

FuelX Autotune- Royal Enfield Himalayan/Scram 411

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Application information	FuelX
Vehicle	Royal Enfield
Model	Himalayan or Scram 411
Year of manufacture	Himalayan: (2017-2022), Scram 411: (2022+)

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 tend 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.

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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 autotune the engine to 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

3. FuelX Harness Connectors

The harness contains

- The Lambda connector (O₂)
- FuelX connector
- Ground/battery negative connector.

For Himalayan, the FuelX harness contains 2 pairs of Lambda sensor connectors (Refer to to image 3.1 and 3.2).

Choose the appropriate set that matches your vehicle.

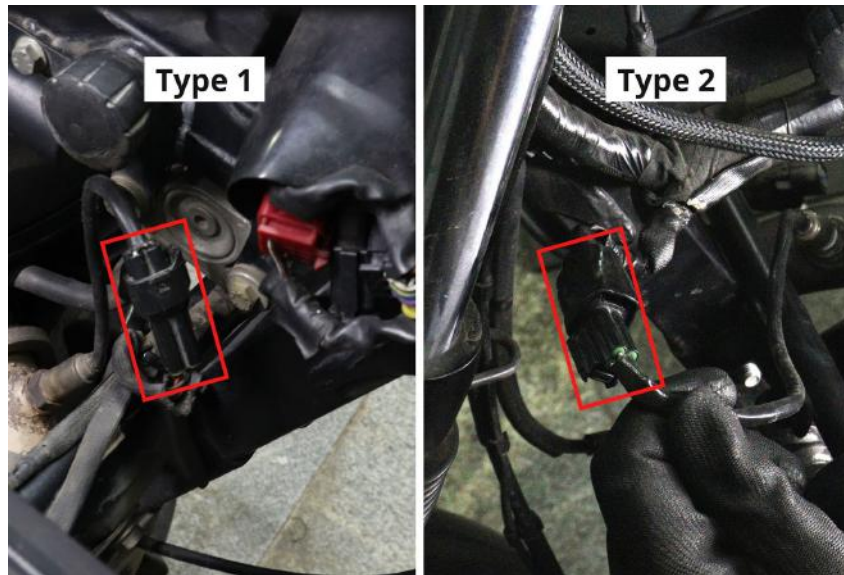


Image 3.1

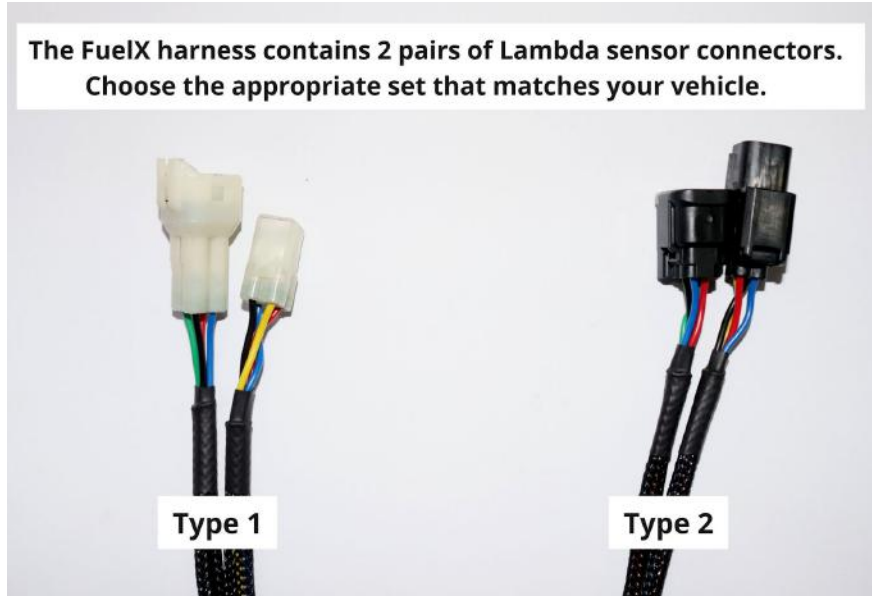


Image 3.2

Leave the other pair of connectors unplugged and keep them disconnected (ie open). Refer to to image 3.3. Tag the connectors securely using zip ties.

