# PowerTRONIC Installation Manual- KTM Adventure 390 (2020-2023)

| Document Version | 2 | Release Date | 01 August 2023 |
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|---|---|
| Application information | Vehicle Specific |
| Vehicle | **KTM** |
| Model | **Adventure 390** |
| Year of manufacture | **2020-2023** |
| 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.

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## Table of Contents



## 1. Parts list

| | | |
|---|---|---|
| 1 | PowerTRONIC | Piggyback ECU |
| 2 | Stock Coupler | Stand by unit<br>● Can be connected in place of the PowerTRONIC to run the bike in stock mode if need be.<br>● Used for the verification of the connectors involved. |
| 3 | Harness | Bike specific harness contains the following connectors<br>● Fuel injector connector<br>● Spark/Ignition coil connector<br>● Throttle position sensor connector (TPS)<br>● Crankshaft position sensor connector(CKP)<br>● Map selection connector<br>● Quick shifter connector<br>● 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 | Main tools | Optional tools |
|---|---|---|
| 1 | M10 Hexagonal socket | Spinner handle |
| 2 | M10 T bar Hexagonal Socket wrench | Ratchet handle |
| 3 | Wire cutter | Extension bar or Sliding T bar |
| 4 | Phillips head screwdriver | |

# 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). Refer **Image 1**

Image 1

Note the position of the connector/hoses/wires to be removed. Refer **Image 2**

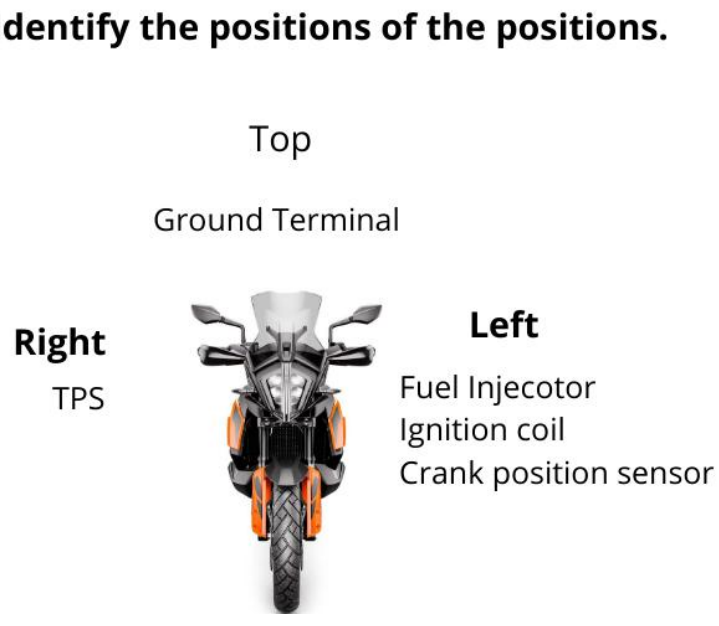


Image 2

***3.1.1*** Detach the pillion seat by inserting the key into the keyhole shown in **Image 3** and unlock the pillion seat. **Image 4** shows the pillion seat detached.


Image 3

Image 4

***3.1.2*** Detach the rider seat. (Gently lift and slide it towards rear end - Refer **Image 5**).


Image 5

***3.1.3*** Disconnect the battery negative terminal. Refer **Image 6**


Image 6

***3.1.4*** Locate and unscrew the tank side bolt using M10 Hex socket. Refer **Image 7** and **Image 8.** Repeat the process on the other side of the bike.


Image 7

Image 8

***3.1.5*** Locate and unscrew the tank side panel bolts using 4 mm hex bit. Refer **Image 9** and **Image 10**.


Image 9

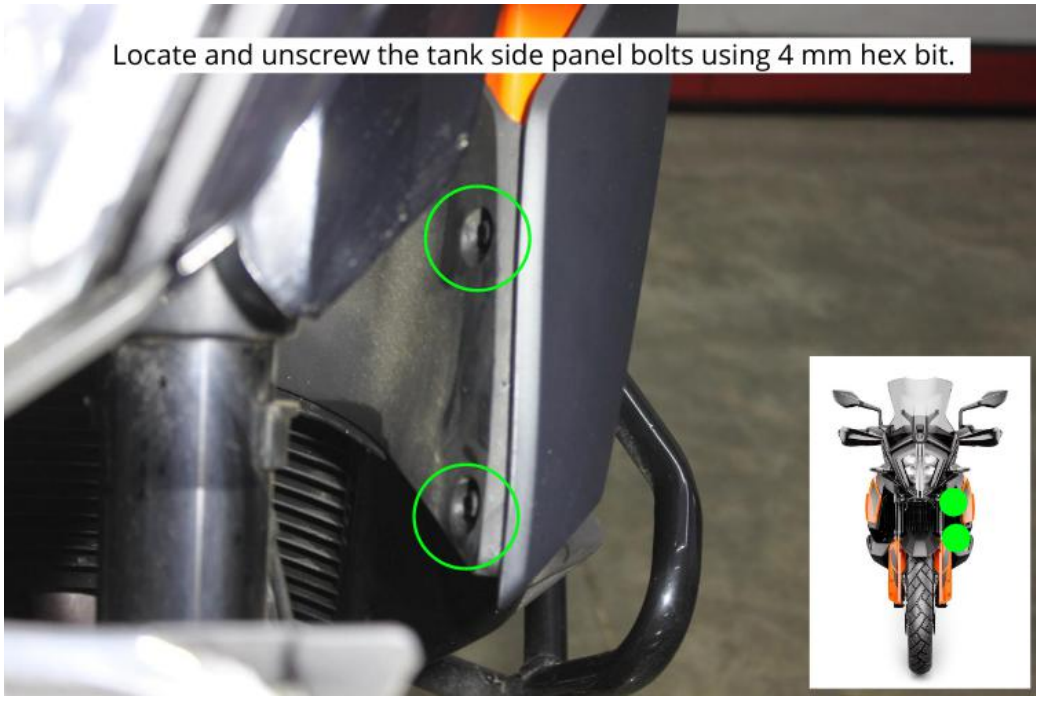


Image 10

***3.1.6*** Gently detach the side panel from the tank. Repeat the process on the other side of the bike. Refer **Image 11**.


