

PowerTRONIC Installation Manual- Kawasaki ER-6N (2012-2018)

Document Version	1	Release Date	05 August 2019
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Application information	Vehicle Specific
Vehicle	Kawasaki
Model	ER-6N
Year of manufacture	2012-2018
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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1. Parts list

1	PowerTRONIC	Piggyback ECU
2	Stock Coupler	Stand by unit <ul style="list-style-type: none">• 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 <ul style="list-style-type: none">• Fuel injector connectors• Ignition coil connectors• Throttle position sensor connector (TPS)• Crank position (CKP) sensor connector tapping wire• 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	M3, M5 Hexagonal bit
2	M10 Hexagonal socket
2	Phillips-Head screwdriver
3	Wire cutter

3. Installation procedure

3.1 Removing panels, fairing

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

Begin at the left side of the bike.



Image 1

Locate the Connections/wires/hoses



Image 2

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



Image 3



Image 4

3.1.2 Detach the pillion rider seat. Gently detach the rider seat also. Refer [Image 5](#) and [Image 6](#)



Image 5



Image 6

3.1.3 Locate the tank front cover bolt and unscrew it with M5 Hex bit. Refer the **Image 7**



Image 7

3.1.4 Refer **Image 8** for Unscrewing the bolt, repeat the process on the other side as well.

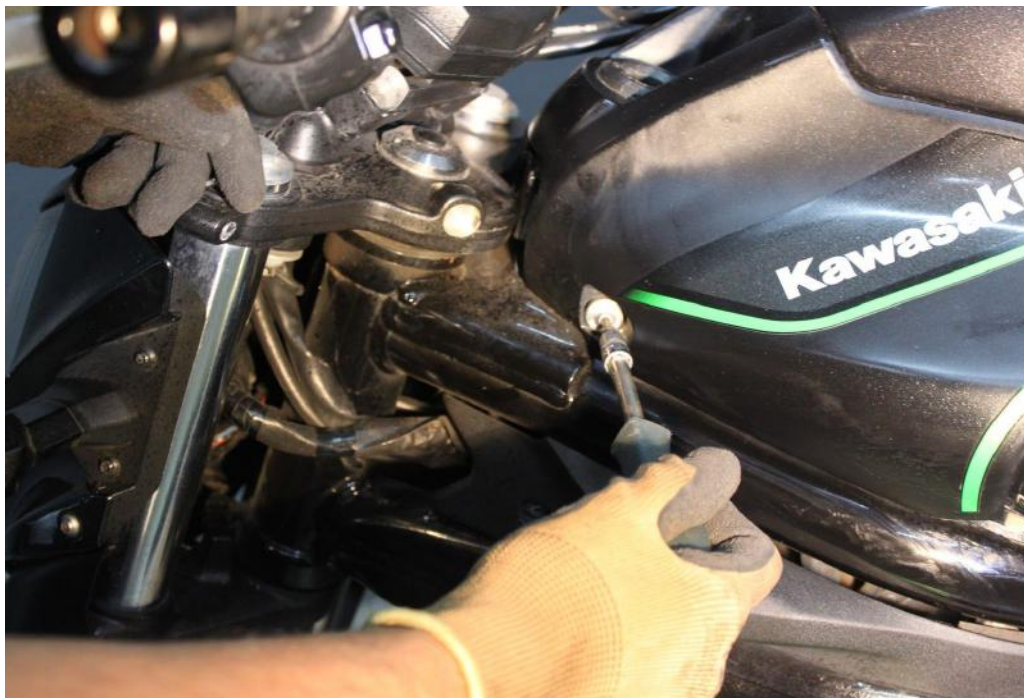


Image 8

3.1.5 Unpin the tank front cover from the slot and gently detach it from the hook-and-loop fastener. Refer **Image 9**.

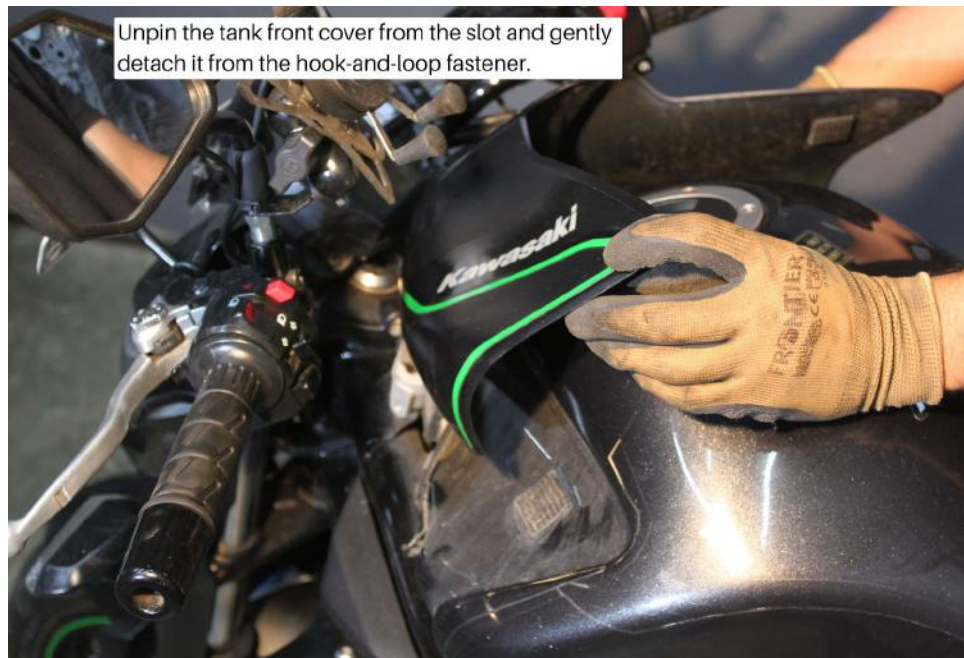


Image 9

3.1.6 Locate and unscrew the tank mounting bolts at the front end using M10 Hexagonal socket. Refer **Image 10**



Image 10

3.1.7 Locate and unscrew the tank mounting bolt at the rear end using M10 Hexagonal socket. Refer **Image 11**



Image 11

3.1.8 Locate and disconnect the vacuum hoses from the fuel tank. Refer **Image 12A**

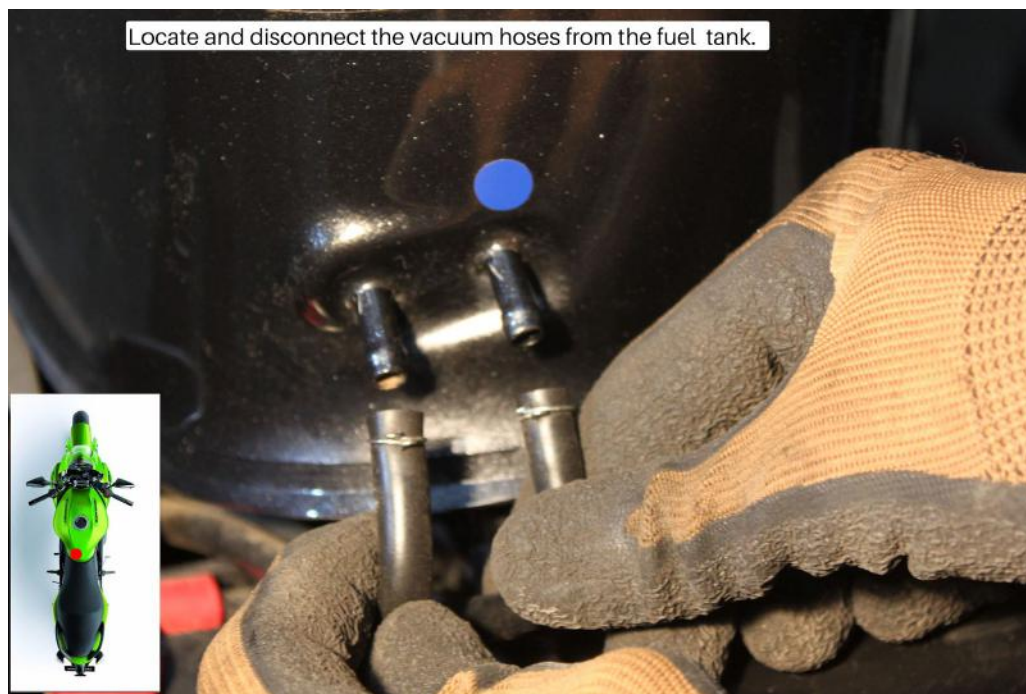


Image 12A

3.1.9 Gently lift the rear end of fuel tank. Disconnect the fuel line by gently pulling the red lock pin. Refer **Image 12B**

