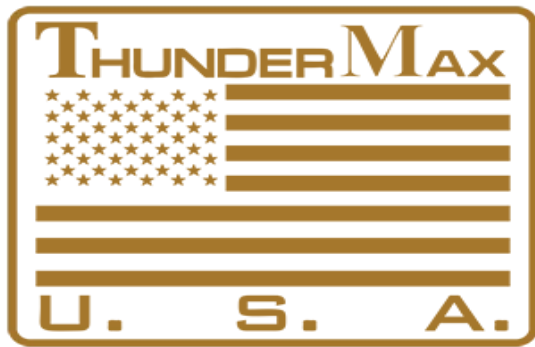


Part 1: Module Installation



#309-466 2002-17 V-Rod® Models

Thank you for purchasing a ThunderMax ECM! Please read through the following instructions before beginning the installation procedure. Following these instructions will ensure that the ECM is installed and setup properly for optimal results. If you have any problems or questions, please refer to the TMax Tuner.pdf Manual. The manual can be found in the software (see part 2), under the Help button in the menu. Record serial number NOW, in the space below for later use registering your ECM.

Serial # TMRM _____

Install Module

The ThunderMax ECM mounts in the same location as the factory ECM.

2002-2005 MODELS

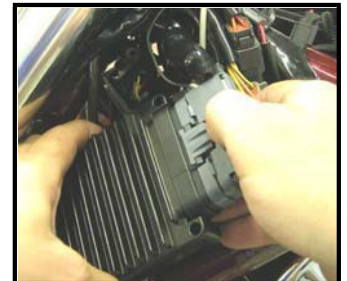
A: Remove the seat, air box cover and front frame side covers to expose the airbox and battery area. Remove the airbox lid with snorkel.



“DISCLAIMER: NOT LEGAL FOR SALE OR USE IN CALIFORNIA ON ANY POLLUTION CONTROLLED MOTOR VEHICLES” The user shall determine suitability of the product for his or her use. Installation and use on a pollution- controlled vehicle constitutes tampering under the U.S. EPA guidelines and can lead to substantial fines. Review your application and check your local laws before installing.
* CA Proposition 65 “known to the state of CA to cause [cancer] [birth defects or other reproductive harm]” see www.p65warnings.ca.gov for details

Locate fuse box just forward of the seat and remove fuse labeled “ECM POWER” (center fuse, right side).

Unplug and remove the factory ECM from the motorcycle (located just behind the steering stem).



Due to the tight restrictions of the location of the ECM on 2002-2005 model bikes:

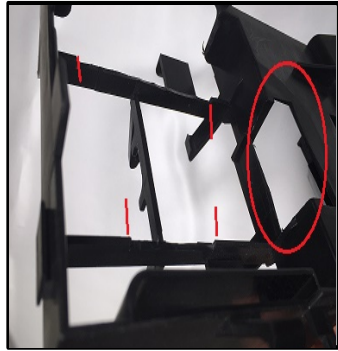
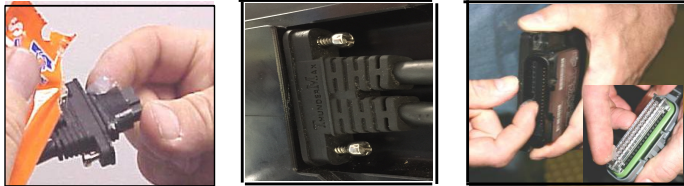
Option 1 or 2

The communication cable can be installed into the communication port of the ThunderMax attached to the ECM and stored on the motorcycle (how you store / route the cable is up to you, you can run it through the frame and along the airbox



housing and store it under the seat or roll it up and store it under one of the side covers), or **Option 2 – (PREFERRED not required)** Install the ThunderMax Pigtail Communication Port Harness (included) and wire it to the ECM harness plug on the motorcycle for an alternate port location.

Once option 1 or 2 is performed, install the ThunderMax ECM to the motorcycle in the stock location. Use dielectric grease on the O2 harness, slip into the harness port in the side of the case and tighten the screws. Use dielectric grease on the 36 pin connector and a light coat just inside the ECM housing opening for the connector. Plug the main harness into the ECM and reinstall the ECM fuse. Slide the ECM back into the mount carefully route the rear O2 harness up towards the air box, the front can go directly out the side to connect and attach to the front sensor later in the install. Now attach with the ECM to the mount with the original bolts.



