

Owner's Manual



Full Power Output Panel

6500 WATT AIR-COOL DIESEL GENERATOR

SAVE THIS MANUAL FOR FUTURE REFERENCE

This manual provides information regarding the operation and maintenance of these products. We have made every effort to ensure the accuracy of the information in this manual. We reserve the right to change this product at any time without prior notice.

Please keep this manual available to all users during the entire life of the diesel generator.

Introduction

For correct operations, Please read this manual before using. This manual will keep your generator in best status and extend using life. If you have any suggestion or question, please contact our nearest dealer.

This manual state the general term of generator set. By way of the improvement of our products, the content of manual maybe different from the act. Please understand this point.

Please note the following items.



WARNING If operate not according to this manual, it will caused to hurt body seriously..



NOTICE If operate not according to this manual, it will be caused to hurt body and break the machine.

The diesel generator set will meet your requirement if correct operate it. Any actions against these instruction, could cause scald, fire and other serious accident. Therefore, we suggest again that you must read this manual carefully before using the diesel generator set.

SAFETY INSTRUCTION

Warning:

1. For avoid fire:

Don't inject fuel when the engine running.

Clean the fuel which outside the fuel tank, generator set must be apart from flammability products.

- Keep very good breezy, and keep running the generator set distances the building over 1M.
- When this generator not become cooler, don't put it in the house.

2. Avoid inbreathe exhaust gas.

The exhaust gas contain in CO, kind of this exhaust gas is harmful to your health.

3. Be carefully the scald.

When the generator set running or just running, the muffler and the engine body very hot. Don't osculate all of these parts.

4. get an electric shock, short circuit

For avoid get an electric shock or some short circuit, don't osculate the generator when it running use your wet hands.

- For avoid get an electric shock, please contact the earthing line.
- Don't put anything one the generator set before start the generator set.



NOTICE

- Most electric machine needed power bigger than normal power.
- Don't overtake the socket utmost.
- Don't contact the generator to home line, avoid broken your home electric machine and generator.

5. Batteries charge

When charge the batteries, please don't and far away smoke. And set at good breezy please.

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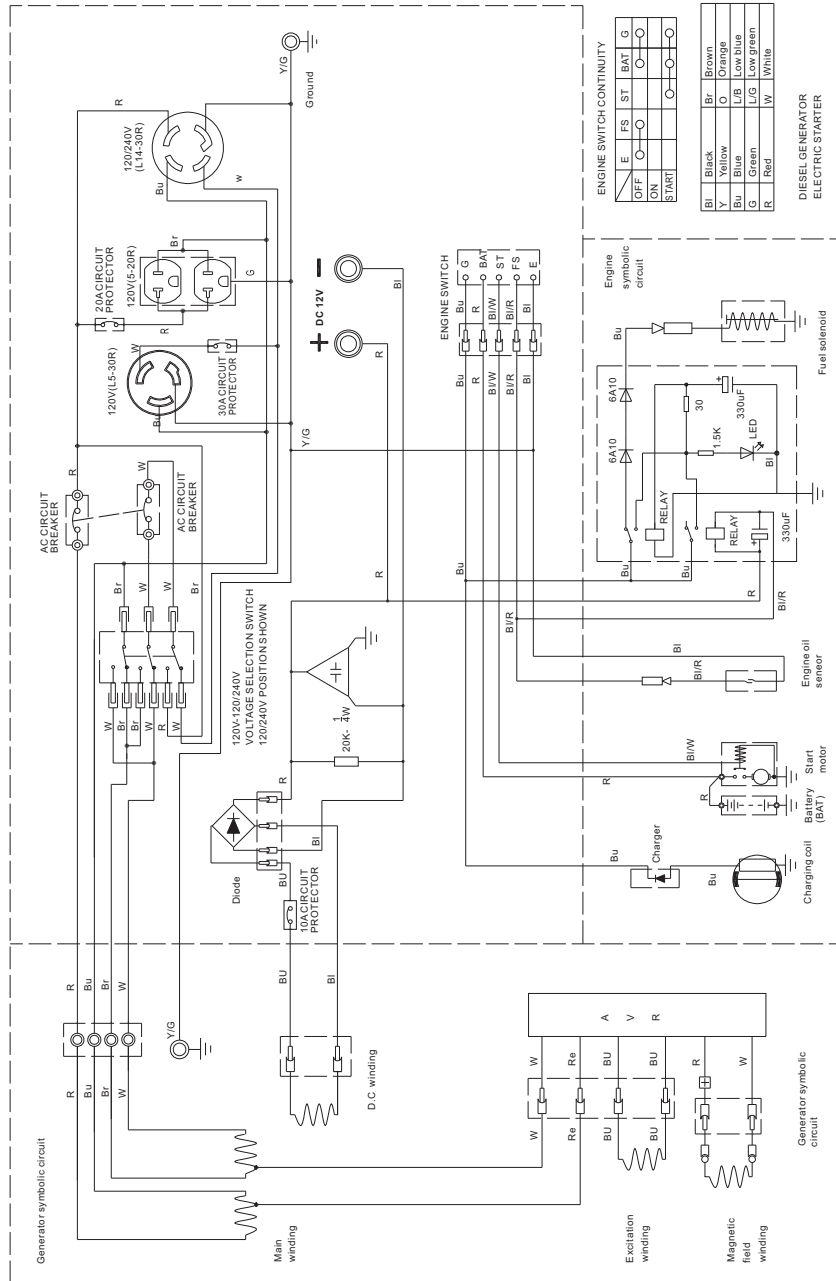
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1、 Main technology details and standard

1.1 Main technology details and standard

Item \ Model		YKU5000E	PDU6500E
Generator set	Rated frequency (Hz)	60	60
	Rated output (KW)	5.0	6.5
	Rated output (KW)	4.2	5.5
	Rated voltage (AC/V)	240/120	240/120
	Rated current (AC/A)	17.5/35	22.9/45.8
	Rated rotate speed (r/min)	3600	3600
	Phase	Single phase	
	Power factor(cos φ)	1	
	Excitation system	(AVR)	
	DC output	12V/8.3A	
	Working type	12hours	
	Weight (kg)	168	175
	Package:L×W×H)(mm)	880×560×830	950×560×800
Model	178FG	186FG	
Type	4 Stroke, Single Cylinder, Air Cool, Direct Injection Diesel Engine		
Bore×Strock (mm)	78×62	86×72	
Displacement (cc)	296	418	
Lubricate System	Pressure Splash Combined Type		
Lube Capacity (L)	1.1	1.65	
Starting Type	Electric Start		
Fuel	Diesel 0#(summer). 10#(winner)		

