



Thank you and congratulations on the purchase of your new Stratified Auxiliary Fuel System. Follow this document to ensure safe and proper installation and operation of your new device.

WARNINGS AND WARRANTY – PLEASE READ CAREFULLY

ALL parts are sold for OFF ROAD RACE-ONLY ground vehicle use only. Aftermarket systems interacting with engine function are not for use on pollution controlled vehicles. Alteration of emission related components constitutes tampering under most local emission regulation guidelines and can lead to fines and penalties.

Limited Warranty

This Stratified product is warranted against defects in materials and workmanship for ninety (90) days from date of purchase. During the warranty period, Stratified will repair, or at its option replace at no charge, components that prove to be defective. The product must be returned, shipping prepaid, to a Stratified facility. This limited warranty does not apply if the product is damaged by accident or misuse. The foregoing warranty is in lieu of all other warranties expressed or implied including but not limited to any implied warranty of merchantability, fitness, or adequacy for any particular purpose or use. Stratified Automotive Controls Ltd. is not responsible for any fines, injuries, or damages incurred as a result of the installation or use or misuse of our products. It is the complete responsibility of the purchaser of such products to ensure that they are used in a legal, safe, and appropriate manner.

DISCONNECT THE NEGATIVE BATTERY TERMINAL BEFORE PERFORMING ANY ELECTRICAL WORK ON YOUR VEHICLE. IF YOU DO NOT FEEL COMFORTABLE MAKING THESE MODIFICATIONS, HAVE THEM PERFORMED BY A PROFESSIONAL.



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1. Features and Benefits



Protects your Engine from Fuel Starvation:

To make more power you need two main components. Air and Fuel. With more boost and bigger turbochargers or superchargers, your OEM direct injection components can't supply the fuel needed for safe high power operation. This auxiliary port injection system is a proven method for keeping your motor safely fueled under the most demanding conditions.



Provides The Fuel you Need for More Boost and Power:

Direct injection cars use expensive and complex components. When upgrading your vehicle to produce more power than stock, more fuel is needed. Direct injection injectors and fuel pumps are often not upgradeable. This fuel system augments your fueling under high power levels with proven components allowing you to achieve your power goals.



Cleaner Valves, Efficient Motor:

The direct injection (DI) system is very efficient and has cooling benefits. Keeping it in the car and working as intended is ideal. This is why a port injection system works so well. You keep the efficient DI fueling and augment it with port injection only under high power. This also has the benefit of keeping your intake valves cleaner.



Easy Installation:

We have worked very hard to make our systems as plug and play as possible. The kit you purchased is built and tested for your vehicle. This means everything fits right and works as it should from the get-go making it a painless and effective installation process.



Tested, Proven, Safe Solution:

We don't build and sell anything that we don't thoroughly test. The fuel system is a proven, safe solution for increasing fueling on your vehicle and we stand behind its performance, capabilities, and reliability.



E85 Safe, Simple Adjustments:

All kit components are E85 safe. The controller that calculates the fuel delivery as well as all components are purpose built and safe. We make adjusting the fueling as simple as possible to make sure you get to your results quickly whether we tune the system or someone else does.

2. Introduction and Precautions

IMPORTANT: When installing and working with the Auxiliary Fuel System you are working with flammable fluids. Take all safety precautions necessary during installation and operation of the fuel kit to prevent any fires or injuries. This means ensuring you are installing the system in a well-ventilated area away from any spark or flame source. After the installation and periodically thereafter check that the system continues to be leak free.

The Aux Fuel System Electronic Controller should be mounted within the vehicle's engine bay, but it is **NOT water proof**. The controller should not be mounted directly on the engine. Do not spray or pressure wash the controller with water or any other liquids. Mount the controller in an area that is not in contact with the engine - preferably close to other vehicle electronics such as the fuse box.

The direct injection (DI) system in your vehicle is designed to supply enough fuel to run the OEM vehicle with OEM components. Most manufacturers build some headroom into their fueling systems but at some point, your quest for power requires more fuel. On a direct injected car this means that you need to upgrade at least the fuel injectors or high pressure fuel pump or often both. These upgrades are expensive and often not available.

The Stratified Auxiliary Fuel System is designed to work in conjunction with your DI fuel system and offer additional fuel when needed under high boost or high power demands. This means that your car remains efficient and driveable while having the fueling capacity to reach higher power goals.

