FuelX Installation Manual
Royal Enfield Himalayan 450/ Guerrilla 450 2025 (EU 5+)

Document Version	1	Release Date	29 May 2025

Application information	Vehicle Specific
Vehicle	**Royal Enfield**
Model	**Himalayan 450/Guerrilla 450**
Year of manufacture	**2025 (EU 5+)**

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 that tend to heat up during the normal operation of the vehicle at any point.
- FuelX is intended for motorsport use on a closed course, Please check with your local laws before using this product. Race Dynamics / PowerTRONIC is not liable for consequences arising out of using the product.
- In the installation manual, the vehicle shown is a Himalayan 450, but the process can be replicated for a similar platform vehicle, such as Guerrilla 450.

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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.

Tools required

Serial No	Main tools	Optional tools
1	4mm, 5mm Hex bit	Spinner handle
2	10mm, 8 mm T bar Hexagonal Socket wrench	Ratchet handle
3	Wirecutter	Extension bar or Sliding T-bar

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's requirement. It autotunes 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.

The **FuelX kit contains the following items**

- FuelX Module
- Wiring Harness
- Handlebar map switch (Pro and Pro+ versions 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

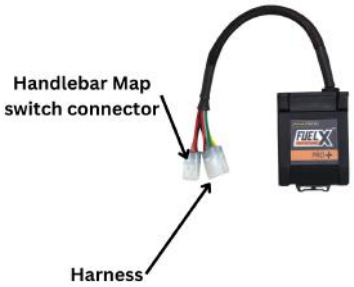

Image 2.3

FuelX 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 2.6) for the Handlebar Map switch (Refer to Image 2.5)

Image 2.4

Image 2.5

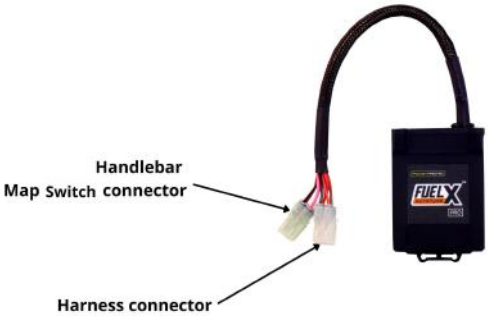

Image 2.6

FuelX Lite

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

Image 2.7

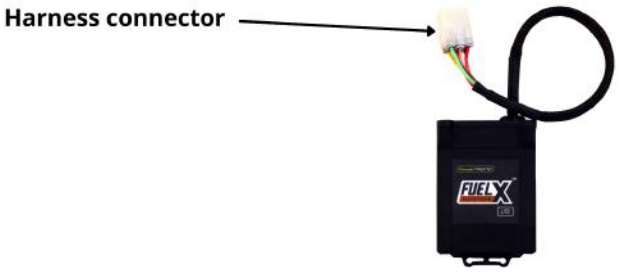

Image 2.7

3. FuelX Harness Connectors

The harness contains

- The Pre and Post Lambda connectors (O_2)
- FuelX connector
- Ground/battery negative connector.

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.

