

## FuelX Autotune- Royal Enfield Himalayan/Scram 411

Document Version	2	Release Date	05 July 2021
------------------	---	--------------	--------------

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.

**Support:**

North & South America : +1 267 214 9292 (Call) +91 9606 044 178 (WhatsApp)

India, Bangladesh, Bhutan, Srilanka & Nepal : +91 9916 229 292 (Call & WhatsApp)

Rest of the world : +91 9606 044 177 (Call & WhatsApp)

Email : support@powertronicecu.com

Website : www.powertronicECU.com

<b>SL No</b>	<b>Chapter</b>	<b>Page</b>
1	About FuelX and Kit Contents	3
2	FuelX Variants	4
3	FuelX Connectors	5
4	FuelX Installation	7
5	FuelX Configuration	23

## 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

## 2. FuelX Variants:

### FuelX Pro

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



Image 2.1



Image 2.2

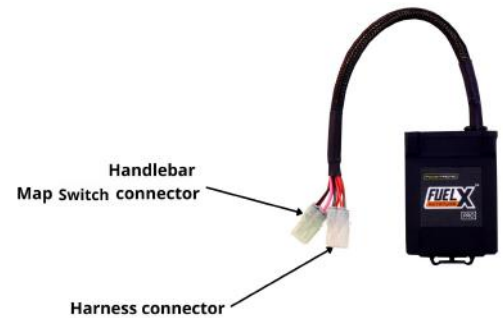


Image 2.3

### FuelX Lite

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



Image 2.4

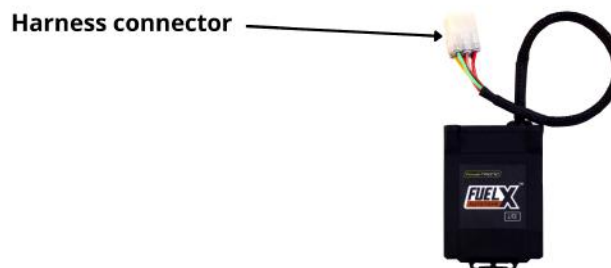


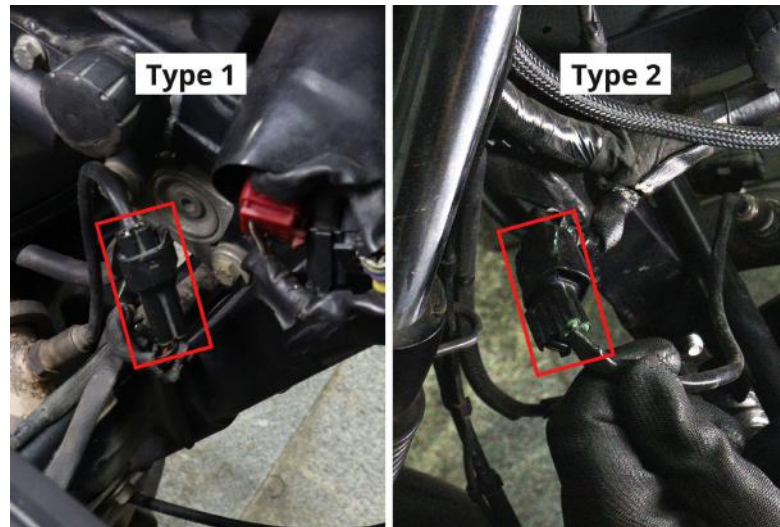
Image 2.5

### 3. FuelX Harness Connectors

The harness contains

- The Lambda connector (O<sub>2</sub>)
- FuelX connector
- Ground/battery negative connector.

For Himalayan, the FuelX harness contains 2 pairs of Lambda sensor connectors. Choose the appropriate set that matches your vehicle.



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.

