal.
- Never run the generator without the air cleaner element. This may cause rapid engine wear.
- Reattach the cover of air cleaner and tighten the wing nut.

Ensure no load on generator

- Turn off the main circuit breaker and any other loads.
- Be sure to turn off the main circuit breaker before starting the generator. If the switch is not on the "OFF" position, sudden application of load could be very dangerous, when the diesel engine is started.
- The generator should be earthed to prevent electric shocks. (Recommended).

Handling of dual voltage type generator

- Operation of change over switch: The AC circuit breaker on the control panel must be set to 'OFF' position before running the machine. After starting the generator, allow the speed to reach rated RPM and then turn the AC circuit breaker to the "ON"

position, so that the receptical sockets can be used for operating equipment.

- NEVER try to switch between voltages when the AC circuit breaker is ON and equipment plugged IN.
- Set the main AC circuit breaker to the "OFF" position when using the 12v DC power supply.

Check for Airlock

⚠ WARNING

The FUEL and engine OIL are drained off by factory prior to transportation. Generators are dry for storage.

- Check for airlock in fuel pipeline, and find whether there is air mixed into the pipeline, if yes, drain away the air from the pipeline before refuel and start the diesel engine.
- Fuel filter should be minimum 75% full, if not then air may be present in system.
- The method to remove is, loosen the 17mm gland nut connection between injecting pump and high pressure brass pipeline, put run lever to "RUN" position and turn over the engine until fuel starts to jet out.
- Replace and re-tighten 17mm gland and repeat the process if engine still does not start.

OPERATION

Low oil warning system

- Device works to stop the engine automatically when the oil pressure falls below the regulatory level and will prevent engine seizure when the engine oil is running low or engine pressure is lost.
- The oil temperature will rise high if the engine is operated with insufficient engine oil. On the other hand, too much oil is dangerous because the oil may combust and cause a sudden and excessive rise in engine rpm, so before operating the machine each day be sure to check the oil and fill oil to the specified level if necessary.

Opening the cabinet door and cover.

Opening the cabinet door and raise the door and check daily.

1. Turn the handle anticlockwise to open cabinet door.
2. Turn the handle clockwise to lock cabinet door.

Break-in operation

While your generator is still new, application of heavy loads may shorten the life of the engine. Follow the break-in procedures during the first 20 hours.

1. Avoid applying any heavy load during the break-in period.
2. Change engine oil regularly. Change the engine oil every 20 hours or one month after the initial use, and every 3 months or 100 hours thereafter.

Starting the generator

Recoil start (Open Frame Type Only)

1. Open the fuel cock (at the "ON" position).
2. Put the engine speed lever in the "RUN" position.
3. Pull out the recoil starting handle.
4. Pull out the handle to the point where your hands feel strong resistant and then return it to the initial position.
5. Push down the decompression lever. (It will return automatically when the recoil starter is pulled).
6. Pull out the recoil starting handle briskly with both hands.
7. Do not allow the handle grip to snap back against the engine. Return it gently to prevent damage to the starter.

⚠ WARNING

NEVER pull out or touch the recoil when the diesel engine is running, otherwise it will damage the engine.

8. In cold weather, when diesel engine is difficult to start, remove the plug from the rocker arm cover and add 2 cc of engine oil.
9. Replace the plug before starting.
10. Always keep the red plug in the cover except when adding oil, otherwise rain , dirt and other contaminants may enter the engine and cause accelerated wear of internal engine parts. This in turn can cause serious problems.

Electric Start

1. Turn ignition key clockwise to 'ON' position.
2. Put the engine speed lever in the "RUN" position.
3. Turn the ignition key clockwise to "Start" position.
4. Release your hand from the key as soon as the engine starts and let the key return automatically to initial 'ON' position.

- If the starter motor doesn't engage and turn over the engine after 10 seconds, please wait for about 30 seconds before attempting to start again and repeat this process.

⚠ WARNING

Please Note: If the starting motor is run for too long it will flatten the battery.

Always leave the starting key turned 1 position, in the "ON" position, while the engine is running.

Battery

Check the level of the fluid in the battery once every month. When the level drops to the lower upper mark replenish with distilled water up to the upper mark.

If battery fluid is low, the engine may fail to start because too little electricity is reaching the starter motor. Always keep the fluid level between the upper level and lower level.

If too much battery fluid is applied, the fluid may spill and corrode the surrounding parts. DO NOT over fill.

Batteries are only covered by a 1 year warranty from original date of purchase.

Operating your generator

- Warm up the engine without load for about 3 minutes.
- Our generator is equipped with low oil warning system. The engine will stop automatically in case of low oil pressure or a lubrication oil shortage. The engine will stop immediately if restarted without a lubrication oil refill. To check the oil level and refill
- Do not loosen or readjust either the engine speed limiting bolt or fuel injection limiting bolt (They have been factory set) otherwise performance and fuel economy will be affected.

Check during operation

- (Any abnormal sound or vibration?)
- The engine misfiring or running rough.
- What about the color of the exhaust gas? (Is it black or too white?)

If you notice any of the above phenomenon, stop the engine and consult your nearest dealer or contact technical support on 44(0)1942 715 407.

AC Operation

- Start the engine and make sure the 'GREEN' pilot lamp turns on. If it does not, the filament may be burnt out.

- The speed of generator must reach rated speed (lever at top).
- Generator can load when the indicator of voltmeter shows at $240 \pm 10\%$ (50Hz) on the panel of control box.
- Plug in the appliance.

