



## **WHIPPLE FLARE FLASH INSTRUCTION MANUAL**

**2015 AND UP FORD MUSTANG/F150**



WHIPPLE SUPERCHARGERS  
3292 NORTH WEBER AVE  
FRESNO, CA 93722  
TEL 559.442.1261  
FAX 559.442.4153

[www.whipplesuperchargers.com](http://www.whipplesuperchargers.com)

*A color PDF of this manual is available, email  
[tech@ipplesuperchargers.com](mailto:tech@ipplesuperchargers.com) for a copy*

**PREMIUM FUEL ONLY (91 OCTANE OR BETTER ALWAYS) RON+MON/2**

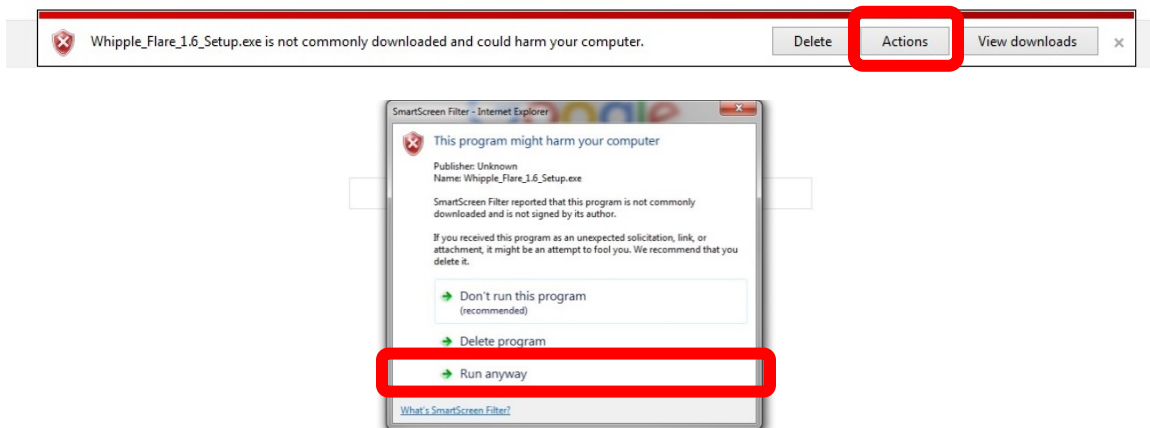
## **INSTRUCTIONS**

1. The Whipple calibration procedure is based off factory calibration files. If you have an aftermarket calibration, put the calibration back to **STOCK**.
2. Whipple supplies each kit with a blank USB thumb drive. This is provided to back up the downloaded file. The Whipple calibration file, after being flashed with Flare, saves the stock file to the Flare file as one larger file. This file is then locked to that vehicle and gives you the option to revert back to stock up to 3 times. Therefore, any future changes or Flight Control modifications require this file. You cannot re-download the calibration file. Whipple highly recommends saving the file to your PC as well as the USB thumb drive. Installers should always give the file and thumb drive to the customer as it contains the stock file and ability to modify options in Flight Control.
3. Using your internet browser, follow the link provided to download the Whipple Flare software.

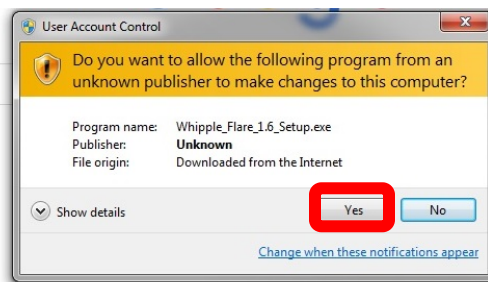
### **Windows and MAC software**

[http://www.micromotive.net/requests/whipple\\_flare.php](http://www.micromotive.net/requests/whipple_flare.php)

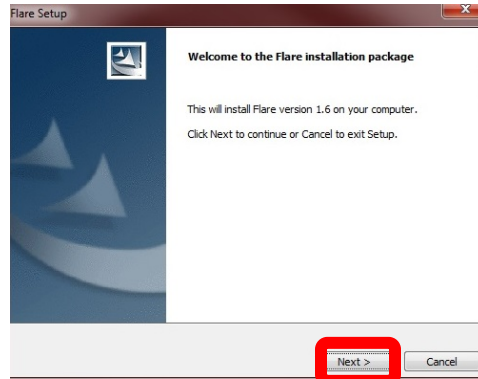
4. The link takes you directly to the download options. Using a Windows based PC, select the "RUN" option.
5. In some cases, internet security may say the software is harmful. In this case, select "Options". Select "RUN ANYWAY".



