

# FuelX Installation Manual

## Aprilia RS 457

Document Version	1	Release Date	09 July 2024
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Application information	Vehicle Specific
Vehicle	<b>Aprilia</b>
Model	<b>RS 457</b>
Year of manufacture	<b>2024</b>

**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 / PowerTRONIC 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.

 FOR INDIAN SPECIFICATION BIKES ONLY

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 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.



FuelX kit contains the following items

- FuelXModule
- WiringHarness
- Handlebarmapswitch(ProandPro+ versiononly)
- Zipties
- Decals
- QuickstartguideandWarrantycard



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

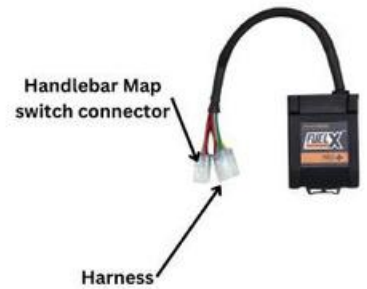


Image 2.3

### 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

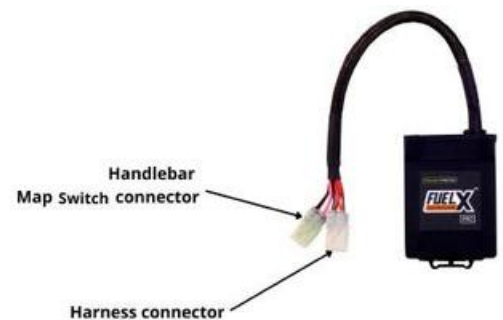


Image 2.6

## FuelX Lite

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



Image 2.7

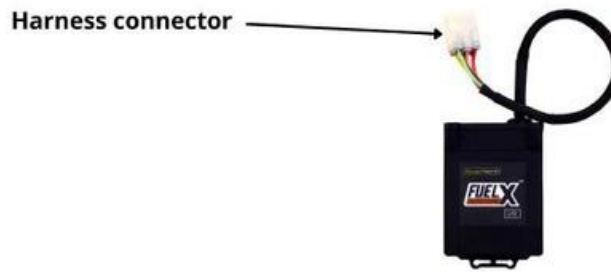


Image 2.7

### 3. FuelX Harness Connectors

The harness contains

- The Lambda connector (O2)
- 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.

