TEST CERTIFICATE

This Test Certificate that warranty the product has been inspected and Tested in accordance with the published specifications. The instrument has been calibrated by using equipment which has already been calibrated to standards traceable to national standards.

MODEL NO. _____

SERIAL NO. _____

DATE: _____

ISO 9001:2015 REGISTERED

QC
KUSAM-MECO
PASS

WARRANTY

Each “KUSAM-MECO” product is warranted to be free from defects in material and workmanship under normal use & service. The warranty period is one year (12 months) and begins from the date of despatch of goods. In case any defect occurs in functioning of the instrument, under proper use, within the warranty period, the same will be rectified by us free of charges, provided the to and fro freight charges are borne by you. This warranty extends only to the original buyer or end-user customer of a “KUSAM-MECO” authorized dealer. This warranty does not apply for damaged Ic’s, fuses, disposable batteries, carrying case, test leads, or to any product which in “KUSAM-MECO’s” opinion, has been misused, altered, neglected, contaminated or damaged by accident or abnormal conditions of operation or handling. “KUSAM-MECO” authorized dealer shall extend this warranty on new and unused products to end-user customers only but have no authority to extend a greater or different warranty on behalf of “KUSAM-MECO”. “KUSAM-MECO’s” warranty obligation is limited, at option, free of charge repair, or replacement of a defective product which is returned to a “KUSAM-MECO” authorized service center within the warranty period.

KUSAM-MECO®

OFFICE ADDRESS / SERVICE CENTER

Shop no.18, 1st Floor, CIDCO Shopping Complex, Plot # 9, Sector-7,

Rajiv Gandhi Marg, Sanpada, Navi Mumbai - 400705.

Sales Direct : +91-9867488006, 9867675093

Email : sales@kusam-meco.co.in **Website :** www.kusamelectrical.com

KUSAM-MECO®

AN ISO 9001:2015 COMPANY

BATTERY TESTER WITH PRINTER
KM 950



- ☑ 12V Lead-acid Battery Test
- ☑ 12V/24V Cranking System Test
- ☑ 12V/24V Charging System Test

TABLE OF CONTENTS

1. SAFETY NOTE

1.1 SAFETY INFORMATION ---------- 1

1.2 IMPORTANT SAFETY INSTRUCTIONS ---------- 1

2. PRODUCT DESCRIPTION

2.1 PRODUCT INTRODUCTION ---------- 2

2.2 FUNCTION DESCRIPTION ---------- 2

2.3 TECHNICAL PARAMETERS ---------- 3

2.4 TECHNICAL SPECIFICATIONS ---------- 3

2.5 PRODUCT INFORMATION ---------- 4

3. BATTERY TESTER SETUP

3.1 TESTER SETUP ---------- 5

4. BATTERY TESTER OPERATION

4.1 BATTERY TEST ---------- 7

4.2 BATTERY TEST RESULT ---------- 9

4.3 CRANKING TEST ---------- 10

4.4 CHARGING TEST ---------- 11

4.5 REVIEW DATA ---------- 12

4.6 PRINT ---------- 12

5. PAPER REPLACEMENT

5.1 ROLL PAPER INSTALLATION ---------- 13

6. PRINT DATA BY PC

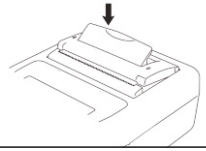
6.1 PRINT DATA BY PC PRINTER ---------- 13

5. PAPER REPLACEMENT

5.1 ROLL PAPER INSTALLATION

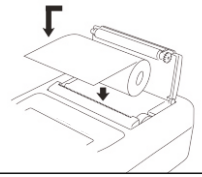
- Pull the printer lever to open the printer cover.

Pull the printer lever



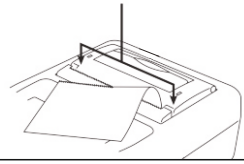
- Take out the remaining rolls and prepare new printing paper.
- Pull out the printing paper head, and install the printing surface (smooth roll as inner side) downwards into the printer.

Smooth side downwards



- Close the printer cover, and tear off the excess printing paper.