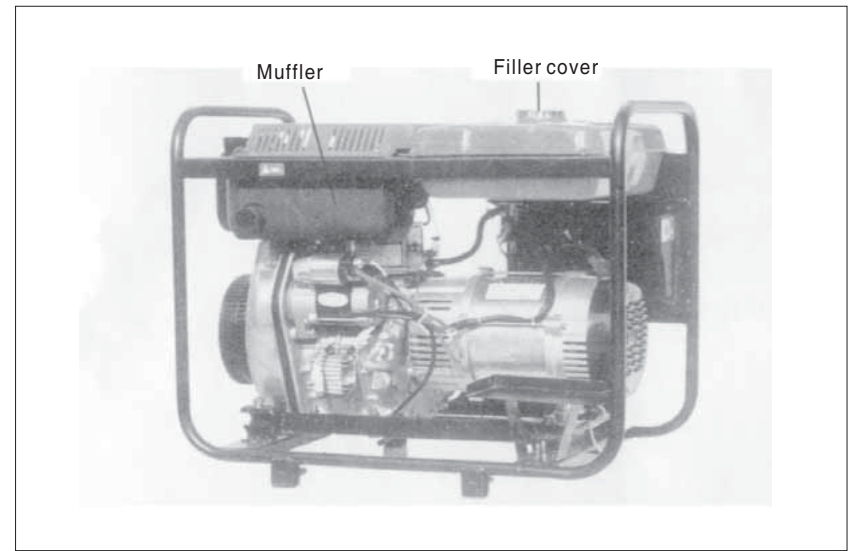
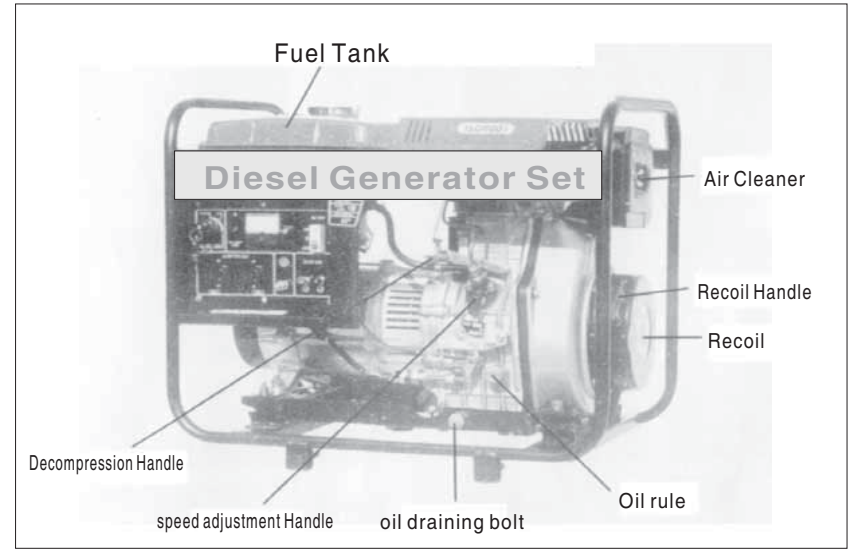
WIRING DIAGRAM



2

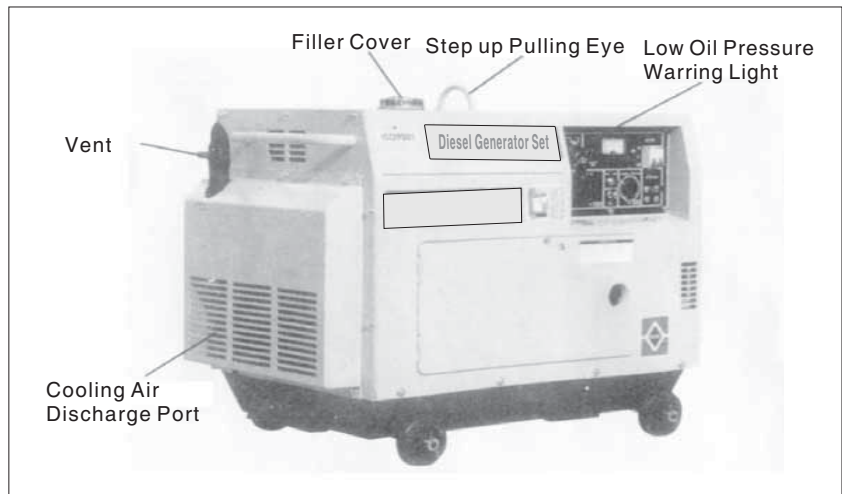
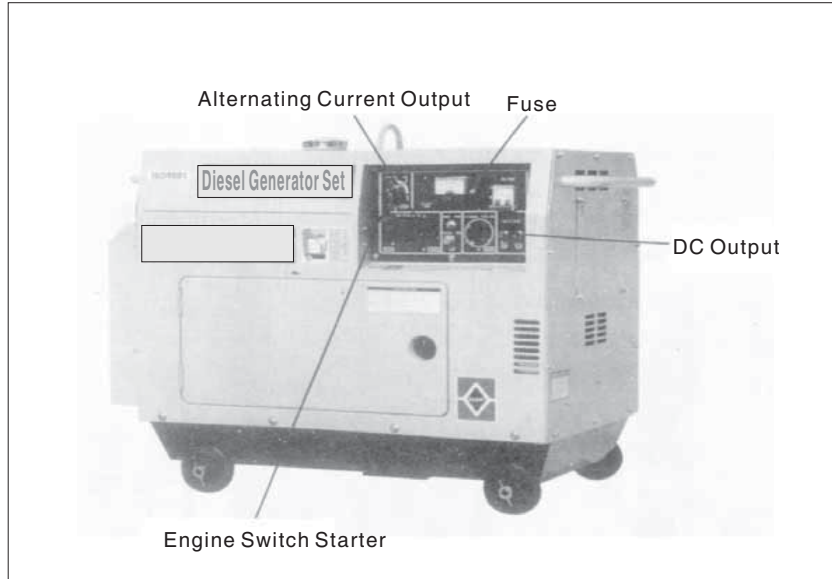
2、 Each several part name

2.1 CFESeries Diesel Generator Set Structure Formation Appearance

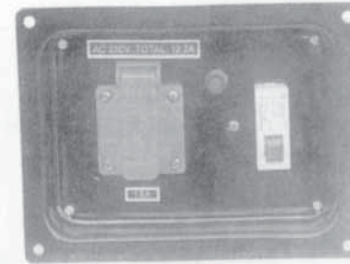


3

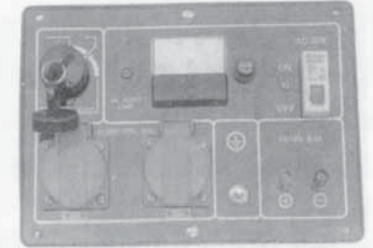
2.1 CL-1 Series Diesel Generator Set Structure Formation Appearance



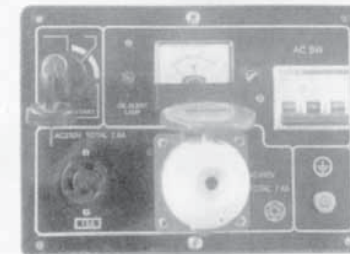
2.2 Control board



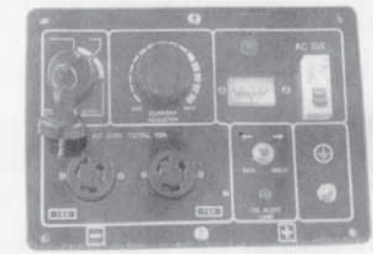
C Series control board



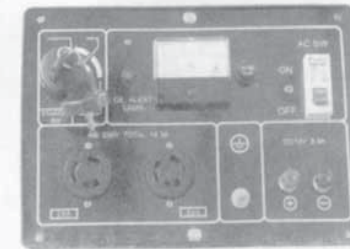
E Series Euro socket control board



E3 Series 3 phase control board



EW Welding control board



E Series normal control board



E Series double voltage American control board



New intelligentize control board

3、 The set-up service before start the machine

3. 1 The fuel's choose and use.

