
Owner's Manual

CE FY-70-1000

The equipment is approved by following car manufacturers(China)















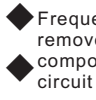









Preface

Please read this instruction manual carefully before using and the equipment and refer to it as needed to ensure the continued safe operation of the equipment.

- ▲ This instruction manual should be read completely before attempting to use or service the equipment. Failure to follow the instructions in this manual could result in property damage, severe personal injury, or death.

▲ The following warnings and important notices are used in the instruction manual:

| | | | |
|--|--|--|--|
|  DANGER | Improper use of this equipment can cause serious or fatal injury |  WARNING | Improper use of this equipment can cause personal injury or property property damage |
|--|--|--|--|

-  Do not use this device until all precautions and operating instructions have been carefully read and fully understood.
-  Possible sources of ignition, such as flames, sparks and flame lamps, must be kept away from batteries
-  Do not allow corrosive battery electrolyte to contact eyes, skin and clothing
-  Ensure sufficient fresh air is supplied during charging. Keep the charger at least 50 cm away from other objects
-  Magnetic fields can affect pacemakers. Pacemaker wearers keep away from the equipment. Wearers should consult their doctor before going near equipment operations.
-  Do not touch any live electrical parts. Wear dry, hole-free insulating gloves and body protection. The input power circuit and machine internal circuit are live with high voltage when power is on. Touching live electrical parts can cause fatal shocks or severe burns. High voltage exists in the power supply socket. Never touch the conductor terminals with bare hand.
-  Input power installation must meet national standard. All electrical connections must be made by a qualified electrician. Insulated gloves and shoes must be worn when connecting input power or maintaining equipment.
-  Never disassemble, repair, alter or rebuild the equipment without approval from the manufacturer. There is a risk for electrical shock and fire.
-  Electric shock can kill. Properly ground this equipment according to its user manual and national standard.
-  Make sure the supply cable is up to national standard or local code. Use only the right gauge of electrical wire/cable. There is a risk of fire or electrical shock if overload building wiring—be sure power supply system is properly sized, rated and protected to handle this unit.
-  Replace power cord/wire/cable immediately—bare wiring can kill.
-  Do not step on, twist or pull the power cord..
-  Frequently inspect input power cord and regularly clean the unit to remove dust and dirt. Any worn or damaged power cord or internal components in heavy dust may cause electrical shock, short circuit or fire.
-  In the event of abnormal, operation must be immediately stopped. If smoke, smell or abnormal noise is produced by the unit, disconnect the power cord immediately and contact your local dealer. Do not use it until the problem is fixed.
-  Do not operate or place the device near water or in wet locations. Risk for electrical shock or damage to the device.
-  Do not operate the equipment in potential hazardous areas : chemicals, oil, gas and mining, or the worksites where power supply system is in poor condition.
-  Use only well-maintained device. Inspect and maintain the device for safety every 12 months, including cleaning and removing dust. Repair or replace damaged parts/cables at once.
-  There are precautions printed on the top of the machine. Strictly check whether the environment where the machine is placed meets the requirements when using it. Otherwise, the charger or the device connected to the charger may be damaged, or even personal safety may be endangered
-  Flames are strictly prohibited at the operation site, since combustible gas is produced during charging
-  It is highly recommended to use spare parts provided by our factory. Do not replace spare parts randomly. Contact our staff for replacement to meet usage requirement. Before use, ensure that the appearance of the machine is complete and there are no obvious bumps to avoid internal short-circuit problems caused by clash
-  This machine can only charge rechargeable batteries that conform to the battery specifications. It is strictly forbidden to charge one-time batteries. Otherwise, the battery and charger may be damaged, and even serious explosion happens. If the acid in the bottle accidentally touches the skin, clothes, eyes, etc., clean it with clean water and soap in time. If doesn't work, go to the hospital for professional treatment in time
-  Do not let water or any other liquid or (flammable) detergent enter the product to avoid electric shock or fire



WARNING

Improper use of this equipment can cause personal injury or property property damage

Deep Charging Mode (Repair mode)

If the battery has been in a state of deep discharge (such as battery sulfuric acid) for a long time, the Repair mode can charge this battery

The sulfuric acid density of the battery has been activated to the maximum (degradation of sulfuric acid layer)

Warning! There is a risk of personal injury and property damage when the battery overheated. Do not charge battery at the ambient temperature above 36°C. Starting Repair mode may cause the battery temperature to rise. If the battery temperature exceeds 45°C, disconnect the charger immediately

Note! Repair mode could cause damage to electronic components of vehicle. Remove battery from vehicle before using Repair mode


The successful repair of battery depends on the degree of sulfidation of the battery