⚠ WARNING

Do not start two or more machines simultaneously. Start them one by one. Do not use floodlights together with other machines.

- Be sure that all pieces of equipment are in good working condition before connecting them to the generator.
- If an appliance or piece of equipment begins to operate abnormally, becomes sluggish, or stops suddenly, turn off the generator immediately. Then disconnect the appliance and examine it for signs of malfunction.
- If overloading of the circuit trips the AC circuit protector, reduce the electrical load on the circuit, and wait a few minutes before resuming operation.
- If the LCD display voltmeter is too low or too high, stop the machine and examine it for cause of fault.

DC Operation

The DC terminal may be used for charging 12V automotive type batteries only.

- When using automotive-type batteries with battery cables, be sure to disconnect the minus pole battery cable from the battery before charging.
- Start the engine.
- Connect the charging cable to the battery terminals and the DC terminals of generator.

Connect the positive battery terminal to the positive generator terminal. Do not reverse the charging cables, or serious damage to the generator and/or battery may occur.

Do not allow the free ends of the cable to touch each other. If this occurs, it will be short circuit the battery

When a large capacity battery is charged, excessive current flows (the value varies depending on the discharging condition), and the fuse for the direct current will blow.

- Batteries produce explosive gases. Keep sparks, flames and cigarettes well away. To prevent the possibility of creating a spark near the battery, always connect the charging cables to battery first and only then to the generator. When disconnecting,

you should disconnect the cables at the generator first.

- Charge the battery in a well ventilated place. Before charging, remove the cap from each cell of the battery. Discontinue charging if the electrolyte temperature exceeds 45°C .

⚠ WARNING

Do not attempt to start an automobile engine while the generator is still connected to the battery.

NEVER try to use both DC 12 volt and AC at the same time.

Stopping the generator

- Turn off the AC circuit breaker.
- Leave the engine speed lever in the "RUN" position, operate the engine without load for approx 3 minutes, DO NOT stop the engine suddenly because this may cause the temperature to rise abnormal and cause the nozzle to damage and seize the engine.
- Push down the stop lever or Turn the ignition key anticlockwise to "OFF" position.

⚠ WARNING

If the engine keeps on running even after the speed lever is pressed at the "Stop" position, turn the ignition key to 'OFF' position. NEVER try to stop the engine with the decompression lever (Open Frame Type Only)

Remote Control (If Applicable)

Generator can be started or stopped remotely using a wireless transmitter

- Ensure lever is in 'RUN' position
- Turn ignition key to 'ON' position (1 Clockwise Turn).
- To start engine, press and hold button 'A' on transmitter for approx. 3-5 seconds.
- If generator does start check 1-2 and retry.
- To stop engine press 'B' button on transmitter
- Turn ignition key to 'OFF' position (1 Anti-clockwise Turn)

⚠ WARNING

After the generator is stopped or not in use you MUST turn the ignition key to the 'OFF' position otherwise battery will flatten over time.

⚠ WARNING

If Generator doesn't start after 3 attempts, steps 1-3 need to be REPEATED as well as general maintenance of oil level and fuel level need to be checked.

Never allow anybody other than the owner or user to remotely start or stop the generator using the wireless transmitter. Constantly starting and stopping the generator will damage electric/electronic components or equipment and also will cause increased engine wear.

If the generator doesn't not start at all after many attempts there may be malfunction or fault and you will need to contact your local service centre on 44(0)1942 715 407.

MAINTENANCE

Periodic check and maintenance are very important for keeping the engine in good condition. Please read the detailed description of operating manual for each part.

Shut off the engine before performing any maintenance. If the engine must run, make sure the area is well ventilated. The exhaust contains poisonous carbon monoxide gas.

After the engine has been used, clean it immediately with a cloth to prevent corrosion and remove sediment.

DAILY

- ☐ Check oil level
- ☐ Check and replenish fuel
- ☐ Check for oil leakage
- ☐ Check and tighten and engine parts if loose

FIRST 20 HOURS

- ☐ Change oil
- ☐ Drain fuel tank
- ☐ Adjust valve clearance for intake & exhaust valves*
- ☐ Lap intake & exhaust valves*

MONTHLY

- ☐ Check battery fluid
- ☐ Check air filter

EVERY 100 HOURS OR 3 MONTHS

- ☐ Chain oil
- ☐ Clean oil filter

EVERY 300 HOURS OR 6 MONTHS

- ☐ Tighten head bolts on engine*
- ☐ Replace oil filter
- ☐ Replace air filter
- ☐ Clean fuel filter
- ☐ Check fuel injection pump*
- ☐ Check fuel injection nozzle*
- ☐ Check fuel pipe
- ☐ Adjust valve clearance for intake & exhaust valves*

EVERY 1000 HOURS OR ANNUALLY

- ☐ Replace fuel filter
- ☐ Lap intake & exhaust valves*
- ☐ Replace piston rings*

EVERY 3 YEARS

- ☐ Replace fuel line*

*Special tools or skills are required - please do not attempt yourself - consult Technical Support on 44(0)1942 715 407.

Changing engine oil (Every 100Hrs)

Remove the oil filler cap. Remove the drain plug and drain the used oil while the engine is still warm. The oil drain plug is located on the bottom of the engine block next to the oil filter. Tighten the drain plug and refill with the recommended oil 10W30 Non or part synthetic.