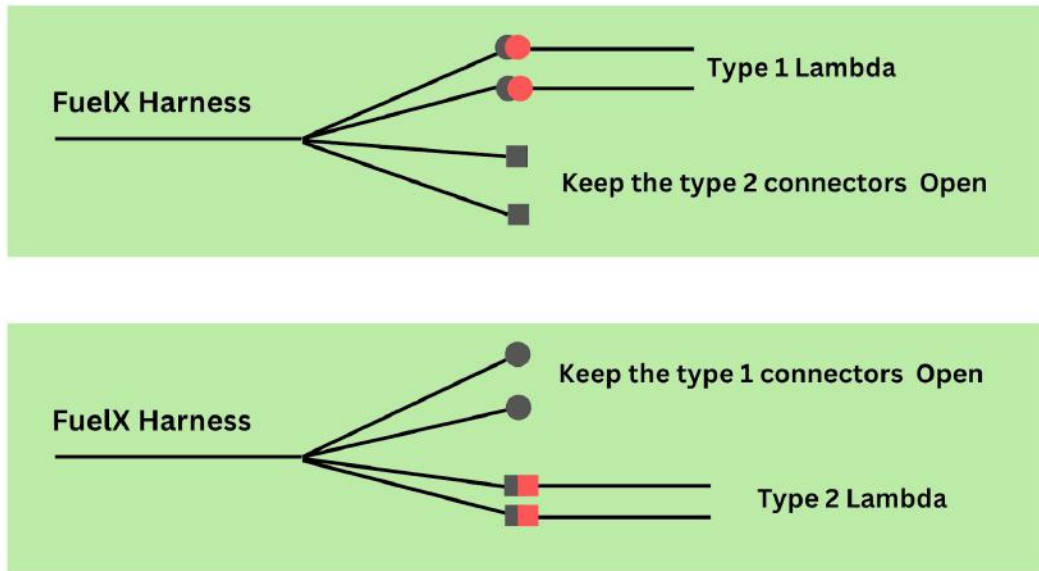


Image 3.3

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

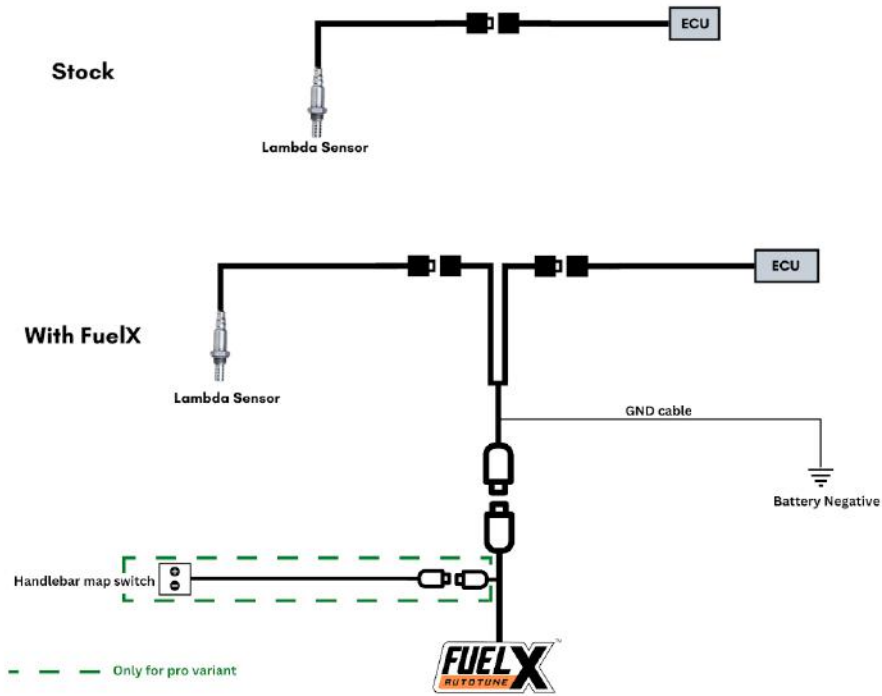


Image 3.4

4. Installation procedure

4.1 Removing panels, fairing

Begin at the left side of the bike. Park the bike using the centre stand on a level surface (Or a paddock stand). Refer to to **Image 1**



Image 1

4.1.1 Detach the pillion seat by inserting the key into the keyhole shown in **Image 2** and unlock the pillion seat. **Image 3** shows the pillion seat detached.



