Battery Tester & Analyser (MP7436)

Suitable for 6V/12V lead acid; AGM or GEL batteries.

USER MANUAL

Please read and follow this operating manual and all safety instructions for the batteries being tested before using this device.
Keep these instructions for future reference. When passing the device on to others be sure to also include all documentation. The instruction leaflet is also available on our website **www.maypoleltd.com**

SAFETY

- Ensure that cables are regularly inspected and kept in good condition.
- Never use the tester if the lead or crocodile clips are damaged.
- Never use the tester if it has been dropped or damaged in any way.
- For indoor use only, **do not** expose to rain or any other forms of liquid or moisture.
- There are no user-serviceable parts in this product. Opening the case is dangerous and electrical repairs or replacement of the cable should only be carried out by the manufacturer, its service agent or a suitably qualified electrician / electrical technician in order to avoid a hazard. Resultant damage to the product will result in the loss of your guarantee.

GENERAL SAFETY

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children must be supervised to ensure that they do not play with the appliance. Cleaning and user maintenance must not be undertaken by children without supervision.

Short circuit: Batteries store large amounts of energy. Avoid short circuits which could result in a dangerous electrical discharge that could result in personal injury and / or damage to equipment and property. Take extra care when using tools around a battery, remove personal metal items such as rings, bracelets, necklaces, and watches when working with a lead-acid battery as a short circuit may result in severe burns or cause an explosion.

Personal protection: The use of safety goggles, clothing protection and gloves when working with lead acid batteries is strongly advised. Avoid contact with the electrolyte as this is acidic and is likely to cause burns to the skin or clothes. If this occurs you should rinse the affected area with plenty of running cold water immediately. Medical advice should be sought immediately in the event of burns to the eyes or if symptoms persist as a result of burns to the skin.

GENERAL INFORMATION

Only use this product for the purposes described in this instruction booklet. Failure to do so will result in the loss of your guarantee. The manufacturer will not accept liability for damage to the device, persons or property resulting from incorrect usage or failing to follow the instructions in this booklet.

DISPOSAL

In the event that this product must be disposed of, an authorised place for the recycling of electrical and electronic appliances must be sought. Contact your local authority for information concerning local Household Recycling Centres with applicable facilities.
This product must not be disposed of with general domestic waste.

PRODUCT PROFILE & SCOPE OF USE

The Battery Tester & Analyser is designed to 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.

'Battery Test' analyses the battery health status to calculate the actual cold cranking capability of the battery.

'Cranking Test' is used to test and analyze the starting motor.

'Charging Test' is used to check and analyze the charging system, including the alternator.

The device is designed to test 6/12V regular flooded, AGM, GEL & EFB batteries only with a CCA operating range of 100 – 2000 CCA.

Consult the manufacturer of your device, battery or vehicle if you are unsure about the suitability of this tester for use with it.

What Are the Most Commonly Used Car or Motorcycle Batteries?

Cars are powered by lead-acid batteries.The most commonly used ones are listed below:

- Flooded Lead Acid Batteries(Wet):

This is the oldest/most common car battery type, also known as a "SLI battery.The Flooded Battery is usually made of 6 cells with a liquid electrolyte solution of sulfuric acid and water that needs to be topped off periodically. This battery typically supplies a voltage of 12.6v at full charge.

- Enhanced Flooded Battery(EFB):

This battery type also uses a liquid electrolyte solution. However, different from the Wet Flooded Lead Acid, it is sealed and maintenance-free. The Enhanced Flooded battery is usually seen in cars with simple start-stop technology, and can provide up to 85,000 engine cranks.

- Gel Cell Battery (Gel) & VRLA Battery:

Gel batteries are similar to flooded batteries. Although for this type, calcium replaces the antimony in the lead plates, and silica is added to the electrolyte solution, turning the liquid into a gel.

- Absorbent Glass Mat Battery (AGM):

AGM batteries are designed to deliver powerful bursts of starting amps and run for a long time."Absorbed Glass Mats" are used to cushion the ultra-thin lead plates, allowing manufacturers to include more leads into one battery and provide more power. AGM batteries are divided into two categories according to the cell structure. They can be AGM FLAT PLATE Or AGM SPIRAL. This type of battery is ideal for vehicles with automatic start-stop applications and braking energy recovery.

BATTERY CONNECTION

Connect the battery clips to the battery being tested in the following order:

1) Connect the positive charging lead (RED) to the positive post of the battery (marked +/ +ve or P).

