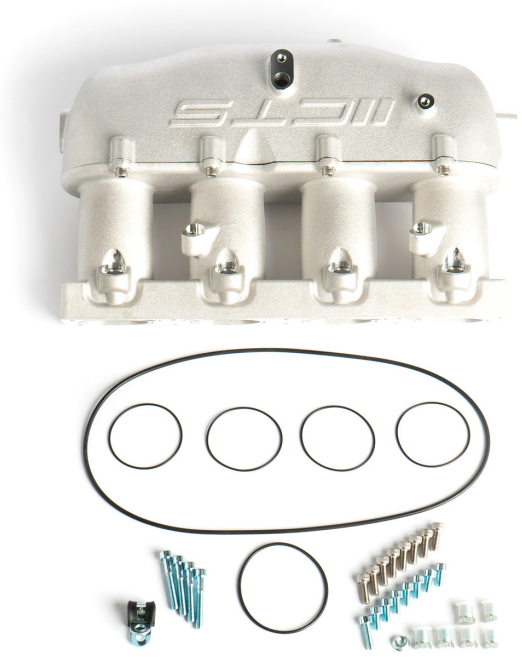
# INSTALLATION GUIDE

## CTS TURBO MQB EA888.3 INTAKE MANIFOLD
## CTS-HW-0484



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## WHAT IS INCLUDED

1. CTS Turbo Cast Aluminum Intake Manifold
2. Sealing O-rings
3. Installation Hardware Set

## WHAT IS REQUIRED

1. Tuning software calibrated to be used with an aftermarket intake manifold. Make sure you contact your tuner before attempting installation.
2. MPI (multi-port injection) fueling kit.
3. Teflon tape or thread sealant.
4. Red threadlocker (Loctite or equivalent)
5. General purpose grease.

## NOTES

Vehicle used in this guide is a 2017 VW GOLF R equipped with CTS Turbo MPI kit. This intake manifold must be installed with an MPI system, it is optimized to be used with CTS Turbo MPI kit. Other kits should also be compatible, some extra modifications may be required if using different MPI kits.

Always make sure the car is safe to work on. Do not work on a hot motor. This guide is provided as a reference only, professional installation by an experienced technicial is strongly recommended.

## STEP 1

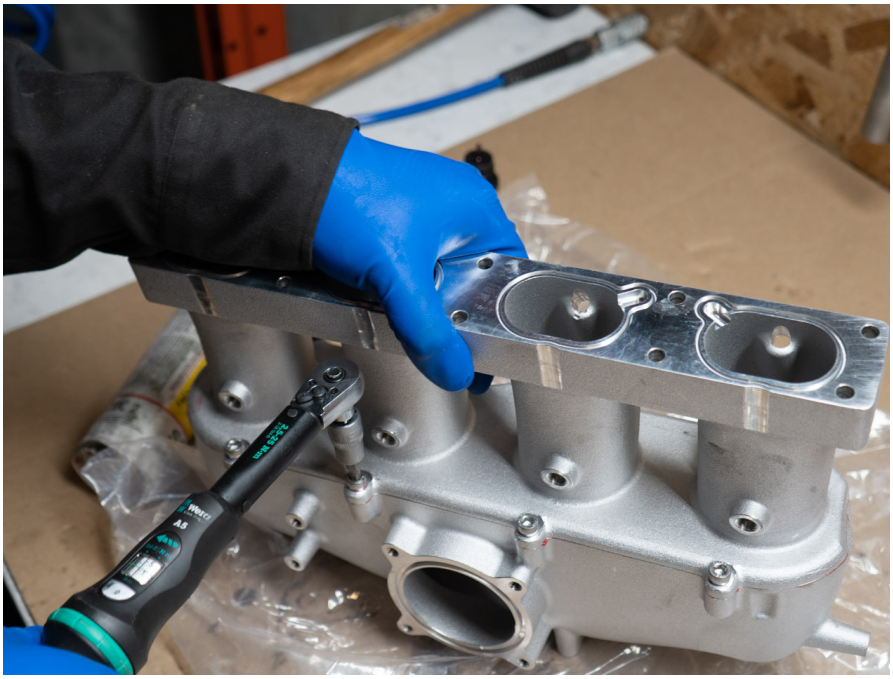
**Remove the stock intake manifold and MPI system (if equipped). Follow the factory procedure for removal.**

## STEP 2

Install the provided o-ring on to the manifold plenum. Use a little bit of grease before installing the plenum onto the runner section.

