

Version: V1.01.000

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**NOTES:**

- Carefully read the user manual before using, and keep it well for future reference.
- Carefully check the device parts list before using. For any doubt, contact Launch distributor immediately.
- Due to the product upgrade, tiny difference between the user manual and the device will not be further noticed. Take the device as standard.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

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# Chapter 1 Product Summary

## 1.1 Product Profile

BST-760 Battery System Tester adopts the state-of-the-art conductance testing technology in the world to easily, quickly and accurately measure the actual cold cranking amps capability of the vehicle starting battery, healthy state of the battery itself, and common fault of the vehicle starting system and charging system, which can help maintenance personnel to find the problem quickly and accurately, thus to achieve quick vehicle repair.

1. Test all automotive cranking lead acid battery, including ordinary lead acid battery, AGM flat plate battery, AGM spiral battery, and Gel battery, etc.
2. Directly detect bad cell battery.
3. Feature reverse polarity protection: reverse connection may not damage the tester or affect the vehicle and battery.
4. Directly test the battery with loss of electricity, full charge is not required before testing.
5. Testing standards cover the majority of world's battery standards, such as CCA, BCI, CA, MCA, JIS, DIN, IEC, EN, SAE and GB.
6. Support multi-languages and customers can set it to your preference. The currently available languages are Simplified Chinese, Traditional Chinese, English, Japanese, Russian, Spanish, French, Italian, German and etc. Meanwhile, other languages can also be customized according to user's need.
7. Provide some common additional functions, such as voltmeter, ammeter, thermometer, even as standby power for ECU.
8. Able to store up to 100 groups of test data for future review and print.

## 1.2 Product Function

BST-760 battery tester features the following functions: battery test, cranking test, charging test and other additional functions.

**Battery test** mainly aims to analyze the battery healthy status to calculate the actual cold cranking capability of the battery and the aging extent, which provide reliable analysis evidence for the test and maintenance of the battery. It may notify the user to replace battery in advance when the battery gets aged.

**Cranking test** is used to test and analyze the starting motor. Testing the actual required cranking current and cranking voltage of the starting motor is helpful to determine whether the starting motor works properly or not. If the starting motor runs improperly, find the possible reasons: lubricating system malfunction may cause an increased starting loaded torque; or rotor friction of the starting motor generates an increasing friction of the starting motor itself.

**Charging test** is to check and analyze the charging system, including generator, rectifier, rectifier diode, etc., thus to find out whether the output voltage of the generator is normal, the rectifier diode works properly and the charging current is normal. In case one of the above mentioned parts is abnormal, it will lead to over charge or incomplete charge of the battery, thus cause quick damage to the battery and greatly shorten the life of other loaded appliance.

**Additional functions** include:

View test result, print test result, set voltmeter, ammeter, thermometer, thermometer unit choice, QC mode, client code setting, set language, set date and time format, date and time adjustment, set user info, screen light adjustment, set printer definition and standby power function.

## 1.3 Technical Parameters

1) Cold Cranking Amps Measurement Range:

Measurement Standard	Measurement Range
CCA	100-2000
BCI	100-2000
CA	100-2000
MCA	100-2000
JIS	26A17--245H52

DIN	100-1400
IEC	100-1400
EN	100-2000
SAE	100-2000
GB	100-1400

- 2) Voltage Measurement Range: 1.0-30V DC.
- 3) Current Measurement Range: 0-900A DC/AC.
- 4) Temperature Measurement Range: -20°C-55°C/-4°F-131°F

## **1.4 Working Environment Requirement**

Working Environment Temp.: -20°C-55°C/-4°F-131°F

It is applicable for automotive manufacturers, automotive maintenance and repair workshops, automotive battery factories, automotive battery distributors, and educational organizations, etc.



## Chapter 2 Tester Structure

BST-760 mainly consists of battery tester main unit, testing cables and current clamp.

BST-760 Battery Tester main unit cover is made of ABS acid-resistant plastic.



