

# THUNDER MAX

EFI made simple.

**Part # 309-485 2004-2011 Dyna®, 2010-2013 XL Sportster®, 2008-2010 Rocker® and 2009 CVO FXSTSSE2 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 TMaxII Tuning .pdf Manual, included on the CD (Help Menu) with this package. **Record serial number NOW on your warranty card, and below for your records!**

**Serial # TMRM\_\_\_\_\_**

## All Models - Oxygen Sensor Installation Tips

Your ThunderMax kit includes robust Wide-Band oxygen sensors that report data from every cylinder combustion event to the ThunderMax ECM for automatic air/fuel corrections. These sensors replace the factory supplied narrow-band sensors first used on 2006 Dyna® and in most cases are direct bolt-in replacements (2004-2005 Dyna® models will require the addition of 18mm sensor bungs to the exhaust header pipes). Installation of the wide band sensors into most bung-equipped headpipes presents no clearance problems; however, some pipe brands 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 exhaust 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 2007 factory location). Weld-in bungs are available in straight or angled style from many industry sources; see video installation link on page 8. After installation, route the sensor harness away from the engine and along the frame when possible, above the lowest frame point to avoid the possibility of dragging ground during operation. **Avoid routing harnesses where engine movement or sharp edges can contact and cut into the harnesses or connector plugs.**

## Installation / Setup Guide

**Please Note: This product is Legal in California only for racing vehicles which may never be used upon a highway. 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.**

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. **Remove any previously installed ancillary tuning device including oxygen sensor eliminators that may be plugged into the factory oxygen sensor harness.**

**Step 1** Insert the TMaxII CD into your computer. TMaxII will automatically open the InstallShield Wizard when the computer finds the CD-Rom. Follow the instructions and install the software on your computer.



**All Models -** A packet of dielectric grease is included with your ThunderMax. After you have installed the Pigtail communication cable harness, before installing the ECM connector, apply the provided dielectric grease to the inside lip of the ThunderMax ECM to ensure the rubber weather seal does not bind during installation and across the clear case on the 36 pin ECM connector. Spread the grease across all of the female terminal openings, making sure the grease penetrates openings. This grease will greatly improve vital conductivity between the ThunderMax and the 36 pin connector.



Also apply dielectric grease to the ThunderMax oxygen sensor harness connector terminals for improved conductivity, and to the outer housing to prevent binding upon installation to the ECM.

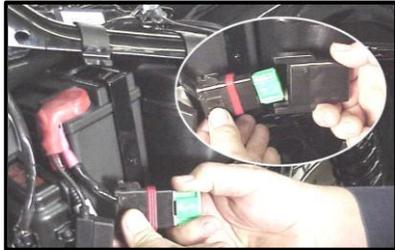


**Step 2 - Module Installation – Sportster®**  
*(Skip ahead for other models)*

**Remove any previously installed ancillary tuning device including oxygen sensor eliminators that may be plugged into the factory oxygen sensor harness.**

**XL-A** Unplug and Remove the factory oxygen sensors. Rubber caps are included to cap off the factory oxygen harness connectors.

**XL-B** Remove the left side cover to expose the battery and main fuse compartment. Remove the main fuse cover, then the main fuse (Note: if



equipped with optional security system, turn on ignition before you remove the fuse to avoid tripping the alarm).

**XL-C:** Remove the socket head screw and slide the ECM cover towards the left side of the bike to remove it (remove wires from ECM caddy cover channels).



**XL-D:** Remove the stock ECM out of the caddy, towards the primary side of the motorcycle. Lift tang on the top of the caddy to help release the unit.



**XL-E:** Fully depress connector tab and disconnect the stock ECM from the 36 pin connector.

**XL-F:** Install ThunderMax Pigtail connector # 309-424 to 36 pin harness connector per connector instructions. Run the communication cable straight up inside the caddy towards

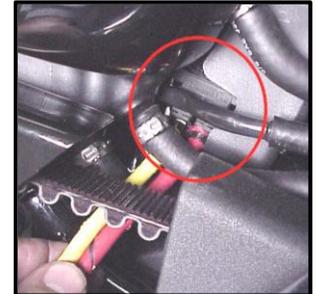


the left side of the motorcycle, between the module area and the frame back bone, coming out above the battery. Use a wire tie on the connector to the main harness

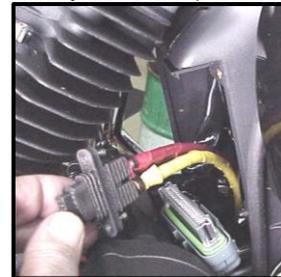
above the battery for easy access under left side cover.