## STEP 3

Install the 8 stainless steel bolts to secure the plenum to the runners. Use red thread-locker on the bolts and torque to 9NM. Tighten the bolts starting from the middle and moving to the outside.



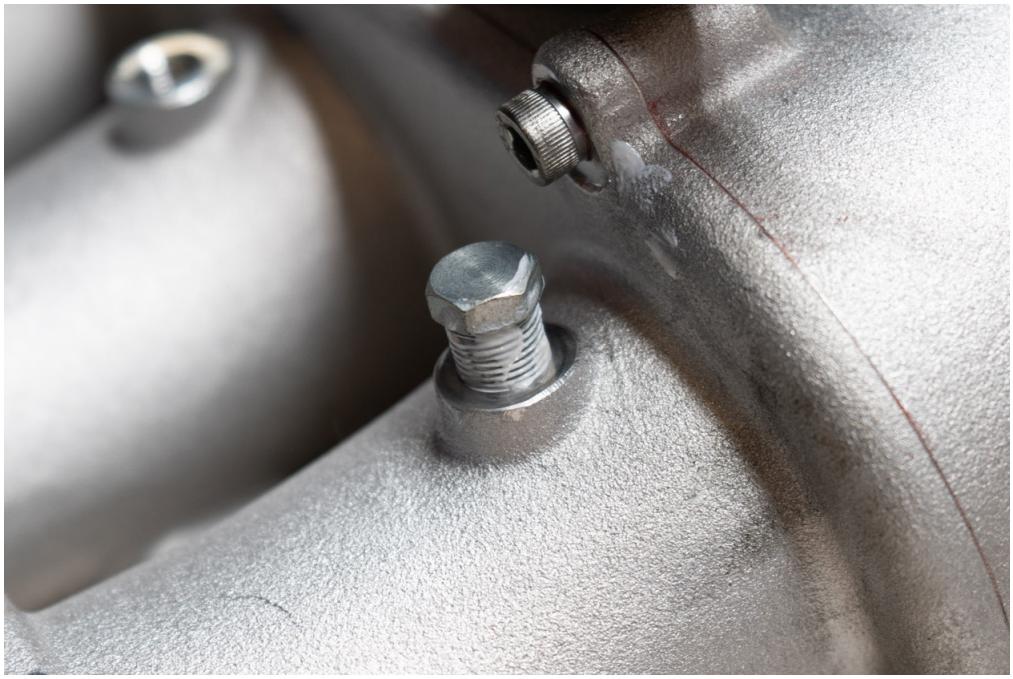
## STEP 4

Transfer the wiring harness bracket to the CTS manifold. Secure with supplied M6x12 bolts.

## STEP 5

If you are not using a watermeth injection system, block off the ports provided 1/8" NPT plugs. Use thread sealer or teflon tape on all NPT fittings.

The plug will not go all the way in. You will see threads when the plug is securely installed.