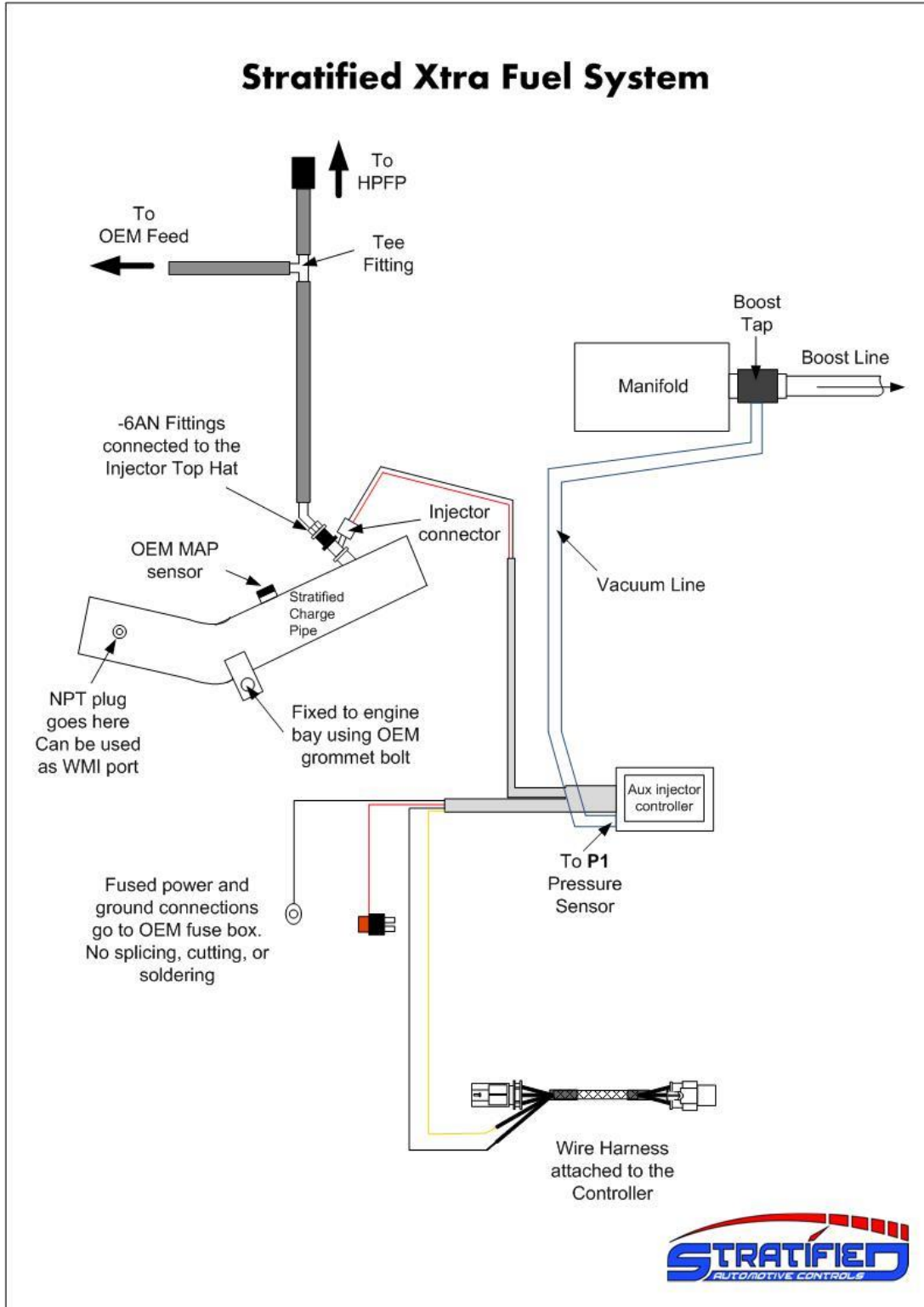
3. Parts Included

Verify that all these components are included with your fuel system kit:

<u>Item</u>	<u>Specifics</u>
1x – Charge Pipe w/ Injector (pre assembled)	<ul style="list-style-type: none"> • 1x – Charge Pipe w/ Injector Boss • 1x – Injector • 1x – Injector Top Hat • 2x – Injector Spacer Rods • 2x – Injector Screws (M4-0.7 x 40) • 1x – -6AN Adapter Fitting w/ O-ring • 1x - NPT Brass Plug • 2x – Bolts (M5-0.8 x 16)
1x – Fuel Line w/ Clamps & Fittings	<ul style="list-style-type: none"> • 1x – Flexible Hose • 1x – -6AN 45 deg. Fitting • 1x – 4in. Flexible Hose • 1x – 3-Way Tee Barb Fitting • 2x – Metal clamps
Fuel System Controller Box	<ul style="list-style-type: none"> • 1x – Controller • 1x – Wire Harness • 1x – USB Tuning Cable • 1x – Add-a-fuse • 1x – 10A Fuse • 1x – Ring terminal – negative wire (18-22AWG, ¼” stud) • 1x – Injector Connector
Hardware Bag	<ul style="list-style-type: none"> • 1x – Boost Tap w/ Fittings, Key & O-Ring • 1x – 3ft. Vacuum Line (5/32” ID) • 2x – Plastic clamps • 10x – Zip Ties – Small • 2x – Zip Ties - Large • 2x – 3M Dual Lock Strips • 2x – Metal clamps





4. Installation Diagram





5. Hardware Installation Instructions

IMPORTANT: When installing and working with the Auxiliary Fuel System you are working with flammable fluids. Take all safety precautions necessary during installation and operation of the fuel kit to prevent any fires or injuries. This means ensuring you are installing the system in a well-ventilated area away from any spark or flame source. After the installation and periodically thereafter check that the system continues to be leak free.

 **WARNING:** Before working on or disconnecting any of the fuel tubes or fuel system components, relieve the fuel system pressure to prevent accidental spraying of fuel. Fuel in the fuel system remains under high pressure, even when the engine is not running. Failure to follow this instruction may result in serious personal injury.

 **WARNING:** Do not smoke, carry lighted tobacco or have an open flame of any type when working on or near any fuel-related component. Highly flammable mixtures are always present and may be ignited. Failure to follow these instructions may result in serious personal injury.

 **WARNING:** Clean all fuel residue from the engine compartment. If not removed, fuel residue may ignite when the engine is returned to operation. Failure to follow this instruction may result in serious personal injury.

 **WARNING:** Do not carry personal electronic devices such as cell phones, pagers or audio equipment of any type when working on or near any fuel-related component. Highly flammable mixtures are always present and may be ignited. Failure to follow these instructions may result in serious personal injury.

 **WARNING:** Always disconnect the battery ground cable at the battery when working on an evaporative emission (EVAP) system or fuel-related component. Highly flammable mixtures are always present and may be ignited. Failure to follow these instructions may result in serious personal injury.

 **WARNING:** When handling fuel, always observe fuel handling precautions and be prepared in the event of fuel spillage. Spilled fuel may be ignited by hot vehicle components or other ignition sources. Failure to follow these instructions may result in serious personal injury.

 **WARNING:** Avoid contact with fuel during a visual inspection for fuel leaks with the engine running. Do not work on the fuel system until the pressure has been released and the engine has cooled. Fuel in the high-pressure fuel system is hot and under very high pressure. High-pressure fuel may cause cuts and contact with hot fuel may cause burns. Failure to follow these instructions may result in serious personal injury

1. You must first relieve the fuel pressure in the OEM fuel system. This is done by pulling fuse shown below from the panel the side of the dash.
2. Remove the panel.



3. Remove the 15A fuse.



4. Now start the car and wait for the engine to stall. Once it has stalled, crank for another 10 seconds to ensure fuel pressure is relieved.
5. Turn the key to the OFF position and keep the fuse out of the panel until the fuel kit installation is complete. This might trigger some engine codes. Clear these after the installation.
6. Remove the negative battery cable.

7. The Stratified charge pipe should be installed next.
Jack up the vehicle and secure it.
8. Remove the underbody panel



9. Disconnect your OEM cold side air charge pipe by first unplugging the MAP sensor wire harness from the sensor connector.



10. Loosen the OEM clamps on either side of the charge pipe.



11. Unscrew the OEM grommet bolt and take off the bolt and washer and remove the OEM charge pipe.



12. Remove the MAP sensor from the OEM charge pipe.

- Put the OEM MAP sensor onto the Stratified charge pipe and thread in the two M5x16 bolts provided in the kit.



- Insert the Stratified charge pipe where the OEM charge pipe was (see below) and tighten it in place using the OEM or aftermarket clamps.