**XL-G:** Route the oxygen sensor harness into the ECM caddy. Starting from under the chassis between the rear engine mount and rear frame cross member, behind the belt, tight to the engine case. Feed the ECM plug between the bottom two oil tank hoses into

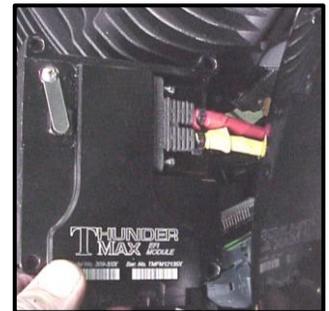


the ECM caddy opening (it's a tight fit, you may have to push the plastic caddy forward while working the plug into the opening at the caddy bottom). Pull the



harness through the caddy to the left side of the engine above the primary cover, being mindful that the rear oxygen sensor connector will limit how far the harness can pull up.

**XL-H:** Insert the greased oxygen harness connector into the ECM with the imprinted "ThunderMax" logo facing up. Using a long Phillips screwdriver inserted through the frame from right to left, tighten the (2) Phillips connector screws.



Connect the greased 36-pin ECM connector to the ThunderMax ECM. Install the ThunderMax ECM into the ECM caddy while gently pulling the oxygen sensor harnesses down from under

the bike to reduce slack. Verify that the harnesses are **clear of the drive belt.**

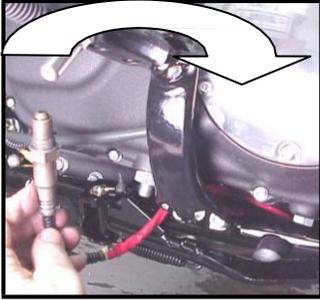
**XL-I:** Starting from under the chassis between the rear engine mount and rear frame cross member, feed the oxygen sensor for the



front cylinder towards the front of the engine between the left frame tube and the engine (a tight fit that may require some patience).



Install the rear sensor the same way, except once it's through the frame, loop the sensor and harness over the footpeg bracket towards the rear of the bike.



**XL-J:** Route the un-tied front and rear sensors to the exhaust pipes and install them into the pipes (leave all leads loose to allow them to rotate during tightening).

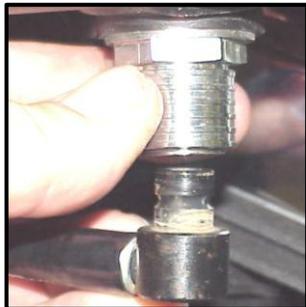
Plug oxygen sensors into Thundermax ECM sensor harness under transmission. Securely tie all harnesses to the frame and/or other harnesses with supplied wire ties. Avoid sharp turns while routing harnesses and avoid areas where engine movement, sharp edges, exhaust systems or hot engine components can contact and cut into the harnesses or connector plugs. Bundle excess harness together under transmission and secure so that they will not drop below frame rails or be contacted by engine movement.



**XL-K:** Re-install main fuse. Advance to Step 3.

**Step 2 - Module Installation – Dyna® Models**

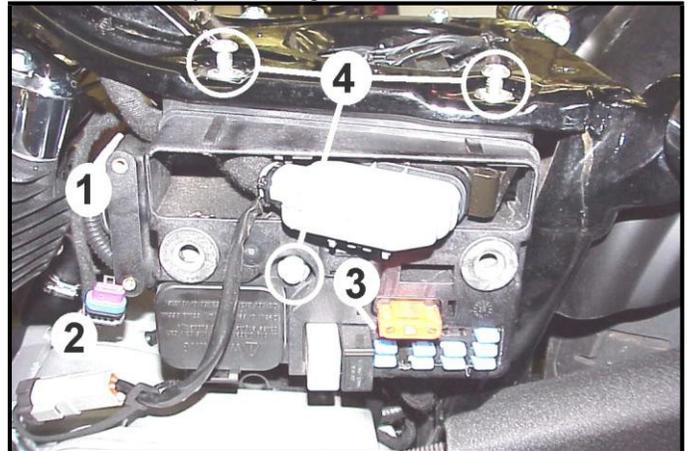
**FXD-A:** Remove seat. Disconnect fuel line from fuel tank by carefully pushing up the ribbed quick disconnect ring on the tank fitting while gently pulling the fuel line down. Loosen front fuel tank mounting bolt; remove rear mounting bolt, prop up tank rear 4-5" with a wood block.