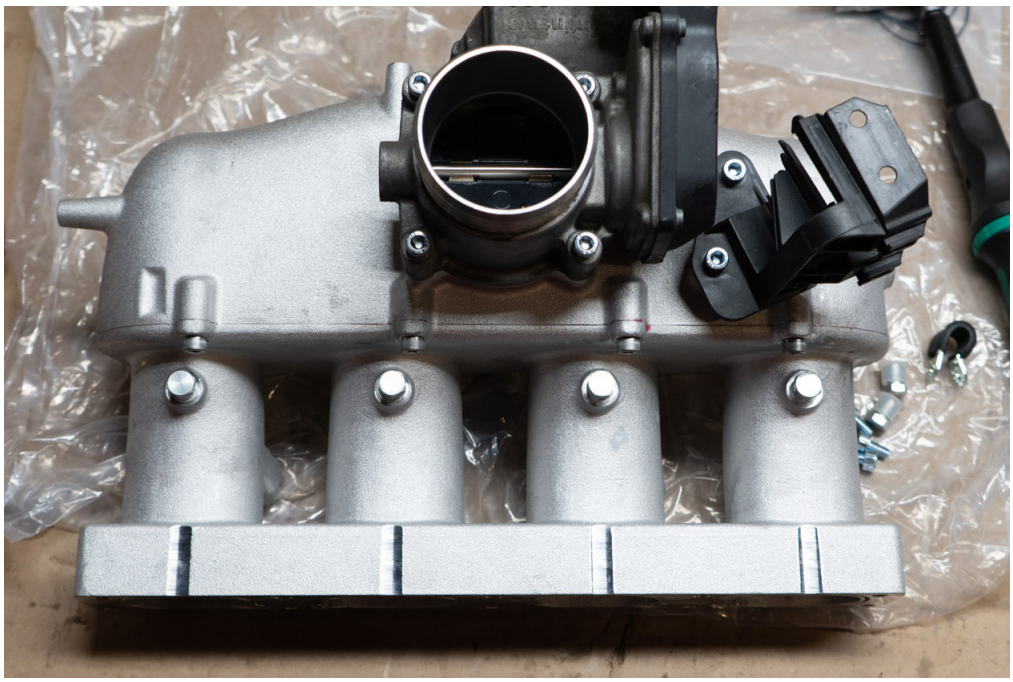


## STEP 6

Install supplied throttle body o-ring before installing the throttle body.

## STEP 7

Transfer the factory throttle body to the CTS intake manifold. Secure with supplied M6x40 bolts.



## STEP 8

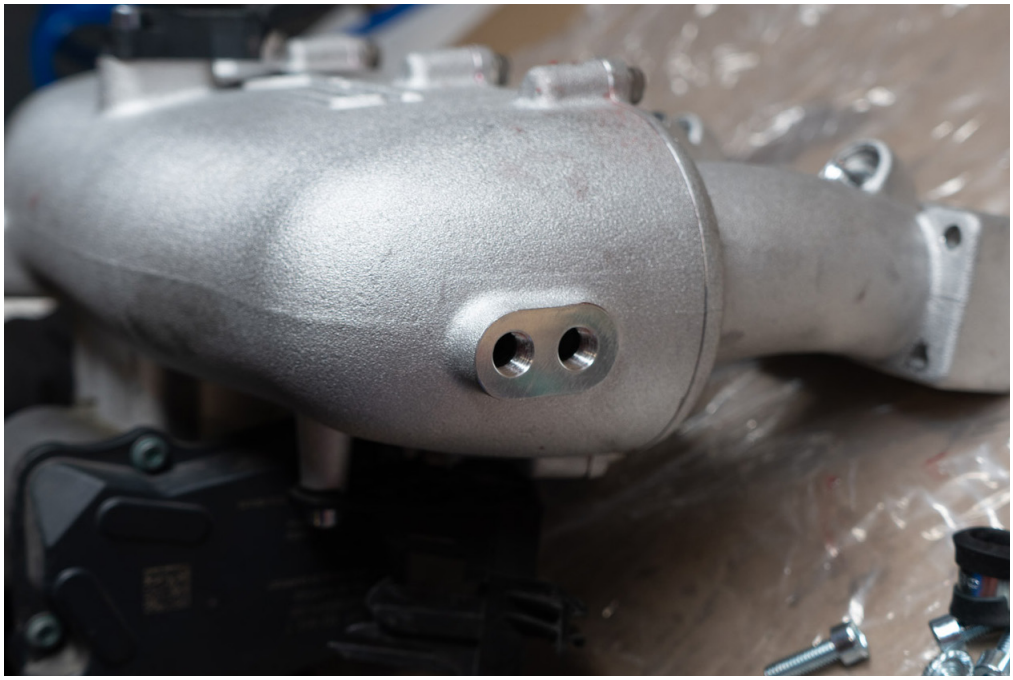
Transfer the factory MAP sensor.

## STEP 9

If you are using a boost tap you can install barb fittings (not included). Thread is 1/8" NPT.

Due to the variety of 5bar MAP sensors, some extra fittings may be required in order to install boost tap and 5bar MAP together.

Otherwise, use supplied 1/8" NPT plugs with thread sealant to block the holes off.



