

# PowerTRONIC V4 Installation Manual- Yamaha R15 V3.0/V4.0/V4.0 M (2018-2023)

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Application information	Vehicle Specific
Vehicle	<b>Yamaha</b>
Model	<b>R15 V3.0/V4.0/V4.0 M</b>
Year of manufacture	<b>2018-2023</b>
PowerTRONIC application	All PowerTRONIC ECUs

**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.
- This document can be used as a PowerTRONIC installation manual for Yamaha R15 V1, V2, V3, V4, and V4M. You can observe the processes and recreate them on your respective bike.

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### 1. Parts list

1	PowerTRONIC	Piggyback ECU
2	Stock Coupler	Stand by unit <ul style="list-style-type: none"> <li>• Can be connected in place of the PowerTRONIC to run the bike in stock mode if need be.</li> <li>• Used for the verification of the connectors involved.</li> </ul>
3	Harness	Bike specific harness contains the following connectors <ul style="list-style-type: none"> <li>• Fuel injector connector</li> <li>• Spark connector</li> <li>• Throttle position sensor tapping wire (TPS)</li> <li>• Crankshaft position sensor connector (CKP)</li> <li>• Map selection connector</li> <li>• Quick shifter connector</li> <li>• Ground terminal</li> </ul>
4	USB cable	Can be used to connect the PowerTRONIC to a laptop for throttle calibration or change maps
5	Nylon Tags	To secure the 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 center stand on a level surface (Or a paddock stand).



Image 1

3.1.1 Locate the rider seat lock shown in **Image 2** and unlock the rider seat. Refer to **Image 3**.



Image 2



Image 3



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



Image 4

3.1.3 Locate and unscrew the side screw using a Phillips-head screwdriver. Refer to **Image 5**.

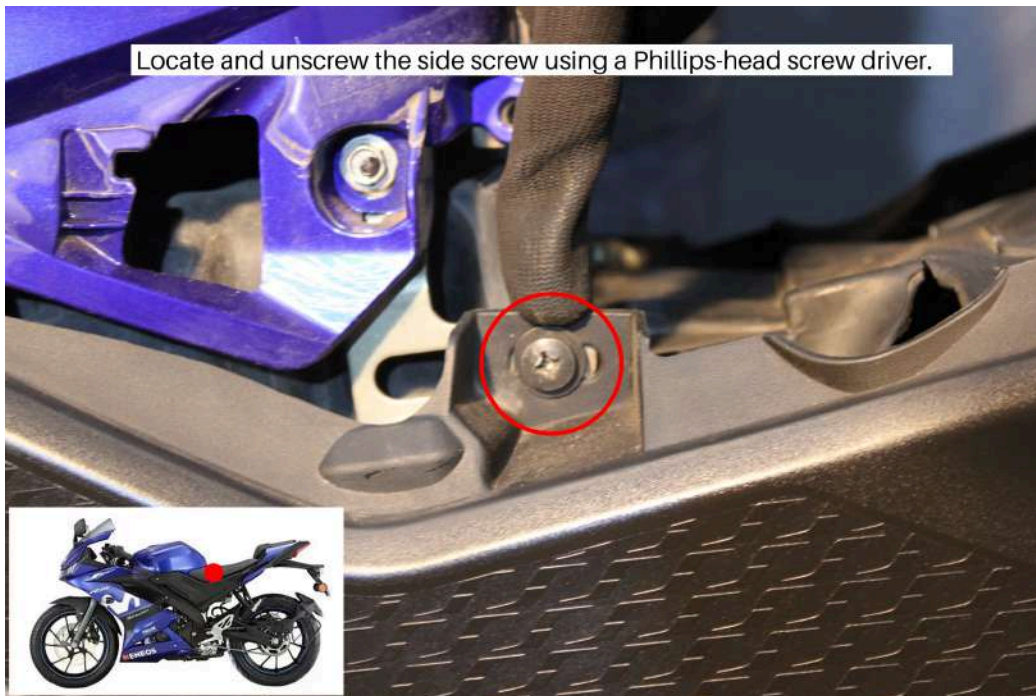


Image 5

**3.1.4** Locate and unscrew the side screw using a 4mm hex bit T Handle. Refer to **Image 6**.



Image 6

**3.1.5** After removing the screw and the bolt from the side panel, gently detach the panel. Repeat the process on the other side also. Refer to **Image 7**



