FuelX Autotune- KTM Adventure 390/250 S/X/R 2025

Document Version	1	**Release Date**	13 March 2025

Application information	**FuelX**
Vehicle	**KTM**
Model	**Adventure 390/250 S/X/R**
Year of manufacture	**2025**

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:

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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.

Toolsrequired

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 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.

The **FuelX kit contains the following items**

- FuelX Module
- Wiring Harness
- Handlebar map switch (Pro+/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 m)

Image 2.4

Image 2.5

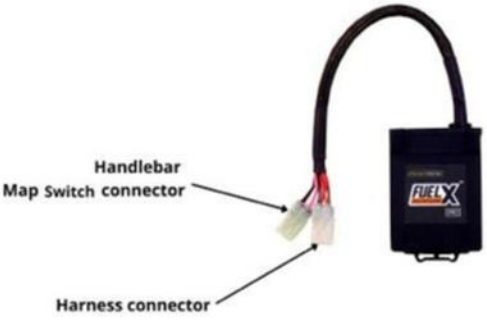


Image 2.6

FuelX Lite

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

Image 2.7

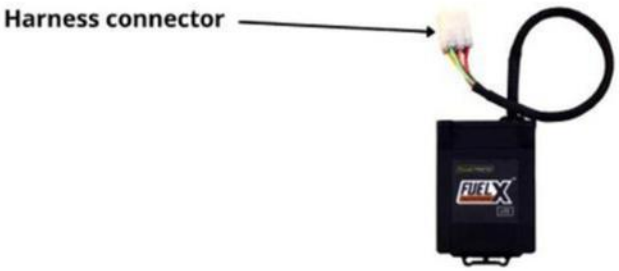


Image 2.7

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.