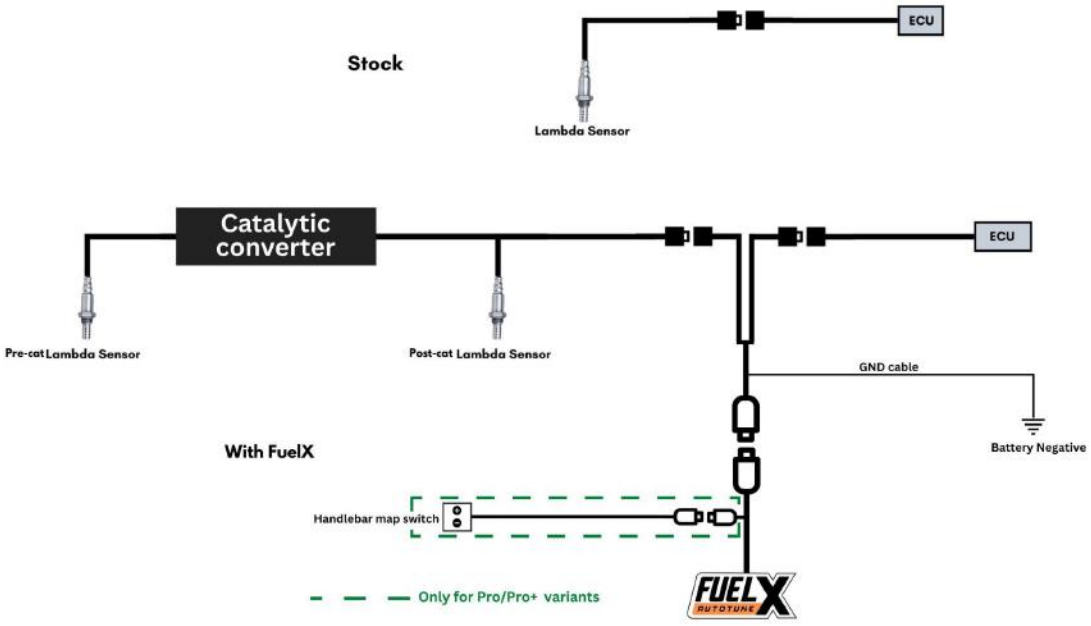

Image 3.4

<u>The harness contains Pre and Post Lambda sensor connections.</u>

4. Installation procedure

4.1 Removing panels and tank.

Begin at the right side of the bike.

Park the bike using the center stand on a level surface (Or a paddock stand). Refer 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 2

Image 3

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

Image 4

4.1.3 Unscrew the front end tank panel bolt using the 4 mm Hexagonal bit. Refer to **Image 5**.

Image 5

4.1.4 Gently detach the tank front panel. Refer to **Image 6**.

Image 6

4.1.5 Locate the rear end mounting bolts (3 Nos). Refer to **Image 7.**

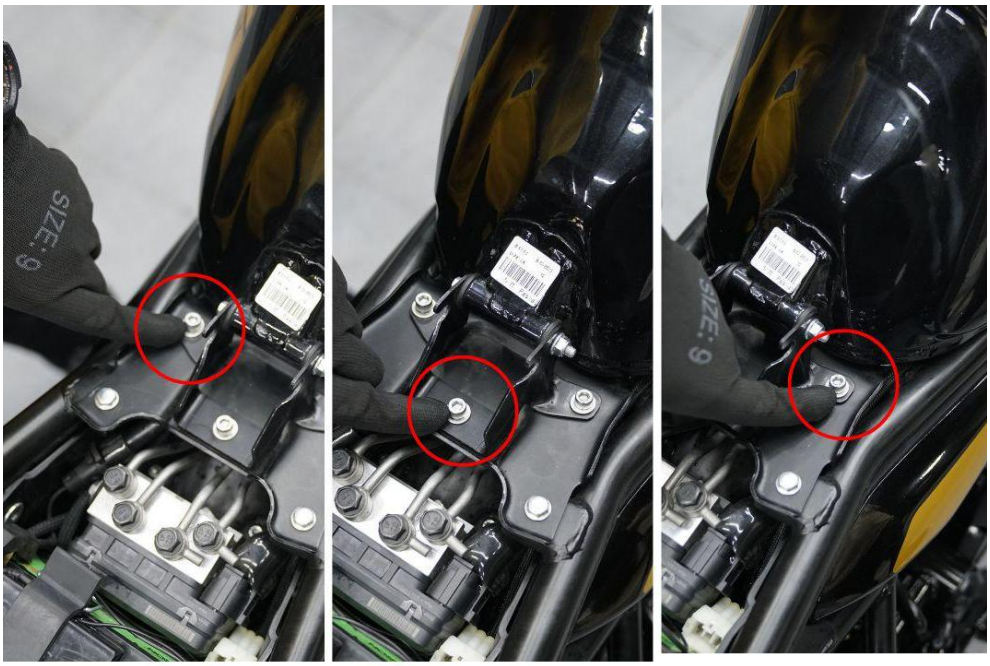

Image 7

4.1.6 Unscrew the rear end mounting bolts using the 5 mm Hexagonal bit. Refer to **Image 8.**

Image 8

4.1.7 Gently lift the rear end of the tank and locate the vacuum hoses. Detach the hoses carefully. Refer to **Image 9.**

