BATTERY ANALYZER

CONTENTS

1. Notice

- This machine is for 12V vehicle battery only.
- Please don’t store the machine in high temp. or humidity place. It’ll damage the machine.
- The working voltage range is 9V~15V DC, don’t operate on a series battery(24V).
- Please operate after turn on the headlight 3~5 minutes to clean the surface voltage when the battery was just full recharged.

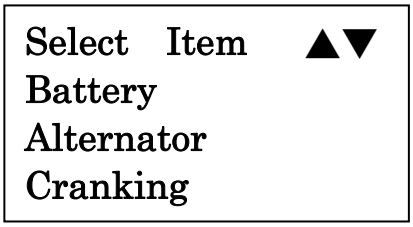
1. Graphic Instructions

1. Monitor Zone: Show Functions & Information
2. Function Zone: Input Data & Select Functions

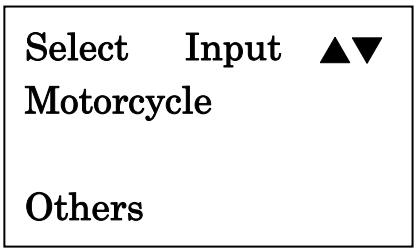
1. Select: Press Up/Down/Left/Right to input data or select function.
2. Enter: Confirm the selected function or data.
3. Exit: Abort the function or clear the data.

2. How to Operate.

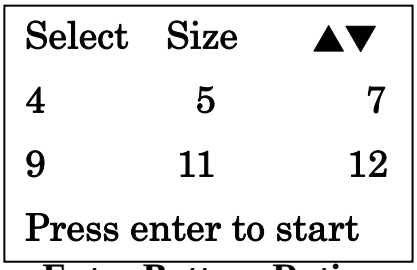
2.1 Battery Test



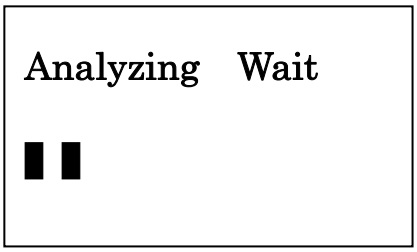
Select Test Item--Battery



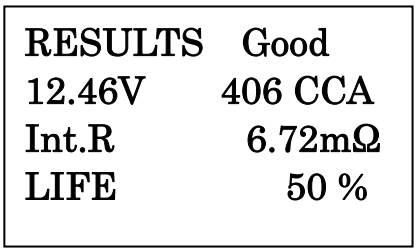
Select Battery Type



Enter Battery Rating



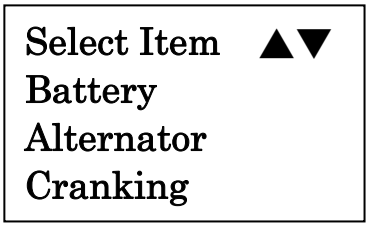
Waiting for Result



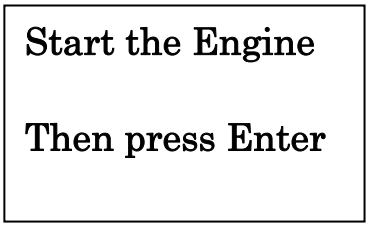
Result

Battery Voltage	12.46V	
	Charged 100%	13.2V
	90%	12.9V
	75%	12.45V
CCA Value	406CCA	
	The computed CCA value	
Internal Resist (Int.R)	6.72mΩ	
	It will between 2-15mΩ	
	Greater CCA with minor resist	
LIFE	The computed life of battery.	

