

ENERGY STORM







ES220050

ENERGY STORM GENERATORS

Operating Instructions and Owner's Manual

This Owners Manual is published in ENGLISH and SPANISH

PLEASE READ THIS MANUAL CAREFLLY BEFORE OPERATING YOUR NEW GENERATOR
These Units are EPA CERTIFIED 1/12/2015







Operating Instructions And Owner's Manual

ENERGY STORM SERIES

ES1500 & ES2200SC

Record Purchase Here

Model #
Engine ID #(Unique Identifier stamped on engine crankcase
Date of Purchase
Purchase Location

PLEASE KEEP AND READ THIS MANUAL CAREFULLY BEFORE OPERATING YOUR NEW PORTABLE GENERATOR

(E) Indicates this unit is Equipped with Electric Start











PLEASE READ THE FOLLOWING INSTRUCTIONS!

- 1. Unit Shipped with "NO OIL" in Engine or where applicable pumps and/or accessories. Check and fill with proper oil as outlined in the Owner's Manual for the respective product.
- 2. For repair under Warranty or questions concerning Warranty, DO NOT return this product to the Store where purchased. Follow the procedures as outlined in the "WARRANTY POLICY" and "WARRANTY REGISTRATION" in the Owner's Manual. For any questions visit www.lifanpowerusa.com or call 1-866-471-7464 OPTION 1.
- 3. Read the "Owner's Manual" prior to operating any equipment and familiarize yourself with the proper and safe operation of the equipment. If you have any questions visit www.lifanpowerusa.com or call 1-866-471-7464.

Insert Pictures

(E) Indicates this unit is Equipped with Electric Start











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Preface

Thank you for choosing LIFAN Power USA for your Power Equipment Needs. LIFAN Power USA prides itself on providing quality products at affordable pricing, creating the "Best Equipment Value on Today's Market!"

All LIFAN Power USA products are manufactured utilizing the latest technology. Built with quality components, your new Power Equipment Product will give you years of dependable service. Your unit, along with all of LIFAN Power USA products are designed, engineered, and manufactured with LIFAN's Industrial Grade Gasoline Engine.

This Owner's Manual will provide you with all of your needed information for your new Power Equipment Product, including Safe Operation and Maintenance of your unit. Please read this Owner's Manual completely and carefully prior to operation. Keep this Owner's Manual for assistance in the future, such as proper maintenance schedules and tips to prolong the life and effective use of your unit. If you require assistance, please visit our website (www.lifanpowerusa.com) or call toll free 866-471-7464 OPTION 2.

This Owner's Manual contains information with respect to the newest products at the time of publication. Due to revision and modifications, the information noted in the Owner's Manual might vary from the actual status. This Owner's Manual is subject to change without notice. The copyright of this Owner's Manual belongs to EquipSource, LLC. Any group or individual is forbidden to reprint or copy any of this Owner's Manual without the written consent of EquipSource, LLC.

FOR ALL WARRANTY AND SERVICE RELATED ISSUES/QUESTIONS <u>DO NOT RETURN YOUR UNIT TO THE STORE OR</u> <u>DEALER WHERE THE ITEM WAS PURCHASED.</u>

FOR SERVICE VISIT LIFAN POWER USA'S WEBSITE (WWW.LIFANPOWERUSA.COM) OR CALL 1-866-471-7464 OPTION 2. WE WILL BE HAPPY TO HANDLE YOUR WARRANTY ISSUE OR DIRECT YOU TO THE NEAREST "AUTHORIZED SERVICE CENTER."











ENERGY STORM PORTABLE GENERATORS

Model Size	ES1500	ES2200SC
Voltage	120 / AC	120/240V AC & 12V DC
AC Surge Output ¹	1500 Watts	2200 Watts
Rated AC Output ²	1200 Watts	1800 Watts
Maximum AC Amperage	12amps @ 120V	16amps @ 120V
AC Cycle	60 Hertz	60 Hertz
	N/A	N/A
On/OFF - E-Start Switch	On/Off	On/Off
120V 20amp AC Receptacle 3	1 ea.	2 ea.
120 / 30 amp AC Receptacle 3 prong twist lock	N/A	N/A
120/240 AC 4 prong Receptacle	1 ea	1 ea
CircuitProtection	Master Circuit Breaker	Master Circuit Breaker
	ENGINE	

	LIVOIIVL	
Manufacturer	LIFAN	LIFAN
Model	LF152F-13111 Recoil	LF160F-13111
Maximum Horsepower (MHP)	3МНР	4MHP
Engine Displacement	97cc	118cc
Starting System	Recoil	Recoil (Recoil & Electric) ⁴
Fuel Tank Capacity	1 Gallons	1 Gallons
Fuel Tank Material	Rust Preventative Coated Steel	Rust Preventative Plastic
Fuel Gauge	N/A	N/A
Run Time (@ 50%Load)	6 hours	6 hours
Sound Level (@ 7m or 23ft)	63 decibels	65 decibels
Engine Type	4 Stroke OHV	4\\Stroke OHV
Fuel Type	Automotive Grade Unleaded Gasoline	Automotive Grade Unleaded Gasoline
Fuel Compliance	10% Ethanol Mix	10% Ethanol Mix IMix
Oil Type & Amount	SAE 10w30w 20oz	SAE 10w30w 20oz
Low Oil ShutoffProtection	Yes	Yes
CARB Certified	(IICA) Models Only	(IICA) Models Only

ACCESSORIES

Spark Plug Wrench	1 ea.	1 ea.
Mobility/Wheel Kit	Suitcase Style	Suitcase Style
Battery (not included)	N/A	N/A

⁼ Temporary Power for no more than 10 seconds $\frac{3}{2}$ = Automatic Voltage Regulation

STORM SERIES

Comments



⁼ Only (E) Models have Recoil & Electric Start







SAFETY RULES



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

For your safety read this manual carefully. Become familiar with the proper operation, care, and maintenance of your Lifan generator.

The safety and alert symbol (A) is used with a signal word (CAUTION, DANGER, WARNING), a pictorial and/or safety message to alert you to hazards. <u>CAUTION</u> indicates a hazard which, if not avoided could be harmful.



WARNING!

Running generator emits carbon monoxide an odorless, colorless, poison gas.

Breathing carbon monoxide can cause nausea or death!

