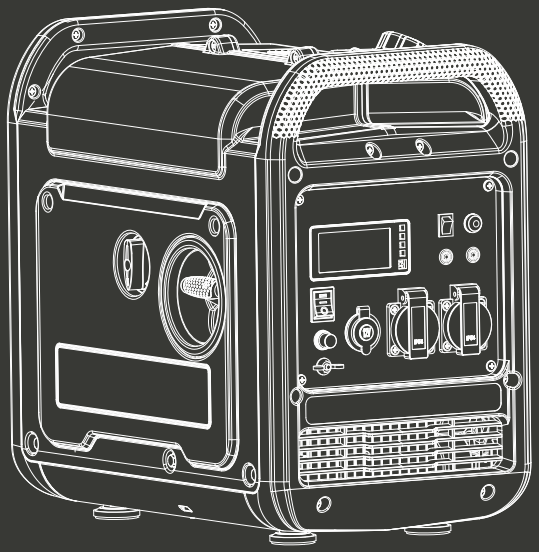
HYUNDAI

HY2250Si
HY2250SEi

User Manual



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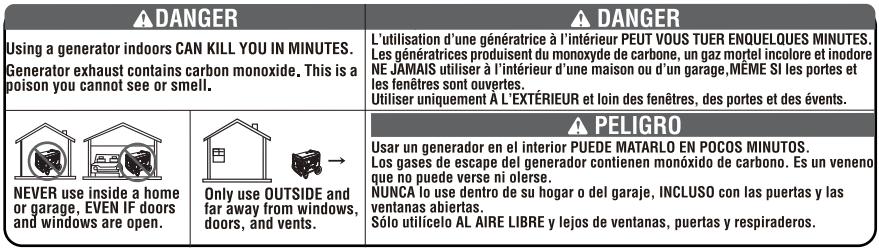
1.SAFETY INFORMATION

1.1)SAFETY LABEL:



⚠ DANGER! ⚠

Using a generator indoors can kill you in minutes.

Generator exhaust contains carbon monoxide. This is a poison that you cannot see or smell.

NEVER use inside a home or garage.

The engine exhaust from this product contains chemicals known to cause cancer, birth defects or other reproductive harm.

1.2) OPERATOR SAFETY

⚠ WARNING!

- Always perform an oil, fuel and air filter check before starting the engine.
- Properly clean and maintain the equipment.
- Operate the generator according to instructions for safe and dependable service.
- Before operating the generator, read the user guide carefully.
- Otherwise, it may result in personal injuries or equipment damage.
- Never run the generator in an enclosed area to avoid harm from exhaust emissions of a poisonous carbon monoxide gas.

- Pay attention to the warning labels. The engine exhaust system will become heated during operation and remain hot immediately after the engine is stopped.
- Gasoline is a highly flammable and explosive liquid. Refuel in a well ventilated area with the engine stopped.
- Use of gasoline with an ethanol content greater than 10% can damage the engine and fuel system and will void the manufacturer's warranty.
- When refueling the generator, keep it away from cigarettes, open flames, smoke and/or sparks.
- Place the generator at least 3 feet away from buildings or other equipment during operation.
- Run the generator on a level surface. Tilting the generator may result in fuel spills.
- Know how to stop the generator quickly and understand operation of all the controls. Never permit anyone to operate the generator without proper instructions.
- Keep children, pets and machinery with rotating parts away during operation.
- Do not operate the generator in rain or snow.
- Do not allow any moisture to come in contact with the generator.
- Do not touch the spark plug while the engine is operating or shortly after the engine has been shut down.

1.3) AC SAFETY

⚠ WARNING!

Before connecting the generator to an electrical device or power cord:

- Make sure that everything is in proper working order. Faulty devices or power cords can lead to an electrical shock.
- Turn off the generator immediately if the device begins to operate abnormally. Then disconnect the device and investigate the problem.
- Make sure that the electrical rating of the device does not exceed that of the generator. If the power level of the device is between the maximum output power and the running power of the generator, the generator should not be used for more than 30 minutes.

- Connections for standby power to a building's electrical system must be done by a qualified electrician and must comply with all applicable laws and electrical codes. Improper connections may cause serious injuries to electrical workers during a power outage, and when the utility power is restored, the generator may explode or cause fires. The generator shall be connected through transfer equipment that switches all conductors other than the equipment grounding conductor. The frame of the generator shall be connected to an approved grounding electrode.
  For power outages, permanently installed stationary generators are better suited for providing backup power to the home. Even a properly connected portable generator can become overloaded.
- This may result in overheating or stressing the generator components, possibly leading to a generator failure.

1.4) MAINTENANCE SAFETY

⚠ WARNING!

- After any maintenance is performed, wash immediately using soap and clean water because repeated exposure to lubricant may cause skin irritation.
- Do not clean the filter element with flammable liquids like gasoline due to risk of explosion.

  Turn off the engine before performing any maintenance.
- Otherwise it can cause severe personal injury or death.
- Allow the generator set to cool down before performing any maintenance.
- Always wear safety glasses when cleaning the generator set with air.
- Do not clean the generator set with a pressure washer because it can cause damage to the generator set.
- When working with batteries, ventilate the area, use safety glasses, do not smoke. Always disconnect the negative first and reconnect it last.
- Use rubber gloves when coming into contact with engine oil.
- Always stop the generator set before removing the oil filler cap.
- Only qualified maintenance personnel with knowledge of fuels,

electricity, and machinery hazards should perform maintenance procedures.