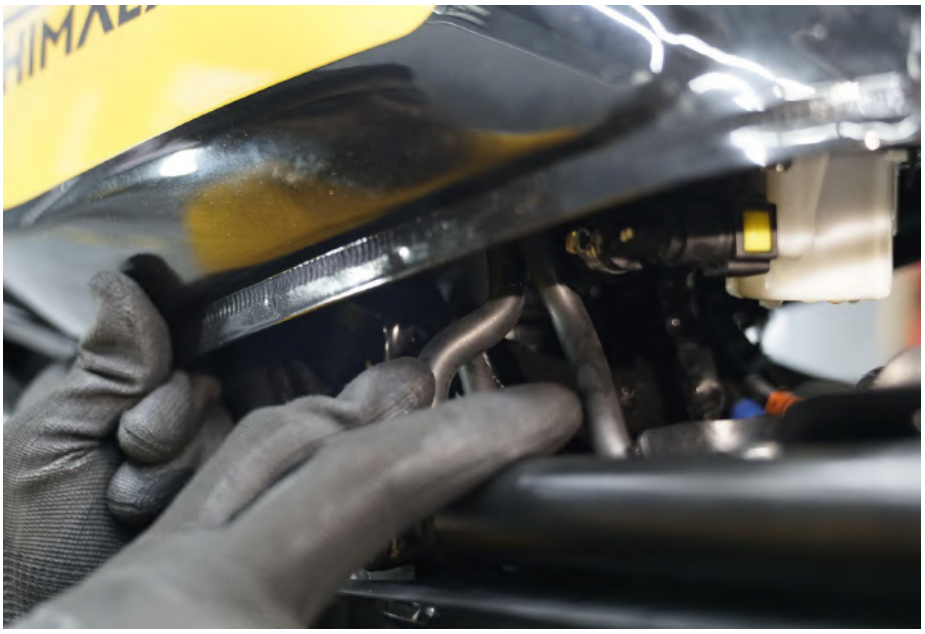

Image 9

4.1.8 Locate the Fuel line and detach the connector carefully. Refer to **Image 10.**

Image 10

4.1.9 Locate the Fuel Pump connector and detach the connector carefully. Refer to **Image 11**

Image 11

4.1.10 Locate the Fuel Float connector and disconnect the coupler. Refer to **Image 12**.

Image 12

4.1.11 Once all the connectors are detached from the tank, gently lift and place it carefully. Refer to **Image 13**

Image 13

4.1.12 Locate the air box assembly and the mounting bolts. (2 on the left side and 1 on the right side) Unscrew them with an 8 mm Hex socket. Refer to **Image 14**

