

# Battery-, charging- and starting system analyzer & printer

## TECHNICAL DATA

Test range: 40 - 2000 CCA (SAE)  
Voltmeter: 1.5 - 30 Volt  
Accuracy: Voltage 0.1V / CCA 5% / IR 5%  
Operating temperature: 0°C-50°C (32°F-122°F)  
Batterie test 6V / 12V  
Starting / Charging system test 12V / 24V  
Measure battery internal resistor IR  
Multi-standard test: SAE, DIN, EN, IEC, CA, JIS  
Display: LCD 66 x 33 mm  
Thermal printer with 58 mm x 10 m paper roll  
Battery type: 6x 1.5V AA  
Languages: English, Francais, Deutsch,  
Espanol, Portugues



## INTENDED USE

This product is used to check 6V and 12V batteries and to test 12V and 24V starting and charging systems. The product is suitable for standard tests SAE, DIN, EN, IEC, CA and JIS.

## SAFETY INFORMATION

Before using the product, please read the instructions and the included safety information carefully.

- Observe operating environment temperature of 0°C-50°C (32°F-122°F).
- Keep good ventilation around the surroundings tested battery.
- Do not expose the instrument to direct use when it rains or snowy days.
- Please wear protection and safety equipment.
- Do not place metal objects near or touch the battery, including goggles, watches and other items.
- Do not smoke around the battery.
- Only use distilled water to refill the battery.
- When disconnecting the battery from system, make sure all electrical devices like radio, amplifiers, etc. are switched off.
- When take out the battery from car, make sure all battery caps had been closed.
- Do not use damaged batteries and clean the battery terminals.
- If the battery acid run into eyes, please rinse eyes with many fresh water. Ask a doctor for advice.
- Do not perform battery tests on batteries with more than 12 volts.
- Do not perform starting or charging system tests on systems with more than 24 volts.

## COMPONENTS

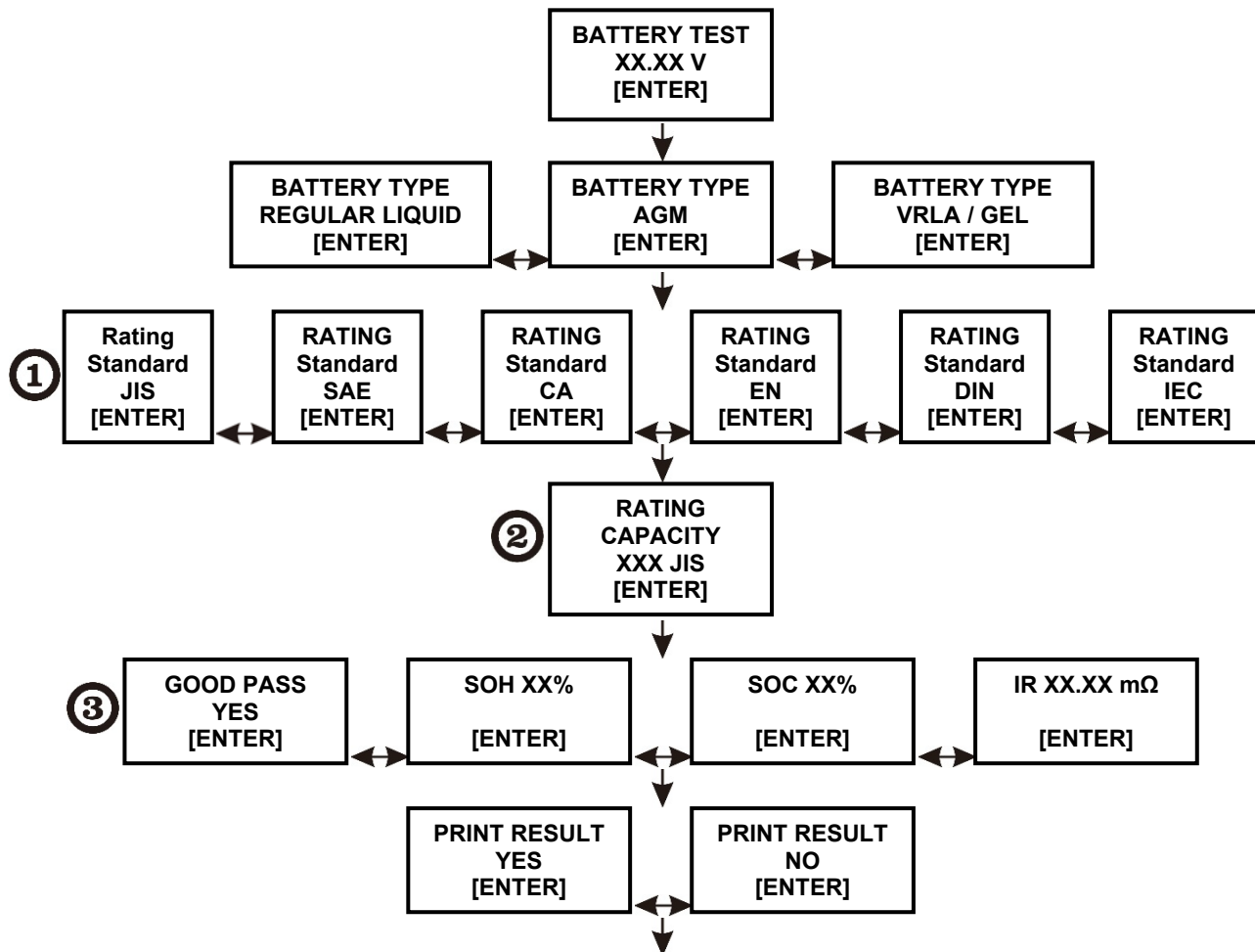
- 1 Thermal printer
- 2 LCD Display
- 3 Forward button
- 4 Back button
- 5 Enter button
- 6 Red battery clamp (battery minus -)
- 7 Black battery clamp (battery plus +)



