FuelX Autotune- Royal Enfield Meteor 350

Document Version	2	**Release Date**	13 July 2023

Application information	**FuelX**
Vehicle	**Royal Enfield**
Model	**Meteor 350**
Year of manufacture	**2021-2023**

Note:

- Read through all instructions before installation and use.
- Ensure that the bike is switched off and the key is out of the ignition before proceeding with the installation.
- Some parts of the bikes might be hot/sharp and may cause burns/cuts. Proceed with extreme caution or wait until the bike has cooled down. Always wear safety gloves.
- When the installation is complete, make sure to secure the wiring loom away from the movable parts or components which tends to heat up during the normal operation of the vehicle at any chance.
- FuelX is intended for motorsport use on a closed course, please check with your local laws before using this product. Race Dynamics is not liable for consequences arising out of using the product.

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for Indian specification vehicles, the FuelX module will have a sticker indicating it.

The warranty/support will not be provided for international users with Indian specification FuelX purchased from unauthorized re-sellers.

1. FuelX

FuelX is an electronic, plug-in, fuel-injection optimizer for modern engines. It either enriches or decreases the AFR in all operating regions according to the rider requirement. It autotunes the engine to the best operational parameters, constantly monitoring, learning, and adapting to the engine condition, wear and tear, riding style, add-ons (such as air filter and/or exhaust), etc as well as the environmental conditions such as temperature, humidity, altitude, etc. always ensuring the engine performs in the safest and most optimal zones.

FuelX kit contains the following items

- FuelX Module
- Wiring Harness
- Handlebar map switch (Pro version only)
- Zip ties
- Decals
- Quick start guide and Warranty card

Image 1.1

2. FuelX Variants:

FuelX Pro

The FuelX Pro variant has 10 maps that can be changed depending on the preference of the rider. For the Pro version, the Fuelx contains an additional connector (Refer to Image 2.3) for the Handlebar Map switch (Refer to Image 2.2)

Image 2.1

Image 2.2

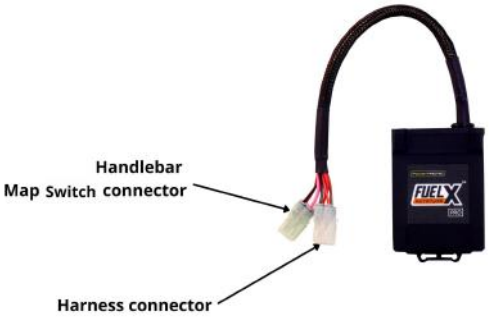


Image 2.3

FuelX Lite

The FuelX Lite variant has a single autotune map and only one connector for the harness.

Image 2.4

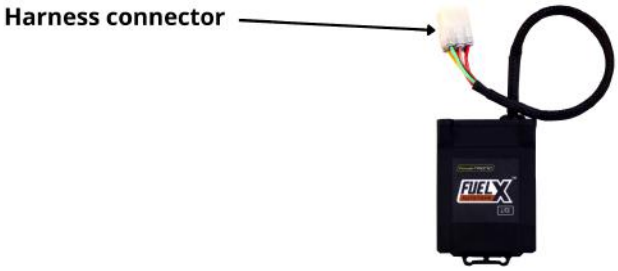


Image 2.5

3. FuelX Harness Connectors

The harness contains

- The Lambda connector (O_2)
- FuelX connector
- Ground/battery negative connector.

Image 3.1

The type and number of connectors may vary depending on the vehicle, year of manufacture, and the number of cylinders. Examples of different types of Lambda sensor connectors are shown below.

Image 3.2

The FuelX is connected between the Lambda sensor connector and the ECU. The male connector of FuelX is connected to the female of the Lambda sensor and vice versa.