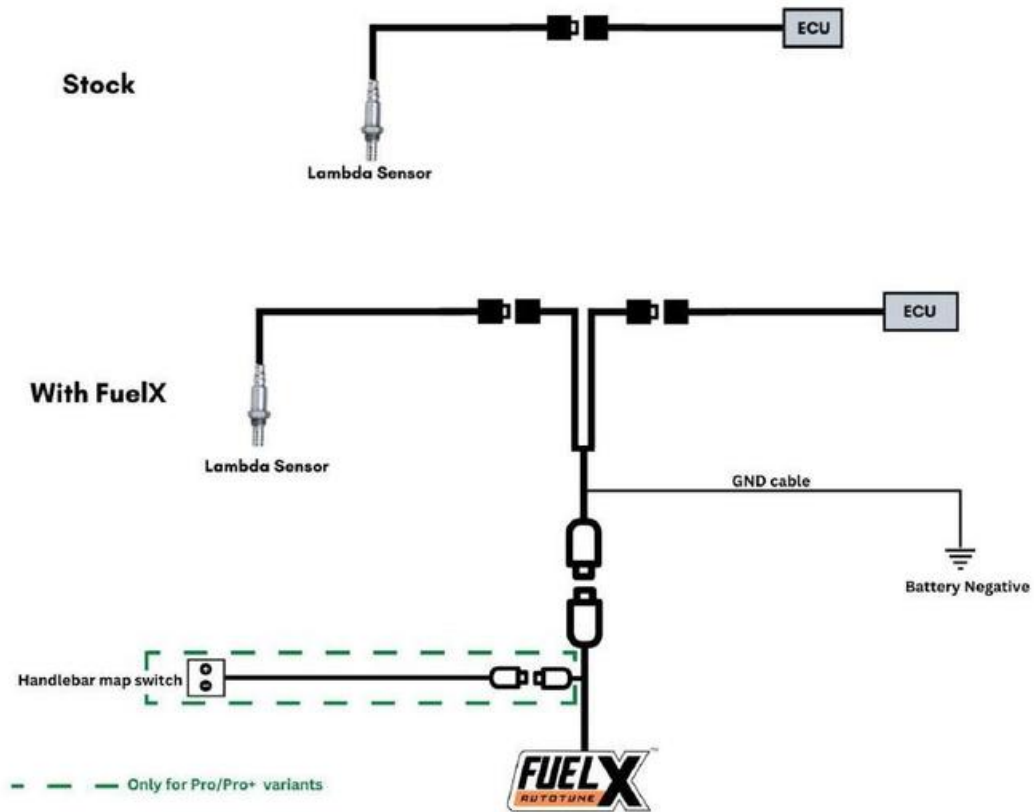


Image 3.4

**Tools Required**

- Allen keys- 4mm
- Torx keys- T10, T45
- Philips head screw driver

**Note: As the Aprilia RS457 has clip on handlebars, you will need a Mirror Mount Extender, to be purchased seperately, to install the FuelX map switch. Refer to [Image 0](#) for reference.**



**Image 0**



#### 4. Installation procedure

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



Image 1

4.2 Locate the keyhole at the rear of the bike and use the key to unlock the seat.



Image 2



**4.3** Detach the pillion seat by gently lifting it.



**Image 3**

**4.4** Detach the rider seat by gently lifting and pulling it back.



**Image 4**

**4.5** Locate the screws on the front tank cover. Refer to **Image 5** for the location of screws.



**Image 5**

**4.6** Unscrew the screws using a 4mm Allen key.



**Image 6**

4.7 Gently lift to detach the front tank cover.



Image 7

4.8 Locate the screws on the side panel of the bike. Refer to **Image 8** for location of the screws.

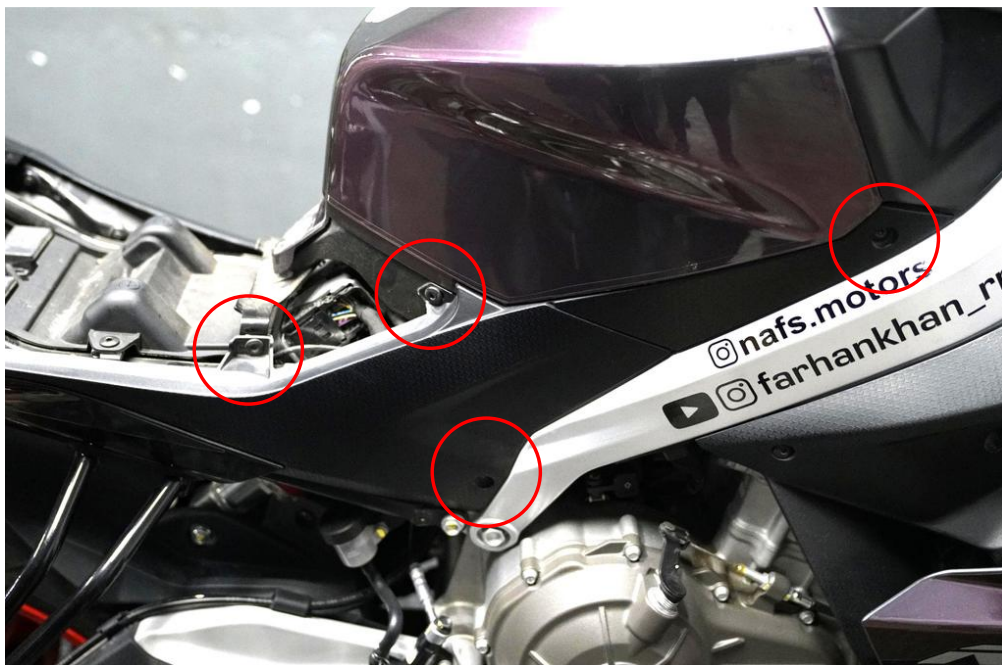


Image 8



**4.9** Unscrew the screws using a 4mm allen key. Gently move the front of the panel away from the frame. Refer to **Image 9**



