

FuelX Installation Manual

BSA GOLD STAR 650 (2024)

Document Version	1	Release Date	03 Oct 2024
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Application information	Vehicle Specific
Vehicle	BSA
Model	GOLD STAR 650
Year of manufacture	2024

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.

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.

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Toolsrequired

Serial No	Main tools	Optional tools
1	4mm, 5mm Hex bit	Spinner handle Ratchet
2	10mm, 8 mm T bar Hexagonal Socket wrench	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 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

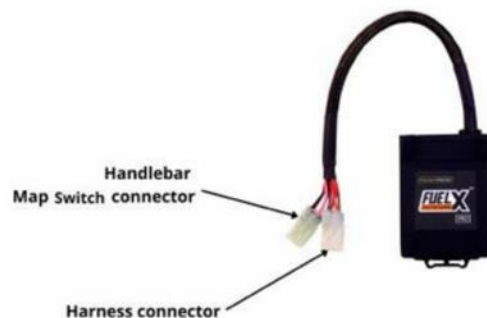


Image 2.6

FuelX Lite

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



Image 2.7

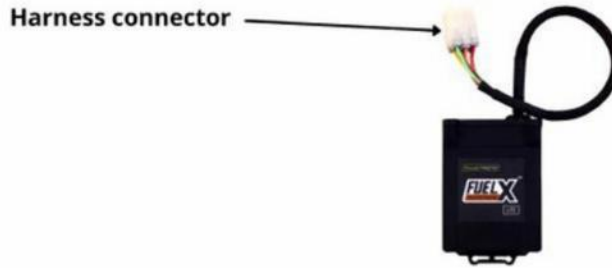


Image 2.7

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 FuelX is connected to the female of the Lambda sensor and vice versa.

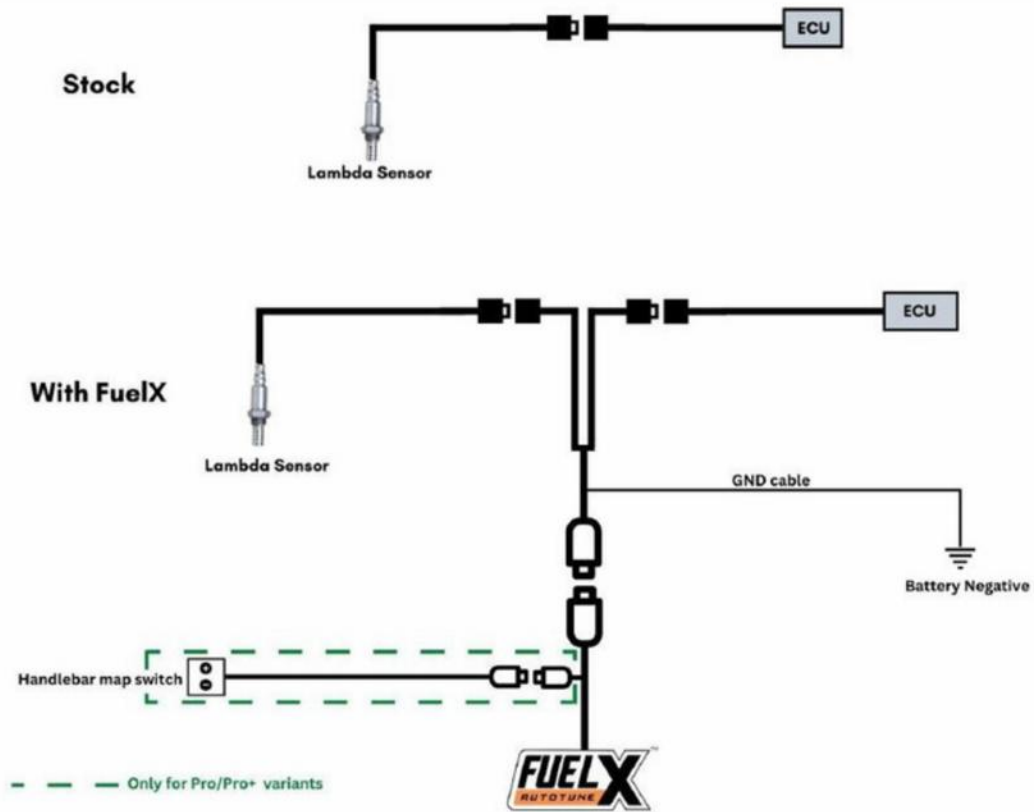


Image 3.4

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

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 and unlock the pillion seat refer Image 3.