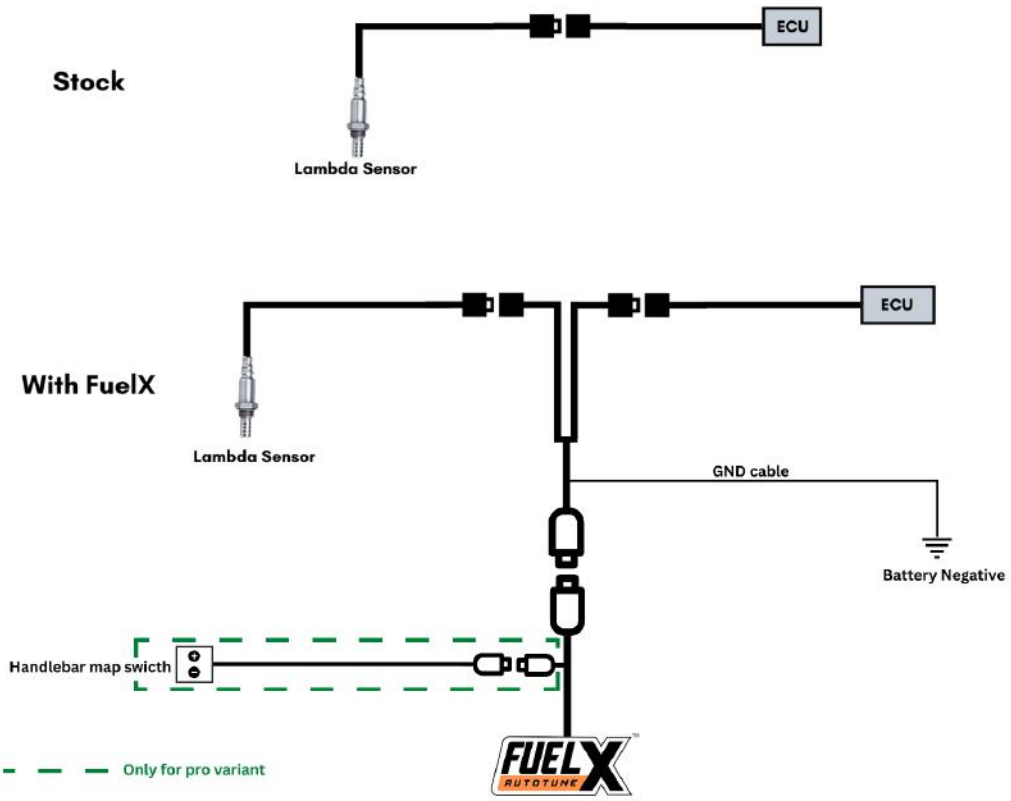


Image 3.3

4. Installation procedure

4.1 Removing panels, and fairing

Begin at the right side of the bike.

Park the bike using the center stand on a level surface (Or a paddock stand).

