



Long Road Racing

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Global MX-5 Cup Car Technical Service Bulletin #4-19-16

ECU Change

Purpose for this TSB:

The GEMS (General Engine Management Systems) ECU (Engine Control Unit) is now available for your GMX-5 race car. There are several enhancements that the GEMS ECU offers that the stock ECU did not, they are:

1. Elimination of traction and stability control
2. Horse power and torques increases
3. Increase electronic steering feel
4. Tuned for octane ranging from 93 – 96
5. Flat shift rev cut

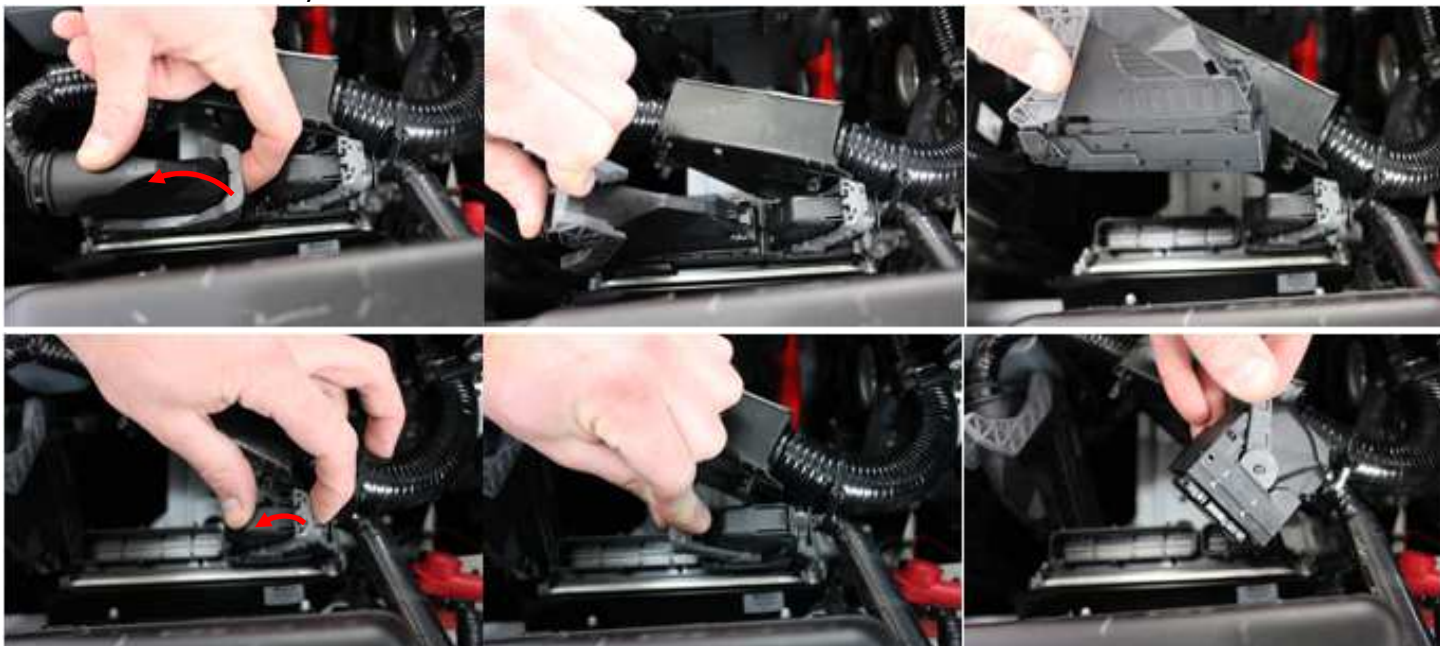
Installation:

1. Follow all safety standards and wear the appropriate safety gear
2. Ensure that the kill switch is OFF, and battery is disconnected
3. Locate and remove the Stock ECU
 - a. Open hood, Locate stock ECU next to Fuse Box