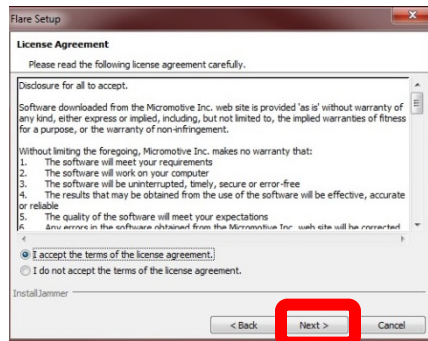
6. The software installation will begin automatically. A prompt stating that Flare will be installed on your computer will pop up, select "YES" to continue.



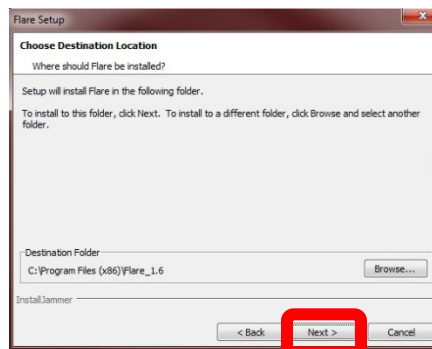
7. Select "NEXT" to continue the installation.



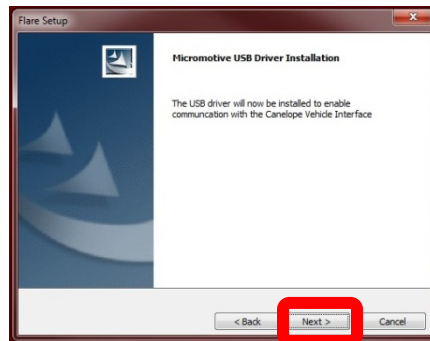
8. Read the License Agreement, if you agree with the terms, select "I ACCEPT THE TERMS OF THE LICENSE AGREEMENT" and then select "NEXT".



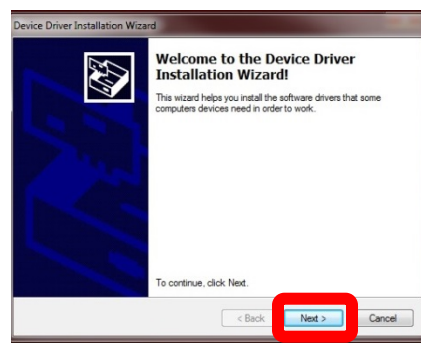
9. Select a folder you would like to save the Flare program. Standard setup is to the C:\Program Files (x86) folder. You may also select MY DOCUMENTS, DESKTOP or others you are familiar with.



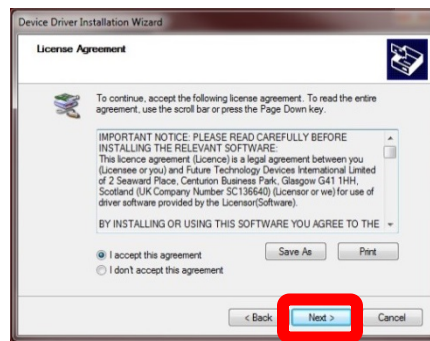
10. After the software is installed, the USB driver will need to be installed for the Canelope Vehicle Interface. Select **"NEXT"**.