Removable testing cables



Removable current clamp



## Chapter 3 Operation

### 3.1 Pre-Test

#### 3.1.1 Connect Tester

- Before test, clean battery poles with metal wire brush and alkaline detergent to avoid the tolerance caused by oil and dust to the test result.
- For Group31 or side-installed battery, install and fix the terminal wiring connector. Otherwise, inaccurate test result will be caused due to wrong installation or dirty or bad wiring connectors.
- While testing, ensure none of the in-vehicle electrical appliance is on, doors are closed and the ignition key is in OFF status.
- Connect the red test clamp with battery anode and the black one with cathode.
- Shake the clamps back and forth to make sure they are well connected.

The tester requires the two clamps are well connected with the battery poles. Otherwise, the test cannot go on. When enter the battery test program, a prompt message "**Check Connection**" will appear on the screen. In this case, try to clean the poles and re-connect it properly.



CHECK  
CONNECTION

The tester features reverse polarity protection function. When clamps are reversely connected, tester will prompt "**Reverse Connection**", which generates no adverse effect on the tester and the automotive load.

REVERSE  
CONNECTION

**NOTE:** For parallel connected batteries, break off the cathode connection first, then do single test to each battery. If cathode connection is not cut off, there will be error in test result.

### 3.1.2 Key Description

-   **Up / Down keys**

Select upwards or downwards via white UP and DOWN keys.

-  **Return key**

Return to previous menu via blue RETURN key.

-  **OK key**

Confirm the selection via green OK key

-  **MENU key**

Enter additional function program via MENU key.

-  **Power key**

Turn on/off the tester (Refer to 3.2 Tester Startup).



### 3.1.3 Connect Current Clamp

To test cranking amps and charging current, first connect the current clamp before startup, then turn on the current clamp power switch.

After tester is powered on, the current clamp is able to work.

Press the reset key of the current clamp and connect the current clamp jaw to the anode wire between the battery to be tested and the generator. See below picture.



As the minimum width of the current clamp jaw is only 28mm, choose the connecting cable or connection pole with diameter less than 28mm to test. Otherwise, the current clamp jaw cannot close completely.

**NOTES:**


1. *The current clamp jaw must be closed to avoid test tolerance.*
2. *The current clamp uses 9V alkaline battery. Turn the clamp off after using it.*
3. *Before testing the current, remove the current clamp from the battery positive cable, and reset.*

### **3.2 Tester Startup**

Press the power key to turn on the tester, and a screen similar to figure 1 will appear (By default voltmeter is ON). Refer to figure 1.



Figure 1 Startup Interface with Voltmeter On

"" shown on the bottom of the screen stands for the real time capacity of the internal 9V battery. When the capacity of the 9V battery is not sufficient, please replace it immediately so that additional functions can be performed smoothly.

By default, the voltmeter value at the middle bottom of the startup interface can be used as DC voltmeter. The measurement range of DC voltmeter is 1.0-30V DC.

**(Caution: Over the measurement range, it will damage the tester.)**

Voltmeter function can be set as "OPEN/CLOSE" in "Set voltmeter" under Additional Functions.

If Voltmeter is OPEN and no activities are made on the tester after startup, the screen will remain as the startup interface all the time. In this case, it can be used as a DC Voltmeter. When OK key is pressed, tester enters the battery test program. Press MENU key, it enters additional function program.

When Voltmeter is OFF, the startup interface will display as figure 2. After 2 seconds, it automatically enters the battery test program. Press MENU key within this 2 seconds, it enters additional function program.



Figure 2 Startup Interface with Voltmeter Off

### 3.3 Battery Test

After entering battery test program, the tester will display the tester model and version approx. 2 seconds, see figure 3.

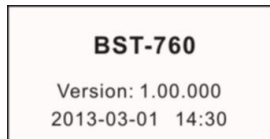


Figure 3, Interface with tester model and version

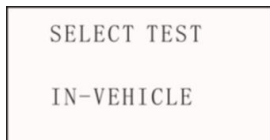
The bottom line of the interface shows the current date and time. Time format can be edited and adjusted in the Additional Functions. For details, refer to Additional Function 3.8.10 "Set Date and Time Format" and 3.8.11 "Date and Time Adjustment".

The tester will display the following contents in a sequence, select the desired items accordingly.

#### 3.3.1 IN-VEHICLE or OUT-OF-VEHICLE

Press UP/DOWN key to select the battery location: in-vehicle or out-of-vehicle, then press OK key to confirm.

