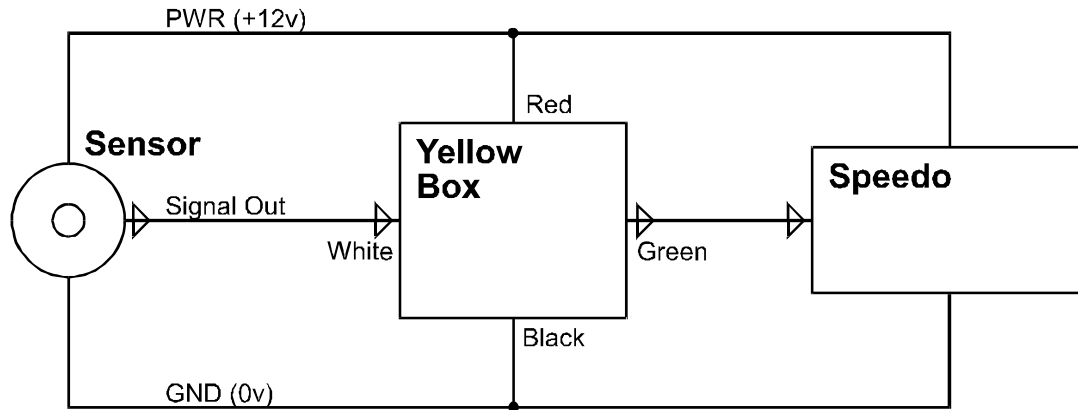


Components.

Please check you have received the following components in your package;

- Yellow Box

After Yellow Box Installation



- Jumper plug
- Cable harness
- Instructions (3 pages)

If there are any components missing or damaged, please email us immediately at the address on the bottom of this page.

Installation.

Please read this whole section before starting! You will need basic electrical tools like wire cutters and preferably a soldering iron. Electrical tape or cable ties may also be handy.

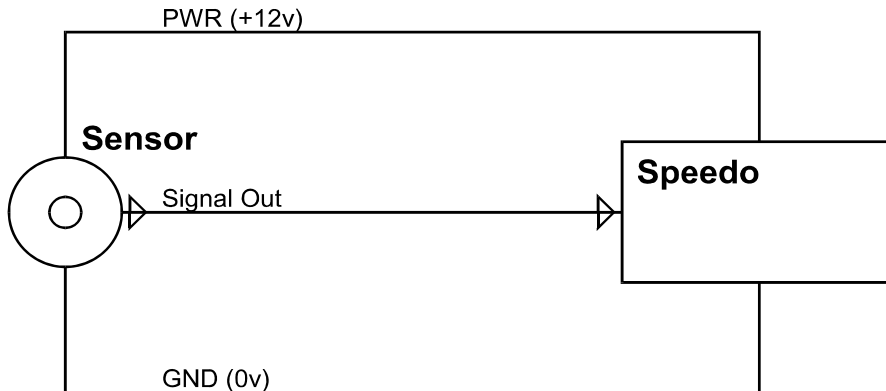
The Yellow Box harness has four wires;

- **BLACK** - Ground (or vehicle earth).
- **RED** - Power to the unit (+12 volt dc vehicle power)
- **WHITE** - signal IN (comes from the sensor)
- **GREEN** - signal OUT (goes to speedometer)

For normal installation we recommend mounting the unit away from engine or exhaust heat, generally under the pillion seat is a good place. We have provided a long wiring harness that should have enough wire length for you to do this. Soldering provides a better electrical connection and is the preferred method, although crimp type lugs could be used.

This is how the normal **3-wire speedo system** works, suitable for our “bike” model Yellow Box.

The Sensor Unit 3-wire (bike)

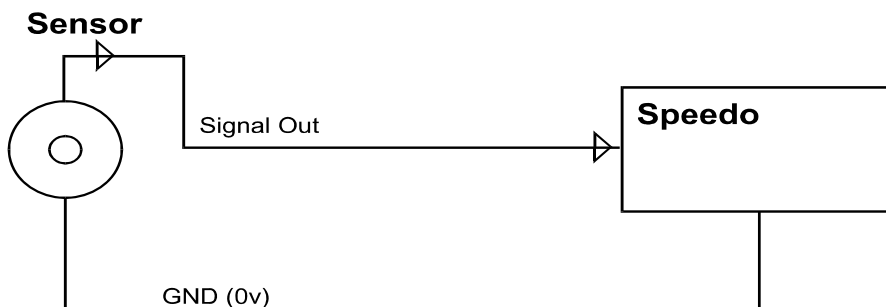


The sensor has three wires, one is + (12v power), one is GND (main earth of the vehicle) and the other wire OUT is where the signal pulses come out. The + and GND must be connected for the sensor unit to work. On most vehicles the sensor is powered up only when the ignition is on.