Image 7



3.1.6 Refer to **Image 8** from the rear side



Image 8

3.1.7 Unscrew the panel screws using a Phillips head screwdriver. Refer to **Image 9**.



Image 9

**3.1.8** Unscrew the panel screws using a Phillips head screwdriver. Refer to **Image 10**



Image 10

**3.1.9** Unscrew the front panel screws using a Phillips head screwdriver. Refer to **Image 11**.

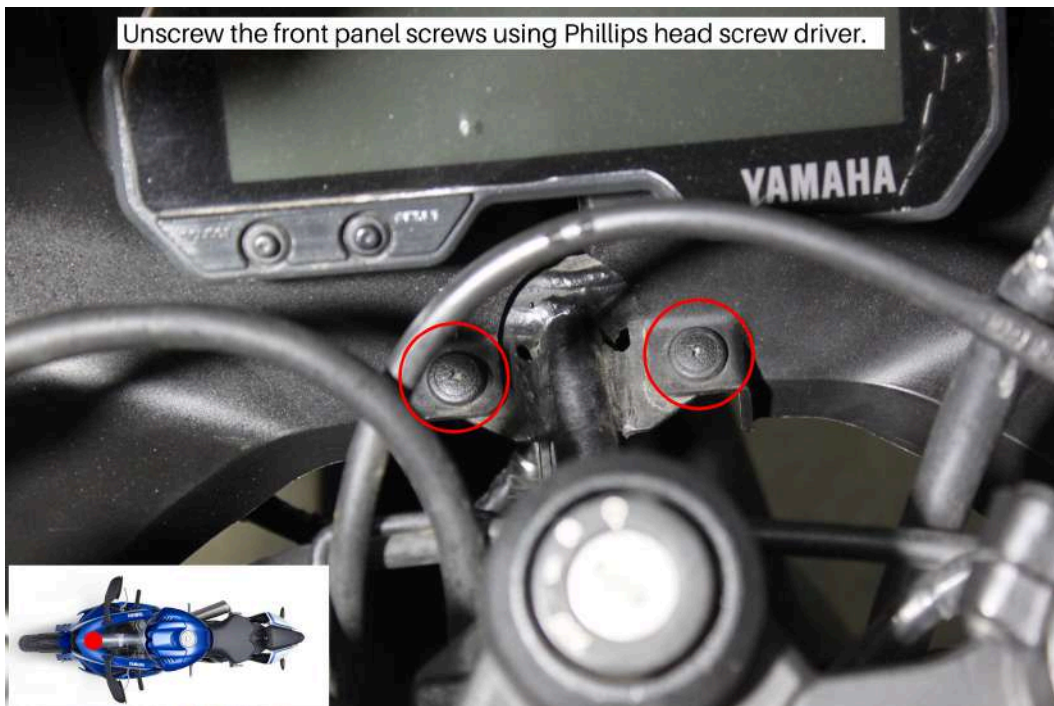


Image 11



**3.1.10** Gently detach the panel from the locking nuts and carefully remove it. Refer to **Image 12**



Image 12

**3.1.11** Unscrew the bolts using a 6mm hex bit. Refer to **Image 13**.



**3.1.12** Unscrew the tank rear bolts using a 10mm hexagonal socket. Refer to **Image 14.**

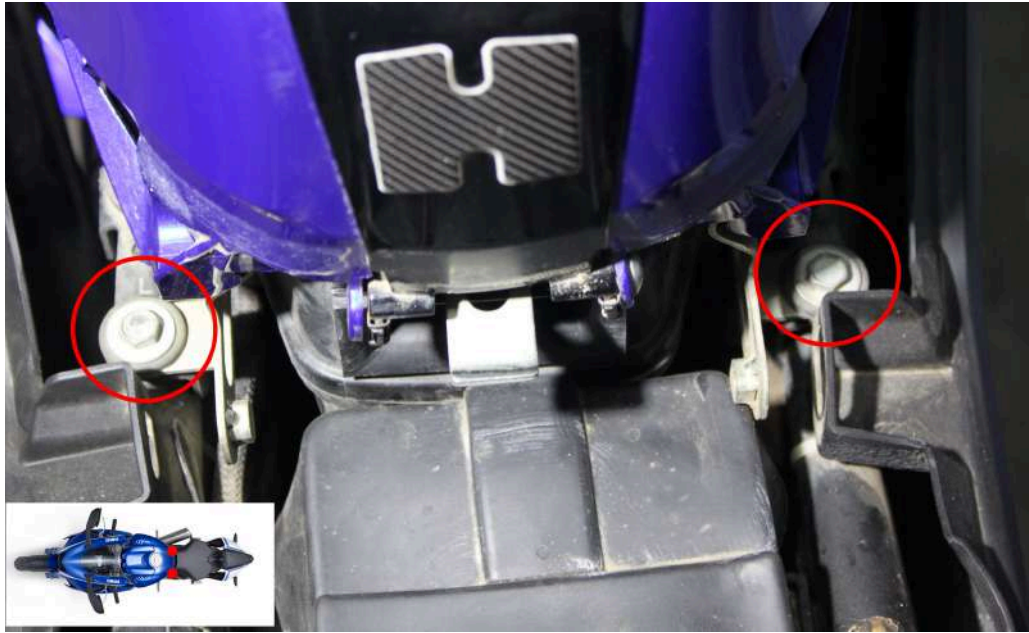


Image 14

**3.1.13** Unscrew the tank rear bolts using 5mm hexagonal socket. Refer to **Image 15.**

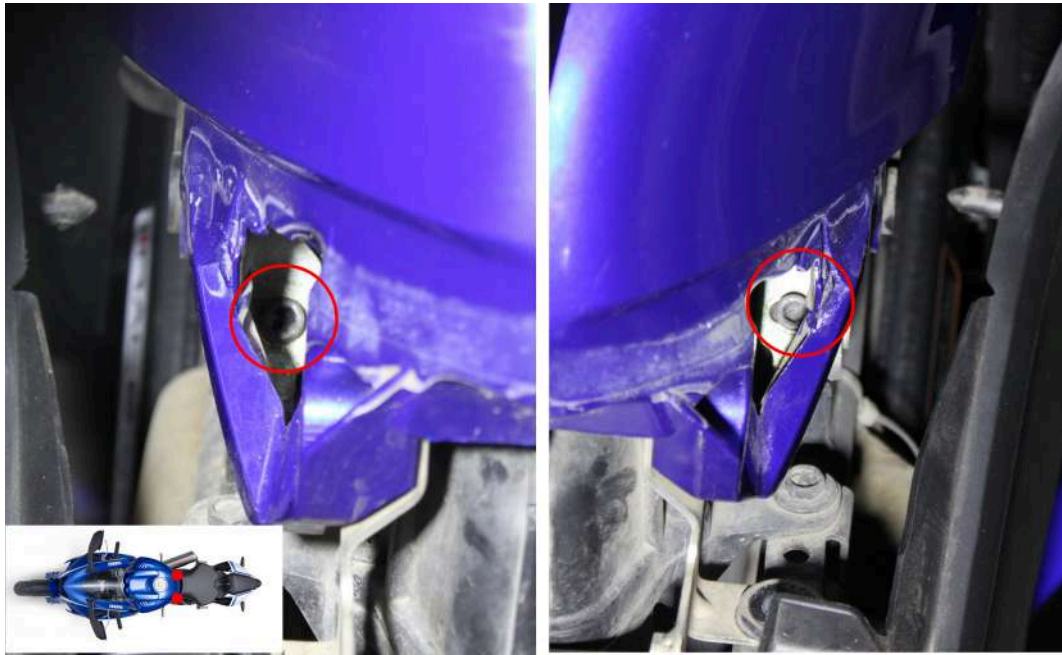