Image 1



Image 3

3.1.2 Detach the rider seat. (Gently lift and slide it towards the rear end) - Refer to **Image 4**.



Image 4

3.1.3 **Image 5** shows both the seats detached.



Image 5

3.1.4 Unscrew the tank bolts using the T socket M10 T bar Hexagonal socket wrench. Refer to **Image 6**.

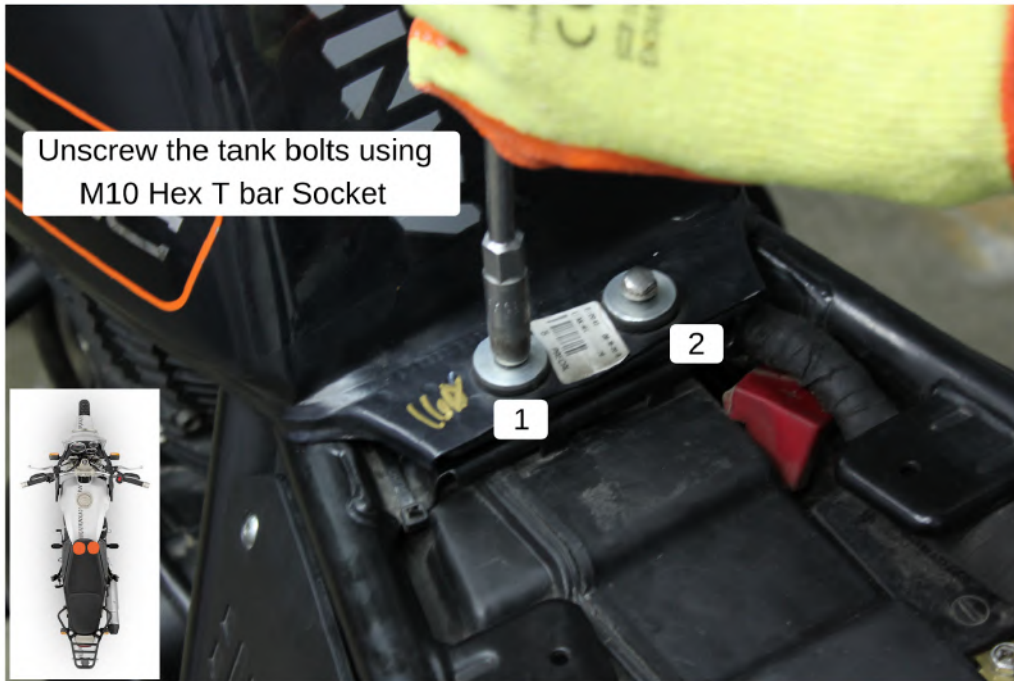


Image 6

3.1.5 Gently give a little lift to the tank and locate fuel gauge connector (Blue colour) on the left side of the tank. Refer to **Image 7**.



Image 7

3.1.6 Detach the fuel gauge coupler. Refer to **Image 8**.



Image 8

3.1.7 Go to the right side of the bike, Locate the fuel line under the fuel tank, after the fuel valve. Gently squeeze and pull the fuel pipe to detach it from the valve. (There may be some amount of gasoline in the pipe. Make sure it does not fall on your body or clothes). Refer to **Image 9**.



Image 9

3.1.8 Right next to the fuel valve, locate the fuel pump connector and detach the connector carefully. Refer to **Image 10**.