Slot caddy approx 3/16" deep along the rails to add clearance for the modlue to set full with the bottom of the caddy when installed. Between the 2 ribs in the picture cut out .700 deep of the plastic. As pictured also remove the 1/8" x 1/8" rib at the top side. Cut caddy with a hacksaw blade or similar cutting tool.



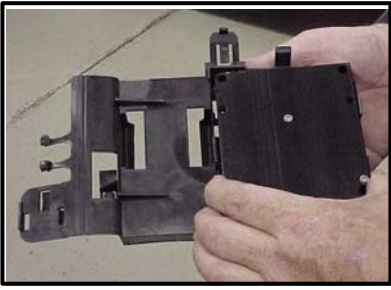
2006-UP MODELS

A: Remove the front and rear seat, air box cover and front frame side covers (2) to expose the airbox and battery area. Remove the airbox lid with snorkel.



Locate and remove the ECM fuse. Unplug the ECM and remove the ECM with the plastic ECM caddy (unsnap the caddy from the fender). Separate the ECM from the caddy.

Step 2c Trial fit the ThunderMax to the plastic ECM caddy. Note that some parts of the caddy will need to be modified for proper fit. This is easily accomplished with a saw blade.



Trial fit the ThunderMax ECM into the modified caddy; re-trim as necessary. Re-install the caddy with the ThunderMax ECM and Oxygen harness plugged in and tightened in place.

Plug the ECM main harness into the ThunderMax and reinstall the ECM fuse. At this point you have two options for linking to the ThunderMax with the supplied communication cable:



Option 1 - The communication cable can be installed into the communication port of the ThunderMax ECM and remain attached to the ECM and kept stored on the motorcycle under the seat, or
Option 2 - Install the ThunderMax Pigtail Communication Port Harness (included) and wire it to the ECM harness plug on the motorcycle for an alternate port location.

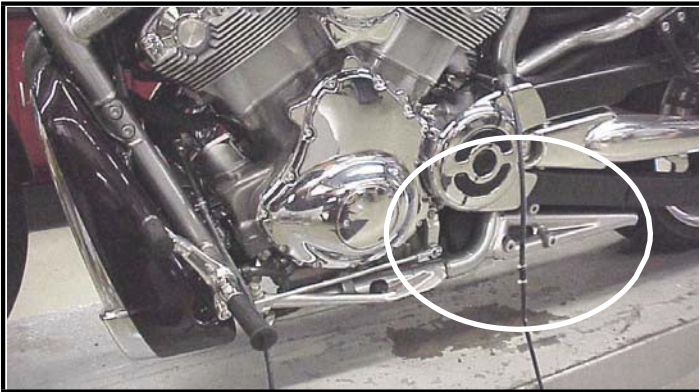
Either of these options will allow you to connect the communication cable to the ThunderMax without removing the passenger seat. Reinstall the passenger seat.



ALL MODELS

Step 2c Install the supplied wide band oxygen sensors into the exhaust pipes. If your exhaust system is not equipped with oxygen sensor bungs, they must be added to the exhaust pipes. The supplied wide band sensors are longer than the factory sensors. Installation of the wide band sensors into factory headpipes equipped with bungs should present no clearance problems, however, some aftermarket pipes may require exhaust pipe modification or sensor bung relocation for interference-free installation. The sensors must mount freely without contacting surrounding components. **If this is not possible, do not attempt to bend or modify the sensor in any way as it is a sensitive electronic component and will be damaged if you do.**

Modify the pipe if required for clearance. Weld-in bungs are available for exhausts systems not equipped with bungs or if current bungs present clearance issues. Bungs should be located no more than 3-4" from the head/pipe connection (for ideal location, refer to the factory location on 2008-up models). Weld-in bungs are widely available from many after market shops. After installation, route the sensor harnesses through to the left side of the bike as shown. If you wish to cap off the bike side of the harness connector, protective caps are provided. See Tips and General Information section on page 7 for further detail.

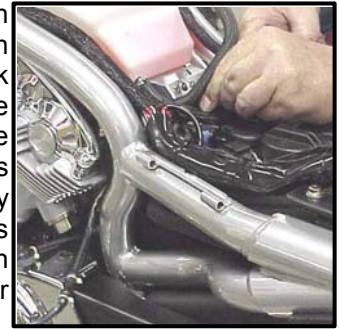


Route the oxygen sensor harness from the front pipe along the left frame downtube, across to the right side of the frame in front of the cylinder head cover, away from the engine and along the frame when possible.

