



**LF1200DT**



LIFAN INDUSTRY(GROUP)CO.,LTD.

# PREFACE

Thank you for choosing LIFAN battery-operated motorcycle. May you enjoy riding all time.

The manual contains the necessary instructions and guidance with respect to the operation and maintenance of the powered vehicle, and BE SURE TO READ IT CAREFULLY BEFORE YOU RIDE THE VEHICLE. Proper operation and maintenance can guarantee a safe riding to minimize troubles of the vehicle and keep it in a sound condition, which can extend the motor service life.

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LF1200DT powered vehicle is subject to the standard Q/LF 61107

The quality system of Lifan Industry (Group) Co., Ltd. is certificated to ISO9001.

## IMPORTANT NOTICES

### •Operator and Passenger

The vehicle is designed to carry the operator and one passenger. Never exceed the maximum weight capacity as following:

Maximum load: 150kg including 5kg for rear carrier.

### •On-road

The motorcycle is designed for on-road use.

Pay special attention to statements preceded by the following words:

**WARNING:** *Indicates a strong possibility of severe personal injury or death if instructions are not followed.*

**CAUTION:** *Indicates a possibility of equipment damage if instructions are not followed.*

**NOTE:** *Indicates a possibility of equipment damage if instructions are not followed.*

**Environmental Protection (EP):** *Indicates special precautions that must be taken to meet environment protection laws and regulations. Improper use of a motorcycle may cause environment pollution.*

If the operator fails to follow safe operating and maintenance practices, Co. will not take any responsibility to any injury or damage occurred.

This manual should be considered as a permanent part of the motorcycle and should remain with the motorcycle when resold.

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# **VEHICLE SAFE RIDING**

## **SAFE RIDING RULES**

**WARNING** Vehicle riding requires special efforts on your part to ensure safety. Know these requirements before you ride.

- Always make a pre-ride inspection before you start the engine. You may prevent accident or equipment damage.
- Most countries require a special vehicle riding test or license. Make sure you are qualified before you ride. NEVER lend your vehicle to an inexperienced rider.
- Make yourself conspicuous to help avoid the accident that wasn't your fault:
  - Wear bright or reflective clothing.
  - Don't ride in another motorist's "blind spot".
  - Don't speedily cross another's way.
  - Obey all national and local laws and regulations.
  - Obey the speed limits, and NEVER travel faster than conditions warrant.
  - Signal before you make a turn or lane change to draw other motorists' attention.
  - Use extra caution at intersections, parking lot entrances and exits.
  - Always remember to ride with both hands and keep both feet on the rider footrest while the passenger grasps the handrail with both feet on the rear footrest.

## **PROTECTIVE CLOTHS**

- For the safety sake, always wear a helmet, a face shield, dust glasses and protective clothing. Your passenger needs the same protection.
- The exhaust system becomes hot during operation, and it remains hot for a while after stopping the engine. Take care not to touch the exhaust system while it is hot. Wear clothing that fully covers your legs.
- Do not wear loose clothing that could catch on the control levers, wheels, etc.

## **REFITTING**

**WARNING** Arbitrarily refitting the vehicle or removing the original parts may make riding unsafe, and is illegal also. The user must obey all national and local laws and regulations in relation to vehicle and traffic. If you have a good proposal concerning refitting of the motorcycle, please write us. The refitment can be done with permission of the Co. Otherwise, the user will take the consequences.

## **LOADING**

**WARNING** Addition of accessories and cargo may reduce the vehicle's stability, performance and safe operating speed.

- Keep cargo and accessory weight lower and close to the center of the vehicle. Load weight equally on both sides to minimize imbalance. As weight is located further from the vehicle's center of gravity, handling is proportionally affected.
- Adjust tyre pressure and rear suspension to suit load weight and riding conditions.
- Make sure that cargo is fastened on the vehicle.
- Do not attach items to the handlebars, fork or fender. Otherwise, unstable handling or slow steering response may occur.
- The maximum load weight of the motorcycle is 150kg. Please do not overload.

## **ACCESSORIES**

Genuine accessories of LIFAN Vehicles have been specifically designed and tested on the motorcycle. Because the factory cannot test all other accessories, you are personally responsible for selection, installation and use of accessories not produced by the Co. Always follow Safe Riding Rules and these below:

- Carefully inspect the accessory to make sure that it does not obscure any lights, reduce ground clearance or banking angle, or limit suspension travel, steering travel or control operation.
- Do not add electrical equipment that will exceed the vehicle's electrical system capacity.