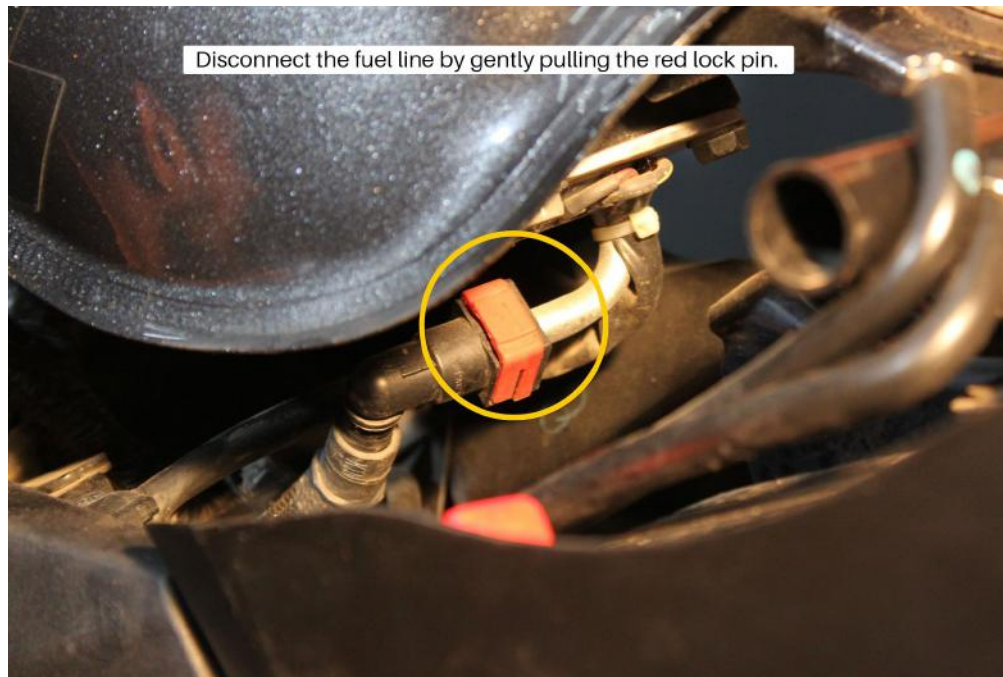


Image 12B

3.1.10 Detach the fuel pump connector. Refer **Image 13**

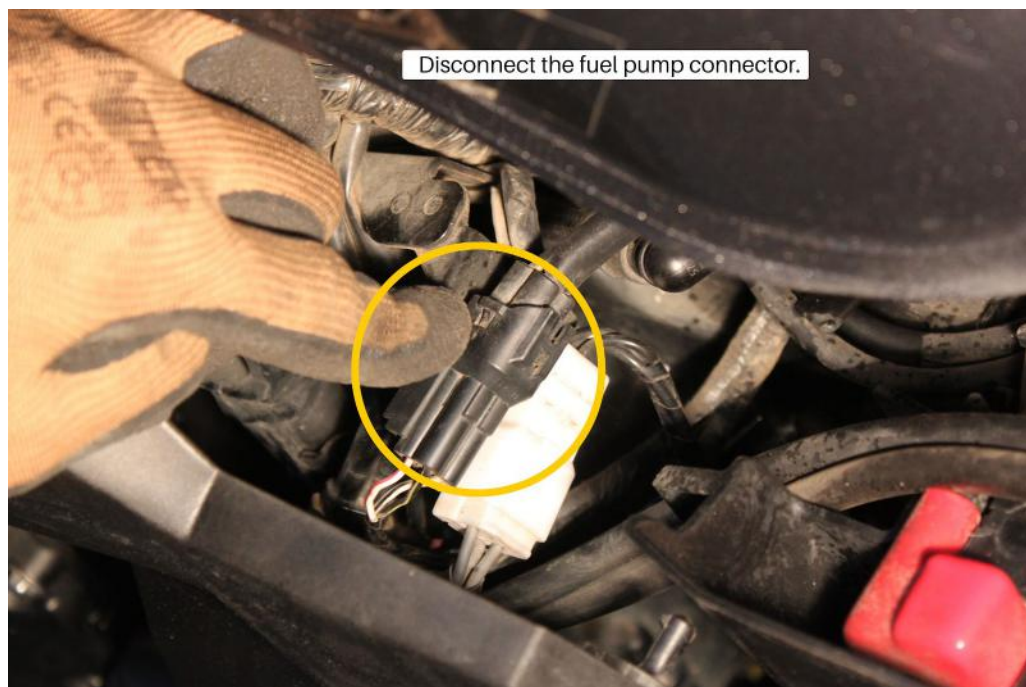


Image 13

3.1.11 Unscrew the ECU harness lock screw using a Phillips-head screwdriver. Refer **Image 14**

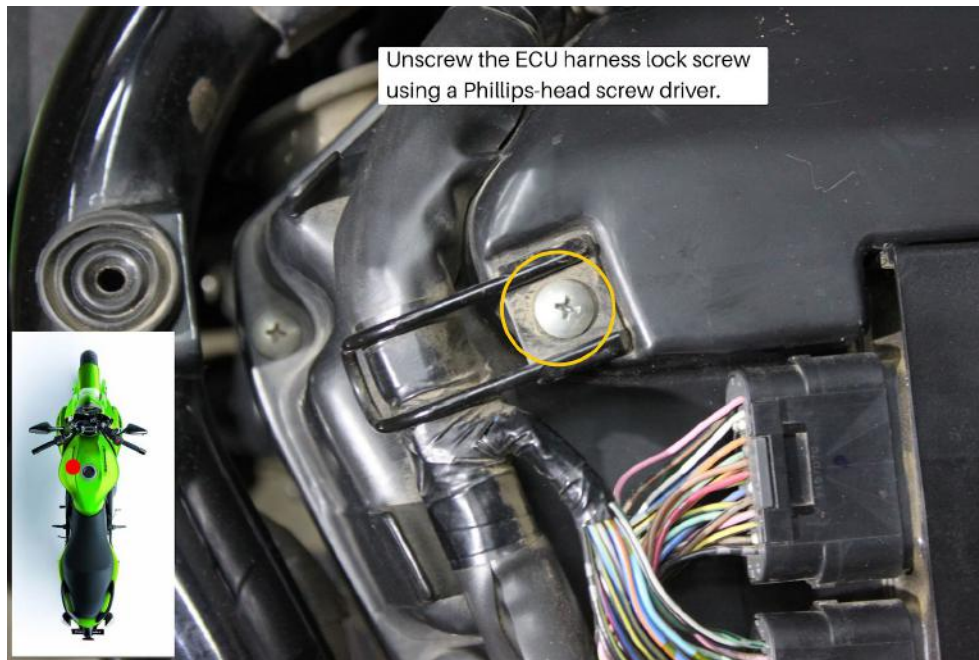


Image 14

3.1.12 Disconnect the air box connector from the top side. Refer **Image 15**

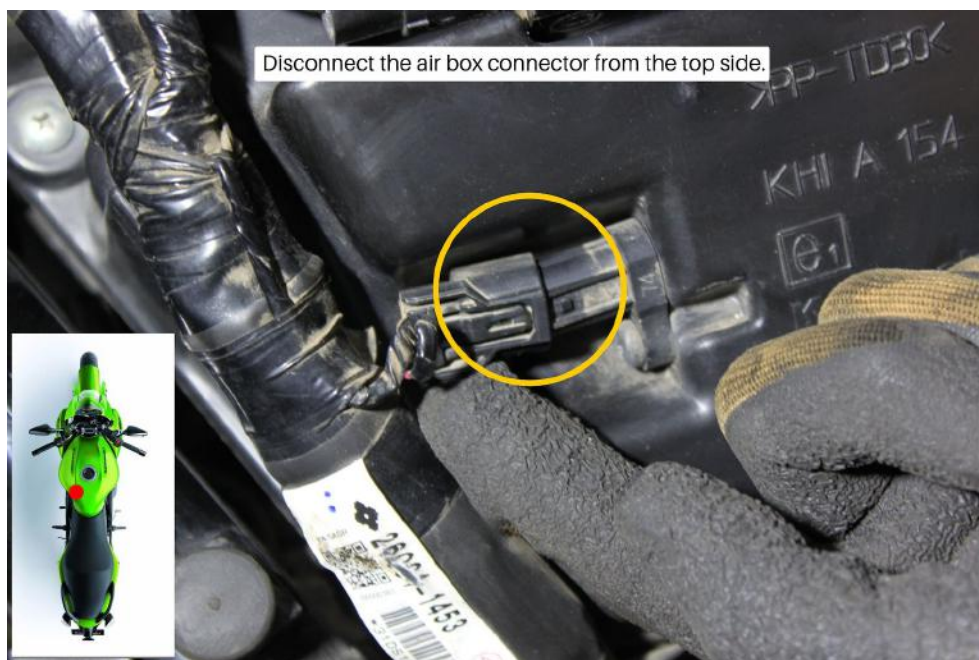


Image 15

3.1.13 Locate and unscrew all the screws of air box using a Phillips head screwdriver. Refer [Image 16](#)

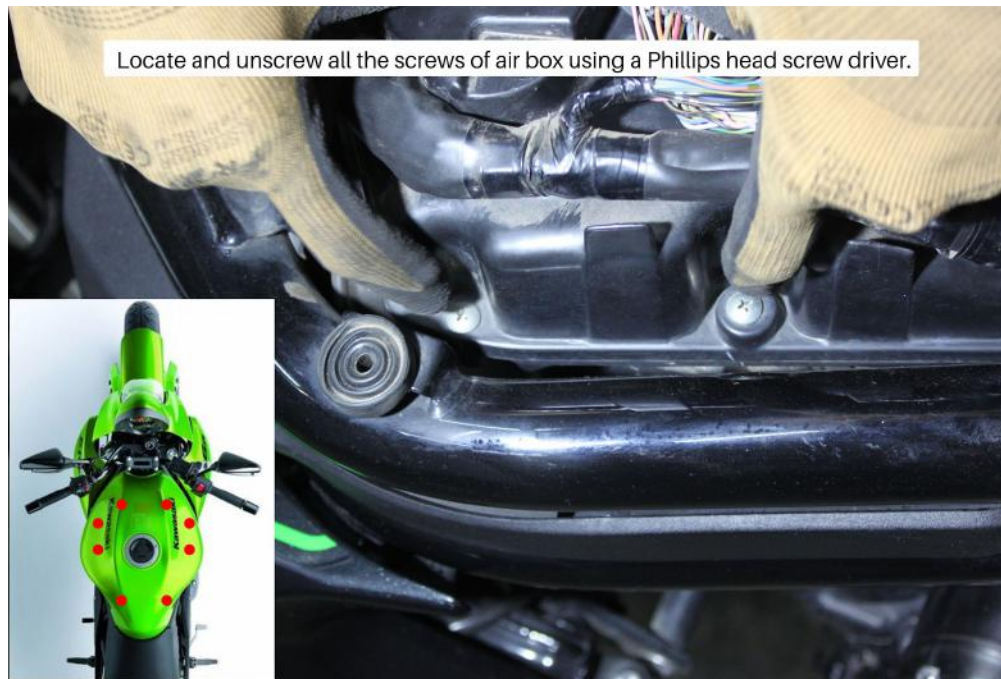


Image 16

3.1.14 Slide the wire to the left carefully. Gently detach the air box top part. Refer [Image 17](#)

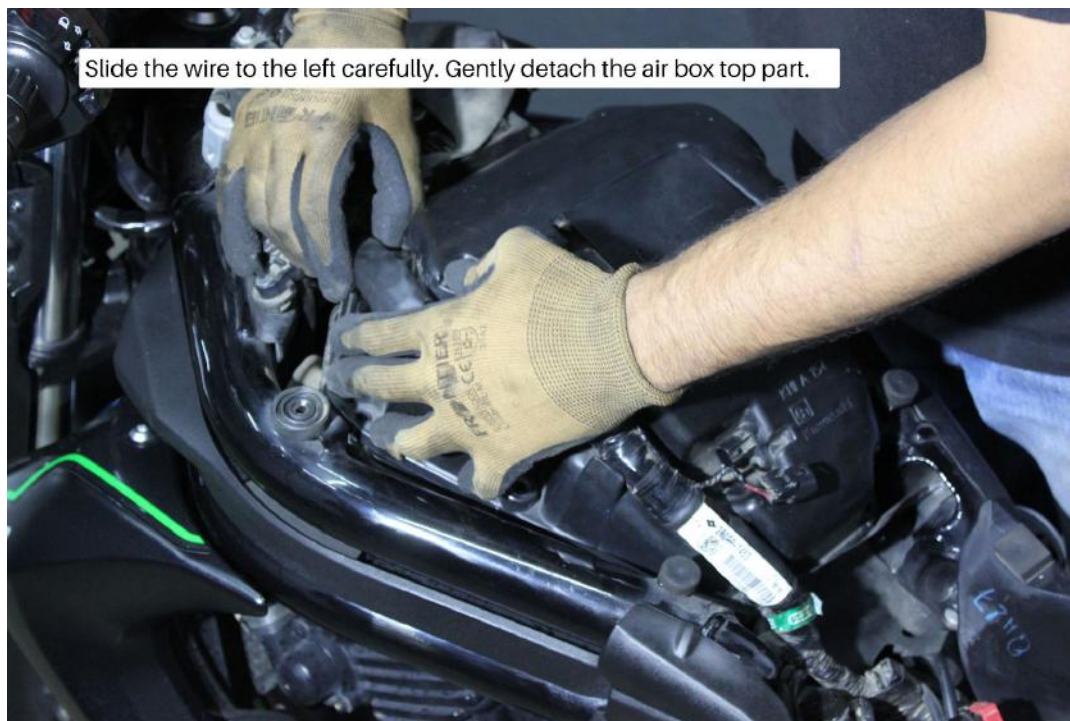


Image 17

3.1.15 Refer **Images 18** for detached view of air filter top part.

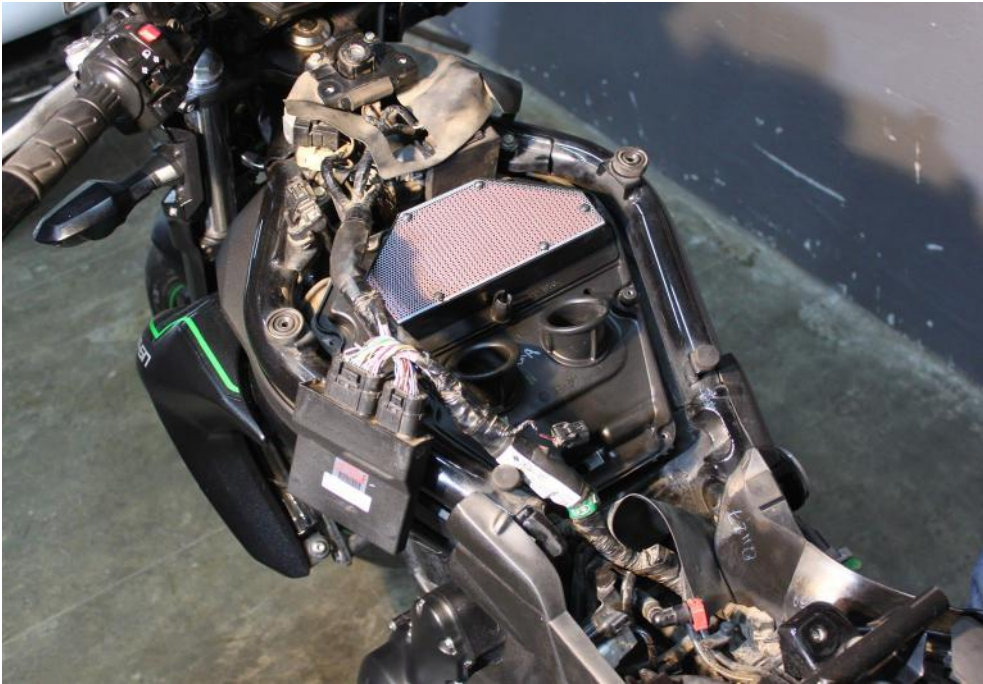