2) For negative-earth vehicles with the battery still installed: Connect the negative charging lead (BLACK) to the vehicle chassis, well away from the battery, fuel line, and hot or moving parts

3) For batteries removed from the vehicle**:** Connect the negative charging lead (BLACK) to the negative post of the battery (marked -/ -ve or N).

After connecting the clips, rotate them slightly to remove any dirt or oxidization; ensuring a good contact.

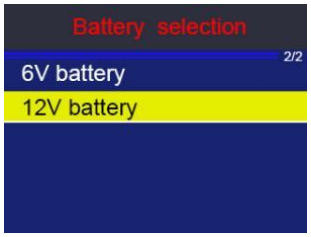
MAIN MENU

When the tester is connected to a battery the tester will default to the below main menu screen. Pressing the UP/DOWN arrow keys will allow you to toggle through each menu option. Pressing the ENTER key will select each option. Pressing the ESC key will take you back to the main menu screen:

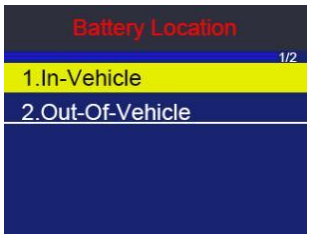
BATTERY TEST

Select ‘Battery Test’ in the main menu

Select a 6V or 12V battery:

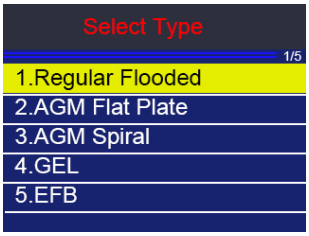


Select the battery location (in-vehicle or out-of-vehicle):



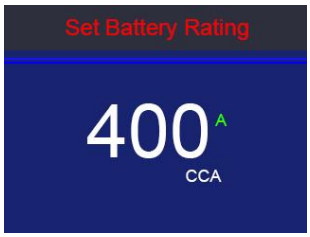
When testing in a vehicle the tester will detect a surface charge. When prompted turn the headlights on for 10 seconds and then turn the lights off as prompted and press the ENTER key.

Select the battery type by pressing the UP/DOWN keys. Press ENTER to confirm battery type:



Select the battery standard by pressing the UP/DOWN keys. Press ENTER to confirm battery standard:

Select the battery rating by pressing the UP/DOWN keys to set the correct value. Press ENTER to confirm the value:



A final press of the ENTER key will start the battery test process. The display will show the following 5 test results after approximately 10 seconds:

1). GOOD BATTERY: The battery is without any problems:

2). GOOD-RECHARGE: A good battery but low charge. Recommend re-charging:

3). REPLACE: Battery is not holding its charge. Have the battery tested by a qualified technician and replace if necessary.

4). BAD CEL: Faulty battery. Have the battery tested by a qualified technician and replace if necessary.

5). CHARGE-RETEST: Re-charge and re-test the battery. If the same test result is displayed after the battery has been re-charged and re-tested have the battery tested by a qualified technician and replace if necessary.

Note – it is recommended that the battery is tested out of vehicle before replacing the battery in case the battery is not well connected in the car.

Once the battery has been tested; pressing the EXIT key will take you back to the main menu options.

What is STATE OF HEALTH (SOH)?

It means how much battery capacity is left (%) comparing with the marked original battery capacity.

What is STATE OF CHARGE (SOC)?

It means how many percent of the battery is actually charged.

What is CCA (COLD CRANKING AMPS)?

The current in amperes which a new fully charged battery can deliver for 30 seconds continuously without the terminal voltage falling below 1.2volts per cell. After it has been cooled to 0°F and held at that temperature. This rating reflects the ability of the battery to deliver engine starting currents under winter conditions.

IN-VEHICLE TEST

This is a combination test of both battery test & electrical system test. Please refer to above testing procedures or follow the instructions on the display of the tester.

CRANKING TEST

Note:

1) Turn off the engine and all accessories.

2) The test only applies to 12V lead-acid batteries.

The cranking test is the Engine ignition test. This test allows you to check if the battery can provide enough power to start the engine. It tests the battery instant voltage when the engine is cranked. If the cranking voltage value is lower than 9.6V, the result is considered abnormal. If the result is higher than 9.6V, the result is considered normal.

Connect the tester to the battery.

Select ‘Cranking test’ in the main menu

Start the engine.

The display will automatically show the following test results after approximately 10 seconds:

Refer to the table below to better understand the test result.

Item	Cranking Voltage (V)	Conclusion
1	V < 9.6	Cranking Low
2	9.6 ⩽ V < 10.7	Normal
3	V ⩾ 10.7	Good

CHARGING TEST (ALTERNATOR TEST)

Note:

1) The test only applies to 12V lead-acid batteries.

