

PowerTRONIC Installation Manual- KTM RC 390 (2014-2019)

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Application information	Vehicle Specific
Vehicle	KTM
Model	RC 390
Year of manufacture	2014-2016
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 connector • Spark/Ignition coil connector • Throttle position connector (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	Main tools	Optional tools
1	M4, M5, 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**

Locate the connectors/hoses/wires



Image 2

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

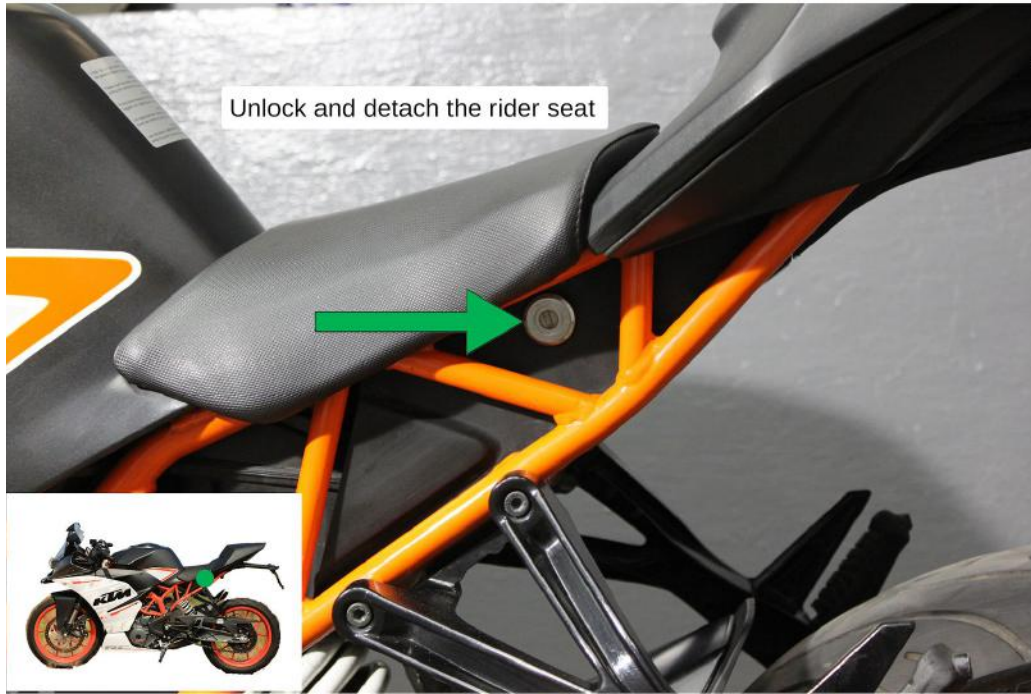


Image 3



Image 4

3.1.2 Locate the pillion rider seat bolt- Refer [Image 5](#)



Image 5

3.1.3 Unlock the pillion rider seat by unscrewing the bolt using M5 hexagonal bit. Refer [Image 6](#)



Image 6

3.1.4 Detach the pillion rider seat. Refer **Image 7**



Image 7

3.1.5 **Image 8** shows the seats detached.



Image 8

3.1.6 Locate and unscrew the bolts on the side fairing from both sides using M5 and M4 hex bits. 3 bolts are removed using M5 hex bit and 2 bolts are removed using M4 hex bit tools. Refer [Image 9](#)



