

# PowerTRONIC V4 Installation Manual

## Kawasaki Ninja 300 (2021-2022)

Document Version	1	Release Date	01 August 2023
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Application information	Vehicle Specific
Vehicle	<b>Royal Enfield</b>
Model	<b>Kawasaki Ninja 300</b>
Year of manufacture	<b>2021-2022</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 tend 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"> <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 connections.</li> </ul>
3	Harness	Bike specific harness contains the following connectors <ul style="list-style-type: none"> <li>• Fuel injector connectors</li> <li>• Spark/Ignition coil connectors</li> <li>• Throttle position sensor connector (TPS)</li> <li>• Crank Position (CKP) Sensor Connector tapping wire</li> <li>• Map selection connector</li> <li>• Quickshifter 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	Main tools	Optional tools
1	M8, M10, M12 Hexagonal socket	Spinner handle
2	M10, 12 T bar Hexagonal Socket wrench	Ratchet handle
3	Size 4, Size 5, Size 6 Hex bit	Ratchet handle
4	Wire cutter	M4 hex bit

### 3. Installation procedure

### 3.1 Removing panels and fairing

Begin at the right side of the bike.

Park the bike using the paddock stand on a level surface



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 to **Image 5** and **Image 6**



Image 5

3.1.3 Locate and remove the Pressing clips under the pillion seat.



Image 6

**3.1.4 Remove the side panel by removing highlighted screws.**



Image 7

**3.1.5 Detach the seat carefully by removing the side bolt.**

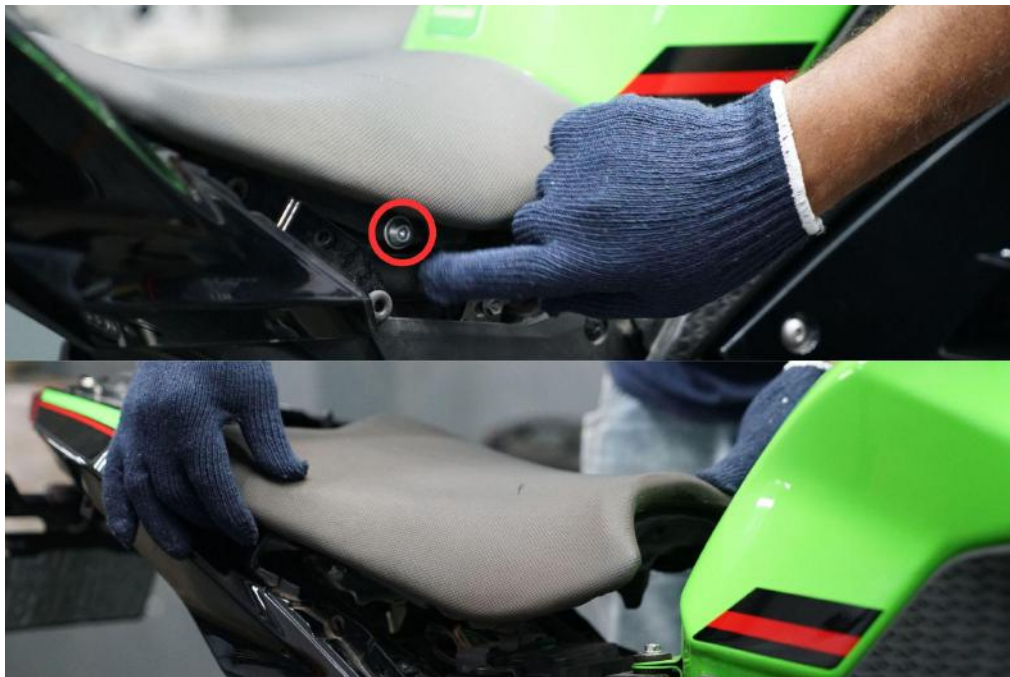


Image 8

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



Image 9

3.1.7 Locate and detach the pins on the front panel

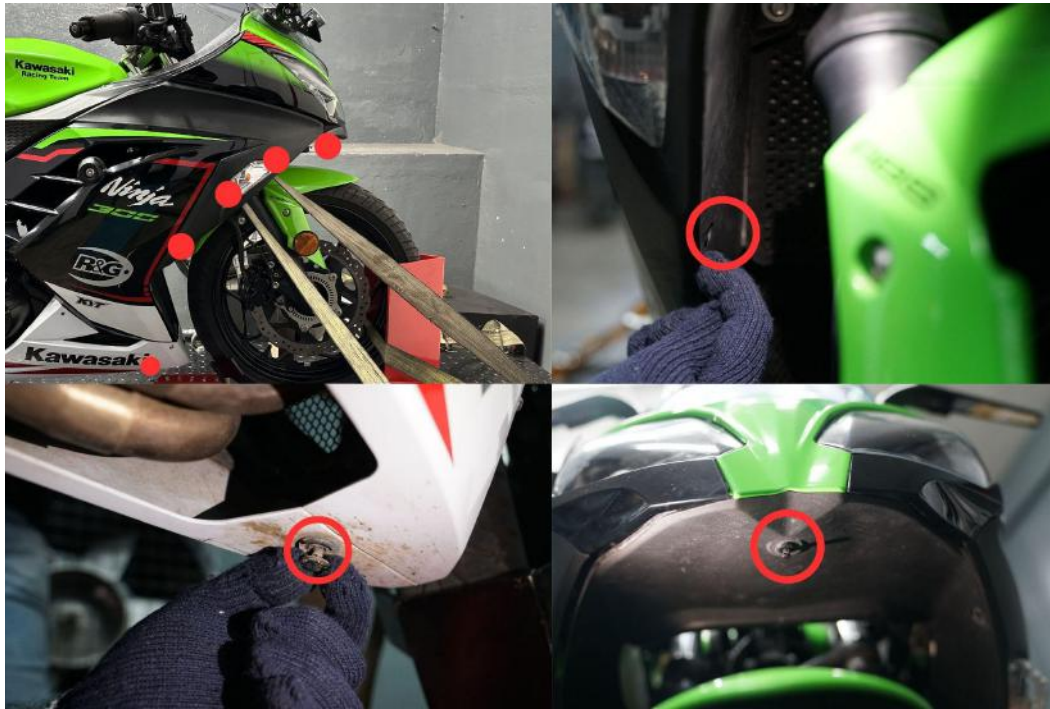


Image 10

**3.1.8** Locate and detach the pin and 4mm Hallen bolts on the bottom panel.



Image 11

**3.1.9** Carefully detach the side indicator connections and bolts on the side panel.



Image 12



**3.1.10** Remove the inner panel to expose the inner mounting screws



Image 13

**3.1.11** Carefully detach the side panel. Repeat the process on the other side also.



Image 14

**3.1.12** Unscrew the tank rear bolts using the 10mm Hex T handle. Then disconnect the vacuum hoses and fuel line by gently pulling the red lock pin