Cleaning the oil filter (Every 300 hours)

Undo the 10mm bolt and Remove the oil filter (located at the bottom of the engine block next to the oil drain plug). Clean with water or petrol and DO NOT use any detergents.

Changing the air cleaner element (every 300 hours)

Do not wash the air cleaner element with detergent because this is a dry type element use water or petrol. Allow to dry fully before replacing it.

⚠ WARNING

Never start the engine without the element, or with a defective element. Change the element in time

Cleaning and replacing the fuel filter (Every 300 hours)

The fuel filter also has to be cleaned regularly to insure maximum engine efficiency .

1. Drain the fuel (diesel) from the fuel tank.
2. Loosen the small clips on the hoses. Remove fuel filter and Wash through thoroughly with diesel fuel

(ONLY). Remove the lock nut, end cap and diffuser discs and clean the carbon deposit.

Checking and replenishing battery fluid and charging and battery (Monthly)

This diesel engine uses a 12v battery. The battery fluid will be lost through continuous charging and discharging.

Before starting , check for physical damage to the battery and also the electrolyte level, and replenish with distilled water up to the upper mark if necessary. When actual damage is discovered , replace the battery immediately. Batteries are covered by 12 months warranty from the original date of purchase.

STORAGE

If your generator should be stored in long time, the following preparation should be made.

1. Operate the diesel engine about 10 minutes with NO load and stop it.
2. Wait approx. 10 mins when the engine is still warm, drain engine oil out, then refill new 10W30 engine oil.
3. Pull out the red plug on the cylinder head cover of diesel engine and add 2ml of lubricate oil in cylinder, and finally put the red plug back it to original place.
4. Maintenance of starting position
 - Manual starting (Open Frame Type Only)
 - Put the lever to the 'RUN' position
 - Press the red pressure-reduce handle (non-compression position), pull the recoil handle 2-3 times. (Don't start diesel engine).

TROUBLESHOOTING

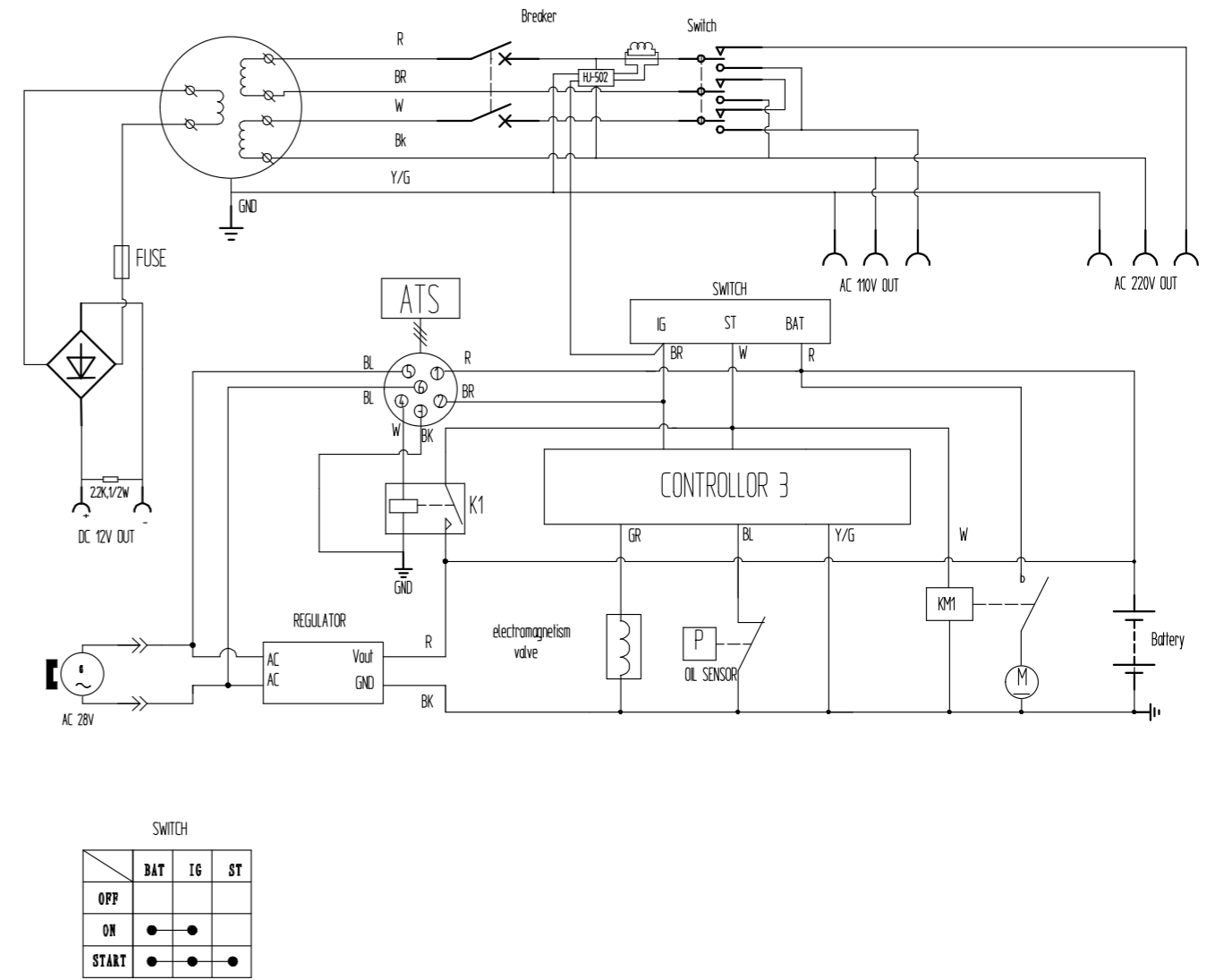
| Problem | Cause | Solution |
|--|---|---|
| Engine will not start. | No fuel. | Add fuel. |
| | The switch is not at "ON" position | Turn it to "ON" position |
| | The high pressure fuel pump, injection nozzle cannot inject or the fuel amount is insufficient. | Remove the injection nozzle out and repair it or bleed the fuel injection system. |
| | The control lever of speed is not at "RUN" position | Put the control level to "RUN" position |
| | Check oil level | Add oil if needed |
| | The speed and force to pull the recoil starter is not enough | Start the diesel engine according to the requirements of operating procedure of start |
| | The injection nozzle is dirty or blocked | Clean or replace injection nozzle |
| Engine will not start with Remote Control. | The battery is flat | Recharge or replace |
| | Ignition key is not in the ON position | Check steps 1-3 on RC instructions |
| | Lever not in to RUN position | Check steps 1-3 on RC instructions |
| Engine is running but no output. | Oil or fuel level low | Add oil or fuel if needed |
| | AC circuit breaker is turned 'OFF' | Put the main AC switch to the "ON" position |
| | The contact of socket is not good | Adjust the feet of socket |
| | The rated speed of generator cannot be reached | Adjust engine governor according to the requirements |
| | Other. | Contact Technical Support 44(0)1942 715 407. |

