



Installation Instructions
ZZP LTG Aux Injection Kit
ZZ-ATS-AUX



Estimated Installation Time: 3 Hours

Installation Difficulty: 4/5

Some procedures will not be described in full detail. If you run into any installation issues or have trouble comprehending any of the procedures, please contact customerservice@zzperformance.com

Kit Contents:

- 2 – 42# Shorty Injectors
- 2 – LTG Injector Adapters
- 1 – 8 Way MAF Breakout Harness
- 1 – Aux Fuel Line
- 1 – 6AN T Fitting
- 1 – AEM Controller
- 4 – M6 x 80mm Socket Cap Screws
- 1 – Injector Assembly
- 1 – 1/4 x 1/8 90° Brass Fitting
- 1 – 1/8 NPT Plug



STEP ONE:

Start by removing your engine cover.

STEP TWO:

Loosen the top clamp and pull the silicone coupler off of the throttle body and turn it out of the way. After that is out of the way go ahead and unplug the throttle body, remove it and set it to the side.

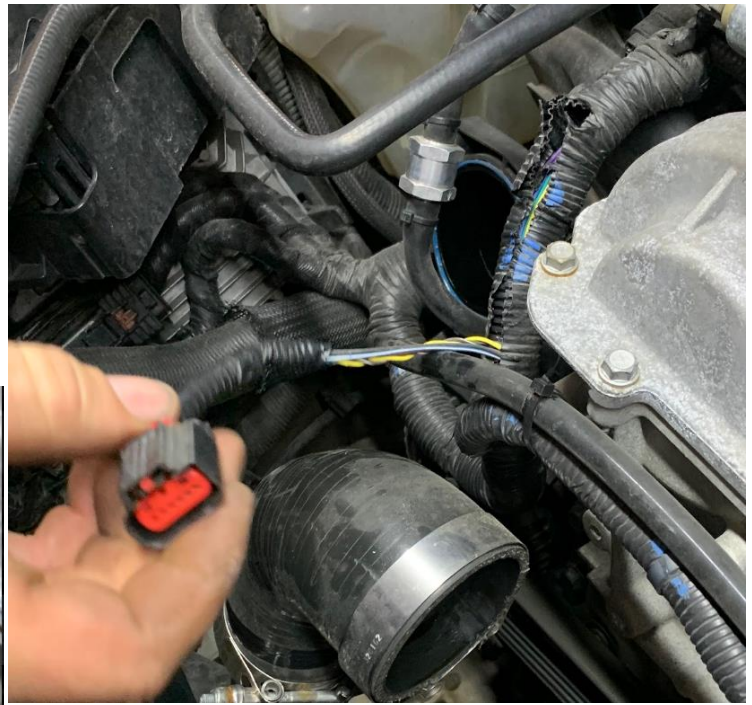


STEP THREE:

You will next need to carefully cut and pull the throttle body wires out of the loom shown. You can do this by gently cutting the loom straight down and pulling the throttle body wires out (shown below). BE CAREFUL not to cut any wires.

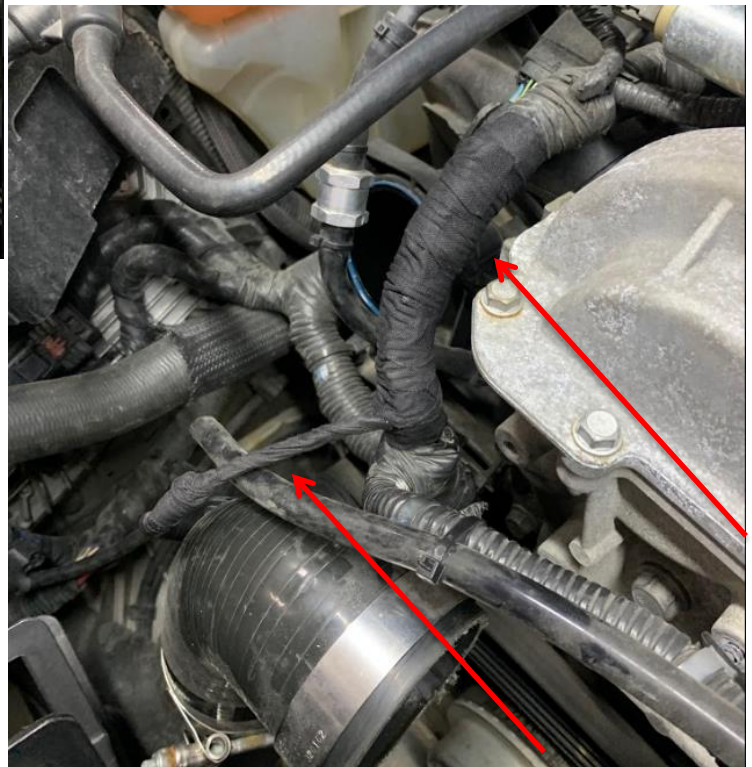
STEP FOUR:

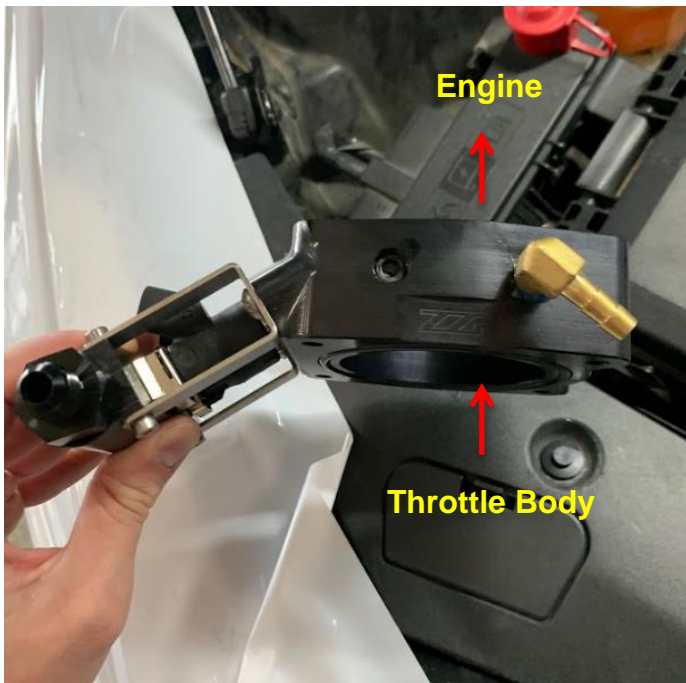
Pull the throttle body wiring out enough to expose about 6" of the exposed wiring. You will then want to wrap these wires with tape to protect them and to close up the loom you cut (below). We suggest using automotive tape or hockey tape for this.



STEP FIVE:

Your wires should now look like the ones below.



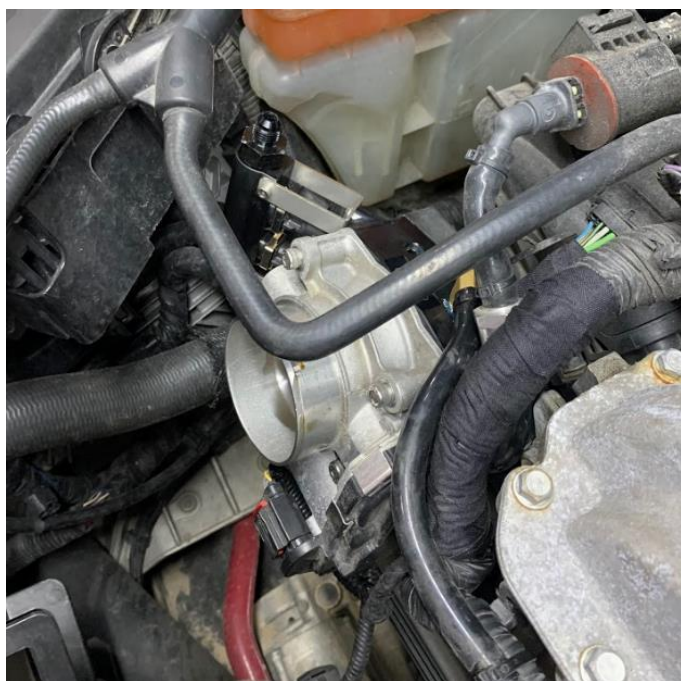


STEP SEVEN:

Your next step is installing the pre-assembled spacer on to the throttle body. The picture shows how the assembly will look. This assembly will come with the right hole open, you will have to install either the brass fitting or the NPT plug provided using some RTV on the threads. The brass fitting is for vehicles with big turbos, the NPT plug is for everything else.

STEP EIGHT:

The throttle body will attach to the spacer upside down with the plug on the bottom. Attach the throttle body and the spacer to the engine using the 4 M6 screws. You can then plug back in the throttle body harness. You can now re attach the silicone coupler and tighten the clamp.



STEP NINE:

Your next step is to detach the left fuel hose that connects to the E85 Flex Fuel Sensor. The easiest way to remove the line from the flex sensor is by using a metal fuel line tool that has been ground down slightly to fit in between the sensor and fitting.