Image 10

3.1.9 Lift the tank carefully and locate the two vacuum hoses present (and connected) under the tank. Disconnect both the hoses and lift away the fuel tank and place it safely. Refer to **Image 11**



Image 11

3.1.10 Refer to **Image 12** for disconnected view of the vacuum hoses.



Image 12

3.1.11 Refer to **Image 13** for disconnected view of the vacuum hoses.



Image 13

For type 1 Lambda sensor connector

3.1.12 Refer to to **Image 14** to locate the Lambda Sensor Connector



Image 14

3.1.13 Disconnect the Lambda male and female connectors. Refer to to **Image 15**



Image 15

3.1.14 Connect the FuelX male connector to Stock female Lambda connector. Refer to Image **Image 16**



Image 16

3.1.15 Connect the FuelX female connector to the Stock male Lambda connector. Refer to Image **Image 17**



Image 17

3.1.16 Refer to to the completed view. Tag the connectors securely. Refer to Image **Image 18**

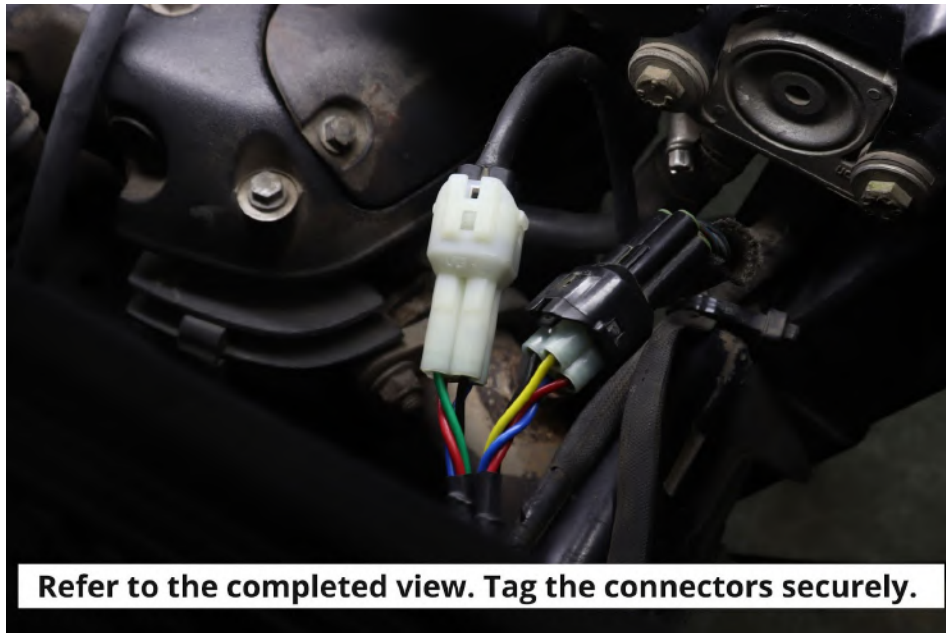


Image 18

3.1.17 Leave the Type 2 connectors unplugged and tag them securely.

For type 2 Lambda sensor connector

3.1.18 Refer to to **Image 19** to locate the Lambda Sensor Connector



Image 19

