

[POWER COMMANDER V]

FUEL AND IGNITION

2009-2013 Honda Big Red

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
- 3 Zip Ties
- 3 Posi-taps

THE IGNITION MUST BE TURNED OFF BEFORE INSTALLATION!

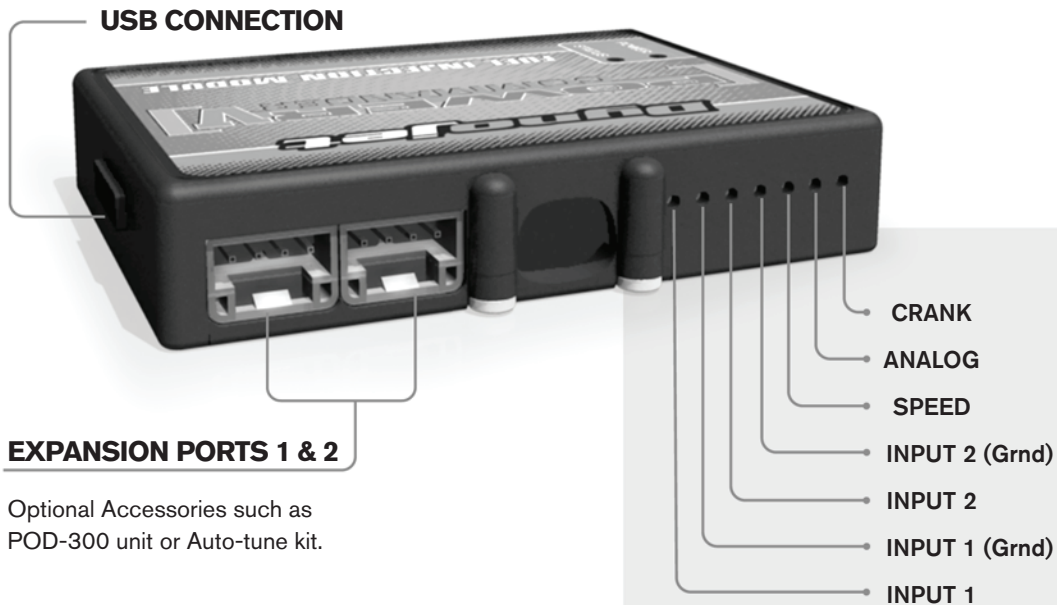
THE LATEST POWER COMMANDER SOFTWARE AND MAP FILES CAN BE DOWNLOADED FROM OUR WEB SITE AT:
www.powercommander.com

PLEASE READ ALL DIRECTIONS BEFORE STARTING INSTALLATION

Dynojet

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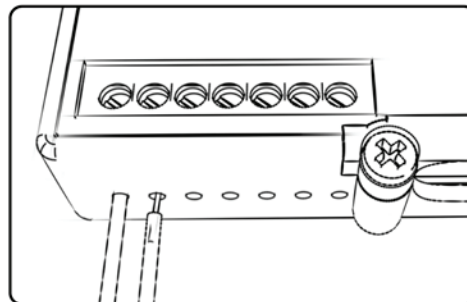
POWER COMMANDER V INPUT ACCESSORY GUIDE



PCV Wire Connections

1. Remove the rubber plug on the backside of the unit and loosen the screw for the corresponding input.
2. Using a 22-24 gauge wire, strip about 10mm from its end.
3. Push the wire into the hole of the PCV until it stops and then tighten the screw.
4. 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 two different base maps. You can switch on the fly between these two base maps when you connect 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) Not used for continuously variable transmissions. (Set to Switch Input #2 by default.)

Speed-

If your application has a speed sensor then you can tap into the signal side of the sensor and run a wire into this input. This will allow you to calculate gear position in the Control Center Software. Once gear position is setup you can alter your map based on gear position and setup gear dependent kill times when using a quickshifter.