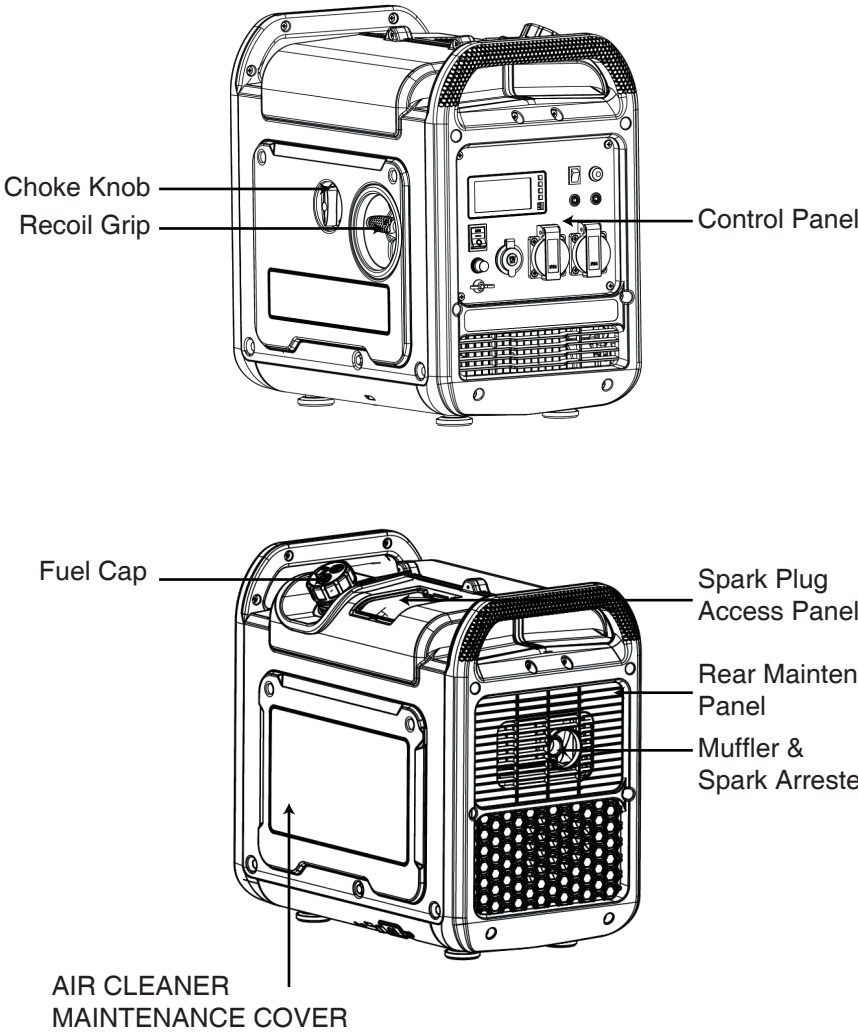
- Lubricate all exposed metal parts regularly.

1.5) OTHER SAFETY TIPS

⚠ WARNING!

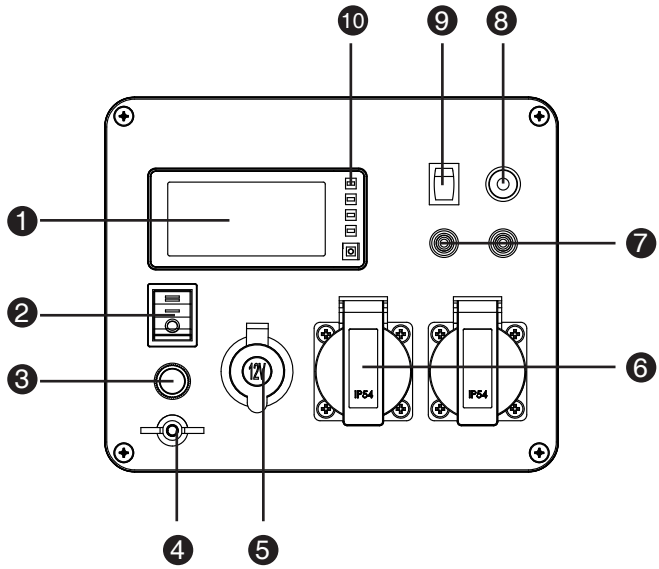
- To avoid breathing in poisonous carbon monoxide from the exhaust gases, adequate ventilation should be provided if the generator set is running in a partially enclosed space.
- If the generator set is stored outdoors, check all the electrical components on the control panel before each use. Moisture can damage the generator and can lead to an electric shock.
- Generators vibrate in normal use. During and after the use of the generator, inspect the generator as well as extension cords and power supply cords connected to it for damage resulting from vibration. Have damaged items repaired or replaced as necessary. Do not use plugs or cords that show signs of damage such as broken or cracked insulation or damaged blades.
- If you start to feel sick, dizzy, or weak after the generator has been running, move to fresh air RIGHT AWAY. See a doctor. You could have carbon monoxide poisoning.

2. LEARN ABOUT YOUR GENERATOR



3. COMPONENTS IDENTIFICATION

3.1) Control Panel



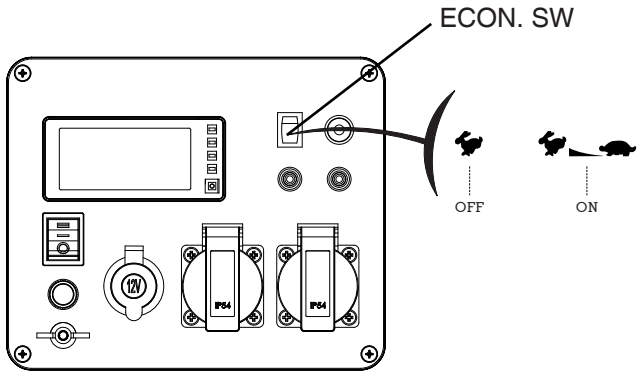
1.Monitor
2.Power Button
3.DC Breaker
4.Ground Terminal
5.DC Outlet
6.AC Outlet
7.Parallel
8.Reset
9.EcoMode Switch
10.Indicator Lights

3.2) ECON. SW (Economy control switch):

"ON"( )

- When the economy control switch is turned to"ON"( ), the engine keeps running at idle state automatically when the electrical appliance is disconnected,and it will return to the proper speed with the requirement of electrical load.

- The “ON”( ) is recommended to minimize the fuel consumption.



NOTE

When a high load electrical appliance is connected instantaneously, in order to reduce voltage change, turn the economy control switch to the“OFF”( )position.

In DC operation, turn the economy control switch to the “OFF”( )position.

Connect both AC load and DC load, turn the economy control switch to the “OFF”( ) position.

“OFF” ( )

When the economy control switch turns to the “OFF” ( ) position engine runs at high speed.

4. PRE- OPERATION CHECK

⚠ WARNING!