3.1.19 Disconnect the Lambda male and female connectors. Refer to to **Image 20**



Image 20

3.1.20 Connect the FuelX male connector to Stock female Lambda connector. Refer to Image [Image 21](#)



Image 21

3.1.21 Connect the FuelX female connector to the Stock male Lambda connector. Refer to Image [Image 22](#)

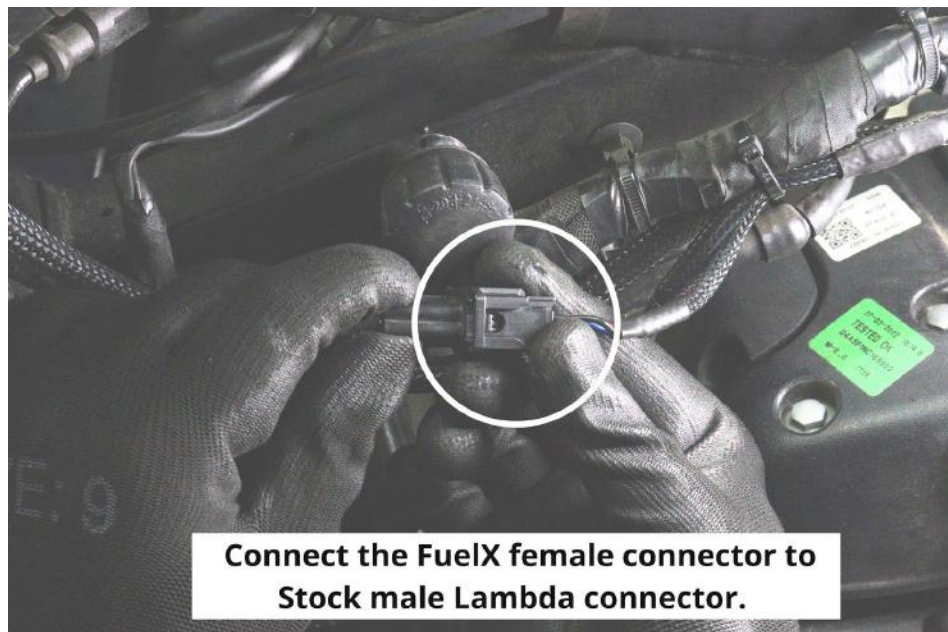


Image 22

3.1.22 Refer to to the completed view. Tag the connectors securely. Refer to Image **Image 23**



Image 23

3.1.23 Leave the Type 2 connectors unplugged and tag them securely.

3.1.24 Connect the Ground connecto tpo the battery negative terminal. Refer to Image **Image 24**



