

## FuelX Autotune- KTM

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<b>Application information</b>	<b>FuelX</b>
Vehicle	<b>KTM</b>
Model	<b>All</b>
Year of manufacture	<b>Not Applicable</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 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

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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 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.



### FuelX kit contains the following

- FuelX Module
- Wiring Harness
- Handlebar map switch (Pro version only)
- Zip ties
- Decals
- Quick start guide and Warranty card

FuelX Module



Handlebar Map Switch



Wiring Harness



Zip Ties



Decals



Quick Start Guide & Warranty Card



Image 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

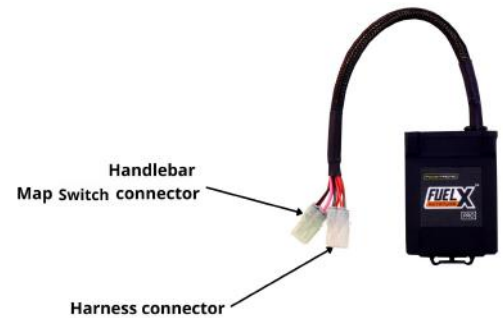


Image 2.3

### FuelX Lite

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



Image 2.4

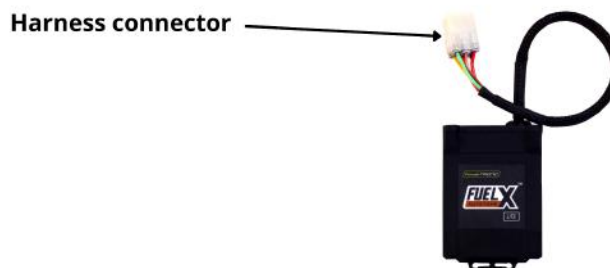


Image 2.5

### 3. FuelX Harness Connectors

The harness contains

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



Image 5

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.

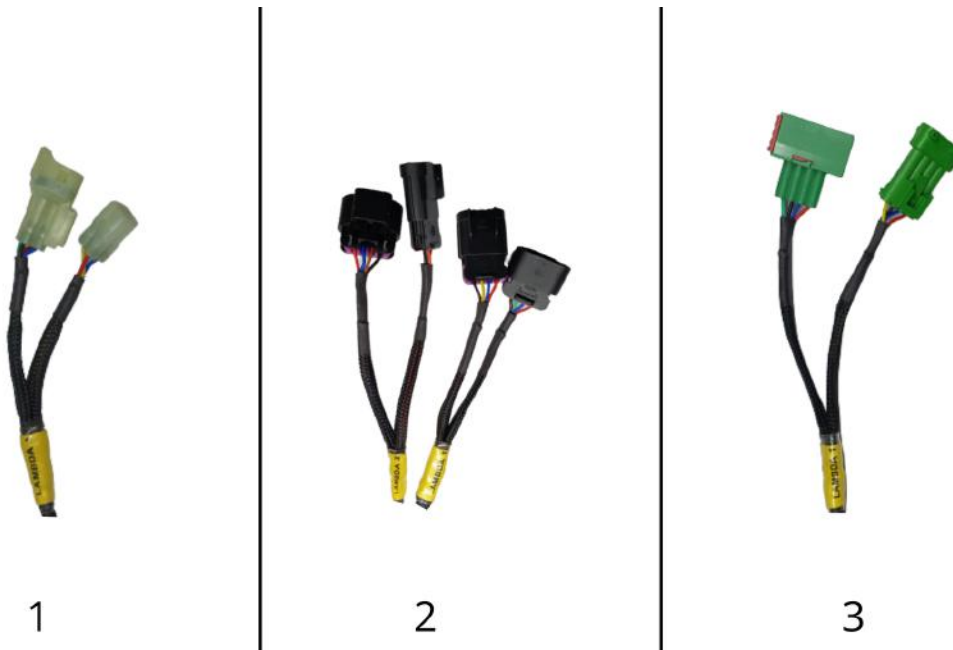


Image 6

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.

