

[POWER COMMANDER V]

FUEL AND IGNITION

2012-2014 Harley Davidson Softail

Installation Instructions



PARTS LIST

- 1 Power Commander
- 1 USB Cable
- 1 Installation Guide
- 2 Power Commander Decals
- 2 Dynojet Decals
- 2 Velcro strips
- 1 Alcohol swab
- 1 O2 Optimizer (front)
- 1 O2 Optimizer (rear)

THE IGNITION MUST BE TURNED OFF BEFORE INSTALLATION!

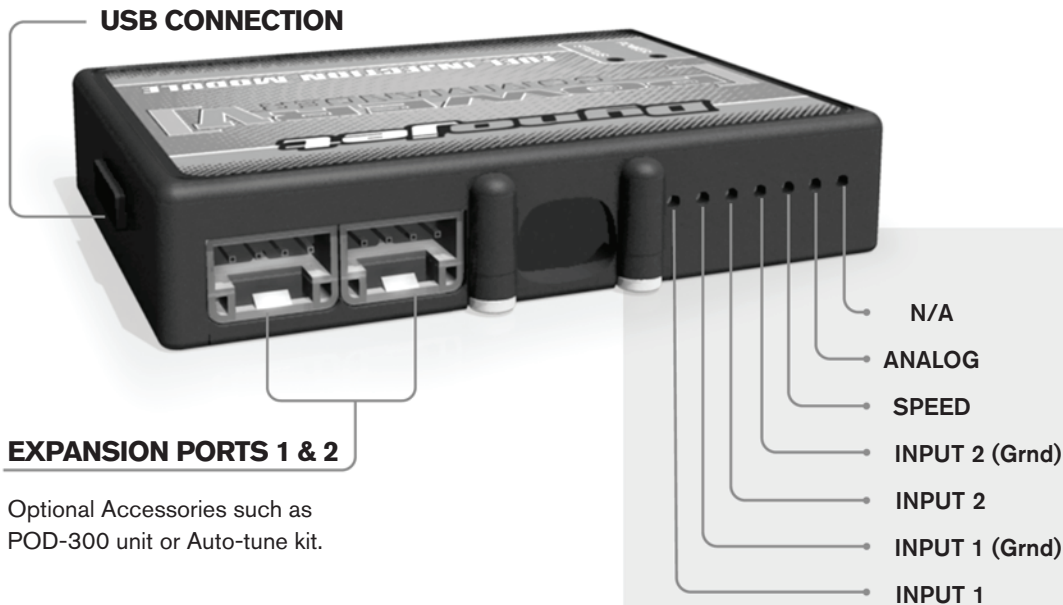
THE LATEST POWER COMMANDER SOFTWARE AND MAP FILES CAN BE DOWNLOADED FROM OUR WEB SITE AT:
www.powercommander.com

PLEASE READ ALL DIRECTIONS BEFORE STARTING INSTALLATION

Dynojet

2191 Mendenhall Drive North Las Vegas, NV 89081 (800) 992-4993 www.powercommander.com

POWER COMMANDER V INPUT ACCESSORY GUIDE



Wire connections:

To input wires into the PCV first remove the rubber plug on the backside of the unit and loosen the screw for the corresponding input. Using a 22-24 gauge wire strip about 10mm from its end. Push the wire into the hole of the PCV until it stops and then tighten the screw. Make sure to reinstall the rubber plug.

NOTE: If you tin the wires with solder it will make inserting them easier.



ACCESSORY INPUTS

Map -

(Input 1 or 2) The PCV has the ability to hold 2 different base maps. You can switch on the fly between these two base maps when you hook up a switch to the MAP inputs. You can use any open/close type switch. The polarity of the wires is not important. When using the Autotune kit one position will hold a base map and the other position will let you activate the learning mode. When the switch is "CLOSED" Autotune will be activated. (Set to Switch Input #1 by default.)

Shifter-

(Input 1 or 2) Used for clutch-less full throttle upshifts. Insert the wires from the Dynojet quickshifter into either INPUT 1 or INPUT 2. The polarity of the wires is not important. (Set to Switch Input #2 by default.)

