

Jeep Wrangler JL 2.0L Turbo MAXPower PRO ECM Installation Manual

MAXPower PRO
Engine Control Module



Introduction

Thank you for purchasing the MADNESS Autoworks **MAXPower PRO**. The **MAXPower PRO** has been developed and produced to ensure the best performance for the life of your Jeep. If you have any questions, please contact MADNESS Autoworks. We will be very happy to answer your questions about our complete product line.

The **MAXPower PRO** is a Plug-and-Play add-on (or “piggyback”) Engine Control Module (ECM) that offers additional features not available on a stock engine. It uses all the factory data, and then enhances the factory settings to optimize your Jeeps performance.

The **MAXPower PRO** offers a power increase over stock throughout the RPM range, but the power is most noticeable in midrange RPM's. This greatly improves drivability and performance. The first thing you will notice is improved performance, especially if this is your first time driving a turbo Jeep with a performance module. You will experience more power, better throttle response, better passing and acceleration.

IMPORTANT:

Read all Safety, Warranty, and Installation Instructions before installing this product. Read through these instructions completely so that you understand each step prior to installation.

This D.I.Y. is for informational use only.

MADNESS Autoworks will not be held responsible for any damages caused to your Jeep due to installation or due to the use of the **MAXPower PRO**.

Professional installation is recommended but not required.

If you have any questions please contact us online or over the phone for assistance for any questions you may have.

Tools Required:

Flat Head Screwdriver
10mm Open-End Wrench
10mm Socket
3/8" Ratchet
6" 3/8" Extension

OPTIONAL:

O-Ring Pick
Nylon Pry Tool

Jeep Wrangler JL 2.0L MAXPower ECM Installation



Module Installation:

The **MAXPower PRO ECM** can be mounted near the air box near the passengers side of the engine compartment. Adhere the module using Velcro or double-sided tape, allowing enough movement to decouple the box comfortably if needed.

Harness Connections:

Your MAXPower ECM is equipped with a harness that can be disconnected at the module itself. It is important to make sure that either the **MAXPower PRO ECM** or the **Bypass Plug** is always connected to the harness when the wiring harness is installed on the Jeep. Not doing so may cause the Jeep to run improperly, may trigger warning lights or Check Engine Light (CEL), or any combination thereof.

Engine Cover Removal:

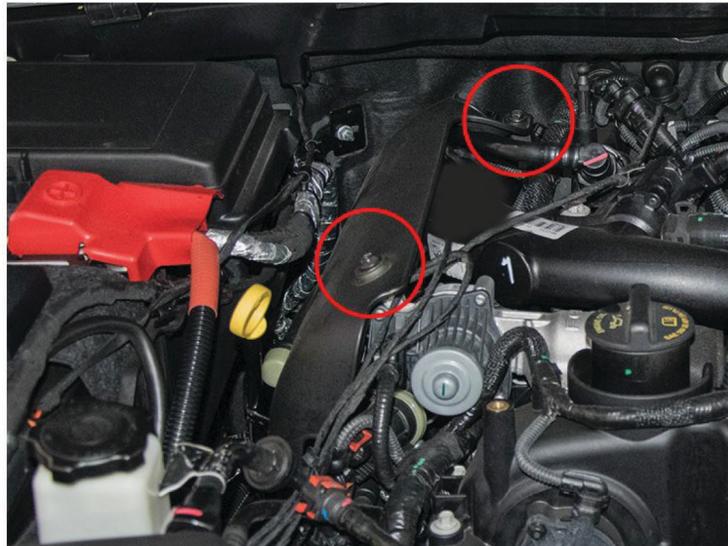
1. Remove the two 10mm bolts that hold the engine cover down.
2. Gently pull up on the corners of the engine cover to remove the engine cover from the engine bay.



Removing Right Side Engine Cover/Heatshield:

In order to gain access to some of the sensors we need to remove the right side engine cover/heat shield.

1. Remove the two 10mm bolts holding this piece in place.
2. Pull the piece straight up to remove from the Jeep.



Sensor Connections Overview:



The image above shows the location of the sensors the **MAXPower PRO** taps into.