## STEP 10

Remove the airflow dividers from the intake ports. Right now is a good time to clean the intake valves. The dividers are re-used during the installation.

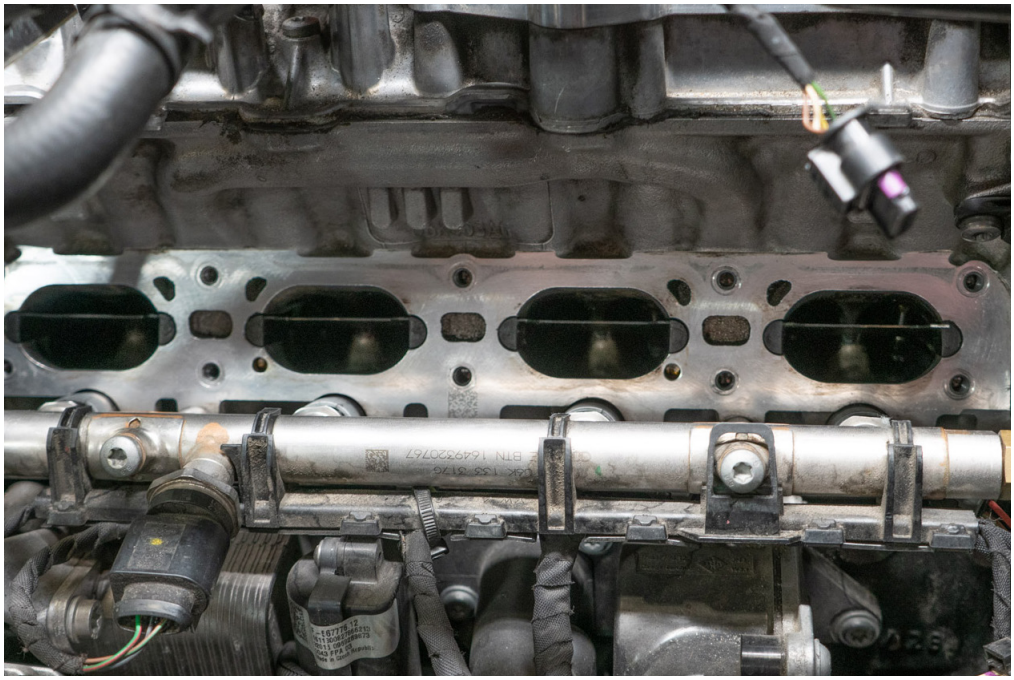
## STEP 11

There are locating posts on the end of the dividers that need to be removed. See photo that shows the modified divider.

## STEP 12

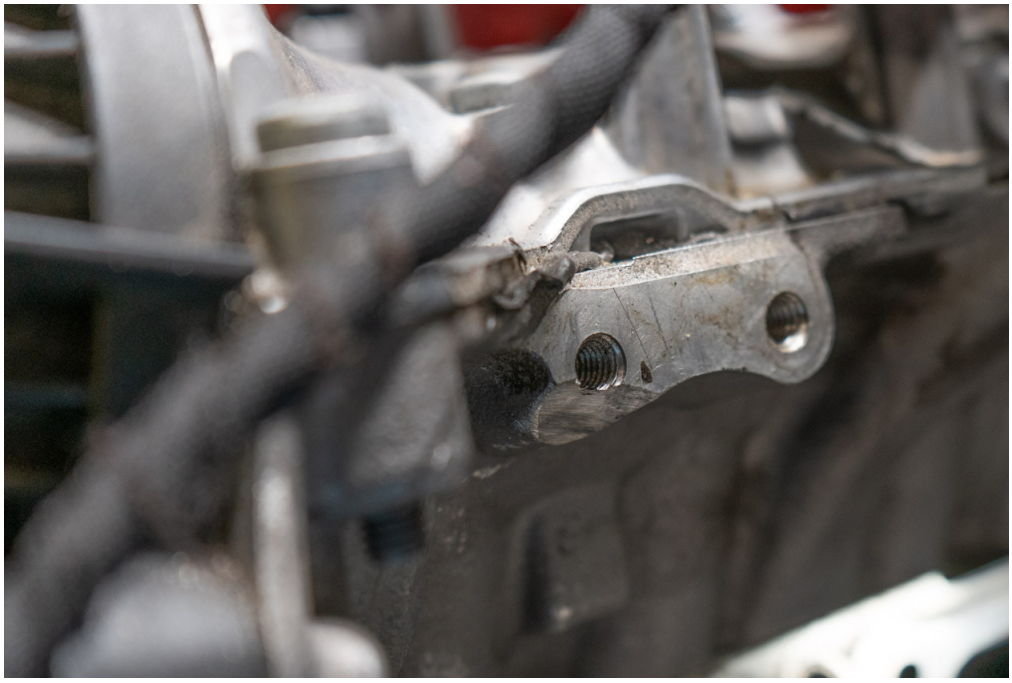
Carefully clean around the ports to ensure there are no debris.