Press both ends to close the cover



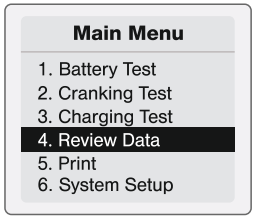
6. PRINT DATA BY PC

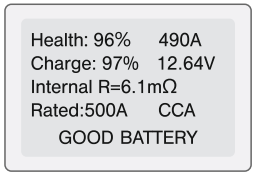
6.1 PRINT DATA BY PC PRINTER

- Before choosing the print function, it is necessary to connect the tool to the computer via USB cable.
- Install the USB driver firstly, the driver is in the CD of the package.
- Then run the print software.
- Choose the COM Port number.
- Choose the information you want to print from the battery tester.

4.5 REVIEW DATA

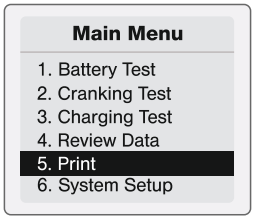
Choose the function of Review Data to review last time test results.



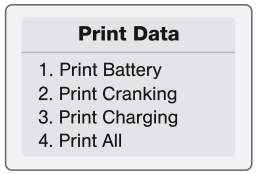


4.6 PRINT

1. Choose the function of Print and press Enter.

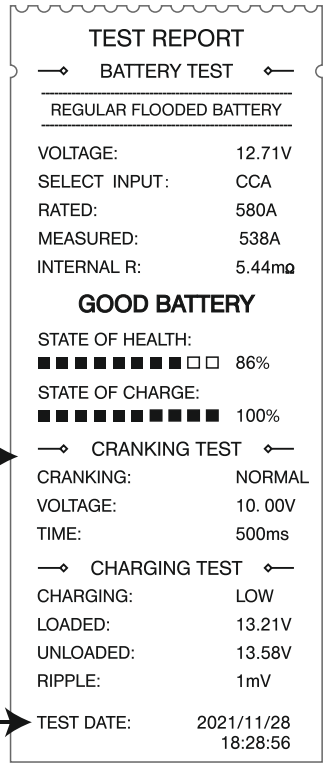


2. The Printer will print the test result as below.



3. Press Back button to return the previous menu.

Test time, Year/Month/Day



1. SAFETY NOTE

1.1 SAFETY INFORMATION

For your own safety and the safety of others, and to prevent damage to the equipment and vehicles, read this manual thoroughly before operating your battery tester. The safety messages presented below and throughout this user's manual are reminders to the operator to exercise extreme care when using this device. Always refer to and follow safety messages and test procedures provided by vehicle manufacturer. Read, understand and follow all safety messages and instructions in this manual.

1.2 IMPORTANT SAFETY INSTRUCTIONS

WARNING

- Do not smoke, strike a match, or cause a spark near the vehicle while testing and keep all sparks, heated items and open flames away from the battery and fuel / fuel vapours as they are highly flammable.
- The device should not be used again when abnormal phenomena occur during the test. If smoke, peculiar smell or abnormal noise occurs, stop using it immediately and contact the supplier. Use under abnormal conditions may cause accidents, fires, etc.
- Prevent engine oil, gasoline, antifreeze and electrolyte from contacting this product, which may cause surface deterioration of this product.
- If the skin of the cable is damaged, it may cause a short circuit, so stop using it immediately and send it for repair.
- After the test, please remove the alligator pliers from the battery terminal, otherwise it may cause the product to malfunction or damage the battery.
- Do not use alcohol-based liquids to wipe the product, as it may crack.
- Do not allow engine oil to adhere to the metal parts of the alligator pliers or USB port, which may cause poor contact.

- Do not touch the inside of the printer with your hands, as this may cause malfunctions.
- Do not forcibly operate the printer lever or printer cover, as it may malfunction or break.
- When storing, put the product in a sealed bag or tool box to prevent dust from entering the printer and causing malfunction.

2. PRODUCT DESCRIPTION

2.1 PRODUCT INTRODUCTION

KM 950 battery tester adopts the world's most advanced conductance test technology, which can conveniently, quickly and accurately measure the cold cranking current capacity and battery health of the vehicles battery without damaging the battery performance.

It has the ability to quickly detect the car common faults of cranking system and charging system.

Print test results through the built-in thermal printer.