4.1.1 Unlock the side panel. Refer to **Image 1**

Image 1

4.1.2. Detach the side panel. Refer to **Image 2**

Image 2

4.1.3 Locate the grab rail and pillion seat bolts. Refer to **Image 3**

Image 3

4.1.4 Using a 6 mm Allen key unscrew the bolts. Refer to **Image 4**

Image 4

4.1.5 Repeat the process on the other side also.

4.1.6 Carefully detach the grab rail and the pillion seat.- Refer to **Image 5**.

Image 5

4.1.7 Locate the rider seat bolts. Refer to **Image 6**

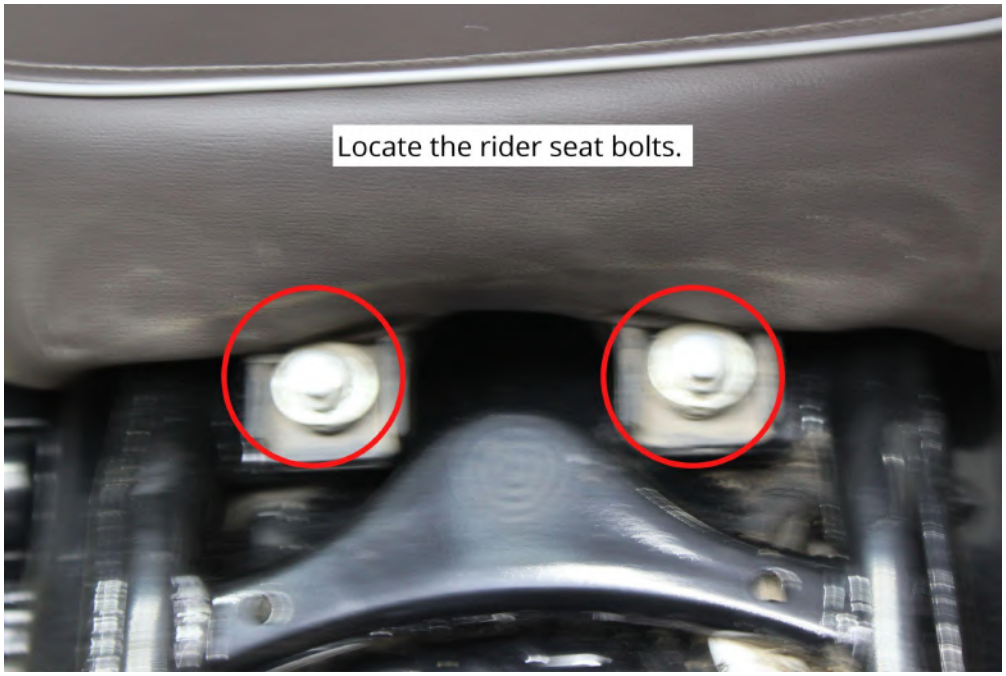


Image 6

4.1.8 Using a 10 T handle, unscrew the rider seat bolts. Refer to **Image 7**.

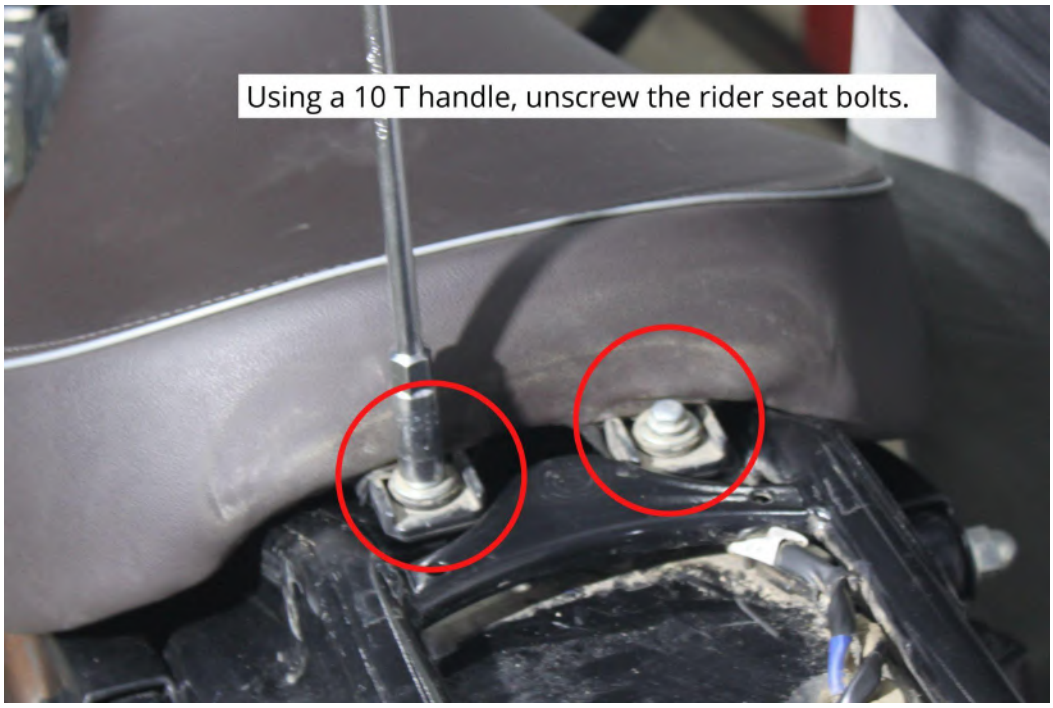


Image 7

4.1.9 Gently lift the rider seat. Refer to **Image 8**.

