



WARRIOR GENERATORS USER MANUAL



LDG12S & LDG12S3

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1. Safety Instructions

Notes: Please read this manual carefully and make sure you fully understand, to avoid serious damage to user or product.

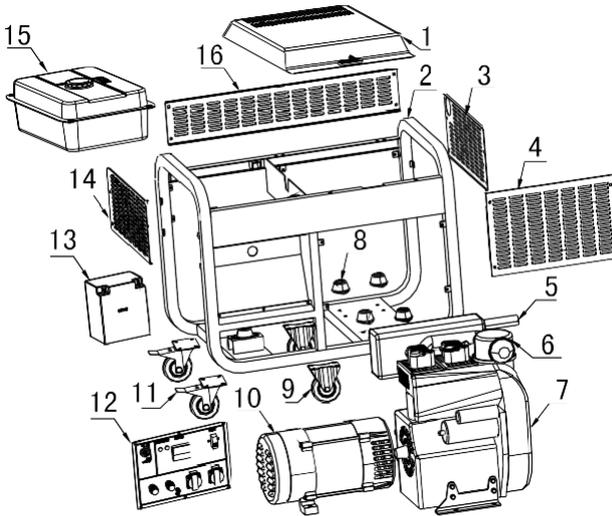
- Careful inspection required before starting generator each time.
- In order to prevent fire disaster and keep the generator set in a well ventilation area, please keep the generator set at least 1 metre from any objects. ENSURE generator set is as far away as possible from flammable substances.
- Keep kids and pets far away from running generator set to prevent serious injury.
- Make sure a clear SOP is in place and forbid any person who are not trained in operating generator set.
- Make sure adding fuel under well ventilation condition while the generator set is shut down and isolated. Diesel Fuel is combustibile and can ignite.
- Do not overfill the fuel tank, fill to recommended level on gauge.
- Make sure the fuel cap is tightly secured.
- If any fuel spills, must clean before starting the generator and DO NOT start generator until area is dry.
- Make sure there are no naked flames such as cigarettes, matches or flames where the generator is being re-fueled or fuel storage.
- Diesel engines produce toxic carbon monoxide exhaust fumes, do not breath exhaust fumes. Never operate unit indoors, enclosed areas or inadequate ventilated areas. OUTDOOR use only.
- Operate the unit on stable ground to prevent accidents.
- The exhaust and muffler is very hot when in operation, even after use, DO NOT touch the engine or muffler while they are still hot. To avoid fire hazard or burns, leave generator to completely cool down.

2. Specifications

Model		DG12(Open frame)		DG12S(Silent)		
		DG12	DG12-3	DG12S	DG12S-3	
Engine	Engine model	290F				
	Type	Air cooled, 4-stroke, Twin-cylinder				
	Bore	mm	90			
	Speed	rpm	3000/3600			
	Max output	hp	20			
	Starting system	Electric start				
Generator	Type	Brush/Brushless, AC single phase	Brush, AC three phase	Brush/Brushless, AC single phase	Brush, AC three phase	
	Frequency	Hz	50/60			
	Voltage	V	110,115,120, 220,230,240, 110/220,115/230, 120/240	220/380 230/400	110,115,120, 220,230,240, 110/220,115/230, 120/240	220/380 230/400
	Rated output	KVA	10/10	12.5/12.5	10/10	12.5/12.5
	Max output	KVA	11/11	13.75/13.75	11/11	13.75/13.75
	Power factor		1.0	0.8	1.0	0.8
	Fuel tank capacity	L	25	25	60	60
	Duration of full	h	≤5.5/5.0		≤12/11.5	
	Fuel consumption g/kWh		≤350			
	Size (LxWxH)	mm	910x578x668		1160x675x945	
Net weight	kg	170	174	295	300	