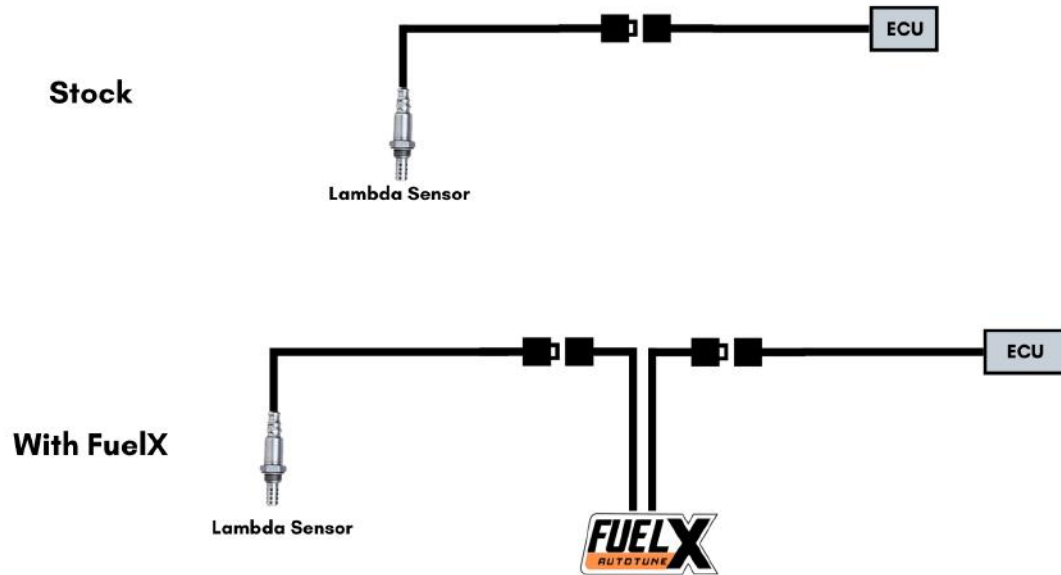


Image 7

## 4. FuelX Installation:

**Note:** The installation was done on a KTM Duke 390 (2017-2019) model. Replicate the installation process for all KTM vehicles.

### 4.1 Removing panels, fairing

Begin at the left side of the bike.

Park the bike using the center stand on a level surface (Or a paddock stand). Refer [\*\*Image 1\*\*](#)



Image 1

Note the position of the Lambda connector. Refer [\*\*Image 2\*\*](#)



Image 2



**4.1.1** Detach the pillion seat by inserting the key into the keyhole shown in **Image 3** and unlock the pillion seat. **Image 4** shows the pillion seat detached.