Image 8

4.1.10 Locate the tank rear mounting bolt. Refer to **Image 9**.

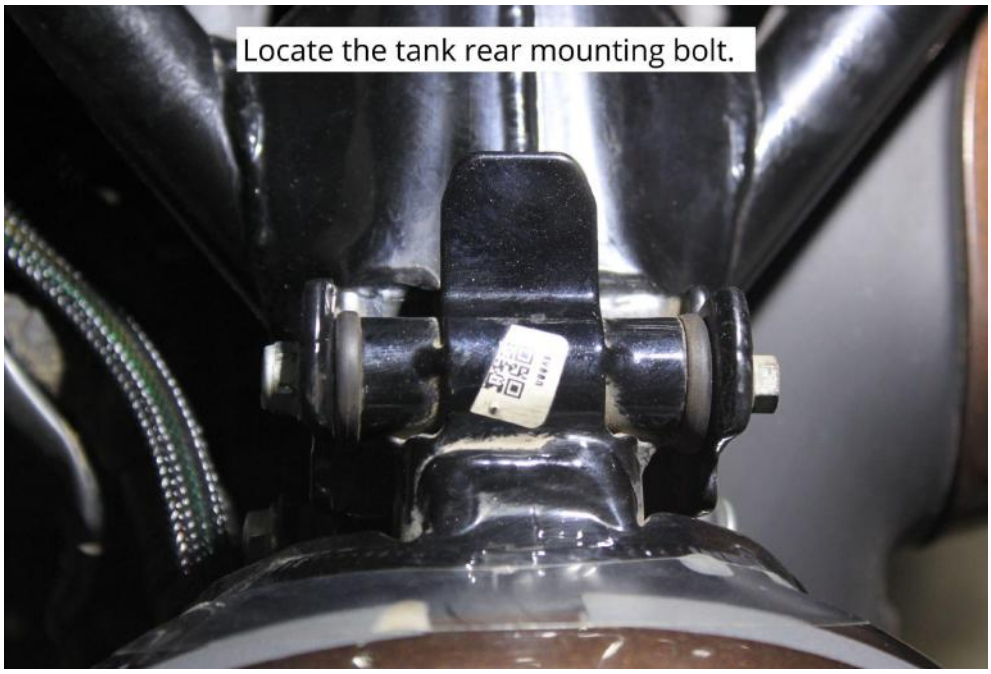


Image 9

4.1.11 Using 10 and 8 mm sockets unscrew the tank rear bolts. Refer to **Image 10**.

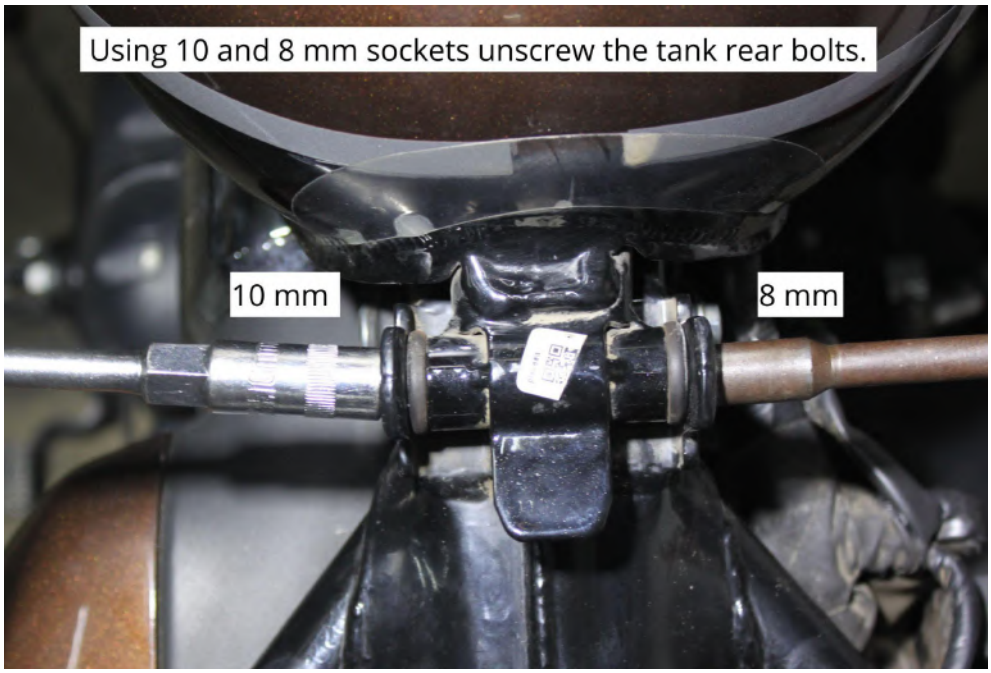


Image 10

4.1.12 Gently lift the rear end of the fuel tank and detach the vacuum hoses. Refer to **Image 11**.

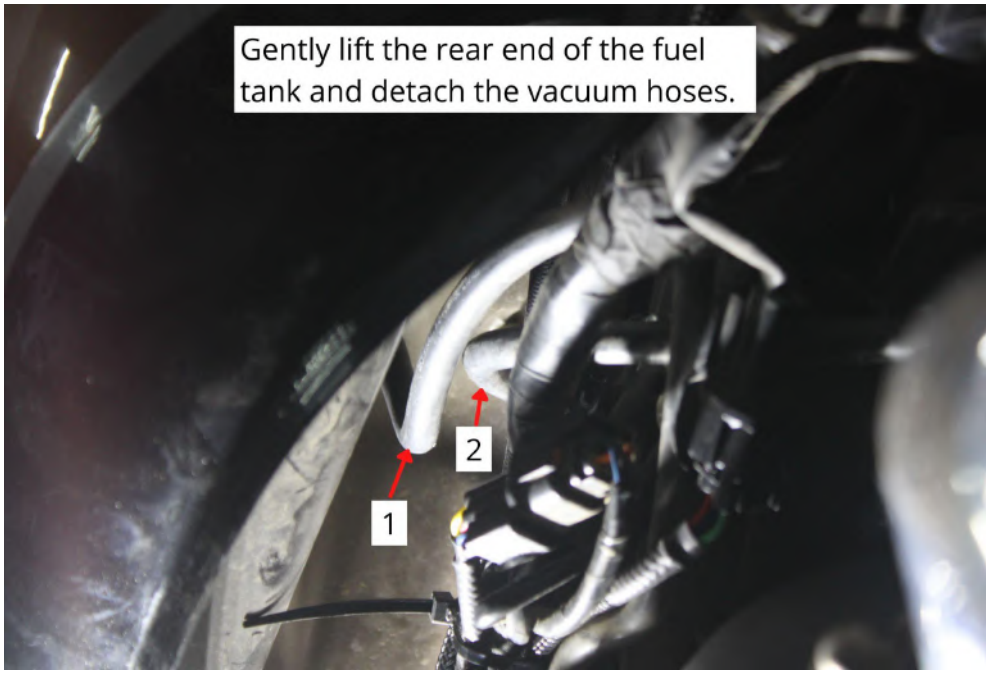


Image 11

4.1.13 Gently disconnect the fuel line from the left side of the fuel tank. Refer to **Image 12**.

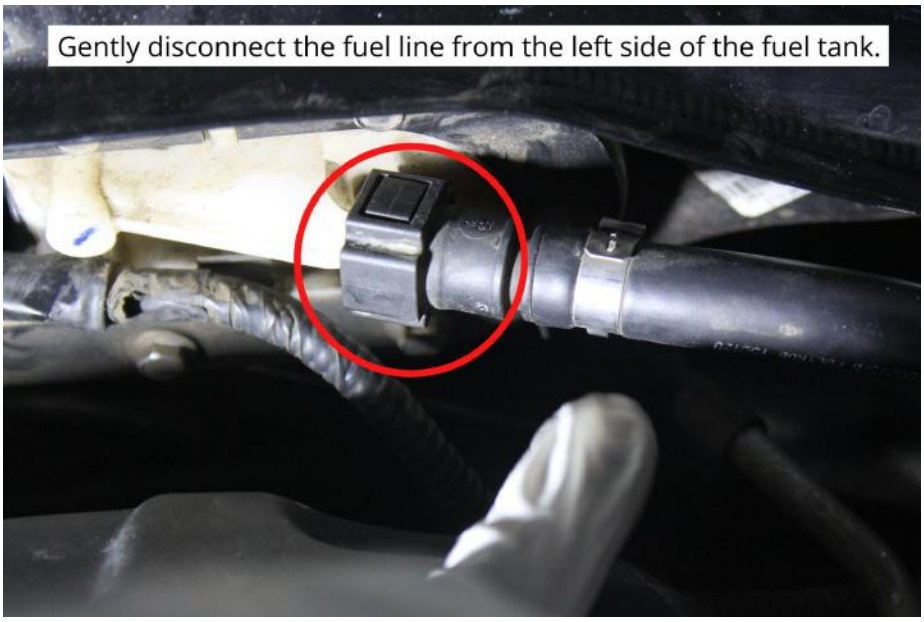


Image 12

4.1.14 Gently disconnect the fuel pump connector from the left side of the fuel tank. And gently detach the tank. Refer to **Image 13**