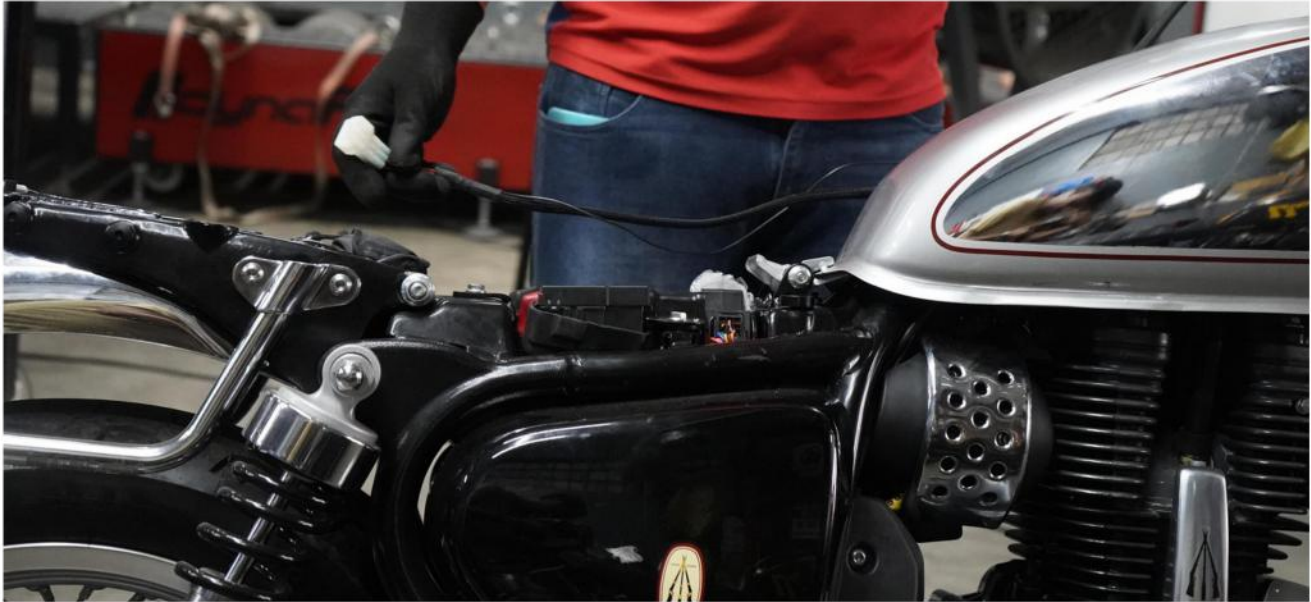


Image 3

4.1.2. Locate the tank rear mounting 10mm bolt, and remove the bolt. Refer image 4



Image 4

4.1.3. After removing the bolts, gently lift the rear end of the tank a little, and unplug the fuel line connector. Refer Image 5 and image 6