Speed-

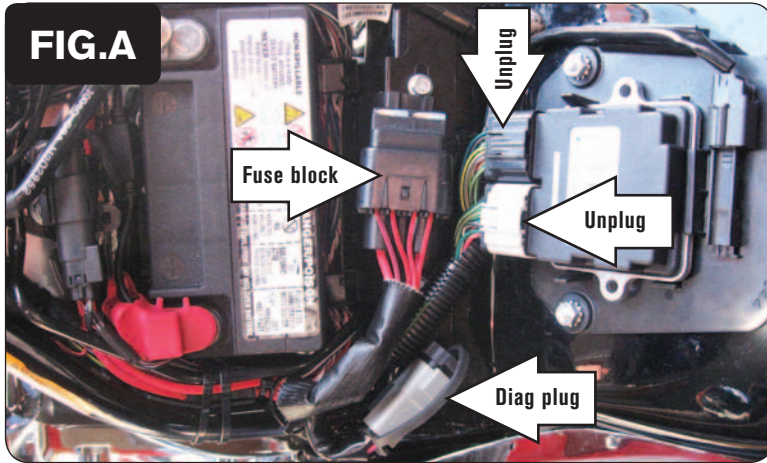
Not needed on Harley applications as the speed signal wire is built into the main wiring harness of the PCV.

Analog-

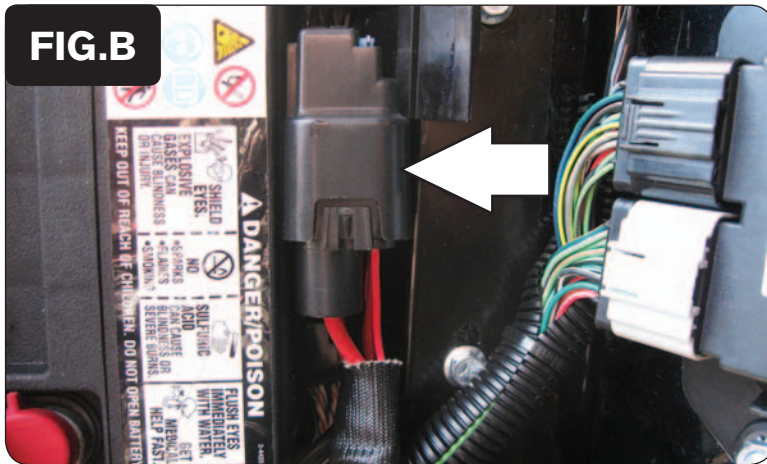
This input is for a 0-5v signal such as engine temp, boost, etc. Once this input is established you can alter your fuel curve based on this input in the control center software.

Launch-

You can connect a wire to either input 1 or 2 and then the other end to a switch. This switch when engaged (continuity) will only allow the RPM to be raised to a certain limit (Set in the software). When released you will have full RPM.



- 1 Remove the seat.
- 2 Unplug the stock wiring harness from the ECM (Fig. A).
- 3 Slide the fuse block off of its mounting tab.
Slide backwards to release.



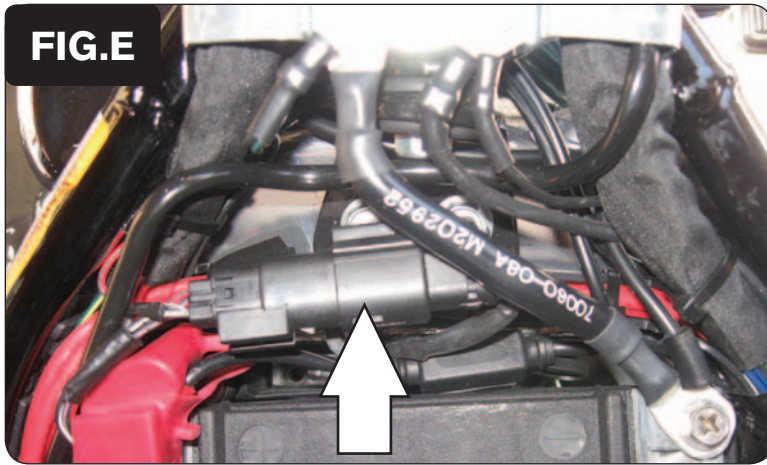
- 4 Position the fuse block so that it sits between the battery and frame (Fig. B).