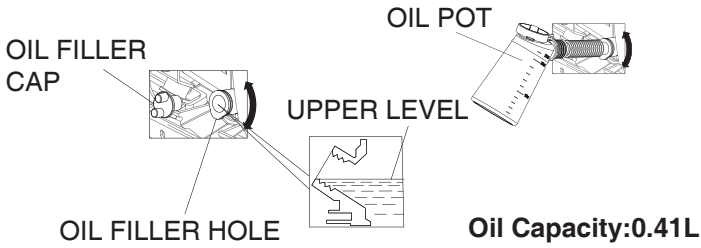
Be sure the generator is on the leveled surface and the generator is stopped.

4.1) Check Oil Level

Remove the oil filler cap, fill the specified amount of the recommended oil， and then tighten the oil filler cap.

NOTE

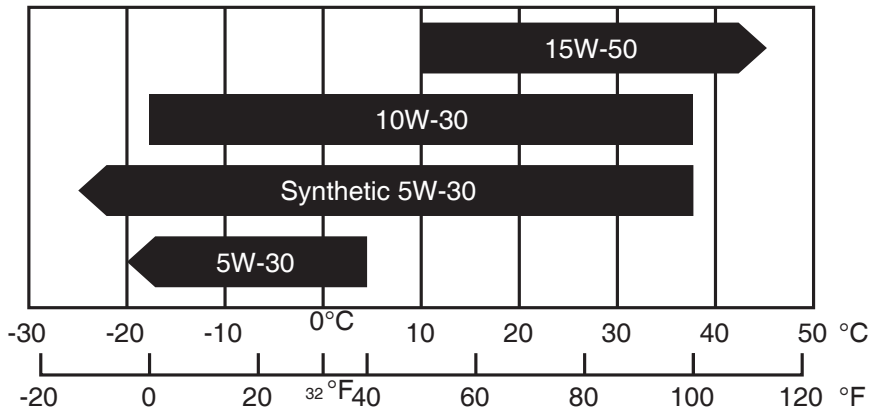
- Do not tilt the generator when adding engine oil. This could result in overfilling and damage to the engine.



NOTE

- Using non-detergent or 2-stroke oil could shorten the engine's working life.
- Using the high quality engine oil with strong detergents
- Using 4-stroke engine oil, certified to meet or exceed API standards: SG, SF ,SAE stickiness rating:

Effective Viscosity Range of Engine Oils(Ambient Air Temp.)

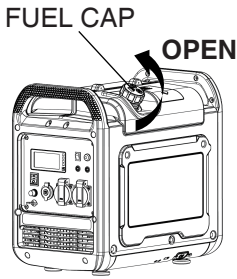


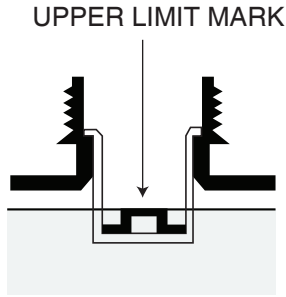
NOTE

- Carefully use and store the engine oil, avoid getting dirt or dust into the engine oil.
- Mixing different kinds of engine oil is prohibited.
- Before the engine oil reduces below the safety margin, low oil alert system will close the engine automatically. The oil alert indicator light (red) will be on.
- To avoid the inconvenience caused by unexpected stopping, it is still advisable to check the engine oil level regularly.

4.2) Check Fuel Level

- Fuel recommend: use unleaded gasoline (Research Octane Number of 92 or higher)
- Never use stale or contaminated gasoline or an oil/gasoline mixture.
- Avoid getting dirt or water into the fuel tank.
- Do not use a mixture gasoline containing ethanol or methanol; otherwise,it will seriously damage the engine.





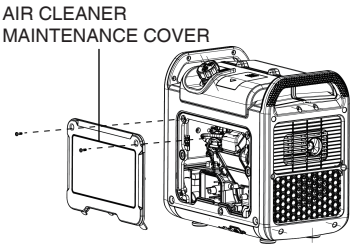
Fuel Capacity: 5.5L

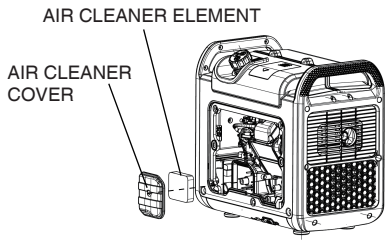
⚠ WARNING!

- Gasoline is extremely explosive and flammable.
- Around the refueling area and fuel storage area, prohibit smoking and firing.
- Do not overfill the fuel tank (no fuel above the red upper limit mark). After refueling, make sure the fuel cap is closed properly and securely.
- Do not make fuel spill from fuel tank. (No residual fuel around the neck of tank, before starting engine)
- Avoid contacting with skin or breathing the fuel vapor.
- KEEP OUT OF REACH OF CHILDREN

4.3) Check Air Cleaner

Check the air cleaner element to be sure it is clean and in good condition.





1.Unscrew and remove the engine access panel. With the screws loose work the snapfits free around the perimeter, it may require some force.

2.Unscrew the air filter cover and remove the filter.

3.Clean the air filter with soap and water or solvent and squeeze dry.

4.Soak in clean engine oil.

5.Squeeze out all excess oil and reinstall.

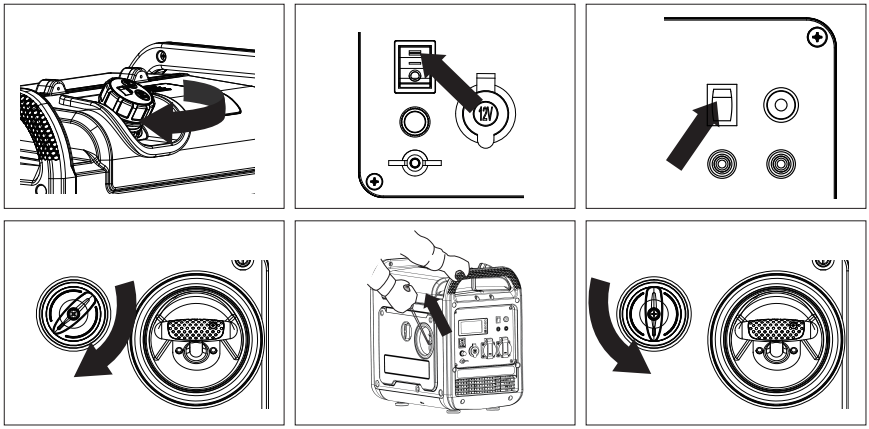
NOTE

Do not run engine without air Cleaner lement, otherwise that makes engine abrasion.