The colors and letters on the image correspond to the markings on the **MAXPower PRO** Wiring Harness.

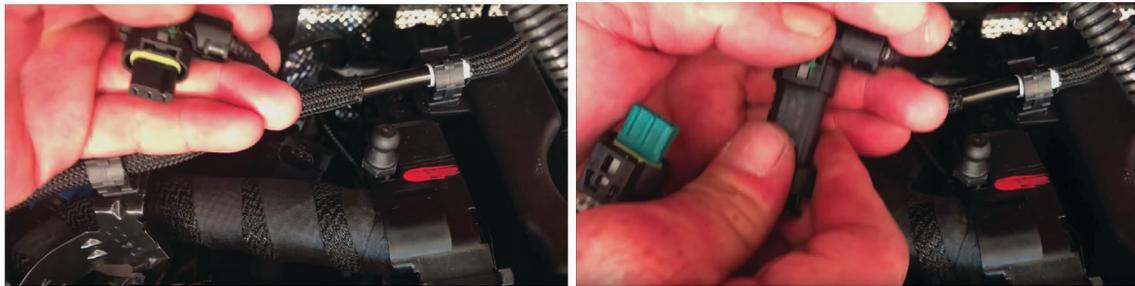
- A. Boost Pressure Sensor
- B. Manifold Air Pressure Sensor
- D. Fuel Pressure Sensor
- +. Power Supply

A. Boost Pressure Sensor Connection:

The Boost Pressure Sensor is located near the back of the engine bay. See the image below to see the exact location.



1. Disconnect the factory Boost Pressure Sensor from the factory harness.
2. Connect the **MAXPower PRO** Boost Pressure Sensor in between the factory Boost Pressure Sensor and the factory harness.



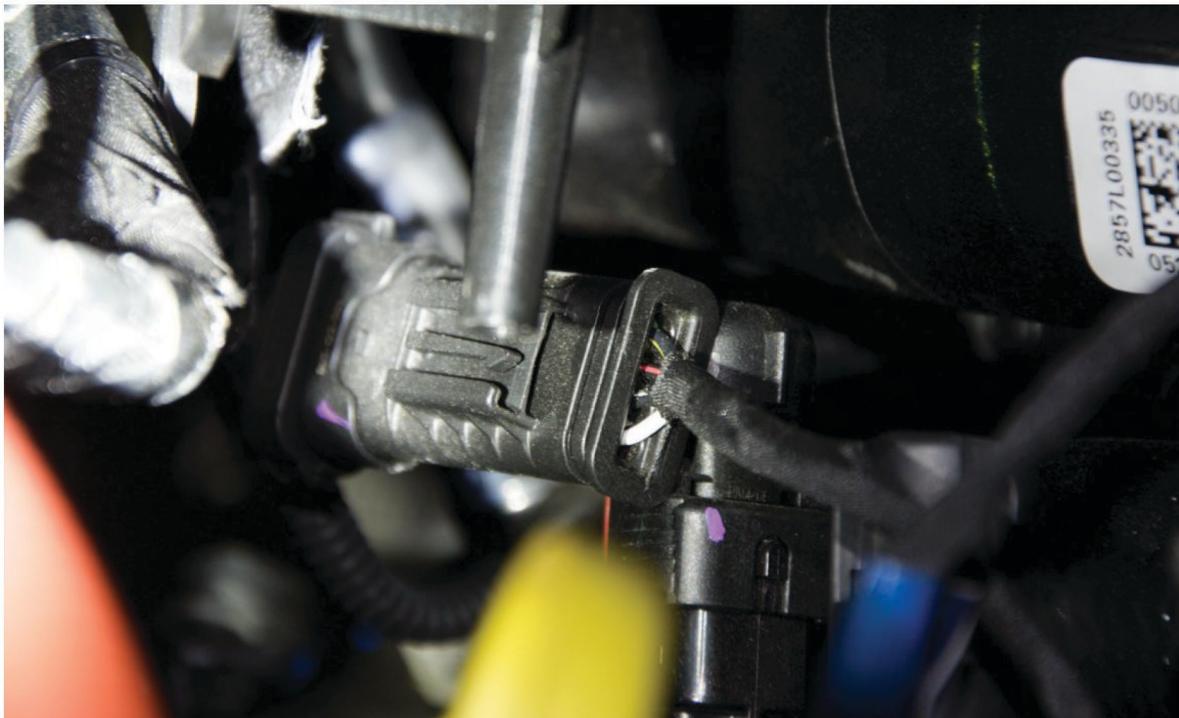
B. Manifold Pressure Sensor Connection:

The Manifold Pressure Sensor is located near the center of the engine bay. See the image below to see the exact location.



Disconnect the factory Manifold Pressure Sensor from the factory harness.

Connect the **MAXPower PRO** Manifold Pressure Sensor in between the factory Manifold Pressure Sensor and the factory harness.



D. Fuel Pressure Sensor Connection:

The Fuel Pressure Sensor is located centered towards the rear of the engine bay. See the images below to see the exact location.



1. Disconnect the factory Fuel Pressure Sensor from the factory harness.
2. Connect the **MAXPower PRO** Fuel Pressure Sensor in between the factory Fuel Pressure Sensor and the factory harness.



+ Power Supply Connections:



Connect the supplied 12-volt power connections. The positive (red) connection will go on the positive battery terminal.

1. Loosen the 10mm nut that is on the the positive battery terminal.
2. Connect the positive (red) connection to bolt and tighten the nut.



Final Inspection:

1. Recheck all connections, fittings and fasteners for a properly secure installation.
2. Re-install the engine cover prior to starting the Jeep. The bolt on the left side of the engine cover goes all the way through the valve cover. If you run the Jeep or drive it with the engine cover off, it will mist oil through the engine bay.
3. With the Bypass Plug installed on the harness, turn the Jeep on and check if there are no CEL's (Check Engine Light).
4. Turn the Jeep off, remove the bypass plug and install the **MAXPower PRO**.

Operation:

The factory ECU will go through an adaptation phase with the **MAXPower PRO**. In general this process should take approximately 80 miles to complete. After completion the factory ECU and **MAXPower PRO** will be optimized to run together for maximum performance.

SAFETY INFORMATION

The MADNESS product you have purchased is a high performance product. As such, it does present some risks of which you should be fully aware. Do not use this product until you have carefully read all the following safety information.

SAFETY GUIDELINES:

1. Do not exceed legal speed limits on public streets. Use any performance speed capabilities of this product only in legally sanctioned racing environments expressly for this purpose.

All **MAXPower PRO** modules are built to operate with OEM ECU tunes. MADNESS Autoworks updates its active products (i.e. those currently being manufactured) to work effectively with updated OEM tunes. However, this process can take some time, as MADNESS Autoworks is not always aware of calibration changes made by OEM manufacturers.

If you have used another tuner/programmer on your Jeep, you will need to revert back to stock and remove the device before using the **MAXPower PRO**.

Failure to return to stock may result in PCM failure or engine damage.

Programming your Jeep may expose existing defects in your Jeep's PCM that could disable your Jeep.

Warranty Information

LIMITED 2-YEAR WARRANTY:

MADNESS Autoworks LLC, (hereafter "SELLER") gives Limited Warranty as to description for any product's purpose, productiveness, or any other matter of SELLER's product sold herewith. The SELLER shall be in no way responsible for the product's open use and service and the BUYER hereby waives all rights other than those expressly written herein. This Warranty shall not be extended or varied except by a written instrument signed by SELLER and BUYER.

The Warranty is Limited to 2 Years from the date of sale and limited solely to the parts contained within the product's kit. All products that are in question of Warranty must be returned shipping prepaid to the SELLER and must be accompanied by a dated proof of purchase receipt. All Warranty claims are subject to approval by MADNESS Autoworks. Under no circumstances shall the SELLER be liable for any labor charged or travel time incurred in diagnosis for defects, removal, or reinstallation of this product, or any other contingent expenses.