Reinstall the dividers back into the head.



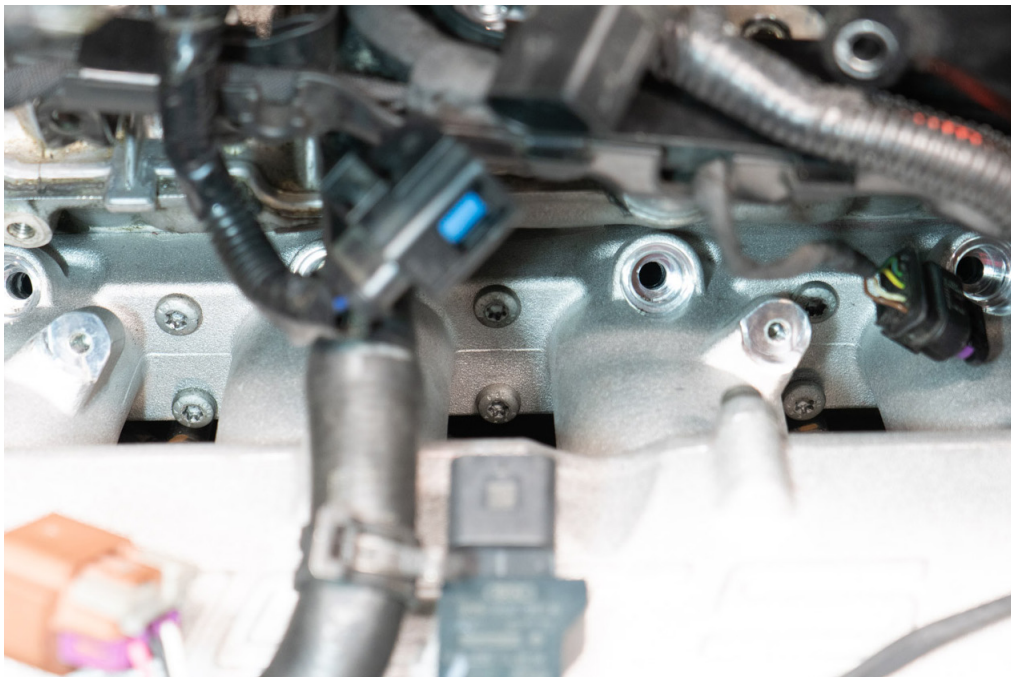
## STEP 13

Some material needs to be removed from the head in order for the MPI fuel rail or MPI injector harness to clear once installed. Remove the lifting hook attachement and modify as shown in photo. Make sure no aluminum shavings enter the engine. Test-fit the intake manifold with MPI to ensure sufficient clearance.