STEP TEN:

You will now slide the blue clip from the T fitting in your kit and slide it over the nipple on the flex fuel sensor.



STEP ELEVEN:

Attach the T fitting like pictured, the male screw on will be to the left, the bottom of the T will attach to the fuel line you removed earlier.



STEP TWELVE:

You will now attach the hose provided in your kit to the sensor and the top of your throttle body spacer/injector assembly. The 45° end of the hose will attach to the sensor, the 90° end will attach to the injector assembly.



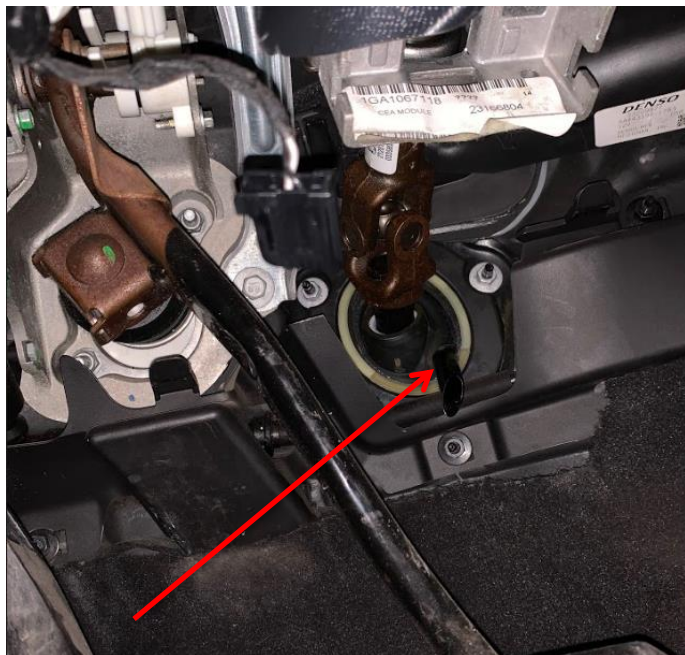
STEP THIRTEEN:

Your next step will require you to go into the cabin and remove the trim panel under the steering column (3 screws) and the trim panel on the left side of the center console (1 screw). You will also want to remove the fuse panel cover on the driver's side of the dashboard.



STEP FOURTEEN:

Running the wiring harness is different for automatic and manual transmissions. For the automatic transmission there is a hole already in the firewall located up and to the left of the brake booster, with a knock out plug in it. This is where you'll want to run the wires. On a manual transmission you will have to put a hole through the boot of the steering column (shown). Or where ever you see best fit.



STEP FIFTEEN:

When running your wires, you will want to plug the fuse tap into the 10Amp fuse location as shown. Your ground will go on the factory screw that is circled below. You will then feed them down to the hole you made (MANUAL) or the pre-existing hole (AUTO). When running your wires make sure to keep them out of the way of anything they could possibly get caught on.



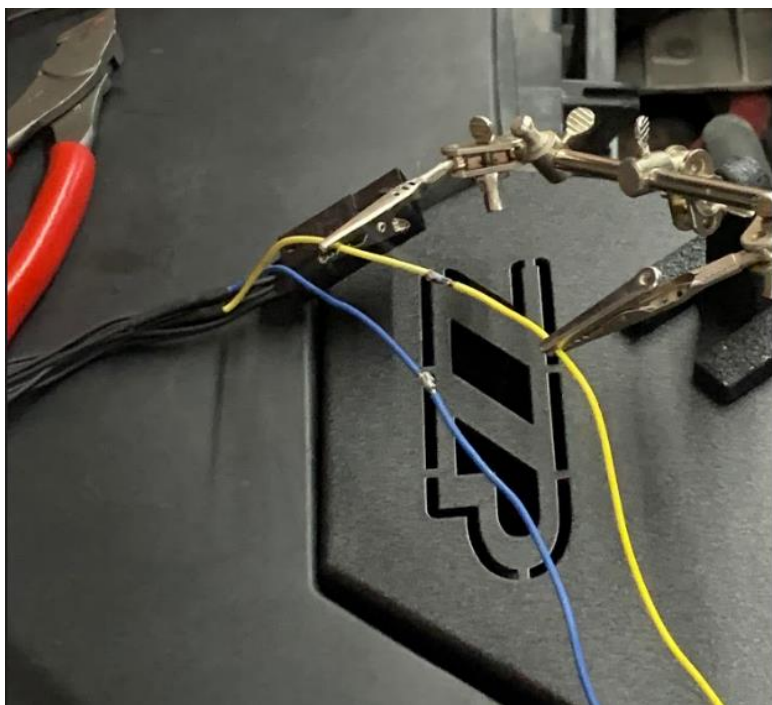
STEP SIXTEEN:

After pulling your wire through you will need to connect the blue wire you just ran and the blue wire on the 8 to 8 harness provided. You will also need to do this to the yellow wire (shown below). We suggest soldering, but a butt connector will also work.