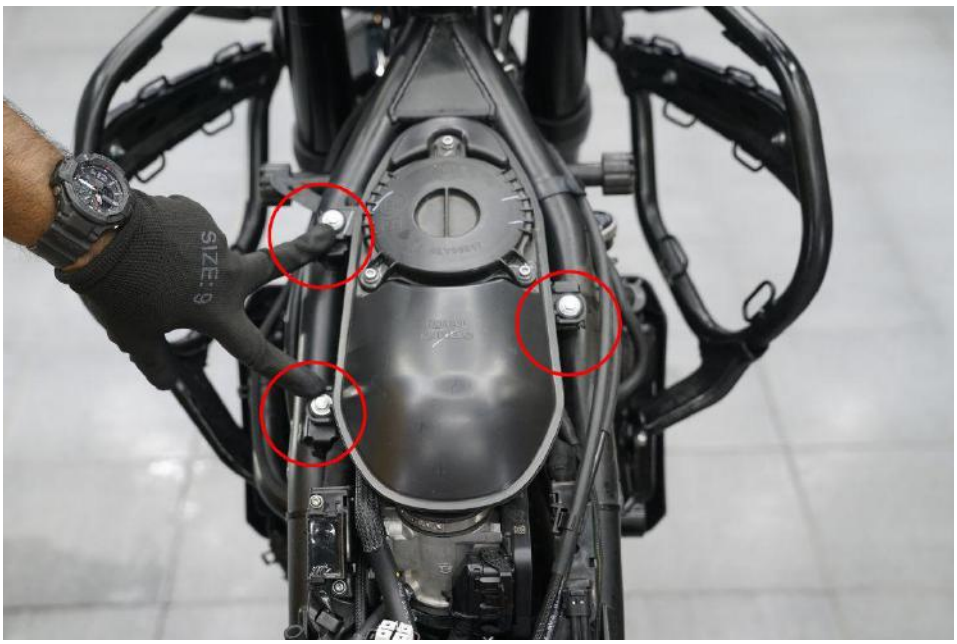

Image 14

4.1.13 Carefully unplug the hose from the throttle body. Refer to **Image 15**.

Image 15

4.1.14 Loosen the bolt of the throttle body clamp. Refer to **Image 16**.

Image 16

4.1.15 Disconnect the battery negative terminal of the vehicle. Refer to **Image 17** below.

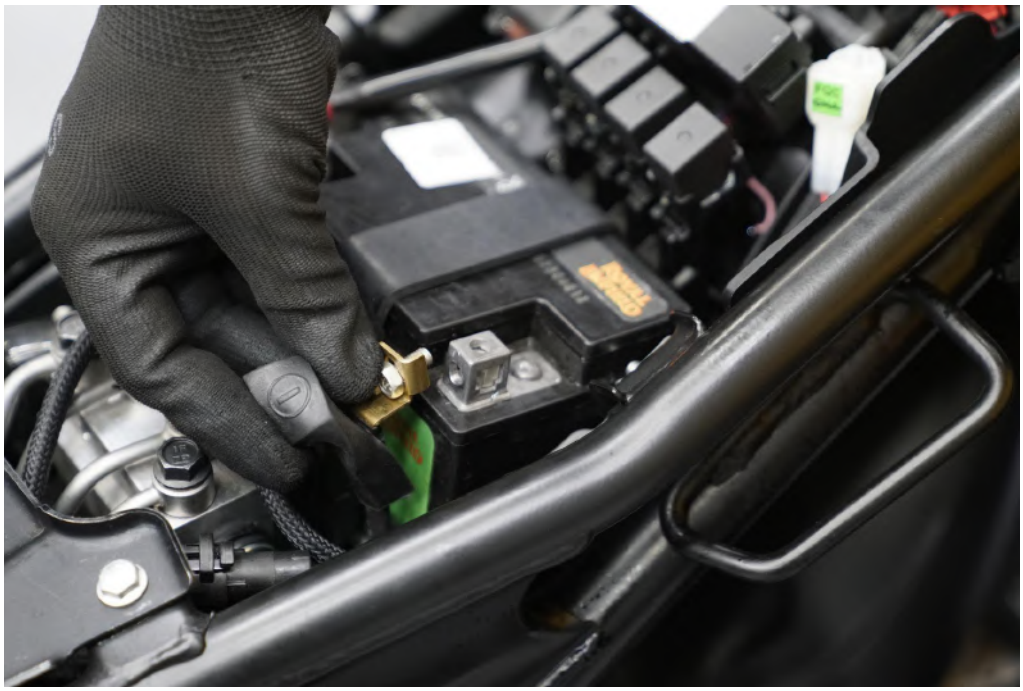

Image 17

4.1.16 Unplug the ECU connector carefully. Refer to **Image 18** below.

Image 18

4.1.17 Carefully unplug the spark plug cord. Refer to **Image 19**.

Image 19

4.1.18 Gently lift the air box and place it carefully as shown in **Image 20** below to access the Pre-cat Lambda sensor. .