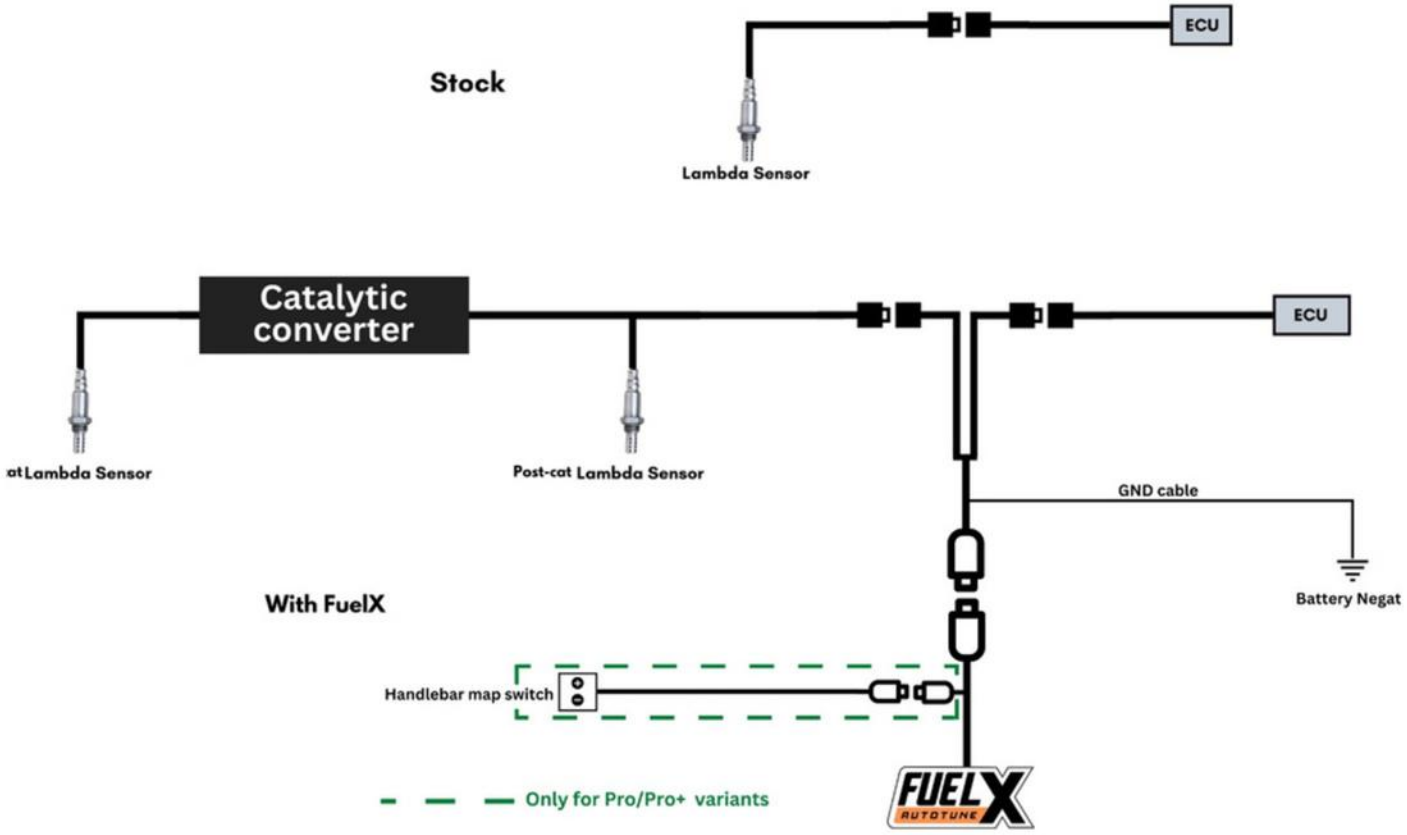


Image 3.4

4. Installation procedure

4.1 Removing panels, fairing

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 seat detached.

Image 2

Image 3

4.1.2 Locate the side panel mounting bolts both left and right (4 nos). Refer to **Image 4**

Image 4

4.1.3 Remove the side panel mounting bolts both left and right (4 nos). Refer to **Image 5**

Image 5

4.1.4 Locate and Unscrew the marked panel mounting bolts (left and right) using 4mm Allen key. Refer to **Image 6** and **Image 7**