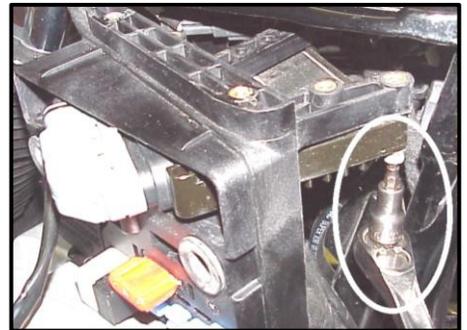
**Remove any previously installed ancillary tuning device including oxygen sensor eliminators that may be plugged into the factory oxygen sensor harness.**

**FXD-B:** Remove the factory oxygen sensors (if equipped) and install supplied Wide-Band sensors into exhaust pipes. Rubber caps are included to cap off the factory oxygen harness connectors on 2006-up models.

**FXD-C:** Remove left side cover to expose electrical caddy. (1) Unplug and remove coil assembly from caddy. (2) Slide diagnostic plug forward to remove from caddy. (3) Remove ECM fuse (top left blue fuse. (4) Remove 3 caddy mounting bolts.



**FXD-D:** Gently pull caddy from chassis far enough to access the two stock ECM mounting bolts. Once ECM is unbolted from caddy, depress tang on main 36-pin ECM connector plug and remove ECM from plug. Install the included #309-424 USB pigtail harness to 36-pin connector as per instruction sheet.



**FXD-E:** Insert the greased oxygen harness connector into the ThunderMax ECM with the imprinted "ThunderMax" logo facing up; tighten the (2) Phillips connector screws.

Feed the oxygen sensor harnesses through the ECM caddy towards the front of the bike as shown and install the T-Max ECM to the ECM caddy with original screws.



**FXD-F:** Reattach the caddy to the chassis with the two top frame bolts, taking care not to pinch any harnesses behind it in the process. Connect the greased 36-pin ECM connector to the ThunderMax ECM. Route pigtail harness for convenient access under cover as shown.



**FXD-G:** Route front ECM sensor lead along left frame backbone under gas tank; position sensor plug just forward of engine mount top link. Route front oxygen sensor lead up left frame tube to connector as shown. Check that connector position does not interfere with gas tank when in position before securing with wire ties.



**FXD-H:** For the rear cylinder, connect the oxygen sensor; coil and tie the excess harness and locate it in the pocket behind the ECM caddy in front of the frame backbone.



**FXD-I:** Securely tie all harnesses to the frame and/or other harnesses with supplied wire ties. Avoid sharp turns while routing harnesses and avoid areas where engine movement, sharp edges, exhaust systems or hot engine components can contact and cut into the harnesses or connector plugs. **Re-install the ECM fuse,** ignition coil assembly, gas tank, fuel line and seat. Advance to step 3.

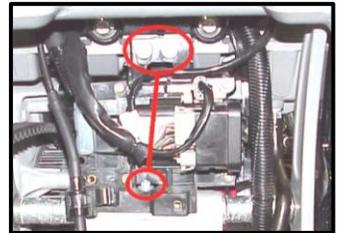
## Step 2 – Rocker® & FXSTSSE<sup>2</sup> Models

**Remove any previously installed ancillary tuning device including oxygen sensor eliminators that may be plugged into the factory oxygen sensor harness.**

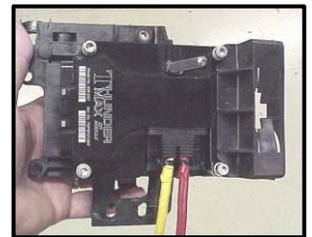
**ST-A:** Unplug and remove the factory oxygen sensors. Thread the supplied front sensor up from the bottom through the gap between the engine and kickstand mount in front of inner primary cover; install into front pipe. Install sensor in rear exhaust pipe; route sensor lead under oil tank to right rear of transmission. Leave leads loose for connection after ECM installation.