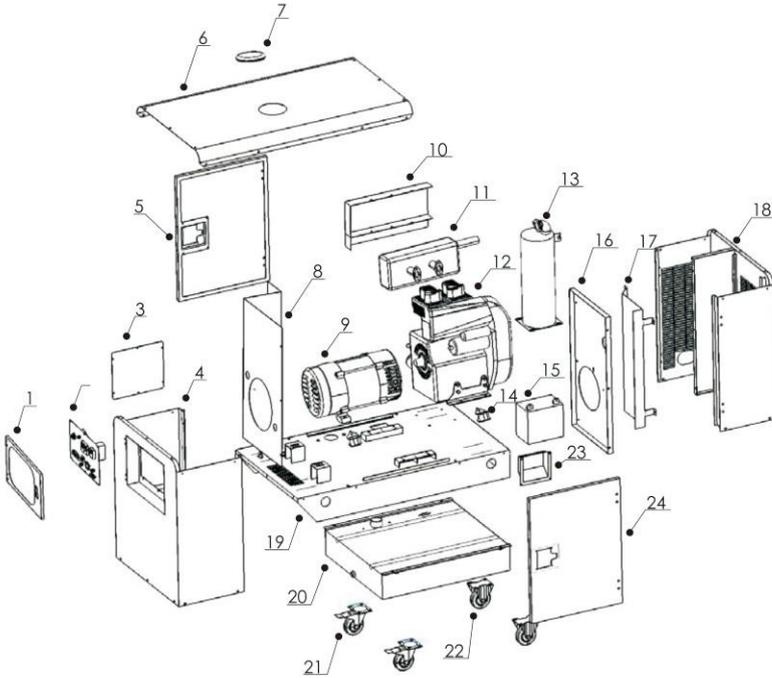
3. Generator Set Assembly Components

DG12 Components



Item	Description	Quantity
1	Top cover	1
2	Frame	1
3	Engine side cover	1
4	Front cover	1
5	Muffler assy	1
6	Air cleaner assy	1
7	Engine	1
8	Shock absorber	6
9	Lock wheel	2
10	Alternator	1
11	Wheel	2
12	Control panel	1
13	Battery	1
14	Motor side cover	1
15	Fuel tank	1
16	Back cover	1

DG12S Components



Item	Description	Quantity
1	Control gate	1
2	Control panel	1
3	Battery boards	1
4	Front cover	1
5	Left door	1
6	Upper plate	1
7	Rubbe rcover	1
8	Alternator clapboard	1
9	Alternator	1
10	Muffler heat insulation cover	1
11	Muffler assy I	1
12	Engine	1

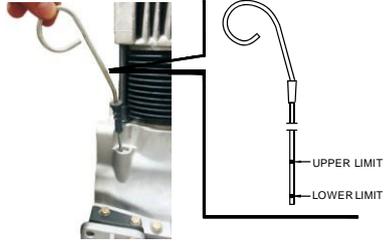
Item	Description	Quantity
13	Muffler assyII	1
14	Shock absorber	6
15	Battery	1
16	Inner cover	1
17	Air cover	1
18	Back cover	1
19	Bottom seat	1
20	Fuel tank	1
21	Wheel	2
22	Lock wheel	2
23	Door lock cover	2
24	Right door	1

4. Inspection Before Operation DG12 Check Before Operation

1. Oil level

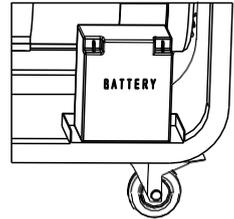
Notice: Check oil level before operation each time.

- ① Opening lock button, and then raise upper cover.
- ② Loosen oil dipstick, clean it with cloth, and then insert into filter neck (do not screw). Add engine oil level if it below the lower limit (includes lower limit) when take out, the ways of adding oil as below.(7.1. ①), Finally, install and plug oil gauge.



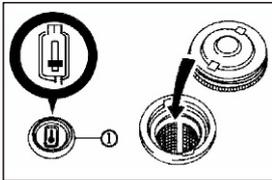
Notice: DO NOT run generator with low oil level or below Minimum, this will cause generator engine parts to damage.

- ③ Check any damage of the battery, if damaged, please replace battery.

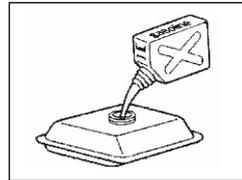


2. Fuel level

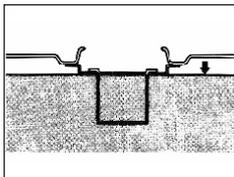
- ① Open the generator cover, unscrew the fuel tank cap.



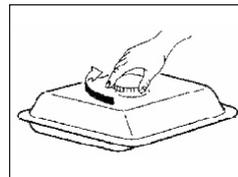
- ② Check fuel level, if it is very low, add the fuel.



- ③ Filling the fuel to the fuel filter shoulder.



- ④ Screw the fuel tank cap well, fit the generator cover.