When the sensor is powered up and operating, the SIGNAL OUT wire will send out 0 volts or 12 volts (5v on some bikes), which will change as the sprocket is rotated. There are usually 2 to 40 pulses for every wheel rotation.

The other speedo system is **the 2-wire system**, which is usually seen on cars.

The Sensor Unit 2-wire (car)



The **After Yellow Box Installation picture** shows how the unit is installed. Please note that the unit gets its power from the same wire as the sensor, so they are BOTH getting power from this wire. The Yellow Box draws very little power, so this is quite ok.

Also note that where the signal used to go straight from the sensor to the speedo, it now goes through the Yellow Box to get there, allowing the Yellow Box to correct the signal.

How to connect the unit.

Step 1 picture shows the wires coming from the sensor. Where these go into the plug, strip back the outer cover sheath so you can access the three wires, you need about 100mm (4 inches) to make it easier.

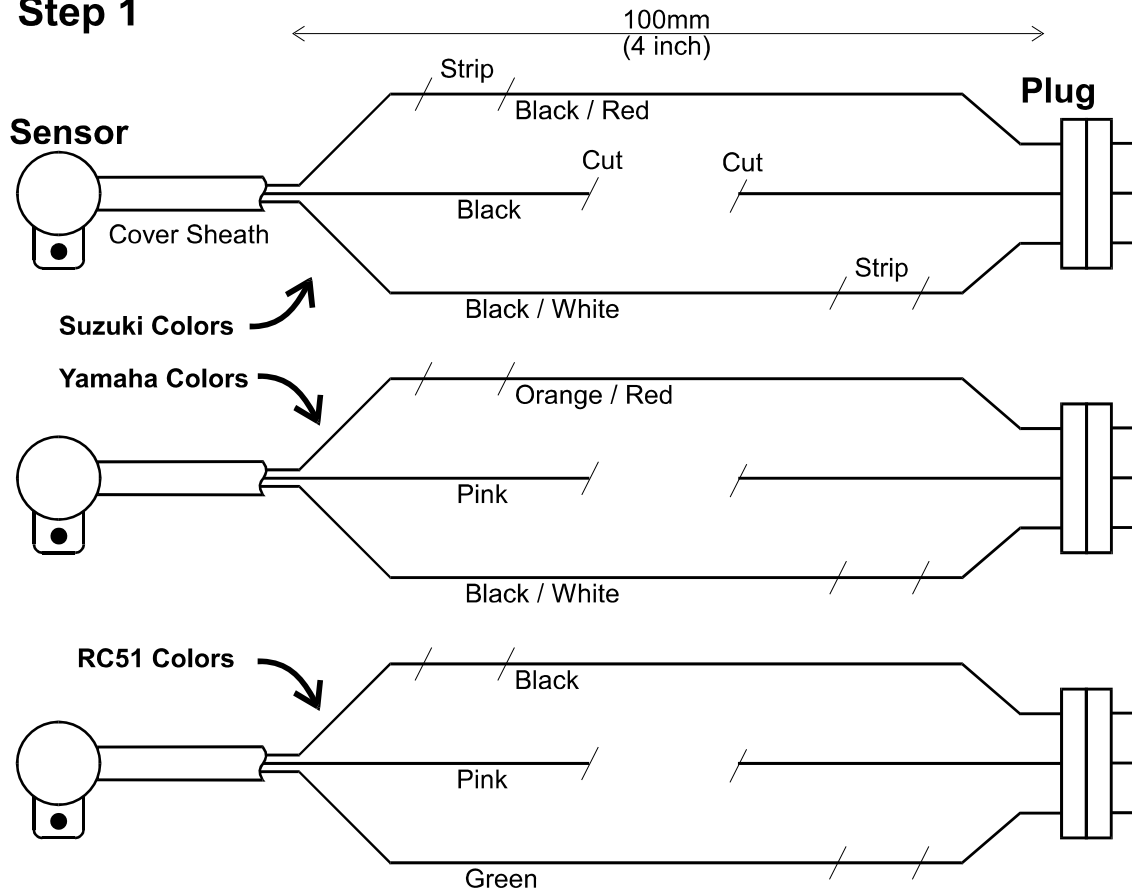
The OUT wire should be cut twice, leaving a 20mm (3/4 inch) gap.

