



Mazda MX5 NC DTH ITB Kit

Mazda MX5 NC Complete DTH ITB Kit Assembly

This guide is to be used alongside the assembly drawing provided on the website ('Manifold Drawing' & 'Product Drawing') and the 'Mazda Mx-5 NC DTH ITB Throttle Body Kit' video (link below) to safely install the kit. Please scan the QR code below to view the drawings:



ASSEMBLY YOUTUBE VIDEO



WEBSITE/DRAWING

Introduction video:

<https://youtu.be/c5xYyd6vxg4?si=Cj9Cr1jL8qLBEAPu>

Assembly video:

<https://www.youtube.com/watch?v=VKsGpWCHNI8>

PLEASE NOTE:

- These instructions require the following to be completed.
The battery has been disconnected from the vehicle.
The installation is being conducted by a competent mechanic.



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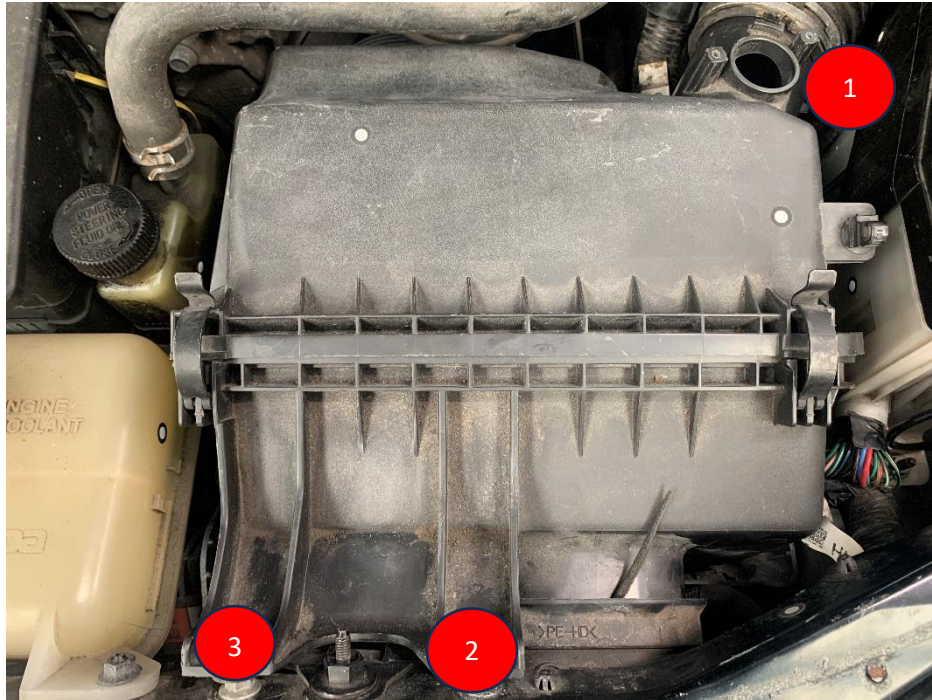
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Upon receiving your Mazda NC MX5 fuel injection throttle body conversion kit, please complete a visual inspection of all the components to ensure that no damage has occurred in shipping.