## TEST PREPARATION

- Before you test a battery in a vehicle, turn off the ignition, all accessories and loads. Close all the vehicle doors and the trunk lid.
- Make sure you have put 1.5V x 6 pcs internal batteries into the tester (If the LCD screen shows "POWER LOW", then the internal batteries need to be replaced).
- Clamp the black load lead to the vehicle negative battery terminal (-). Clamp the red load lead to the vehicle positive battery terminal (+).

## BATTERY TEST



Press **ENTER** button to confirm and return to the main interface

## STANDARD

JIS: Japanese Standard  
 SAE: United States Standard  
 ① EN: European Standard  
 DIN: German Standard  
 CA: Normal starting current or maritime starting current  
 IEC: International electrical science and technology association

## TESTING RANGE

② JIS: 40 - 2000 CCA CA: 240 - 1400 CA (MCA)  
 SAE: 40 - 2000 CCA EN: 40 - 2100 CCA  
 DIN: 25 - 1300 CCA IEC: 30 - 1500 CCA

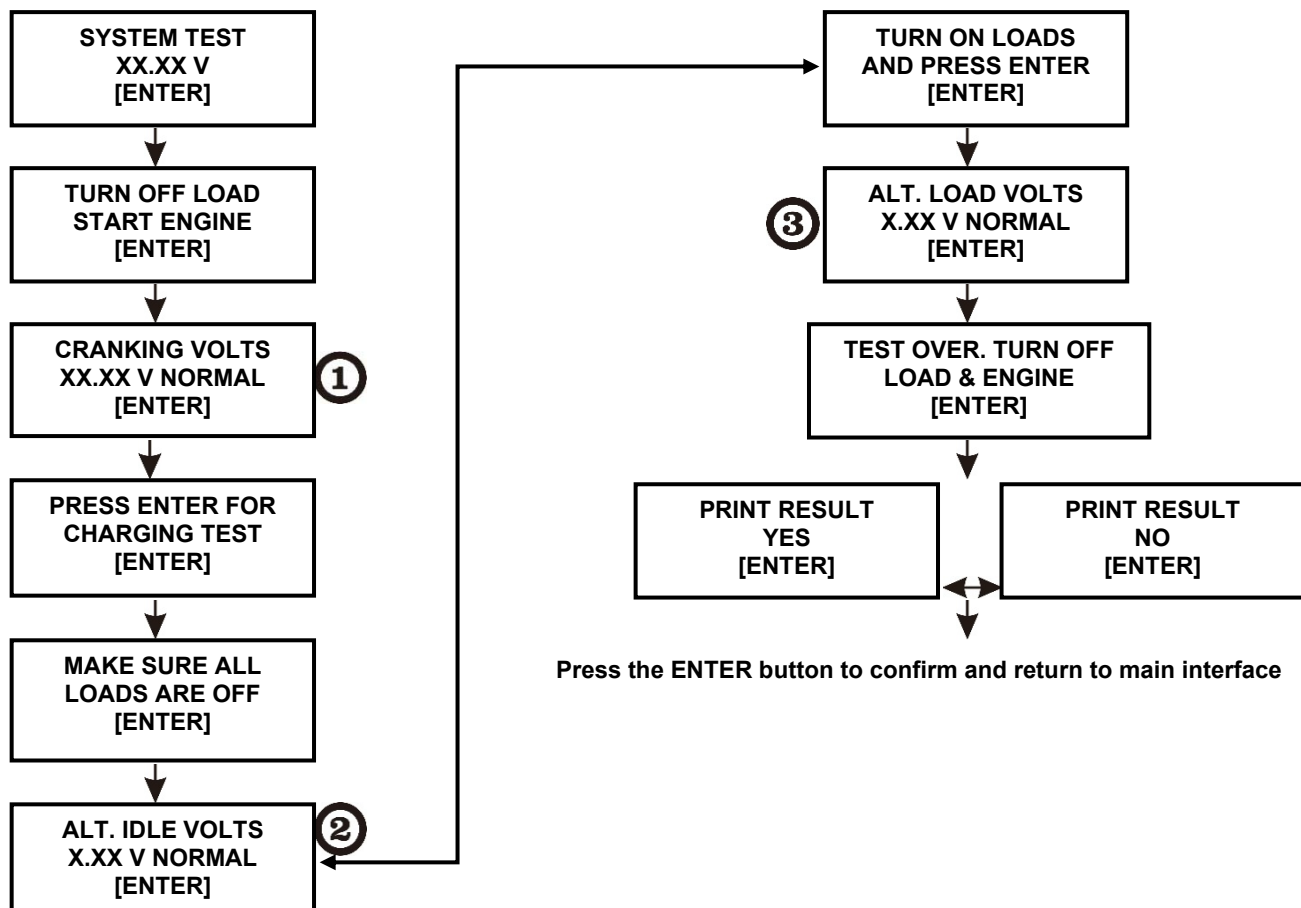
The value will rise or fall five units each time, JIS every time for a unit:

③ SOH: State of health  
 SOC: State of charge

## BATTERY TEST RESULTS

- "GOOD PASS"  
The battery is good and capable of holding a charge.
- "GOOD RECHARGE"  
The battery is good but needs to be recharged.
- "RECHARGE RETEST"  
Battery is discharged, the battery condition cannot be determined until it is fully charged. Recharge and retest the battery.
- "BAD REPLACE" The battery will not hold a charge, it should be replaced immediately.
- "TEST ERROR"  
The tested battery is bigger than 2000 CCA or the clamps are not connected properly. Please fully charge the battery and retest after excluding both previous reasons, if reading is the same, the battery should be replaced immediately.

## SYSTEM TEST



**①****SYSTEM TEST RESULT**

- "CRANKING VOLTS NORMAL"  
The system cranking voltage is in a good range.
- "CRANKING VOLTS LOW"  
The cranking voltage is below normal limits,  
troubleshoot the starter with manufacturers recommended procedure.
- "CRANKING VOLTS NO DETECTED"  
The cranking voltage is not detected.

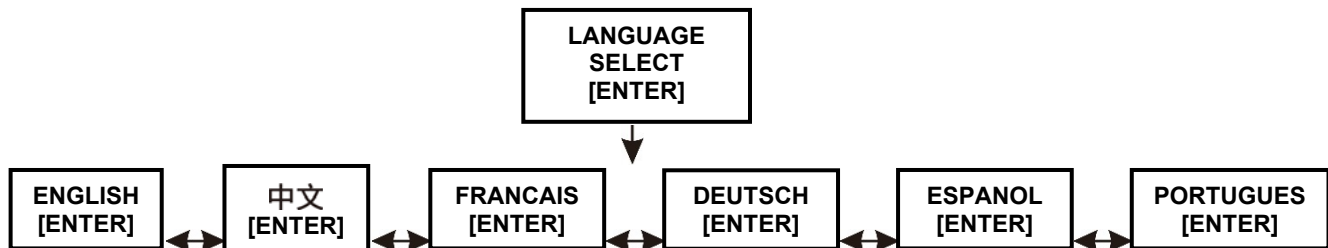
**②****SYSTEM TEST RESULT**

- "ALT. IDLE VOLTS NORMAL"  
The system is showing normal output from the alternator. No problem is detected.
- "ALT. IDLE VOLTS LOW"  
The alternator is not providing sufficient current to the battery.  
Check the belts to ensure the alternator is rotating with engine running, if the belts are slipping or broken, replace the belts and retest.  
Check the connections from the alternator to the battery, if the connection is loose or heavily corroded, clean or replace the cable and retest, if the belts and connections are in good condition, replace the alternator.
- "ALT. IDLE VOLTS HIGH"  
The voltage output from the alternator to the battery exceeds the normal limits of a functioning regulator. Check to ensure there is no loose connection and the ground connection is normal, if there is no connection issue, replace the regulator. Since most alternators have the regulator built-in, this will require you to replace the alternator.  
The normal high limit of a typical automotive regulator is 14.7 volts +/- 0.05.  
Check manufacturer specifications for the correct limit, as it will vary by vehicle type and manufacturer.