11. Device Driver window should pop up for installation of the USB drivers. Select **"NEXT"**.



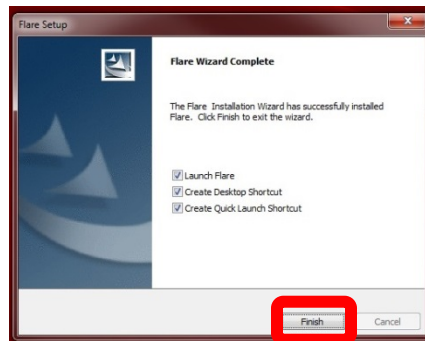
12. Read the License Agreement. If you agree, select **"I ACCEPT THIS AGREEMENT"** and then select **"NEXT"**.



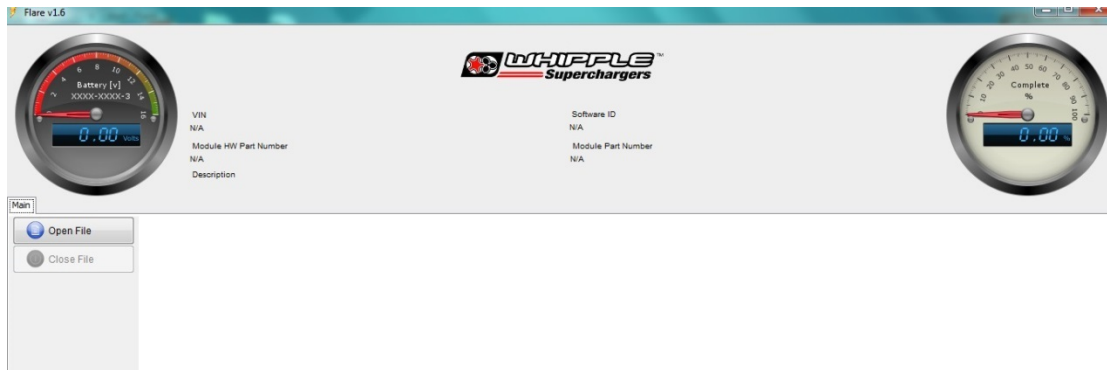
13. The Device Driver Installation Wizard will install the driver package, select **"FINISH"**.



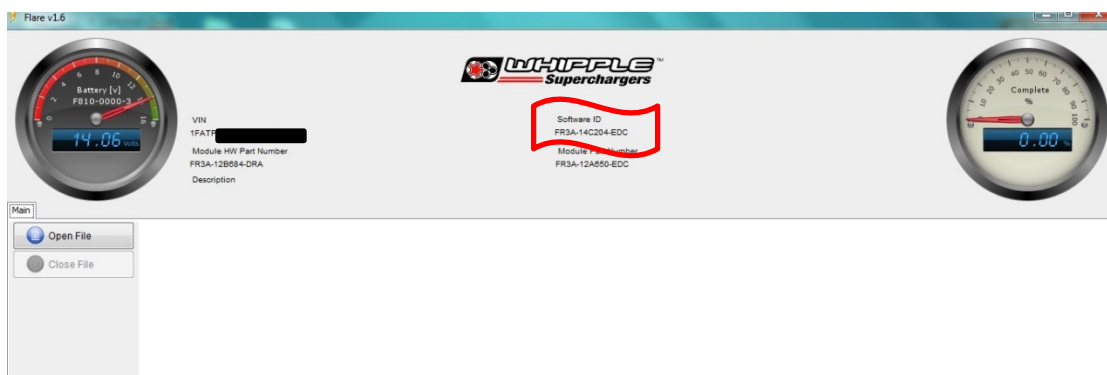
14. Once installed, you will be prompted with a few options. It's good to always **"CREATE DESKTOP SHORTCUT"** to find the program quickly. The quick launch is typically not needed.



15. Connect the Canelope tool to the factory OBD2 port.
16. Connect the Canelope USB cable to your PC/Laptop.
17. Go to your desktop, double click the Flare Icon to start the program.



18. Turn/push ignition to the key **"ON"** position. The Flare software will populate the VIN, Module HW Part Number, Software ID, Module Part Number. Note the Software ID number to supply Whipple for your calibration. Once you have this info, turn/push ignition to the **"OFF"** position.