Image 18

3.1.16 Unscrew the side panel bolt using M5 Hex bit. **Images 19**



Image 19

3.1.17 Gently detach the side panel from its locking slots. Refer **Image 20**.



Image 20

3.1.18 Unscrew the side panel bolt using M5 Hex socket. Refer **Image 21**

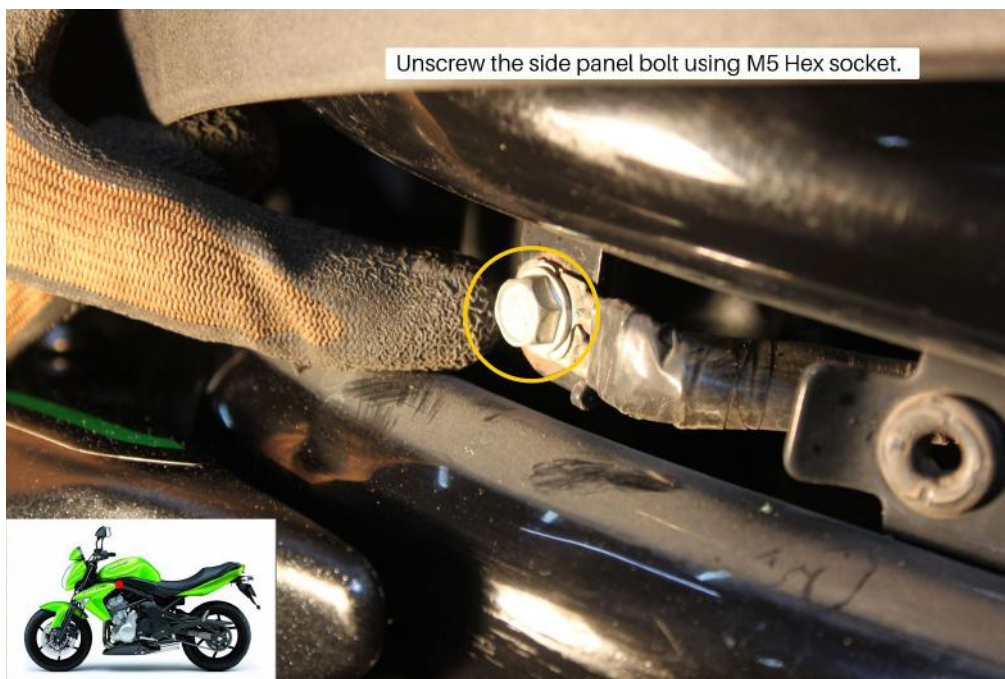


Image 21

3.1.19 Unscrew the air filter mounting bolt using M3 hex bit. Refer **Image 22**



Image 22

3.1.20 Disconnect the hoses at the rear side of the air filter box. Refer **Image 23**

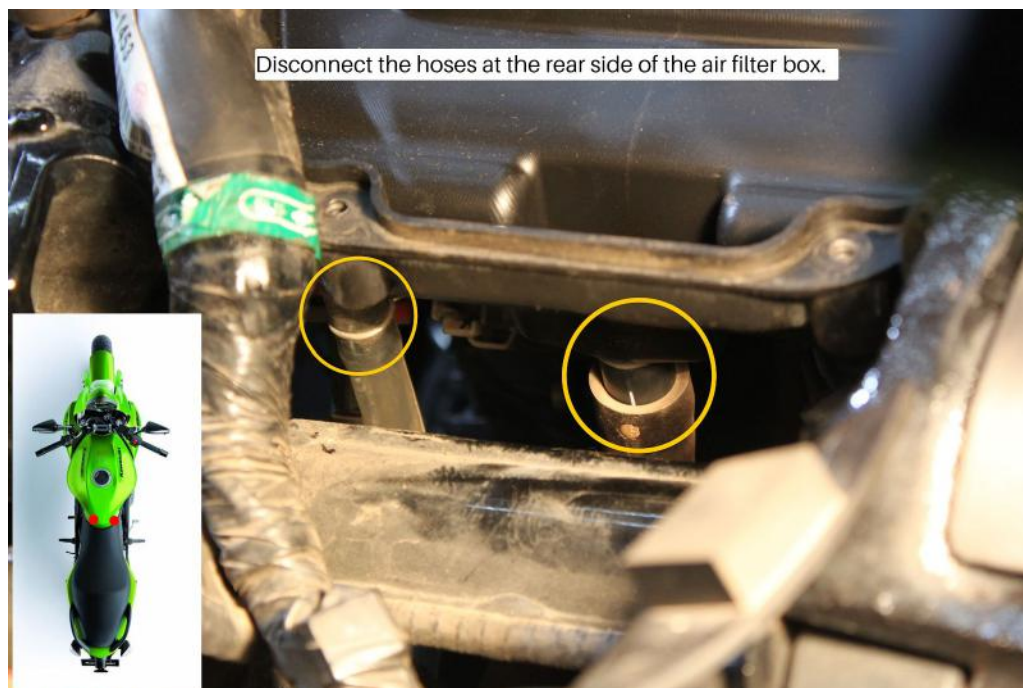


Image 23

3.1.21 Disconnect the hoses at the left side of the air filter box. Refer **Image 24**



Image 24

3.1.22 Gently detach the air filter box from the slots. Refer **Image 25**



Image 25

3.1.23 Refer the top of the bike before installation. Refer [Image 26](#)



Image 26

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 27](#).