Image 15

**3.1.14** Detach the vacuum tubes from the tank. Refer to **Image 16**.

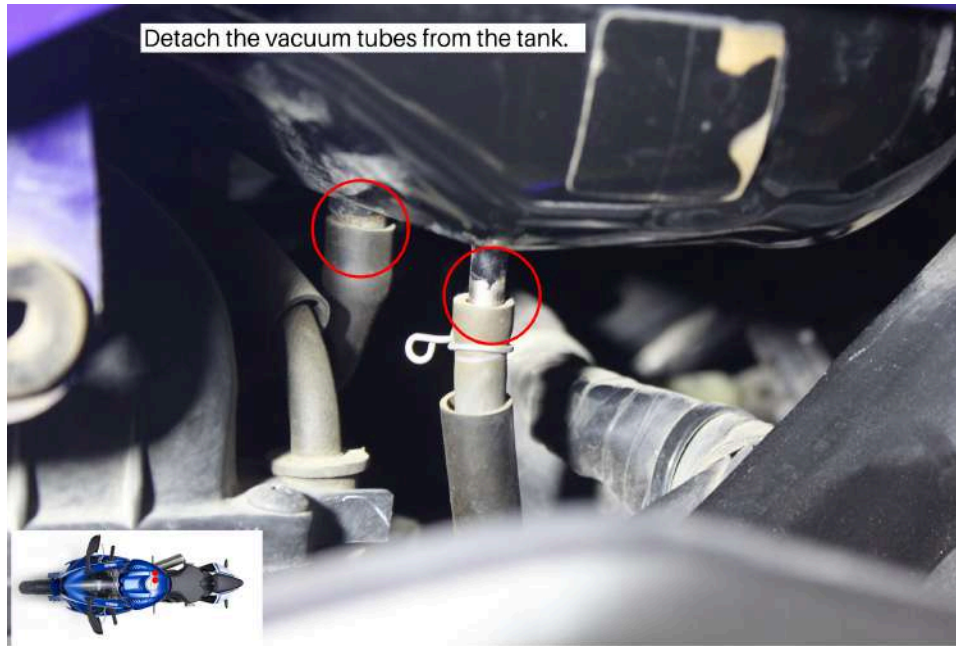


Image 16

**3.1.15** Detach the fuel line from the tank. Refer to **Image 17**.



Image 17



**3.1.16** Detach the fuel pump connector from the tank. Refer to **Image 18**

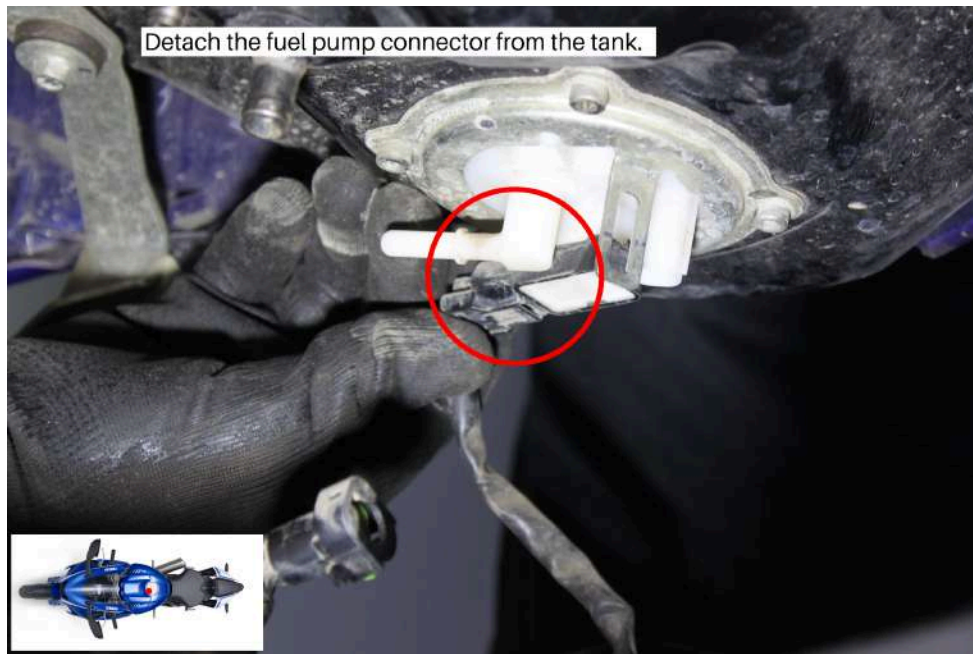


Image 18

**3.1.17** Detach the fuel gauge connector from the tank. Refer to **Image 19**

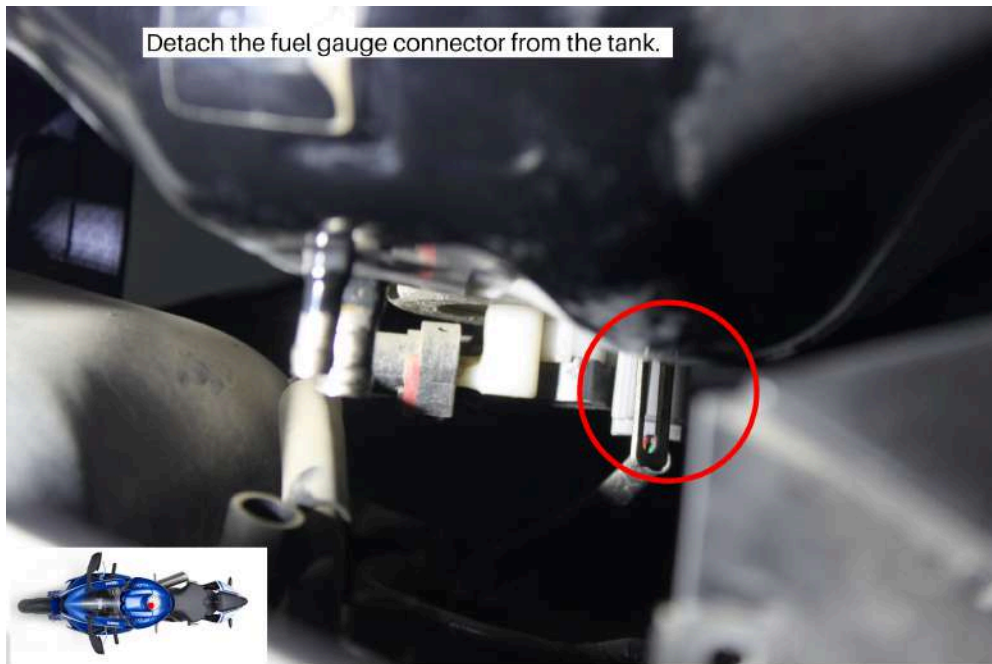


Image 19

**3.1.18** After disconnecting all the connections from the tank, lift the tank gently and carefully place it safely..

### 3.2 Routing the harness

3.2.1 Unlock the rubber cover back. Refer to **Image 20** and **Image 21**.



Image 20



Image 21



**3.2.2** Starting from the glove compartment, route each connector terminal between the welded plate and the mudguard. Refer to **Image 22.**