1) **IN-VEHICLE** means the battery is connected with vehicle engine or vehicle electrical appliance.



When the tester detects surface charge, a prompt message "SURFACE CHARGE DETECTED, TURN LIGHTS ON" will appear on the screen.

SURFACE CHARGE  
DETECTED

TURN LIGHTS ON

Follow the instructions to turn lights on to eliminate battery surface charge, the tester will then display the following messages in a sequence:

HEADLIGHTS ON

TURN LIGHTS OFF

Now the tester detects the surface charge has been eliminated, turn lights off as prompted, then press OK key. The tester will recover automatic test.

**2) OUT-OF-VEHICLE** means battery is not connected with any of the vehicle load, namely, battery connection is cut off.

SELECT TEST

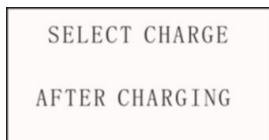
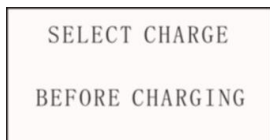
OUT-OF-VEHICLE

### 3.3.2 Select Battery Charge State

After selecting the battery location, the tester will prompt to select the battery charge status, i.e. **Before Charging** or **After Charging**.

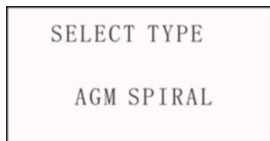
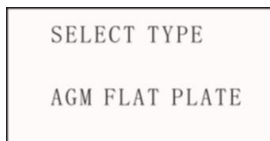
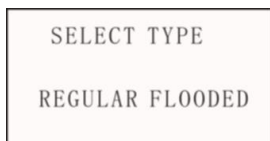
Press UP/DOWN key to select, then press OK key to confirm. In this way, it ensures a more accurate test result.

**NOTE:** In case of In-Vehicle, select *Before Charging* for Cold Vehicle and *After Charging* for Hot Vehicle.

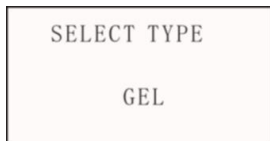


### 3.3.3 Select Battery Type

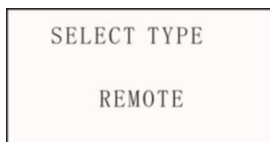
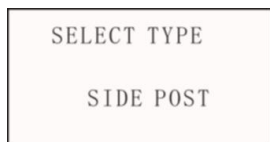
After the battery charge status is chosen, the tester will enter battery type selection interface: Regular Flooded, AGM Flat Plate, AGM Spiral or Gel battery. Press UP/DOWN key to select, and press OK key to confirm.







When it's IN-VEHICLE test, battery installation type shall also be selected, e.g. TOP POST, SIDE POST or REMOTE (This selection does not apply to OUT-OF-VEHICLE), then press OK key to confirm. REMOTE is applicable to some in-vehicle battery which is too tightly installed to use the test clamps to connect the battery poles.



**NOTE:** For REMOTE test, tolerance may exist. For any doubt, remove the battery and select "OUT-OF-VEHICLE" to re-test.

### 3.3.4 Battery System Standard and Rating

**BST-760** battery tester will test each battery according to the selected system and rating.

Use UP/DOWN key to select according to the actual system standard and rating marked on the battery. See the arrow position as indicated in the below picture.



**CCA:** Cold Cranking Amps, specified by SAE&BCI, most frequently used rated value for starting battery at 0°F (-18°C)

**BCI:** Battery Council International standard

**CA:** Cranking Amps standard, effective starting current value at 0°C

**MCA:** Marine Cranking Amps standard, effective starting current value at 0°C.

**JIS:** Japan Industrial Standard, displayed on the battery in form of combination of numbers and letters, e.g. 55D23, 80D26.