# GENERAL INFORMATION

## PARTS LOCATION





## VIN RECORD

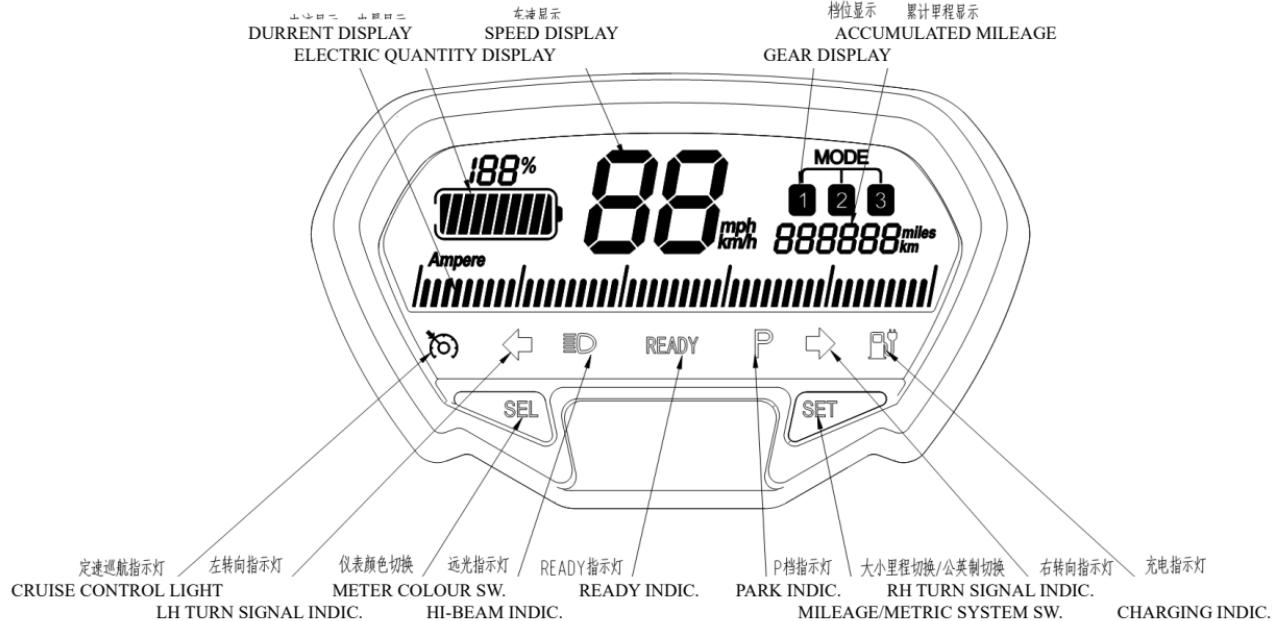
VIN: ☆□□□□□□□□□□□□□□□□☆

Please fill the VIN and engine code of your vehicle in the blank below. They will help order spare parts and find out the vehicle when stolen.

The VIN is stamped into the frame under seat. The vehicle nameplate is fixed on the left side of frame

## CONTROLLING PARTS

## METER



**188%**



Electric quantity, %

Electric quantity, 10% of battery per scale

**88.**

Shows riding speed of vehicle within 88km/h. Fault code is showed when the vehicle fails in operation.



Gear shifter lever    1 gear : Economy    2 gear: Normal    3 gear: Sport

**888888.**

Shows accumulated mileage with a total of 6 digits (including 999999). A trip mileage can be showed by operating the switch.



Shows current with 50 scales.



Cruise control light



Left turn signal indicator



High-beam indicator



READY indicator



PARKING indicator



Right turn signal indicator



Charging indicator   The indicator is green when battery charging reaches 100%. Power is lower than 10%, the charge indicator keeps flashing (yellow). The indicator shows yellow when the battery is charging.

## IGNITION SWITCH

“ON”: The circuit of vehicle can be operated, power indicator on the dashboard is lit and the key cannot be removed.

“OFF”: The circuit of vehicle cannot be operated and the key can be removed.

“LOCK”: To lock the steering head, turn left or right the steering bar as far as it will go, insert the key into the ignition switch slot, turn to “OFF” position, then depress and turn



counterclockwise to “LOCK” position, at last remove the key. To unlock the steering head, turn the key clockwise.

