PowerTRONIC Installation Manual- Yamaha MT15

Document Version	1	Release Date	14 Nov 2020

Application information	Vehicle Specific
Vehicle	**Yamaha**
Model	**MT15**
Year of manufacture	**2018-2019**
PowerTRONIC application	All PowerTRONIC ECUs, from firmware version F.3.x onward

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 tends to heat up during the normal operation of the vehicle at any chance.
- PowerTRONIC 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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Table of Contents

1. Parts list

1	PowerTRONIC	Piggyback ECU
2	Stock Coupler	Stand by unit ● Can be connected in place of the PowerTRONIC to run the bike in stock mode if need be. ● Used for the verification of the connectors involved.
3	Harness	Bike specific harness contains the following connectors ● Fuel injector connector ● Spark connector ● Throttle position sensor tapping wire (TPS) ● Crankshaft position sensor connector (CKP) ● Map selection connector ● Quick shifter connector ● Ground terminal
4	USB cable	Can be used to connect the PowerTRONIC to a laptop for throttle calibration or changing maps
5	Nylon Tags	To secure wiring harness
6	User guide and Warranty card	Instructions

2. Tools required

Serial No	Item with description
1	M4, M5, M6, M10, M8 Hexagonal socket
2	Phillips-Head screwdriver
3	M10 T bar Hexagonal Socket wrench
4	Wire stripper
5	Size 4, Size 5, Size 6 Hex bit

3. Installation procedure

3.1 Removing panels, fairing

Begin at the left side of the bike.