19. Email [tuning@whipplesuperchargers.com](mailto:tuning@whipplesuperchargers.com), call 559.442.1261 or fax to 559.442.4153 the following information to receive your **VOUCHER NUMBER**:

VIN NUMBER	CANELOPE ID #	TRANS TYPE (AT OR MT)	STOCK STRATEGY ID	THROTTLE BODY (STOCK OR 132MM)	FUEL INJECTOR (58LB OR 72LB)	SC #

20. Using your internet browser, visit the website, [www.micromotive.net](http://www.micromotive.net). Click **REGISTER** on the upper left corner.

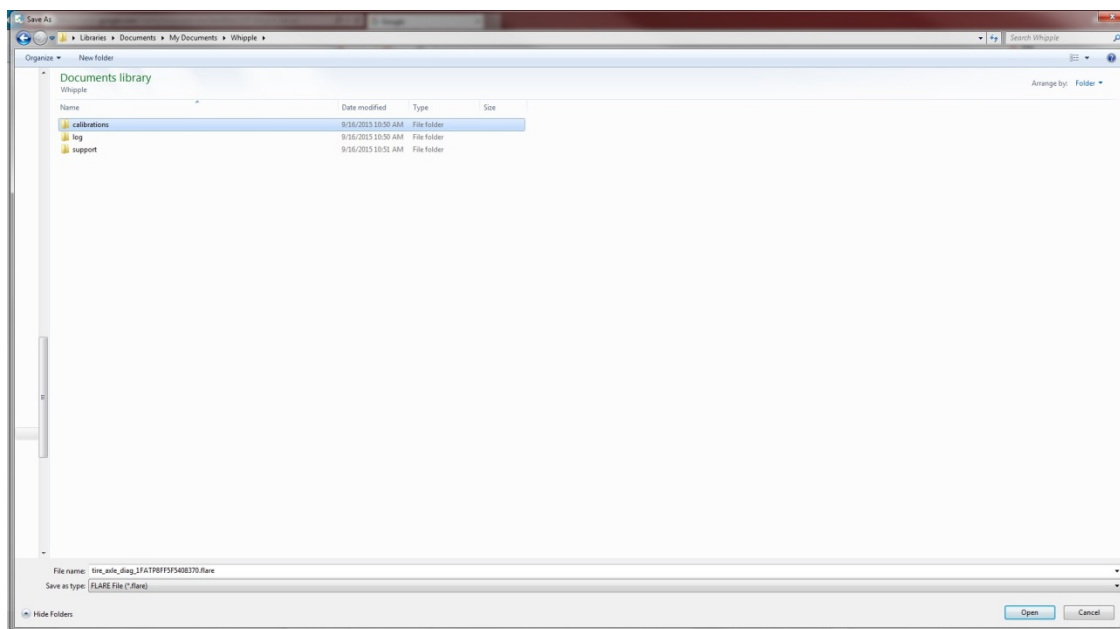
21. Fill out the registration page.



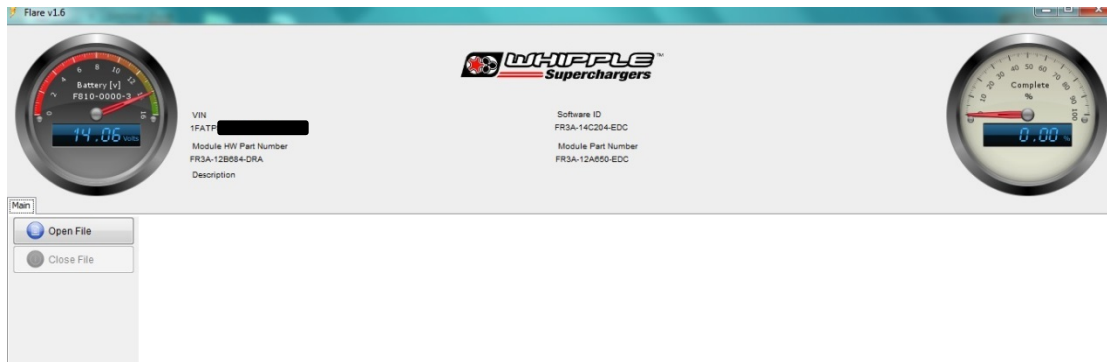
22. Go to your desktop, double click the Flare Icon to start the program. Click "**DOWNLOADER**" on the screen and enter the requested information including the **VOUCHER NUMBER** you requested. Click "**DOWNLOAD**" to download your calibration file from the server.