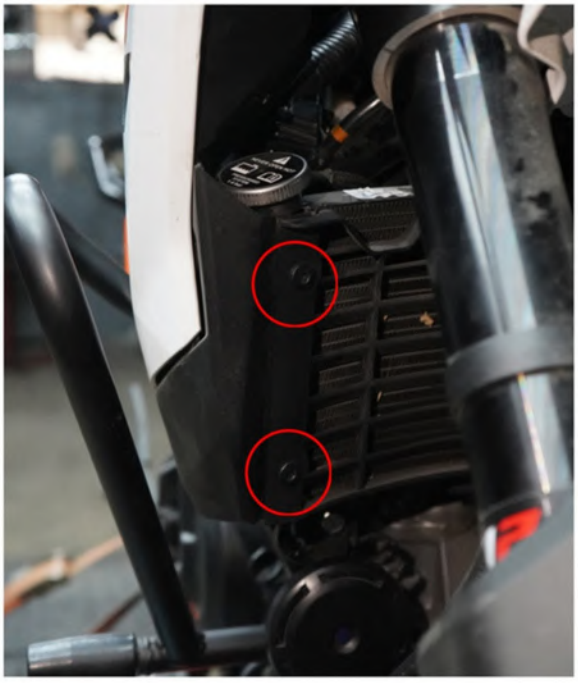


Image 6

Image 7

4.1.5 Locate and unscrew the tank side mounting bolts using a 4mm Allen key. Refer to **Image 8** and **Image 9**

Image 8

Image 9

4.1.6 Remove the side panels both right and left side of the bike. Refer to **Image 10** and **Image 11**

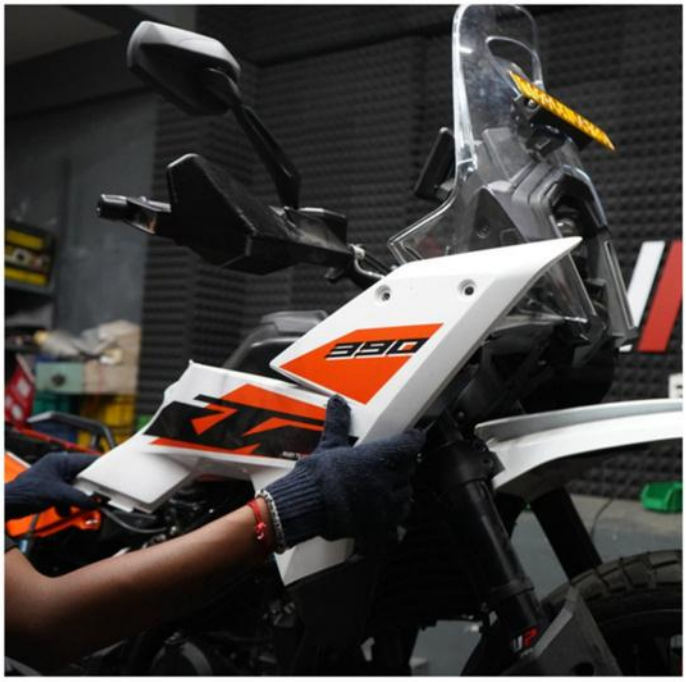


Image 10

Image 11

4.1.7 Locate and unscrew the side panel mounting bolts using a 5mm Allen key. Refer to **Image 12**

Image 12

4.1.8 Remove the side panels both right and left side of the bike. Refer to **Image 13** and **Image 14**

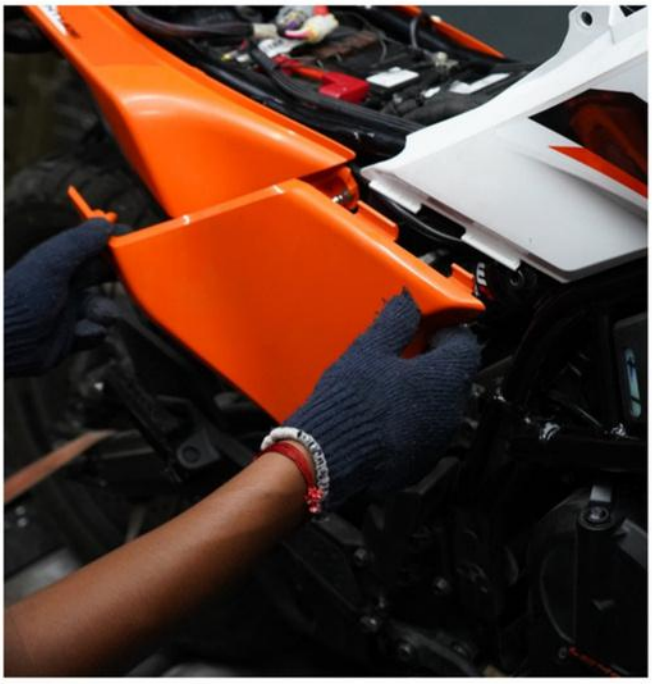


Image 13