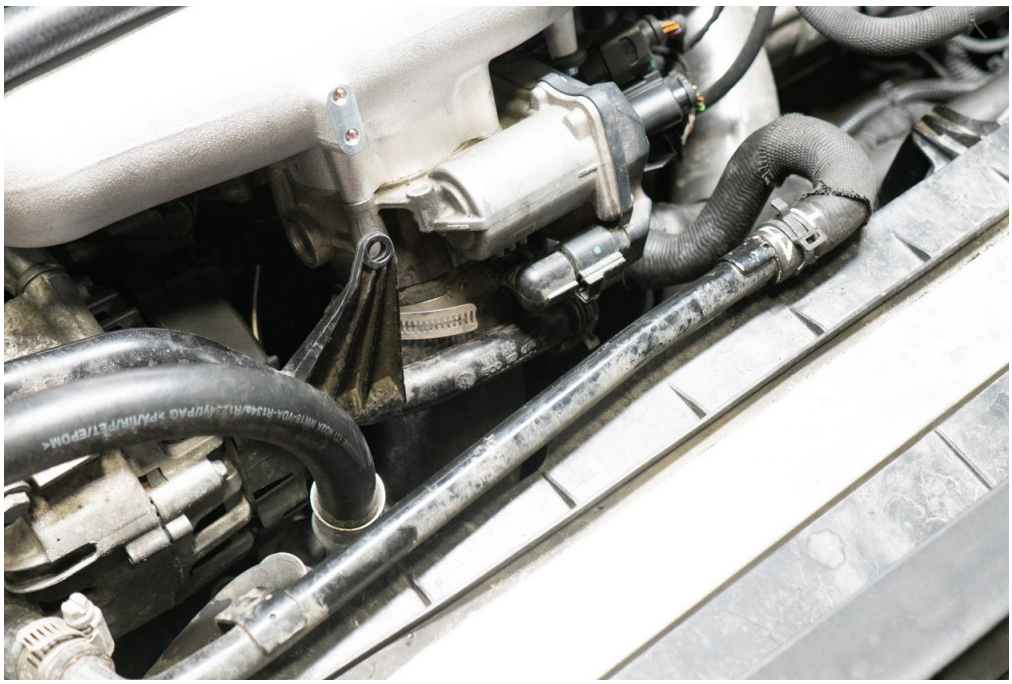
## STEP 14

Install the CTS manifold using factory bolts.
Follow the factory tightening procedure.



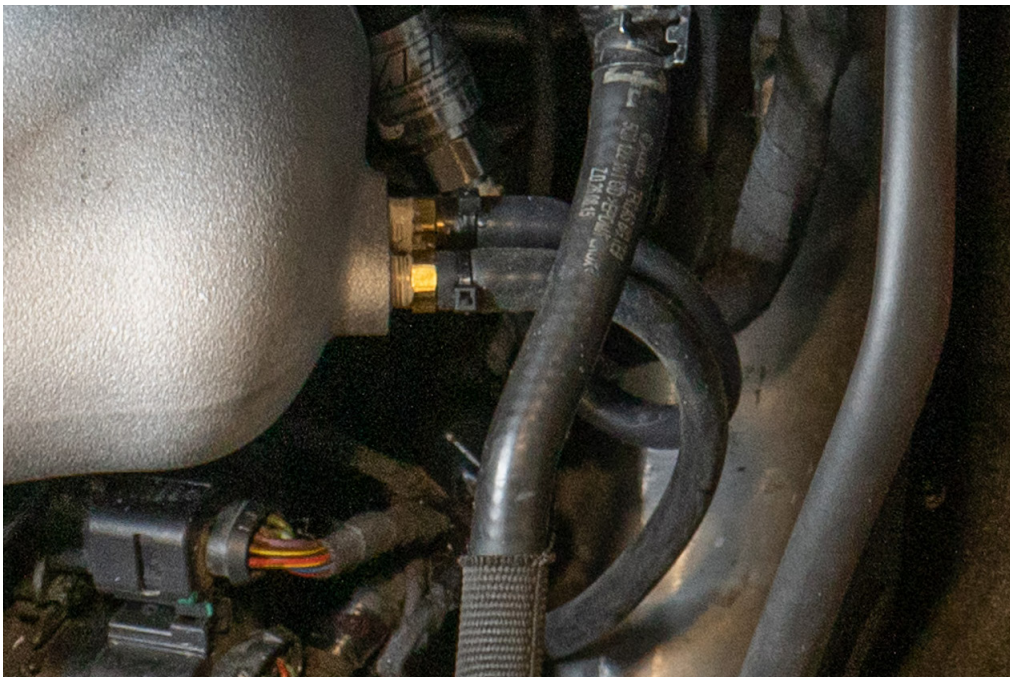
## STEP 15

Install the throttle pipe. A supporting bracket for the coolant line may be installed at this time as well (not shown).