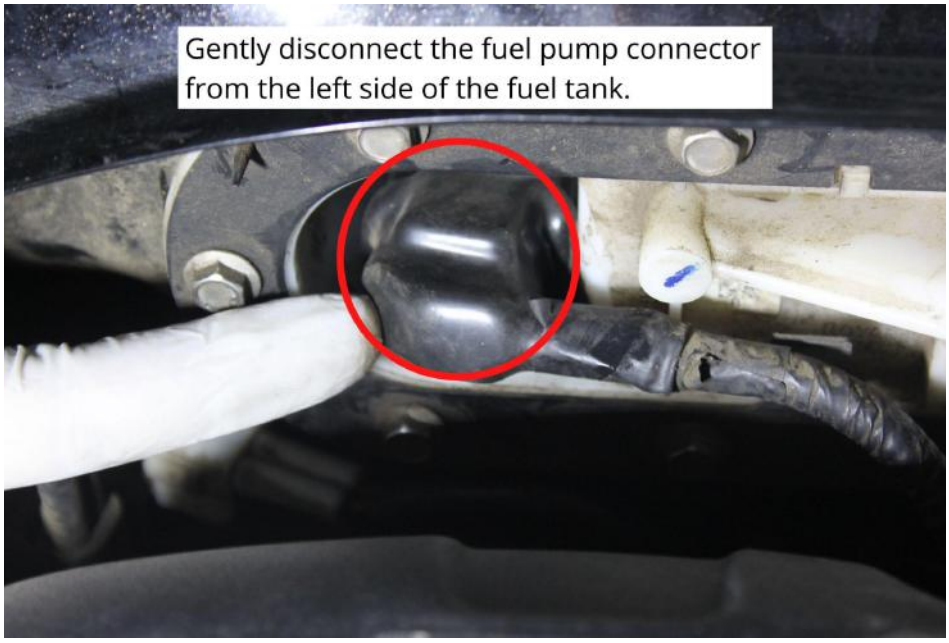


Image 13

4.1.15 Locate the stock lambda sensor connector. Refer to **Image 14**.

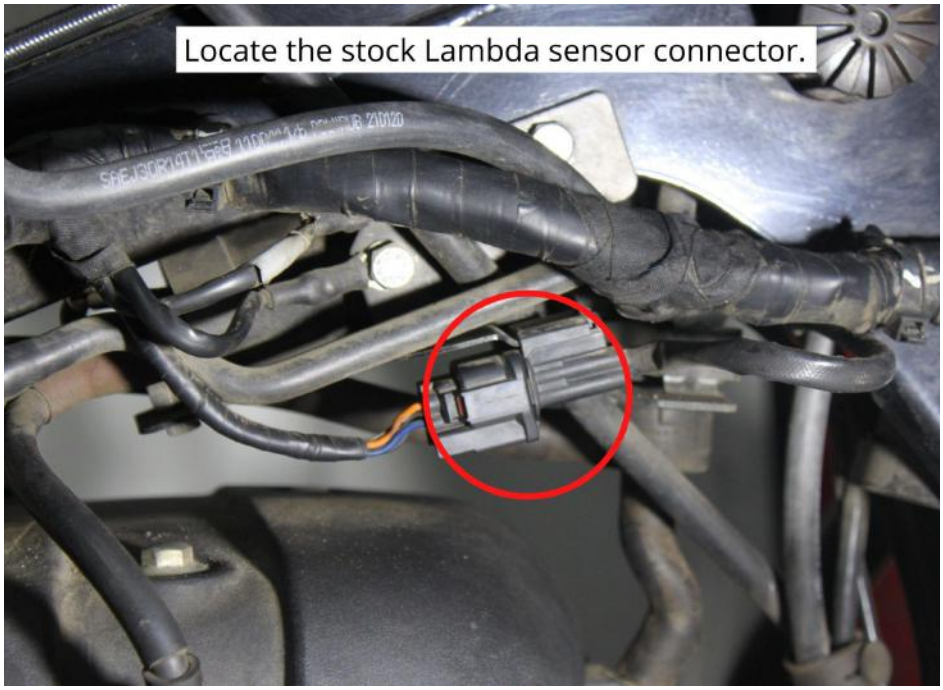


Image 14

4.1.16 Disconnect the stock Lambda sensor connector. Refer to the **Image 15**.

Image 15

4.1.17 Connect PowerTRONIC female Lambda sensor connector to stock male connector. Refer to the **Image 16**

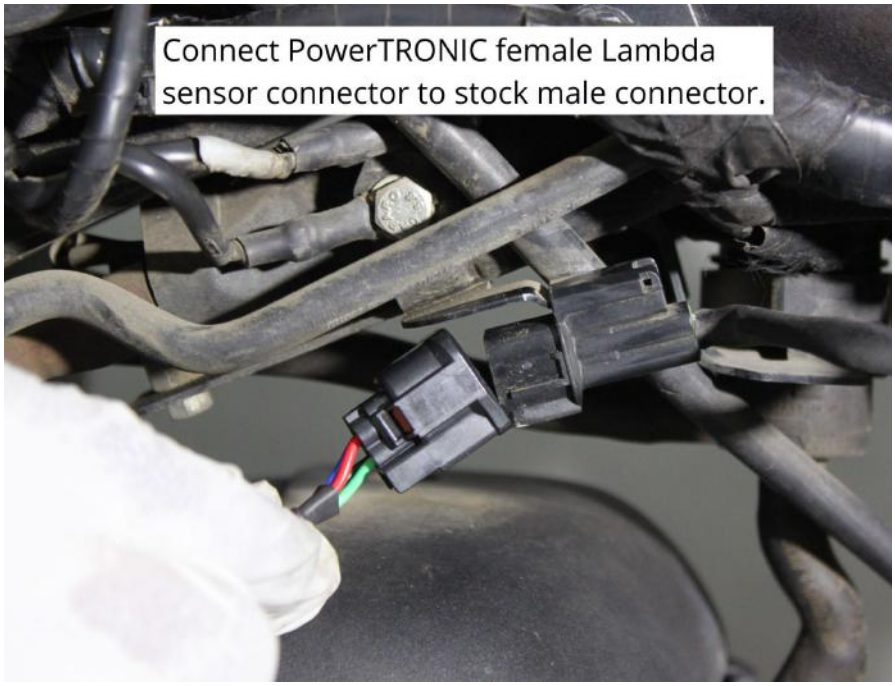


Image 16

4.1.18 Connect PowerTRONIC male Lambda sensor connector to stock female connector. Refer to the **Image 17**

Image 17

4.1.19 Connect the FuelX male connector to the Stock female Lambda connector. Refer to Image **Image 18**

Image 18