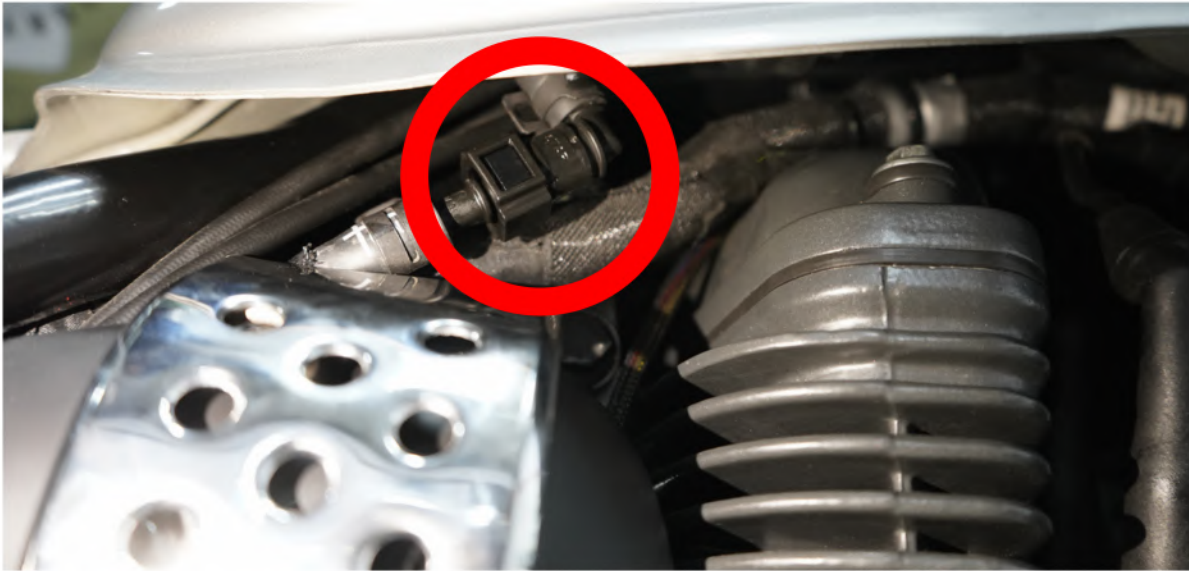


Image 5



image 6

4.1.4. locate the fuel pump connector refer image 7, unplug the fuel pump connector, refer image 8.



image 7



image 8

4.1.5. locate the fuel guage connector refer image 9, unplug the fuel guage connector, refer image 10.