5. STARTING THE ENGINE

NOTE

- Before starting engine, disconnect load with AC receptacle.
- When transporting generator, turn the fuel cap vent lever to the “OFF” position.



1. Rotate the fuel cap vent lever to ON.
2. Rotate the fuel valve to the OPEN position.
3. Turn the power switch to the ON position.
4. If the engine is cold pull the choke lever fully out.
5. Pull the starter slowly until you feel it engage then pull quickly. Repeat until the generator starts.
6. When the engine warms up push the choke fully in. The choke is used to provide the proper air-fuel mixture when the engine is cold.

NOTE

Do not pull out the choke knob, when engine is hot or ambient temperature is high.

Return the starter grip slowly by hand. Do not make the starter grip spring back quickly.

If the generator stops and can not restart,check the oil level firstly.

Carburetor Modification for High Altitude Operation

At high altitude, the standard carburetor air-fuel mixture will be too rich. Performance will decrease, and fuel consumption will increase. Avery rich mixture will also foul the spark plug and cause hard starting.

If the generator operates at high altitude, change the main-nozzle or adjust the idling-screw of carburetor.

If the generator always operates at altitude above1,000 meters, contact with an authorized servicing to modify the carburetor.

Generator output power should be modified according to the altitude and ambient temperature.

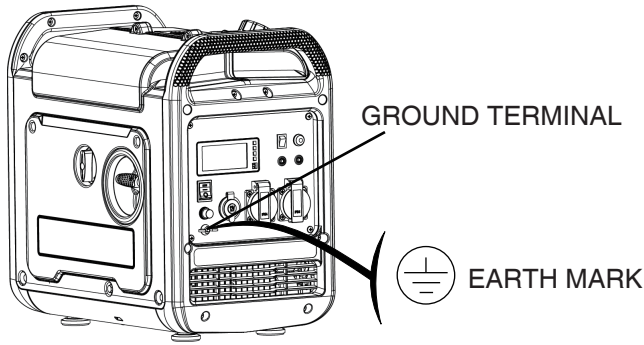
⚠ WARNING!

If the carburetor has been modified for high altitude operation, the air-fuel mixture will be too lean for low altitude use. Operation at low altitude may cause the engine to overheat and result in serious engine damage. The carburetor needs return to original specifications.

6. GENERATOR USE

⚠ WARNING!

- Be sure to ground the generator when the connected electrical appliance is grounded.
- Do not connect to the building's electrical system, in order to avoid the electric shocks and fires.



- For continuous operation, do not exceed the rated out-put power of generator.
- Do not make parallel connection with other generators.
- Do not connect an extension to the exhaust pipe.
- When an extension cable is required, be sure to use a tough rubber sheathed flexible cable (according to IEC245 or equivalent standards). The maxmin length of the 2 extension cable: 60m for cable of 1.5mm ; 2 100m for cable of 2.5mm .
- Keep away from other electric cables or wires.

NOTE

- The DC receptacle can be used while the AC power is in use. If use both at same time, be sure not to exceed the total power for AC and DC.
- Most of motor appliances require more than their rated wattage, when starting.

6.1) DC Application

The DC receptacle, 15-30V under no-load condition, may be used for charging 12V battery only

NOTE

- In DC operation, turn the ECON.SW to the “OFF” ( ) position.

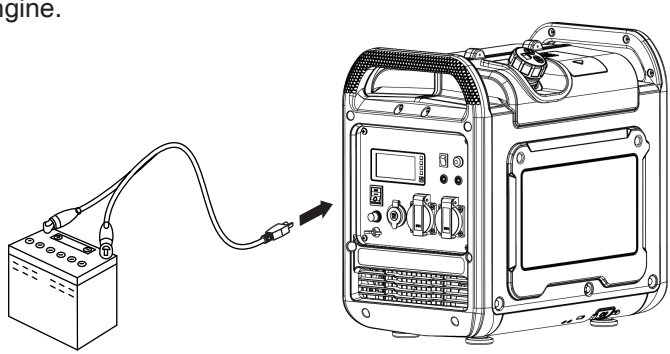
6.1.1) Disconnect the vehicle battery ground cable from the negative(-) battery terminals.

6.1.2) Connect the DC receptacle to battery terminals with the charging cable.

CAUTION

Connect red lead to positive (+) battery terminal and black lead to negative (-) battery terminal.

6.1.3) Turn ECON.SW to “OFF” ( ) position, and then start engine.



NOTE

Do not start the automobile engine when the generator is still connected to the battery, otherwise the generator will be damaged.

Disconnecting the charging cable:

1)Stop the engine.

2)Disconnect the black lead from the negative (-) battery terminal.

3)Disconnect the red lead from the positive (+) battery terminal.

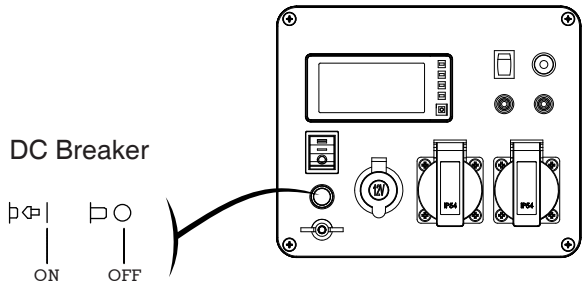
4)Reconnect the vehicle battery ground cable.

⚠ WARNING!

- The battery can release the explosive gases. Keep the battery away from spark/fire. Charge the battery in ventilated condition.
- Battery electrolyte contains sulfuric acid that will cause severe burn of skin and eyes. Therefore it is necessary to wear the protective clothing and mask.
- If battery electrolyte gets into eyes, flush thoroughly with warm water for 15min at least, and call a doctor immediately.
- If you swallow a little of battery electrolyte accidentally, flush thoroughly with water your mouth, and then drink large quantities of water or milk (with magnesia or vegetable oil), and call a doctor immediately.

NOTE

- The DC receptacle can be used while the AC power is in use .
- When DC circuit overload will trip the DC circuit protector, remove load firstly, and then reset the protector after a few minutes.