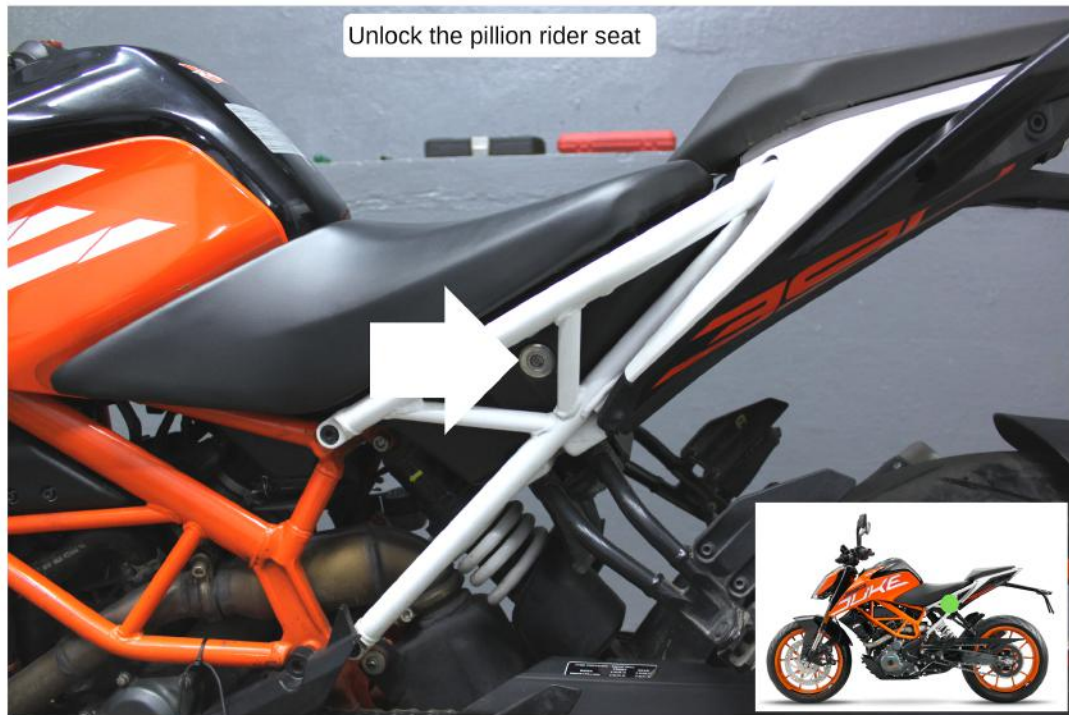


Image 3



Image 4



**4.1.2** Detach the rider seat. (Gently lift and slide it towards the rear end - Refer **Image 5**).



Image 5

**4.1.3** **Image 6** shows both the seats detached.



Image 6

**4.1.4** Locate and unscrew tank bolt (middle) using M12 Hexagonal socket wrench. Refer [Image 7](#) and [Image 8](#)



Image 7



Image 8



**4.1.5** Locate and unscrew the bolts (side) using the M17 Hexagonal socket. Refer to [Image 9](#) and [Image 10](#).



Image 9



Image 10

**4.1.6** Locate the bolts on the brackets. Refer **Image 11**.

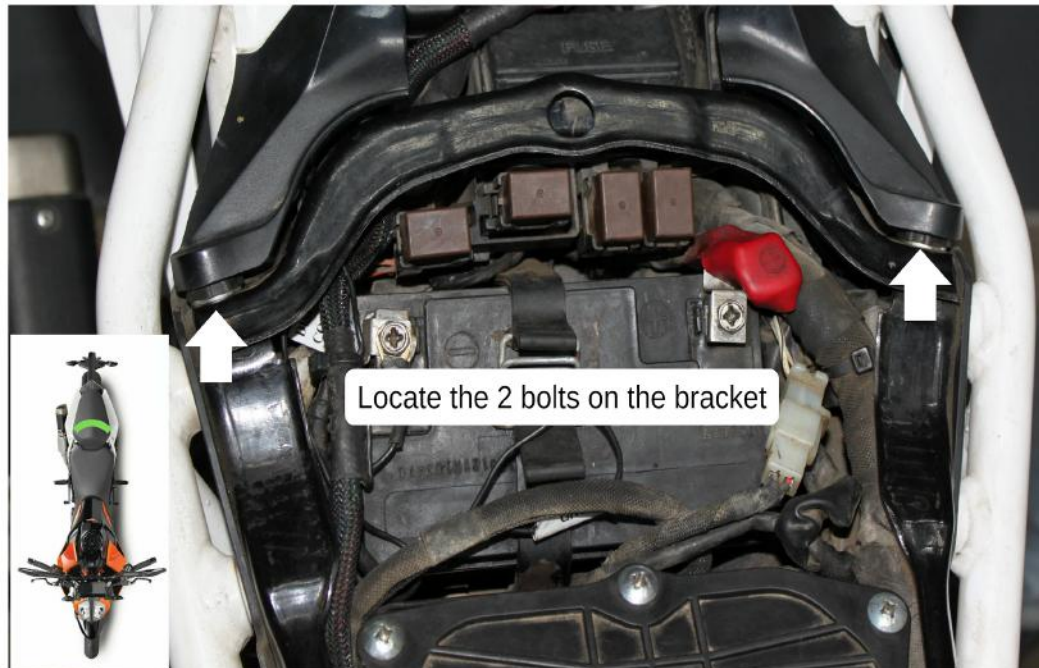


Image 11

**4.1.7** Lift the fairing gently and detach it from the bracket carefully. Refer **Image 12**

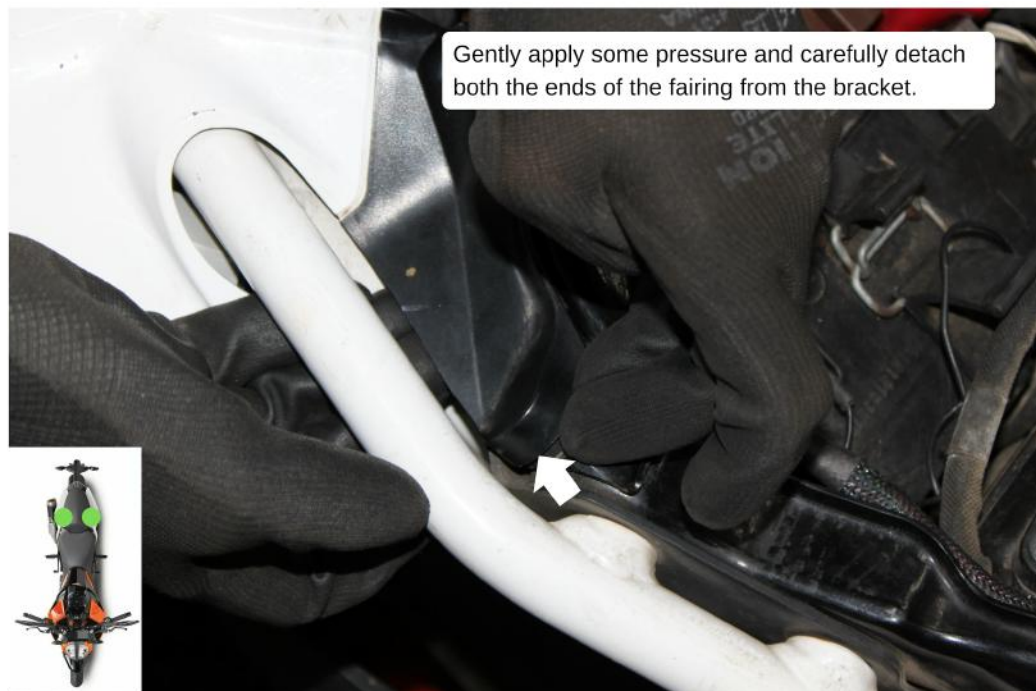


Image 12



**4.1.8** Detach both ends of the fairing. Refer **Image 13**.

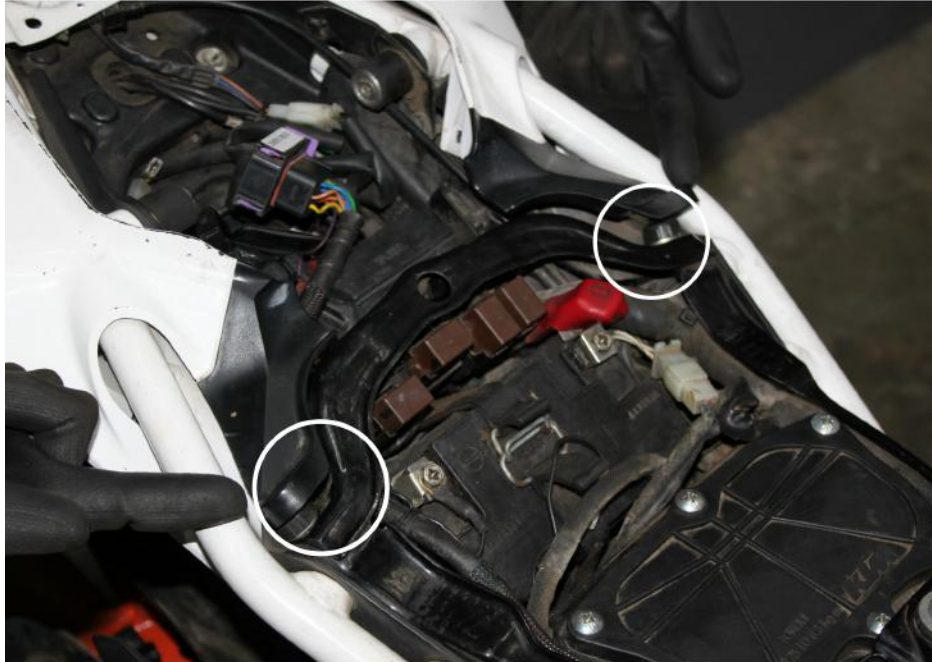


Image 13

**4.1.9** Unscrew the bolts using the M5 Hex bit socket from the bracket. Refer **Image 14**.

**Note:** Lift the fairing gently so that you will have enough space to unscrew the bolts.



Image 14

**4.1.10** Remove the bracket. Refer **Image 15**.



Image 15

**4.1.11** Go to the left side of the bike. Locate the bolts from the ignition coil cover. Refer **Image 16**



Image 16



**4.1.12** Unscrew the bolts using the M5 Hex bit socket from the ignition coil cover. Refer **Image 17**



Image 17

**4.1.13** Remove the ignition coil cover. Refer **Image 18**



Image 18



**4.1.14** Locate the stock Lambda connector of the vehicle. Refer **Image 19**



Image 19

**4.1.15** Disconnect the Lambda connector of the vehicle. Refer **Image 20**



Image 20

**4.1.16** Connect the FuelX male Lambda connector to the stock female Lambda connector of the vehicle. Refer **Image 21**



Image 21

**4.1.17** Connect the FuelX female Lambda connector to the stock male Lambda connector of the vehicle. Refer **Image 22**



