NOTE
- 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.

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Table of Contents

Chapter 1 Product Summary

1.1 Product Profile

BST-560 Battery Tester adopts currently the world's most advanced conductance testing technology 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. Polarity reverse connection protection, reverse connection will not damage the tester or affect the vehicle and battery.
4. Directly test the battery with loss of electricity, no need to full charge before testing.
5. Testing standards include currently the world's majority of battery standards, CCA, BCI, CA, MCA, JIS, DIN, IEC, EN, SAE, GB.
6. Support multi-languages, customer can select different language package, which includes:

> European version A: English, Russian, French, Italian, German,Polish
>
> European Version B: Dutch, Sweden, Finnish, Turkish, Danish,Norwegian
>
> American version :English, Spanish, Portuguese, French
>
> Asian version A: English, Chinese Simple, Chinese Traditional
>
> Asian version B: English, Japanese, Korean

1.2 Product Function

Main functions of BST-560 battery tester include: battery test, cranking test, charging test and other additional functions.

Battery test is mainly targeted 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 notifies the user to replace battery in advance when the battery getting aged.

Cranking test is mainly to test and analyze the starting motor. Through testing the actual required cranking current and cranking voltage of the starting motor, it can find out whether the starting motor works fine.There are several reasons why the starting motor is abnormal: lubricating system fault causing the starting loaded torque increasing or rotor friction of the starting motor causing the 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 fine and the charging current is normal. Suppose one of the above mentioned parts is not in normal situation, it will lead to over charge or incomplete charge of the battery, thus the battery will be quickly damaged and also greatly shorten the using life of other loaded electrical appliance.

Additional functions include:Set language, print test result

1.3 Technical Parameters

1、   Cold Cranking Amps Measure Range:

Measure Standard	Measure 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	30-220AH

2、   Voltage Measure Range: 7-16VDC

1.4 Working Environment Requirement

Working Environment Temp.: -20°C-50°C

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-560 mainly consists of battery tester main unit and USB Cable.

BST-560 Battery Tester main unit cover is made of ABS acid-resistant plastic.

USB Cable (With attached picture)

Chapter 3 Operation

3.1 Pre-Test

3.1.1 Connect Tester

Connect the red test clamp with battery anode and the black one with cathode, the tester will power on automatically. Voltage battery below 7.0VDC can't be tested properly, then press OK key to continue.
According to the tester, you can press UP/DOWN key to choose:

① battery test

② starting system test

③ charging system test

④ battery test result

⑤ print test result

⑥ select language

3.1.2 Key Description

● ▲ ▼ Up and Down keys

 Select upwards or downwards via UP and DOWN keys.

● |◄◄ Return key

 Return to previous menu via RETURN key.

● OK **Ok** key

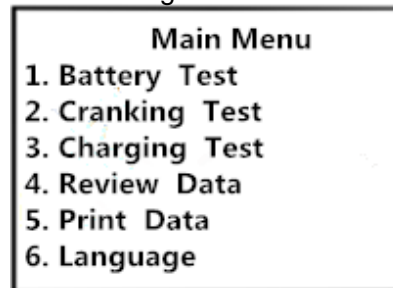 Confirm the selection via OK key

Kev Photo

3.2 Tester Startup

Tester automatically starts up after the clamps are correctly connected, and displays the Launch startup interface refer to figure 1.

Figure 1.

Main menu

3.3 Battery Test

After entering battery test program, tester displays the tester model and version approx. 2 seconds, Interface with tester model and version

Tester will display the following contents in a sequence, select accordingly.

Select the battery test and press OK key to continue:

Input testing standard: the standard which you can see the front of the

battery ,such as CCA、 BCI 、DIN. If you can't find any info about the standard, you can choose GB standard. Choose GB standards would lead little tolerance.

Input rated capacity: you can see the starting current standards in front of the battery .Such as BCI/300A.

Then press OK key to start testing.

NOTE：

For power loss battery (such as a vehicle for a long time on hold, the battery is not charged in time; forget to close the lights, the doors resulting in serious loss

of battery electric vehicle and can not be started, etc.), in the actual testing process may also be prompted to "Please replace the battery," for such batteries, please consult the battery manufacturers, and then tested.

3.3.1 Select Battery Type

After the battery test selected, tester will prompt to select battery type, i.e. Regular Flooded, AGM Flat Plate or AGM Spiral, and Gel battery. Press UP/DOWN key to select battery type, and press OK key to confirm.
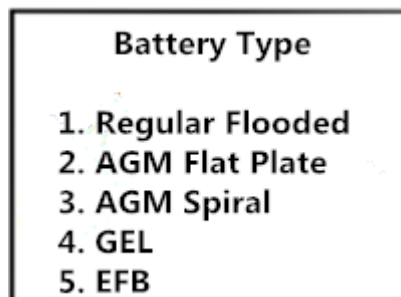
3.3.2 Battery System Standard and Rating

BST-560 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. Use UP/DOWN key to select according to the actual system standard and rating marked on the battery. See in the below picture, the arrow indicated location.