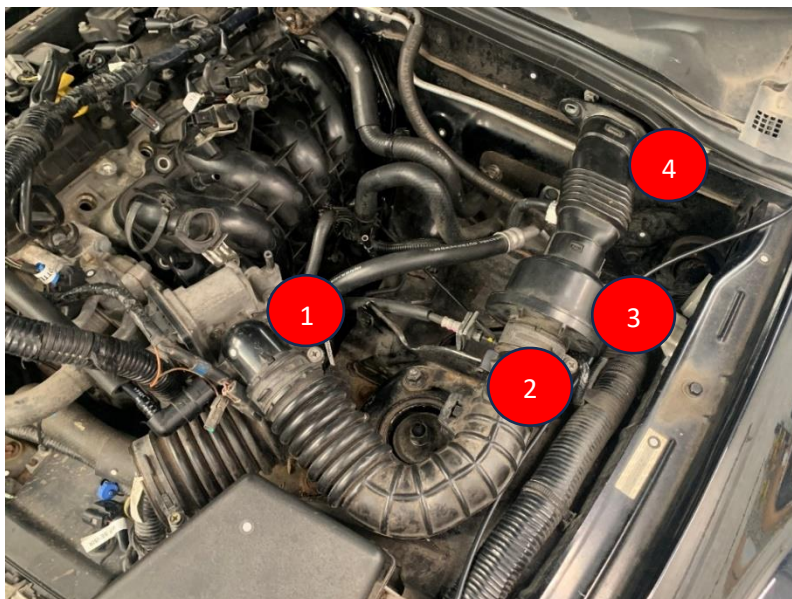


REMOVAL OF OEM INTAKE:

- 1.) Once the battery for the vehicle has been isolated. The removal of the OEM intake system can start. **It is recommended that the engine wiring loom connectors below are unplugged to allow more room in removing the OEM intake parts.** It is recommended that the throttle body, coil, fuel injectors, MAP sensor and plenum electrical plugs are removed. Then remove the airbox situated at the front of the engine bay shown in the picture below. This can be completed by loosening the hose clamp connected at the rear of the airbox and unscrewing the MAF sensor from the airbox (1). Then remove the two retaining nuts at the front of the airbox (2)(3).



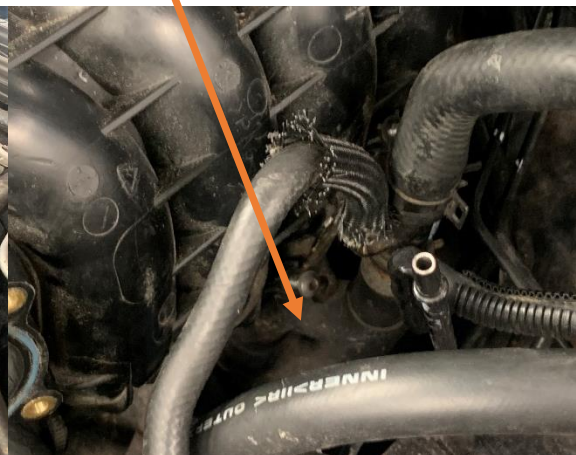
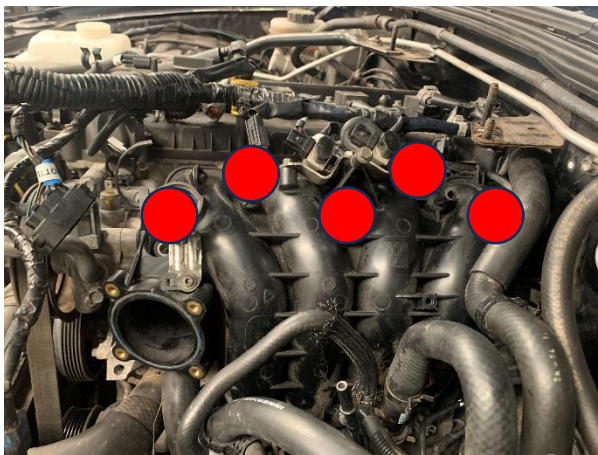
- 2.) Next, remove the intake piping and sound tube from the engine bay. This will require you to undo the hose clamp piping from the throttle body (1). Then undo the retaining clip (2), retaining bolt (3) and the two firewall mounting bolts for the sound pipe (4).



- 3.) Uninstall the throttle body from the manifold, to do this, first ensure that the coolant lines passing through the throttle body are looped back into each other with the brass 90-degree fitting (included). Then undo the four bolts holding the throttle body in place and disconnect the electrical connector from the body.