NOTE: When welding, if you find the electricity is too large for welder or the engine shuts down by overload during welding, it may cause by the AVR's regulator to damage or short circuit.

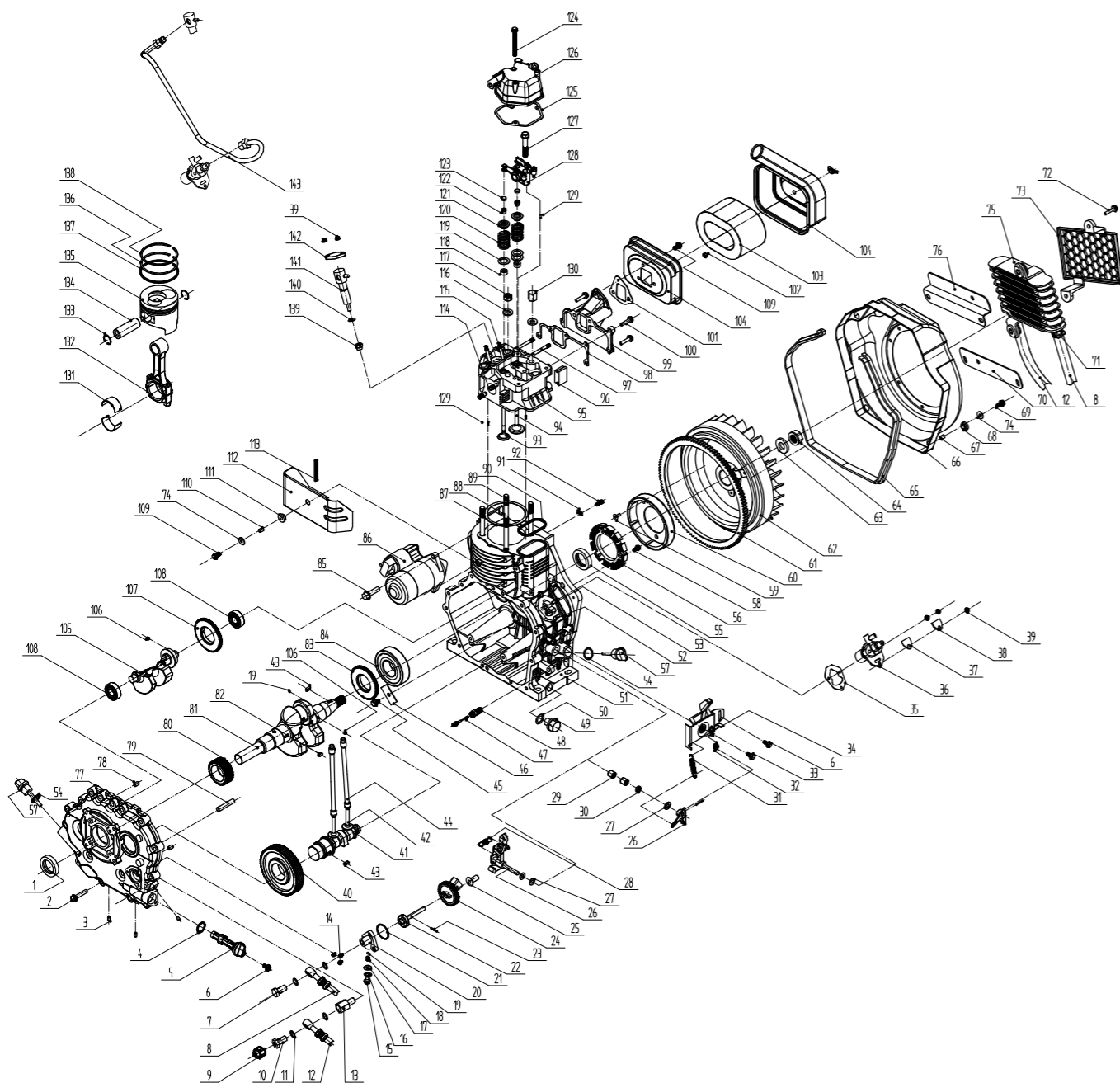
TECHNICAL SPECIFICATIONS

| MODEL: | 6000S | 6500S | 6000S3 | 6500S3 |
|---------------------------------|---|-----------------------|------------------------|------------------------|
| Type | Single Phase A.C | | Three Phase A.C | |
| Frequency (Hz) | 50 | 50/60 | 50 | 50/60 |
| Rated Power (kW) | 4.5 | 5.0/5.5 | 5.6kVA | 6.3/6.9kVA |
| Max Power (kW) | 5.0 | 5.5/6.0 | 6.2kVA | 6.9/7.5kVA |
| Voltage (A.C) | 110, 115, 220, 230, 240, 11/220, 115/230, 120/240 | | 240/415 | |
| Voltage (D.C) | 12V | | | |
| Current (D.C) | 6A | | | |
| Power Factor | 1.0 | | 0.8 | |
| Phase Number | Single Phase | | Three Phase | |
| Pole Number | 2 | | | |
| Excitation | Self-excitation | | | |
| Insulation | G1 | | | |
| Voltage Regulation System | Condenser compensating system | | | |
| Engine Type | 186FA Euro 5: LA186FAG | 188F Euro 5: LA186FAG | 186FA Euro 5: LA186FAG | 188F Euro 5: LA188FG |
| Type | 4 Stroke, single cylinder, air cooled, direct injection diesel engine | | | |
| Speed (rpm) | 3000/3600 Euro 5: 3000 | | 3000 | 3000/3600 Euro 5: 3000 |
| Cont. Output (kW) | 5.7/6.3 (Euro 5: 5.7) | 6.6/7.2 (Euro 5: 6.3) | 5.7/6.3 (Euro 5: 5.7) | 6.6/7.2 (Euro 5: 6.3) |
| Bore x Stroke (mm) | 86 x 72 | 88 x 78 | 86 x 72 | 88 x 78 |
| Displacement (L) | 0.418 | 0.474 | 0.418 | 0.474 |
| Cooling System | Forced Air Cooled | | | |
| Lubrication System | Forced Lubrication | | | |
| Lube oil capacity | 1.65 | 1.65 | 1.65 | 1.65 |
| Start System | Electric Start | | | |
| Fuel | Diesel | | | |
| Fuel Capacity (L) | 16 | 16 | 16 | 16 |
| Low Pressure Alarm | Included | | | |
| Operation capacity (hr) | 7.4/6.6 | 7.2/6.5 | 7.4/6.6 | 7.2/6.5 |
| Acid battery capacity (AH) | 24-36 | | | |
| Care free battery capacity (AH) | 17-36 | | | |
| Nett Weight (kg) | 150 | 154 | 150 | 154 |
| Dimensions (L x W x H) mm | 900 x 520 x 700 | 900 x 520 x 700 | 900 x 520 x 700 | 900 x 520 x 700 |