Do not operate generator inside or under any buildings. Operating this generator inside the compartment of a recreational vehicle will likely result in death

WARNING!

The engine exhaust from this generator contains chemicals known to the state of California to cause birth defects, reproductive harm, and cancer

Do not use this generator within the generator compartment of a recreational vehicle!



This generator does not meet U.S. Coast Guard Regulation 33CFR-183 and should not be used on marine applications. See of this generator on marine applications could result in niury or death.

WARNING!



Rapid recoil of starter cord (kickback) may pull hand and arm forward toward engine at a rapid rate.

Broken bones, bruises, sprains, and Fractures may result.

- When starting engine, pull cord slowly until Tension is felt, then pull rapidly to avoid kickback.
- Never start or stop engine with electrical Devices plugged in and turned on. Doing so is hazardous and will damage generator.



Generator produces powerful voltage! Only a licensed electrician can safely Connect hookups. Failure to isolate generator from electrical grid can result in death to utility workers as well as Others

- When using generator as backup power, notify Utility company. Use approved transfer equipment to isolate generator from electric utility.
- Do Not operate generator while exposed to Rain or other wet conditions.
- Do not handle generator when in contact with water.
- Do not contact bare wires or receptacles.
- Inspect all electrical cords for damage and Discontinue from use any damaged or excessively worn cords.
- Do not allow unqualified persons to operate or service generator.

Hazard Symbols and Meanings

Explosion Fire

Electrical

Toxic Fumes Hot surface or 1ms

Kickback













WARNING!

Fuel and its vapors are extremely flammable and explosive.

Fire or explosion can cause severe burns or death.

WHEN ADDING OR DRAINING FUEL

- Turn generator off and let it cool for at least three minutes before removing fuel cap. Loosen cap slowly in order to relieve pressure in the fuel tank.
- Fill or drain fuel tank outdoors. Do not excessively inhale fuel vapors.
- Keep away from open flames or sparks and other sources of ignition.
- Do NOT smoke while filling fuel tank.
- Do NOT overfill tank. Allow space for fuel expansion.

WHEN TRANSPORTING OR REPAIRING EQUIPMENT

- Transport generator with the fuel valve in the off position.
- Repair generator with the fuel tank empty or the fuel valve in the off position.
- Disconnect spark plug wire before transport or service.

WHEN STORING FUEL OR EQUIPMENT CONTAINING FUEL

• Store away from furnaces, stoves, water heaters, clothes dryers or other appliances that have pilot light or other ignition source because they can ignite fuel vapors.

WHEN STARTING EQUIPMENT

- Ensure spark plug, muffler, air cleaner, and fuel cap are in place.
- Do NOT crank engine with spark plug removed.
- If fuels spills, wait until it evaporates before starting engine.

WHEN OPERATING EQUIPMENT

- Do not choke carburetor to stop engine.
- Do not tip engine or equipment at an angle, which causes fuel to spill.
- This generator is not for use in marine applications.



CAUTION!

Excessively high operating speeds (engine revolutions) increase the risk of injury and damage to the generator. Excessively low speeds impose a heavy load and will damage generator.

- Do NOT adjust engine speed governor. Generator supplies correct voltage and frequency at designated speed.
- Modifying generator in any way may be dangerous and will void warranty.













WARNING!

While engine is running temperature may exceed 150°F (65°C). Server burns may occur.

Exhaust heat/gasses can ignite combustibles, structures or damage fuel tank causing a fire.

- Do NOT touch hot surfaces and do avoid exhaust gasses.
- Allow generator to cool before touching.
- Keep at least 7 ft. (183cm) clearance on all sides of generator including overhead clear.
- Reflective exhaust heat may damage fuel tank causing fire.
- Code of Federal Regulation(CFR) Title 36 Parks, Forests, and Public Property require equipment powered by an internal
 combustion engine to have a spark arrester, maintained in working order, complying to USDA Forest service standard 51001c or later revision. In the state of California a spark arrester is required under section 4442 of the California Public resources
 code

WARNING!

Unintentional sparking can result in fire or electrical shock.



WHEN TESTING FOR ENGINE SPARK

- Do NOT check for spark with the spark plug removed.
- Use approved spark plug tester.

WHEN REPAIRING OR ADJUSTING GENERATOR

• Disconnect the spark plug wire from the spark plug and place the wire where it cannot contact spark plug.

CAUTION!

Improper use and care of this generator will cause damage and shorten its lifespan. Failure to follow these actions will void all warranties.

- Use generators only for appropriate and designated purposes.
- The dealer or customer helpline (1-866-471-7464) can instruct you on intended uses.
- Generator must be placed on a level surface.
- Do NOT expose generator to extreme conditions. Excessive dust, moisture, and corrosive vapors will damage unit.
- Cooling slots must be kept clear of debris.
- Do not connect improperly operating devices to generator.
- Shut off generator and take to a qualified service center if the generator fails to operate properly.











Controls and Features

Read this Owner's Manual completely and carefully before Operating Generator.













<u>Legend</u>

- 1. Fuel Level Sensor Displays Current Fuel Level
- 2. Fuel Tank Cap Vented Fuel Cap Must be Properly Installed at all times during Operation
- 3. Receptacle Panel See Product Specifications for Individual Model
- 4. Double Pole Circuit Breaker (AC) Protects Receptacles & Generator from Overload
- 5. Crankcase Oil Dipstick/Oil Fill Hole Cap Check/Fill Engine Oil
- 6. On/Off Switch Rocker Style; Set to "ON" to start Engine & "OFF" to Shut Off Engine; Key Switch Model: Turn to "START" to Crank Engine & "OFF" to Shut Off Engine
- 7. Crankcase Oil Drain Plug Remove to Drain Oil from Crankcase
- 8. Recoil Starting Handle Pull Handle to Rotate Engine for Starting
- 9. Fuel Cock (Valve) Turn to "OFF" to Terminate Fuel Delivery to Engine
- 10. Air Cleaner Check Maintenance Schedule for Service Intervals
- 11. Choke -
 - 5700 Watts & 8100 Watts Model: Before starting cold generator, pull the choke pin outward from generator to activate the choke lever. After allowing generator to run for a few seconds, push pin inward toward generator.
 - 4100 Watts Model: Before starting cold generator, rotate the choke lever to the left until resistance is felt. After starting the generator, rotate the choke lever to the right to disengage.
- 12. Earth Grounding Stud Always connect generator to an Earth Grounding Source. Consult Local Energy Jurisdiction for Code Requirements in your area.
- 13. Muffler & Muffler Hood Exhaust muffler emits combustion gas from engine and lowers the noise level of the generator
- 14. Valve Cover Cover for Overhead Valves designed to be removed periodically for valve adjustments.











