

FuelX Autotune- Husqvarna Svartpilen 401 2024

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Application information	FuelX
Vehicle	Husqvarna
Model	Svartpilen 401
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 bike 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.

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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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Toolsrequired

Serial No	Main tools	Optional tools
1 2	4mm, 5mm Hex bit	Spinner handle Ratchet
3	10mm, 8 mm T bar Hexagonal Socket wrench	handle
	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

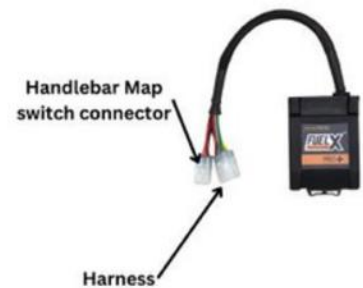


Image 2.3

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

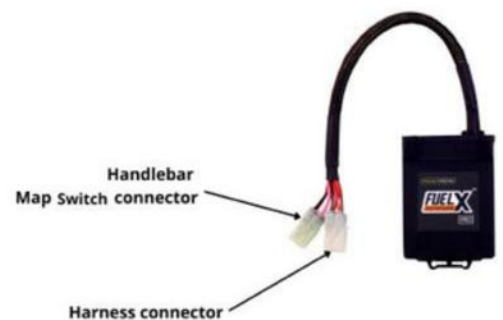


Image 2.6

FuelX Lite

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



Image 2.7

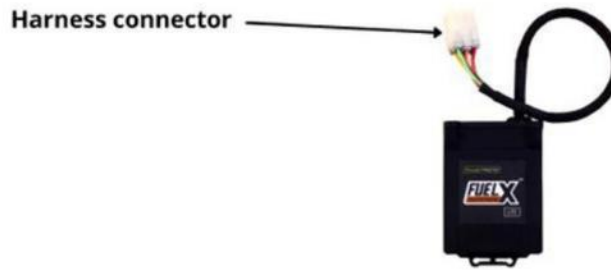


Image 2.7

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

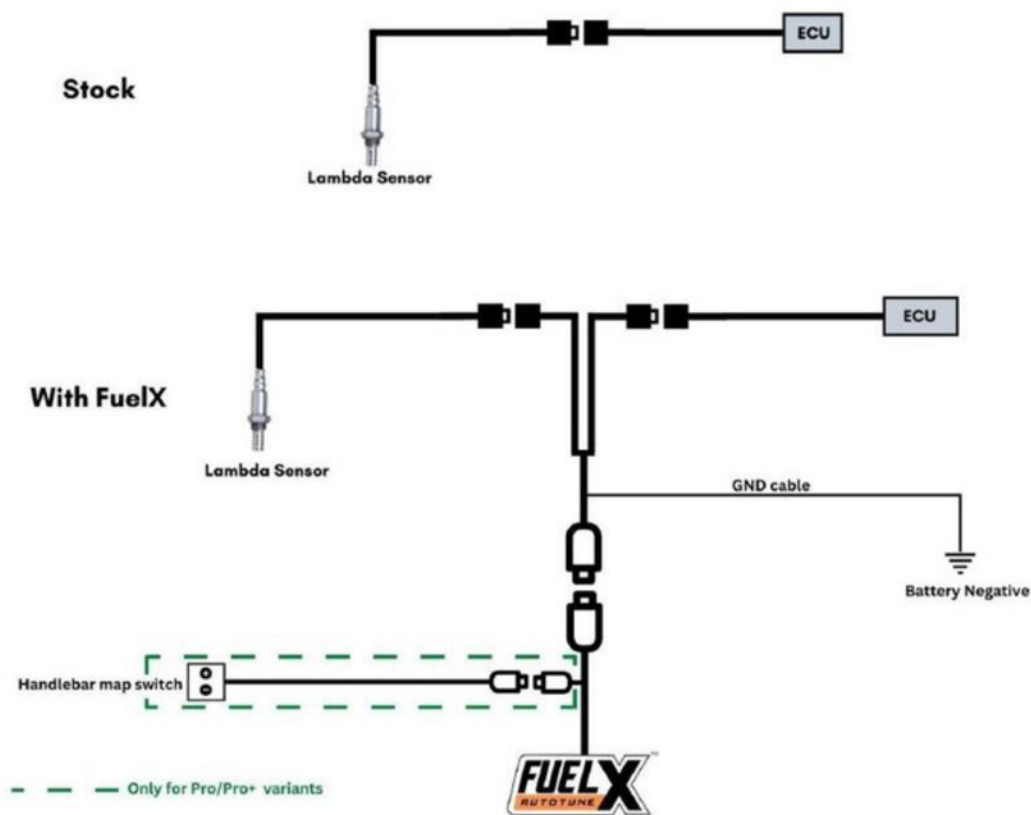


Image 3.4

3. Installation procedure

3.1 Removing panels, fairing

Park the bike using the center stand on a level surface (Or a paddock stand). Refer to **Image 1**



Image 1

3.1.1 Detach the pillion seat by inserting the key into the keyhole shown in **Image 2** and unlock the pillion seat. **Image 3** shows the pillion seat detached.



Image 2



Image 3

3.1.2 Detach the rider seat. (Gently lift and slide it towards the rear end - Refer to **Image 4**).