Route the harness as follows

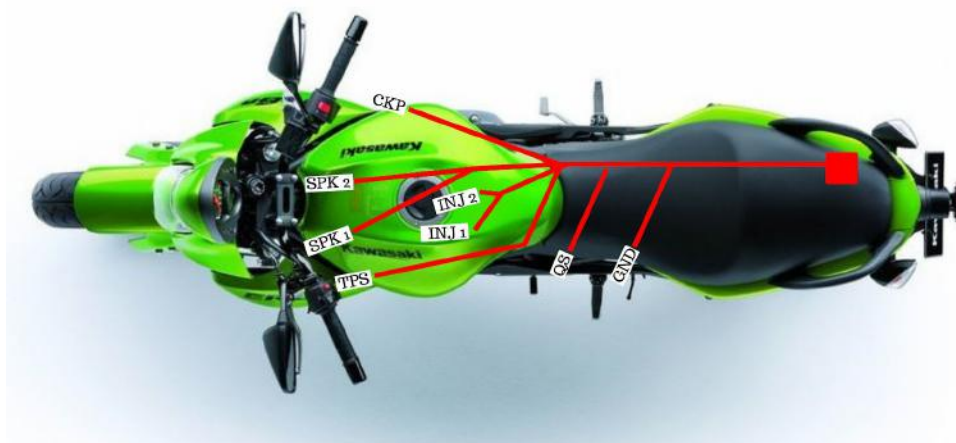


Image 27

3.2.2 Start from the glove compartment, route each connector terminal between the mudguard and seat centre panel. Refer [Image 28](#) and [Image 29](#).