WIRING DIAGRAM



ENGINE PARTS DIAGRAM

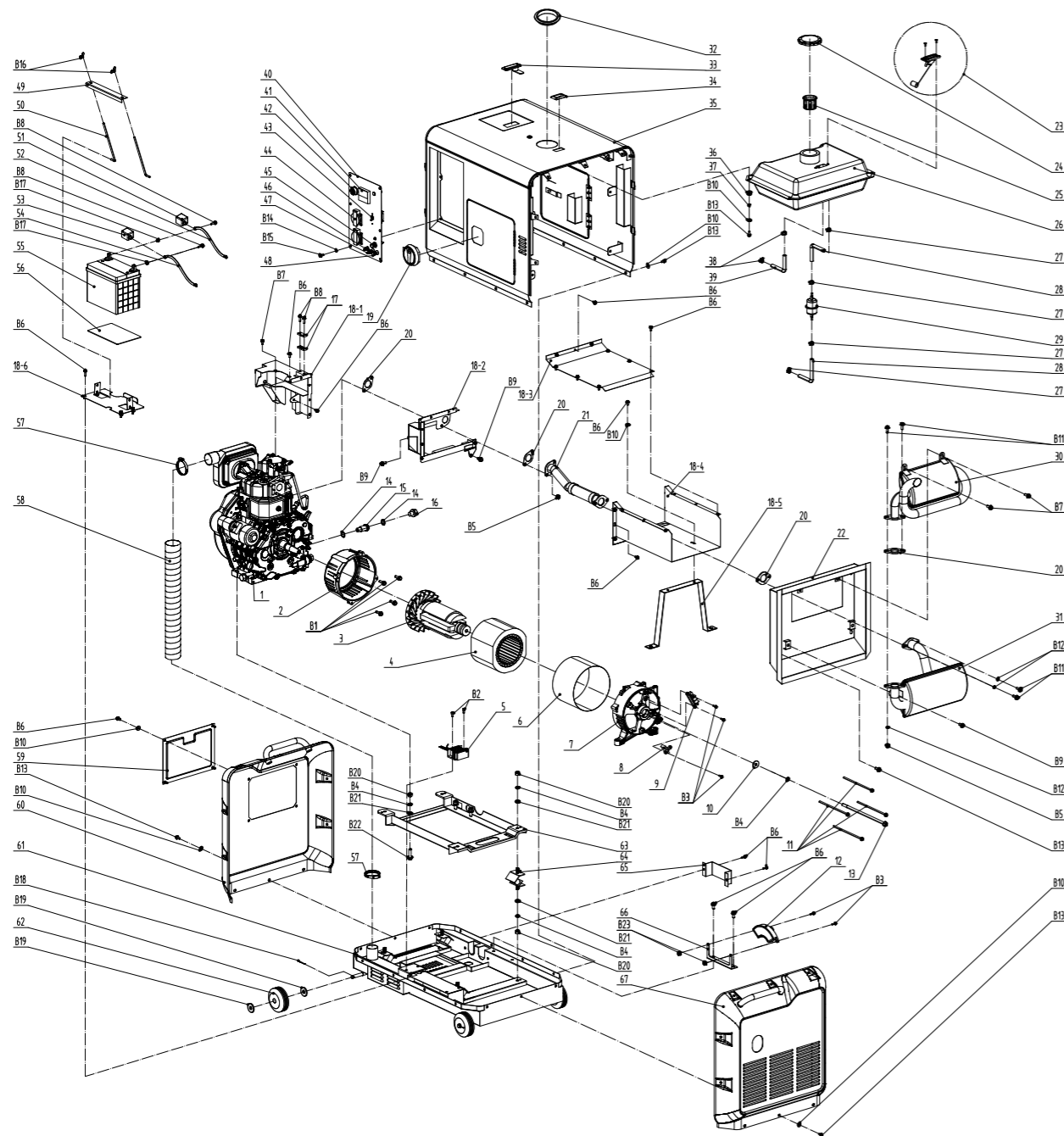


ENGINE PARTS LIST

| | | | | | | | |
|-----|----------------------------------|------------|---|-----|---|------------------------|-------|
| 135 | Piston | A188 | 1 | 68 | Shock absorber seal | A170/78/86 | 4 |
| 134 | Piston pin | A188 | 1 | 67 | Bush10*10 | A170 | 4 |
| 133 | Washer*23 | A186 | 2 | 66 | Fan cover | A192 | 1 |
| 132 | Connect rod assy | A188 | 1 | 65 | Shock absorbing bushing | A170/78/86 | 965mm |
| 131 | Crank pin bearing | A186 | 2 | 64 | Flywheel nut | A186 | 1 |
| 130 | Cylinder head nut<thick> | A188 | 2 | 63 | Flywheel nut washer | A186 | 1 |
| 129 | Straight pin | 4x8 | 1 | 62 | Flywheel | A186F | 1 |
| 128 | Valve rocker arm | A186FA | 1 | 61 | Flywheel gear | A186F | 1 |
| 127 | Rocker arm ball | M8x4.5 | 2 | 60 | Flywheel rotating assembly | F186-100 | 1 |
| 126 | Cylinder head cover assembly | A186FA | 1 | 59 | Hexagon socket countersink head screw | M6x12 | 3 |
| 125 | Cylinder head cover gasket | A186FA | 1 | 58 | Flange bolt | M6x18 | 3 |
| 124 | Flange bolt | M6x70 | 2 | 57 | Oil level gauge | A178/86 | 2 |
| 123 | Valve adjusting block | A186 | 2 | 56 | Stator assembly | F186-200 | 1 |
| 122 | Valve key | A188 | 4 | 55 | Oil seal | DR-35x50x8 | 1 |
| 121 | Valve-spring retainer | A188 | 2 | 54 | O ring | 19.2x2.4 | 2 |
| 120 | Valve spring | A186 | 2 | 53 | Fuel injection pump fastening studlong | M6x36 | 2 |
| 119 | Valve spring washer | A186 | 2 | 52 | Fuel injection pump fastening studshort | M6x30 | 2 |
| 118 | Valve guide oil seal | A186 | 2 | 51 | Crankcase | A188 | 1 |
| 117 | Cylinder head nut<thin> | A188 | 2 | 50 | Seal washer | 16 | 1 |
| 116 | Cylinder head nut washer | A188 | 4 | 49 | Drain plug | A170/78/86 | 1 |
| 115 | Double end stud | M6x55 | 2 | 48 | Torque connector | A186 | 1 |
| 114 | Double end stud | M6x20 | 2 | 47 | Calibrate spring | A186 | 1 |