CCA: Cold Cranking Amps, specified by SAE&BCI, most frequently used 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 as combination of the numbers and letters, e.g. 55D23,80D26.

DIN：German Auto Industry Committee Standard

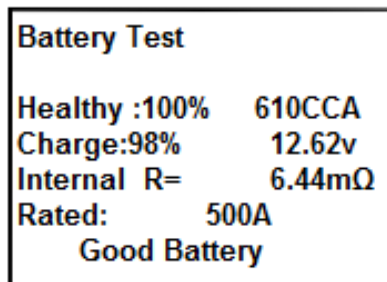**IEC**：Internal Electro technical Commission Standard

EN： European Automobile Industry Association Standard

GB：China National Standard

Input correct test standard and rating, press OK key, tester starts to test, and dynamic interface "TESTING" prompted. See below:

```
        TESTING

          ***
```

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

```
Battery Test

Healthy :100%    610CCA
Charge:98%        12.62v
Internal  R=       6.44mΩ
Rated:        500A
     Good Battery
```

3.4 Cranking Test

Tester prompts as following:

```
Cranking Test

START ENGINE
```

Starting the engine as prompted, tester will automatically complete the cranking test and display the result.

RPM DETECTED

Normally, cranking voltage value lower than 9.6V is regarded as abnormal, higher than 9.6V is OK.

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

TIME   1758ms

CRANKING   NORMAL

          12.56V
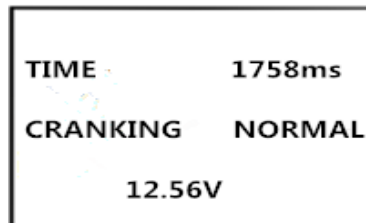
When cranking test is abnormal, battery test result will also be displayed at the same time.

TIME   1020ms

CRANKING   LOW

          19.12V

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

## 3.5 Charging System and Rectifier Diode Test

When enter the charging test, tester will prompt "Loaded testing"

LOADED   TESTING

Press OK key again to start the charging test.

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

Operate accordingly to increase the engine rotating speed to 2500turns, and keep for 5 seconds.

```
Charging Test

Increase RPM to 2500
r/min and keep it 5-seconds.
Press ENTER to continue.
```
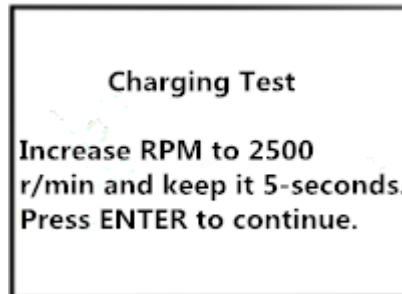
Tester starts the charging volt test after increase rev detected.

```
TESTING

***
```

After the test finished, tester displays the effective charging volts, ripple test result and charging test result.

```
Charging  Test

Loaded      13.27V
Loaded      14.23V
Ripple      15mv

CHARGING    NORMAL
```
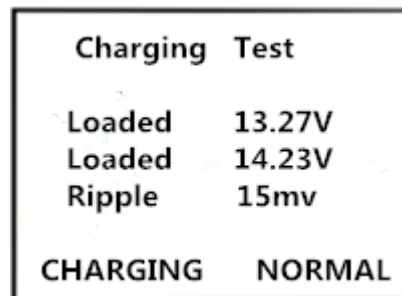
NOTE: If no increase rev detected, it shall be the fault of generator regulator or connection with battery failed. Tester will try 3 times to further detect, if still failed, it will skip the increase rev detect and the test result displays "No Volt Output".

Check the connection between generator and battery, then retest.

3.5.1 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 drive belt of the generator whether slip or running off. 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 internal regulator, the generator assembly has to be replaced.(Some old style cars are using external regulator, then directly replace the regulator.)

The normal high volt of the voltage regulator is maximum 14.7±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 the generator connection cable and the belt whether they are normal.

5) Diode Test:

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

Till now, all tests have been done.

3.6 Additional Functions

3.6.1 View test result

After entering the forth function, then press OK key you can view the final test result.

3.6.2 Print Test Result

About Printing function, connect the tester to computer with USB Cable,then export the testing result.(Before this ,need contact our company for the software first,download a exporting software to your computer)

3.6.3 Select Language

This option is to let user select language.

European version A: English, Russian, French, Italian, German,Polish
European Version B: Dutch, Sweden, Finnish, Turkish, Danish,Norwegian
American version :English, Spanish, Portuguese, French
Asian version A: English, Chinese Simple, Chinese Traditional
Asian version B: English, Japanese, Korean

Chapter 4 Daily Maintenance

4.1 Eliminate Common Fault

4.1.1 Screen Not Light

- Check connection with the battery whether it's well or reverse connected.
- Check the test cable whether break off or drop down.