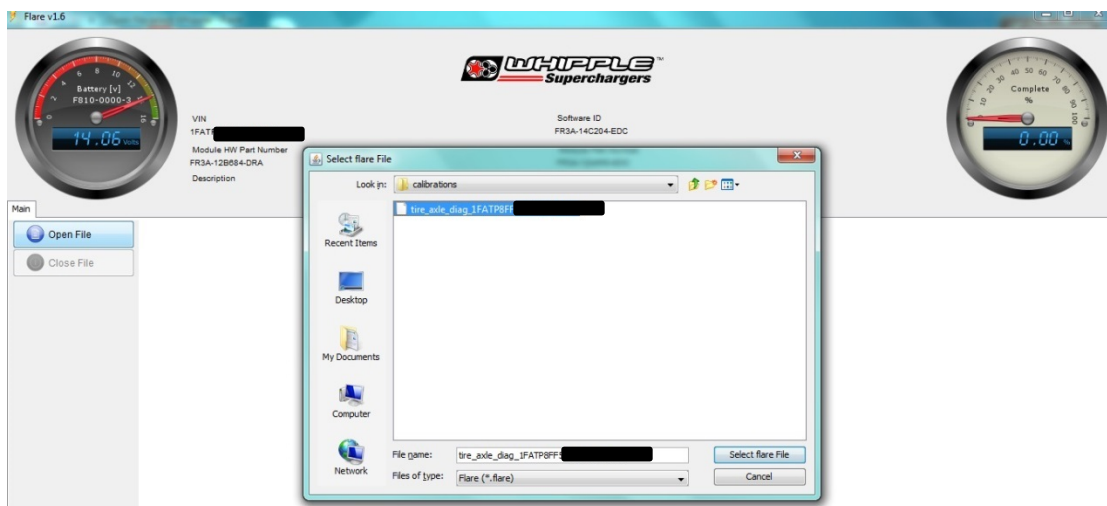
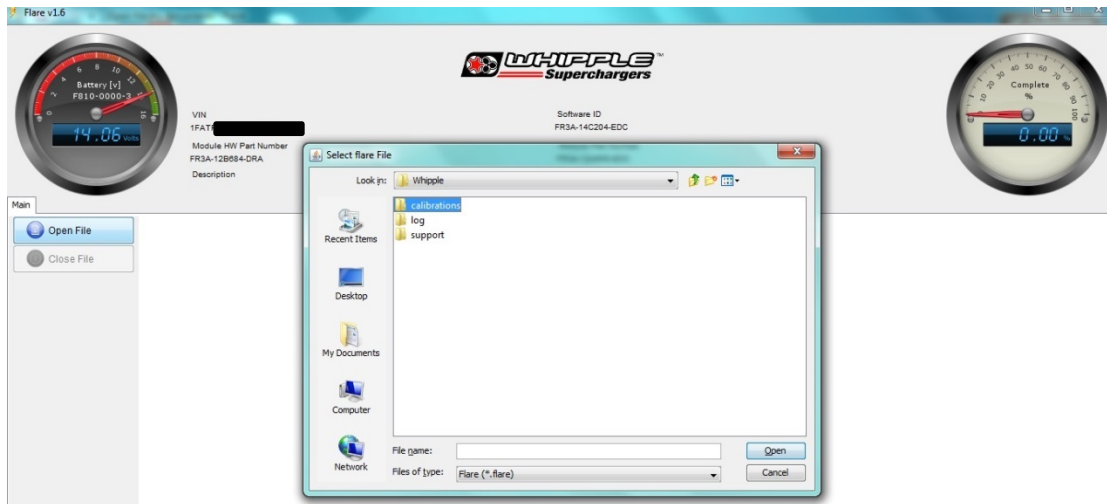
23. Save the calibration file supplied by Whipple in My Documents, Whipple, Calibrations.