Image 20

4.1.19 Remove the side panel to access the Post-cat Lambda sensor connector. **Image 21** below.

Image 21

4.2 Routing the harness

Important notes:

In this installation manual, the air box is removed to demonstrate better routing. During the air box removal, unplug the ignition coil Ground as shown in the image below, and make sure to connect the Ground back while fitting the air box back.

Image 22

4.2.1 Route the FuelX harness and handlebar switch wire. Refer to **Image 23**

Image 23

4.2.2 Route the FuelX Post-Cat harness branch. Refer to **Image 24**

Image 24

4.2.3 Locate the stock Pre-Cat Lambda sensor connector. Refer to **Image 25**.

Image 25

4.2.4 Disconnect the stock Pre-Cat Lambda sensor connector. Refer to **Image 26**.

Image 26

4.2.5 Connect the FuelX female Pre-Cat Lambda sensor connector to the stock male Pre-Cat connector. Refer to **Image 27.**

Image 27

4.2.6 Connect the FuelX male Lambda Pre-Cat sensor connector to the stock female Pre-Cat connector. Refer to **Image 28.**

Image 28

4.2.7 Locate the stock Post-Cat Lambda sensor connector. Refer to **Image 29**.

Image 29

4.2.8 Disconnect the stock Post-Cat Lambda sensor connector. Refer to **Image 30**.

Image 30

4.2.9 Connect the FuelX female Post-Cat Lambda sensor connector to the stock male Post-Cat connector. Refer to **Image 31.**

Image 31

4.2.10 Connect the FuelX male Lambda Post-Cat sensor connector to the stock female Post-Cat connector. Refer to **Image 32.**