Voltage Regulator



All Energy Storm Generators are equipped with AVR to get maximum performance and power from your unit.











Pre-Operating Instructions: Assembly

Your LIFAN Power USA generator is packaged without fuel and oil. Some assembly is required before operating your LIFAN Power USA Generator.

For further assistance in assembling your generator please visit our website (www.lifanpowerusa.com) or call 1-866-471-7464 option 2, between the hours of 9am-5pm Monday-Friday.

BOX CONTENT:

- Generator
- Accessory Kit
 - o 1 ea. --- Spark Plug Removal Tool
 - o 1 ea. Nema14-30 Male Twist Lock Plug
- Owner's Manual and Warranty Card
- Wheel Kit
 - o 2 ea. Never-Go-Flat Foam Filled Wheels
 - o 2 ea. -- Heavy Duty Leg Supports (Shipped Stored Under Fuel Tank)
 - o 1 ea. -- Axle
 - o 2 ea. --- Folding Handle
 - o Hardware Bag

UNPACKING THE GENERATOR:

- 1. Set the Carton on a Flat, Rigid Surface.
- 2. Remove All Contents from Carton EXCEPT Generator.
- 3. Open Box Completely by Cutting Each Corner from Top to Bottom.
- 4. Leave Generator on the Remainder of the box until Wheel Kit is installed.
- 5. Locate all Box Contents and Place them Beside the Generator. (Some Items may be Packed within the voids of the Generator itself)











Pre-Operating Instructions: Assembly

WHEEL KIT INSTALLATION:

The Following Tools are needed to Install Wheel Kit:

- Safety Glasses
- 8mm-14mm Wrench Set
- 8mm-14mm Ratchet & Socket Set
- 17mm Ratchet & Socket

Wheel Kit Installation Directions:

NOTE: Install Wheel Kit BEFORE Filling the Generator with Fuel or Oil. Never Tip a Unit that contains Fuel or Oil.

- 1. Tip Generator so Engine End is down and altenator end is up.
- 2. Slide Axle through both Mounting Brackets.
- 3. Place a Wheel on both Sides as shown in "Assembly Diagram."
- 4. Securely Tighten Wheel nuts with the 17mm Socket.
- 5. Tip the Generator so engine end is up.
- 6. Place the Support Legs under the Frame Brace as shown in "Assembly Diagram."
- 7. Secure with the provided Cap Screws and Hex Nuts. Securely tighten using 12mm Ratchet and Socket.











Pre-Operating Instructions: Assembly

Lifan to insert Diagram Picture











Pre-Operating Instructions: Generator Setup

CAUTION: Any attempt to start the generator before it has been properly serviced may result in engine failure and void warranty.

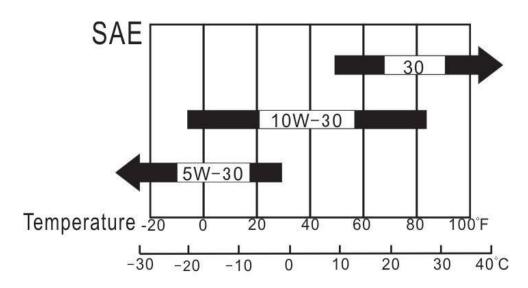
ADD ENGINE OIL: Refer to the diagrams below.

- 1. Place generator on level surface.
- 2. Clean area around Oil Hole Dipstick/Plug & Unscrew Oil Hole Dipstick/Plug.
- 3. Fill with appropriate type and amount. Refer to Chart below for recommended oil type based on Environmental temperature.

NOTE: Refer to "Product Specifications" section for universal recommended oil type and oil amount.

4. Replace Oil Hole Dipstick/Plug and tighten securely.

5



Environment temperature









Pre-Operating Instructions: Generator Setup

(Continued)



WARNING!



Fuel and its vapors are extremely flammable and explosive.



Fire or explosion can cause severe burns or death.

WHEN ADDING FUEL

- Turn generator off and let it cool for a minimum of three minutes before removing fuel cap. Turn and remove cap slowly in order to relieve residual tank pressure.
- Always fill the fuel tank with the unit outdoors.
- DO NOT overfill tank. Allow room for fuel expansion.
- Keep fuel away from sparks, open flames, heat, pilot lights, and other ignition sources.

ADD FUEL: Refer to Controls and Features section for diagrams.

- 1. Clean area around fuel cap, then remove fuel cap.
- 2. Pour fresh, clean regular automotive grade unleaded fuel with a minimum octane rating of 87 into fuel tank. Do NOT mix fuel with oil. Fuel must have ethanol blend of 10% or less. Pay close attention to the storage requirements of these fuels. Do NOT overfill fuel tank.
- 3. Install the fuel cap. Rotate the fuel cap clockwise until it is in its locked position. Wipe away any spilled fuel.











Pre-Operating Instructions: Generator Setup

CAUTION:

Alcohol-blended fuels (gasohol, ethanol, or methanol) will attract moisture, which leads to separation and formation of acids during storage. Acidic gas can damage the fuel system of an engine while in storage. To avoid engine problems, the fuel system should be treated with a fuel stabilizer or drained if the generator will not be started for thirty (30) days. If using a fuel stabilizer, follow the manufacturer's recommended instructions for use. Always use stabilizer with a full tank of gasoline.

Always drain old fuel and use fresh fuel before next use. If you do not use a fuel stabilizer, the fuel system must be drained and cleaned. Drain the fuel tank and start the engine, allowing it to run until all fuel lines and carburetor are drained of fuel.

Before restarting the carburetor the float bowl must be removed and cleaned of any debris.

NEVER use chemical solvents or cleaners in the fuel tank or damage may occur.

CHECK AIR CLEANER FLEMENT:

Refer to "Air Cleaner Maintenance" in the Maintenance section of this Owner's Manual to ensure Air Cleaner Element is in operable condition.

GROUNDING THE GENERATOR:

Refer to Controls and Features section.