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

Image 1

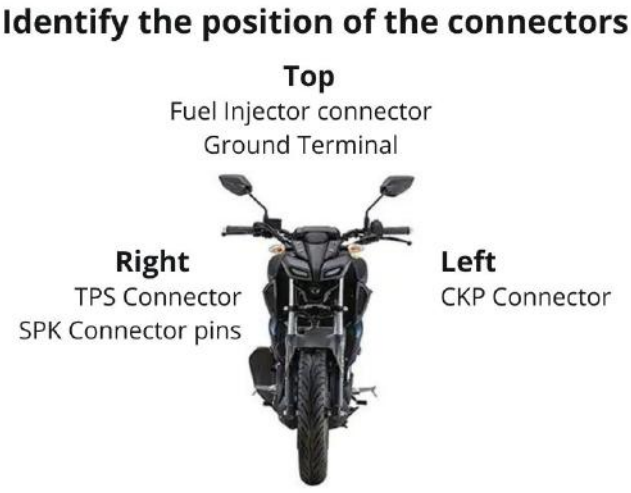

Image 2

3.1.1 Locate the rider seat lock shown in **Image 3** and unlock the rider seat. Refer **Image 4**.

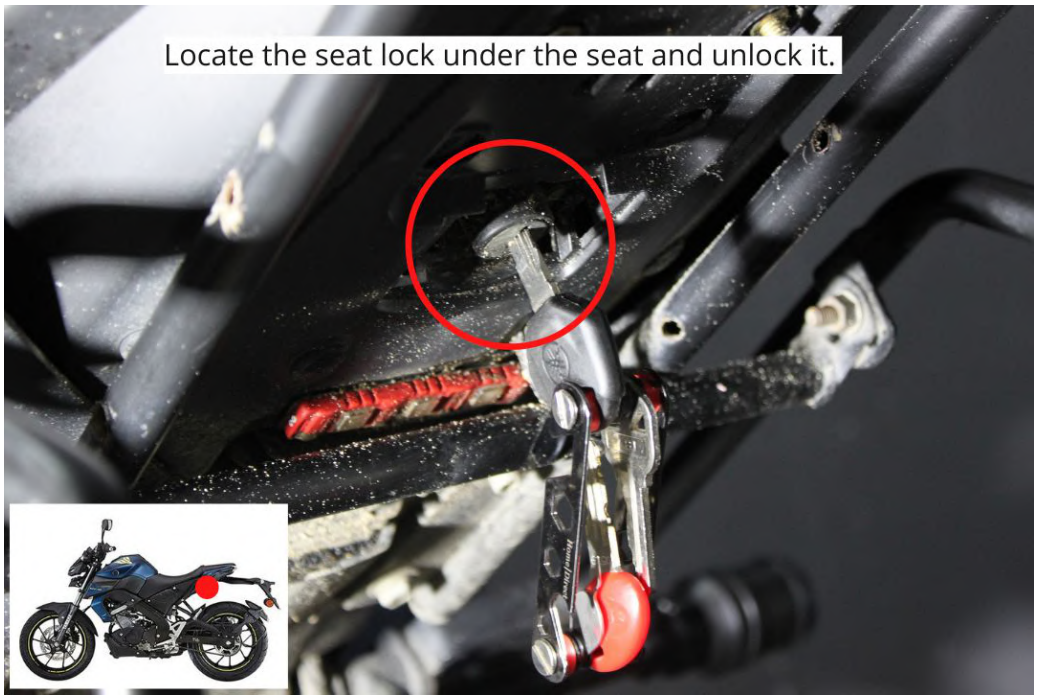

Image 3

3.1.2 Detach the rider seat carefully. **Image 4** shows how the rider seat detached.

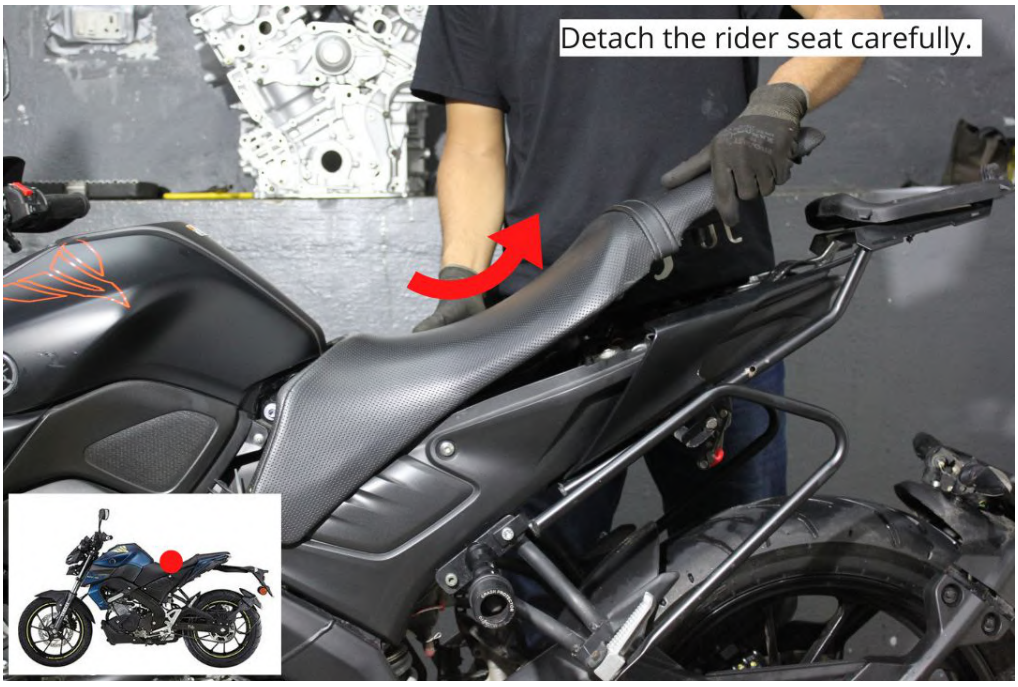

Image 4

3.1.3 Locate and unscrew the tank bolts using 4mm Allen key. Refer **Image 5**.

Image 5

3.1.4 Locate and unscrew the side screw using M4 hex bit T Handle. Refer **Image 6**, **Image7**, **Image 8**

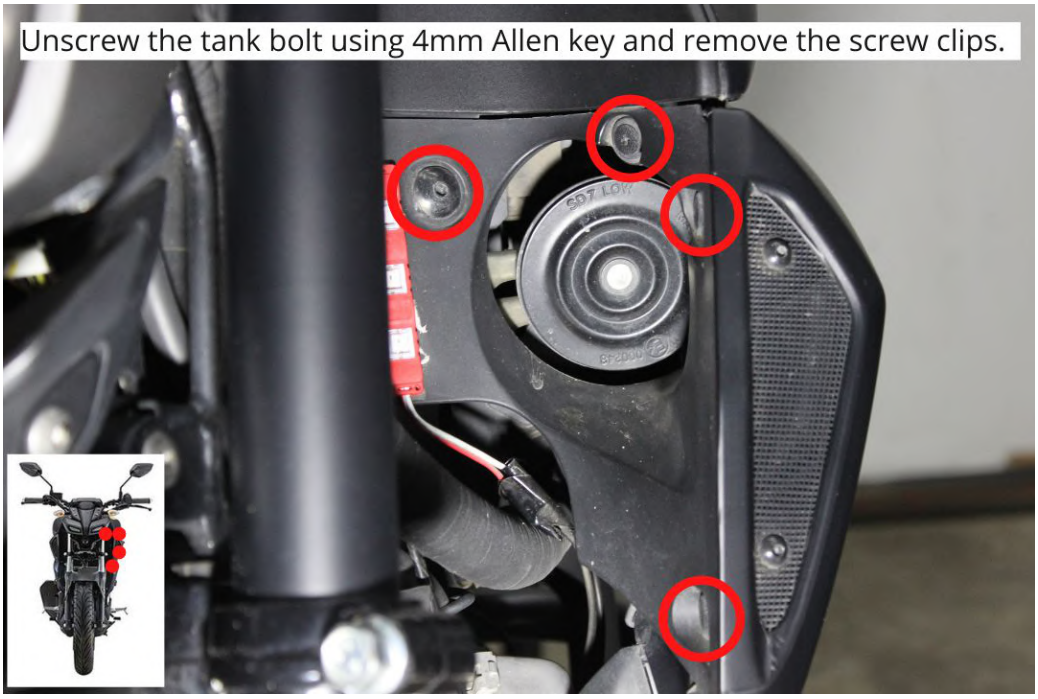

Image 6

3.1.5 Unscrew the front bolt using a 4mm Allen key. Refer the **Image 7**

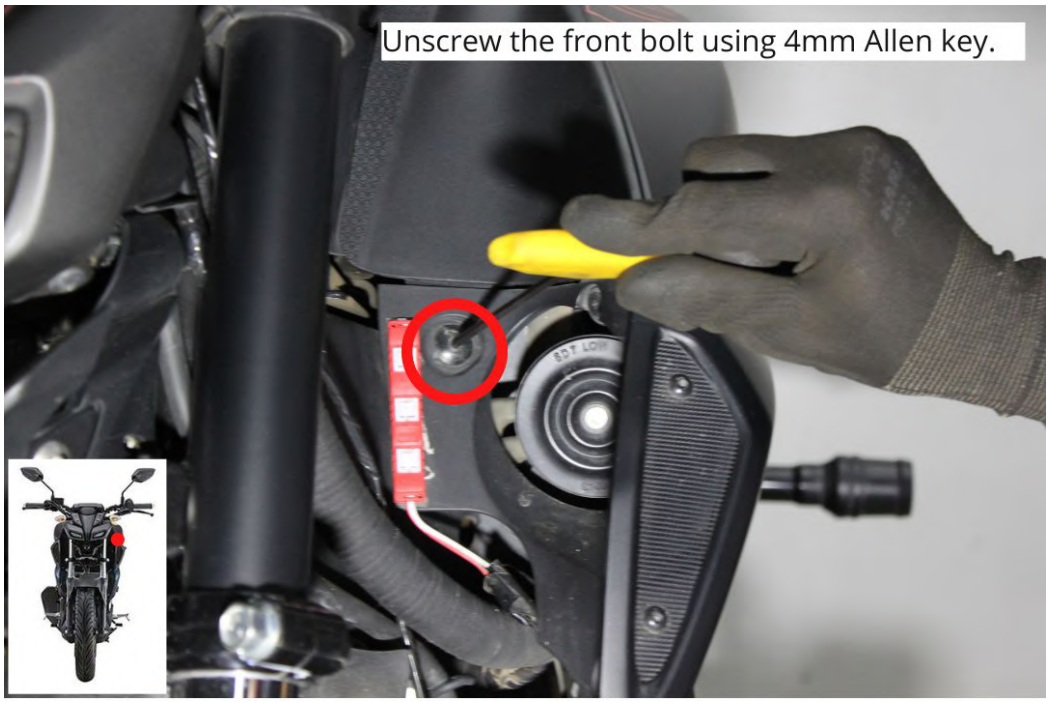

Image 7

3.1.6 Remove the screw clips. Refer **Image 8**.

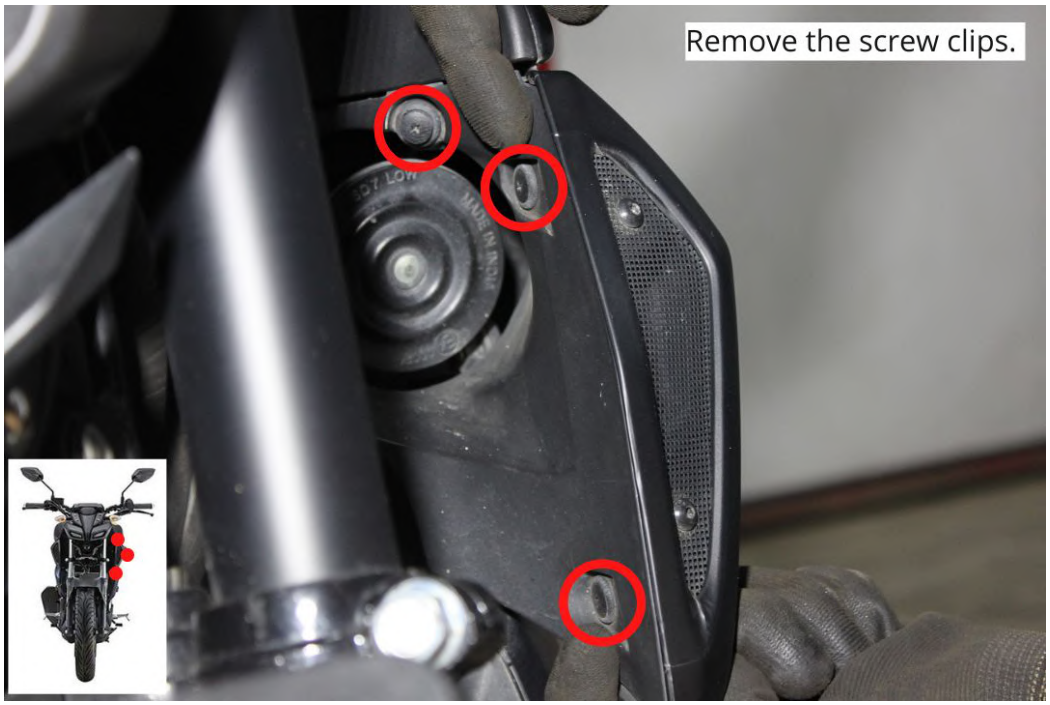

Image 8

3.1.7 Remove the side panel carefully. Repeat the process on the other side of the bike. Refer **Image 9**.

Image 9

3.1.8 Remove the screw of the tank side panel carefully using a Phillips head screwdriver. Refer **image 10**

Image 10

3.1.9 Unscrew the tank side panel screw using Phillip head screwdriver. Refer **Image 11.**

Image 11

3.1.10 Carefully remove the side panels. Refer **Image 12**. Repeat the process on the other side of the bike.

Image 12