Image 15

**3.1.13** Gently lift the rear end of the fuel tank.



Image 16

**3.1.14** Remove the under-seat metal clam and rear panels

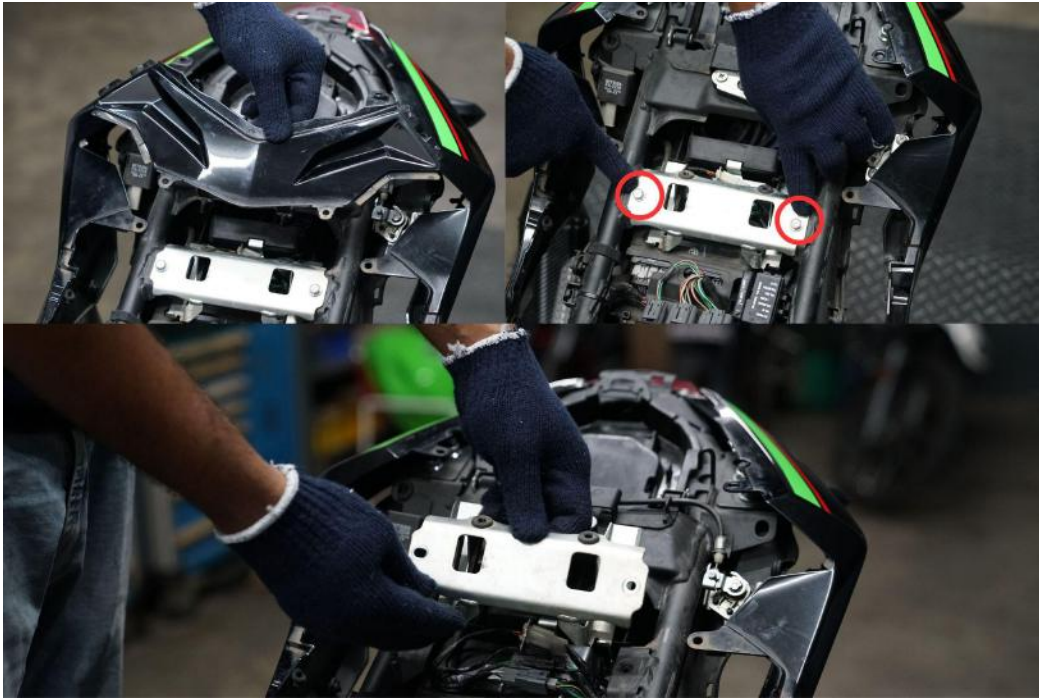


Image 17

### 3.2 Routing the harness

**3.2.1** Starting from the glove compartment, route each connector terminal between the welded plate and the mudguard. Refer to **Image 18**.



Image 18

**3.2.2** Start from the glove compartment, and route each connector terminal between the mudguard and seat center panel.



Image19

### 3.3 Fuel Injector Connector (both sides of the bike)

**3.3.1** Locate the stock injector connector of your bike. It can be located under the ABS module, on the throttle body. Refer to **Image 20** and **Image 21** below



Image 20



Image 21

**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 to the zoomed view ([Image 22](#)).



Image 22

**3.3.4** Connect the female PowerTRONIC injector connector to the stock male injector connector. Refer to [Image 23](#).



Image 23

**3.3.5** Connect the stock female injector connector to the PowerTRONIC male injector connector. Refer to **Image 24**.



Image 24

**3.3.6** Repeat the steps on the right side of the bike.

### 3.4 Ignition Coil Connector (Both sides of the bike)

**3.4.1** Locate the stock Spark/Ignition coil connector on the ignition coil, located right above the engine. Refer to **Image 25** and **Image 26**.



Image 25



Image 26



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

**3.4.3** Detach the stock ignition coil connectors. Refer to **Image 27**.



Image 27

**3.4.4** Connect the PowerTRONIC Ignition coil male connector to the stock ignition coil female connector. Refer to **Image 28**.



Image 28

3.4.5 Connect the PowerTRONIC Ignition coil female connector to the stock ignition coil male connector. Refer to [Image 30](#).



Image 30

### 3.5 Throttle position sensor connector (Left side of the bike)

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 to [Image 31](#) and [Image 32](#).