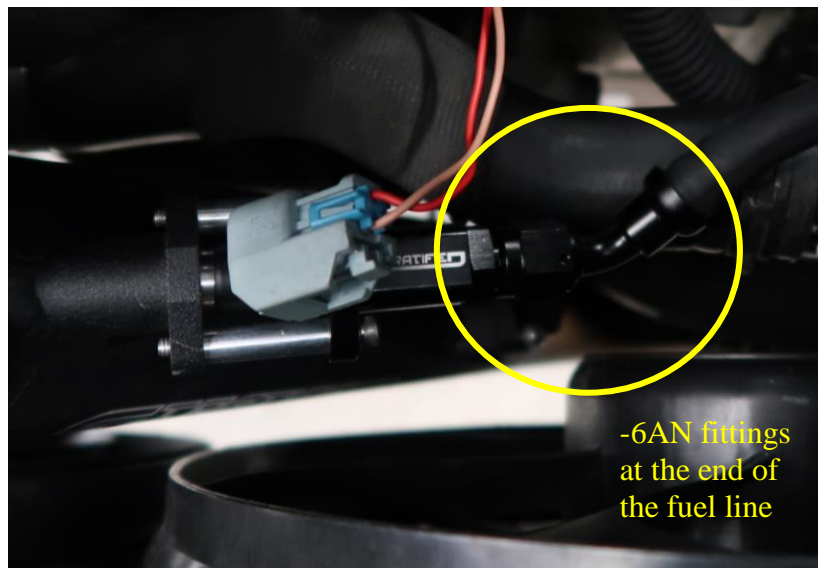
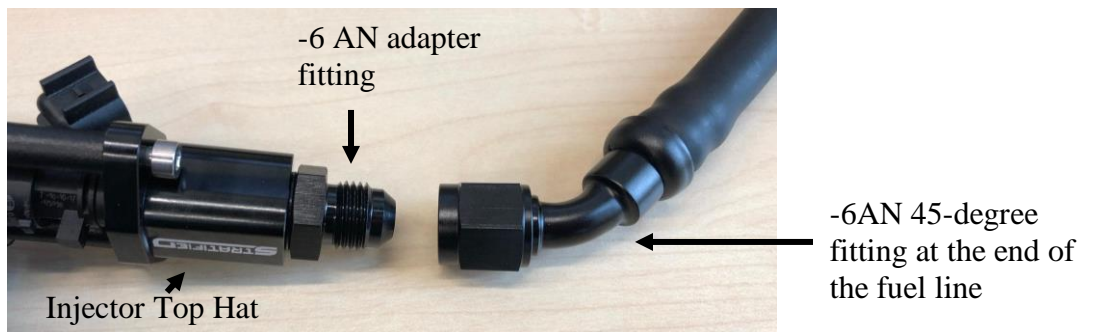
Note that the NPT plug can be removed for Water Methanol Injection (WMI).



- Thread in the OEM grommet bolt.



16. Install the Stratified flexible fuel line by threading the -6AN 45-degree hose end fitting onto the -6AN adapter fitting that is connected to the injector top hat.

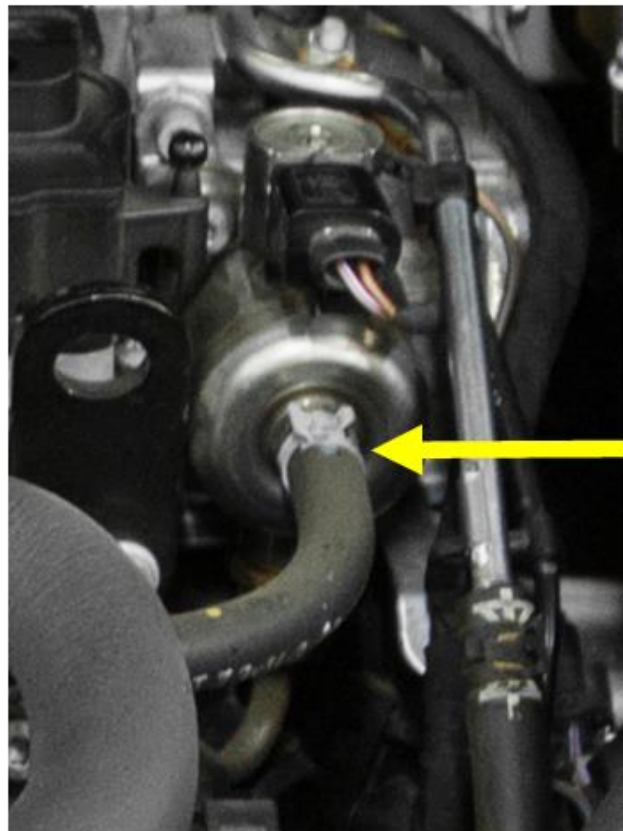


17. The other end of the fuel line is then attached the OEM feed line which goes into the High-Pressure Fuel Pump (HPFP).

18. Disconnect the OEM feed line from the HPFP.

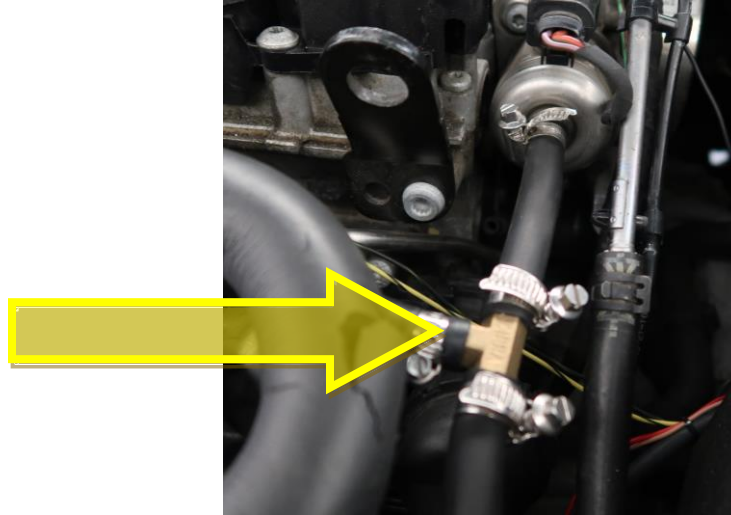


High
Pressure
Fuel Pump

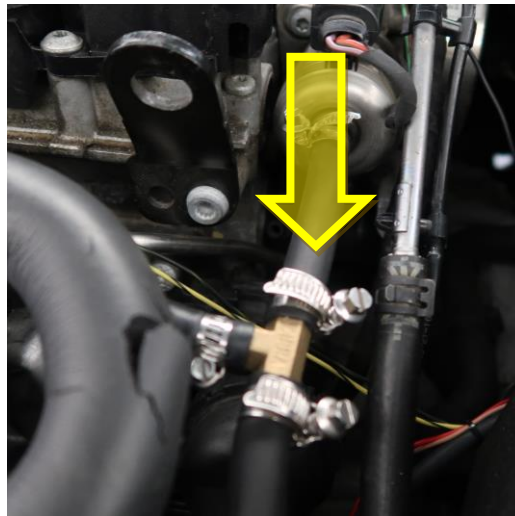


Unclip
Here

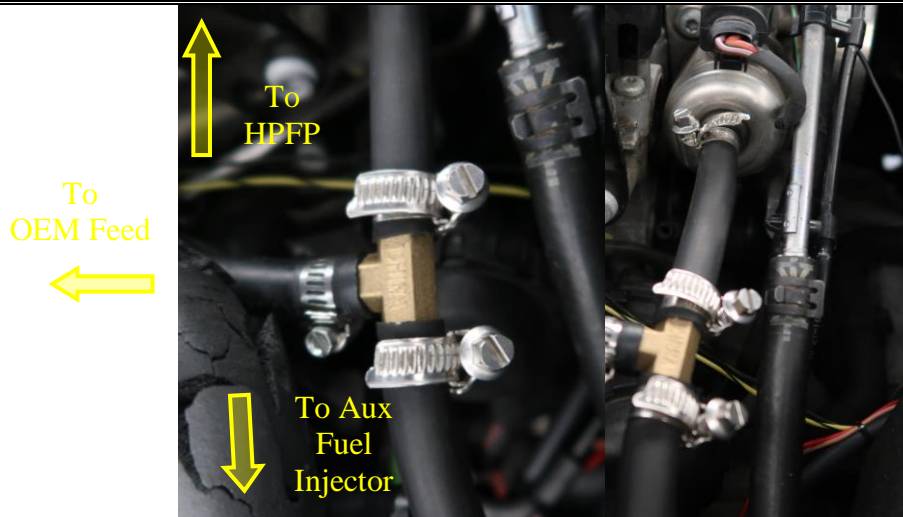
19. Cut the fuel feed line that was going into the HPFP 3.5 inches from the open end.
20. Insert OEM fuel feed line into bottom of the brass Tee as shown below and clamp on using provided clamp.