- Choose the fuel
Only can use the suit engine performance diesel.
- Do not put the water and dirty thing into the fuel
When draw out fuel from the fuel tank, be carefully that fuel can not interfuse any water and dirty things, avoid occur any fearful problem.
- Do not inject overfull fuel
Inject overfull fuel, it's very dangers. When inject the fuel don't inject fuel over the red line.



WARNING

- Stop the engine, must be stop it at good breezy place than add the fuel
- Don't smoking at the warehouse of fuel and when you adding the fuel.
- Don't inject overfull the fuel, after you inject the fuel must be close the filler cover.

3. 2Checking the engine oil.



WARNING

- Before you start the generator set, check the engine oil first make sure inject the engine oil enough.
- If not enough the engine oil the engine will broken, contrarily if inject it overfull the engine will running instability.



Attention:

CFE Series generator set we set a low oil pressure warning system, when the position of engine oil fall down to lowest line this system will stop the engine automaticly insure the engine will not broken.

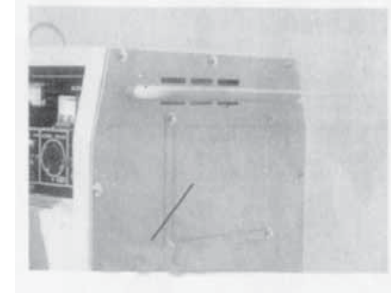
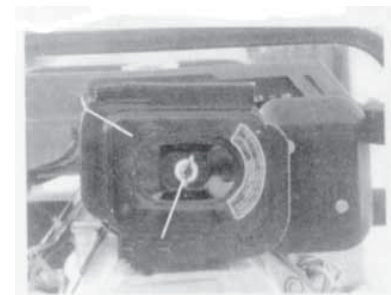
- Choose the adaptive engine oil use for the generator set to extend the machine life.

3. 3 Check the air cleaner

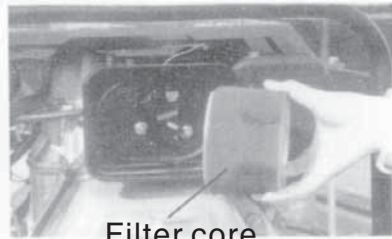


Notice:

- Don't wash the filter element.
- If the power output going down or exhaust gas colour difference before, please change the filter element.
- If there's no filter element, don't start the generator set.



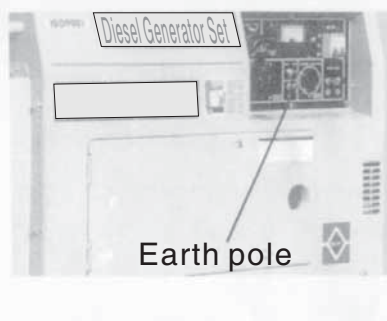
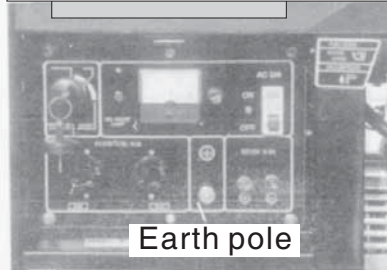
2. Set the air cleaner cover, tighten the butterfly nut.



3.4 Checking the generator.

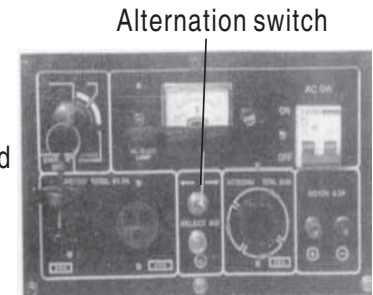
1. Turn off power switch, and break the load.

- Must turn off the power switch before starting.
- Earthing the generator set to avoid electrocute.



2. Using method of double voltage generator set

Set the voltage alternation switch to the right position for the voltage of load



⚠ Notice

- Before starting engine, turn off all the load. Otherwise it's very dangerous to start load emergently when starting engine.

3.5 How to open the cover of silent generator set.

1. Turn the handle in clockwise direction, then open the door for checking.



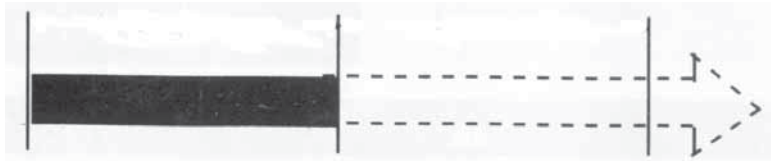
3. Turn off the butterfly nut, then open the cover of oil muzzle to check the muzzle.

3.6 Operation in new running period

The first 20 hours is the new running period, operate must obey the following items:

- Warming the engine for 5 minute while the first starting. Running the engine to warming status with low speed and no-load.

- Don't run with big load in new running period.
We suggest running with 50% load and 3000r/min in new running period.
- Changing the lubricant in scheduled time..
- After 20 hours of working, let the lubricant out completely when the engine is warm, and refuel new lubricant.
← About 1 month or 20 hours → ← each 3 months or 100 hours →



4.Starting generator set

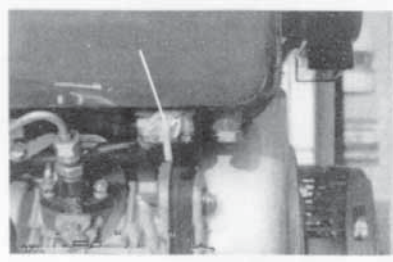
Warnin

- Don't keep tools or load on generator set.

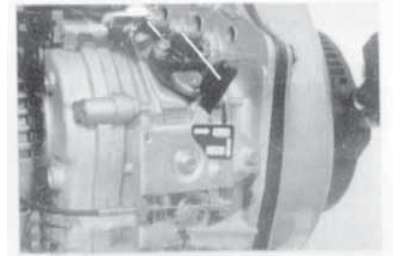
4.1 Recoil starting

Starting according to the following order:

- 1.Turn on the fuel switch.

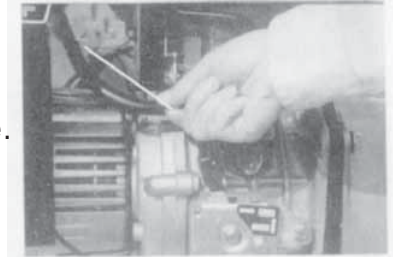


2. Turn the speed switch to "ON"



3. Start the recoil

- . Pull the handle until can't pull.
- . Press the decompress handle. The handle will be recover after starting.
- . Pull the recoil rapidly with two hand.