Image 28

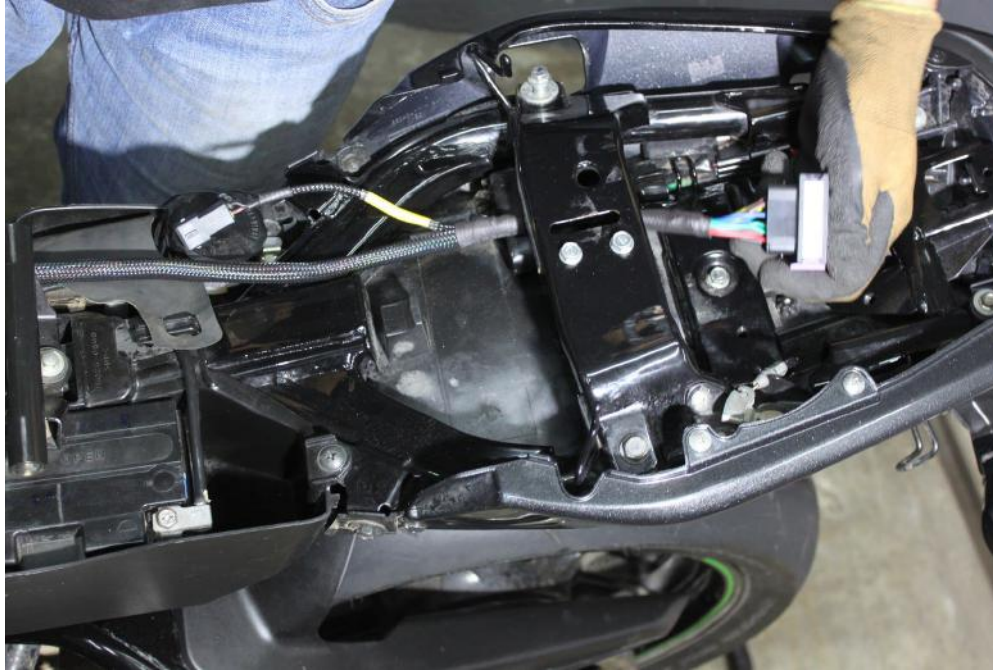


Image 29

3.2.3 Route each connector through the panel carefully and route the entire harness. Refer **Image 30.**



Image 30

3.2.4 Route the harness around the battery casing. Refer [Image 31](#)



Image 31

3.2.5 Route ignition coil connectors under the throttle cable. Refer [Image 32](#)

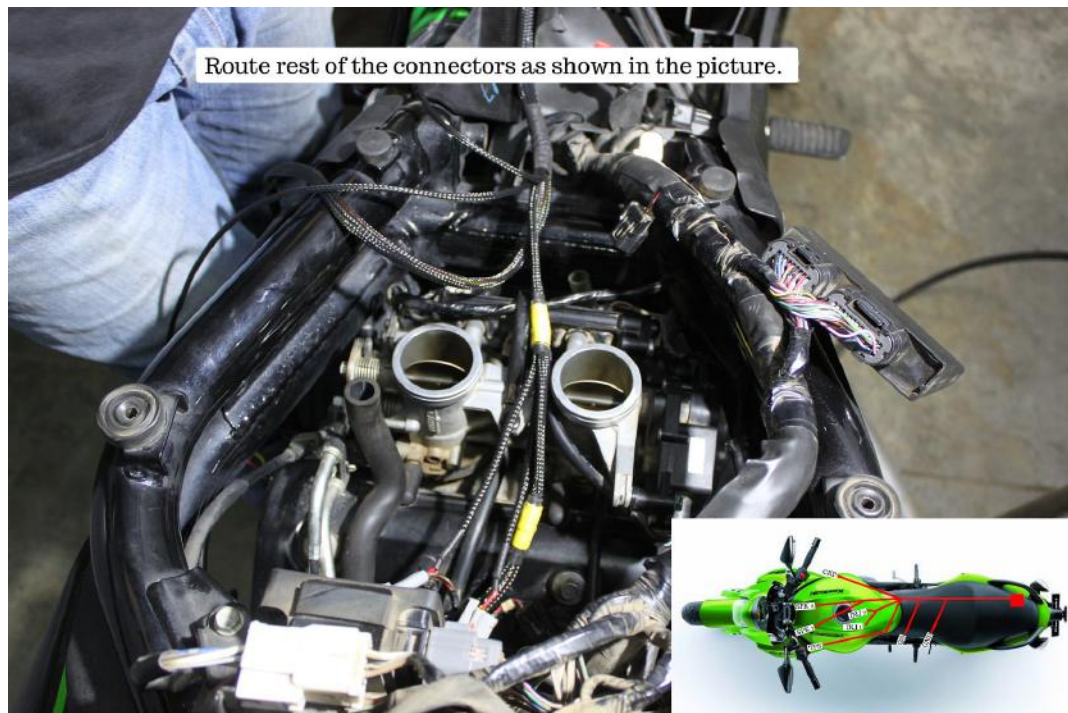


Image 32

3.3 Fuel Injector Connector

3.3.1 Locate the stock injector connector of your bike. Refer [Images 33](#).

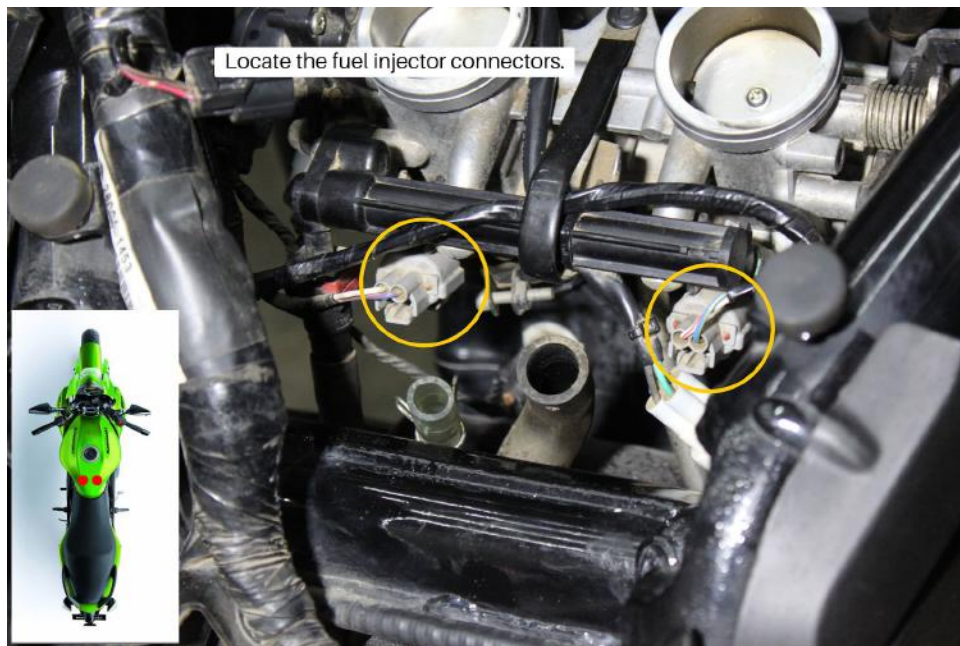


Image 33

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

3.3.3 Disconnect the injector connector on your bike. Refer the zoomed view ([Image 34](#))