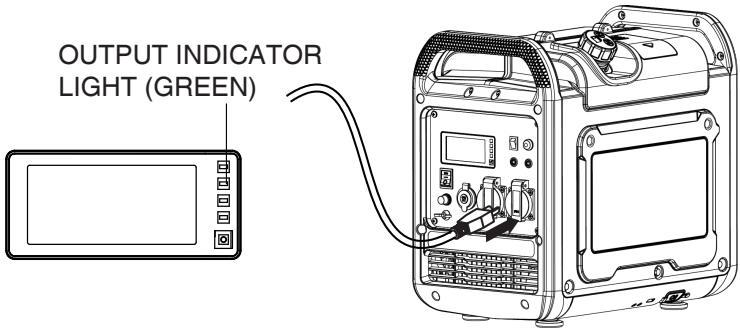
6.2) AC applications

6.2.1) Start engine and make sure the output indicator light (green) is on.

6.2.2) Confirm all electrical appliances are switched off, and connect the appliance plugs to the generator receptacle.

NOTE

To obtain the best working and longest working life of the generator, a new generator is supposed to run for 20 hours at 50% rated load.

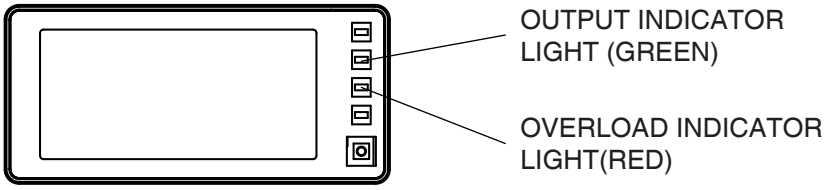


NOTE

Confirm all electrical appliances are in good working condition before connecting them to the generator. If an electrical appliance becomes abnormal, sluggish, or stops suddenly, shut off the generator engine immediately, and disconnect the appliance

6.3) Output and Overload Indicator

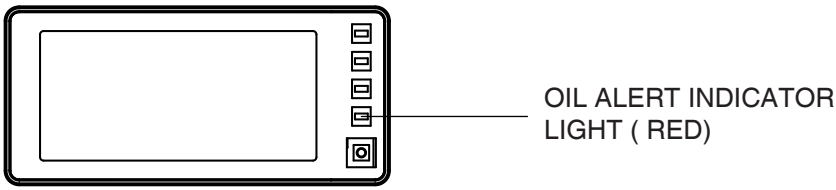
In normal operating, output indicator light (green) will remain on.
If the generator is overload , or the connected appliance is short-circuit, the output indicator light (green) is off, and overload indicator light (red) is on. The AC power will be switched off, but engine is still running.
If the overload indicator light (red) is on, disconnect the electrical appliances firstly, press and hold the rest button 1s. If the overload indicator light (red) is OFF and the output indicator light (green) is on, reconnect the electrical appliances. Otherwise stop the engine and check the generator.



6.4) Oil alert system

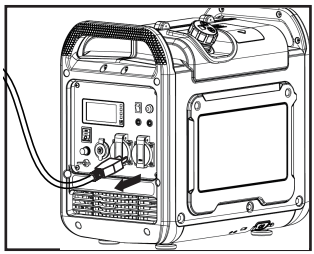
The oil alert system is designed to prevent engine damage caused by an insufficient amount of oil in the crankcase. Before the oil level in the crankcase falls below a safe limit, the oil alert system will automatically shut down the engine (the engine switch remains in the “ON“position).

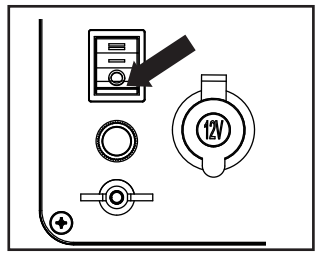
If the oil alert system shuts down the engine, the oil alert indicator light (red) will be on. Check the engine oil level.



7. STOPPING THE ENGINE

To stop the engine in an emergency, turn the engine switch to the “OFF”position





7.1) Switch off the connected electrical appliances, and pull out their plugs.

7.2) Turn the engine switch to the “OFF” position.

NOTE

- Be sure the fuel cap vent lever and engine switch locate the “OFF” position, when stopping, transporting and storing the generator.

8. MAINTENANCE

The purpose of the maintenance and adjustment schedule is to keep the generator in the beset operating condition

⚠ WARNING!

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

Use genuine or equivalent quality components to replace the wear components.

Item	Task	Each Use	First 10 Hours	Every 50 Hours	Every 100 Hours	Every 300 Hours
Generator	General Inspection	•				
Engine Oil	Inspect Oil Level	•				
	Change		•*		•**	
Air Filter	Inspection	•				
	Cleaning			•		
Sediment Cup	Cleaning			•		
Spark Plug	Inspection & Cleaning				•	
	Replacement					•
Valve Clearance	Inspection & Adjusting					•
Combustion Chamber	Inspection & Adjusting					•
Fuel Tank and Strainer	Cleaning					•
Fuel Line	Cleaning	Every two months (replace if necessary)				
Exposed Metal Parts	Lubricate with oil	After every use and especially before storage				

Maintenance Schedule

* After engine break-in period (first 10 hours) the oil must be changed.

**Change engine oil every year or 100 hours, whichever comes first.

NOTE

(1) Service more frequently when used in dusty areas.

(2) These items should be serviced by your servicing dealer, unless you have the proper tools and are mechanically proficient. Refer to manual for service procedures.

(3) For commercial use, long hours of operation to determine proper maintenance intervals.

8.1) Change Oil

Drain the oil rapidly and completely while the engine is still warm.

8.1.1) Loosen three screws of the air cleaner maintenance cover, and remove the cover.

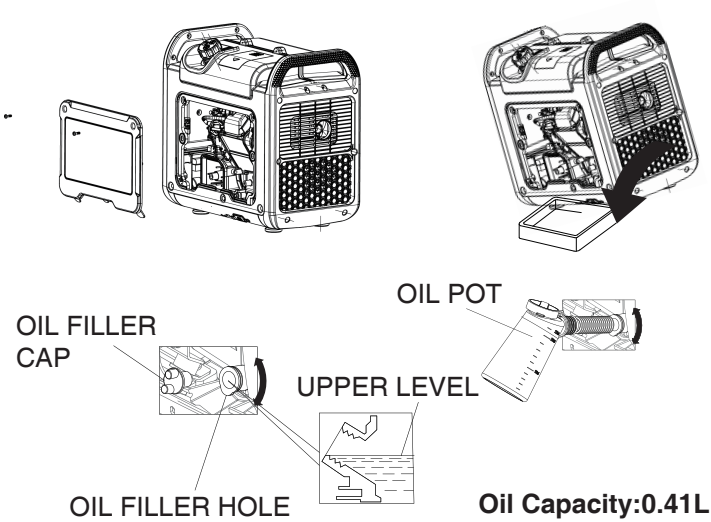
8.1.2) Remove the oil filler cap.