Notice

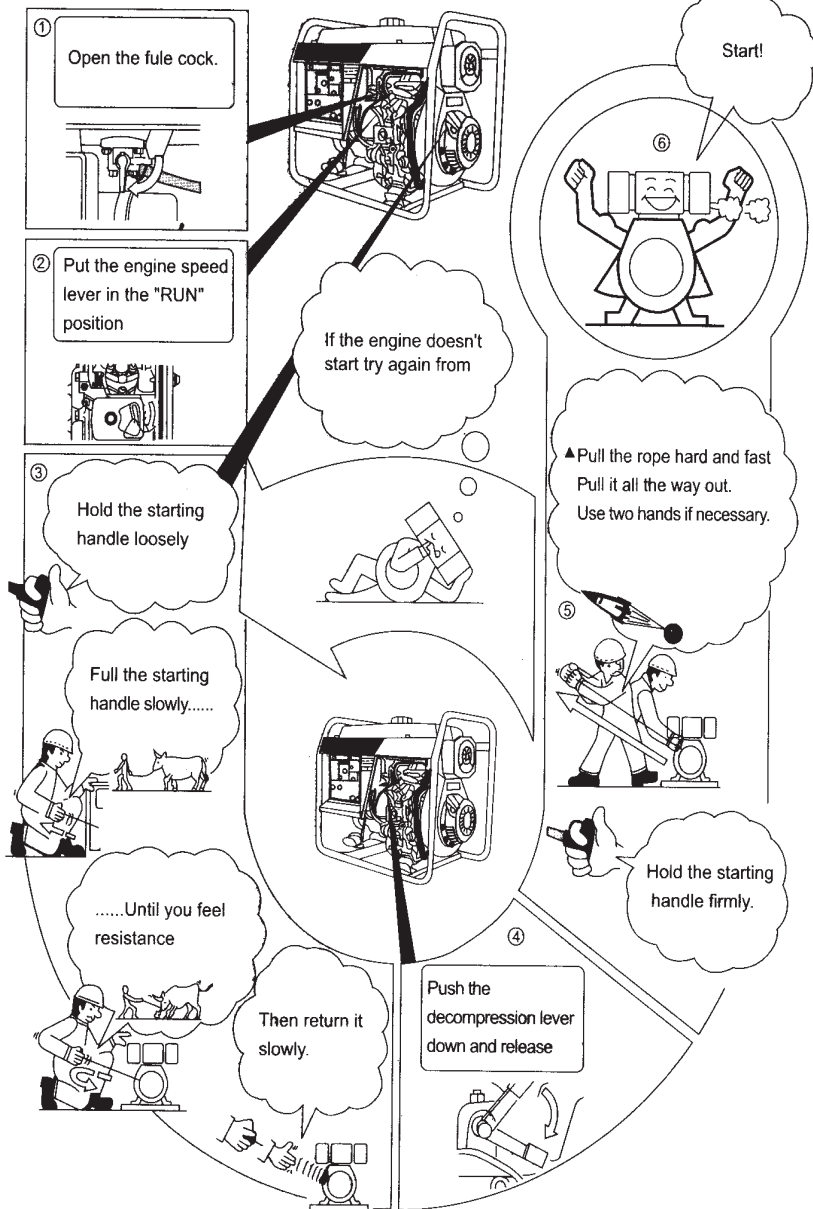
- . Don't let the recoil rebound to the engine, return it slowly.
- It's difficult to start in winter. Please turn off the nut under cylinder cover, then fill 2cc lubricant.

Notice

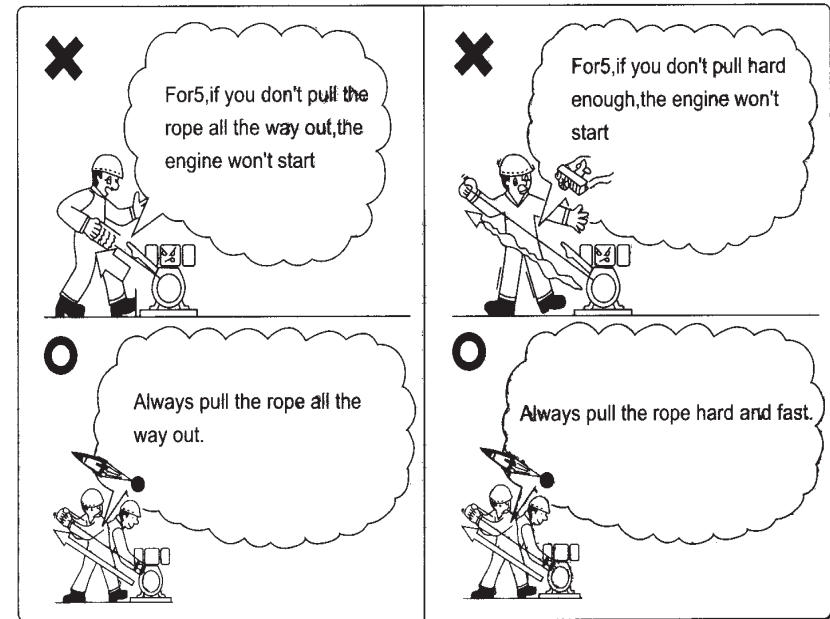
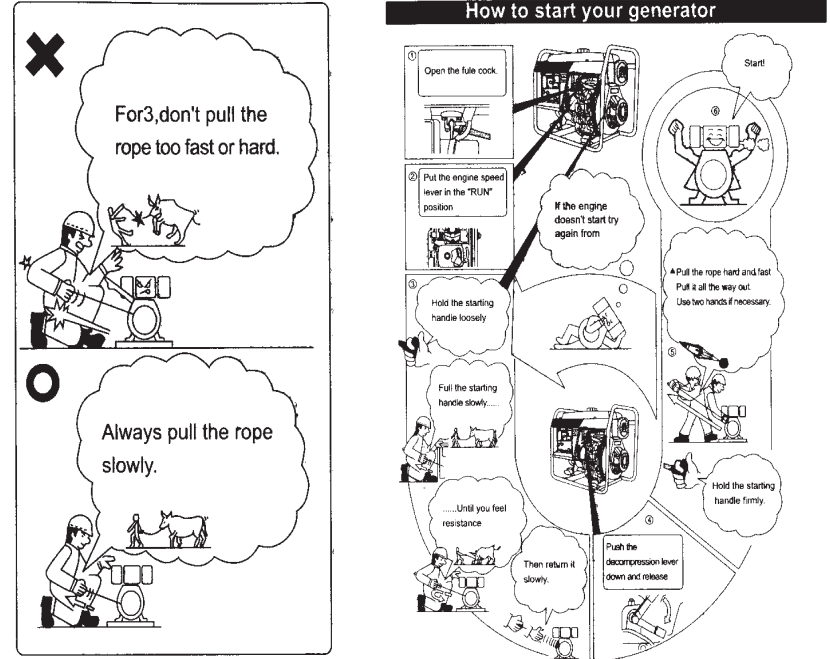
- Except refuel, the nut on the cylinder cover must be tighten, to avoid the rain and dust get into engine body and break the engine.