Connect the Ground Terminal on the generator to an acceptable source of electrical ground, such as a copper-grounding stake, using copper electrical wire with a minimum diameter of 16 gauges.











HOW TO USE YOUR GENERATOR

WARNING!

Running generator gives off carbon monoxide gas. It is odorless, colorless, and highly toxic.

Breathing carbon monoxide gas can leads to fainting, nausea or may result in death.

- Only operate generator outdoors.
- Prevent exhaust gas from entering, through windows doors or ventilation intakes, any confined areas.
- DO NOT operate generator inside any enclosed or roofed areas. This includes the generator compartment of any recreational vehicle (RV).

STARTING THE ENGINE: Refer to the Controls and Features section.



CAUTION!

Never start or shutoff the generator with electrical loads connected and in the operational mode (on switch activated). Starting or shutting off the generator with electrical loads activated may result in damage to the generator.

- 1. Unplug all electrical loads from the generator.
- 2. Make sure the generator is in a level position.
- 3. Open the fuel cock by turning the fuel cock to the "ON" position.
- 4. For cold engine starts only: Push the choke lever to the engaged position per the instruction label on the generator main frame.

PULL START (RECOIL) ONLY MODELS:

- 5. Place the On/Off switch in the "ON" (I) position.
- 6. Grasp starter handle and pull slowly until resistance is felt. Then pull the cord rapidly with a full arm stroke. Allow the rope to return slowly. Do NOT allow the rope to snap back against housing.
- 7. Once the engine runs for 3-5 seconds, push the choke lever in to disengage.











HOW TO USE YOUR GENERATOR

ELECTRICT START MODELS:

- 5. For Electric Start Models, using provided key, turn the key switch to the "ON" position, for models with the rocker switch start, push the rocker switch to the "ON" position. Hold key switch in the "START" position or the rocker switch until engine starts or for NO MORE than 10 engine rotations. If the engine does NOT start, wait 15 seconds and repeat starting procedures.
- 6. Once the engine runs for 3-5 seconds, push the choke pin in to disengage.

NOTE (all models): If generator does not start within FIVE pulls, check the crankcase oil level. The engines "Low Oil Alarm System" may be activated and preventing the engine from starting.

CONNECTING FLECTRICAL LOADS:

- 1. Ensure engine is started before plugging in any electrical appliance.
- 2. Plug in desired 120 Volt loads to the 120 Volt U-Ground and 240 Volt loads to the 240 Volt receptacles on the LF8000E model. Always plug appliances into the generator with appliance in its "OFF" position.
- 3. Do NOT connect 240 Volt loads to the 120 Volt receptacles.
- 4. Only connects single-phase 60 Hertz loads.
- 5. **DO NOT OVERLOAD THE GENERATOR. FOLLOW THE PROVIDED "GENERATOR** WATTAGE REFERENCE **WORKSHEET" TO DETERMINE THE RUNNING** AND STARTING WATTAGE OF YOUR EQUIPMENT REFER TO THE PRODUCT SPECIFICATIONS TO ENSURE YOUR GENERATOR WILL OPERATE THE DESIRED EQUIPMENT.

NOTE: Use the running and starting wattage provided by the equipment manufacturer if available. If not available, use provided "Generator Wattage Reference Worksheet."











HOW TO USE YOUR GENERATOR

LOW OIL ALARM SYSTEM:

This model is equipped with a Low Oil Alert System designed to avoid engine damage from insufficient oil in the crankcase. The Low Oil Alarm System will stop the engine automatically before the oil level in the crankcase drops below safe operating levels.

STOPPING THE GENERATOR:

Refer to Controls and Features section for diagram.

EMERGENCY SHUTDOWN

1. Turn the Fuel Valve to "OFF" position

NORMAL SHUTDOWN

- 1. Unplug all electrical loads or turn the main breaker to the "OFF" position.
- 2. In order to stabilize internal equipment temperatures, allow the engine to run for 3–5 minutes under no load.
- 3. If the generator will not be in use for more than 7 days, turn the fuel valve to the "OFF" position and allow the unit to run until the fuel in the carburetor is used and the engine shuts itself off.
- 4. Turn the ignition switch to the "OFF" position.
- 5. Allow unit to cool to ambient temperature before storage or transportation.
- 6. Always transport the generator with the fuel valve in the "OFF" position. Failure to do so will result in damage to the engine.











HOW TO USE YOUR GENERATOR

USAGE IN HIGH ALTITUDE REGIONS:

In regions with high altitude, the standard carburetor produces overly dense combinations of fuel and air, which result in decreased engine performance and increased fuel consumption. To maintain high engine performance at high altitudes, install a high altitude carburetor main spray nozzle and re-adjust the adjusting screw for idle speed. For usage in regions with an altitude of over 4,527ft (1380m), contact your dealer to replace the standard carburetor and make needed adjustments in advance. Even with a proper high altitude carburetor spray nozzle installed in the engine, the power output of the engine will drop about 3.5% with every 1000ft (305m) increase in altitude. If the standard carburetor jets are not replaced and adjusted for usage in high altitude, the increased altitude effect will be even more severe.

NOTE: Usage of the generator in regions with lower altitude than the high altitude carburetor spray nozzle is applicable, may result in decrease of engine performance. The engine may become overheated and over-lean combination of fuel and air produced may cause severe damage to the engine.

TRANSFER SWITCH CONNECTIONS - Only allow Professional Electricians

The Lifan EnergyStorm generator is wired with the neutral bonded to ground. If you are connecting your generator to a transfer switch, the electrician must first determine what type transfer switch is being used. Transfer switches for this equipment are either two-pole or three- pole types.

A two-pole transfer switch will not switch the neutral from the generator to the service panel. That means the generator will be grounded to the service panel. To use the generator with two-pole transfer switches, the electrician will need to change the neutral from bonded to floating.

This is done by removing the jumper wire that connects the alternator ground to the alternator neutral. Remove the jumper wire and retighten the connections. Keep the jumper wire with the owner's manual in case it is needed for future use when not connected to a transfer switch.