3.1.11 Carefully remove the screw clips. Refer **Image 13**

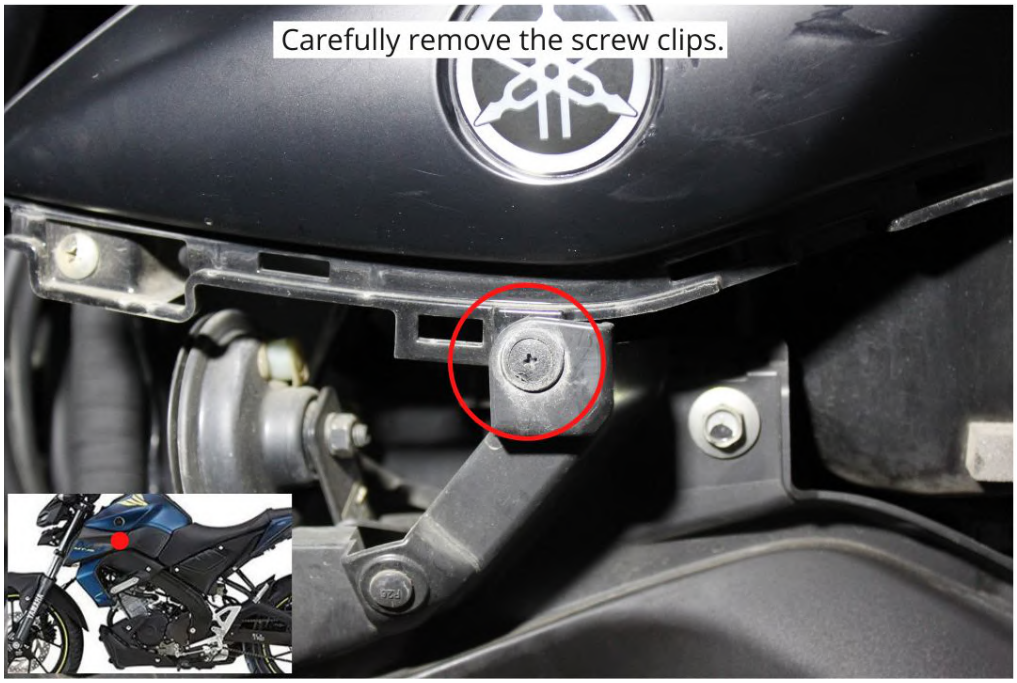

Image 13

3.1.12 Unscrew the tank side bolt using 10 mm Hex socket. Refer **Image 14.**

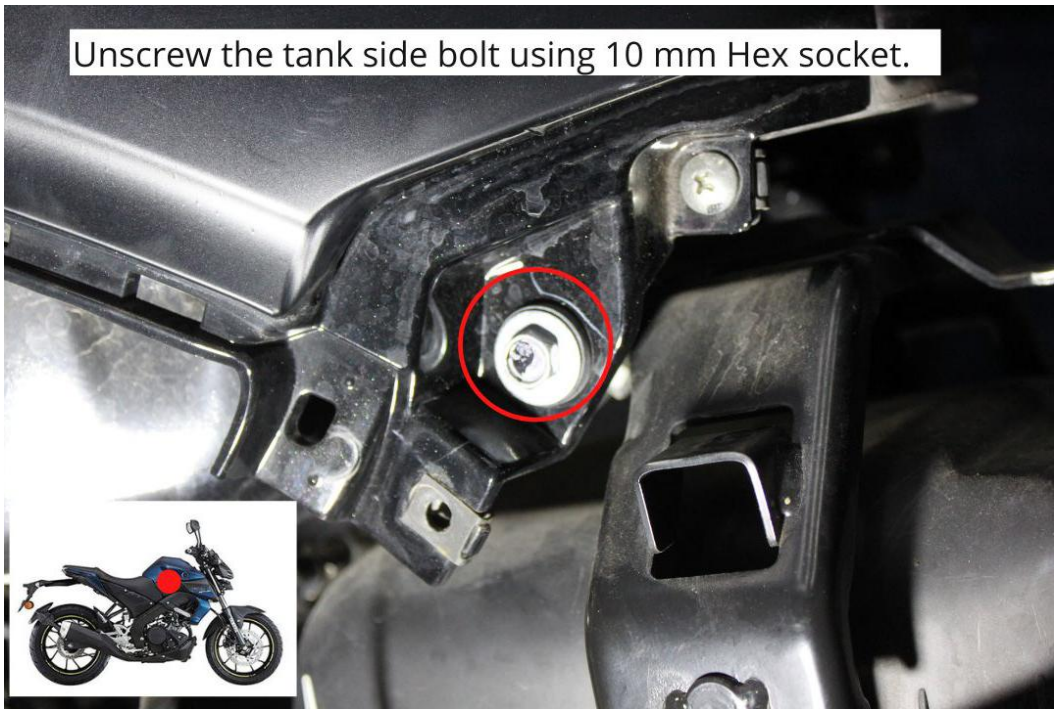

Image 14

3.1.13 Unscrew the tank side front screw using Phillips head screw driver. Refer **Image 15.**

Image 15

3.1.14 Unscrew the tank side rear screw using Phillips head screwdriver. Refer **Image 16.**

Image 16

3.1.15 Carefully detach the front panel after removing the bolts. Refer **Image 17.**

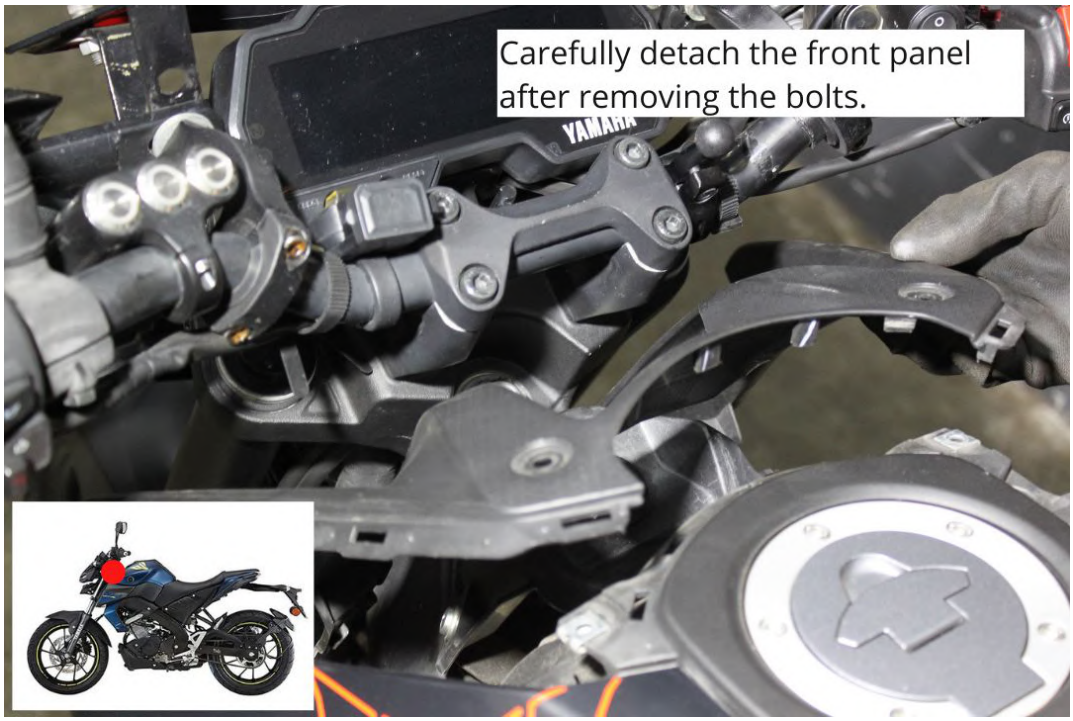

Image 17

3.1.16 Unscrew the key slot cover panel screw using a Phillips head screwdriver. Refer **Image 18**

Image 18

3.1.17 Detach the key slot cover panel carefully. Refer **Image 19**

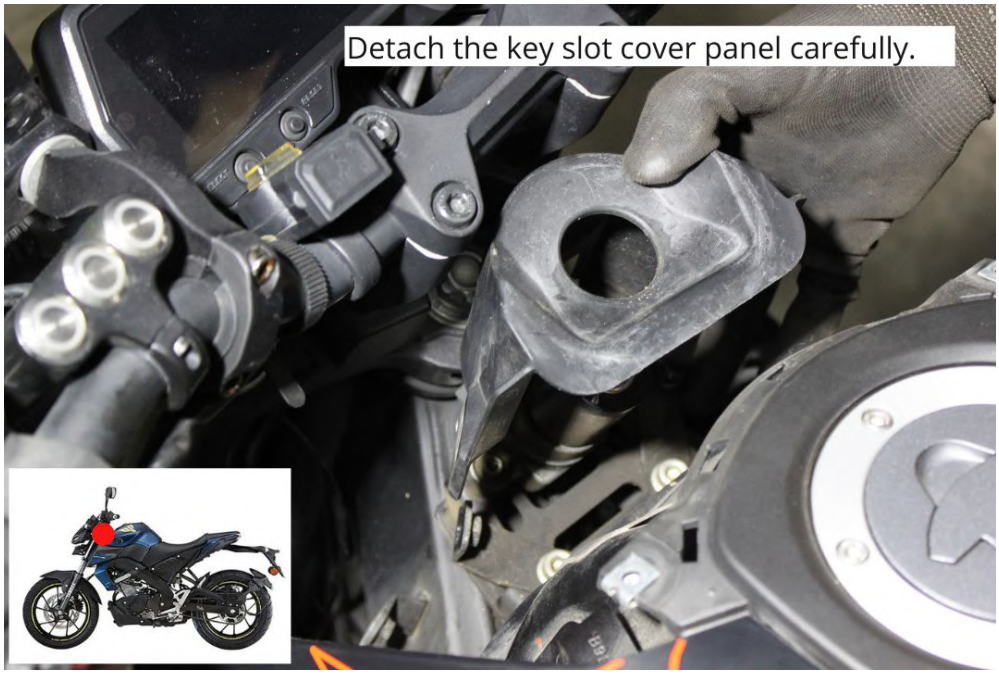

Image 19

3.1.18 Unscrew the tank front bolts using 6 mm Allen key. Refer **Image 20**

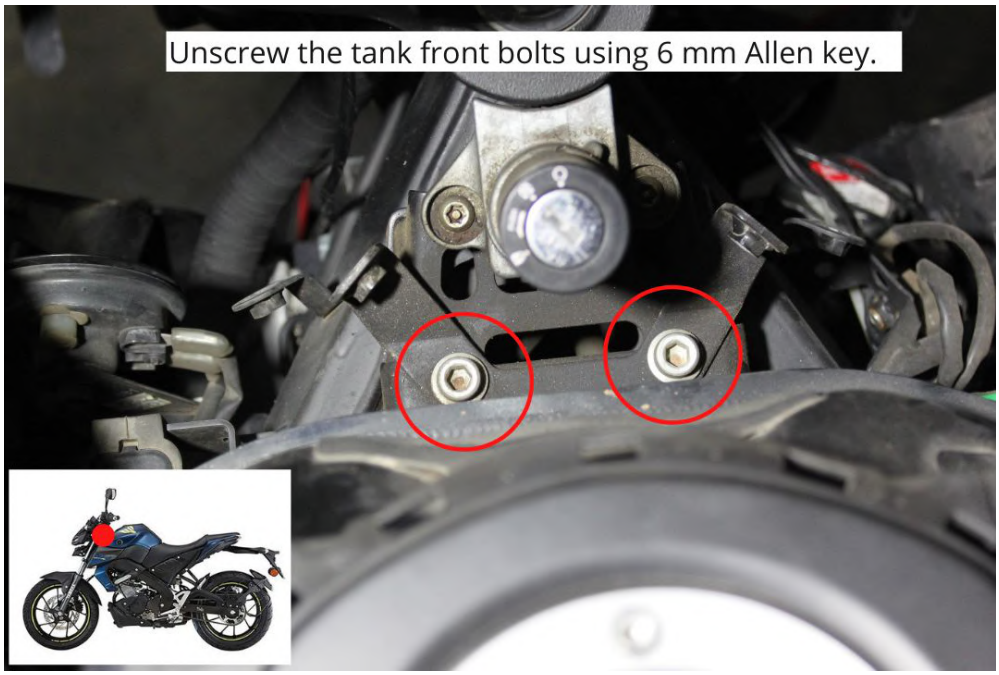

Image 20

3.1.19 Remove the bracket carefully. Refer **Image 21**

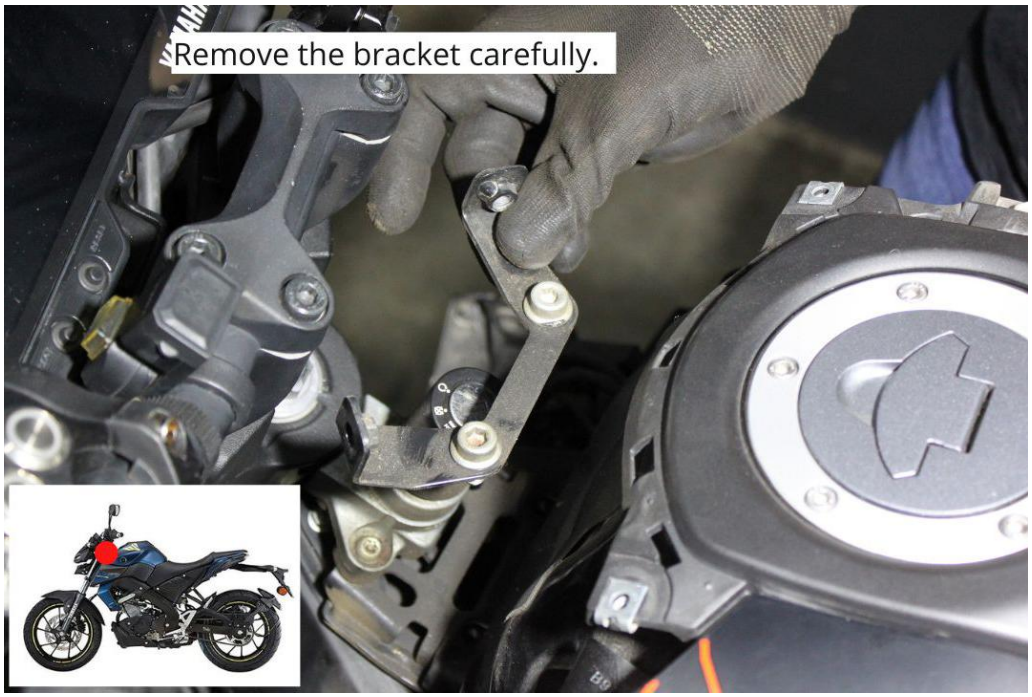

Image 21

3.1.20 Unscrew the tank rear bolts using 5 mm Allen key. Refer **Image 22**

Image 22

3.1.21 Gently lift the rear end of tank and disconnect the vacuum hoses 1 and 2. Refer **Image 23**

Image 23

3.1.22 Gently lift the rear end of tank and disconnect the fuel pump and float connectors. Refer **Image 24** and **Image 25**

