

## Items Supplied >

- 1 – Fi2000R Fuel Injection Module
- 1 – Zip Tie, (1): 3/16" x 8"
- 1 – Velcro Strip

## Application(s) >

YAMAHA RAIDER 2008 - 2013

## Instruction Manual >

92-1777

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**Cobra® recommends the use of the Closed Loop Module 92-1777CL or 92-1777CL-50 if your motorcycle will continue use of the Oxygen Sensors in your exhaust System. This Fi2000 is intended for motorcycles that will not utilize Oxygen Sensors in the fuel management system.**

**Read all instructions carefully and completely before installing your new Fi2000R module.**

**It is recommended that a qualified mechanic or technician install this product.**

**Before installing the Fi2000 it is recommended that the gas tank be low on fuel.**

1. Remove the seat, and the chrome right hand cover from the engine. Remove the two dome head nuts holding the rear of the fuel tank on.
2. Position the Fi2000R on top of the ECU (under the seat) and feed the wire harness under the front seat bracket, then feed the harness forward underneath the rear fuel tank mounting bracket. Lift up the fuel tank just enough to slip the wire harness under the rear of the fuel tank, make sure the harness does not get pinched between the fuel tank and the frame as the tank is lowered down, see Figure 1. Zip-tie the harness to the other harnesses under the tank.
3. Feed the remaining portion of the wire harness forward and down through the coil bracket opening, see Figure 2. Locate the white Raider 6-pin connector behind the coil-mounting bracket; disconnect this connector.
4. Plug the Fi2000R connectors into the corresponding 6 pin connectors that were previously unplugged in Step 3. Reinstall the chrome right side cover.
5. Locate the oxygen sensor on the muffler body near the power valve and trace the wire on it back up to under the seat, where it's male and female connectors are located. Move the fuse block out of the way, by depressing the plastic tab between the housing and the steel-mounting tab, and pull it upward out of the way to gain access to the oxygen sensor connectors mounted on the plastic tab. Disconnect the oxygen sensor by pulling the tab on the female connector outward and pulling the male connector towards the front of the bike, see Figure 3.
6. Using the supplied Velcro pads, place the module in the position shown, in Figure 4. Attach the black ground wire from the Fi2000R to the 5 mm allen head bolt securing the battery ground wire, see Figure 3. Before reinstalling the seat, verify connections.
7. Remove the door from the Fi2000R module to expose the LED's. **NOTE:** The Fi2000R base pot settings come preset from the factory for the Raider, shown in (Figure 5.) Verify the wire connections by, (1), turning the ignition on while watching the 3 LED's. They will all light up for a few seconds, and then go off. This is correct. – Continued to Page 2.

**\* It is recommended that you always wear a helmet while riding. Please never operate your motorcycle while under the influence of alcohol and/or drugs. Enjoy the new power of your motorcycle and please ride safely.**

7. Continued: If there are no lights visible, make sure the side stand is up, bike is in neutral, clutch is in and handlebar engine switch is set to run. If there are still no lights visible, re-check that all connectors are fully engaged and the ground wire is connected correctly. (2), after achieving a steady light from all three LED's, start the motorcycle; the green light should now be the only LED on. If all three LED's are still on after start up, verify the injector connectors are correctly attached. Reattach the access door when finished and install the remaining components. **NOTE:** Make sure the ignition is turned off before changing any connections.

## ADVANCED TUNING

The Fi2000R has the ability to efficiently tune the EFI system on your motorcycle for slip-on or full exhaust systems. It comes pre-set from the factory for popular brand name slip-on mufflers. Both dyno testing and on-road exhaust gas analysis have been used to develop the best base settings for drivability and power. Not all slip-on mufflers flow exactly the same. Some eliminate power valves and others don't. Some are made with street baffles, other with race or competition baffles. Full exhaust systems offer even greater variation in construction, features and performance. The Fi2000R has the ability to tune the EFI system on your motorcycle to any of these exhausts by applying a logical and systematic approach to altering the base settings supplied with your Fi2000R. These suggestions should be followed step by step and help you achieve success.