If the BUYER sends back a failed unit that is out of warranty and chooses to buy a refurbished unit, the refurbished unit will only carry a 90-day warranty. If the BUYER purchases a new unit at a predetermined discounted rate, it will have the standard 1-year warranty.

Under no circumstances will the SELLER be liable for any damage or expenses insured by reason of the use or sale of any such equipment.

THE INSTALLATION OF THIS PRODUCT INDICATES THAT THE BUYER HAS READ AND UNDERSTANDS THIS AGREEMENT AND ACCEPTS ITS TERMS AND CONDITIONS.

IN THE EVENT THAT THE BUYER DOES NOT AGREE WITH THIS AGREEMENT, THE BUYER MAY PROMPTLY RETURN THIS PRODUCT, IN A NEW AND UNUSED CONDITION, WITH A DATED PROOF OF PURCHASE, TO THE PLACE OF PURCHASE WITHIN THIRTY (30) DAYS FROM DATE OF PURCHASE FOR A FULL REFUND.

Technical Support

To expedite your support call please have your Jeep Information, Part Number, Serial Number, ready prior to calling Technical Support.

CA: 562-981-6800

TX: 512-982-9393

TROUBLESHOOTING GUIDE

The MAXPower Pro is designed for easy, trouble free installation. Please make sure to read all the directions prior to installing this product.

The Troubleshooting Guide we have put together will help to identify most issues that can happen during the installation process. Following the guide below should resolve 99% of most common installation errors. Please review all the information below and carefully check every step mentioned prior to contacting us directly for assistance.

The majority of the time something was missed during the installation process and this guide should help resolve the challenge.

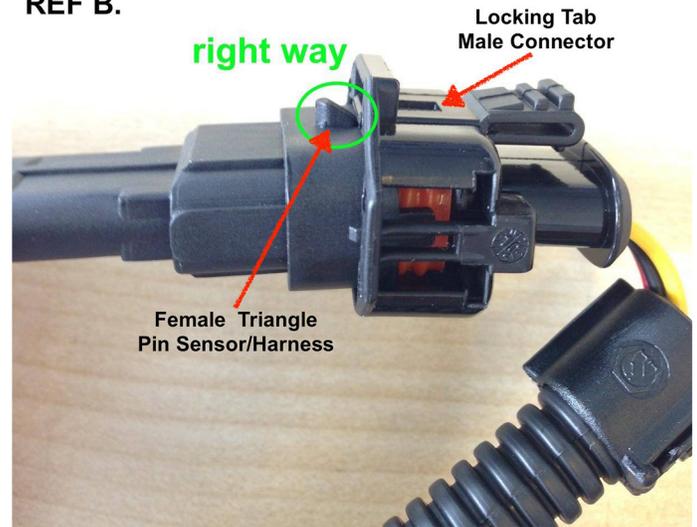
Please note that most of the time the cause of a Check Engine Light (CEL) or drivability problem can be traced back to a faulty harness connection or a connection that is plugged in upside down. **REF A.**

If you are running into these issues we ask that you check the connection integrity and verify that all connections are seated and plugged in the correct orientation. **REF B.**

REF A.