21. Take the smaller piece of flexible hose provided in the kit and insert the remaining end of the Tee fitting into it. Use a clamp to tighten it.



22. Then connect this small piece of hose to the HPFP side.



23. Take the Aux Fuel controller provided in the kit and place it securely on top of the fuse box or a similar location using 3M dual lock strips.

*Note that controller is **NOT waterproof**. Do not spray or pressure wash the controller with water or any other liquids.*

24. Insert the vacuum line (5/32" ID) onto the P1 fitting attached to the Pressure Sensor 1 on the controller and tighten it using a black, plastic clamp provided.



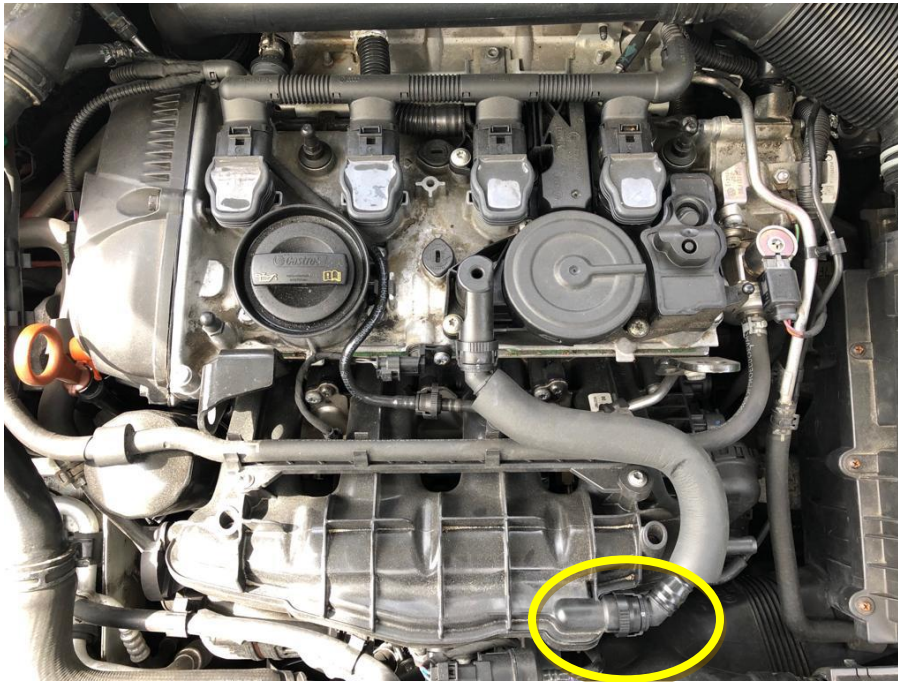
25. The boost line will be tapped into using the COBB boost tap next.



Take the boost tap provided in the kit and screw the barbed fitting into one tapped hole and the plug into the other tapped hole.



26. Unplug the PCV line from the manifold.



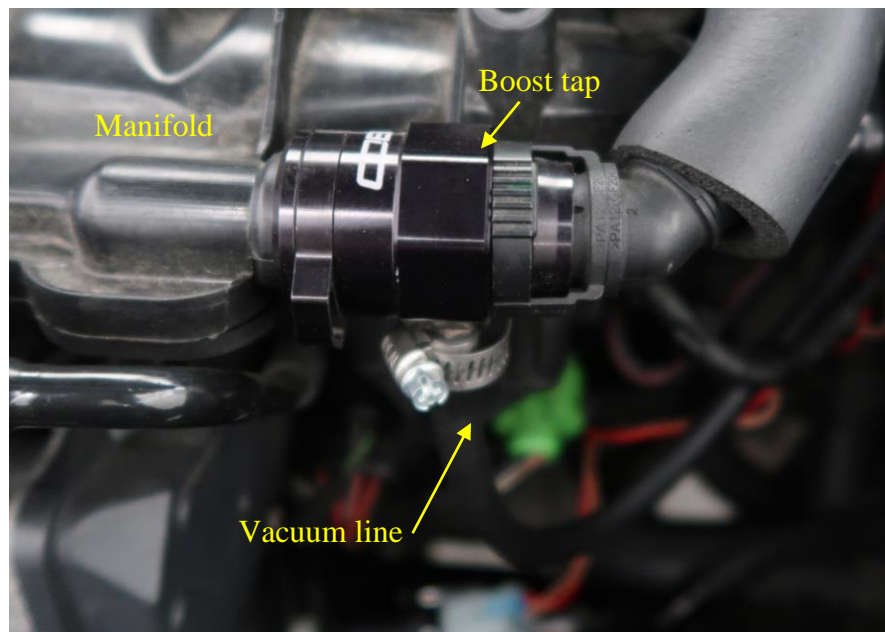
27. Place the female end of the boost tap onto the manifold. Take the retaining clip provided and clip the boost tap to the intake manifold.



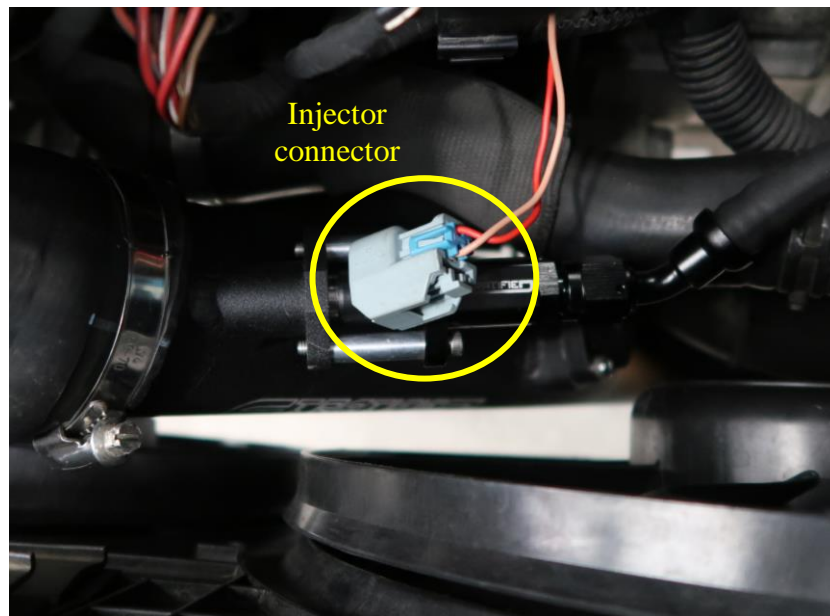
28. Clip the hose onto the boost tap.

Note that the clip will click into place once it slides over the grooves on the boost tap.