Starting proceeding

This starting sequence is only suitable for open frame type diesel generator recoil start.



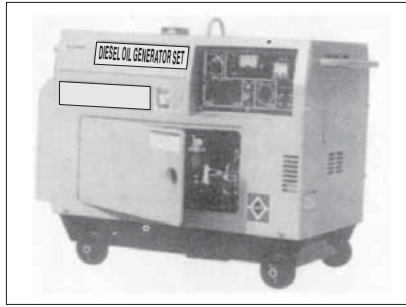
How to start your generator



4.2. Electric start

1. Starting: Check before starting is the same as the recoil start.

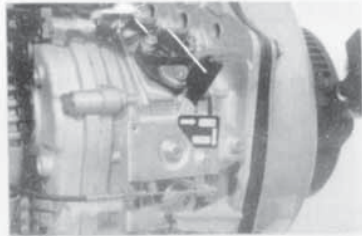
- Open the fuel switch



Timing handle of the engine

- Pulling the engine handle to the (running) position.

(Note: CLE generator series don't need this process)



The picture can display the condition of running.

- Pulling the start switch to the (start) position.

- After starting the engine, withdraw the hand from the start switch at once.



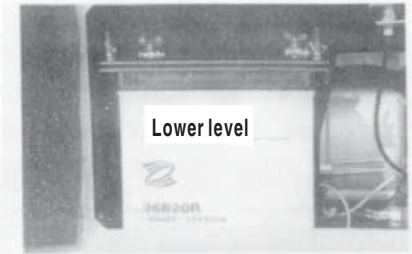
- If the starting motor cannot start after 10 seconds, then start it once again.

⚠ Notice

- Long-time operation of the starting motor will consume the battery and power, even breakdown the battery.
- When the engine is running, putting the start switch to the (OPEN) position.

2. Battery

Check electrolyte of the battery every month, If the electrolyte reduce to the lower level, adding the distilled water to the upper level.



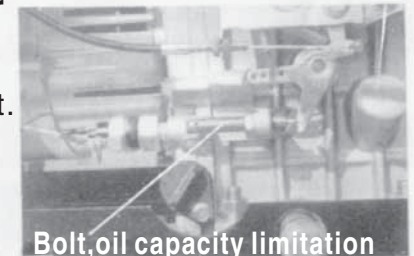
⚠ Notice:

- If the electrolyte is few, the engine will not start because of the lack-ness of the power. On the other hand, If the electrolyte is too much, it will erode the spare parts around it. The electrolyte should be kept between the upper and lower level.

5. Running the Generator set

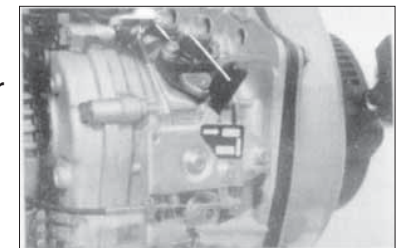
5.1 Running the Generator set

1. Non-loading generator set.



Bolt, oil capacity limitation

2. For the generator set which equipped with the low-pressure alarming system, checking whether the indication light is bright.



 **Notice**

■ If the oil pressure or the oil position is too low, low-pressure alarming system will brake the engine automatically. If not adding the engine oil, the engine cannot start. Please checking the oil position first, the adding the engine oil.

■ Don't loosen or adjust the speed of engine to limit the bolt ,or limit the bolt in fuel oil.

5.2 Check in the course of running

1. Check the generator set whether it has the deviant voice or vibrate.
2. Check the generator set whether it will ignite or stabilization of the running.
3. Check the exhausting colour whether it is black or too white.)

If aboved anyone situation has happed, please check the reason of the problem and contact with the agent at once.

 **Notice**

- If the engine is running just now, the muffler will become very hot, be careful and don't touch it.
- Don't add the fuel oil when the engine is running.

6.Loading

 **Notice**

If the engine is running just now, the muffler will become very hot, be careful and don't touch it.

- Don't use the light with the other loading synchronously.

6.1 AC application

1. You must raise the rotation speed of the generator set to the rated rotation speed, otherwise the AVR will excited very strongly. Long-time running will burn out the AVR.
2. Opening the air switch, observing the voltage meter, the voltage meter of the single-phase generator set should point to about 230V(50HZ),the voltage meter of the three-phase generator set should point to about 400V,then can add the loading.
3. When the double voltage generator set transform the voltage, pulling the air switch to the (CLOSE)position, otherwise the generator set and load will burn out.
4. Connect the every equipment to the generator set accoding to the order. If connect the load, you should start the high-power motor, after starting it successfully, then starting the low-power motor according to the order, don't start at the same time. If the way of operation is wrong, the generator set will lag and break suddenly, disconnect the load at once, close the generator switch, then checking the cause of the problem.
5. Three-phase generator set:
 - When running the generator set, pay attention to balance the three-phase voltage, If you find that the voltage is not balanceable, when bigger than 20 percent, stop the generator .then checking it.

 **Notice**

- If the over loading makes the AC air switch skip the gate, you should decrease the loading. After waiting for several minutes, then running it .

6.2 DC Application

1. DC junction box is only applicable to the battery of 12V.
2. Open the air switch when charging, the user can connect the junction box of 12v to the charge switch.
3. If using the automatic battery equipped with the lead, you must disconnect the lead of the cathode battery when charging.



Notice

- Connect the anode and cathode of the battery to the anode and cathode of the junction box, do not connect them in reverse, otherwise the generator set and battery will burn out.
- Don't let the anode and cathode of the junction box connect in reverse, otherwise the generator set will shatter.
- Don't let the anode and cathode of the battery touched each other, otherwise the battery will shatter.
- If charging for the large-capacity battery, the fuse of the current will be easy to burn out. The charging current should not bigger than 8A.
- Do not starting the generator set when it connect with the battery.
- Do not using the DC and AC output of 12V simultaneously.











Notice

- The battery will volatilize flammability gas, keep it away from the spark and cigarette. To prevent producing the spark around the battery, Must connect the winding lead to the battery, then to the generator set. When disconnect winding, should disconnect from the generator first. Charge must be at good ventilation.

Before charge, take off the battery cover first.

If the temperature of electrolyte exceed 45°C, stop charge.

6.3 Electric equipment, especially engine drive setting will produce bigger current when starting. The following chart will be the reference for user to connect the generator to these setting.

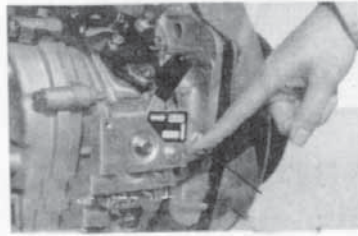
Type	Watt		Model	Example		
	Starting	Rated		Setting	Starting	Rated
Light Hot up setting	X1	X1	 Light  TV	 Light 100W	100VA (W)	100VA
Fluorescence light	X2	X1.5	 Fluorescence light	 40W Fluorescence light	80VA (W)	60VA (W)
Engine drive setting	X3~5	X2	 Refrigerator  Fanner	 Refrigerator 150W	450-750VA (W)	300VA

7. Stopping generator sets

1. Disconnect the load way from the Generator.

2. Closing the air switch.

3. Put the speed handle to the "operation" position, Running the engine with no-loading for 3 minutes. Do not stop the engine abruptly, otherwise the temperature will increase abnormally, the oil nozzle will block and the Generator will damage.