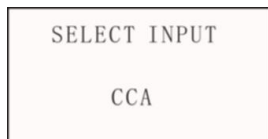
**DIN:** German Auto Industry Committee Standard

**IEC:** Internal Electro technical Commission Standard

**EN:** European Automobile Industry Association Standard

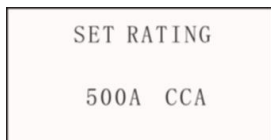
**SAE:** Society of Automotive Engineers Standard

**GB:** China National Standard

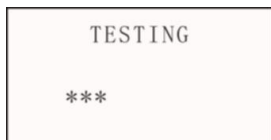


Rating range is as follows:

Measurement Standard	Measurement Range
CCA	100-2000
BCI	100-2000
CA	100-2000
MCA	100-2000
JIS	26A17--245H52
DIN	100-1400
IEC	100-1400
EN	100-2000
SAE	100-2000
GB	100-1400



Input correct test standard and rating, press OK key, the tester starts to test and a screen similar to the following figure will appear:



It takes around 3 seconds to display the battery test result.

### 3.3.5 Battery Test Result

Battery test result is mainly classified into 5 types:

### 1) Good Battery

SOH 96%	SOC 98%
12.64V	490A
RATED	500A
GOOD BATTERY	

The battery is in good health, please be free to use!

**NOTE:**

**SOH** means State of Health.

**SOC** means State of Charge.

### 2) Good, Recharge

SOH 78%	SOC 30%
12.20V	440A
RATED	500A
GOOD, RECHARGE	

The battery is good but with low power. Please recharge it before using.

### 3) Replace

SOH 46%	SOC 80%
12.68V	340A
RATED	500A
REPLACE	

The battery is near to or already reached the end of its service life, replace it immediately, otherwise, potential hazard will be followed.

### 4) Bad Cell, Replace

SOH 0%	SOC 20%
10.60V	0A
RATED	500A
BAD CELL, REPLACE	

The battery has internal damage, broken cell or short circuit, please replace it.

### 5) Charge, Retest

SOH 39%	SOC 20%
12.08V	310A
RATED	500A
CHARGE, RETEST	

Unstable battery shall be recharged and retested to avoid error. If same test result appears after recharge and retest, the battery is regarded as damaged, please replace it.

*Attention: If "Replace" resulted from IN-VEHICLE mode, it might be the reason that vehicle cable is not well connected with the battery. Ensure to cut off the cable and retest the battery in OUT-OF-VEHICLE mode before determining whether to replace battery or not.*

#### NOTES:

*To exit after testing, press RETURN key to directly return to the startup interface.*

*After battery test:*

*If it is "OUT-OF-VEHICLE" mode, press OK key to print the test result.*

*If it is "IN-VEHICLE" mode, press OK key to enter Cranking Test.*

### 3.4 Cranking Test

Connect with current clamp in advance. Under poor connection, the tester will not test the actual cranking amps accurately.

CRANKING TEST
START ENGINE

Refer to 3.1.3 for current clamp connection.

**NOTE:** While the system prompts you to start engine, pressing RETURN key can not exit the current interface.

Follow the on-screen instructions to start the engine, the tester will automatically complete the cranking test and display the result.

RPM DETECTED
--------------

TIMES	780ms
AMPS	540A
CRANKING	NORMAL
	10.13V

Generally, cranking voltage lower than 9.6V is regarded as abnormal and it is OK if it is higher than 9.6V.

Test result of the tester includes actual cranking voltage, cranking amps, and actual cranking time.

When cranking test is abnormal, battery test result will be displayed. See below picture:

TIMES	1020ms
AMPS	320A
CRANKING	LOW
REPLACE	9.12V

It is convenient for maintenance personnel to quickly know the whole state of the starting system according to the data.

After testing finished, do not shut down the engine, press OK key to enter Charging Test.

### 3.5 Charging System and Rectifier Diode Test

When enter the charging test, the tester will display "Charging Test?"

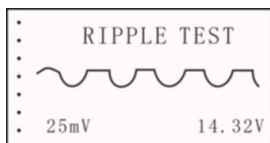


**NOTE:** To return when this prompt message appears on the screen, misfire the engine and press RETURN key.

Press OK key to start the charging test.

**NOTE:** Do not shut down the engine during the test. All electrical appliance and device are in OFF state. Turning on/off any electrical appliance in the vehicle during the test will affect the accuracy of the test result.

The tester will do the following tests in sequence:



For ripple test, the tester will present the real time waveform and ripple volt and charging volt values are displayed at the bottom line.