image 9



image 10

4.1.6. Disconnect the vaccum hose 1 carefully. Refer to Image 11.



image 11

4.1.7. Disconnect the vaccum hose 2 carefully. Refer to Image 12.



image 12

4.1.8. Gently lift the tank from the tank seating after disconnecting the connections. Refer image 13



image 13

4.1.9. Route the harness of the FuelX module to the front end of the vehicle. Refer Image 14



image 14

4.1.10. Refer to Image 15 to locate the Lambda sensor and Lambda Sensor Connector.

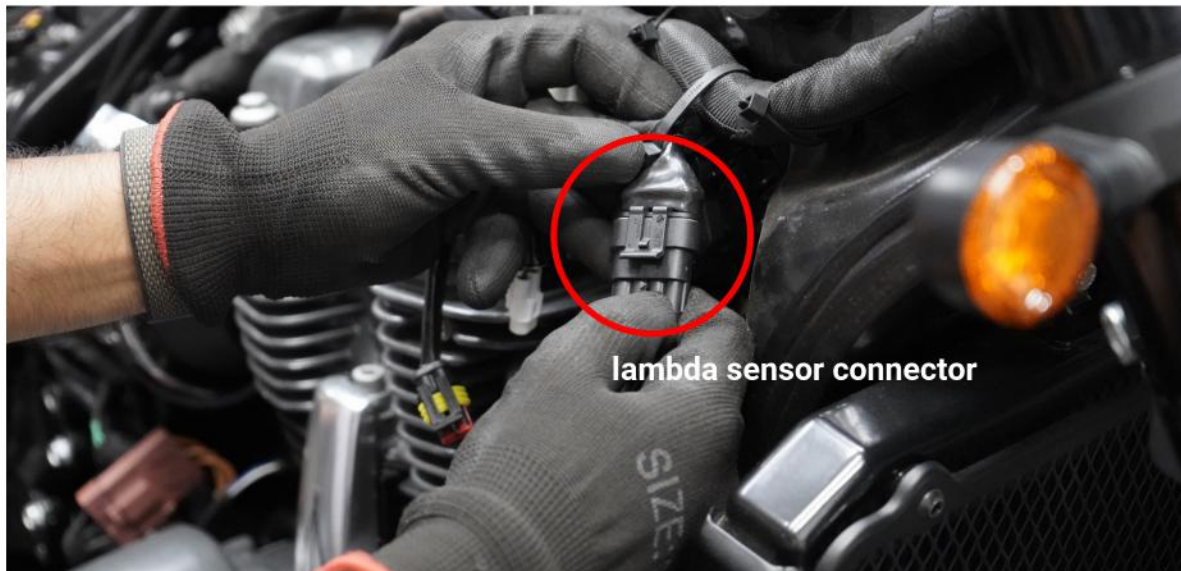


Image 15

4.1.11. Disconnect the male and female connectors. Refer to Image 16 and Image 17.