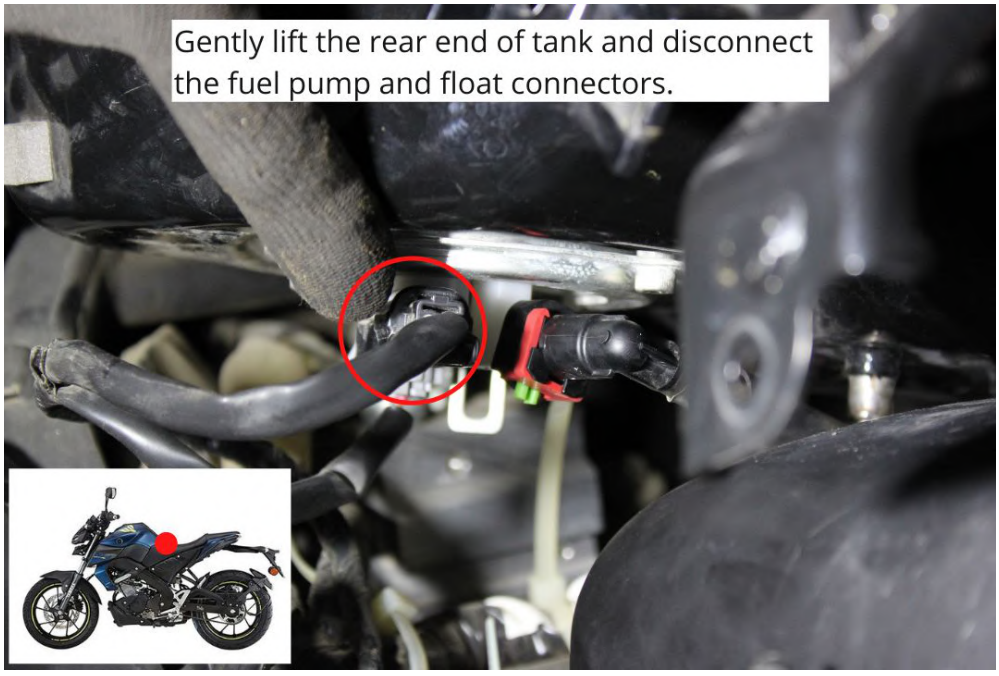

Image 24

Image 25

3.1.23 Gently lift the rear end of tank and disconnect the fuel line by unlocking the connector pin very carefully. Refer **Image 26** and **Image 27**

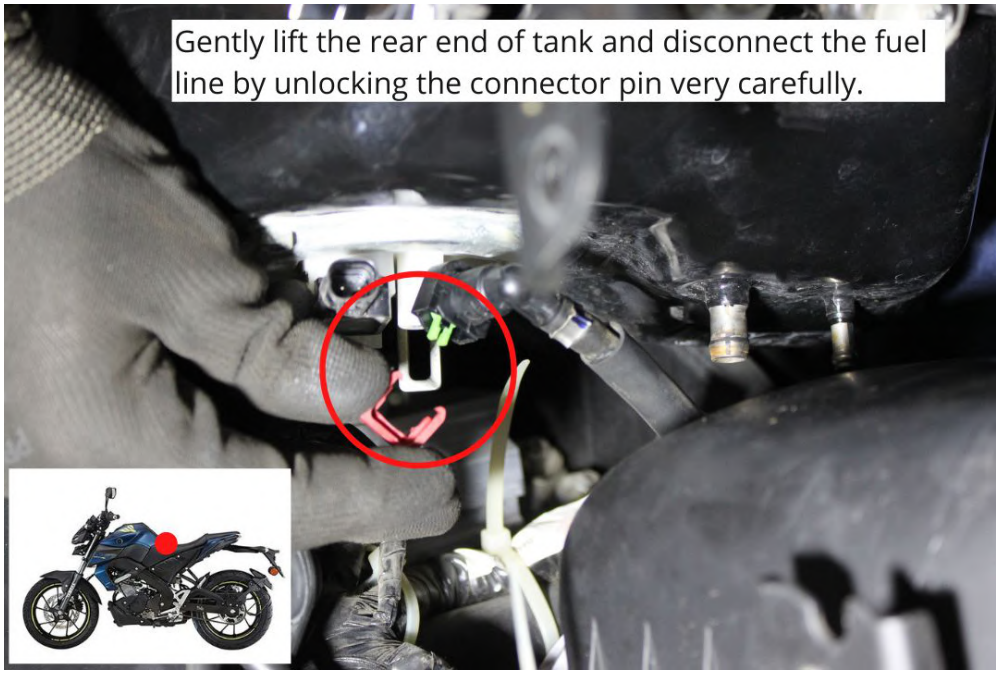

Image 26

Image 27

3.1.24 After removing the connections, carefully lift the tank and place it safely. Refer **Image 28**

Image 28

3.1.25 Unscrew the 2 bolts using 4 mm Hex bit and remove the press clip at the bottom of the left side panel. Refer **Image 29**

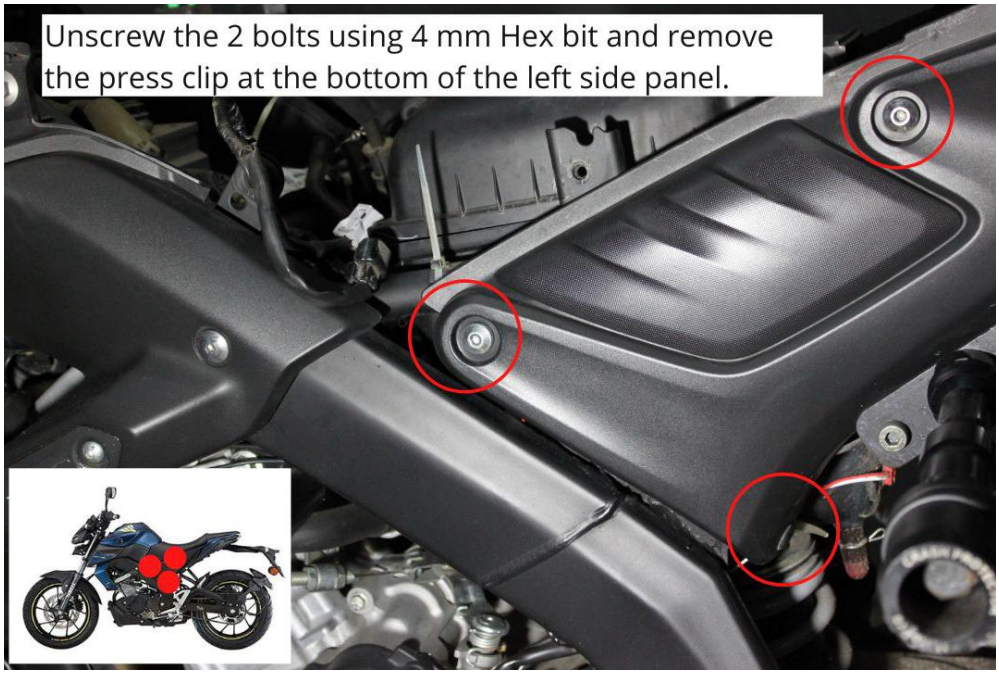

Image 29

3.2 Routing the harness

3.2.1 Starting from the glove compartment, route each connector terminal between the welded plate and the mud guard. Refer **Image 30**.