Image 9

3.1.6 Locate and pull 3 rivets inside the fairing on both sides. Refer [Image 10](#)

Note: Rivets are not visible from outside and are located inside the fairings



Image 10

3.1.6 Remove the side fairings from both the sides. Refer [Image 11](#).



Image 11

3.1.13 Locate the battery cover lock under rider seat on the right side of the bike. Refer [Image 12](#)



Image 12

3.1.13 Pull the hook to unlock the battery cover . Refer **Image 13**



Image 13

3.1.13 Remove the battery cover . Refer **Image 14**



Image 14

3.1.7 Locate the tank cover bolts on both sides. Refer [Image 15](#)



Image 15

3.1.8 Unscrew the bolts using M10 hexagonal socket. Refer [Image 16](#).



Image 16

3.1.9 Locate the tank cover side bolts on both sides. Refer **Image 17**.



Image 17

3.1.10 Unscrew the bolts using M4 Hex bit on both sides. Refer **Image 18**.



Image 18

3.1.11 Locate the fuel tank lid and cap bolts on top of fuel tank. Refer [Image 19](#)



Image 19

3.1.12 Unscrew the bolts using M4 Hex bit. Refer [Image 20](#)



Image 20

3.1.13 Unlock the fuel tank lid and cap. Refer **Image 21**



Image 21

3.1.13 Remove the fuel tank lid and cap. Refer **Image 22**



Image 22

3.1.13 Remove the fuel tank cover carefully. Refer **Image 23**



Image 23

3.1.13 After removing the tank cover, place the lid back and lock the lid on the fuel tank to avoid the evaporation of fuel. Refer **Image 24**



Image 24

3.1.13 Locate the fuel tank mounted bolts. Refer [Image 25](#)

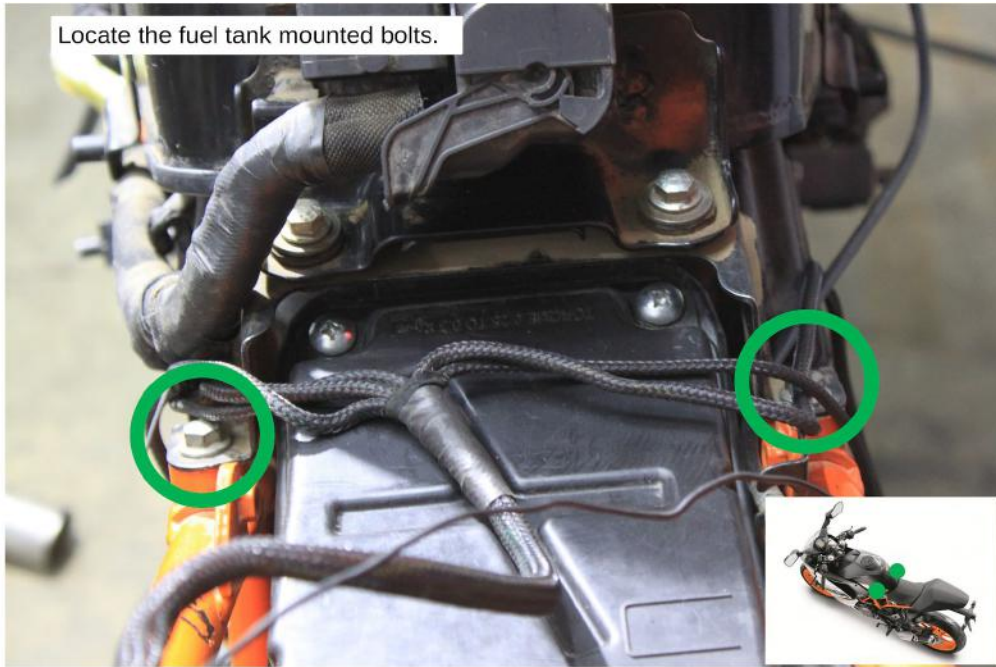


Image 25

3.1.13 unscrew the bolts using M10 hexagonal T socket on both sides. Refer [Image 26](#)



Image 26

3.2 Routing the harness

3.2.1 Note that TPS and ignition coil (SPK) connectors goes to the right side of the bike. All other connectors go to left. Fuel and CKP connectors goes from left to right inside the bike. Refer [Image 27](#)