Analog-

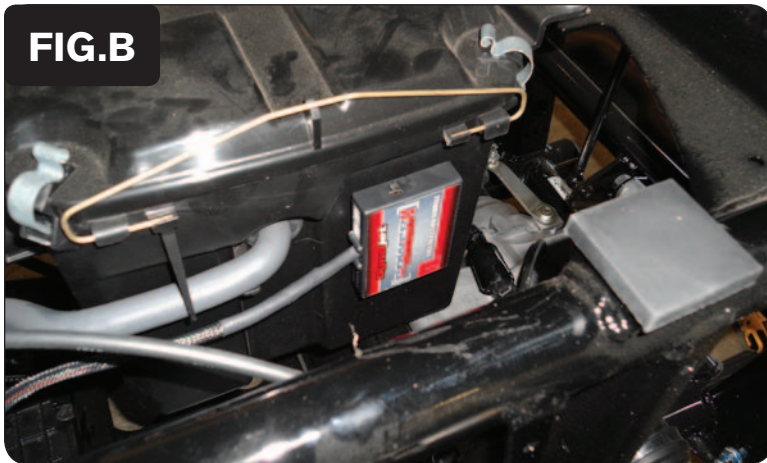
This input is for a 0-5v signal such as engine temp, boost, etc. Once this input is established you can alter your fuel curve based on this input in the control center software.

Crank-

Do **NOT** connect anything to this port unless instructed to do so by Dynojet. It is used to transfer crank trigger data from one module to another.



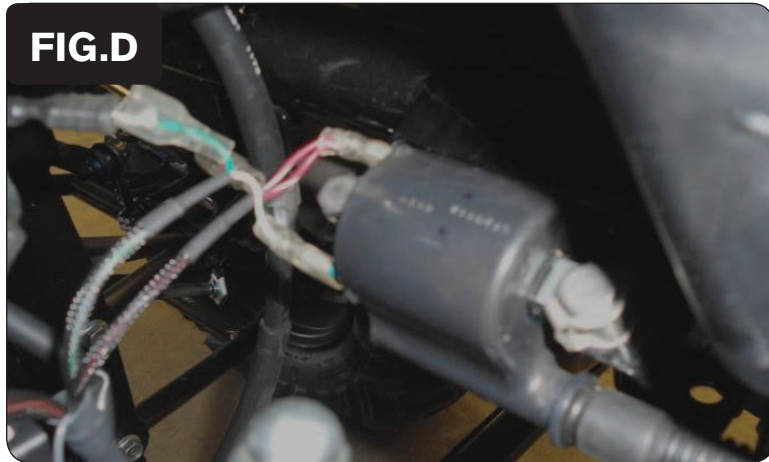
- 1 Remove the seat.
- 2 Remove the middle console cover as shown in Figure A.



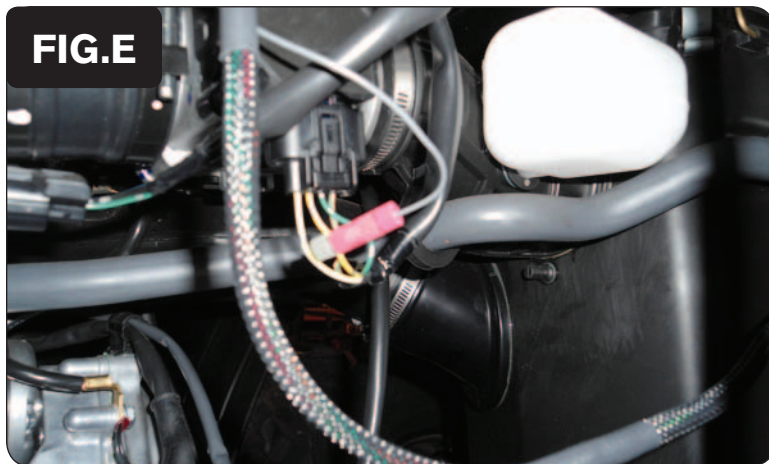
- 3 Raise the vehicle bed.
- 4 Using the supplied velcro, secure the PCV to the driver's side of the air box as shown in Figure B.
Make sure to clean both surfaces with the alcohol swab before attaching.
- 5 Route the PCV harness toward the front of the vehicle as shown in Figure B.



