pivot

(VS-M As of March, 2008 No.2)

Voltage Stabilizer *Mega RAIZIN*

USER'S GUIDE

Thank you for purchasing PIVOT "Mega RAIZIN". Please read these instructions carefully before installing or using this device. Please do not lose this user's guide, as you will held liable for the cost of reissuing it.

MegaRAIZIN

High Capacity System & Battery Performance Monitor

Please check the contents of the package.

Main Unit | M6 Nut ×2 | Double-sided Tape ×3 | User's Guide

⚠ CAUTION Improper use or disregard of these warnings may result in the injury or death of people.

- ●Do not work in areas where there is excessive exhaust
  Due to vehicle exhaust emission poisoning or fire may result in a damage to humans.
- ●Safety Precautions for Installation and Checking Operations
  When the key is switched to ON, there is a possibility that the fan or belt may suddenly begin moving and cause bodily injury. When doing any work, make sure that the key is switched to OFF and when checking operation make sure not to put your face or hands in a close position which could cause bodily injury.
- ●Please securely fasten the product to a stable place
  Make sure to install and fasten the unit to a safe place that will not become entangled in a fan or belt.
- ●Do not crush the cable
  Please do not place the unit or the wires in any place that is exposed to high temperature nor near any rotating objects such as a fan or belt. Wires may become broken causing a short and/or fire. Do not splash water on the unit.
- ●Do not allow water to come into contact with the unit.
  The unit has been processed for water resistance but do not splash with water when washing the car and so on.
- ●This product is for DC12V cars;
  installation cannot be carried out on cars with other voltage batteries.

FEATURES Stabilize Voltage and Know when Battery Performance is Reduced !

Results you can count on

1.The unit assesses battery performance through changes in lowest voltage readings and when it has been judged to be reduced allows the user to take necessary measures to improve performance (replacement, recharging, etc...) and thereby provide voltage stability to all electronic devices.

2.The condenser circuitry reduces electrical noise and provides a stable voltage supply to the ignition coil as well as all other electronic devices.

NOTE

- ●About Improved Performance……Installation of this product will lead to improvement in electrical aspects of your automobile but due to actual car and driving conditions these improvements may be negligible or in some cases no change will occur.
- ●About Judging Battery Life……Depending on the characteristics of the battery itself even a small change in the lowest voltage reading may signal the end of a battery's life.

Voltage Stabilizer

Our newly designed three-fold (compared to Blue Raizin) large capacity condenser and our newly designed filter circuitry results in decreases in both circuitry noise and high frequency impedance which results in a more stable supply of voltage to the ignition coil and all electronic devices as well as improvements in power loss.

A World's First: View Battery Performance via Lowest Voltage Display

Displaying two types of voltage, both "Real" and "Lowest" Voltage (world first) at engine start makes it easy to see battery life and loss in battery performance. This also helps to protect against trouble caused by shortages in voltage to various electronic devices.

INSTALLATION PROCEDURE

⚠ WARNING

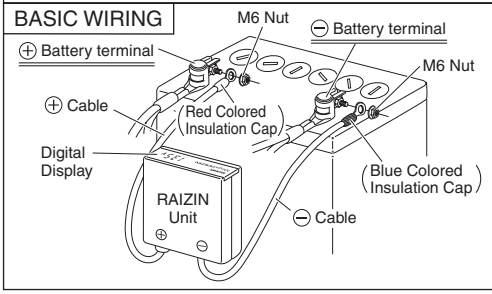
Please install safely and surely by following these instructions.
In particular, please be very careful about connecting the ⊕ and ⊖ cables. Mixing these up will cause damage to the product.

■ Things to prepare

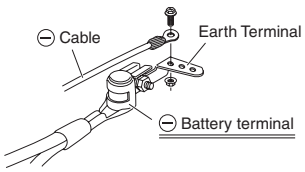
・Wrenches (Socket Wrench・Combination Wrench)
・Vinyl Electrical Tape ・Cloth ・Absorbing Agent

Make sure that ⊕ and ⊖ are connected correctly.

BASIC WIRING

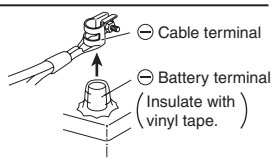


If an earth terminal is installed...



1 Installation Preparation

① Remove the ⊖ cable from the ⊖ battery terminal.
② Insulate the ⊖ battery terminal with vinyl tape.



⚠ CAUTION

To prevent making any mistakes with the ⊕ and ⊖ and causing a short during installation, please make sure to insulate.