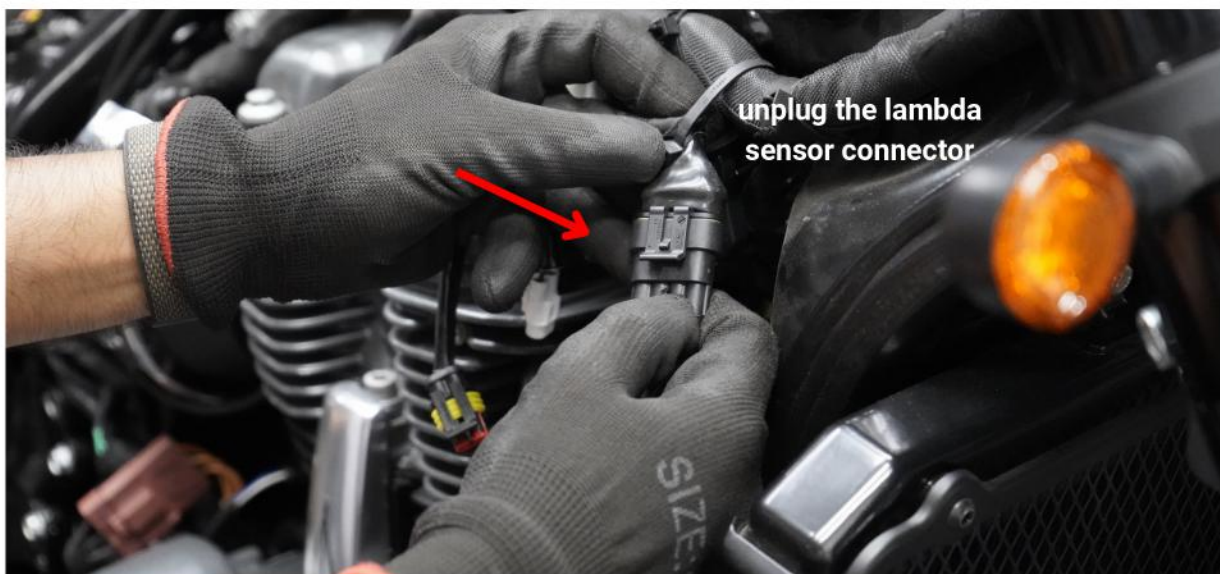


image 16

4.1.12. Disconnecting the male and female connectors, Refer image 17.



Image 17

4.1.13. Connect the FuelX male connector to the Stock female Lambda connector. Refer Image 18

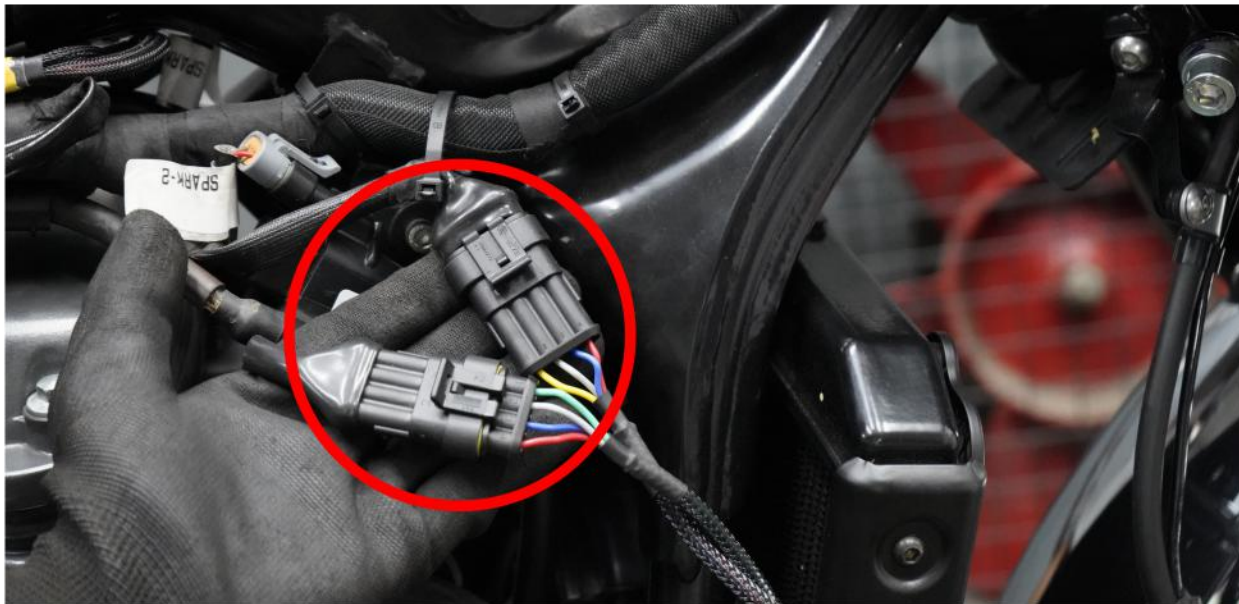


Image 18

4.1.14. Attach the handlebar switch to a suitable position. Refer to Image 19.



Image 19

4.1.15. Using a 2.5 mm Allen key, tighten the bolts. Refer to Image 20



Image 20

4.1.16. Connect the FuelX 4-pin female connector to the handlebar map switch harness 4-pin male connector. Refer to Image 21