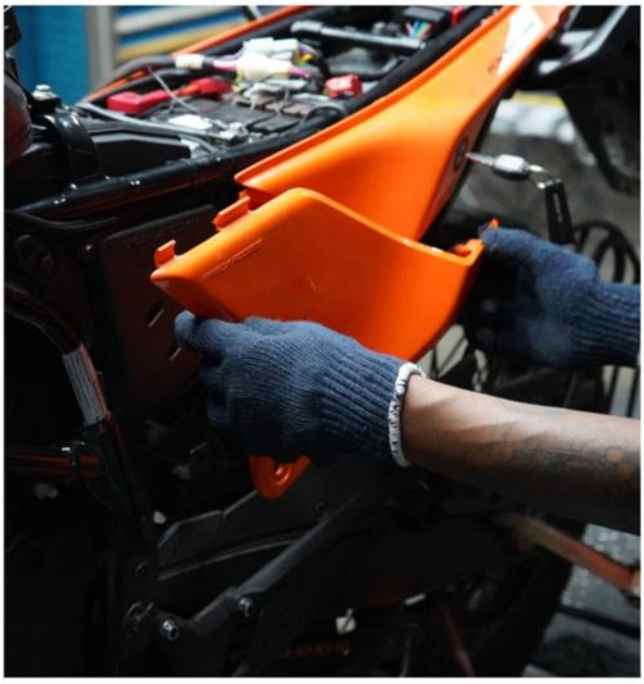


Image 14

4.1.9 Unscrew the tank rear mounting bolts using 10mm t-spanner Refer to Image 15

Image 15

4.1.10 Remove the key set casing Refer to Image 16 and Image 17

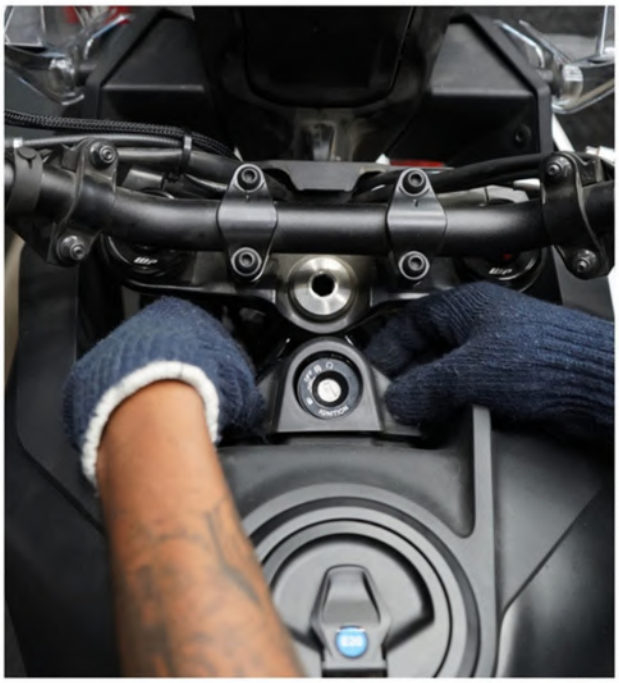


Image 16

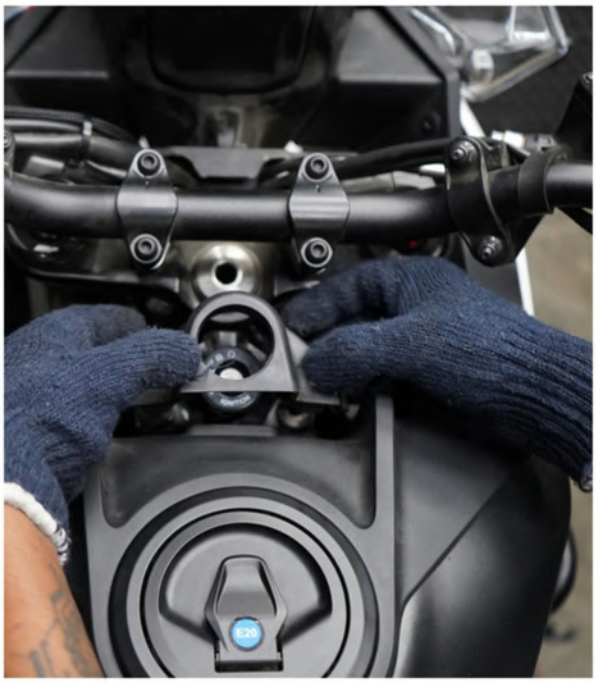


Image 17

4.1.11 Locate and unscrew the tank front mounting bolts using 12mm t-spanner Refer to Image 18

Image 18

4.1.12 Detach Fuel pump connector. Refer to **Image 19**.

Image 19

4.1.13 Locate and gently detach the Fuel Line. Refer to **Image 20**.

Image 20

4.1.14 Locate and unplug the Vacuum hoses from the tank. Refer to Image 21

Image 21