Image 32

4.2.11 Connect the FuelX Handlebar map switch to the Handlebar. Refer to **Image 33**

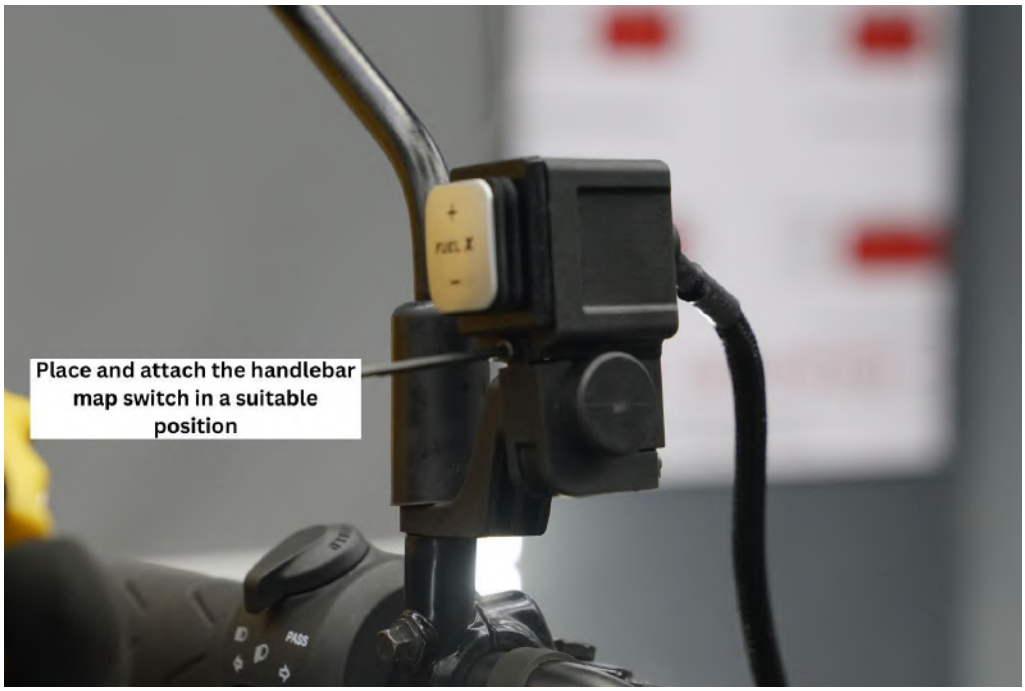

Image 33

4.2.12 Using a 2.5 mm Allen key, tighten the bolts. Refer to **Image 34.**

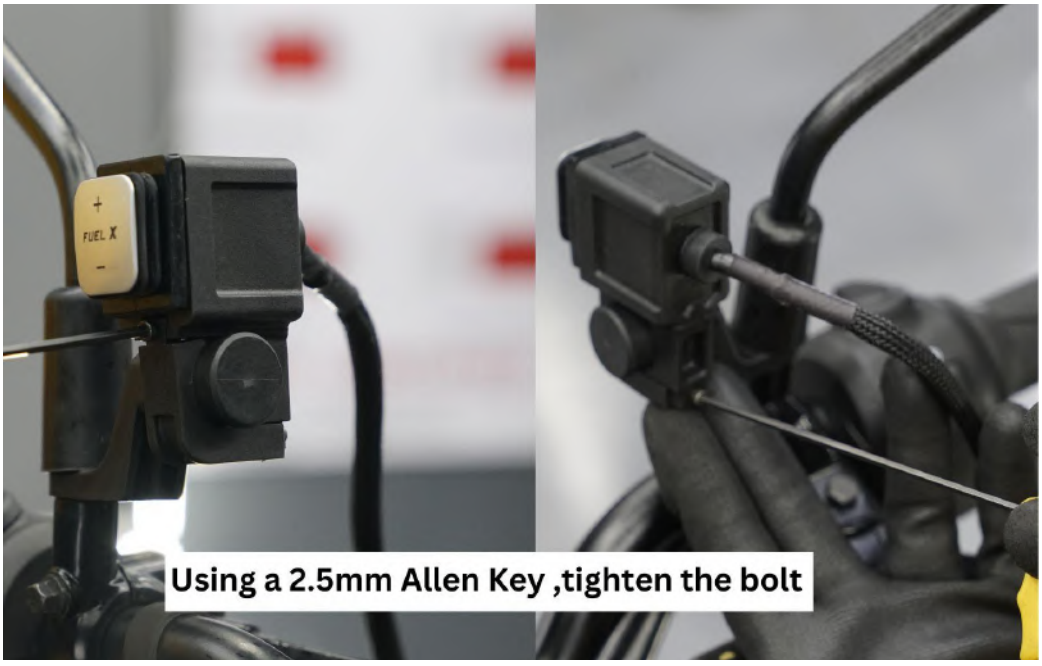

Image 34

4.2.13 Place the FuelX module under the seat on top of the battery. Refer to **Image 35.**

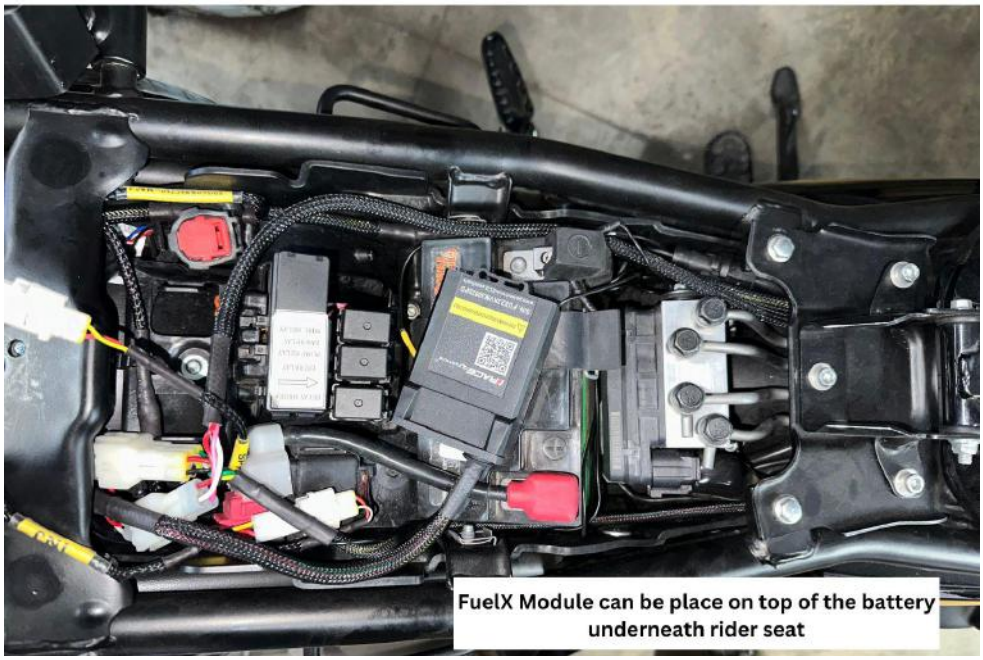

Image 35

4.2.14 Connect the 8-pin FuelX connector to the harness. Refer to **Image 36**

Image 36