Image 22

**3.2.3** Route the harness through the frame. Refer to **Image 23.**



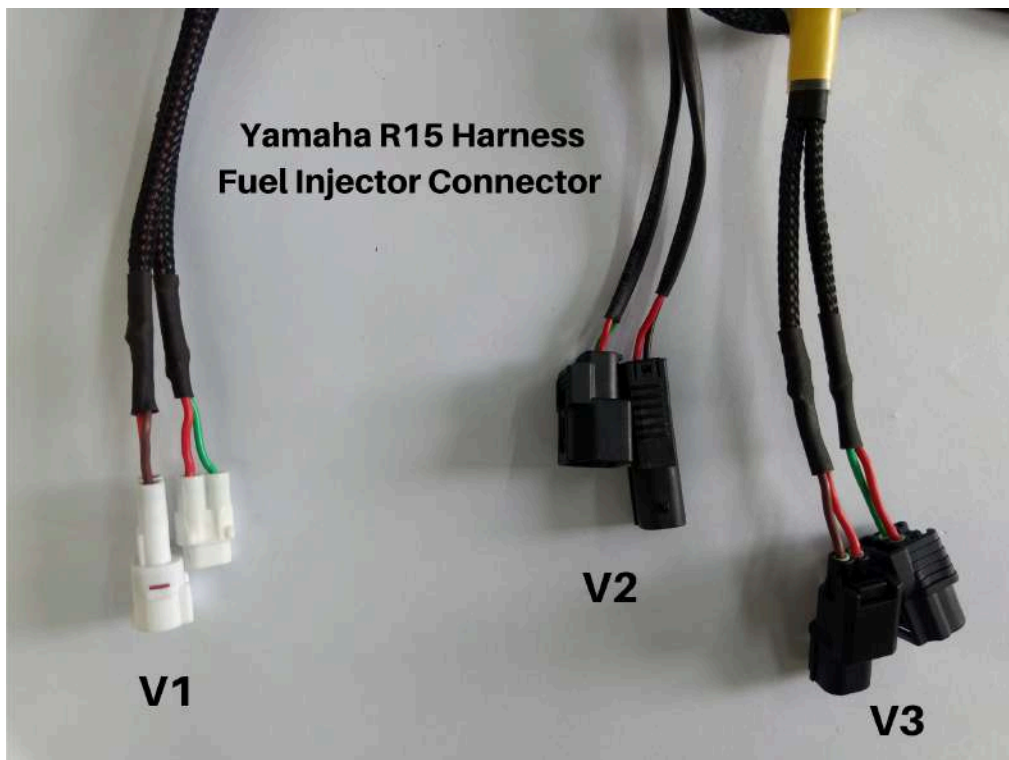
Image 23



### 3.3 Fuel Injector Connector

Note: The fuel injector connectors of the PowerTRONIC harness of Version 1, Version 2, and Version 3 of Yamaha R15 are different.

Refer to the Image below.