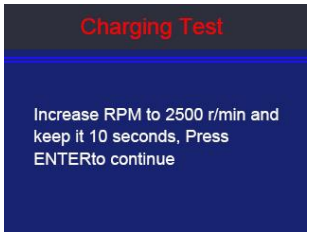
Connect the tester to the battery.

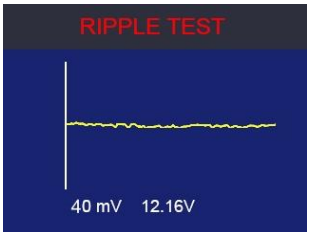
Select ‘Charging test’ in the main menu.

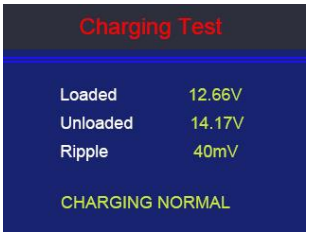
The display will automatically show the ripple test results which is used to check the condition of the alternator.

Start the engine and increase the RPM to 2,500rpm for 10 seconds. Press ENTER to continue.

The display will automatically show the following test results after approximately 10 seconds:







Refer to the table below to better understand the test result.

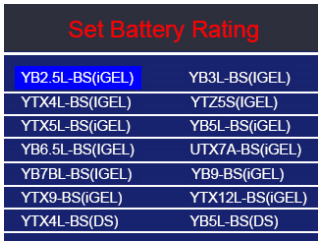
Item	Battery Voltage (V)	Conclusion
1	V < 12.8	No Output
2	12.8 ⩽ V < 13.2	Charging Low
3	13.2 ⩽ V < 15	Charging Normal
4	V ⩾ 15.0	Charging High

MOTORCYCLE

Connect the tester to the battery.

Select ‘Motorcycle’ in the main menu.

Press the UP/DOWN key to select the battery rating:



A final press of the ENTER key will start the battery test process. The display will show the result after approximately 10 seconds:

Good battery

Good/Recharge

Replace

Bad cell/ replace

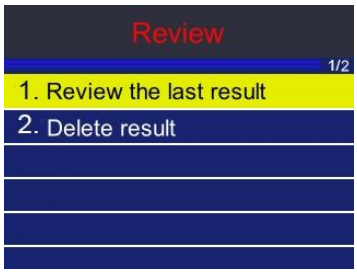
Charge/ re-test

REVIEW

Connect the tester to the battery.

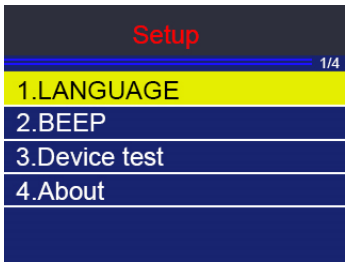
Select ‘Review’ in the main menu.

The review option allows you to review the last test result and delete it.



SETUP

Select ‘Setup’ in the main menu.
In the setup option you can change the device language, activate or de-activate the key beep, test the screen operation and also the keys. Details regarding software information and version are also available.



TECHNICAL SPECIFICATIONS

Voltage	6V/12V DC
CCA Operating Range	100 – 2000CCA
Battery compatibility	Regular, flooded, AGM, GEL batteries
Safety Features	Over Voltage & reverse polarity protection
Working temperature	0°C- 50°C/ -32°F - 122°F

COLD CRANKING AMPS MEASUREMENT RANGE

Measurement Standard	Measurement Range
CCA	100-2000
BCI	100-2000
CA	100-2000
MCA	100-2000
JIS	26A17-245H2
DIN	100-1400
IEC	100-1400
EN	100-2000
SAE	100-2000

MAINTENANCE INSTRUCTIONS

This tester requires minimal maintenance. As with any appliance or tool, a few common sense rules will prolong the life of this device.
ALWAYS BE SURE THE TESTER IS DISCONECTED FROM A BATTERY BEFORE PERFORMING ANY MAINTENANCE OR CLEANING.
1. Store in a clean, dry place to avoid moisture damage.
2. Loosely coil up the cords when not in use.
3. Clean the case and cords with a slightly damp cloth.
4. Clean any corrosion from the clamps with a solution of water and baking soda.
5. Examine the cords periodically for cracking or other damage and have them replaced if necessary.
6. WARNING: All other service should be done by qualified personnel only.

DECLARATION OF CONFORMITY

We declare that this product conforms to the following standards:

CE

EMC Directive 2014/53/EU
ROHS 2011/65/EU Annex II and its subsequent amendments Directive (EU) 2015/863

Technical Manager Maypole Ltd June 2024

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