Image 4

3.1.3 Locate the tank rear mounting allen key (2 nos). Refer to **Image 5**



Image 5

3.1.4 Unscrew the tank rear mounting bolts using 5mm Allen key. Refer to **Image 6**



Image 6

3.1.5 Locate and unscrew the tank front mounting bolts using a 14mm Hexagonal socket. Refer to **Image 7** and **Image 8**



Image 7



Image 8

3.1.6 Remove the tank cover. Refer to **Image 9**.



Image 9

3.1.7 locate the tank mounting 5mm allen key bolts, and unscrew the bolts Refer Image 10 and Image 11



Image 10



Image 11

3.1.8 Locate the side fairing 5mm allen key bolts and unscrew it Refer to **Image 10** and **Image 11**



Image 10



Image 11

3.1.9 Detach side fairing of the bike Refer to **Image 12**.



Image 12

3.1.10 locate the tank mounting 5mm allen key bolts, and unscrew the bolts Refer Image 13 and Image 14



Image 13



Image 14

3.1.11 Locate the side fairing 5mm allen key bolts and unscrew it Refer to **Image 15**



Image 15

3.1.12 Remove the key socket cover, locate the tank mounting 5mm allen key bolts, and unscrew the bolts Refer Image 13 and Image 14 and 15



Image 13



Image 14



Image 15

3.1.13 Locate the 10mm tank bolt shown in Image 16, unscrew it Refer to **Image 17** and **Image 18**



Image 16

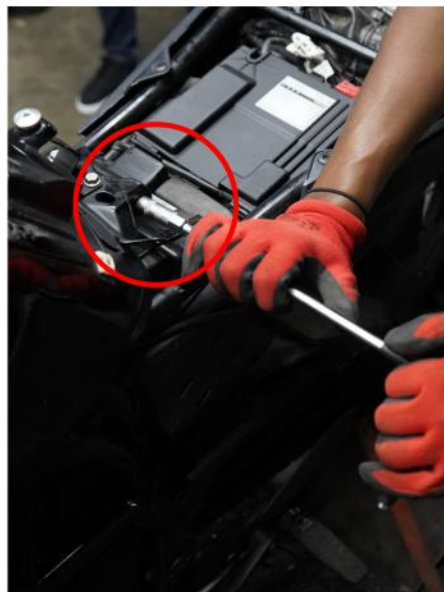


Image 17



Image 18

3.1.14 Gently lift the tank assembly. Refer to **Image 19**



Image 19

3.1.5 Gently lift the tank front and locate the canister. Gently unplug the canister from the slot. Refer to **Image 20**