**3.3.1** Locate the rubber cover and remove it to access the injector connector. Refer to **Image 24**

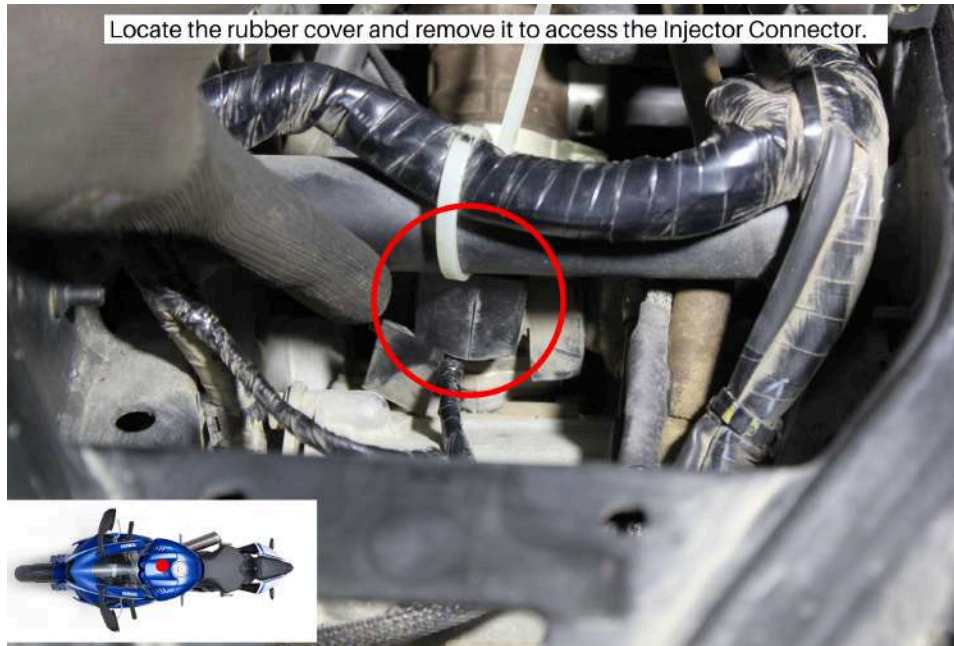


Image 24

**3.3.2** Locate the stock injector connector of your bike. Refer to **Image 25**

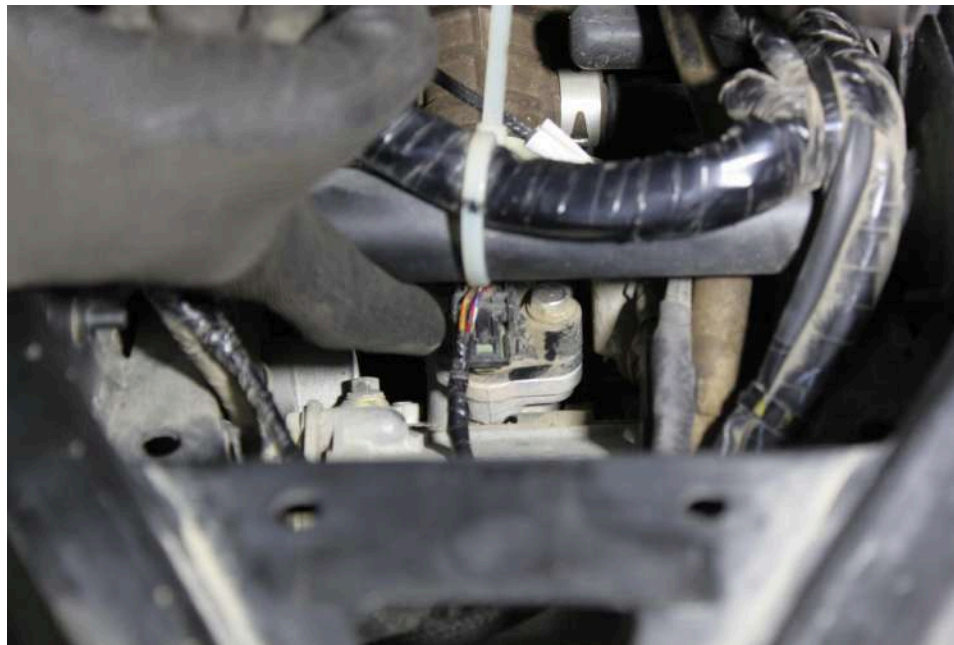


Image 25

**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 to zoomed view (**Image 26**)



Image 26

**3.3.5** Connect the female PowerTRONIC injector connector to the stock male injector connector. Refer to **Image 27**

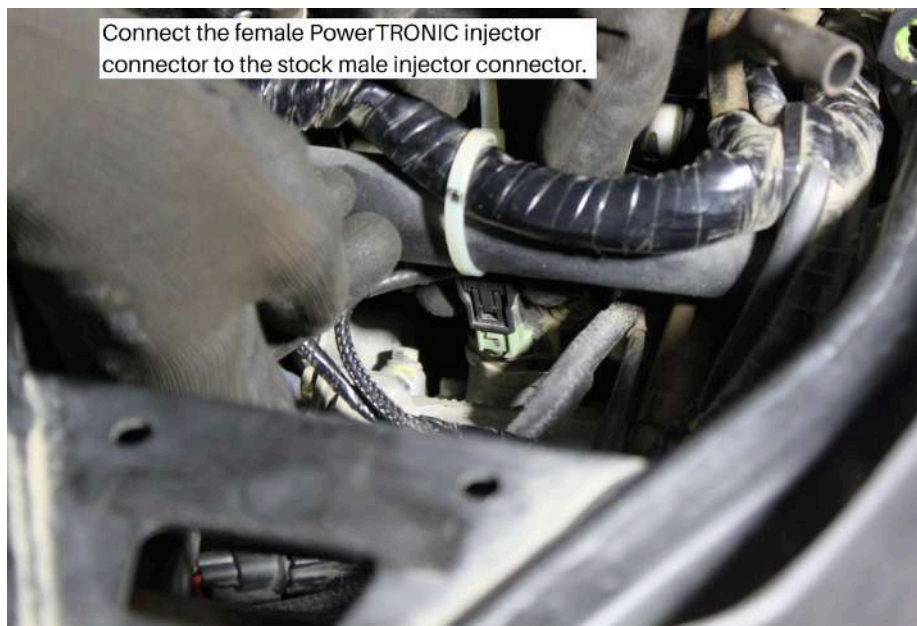


Image 27



3.3.6 Connect the stock female injector connector to the PowerTRONIC male injector connector. Refer to [Image 28](#)



Image 28

3.3.7 Refer to [Image 29](#) for the completed view



Image 29

### 3.4 Ignition Coil Connector

3.4.1 Locate the Ignition coil. Refer to **Images 30** and **Image 31**



Image 30



Image 31



**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 pins. Refer to **Image 32**

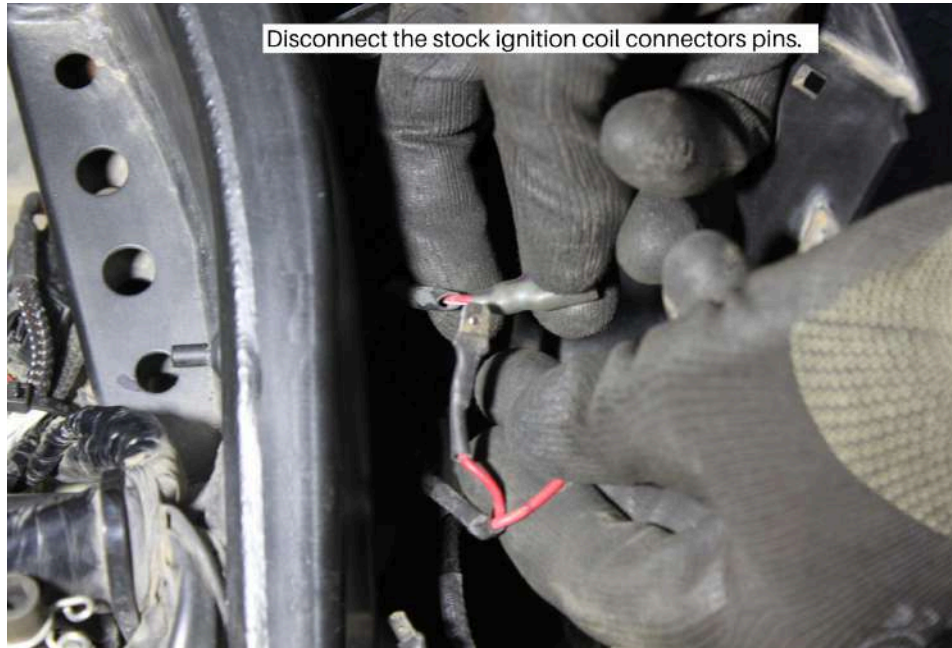


Image 32

**3.4.4** Connect the PowerTRONIC Ignition coil 12 V female pins to the stock ignition coil mating pins on the coil. Refer to **Image 33.**



Image 33



**3.4.5** Connect the PowerTRONIC Ignition coil 12 V male pins to the stock ignition coil female pins on the coil. Refer to **Image 34**



Image 34

**3.4.6** Connect the PowerTRONIC Ignition coil signal male pins to the stock ignition coil mating female pins. Refer to **Image 35**

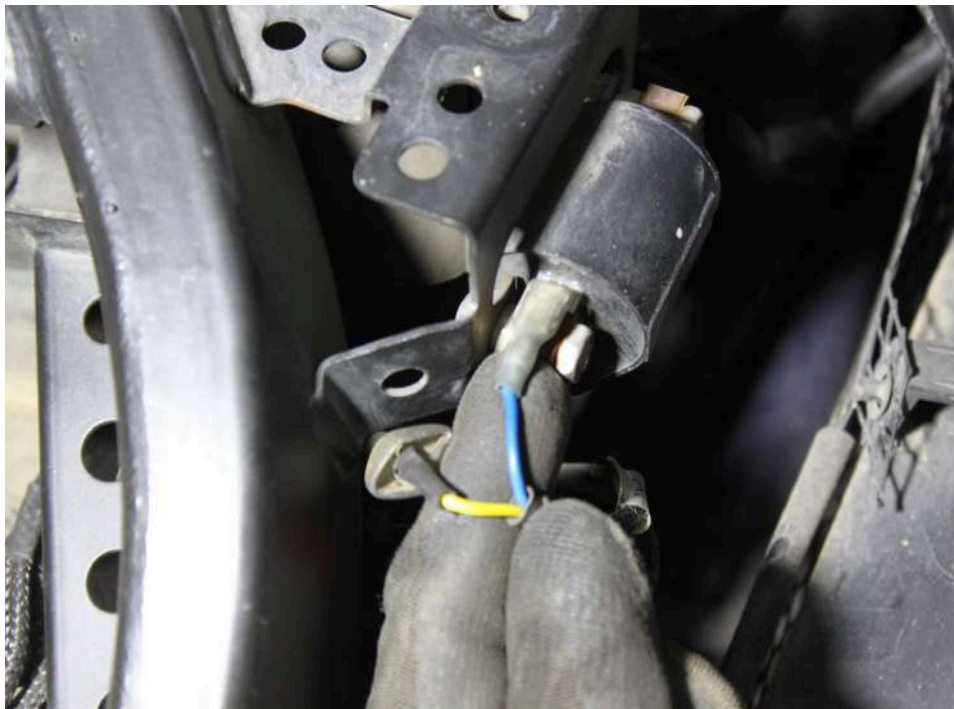


Image 35

3.4.7 Connect the PowerTRONIC Ignition coil signal female pins to the stock ignition coil mating male pins. Refer to **Image 36**