2.2 FUNCTION DESCRIPTION

- Quickly test the health of 12V batteries, and show status with the result of "Good Battery" / "Replace" / "Good & Recharge" / "Charge & Retest"/ "Bad Cell".
- Test 12V/24V cranking system and charging system of vehicles.
- Batch battery test mode is available through **"Fn"** button.
- Built-in thermal printer to directly print test results.
- Connect to the computer through the USB port to transfer the test data.
- With reverse polarity protection function, wrong connection will not damage the tester, car or battery.

4.4 CHARGING TEST

Tester prompts as following

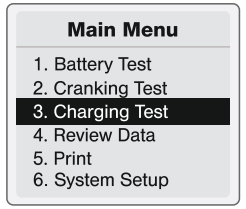
- Select "Charging Test" and press Enter button to start the charging test.

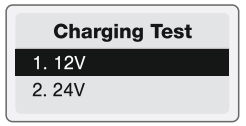
Note: Do not shut down the engine during the test. Follow the steps according to the on screen instructions.

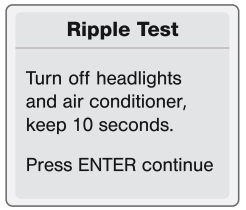
- Choose to test 12V/24V charging system.

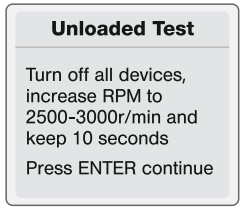
- After the test has finished, the tester displays the loaded and unloaded charging voltages, ripple voltage and charging test result.

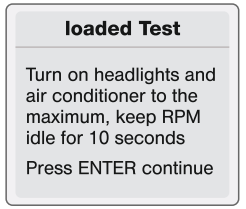
Note: "NO OUTPUT" means Charging system is no output. The vehicle will stop working when the battery is exhausted. Please check the alternator or contact the maintenance service center immediately.

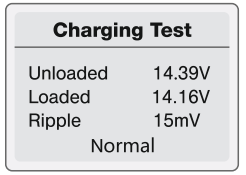






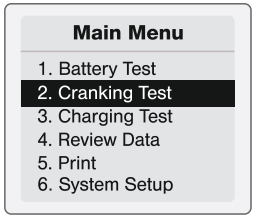




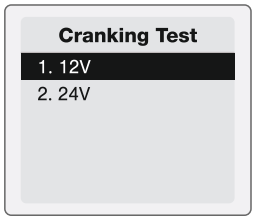


4.3 CRANKING TEST

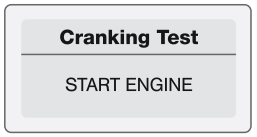
Tester prompts as following



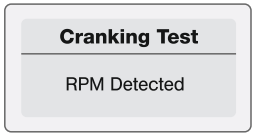
- Choose to test 12V/24V cranking system.
- Start the engine when prompted, the tester will automatically complete the cranking test and display the result.

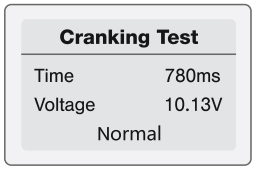


- When the RPM is detected this will display on the screen.
- Normally a cranking voltage value lower than 9.6V is regarded as abnormal.



- The test result of the tester will include actual cranking voltage and actual cranking time.
- This is for the convenience of the maintenance personnel to quickly know the whole state of the cranking system according to the data.





After the test is finished, do not shut down the engine, the next step is the charging test.

2.3 TECHNICAL PARAMETERS

Cold Cranking Amps Measure Range

Measure Standard	Description	Measure Range
CCA	Cold Cranking Amps	100-2000
BCI	Battery Council International Standard	100-2000
CA	Cranking Amps Standard	100-2000
MCA	Marine Cranking Amps Standard	100-2000
JIS	Japan Industrial Standard	26A17-245H52
DIN	German Auto Industry Committee Standard	100-1400
IEC	Internal Electro Technical Commission Standard	100-1400
EN	European Automobile Industry Association Standard	100-2000
SAE	Society of Automotive Engineers Standard	100-2000
GB	China National Standard	30-220Ah

2.4 TECHNICAL SPECIFICATIONS

- Input Voltage Range: 8V ~ 30V
- Tester Working Temperature: -10°C to 60°C (14°F to 140°F)
- Printer Working Temperature: 0°C to 50°C (32°F to 122°F)
- Storage Temperature: -20°C to 70°C (-4°F to 158°F)
- Dimensions: (L)232 x (W)106 x (H)62 mm
- Printing Roll: 57 x 50 mm