Image 11

***3.1.7*** Remove the brackets after removing the bolts using 4mm Hex bit. Refer **Image 12**

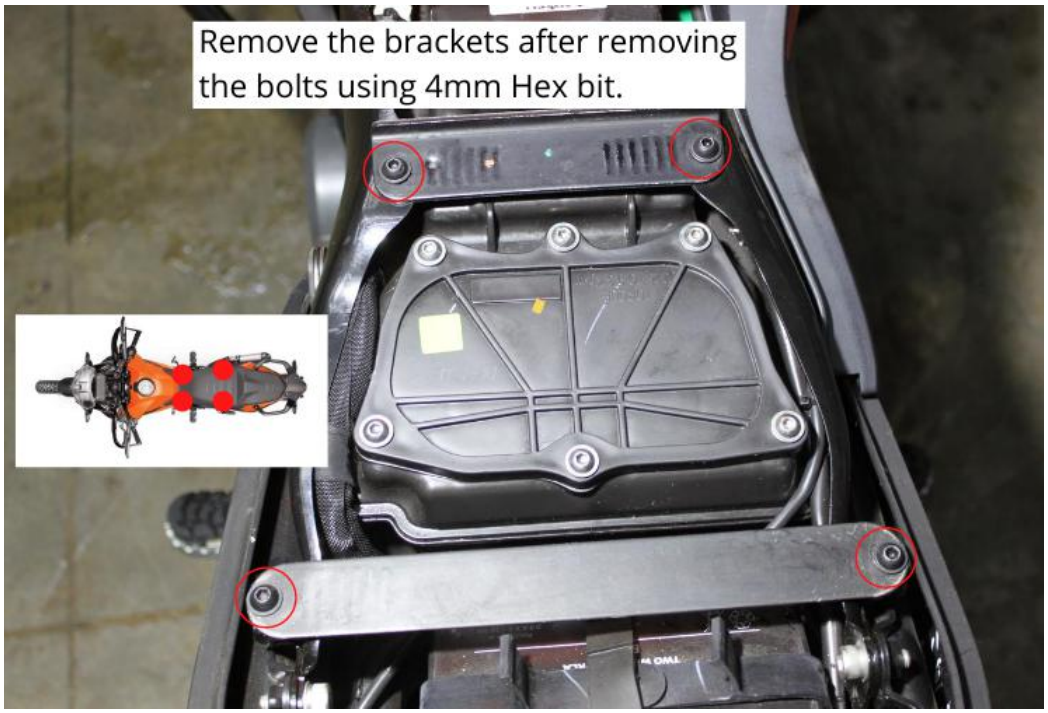


Image 12

Image 12

Image 12

***3.1.8*** Unscrew the side panel bolt using 10 mm Hex socket. Refer **Image 13**.


Image 13

***3.1.9*** Loosen the the side panel bolt using 6 mm Allen key. Refer **Image 14**.

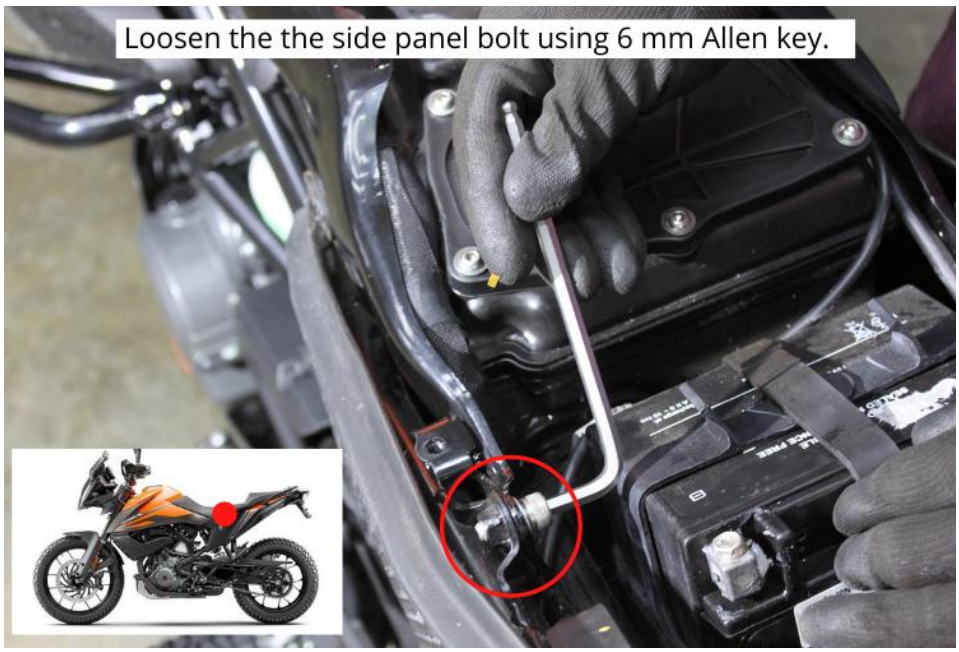


Image 14

***3.1.10*** Locate the ignition coil cover using 5 mm Hex bit. Refer **Image 15**.


Image 15

***3.1.11*** Unscrew the bolts from the ignition coil cover. Refer **Image 16**


Image 16

***3.1.12*** Remove the ignition coil cover. Make sure the electrical connections attached to the bolt position. Refer **Image 17**


Image 17

***3.1.13*** Make sure the electrical connections attached to the bolt position are reattached while connecting the cover back. Refer **Image 18**