It takes approx. 6 seconds for the ripple test.

After the ripple test, the tester will automatically start the loaded voltage test. See below picture:

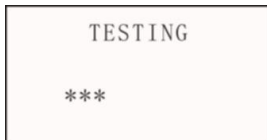


Loaded Volt Test takes approx. 3 seconds, and then the "INCREASE REV" prompt will appear on the screen. See below picture:



Operate accordingly to increase the engine rotating speed to above 3000 revolutions, and keep it for 5 seconds.

The tester starts the charging volt test after an increased revolution is detected. See below picture:



After the test finished, the tester displays the valid charging volts, ripple test result and charging test result. See below picture:

CHARGING	NORMAL
LOADED	14.18V
LOADED	14.36V
RIPPLE	NORMAL

**NOTE:** If no increased rev is detected, it shall be the fault of generator regulator or connection with battery failed. The tester will try 3 times to further detect, if still failed, it will skip the increase rev detect and the test result displays "No Output". See below picture:

NO OUTPUT	
LOADED	12.81V
LOADED	12.81V
RIPPLE	NORMAL

Check the connection between generator and battery, then retest.

**Charging Test Result:**

**1) Charging Volt: Normal**



Charging system shows the generator output normal, no problem detected.

### **2) Charging Volt: Low**

Charging volt of the charging system is low.

Check whether slip or running off occurs on the generator drive belt. Check the connection between generator and battery is normal or not. If both of the drive belt and the connection are in good condition, follow the manufacturer's suggestion to eliminate generator fault.

### **3) Charging Volt: High**

Generator output volt is high.

Since most of the vehicle generators are using built-in regulator, the generator assembly has to be replaced. (For some old style cars using external regulator, directly replace the regulator.)

The normal high volt of the voltage regulator is maximum  $14.7 \pm 0.5V$ . If charging volt is too high, it will overcharge the battery. Therefore, the battery life will be shortened and troubles will be caused.

### **4) No Volt Output:**

No generator volt output is detected. Check whether the generator connecting cable, the drive belt of generator and engine are normal or not.

### **5) Diode Test:**

Through the test of charging current ripple, the tester will find out whether the diode works properly or not. When ripple volt is too high, it indicates at least one diode is damaged. Check and replace the diode.

Till now, all tests have been done.

When client code setting function is off, press OK key again, it prompts "Print Result?", press OK key to print.

If client code setting function is on, press OK key again, it prompts "Print Result?", press OK key to input client code. After inputting client code, press OK key to print.

### 3.6 Client code Input

Input client code in a sequence. 1<sup>nd</sup> to 7<sup>th</sup> digits are letters or numbers. Press UP/DOWN keys, numbers and letters will scroll, select the desired number or letter, press OK key to confirm and proceed to next digit input.

CLIENT CODE
AA88888

Take how to input "BB4F50N" for example. Press UP/DOWN key to select the desired first character, and press OK to finish your input.

CLIENT CODE
BA88888

Press UP/DOWN key to select the second letter "B", press OK to finish the second digit input. Repeat the step until the 7th digit input is complete.

CLIENT CODE
BB4F50N

Press OK key again, the tester will print out the test result including the plate number.

### 3.7 24V System Test

Ordinary 24V battery group combines two 12V batteries in series connection. Therefore, when testing 24V battery, the tester will

prompt "24V Battery", divide the batteries and test one by one. It's not necessary to break off the connecting cable (Comparatively, the parallel connected battery group must cut off the cathode connection), test method is same as testing single 12V battery.



24V BATTERY

For 24V charging and cranking tests, connect the red clamp to the anode of 24V battery group and the black one to the cathode of 24V battery group (*NOTE: it's not the anode and cathode of the single battery but battery group*), select IN-VEHICLE and the screen displays "24V Battery". Ignore the prompt and after 3 seconds, the tester will skip battery test program and enter the cranking test directly. Follow the method of 12V system test to complete the 24V charging and cranking tests. The test process is same as 12V system.

### 3.8 Additional Function

Press MENU key to enter Additional Function (See 3.2 Tester Startup). The following options and operations can be done.

