



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

<b>WPE TECHNICAL SUPPORT TEAM</b>
<b>44(0)1942 715 407</b>
<b>MODEL NUMBER</b>
<b>SERIAL NUMBER</b>
<b>DATE OF PURCHASE</b>
<b>PURCHASE LOCATION</b>

### ⚠ 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 1.5mm<sup>2</sup> cross section should not be longer than 50 metres; and for 2.5mm<sup>2</sup> 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.

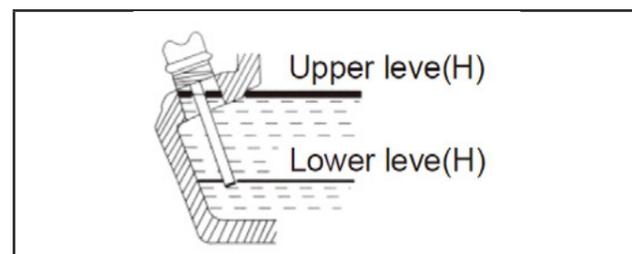
## PREPARATION BEFORE START

### 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  $45^{\circ}\text{C}$ .

### ⚠ 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**

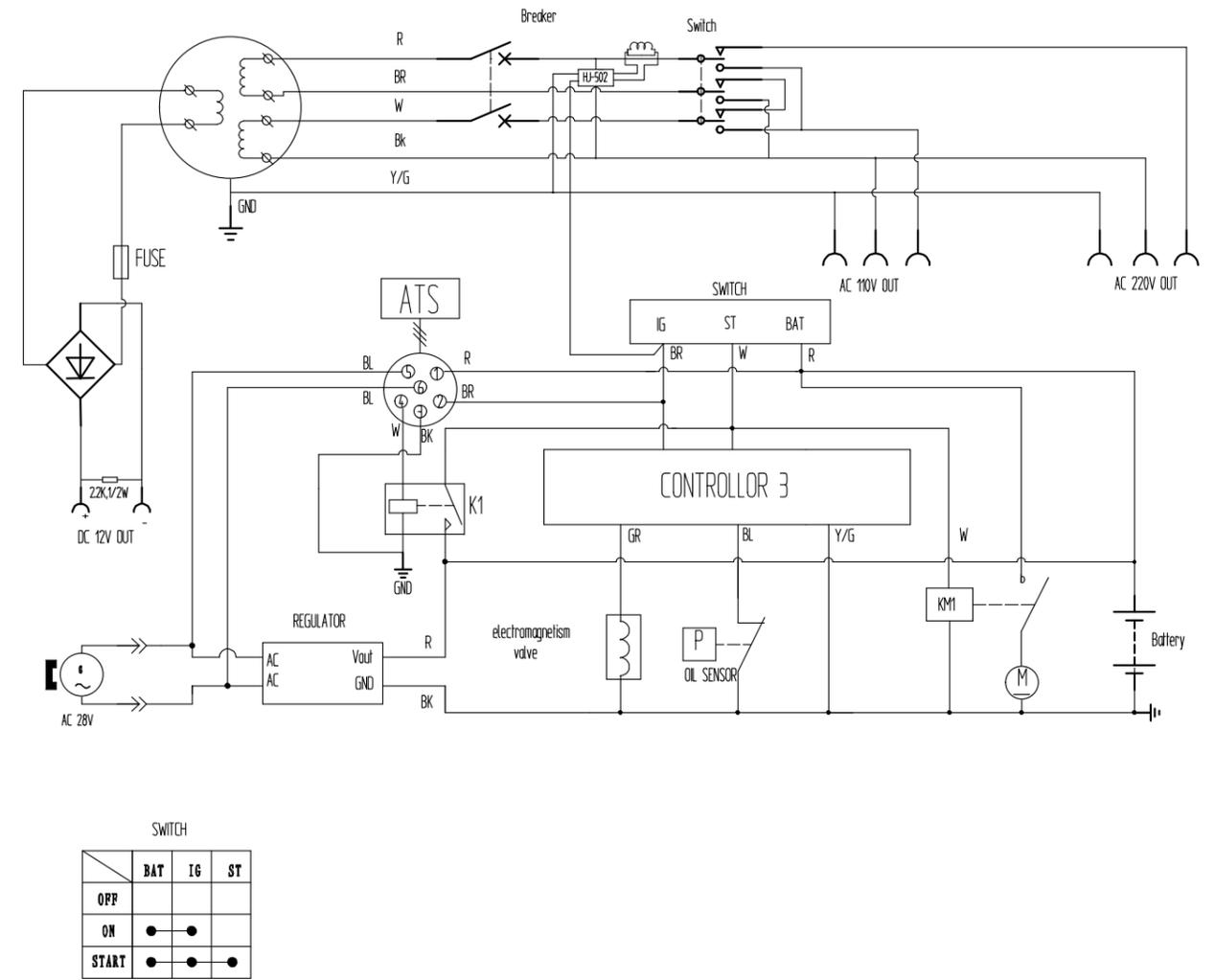
Problem	Cause	Solution
Engine will not start.	No fuel.	Add fuel.
	The switch is not at "ON" position	Turn it to "ON" position
	The high pressure fuel pump, injection nozzle cannot inject or the fuel amount is insufficient.	Remove the injection nozzle out and repair it or bleed the fuel injection system.
	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.