DG12S Check Before Operation

1. Oil level

Notice: Check oil level before operation each time.

- ① Open right door, You will see the oil dip stick.
- ② Loosen oil dipstick, remove clean it with cloth, and then insert into filter neck (do not screw). Add engine oil if it is below the minimum level, ways of adding oil as below in (7.1.①), Finally, install and plug oil cap.



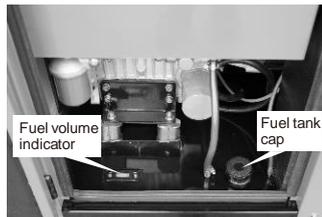
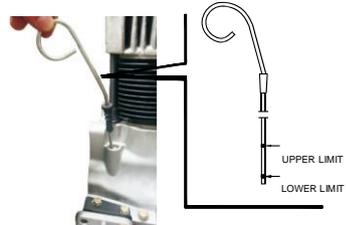
Notice: DO NOT run generator with low oil level or below Minimum, this will cause generator engine parts to damage.

2. Fuel level

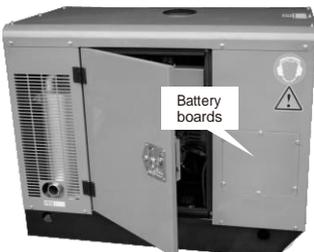
Caution: Please refuel in a well ventilated area, make sure there is NO cigarettes, naked flames or sparks when refuel.

- ① Open left door, check the fuel level indicator.

If fuel level is low, unscrew the tank cap, fill the fuel through fuel filter. After filling fuel, screw back the tank cap.

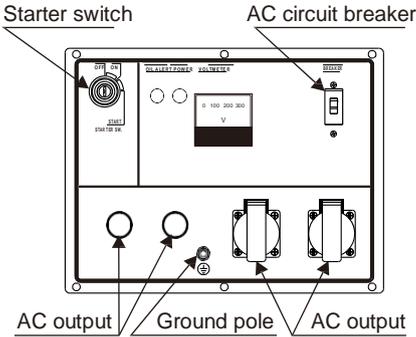


- ② If generator won't operate for a period time, drain remaining fuel through the discharge hole in the bottom of fuel tank (located in the bottom of generator below panel).
- ③ Check any damage of the battery, if damaged, please replace battery.

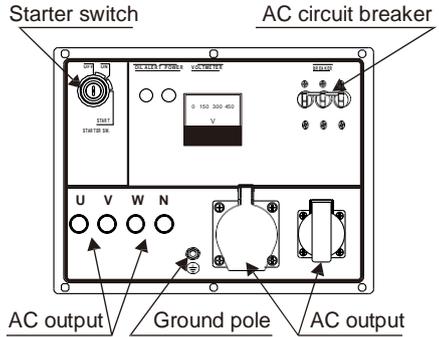


5. Operation

Single Phase Control Panel



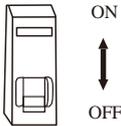
Three Phase Control Panel



(1) Checking before operation

Turn the AC circuit breaker switch to “OFF” position, To protect your personal security, make sure the generator is grounded recommended 200mm earth rod.

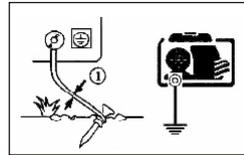
BREAKER



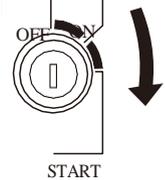
(2) Starting generator

Electric starting

Turn the starting key at “start” position (no more than 8 seconds), remove your hand from the key as soon as the engine starts and let the key return automatically to initial position. If the starting motor doesn't start, please wait for about 30 seconds before attempting to start again.



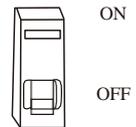
STARTER SW



(3) AC application

- ① In accordance with the actual situation to connect the load through the load terminals or wiring socket.
- ② Connect AC circuit breaker, the genset begin to offer power.

BREAKER

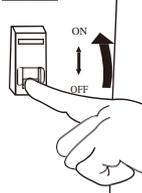


6. Stopping Generator

Caution: DO NOT stop the generator when it's loaded. it will damage the generator.

- ① Turn off AC breaker
Turn the breaker switch to “OFF” position.
- ② Turn off starter switch
Turn the key to “OFF” position.

BREAKER



STARTER SW



7. Maintenance and Remedy of Generator Set

Notice: Proper maintenance is not only the basis of safe, economical and easy way of generator operation, but also helpful to reduce the air pollution.