- Press the stop handle down forward.
- For Generator that starting by electricity, only turn the starting switch to the "OFF" position.
- Turn the fuel switch to the "S" position.
- Pull the recoil until feeling the press (This moment, the In and Ex Valve are both closing), leave the handle to this place can avoid the engine rust.

Warning

- When speed handle locate in the "STOP" position, the engine is still running, At this instance, turn the fuel switch to the "OFF" position or loose the high-pressure pipe nut. This can stop engine.
- Do not stop engine with decompress handle.
- The Generator is not allowed to stop with loading, should disconnect with loading first, then to stop.

8. Check and maintenance

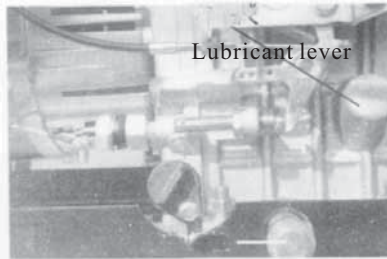
Check and maintenance regularly are very important for operation and durability of the generator. The following table indicates what is necessary and when to check the generator.

Warning

- The maintenance must be in good ventilation conditions. If the exhausted gas is gathered indoors, it is very harmful to people's health.

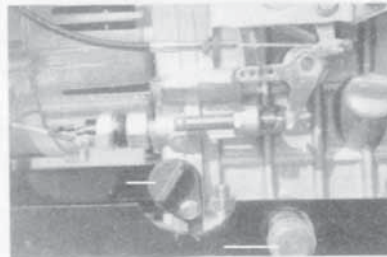
8.1 Changing lubricant

Turn off the lubricant cap, discharge all the lub. When engine is warm. Lub. Cap is at the engine bottom. Refuel new lub., Then tighten the cap.



8.2 Clean the lub. Filter.

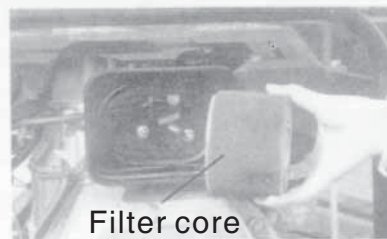
Clean time	Every 6 month or 500 hours
If necessary, replace it	



8.3 Changing the filter core of air cleaner

切勿用洗涤剂清洗滤芯。

Clean time	Every 6 month or 500 hours
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Notice

- Don't run the engine without filter core, or with broken filter core.

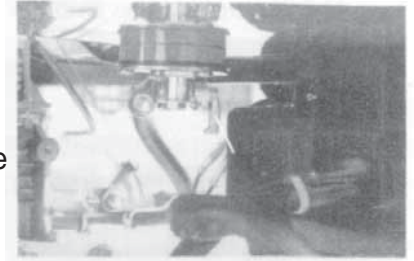
8.4 Cleaning or changing fuel filter

To keep the Max. output of engine, fuel filter must be cleaned and changed in scheduled time.

Clean time	Every 6 month or 500 hours
Chang time	Every year or 1000 hours

1. Let fuel out completely.

2. Turn down the small nut of fuel switch, and take out the filter from the refuel hole. Then, wash the filter with diesel.



3. Releasing the tight nut, bottom cover and eject pan, then clean the carbon. The above operation need special tool and technique, please contact dealer.



8.5 Tighten the nut of cylinder head

To tighten the nut need special tools, don't try casually. Please read the instruction of diesel engine.

8.6 Checking eject muzzle and pump

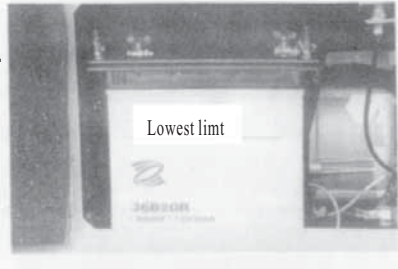
1. Adjust the clearance of inlet and outlet valve.
1. Running of inlet and outlet valve.
1. Changing the piston ring.

Warning

- Don't test the eject function when closing fir, otherwise the fuel will cause fire disaster. Don't let the nude skin in the fuel frog, which will hurt your body. Keep distance from the eject muzzle.

8.7 Checking and add electrolyte. and charging battery.

This machine using 12V battery. The power will be consume after continuous charging and discharging.



Check the electrolyte level before starting engine. If battery broken, change it. If the electrolyte level is too low, add some distilled water to the upper limit. Check electrolyte every month.



Warning

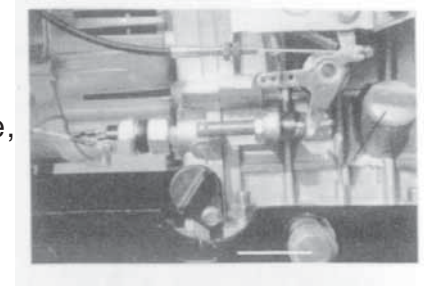
- Electrolytes contains vitriol, don't let eye, skins or clothes close it. If close it, must wash and see the doctor.
- Battery can boil off Hydrogen gas which is flammable. Strictly avoid spark near battery, especially when charging battery.

8.8 Check the carbon brush and slip ring

Check the carbon brush and slip ring frequently. If finding spark, adjust it in time.

9. Long storage

If generator set need long storage, please make the following preparing work.

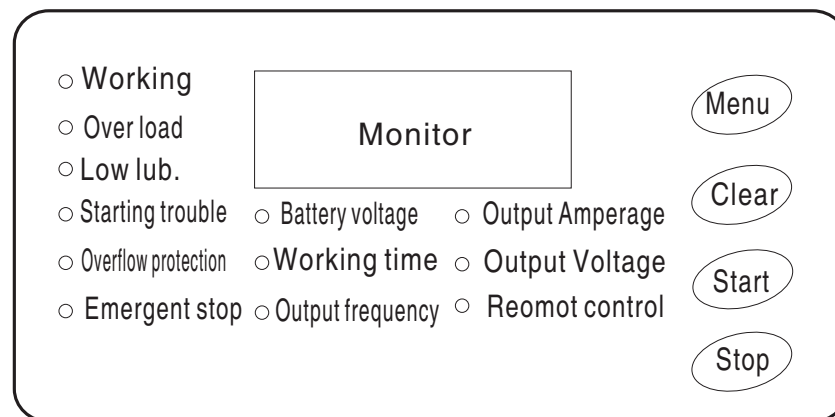


1. Run the engine for 3minute, then stop.
2. After stop the engine, let the lub. Completely our, and add new lub.
3. Turn down the nut of the cylinder cover, filled 2CC lub, Then turn on the nut.
4. ■ Recoil starting:
Press down the decompress handle (no-press position), press the handle and pull the recoil 2~3 times.
(Don't start engine)
 - Electric starting:
Press down the decompress handle (no-press position), turn the start switch to "ON" and run the engine 2~3 second.(But don't start engine)
5. Take out the decompress handle . pull the recoil until feeling resistance. (When the inlet and outlet valve are off to avoid engine rust)
6. Clean the generator and store it in dry place.