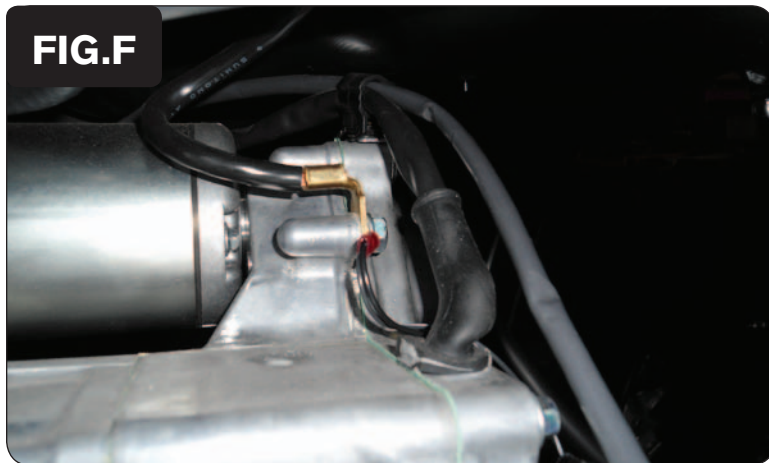
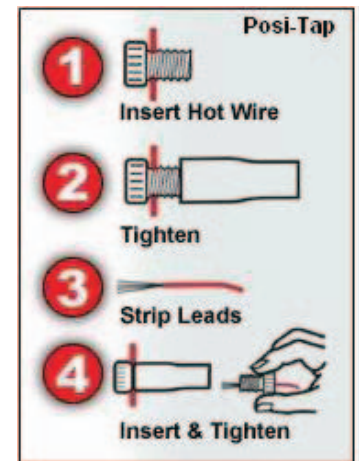
- 6 Locate and unplug the stock injector connector on top of the cylinder head area.
- 7 Attach the PCV connectors to the stock injector connector and the injector as shown in Figure C.



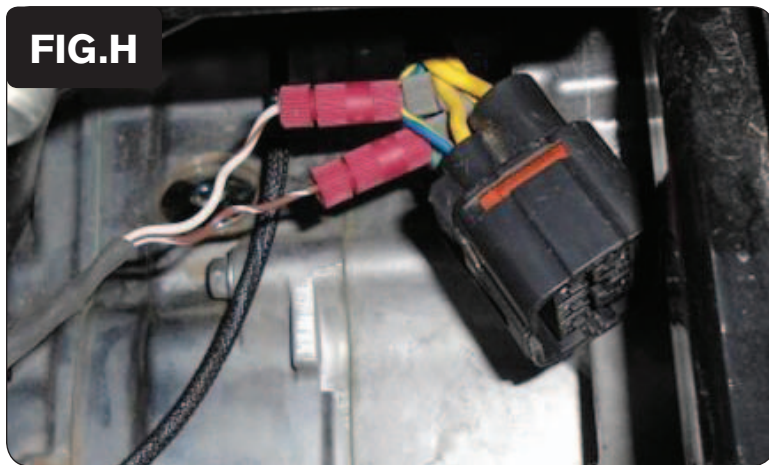
- 8 Locate the ignition coil under the driver's seat area.
- 9 Unplug the two spade quick connectors from the coil.
- 10 Attach the red/white wired female spade to the upper prong of the coil and the red/white wired male spade to the stock upper female spade connector as shown in Figure D.
- 11 Attach the green/white wired female spade to the lower prong of the coil and the green wired male spade to the stock lower female spade connector as shown in Figure D.



- 12 Locate the Throttle Position Sensor (TPS) underneath the vehicle on the driver's side of the throttle body.
- 13 Unplug the TPS connector.
- 14 Using the supplied posi-tap, attach the grey wire from the PCV harness to the yellow/grey wire on the stock TPS as shown in Figure E.
- 15 Plug the TPS connector back into the stock TPS.