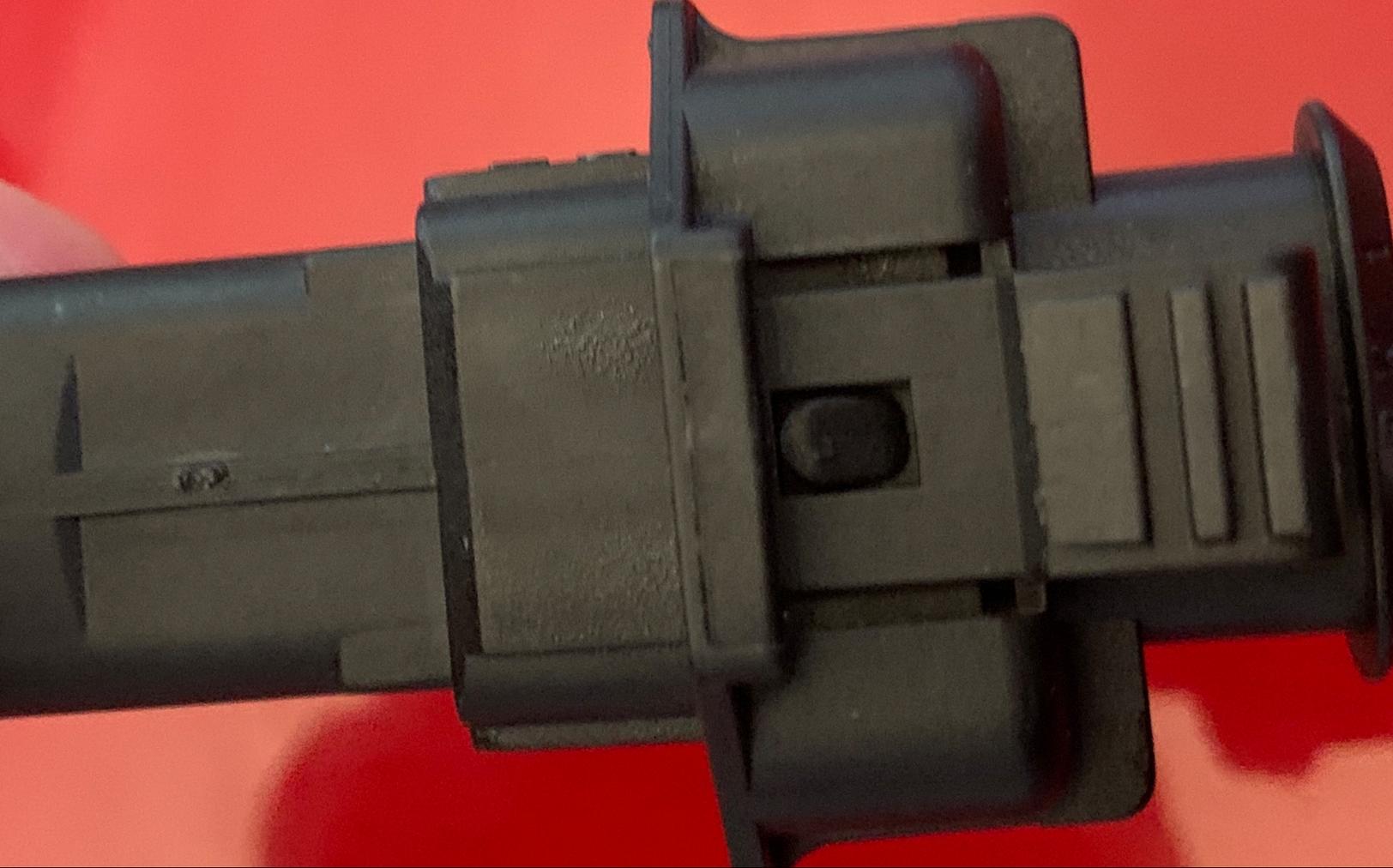


REF B.