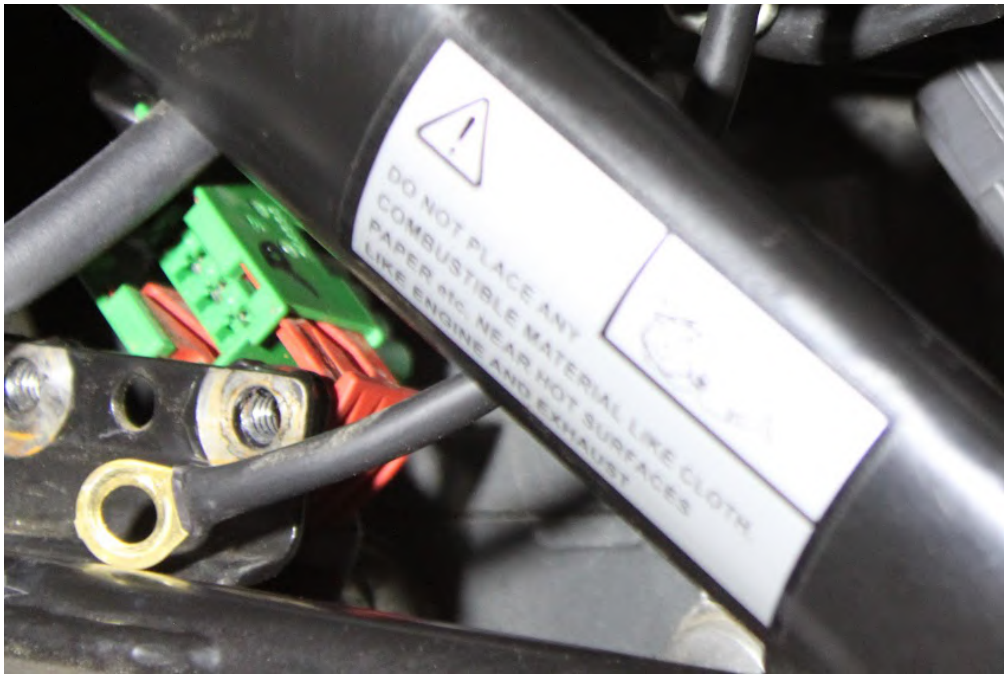


Image 18

### 3.2 Routing the harness

***3.2.1*** Place the harness on the bike. Note that TPS connector goes to the right side of the bike. All other connectors go to left. Refer **Image 19**.

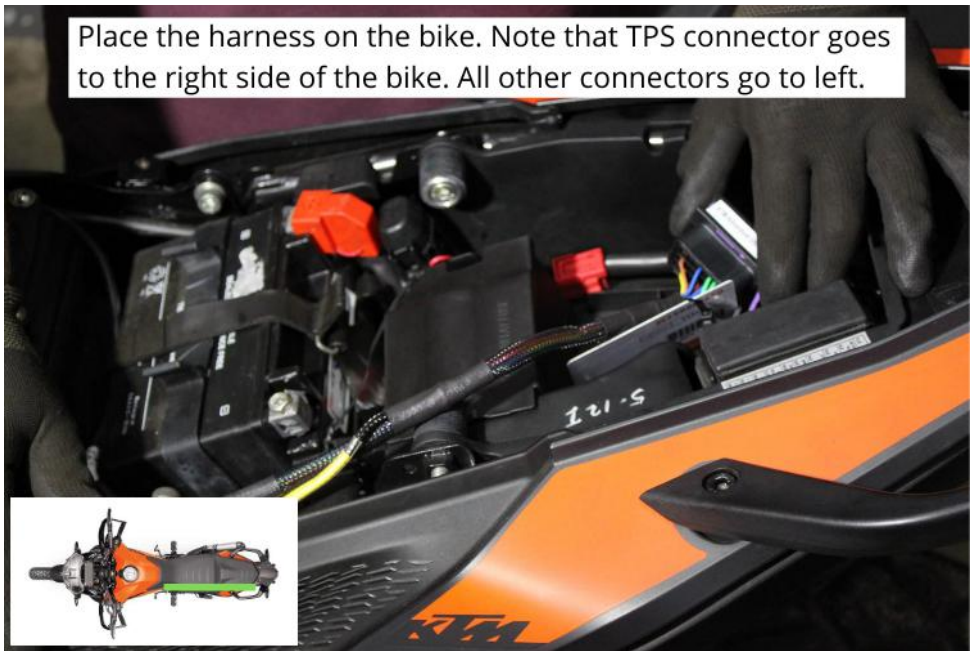


Image 19

***3.2.2*** Apply slight pressure and push the harness into the fairing. Refer **Image 20.**

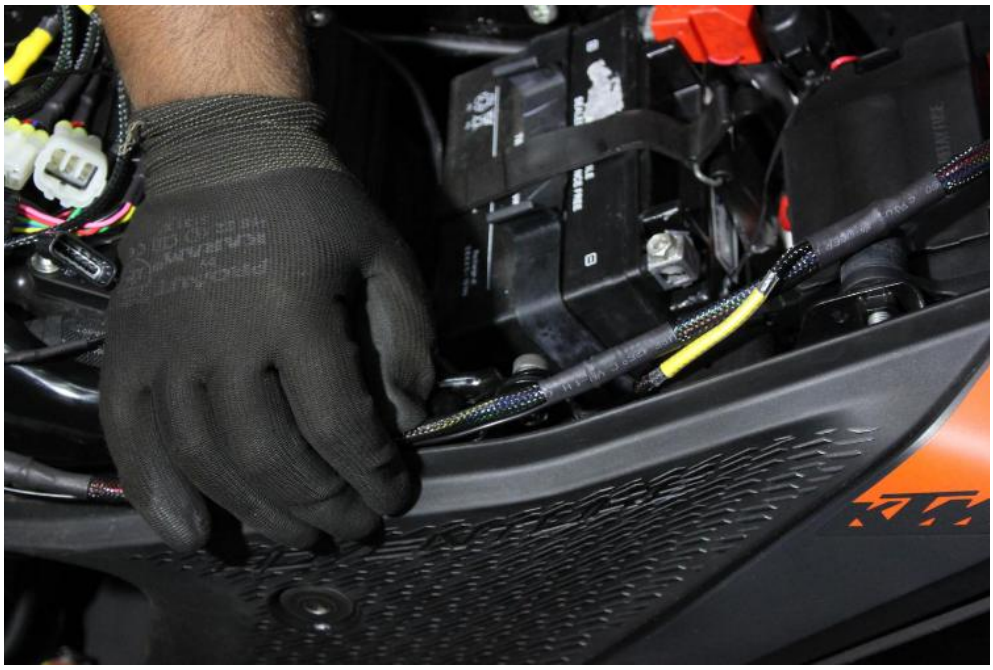

Image 20

***3.2.3*** Carefully route the harness under the tank on both sides. Once the harness is through, route it inside the frame. Refer **Image 21** Front left fairing is removed to show how how the routing is done.