**ST-B:** Locate and remove the ECM fuse. Remove rear fender assembly and rear wheel to access ECM mounting caddy. Remove the plastic shield, then the ECM caddy mounting bolts.



**ST-C:** Remove the caddy from the chassis, then remove the factory ECM from the caddy. Mount the T-Max ECM using two mounting bolts and insert the greased oxygen harness connector into the ECM with the imprinted "ThunderMax" logo facing up; tighten the (2) Phillips connector screws.



**ST-D:** Install USB Pigtail Communication Harness to 36-pin ECM plug as per included instructions. Connect the greased 36-pin ECM connector to the ThunderMax ECM. Re-install the ECM caddy with the oxygen sensor harnesses routed over the top of the swingarm pivot bolt; connect the rear sensor and coil the excess harness for the rear sensor (shown red) and tie it up under the transmission housing, clear of the suspension and any other moving parts.



**ST-E:** Route the front sensor lead along the right frame rail, position connector as shown behind brake pedal.

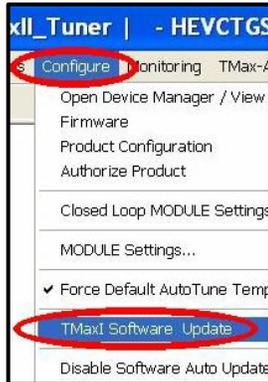


**ST-F:** Securely tie all harnesses to the frame and/or other harnesses with supplied wire ties. Avoid sharp turns while routing harnesses and avoid areas where sharp edges, exhaust system or hot engine components can contact and cut into the harnesses or connector plugs. **Replace the ECM fuse,** position the pigtail for convenient access and re-install the rear wheel & fender assembly; move to step 3.



### Step 3 – Choosing and Installing a Map

Now it's time to turn your attention back to your computer. Open your TMaxII Tuner software (there is no need to link to the module at this time). To ensure you are working with the latest version of TMaxII Tuner software and have the most up-to-date selection of base maps, it is suggested that you establish an Internet connection and click **[Configure]** on the tool bar, then **[TMax Software Update]** and follow the prompts.

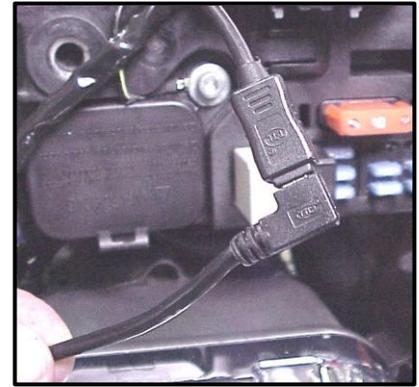


After uploading new software (if found), next click **[EFI Maps]** **[EFI Map Listings (Throttle Cable)],** double-click any map; when the Base Map Name Encoding window appears, click the **[Check Internet For Updates]** button and follow the prompts. Close window after updating.



### Loading Interface Drivers and VIN Number

Next, the TMaxII Tuner software for the ThunderMax EFI systems contains the correct Windows® drivers required for USB interface with the ECM. Connect the USB cable to the specific port on your PC that the



driver will be configured to, and the ThunderMax ECM Pigtail connector harness. Open the TMaxII Tuner software and turn the bike's ignition and handlebar switches to the on/run positions. Follow the prompt instructions for installing the driver. Next, go to the menu bar and select **[Tuning Maps]** **[Module Configuration]** **[Module Service Data]**. Under the Module Information tab, click **[Edit VIN/SRN]** and enter your motorcycle's serial number (CAPITAL LETTERS ONLY), click **[OK]** then **[Close]**. Turn off ignition when finished. Once your software, map databases and USB driver are verified as up-to-date, go to selecting and loading your base map.

### Selecting A Base Map File from the Database

The TMaxII Tuner EFI Map Database will help you chose a Base Map for your application. To open the Map Database, select from the toolbar **[EFI Maps]** **[EFI Map Listings (Throttle Cable)].**