“OPEN”: Open the seat lock.

**CAUTION:** As a rule, in order to ensure safety, please quickly shut down the main ignition switch in abnormal situation, cut off power supply.

## LEFT HANDLEBAR CONTROLS

“”: Hi-beam

“”: Lower-beam

“”: Overtaking light Hi-beam light flashing for warning

“”: Left turn signal light

“”: Right turn signal light

“”: Press the button to sound the horn.

Rear Brake Lever: Grasping in the lever will apply the rear brake.

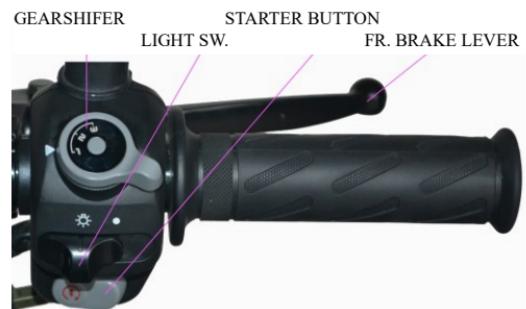
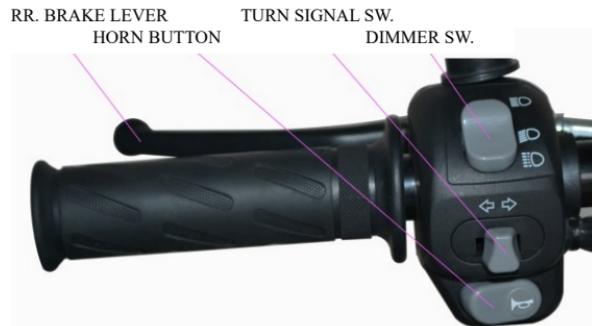
## RIGHT HANDLEBAR CONTROLS

### Gear shifter lever

1 gear: ECONOMY is suitable for the farthest trip.

2 gear: NORMAL is the most suitable for spacious road

3 gear: SPORT High speed mode



“”: Illuminating switch, ON

“”: Illuminating switch, Off

“”: Start the vehicle by key, set the side stand in the running position. Press and hold the switch for 3 seconds to turn off “P” light and turn on “READY” light. Operate the throttle grip to run the vehicle.

Press the button when the vehicle runs more than 5km/h” to put the vehicle in "Cruise control" mode. Turn or operate the brake lever or throttle grip, disengage the "Cruise control" mode.

Front Brake Lever: Grasping in the lever will apply the front brake.

## REAR SHOCK ABSORBER

The shock absorber has 5 adjustment positions for different loads and riding conditions. Position I is for light loads and smooth road conditions. Position II to V increase spring preload for a stiffer rear suspension, and can be used when the motorcycle is heavily loaded or ridden in rugged roads.

**NOTE** Be certain to adjust shock absorbers both left and right to the same position.



## STANDS



### Side Stand

When parking the vehicle, turn the side stand clockwise along the frame to position. Before driving the vehicle, turn the stand to the initial position. After returning the side stand, press and hold  button for 3 seconds to switch "P" to "READY" position.

### Center Stand

When parking the vehicle, step on the center stand at the left of body while rising the rear portion of body with right hand so as to support the vehicle. Before driving the vehicle, move the steering head forward to let the center stand return automatically.

# OPERATION GUIDE

## PRE-RIDE INSPECTION

Inspect your vehicle every time before you ride it. The items listed here will only take a few minutes to inspect, and in the long run they can save time, expense, and possibly your life.

S/N	Check Item	Contents
1	Tyres	Check condition and pressure
2	Front/rear brakes	Check operation
3	Horn	Check function
4	Lights	Check function
5	Meter	Check function
6	Ignition switch	Check function
7	Rearview mirror	Check clean
8	Grips	Check for its smoothness and reliability
9	Steering bearings	Check for looseness. Repack with all-purpose grease
10	Front/rear axles	Check all fasteners. Tighten and adjust as needed.
11	Fasteners	Check all fasteners and fittings. Tighten and adjust as needed.
12	Electric quantity	Check that electric quantity if suitable. Recharge if needed.
13	OL protection sw.	Check to see that the device is on, or switch to "ON"