Image 20

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



Image 21

3.1.17 Locate and Detach Fuel pump connector, and fuel line connector Refer to Image 22 and Image 23

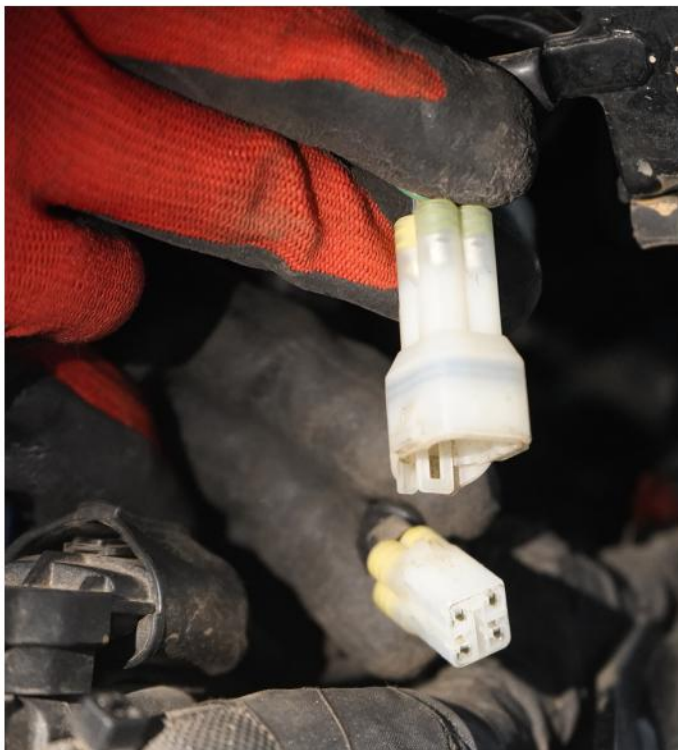


Image 22



Image 23

3.1.18 Gently lift the tank assembly and place it safely. Refer to Image 24



Image 24

3.1.21 Remove the battery-relay box cover. Refer to **Image 25**



Image 25

3.2.22 To locate the stock Lambda connector of the vehicle. by removing the RR unit cover of the bike
Refer to **Image 26** and **Image 27**



Image 26



Image 27

3.2.23 Locate the stock Lambda connector of the vehicle. Refer to **Image 28**



Image 28

3.2.24 Disconnect the Lambda connector of the vehicle. Refer to **Image 29**



3.2.25 Connect the FuelX female Lambda connector to the stock male Lambda connector of the vehicle. Refer to **Image 19**



Image 30

3.2.26 Connect the FuelX male Lambda connector to the stock female Lambda connector of the vehicle. Refer to **Image 31** and **32**