Storing the Unit

STORAGE

Before long term storage of your power equipment product, typically 30 days or more, perform the following:

- 1. Set the fuel cock (valve) to the "OFF" position.
- 2. Let the unit continue to run until it stops itself, burning all of the fuel in the fuel system.
- 3. Turn the ignition switch to the "OFF" position.
- 4. Drain the engine oil in accordance with the "Oil Change Procedures" in this Owner's Manual's Maintenance section. Do NOT re-fill with oil until ready to use again.
- 5. Remove the Spark Plug in accordance with the "Spark Plug Maintenance" in the Owner's Manual's Maintenance section. Spray a lubricant, such as WD40®, into the Spark Plug hole to lubricate the top of the piston and walls of the cylinder. Replace the Spark Plug.
- 6. Pull starter rope until resistance is felt. This will place the valves in the closed position.
- 7. Add the recommended amount of fuel stabilizer, in accordance with the amount recommended by the manufacturer of the fuel stabilizer, to the unused gasoline left in the fuel tank.
- 8. Place the unit in a clean, dry, and secure location.
- 9. Cover with "LIFAN Water Proof Generator Cover," Item Number LF100-69600 not included) or canvas/vinyl tarpaulin. Do NOT operate unit with cover installed.











MAINTENANCE SCHEDULE		
PROCEDURE	TIME	
Engine Oil Check	Each Use	
Replace Engine Oil	After Each 40 Hours of Use (For Initial Break in – After First (1 st) 10 Hours of Use	
Air Cleaner Filter Check	Each Use	
Air Cleaner Filter Replacement	When Needed or After Every 50 Hours of Use	
Air Cleaner Wash	When Needed	
Spark Plug	When necessary or within 100 hrs of run time	
Valve Clearance	Check & Re-adjust annually or after 300 Hours of Use	
Fuel Tank	Replace Every 3 Years Based on Condition	

NOTE: Refer to Following Procedures for Proper Method to Perform Maintenance

OIL CHANGE PROCEDURES: Refer to Controls and Feature section for diagram. Periodic Maintenance of your engine oil should be performed after each 40 hours of use of you Power Equipment Product. Check your engine oil level prior to each use.

- 1. Start your engine and let it warm up to get the oil warm and thinner. Turn the engine On/OFF switch to the "OFF" position. Turn Fuel Valve to the "OFF" position.
- 2. Remove the oil cap/dipstick by turning counter clockwise. Remove the oil drain plug located below the oil cap/dipstick utilizing the appropriate tools.

USE CAUTION: THE OIL MAY BE HOT.

3. Drain the engine oil into an approved receptacle and discard in accordance with all Federal and State Regulations. Never dump the used engine oil on the ground or into drains, only discard in an approved manner. Check with your local authorities to determine the regulations in your area.











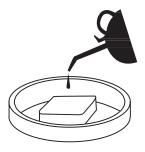
WARNING! AVOID SPLASHING OF HOT OIL: IT CAN BURN YOU AND CAUSE SEVERE INJURY.

- 4. After oil is completely drained, replace oil drain plug and tighten with appropriate tools. Replace oil with the proper oil for your product. Refer to the Pre-Operating Instruction: Generator Setup section for exact fill requirements.
 - Always use your dipstick to check the oil level and only fill to the full mark on the dipstick. Never overfill the engine as this can cause damage to the unit and void warranty.
- 5. Replace the dipstick/oil cap on the engine.
- 6. Shake generator to ensure the float in the Oil Alert System is free.

PROPER MAINTENANCE OF THE UNIT WILL INCREASE THE LIFE OF YOUR PRODUCT. THE OIL MUST BE CHANGED ON A REGULAR BASIS FOR PROPER OPERATION, AND RELIABILITY AND TO ALSO MAINTAIN THE WARRANTY ON THIS PRODUCT.

AIR CLEANER MAINTENANCE:

- 1. Remove the clip (item 9 in "Air Cleaner A" below) or the wing nut (item 7 in "Air Cleaner B" below) to remove and check the air filter element.
- 2. For Sponge Type Air Filters, wash with soap and water when contaminated. Squeeze excess liquid from air filter element, and allow the air filter element to dry. lubricate with a few drops of oil. For Paper Type Air Filters, replace with the correct Air Filter for your unit. They are available at your dealer or from LIFAN Power USA. Order your filter by calling toll free 866-471-7464.





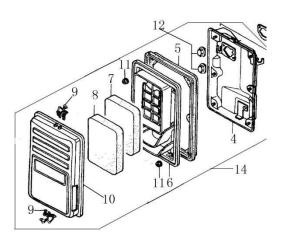


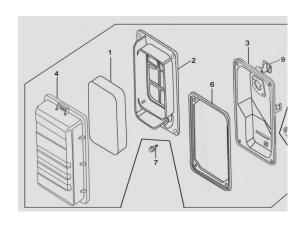






3. Re-Install the air filter element into the air filters housing.





Air Cleaner A Air Cleaner





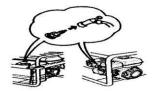




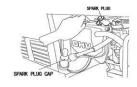


SPARK PLUG MAINTENANCE:

- 1. Remove Spark Plug Cap (refer to "Spark Plug Cap Removal" figure below.)
- 2. Remove Spark Plug with socket and handle supplied with your unit (refer to "Spark Plug Removal" figure below.)
- 3. Clean any carbon build-up around the Spark Plug.
- 4. Check the Spark Plug Gap and adjust if necessary. 0.30-inch gap.
- 5. Lubricate the threads of the Spark Plug with anti-seize compound or engine oil.
- 6. Re-install the Spark Plug and Spark Plug Cap.







Spark Plug Cap Removal

Spark Plug Removal

Lifan to insert pics

ES1500 equipped with spark plug access through access panel located on the top of the fuel tank.

FUEL SYSTEM MAINTENANCE:

NOTE: Periodically you can get sediment or trash in your Carburetor Bowl. Use the following procedures to clean:

- 1. Turn the fuel cock (valve) to the "OFF" Position.
- 2. Remove the carburetor bowl by removing the mounting bolt located at the bottom of the bowl.
- 3. Dump out the old fuel and sediment into an approved container and clean carburetor bowl thoroughly.









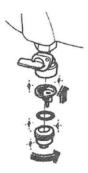


FUEL SYSTEM MAINTENANCE (continued):

4. Fit a new rubber washer into place and re-attach fuel bowl to the carburetor. diagram below) and either clean or replace the fuel filter element. Re-assemble the fuel filter element (refer to "Fuel Filter Element Assembly" diagram below.)