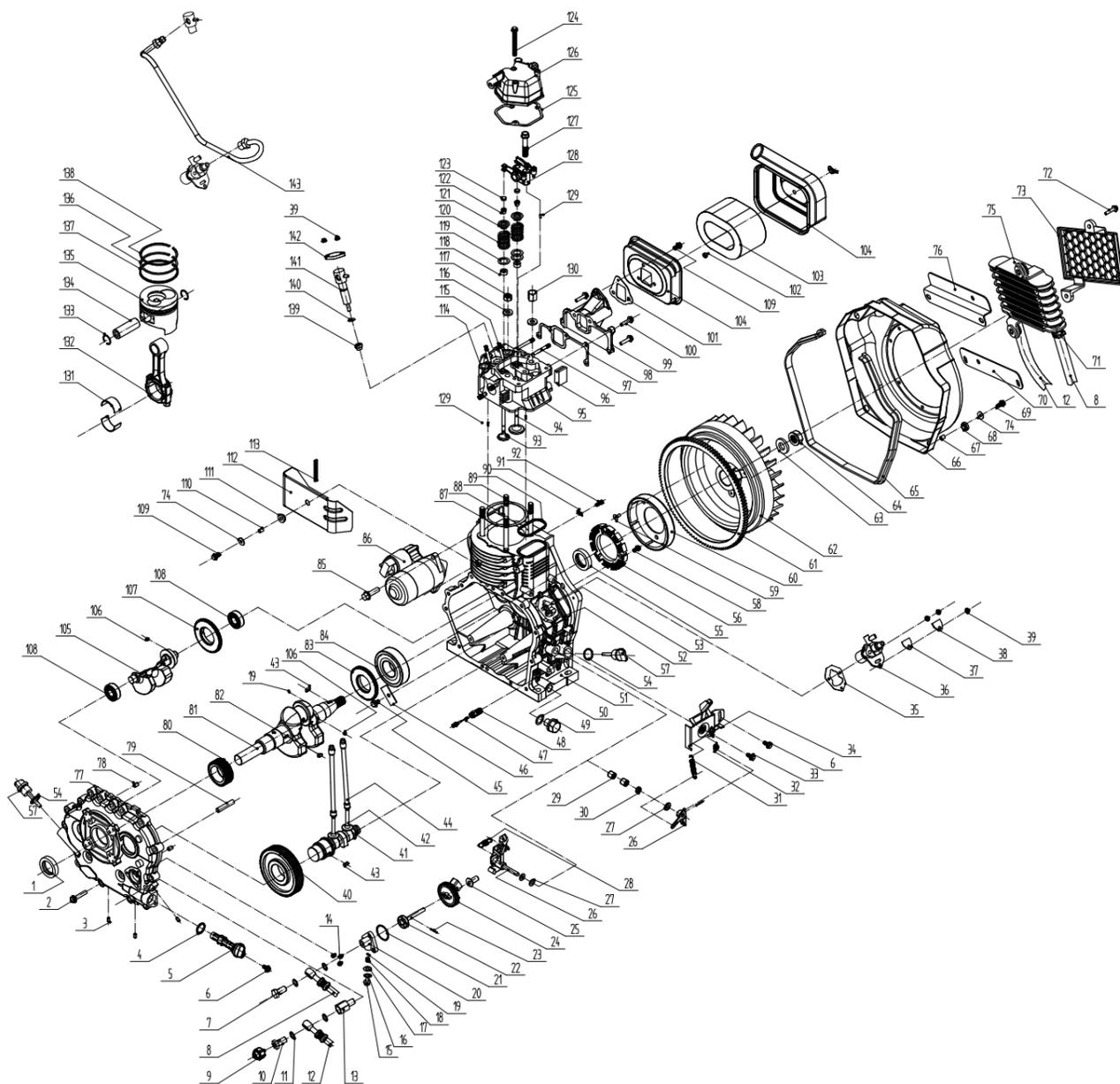
TECHNICAL SPECIFICATIONS

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

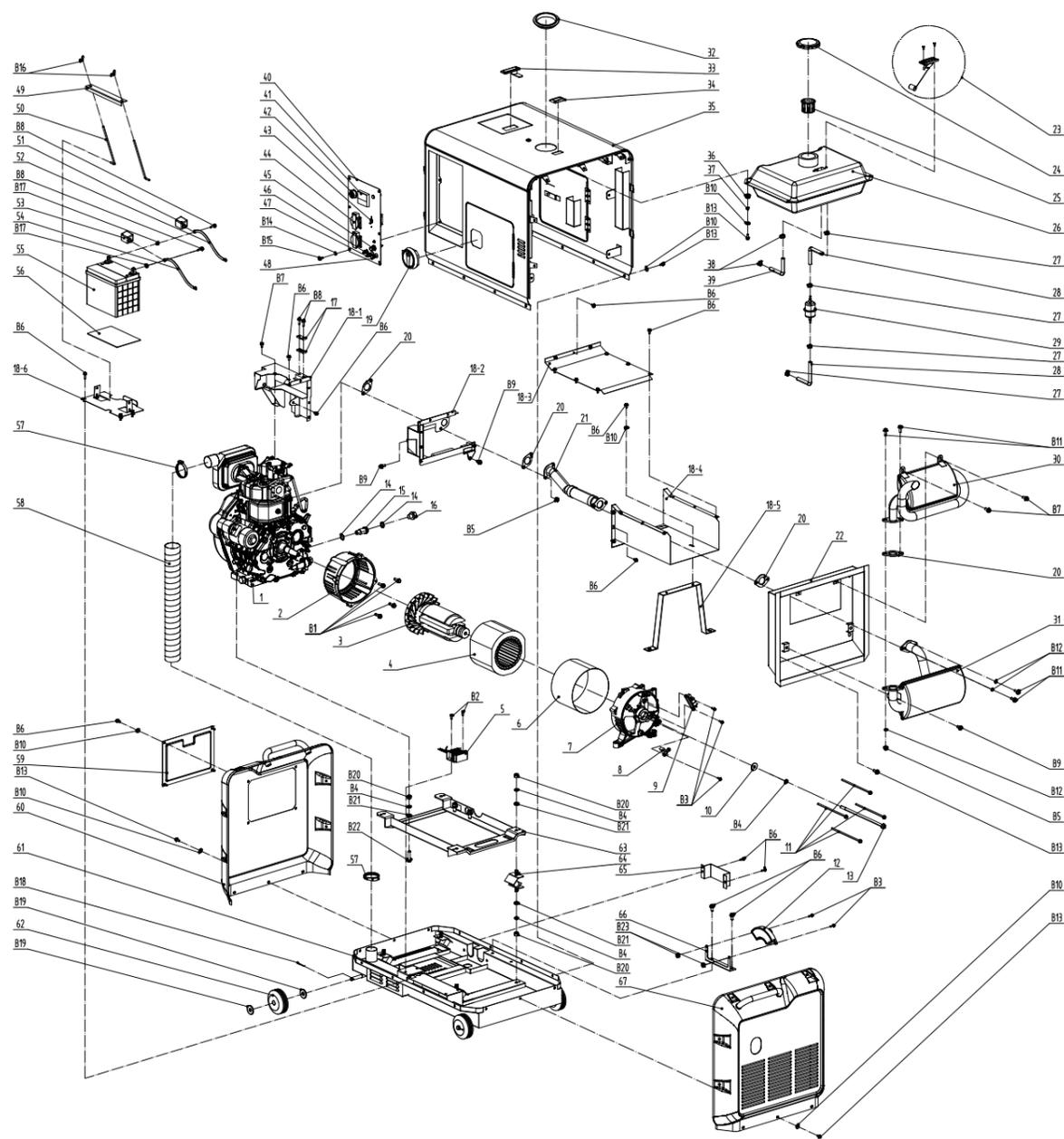


ENGINE PARTS LIST

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	2	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 seatplate	A170/78/86	1
104	Air cleaner case<low noise>	A186	1	37	Fuel injection pump seat 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	M6x7.5	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	3x8	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	2	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				

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

**WARRIOR**<sup>®</sup>  
**POWER EQUIPMENT**