| 113 | Shock absorber seal | A178/86 | 2 | 46 | Thrust plate | A170/78/86 | 1 |
| 112 | Air induced cover parts | A188 | 1 | 45 | Flange bolt | M8x15 | 1 |
| 111 | Air induced cover shock absorber | A178 | 1 | 44 | Valve push rod | A188 | 2 |
| 110 | Air induced cover bush | A178 | 1 | 43 | Flat key | 5x14A | 2 |
| 109 | Flange bolt | M6x16 | 2 | 42 | Valve tappet | A186 | 2 |
| 108 | Deep groove ball bearing | 6304 | 2 | 41 | Camshaft | A188 | 1 |
| 107 | Balance shaft gear | A186 | 1 | 40 | Camshaft timing gear | A188 | 1 |
| 106 | Flat key | 5x1A | 2 | 39 | Flange nut | M6 | 5 |
| 105 | Balance shaft | A188 | 2 | 38 | Fuel injection pump sealplate | A170/78/86 | 1 |
| 104 | Air cleaner case<low noise> | A186 | 1 | 37 | Fuel injection pump seal gasket | A170/78/86 | 1 |
| 103 | Air cleaner element | A186 | 1 | 36 | Solenoid valve fuel injection pump | A188 | 1 |
| 102 | Hexagon lock nut | M6 | 2 | 35 | Fuel injection pump gasket | A170 | 接箍 |
| 101 | Air cleaner gasket | A186 | 2 | 34 | Control handle | A170/78/86 | 1 |
| 100 | Flange bolt | M6x22 | 1 | 33 | Flange bolt | M6x22 | 1 |
| 99 | Intake pipe | A186 | 1 | 32 | Return spring | A170/78/86 | 1 |
| 98 | Intake pipe gasket | A186 | 1 | 31 | Governor spring | A186 | 1 |
| 97 | Double end stud | M6x15 | 2 | 30 | Oil seal | W18x14x4 | 1 |
| 96 | Cylinder head rubber plug | A186 | 2 | 29 | Needle bearing<7947/8> | HK081410 | 2 |
| 95 | Cylinder head | A188 | 1 | 28 | Starting spring | A186 | 1 |
| 94 | Intake valve | A188 | 1 | 27 | Governor level washer | A170 | 3 |
| 93 | Exhaust valve | A188 | 1 | 26 | Shift fork | A186 | 1 |
| 92 | Hexagon bolt | M6x12 | 1 | 25 | Tappet | A186 | 1 |
| 91 | Wire clamp | A170/78/86 | 1 | 24 | Oil pump drive gear | A188 | 1 |
| 90 | O-ring seal | A186 | 1 | 23 | Straight pin | 3x18 | 1 |
| 89 | Cylinder head stud<long> | A188 | 2 | 22 | Oil pump assembly | A186 | 1 |
| 88 | Cylinder head stud<short> | A188 | 2 | 21 | O ring | 34.5x18 | 1 |