The other two (+ and GND) wires need to have a small piece of plastic stripped with a knife, so you can solder to the wire inside. DONT cut these wires. Try to strip and cut the wires in the exact places shown in the picture, we will explain why later.

Suzuki – remove/loosen left side fairing

Yamaha R1– remove left side fairing

Step 1



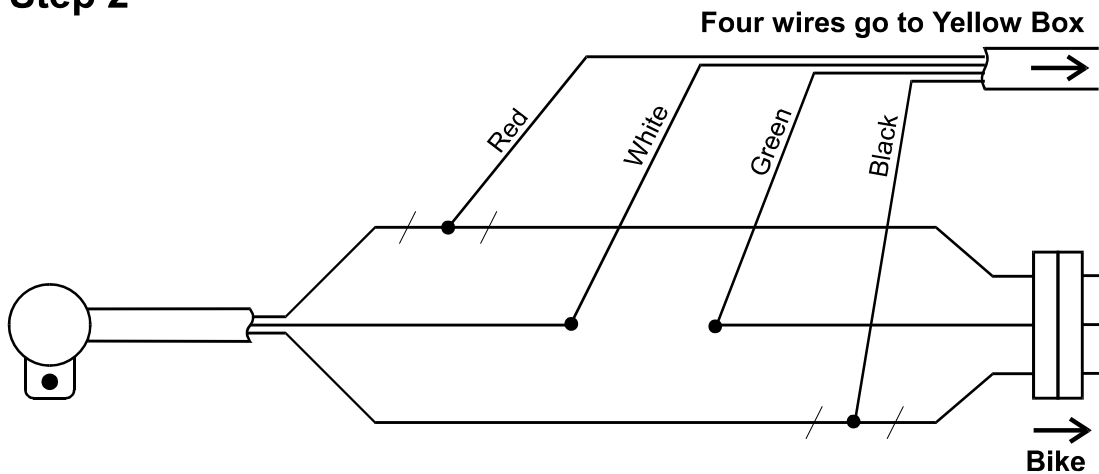
Honda RC51 – remove seat

Important! The colors shown in the Step 1 picture are for some Suzuki, Yamaha and Honda motorcycles.

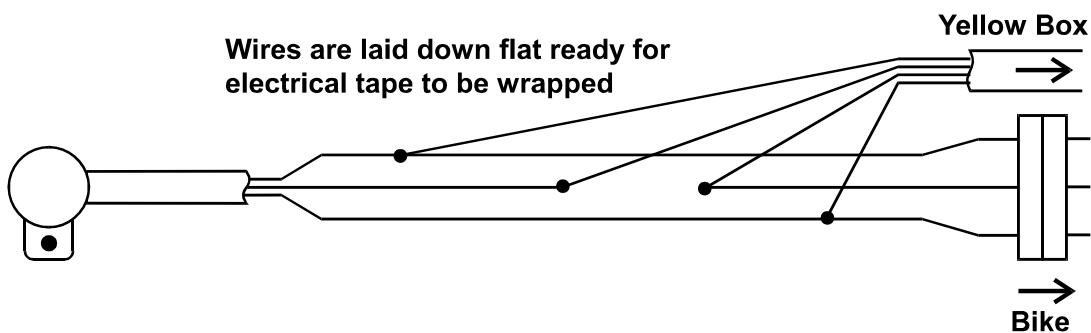
These colors may be different on other bikes. If in doubt, check the electrical diagram in your bike's service manual, or check with a voltmeter. With ignition switch on, the + wire will always have 12v power on it, the GND wire will always be connected to ground (vehicle earth) and the other wire will have a voltage that changes up and down as the sprocket is rotated. Get help from an electronics person if you have difficulty here, all these three wires must be connected EXACTLY, or the Yellow Box (and your speedo) won't work.