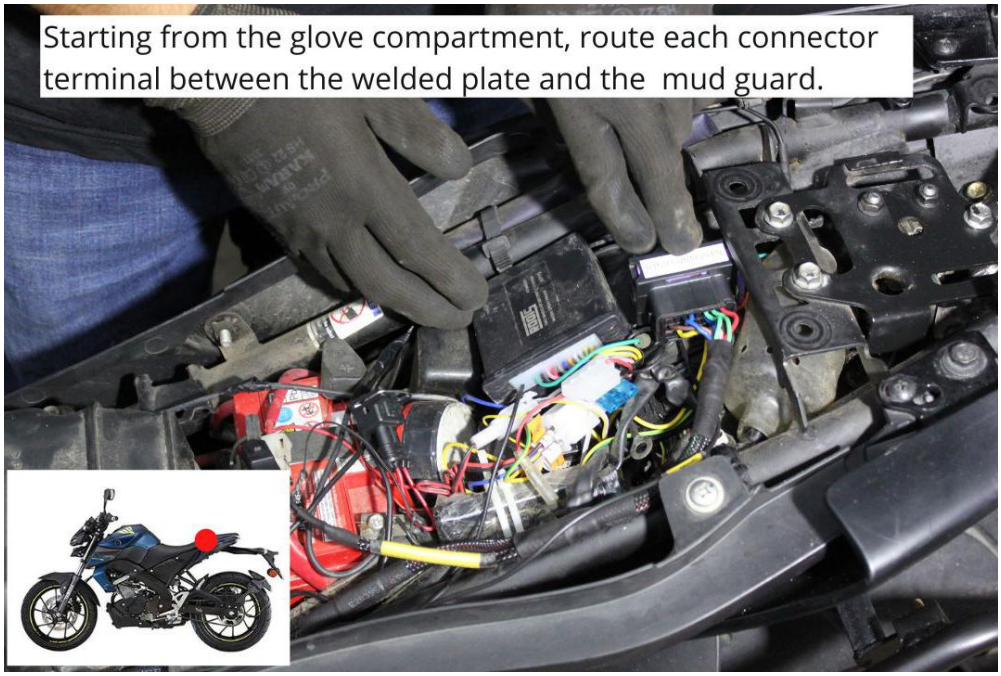

Image 30

3.2.2 Route the harness through the frame and route it to the front end. Refer **Image 31**.

Image 31

3.3 Fuel Injector Connector

3.3.1 Locate the rubber cover and remove it to access the injector connector.Refer **Images 32**

Image 32

3.3.2 Locate the stock injector connector of your bike. Refer **Image 33**

Image 33

3.3.3 Identify the fuel injector connector in the PowerTRONIC wiring harness. The connectors are labeled 'INJ'

3.3.4 Disconnect the injector connector on your bike. Refer the zoomed view (**Image 34**)

Image 34

3.3.5 Connect the female PowerTRONIC injector connector to the stock male injector connector. Refer **Image 35**

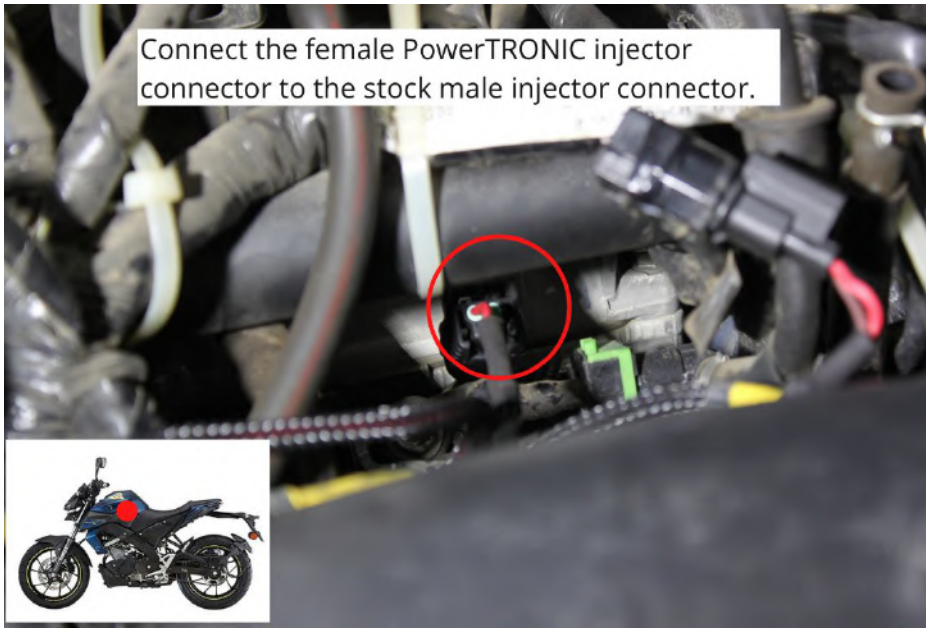

Image 35

3.3.6 Connect the stock female injector connector to the PowerTRONIC male injector connector. Refer **Image 36**

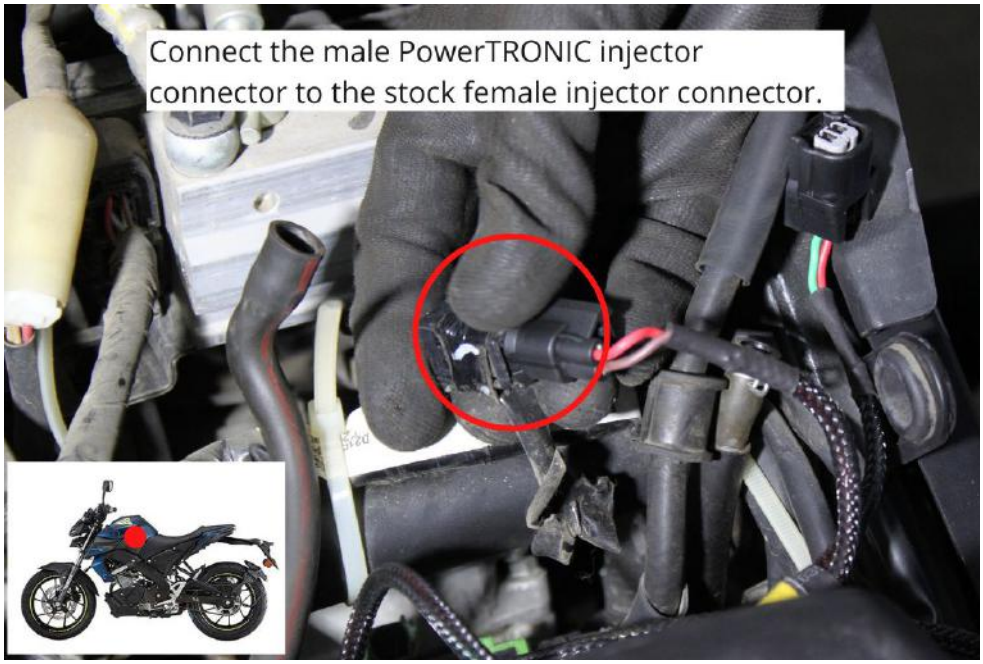

Image 36

3.4 Ignition Coil Connector

3.4.1 Locate the Ignition coil of the bike on the right side. Refer **Images 37** and **Image 38**

