

**It's virtually impossible to install a motorcycle alarm system without a multi-meter; therefore, if you plan to do the install, this is a must have. You can purchase a digital multi-meter for about 30.00 USD at any tool supply. (see below for detailed instructions on using a multi-meter).**

## **Using a Multi-meter and Testing Wires**

A digital multi-meter is your safeguard when doing a motorcycle alarm. Testing wires before you make a connection is a sure fire way to make sure you are making a proper connection. Your multi-meter should have a DC setting with 2 leads, red and black: positive (+) and negative (-).

### **Testing Wires**

When installing any electrical component into a vehicle, you will have 3 polarities which you may need to test for. There are positive, negative and reverse polarity configurations which you must know how to test for.

#### **Positive (+)**

When testing for a wire which should have a positive polarity, you will need to do as follows. Set your multi-meter to 12Volts DC. Connect your black lead to chassis ground (-). Next connect your red lead to the wire which you believe has 12volts. The meter will show 12V if that wire is positive. The meter will show 0 if it is not.

#### **Negative (-)**

When testing for a wire which should be negative (grounded), you will need to do as follows. Connect the red lead from your meter to 12volts constant (+). Connect the black lead to the wire you believe is grounded. The meter should show 12V if that wire is grounded. It will show 0 if it is not.

#### **Reverse Polarity**

Reverse Polarity is the combination of 2 wires operating a motor of some sort. When you activate a reverse polarity motor, one wire goes to 12volts the other wire becomes grounded (-). When you move the motor in the opposite direction, the leads swap polarity. To test for a reverse polarity system, do as follows. Locate the 2 wires you believe run the motor. First, connect your red lead to 12volts constant, and then connect your black wire to ONE of the leads on the motor. Operate the motor in each direction, notating which direction makes your meter say 12V. Now, swap your leads. Put the black lead from the meter to ground and the red lead to the same wire you just had your black lead on. Operate the motor in the opposite direction. If the meter shows 12volts positive (+) when you operate it in the other direction, this is likely one of your wires.

For example...say there is a button with up and down on it and a motor with wires colored white and black. IF you are testing the white wire, you would first connect your red lead to 12volts constant (+) and your black lead to the wire. Press the button UP. This should make the meter say 12volts, telling us that the wire is grounded when you press UP. Now you switch your leads and retest. The meter shows 12V again when you press down, telling us the wire is reverse polarity.

You now test the opposite wire (black in example) using the same guidelines. If it follows criteria, then you have

located your 2 reverse polarity wires.

## Specific Testing Applications

### **Ignition Wires**

**12Volts with key in all positions except for 'off'**

Testing an ignition wire is simple. Ignition wires are generally positive in polarity. Start by setting your meter to DC 12V. Next, take your black lead and put it to chassis ground (-). Next, connect the red lead to what you believe to be the ignition wire in the vehicle. It should show 0 Volts when the key is off. Next, cycle the key through the Accessory and Ignition position. It should show 12Volts in both positions. Next, crank and run the vehicle. It should show power even while cranking. If it does, it is an ignition wire. If not, please read "testing an accessory wire" below. Ignition Wires are used for motorcycles alarm and remote Starting.

### **Accessory Wires**

**12Volts with key in all positions except off and crank**

Testing an accessory wire is the same as testing an accessory wire. The only exception is the meter should show 12volts with the key in the accessory and ignition positions only. There should be 0 volts in the off and crank position. Accessory wires are used in remote starting Installations, and are especially important on bikes with EFI.

### **Starter Wires**

**12volts ONLY in crank position**

Testing a starter wire is very simple. Start by locating the suspected wire in the vehicle. Next, take your meters black lead and connect it to ground. Next, connect the red lead to the wire you believe is the starter wire. Crank the vehicle. The meter should ONLY show 12V when the key is in the crank position. There should be 0 volts in all other positions. Starter Wires are used in Remote Car Starter Installations.

Using the above testing guidelines, you can test any wire. When testing an accessory like a horn or dome light in the vehicle, simply activate the accessory with your meter leads in place to get the meter reading. The meter should only read power and ground on accessory items when they are activated.

ATTENTION: West Coast Cycle always suggests installation be performed by a certified and trained installation technician, professional installation is requirement to obtain full warranty(This does not include LED lighting Kits). This wiring information is being provided free of charge and on an "as is" basis, without any representation or warranty to the products being installed. It is your responsibility to insure proper installation. West Coast Cycle assumes no responsibility with regards to the accuracy or currency of this information. Proper installation in every case is and remains the responsibility of the installer. West Coast Cycle assumes no responsibility resulting from an improper installation, even in reliance upon this information. All product warranties are voided by self-installation. Any harm or injury to the installer is in no way the responsibility of West Coast Cycle. Any damage to the vehicle during installation or after installation is not the responsibility of West Coast Cycle.