4.1.15 Gently lift the tank assembly and place it safely. Refer to **Image 22**

Image 22

4.1.16 Remove the battery-relay box cover. Refer to **Image 23**

Image 23

4.2 Routing the harness

4.2.1. Routing the FUELX harness safely under the refer to the **Image 24** and **Image 25**

Image 24

Image 25

4.2.2 Locate the stock Lambda connector 1 of the vehicle. Refer to **Image 26**

Image 26

4.2.3 Disconnect the Lambda connector 1 of the vehicle. Refer to **Image 27**

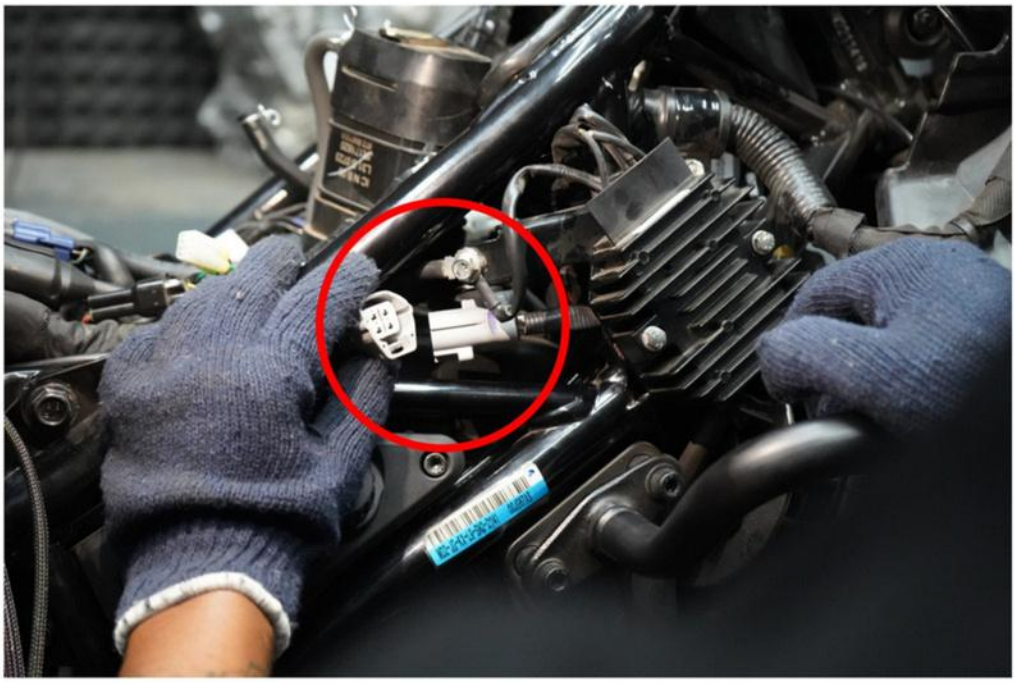


Image 27

4.2.4 Connect the FuelX male Lambda connector 1 to the stock female Lambda connector 1 of the vehicle. Refer to **Image 28**