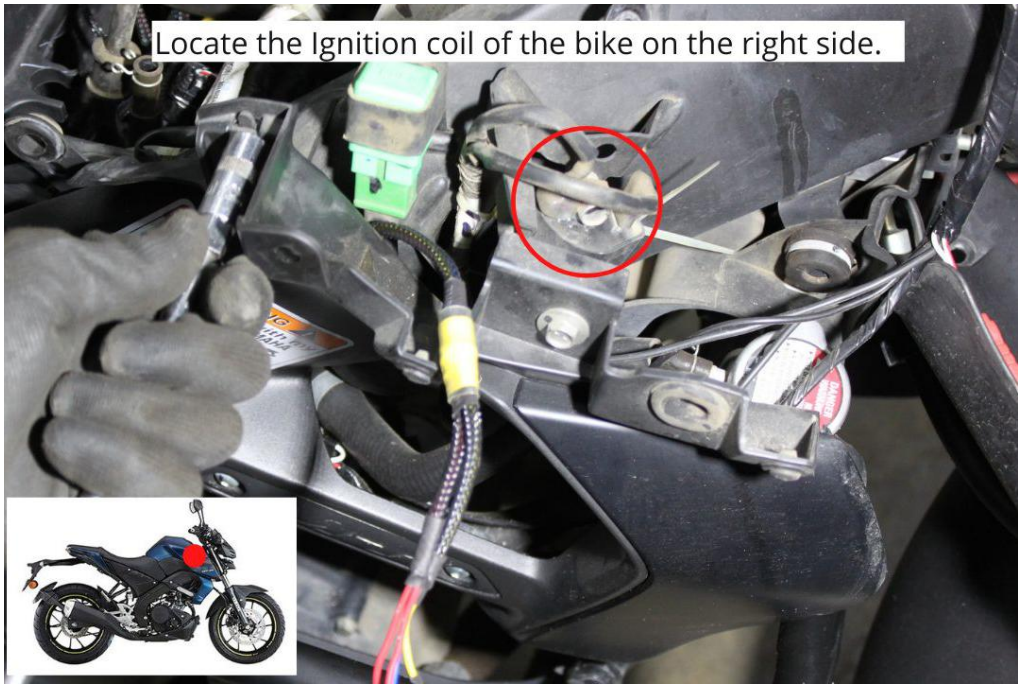

Image 37

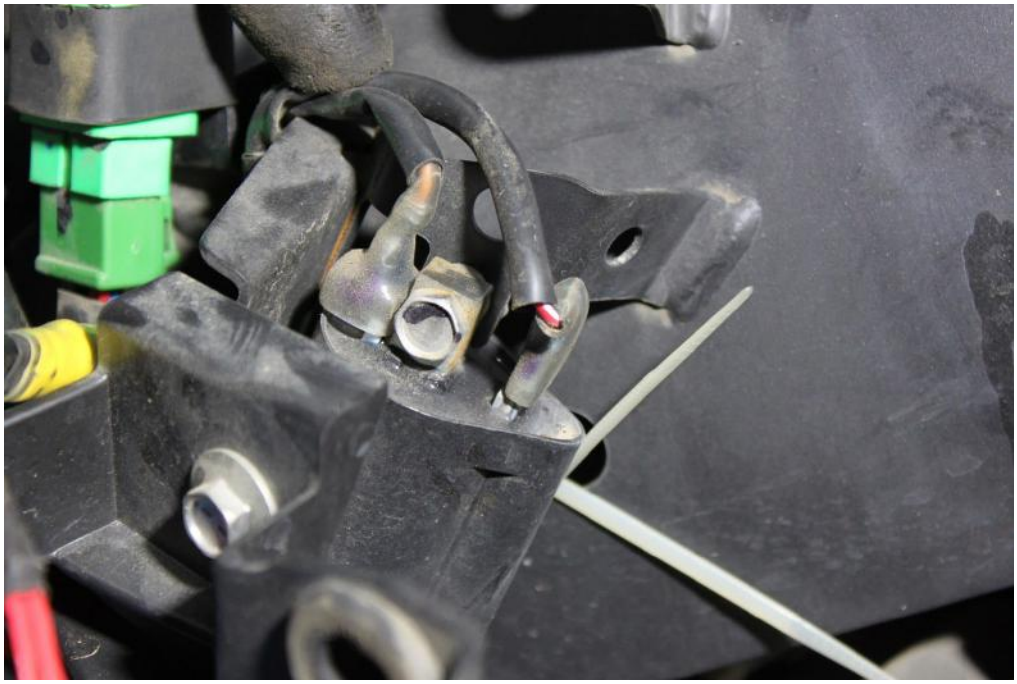

Image 38

3.4.2 Identify the Spark/Ignition coil connector in the PowerTRONIC wiring harness. The connectors are labelled 'SPK'.

3.4.3 Disconnect the stock ignition coil connector signal and 12V pins. Refer **Image 39**

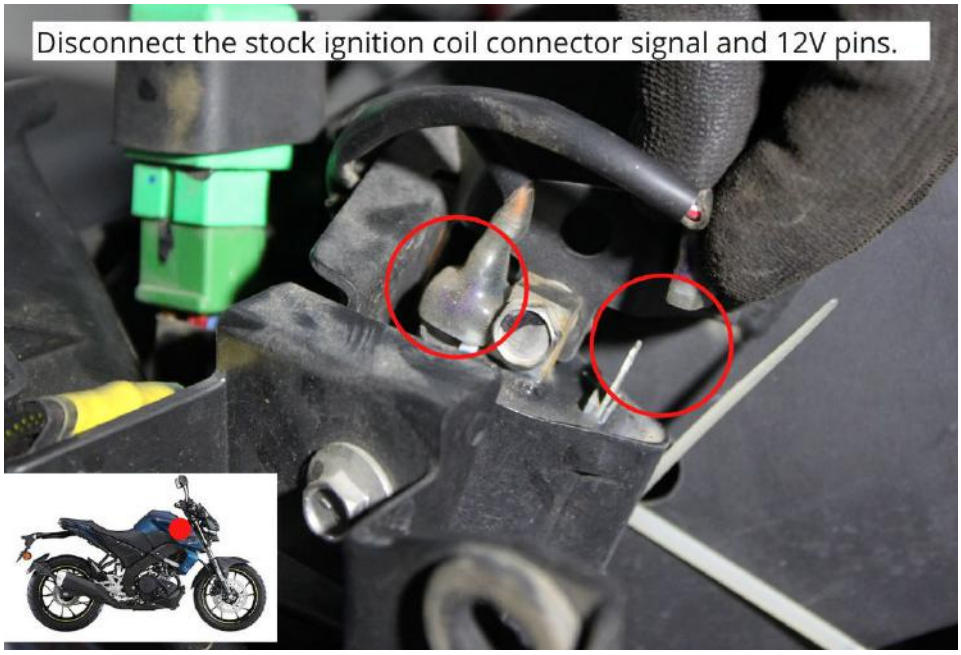

Image 39

3.4.4 Connect the PowerTRONIC Ignition coil 12 V female pins to the stock ignition coil mating pins on the coil. Refer **Image 40.**

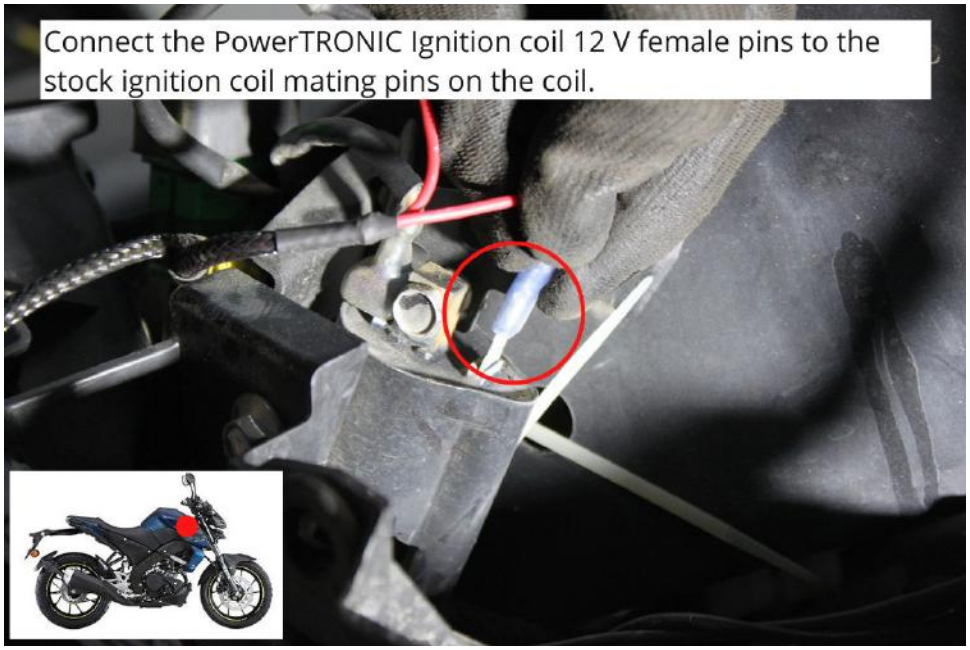

Image 40

3.4.5 Connect the PowerTRONIC Ignition coil 12 V male pins to the stock ignition coil female pins on the coil. Refer **Image 41**

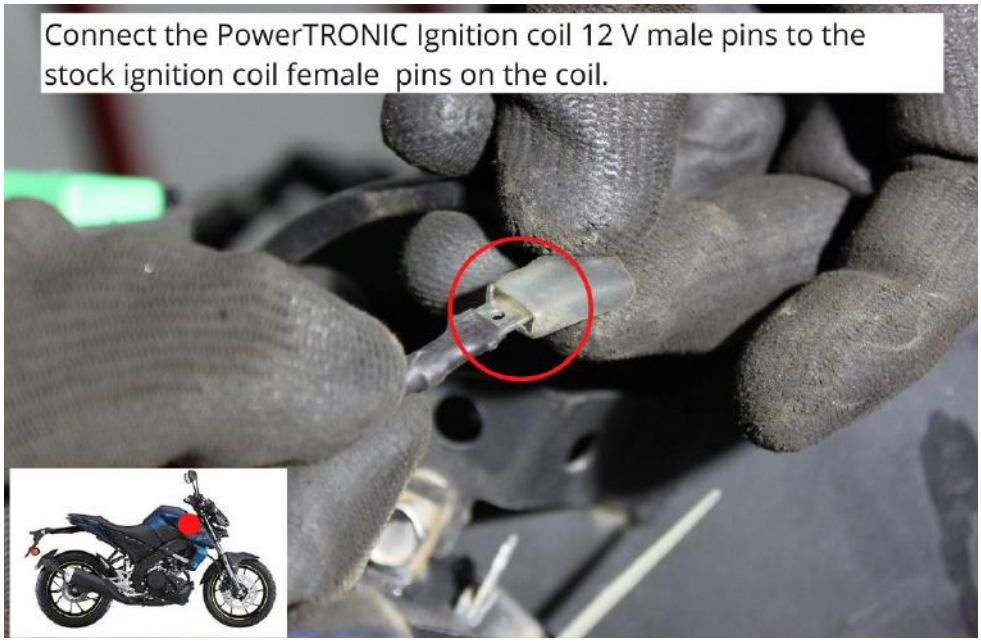

Image 41

3.4.6 Connect the PowerTRONIC Ignition coil signal male pins to the stock ignition coil mating female pins. Refer **Image 42**

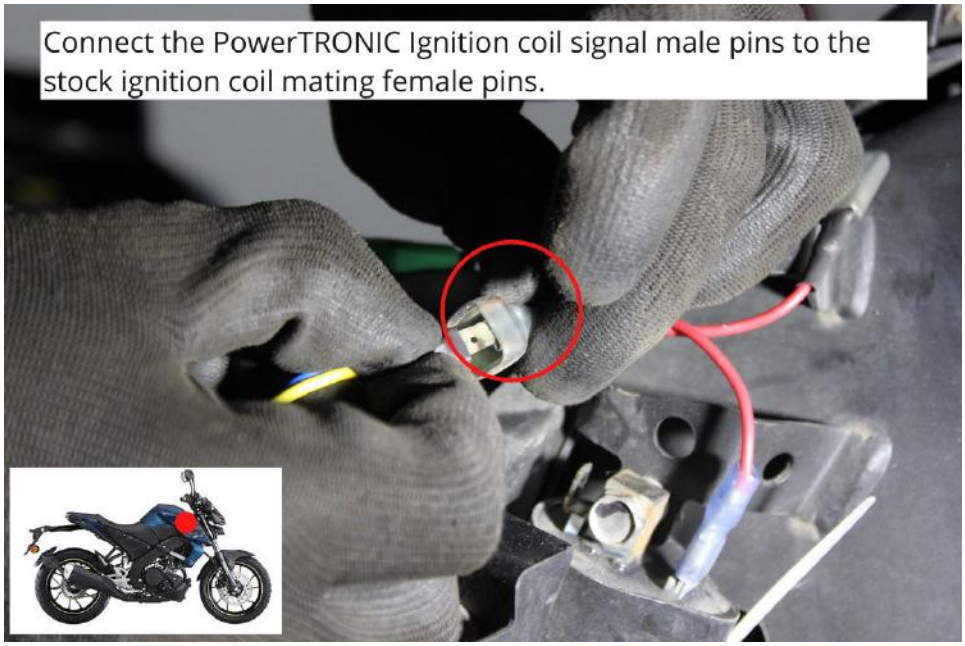

Image 42

3.4.7 Connect the PowerTRONIC Ignition coil signal female pins to the stock ignition coil mating male pins. Refer **Image 43**