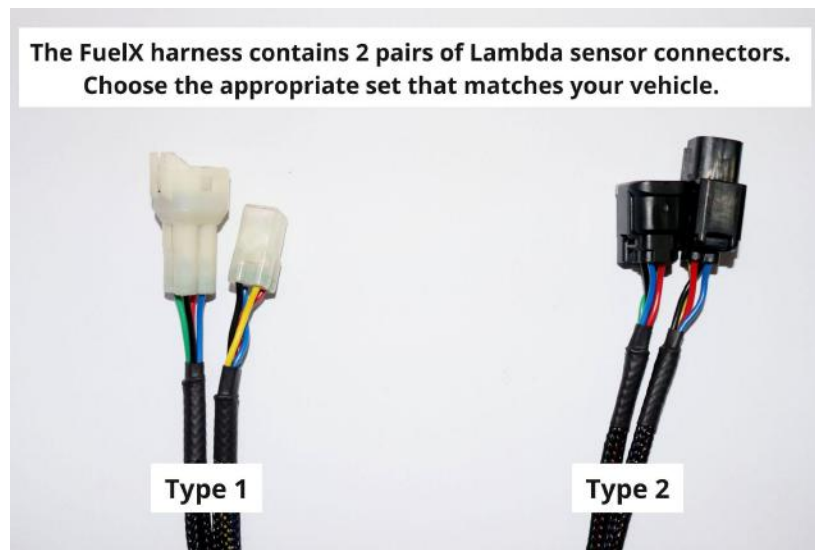


Image 3.2

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

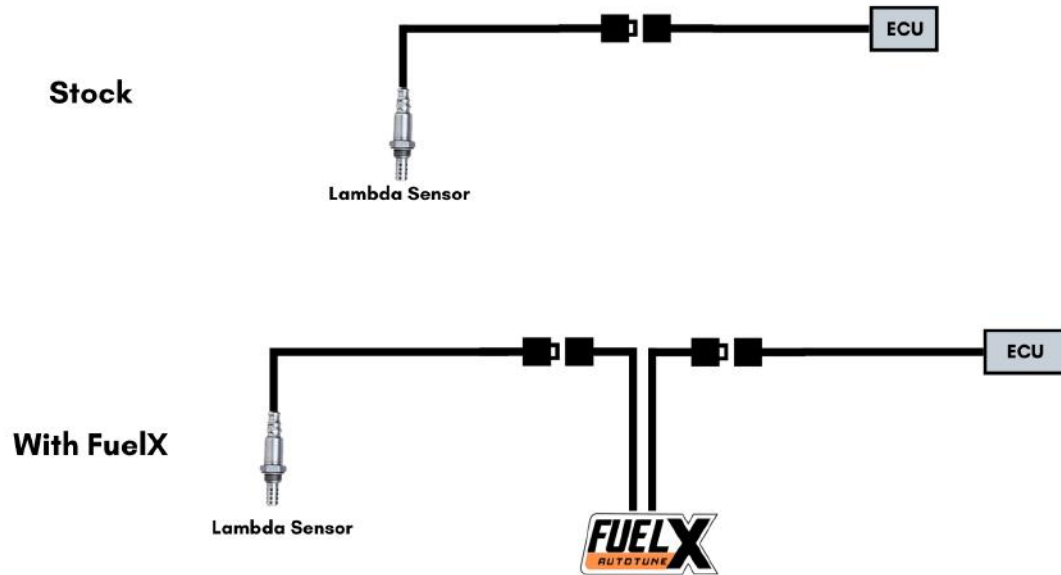


Image 3.3

### 3. Installation procedure

#### 3.1 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).





**3.1.1** Detach the pillion seat by inserting the key into the keyhole shown in **Image 1** and unlock the pillion seat. **Image 2** shows the pillion seat detached.