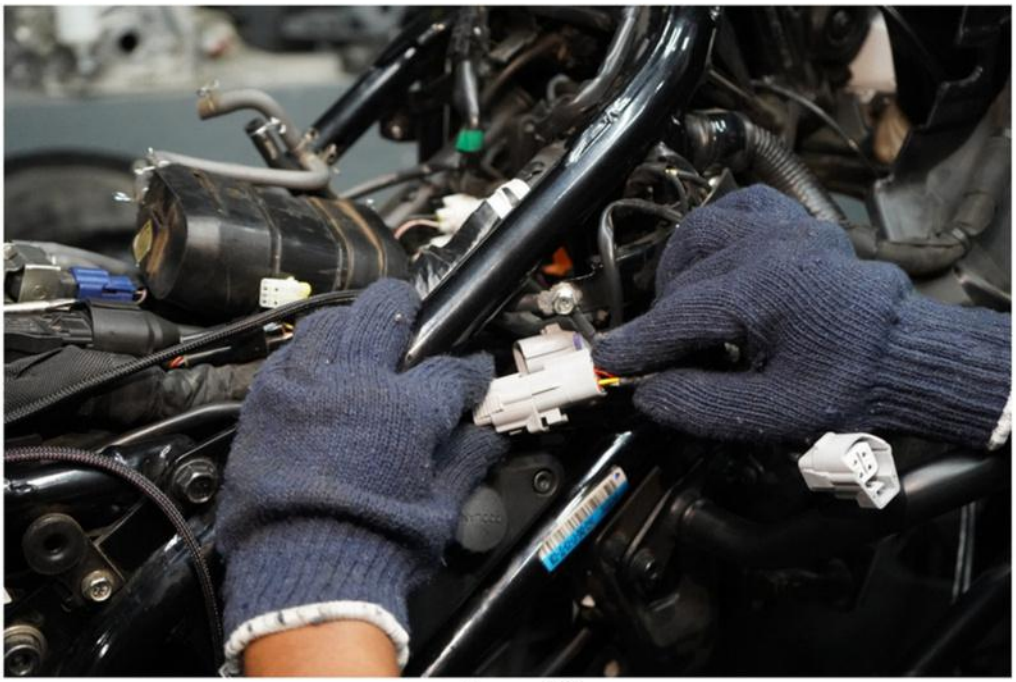


Image 28

4.2.5 Connect the FuelX female Lambda connector 1 to the stock male Lambda connector 1 of the vehicle. Refer to **Image 29**

Image 29

4.2.6 Remove the horn to easy access to Locate the stock Lambda connector 2 of the vehicle. Refer to **Image 30**

Image 30

4.2.7 Disconnect the Lambda connector 2 of the vehicle. Refer to **Image 31**

Image 31

4.2.8 Connect the FuelX male Lambda connector 2 to the stock female Lambda connector 2 of the vehicle. Refer to **Image 32**

Image 32

4.2.9 Connect the FuelX female Lambda connector 2 to the stock male Lambda connector 2 of the vehicle. Refer to **Image 33**