## **ATTENTIONS TO RIDING**

1. Developing your riding skills in an ongoing process. Even if you have ridden other motorcycles, take time to become familiar with how this vehicle works and handles. Practice in a safe area until you build your skills and get accustomed to the vehicle's size and weight. Because accidents often involve inexperienced or untrained riders.
2. When using the vehicle, make sure that the OL protection switch is set to ON, then turn on the ignition switch and set the travel switch to ON. When P indicator switches into READY indicator, slowly turn the throttle grip to activate the motor, thus, speed of vehicle achieves the best state. Do not turn the grip fast.
3. It is a normal phenomenon when starting the motor with a "buzzing" sound, due to the voice of high magnetic field work. The voice will disappear as the motor speed achieves the best state.,。
4. Do not overload driving. In the case of security, try not to brake, starting frequently.
5. Do not accelerate on downhill road; do not clench handle brake or else it is easy to slip to sideways and fall over the vehicle.
6. When riding at night, please open the headlight. Please slow down and turn on the winker when turning the corner; do not make sharp turn.
7. Please use caution in rain days. Don't drive the vehicle in deep water area avoid the damage of motor.
8. Please don't operate the vehicle with one hand. We urge all riders to take a government-certified riding course.

## **NOTES OF POST-RIDE**

1. After using the vehicle, set the travel switch to OFF position. Turn off power, and remove the key.
2. Please pay attention to support the vehicle smoothly when parking.
3. Check the battery and recharge if necessary.
4. Optimized methods to utilize the lithium battery: put it in a cool and dry place, and recharge it every two weeks to maintain its capacity.

## MAINTENANCE

### TOOL KIT

Some roadside repairs, minor adjustments and parts replacement can be performed with the tools available in the kit.



## MAINTENANCE SCHEDULE

Initial Maintenance work should be performed at 500km's drive or 1 month after buy the vehicle whichever comes first. Then we recommend that maintenance should be done once every 6 months to lifan service stations to evaluate the vehicle performance.

S/N	ITEMS	CONTENTS
Conventional security and performance		
1	Tyres	Check air pressure, tread depth
2	Brake system	Check operation, fluid level, cable, etc.
3	Horn	Check the lines and insulation
4	Rearview mirror	Check the mirror functions properly
5	Lights	Make sure all lights are working properly
6	Meter	Check indicators, lines, circuit
7	Fasteners	Tighten up nuts
8	Throttle grip	Twist the throttle to ensure smooth action
Structural Inspection		
1	Front/rear wheel hubs	Check end gag, etc.
2	Grips	Twist the grip to ensure smooth action
3	Frame, rear fork	Check all welded points and fasteners.
4	Front fork	Check fasteners, bearings
5	Shock absorber	Check the absorber works properly
6	Lock set	Check the lock functions properly

Importance Parts		
1	Battery	Voltage balancing, normal charging and discharging
2	Motor	End cover, bearings, hall, signal lines, electrical circuits and casing insulation
3	Controller	Undervoltage, over-current protection
4	Charger	Check charging current, voltage
5	Main cable	Check the welded points of lines and insulation

NOTES

1. Such parts as front axle, rear axle, etc, should be lubricated with grease (No. 3, lithium base grease).
2. Clean more frequently when riding in unusual wet or dusty area.

## **OPERATION OF THROTTLE GRIP**

Check for smooth rotation of the throttle grip from the fully open to the fully closed position at both full steering position.

Measure the throttle grip free play at the throttle grip flange. The standard free play should be approx. 2-6mm. To adjust the free play, loosen the locknut, turn the adjuster. Adjustment over, fasten the locknut.



## **MAINTENANCE OF LITHIUM BATTERY**

Battery capacity will gradually decrease as the use of time and mileage increases. The correct use and maintenance can effectively extend the life of the battery.

1. Please charge lithium battery fully before first using newly purchased electric motorcycle. First requirement when using battery recharged again after use controller under-voltage protection. Pay attention as follows: charging the battery for first 5 times should be not less than 8 hours, but not more than 12 hours. When charging, bear in mind that the charger operation method.
2. The battery should be fixed reliably to avoid damaging. Never throw, roll and weight the battery when transferring it.
3. Keep the battery dry, clean to prevent the self-discharge too much.
4. Avoid losing electricity for a long time. As a rule, charge the battery in time after using the vehicle every day. During long-term storage of vehicle, remove the battery from the vehicle, and charge it, then put it in a cool and dry place ( $-10^{\circ}\text{C} \sim 25^{\circ}\text{C}$ ). Then recharge it (after stored for 10~15 days).
5. To protect the battery from damage, slowly start the vehicle to avoid instantaneous discharging too much.
6. Battery discharges to the termination voltage, and continue to discharge, called as over-discharge. Pay attention to not let the battery discharge during riding. In order to maximize the life of the battery, charge it when the battery discharged to 50%.
7. Avoid over-charging as follows, the battery can be charged for 2 hours when the charger indicator lights all

bright. This done, do not use the battery immediately, let it rest for 10 minutes or so to use again.