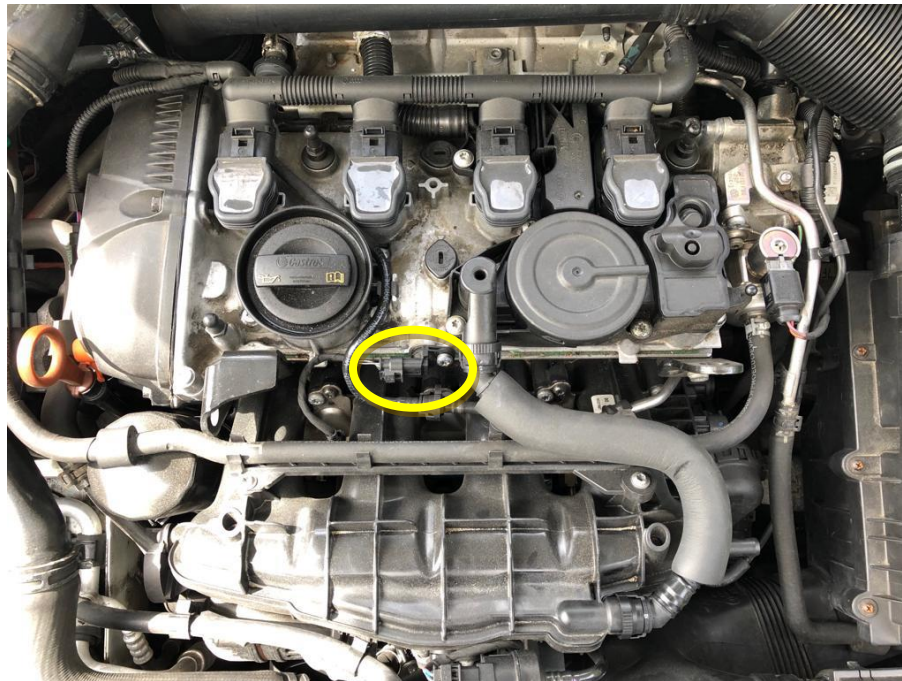
29. Run the vacuum line from the controller to the boost tap and insert the line onto the boost tap barbed fitting. Then tighten it using a clamp.



30. Plug in the injector connector from the controller onto the injector located on the Stratified charge pipe.

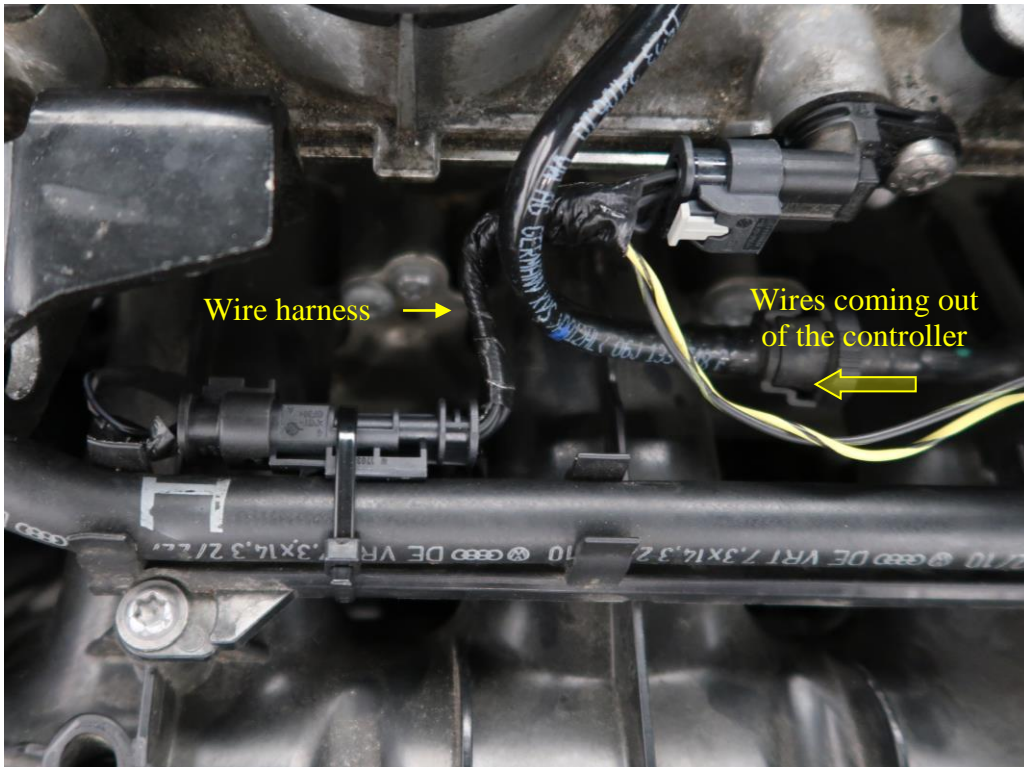


31. Unclip the OEM cam position connector located on top of the engine as shown below.



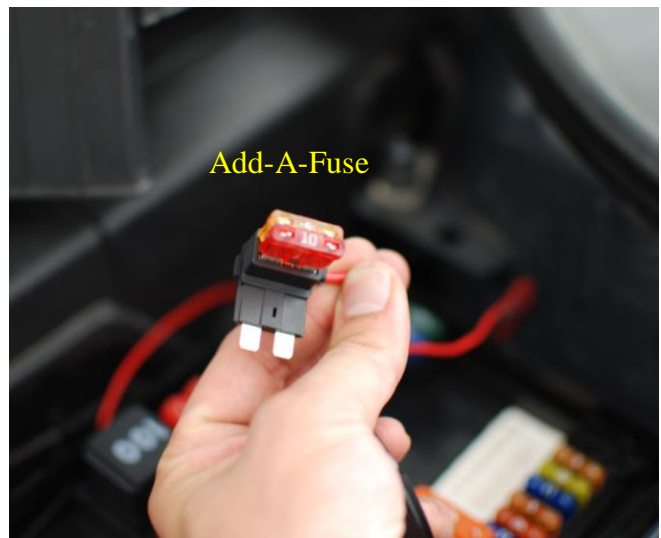


32. Plug in the male and female terminals at the end of the wire harness to the respective connectors. Secure the connector to the OEM fuel line using a zip tie.