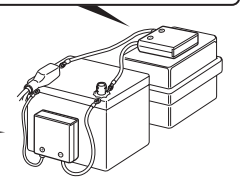
2 Installing the RAIZIN unit.

① Decide installation place.
・Without forcing, make sure you can connect the two cables to the correct terminals.
・Make sure the installation place is a flat surface where the unit can be fixed with double-sided tape.

Ex) The top or side of the battery or any other flat surface near the battery. (fuse box, etc...)

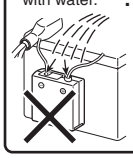
⚠ If you're installing on the top surface, make sure the car hood will not to hit the unit when closed.

⚠ If you're installing on the side surface, install so that the cables go out the bottom.※



※ Do not to install in areas subject to water.

Circuitry has waterproof coating. But do not to install in areas subject to water or spray with water.



・If you install with the cables going out the top, water may enter the unit and cause damage. Make sure to install with cables going out the bottom of the unit.

・Do not allow water to come into contact with the unit.
If it is a good chance of water coming into contact, please cover with waterproof sheeting.

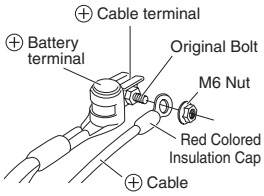
② Clean off all oil and dirt from the bottom of the main unit and affix the double-sided tape included in the kit.
③ Clean off all oil and dirt from the installation place and fasten the main unit.

⚠ CAUTION

1.If you're installing on the side surface, the double-sided tape will take about two hours to become secure. During that time do not allow any vibration to the unit.
2.Reinstalling will cause the tape's adhesive strength to weaken, so please do not to it.

3 Connect the ⊕ Cable

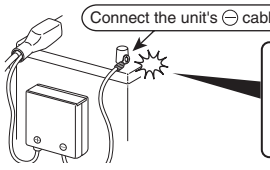
① Remove the cover from the ⊕ terminal of the battery. Connect the unit's ⊕ cable (one with red colored insulation cap) to the terminal of the ⊕ battery cable.
・Fasten with an M6 nut to the original bolt.
・Fasten between the original nut and the terminal.
② Replace the cover after completing the connection.
※ If the cover does not insulate properly, please use vinyl tape to ensure proper insulation.



4 Check Wiring

① Remove the vinyl tape from the ⊖ terminal of the battery.
② Connect the minus ⊖ cable (with blue cap) to the battery's minus ⊖ terminal.
③ If the wiring has been completed correctly the voltage should appear and after ten seconds automatically shut off.
・If voltage is not displayed = please check the connection and make sure ⊕ and ⊖ are correct.

⚠WARNING Please make sure to check about connecting the ⊕ and ⊖ cables. Mixing these up will cause damage to the product.

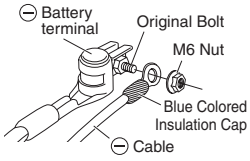


⚠ Sparking upon Contact

Due to characteristics of the product, upon contact of the RAIZIN'S ⊕ ⊖ to the battery's ⊕ ⊖ or upon the shorting of the flow of ⊕ ⊖ current sparks may be emitted. This is not a defect.

5 Connect the ⊖ Cable

① Properly connect the ⊖ cable terminal to the ⊖ battery terminal.
② Connect the unit's ⊖ cable (one with blue colored insulation cap) to the terminal of the ⊖ battery cable.
・Fasten with an M6 nut to the original bolt.
・Fasten between the original nut and the terminal.



⚠ If an earth terminal is installed, connect the cable to the terminal. (See [BASIC WIRING])

6 Arranging the Cables

Arrange the cables with the lock ties included.

ASSESSING BATTERY PERFORMANCE

The lowest voltage at engine start is measured and if a change (lower measurement) is detected the battery's performance and life will be judged to have been reduced.

HOW TO CHECK VOLTAGE

Judging Reduced Battery Performance (Lowest Voltage)

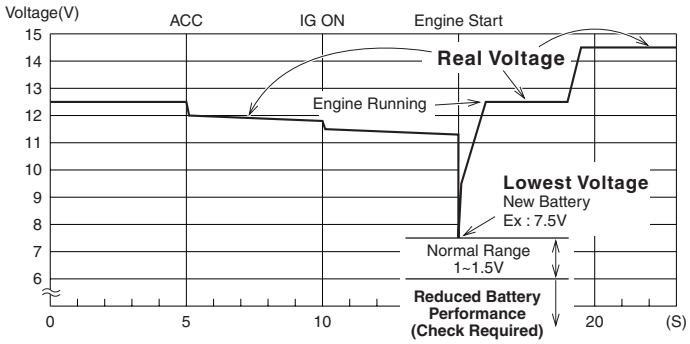
Judgments about reduced battery performance (life) can be made by checking the lowest voltage reading for a new battery※ at engine start and using that reading for comparison. In order to do this, this unit measures and displays lowest voltage at engine start and thereby helps to prevent the following troubles associated with reduced battery performance.