8. Battery applicable ambient temperature: 15-45 °C

Optimum charging environment: 25 °C

Reduce temperature of battery as far as possible when charging battery temperature, ensure good heat dissipation, and away from heat source.

9. Avoid large current discharging for a long time. Prevent it from exposure in the sun.

10. After discharge of the lithium battery, charge it in time. Do not put discharged battery over 12 hours

**NOTE** Please dispose of used battery in a manner that is compatible with the environment.

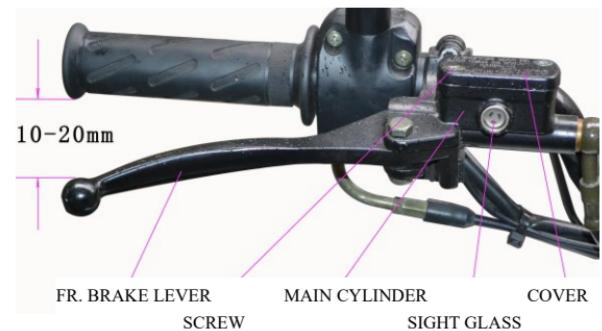
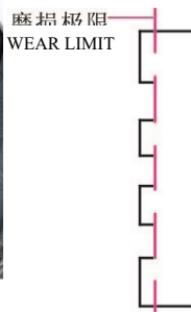
We suggest you take it to local recycling center or service station for reclamation. Do not throw it in the rubbish. At the same time to remove the lithium battery is prohibited.



## FRONT BRAKE



前制动分泵  
FR. BRAKE CALIPER



## **Check**

The brake fluid level and brake pads shall be checked regularly. If any pad is worn to its limit depth, replace both pads as a set in no time.

Check the brake fluid level through the sight glass. If the fluid level is below the LOWER, loosen the cylinder cover screws, remove the cover, add brake fluid up to UPPER level mark. If any doubt, see your dealer for help.

**WARNING** **Apply the specified brake fluid, or braking effectiveness and riding safety will be affected adversely. Brake fluid may cause irritation. Avoid contact with skin or eyes. In case of contact, flush thoroughly with water and call a doctor if your eyes were exposed. Do not allow contaminants such dirt or water to enter the brake fluid tank.**

## **Adjustment**

1. Measured at the tip of the front brake lever moves before the brake starts to engage is called free play. The free play should be maintained within 10~20mm.

2. If the brake lever free play becomes excessive and the brake pads are not worn beyond its minimum depth, there is probably air in the brake system and bleed it. For which purpose, see your dealer for help.

**NOTE** **If such adjustment is still unsatisfactory, see your dealer for help.**

3. Apply the brake several times and check for free wheel rotation after the brake lever is released.

## REAR BRAKE

BRAKE PANEL    INDICATOR    ADJUSTING NUT  
REFERENCE MARK    BRAKE ARM    PIN



### Check

The brake is equipped with a brake wear indicator. If the pointer aligns with the reference mark on full application of the brake, replace the pads as a set at the first opportunity.

### Adjustment

The rear brake equipped with the motorcycle is of lever type.

1. Measured at the tip of the rear brake lever moves before the brake starts to engage is called free play. The free play should be maintained within 10~20mm.
2. Turning the adjusting nut in direction A will decrease the free play, and in direction B increase the free play.



**NOTE** Make sure the curved slot in the adjusting nut corresponds to the circular surface of the brake arm pin after making final free play adjustment. If such adjustment is still unsatisfactory, see your dealer for help.

3. Apply the brake several times and check for free wheel rotation after the brake lever is released.

## FRONT/REAR SHOCK ABSORBER AND SUSPENSION

Support the motorcycle on the center stand, pull in the front brake lever to lock the front wheel, pump the front/rear shock absorber up and down several times to see that it functions well without noise or leakage. Check the rear fork bushing for proper play by pressing the side of the rear wheel. Make sure that all of the fasteners are tightened securely.