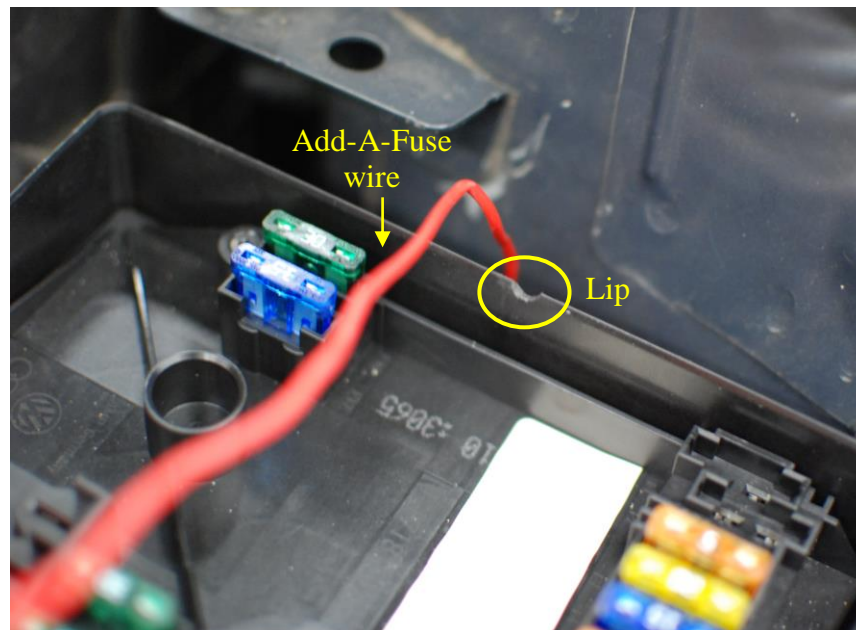


33. Open the fuse box and install the Add-A-Fuse supplied to one of the switched fuse locations in the fuse box by the battery.

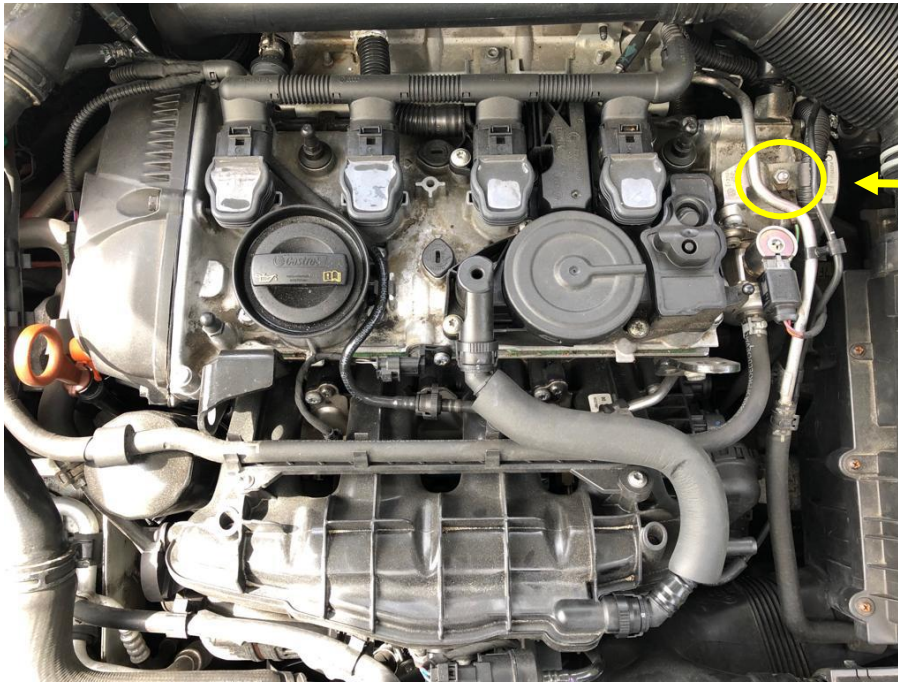
34. Take out the 10A fuse in that fuse box location and put it on the add-a-fuse then plug add-a-fuse into same location



35. File edge of fuse box to create a small notch and close the fuse box



36. Attach the ground connection from the controller to the bolt next to the HPFP (see below).



Attach
ground
here



37. Now set up the controller by following the software installation instructions in the next chapter.

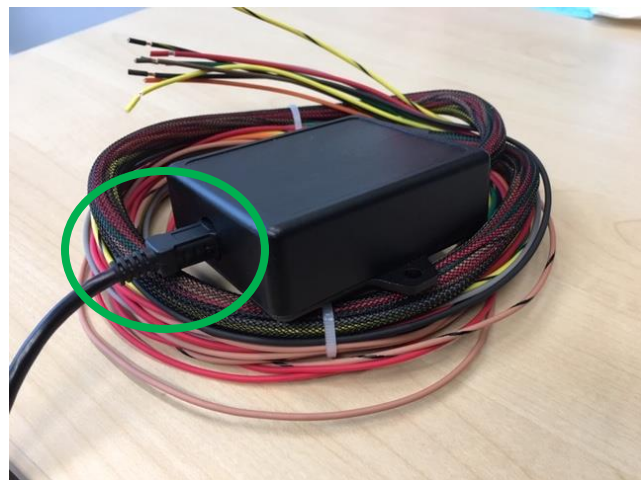
6. Software Installation Instructions

Your Aux Fuel Controller comes preloaded with a base map file. The following instructions are for when you want to upload a new tune file to the controller. This may be necessary during the tuning process.

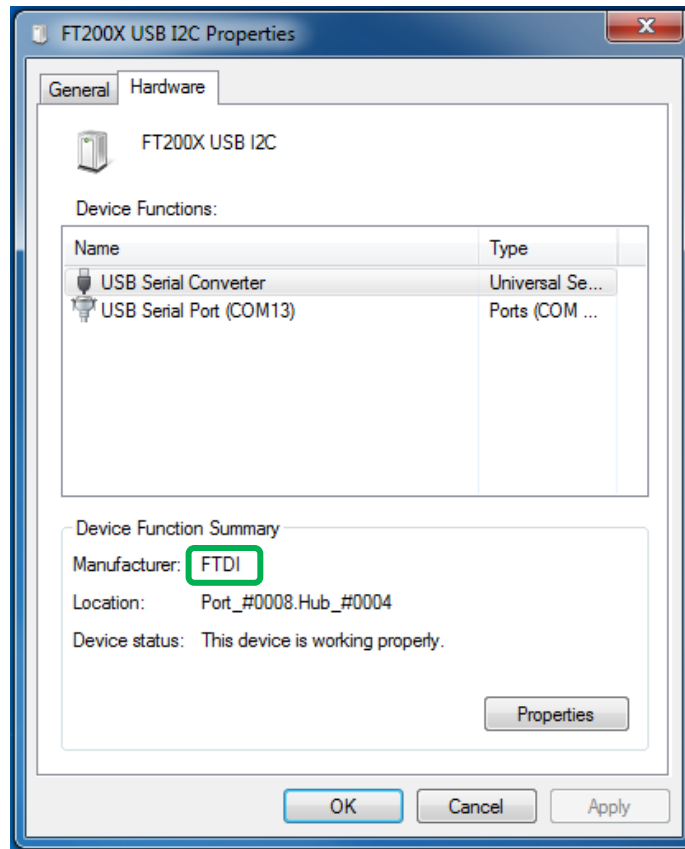
1. Download our software and tune package from our product page Aux Fuel Controller.
2. Once downloaded and installed the TunerPro RT software icon will be as shown below.