24. Turn/push ignition to the key **"ON"** position. The Flare software will populate the VIN, Module HW Part Number, Software ID, Module Part Number and read the battery voltage. If voltage is below 12.6 volts, do not continue. Connect a battery charger on **"LOW"** until 12.6 to 14.7 volts is met.



25. Select **"OPEN FILE"**. Go to **"My Documents"**, then the **"Whipple"** folder, then the **"Calibrations"** folder. Select the .flare file you saved previously.





26. For the Supercharged applications. Select "**PROGRAM**" tab on the left of the screen. Follow the onscreen menu for flashing the vehicle. Do not let your laptop go into sleep mode. Please note, your stock calibration will be saved in the Flare file for the "Restore" function. Therefore, if you misplace the file and have to download again, you will lose your stock file. Make sure to back up your Flare file after flashing.
27. Once you're done flashing, cycle the key off for 5 seconds, then back on. Select the Diagnostic tab, read all the DTC (trouble codes). Erase all codes. Note: De-energizing relay code is common after flashing and will go off after a few driving cycles or if you hit clear DTC 5-6 times. The vehicle will run proper even if this code is on.
28. After flashing the PCM, a crank relearn is required. Failure to may result in a hard time starting and/or sets a random misfire code. To perform a crank relearn, select the "**CONFIGURATION**" tab. Toggle the "**PROFILE LEARNING**" to the "ON" position. Follow the on screen instructions. When changing the flywheel, a crank relearn must be performed. Note that the engine must be at normal operating temp (160deg F+) to perform this test. If you begin the test, but leave it unfinished, it will set a crank learn DTC as it erases the original data. Therefore to run properly, this procedure will be required.
29. After flashing PCM, if the axle ratio and/or tire size is not stock. Turn the ignition key to the "**ON**" position (no foot on brake). Click the "**CONFIGURATION**" tab. Enter the axle ratio into the gauge (ex. 3.55, 3.73, etc). For tire size changes, locate the Revs Per Mile from the tire manufactures website. If unavailable, use the provided calculation to determine the Revs Per Mile. Note that a standard "squish" is 15%-20%. Once you find the RPM's, enter the Revs Per Mile to the Tire Size gauge. Hit enter when done. Follow the on screen menu to complete the tire/axle changes. You may do the Tire and axle at the same time, or just one. If you leave one blank, it will stay as is. Example, if you change only the axle ratio to 3.55, but have factory tires, leave the Tire gauge as is and it will not change. The text area on Flare will inform you when the task is complete.

$$TireSize[rev/mi] = \frac{20168 \times SquishFactor}{WheelSize[in] + \frac{2 \times TireWidth \times AspectRatio}{25.4}}$$

Example:

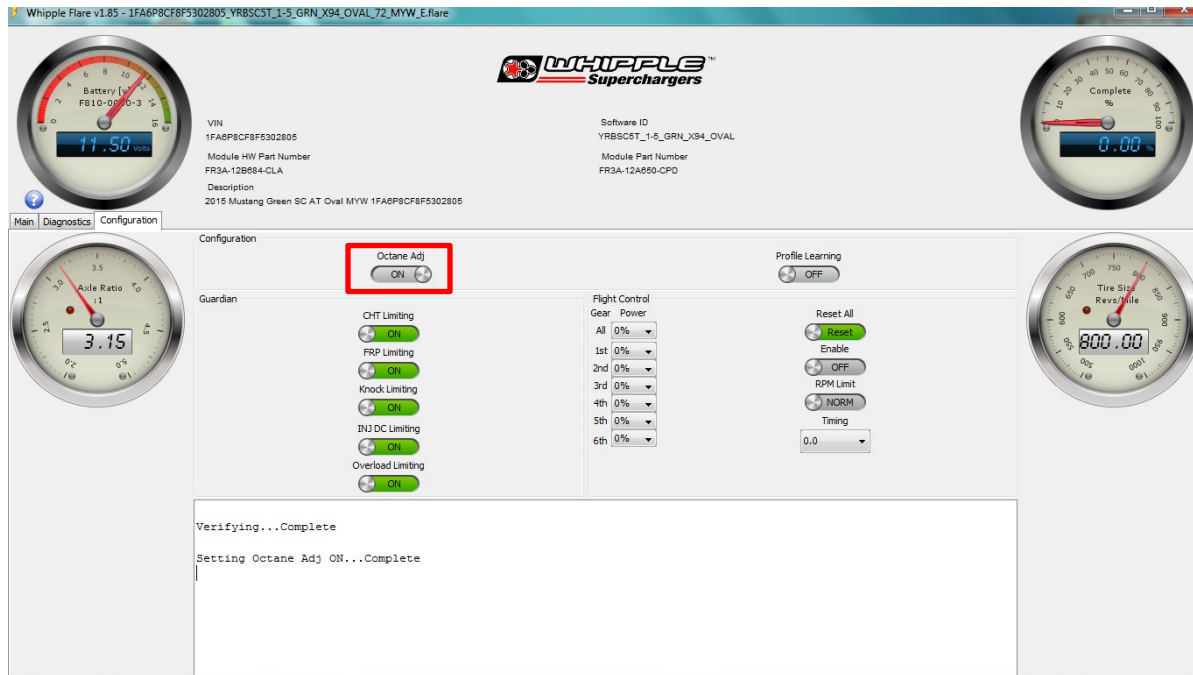
195/65R15

$$TireSize[rev/mi] = \frac{20168 \times 1.0}{15 + \frac{2 \times 195 \times 0.65}{25.4}}$$

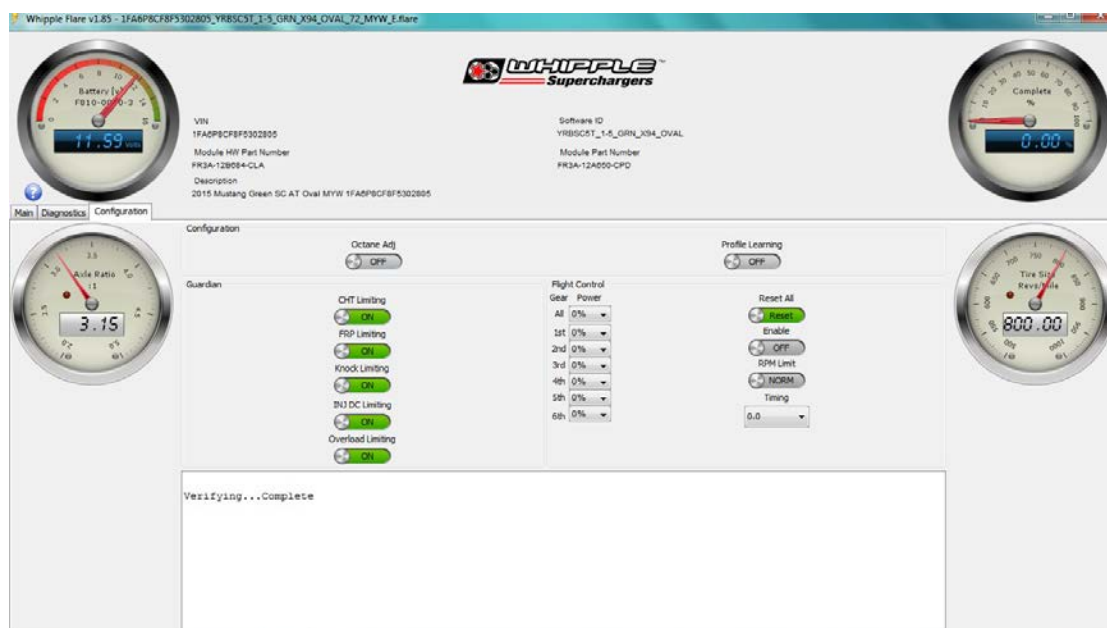
*TireSize[rev/mi] = 806 with no squish*

*TireSize[rev/mi] = 686 with 15% squish*

30. In applications where octane is questionable, or you want added safety, the “**OCTANE ADJUST**” features allows you to reduce the total amount of spark advance during high load conditions. The system still has the capacity to learn, but its ability to add more spark advance will be limited. To activate, turn the ignition to “**ON**”, engine not running. Go to the “**CONFIGURATION**” tab. The octane adjust is defaulted to “**OFF**”. Click it until it goes to “**ON**”. The system will instantly change and the text area will let you know the changes have been completed.
- \*\*NOTE:** Applications where 91 octane is the standard fuel and you have changed the pulley to 3.625”, the octane adjustment should be checked for added safety margin.