Note! Use the Repair mode with caution, as it can cause fluid loss or drying in the battery

Make sure that: Charge battery at room temperature./Set battery capacity correctly./Disconnect battery from vehicle electrical system

Remove battery from vehicle before Repair charging. Place battery in an open area (not exposed to direct sunlight) or in a well-ventilated place

Note! Risk of injury. Wear protective goggles and appropriate protective clothing while handling battery acid. In case of splashing or contact of skin or eye, wash off thoroughly with running water and seek medical care in time if necessary. Do not breathe any released gases and fumes

 Warning! Charging defective battery can result in damage to vehicle. Make sure the battery works normally before charging

 Warning! Improper use of equipment can result in serious injury and damage. Do not use this device until the operating instruction manual have been carefully read and fully understood.

- ◆ Power supply, voltage and wiring should strictly follow the precaution of changers' name plate. Connect the charging clamp correctly. Avoid reverse polarity connection. Keep the charger clean. All cables are undamaged and neatly placed. Turn off the power supply and unplug the socket after charging. Do not open the machine's cover randomly. Contact our staff for maintenance

When using the charger, keep it away from children. Pay attention to earth cable connection to avoid electric shock. Machine running must be attended by somebody during the whole process just in case. Pay attention to waterproof, moisture-proof and ventilation

- ◆ Before connecting the product to the power supply, please check whether the voltage marked by the product is consistent with the local power supply voltage and use a switch with leakage protection
- ◆ If the power cord is damaged, in order to avoid danger, it must be replaced by the manufacturer or its maintenance department or similar full-time personee
- ◆ Do not use this product if the plug, power cord or machine are damaged
- ◆ Poor contact of power socket may cause high temperature of plug. Make sure the machine and the power socket are in good contact
- ◆ Be sure to place and use this product on a dry, stable, flat and non-inclined surface



Follow the installation and operation instruction to ensure user safety and proper equipment performance. It is the responsibility of the owner to ensure that the equipment has been installed and operated as specified in the instructions provided. The manufacturer takes no responsibility for any loss or damage suffered as a result of using the equipment incorrectly or improperly.



NOTE

- ◆ The equipment must be used by qualified personnel familiar with electronic equipment.
- ◆ Do not place the equipment on unstable or uneven ground. The equipment might fall causing injuries and damage to the equipment.
During operation process, the equipment should keep a distance about 10cm from the wall to keep air way clear.
- ◆ Avoid using the equipment in the environments with high humidity (above 90%), high temperature (above 40°C), low temperature (below 5°C), high frequency source nearby, chemical and drug, water vapor for condensation, dust or vibration.
- ◆ Make sure the facility supply voltage and frequency are the same as shown on name plate. The supply cable must be properly sized and rated.
- ◆ The connection between the main power supply and the equipment should be as short as possible.
- ◆ Use a dry cloth to clean the dirt on the equipment.
- ◆ Do not forget to take back all repair tools/objects inside the equipment after repair/ maintenance, such as screws, bolts or nuts. The left out metallic objects inside the equipment can cause damage to the equipment.
- ◆ Follow the instructions on the user manual to operate the equipment.
- ◆ We have made installation and operation quick and easy. Please operate the buttons and switches gently with your hands, only one button each time. The sensitive control circuit will be damaged if pressing the buttons with a hard and sharp thing such as screw driver and, pen.
- ◆ Turn off all equipment when not in use.
- ◆ When the charger is charging, the charging clip must be directly connected to the positive and negative terminals of the battery. Please do not connect by other conductors. Read the user manual firstly before charging on vehicle. Make sure the battery type and vehicles must conform to the charger's scope of application
- ◆ Programming model is not available to battery charging
- ◆ Please check the battery's charging requirement before operation to ensure this battery charger meets the requirement
- ◆



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INSTRUCTION

Note!

This manual contains safety and operating instructions. Read it carefully before using or servicing the device. Do not neglect to do this as improper handling may result in personal injury and damage to the device.

The safety precautions are printed on the top panel of the device. Make sure the device is to be used under right circumstances and conditions. Otherwise, it may damage the charger or devices connected to the charger, and injury to persons.

Charging produces flammable gases. During the charge, the battery must be placed in a well ventilated area. Avoid flames and sparks.

To maintain the factory original performance of your device, use only manufacturer's suggested replacement parts. Model and serial number required when ordering parts from your local distributor.

Do not use the charge if it has been dropped or damaged. Make sure the exterior appearance is in good condition without any obvious damages, to avoid short circuit and other problems caused by damage to the internal components.

The charger is designed for charging rechargeable batteries only. Do not use to charge small batteries or non rechargeable batteries, otherwise it may cause the battery and charger damage or even explosion. In case of the battery acid contact with the eyes or skin, rinse well with water and see a doctor as soon as possible.