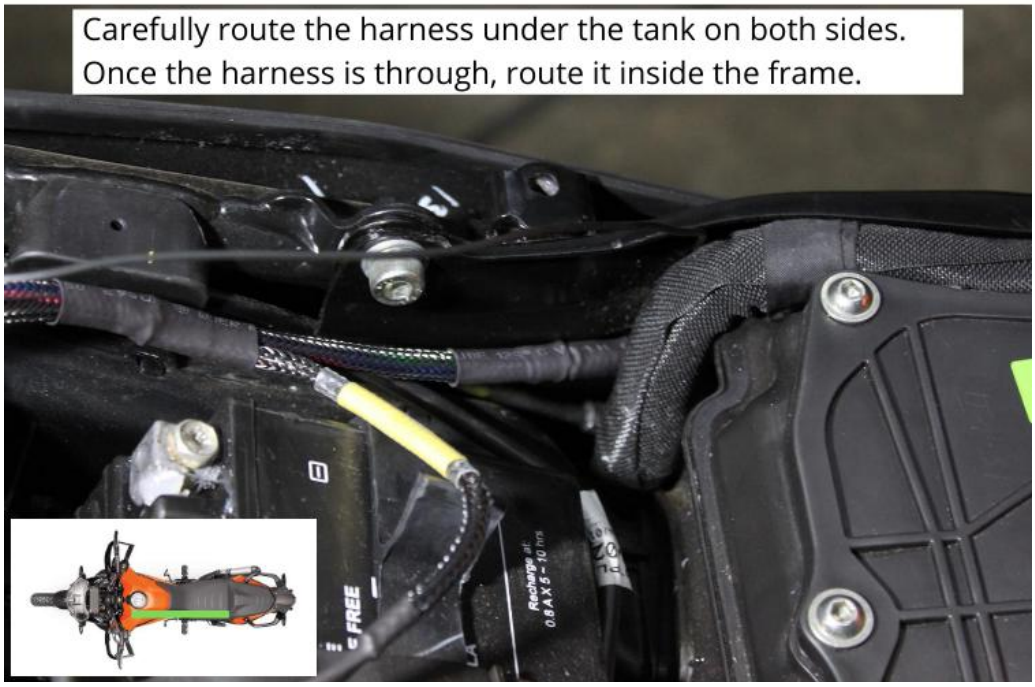


Image 21

***3.2.4*** Route the connectors under the tank on both the sides of the bike and push them into the metal casings. Refer **Image 22**