**Image 9**

**4.10** Unscrew the screw shown in **Image 10** with a 4mm allen key.



**Image 10**

4.11 Unscrew the tank bolt show in **Image 11** using a 4mm Allen key.



**Image 11**

4.12 Unscrew the tank anchor bolts on either side using a T45 Torx key. Refer to **Image 12**



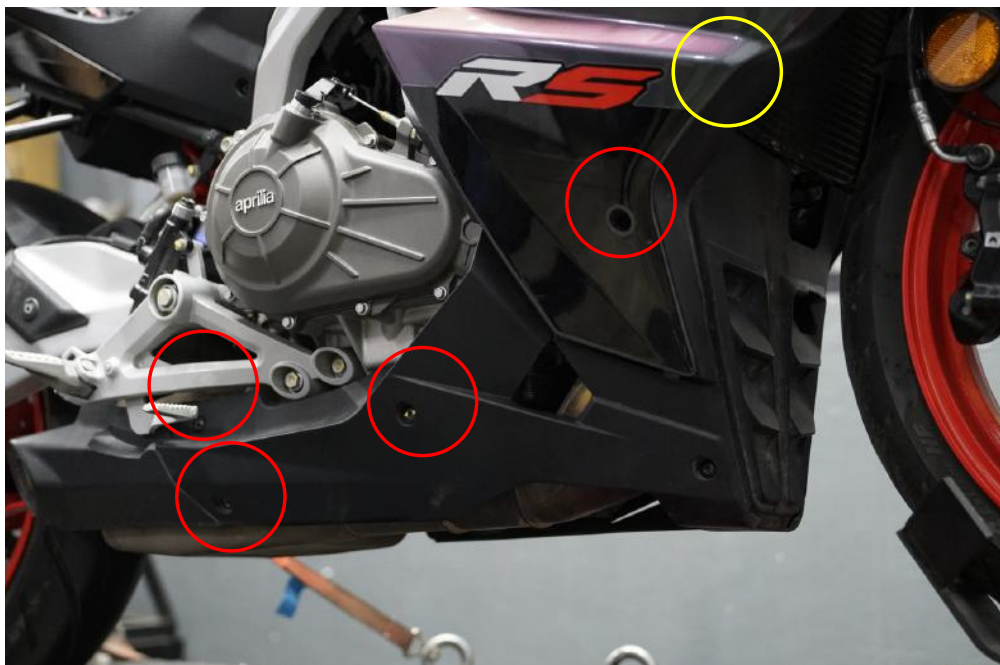
**Image 12**

**4.13** Ensure the tank can be lifted up in order to make room for the harness to pass underneath it.



**Image 13**

**4.14** Unscrew the bolts marked in red on the bottom panel using a 4mm Allen key. Locate the screw underneath the fairing marked in yellow and unscrew it using T10 Torx key. Refer to **Image 14**.