Image 1



Image 2



**3.1.2** Detach the rider seat. (Gently lift and slide it towards the rear end) - Refer **Image 3**.



Image 3

**3.1.3** **Image 4** shows both the seats detached.



Image 4

**3.1.4** Unscrew the tank bolts using the T socket M10 T bar Hexagonal socket wrench. Refer **Image 5**.

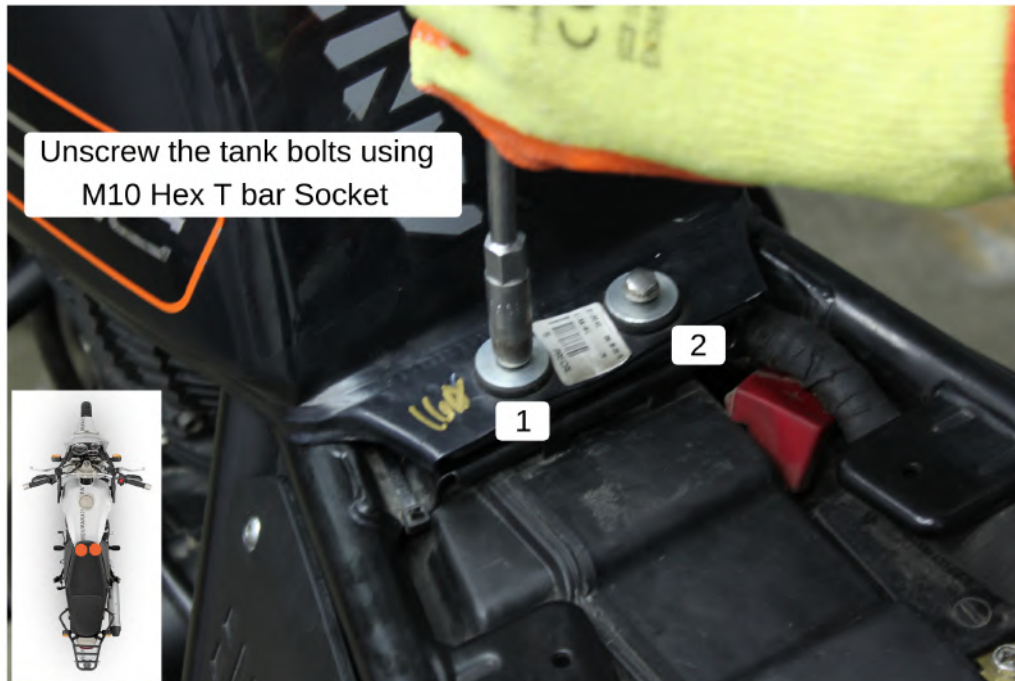


Image 5

**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 **Image 6**.



Image 6



**3.1.6** Detach the fuel gauge coupler. Refer [Image 7](#).



Image 7

**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 [Image 8](#).



Image 8

**3.1.8** Right next to the fuel valve, locate the fuel pump connector and detach the connector carefully. Refer **Image 9**.