- 5 Install the PCV in the cutout of the battery and route the harness to the right side of the battery. (Fig. C).
Remove the negative battery lead so that you can route the PCV harness underneath it.



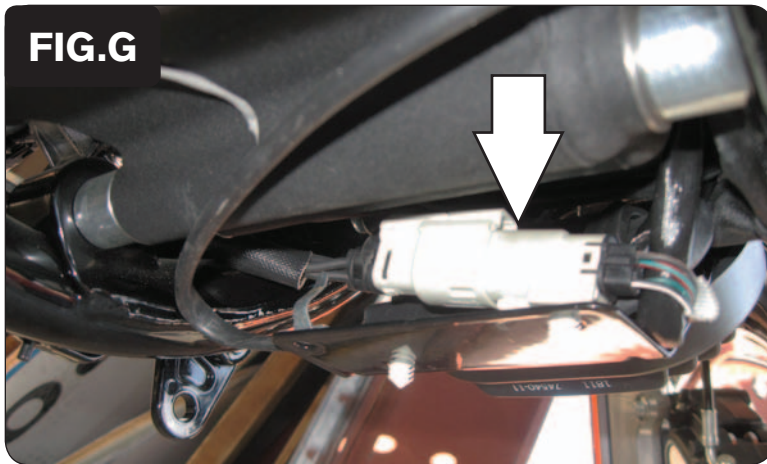
- 6 Connect the PCV in-line of the stock wiring harness and stock ECM (Fig.D).
Keep the connectors laying as flat as possible.



- 7 Unplug the rear O2 sensor from the stock wiring harness (Fig. E).



- 8 Plug the Dynojet O2 Optimizer into the stock wiring harness (Fig. F).
There is a BLACK Optimizer and a WHITE Optimizer in the kit. They are indexed so they can NOT be connected incorrectly.
The stock O2 sensor will no longer be connected to anything and can be removed from the exhaust if desired.



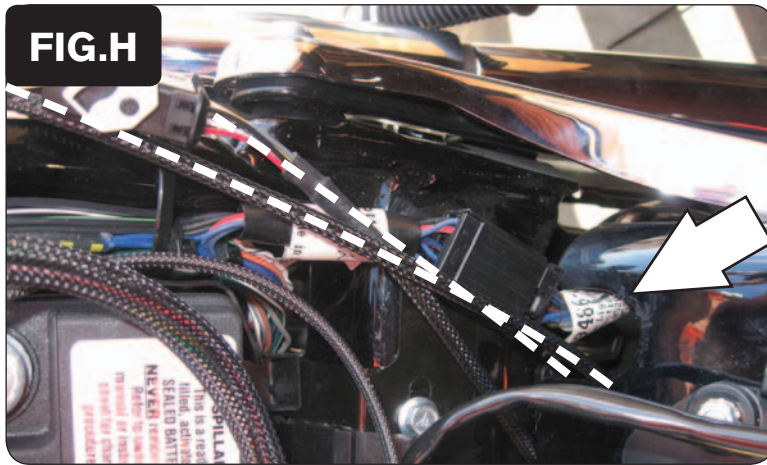
- 9 Unplug the front O2 sensor from the stock wiring harness (Fig. G).

This connector is located under the front of the engine behind the regulator/rectifier.

- 10 Plug the Dynojet O2 Optimizer into the stock wiring harness.

The stock O2 sensor will no longer be connected to anything and can be removed from the exhaust if desired.

- 11 Reinstall the seat, unless you are installing the Auto-tune kit.



IF INSTALLING THE AUTO TUNE KIT FOLLOW THESE STEPS:

- 12 Install the O2 sensors into the exhaust (see Auto tune install guide).

