

PowerTRONIC V4 Installation Manual

BSA GOLD STAR 650 (2024)

Document Version	1	Release Date	03 Oct 2024
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Application information	Vehicle Specific
Vehicle	BSA
Model	GOLD STAR 650
Year of manufacture	2024

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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 - 3.9 Attaching the panels fairing etc Attach the panels, and fairing as removed from the bike.

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 connections.
3	Harness	Bike specific harness contains the following connectors <ul style="list-style-type: none"> • Fuel injector connector • Spark/Ignition coil connector • Throttle position sensor 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 change maps
5	NylonTags	To secure the wiring harness
6	User guide and Warranty card	Instructions

2. Tools required

Serial No	Main tools	Optional tools
1	4mm, 5mm Hex bit00	Spinner handle Ratchet
2	10mm, 8 mm T bar Hexagonal Socket wrench	handle
3	Wirecutter	Extension bar or Sliding T-bar

3. Installation procedure

3.1 Removing panels and tank.

Begin at the right side of the bike. Park the bike using the center stand on a level surface (Or a paddock stand). Refer to Image 1



Image 1

Detach the rider seat. (Gently lift and slide it towards the rear end) - Refer to Image 2.



Image 2

3.2 Detach the pillion seat by inserting the key into the keyhole and unlock the pillion seat refer to Image 3.



Image 3

3.3 Locate the tank rear mounting 10mm bolt, and remove the bolt. Refer to Image 4



Image 4

3.4 After removing the bolts, gently lift the rear end of the tank a little, and unplug the fuel line connector. Refer to Image 5 and Image 6



Image 5



Image 6

3.5 locate the fuel pump connector refer to Image 7, unplug the fuel pump connector, refer to Image 8.



Image 7



Image 8

3.6 locate the fuel guage connector refer to Image 9, unplug the fuel guage connector, refer to Image 10.

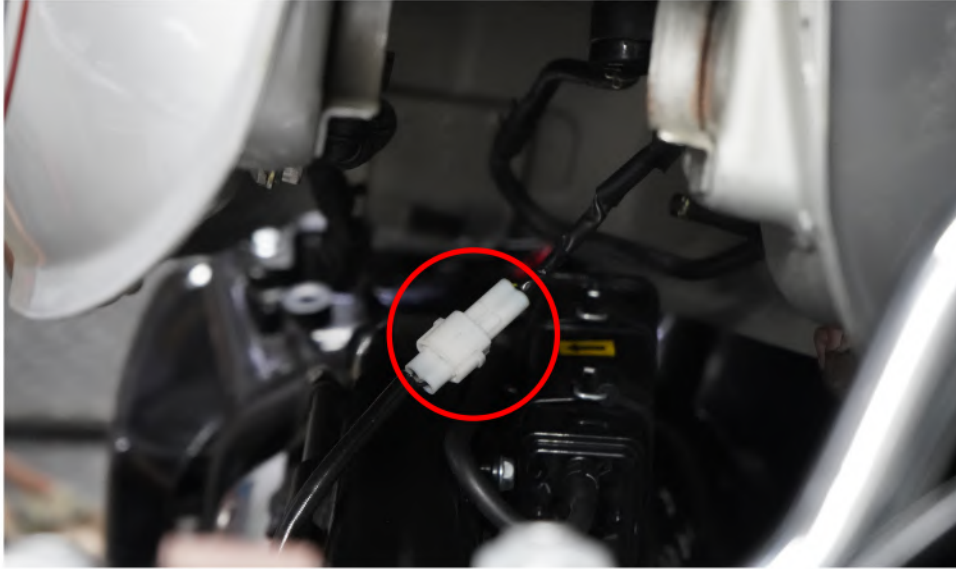


Image 9



Image 10

3.7 Disconnect the vaccum hose 1 carefully. Refer to Image 11.



image 11

3.8 Disconnect the vaccum hose 2 carefully. Refer to Image 12.



Image 12

3.10 Gently lift the tank from the tank seating after disconnecting the connections. Refer to Image 13



Image 13

3.11 Starting from the glove compartment, route each connector terminal from in-between the welded plate and the mudguard. Refer to Image 14 and for the top view refer Image 15.