#### 3.8.1 View Results

Press OK key to view results of the last test.



OPTION SELECT  
1 VIEW RESULTS

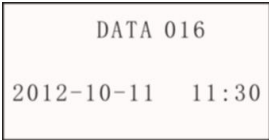
#### 3.8.2 Print Results

The tester stores up to the latest 100 groups of test data, and users can print out any group for review via the thermal printer. Press OK key to enter.



OPTION SELECT  
2 PRINT RESULTS

Then search the test results by date and time, and press OK key.



DATA 016  
2012-10-11 11:30

**NOTE:** when internal memory is full, the tester will automatically clear the earliest test results. Or, select "Memory Reset" under "QC Mode" in Additional Function to clear data in memory and store data all over again.

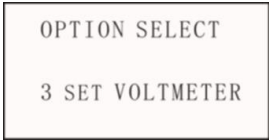
**Attention:** Once reset, all data will be erased and cannot be recovered.

### 3.8.3 Voltmeter

BST-760 tester can also be used as DC voltmeter.

The working range is 1.0-30V DC.

**CAUTION: BST-760 tester may be damaged when connected to voltage above 30V!**



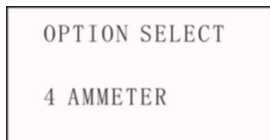
OPTION SELECT  
3 SET VOLTMETER

This function enables you to set the voltmeter On/Off at the bottom line of the startup interface.

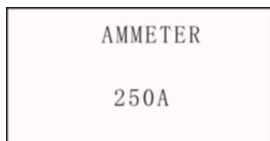
If successful, it shows "OK" for 2 seconds, then return to the previous interface.

### 3.8.4 Ammeter

The tester can be used as an ordinary ammeter via the attached current clamp.



Press OK key to display the ammeter interface.

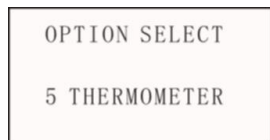


#### Cautions:

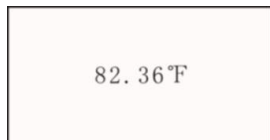
1. Turn the current clamp off once the ammeter test is complete. Otherwise, it will shorten the life of the internal battery.
2. Prior to every test, remove the current clamp from anode, and reset. Re-connect it and then proceed the test.

### 3.8.5 Thermometer

The tester integrates internally a temperature sensor, which may detect the ambient environment temperature.

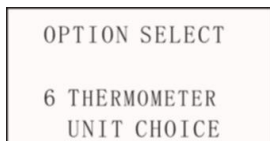


Press OK key to display the thermometer interface.



### 3.8.6 Thermometer Unit Choice

This option is to set Fahrenheit temperature or Celsius temperature.

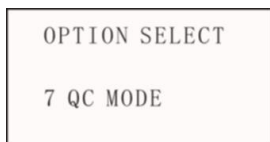


Firstly, press OK key, then use UP/DOWN arrow to choose °C or °F. Once setting is done, it shows "OK" for 2 seconds and then returns to the previous interface.

### 3.8.7 QC Mode

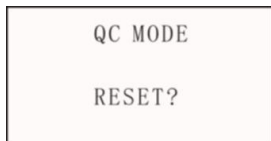
If QC mode is open, the tester will simplify the test input process, and make the battery test much faster and easier. Meanwhile, the tester will count the test for purpose of analyzing and tracking the battery quality.

This function is applicable for vehicle manufacturer and maintenance workshop to test and analyze the newly purchased battery, and also for the battery factory to inspect and analyze the outgoing batteries. QC function is off by default.



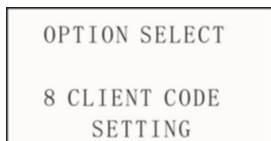
If successful, it shows "OK" for 2 seconds and then returns to the previous interface.

In addition, memory reset in QC mode will clear up all stored data, including the 100 groups of data viewed in "Print Results". Once reset, data cannot be recovered.



### 3.8.8 Client code Input Function

This option allows you to set client code input function ON or OFF.

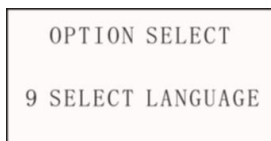


Once done, it shows "OK" for 2 seconds, then return to the previous interface.