10. Eliminating Trouble

Trouble	Eliminate method
Fuel is not enough to start engine	Refuel
Fuel switch is turned "ON"	Turn on
Eject pump and muzzle can't eject oil or enough oil	Knocked down the eject muzzle, and repair it
Speed control hand is not in "ON" position	Turn on
Check the lub. Level	Lub. must be between the upper and down limit
Dirty on eject muzzle	Wash eject muzzle
Pull recoil not rapidly with big strength	Pull it according to the striction of engine starting
No electric in battery	Charging battery or replace
Main switch is off	Turn on
Carbon brush broken	Replace it
Socket is bad osculatory	Adjust the socket

11. Introduction of intellictive control pannel



Function:

Menu: Shift the content of screen, including battery voltage, working time, output frequency, output voltage and output amperage.

Clear: Stop all kind of trouble indicator light or alert.

Start: Starting generator set

Stop: Stop generator set

Battery voltage: The voltage of battery

Working time: The total working time of generator set.

Output frequency: The frequency of generator

Output amperage: The amperage of generator

Output voltage: The voltage of generator

Remote control: Indicate if the generator is remote control or not.

Working: Indicate if the power of generator is normal

Over load: Indicate the over load of generator, which will cause engin self-stop.

Low lub.: Lubricant is low, which will cause engin self-stop.

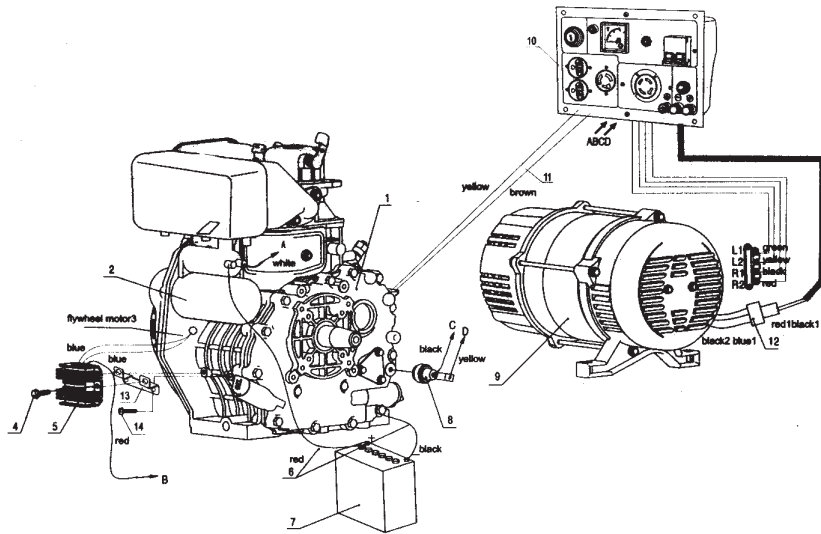
Starting trouble: Starting engine is not successfully/

Overflow protection: Frequency is not normal, which will cause engine self stop.

Emergent stop: Indicate emergent stop..

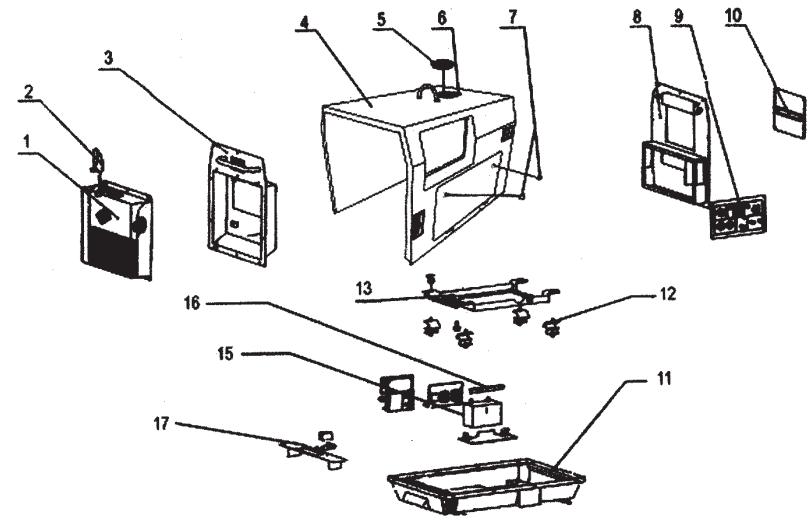
12. Chapter 5 part listings

Overall view of engine generator assembly



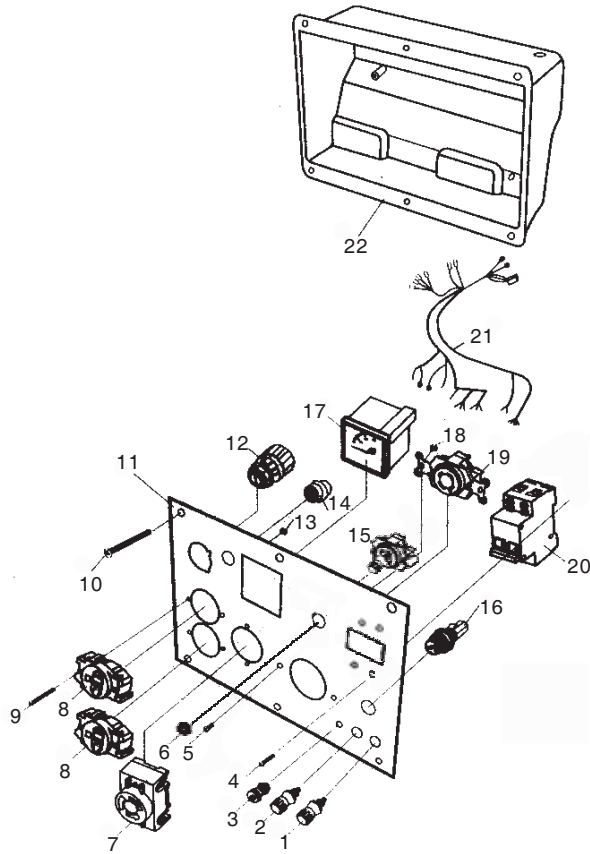
Number	Part Description	Quantity	Part Number
1	AT series diesel engine	1	4LN 1/6LN 1
2	Starter Motor	1	4LN 2/6LN 2
3	Flywheel generator	1	4LN 3/6LN 3
4	Bolt	2	4LN 4/6LN 4
5	Voltage Regulator	1	4LN 5/6LN 5
6	Battery Cable(red,black)	2	4LN 6/6LN 6
7	Battery	1	4LN 7/6LN 7
8	Oil level sensor	1	4LN 8/6LN 8
9	Generator	1	4LN 9/6LN 9
10	Output panel assembly	1	4LN 10/6LN 10
11	Throttle cable	2	4LN 11/6LN 11
12	Connector assembly	1	4LN 12/6LN 12
13	Voltage Regulator Bracket	1	4LN 15/6LN 15
14	Bolt	1	4LN 16/6LN 16