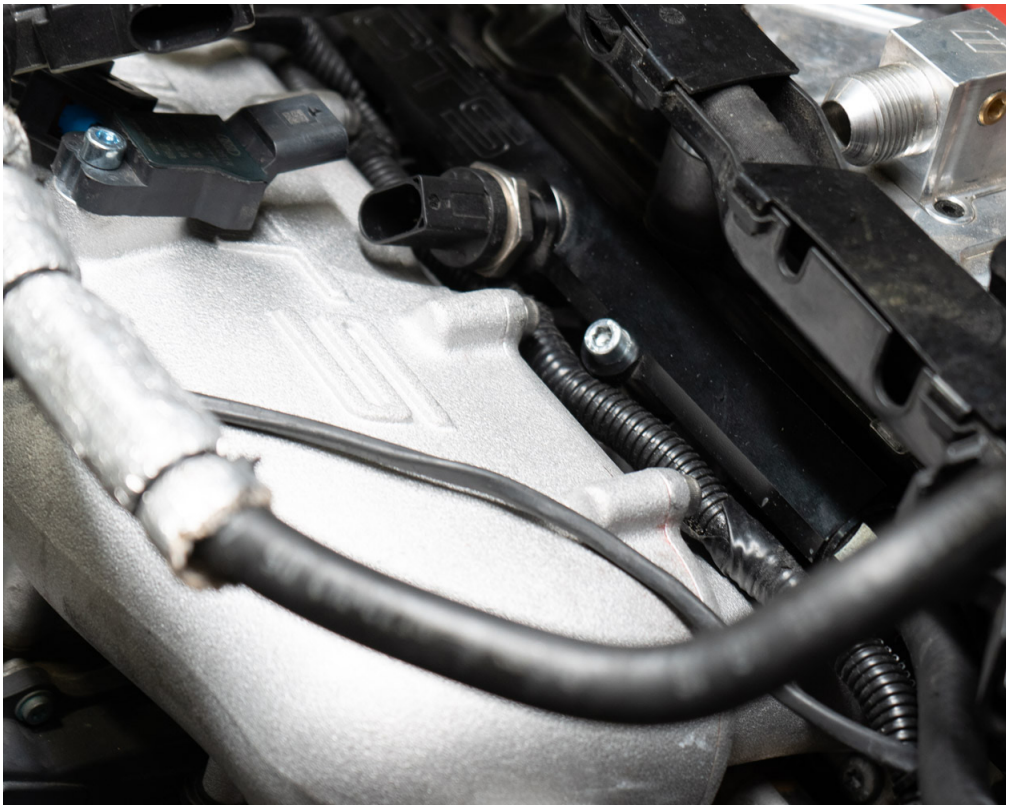
## STEP 16

If you are running the boost tap connect the lines now. You can see how we installed a boost tap and a 5BAR AEM sensor. Your installation may vary.



## STEP 17

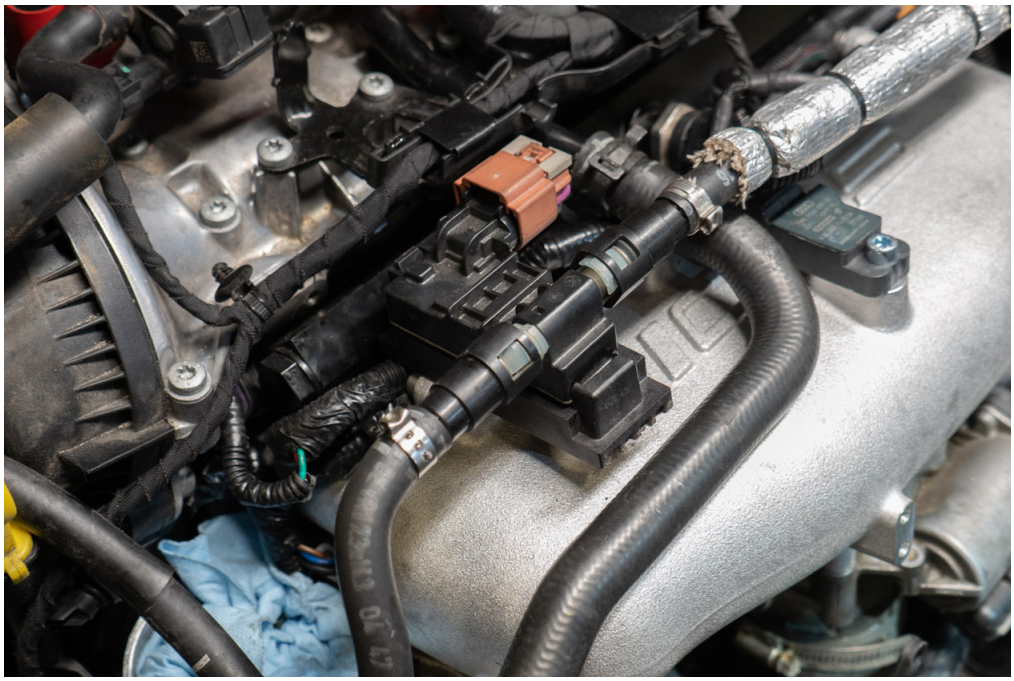
Install the MPI fuel rail. Shown here is the CTS Turbo fuel rail.