Possible Causes	Trouble
Reduced electronic device output caused by unstable voltage supply.	Poor mileage, reduced torque, poor starting, sound and reduced light brightness.
Reduced electronic device output caused by increased noise.	Reductions in mileage and torque as well as in sound quality due to increase in noise.
Reduced output due to lack of battery charge.	Troubles in starting engine and dead batteries.

About Judging Reductions in Performance from Changes in Voltage

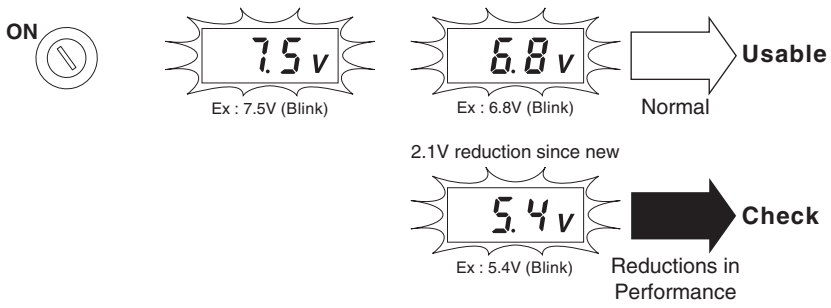
If the difference in lowest voltage measurements for a new battery falls **1V to 1.5V**, the battery's performance can be deemed to be reduced and we strongly suggest taking the battery to a repair shop for checking and recharging.

※By "new battery" we mean a battery that has not been used for more than six months; if a battery has been used for more than six months a change of **0.5V to 0.8V** should be viewed as a sign that performance has been reduced and the battery should be checked.



Judgment Method

Engine Start → Check the Lowest Voltage of New Battery → Periodic Check



Please have battery checked periodically (every month) or if the following occurs:

・The engine seems not to start well

・The lights seem dark ・The battery frequently dies out

※Note that this method can only provide a rough guideline and battery life varies greatly depends on the individual characteristics of batteries and automobiles.

※Also note that even with properly working batteries, large reductions (about 1V) in lowest voltage readings can occur when outside temperatures are low (below 5℃) or starting after having forgotten to turn off the lights.

※Note that this measurement method can only provide a rough guideline and that lowest voltage readings and battery life varies greatly depending on the individual characteristics of the battery being used.

Checking while Engine is Running (Real Voltage)

If voltage falls outside an acceptable range while the engine is running one of the following may be the reason and a check should be carried out.

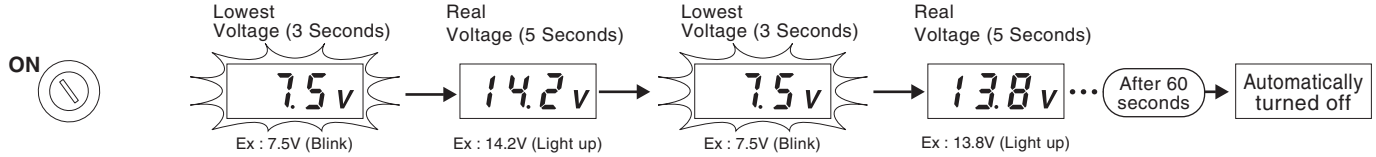
If it is too high (15V or more)	
Possible Causes	The alternator is broken (Regulator)
Trouble	Lowered performance of electronic devices or reduced battery life.

If it is too low (11.5V or less)	
Possible Causes	1. The fan belt is too loose or is torn. 2. The alternator or battery does not work properly.
Trouble	Deterioration in mileage, torque, starting, sound and light brightness.

Measurement Method

When the engine is started, two types of voltage measurement (lowest voltage at engine start and real voltage) will be displayed for a short time (about one minute) and then will automatically shut off.

Engine Start → Voltage Displays (Displayed alternately for about sixty seconds) → After 60 seconds



※If you wish to re-measure the lowest voltage at engine start please perform only after the display has automatically turned off.

※Note that if you are using a remote control starter to start your engine, the display will turn off after about one minute and cannot be viewed.