Warning: If the maintenance instructions are not followed properly, it may cause serious personal injury.

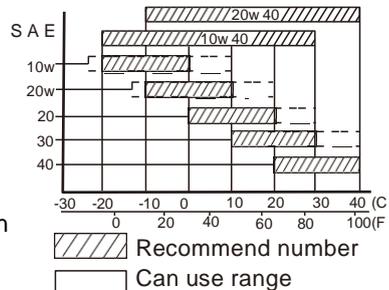
Maintenance Schedule

Maintain period Item month working hours		Every time use	The first month or 20 hours	Every three months or 100 hours	Every three months or 100 hours
Oil	Check	○			
	Renew		○ (First time)	○ (Second time)	
Air cleaner element	Check	○			
	Clean			○	
The valve gap	Check- adjust			○	
The liquid of the battery	Check	○			
Oil filter	Clean		○		
	Renew			○	
Fuel filter	Renew			○	
Fuel pipe	Check	Every two years or necessary to renew			

Recommend oil

4 stroke diesel engine oil, API CE, CF the same as the CG (SAE10W-30) oil.

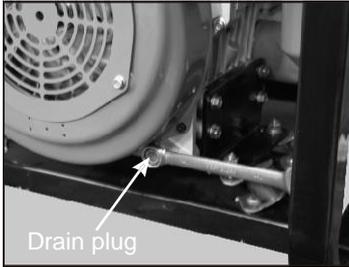
A.P.I diesel engine maintenance classification
Oil should be CE or over CE standard



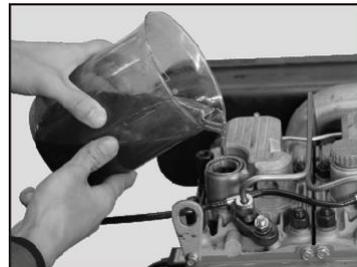
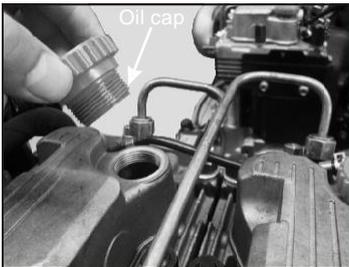
DG12 Maintenance

1. Change the oil

- ① Please prepare the oil container under the drain plug, use the fork to release the drain plug, then begin to pull out the oil, when the oil pull over, if necessary, use the diesel to clean the inside of the cylinder block. In the end lock the drain plug back.

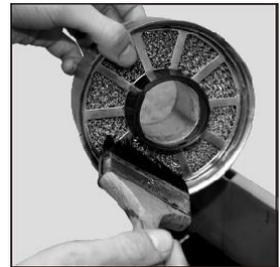
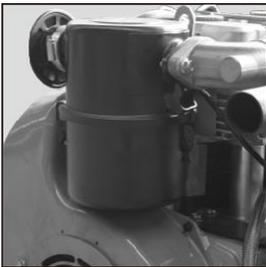


- ② Open the lock, over the front cover (4.1.①), screw the cylinder head oil cap (2) as the photo, pull the oil until reach the oil gauge max limited (4.1.②), in the end screw back the cylinder head stud.



2. Air cleaner

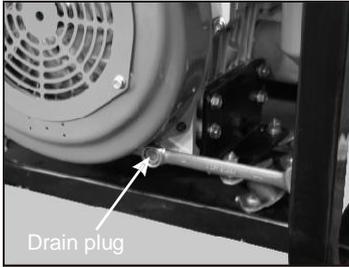
- ① Remove the side plate of the engine, release the clip, unload the lower half part of the air cleaner, and take out the filter element in the middle; wash the filter element with diesel fuel and put it back in the air cleaner after it is dry.



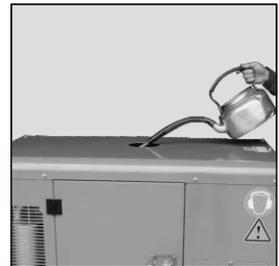
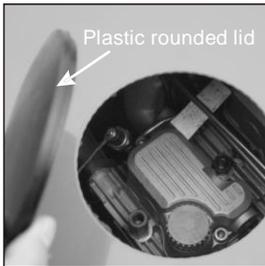
DG12S Maintenance

1. Change the oil

- ① Open left door, use the fork to release the drain plug (don't take out screw), put the oil guide groove under the drain plug, let its outlet connect with oil container, then completely remove the oil drain plug. Begin to release out the oil and when the oil sump is empty, if necessary, use the diesel to clean the inside of the cylinder block. Replace drain plug back.