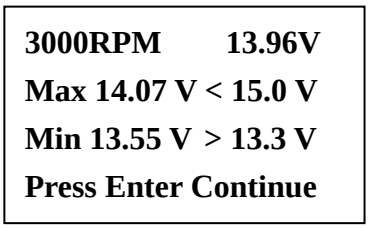
2.2 Alternator Test



Select Test Item—Alternator



Start the engine then press Enter to test



Pump to 3000 RPM for 3-5 Seconds,
Max Volt must under 15.0V, Min V must above 13.3V
(When turn off all loads)

Load is all opened

Then press Enter

Turn on the headlight,
Then press Enter to start

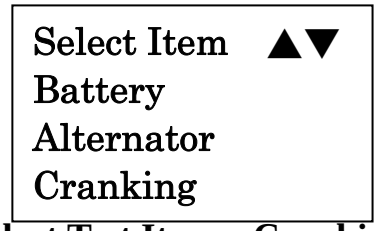
2000RPM 13.89V

Max13.96 V > 13.5V

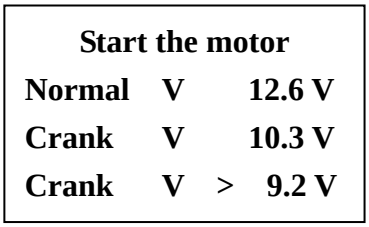
Min 13.76V > 12.5V

Pump to 2000 RPM for 3-5 Seconds,
Max Volt must above 13.5V, Min V must above 12.5V
(When turn on all loads)

2.3 Crank Motor Test



Select Test Item—Cranking



The voltage should be above 9.2V when cranking.

Please test the battery before testing the alternator and crank motor. The bad battery will affect the result of alternator and crank motor testing.

Where The Battery Model Number Is.

GS 9 Series

Great 4 Series

Yuasa 7 Series

Traditional test method (1/2 CCA Load Test)

A deep discharge test simulating the demands imposed on a battery. Test the ability to deliver a starter motor's cranking current requirements while maintaining a terminal post voltage above a minimum standard.
Apply a load equal to 1/2 the CCA rating for 15 seconds and measure the voltage drop. Compare the voltage to a voltage chart.
The battery state -of-charge must be 75% (12.4 v) to perform a 1/2 CCA test. If the battery is below 75% state-of-charge, it must be charged before testing.

New Measurement Techniques: Ohmic Measurement

Resistance Measurements(DC method)
Impedance Measurements(AC method)
Conductance Measurements(AC method)

Resistance Measurement

Resistance measurements can be performed by applying a load across the cell/unit and measuring the step change in voltage and current. The Ohmic value is calculated by dividing the change in voltage by the change in current.

Impedance Measurements

Impedance measurements can be performed by passing a current of known frequency and amplitude through the battery and measuring the resultant ac voltage drop across each cell/unit. The ac voltage measurement is taken between the positive and negative terminals of individual cells or the smallest group of cells possible. Compute the resultant impedance by Ohm's law.

Conductance measurements(Our Test Method)

Conductance measurements can be performed by applying a voltage of known frequency and amplitude across a cell/unit and observing the ac current that flows in response to it. The conductance is the ratio of the ac current component that is in-phase with the ac voltage, to the amplitude of the ac voltage producing it.

The Benefit of Our Test Method

Conductance correlates directly to battery capacity
Passive test method is safe & repeatable
Never discharges the battery
Can Test discharged batteries
Provides a unique indication of battery
Provides a unique indication of state of charge

3.Motorcycle Battery Reference Table

Battery Type		C.C.A.		Battery Type		C.C.A.
CMF	Normal			CMF	Normal	
	YB2.5L-C-2	90		YTX7(L/A)-BS		220
	GM2.5A-3C-2	90		GM7Z-4B		260
	YB3L-(A/B)	110		YB7L-B		260
	GM3-3(A/B)	110		GM7Z-4A		290
YT(X)4L-BS		110		YB7-A		290
(G/Y)TZ5S		135		YTX9(L)-BS		295
GM4-3B		148		YTR9-BS		295
YB4L-B		148		YTX10-BS		310
YT(X)5L-BS		155		YTX12(A/L)-BS		340
GM5Z-3B		185		YTX14(L)-BS		420
YB5L-B		185		YTX16(L)-BS		500
				YTX18(L)-BS		520