- 4.) Next, Uninstall the intake plenum from the cast aluminium angle manifold. Make sure to undo the manifold supporting bolt situated on the bottom of the plastic plenum, and then remove the 5x M8 bolts highlighted in the picture below. Also, the EGR screws and nut located down the backside of the engine bay need to be loosened to be able to remove the airbox. Then finally, undo the screws situated down the side of the plastic manifold shown below:

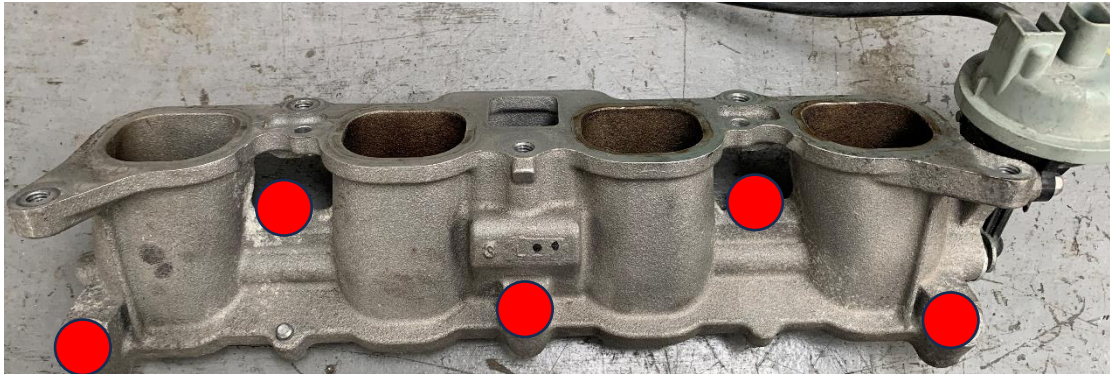


EGR NUT IS LOCATED HERE DOWN THE BACKSIDE OF THE ENGINE.

- 5.) Now remove the fuel rail from the head.

Please be aware that the fuel rail may still be pressurised and can squirt fuel from the fitting upon removal.

- 6.) Behind the plastic manifold will be a cast aluminium angle manifold, disconnect the vacuum lines to the actuator, then unbolt the manifold from the head of the engine with the bolts highlighted below:



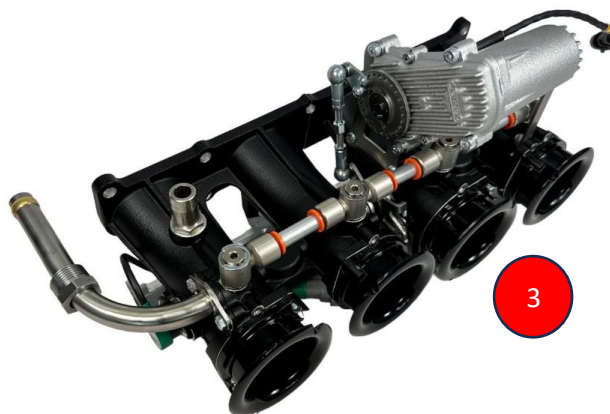
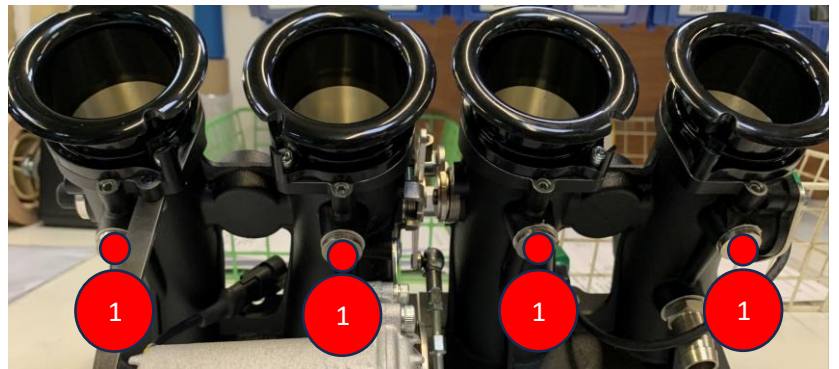
- 7.) Once all the OEM intake components have been removed, clean the manifold flange on the cylinder head thoroughly to ensure no debris is present. Then block the intake runners to avoid any debris from entering the combustion chambers.