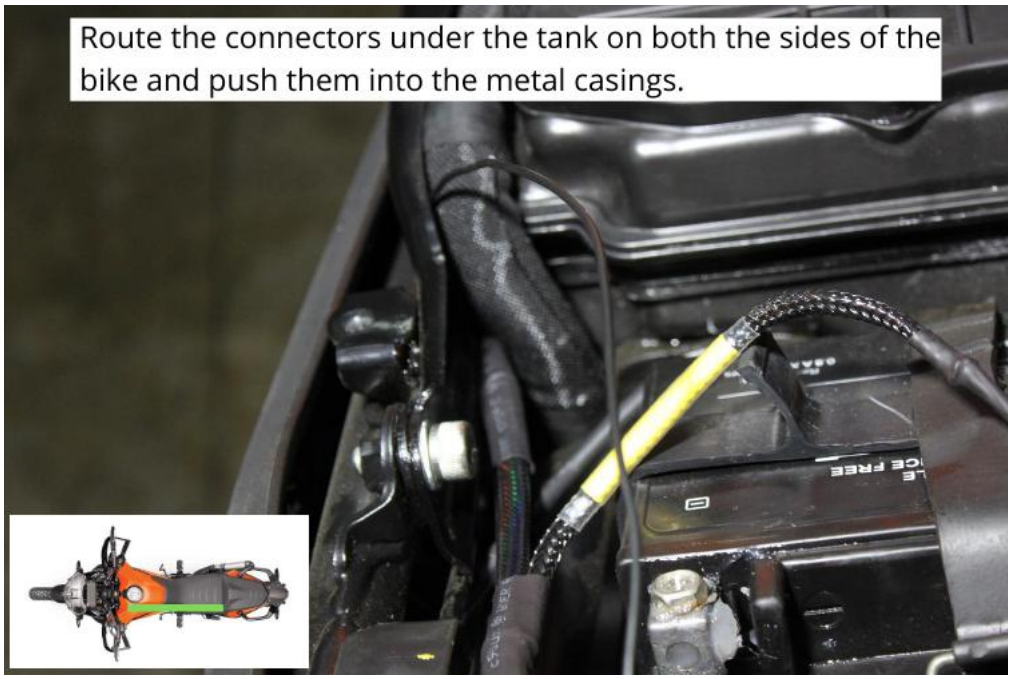

Image 22

***3.2.5*** Secure the harness by pushing it under the metal frame. Refer **Images 23**

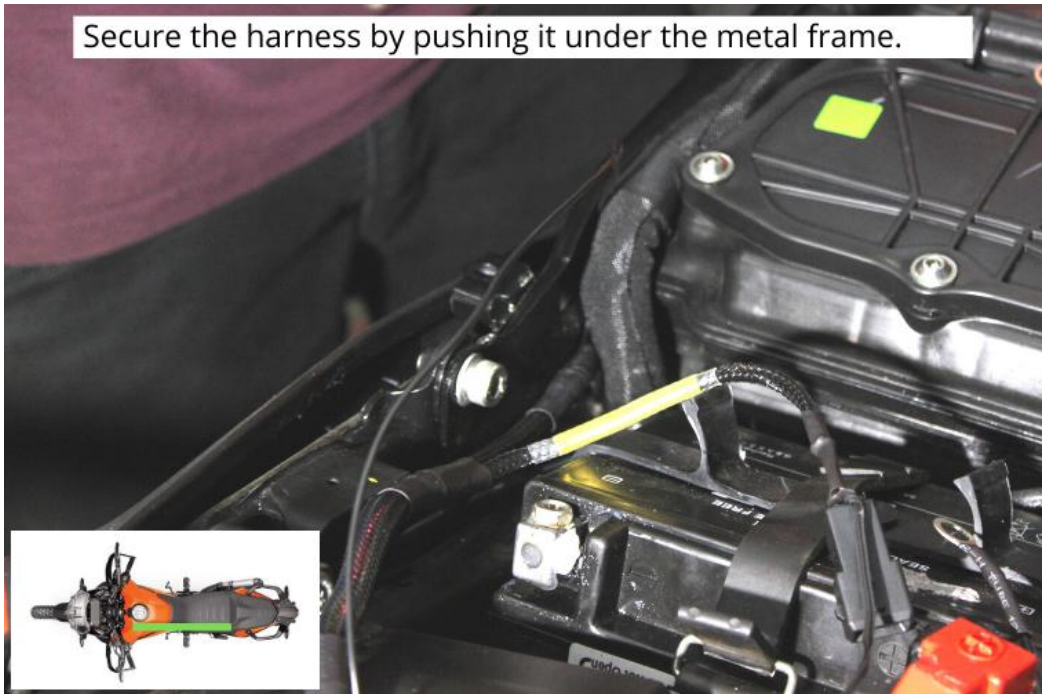


Image 23

***3.2.6*** Secure the TPS line of the harness to the right side by pushing it under the metal frame. Refer **Image 24**

Image 24

***3.2.7*** Route the Ground Terminal connector to the battery negative. Refer **Image 25**.

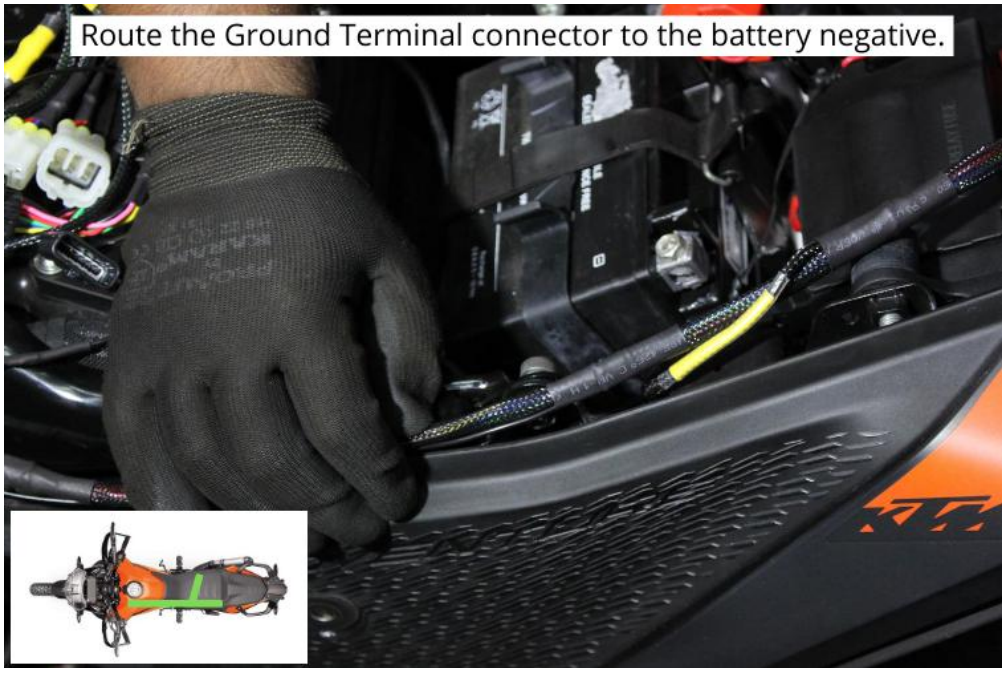


Image 25

***3.2.8*** Refer **Image 26** for completed routed view from left end.

Image 26

### 3.3 Fuel Injector Connector (Left side of the bike)

***3.3.1*** Locate the stock injector connector of your bike. Refer to **Image 27** and **Image 28** below.


Image 27

Image 28

***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 29**) below.


Image 29

***3.3.4*** Connect the female PowerTRONIC injector connector to the stock male injector connector. Refer **Image 30**

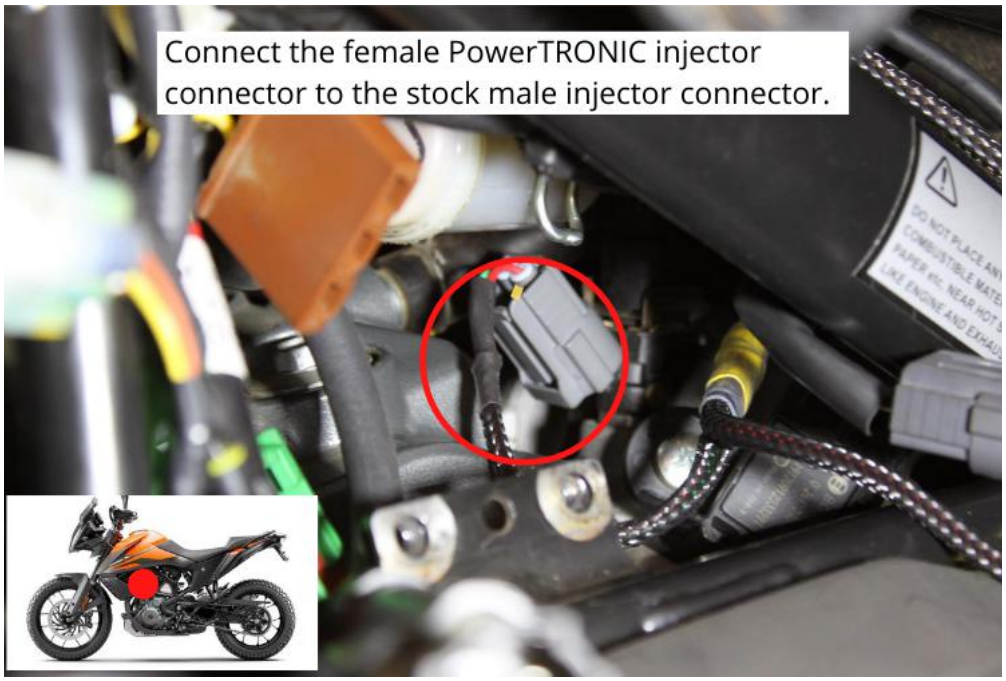

Image 30