Image 9

**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 **Image 10**



Image 10

3.1.10 Refer **Image 11** for disconnected view of the vacuum hoses.



Image 11

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



Image 12



### **For type 1 Lambda sensor connector**

**3.1.11** Refer the **Image 13** to locate the Lambda Sensor Connector



Image 13

**3.1.12** Disconnect the Lambda male and female connectors. Refer the **Image 14**



Image 14

**3.1.14** Connect the FuelX male connector to Stock female Lambda connector. Refer Image **Image 15**

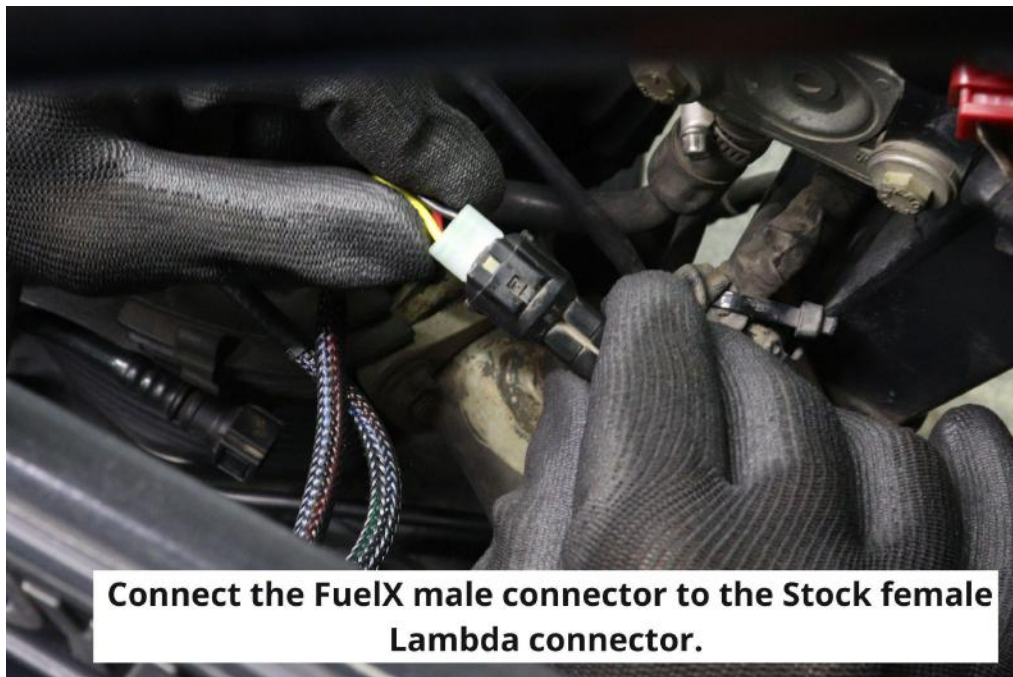


Image 15

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



Image 16



**3.1.15** Refer to the completed view. Tag the connectors securely. Refer Image [Image 17](#)

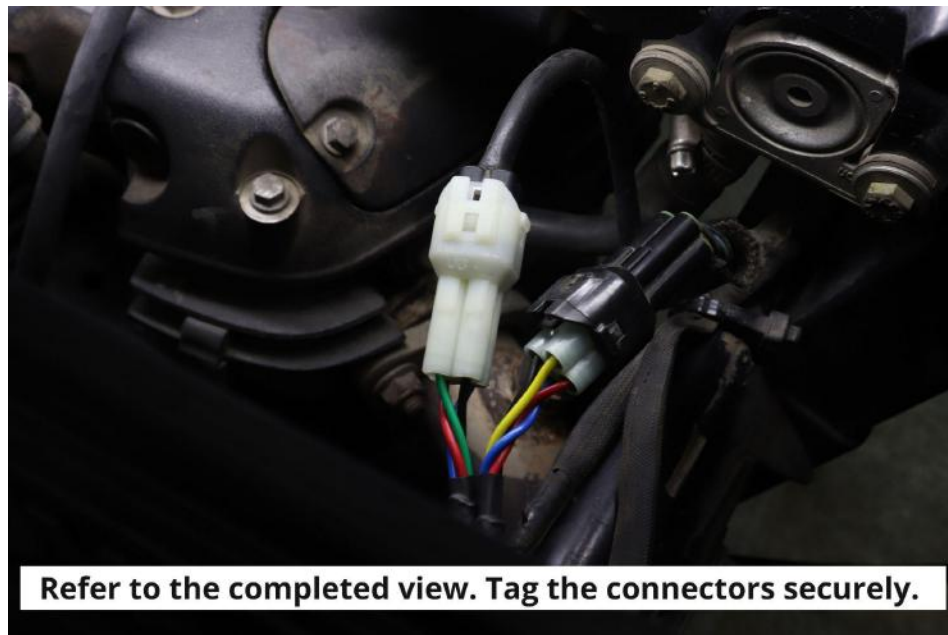


Image 17

**3.1.16** Leave the Type 2 connectors unplugged and tag them securely. You can connect the type two connector male and female each other as well.