2.5 PRODUCT INFORMATION

(1) LCD display (2) Enter button

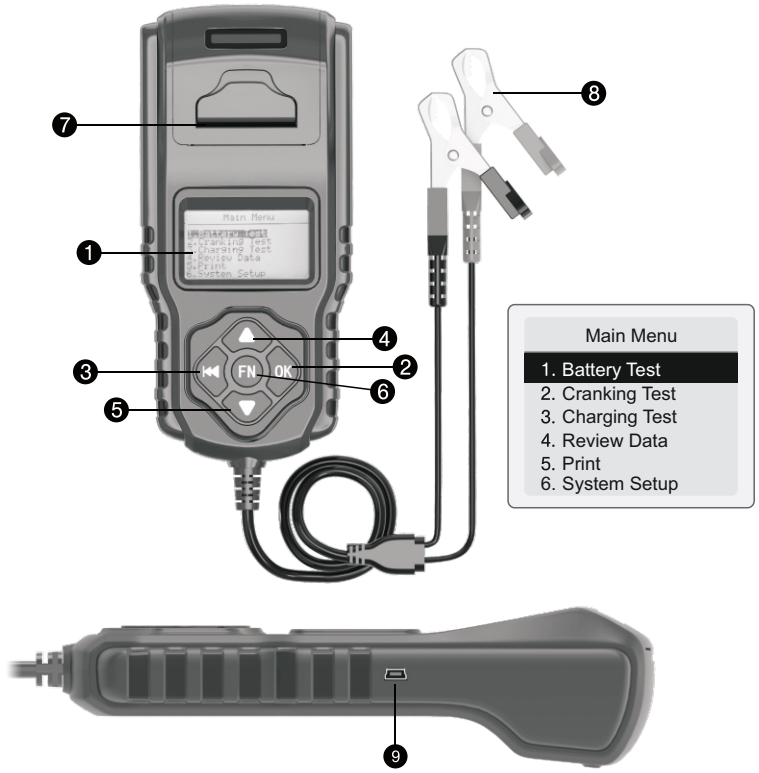
(3) Back button (4) Up button (5) Down button

(6) Fn button — Quick test or voltage test function can be set.

(7) Thermal printer

(8) Alligator clamps (red & black) — Connect the red clamp to the positive pole and the black clamp to the negative pole.

(9) USB port — Connect to the computer for data transfer.



4.2 BATTERY TEST RESULT

Battery test result includes 5 types as following.

(1) GOOD BATTERY

• The battery is without any problem.

Health: 96% 490A
Charge: 97% 12.64V
Internal R=6.1mΩ
Rated:500A CCA
GOOD BATTERY

(2) GOOD, RECHARGE

• Good battery but low power, recharge before using.

Health: 78% 440A
Charge: 31% 12.20V
Internal R=7.2mΩ
Rated:500A
GOOD, RECHARGE

(3) REPLACE

• The battery is near to or already reached the end of the using life, replace battery.

Health: 8% 144A
Charge: 99% 12.68V
Internal R=18.1mΩ
Rated:500A CCA
REPLACE

(4) CHARGE-RETEST

• Unstable battery recharge and retest. If same test result appears after recharge and retest, the battery is regarded as damaged, replace the battery.

Health: 39% 310A
Charge: 12% 12.08V
Internal R=30.1mΩ
Rated:500A CCA
CHARGE-RETEST

(5) BAD CELL

• Internal damage, replace battery.

Health: 10% 165A
Charge: 0% 9.97V
Internal R=17.83mΩ
Rated: 500A CCA
BAD CELL

Note: When the test is complete, once the Enter button is pressed, the user will be prompted to print results - press Enter to confirm or to continue testing /press the Back button to go back to previous menu.

PRINT TEST RESULTS?

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.

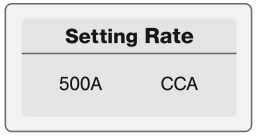
SAE: Society of Automotive Engineers Standard.

GB: China National Standard.

Rating range as following

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

Input correct test standard and rating, press Enter button, tester starts to test, and dynamic interface "TESTING" prompted.



Note: It takes around 5 seconds to display the battery test result.

3. BATTERY TESTER SETUP

3.1 TESTER SETUP

The tool allows you to make the following adjustments and settings.