Exploded view of frame assembly



Number	Part Description	Quantity	Part Number
1	Muffler cover plate	1	4LN 17/6LN 17
2	Muffler elbow	1	4LN 18/6LN 18
3	Left outer cover	1	4LN 19/6LN 19
4	Fuel gauge	1	4LN 21/6LN 21
5	Fuel tank sleeve	1	4LN 22/6LN 22
6	Main cover	1	4LN 23/6LN 23
7	Door knob	1	4LN 24/6LN 24
8	Right outer cover	1	4LN 27/6LN 27
9	Output panel assembly	1	4LN 28/6LN 28
10	Air cleaner cover	1	4LN 29/6LN 29
11	Lower Chassis	1	4LN 30/6LN 30
12	Engine tray mounts	4	4LN 31/6LN 31
13	Engine/Generator tray	1	4LN 32/6LN 32
14	Wheels	4	4LN 33/6LN 33
15	Battery	1	4LN 34/6LN 34
16	Battery tie down	1	4LN 35/6LN 35
17	Long cover plate	1	4LN 36/6LN 36

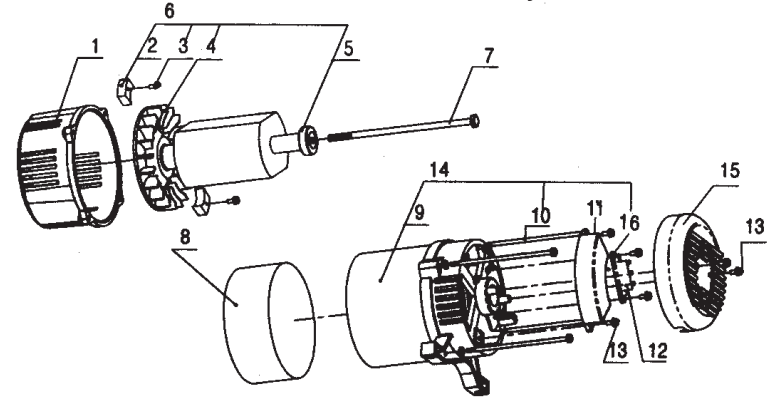
Generator head assembly



Number	Part Description	Quantity	Part Number
1	Positive DC port	1	4LN 37/6LN 37
2	Negative DC port	1	4LN 38/6LN 38
3	Grounded bolt	1	4LN 39/6LN 39
4	Bolt	4	4LN 40/6LN 40
5	Bolt	4	4LN 43/6LN 43
6	Large Nut	1	4LN 41/6LN 41
7	120V Socket (L5-30R)	1	4LN 45/6LN 45
8	120V Socket (5-20R)	1	4LN 46/6LN 46
9	Bolt	2	4LN 47/6LN 47
10	Electric panel bolt	6	4LN 48/6LN 48
11	Electric Panel	1	4LN 49/6LN 49
12	Starter switch	1	4LN 50/6LN 50
13	Large nut	2	4LN 51/6LN 51

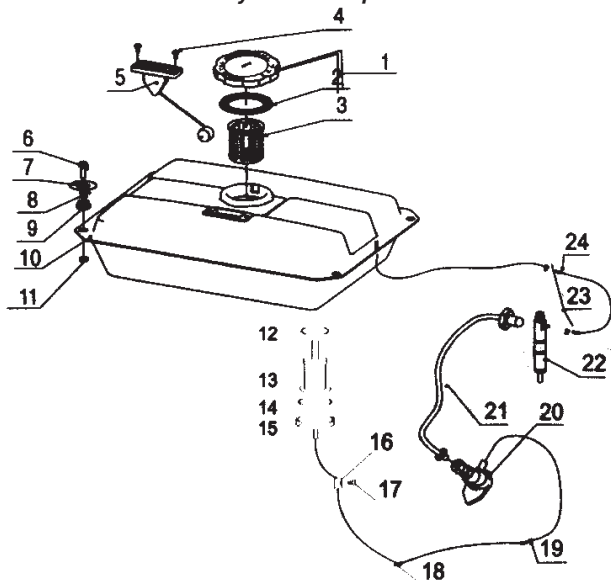
Number	Part Description	Quantity	Part Number
14	Oil alert lamp	1	4LN 52/6LN 52
15	Voltage selection switch	1	4LN 53/6LN 53
16	DC protector	1	4LN 55/6LN 55
17	Voltmeter	1	4LN 56/6LN 56
18	Nut	4	4LN 57/6LN 57
19	120/240V Socket (L14-30R)	1	4LN 58/6LN 58
20	Circuit Breaker	2	4LN 61/6LN 61
21	Wiring harness	1	4LN 62/6LN 62
22	Electrical box	1	4LN 63/6LN 63

Generator head assembly



Number	Part Description	Quantity	Part Number
1	Front end cover	1	4LN 64/6LN 64
2	Diode	2	4LN 65/6LN 65
3	M4x8 Bolt	2	4LN 66/6LN 66
4	Fan Blade	1	4LN 67/6LN 67
5	Bearing	1	4LN 68/6LN 68
6	Rotor Unit	1	4LN 69/6LN 69
7	Center bolt	1	4LN 70/6LN 70
8	Motor cover	1	4LN 71/6LN 71
9	Stator	1	4LN 72/6LN 72
10	Long bolt	4	4LN 73/6LN 73
11	Voltage regulator	1	4LN 74/6LN 74
12	Wiring Seat	1	4LN 75/6LN 75
13	M5 x 15 Bolt	8	4LN 76/6LN 76
14	Stator Unit	1	4LN 77/6LN 77
15	Dust Cover	1	4LN 78/6LN 78
16	Brush assy.	1	4LN 79/6LN 79

Fuel system components



Number	Part Description	Quantity	Part Number
1	Fuel Cap	1	4LN 79/6LN 79
2	Seal	1	4LN 80/6LN 80
3	Filtering cup	1	4LN 81/6LN 81
4	M5 x 10 screw	2	4LN 82/6LN 82
5	Fuel lever indicator	1	4LN 83/6LN 83
6	M6 x 25 Bolt	4	4LN 84/6LN 84
7	Large flat washer 6	4	4LN 85/6LN 85
8	Fuel tank lining	4	4LN 86/6LN 86
9	Shock absorbing gasket	4	4LN 87/6LN 87
10	Fuel tank	1	4LN 88/6LN 88
11	M6 Nut	4	4LN 89/6LN 89
12	O ring seal	1	4LN 90/6LN 90
13	Fuel tank filter	1	4LN 91/6LN 91
14	O ring gasket	1	4LN 92/6LN92
15	Fuel filter cover	1	4LN 93/6LN 93
16	Cover	1	4LN 94/6LN 94
17	Wing nut	1	4LN 95/6LN 95
18	Fuel line	2	4LN 96/6LN 96
19	Fuel inlet pipe	1	4LN 97/6LN 97
20	High pressure fuel pump	1	4LN 98/6LN 98
21	High pressure fuel pipe	1	4LN 99/6LN 99
22	Fuel injector	1	4LN 100/6LN 100
23	Overfill tube	2	4LN 101/6LN 101
24	Fuel overfill pipe	1	4LN 102/6LN 102