Item...	Manufacturer	EngineType	Family	Stock HD TC
506	HarleyDavidson	1100	TwInCam A8B	Stock H
590	HarleyDavidson	1030	TwInCam A8B	Stock H
591	HarleyDavidson	1030	TwInCam A8B	101-Y5 500
592	HarleyDavidson	1030	TwInCam A8B	101-Y5 500
593	HarleyDavidson	1030	TwInCam A8B	101-Y5 500
594	HarleyDavidson	1030	TwInCam A8B	Stock H
595	HarleyDavidson	1030	TwInCam A8B	101-Y5 500
596	HarleyDavidson	1030	TwInCam A8B	Stock H
597	HarleyDavidson	1030	TwInCam A8B	101-Y5 500
598	HarleyDavidson	1030	TwInCam A8B	101-Y5 500
603	HarleyDavidson	1030	TwInCam A8B	101-Y5 500
604	HarleyDavidson	1030	TwInCam A8B	101-Y5 500
605	HarleyDavidson	1030	TwInCam A8B	101-Y5 500
607	HarleyDavidson	950	TwInCam A8B	Stock H
608	HarleyDavidson	950	TwInCam A8B	Stock H
609	HarleyDavidson	950	TwInCam A8B	Stock H
610	HarleyDavidson	950	TwInCam A8B	Stock H
611	HarleyDavidson	950	TwInCam A8B	Stock H
612	HarleyDavidson	950	TwInCam A8B	Stock H
613	HarleyDavidson	950	TwInCam A8B	Stock H
614	HarleyDavidson	950	TwInCam A8B	Stock H
615	HarleyDavidson	950	TwInCam A8B	Stock H
616	HarleyDavidson	950	TwInCam A8B	Stock HD TC
617	HarleyDavidson	950	TwInCam A8B	Stock
618	HarleyDavidson	950	TwInCam A8B	Stock HD TC

Available base maps will be shown (if the **[Show All Maps]** button at the lower left of the screen is highlighted, click it to clear any filtered maps so all maps will be shown).

You will now be able to select the closest Base Map for your engine combination. Please read the following section on Key Elements before proceeding; this will help you quickly narrow down the selection of available Base Maps and find the right one for your application.

## Base Map “Key Elements”

The reason for selecting a Base Map by “Key Elements” is to find the closest Base Map match available for your combination, identified by the most critical components. These include:

**Engine Size.** A correct match to the engine’s stroke is more important than an exact match of engine displacement. Stroke and cam timing influence engine pumping pressures. The correct shape of spark curves in the base map will be best matched by engine stroke.

**Throttle Body / Injector Size.** Choose the throttle body and injectors being used for your application (most applications will be “stock” unless performance parts have been installed).

**Camshaft.** Many popular short duration aftermarket cams (less than 240° intake duration) perform well when using a stock-cam base map. With broader timing cams (more than 240° intake duration) you may find that choosing a base map calibration developed for an aftermarket cam to be a better choice.

**Exhaust System Design.** There is no need for concern if an exact *brand* match does not appear in the Base Map library. Simply select the Base Map with the closest *style* of exhaust system (Slip-ons, 2:1, True Duals). Choosing the closest style will yield excellent results. Group your exhaust system in one of the following three categories:

**Factory Head Pipe with Crossover:** Dual exhaust systems with a cross over pipe that connects the front and rear exhaust pipes. Typically used with accessory slip-on mufflers. **Bikes with stock catalyst-equipped mufflers require maps designed for use with catalyst-equipped systems or damage to the catalyst can result.** ThunderMax maps for use with 96” and 103” internally stock engines are catalyst-safe maps.

**2 into 1:** Both head pipes converge into one collector.

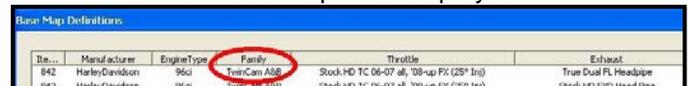
**True Dual Exhaust:** 100% separate exhaust pipes.

ThunderMax’s AutoTune system allows you to choose a Base Map that isn’t an exact match of components and still have excellent results. Even if your combination isn’t listed, select the closest Map match and let the AutoTune create your custom Base Map while you ride. The closer the match that the Base Map is to your combination, the faster the system will achieve the desired AFR Targets. This simply means less time to establish and maintain a great tune. Once you have allowed the system to establish custom AFR fuel-flow adjustments, you can use the AutoMap function to create an all-new Base Map based upon the AutoTuned learned adjustments. To use the AutoMap feature, see the tuning manual for the procedure on how to create your custom base map using AutoMap.