Caution!

Risk for electrical shock ! All electrical connections must be made by a qualified electrician. Make sure that the facility supply voltage and frequency are the same as shown on the charger name plate. Make sure the supply cable also meets the specifications of the charger unit.

Make sure the red clamp to the (+) and black clamp to the (-) of the battery.

Keep the charger clean.

Frequently inspect all power cables for damage or bare wiring. Replace cable immediately if damaged.

Turn off the charger and disconnect the charger from the mains when not in use.

Disconnect input power supply before installing, checking, cleaning or changing parts.

Only qualified persons should install, operate, maintain and repair this charger. Consult the manufacturer or supplier before servicing.

Keep charger as far away from children as practical. Properly install and ground this equipment. Electric shock can kill.

To prevent dangers and accidents, a person to keep an eye on the device and battery during the whole charging process is strictly required. Do not place or operate the charger near water, in wet locations or outdoors.

Note:

1. Fully use the length of charging cables to keep the charger away from the battery when connecting the charger to the battery.

2. Never place the charger on top of a battery.

3. Keep well-ventilated and dry condition.

4. Make sure the power supply and charging clamps is properly connected.

5. Press Start/Stop button and disconnect the clamps to stop the charger during charging process. Do not disconnect the power by simply unplugging the charger.

After charging, disconnect the charger from the mains, then disconnect the clamps from the car body and then disconnect the clamp from the battery, in the indicated order.

6. It will take a longer time for the battery to be fully charged as there will be a relatively longer time for floating charge.

7. Never attempt to charge a damaged or short-circuited battery.

8. Charging only someone attended and strictly object the instruction.

Please read this instruction manual carefully before using the device.

Precaution:

1. Shut off power before disconnecting the charging clamps from the battery posts.
2. Batteries generate explosive gases during their normal operation.
Never smoke or allow an open spark or flame in the vicinity of the battery.
3. Do not place the charger where rain, snow, or other moisture could drip on it.
4. Make sure the red clamp to the (+) and black clamp to the (-) of the battery.
5. Do not operate charger with damage cord or plug. Replace the cord or plug immediately.
6. Avoid vibration and collision when using the charger
7. Never attempt to charge a **frozen** battery

Note:

1. Use only qualified breaker or fuse(s). Replace or repair damaged parts at once.
2. Clean the battery before charging and test its primary voltage.

3. Battery Charging Principle

When starting the diesel engine, the spark plug should be preheated before starting. Connect the negative terminal first and then connect the positive terminal.

4. Charging Time

Depending on the type of battery, it is generally calculated by the following formula:

Charging time = Battery capacity (Ah) / Charging current (A)

As the charge current will decrease with time during charging process, the actual charging time will be about 1/4 longer than the value of the formula.

It is possible to charge one or several batteries simultaneously, but the charging time will be longer. These batteries or battery groups must be of the groups must be of the 12V or 24V. Remove the battery clamp when charging car battery.

Starting vehicle engine

with fast-charge for 15 mins.

When starting the diesel engine, the spark plug should be preheated before starting. Connect the negative terminal first and then connect the positive terminal. the positive terminal.

Charging vehicle battery:

1. Connect the charging clamps to the battery
2. Connect the power supply and select the battery type, which can be charged at fast, medium or slow speed. When the battery is fully charged, the charger displays "FUL" and stops charging the battery.

It can also be stopped the charging by pressing the STOP button. Do not remove the clips to prevent short circuit in the charger during charging process.

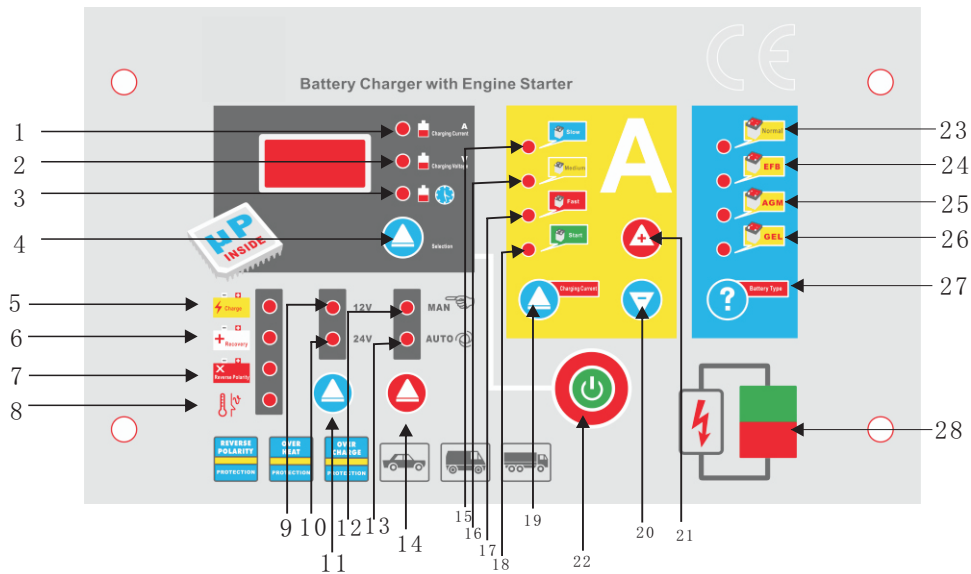
3. When starting the vehicle, you need to set the charger to Starting mode before using it.