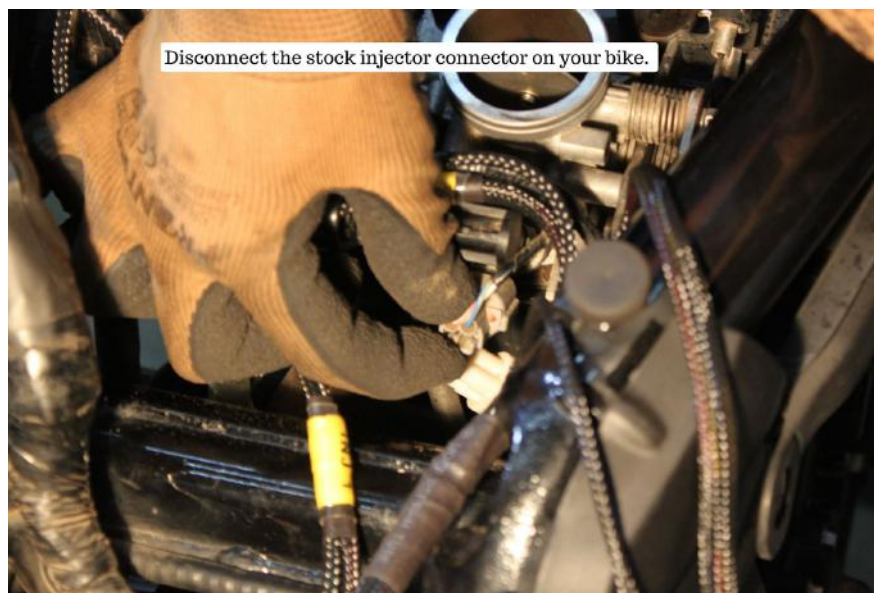


Image 34

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

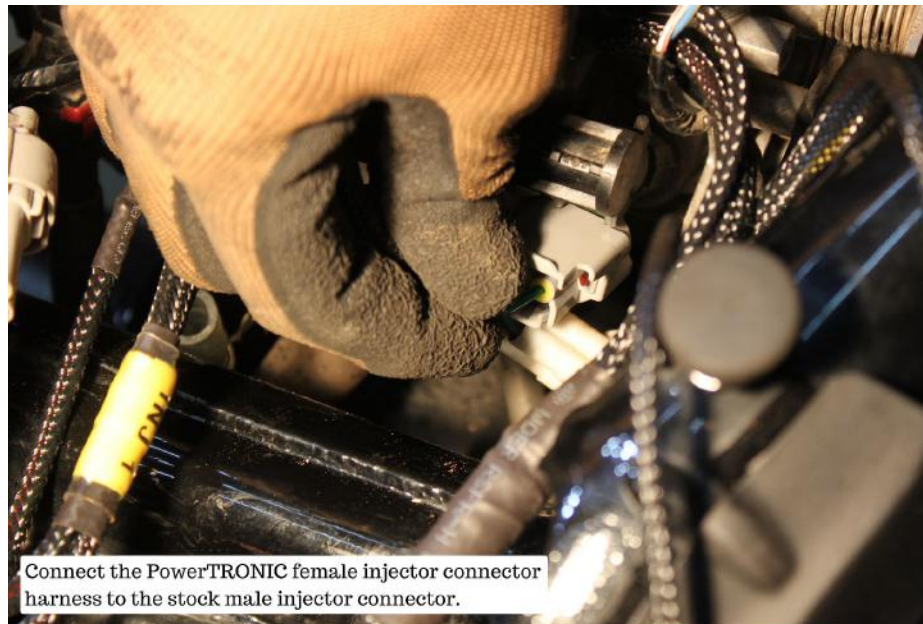


Image 35

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



Image 36

3.4 Ignition Coil Connector

3.4.1 Locate the stock Ignition coil connectors. Refer [Images 37](#)

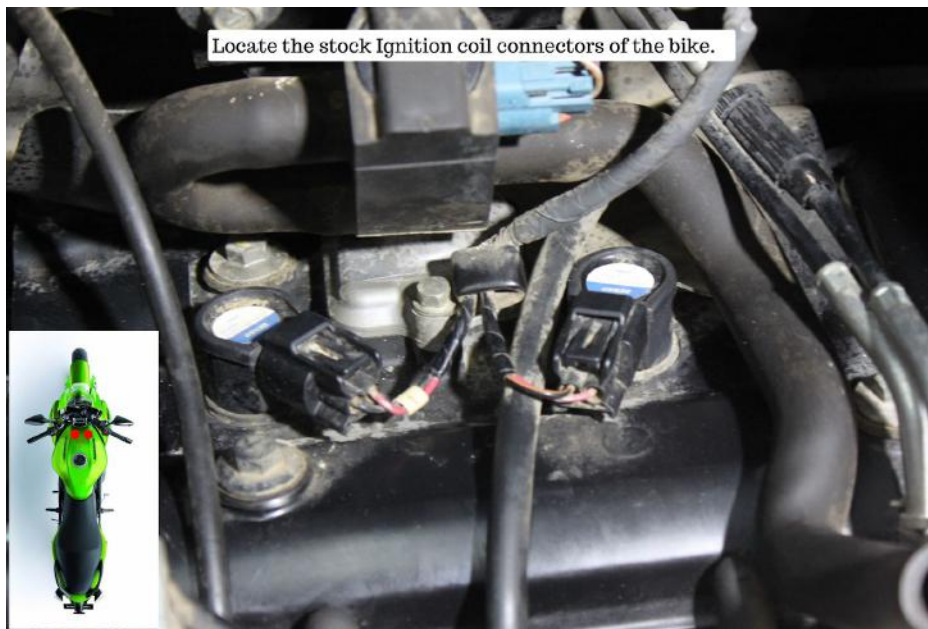


Image 37

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 connectors. Refer [Image 38](#)

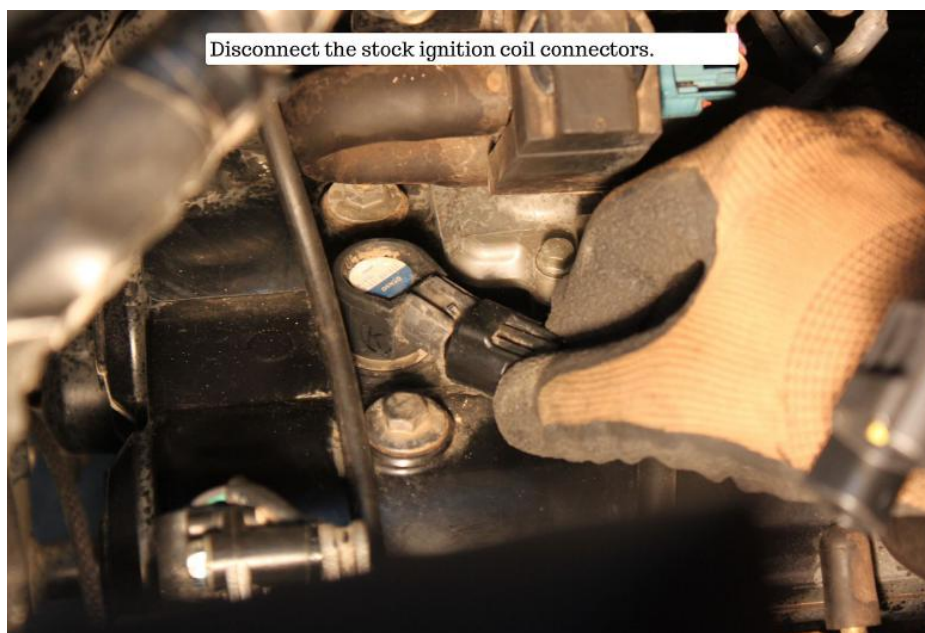


Image 38

3.4.4 Connect the PowerTRONIC Ignition coil female connector to the stock ignition coil male connector. Refer [Image 39.](#)