## TYRE

Proper air pressure will provide maximum stability, riding comfort and prolong tyre life

Tyre Pressure, kPa		
Rider	Front: 175	Rear: 200
Rider & passenger	Front: 200	Rear: 225
Tyre size	Front: 3.00-10	Rear: 100/80-10

**WARNING** Operation with excessively worn tyres is hazardous and will adversely affect traction and handling.

**NOTE** Tyre pressure should be checked before you ride while the tyres are “Cold”. Check the tyres for cuts, embedded nails, or other sharp objects. Check the rims for dents or deformation. See your dealer for change or

damaged tyres or punctured inner tubes.

**CAUTION** Improper tyre inflation will cause abnormal tread wear and create a safety hazard. The tyre pressure less than the rated value may result in slipping wheel on the ground or coming off from the rim.

When the tread depth in the middle section of tyres reached limits below, please replace them.

Tread Depth Limits, mm			
Front tyre	1.6	Rear tyre	2.0

## FUSE

Fusing type over-current protector (fuse) is located on the right-rear side of the vehicle frame. The fuse will blow to protect the circuit automatically in the case of troubles such as a short circuit or an overload trouble. After the troubleshooting, fit a new fuse available in the fuse box.

**CAUTION** Specially pay attention to specification (40A) of fuse when replace it. Never use other material such as aluminium, iron or copper wire instead. Otherwise the circuit may be burnt.

## CHARGER

To charge the battery on the vehicle, please turn off the ignition switch, then connect the charger to the socket of the vehicle, and to 220V AC power outlet. When recharging the battery alone, connect the charger with the battery socket, and then access to 220V AC power outlet. After charging, turn off 220V AC power outlet, at last disconnect the charger plug.

**CAUTION** Do not operation in the reverse order.

## TROUBLESHOOTING, VEHICLE SAFETY AND OPTIONAL PART

### COMMON FAULT DISPOSAL METHODS

Trouble	Cause	Remedy
Meter fails to operate when turning on power	1. Ignition switch damaged or poor connected 2. Power pin connected with battery socket poorly 3. Fuse open-circuit 4. Meter malfunction	1. Check ignition switch, connecting parts, repair or replace if necessary 2. Check power pin and socket, repair or replace if necessary 3. Check fuse, replace if necessary 4. Check meter, replace if necessary
Meter functions properly but does not accelerate when turning on power	1. Electricity shortage or undervoltage 2. Accelerator failure 3. RH/LH handlebar malfunction 4. Controller/motor failure	1. Charge 2. See the service station for help 3. See the service station for help 4. See the service station for help
Speed is too slow or range is insufficient	1. Power is no enough 2. Tyre pressure under-inflation 3. Frequent brake starting or overload 4. Battery aging or vehicle attenuation 5. Temperature is too low 6. Controller failure	1. Recharge 2. Check the pressure, inflate if necessary 3. Good riding habit 4. Replace battery 5. normal phenomenon 6. See the service station for help
Battery fails to be recharged or undercharged	1. Charger is connected with lithium battery unreliably 2. Cable is loose or fall off 3. Charger malfunction	1. Connect reliably 2. Fasten the battery cable reliably 3. See the service station for help

If any other malfunctions, see your LIFAN service station for help.