- 13 Plug the wiring harnesses from the kit into each sensor and route the wires towards the rear fender going thru the hole in the right side of the rear fender (Fig. H).



- 14 Remove the bolt holding the rear mudflap in place (Fig. I).

This bolt is located in front of the rear tire.

- 15 Pull the mudflap away from the frame.

FIG.J



FIG.K



- 12 Connect the CAN cable to the Auto tune module.
- 13 Install the CAN termination plug into the Auto tune module.
- 14 Connect the wires from the O2 sensors into the Auto tune module (Fig. J).
Make sure to wire the front O2 sensor into #1.
- 15 Route the CAN cable up to the PCV and connect into one of the ports.
- 16 Route the power harness from the Auto tune thru the hole in the rear fender and connect to the diagnostic port.
The diagnostic port is shown in Figure. A.
- 17 Attach the Auto tune module to the body control module in front of the mudflap (Fig. K).
Make sure to clean the surface with the alcohol swab before attaching.
- 18 Reinstall the mudflap.

Use the following install instructions on pages 7-11 for Breakout models.

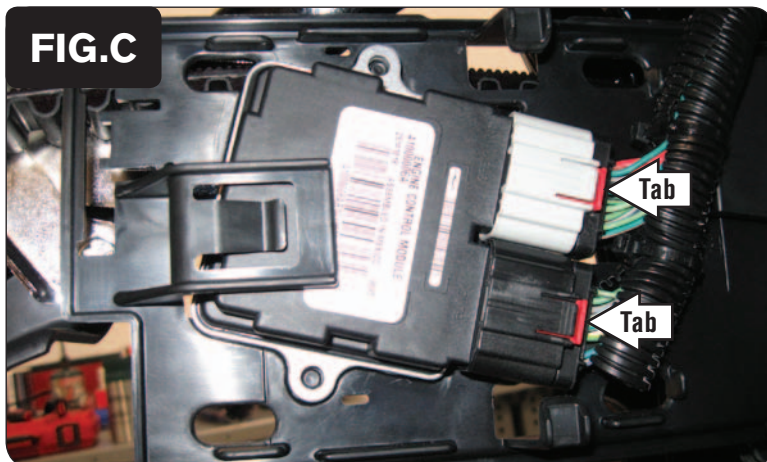
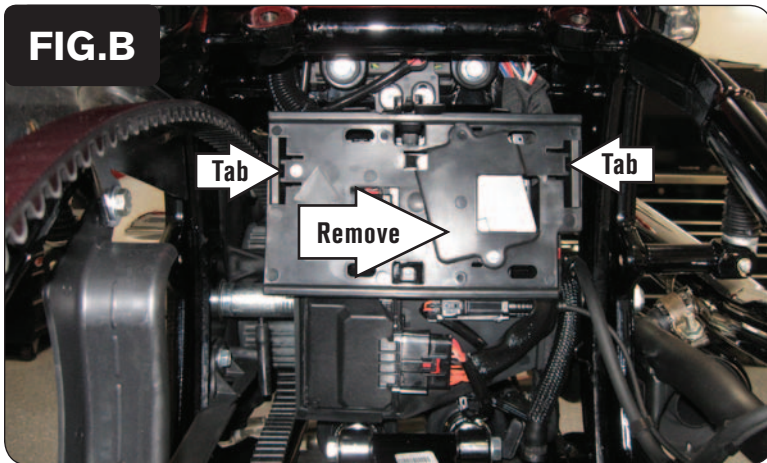
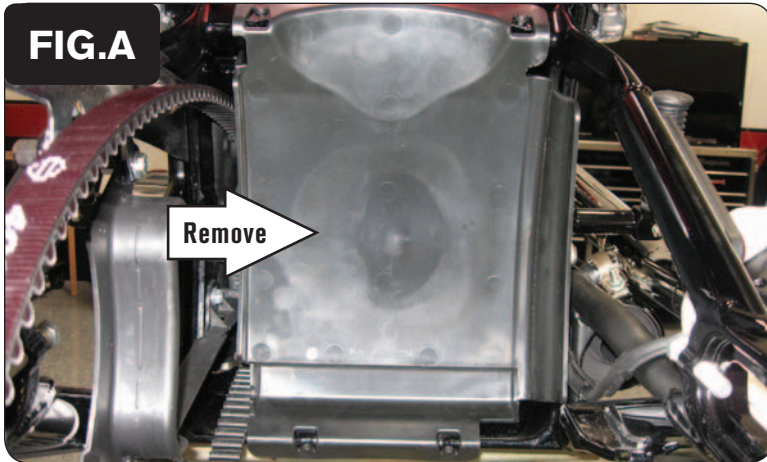
Warning - This installation can be difficult and is recommended to be done by a well equipped and experienced technician. The rear wheel will need to be removed to install this unit on the Breakout. Please refer to the HD service manual for proper removal and installation instructions.