- 16 Route the remaining leg of the PCV harness over the engine above the white plastic collection bottle rearward of the throttle body.
- 17 Locate the grounding lug on the rear of the motor on the passenger side underneath the vehicle bed.
- 18 Attach the ground wire ring lug from the PCV harness to the grounding lug as shown in Figure F.



- 19 Locate the opening to the cavity shown in Figure G on the underside of the vehicle, below the passenger seat.
- 20 Reaching up from the underside of the vehicle, unplug the crank connector shown in the inset of Figure G.

Note: The crank connector is the rear-most connector in a group of three connectors.
- 21 Pull the crank connector to the rear of the vehicle outside the cavity area to gain access to the wires.
- 22 Using the supplied posi-tap, attach the white/brown wire from the PCV harness to the blue/yellow wire on the stock crank connector as shown in Figure H.
- 23 Using the supplied posi-tap, attach the brown/white wire from the PCV harness to the green/white wire on the stock crank connector as shown in Figure H.
- 24 Plug the crank sensor connector back into the stock location taking care not to snag/stretch the PCV harness.
- 25 Using the supplied zip ties, secure the PCV harness where necessary. Keep the wires away from moving parts and hot surfaces.
- 26 Replace the middle console cover and reinstall the seat.

EFI Tuning with PCV

The Power Commander makes fueling changes off of the numbers in the map stored in the Power Commander. The UTV Power Commanders are shipped with a Zero Map. With a Zero Map, the UTV will run the stock fueling programmed in the ECU. When a map is loaded into the Power Commander, the UTV will be fueled according to the numbers in the map. The Power Commander does not make changes to the ECU programming.

The numbers in the Power Commander map add or subtract a percentage of the fuel the ECU is supplying for a particular load condition. For example, if the Power Commander map shows a 10 in a given cell, the Power Commander increases the amount of fuel the ECU is supplying by 10%. If the Power Commander map shows a -10 in a given cell, the Power Commander reduces the amount of fuel the ECU is supplying by 10%.

When tuning, always start with a setting where the motor runs rich. Slowly trim fuel out to find the desired exhaust gas temperature (EGT) or air-to-fuel ratio (A/F).

The PCV gives you the freedom to subtract up to 99% and add up to 250% of the fuel the ECU is supplying for a particular condition. When adding fuel with the Power Commander, the injector duty cycle may reach 100% (always open) before the Power Commander value reaches 100%. For example, if the ECU is running the injectors at 67% duty cycle (injectors open 67% of the time) then adding 50% fuel with the Power Commander will max out the injectors. In this case, the amount of fuel that can be added will be limited by the injectors.

Fuel Subtraction

The PCV gives you the ability to trim fuel out of the map to correct rich conditions.

Caution: Engine failure can result from running the engine in a lean state.



Additional Features and Accessories for the Power Commander V

The PCV can be combined with the Dynojet Autotune kit (P/N AT-200) allowing you to tune as you ride. The Autotune feature uses a target AFR table where the user specifies a target AFR based on TP and RPM. After enabling Autotune, the user rides as normal and the PCV calculates a trim table as you ride. Once the system has calculated a trim table for the specified conditions, the user can accept the trims as a base map and turn the Autotune feature off.

Autotune is a very powerful feature allowing the user to build custom maps for any modifications made to the UTV, including big bore kits, aftermarket pipes, and intakes. The Autotune kit may also be used to smooth out a stock UTV's fuel map eliminating midrange flat spots and improving throttle response.



If you are looking for a display for your setup we have the answer. Dynojet's POD-300 is a display unit capable of displaying all PCV data (and AFR if you are using the Wideband 2). The POD-300 is capable of logging data including TP, RPM, Injector duty cycle, fuel change, AFR, and two analog signals input into the PCV.

The data logged on the POD-300 can be downloaded to your computer and viewed in Excel or with the Dynojet Power Core Data Analysis Software.