Image 31



Image 32

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 to **Image 33**

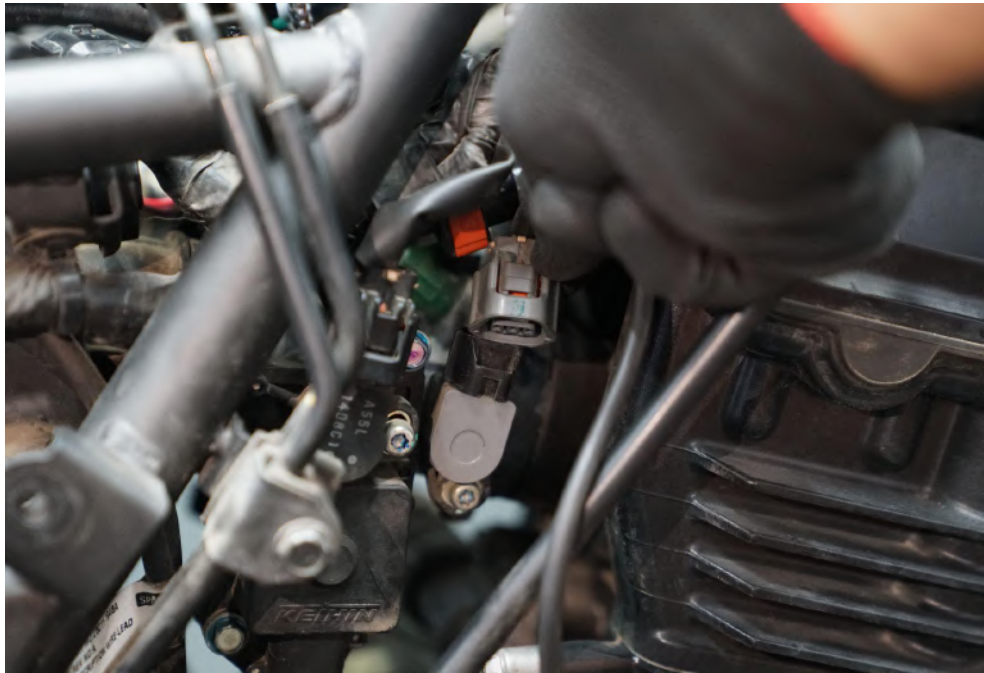


Image 33

3.5.4 Connect the PowerTRONIC male TPS connector to the stock female connector. Refer to **Image 34**.

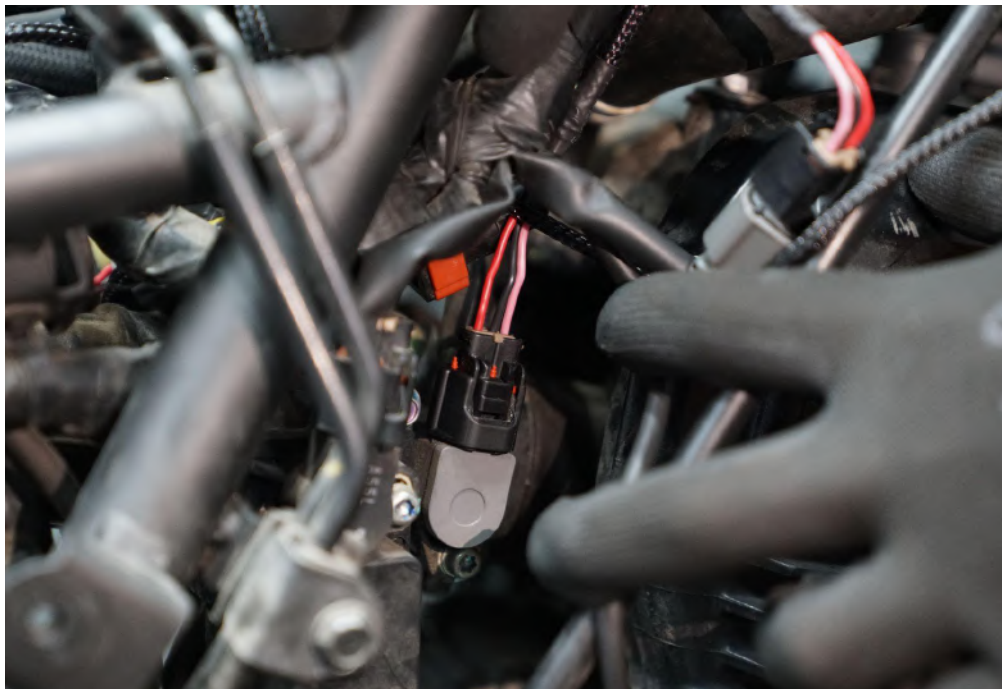


Image 34

3.5.5 Connect the PowerTRONIC female TPS connector to the stock male connector. Refer to **Image 35**.



Image 35

3.5.6 We advise you to perform a TPS calibration after the installation of the PowerTRONIC ECU.

Refer:<https://powertronicecu.com/wp-content/plugins/wp-extra-file-types/PowerTRONIC%20V4%20-%20TPS%20Calibration%20-min.pdf>

### 3.6 Crank Position Sensor Tapping

**3.6.1** Locate the CKP sensor connector. It is a two-wire connector and can be found inside the rubber protective cover. Refer to **Image 36**