(OPTIONAL) INSTALLING EGR KIT, IF NOT FITTING GO TO PAGE 9:

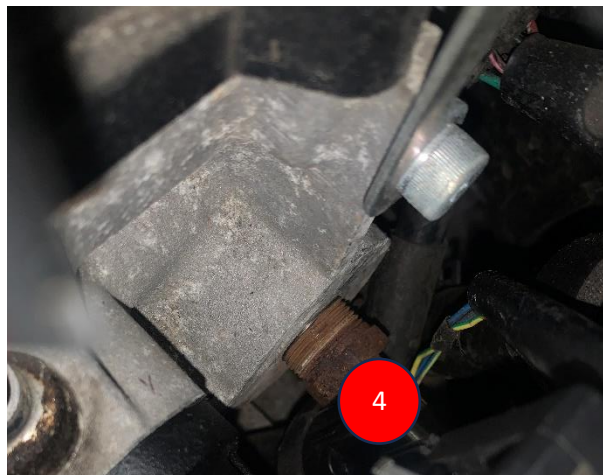
- 1.) If fitting the EGR rail to the kit, modification is required.

To do this, first remove the blanking plugs on the underside of the bodies (shown below, 1), then remove the blanking plate situated on the end of the throttle bodies (2).

Once the blanking plugs have been removed (1), fit the EGR kit to the underside of the bodies, and fit the EGR elbow to the end of the throttle bodies in replacement of the blanking plate. The final product when installed in the vehicle should look like the item shown below (3):



- 2.) Once the kit has been installed, the 22mm EGR Hex nut can be tightened up from the underside of the kit. (4)



MANIFOLD / THROTTLE BODY FITTING:

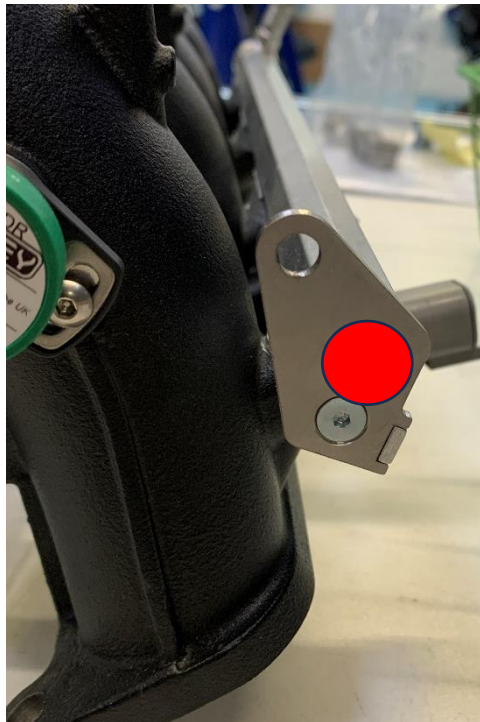
- 1.) If not fitting the EGR kit, the included M22 blanking plug and crush washer will need to be used. To correctly complete this step. Ensure that the blanking plug is tightened to 50-60Nm.