***3.3.5*** Connect the stock female injector connector to the PowerTRONIC male injector connector. Refer **Image 31**

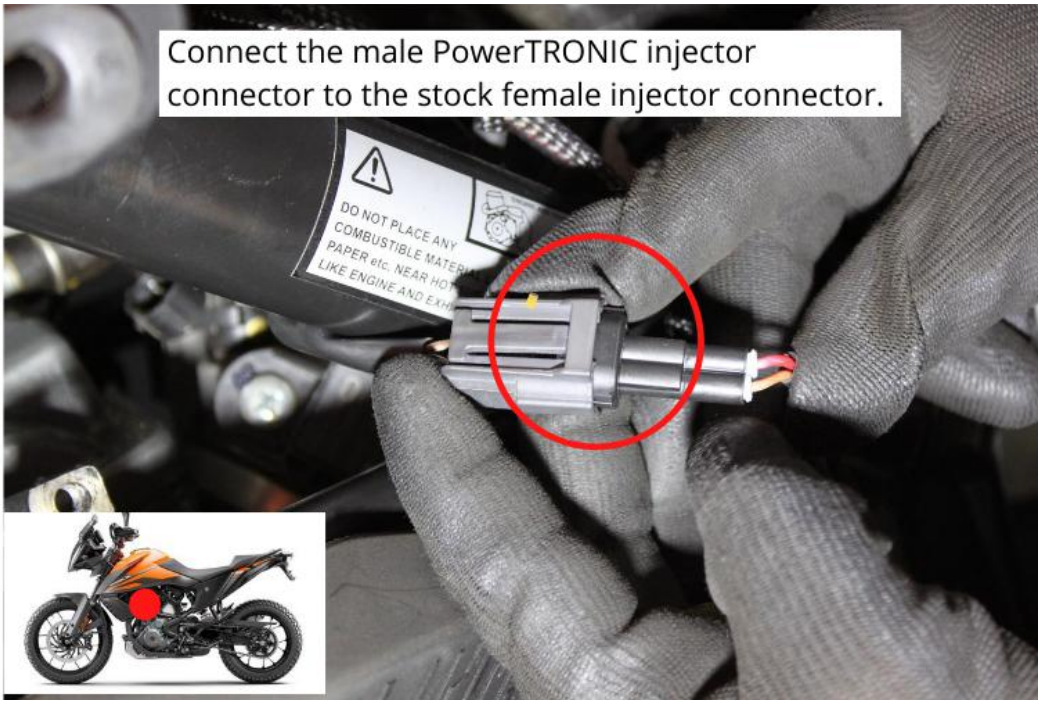


Image 31

### 3.4 Crank position sensor (Left side of the bike)

***3.4.1*** Locate the stock crankshaft position sensor connector on the bike. Usually located right above the engine. Refer **Image 32** and **Image 33** below.

To identify the CKP connector, locate the connector which include red-white striped wire.

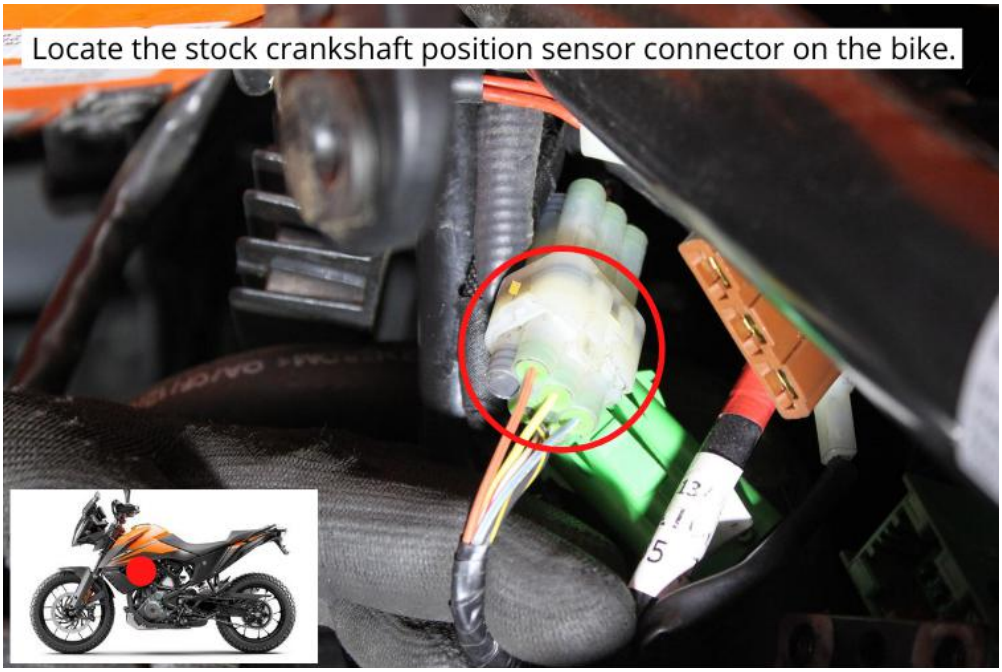


Image 32

Image 33

***3.4.2*** Disconnect the stock CKP connector. Refer **Image 34**.


Image 34

***3.4.3*** Connect PowerTRONIC male CKP connector to the stock female CKP connector. Refer **Image 35**

Image 35

***3.4.4*** Connect the PowerTRONIC female CKP connector to the stock male connector. **Refer Image 36**


Image 36

### 3.5 Ignition Coil Connector (Left side of the bike)

***3.5.1*** Locate the stock Spark/Ignition coil connector on the ignition coil. Usually located right above the engine. Refer **Images 37** and **Image 38** below.