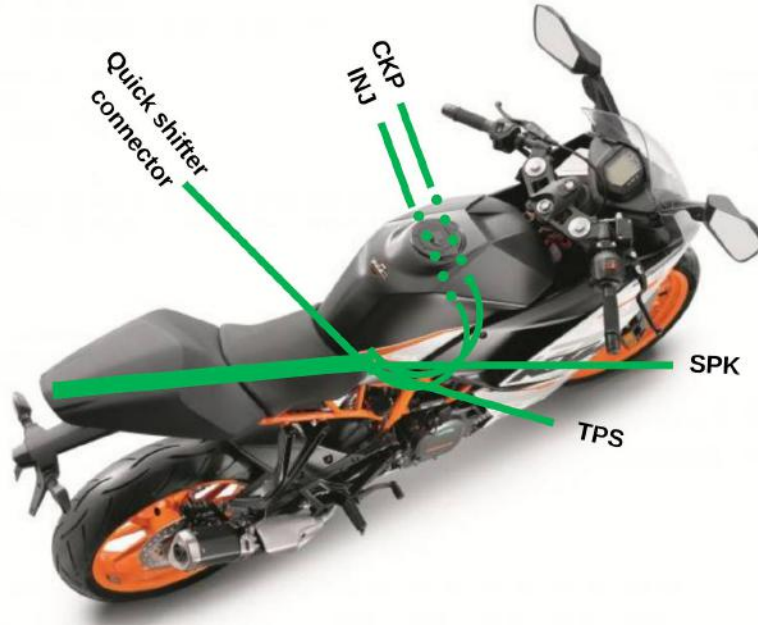


Image 27

3.2.1 Place the harness on the bike. Refer [Image 28](#).



Image 28

3.2.2 Apply slight pressure and push the harness into the frame on the right side. Refer [Image 29](#).



Image 29

3.2.2 Route the harness between the tank mounting plate and frame of the bike. Refer [Image 30](#).



Image 30

3.2.3 The ignition coil connectors, ground connector and TPS connector wires are routed to right side of the bike. Route the Injector connector and CKP connector to right side through the frame. Let the QS connector be routed to the left side. Refer **Image 31**, **Image 32** and **Image 33**.