Plug the O2 sensor harness into the AutoTune harness plug marked "FRONT". Avoid routing harnesses where engine movement or moving parts can contact and damage the harnesses or connector plugs.



Route the rear oxygen sensor harness between the engine and fuel tank under the seat. The AutoTune harness for the rear cylinder sensor is shorter and can be easily identified by black tracers on all of its wires; both plugs are clearly marked for front/rear use.



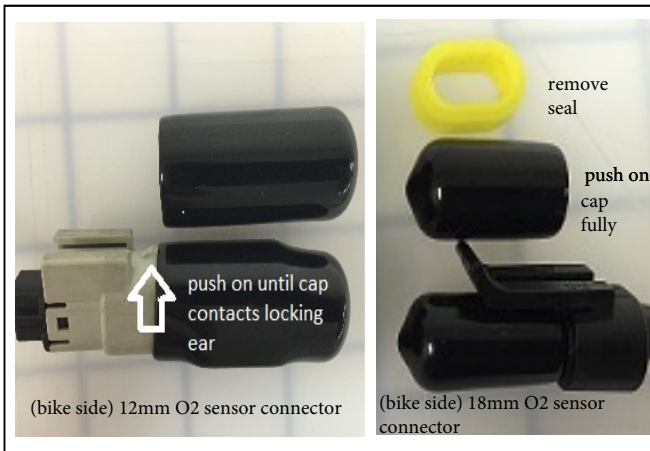
Route the harness along the upper left frame rail and plug the oxygen sensor harness into the AutoTune harness plug marked "REAR". It is very important to install these correctly or the engine will perform poorly! Tie the harnesses to the frame or existing component harnesses, taking care to avoid contact with any vibrating component that may chaff the sheathing or wires. Some disassembly of bike components may be required for best harness routing.

Some riders prefer to remove the airbox lid altogether for increased airflow to the intake. Another option if you chose to leave it on, the "snout" can be removed to increase air flow, with less air noise. With a hacksaw blade or similar cutting tool, cut the airbox snout off the airbox lid. Reinstall the airbox and frame louvered covers.



You are ready to proceed to part 2 setup of your system.

TIPS AND GENERAL INFORMATION



ATTENTION!

Please find the enclosed caps to block off the bike side of the stock oxygen sensor harness connector. There are 2 larger caps for all motorcycles that come stock with the smaller 12mm oxygen sensors. There are also 2 smaller caps for all motorcycles that come stock with the larger 18mm oxygen sensors. Install per the appropriate picture to the left. Discard the other 2 caps they will not be needed.

Thank you for your purchase of ThunderMax products.
For other information visit www.thunder-max.com

IMPORTANT STEP BEFORE STARTING THE FIRST TIME OR AFTER A BATTERY CHANGE

Next, '**Initialize**' the ThunderMax ECM. Initializing synchronizes 'home' positions for the TPS and IAC, and is a required step any time battery power has been interrupted or established to the ThunderMax ECM. **With the handlebar switch in the 'ON' position, cycle the key switch on and off 3 times, leaving the ignition on for 30 seconds, then off for 30 seconds, each cycle.** DO NOT start the engine or move the throttle during this process. After 3 on/off cycles, make certain that the motorcycle is in neutral and start the bike 2 times, letting it settle at idle for 10 seconds; the idle should be smooth and steady. Some engines may require several on/off engine starts to initialize properly. **This initialization process must be performed any time battery power is interrupted to the module (after battery servicing/winterization, etc).**

Special Note for International Model Bikes with Active Exhaust Enabled: *If your bike is equipped with a working Active Exhaust Valve, you must unplug the active exhaust harness before linking to the module, as the AEV circuitry conflicts with the communication stream. You can re-connect the harness after unlinking. If the stock exhaust has been changed, disregard this step. ThunderMax does not support active exhaust.*

Nitrous - When adding a Nitrous system, plan to use a relay to control the activation of the system. This will keep from overloading the circuit and causing damage to the ECM.

In-Tank Fuel Filters - should be inspected as a part of routine maintenance. The filter is small and one bad load of fuel can clog it. The factory recommended service interval is 25K miles.

Oxygen Sensor Care - Items that can damage or shorten the life of your sensors: Leaded fuel-racing fuel, oil deposits from oil consumption problems, excessive moisture, Excessive (Extreme heat) heat. There is no warranty on sensors (part # 309-355).



Initializing Instructions



Auto Support Feature



Installing Exhaust Bungs