**Image 14**



**4.15** Gently remove the bottom panel.



**Image 15**

**4.16** Unscrew the screws shown in **Image 16** with a 4mm Allen key.



**Image 16**



**4.17** Locate the lambda sensor at the front of the bike under the radiator. Refer to **Image 17**.



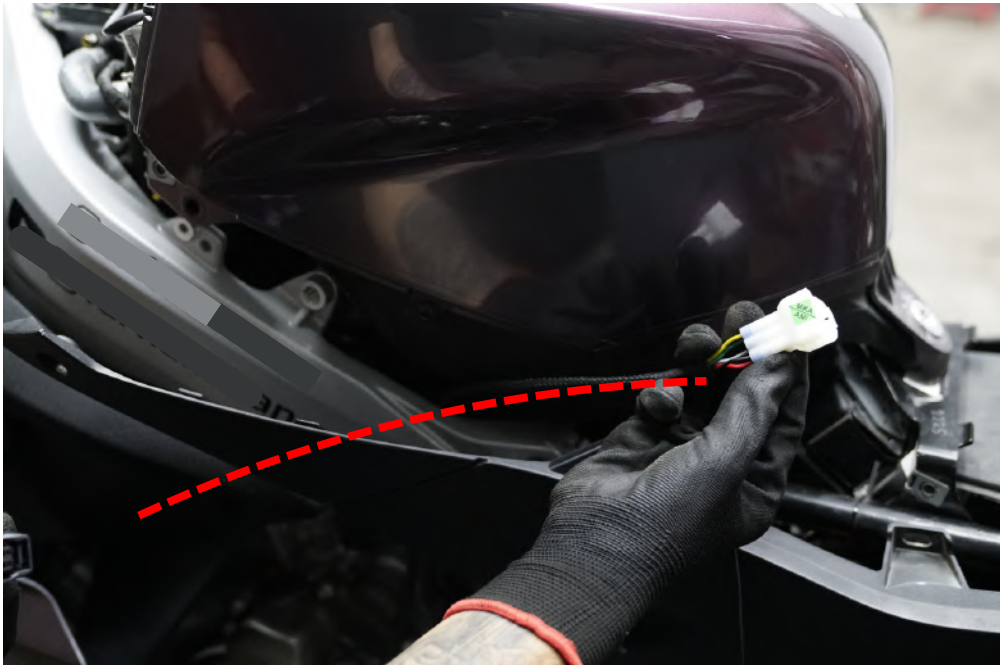
**Image 17**

**4.18** Disconnect the lambda sensor.

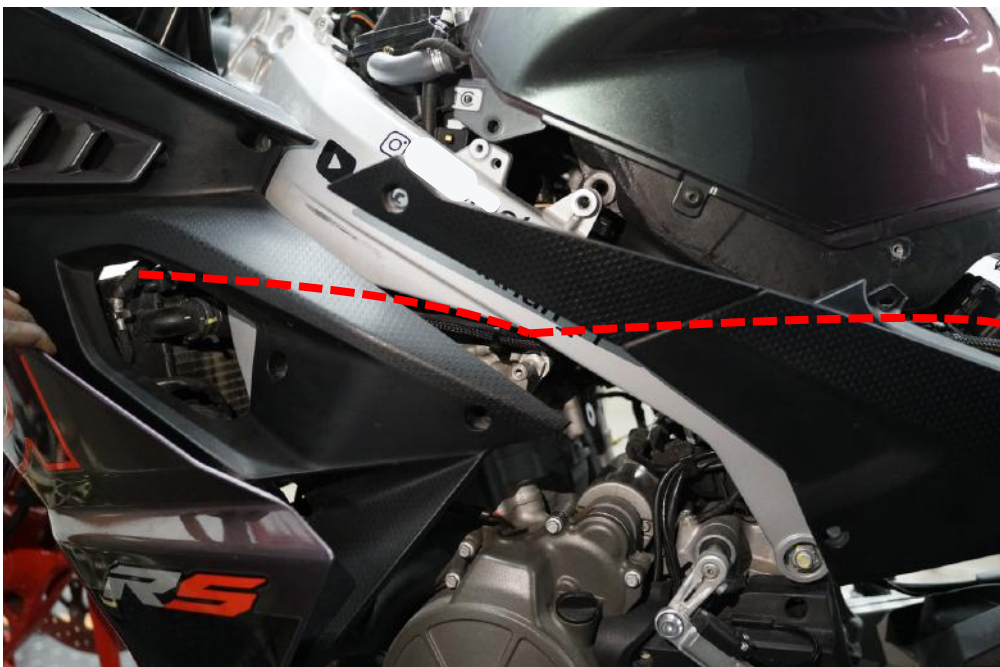


**Image 18**

4.19 Route the FuelX harness underneath the fairings as shown in **Image 19** and **Image 20**.



**Image 19**



**Image 20**

**4.20** Connect the male connector of the lambda sensor to the female connector of FuelX and vice versa. Refer to **Image 21**.



**Image 21**

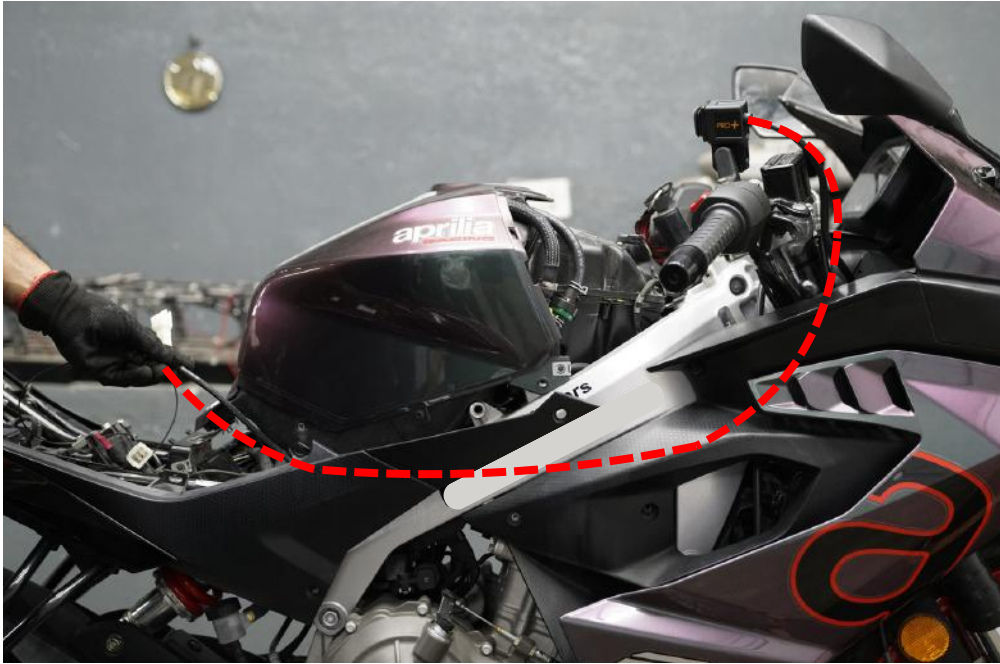
**4.21** Attach the mirror mount extender and attach the FuelX map switch on the mount. Refer to **Image 22**.