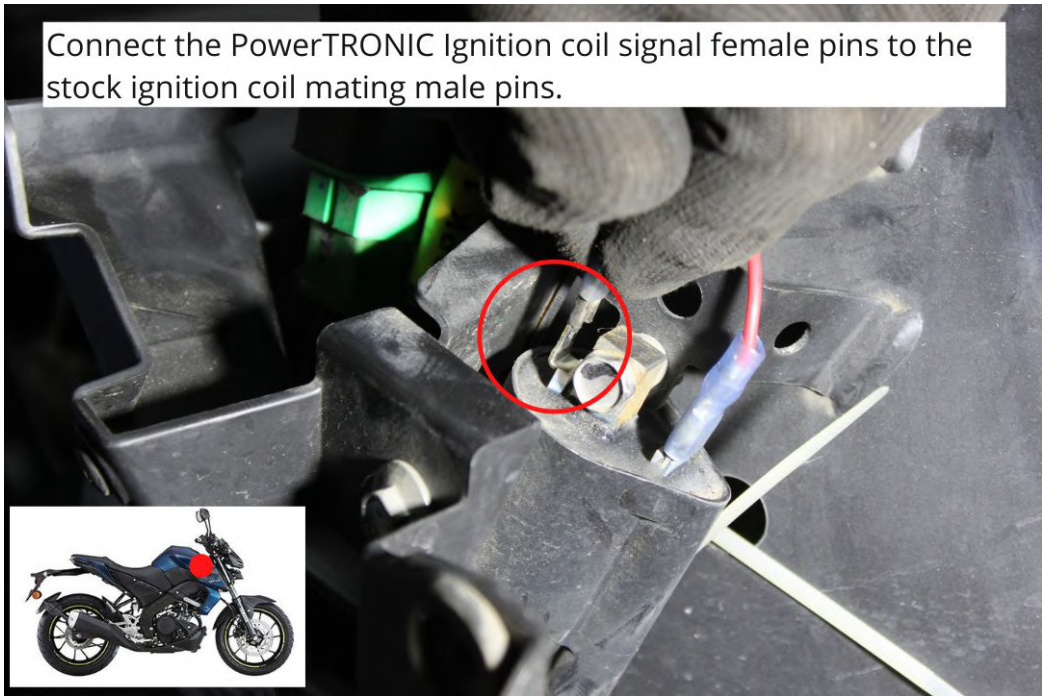

Image 43

3.4.8. Refer **Image 44** for completed view

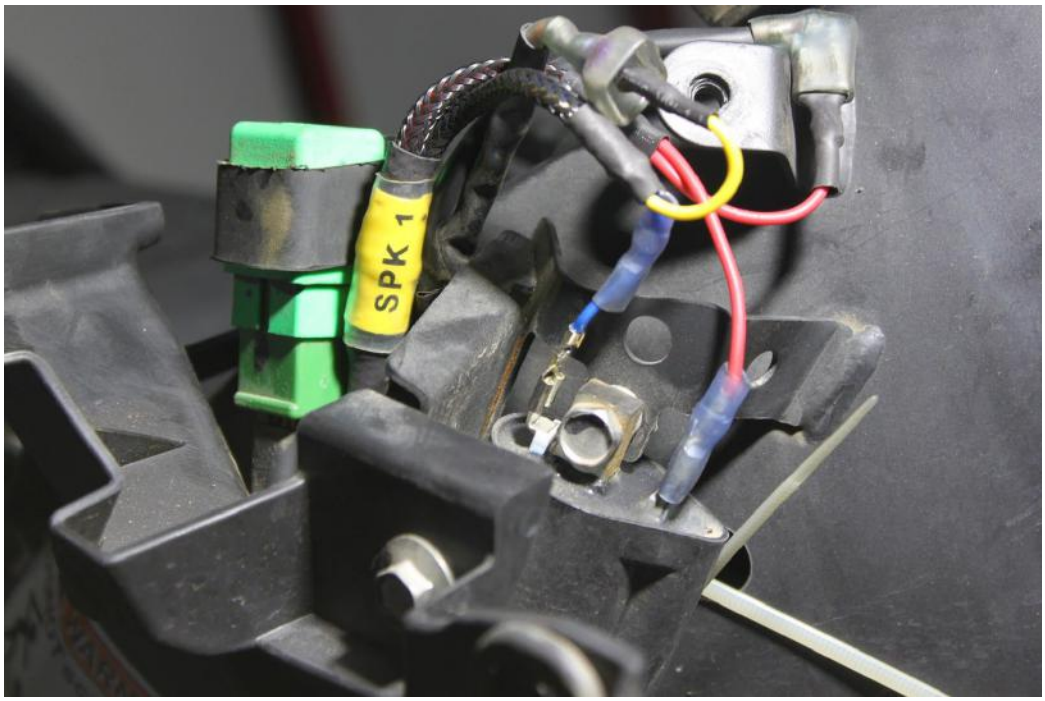

Image 44

3.5 Crankshaft position sensor connector

3.5.1 Locate the CKP connector of your bike. Refer **Image 45** and **Image 46**

Image 45

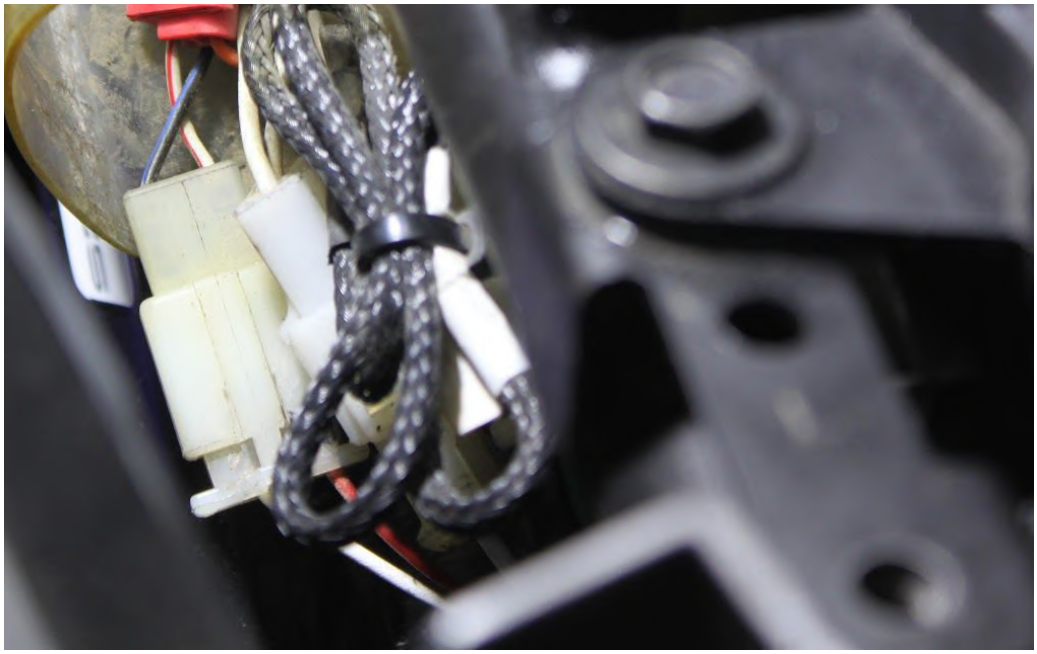

Image 46

3.5.2 Identify the Throttle Position sensor connector in the PowerTRONIC wiring harness, labeled as 'CKP'

3.5.3 Disconnect the stock CKP connectors. Refer **Image 47**.

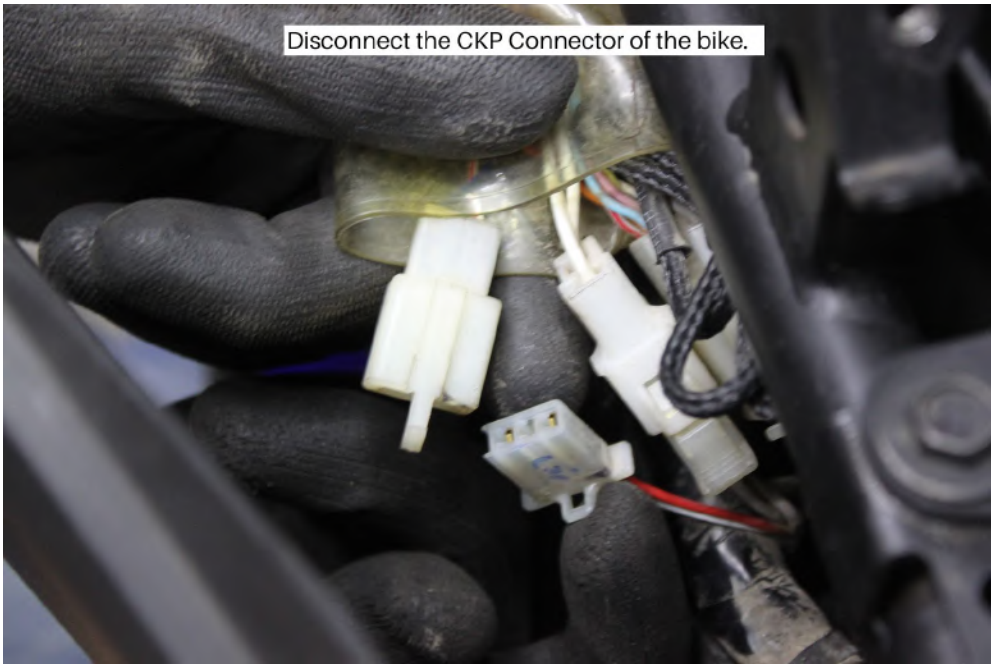

Image 47

3.5.4 Connect Stock male CKP a connector and PowerTRONIC female connector. Refer **Image 48**.

Image 48

3.5.5 Connect Stock female CKP connector and PowerTRONIC male connector. Refer **Image 49**.

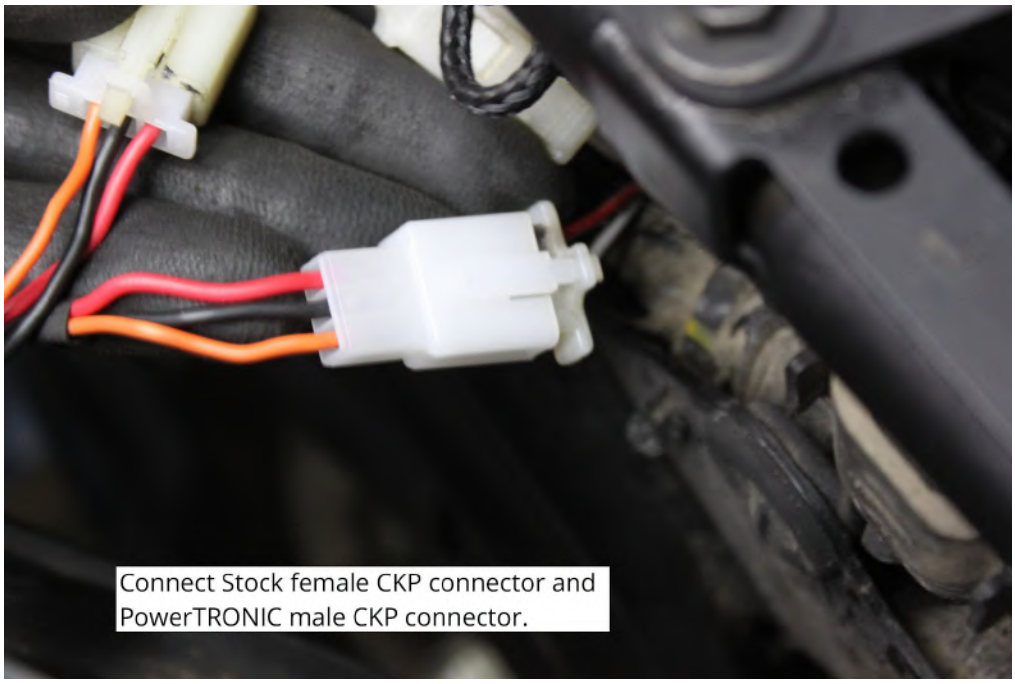

Image 49

3.6 Throttle position sensor connector

3.6.1 Locate the TPS connector of your bike. It is generally located on the throttle body, parallel to the throttle cable return springs. Unplug the connector. Refer **Image 50** and **Image 51**