Fuel Filter Element Assembly







Troubleshooting

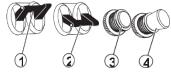
IF THE ENGINE WILL NOT START:

- 1. Check to ensure switches are in the "ON" position. (Both unit and engine)
- 2. Check engine oil level. Your unit possesses a Low Oil Alarm System that will not allow your engine to start if the oil is below safe operating levels. This feature is installed to increase the life of your engine and prevent engine damage. If oil level is low, fill to the full mark on dipstick. Refer to the Product Specifications for exact oil type and amounts.
- 3. Check the fuel level to insure adequate fuel. Add fuel if necessary.
- 4. Remove and inspect the spark plug for cleanliness and proper electrode gap. If needed, clean or replace the spark plug. Refer to Spark Plug Maintenance in the Maintenance section of the Owner's Manual for proper procedure.
- 5. If your unit will still NOT start after performing the above checks, call our customer hotline at LIFAN Power USA Toll Free 1-866-471-7464 OPTION 2.

NOTE: Periodically on the initial start-up or after the unit has been stored for a long period of time, the float for the "Low Oil Alarm System" will stick to the bottom of your oil pan. Locate the two (2) wires to the Low Oil Sensor Diode (refer to figure on the right) located on the side of the engine block. Unplug these wires and, only after ensuring the engine is full of oil, start the engine and allow to run until warm (normally 20 minutes, as this will heat the oil and release the float on the Low Oil Alart System). Then re-plug the wires to the terminals on the Low Oil Alarm Sending Uni



UNIT DOES NOT PROVIDE ELECTRICAL CURRENT:



- 1. Plug in a small appliance or tool to test. 1.On 2.Off/Tripped 3.On 4.Off
- 2. Check if the AC (or DC) Circuit Breaker is in the "ON" position. If not, place in "ON" position. If equipped with a GFCI receptacle, re-set GFCI Breaker by pushing in the reset button in the middle of the GFCI's faceplate (this must be done with the engine running).
- 3. If your unit still does NOT produce electricity after performing the previous checks, call LIFAN Power USA at 1-866-471-7464, OPTION 2.

UNIT DOES NOT PROVIDE ELECTRICAL CURRENT (continued):

1. If your unit still does NOT produce electricity after performing the previous checks, call LIFAN Power USA at 1-866-471-7464 OPTION2.









Generator Safety

- 1. Never operate gasoline engine powered products in any enclosed spaces, as they product deadly Carbon Monoxide Poisonous Gases.
- 2. Never hook a generator directly to your home circuit without the proper installation by a Licensed Electrician and without the proper power transfer devices.
- 3. Do NOT operate your power equipment in inclement weather such as rain, snow, and/or sleet.
- 4. Do NOT operate your power equipment within five (5) feet of any flammable materials.
- 5. When refueling the power equipment never smoke or refuel near any flame or ignition devices. Never refuel while the unit is running. If during the refueling process some fuel is spilled, always completely clean the fuel and allow sufficient drying time prior to re-starting the unit. Gasoline vapors ignite easily and are very dangerous.
- 6. Do NOT parallel connect this model. Generator cannot be combined with other electric wires or multiple socket boxes.
- 7. Do NOT lengthen the exhaust pipe or vent it with any extension.
- 8. Use SJ or SJO type extension cords if necessary.
- 9. Do not use extension cords exceeding: 16 Gauge, 200ft or 10 Gauge, 330ft.
- 10. NEVER ALLOW CHILDREN OR ANIMALS TO BE NEAR THIS EQUIPMENT DURING OPERATION. ONLY QUALIFIED PERSONS SHOULD OPERATE THIS EQUIPMENT. FOLLOW ALL GUIDELINES CONTAINED IN THIS **OWNER'S MANUAL FOR** THE SAFE OPERATION OF THIS EQUIPMENT.

















Wattage Chart

GENERATOR WORKSHEET				
	RUNNING	ADDITIONAL STARTING		
	WATTAGE REQUIREMENTS	WATTAGE REQUIREMENTS		
HEATING/COOLING:				
Furnace Fan, gas				
or fuel oil furnace	200	700		
1/8 horsepower	300	500		
1/6 horsepower	500	750		
1/4 horsepower	600	1000		
2/5 horsepower	700	1400		
3/5 horsepower	875	2350		
Central Air Conditioner				
10,000 BTU	1500	2200		
20,000 BTU	2500	3300		
24,000 BTU	3800	4950		
32,000 BTU	5000	6500		
40,000 BTU	6000	6700		
HEATING/COOLING:		SUB-TOTAL:		
KITCHEN				
Refrigerator, Average	600	2200		
Dish Washer - Cool Dry	700	1400		
Dish Washer - Hot Dry	1450	1400		
Clothes Dryer - Gas	700	1800		
Clothes Dryer - Electric	5750	1800		
Microwave Oven, 750W	750	800		
Washing Machine	750	2300		
Coffee Maker	850	0		
Toaster 2-slice	1100	0		
Toaster 4-slice	1650	0		
Electric Skillet	1500	0		
Electric Range 6-in. element	1500	0		
Electric Range 8-in. element	2100	0		
Freezer	2500	2200		
KITCHEN		SUB-TOTAL:		











APPLIANCES		
Lights- Wattage	Actual:	
VCR	50	0
Heating Pad	65	0
Radio	100	0
Television - Black & White	100	0
Television - Color	300	0
Dehumidifier	400	0
Electric Blanket	400	0
Garage Door Opener - 1/4HP	550	1100
Garage Door Opener - 1/3HP	725	1400
Well Pump - 1/3 hp	750	1400
Well Pump - 1/2 hp	1000	2100
Sump Pump - 1/3 hp	800	1300
Sump Pump - 1/2 hp	1050	2150
Vacuum Cleaner - Standard	800	0
Vacuum Cleaner - Deluxe	1100	0
APPLIANCES		SUB-TOTAL:
COMMERCIAL PRODUCTS:		
1/4" Drill	300	300
Jigsaw	300	300
Electric Weed Trimmer	500	500
Router	1000	1000
Belt Sander	1000	1000
Disc Sander	1200	1200
Chain Saw	1200	1200
Worm Drive Saw	1560	3100
12" Concrete Cutter	1800	3600
7 1/4" Circular Saw	1500	3000
Disc Grinder	2000	4000
Air Compressor, Average	2000	4000
COMMERCIAL PRODUCTS:		SUB-TOTAL:











CONVERTING AMPS OR HORSEPOWER INTO WATTS

If necessary, uses these formulas:

Watts = Amps x Volts

Running Watts* = Horsepower x 932** (for motors)

Remember, this worksheet lists average power requirements a particular manufacturer's device may use more or less than the listed wattage.