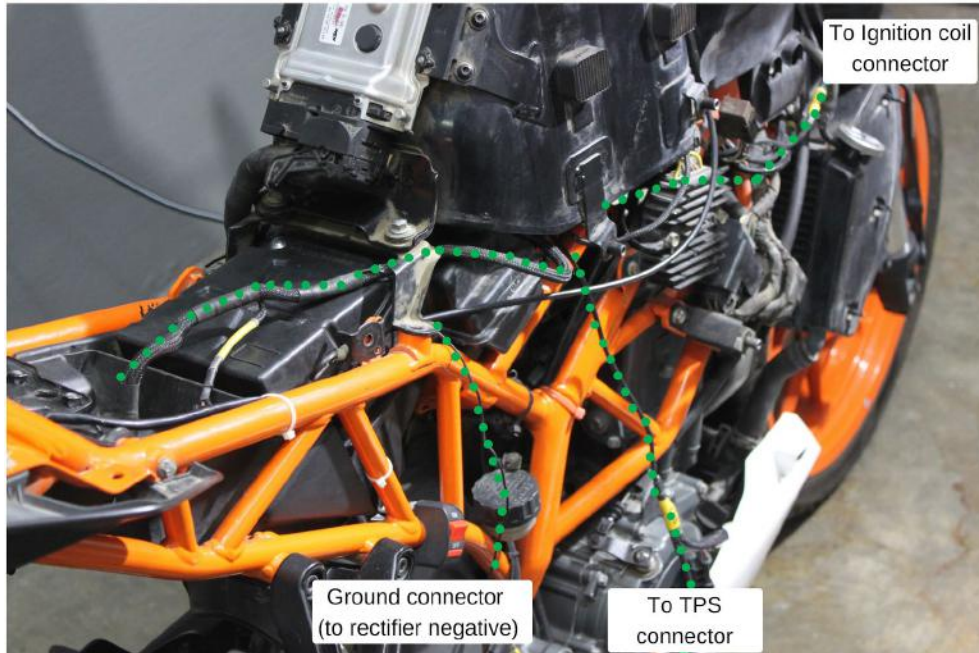


Image 31

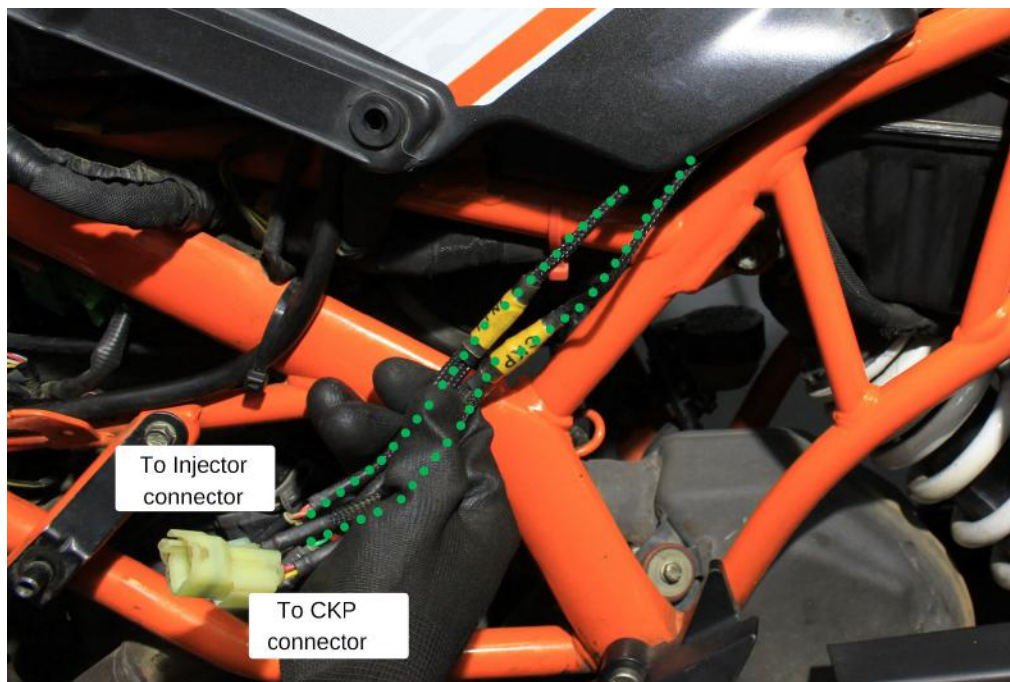


Image 32



Image 33

3.3 Fuel Injector Connector (Left side of the bike)

3.3.1 Locate the stock injector connector of your bike. Refer [Images 34](#) and [Image 35](#).



Image 34



Image 35

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 [Image 36](#)



Image 36

3.3.4 Connect the PowerTRONIC female injector connector to the stock male injector connector. Refer [Image 37](#)



Image 37

3.3.5 Connect the stock female injector connector to the PowerTRONIC male injector connector. Refer [Image 38](#)



Image 38

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 **Images 39** and **Image 40** below.