8.1.3) Drain dirty oil into a container thoroughly.

8.1.4) Refill the recommended oil and check the oil level.

8.1.5) Reinstall the oil filler cap.

8.1.6) Reinstall the maintenance cover and tighten the cover screws.



After oil change, wash your hands with soap.

NOTE

the used oil will be put into a sealed container and then be transported to the service station for recycler. Do not throw it into the trash or pour it on the ground.

8.2) Air Cleaner Service

A dirty air cleaner will restrict air flow into the carburetor.Clean and maintain the air cleaner regularly, especially in the extremely dusty areas.

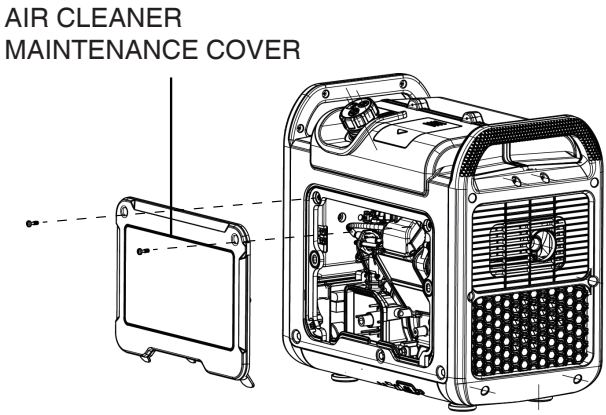
⚠ WARNING!

Do not use gasoline or low ignition point solvents for cleaning. They are flammable and explosive under certain conditions.

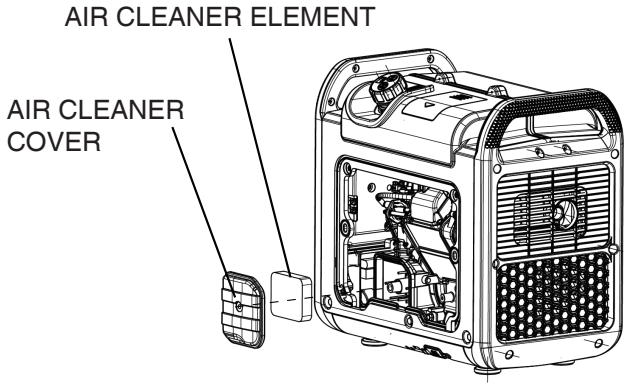
NOTE

Never run the generator without air cleaner, otherwise that result in engine abrasion rapidly.

8.2.1) Loosen three screws of the air cleaner maintenance cover, and remove the cover.

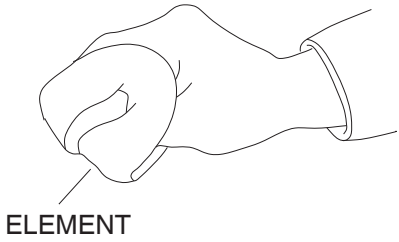


8.2.2) Loosen the air cleaner cover screw and remove the cover.



8.2.3) Take out the air cleaner element, and clean it with non-flammable or high flash point solvent, then dry it.

8.2.4) Soak the air cleaner element in the clean engine oil, and squeeze out the redundant oil.



8.2.5)Reinstall the air cleaner element and cover.

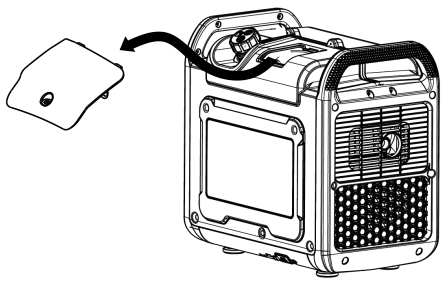
8.2.6)Reinstall the maintenance cover, and tighten the screws.

8.3) Spark Plug Service

Recommendation spark plug: E6RC

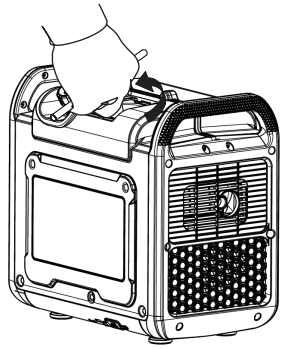
Check the spark plug gap and clean the carbon deposition at the bottom of the spark plug.

8.3.1) Remove the spark plug maintenance cover SPARK PLUG



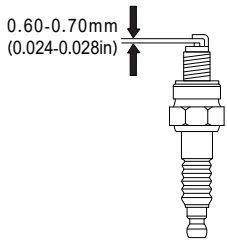
8.3.2) Take off the spark plug cap

8.3.3) Clean the carbon deposition at the bottom of the spark plug.



8.3.4) Take off the spark plug with the spark plug spanner.

8.3.5) Visual inspection the spark plug. Change a new one if its insulator cracked or chipped. Clean it with a wire brush if the spark plug is reused.



8.3.6) Measure the spark plug gap with a feeler gauge. The normal value:0.6-0.7mm(0.024-0.028in). Adjust the gap by bend one of the electrode carefully.

8.3.7) Reinstall the spark plug carefully, by hand, to avoid cross-threading. A new spark plug should be tightened 1/2 turn with a spanner. A used Spark plug should be tightened 1/8 to 1/4 turn with spanner.

8.3.8) Reinstall the spark plug cap

8.3.9) Reinstall the spark plug maintenance cover.

NOTE

- The spark plug must be securely tightened. Tightening in wrong
- way will cause spark plug hot, even damage the engine. Never use a spark plug with an improper heat range.

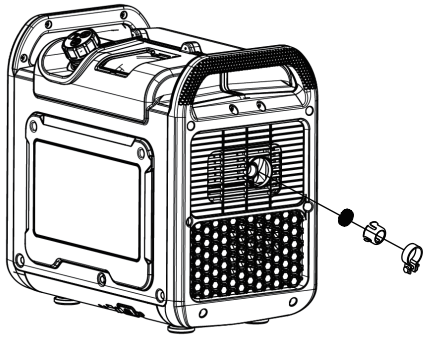
8.4) Spark Arrester Maintenance

⚠ WARNING!