Image 37

Image 38

***3.5.2*** Identify the Spark/Ignition coil connector in the PowerTRONIC wiring harness. The connectors are labelled 'SPK'
***3.5.3*** Disconnect the stock ignition coil connectors. Refer **Image 39** below.


Image 39

***3.5.4*** Connect the PowerTRONIC Ignition coil female connector to the stock ignition coil male connector. Refer **Image 40** below.

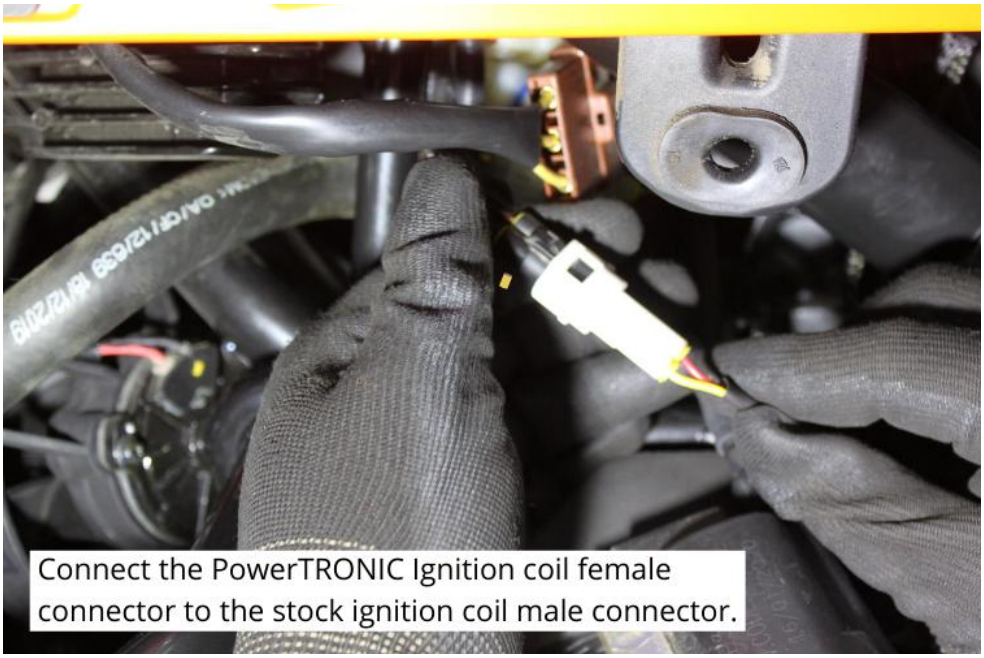


Image 40

***3.5.5*** Connect the PowerTRONIC Ignition coil female connector to the stock ignition coil male connector. Refer **Image 41** below.

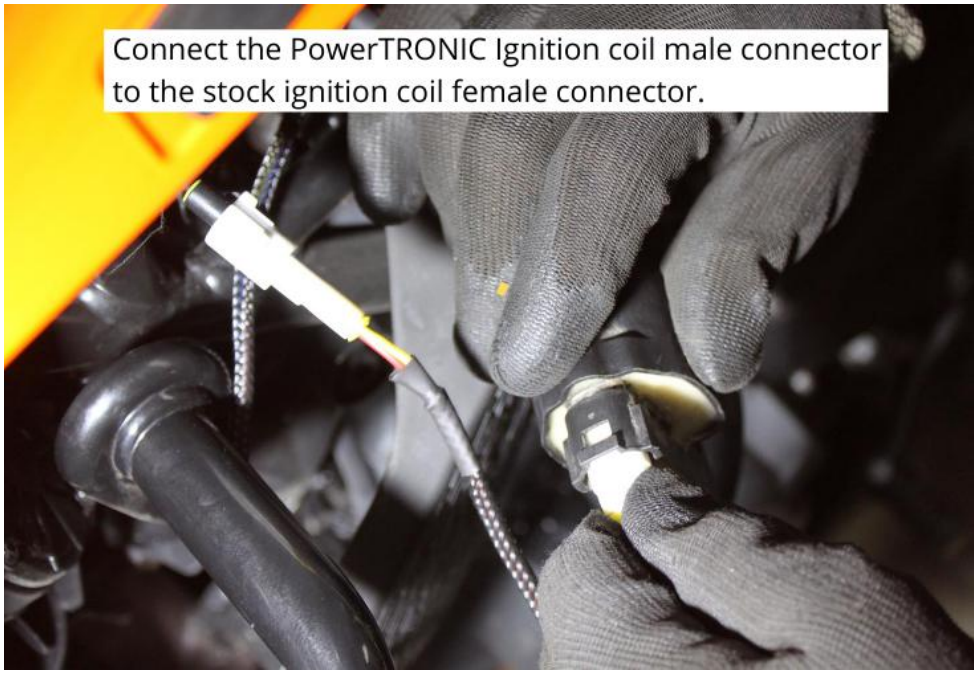


Image 41

***3.5.6*** Refer **Image 42** for completed view.

Image 42

***3.5.7*** Place the connectors and ignition coil back to the original position. Before tightening the bolt of the ignition coil to the frame, make sure the battery negative terminals is kept in place.