### For type 2 Lambda sensor connector

**3.1.11** Refer the **Image 18** to locate the Lambda Sensor Connector



Image 18

**3.1.12** Disconnect the Lambda male and female connectors. Refer the **Image 19**

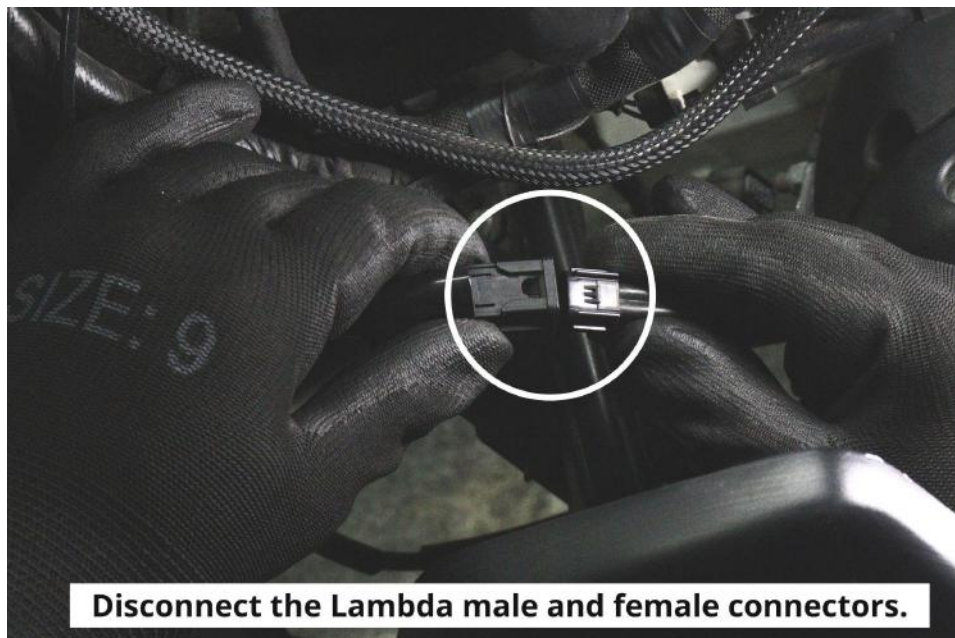


Image 19

**3.1.14** Connect the FuelX male connector to Stock female Lambda connector. Refer Image **Image 20**

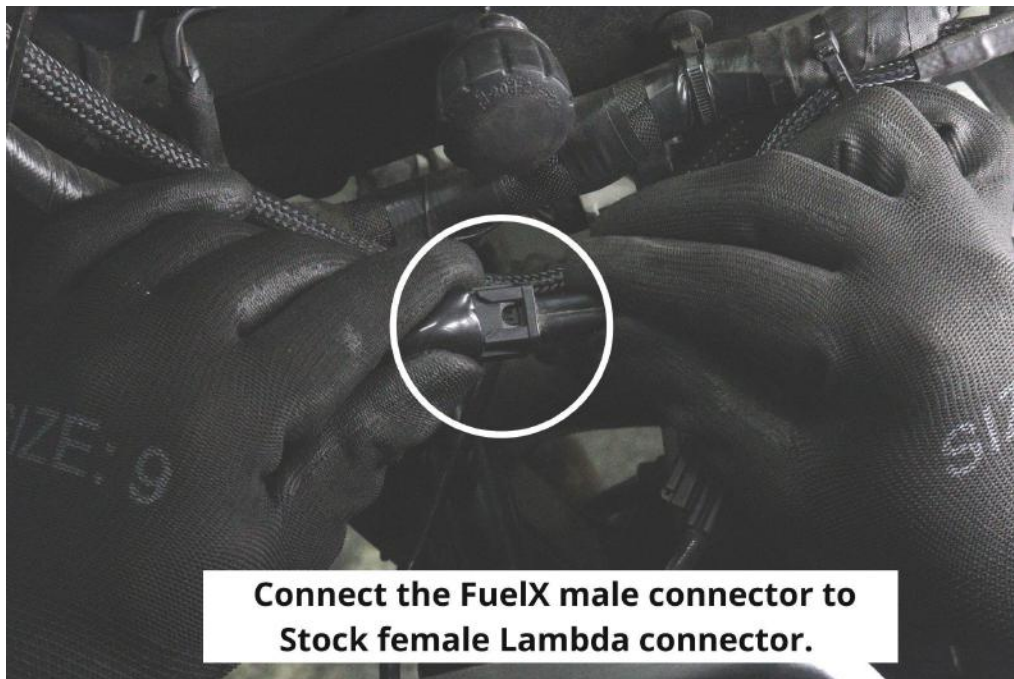


Image 20

**3.1.15** Connect the FuelX female connector to the Stock male Lambda connector. Refer Image **Image 21**

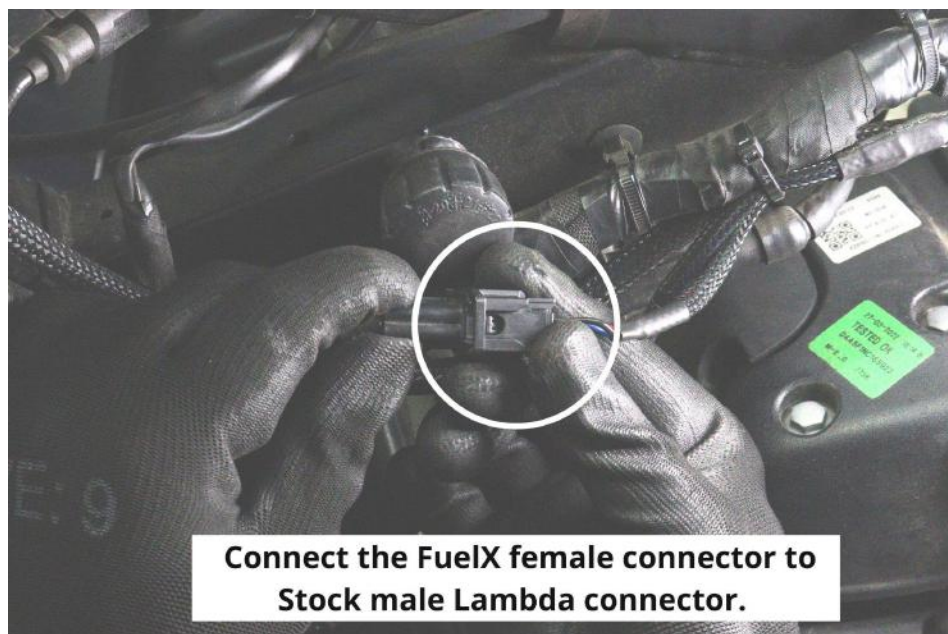


Image 21



**3.1.15** Refer to the completed view. Tag the connectors securely. Refer Image [Image 22](#)



Image 22

**3.1.16** Leave the Type 1 connectors unplugged and tag them securely. You can connect the type two connector male and female each other as well.

**3.1.17** Connect the Ground connector to the battery negative terminal. Refer Image [Image 23](#)



Image 23

**3.1.18** Route the handlebar map switch cable from the front end to the rear end of the vehicle. Refer the **Image 24**