• Add a 10% correction factor to your totals to help overcome this uncertainty.

If your customer plans to operate devices that use electric motors, list both the starting and running requirements of each.

Starting requirements of some devices maybe significantly higher than their running requirements. This
higher demand must be considered when estimating your power needs. Some small, universal motors —
which do not draw a heavy starting load (drills, small saws, blenders, etc.) — require very little extra current
for starting.

When listing items that use motors, take them in the order of highest-to-lowest starting requirements, as shown in the example below. Motor A, for instance, has a starting requirement of 2,600 watts, so it's listed first, followed by Motor B at 1,300 watts, and Motor C at 1,000 watts.

MOTOR/ DEVICE	STARTING WATTS	RUNNING WATTS
Motor A	2,600	850
Motor B	1,300	600
Motor C	1,000	750

NO ELECTRIC MOTORS

If your list *does not* include any devices that use electric motors, simply add the power (running) requirements of all the items on your list to obtain the maximum power needed.

• For example, if you intend to use only an electric skillet, a 100-watt light and a heating pad (as shown below), the maximum power requirement would be 1,655 watts. In this case, a generator like the EF2600, that can produce 2,300 watts rated output, is recommended.

DEVICE	WATTS
Electric Skillet	1,500
Light	100
Heating Pad	65
Total:	1,665

NOTE: The EF1600's rated output is 1,400 watts, so its output would be too low to handle this load on a continuous basis.









This warranty is limited to the following Lifan Power and Storm Series products that are distributed by the EquipSource LLC, dba LIFAN POWER USA, located at 2205 Industrial Park Road, Van Buren, AR 72956. Effective date is 4/20/2010.

LENGTH OF WARRANTY						
	Residential Use** Commercial/Rental***					
PRODUCTS COVERED	1 st Year	1 st Year 2 nd Year 3 rd Year				
Walk Behind Mowers	Full unit parts and labor	Full unit parts only	Engine: parts only	Full unit: 3 months parts and labor		
Water Pumps	Full unit parts and labor	Full unit parts only	Engine: parts only	Full unit: 12 months parts and labor		
Generators/Inverter Generators	Full unit parts and labor	Full unit parts only	Engine: parts only	Full unit: 12 months parts and labor		
Pressure Washer Engines	Full unit parts and labor	Full unit parts only	Full unit: 12 months parts and labor			
Pressure Washer Pumps*	Full unit parts and labor NA NA Full unit: 12 months parts and labor					
Gasoline Engines	Full unit parts and labor	Full unit parts only	Engine: parts only	Full unit: 12 months parts and labor		
Gasoline Powered Welders	Full unit parts and labor	Full unit parts only	Engine: parts only	Full unit: 6 months parts and labor		

^{**} Residential Use is defined as items that are for personal use.

In order to qualify for the limited warranty the product(s) must be purchased in North America from an authorized EquipSource, LLF d/b/a Lifan Power USA dealer or a dealer authorized by EquipSource to sell Lifan products. This warranty is non-transferable and applies only to the original purchaser. The supplied "Warranty Registration Card" must be completed and on file with American Warranty Service (at the supplied address), at the time that any warranty claim is made. The "Warranty Registration Card" must be submitted with a receipt of purchase which clearly states the date of purchase and where the purchase was made.

During the warranty period (stated above) Equipsource, LLC and/or American Warranty Service will repair or replace, at its' option, any part that is proven to be defective in material or workmanship under normal usage. Repairs and/or replacement will be made without charge for parts or labor. All parts found to be defective must be returned to EquipSource or American Warranty Service at our direction. Upon reception of the parts a judgment as to the validity of the warranty claim will be determined. All parts replaced under warranty or any replacement of the complete unit will be considered part of the original product and replacement of any product, and any warranty on those parts or replacement unit will coincide with the original warranty.

To obtain Warranty Service, call our Customer Service Hotline at 1-866-471-7464 and press 2 for Warranty Service at which time you will be transferred to the technicians at American Warranty Service. In lieu of this you may call directly to American Warranty Service at 888-926-4313 to be directly connected to a repair specialist. At Equipsource's discretion; Equipsource may elect to replace a defective unit. In this case the end user is responsible for all shipping and handling charges associated with the exchange and as stated above the warranty will coincide with the date of the original purchased unit.



^{***} Commercial/Rental use is defined as any usage for income producing or other business related uses.







This warranty is not valid for products or parts affected or damaged by accident, collision, normal wear, fuel contamination, abuse, neglect, misuse, alteration and/or unsuitable use or unauthorized parts replacement. Mower decks and blades are specifically not warranted for impact or abrasive damage. Warranty becomes void if the customer fails to install, maintain, and/or operate the product in accordance with the instructions and recommended actions of Lifan set forth in the owner's manual. EquipSource, LLC disclaims any responsibility for time loss or loss of usage of the product, transportation, commercial loss, or any other incidental or consequential damage. Prior to any warranty service an approval code must be issued to the service center in order for the warranty claim to be valid. Any implied warranties are limited to the duration of this written limited warranty. This warranty gives you specific legal rights, and you may also have other rights, which may vary from state to state.

This warranty specifically excludes the use of any Lifan Power Equipment or Storm Series power equipment as the "Sole Source of Power" for "off the power grid applications" and this warranty will become null and void for units used for this purpose and manner. This warranty specifically excludes the use of any Lifan Power Equipment or Storm Series power equipment for the purpose of powering Life Support devices, Life Support appliances, Medical devices, and/or Medical appliances. EquipSource, LLC will not be held responsible for any damage due to the use of any Lifan or Storm Series power equipment for these purposes.

OWNER'S RESPONSIBILITY

To ensure trouble free warranty coverage it is important that you register your Lifan generator by phone at 1-866-471-7464, or by filling out and returning to Lifan Power USA the warranty registration card supplied with your generator. Registering your product Confirms your warranty coverage and provides a direct link between you and Lifan Power USA if we find it necessary to contact you.