## Base Map File Browsing / Selection

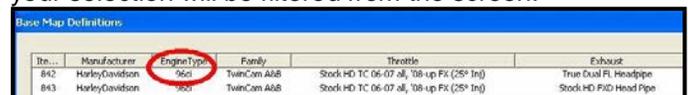
With your Base Map Definitions window open, you may begin narrowing down the list of maps for your application. To sort the map files by a particular key element, left-click on the column heading to arrange the Base Maps in ‘key element’ alpha/numeric order. All of the columns can be sorted in this manner for filtering purposes. Filter the maps to identify the base map that best matches your application by following these steps:

**First** (in order of importance) place your cursor over the ‘**Family**’ heading and left-click to change the sort order of that column. Place your mouse pointer over you bike’s family match and right-click to filter out no-match applications from the list. **Tip -** Notice that the [**Show All Maps**] button at the bottom left is now selectable. At any time if you want to return to the complete library listing, select the [**Show All Maps**] button and you will start over with all Base Map Files displayed.



Id...	Manufacturer	EngineType	Family	Throttle	Exhaust
B42	HarleyDavidson	96ci	TwinCam A&B	Stock HD TC 06-07 all, 108-up FX (25" Inj)	True Dual FL Headpipe
B43	HarleyDavidson	96ci	TwinCam A&B	Stock HD TC 06-07 all, 108-up FX (25" Inj)	Stock HD FXD Head Pipe

**Second**, right-click the engine size under ‘**Engine Type**’ that matches your engine. All maps that do not match your selection will be filtered from the screen.



Id...	Manufacturer	EngineType	Family	Throttle	Exhaust
B42	HarleyDavidson	96ci	TwinCam A&B	Stock HD TC 06-07 all, 108-up FX (25" Inj)	True Dual FL Headpipe
B43	HarleyDavidson	96ci	TwinCam A&B	Stock HD TC 06-07 all, 108-up FX (25" Inj)	Stock HD FXD Head Pipe

**Third**, place your cursor over the ‘**Throttle**’ column and right click your match (injector size is more important than throttle body size if you have to choose).



Id...	Manufacturer	EngineType	Family	Throttle	Exhaust
B42	HarleyDavidson	96ci	TwinCam A&B	Stock HD TC 06-07 all, 108-up FX (25" Inj)	True Dual FL Headpipe
B43	HarleyDavidson	96ci	TwinCam A&B	Stock HD TC 06-07 all, 108-up FX (25" Inj)	Stock HD FXD Head Pipe

**Fourth**, right-click the ‘**Cam**’ that closest matches your application.



Muffler	AirCleaner	Cam	Cylinderhead	Piston
Slip-on Mufflers	H-Flow/2.75" Deep	Stock	HD TC 2006-up Stock	Stock Piston
Stock HD Mufflers	Stock	Stock	HD TC 2006-up Stock	Stock Piston

**Fifth**, right click the ‘**Exhaust**’ that closest matches your application.

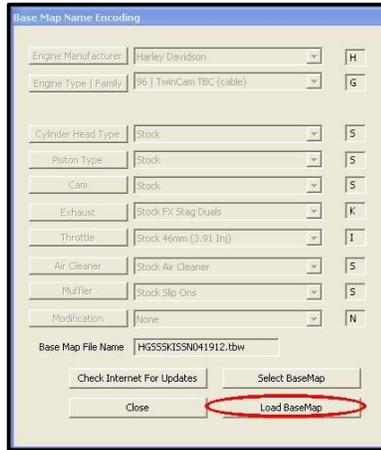


Id...	Manufacturer	EngineType	Family	Throttle	Exhaust
B42	HarleyDavidson	96ci	TwinCam A&B	Stock HD TC 06-07 all, 108-up FX (25" Inj)	True Dual FL Headpipe
B43	HarleyDavidson	96ci	TwinCam A&B	Stock HD TC 06-07 all, 108-up FX (25" Inj)	Stock HD FXD Head Pipe