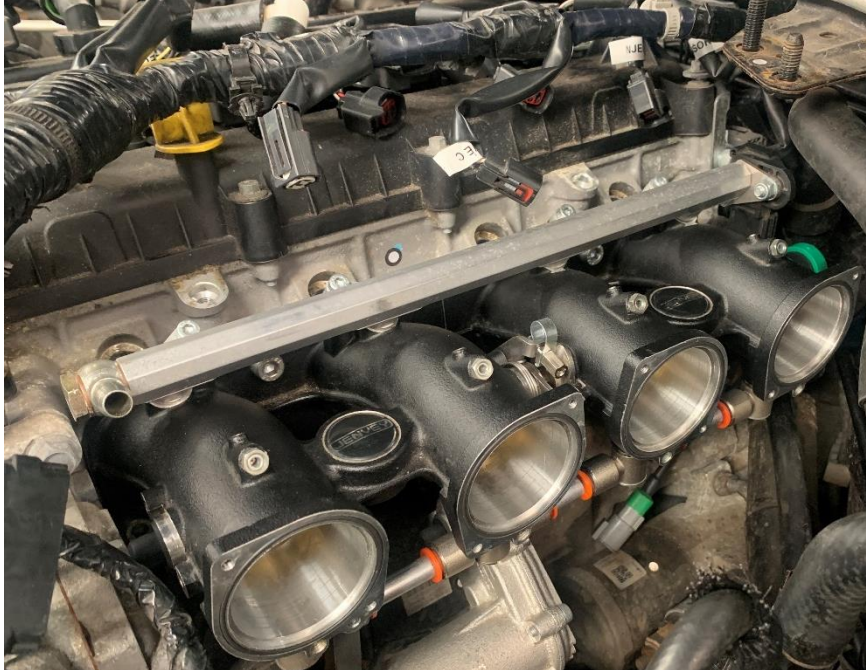
Final article:



- 2.) Fit the OEM MAP sensor to the end of the MAP rail, ensuring a small amount of grease is applied to the MAP sensor O-ring the location of which is shown below:



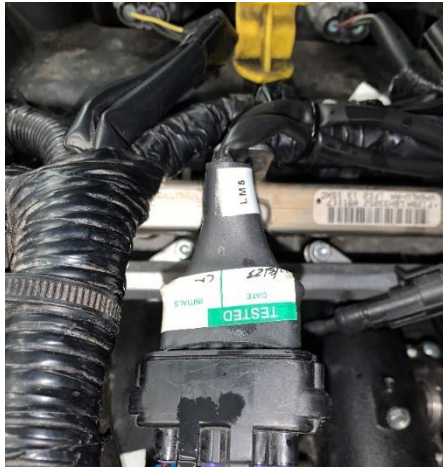
- 3.) Ensure that you now remove the material you have used to block the intake runners. Then fit the DTH bodies to the engine. Please make sure that the DTH bodies O-rings are lightly greased beforehand to ensure that they remain inside the O-ring groove during the installation. Push the bodies square onto the head, then using the supplied M8x20 hardware, tighten the fasteners to 15-25Nm.



- 4.) Fit the positive crankcase vent to the fitting on the underside of the throttle bodies on the intake runner closest to the firewall. PCV valve joining hose is made from a short length of the included hose, and the 17mm 90-degree fitting (included) (See Jenvey website for more information, <https://www.jenvey.co.uk/throttle-body-kits/mazda-engine/mazda-mx5-nc-dth-dbmz01>).

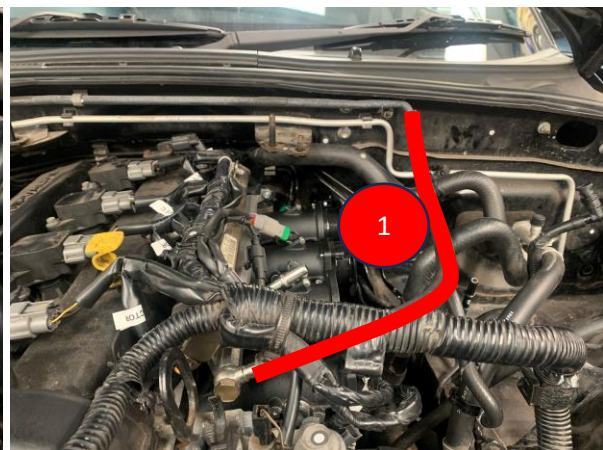
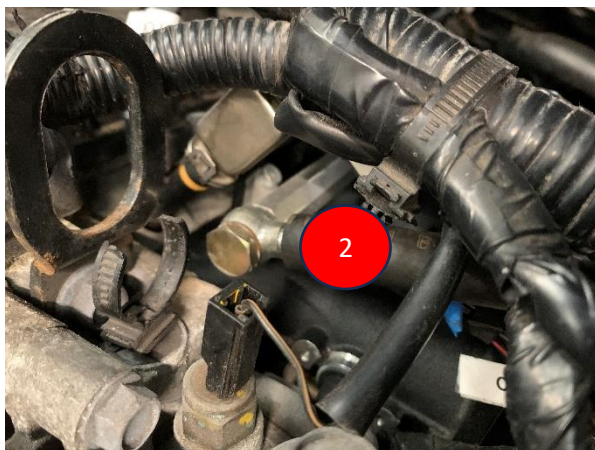