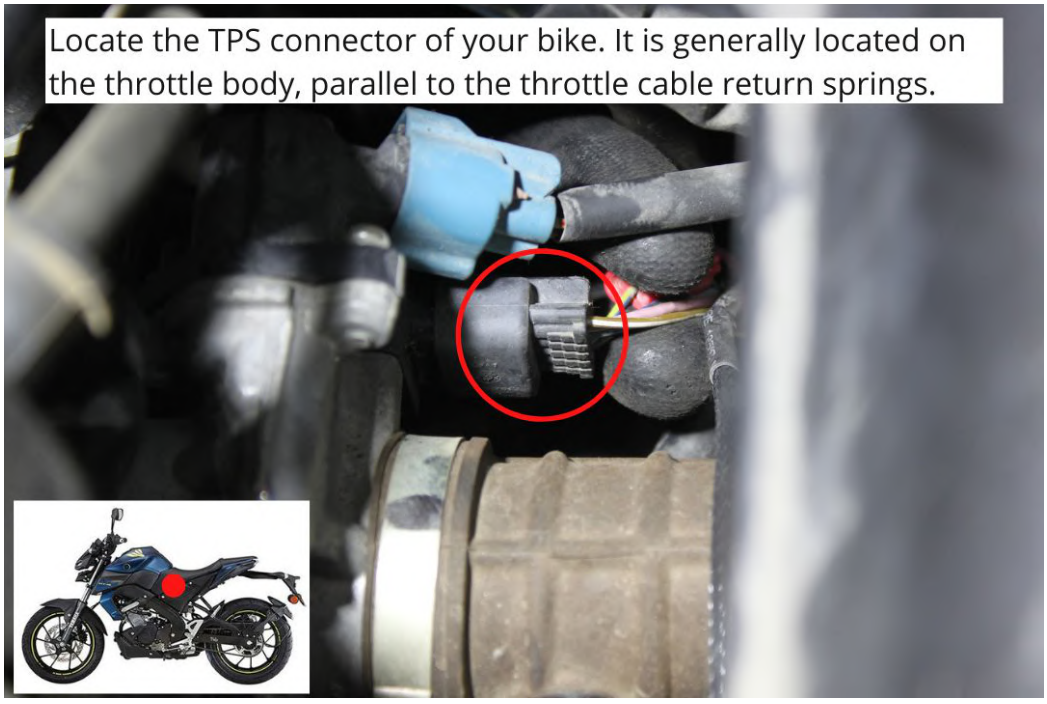

Image 50

Image 51

3.6.2 Identify the Throttle Position sensor connector in the PowerTRONIC wiring harness, labeled as 'TPS'

3.6.3 Tap the yellow and blue striped wire using the tapping clip provided within the kit. Refer **Image 52** and **Image 53**

Image 52

Image 53

3.6.4 Connect the TPS connector back after tapping. We advise you to perform a TPS calibration after the installation of PowerTronic ECU. Refer the detailed TPS calibration document.

3.7 Ground Terminal Connector

3.7.1 Identify the Ground terminal connector labelled as GND and connect it to the negative terminal of the battery. Refer **Image 54**

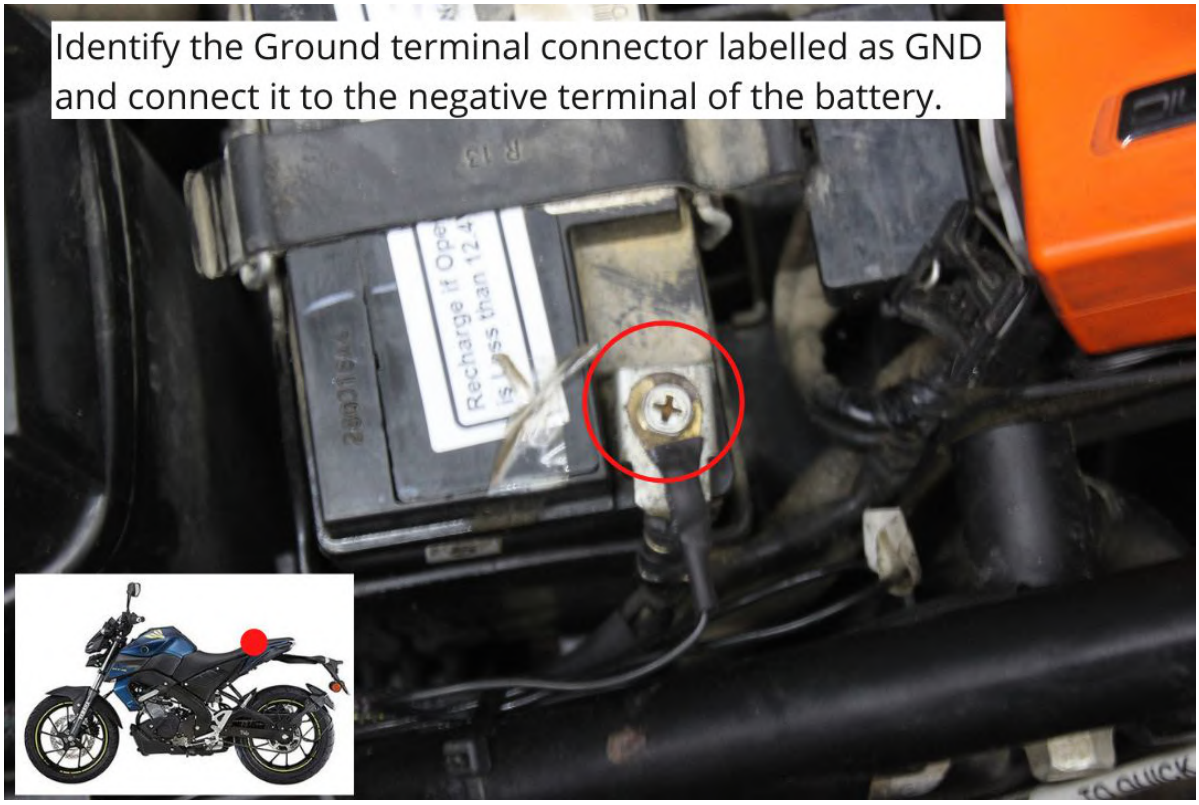

Image 54

3.8 Securing the harness using ties

3.8.1 Secure the harness away from general heating areas by attaching it to the chassis or frame using the zip ties provided wherever necessary. Refer **Image 55**

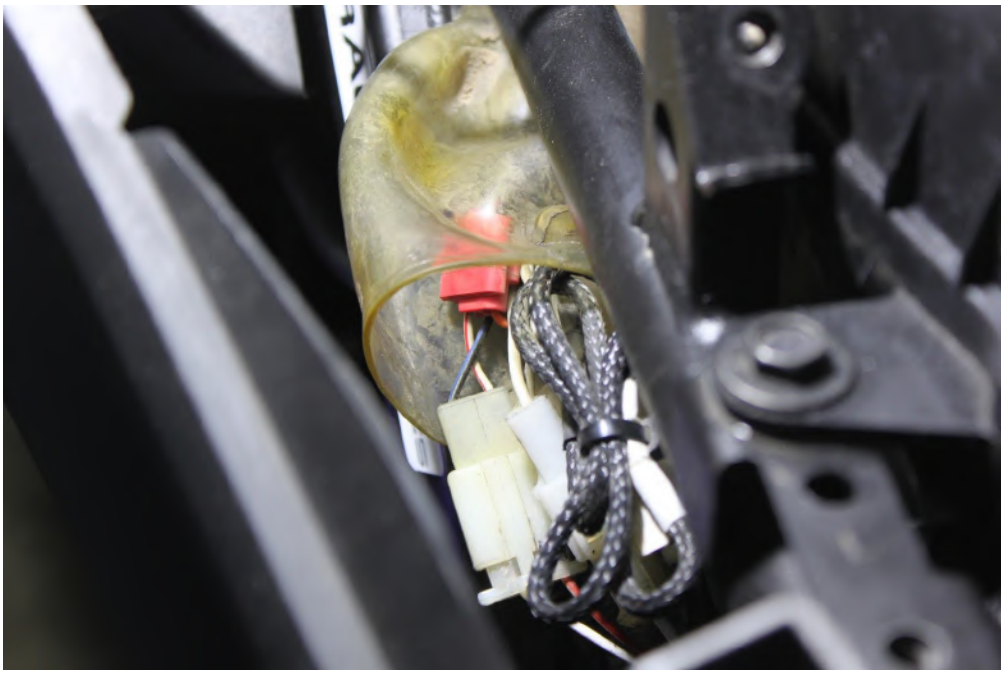

Image 55

Important note: The PowerTRONIC harness contains Quick shifter connector. If you have bought the Quickshifter please attach the connector to it. [Please refer Quick shifter installation manual]

If you have not bought the Quickshifter, you can leave it disconnected but make sure the harness is secured using zip ties provided.

3.9 Testing with the stock coupler

3.9.1 Attach the fuel tank.

3.9.2 You can verify the connections by attaching the stock coupler. Refer detailed Stock coupler test document. Refer **Image 56**

Image 56

3.9.3 DO NOT proceed with PowerTRONIC ECU without verifying the connections with stock coupler.

3.10 Plugging in the PowerTRONIC

Connect the PowerTRONIc to the harness by connecting the 24 pin connector. Secure it in the glove box. Refer **Image 57**

Image 57

3.11 Attaching the panels fairing etc

Attach the panels, fairing as removed from the bike.