4.1.20 Using a 2.5 mm Allen key, tighten the bolts. Refer to Image **Image 19**

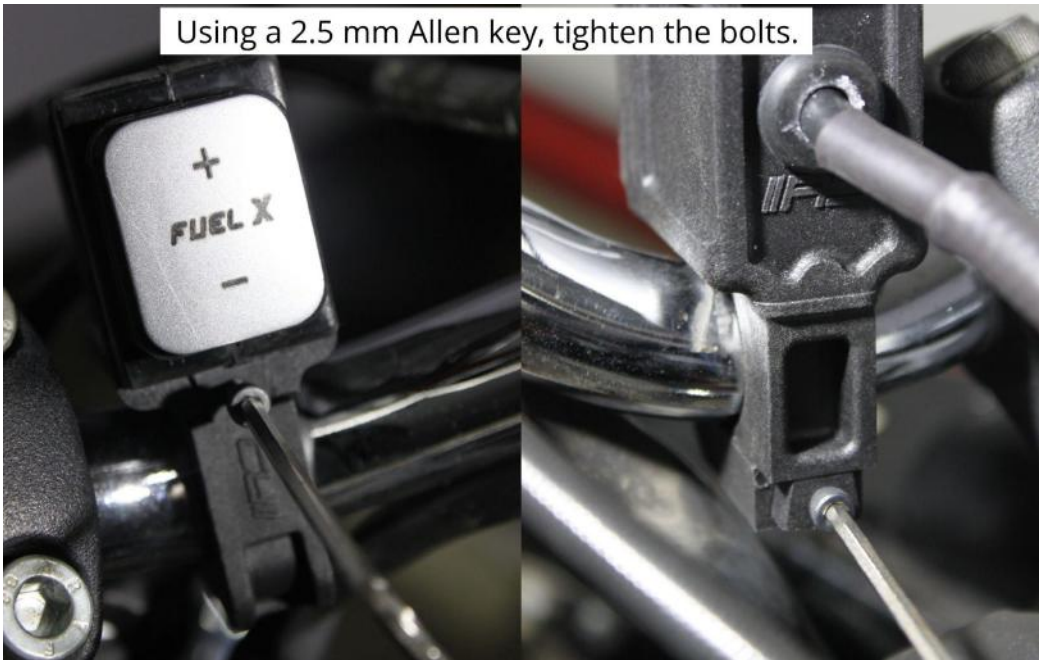


Image 19

4.1.21 Route the FuelX harness and handlebar switch wire to the relay box. Refer to Image **Image 20**

Image 20

4.1.22 Place the FuelX module in the glove compartment. Refer to Image **Image 21**

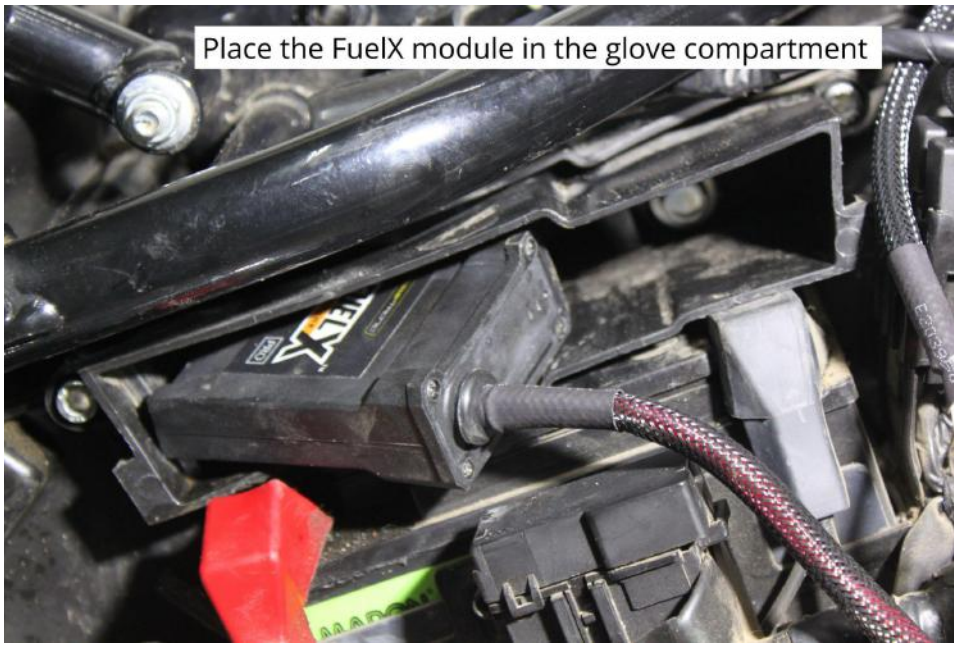


Image 21

4.1.23 Connect the 6 pin FuelX connector to the harness. Refer to the **Image 22**

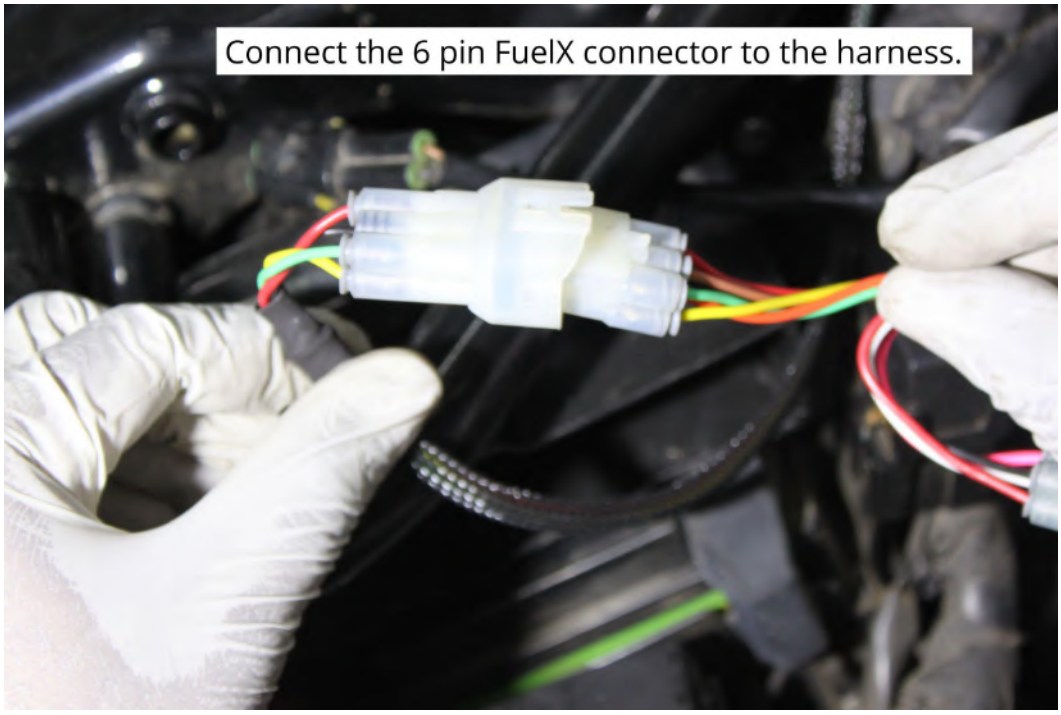


Image 22

4.1.24 Connect the 4-pin FuelX connector to the handlebar map switch harness. Refer to the **Image 23**

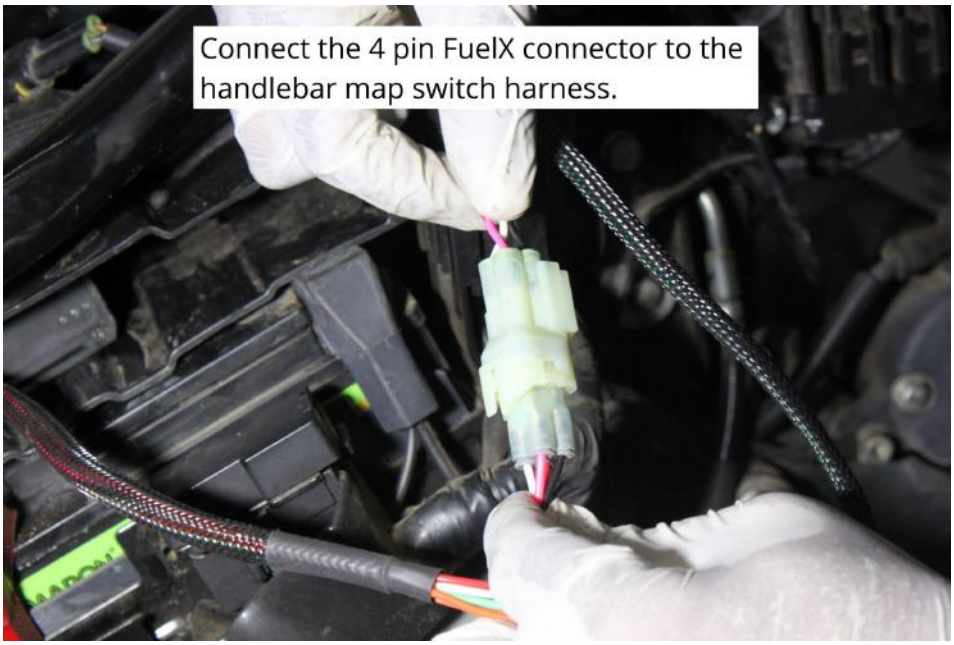


Image 23

4.1.25 Connect the Ground cable to the battery **negative terminal**. Terminal position may vary. Refer to the **Image 24**

Image 24

4.1.26 Secure the harness from hot and moving parts using the zip ties provided. Refer to the **Image 25**

Image 25

4.1.27 Attach the panels back.

5. FuelX Configurations and settings

For Pro versions, maps on the FuelX can be changed according to the preference of the customer. By just pressing the +/- button on the Handlebar map switch. The **Green LED** on the FuelX Handlebar map switch will help the customer know which map is active. Ie the number of blinks on the handlebar switch indicates the number of maps.