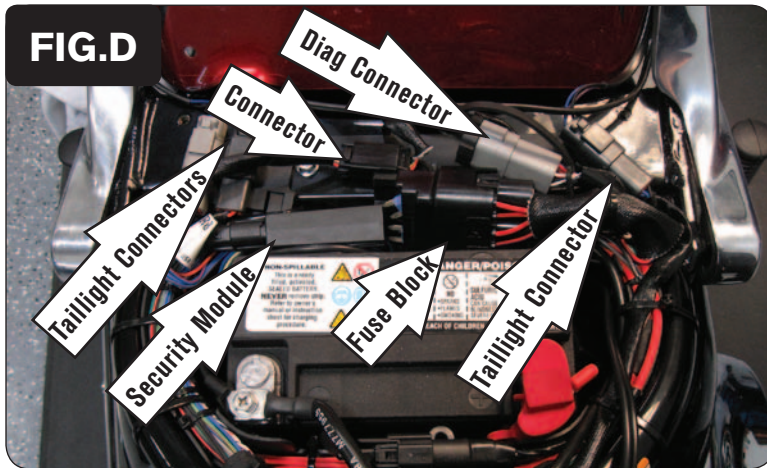
- 1 After the rear wheel has been removed, remove the plastic splash guard at the front of the swing arm (Fig. A).

- 2 Remove the ECM mounting tray and the ECM (Fig. B).

Pull outward on the small tabs on the sides of the tray as you push the larger inner tabs inward and the tray should unlock out of place and can be pulled outward.

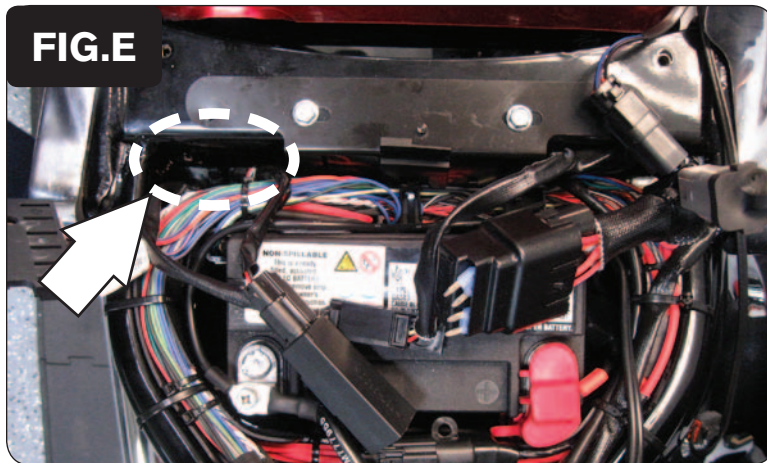
To disconnect the ECM from the stock wiring harness, pull the small RED tabs on the ECM connectors outward, then unplug the stock connectors from the ECM (Fig. C).