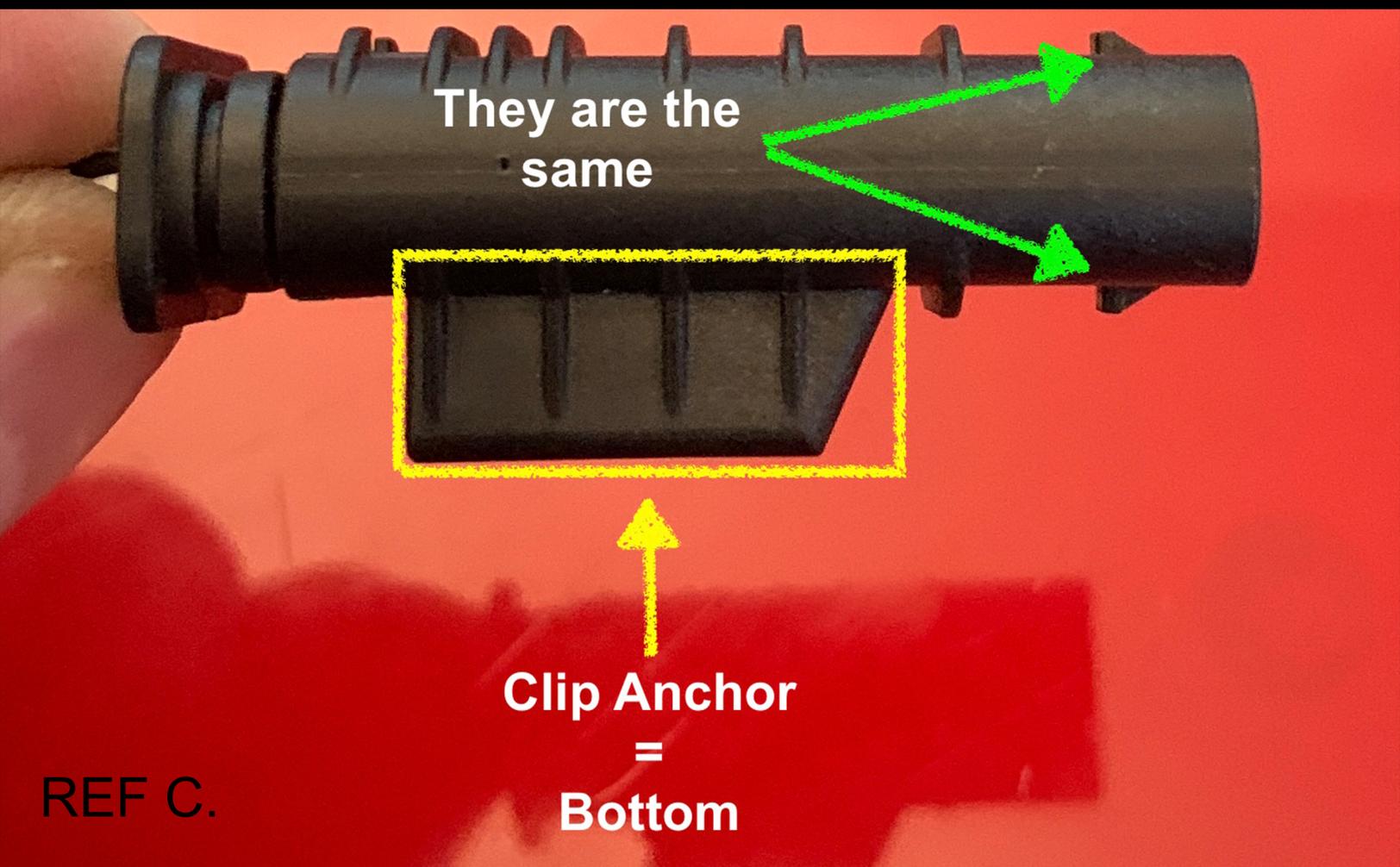


A connection is fully seated when the locking tab on the male connector clicks over the female triangle pin on the sensor/harness connection.

See the photo below.