4.2.15 Connect the 4-pin FuelX connector to the handlebar map switch harness. Refer to **Image 37.**

Image 37

4.2.16 Connect the Ground cable to the battery **negative terminal**. Terminal position may vary. Refer to **Image 38**

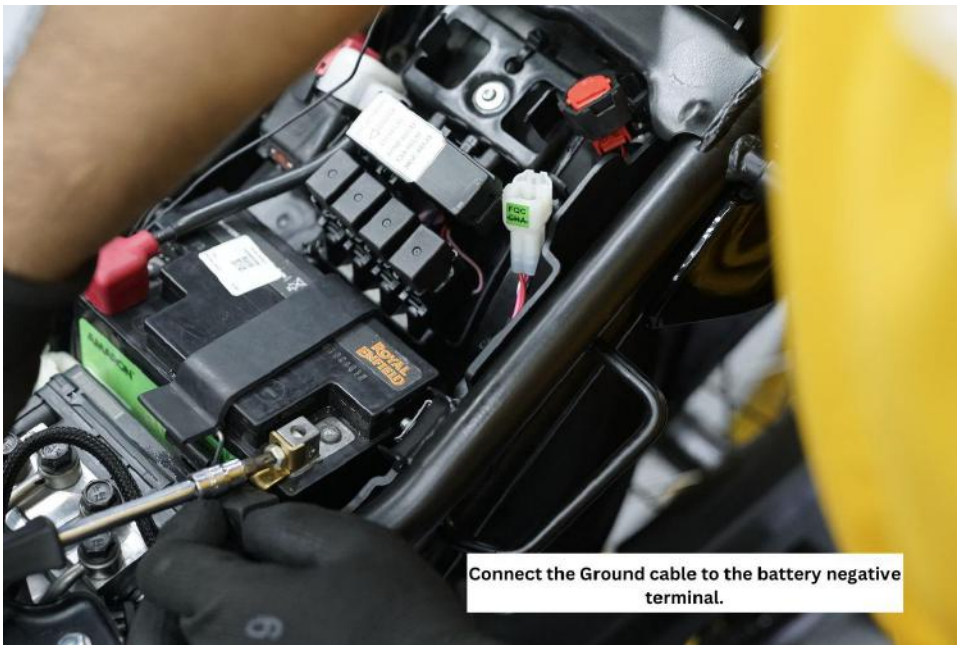

Image 38

4.2.17 Secure the harness from hot and moving parts using the zip ties provided.

4.2.18 Attach the panels and the tank back.

5. FuelX Configurations and Settings

For Pro+ and 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.