Image 14

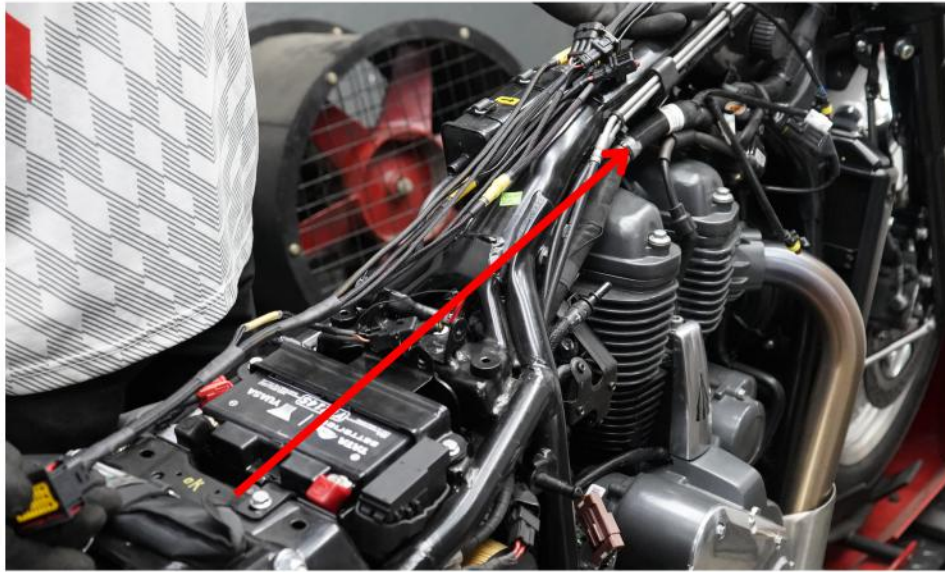


Image 15

3.2 injector coil connector

3.2.1 Locate the stock injector connector of your bike. Refer to Image 16 and Image 17 below

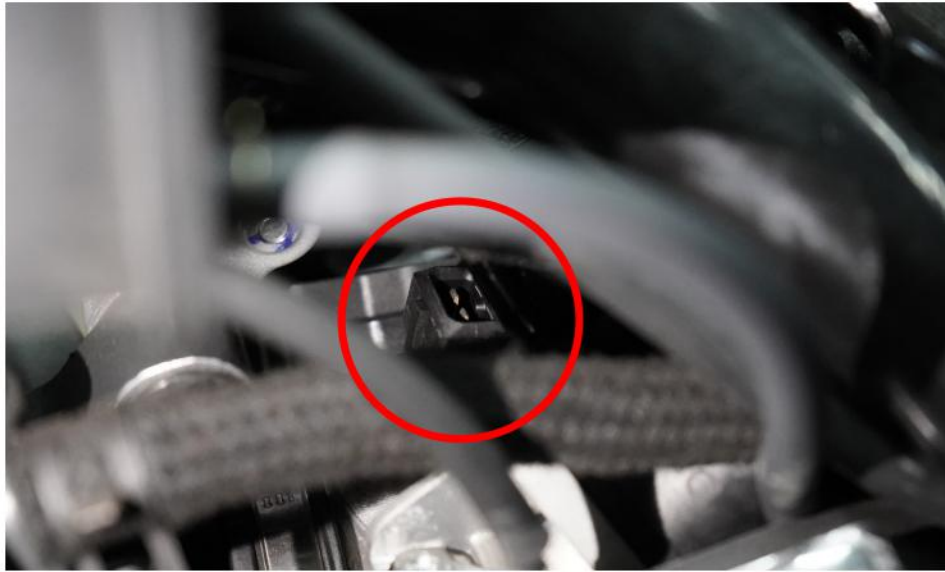


Image 16

3.2.3 Connect the female PowerTRONIC injector connector to the stock male injector connector. Refer to Image 17 and Image 18.