Image 22

**4.1.18** Route the FuelX harness to the rear end of the vehicle. Refer [Image 23](#)

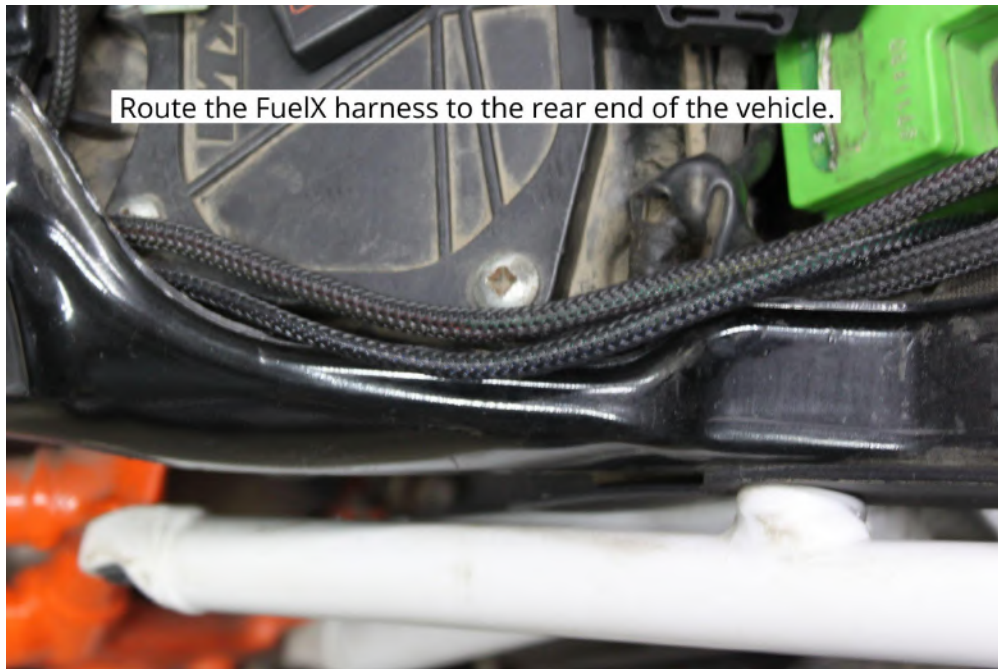


Image 23

**4.1.20** Connect the ground terminal connector to the negative terminal of the battery. Refer the [Image 24](#).



Image 24



**4.1.21** Using a 2.5 mm Allen key, tighten the bolts of the handlebar map switch. Refer [Image 25](#)



Image 25

**4.1.22** Route the handlebar map switch harness to the rear end of the vehicle. Refer [Image 26](#)



Image 26