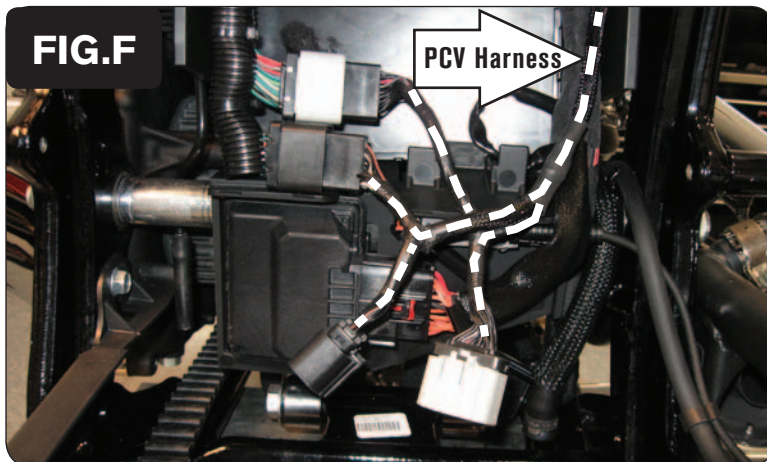
- 3 Remove the rider and passenger seats.
- 4 Under the seat, loosen the various connectors, the fuse block, and the security module shown in Figure. D from the frame cross-member rear of the battery to ease Power Commander harness routing.

The fuse block and security modules can slide off of their plastic mounting brackets.



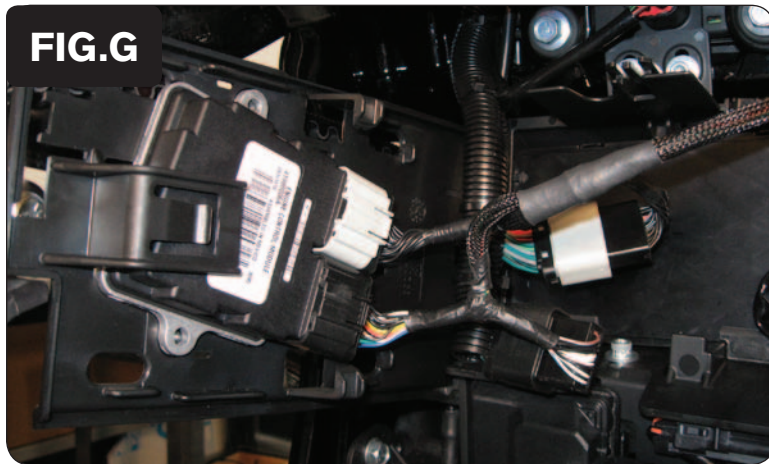
- 5 Once the various components are loosened, there should be enough room to push the Power Commander wiring harness (1 connector at a time) through the frame and towards the ECM compartment under the rear fender and at the front of the swing arm.

The harness should be fed through at the location circled in Figure E. This is at the right-rear corner of the battery.

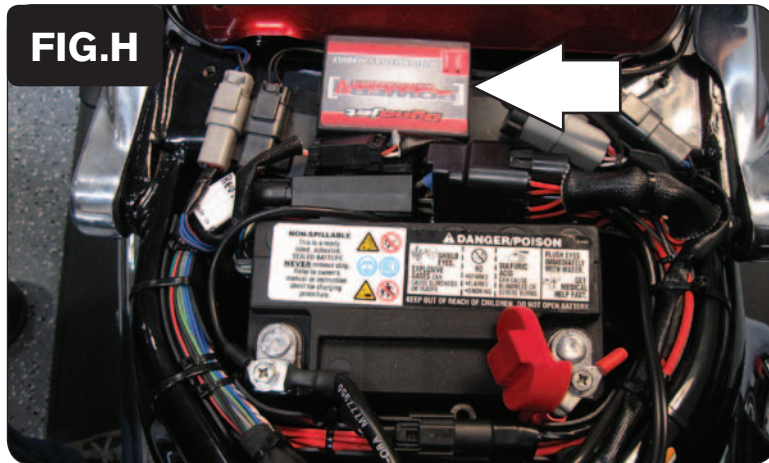


- 6 Under the rear fender, plug the PCV harness into the 2 stock ECM wiring harness connectors (Fig. F).