- 5.) Reinstall the fuel rail and injectors onto the head, ensuring that the condition of all the O-rings sealing the injectors to the head and the fuel rail itself are in good condition.
- 6.) Plug in the throttle position sensor located on the throttle body closest to the firewall, plug in the drive by wire actuator into the drive by wire adaptor loom. Then plug the 6-pin plug into the OEM wiring loom. All 3 clips will make an audible click when fully inserted, (As shown below):



Once all plugs are fully seated, ensure that the plugs are tied away from any sources of heat or vibration with the included cable ties.

- 7.) It is recommended at this point to go through the engine bay wiring loom and tidy any loose or dangling wires away from any sources of heat or vibration, these are the OEM intake sensors and valves due to the throttle bodies not requiring them.
- 8.) Fit the brake booster vacuum pipe to the MAP rail, as shown below. This will require fitment of the included brake booster vacuum pipe supplied with the kit (1 & 2).

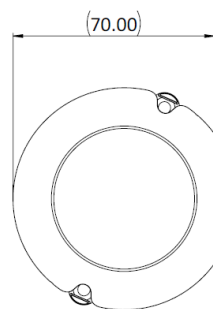


- 9.) Fit the fuel fitting back onto the original fuel rail. Ensure the fuel line fitting (1) is fully inserted onto the fuel rail, then insert the small brown clip (2), then the bigger red clip over the top (3). The clips only go on in one direction so please use the pictures below to ensure the fuel line attaches safely. Please refer to the manufacturer's recommendations if unsure of fitment.



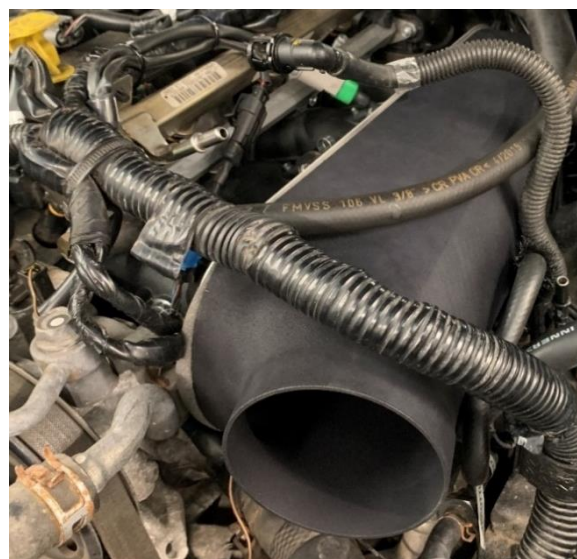
AIRHORNS, AIRBOX AND FILTRATION UNIT:

- 1.) If the airbox isn't being installed, now would be the time to fit the air horns. When installing the airhorns, ensure a thread locking compound is utilized.
- 2.) First, the backplate will require fitting to the throttle bodies, to do this, bolt the air horns through the backplate and then into the bodies. **NOTE, the airhorn located the closest to the firewall will require its lip trimming to allow the airbox to fit over (shown below), using a hacksaw, linisher or similar.**



Trim approximately along this line.

Once this has been completed, slide the airbox into place and then slide the bottom side of the airbox into the slots of the backplate. Once correctly located, lightly push the top side of the airbox towards the backplate and secure in place with the included DZEUS quarter turn style fasteners.



