ELECTRONIC BATTERY TESTER
6 and 12 VOLT BATTERIES
12 and 24 VOLT START/CHARGE ANALYSER
Part 0-524-71

Warning!

This battery tester is designed to test 6 and 12 volt automotive lead acid batteries including maintenance free and sealed for life batteries, it can also help analyse 12 and 24 volt starter and charging systems. These instructions must be followed for its safe and efficient use:

- Battery acid is corrosive, any contact with the skin should be immediately rinsed with copious amounts of water. If in contact with the eyes rinse immediately and seek medical assistance.
- Batteries can produce explosive gases so always work in a well ventilated area. Do not work near naked flames, lit cigarettes etc., and avoid any action which may cause sparking.
- If the battery to be tested has a damaged or cracked case do not use the tester; replace the battery.
- Protect the tester from dampness and never use in a damp or wet environment.
- Only use this product to test lead/acid automotive batteries of the appropriate voltage. Do not test batteries connected in parallel.

Operating Instructions

1. If the battery is non-sealed type, remove the battery filler cap(s) and check the electrolyte level. This level should be approximately 5mm above the plates. If necessary, top up with distilled water before testing.

2. Ensure the vehicle ignition, all accessories and other loads are switched off.

3. Connect the black clip to the negative battery terminal and the red clip to the positive battery terminal.

4. The LCD display will briefly show '**SYSTEM ANALYSER**' then change to '**BATTERY TEST**' and show the battery voltage. Use the up/down keys to select '**BATTERY TEST**', '**SYSTEM TEST**' and '**LANGUAGE SELECT**'.

5. **BATTERY TEST**

   Press '**ENTER**' to select '**BATTERY TEST**'.
   Select battery type '**REGULAR LIQUID**' for normal wet flooded battery, '**AGM FLAT PLATE**' or '**AGM SPIRAL**' dependent on the construction of the AGM battery, or '**VRLA/GEL**' for sealed batteries.
   Press '**ENTER**' then select battery rating '**SAE**', '**DIN**', '**IEC**', '**EN**' or '**JIS**'.
   Press '**ENTER**' then select the battery capacity in CCA, for JIS select battery type number.
   Press '**ENTER**' to start the test, '**TESTING**' is displayed for a few seconds.
   If '**IS BATTERY CHARGED**' is displayed select '**YES**' or '**NO**' and '**ENTER**' to confirm if the battery is fully charged.
   When the test is complete the display shows the voltage and CCA.
   One of six '**SOH**' (State of health) or '**SOC**' (State of Charge) results will be displayed:

   '**GOOD & PASS xx.xxV xxxx SAE**' - battery good.
   '**GOOD & RECHARGE xx.xxV xxxx SAE**' - battery good but needs recharging.
   '**RECHARGE & RETEST xx.xxV xxxx SAE**' - battery is discharged, charge and retest.
   '**BAD & REPLACE xx.xxV xxxx SAE**' - battery will not hold charge and should be replaced.
   '**BAD CELL & REPLACE xx.xxV xxxx SAE**' - battery has a least one failed cell and should be replaced.
   '**LOAD ERROR**' - battery is too large or connection poor.

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6. STARTING TEST

Press '**ENTER**' then select '**SYSTEM TEST**'.
Press '**ENTER**', the screen shows '**TURN OFF LOADS START ENGINE**'.
Ensure all accessory loads are off before starting the engine.
Start the engine, the display will then show the minimum voltage achieved during engine cranking
One of three results will be displayed:

'**CRANKING VOLTS xx.xxV NORMAL**' - starter system ok.
'**CRANKING VOLTS xx.xxV LOW**' - starter system weak.
'**CRANKING VOLTS NO DETECTED**' - no drop in voltage detected.

7. CHARGING TEST

After starter test press '**ENTER**' to show '**PRESS ENTER FOR CHARGING TEST**'.
Press '**ENTER**', the display shows '**MAKE SURE ALL LOADS ARE OFF**' then press '**ENTER**' again.
One of three results will be displayed:

'**ALT IDLE VOLTS xx.xxV NORMAL**' - charging system ok.
'**ALT IDLE VOLTS xx.xxV LOW**' - charging voltage low.
'**ALT IDLE VOLTS xx.xxV HIGH**'- regulator may be faulty (note some modern charge systems can run above 15 volts for short periods, please refer to manufacturer).

Press '**ENTER**' the display shows '**TURN ON LOADS AND PRESS ENTER**', turn on headlights, heater fan and heated screen to load the electrical system then press '**ENTER**'.
On older vehicles the display may show '**RUN ENGINE UP TO 2500 RPM 15 SEC**', run engine at increased rpm then press '**ENTER**'.
One of two results will be displayed:

'**RIPPLE DETECTED xx.xxV NORMAL**' or '**NO RIPPLE DETECTED**'- normal function.
'**RIPPLE DETECTED xx.xxV HIGH**'- possible fault with diodes or stator.

Press '**ENTER**' one of three results will be displayed:

'**ALT LOAD VOLTS xx.xxV NORMAL**' - normal output.
'**ALT LOAD VOLTS xx.xxV LOW**' - output is not providing sufficient current for the loads.
'**ALT LOAD VOLTS xx.xxV HIGH**' - output voltage too high (see earlier note).

Press '**ENTER**' when complete, display shows '**TEST OVER. TURN OFF LOADS & ENGINE**'.
Switch off all loads and stop engine, press '**ENTER**' to return to beginning and remove clips.

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