Image 24

**3.1.19** Attach the handlebar switch to a suitable position. Refer the **Image 25**



Image 25

**3.1.20** Using a 2.5 mm Allen key, tighten the bolts. Refer the **Image 26**



Image 26

**3.1.21** Place the FuelX securely under the seat. Refer the **Image 27**

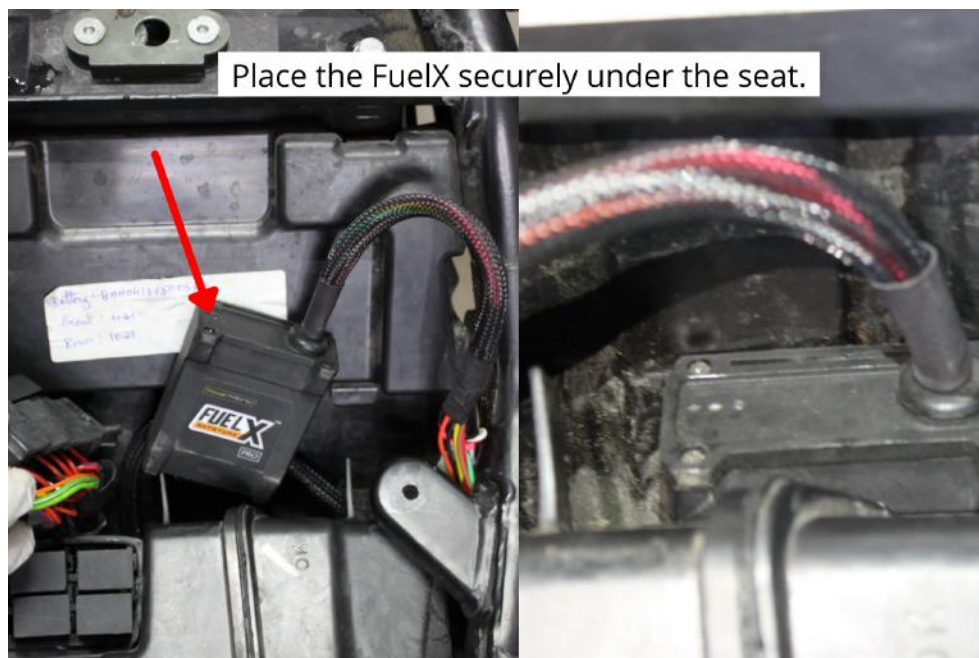


Image 27



**3.1.22** Connect the FuelX to the harness. Refer the **Image 28**

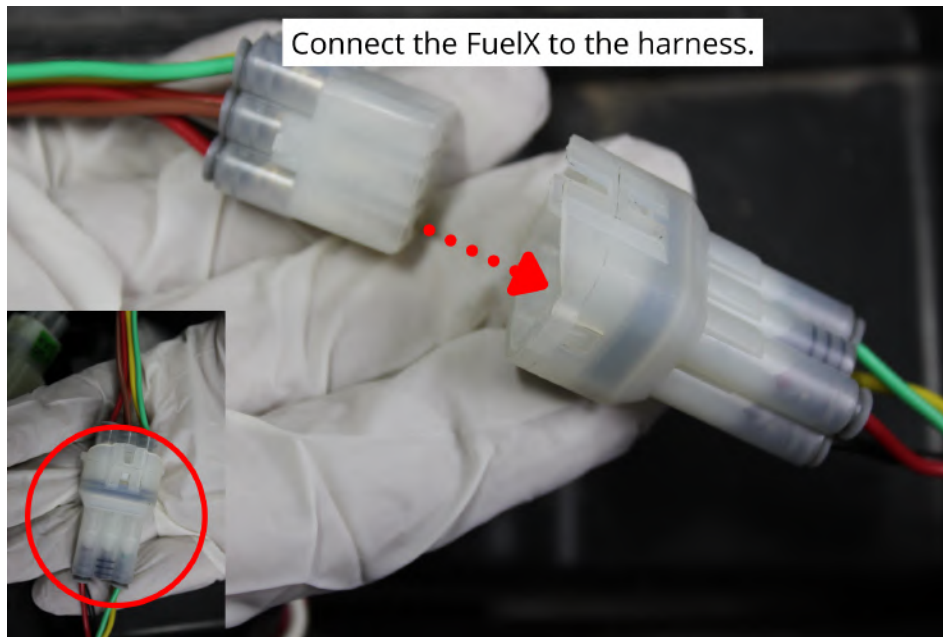


Image 28