Image 21

4.1.17. Place the FuelX securely under the seat. Refer to Image 22 and image 23



Image 22

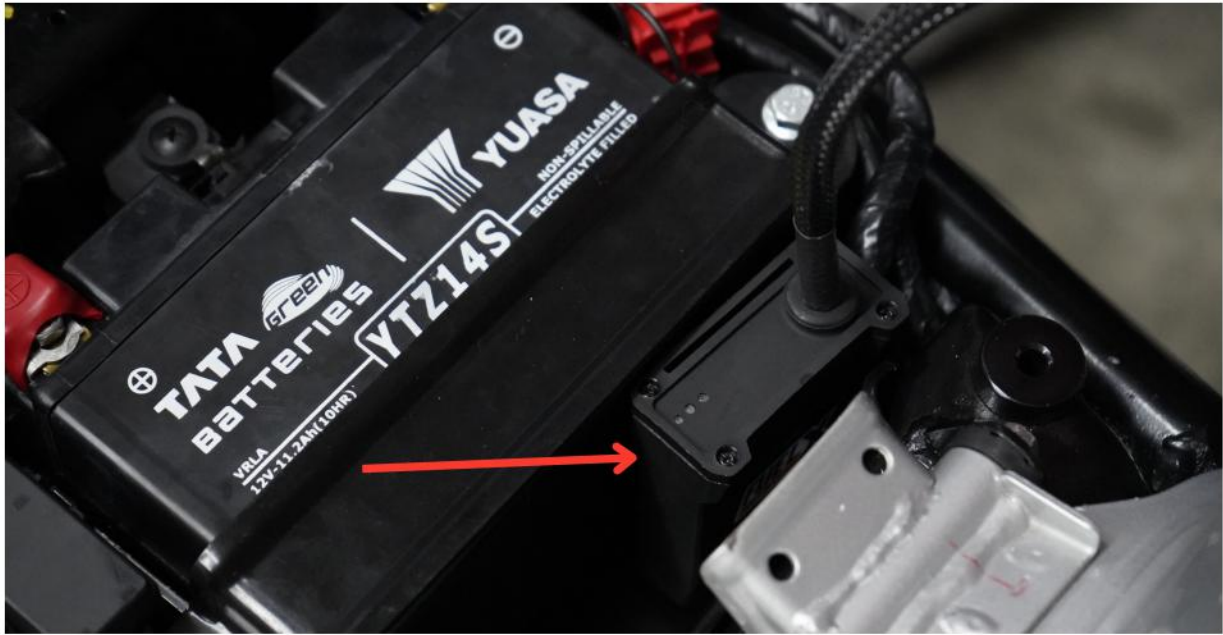


Image 23

4.1.18 Disconnect the battery negative terminal of the vehicle. Refer to Image 24 below.



image 24

4.1.19. Connect the FuelX ground terminal connector to the battery negative terminal. Refer to Image 25 below

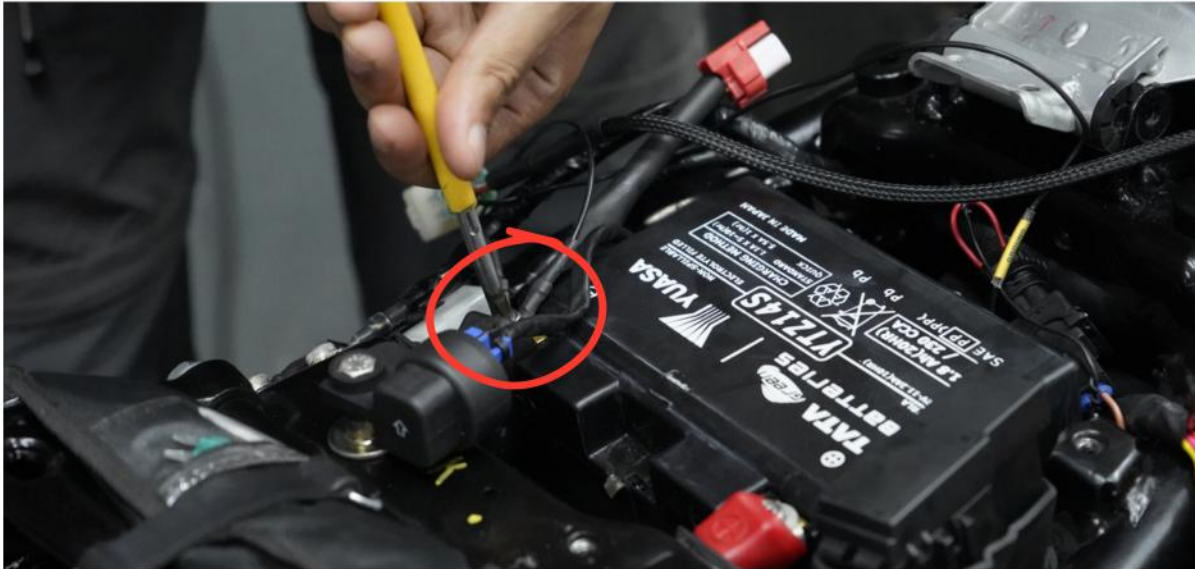


Image 25

2. 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 26

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.

3. FuelX LEDs

FuelX has LEDs on the module to indicate the operation.

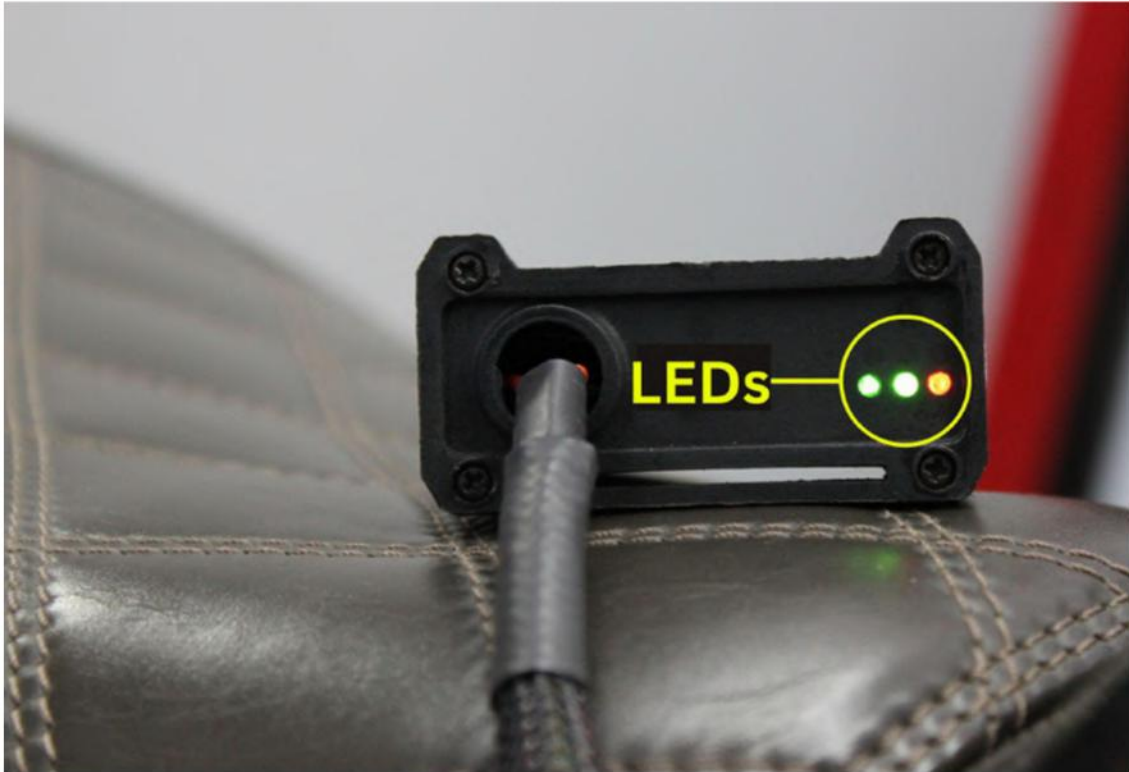


Image 27

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.