### 3.8.9 Set Language

This option lets you to select user interface language.

System contains multi-language package, including Chinese, English, Russian, Japanese, Spanish, German, French, Italian, etc.

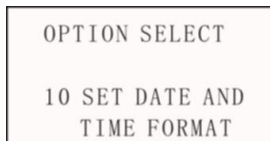


Once finished, it shows "OK" for 2 seconds, then return to the previous interface.

### 3.8.10 Set Date and Time Format

This option is used to define date and time format, and time display in 12-hour or 24-hour.

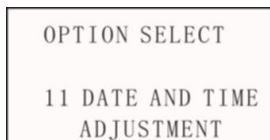
Default format is MM/DD/YY, 12-hour.



If successful, "OK" will appear for 2 seconds, and it will return to the previous interface.

### 3.8.11 Date and Time Adjustment

This option is to adjust and check the system date and time.



Adjust it in sequence of Year, Month, Date, Hour and Minute. This adjustment sequence does not affect the date and time format.

1. Press UP/DOWN key to modify the last two digits of the year. Press OK key to enter the month adjustment screen.
2. Press UP/DOWN key to modify the month. Press OK key to start adjusting date.
3. Press UP/DOWN key to modify the date. Press OK key to enter the hour setting interface.
4. Press UP/DOWN key to modify the hour. Press OK key to set the minute.
5. Press UP/DOWN key to modify the minute. Press OK key till OK displayed.
6. After setting is ok, the tester will return to the startup interface.
7. In process of adjustment, time number will flash, press and hold the key to increase or reduce the number.

**Note:** During time adjustment, pressing of the UP, DOWN or CONFIRM key has to be over 1 second to avoid operation by mistake.

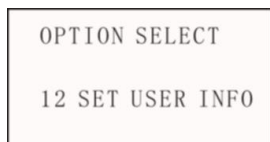
To modify the number, press and hold the UP/DOWN key, the number will automatically and continuously increase or reduce.



**Hint:** In date and time setting, RETURN key is invalid in view of protecting system time and complete setting of "YMDHM" has to be done. To discard your setting, directly press OK key for 5 times to return.

### 3.8.12 Set User Information

This option is to set information on maintenance station code, telephone, address, website, etc.



Presently, it supports only English letter and number input. Maximum 8 lines are allowed and 21 characters including Enter character can be displayed within each line.

If choose enter character, input in another new line.

For each character setting, it is space by default.

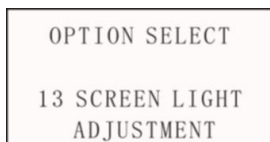
To terminate your input, press the OK key for 4 times in succession to complete the setting.

Once finished, it shows "OK" for 2 seconds and then returns to the previous interface.

To re-input the user information, press OK key to open the last input interface, long press MENU key to delete old information and re-input.

### 3.8.13 Screen Light Adjustment

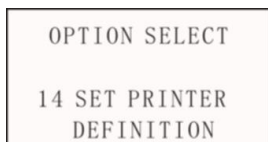
This item enables you to adjust the screen backlight brightness for power saving and for clear view of the displayed characters under the sunlight.



Brightness range is adjustable from 1-4. Default brightness value is 2. Press UP/DOWN key to set. Once done, it shows "OK" for 2 seconds and then returns to the previous interface.

### 3.8.14 Set Printer Definition

This function is to adjust the clarity of the printed character to ensure a good printing effect under various environment and condition.

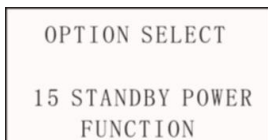


Definition range is adjustable from 1-9 and the default clarity value is 4. Press UP/DOWN key to select the desired value. If finished, it shows "OK" for 2 seconds and then returns to the previous interface.

**NOTE:** *The printer definition is inversely proportional to the printing speed. Moreover, higher definition takes more power current.*

### 3.8.15 Standby Power Function

This function is to set standby power. By default it is OFF.



For some luxury vehicle, ECU must be powered on. Once power off, ECU will automatically be locked.

Standby power function offers ECU power for short time when the vehicle battery needs to be replaced to avoid automatic lock.