***3.5.8*** Connect the Ignition coil cover to the frame. Refer **Image 44.**

Image 44

**Move to the right side of the bike**

Image 45

### 3.6 Throttle position sensor connector (Right side of the bike)

***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 **Image 46** and **Image 47** below.


Image 46

Image 47

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

***3.6.3*** Disconnect the stock TPS connector. Refer **Image 48**


Image 48

***3.6.4*** Connect the PowerTRONIC male TPS connector to stock female connector. Refer **Image 49**.


Image 49

***3.6.5*** Connect the PowerTRONIC female TPS connector to stock male connector. Refer **Image 50**.

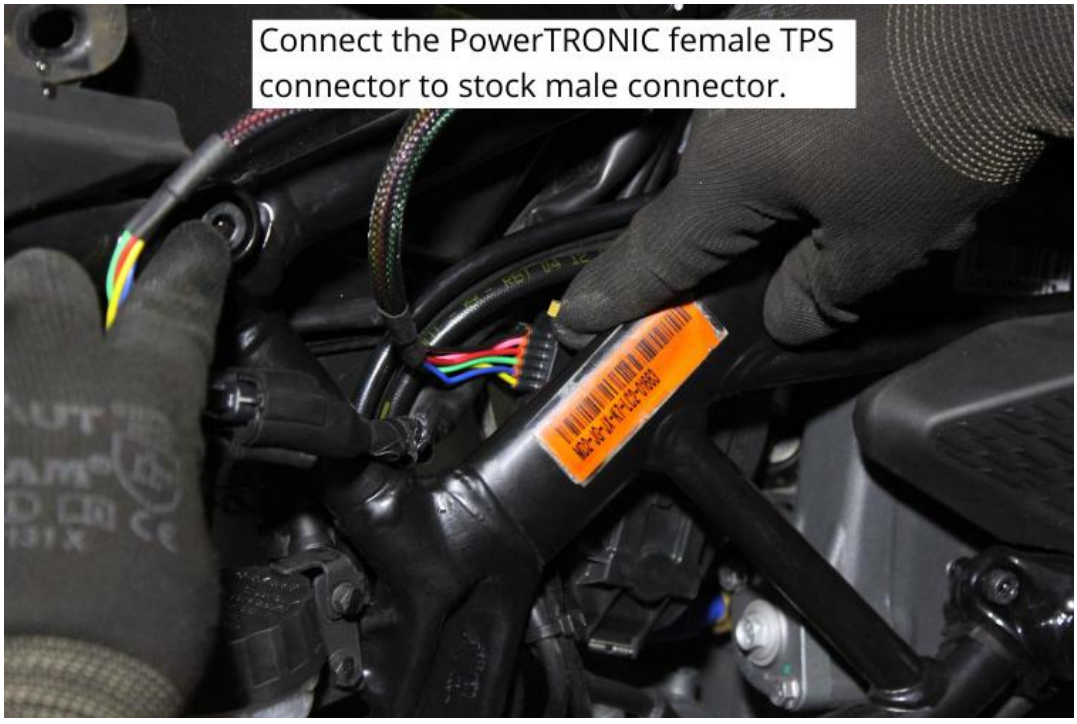


Image 50

***3.6.6*** 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 GND. Refer **Image 51**

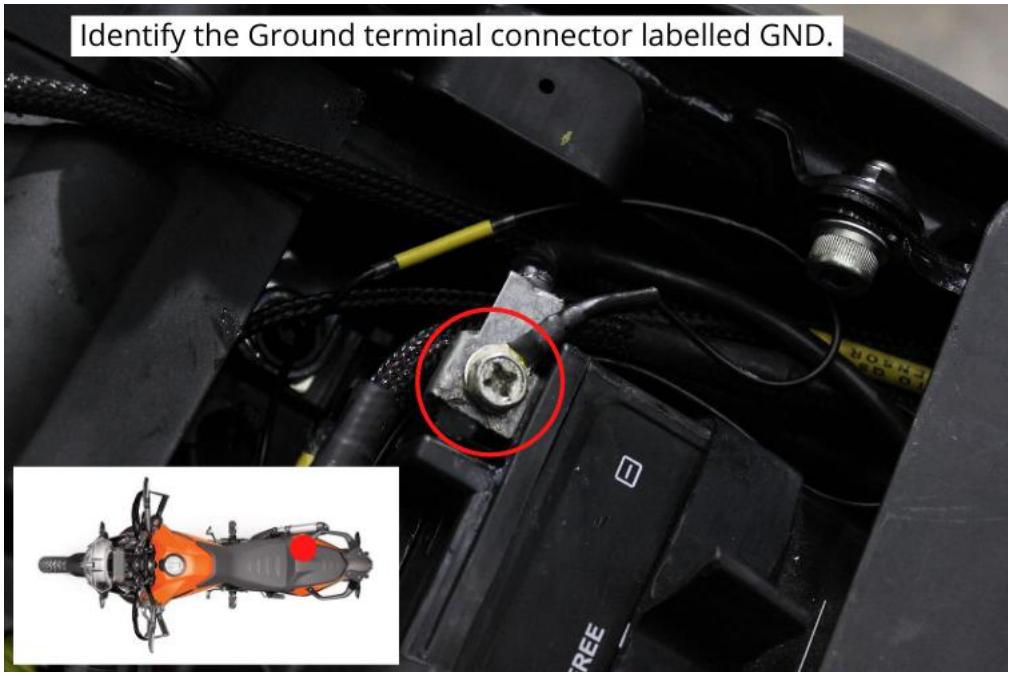


Image 51

### 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 the **Image 52**


Image 52

**Important note:** The PowerTRONIC harness contains a Quick shifter connector. If you have bought the Quickshifter please attach the connector to it.

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 53***


Image 52

### 3.10 Plugging in the PowerTRONIC ECU.

Connect the PowerTRONIC to the harness by connecting the 24 pin connector. Secure it in the glove box. Refer **Image 53**.


Image 53

### 3.11 Attaching the panels/fairing etc

Attach the panels, fairing as removed from the bike.