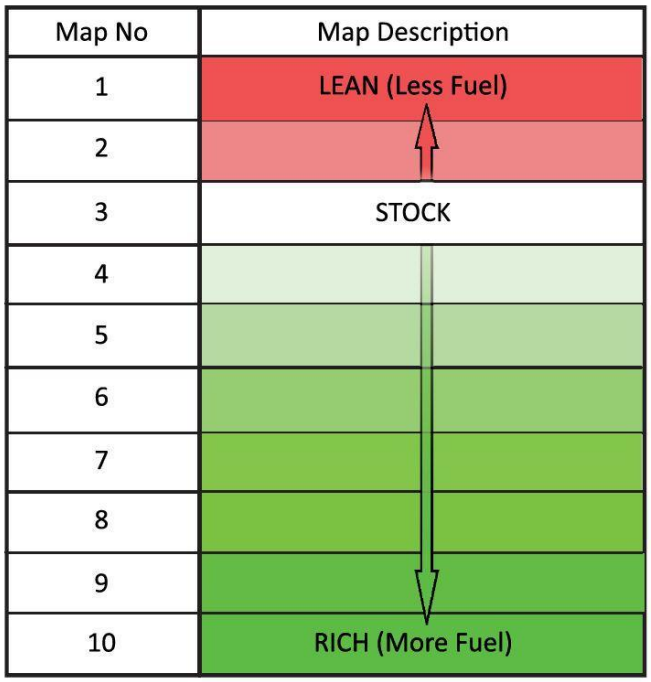


Image 5.1

The rider can choose the map according to the fuel enrichment he wants.

The first two maps are lean maps.

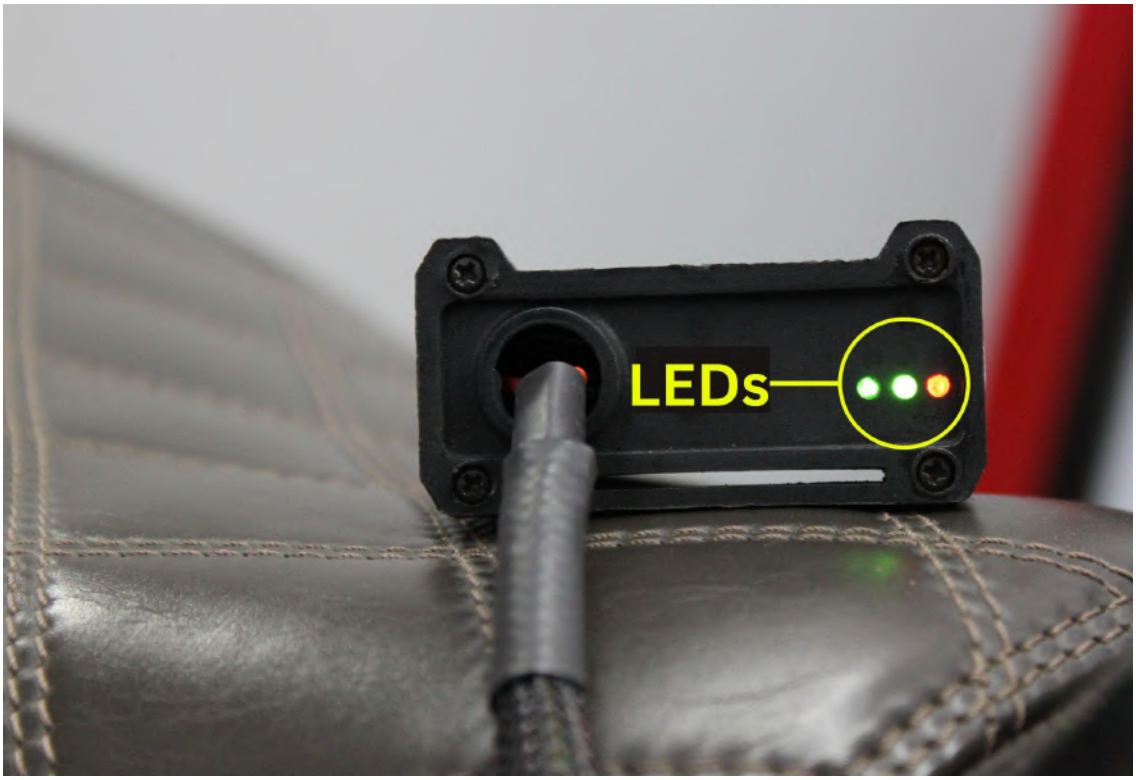
Map 3 runs with stock AFR set by the OEM manufacturer.

Maps 4 from 10 make the AFR richer as the numbers go higher.

For Lite versions, a single autotune map is provided for adjusting the AFR for the best operational parameters.

6. FuelX LEDs

FuelX has LEDs on the module to indicate the operation.



The blinking of the Red LED indicates that the Map on the FuelX is being activated. The Red LED starts blinking after the key and the kill switch are on.

The blinking of the Green LEDs during the idling of the engine indicates that the FuelX is working in sync with the OEM ECU.

The working of both Green and Red LEDs indicates the FuelX Functioning as intended.