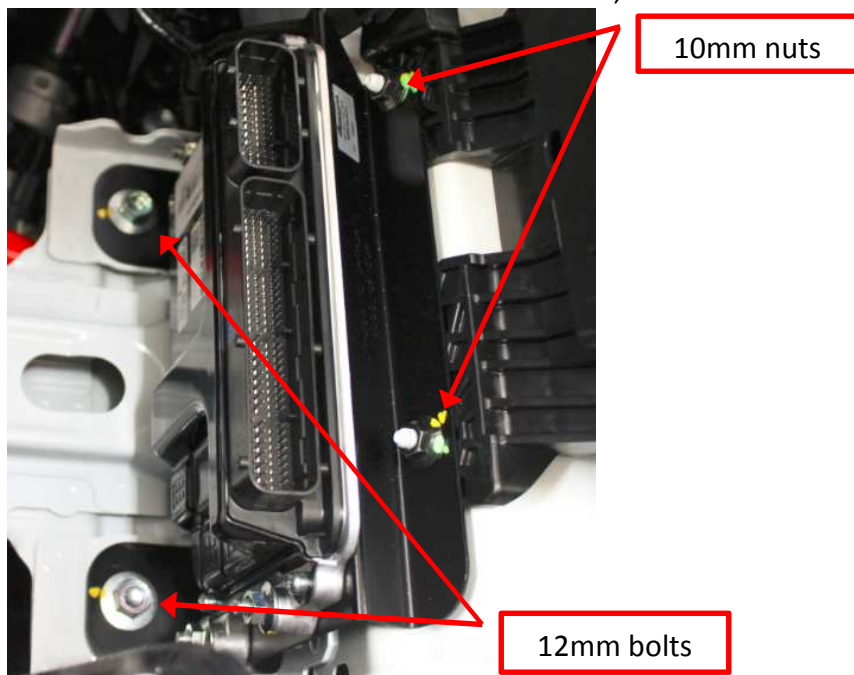


Stock ECU

b. Carefully disconnect Both ECU connectors



c. Remove Stock ECU and Bracket; two 12mm Bolts and two 10mm nuts

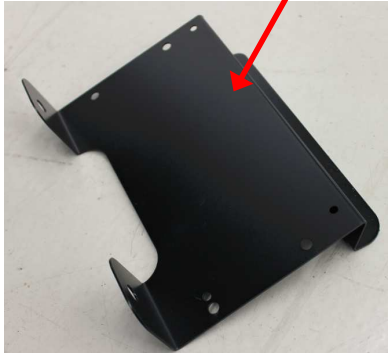


4. Unbolt Stock ECU from Bracket, four 10mm nuts and bolts



Four 10mm nuts & bolts

ECU Bracket



5. Attach GEMS ECU to bracket with provided 4mm cap screws (2.5mm allen), washers and locknuts (7mm)



6. Install GEMS ECU and bracket

- a. Position ECU, Install two 12mm bolts and two 10mm nuts



b. Carefully Install both ECU connectors, be certain to not bend pins inside ECU



7. Remove O2 Sensor

a. Disconnect the O2 sensor connector in the Engine Bay just in front of the Exhaust Header; Press tab and gently pull or pry connector apart



- b. Remove adel clamps holding O2 sensor wire



Adel clamps

- c. Remove O2 sensor using a 7/8' wrench or O2 socket; Sensor can be removed with exhaust installed in car, photos shown out of car below for clarity



8. Install supplied O2 sensor
- Install new Bosch LSU ADV O2 sensor using a 7/8' wrench or O2 socket
 - Use anti-seize on the threads
 - Route sensor wire and re-install adel clamps
 - Connect Bosch LSU ADV O2 sensor to vehicle connector
 - Reconnect battery
9. Install the new AiM configuration; See GMX-5 AiM GEMS configuration bulletin for details
10. Start car to verify correct installation
- Note that you will no longer need your key fob in the vehicle to start and run the car
 - Keep key fobs, Stock ECU and Stock O2 Sensor. The GEMS ECU is the only ECU allowed for use in competition, however the stock components can be useful for electronic systems trouble shooting.

If you have any questions about this Technical Bulletin, please contact Glenn Long at:

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