31. Flight Control adjustments for applications with this feature. Each option on the Flight Control software can be toggled with key in the ON position or with engine running, at an idle, in PARK. Make sure to obey all traffic laws and never make changes while driving. Never reflash to toggle something. Use the mouse to switch the option to ON or OFF, wait 1-3 seconds and the text area will show the task has been completed, no reflashing is required.



32. The Whipple calibration is built with a lot of safety features. Therefore, changing the guardian settings at **YOUR OWN RISK**. All daily drivers should leave the settings in the default position.

**CHT Limiting:** The Cylinder Head Limiting temperature limiting feature is for applications intended for racing in control events. This will reduce the amount of added safety based off of the factory Cylinder Head Temp. This reduces spark advance to add safety when racing and coolant temps are not maintained. All knock sensor and other safety features are still on.

**FRP Limiting:** The factory fuel system does not include a fuel pressure sensor. Whipple Superchargers offers a fuel rail pressure sensor to add increased safety for systems where the stock fuel system may reach its limit. The FRP limit will adapt before the fuel trims so the predictions will be more accurate for fuel pressure falling. The FRP limit will also cut power when the fuel system reaches a critical supply level. This system only works when the FRP sensor is installed and wired. This can be left on or toggled off, it will not change until the sensor is installed.

**Knock Limit:** This feature is defaulted on and works off the factory knock sensors. It constantly monitors knock events, in cases where you have poor gas or another issue and the knock sensor activity becomes too active, the knock limit reduces power output (cylinder pressure) by holding the throttle back until the knock activity has reduced for a calibrated time. When this featured is toggled off, the system will work as normal where the knock sensor is active for advancing/retarding.

**INJ DC Limiting:** This feature allows the customer to toggle the pre-defined "MAX" fuel injector duty cycle limit in applications where the fuel injector may be prematurely clipping the targeted power level. This should only be toggled off in a race application after discussing with Whipple.

**Overload Limiting:** This feature consistently monitors airflow vs its torque output and consistently adapts to the environment. When a customer changes the pulley that can exceed the fuel and air calibration, the PCM recognizes the changes and limits the capacity.

**Reset All:** The reset all feature allows you to revert back all changes you have made from the default settings. Default settings is what's recommended for all daily drivers.

**Enable:** The enable mode is for **RACE APPLICATIONS ONLY**. In applications with aftermarket valve train and other changes that may create false knock readings, the Enable mode disables knock control and runs the standard calibrated timing curve (no adding/subtracting).

**RPM Limit:** The RPM limit change feature gives you two RPM limit set points.

Stage 1 base RPM limit = 7200RPM

Stage 1 optional RPM limit = 7500RPM

Stage 2 base RPM limit = 7500RPM

Stage 2 optional RPM limit = 7800RPM

Note that automatic transmission vehicles will still have a lower targeted shift RPM. Whipple recommends 7500rpm for all standard applications.

**Timing:** The timing feature is tied to the "Enable" function. When the Enable is off, the timing adjustment does not make a difference. When the timing mode is ON, this is the adder/subtractor to the base timing system. **NEVER USE WITH PUMP GAS, ONLY FOR RACE APPLICATIONS USED ON CLOSED COURSES.**

**Flight Control:** The Flight Control software allows the user to lower power per gear or overall. The percent changes are at 5% increments and are changing the available power by pre-determined power levels. 25% will result in near stock power levels and is intended for applications where you want the car to have little to no extra power, possibly during poor weather, taking to dealer, loaning the car and many other scenarios may fit. In race applications where traction is an issue, the power per gear can be a useful tool to bring your power down to a track-able power level in the first few gears.