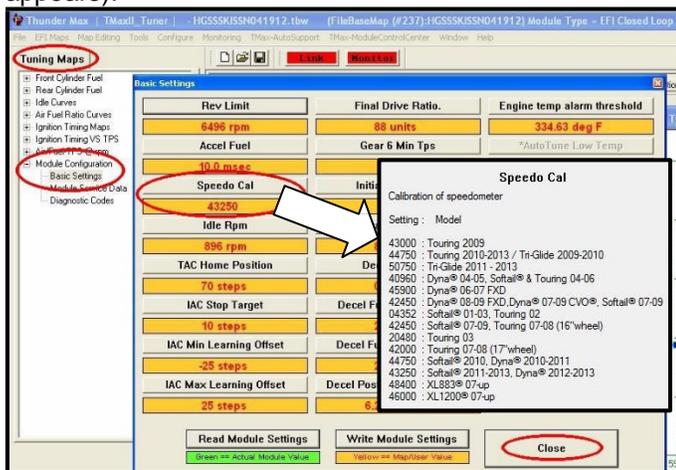
Keep right-clicking the application columns until you have located the best map match (in the case of identical maps, choose the latest date). Highlight the map you’ve chosen (left-click; blue bar indicates selected map) and click the [**Close**] button.

**Step 4** This brings you to the ‘Base Map Name Encoding’ page, from which you can review the map parameters. Once verified, click the [**Load BaseMap**] button to load the map into the software.

Note - If you're still unsure of which Base Map to select, please email the specifications of your Key Elements to [Support@Thunder-Max.com](mailto:Support@Thunder-Max.com). Please title the email "Base Map Selection" for a faster response.



**Step 5** Next, go to the [Tuning Maps] Tree and click the [+] sign next to [Module Configuration] to reveal the [Basic Settings] command. Open the Basic Settings window and click the [Speedo Cal] button (list window appears).



Verify that the Speedometer Calibration is set for your year and model motorcycle based on the chart. If it is, click [Cancel]; if it is not, enter the correct value and click [OK], then [Close] the Basic Settings window.

**Step 6** Now that the Base Map is loaded into the TMaxII Tuner software; you must 'Write' (transfer) the Base Map to your ThunderMax ECM. With the communication cable connected, linking to the module is now automatically performed with the TMaxII Tuner software when the handle bar and key switch are in the on/run positions. The red [Link] button turns green to indicate a successful link.

Once linked, from the toolbar, click [File] [Write Module Maps and Settings], answer [OK] to the message that informs you that you are about to overwrite the current map in the module; the transfer bar appears during the map load. Once the Base Map has been written to the module, clear any active Diagnostic Code readings and Learned Fuel Adjustments that may have been created during the live module testing session that each ThunderMax module must pass. While linked, from the

Tuning Tree select [Module Configuration] [Diagnostic Codes]. When the Diagnostic Codes window appears, select [Clear Diagnostic Codes]. After completing this step, proceed to Map Editing menu on the tool bar and select [Clear "Learned Fuel Adjustments (CLP OFFSET)"]. These steps ensure you will be starting with a "clean slate" Base Map.

## IMPORTANT STEP BEFORE STARTING

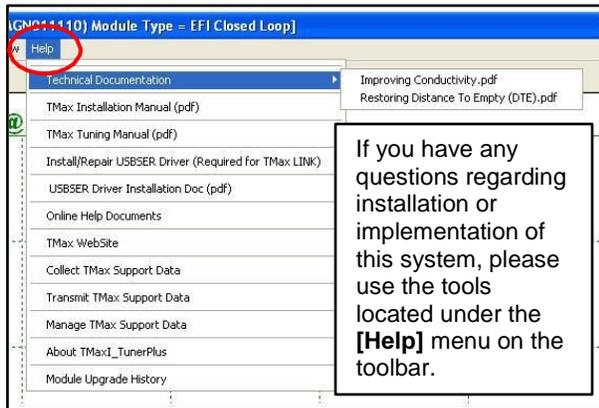
### Step 7 - Initialization Procedure

This procedure allows the ThunderMax to "learn" the "home" position for the Idle Air Control (IAC) motor. This is the only setting within the system that is not retained during 12 volt power interruption. It is required only for new module installation, or when interruption of 12v power takes place. Example: battery change, removal of maxi fuse, etc. Turn the ignition switch on and the handlebar rocker switch to run (without starting the engine) for 30 seconds, uninterrupted. Cycle the ignition switch off for 30 seconds (time it) and then back on for 30 seconds. Repeat the 30 on / 30 off cycles three times; after the 3<sup>rd</sup> off cycle, start the engine. Let the motorcycle idle on its own for 15 seconds. Cycle the ignition off, then restart the motorcycle; normal idle speed should be attained depending on engine temperature. Warm-up cycle will have slightly elevated idle speed (approximately 1200 rpm) until engine reaches operating temperature. To disconnect from the PC, click the Unlink button (turns to red), remove the USB cable. Use provided rubber dust cap to protect the open end of the mini USB Pigtail while not in use.