When standby power function is ON, the tester will use internal 9V battery to supply power after its clamps are connected in principle of "Red to Anode & Black to Cathode" with the battery connecting cable.

**CAUTION: when standby power function is ON, do not touch Red & Black clamps with each other to avoid short circuit.**

After using, press Return key, the tester will automatically turn off the standby power.

**NOTE:** *9V battery, due to its small capacity, can only supply power for short time. Before using the tester as standby power, make sure the internal 9V battery is with sufficient capacity, and try to complete the battery replacement in a short time to avoid the automatic lock caused by power off.*

## Chapter 4 Daily Maintenance

### 4.1 Troubleshooting

#### 4.1.1 Screen Not Light

- Check whether the Power is turned on.
- Check whether the battery is properly connected or not.
- Battery voltage is probably too low to supply the tester (lower than 1.0V). Fully charge the battery and retest.
- Internal 9V battery needs to be replaced. Replace the 9V battery and retest.

#### 4.1.2 About Printer

##### A. Printing paper jam

Paper is not properly installed. Open the paper box and reload the paper.

##### B. Paper can not fed

Paper is used up. Replace new printing paper.

##### C. Low Definition

Set printer definition under Additional Function (refer to 3.8.14).

#### 4.1.3 About Current Clamp

"Low Voltage" indicator flashes, replace the internal 9V battery of the current clamp.

Displayed current value is 0A/1A/2A, or over 900A, or messy code: no reset is done before the test or the actual current exceeds the measurement range.

### 4.2 Replace Internal Battery

BST-760 battery tester uses one 9V battery (alkaline battery suggested) to test the battery with low voltage at 1V and to perform the additional functions.

When testing battery, the screen shows internal battery capacity is not sufficient, replace the battery immediately.

When 9V battery does not work, the tester can still test the battery with low voltage at 5.5V.

Follow the steps described as below to replace the battery:

**Step 1** Use a screwdriver to loosen the battery box cover screw and remove the battery cover.



**Step 2** Insert a 9V battery. There are anode and cathode markings in battery box and also a fixing bayonet. Reversely placed battery cannot be laid flat. In this case, do not force the battery down; otherwise the battery box bayonet will be damaged.



**Step 3** Cover the battery box, and fix the screw.



## **Warranty**

THIS WARRANTY IS EXPRESSLY LIMITED TO PERSONS WHO PURCHASE LAUNCH PRODUCTS FOR PURPOSES OF RESALE OR USE IN THE ORDINARY COURSE OF THE BUYER'S BUSINESS.

LAUNCH electronic product is warranted against defects in materials and workmanship for one year from date of delivery to the user.

This warranty does not cover any part that has been abused, altered, used for a purpose other than for which it was intended, or used in a manner inconsistent with instructions regarding use. The exclusive remedy for any automotive meter found to be defective is repair or replacement, and LAUNCH shall not be liable for any consequential or incidental damages.

Final determination of defects shall be made by LAUNCH in accordance with procedures established by LAUNCH. No agent, employee, or representative of LAUNCH has any authority to bind LAUNCH to any affirmation, representation, or warranty concerning LAUNCH automotive meters, except as stated herein.

## **Disclaimer**

The above warranty is in lieu of any other warranty, expressed or implied, including any warranty of merchantability or fitness for a particular purpose.

## **Purchase Order**

Replaceable and optional parts can be ordered directly from your LAUNCH authorized tool supplier. Your order should include the following information:

Order quantity

Part number

Part name

## **Customer Service**

Any question during the operation, please call 86-755-84528722.

If your unit requires repair service, return it to the manufacturer with a copy of the sales receipt and a note describing the problem. If the unit is determined to be in warranty, it will be repaired or replaced at no charge. If the unit is

determined to be out of warranty, it will be repaired for a nominal service charge plus return freight. Send the unit pre-paid to:

Attn: Customer Service Department

LAUNCH TECH. CO., LTD.

Launch Industrial Park,

North of Wuhe Avenue,

Banxuegang, Bantian,

Longgang, Shenzhen, Guangdong

P.R.China, 518129

Launch website: <http://www.cnlaunch.com>

<http://www.x431.com>

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