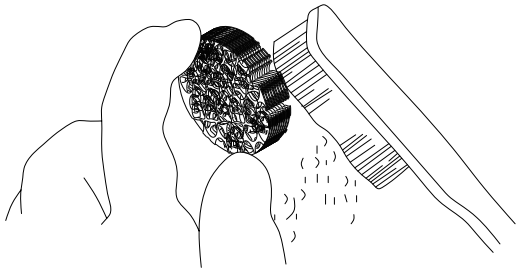
The spark arrester must be maintained every 100h service.

8.4.1)Remove the six screws, and remove the muffler guard.

8.4.2)Take off the spark arrester from the muffle after the engine cool down.



8.4.3)Use a brush to remove carbon deposits from the spark arrester . If the spark arrester is wear, replace it.



8.4.4)Reinstall the spark arrester and muffle guard.

9.TRANSPORTING/STORING

Avoid fuel spilling during transporting or temporary storing, both the engine switch and the fuel cap vent lever should turn to “OFF” position, and the generator should place in normal operating position.

⚠ WARNING!

Transporting Generator:

- Do not overfill the fuel tank. (No residual fuel on the neck of tank)
- Do not use the generator on the transport vehicle. The generator should be used under a good ventilated condition.
- Avoid exposing directly in the sunshine when the generator place in the enclosed transport vehicle for a long time. The high temperature inside the vehicle could cause fuel to vaporize resulting in a possible explosion.
- Drain off the fuel, when the generator is transported on rough road.

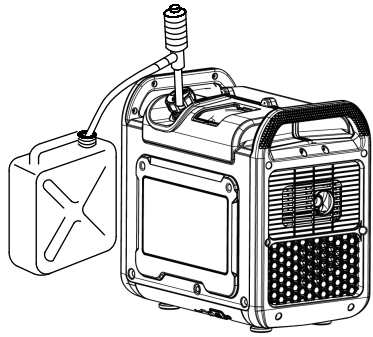
Storing for a long period:
9.1) Make sure the storage area without excessive humidity and dust.

9.2) Drain off the fuel.

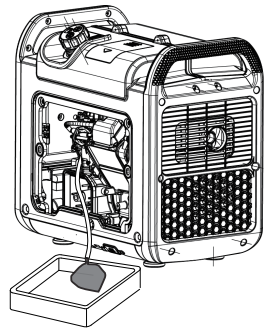
⚠ WARNING!

- Keep away from smoking, flames and spark, gasoline is explosive and flammable in the specified condition.

a. Drain off the gasoline in the fuel tank,storing into the suitable container.



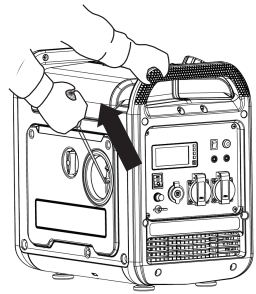
b. Turn the engine switch to “ON” position, and loosen the carburetor drain screw to discharge



c. Take off the spark plug cap, pull the starter grip three or four times, discharge the gasoline from the fuel lines.

d. Turn the engine switch to “OFF” position, and tighten the drain screw of carburetor.

e. Reinstall the spark plug cap.



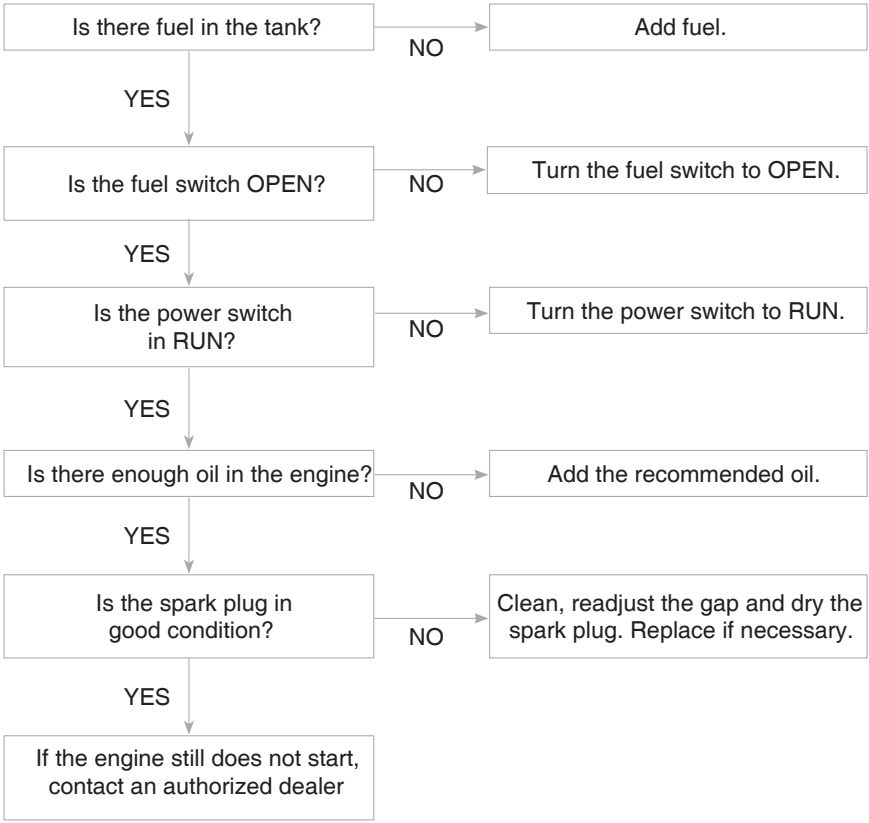
9.3) Change the engine oil.

9.4) Remove the spark plug, and pour a tablespoon of clean engine oil(10~20ml)into the cylinder. Revolve the engine several times to distribute the oil,and reinstall the spark plug.