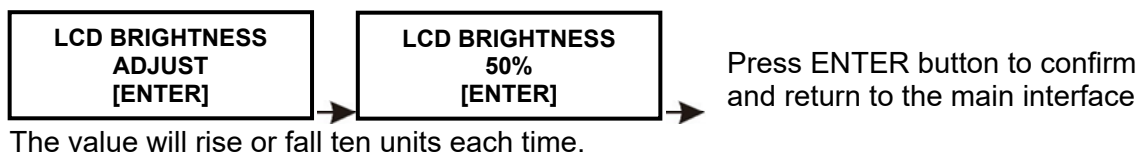
**③****SYSTEM TEST RESULT**

- "ALT. LOAD VOLTS NORMAL"  
The system is showing normal output from the alternator. No problem detected.
- "ALT. LOAD VOLTS LOW"  
The alternator is not providing sufficient current for the systems electrical loads and the charging current for the battery.  
Check the belts to ensure the alternator is rotating with the engine running, if the belts are slipping or broken, replace the belts and retest.  
Check the connections from the alternator to the battery, if the connection is loose or heavily corroded, clean or replace the cable and retest. When the belts and connections are in good working condition, replace the alternator.
- "ALT. LOAD VOLTS HIGH"  
The voltage output from the alternator to the battery exceeds the normal limits of a functioning1 regulator.  
Check to ensure there are no loose connections and that the ground connection is normal, if there are no connection issues, replace the regulator. Since most alternators have the regulator built-in, this will require you to replace the alternator

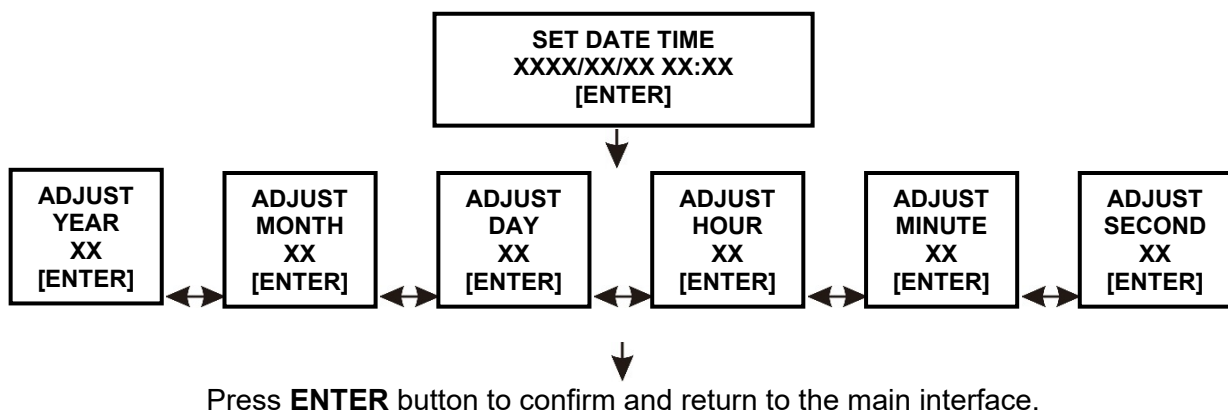
## SELECT LANGUAGE



## ADJUST LCD BRIGHTNESS



## SET DATE TIME



## BATTERY FAST TEST



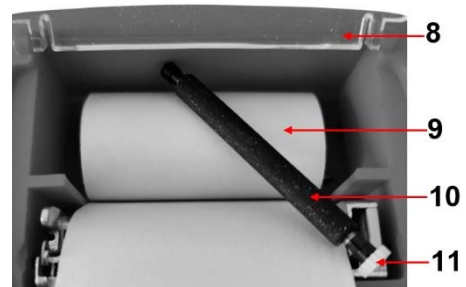
## CHANGE DEVICES BATTERIES

1. Remove the battery compartment cover on the backside of the device.
2. Remove the six worn batteries (type 1.5V AA)
3. Replace the worn batteries with new ones of the same type.
4. Pay attention to correct polarity when inserting, align the battery negative pole to the spring.
5. Replace the battery compartment cover.

### INSERT PRINTER PAPER

- 8 Paper roll compartment cover
- 9 Paper roll
- 10 Transport roller
- 11 Drive gear

1. Pull the paper roll compartment cover out of the retaining clips and open the cover upwards.
2. Pull the transport roller upwards out of the holder.
3. Insert a new paper roll.
4. Place the printing paper towards the display.
5. Place the transport roller on the paper into the holder. Make sure the drive gear is aligned to the right.



### ENVIRONMENTAL PROTECTION

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment.



### DISPOSAL

Do not dispose battery in household waste. Batteries should be disposed of in a responsible manner, they must be disposed at appropriate collection point. Dispose of this product at the end of its working life in compliance with the EU Directive on Waste Electrical and Electronic Equipment. Contact your local solid waste authority for recycling information or give the product for disposal to BGS technic KG or to an electrical appliances retailer.



### NOTICE