**Image 22**

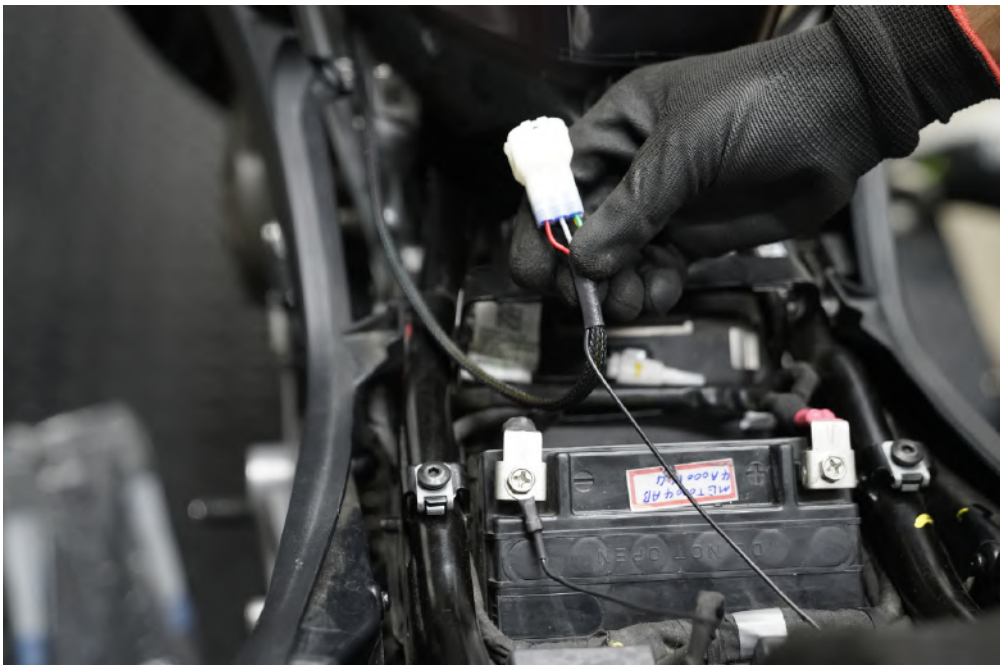


**4.22** Route the map switch harness through the fairing as shown in **Image 23**.



**Image 23**

**4.23** Connect the ground cable to the negative terminal of the battery. Refer to **Image 24**.



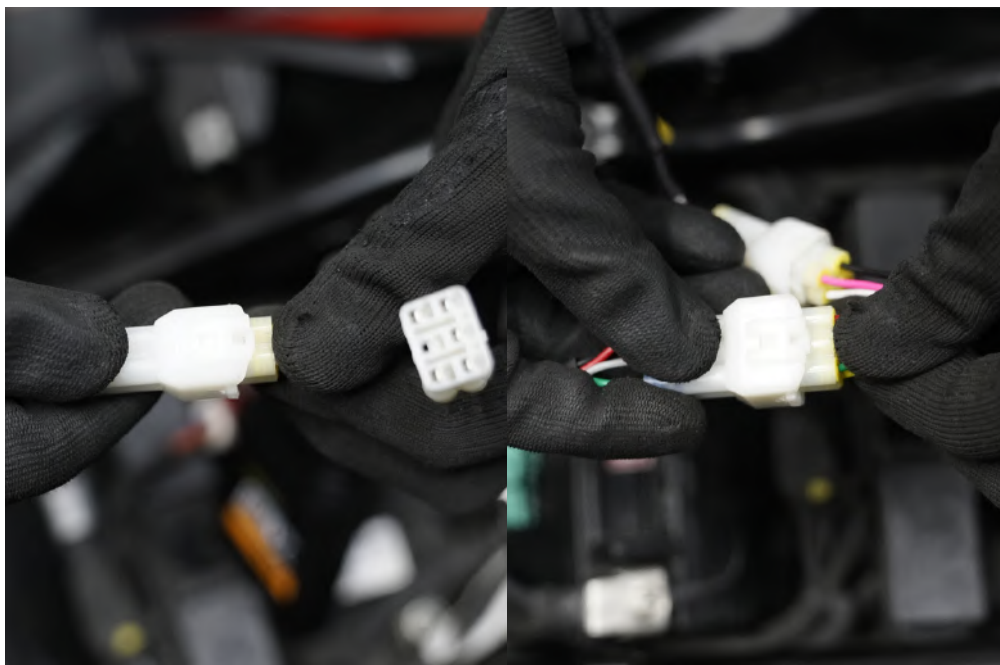
**Image 24**

**4.24** Place the FuelX unit under the pillion seat area at the rear end of the bike. Refer to **Image 25**.



**Image 25**

**4.24** Connect the 4 pin connector of the unit to the map switch connector and 6 pin connector to the main harness. Refer to **Image 26** and **Image 27**.