3.) Now fit the silicone elbow (1), MAF adaptor, and air filter to the airbox.

Lower the elbow into place, then lower the MAF adaptor into place and locate the MAF adaptor on the fuse box mounting in the right side of the engine bay and fix using the OEM nut.

Take the OEM cam cover breather clip from the OEM intake and place it onto the spigot on the MAF adaptor boss (2).

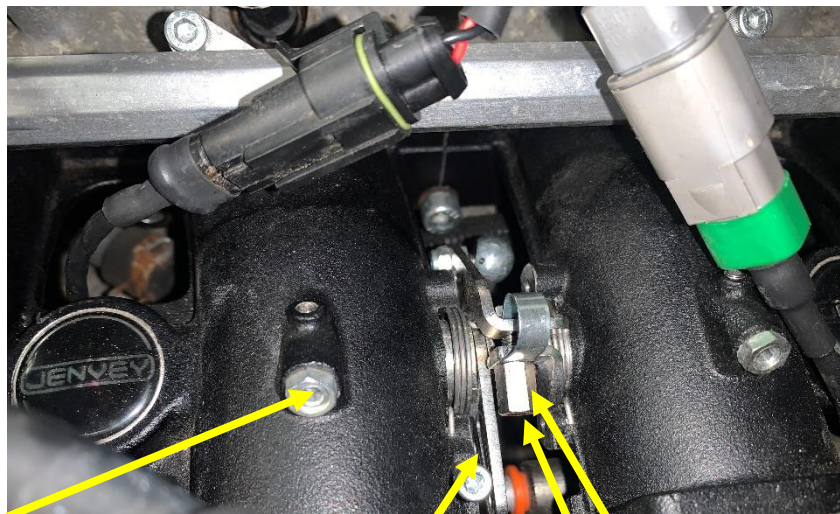
Then snap the cam cover breather onto the adaptor (2). Once this has been installed, screw the MAF sensor into the adaptor and plug into the original loom (3).

Then finally install the filter onto the adaptor. Once all the parts have been installed, tighten the hose clamps.



FIRST START UP:

- Turn the ignition/fuel pump on and check for any fuel leaks around the engine bay/fuel rail.
- NOTE – This kit requires an aftermarket ECU to correctly operate.
- It is recommended that the customer balances the throttle bodies using a synchro meter. The bodies will be balanced at the factory. However, it may require finer tuning to maximise performance:
 - PLEASE GIVE A VISUAL INSPECTION OVER THE INSTALL AND CABLE TIE ANY LOOSE WIRES/CABLES AND TAPE/COVER ANY CUT SHEATHING, AND CHECK FOR ANY FUEL LEAKS WHEN THE VEHICLES FUEL PUMP IS TURNED ON.
- A Synchrometer can be purchased through Jenvey Dynamics here: <https://store.jenvey.co.uk/synchrometer-39-55mm-sync10>



Idle bleed screws

Idle control screw

Hex nut
Grub screw.

- BALANCING
 1. To do this you must start the vehicle and let the engine get up to temperature.
 2. Set the idle speed of the vehicle to approximately 800RPM, using the idle control screw as shown above, using a 3mm hex key.
 3. Place the “Synchrometer” in each air horn checking for equal air flow on all intake runners, if they are out of balance, use the idle bleed screws.
 4. To adjust the balance between the throttle bodies, loosen the Idle bleed 8mm locking nut and adjust the screw with a 3mm hex key.
 5. To adjust between the two banks of throttle bodies, loosen the locking 7mm hex nut and then tighten or undo the grub screw to achieve a balance.
 6. Repeat step 4 at higher RPM’s, ensuring the throttle bodies remain balanced throughout the rev range. Once the balance has been set, tighten up the hex bar while keeping the grub screw secure.

Please note that the kit will require a new fuelling and ignition map to be calibrated to the car’s aftermarket ecu. Therefore, it is recommended that a rolling road dynamometer session is used to correctly calibrate the ecu.