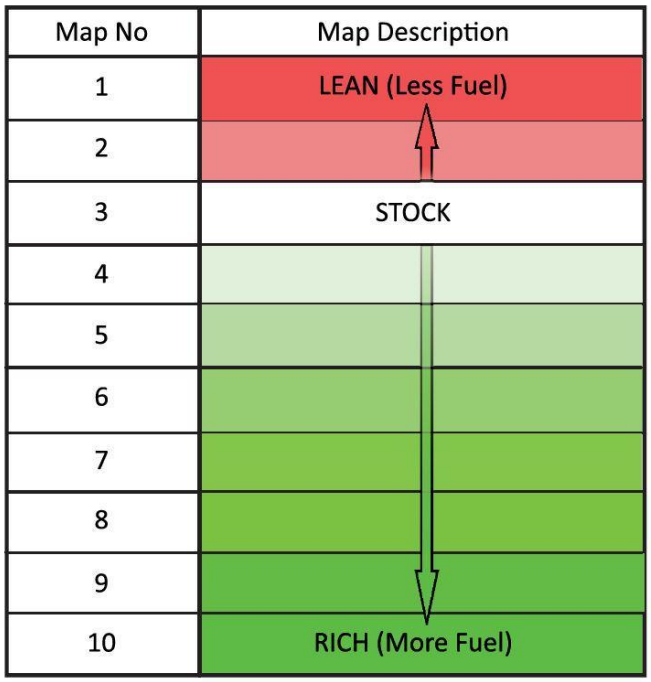

Image 32

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

The first two maps are lean.

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.

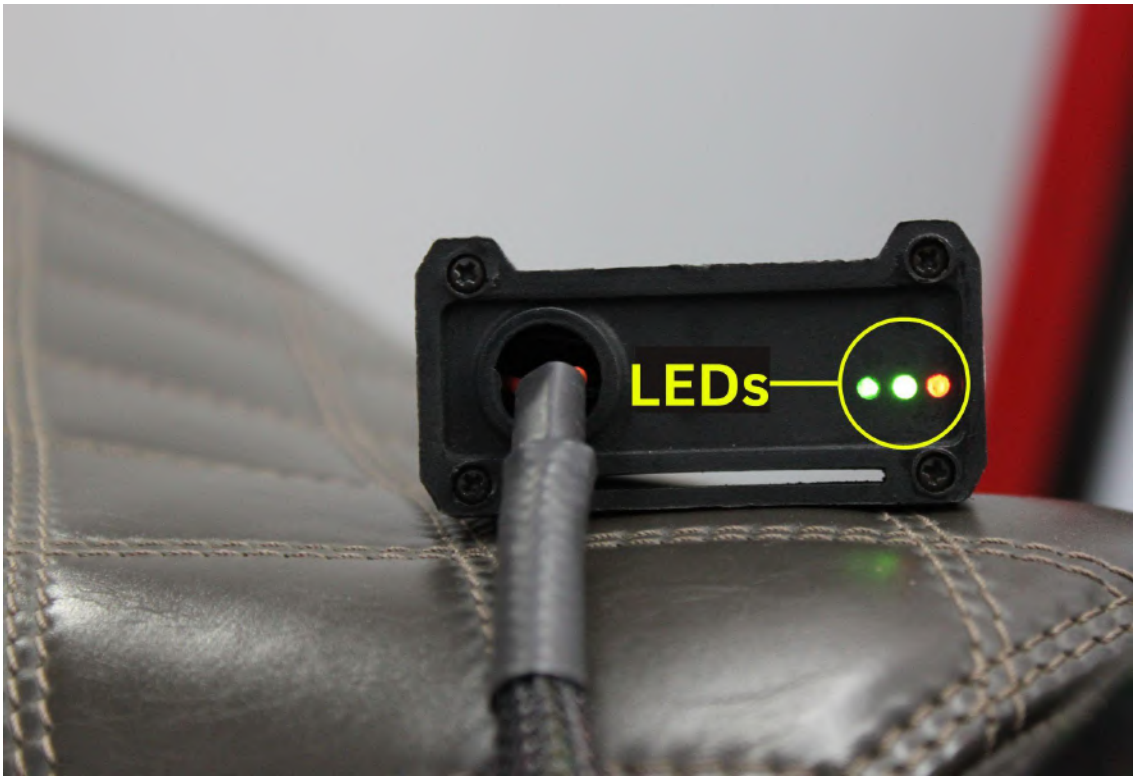

Image 33

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 that the FuelX is Functioning as intended.