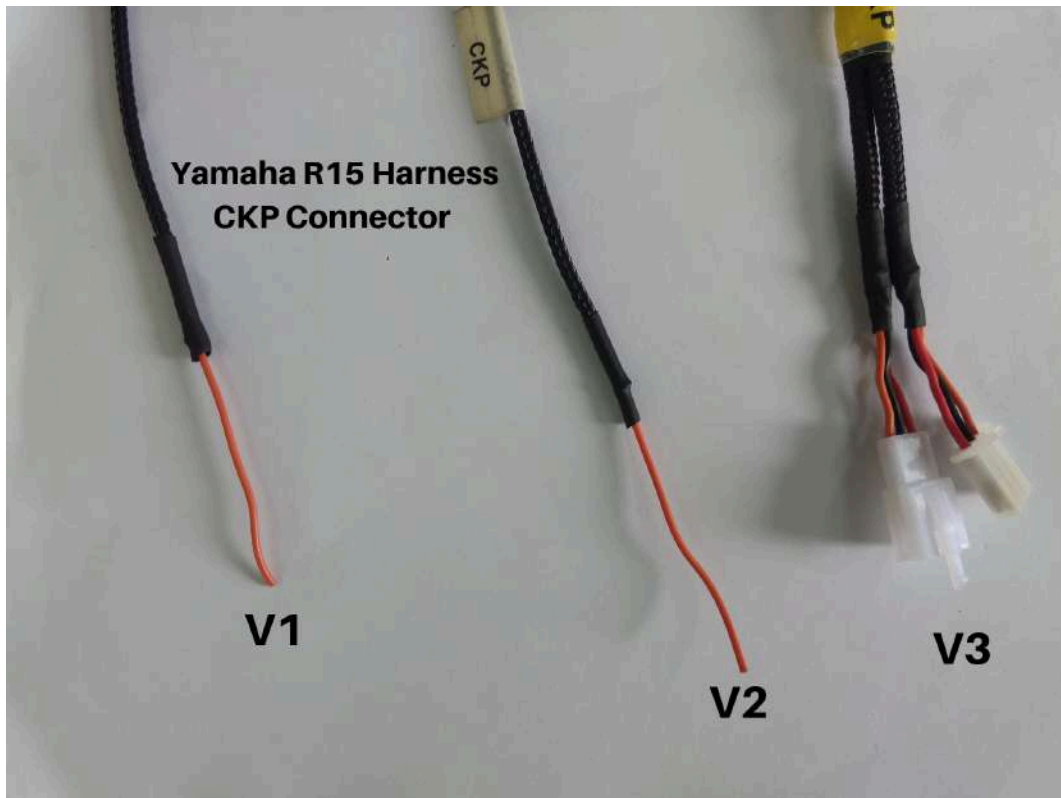
Image 36

### 3.5 Crankshaft position sensor connector

Note: The Crankshaft position sensor connectors of the PowerTRONIC harness of Version 1, Version 2, and Version 3 and above of Yamaha R15 are different.

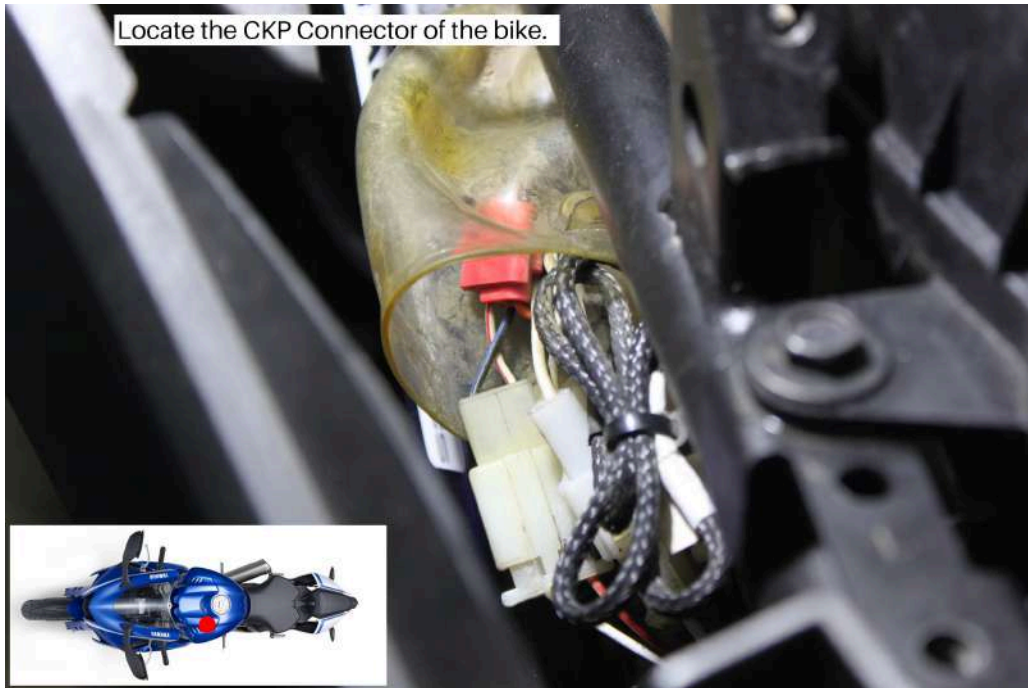
Version 1 and Version 2 have to be tapped with the signal wire. Version 3 is connector type.

Refer to the image below.





3.5.1 Locate the CKP connector of your bike. Refer to **Image 37** and **Image 38**



Locate the CKP Connector of the bike.