| 87 | Cylinder head gasket<in demand> | A188 | 2 | 20 | Oil pump cover plate<oil cooler> | A188 | 1 |
| 86 | Starter | A186/188 | 1 | 18 | Pressure limiting valve spring | A170/78/86 LA170F-0900 | 1 |
| 85 | Flange bolt | M10x30 | 2 | 17 | Fuel injection pump gasket | M10 | 接箍 |
| 84 | Cylindrical roller bearing | NUP-308E | 2 | 16 | Seal washer | 10 | 1 |
| 83 | Balance shaft transmission gear | A188 | 1 | 15 | Hexagonal flange bolt | M10*125*10 | 1 |
| 82 | Flat key | 5x12A | 1 | 14 | Hexagon socket flat round head screw | M6*14 | 3 |
| 81 | Crankcase | A188 | 1 | 13 | Hinged ball transmission seal | A188 | 1 |
| 80 | Crankshaft timing gear | A188 | 1 | 12 | oil cooling pipel | A188 | 1 |
| 79 | Oil inlet pipe | A170/78/86 | 1 | 11 | Seal washer | 14 | 4 |
| 78 | Straight pin | 8x12 | 2 | 10 | Hinge boltM14*15-NP17/8 | A188 | 1 |
| 77 | Crankcase cover<oil cooler> | A188 | 1 | 9 | oil pressure sensor | A188 | 1 |
| 76 | Oil cooler fixing plate | A188 | 1 | 8 | oil cooling pipel | A188 | 1 |
| 75 | oil cooler | L1620 | 1 | 7 | Hinge bolt | M12*15*28 | 1 |
| 74 | Plain washer | 16 | 4 | 6 | Flange bolt | M6x14 | 3 |
| 73 | Mesh Layer | L1620 | 1 | 5 | Oil filter | A170/78/86 | 1 |
| 72 | Hexagonal flange bolt | M6x25 | 2 | 4 | O ring | 20x2.65 | 1 |
| 71 | Hose clamp | 德式12-20 | 2 | 3 | Aluminum plunger8*10 | A170/78/86 | 3 |
| 70 | Oil cooler fixing plate | A188 | 1 | 2 | Flange bolt | M8x35 | 16 |
| 69 | Flange bolt | M6x22 | 4 | 1 | oil seal | DR-35x50x10 | 1 |
| | | | | NO. | Description | Material | Qty |

| | | | |
|-----|-----------------------|---------------|---|
| 143 | Fuel injection pipe | A188 | 1 |
| 142 | Fuel injector platen | A170/78/86 | 1 |
| 141 | Fuel Nozzle | A188 | 1 |
| 140 | Fuel Nozzle gasket | A170 | 1 |
| 139 | Heat insulation cover | A170/78/86 FA | 1 |
| 138 | First gas ring | A188 | 1 |
| 137 | Piston Oil ring | A188 | 1 |
| 136 | Second gas ring | A188 | 1 |