Your receipt for purchase including date, model and serial number must be maintained and registered to receive service from an Authorized Service Dealer for warranty service. Proof of purchase rests solely with you, the original purchaser.

You must demonstrate reasonable care and use, and follow preventive maintenance, storage, fuel and oil usage as prescribed in the operator's manual for your Lifan Power unit. Should a product difficulty occur, you must, at your expense, deliver or ship your Lifan Power Product unit to a Lifan Authorized Service Dealer for warranty repairs (which must occur within the applicable warranty period), and arrange for pick-up or return of your unit after the repairs have been made. For the warranty assistance from a Lifan Authorized Service Dealer nearest toyou, call Lifan's automated phone at 1-866-471-4764 Option 2. Should you require assistance or have questions concerning Lifan Power USA Warranty Statement, you can contact us through the web at www.lifanpowerusa.com or call toll free 1-866-471-7464.











EXCLUSIONS

- Lifan Power Equipment that utilize non-Lifan replacement parts.
- Failure to perform "Periodic Maintenance" as required and specified in the supplied "Owner's Manual."
- Costs of normal maintenance and adjustments.
- Failures caused by any contaminated fuels, oils, or lack of proper oil levels.
- Repairs or diagnostics performed by individuals other than Lifan authorized dealers not authorized in writing by Lifan.
- Failures due to normal wear and tear, accident, misuse, abuse, negligence or improper use.
- As withall mechanical devices, the Lifan engines need periodic part(s) service and replacement to perform as designed. This warranty will not cover repair when normal use has exhausted the life of a part(s) orengine.
- Failures caused by any external cause or act of God, including but not limited to, collision, theft, vandalism, riot, war, fire, freezing, lightning, earth-quake, windstorm, hail, water, flood, tornado, or hurricane or any occurrence outside of normal use and activity.
- Damage related to any animal infestation to include rodent and/or insect infestation.
- Products that are modified or altered in a manner not authorized in writing by Lifan.
- Any incidental, consequential or indirect damages caused by defects in materials or workmanship, or any delay in repair or replacement of the defective part(s).
- Failure due to misapplication.
- Telephone, cellular phone, facsimile, internet access, or other communication expenses.
- $\bullet \ \ \text{Expenses related to "customer instruction" or troubleshooting where no manufacturing defect is found.}$
- Overnight freight or special shipping costs for replacement part(s).
- Overtime, holiday or emergency labor.
- Starting batteries, fuses, light bulbs and engine fluids.











DISCLAIMER OF IMPLIEDWARRANTIES

This limited warranty is in lieu of all other expressed or implied warranties, including any warranty of the units fitness for any particular use and any implied warranty of MERCHANTABILITY otherwise applicable to Lifan Power Equipment and its affiliated companies shall not be liable for any special, incidental or consequential damage, including lost profits. There are no warranties extended other thanas provided herein. This limited warranty may be modified only by Lifan Power USA. Any implied warranties allowed by law shall be limited in duration to the terms of the express warranty provided herein. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. This warranty gives you specific legal rights. You also have other rights from state to state. Lifan's ONLY LIABILITY SHALL BE THE REPAIR OR REPLACEMENT AS STATED ABOVE. IN NO EVENT SHALL Lifan BELIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, EVEN IF SUCH DAMAGES ARE A DIRECT RESULT **OF Lifan's** NEGLIGENCE. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. This warranty gives you specific legal rights and you may also have other rights from state to state.

OWNER'S WARRANTYRESPONSIBILITIES:

As the outdoor equipment owner, you are responsible for performance of the required maintenance listed in your owner's manual. EquipSource, LLC d/b/a Lifan Power USA recommends that you retain all receipts covering maintenance on your outdoor equipment. Lifan Power USA will not deny your warranty coverage based solely on your lack of receipts for service however, the condition of the equipment upon arrival at the service center will determine the warrantable nature of the product.

As the outdoor equipment owner, you should however be aware that Lifan Power USA may deny your warranty coverage if your outdoor equipment or a part has failed due to abuse, neglect, or improper maintenance or unapproved modifications.

You are responsible for presenting your outdoor equipment to a Lifan Power Equipment Authorized Warranty Service Dealer as soon as the problem exists. The warranty repairs should be completed in a reasonable amount of time.

If you have any questions regarding your warranty rights and responsibilities, you should contact Lifan Power USA or American Warranty Service Representative at 1-866-471-7464 Option 2 Warranty and Service or at the following address Lifan Power USA, 2205 Industrial Park Road, Van Buren, AR 72956 or by contacting us through www.lifanpowerusa.com.











Wiring Diagram ES1500











Wiring Diagram ES2200SC











Engine Exploded View & Parts ES1500











Engine Exploded View & Parts ES2200SC











Please Read this Owner's Manual Carefully before

Operating Your New Generator.

This Owne**r's** Manual includes the operation and maintenance of the ES1500 & ES2200SC

Thank you for purchasing our Energy Storm generator!

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For Product Support and Service Please Scan the QR Code Below or Visit Us at www.lifanpowerusa.com Or Call Toll Free 1-866-471-7464







LIFAN Power USA is proud to offer it's extensive line of LIFAN Power Equipment!!!!

LIFAN Power USA is the sole distribution for LIFAN Power Equipment in the United States. LIFAN's unmatched investment in research and development ensures quality engines, generators, pressure washers, and water pumps at an extraordinary value. LIFAN continues to be an innovator and presently holds over 3,000 patents. Product performance has earned LIFAN the reputation of dependability and value in all their international markets.

LIFAN has been manufacturing and selling innovative and value driven products worldwide for over 15 years. LIFAN is distributed in over 100 countries. LIFAN is the largest privately owned company in China with sales over One-Billion Dollars annually and 14,000 employees. As the largest engine manufacturer in China, LIFAN builds more than five million small engines each year. This worldwide presence has been made possible by producing equipment that is durable, reliable, and rugged for any market.

LIFAN Power USA prides itself in standing behind all LIFAN products with our comprehensive warranty policy. LIFAN Power USA continues to offer the highest level or service and support in the industry. With proven performance and unmatched value, LIFAN Power Equipment will always keep you running.

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For additional product information of any LIFAN Power Equipment, please visit us at our website – www.lifanpowerusa.com.

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