**3.1.23** Connect the handlebar map switch connector to the FuelX connector. Refer the **Image 29**

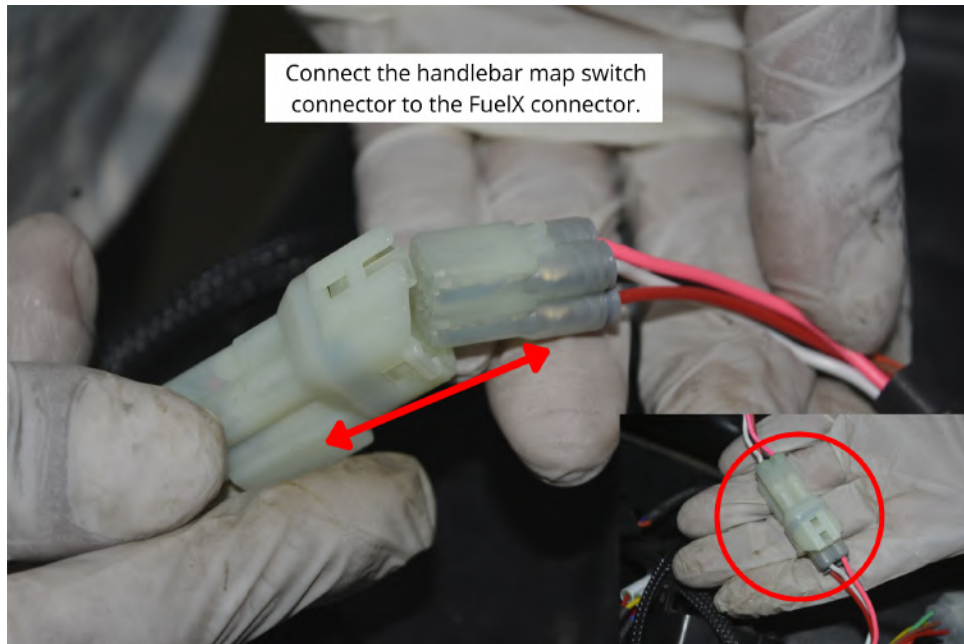


Image 29

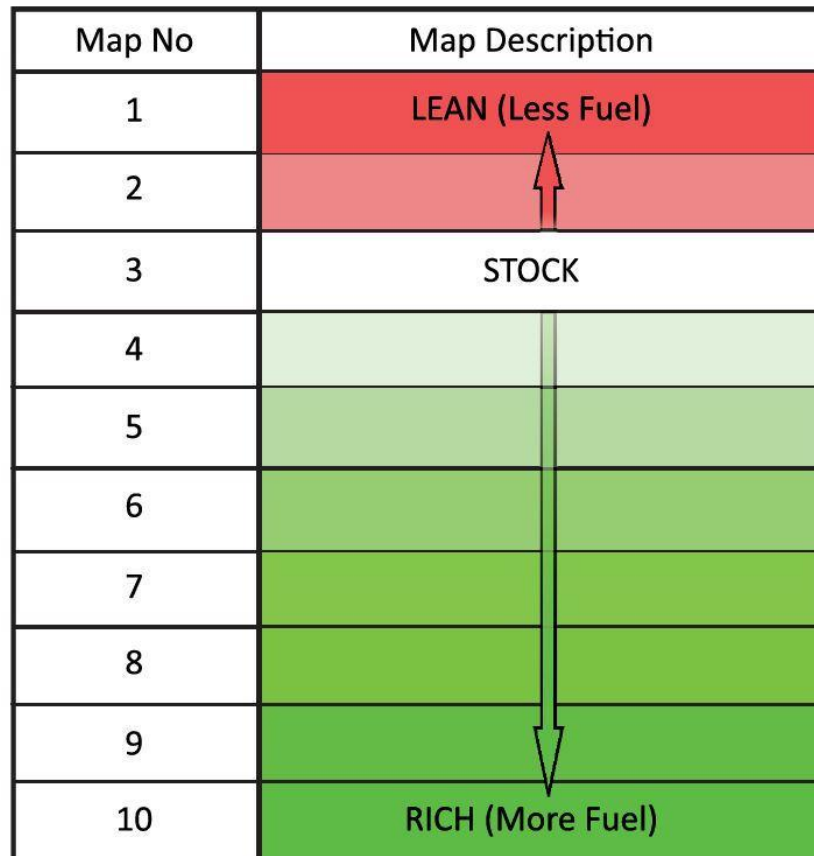
**3.1.22** Attach the panels back.



## 5. FuelX Configuration

Depends on the version, the Red/Green LED on the FuelX module blinks once the FuelX activates.

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 to know which map is currently 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.