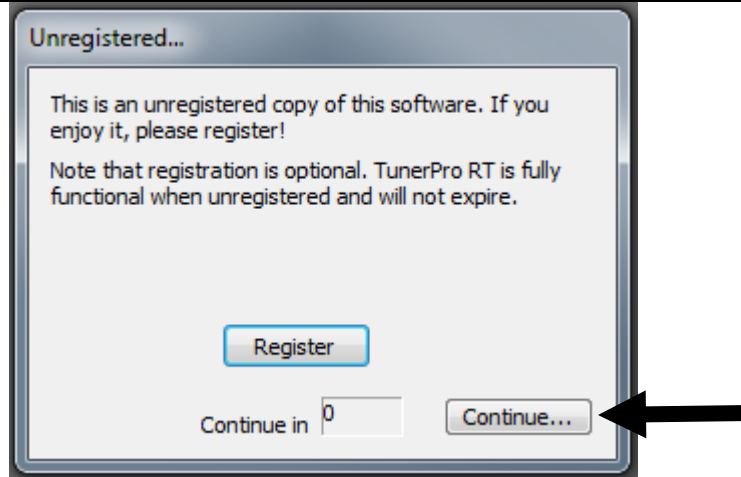
3. Take off the hole plug covering the mini-USB connector on the side of the AIC2-P21 unit and plug in the USB 2.0 A to mini-B 5-pin cable to connect the unit to your computer. A red LED will flash beside the inserted cable.



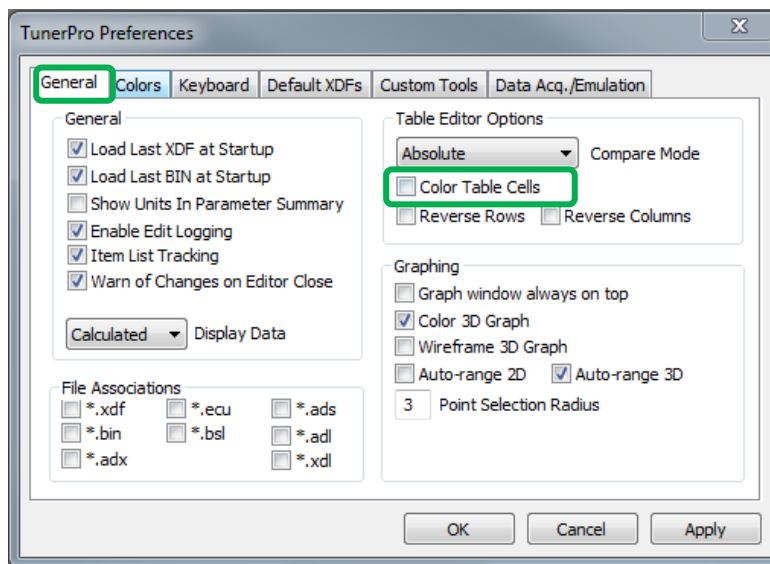
4. Note that the first time you plug in your controller unit to your computer, Windows should automatically recognize the unit and install the necessary driver.
5. To verify that the unit was properly installed, go to Control Panel → Devices and Printers (under Hardware and Sound) and a new USB device should appear. Double-click on that USB device and FTDI should show as the Manufacturer under Hardware Properties.



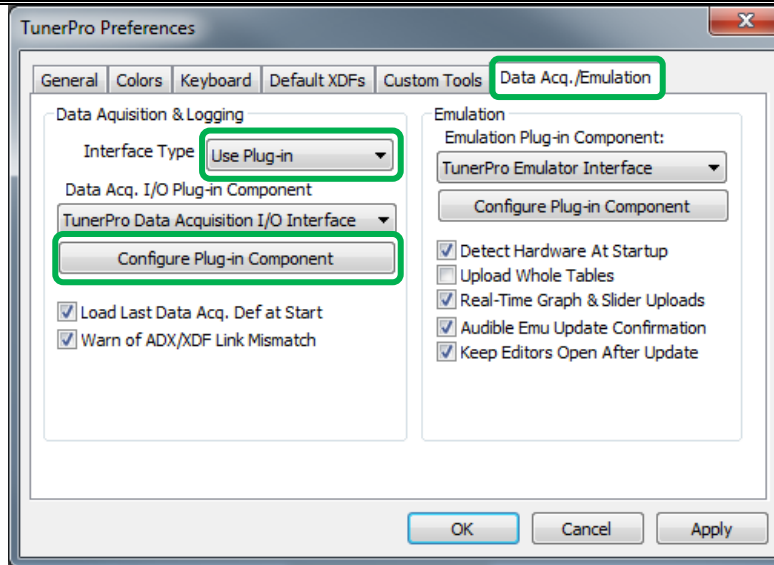
6. However if the driver is not installed and you see a yellow warning symbol under Other Devices (USB), download the required driver from FTDI at <http://www.ftdichip.com/Drivers/VCP.htm>. FTDI application note AN234 at <http://www.ftdichip.com/Support/Documents/AppNotes.htm> is a complete guide to driver installation.
7. Open the TunerPro RT software on your computer. Note that you will be prompted to register for the real-time version; you can press “Continue” to proceed without registering.



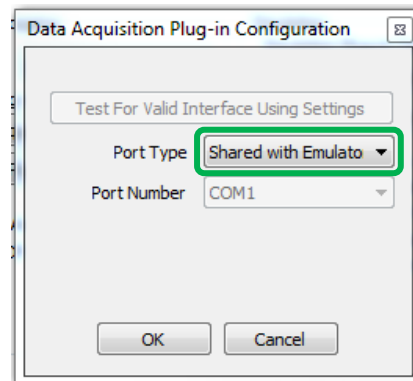
8. If you are using TunerPro for the first time, set the following preferences for proper communication with the calibrator.
9. Go to Tools and click on “Preferences...” and a new window will pop up.
10. Under General preferences, turn off the color table cells option.



11. Under Data Acq./Emulation, set the interface type to “Use Plug-in” (from the drop-down menu) and click on “Configure Plug-in Component”.







12. Once the “Data Acquisition Plug-in Configuration” window opens, make sure that the Port Type is set to “Shared with Emulator”.







Using TunerPro will require the following 3 files: the .BIN file which is a snapshot of the configuration of the calibrator, the .XDF file which represents a roadmap to all the configuration parameters in the bin, and the .ADX file which provides data acquisition dashboard and real-time trace definitions.





13. Open the bin file by going to File, click on “Open Bin...” **.bin** file or the bin file provided by your tuner.

	Stratified MK6 Aux Base 1.00.bin	2018-08-15 11:08 ...	BIN File	16 KB
	Stratified_ADX-v4.4.0.adx	2017-05-21 9:49 PM	ADX File	42 KB
	Stratified_XDF-v4.4.0.xdf	2017-05-21 10:36 ...	XDF File	198 KB
	SetupTunerProRT_v500_9209.exe	2019-09-03 4:15 PM	Application	17,805 KB

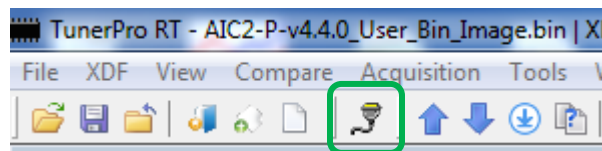
14. Load the XDF file by going to XDF, click on “Select XDF” and open the **.xdf** file.