**4.1.23** Keep the FuelX module in the glove box. Refer [Image 27](#)



Image 27

**4.1.24** Connect the FuelX 6-pin female connector to the harness 6-pin male connector. Refer [Image 28](#)

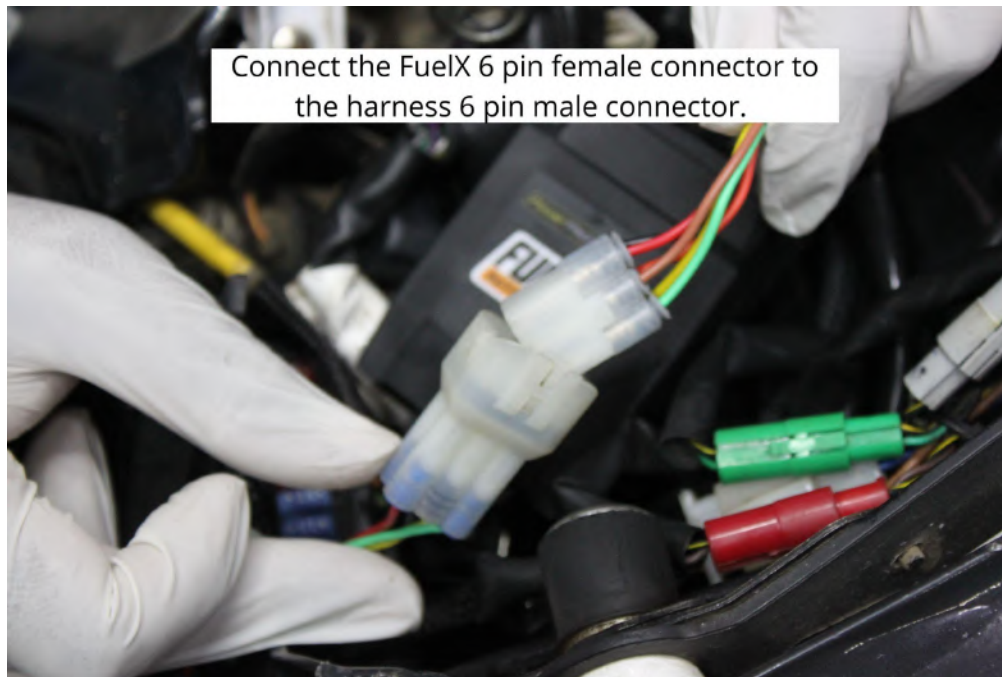


Image 28

**4.1.25** Connect the FuelX 4 pin female connector to the handlebar map switch harness 4 pin male connector. Refer **Image 29**



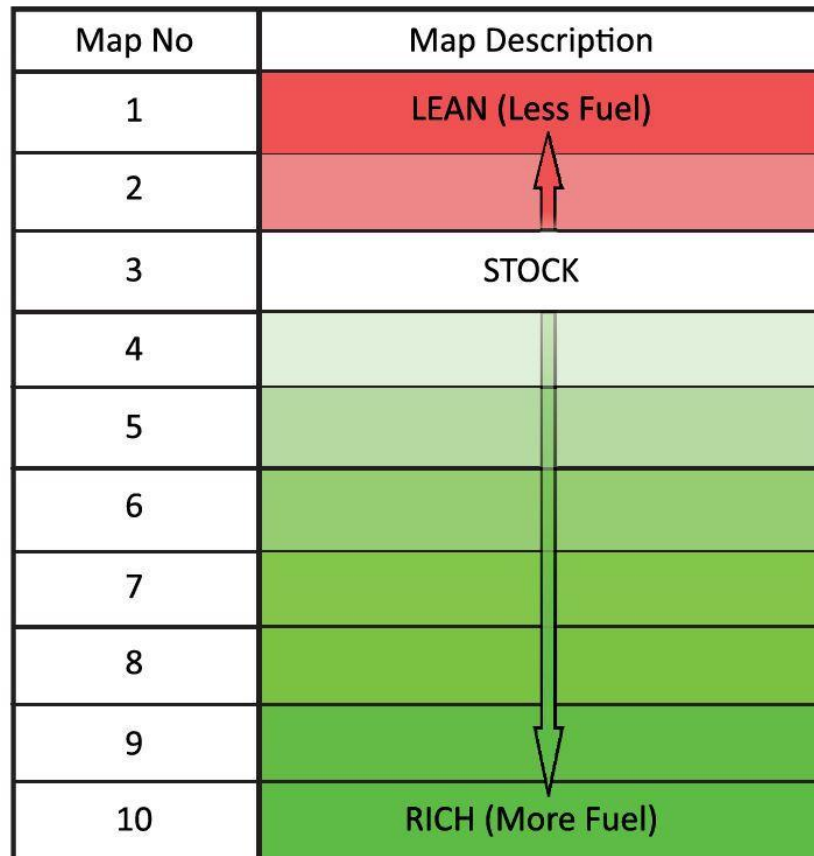
Image 29

**4.1.26** 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 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.