Image 37

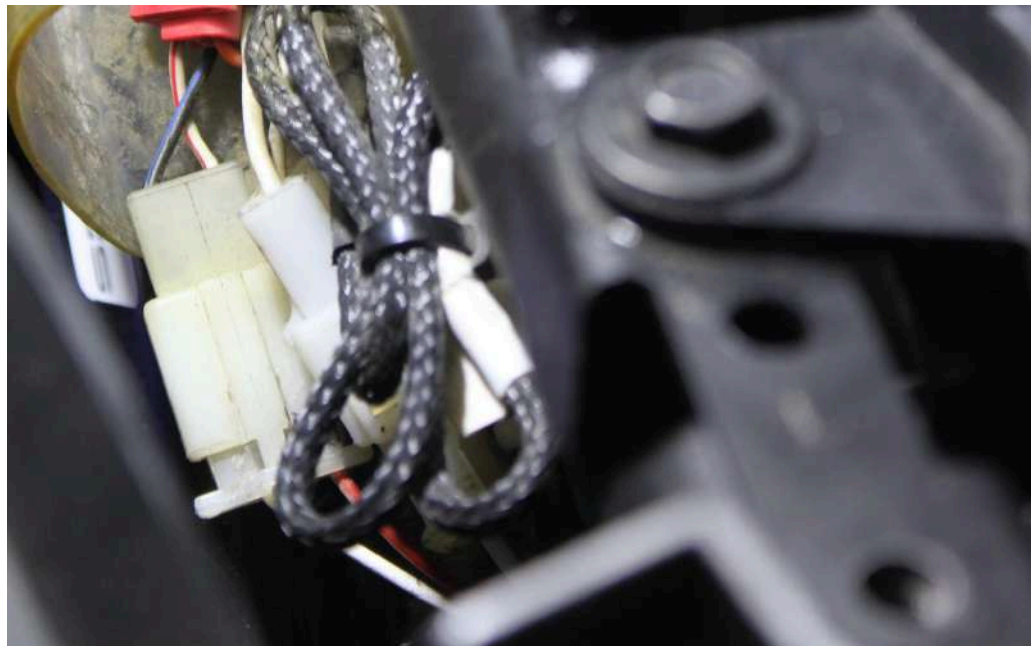


Image 38

**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 to **Image 39**.



Image 39

**3.5.4** Connect Stock male CKP connector and PowerTRONIC female connector. Refer to **Image 40**.



Image 40

**3.5.5** Connect Stock female CKP connector and PowerTRONIC male connector. Refer to **Image 41**.

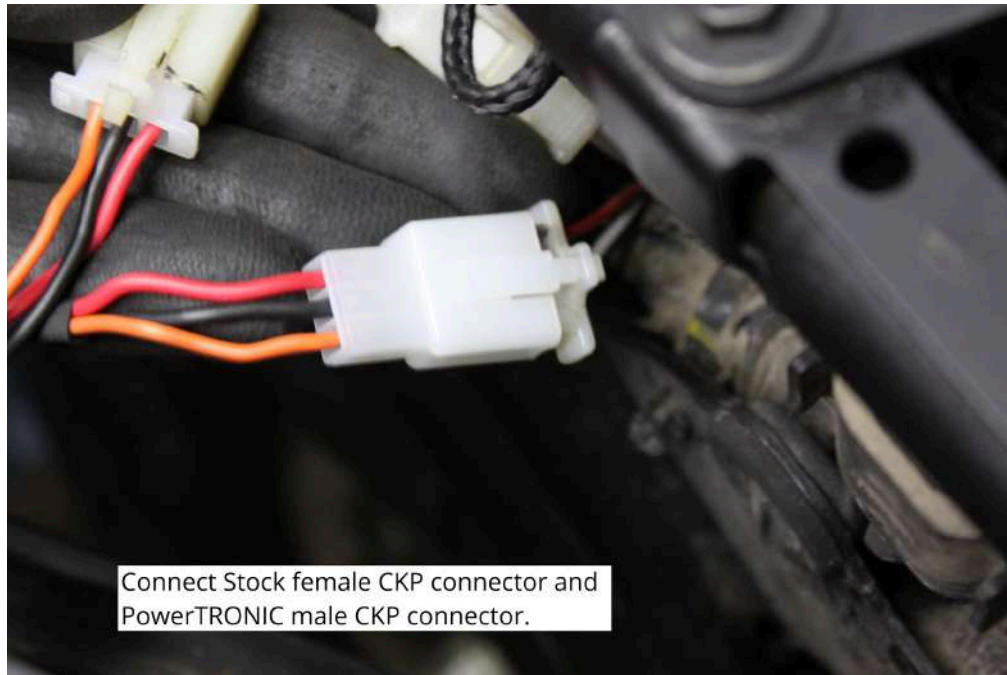


Image 41



### 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. Refer to **Image 42** and **Image 43**

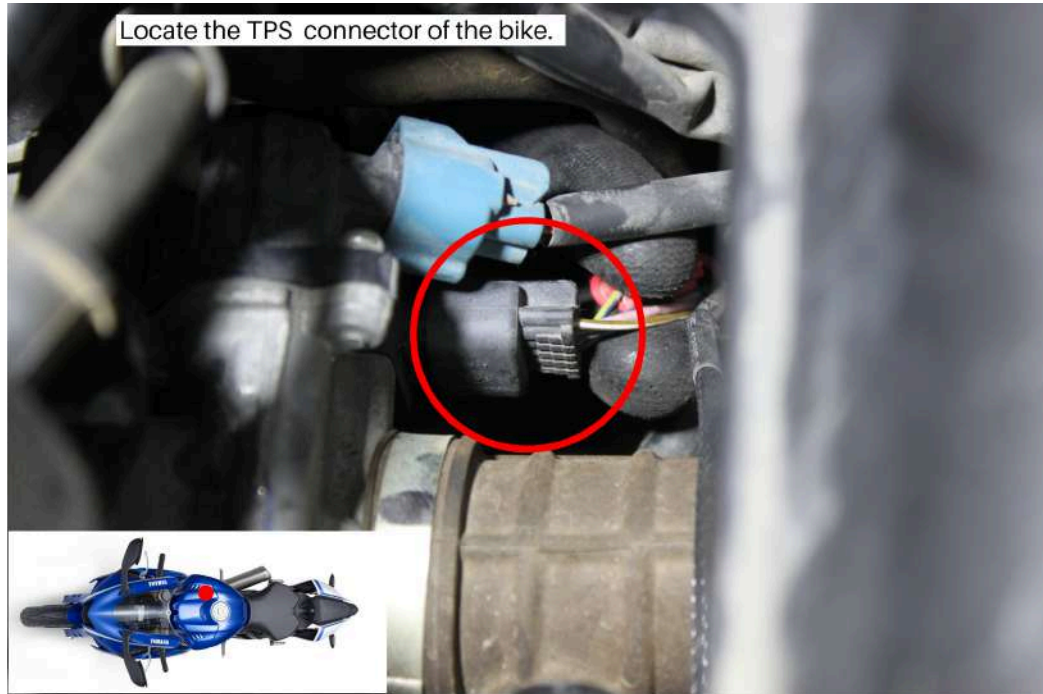


Image 42

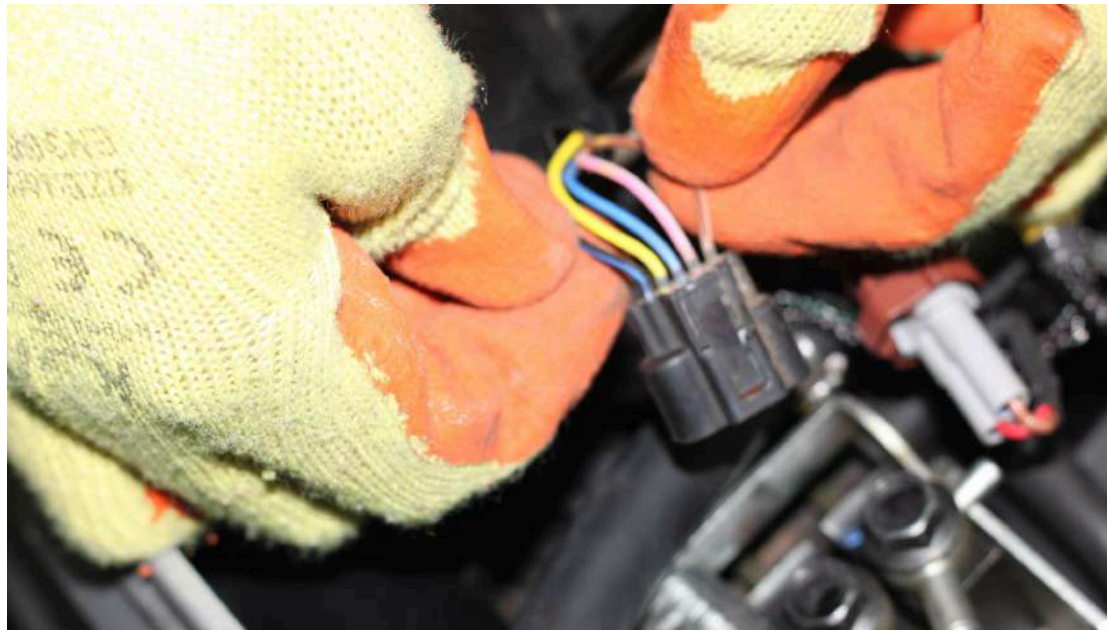


Image 43

**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 to **Image 44** and **Image 45**



Image 44



Image 45