- ② Move the plastic rounded lid on the top of genset, unscrew the cylinder head oil cap, fill the oil until reach the oil gauge max limited (4.1. ②), in the end screw back the cylinder head stud.



2. Air cleaner

- ① Move the upper plate and back cover of the generator, you will see the air cleaner. release the clip, unload the lower half part of the air cleaner, and take out the filter element in the middle; wash the filter element with diesel fuel and put it back in the air cleaner after it is dry.



8. Appendix and Suggestions

1. Storage

It is necessary to store the generator in correct way to keep generator in good condition. Following steps are to protect the generator from rust and corrosion which would damage its performance and appearance.

① Cleaning

If the generator has just run over, clean it after cooling at least 2 hours. Then clean the surface of generators, paint the damage part, and coat with a thin layer of film.

② Fuel

Diesel fuel deteriorates during storage, which will make the starting of the generator more difficult and produce glue materials that would clog the fuel system. It is necessary to clean or replace the fuel system if diesel fuel deteriorates during storage.

2. Storage instructions

① Do not touch the muffler. Around the exhaust port of the muffler is very hot while generator is running and the heat will remain for some time after generator stops. To prevent burn or fire, do not move the generator into the storage room until it is cooled.

② Storage room should be of good ventilation and far from fire place like stove, water heater, dryer, etc, in order to avoid possible serious injury and damage to equipment. Storage room should not be in the wet areas which would cause the generator rust and corrosion.

③ Put the generator on a level surface as tilting may cause fuel or oil leaks.

3. Transport

① If the generator has just run over, please do the shipment after cooling two hours because the exhausting system is still very hot which may burn you or cause a fire.

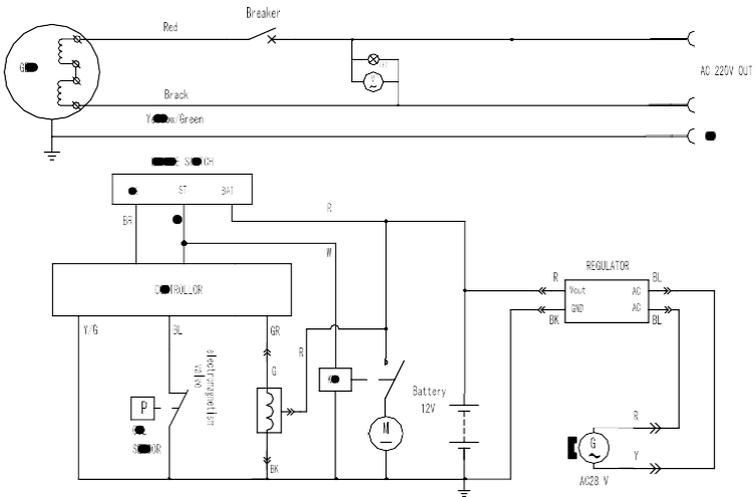
② Put the generator on a level surface while shipping to prevent leaking the oil.

9. Methods of Unexpected Problem

Generator can't start	Cause	Remedy
Check the power control system	Bad connections of current line	Check each connector
	Battery power is low	1. Charge the battery 2. Change the battery
Check fuel and machine oil	Without fuel	Add fuel
	Without oil	Add oil
	Fuel deterioration or contain deteriorated fuel	Drain the fuel tank and add fresh fuel
Check cylinder compression	Piston ring worn or rings in wrong place	Change and adjust piston ring
	Valve clearance is not correct	Adjust the clearance as per operational manual
	Bolts of cylinder head are not tight	Re-tight the bolt
Check fuel supply system	Fuel oil or switch of fuel oil plugs	Replace or repair defective parts

No voltage output	Possible cause	Remedy
Check AC circuit breaker	AC circuit breaker is not open	Turn the AC circuit breaker to "ON" position
	AC circuit breaker is broken	Replace the AC circuit breaker
Check AVR	AVR is broken	Replace AVR
Send generator to repair center	Motor failure, circuit failure	Replace or repair defective parts

10. Electrical Wiring Diagram (Single Phase Generator)



11. Electrical Wiring Diagram (Three Phase Generator)