Image 39

3.4.5 Connect the PowerTRONIC Ignition coil male connector to the stock ignition coil female connector. Refer [Image 40.](#)

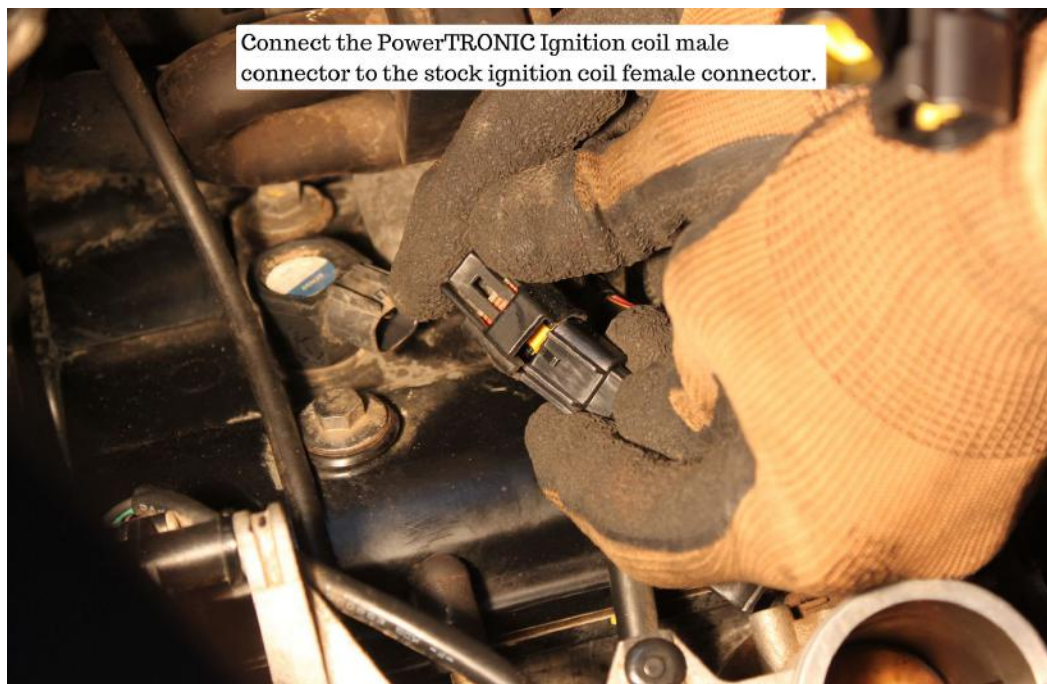


Image 40

3.4.6 Repeat the above steps for the other 3 ignition coils. Refer **Image 41** for completed view.

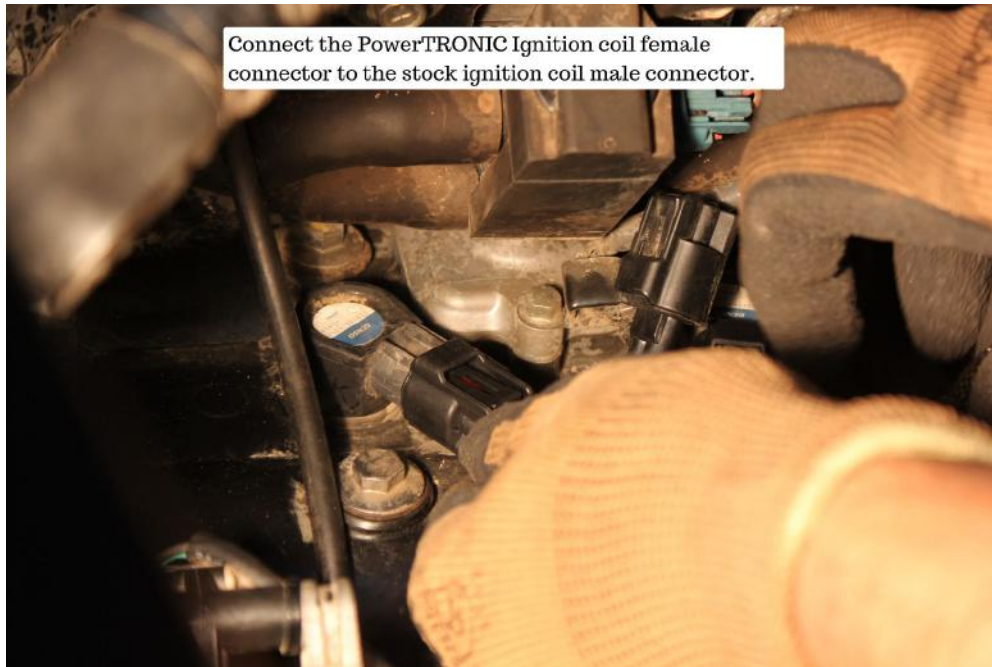


Image 41

3.5 Throttle position sensor connector

3.5.1 Locate the TPS connector of your bike. It is generally located on the throttle body, parallel to the throttle cable return springs. Refer [Image 42](#).