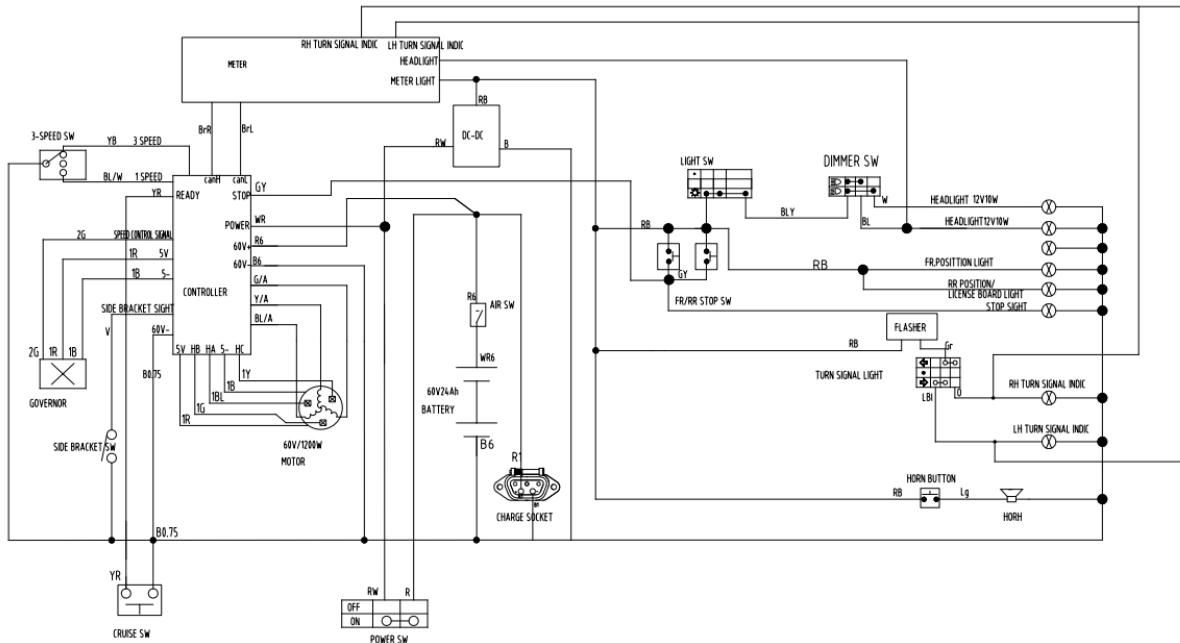
## FAULT CODE MESSAGES

ERROR MESSAGES					
S/N	PART	CODE	DESCRIPTION	CAUSE	REMEDY
1	Motor	01	Motor fault	Phase failure	Please contact the after-sales service
2		02	Motor fault	Hall failure	
3		03	Motor fault	Over-temperature	
4		04	Motor fault	Motor stalling	
5	Controller	21	Controller fails to function	MOSFET	Please contact the after-sales service
6		22		drive failure	
7		23		Over-current	
8		24		Oversupply	
9		25		Over-temperature	
10		26	Controller fault	Undervoltage	
11		27	Steering bar fault	Steering bar fault	
12	Lithium battery	41	Battery warming	Charging saturated protection	Disconnect the charger, stop charging
13		42		Battery low voltage protection	Charging as soon as possible
14		43		Charging overcurrent protection	Disconnect the charger, stop charging
15		44		Discharging overcurrent protection	Please contact the after-sales service
16		45		Discharging overheating protection	Take out the battery, put it in cool place
17		46		Discharging low temperature protection	Please contact the after-sales service
18		47		Battery open circuit	
19		48		Discharging short-circuit protection	
20		49		Charging overheating protection	
21		50		Charging low temperature protection	
22		51		Circuit board MOS overheating protection	
23		52	Battery fault	Temperature sensor failure	Please contact the after-sales service
24	DMU	61	Communication module	SIM card identification failure	
25		62		SIM card debts (showing 2s.)	
26		63		GPS failure	
27		64		GPS antenna short circuit	
28		65		GPS antenna open-circuit	
29		66		Do not write to vehicle SN	Please contact the after-sales service

## **OPTIONAL PART**

LIFAN vehicle guard 3.0 terminal  
equipped with 1 set of DC converter and APP operating instructions

# ELECTRIC DIAGRAM



# SPECIFICATIONS

<b>1. Basic Data</b>	
Overall dim., mm	1975×715×1070
Wheelbase, mm	1200
Ground clearance, mm	130
Kerb weight, kg	76
Max. laden weight, kg	150
Brake type (front/rear)	Disc/Drum
Braking operation (front/rear)	Hand braking
Rim type (front/rear)	Web/web wheel
Tyre type (front/rear)	3.00-10 / 100/80-10
<b>2. Electric Equipment</b>	
Motor type	10ZW6065317
Brand	LIFAN
Type	Monoblock wheel
Nominal voltage, V	60
Rated speed, r/min	650

<b>3. Main Performance</b>	
Rated torque, N·m	17.4
Rated power, W	1200
Type	BN6024PW 60V24Ah
Battery	Lithium battery
Rated capacity, Ah	24
Nominal voltage, V	60
100km power consumption, kwh	1.83
UVP, V	51
OCP, A	35
Charger input voltage/frequency	220V/50Hz
Top speed, km/h	51
Driving range, km	55
Grade ability, °	12
Accelerating ability , (0-100M),S	20

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