Image 24

3.1.25 Route the handlebar map switch cable from the front end to the rear end of the vehicle. Refer to to **Image 25**

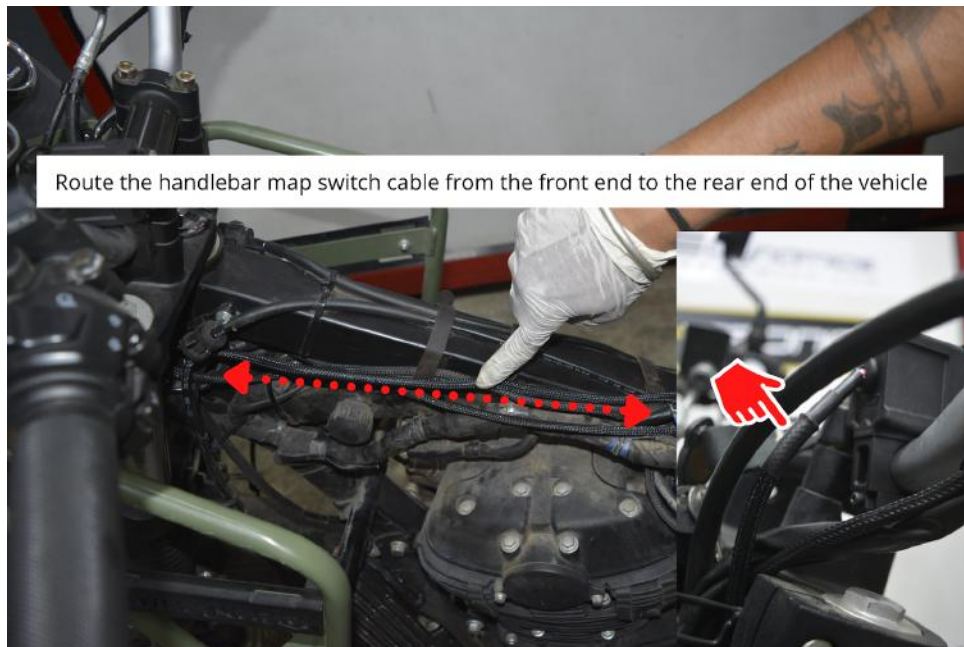


Image 25

3.1.26 Attach the handlebar switch to a suitable position. Refer to to **Image 26**



Image 26

3.1.27 Using a 2.5 mm Allen key, tighten the bolts. Refer to to **Image 27**

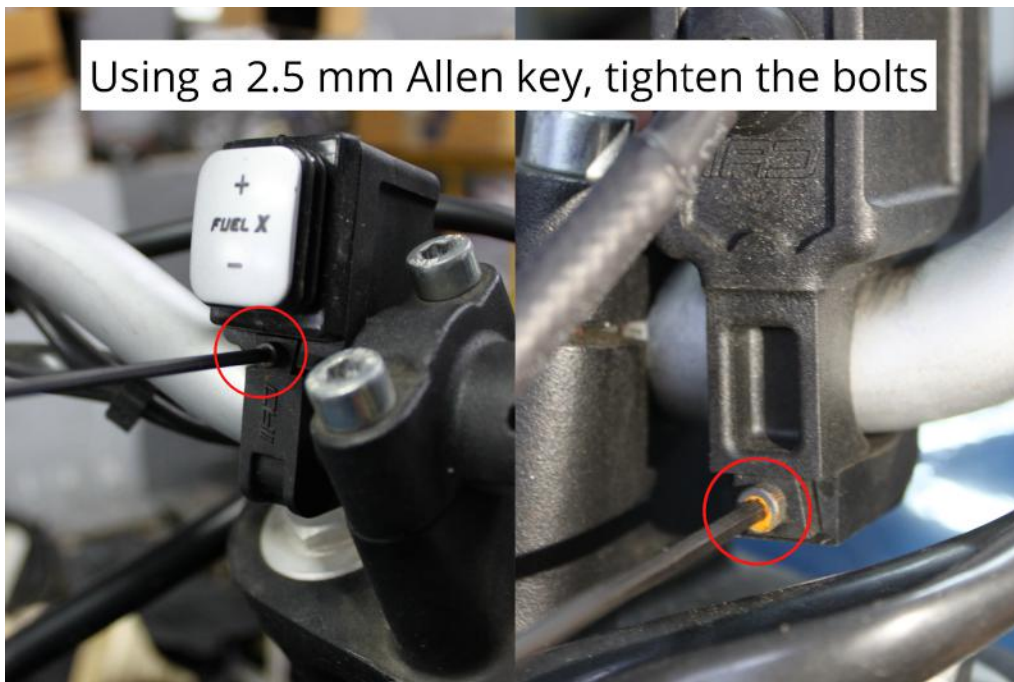


Image 27

3.1.28 Place the FuelX securely under the seat. Refer to to **Image 28**

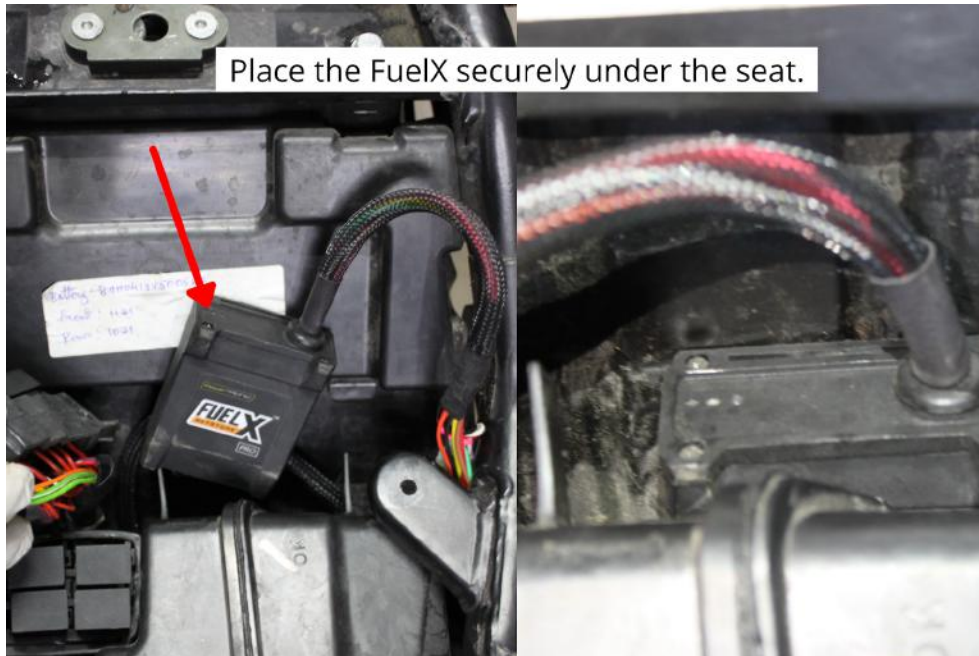


Image 28

3.1.29 Connect the FuelX to the harness. Refer to to **Image 29**