## STEP 18

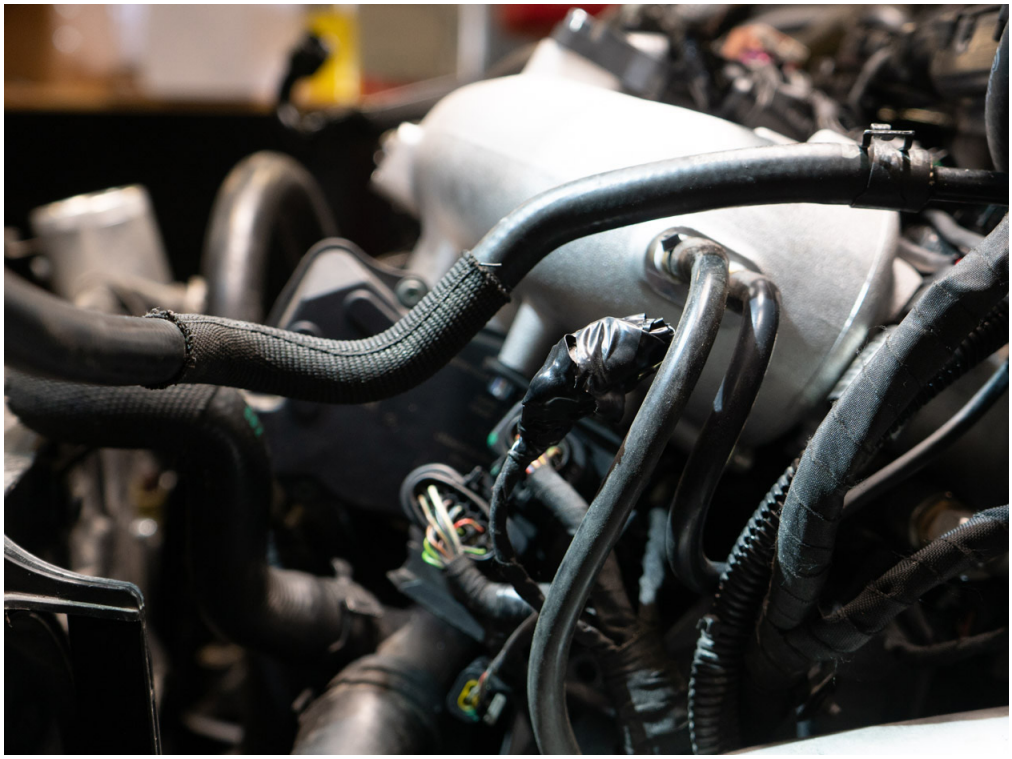
Install your flex-fuel sensor, if equipped.
We are using the United Motorsport PROFLEX kit which can be bolted onto the manifold, making for a clean installation.

If you do not have a flex-fuel sensor, we provide a clamp for the stock fuel line which bolts to the same location.



## STEP 19

Tape off the electrical harnesses for the intake manifold flap position sensor and flap solenoid.



## STEP 20

Ensure all necessary electrical connectors are installed correctly, check for any leaks. You are now ready to retune your car with a compatible software tune.