Image 36

**3.6.2** Identify the crank Position sensor connector in the PowerTRONIC wiring harness, labeled as CKP'

**3.6.3** Tap the CKP connector of the bike with the CKP wire. (Yellow Wire). Refer to **Image 37**



Image 37

3.6.4 Tap the CKP connector of the bike with the CKP wire. (Yellow Wire) Refer to **Image 38**.



Image 38

### 3.7 Ground Terminal Connector (Right side of the bike)

3.7.1 Locate the ECU mount screw on the battery. Refer to [Image 39](#).



Image 39

3.7.2 Gently lift the ECU mount after carefully detaching it from the lock on the other side. Refer to [Image 40](#)

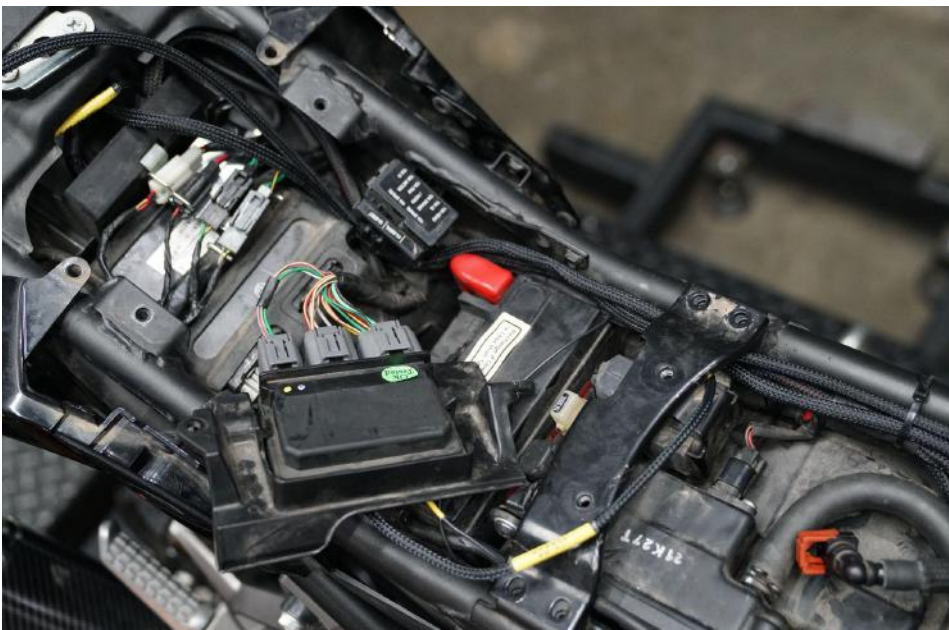


Image 40



3.7.3 Connect the GND cable to the battery negative terminal. And place the ECU mount back. Refer to Image41

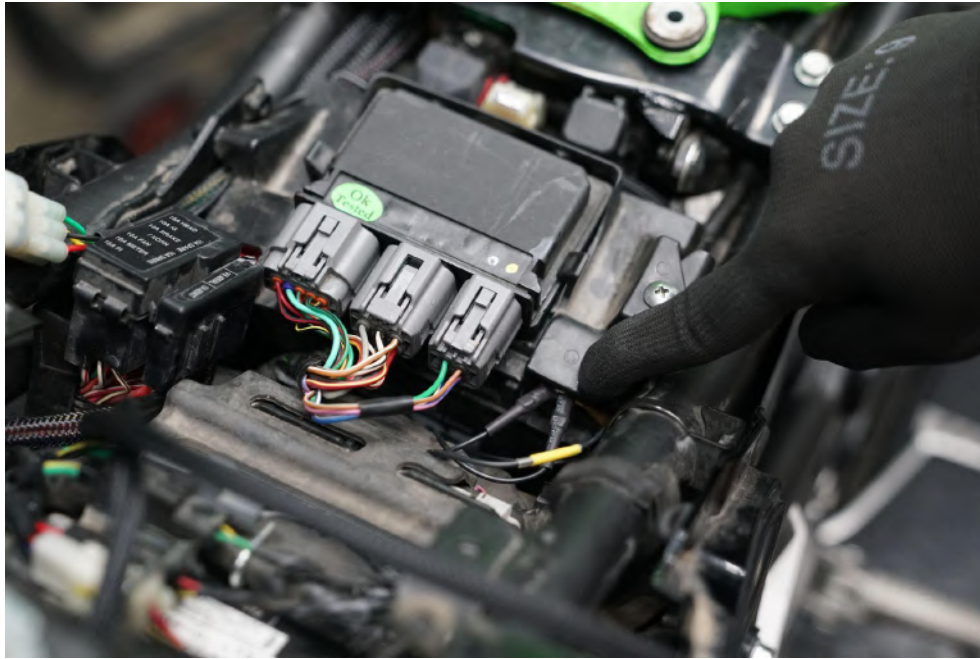


Image 41

### 3.8 Securing the harness using ties

**3.8.1** Secure the harness away from hot moving/parts by attaching it to the chassis/frame using the zip ties provided wherever necessary. Refer the **Image 42**.



Image 42

**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 Quickshifter, 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 43](#)



Image 43

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

Refer: <https://powertronicecu.com/wp-content/plugins/wp-extra-file-types/PowerTRONIC%20V4%20-%20Stock%20Coupler%20Test-min.pdf>

### 3.10 Plugging in the PowerTRONIC

Remove the key from the ignition, unplug the stock coupler and connect the PowerTRONIC to the harness by connecting it to the 24-pin connector. Secure it in the glove box. Refer to [Image 44](#).



Image 44

### 3.11 Attaching the panels fairing etc

Attach the panels, and fairing as removed from the bike. You can keep the toolbox under the seat.