These connectors are slotted such that they cannot be plugged in backwards.



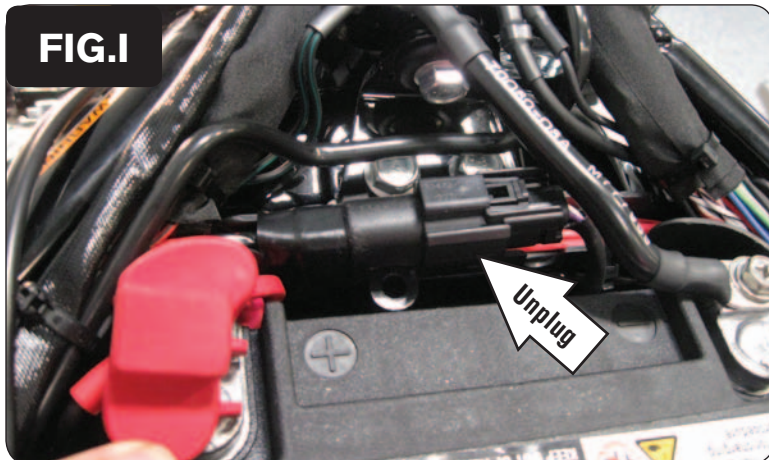
- 7 Plug the ECM into the PCV harness and reinstall the ECM mounting tray, making sure to keep all of the wiring inside of the ECM compartment (Fig. G).



- 8 Store the PCV module at the location shown in Figure H, on the frame cross-member rear of the battery. Reinstall the previously removed connectors and modules to their original locations.

There is a BLACK connector that may need to be relocated to store the PCV module here.

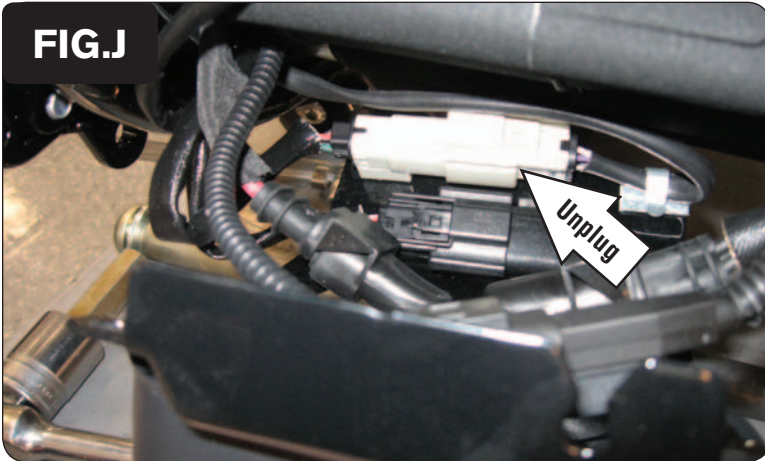
The supplied Velcro strips can be used to secure the module. Use the alcohol swab to clean the area prior to applying the Velcro.



- 9 Unplug the connector for the rear O2 sensor at the front of the bike's battery (Fig. I).
- 10 Plug the Dynojet O2 Optimizer into the stock wiring harness in place of the stock O2 sensor.

There is a BLACK Optimizer and a WHITE Optimizer in the kit. They are indexed so they can NOT be connected incorrectly.

The stock O2 sensor will no longer be connected to anything and can be removed from the exhaust if desired and if you have a way to plug the hole.

FIG.J

- 11 Unplug the front O2 sensor from the stock wiring harness (Fig. J).

This connector is located under the front of the engine behind the regulator/rectifier.

- 12 Plug the Dynojet O2 Optimizer into the stock wiring harness.

The stock O2 sensor will no longer be connected to anything and can be removed from the exhaust if desired.

- 13 Reassemble the bike, unless you are installing the Auto-tune kit.

IF INSTALLING THE AUTO TUNE KIT FOLLOW THESE STEPS:

- 14 Install the O2 sensors into the exhaust (see Auto tune install guide).