**Image 26**



**Image 27**

**4.25** Secure the harness with zip ties away from heating elements wherever necessary.

**4.26** Attach the panels back and the tank back on the bike. Then attach the seats.

**Image 9**

## 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.

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

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.

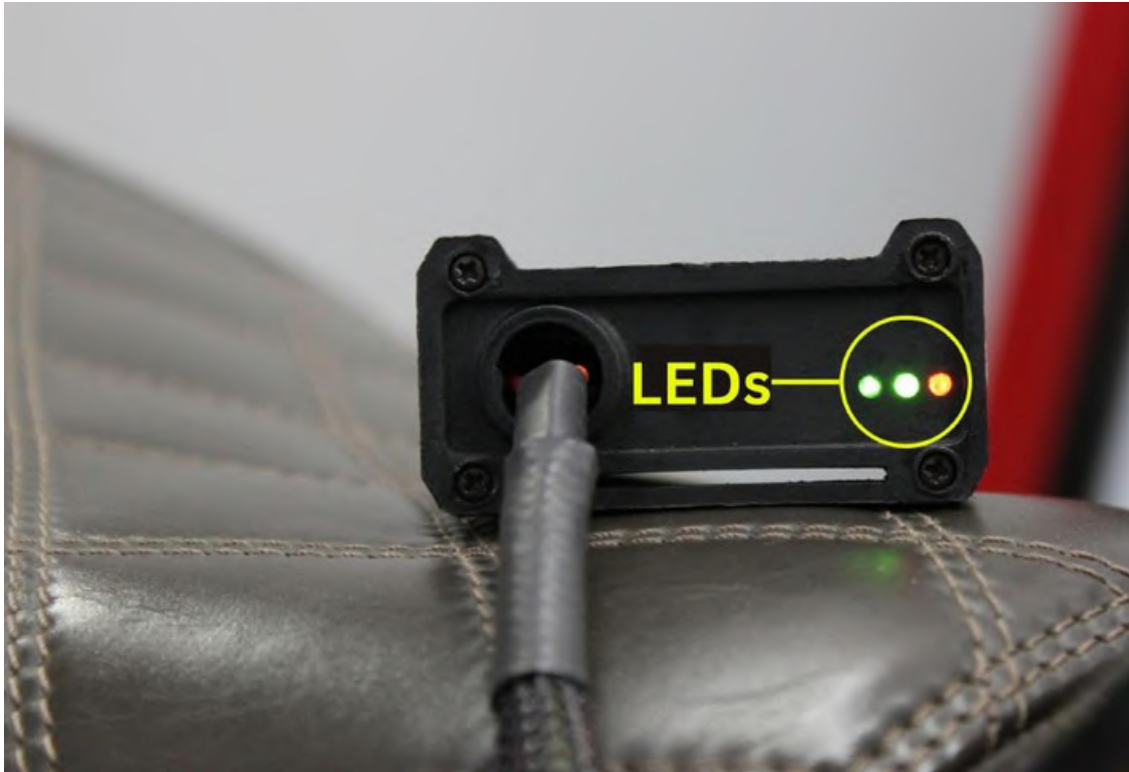


Image 33

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 the FuelX Functioning as intended.