Language: Choose a language.

Fn Setup: Set the One-Click-Key function.

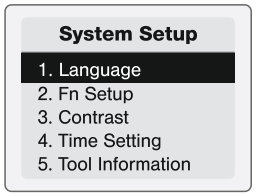
Contrast adjustment: Adjusts the contrast of the LCD display.

Time Settings: Set the time & date.

Tool Information: Show the software and hardware version.

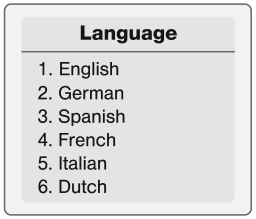
System setup

- From main menu, select the System Setup, and press Enter.



Language

- From System Setup menu, use Enter button to select Language.
- Use UP and DOWN button to select the desired language and press Enter button to save your selection and return to previous menu.



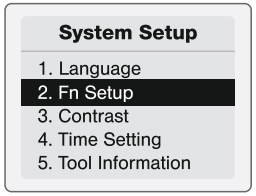
Fn Setup

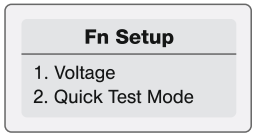
- From System Setup menu, use Enter button to select.
- Use UP and DOWN button to select the desired one-click quick function.

  Voltmeter selection is to show the real time voltage.

  Quick Test Mode is suitable for using the same parameters batteries test.

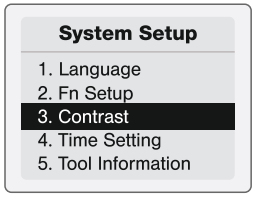
  That means, after inputting the battery parameters during first test, the user can then press the Fn button to quickly access the same test procedure using the same perameters, as long as the Quick Test Mode is selected.



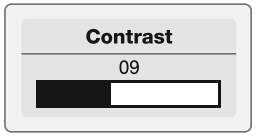


Contrast

- From System Setup menu, use Enter button to select contrast.

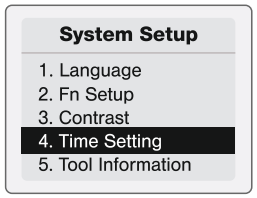


- Use UP and DOWN button to select the contrast value and press Enter button to save your selection setting and return to previous menu.

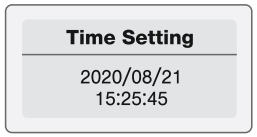


Time Setting

- From System Setup menu, use Enter button to select time setting.

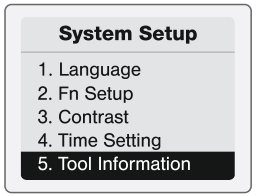


- Use UP and DOWN and Enter button to set the time based on your location, press Back button to return to previous menu.

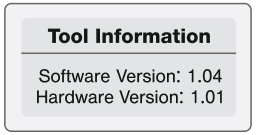


Tool Information

- From System Setup menu, use Enter button to select Tool Information.

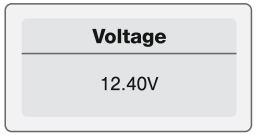


- Press Back button to return the previous menu.



OPERATION AND TEST

- After connecting the tool to vehicle battery, the tester displays the real-time voltage.



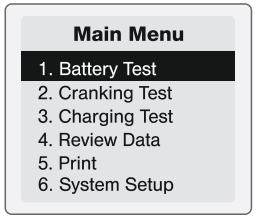
- Press the Enter button, the tester will display the following contents in a sequence, select accordingly.

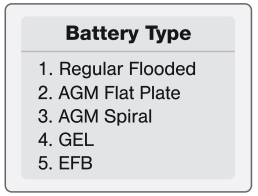
4. BATTERY TESTER OPERATION

4.1 BATTERY TEST

Select battery type

- After entering Battery Test, the tester will prompt to select battery type, i.e. Regular Flooded, AGM Flat Plate or AGM Spiral, Gel and EFB battery. Press UP/DOWN button to select battery type, then press Enter button to confirm.





Battery System Standard and Rating

- The tester will test each battery according to the selected standard and rating. Use UP/DOWN button to select according to the actual system standard and rating marked on the battery. See in picture, the arrow indicates normal locations.



(Please note each battery manufacture is different and the location of the marking may change, if unsure please contact the manufacturer of the battery).