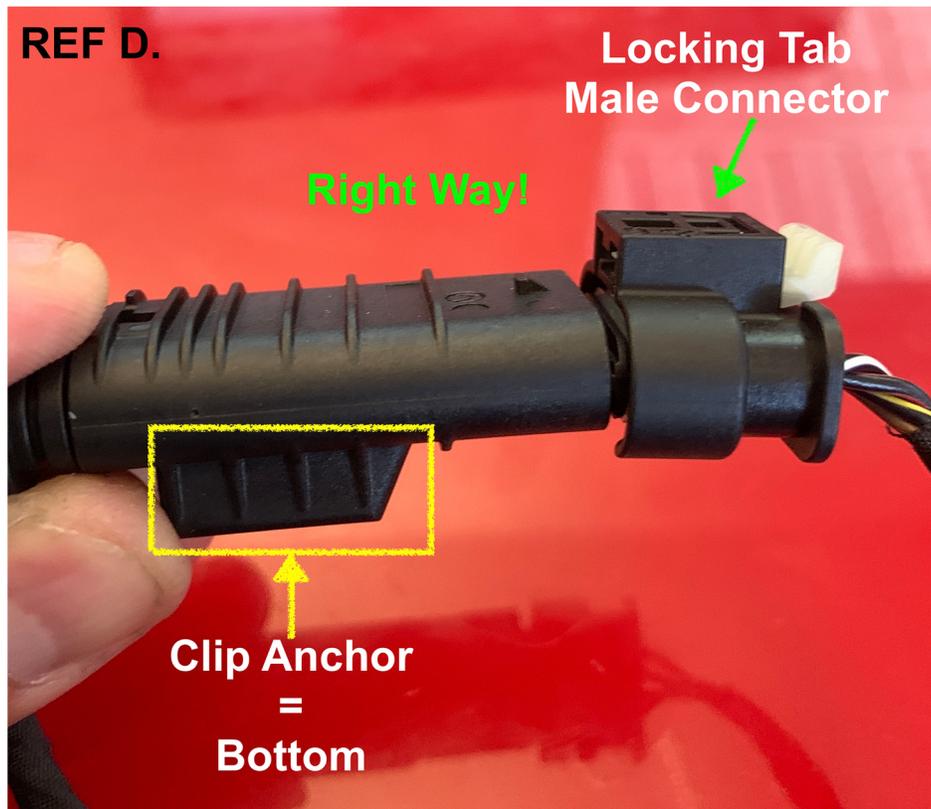


NOTE: On some applications, the "pin" is shaped the same on both sides. REF C.



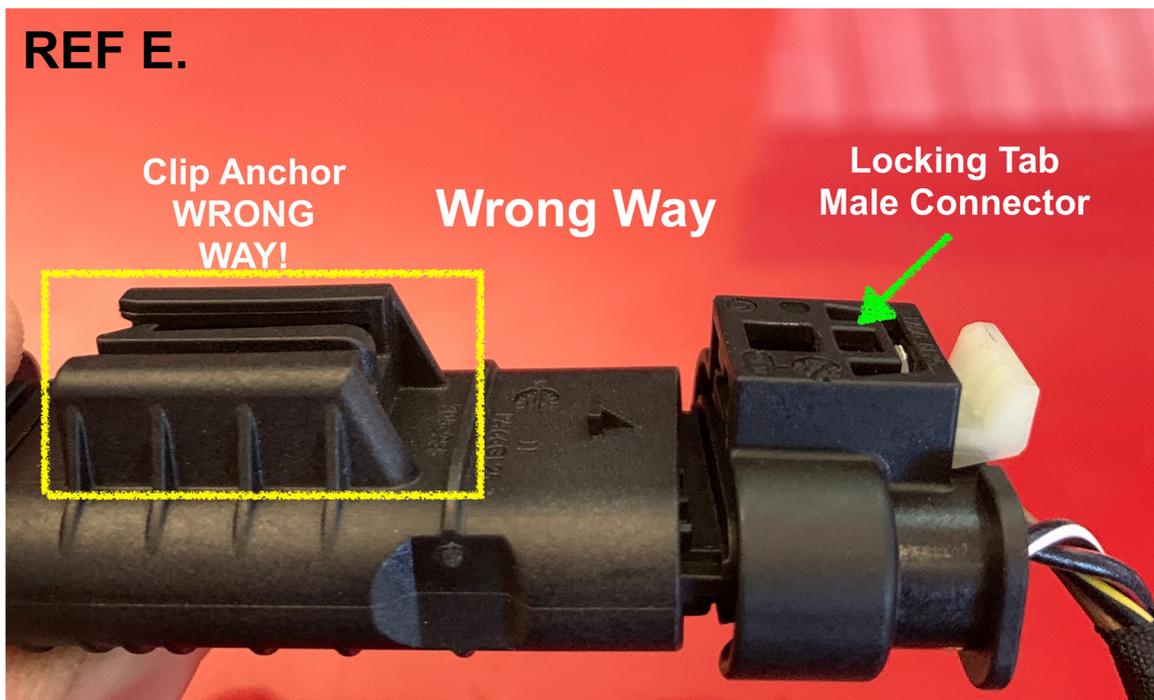
In those cases, you must determine the correct orientation of the connection. As a general rule, the clip anchor that is molded into the female connections always denotes the bottom connection. **REF C.**