Image 31

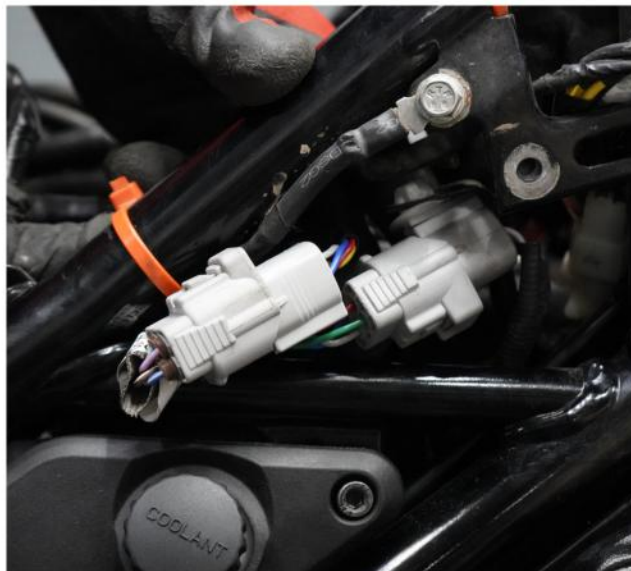


Image 32

3.2.27 Route the FuelX harness to the rear end of the vehicle. Refer to **Image 33** and **34**



Image 33

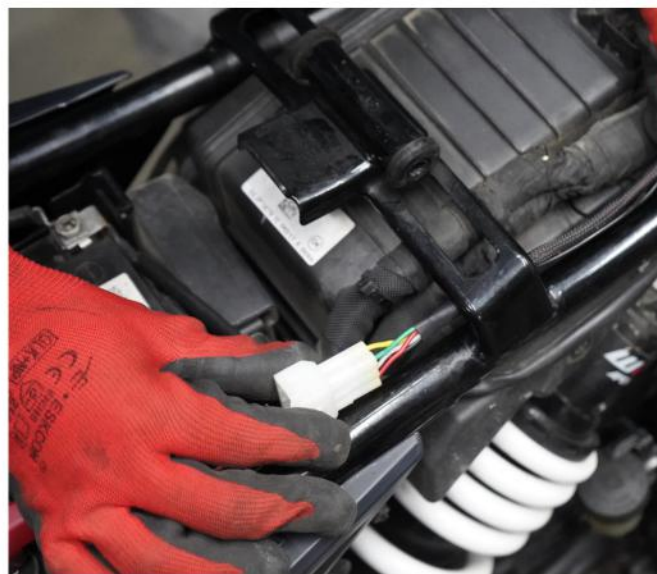


Image 34

3.2.28 Connect the ground terminal connector to the negative terminal of the battery. Refer to the **Image 35**



Image 35

3.2.29 Using a 2.5 mm Allen key, tighten the bolts of the handlebar map switch. Refer to **Images 36 and 37**



Image 36



Image 37

3.2.30 Route the handlebar map switch harness to the rear end of the vehicle. Refer to **Image 38**



Image 38

3.2.31 Connect the FuelX 6-pin female connector to the harness 6-pin male connector. Refer to **Image 39**



Image 39

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



Image 40

3.2.33 Keep the FuelX module in the glove box. Refer to **Image 41**



Image 41

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

4. 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. I.e 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.

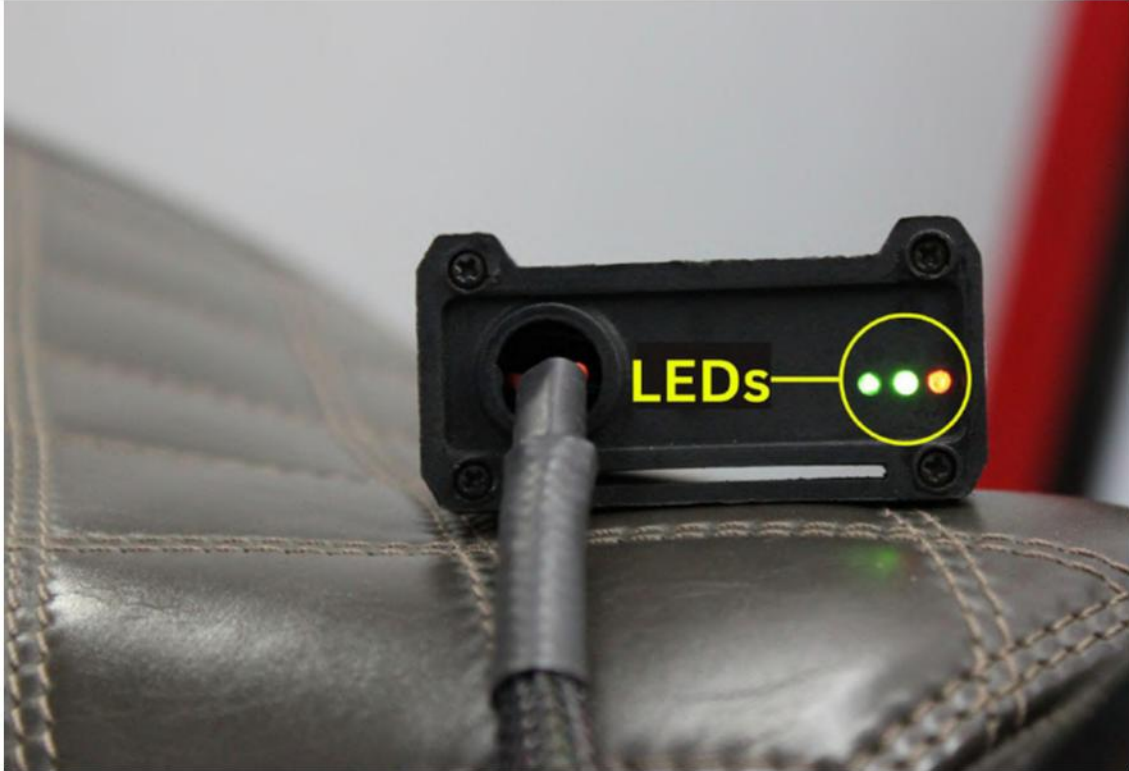
Map 3 runs with stock AFR set by the OEM manufacturer.

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.

5. 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.