Step 2 picture shows where the four wires from the Yellow Box are connected. Check this carefully, compare your work to the Step 1 and Step 2 pictures. In the next step you will cover the join area with tape.

Step 2



Step 3



Step 3 picture shows the wires layed down flat - this is why we put 20mm (3/4 inch) between each connection, so now we can wrap electical insulating tape around this entire "bare" section to make it neat and safe again. Overlap the tape as you wrap it, check the other wiring in the bike and do it like that.

Be sure to check that there are no bare wires sticking out from the tape (that might touch metal parts of the vehicle), and that no wires touch each other where they are not supposed to. Feel free to wrap tape around any wire that will make the installation neater and safer. You may want to wrap tape the full length of the Yellow Box wiring harness, this will give extra protection but may make it harder to thread the wires neatly.

Tips to make installation easier.

With the Suzuki or Yamaha installation, try removing the sensor from its mount, normally one small screw, and unplug it from the bike. This way you can work on the wires away from the vehicle, preferably on a workbench.

Thread the wiring harness (four wires) we have supplied through the vehicles plastic clamps, like the normal wires are. These clamps and mounts are important. You may need to loosen them, thread the new wires through, and then tighten them back up. Keep all the wires away from anywhere they might get HOT, like engine and exhaust, and away from anything that MOVES, suspension, etc, which might trap or cut the wires

The unit is NOT waterproof, so mount it in a safe place, the luggage area or under the seat is ideal. You should seal the switches with hot-melt glue or silicone sealant. Make sure that the switches will not be bumped, and the unit is secured safely. Padded double-sided tape on the rear of the Yellow Box is good.

Important! At least in the calibration stage, mount the unit in a place where you can easily get to the switches needed for calibration. After calibration is complete, you can seal the switches and move it to a more secure location.

Testing the unit.

All units are tested after manufacture, and they will perform properly from the first time you turn the key after installation. Any problems will almost always be caused by an incorrect installation. We suggest you take extra care when installing the unit and you will be rewarded with years of trouble-free use.

Problems?

Yellow Box never lights up... If the light does not come on and start flashing when you turn the ignition on, there is no power connected to the Yellow Box. Check the red and black wires on the **Yellow Box harness**. Make sure they are connected properly and the right way around. The red wire is 12v, the black wire is ground. The Yellow Box will not be damaged by reverse connection for a few minutes.

It lights up ok, but the speedo doesn't work... Make sure it is not in a **special Display/Setting mode**. Check if the IN and OUT wires to the Yellow Box are connected wrong. This will not damage the Yellow Box. Check for a bad connection on one of these wires. On the **Yellow Box harness** the white wire is IN and the green wire is OUT (to speedo). **Also check that some bikes (RC51)** have a 5v output from their sensor, with these bikes the Yellow Box must have its internal settings changed to PULL-UP=ON. This is described in the "Using the Yellow Box" page.

The speedo only reads half as fast as it should... If the speedo seems normal but reads very low, you have probably set the **kph/mph conversion mode** to on. This will divide your speed by 1.609, showing only about 62mph when you are doing 100mph.

This feature is described in the "Using the Yellow Box" page.

I think some switches don't work... Switches are displayed by the flashing light in normal operating mode. However, some switch combinations will take the Yellow Box out of normal mode and will stop this switch display. **To test the**

switches, do this;

Set all switches off, to 0000 0000, display will show this (8 short flashes). Set switches to 0111 1111, display will show this, set switches to 1000 0000, display will show this. We use a high quality switch with gold plated contacts, but dirt or moisture (over a long time) may still cause switch malfunction. In the event of switch errors spray the switches with total-evaporation electrical spray solvent, then work the switches forward and back about 20 times. Note! If you seal the switches after calibration this will never occur.

There is a slight speedo lag on takeoff... All speedo systems have a cut-off point where the speedo is disabled when the bike is stopped. The Yellow Box also does this, below approx 5mph. On takeoff from a dead stop, the speedo re-starts and it will take 16 pulses before the speedo catches up, this equates to about 3 wheel rotations on a Suzuki, about half a wheel rotation on other bikes. This is on takeoff only, there is no lag at riding speeds. This is a normal feature of the Yellow Box.

<end>