The stock O2 sensor bung size is not the same size that the Auto-tune wideband O2 sensors require (18mm x 1.5). You will likely need to weld the supplied bungs to the exhaust to use Auto-tune.

- 15 Plug the O2 sensor wiring harnesses from the kit into each sensor and route the wires towards the rear fender and into the ECM compartment at the front of the swing arm (Fig. K).

Preferred sensor harness routing can vary, depending on exhaust type and sensor location. The front sensor harness can follow along the stock wiring inside the right-side lower frame rail. It could also travel along the backbone of the frame under the fuel tank. The rear sensor harness can usually go under the oil tank and straight to the ECM compartment.

- 16 Install the supplied CAN termination plug into one of the expansion ports on the Auto-tune module.

This is a small BLACK hard plastic plug supplied in the kit (PN: 76423025). It is important that this be installed. It is often overlooked.

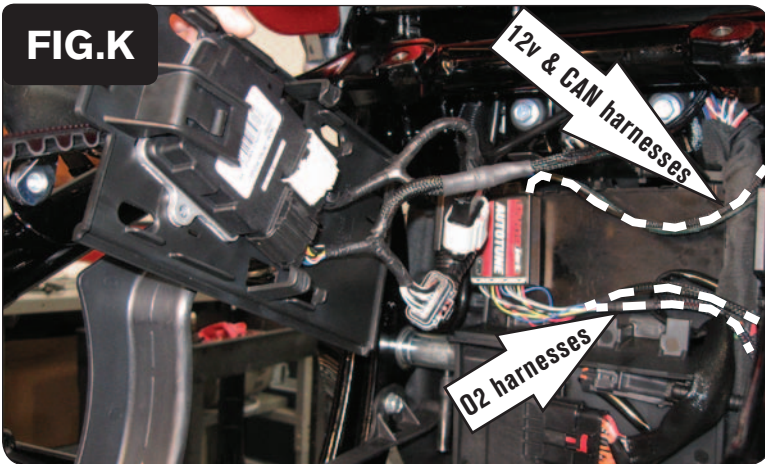
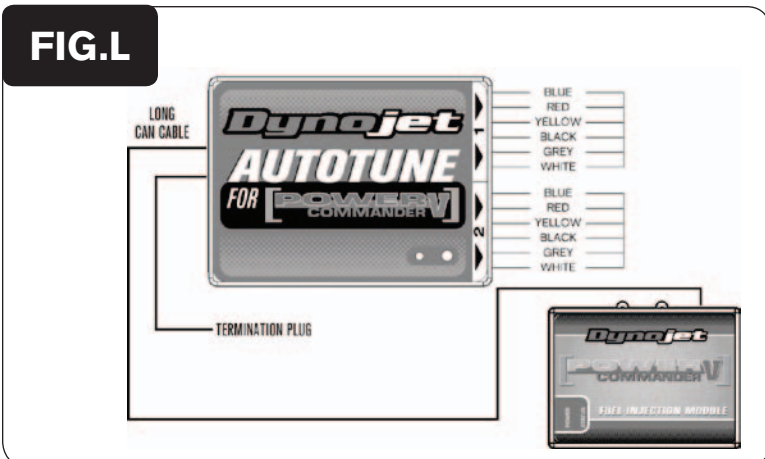
- 17 Insert the CAN link cable into the other expansion port (Fig. L).

- 18 Route the CAN link cable and 12v power supply cable up towards the battery under the seat.

- 19 Connect the wires from the O2 sensors into the Auto-tune module (Fig. L).

Make sure to wire the front O2 sensor into input #1 on the Auto-tune module.

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FIG.K**FIG.L**



- 20 Use the supplied Velcro to secure the Auto-tune module in the upper-left corner of the ECM compartment at the location shown in Figure K.

Clean the surface with the supplied alcohol swab prior to applying the Velcro.

- 21 Under the seat, plug the CAN link cable into one of the expansion ports of the PCV module.
- 22 Plug the 12 volt power supply cable into the bike's diagnostic connector (Fig. M).
- 23 Reassemble the bike.