STEP SEVENTEEN:

You will also need to wire the orange and pink wires. The orange wire is your positive; the pink is your negative. These will attach to the Y plug in harness for your injector plugs (next page). We suggest soldering these as well, but a butt connector will work. Don't forget that if soldering you should always use heat shrink to protect the connection.

Note: The Injector plug will look different than the picture below. Please look at the colors (red & black) on the Y harness to find positive and negative.





STEP NINETEEN:

You will next want to run your wires to run the injector plug wires to the passenger side of the engine bay and plug them in. Run this wire in the best place you see fit, but we do suggest along the front of the engine with zip ties to prevent any damage.



STEP EIGHTEEN:

After doing all of your connections we do suggest taping the wires to keep them more organized and to prevent damage.



STEP TWENTY:

You can now run your 8 to 8 harness alongside your MAF sensor wires. You will then plug in your MAF sensor to the 8 to 8 and the stock harness.

STEP TWENTY ONE:

Your next step is to set up and mount your AEM controller. There are 3 switches on the back of the controller. The left switch will need to be up, the middle is down, the right is down. Reference the photo to the right. The AEM controller knobs should be set to **50 Start**, and **75 Full**, photo below for reference.

STEP TWENTY TWO:

You can mount your AEM controller wherever you see best fit; we only suggest that you mount it in a location that it won't accidentally be hit or adjusted. Tuning is needed (remote tune only) with this kit, driving is not recommended until tuning/tune revision is started. After you have mounted your controller you have finished with your installation and can tighten any connections and tuck any wiring to make things look nice.



Short Circuit Self-Diagnostics

There are two modes of pump-driver short circuit protection available. One can detect a short at any time but produces a slight buzzing in the pump. This should not be noticeable under most conditions but can be turned off if it is objectionable. If turned off, a short circuit can only be detected when the pump is running.

To enable or disable this diagnostic (and the buzzing): Press and hold the TEST button while applying power to the controller. The change is acknowledged by a single long flash of the status LED output and the external LED. Once the button is released the controller will continue to function normally. You can also tell what mode has been selected by listening for the buzzing sound in the pump. Repeating this operation will toggle between the two modes.

CONTROLLER

Settings

The AEM Water/Methanol Injection Controller is a progressive type controller. This means that fluid will be injected in proportion to the amount of boost that is detected by the external MAP input. In other words, higher signal input equals more fluid. It is therefore imperative that the external signal connection be made properly and securely or vehicle/engine damage could occur. In addition, the controller will automatically compensate for any fluctuations in battery voltage variations to ensure consistent flow under all conditions.

The two knobs on the face of the controller dictate at what signal input minimum fluid injection starts and at what signal input maximum/full fluid injection occurs. Fluid injection will 'progressively' increase between these two points as set by the adjustment knobs.

The 'Start' dial has a range from 0% (full counterclockwise rotation) to 100% (full clockwise rotation). The 'Full' dial has a range of 0% (full counterclockwise rotation) to 100% (full clockwise rotation). It is suggested to adjust the 'Start' value by setting the dial to approximately 25% of the vehicle's maximum signal input. Adjust the full-in value to your maximum possible percent for signal input. These are only suggestions; improper use or setting could result in engine or vehicle damage - please consult your tuner.

Mode Selection

The mode can only be selected or changed while the unit is turned off. To change the mode remove the back cover exposing the three DIP switch selectors. Follow the guide on the controller to select the appropriate mode for your application.



Status LED

The controller has an on-board Status LED. This will mimic the operation of the external LED. Upon startup the current mode is flashed in green on the status LED. It will flash error codes in red as well as illuminate with varying intensity as a function of flow in green.

Fuse

The controller has an externally accessible fuse. The controller itself will turn on and function, but the pump will not run without the fuse. If the controller is reporting an open circuit it may be that the fuse has blown or is not installed correctly. Use a 15 amp fast blow fuse for replacement purposes.



- 0: 2000hz
- 1 3200hz
- 2 4400hz
- 3 5600hz
- 4 6800hz
- 5 8000hz
- 6 9200hz
- 7 10400hz
- 8 11600hz
- 9 12800hz
- 10 14000hz