After pressing the Start button, the charger will work for 5 seconds.

Then stop for 30 seconds (to prevent damage to the battery), recyclable.

4. Important: Set the voltage selection switch to 24V when starting/charging 24V, and set the voltage selection switch to 12V when starting/charging 12V, otherwise the battery may be damaged.

Operation

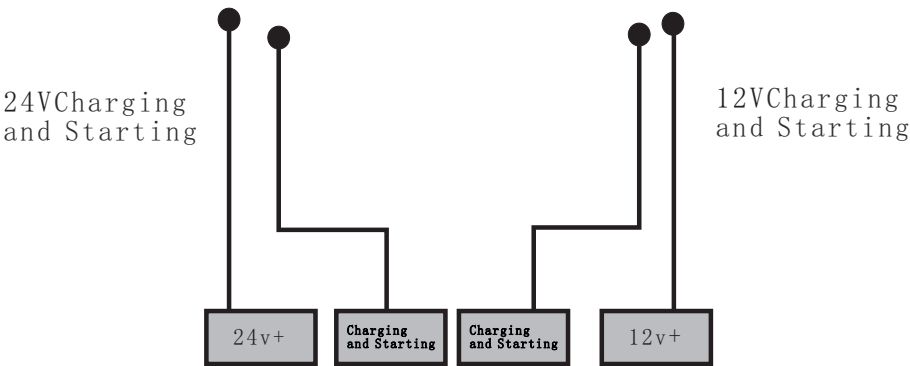


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|-------------------------------------|--|
| 1. Charging current | 15. Slow charging |
| 2. Charging voltage | 16. Medium charging |
| 3. Timer | 17. Fast charging |
| 4. Navigation button for 1, 2 and 3 | 18. Handle starting |
| 5. Charging indicator | 19. Navigation button for 15-18 |
| 6. Repairing battery | 20/21. Current +/- |
| 7. Reverse polarity | 22. Start / Stop |
| 8. Overheat protection | 23. Ordinary battery |
| 9. 12V charging | 24. EFB battery |
| 10. 24V charging | 25. AGM battery |
| 11. Navigation button for 9 and 10 | 26. GEL battery |
| 12. Manual | 27. Navigation button for battery type |
| 13. Automatic | 28. Power supply |
| 14. Navigation button for 12 and 13 | |

Please strictly follow the instruction of user manual and chargers' guidance. If any problems occur due to wrong operation, please take the corresponding responsibility by yourself, our company will not bear all the consequences caused by wrong operation.

Specification

| ITEM | UNIT | FY-70-1000 |
|----------------------------|---------------|------------|
| INPUT VOLTAGE | 50V-60HZ (AC) | 220V |
| POWER | KW | 1/9.2 |
| CHARGING VOLTAGE | V | 12/24 |
| EFFECTIVE CHARGING CURRENT | A | 0-70 |
| STARTING CURRENT | A | 650 |
| BATTERY CAPACITY | AH15H | 35/800 |



Starting Charger Output Connection

Note:

- 1. Connect the RED clamp (+) of the output cable to the positive terminal(+) of the battery, and the BLACK clamp (-) to the negative terminal(-) of the battery.
- 2. If the starting charger fails to start the engine, please check whether the input power line meets the specified standards or whether the output cable is properly connected or whether the output cable meets the standards.

Key Tips 1: Must be installed on the socket with leakage protector!

Key Tips 2: Must follow the user manual and charger's guidance to operate!

Key Tips 3: Charger must be detected and maintained by professionals!

Key Tips 4: Must choose the proper battery type among regular, AGM and GEL, in case of potential loss such as battery damage and vehicle damage.

Key Tips: EFB battery and vehicle must be apart during charge process, in case of vehicle damage!

Key Tips: Battery must be away from vehicle during recovery process, in case of vehicle damage!

Key Tips: Attention! This charger can not replace battery completely. Backup battery must be connected during battery replacement!

Battery charge must be attended by somebody in case of danger!

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