Image 33

4.2.10 Connect the ground terminal connector to the negative terminal of the battery. Refer to the **Image 34**

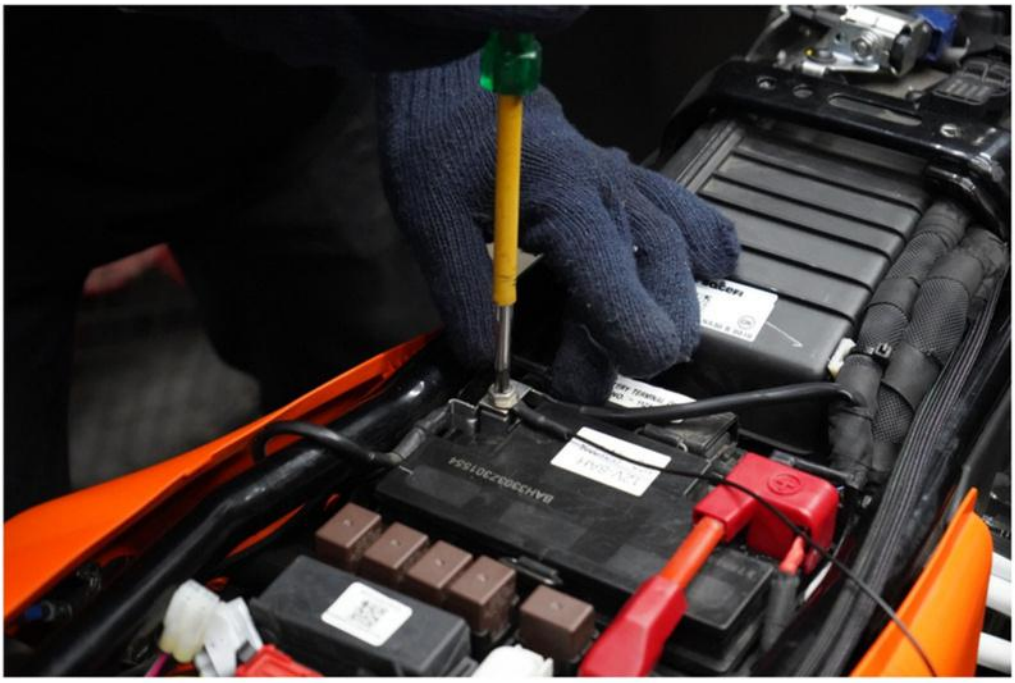


Image 34

4.2.11 Using a 2.5 mm Allen key, tighten the bolts of the handlebar map switch. Refer to **Images 35 and 36**

Image 35

Image 36

4.2.12 For better Routing handlebar map switch harness remove the clamp on the T-stem Refer to **Image 37**

Image 37

4.2.13 Connect the FuelX 8-pin female connector to the harness 8-pin male connector. Refer to **Image 38**

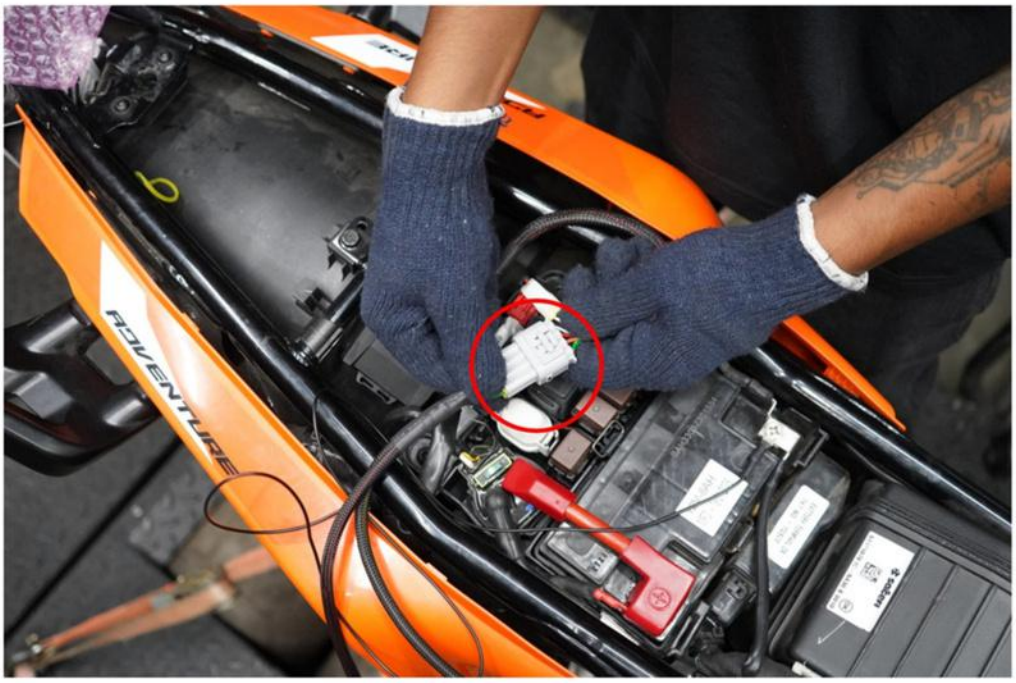


Image 38

4.2.14 Keep the FuelX module in the glove box. Refer to **Image 39**

Image 39

4.2.15 Connect the FuelX 4-pin female connector to the handlebar map switch harness 4-pin male connector. Refer to **Image 40**

Image 40

4.2.16 Use zip ties to secure the harness wherever necessary. Attach the panels back. The installation is complete and you can use the FuelX.

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.