If during this process you encounter wandering or unstable idle, the map selected may not be the best match for your application, or a mechanical problem may be present on your motorcycle. Please contact Product Support (from your toolbar, select [TMax AutoSupport] [Collect TMax Support Data] and follow the prompts (Internet connection required). This process copies your map and adjustments and automatically transmits the data to Product Support for evaluation.

**Congratulations!** You have successfully installed and set up your ThunderMax ECM. Now it's time to ride the bike and let ThunderMax optimize your EFI system! Several riding sessions that allow the engine to reach normal operating temperature should be completed with as much variation in terrain and RPM as possible. During this process, the IAC virtual stops are further refined and your air/fuel ratio is automatically adjusted to the map's targets. Your ThunderMax customizes your map based on your engine, ambient conditions and your riding habits. Once several sessions have been logged, link to your ThunderMax and select [TMax Module Control Center] for an automatic analysis of the adjustments that have been made, and follow prompts for further action if more optimization is suggested.

## Need Help?



We have included many easy-to-use features for supporting and enriching your ThunderMax experience. A full tuning manual, links to online support documents and sites as well as the ability for you to easily attach a map or recorded engine monitoring log to an email directly to our support department are found here.

**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.*

## TIPS AND GENERAL INFORMATION

- **Enter your VIN (motorcycle serial number)** into your module as described in Step 3 to allow your ThunderMax to be compatible with H-D®'s Digital Tech as well as certain H-D® add-ons such as accessory speedometers.
- **System Updates are available** through TMaxII with an internet connection. Software, Firmware and Map updates can be downloaded; dealers, tuners and end users should check frequently for updates.
- **TMax-ModuleControlCenter** provides a snapshot of AutoTuned fuel flow adjustments, RPM time logs in increments of 100 RPM's, engine temperature logs and diagnostic codes. Valuable information about the condition of your tune and how you ride. **AutoMap**, located within the **[TMax-ModuleControlCenter]**, creates a custom base map based on AutoTuned fuel flow adjustments. Create a custom base map with just a few clicks!
- **International (non-US) model notes –** ThunderMax does not support active intake/exhaust functions.
- **When the TMaxII program is opened,** it will automatically retrieve and open the last map that was open.
- **AFR Correction vs. Engine Temperature** page is used to adjust warm-up AFR's. If the engine requires more fuel during warm-up (start to 200°), use this function to adjust. See TMaxII Tuning Manual for procedures.
- **Air/Fuel-TPS @ RPM** These pages reflect desired targets of AFR to throttle position at every 256 RPM. Example: if you desire a leaner mixture for added fuel economy then you can easily enhance multi-tiered AFR targets at specific throttle positions and RPM's that will be learned during closed loop processing. When these pages are open, you can view the target AFR by clicking on a dot and tapping the space bar to view the target at a specific throttle position for that RPM. Use arrow keys to raise/lower targets.
- **Interrupting 12v power** to the module (battery service/replacement) requires system to be re-initialized (**Step 7**). Check battery terminal tightness as part of routine service (like during oil changes); avoid stacking accessory power leads onto main battery cables. If equipped with dual battery post ports, connect accessories separately.
- **When a new map is installed** any existing learned fuel adjustments need to be cleared **[Map Editing] [Clear Learned Fuel Adjustments]**. Linking or editing an existing map within the module does not require above steps.
- **Fuel Pressure Should Be Checked** during periodic service; this is also the first thing to check should you experience sudden or gradual decreasing performance. For any EFI system to operate properly, your fuel system should build and maintain 55-62 PSI of fuel pressure; your dealer can perform this simple test quickly.
- **Save your edited maps** to your hard drive using the **[Save As]** command. Document the changes in **[Map Notes]** located under **[EFI Maps]** on the toolbar. These notes are stored with the saved map; remember to edit them when making changes for future reference.
- **Oxygen Sensor Care:** Items that can damage or shorten the life of your sensors:
  - Leaded fuel – Race fuel or fuel additives (i.e octane boost)
  - Oil deposits from oil consumption problems Excessive moisture exposure
  - Excessive (extreme) heatThere is no warranty on sensors. Replacement P/N is 309-355.



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