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

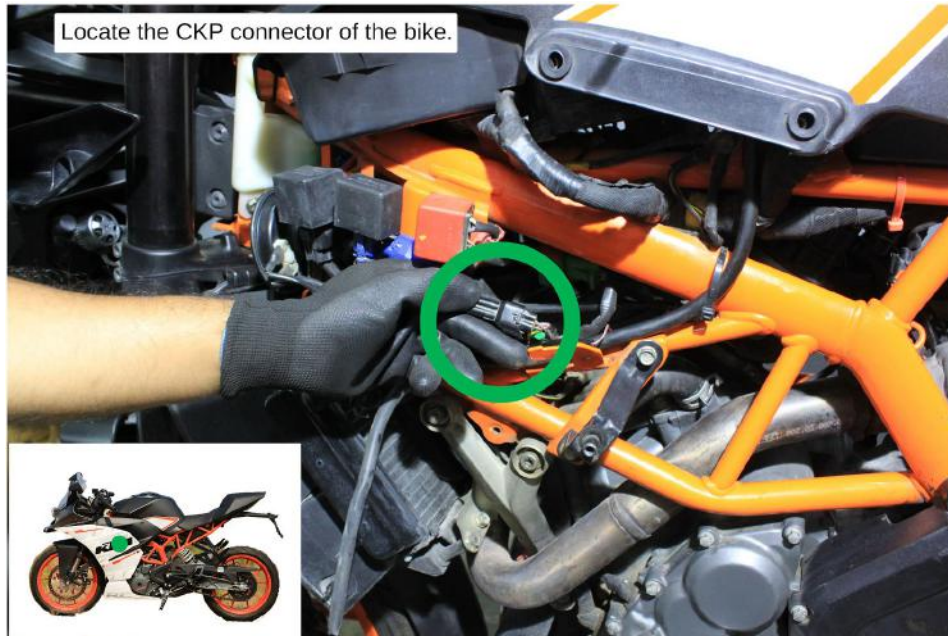


Image 39



Image 40

3.4.2 Identify the fuel injector connector in the PowerTRONIC wiring harness. The connectors are labelled 'INJ'

3.4.2 Disconnect the stock CKP connector. Refer **Image 41**.



Image 41

3.4.3 Connect PowerTRONIC male CKP connector to the stock female CKP connector. Refer **Image 42**



Image 42

3.4.4 Connect the PowerTRONIC female CKP connector to the stock male connector. Refer [Image 43](#)

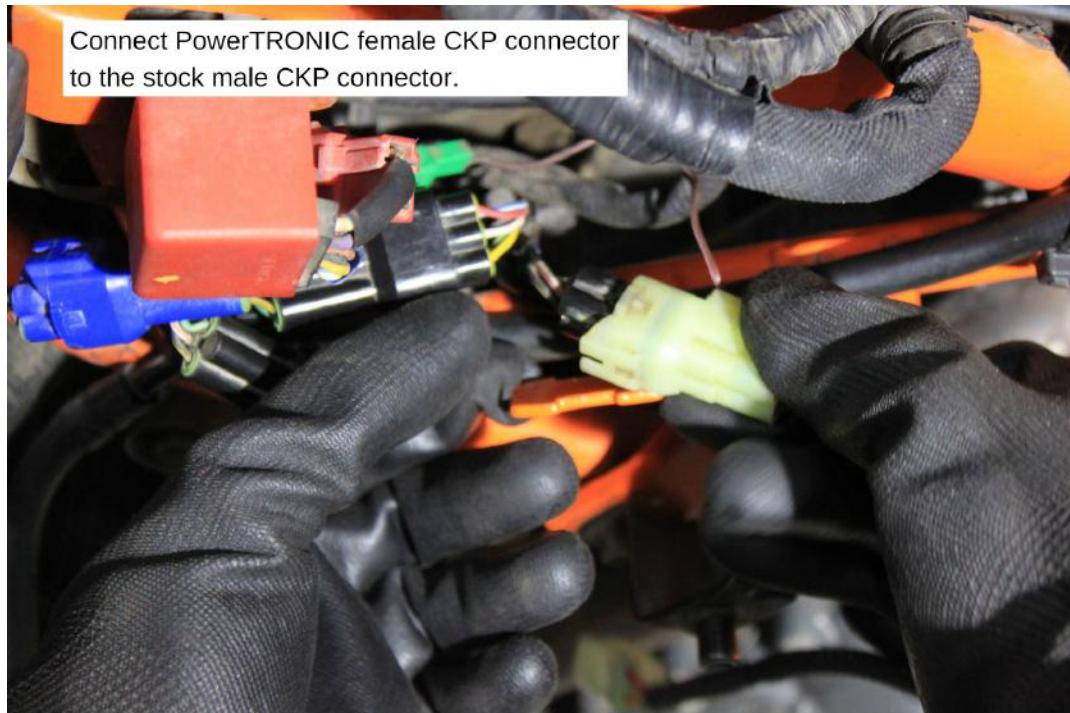


Image 43

Move to the right side of the bike



Image 44

3.5 Ignition Coil Connector

3.5.1 Locate the stock Spark/Ignition coil connector on the ignition coil. Usually located right above the engine. Refer **Images 45** and **Image 46**



Image 45



Image 46

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 47** below.



Image 47

3.5.4 Connect the PowerTRONIC Ignition coil male connector to the stock ignition coil female connector. Refer **Image 48**



Image 48

3.5.5 Connect the PowerTRONIC Ignition coil female connector to the stock ignition coil male connector. Refer [Image 49](#)



Image 49

3.5.6 Refer [Image 50](#) for completed view.



Image 50

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 51** and **Image 52**.



Image 51



Image 52

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 53**



Image 53

3.6.4 Connect the PowerTRONIC male TPS connector to stock female connector. Refer **Image 54**.



Image 54

3.6.5 Connect the PowerTRONIC female TPS connector to stock male connector. Refer [Image 55](#).



Image 55

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 Locate the negative terminal of the rectifier. Refer [Image 56](#)



Image 56

3.7.2 Unscrew the rectifier negative terminal bolt. Refer [Image 57](#)



Image 57

3.7.3 Connect the PowerTRONIC ground connector to the rectifier negative. Refer [Image 58](#)



Image 58

3.7.4 Tighten the rectifier negative bolt. Refer [Image 59](#).



Image 59

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 60](#)



Image 60

Important note: The PowerTRONIC harness contains 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 if removed.

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.**



Image 61

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 62**.



Image 62

3.11 Attaching the panels/fairing etc

Attach the panels, fairing as removed from the bike.