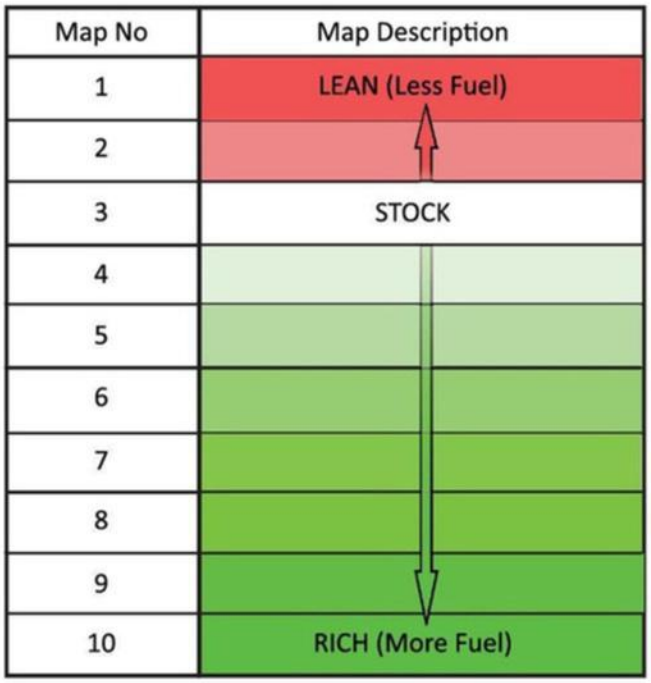


Image 5.1

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

The first two maps are lean maps.

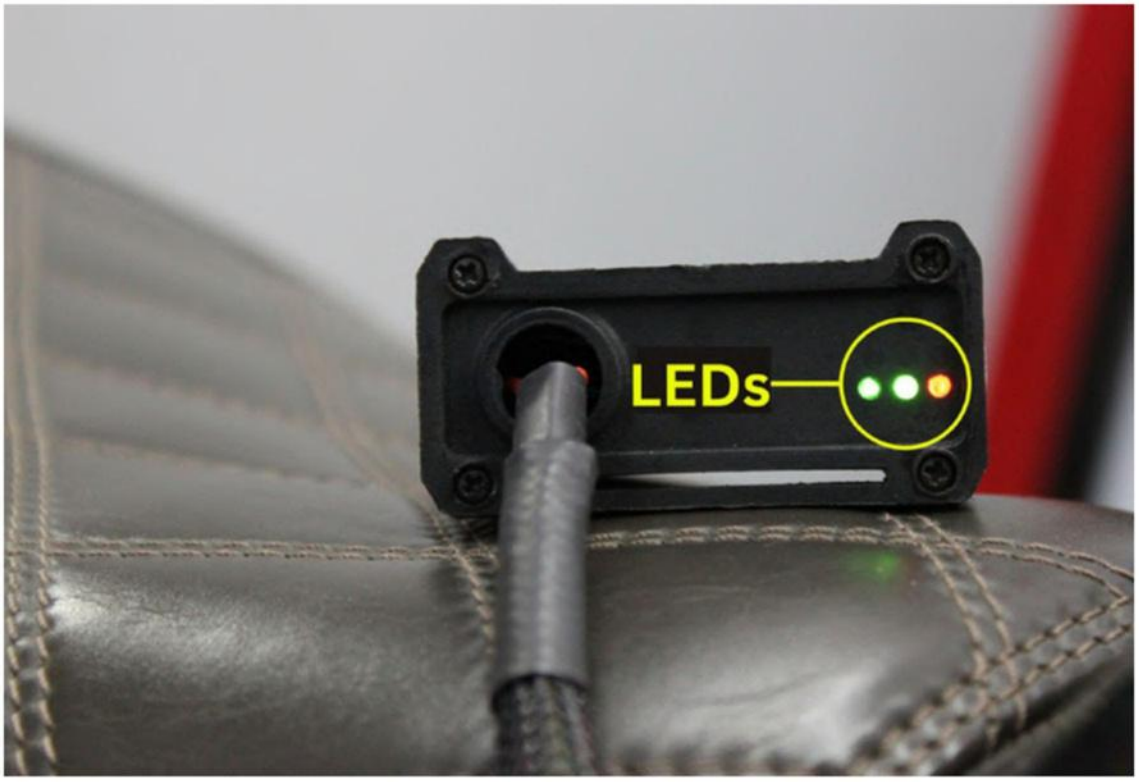
Map 3 runs with stock AFR set by the OEM manufacturer.

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.