PARTS DIAGRAM



PARTS LIST

| | | | | | | | |
|-----|-----------------------------|---------------------------|-----|------|---|-----------------------------------|-------|
| B23 | Flange nut | M5 | 2 | 43 | Circuit breaker | Vary with generator power | 1 |
| B22 | Flange bolt | M10*40 | 6 | 42 | Key switch | 423A | 1 |
| B21 | Plain washer | 10 | 14 | 41 | Volt meter | MU-45(0-300V) | 1 |
| B20 | Hexagonal nut | M10 | 14 | 40 | control panel | | 1 |
| B19 | Plain washer | Big 12 | 8 | 39 | Fuel pipe | φ4.5*8.5 | 850mm |
| B18 | Clip | 2.5*30 | 4 | 38 | Clip for oil return line | LA170/78/86 | 2 |
| B17 | Flange nut | M6 | 2 | 37 | Air induced cover bush | LA178 | 4 |
| B16 | Buttfly nut | M6 | 2 | 36 | Air induced cover shock absorber | LA178 | 4 |
| B15 | Flange bolt | M6*12 | 6 | 35 | canopy | 5000S KQ | 1 |
| B14 | Toothed flange nut | 6 MFZn | 2 | 34 | Fuel level window components | | 1 |
| B13 | Flange bolt | M6*16 | 36 | 33 | pressure reducing valve cover key | MS720 | 1 |
| B12 | Spring washer | 8 | 4 | 32 | Tank rubber sleeve | | 1 |
| B11 | Flange bolt | M8*30 | 4 | 31 | Secondary muffler | LDG5000S KQ | 1 |
| B10 | Plain washer | Big 6 | 38 | 30 | A class muffler | LDG5000S KQ | 1 |
| B9 | Flange bolt | M8*12 | 4 | 29 | Fuel filter | LA170 | 1 |
| B8 | Flange bolt | M6*20 | 4 | 28 | Fuel pipe | φ7.5xφ13 | 220mm |
| B7 | Flange bolt | M8*20 | 4 | 27 | Clip for pipeline | LA170/78/86 | 4 |
| B6 | Flange bolt | M6*12 | 31 | 26 | Fuel tank | | 1 |
| B5 | Flange nut | M8 | 4 | 25 | Fuel filter cup | LA170/78/86 | 1 |
| B4 | Spring washer | 10 | 15 | 24 | Fuel tank cap | LDG3600S | 1 |
| B3 | Flange bolt | M5*16 | 5 | 23 | Fuel level indicator with screw | 120 | 1 |
| B2 | Hexagon socket head screw | M6*12 | 2 | 22 | Muffler mounted panel | LDG5000S KQ | 1 |
| B1 | Flange bolt | M8*25 | 4 | 21 | Ripple pipe comp | 5000S | 1 |
| | | | | 20 | Muffler gasket | LA186 | 4 |
| 67 | Alternator side side cover | 5000S KQ | 1 | 19 | Door lock component | 5000S KQ | 1 |
| 66 | AVR mount support | LDG5000S KQ | 1 | 18-6 | Battery bracket | LDG5000S | 1 |
| 65 | Oil baffle | | 1 | 18-5 | Fan case bracket | LDG5000S | 1 |
| 64 | Genset shock absorber | LDG3600S-03011 | 4 | 18-4 | Fan case body | LDG5000S | 1 |
| 63 | Commonality base | | 1 | 18-3 | Fan case cover | LDG5000S | 1 |
| 62 | Rubber wheel | *For KQ style canopy | 4 | 18-2 | Wind guide plate2 | LDG5000S | 1 |
| 61 | Soundproof underpan | 5000S Keqiang | 1 | 18-1 | Wind guide plate1 | LDG5000S | 1 |
| 60 | Engine side side cover | 5000S KQ | 1 | 17 | High-pressure tubing cushioning fixed block | | 2 |
| 59 | Air cleaner cover | LDG5000S | 1 | 16 | Drain plug bolt | LA170/178/186 | 1 |
| 58 | Air cleaner connecting pipe | external diameter φ58*500 | 1 | 15 | Drain connecting pipe | LDG5000S-01007 | 1 |
| 57 | Hose clamps | d60 | 2 | 14 | Seal washer | 16 | 2 |
| 56 | Battery rubber gasket | | 1 | 13 | Rotor bolt | Vary with alternator | 1 |
| 55 | Battery | Vary with generator | 1 | 12 | AVR | 5kW | 1 |
| 54 | Red battery wire | 500 | 1 | 11 | Stator bolt | M6x(Llength vary with alternator) | 4 |
| 53 | Red battery wire sleeve | Vary with battery | 1 | 10 | Plain washer for rotor bolt | 10.6*28*3 | 1 |
| 52 | Black battery wire | 650 | 1 | 9 | Wire connector | φ160-φ225 | 1 |
| 51 | Black battery wire sleeve | Vary with battery | 1 | 8 | Carbon brush assy | φ190 | 1 |
| 50 | Hook bolt | 2200E | 2 | 7 | Rear cover | Vary with alternator | 1 |
| 49 | Battery plate | LDG2200E-03003 | 1 | 6 | Alternator protective belt | Vary with alternator | 1 |
| 48 | Black DC connect | 107 | 1 | 5 | Rectifier regulator | 13.8V | 1 |
| 47 | Red DC connect | 107 | 1 | 4 | Stator assy | 4.2/4.5/5.0kW | 1 |
| 46 | Grounding bolt | M6*22 | 1 | 3 | Rotor assy | 4.2/4.5/5.0kW | 1 |
| 45 | Fuse holder assy | | 1 | 2 | Front cover | Vary with alternator | 1 |
| 44 | Socket | Vary with generator | 2 | 1 | Engine | LA186/LA186FA/LA188 | 1 |
| No | Description | Specification | Qty | No | Description | Specification | Qty |

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POWER EQUIPMENT