Below is an example of the CORRECT orientation. **REF D.**



NOTE: If you have a Jeep Wrangler JL and get a warning light on the cluster that states "Service Throttle Control" you most likely have plugged in the Boost Pressure Sensor upside down. See the photo below of the INCORRECT orientation that caused the problem. **REF E.**

To fix this issue plug the connection in so it looks like **REF D.**



If you get a CEL and several trouble codes upon first start with the bypass plug installed you most likely have a bad 12v or ground connection.

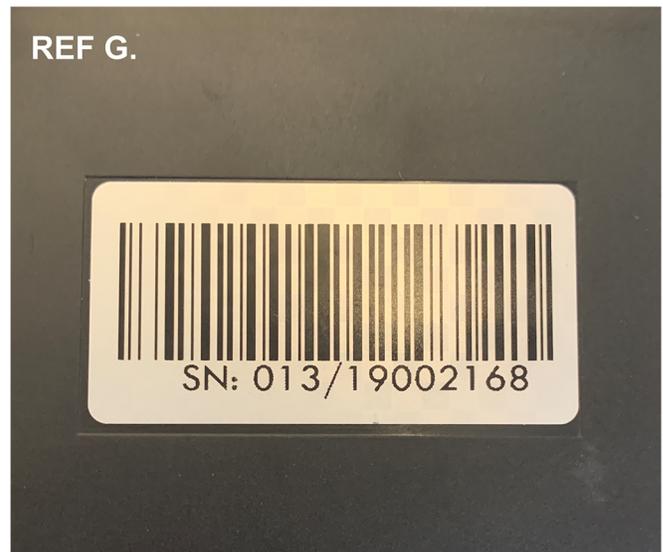
All MAXPower Pro units use a 12v power supply.

The red 12v cable at the main connector must have a permanent 12v source, **(IT CANNOT HAVE A SWITCHED 12V SOURCE)**. The best place to connect this is direct to the battery + terminal or power distribution block located under the hood of most vehicles that have trunk-mounted batteries.

The ground comes from the camshaft plug on all harnesses. If you test the black wire at the main connector of your MAXPower Pro and have no ground signal you most likely have an issue with the camshaft plug connection, please check the orientation of this connector.

Occasionally vehicle manufacturers offer software updates to the vehicle that can make changes to tolerances in the engine, this can cause the tuning box to start throwing trouble codes for boost pressure or throttle. If you start to get errors, limp mode, or faults' appearing after your vehicle has been to the dealer, then it may have had a software update. Please notify us so that we can find a vehicle with the update done to test and make a new mapping file that works with the new update.

- Make sure all connections are in the correct orientation with the sloped locking pin on the female connection/ sensor corresponding to the locking tab on male connection.
- Send clear photos of the all wiring harness connections where you can clearly see the male locking tab and female/ sensor connection.
- If applicable, send a photo of the 12v battery connection.
- Send a photo of the decal located at the main module connection. **REF F.**
- Send a photo of the decal located on the back of the module. **REF G.**
- Send a wide shot of the engine bay and circle the connection locations.
- Use a code scanner and list all trouble code(s) that you have encountered.
- Besides the Check Engine Light are there any other warning lights or messages illuminated on the instrument cluster?
Example: Service Throttle Control, ESC Unavailable, Hill Assist Unavailable, Lightning Bolt Symbol Illuminated, ETC.



If none of the tips above remedied your issue we ask that you please provide us with the information below. Email info@madnessautoworks.com and one of our customer service representatives will get back to you within 24-48 hours.



NOTE: Manufacturer software updates to vehicles do not qualify as a reason to return the product as being faulty, the unit is not faulty, it simply needs to have the mapping changed to work with the update. It may take us some time to located a vehicle with the new software version and alter the mapping to work with it.