Image 42

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

3.5.3 Disconnect the stock TPS connector. Refer [Image 43](#)



Image 43

3.5.4 Connect the PowerTRONIC female TPS connector to the stock TPS male connector. Refer [Image 44](#).



Image 44

3.5.5 Connect the PowerTRONIC male TPS connector to the stock TPS female connector. Refer [Image 45](#).



Image 45

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

3.6 Crank Position Sensor Tapping

3.6.1 Unscrew the right side panel bolt with M5 Hex bit to access the CKP sensor connector. Refer [Image 46](#)

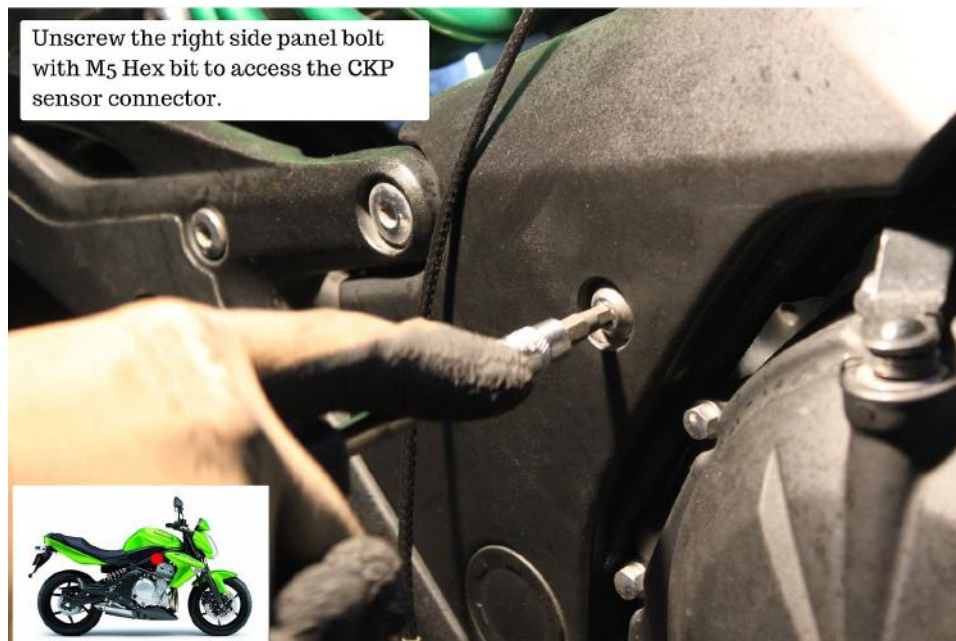


Image 46

3.6.2 Remove the panel and locate the CKP sensor connector. Refer [Image 47](#) and [Image 48](#).



Image 47

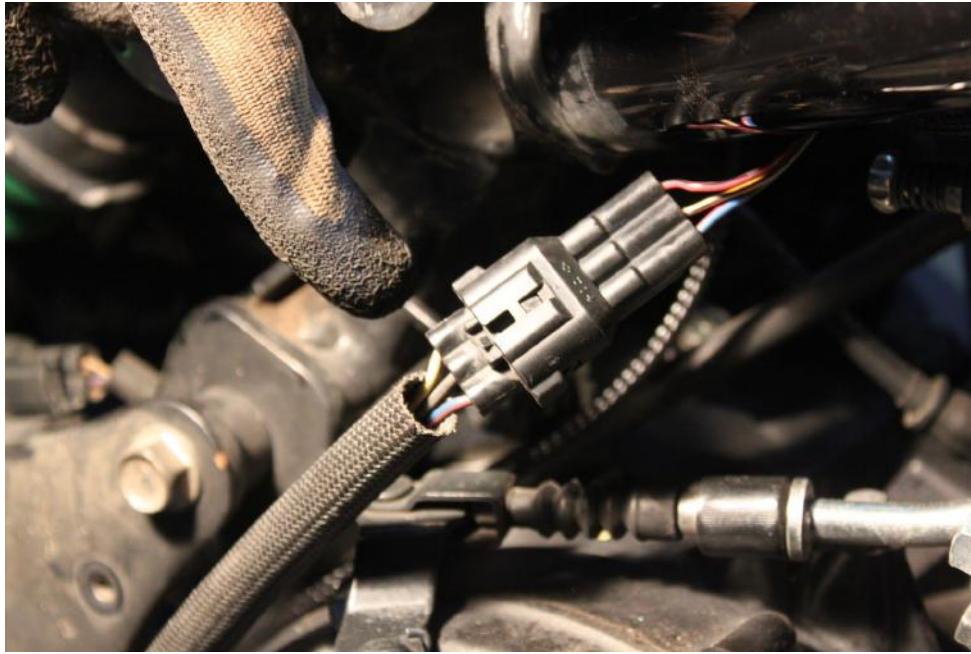


Image 48

3.6.3 Identify the Crank Position sensor connector in the PowerTRONIC wiring harness, labeled as 'CKP'

3.6.4 Disconnect the stock CKP connector. Refer [Image 49](#)

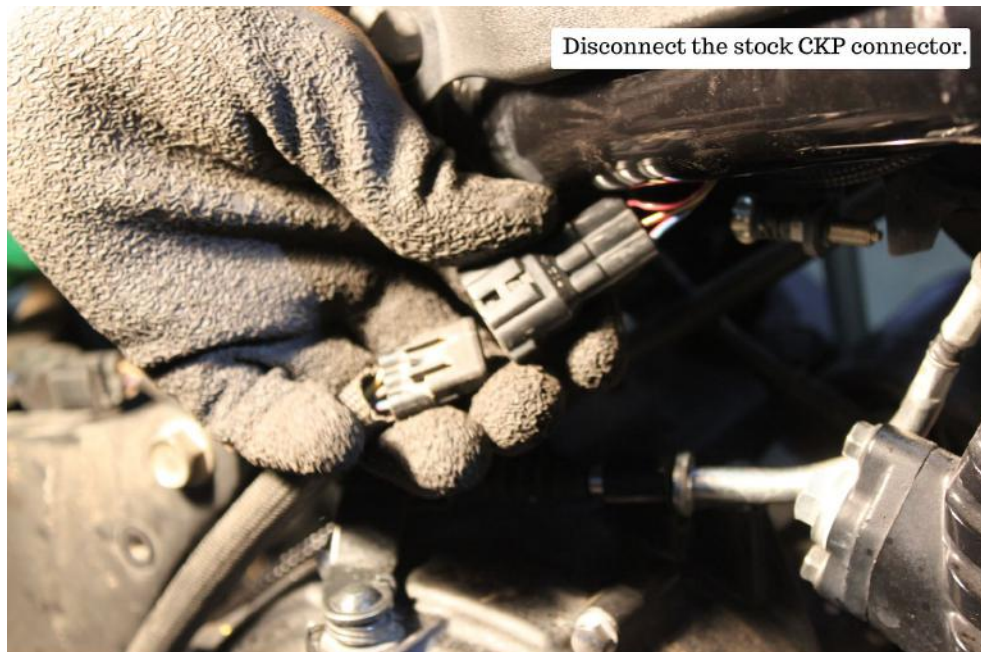


Image 49

3.6.5 Tap the CKP connector of the bike with the CKP wire (Red and Black Stripe) of the PowerTRONIC using the tapping clip provided in the kit. Refer **Image 50**.

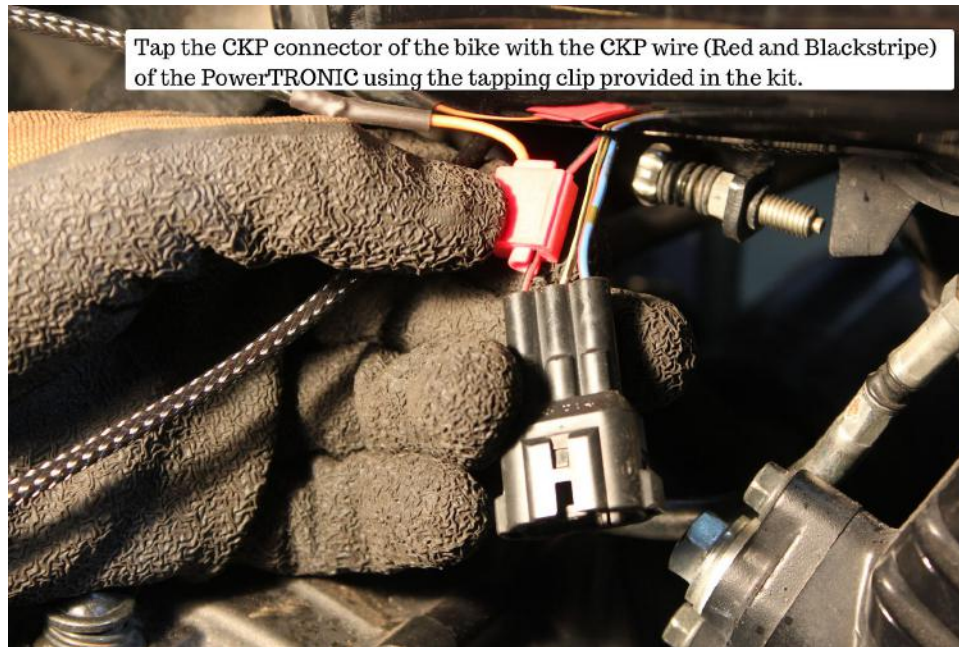


Image 50

3.7 Ground Terminal Connector

3.7.1 Unscrew the battery negative terminal and Identify the Ground terminal connector labelled as GND and connect it to the negative terminal of the battery. Refer [Image 51](#)



Image 51

3.7.2 Refer the completed view. Refer [Image 52](#)



Image 52

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 53**



Image 53

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.

3.9.3 ***DO NOT** proceed with PowerTRONIC ECU without verifying the connections with stock coupler.* Refer **Image 54**



Image 54

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 55](#)



Image 55

3.11 Attaching the panels fairing etc

Attach the panels, fairing as removed from the bike.