	Stratified MK6 Aux Base 1.00.bin	2018-08-15 11:08 ...	BIN File	16 KB
	Stratified_ADX-v4.4.0.adx	2017-05-21 9:49 PM	ADX File	42 KB
	Stratified_XDF-v4.4.0.xdf	2017-05-21 10:36 ...	XDF File	198 KB
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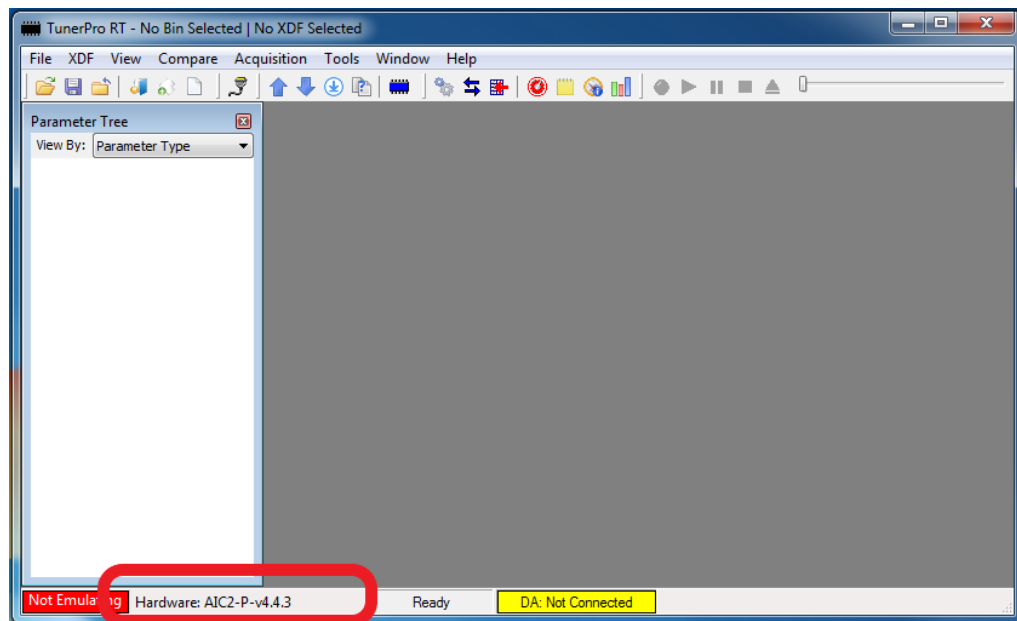
15. Load the ADF file by going to Acquisition, click on “Definition File...” and open the **.adx** file.

	Stratified MK6 Aux Base 1.00.bin	2018-08-15 11:08 ...	BIN File	16 KB
	Stratified_ADX-v4.4.0.adx	2017-05-21 9:49 PM	ADX File	42 KB
	Stratified_XDF-v4.4.0.xdf	2017-05-21 10:36 ...	XDF File	198 KB
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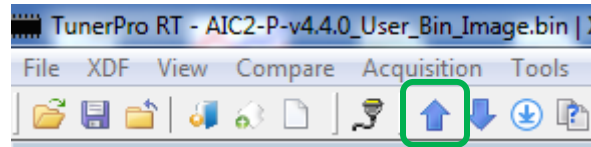
16. Then, click on the USB icon to “Initialize Emulation Hardware”.



17. If your fuel controller is connected, its model and version should appear next to Hardware at the bottom left corner of the TunerPro RT window.



18. Click on the blue arrow pointing up to “Upload Current Bin To Emulator”. **Once the bin has uploaded (there is a blue progress bar at the bottom of the window), the new tune file (.bin) is flashed to your controller.**



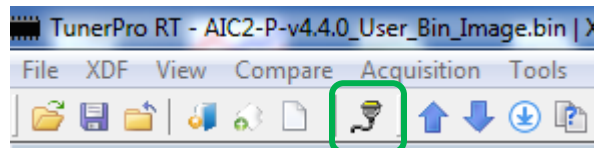
To verify that your Aux Fuel Controller is connected to the car and reading engine speed and boost pressure:

19. Unplug the USB cord.

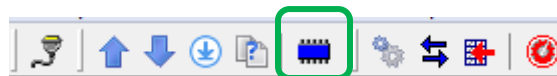
20. Ensure the controller is powered by the car and the car ignition is in the ON position. The light inside the controller should be flashing red.

21. Plug the USB cord once again into the controller. **This sequence of events is critical or the computer may not connect to the controller.**

22. Initialize Emulation Hardware once again.



23. Click on the chip icon to Enable Emulation.



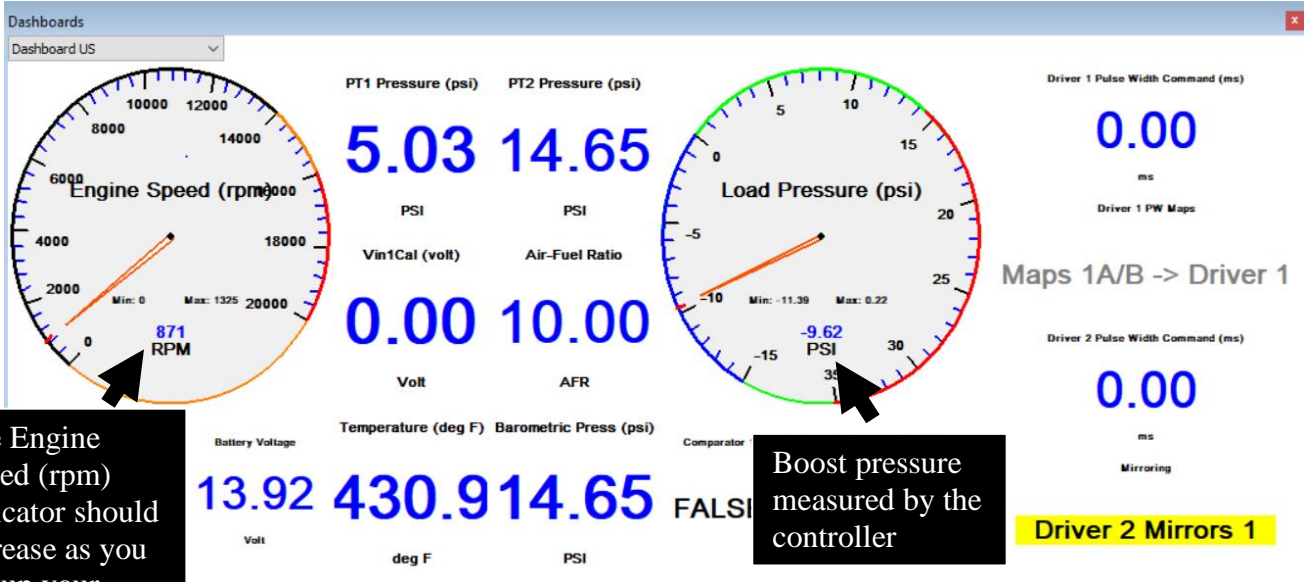
24. Then click on the horizontal arrows “Acquire Data (Connect/Disconnect)”.



25. Open the dashboard by clicking on “Show Data Dash”.



26. Start your engine and if everything has been set up properly, the dashboard should show the following.



The Engine Speed (rpm) indicator should increase as you rev up your vehicle's engine.

Boost pressure measured by the controller

Driver 2 Mirrors 1