### **\*\* Only attempt adjustments on a fully warmed motor \*\***

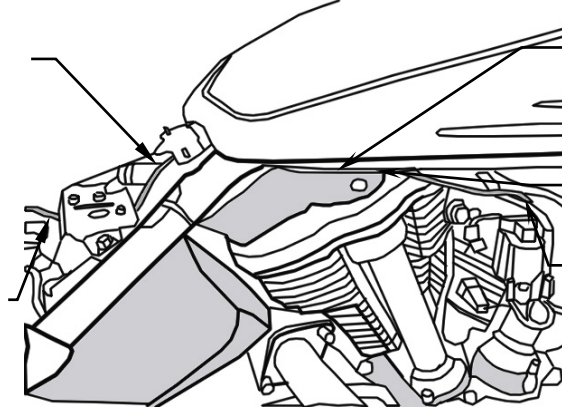
1. Start with the base setting, even if you have a full exhaust system. Adjust and test only *ONE* adjustment pot at a time until you are happy with the result.
2. Start with the left hand or green light pot. This adjustment works either from idle or above idle (varies with bike) to a R.P.M. of about 5000 (also varies with bike) while the bike is driven at a steady throttle or slowly increasing throttle. This is the cruise range and is where the emissions leanness creates issues like choppy on-off throttle application, surging, and backfiring on trailing throttle.
3. Turn this pot back to zero, and make one position increases until you feel the best performance in this range. Do this test a few times to make sure you have it right.
4. The middle or yellow pot is an engine load- triggered fuel adding adjustment. A rapid increase of the throttle at any R.P.M. will add additional fuel and as long as that predetermined load is present, fuel will continue. As engine loads increase in higher gears the acceleration fuel will stay on longer and be more effective. Starting with the base setting, test ride the motorcycle in 4<sup>th</sup> or 5<sup>th</sup> gear and perform moderately fast roll-on throttle from a repeating standard R.P.M. or speed. Increase the pot one position at a time and stop as soon as you don't feel any improvement.
5. The right hand or red pot is for the fuel setting required when the engine is maximizing its R.P.M. and power delivery. This pot is similar to the main jet in a carburetor. It will take a combination of a minimum R.P.M. and a predetermined amount of engine load to initiate this fuel. The straightaway on a racetrack or an inertia dyno are the best places to set this pot. Full exhaust systems of high quality construction increase flow characteristics and will increase fuel demands over our base settings. Also, air filters specifically designed for higher than stock airflow can create need for higher fuel setting. Try an additional one-position pot setting at a time.
6. Camshaft changes can alter an engine's volumetric efficiency and create a greater demand on the engine's fuel system than the Fi2000R may have the ability to adjust for.

## TROUBLE SHOOTING

If you have any problems refer to: Step 7, in the installation body of these instructions.

HARNESS ROUTED UNDERNEATH REAR FUEL TANK MOUNT

HARNESS ROUTED UNDERNEATH SEAT BRACKET

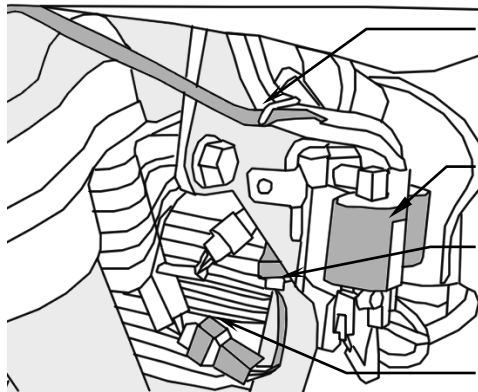


HARNESS ROUTED UNDERNEATH FUEL TANK

ZIPTIE TO EXISTING WIRES

ROUTE CONNECTORS THROUGH COIL MOUNT, SECURE HARNESS WITH EXISTING STEEL PRONG

**FIGURE 1**



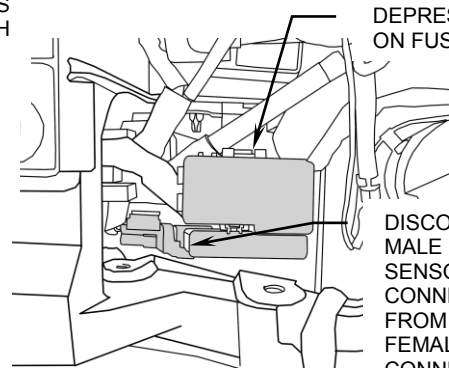
**FIGURE 2**

WIRE HARNESS SECURED WITH EXISTING METAL PRONG

RAIDER COIL AND BRACKET

RAIDER FEMALE / MALE Fi2000R CONNECTOR

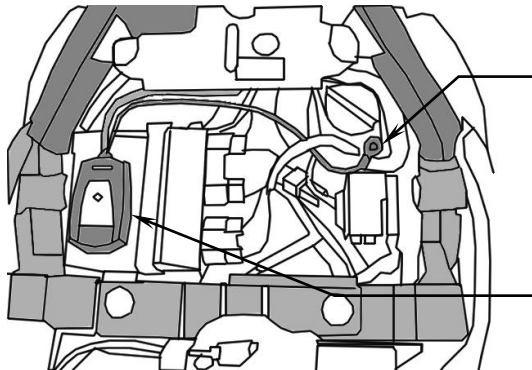
MALE RAIDER / FEMALE Fi2000R CONNECTOR



**FIGURE 3**

DEPRESS TAB ON FUSE BOX

DISCONNECT MALE O2 SENSOR CONNECTOR FROM FEMALE CONNECTOR HERE

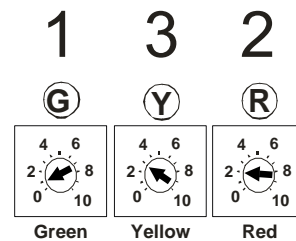


**FIGURE 4**

GROUND WIRE FASTENING LOCATION

Fi2000R INSTALLATION LOCATION

**Default Pot Settings:**



**FIGURE 5**