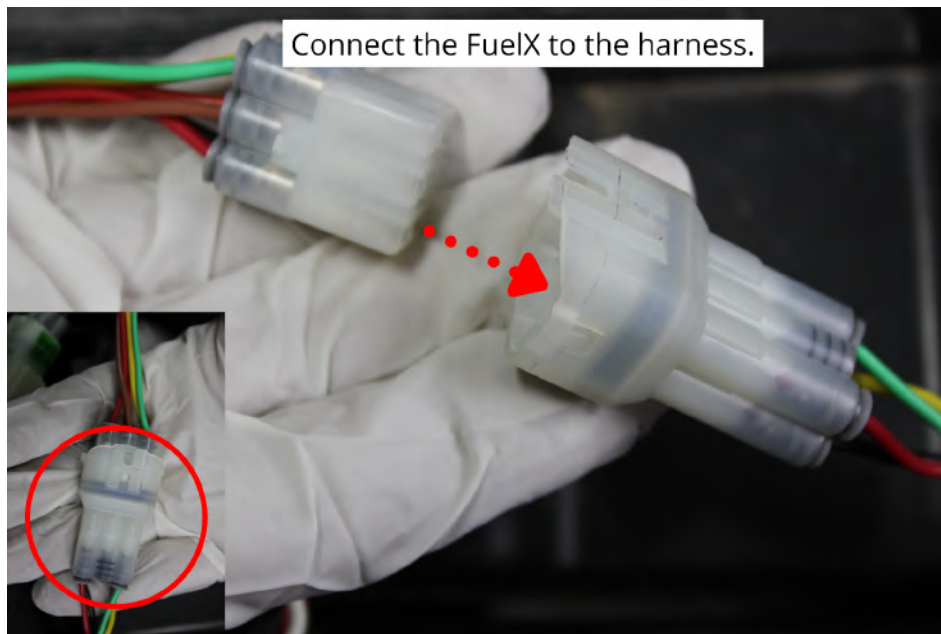


Image 29

3.1.30 Connect the handlebar map switch connector to the FuelX connector. Refer to to **Image 30**

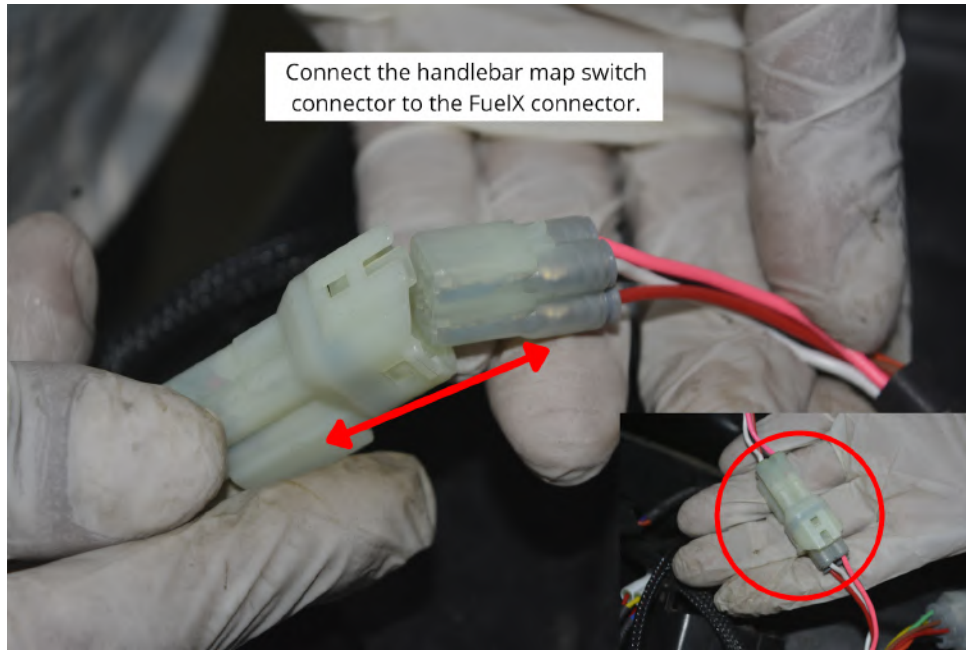


Image 30

3.1.31 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.

Map No	Map Description
1	LEAN (Less Fuel)
2	
3	STOCK
4	
5	
6	
7	
8	
9	
10	RICH (More Fuel)

Image 5.1

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

The first two maps are lean maps.

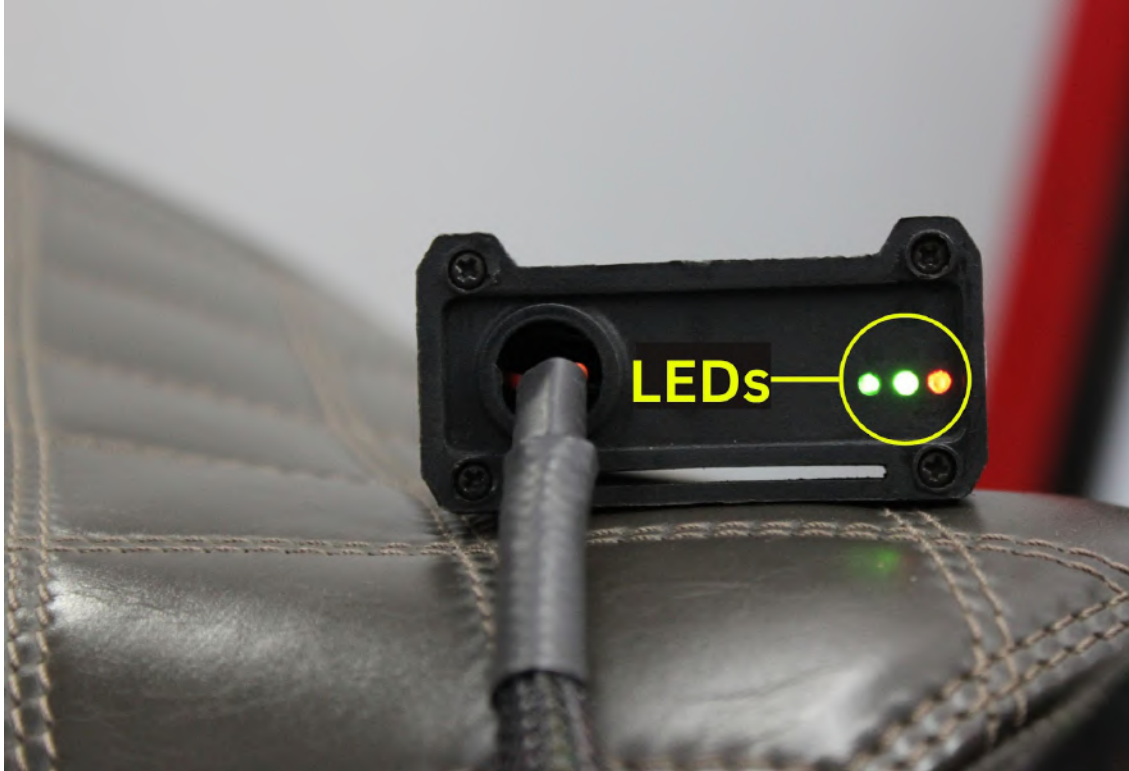
Map 3 runs with stock AFR set by the OEM manufacturer.

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.