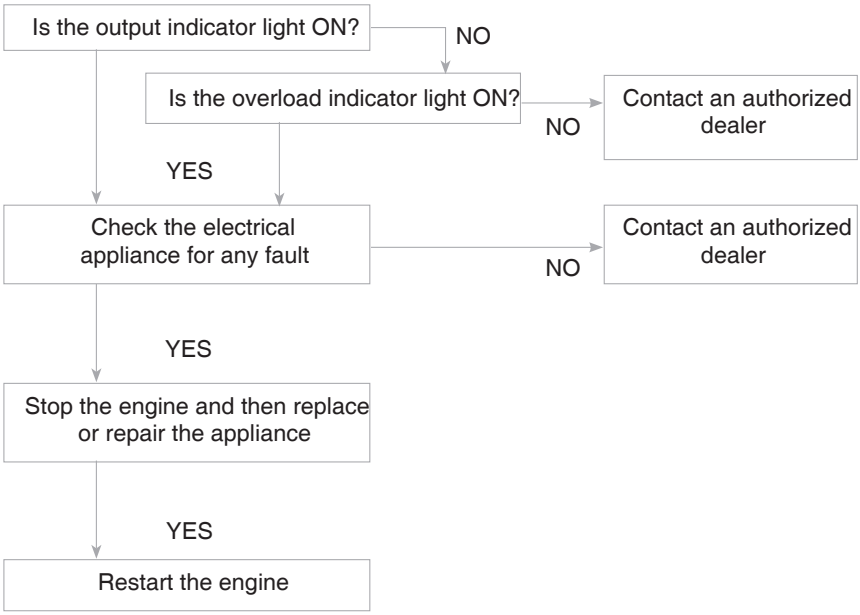
9.5) Pull the starter grip slowly until feel resistance. At this point, the piston is coming up on its compression stroke and both the intake and exhaust valves are closed. In this position, it helps to protect the engine from internal corrosion.

10.TROUBLESHOOTING

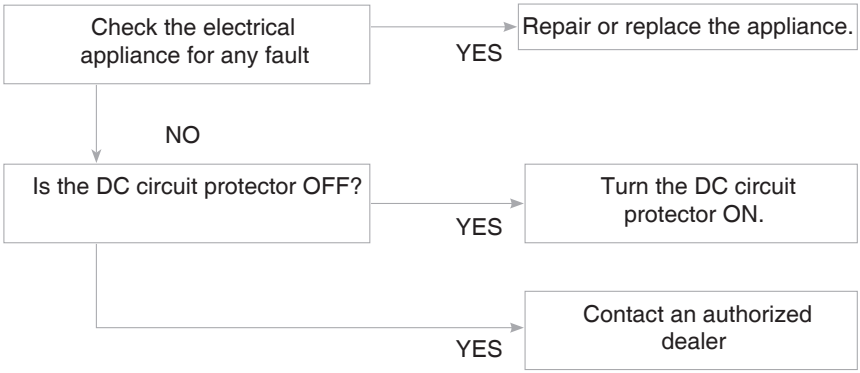
If the engine does not start:



If appliances do not operate:



DC receptacle without any electricity:



11. TECHNICAL SPECIFICATIONS

	SPECIFICATIONS	PARAMETERS
ENGINE	Type	4-stroke, overhead valve, single cylinder, forced-air cooling
	Engine Displacement	79 cc
	Bore* Stroke	1.91x 1.69 in. (48.6mm x 43.0mm)
	Engine Speed	3200-5400 rpm
	Compression Ratio	7.6:1
	Ignition System	Full transistor
	Spark Plug	NGK BPR6HS
	Spark Plug Gap	0.024-0.028in (0.6-0.7mm)
	Start System	Recoil starter
	Fuel Type	Unleaded Gasoline
	Oil Capacity	0.41L
	Oil Type	SAE 10W-30
GENERATOR	Model Name	HY2250Si/ HY2250SEi
	Rated Frequency	50Hz
	Rated Voltage	230V
	Rated Current	8.6A
	Peak Output	2200W
	Running Output	2000W
OTHER SPECIFICATIONS	DC Output	12V/5A
	Fuel Tank Volume	5.5L
	Continuous Running Time	4.2h @ 1650W
	Working Ambient Temperature	(-15°C to 40°C)
	Max. Altitude	1000m
	Sound Power Level at 7m	50-59dB(A)
	Dimensions (L*W*H)	488x417x467mm
	Net Weight	20kg

- Noise level is measured when EcoMode is ON and may vary in different environments.

- The noise level may vary in different environments.

12.WIRING DIAGRAMS

13. APPENDIX

13.1) Environment Correction

The standard condition of rated power output:

Altitude:0m

Ambient temperature:25 C

Relative humidity:30%

Factor of environment correction:

Altitude(m)	Ambient temperature °C				
	25	30	35	40	45
0	1	0.98	0.96	0.93	0.90
500	0.93	0.91	0.89	0.87	0.84
1000	0.87	0.85	0.82	0.80	0.78
2000	0.75	0.73	0.71	0.69	0.66
3000	0.64	0.62	0.60	0.58	0.56
4000	0.54	0.52	0.50	0.48	0.46

NOTE

Relative humidity 60% correction factorC-0.01;

Relative humidity 80% correction factorC -0.02;

Relative humidity 90% correction factorC-0.03;

Relative humidity 100% correctionfactorC-0.04;

Example：

Rated power（P ） 1.6kVA generator(Altitude: N1000m) Ambient temperature: 35°C, Relative humidity: 80%

$$P=Pn*(C-0.02)=1.6*(0.82-0.02)=1.28kW$$

13.2) Noise and Access

Noise emission measure according to ISO 8528-10, EN ISO 3744, European Directive 2000/14/EC with amendment 2005/88/EC

Model of generator set: HY2250Si/ HY2250SEi

Sound Pressure Level: 59 dB(A)

Guaranteed Sound Power Lever：90dB(A)

Measurement Uncertainty K: 1.7 dB(A) The quoted figures are emission levels and are not necessarily safe working levels. Whilst there is a correlation between the emission and exposure levels, this cannot be used reliably to determine whether or not further precautions are required. Factors that influence the actual level of exposure of work-force include the characteristics of the work room, the other sources of noise, etc, i.e. the number of machines and other adjacent processes, and the length of time for which an operator is exposed to the noise. Also the permissible exposure level can vary from county. This information, however, will enable the user of the machine to make a better evaluation of the hazard and risk.

14. CONSUMER INFORMATION

Consumer Service Information

Service dealers are trained professionally. They should be able to answer any questions you have. If the dealer does not solve your problems, please discuss them with the manager of the dealer. Most of your problems are solved in this way.

HYUNDAI