**3.6.4** We advise you to perform a TPS calibration after the installation of PowerTronic ECU. Refer to the detailed TPS calibration document.

### 3.7 Ground Terminal Connector

3.7.1 Identify the Ground terminal connector labeled as GND and connect it to the negative terminal of the battery.  
Refer to **Image 46**

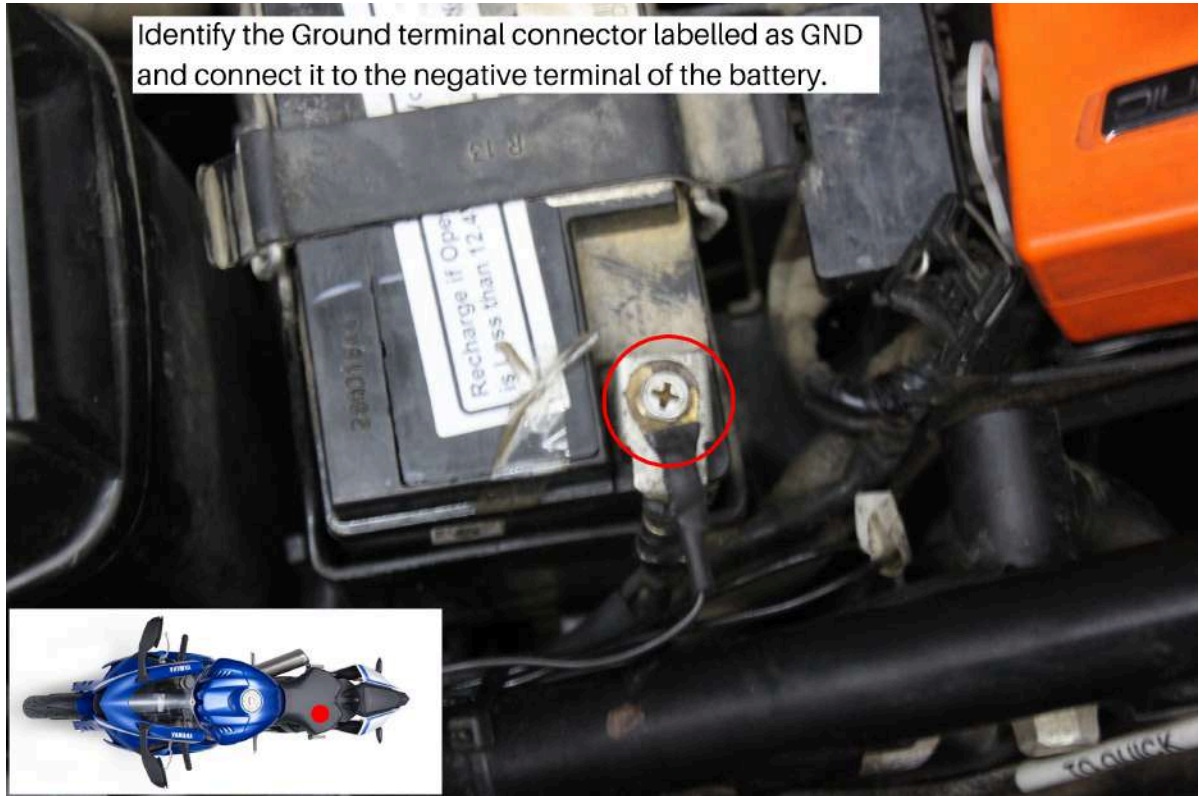


Image 46



### 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 to Image 47



Image 47

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

If you have not bought the quick-shifter, you can leave it disconnected but make sure the harness is secured using the 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 to **Image 48**



Image 48

**3.9.3** *DO NOT* proceed with PowerTRONIC ECU without verifying the connections with the 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 to **Image 49**



Image 49

### 3.11 Attaching the panels fairing etc

Attach the panels, and fairing as removed from the bike.