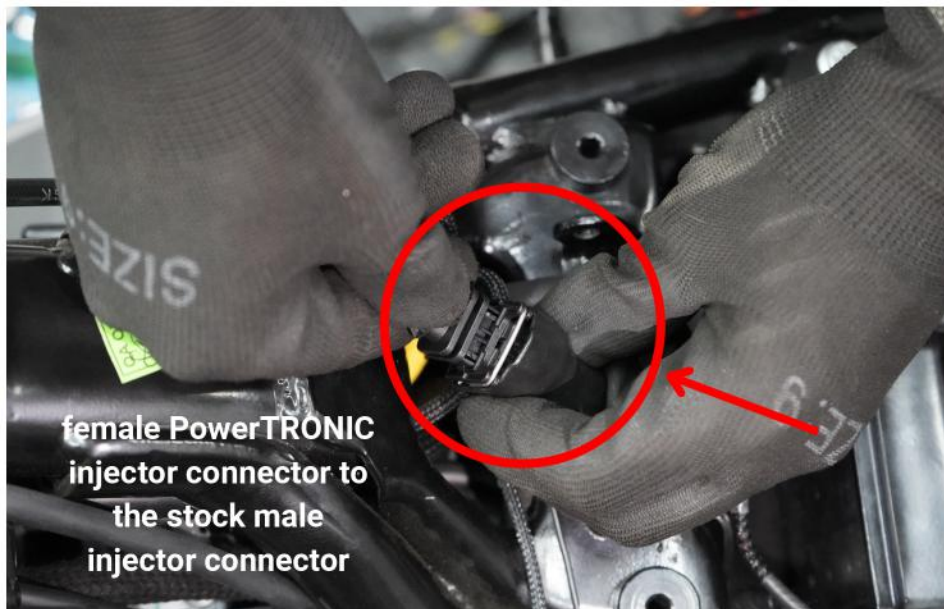


Image 17

Note: Route the wire harness properly, where it wires should not get damaged while refitting the seat



Image 18

3.3 spark connector

3.3.1 Locate the stock Spark/Ignition coil connector on the ignition coil, located right above the engine. Refer to Image 19.



Image 19

3.3.2 Connect the PowerTRONIC Ignition coil male connector to the stock ignition coil female connector. Refer to Image 20 and Image 21.



Image 20



Image 21

Note : carefully connect back to the ignition coil refer to the Image 22 for complete view.

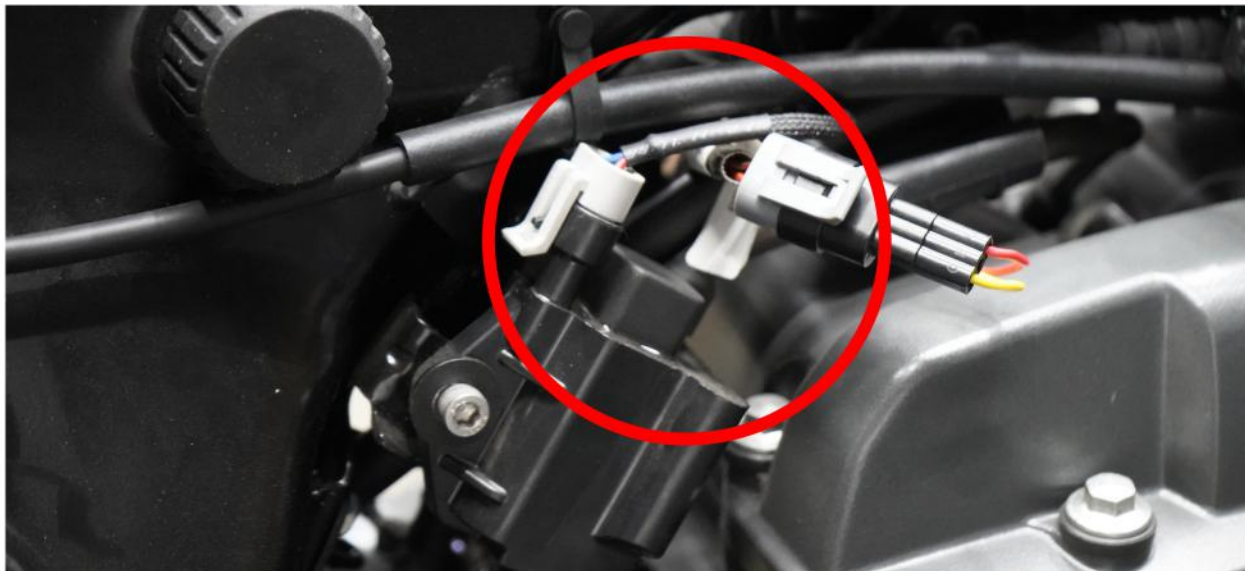


Image 22

3.4 Crank position sensor (Right side of the bike)

Note : Remove the 10mm bolts with the help of 10T, the right side heat shield for easy harness routing and to connect the crankshaft position sensor refer to Image 23 and 24.

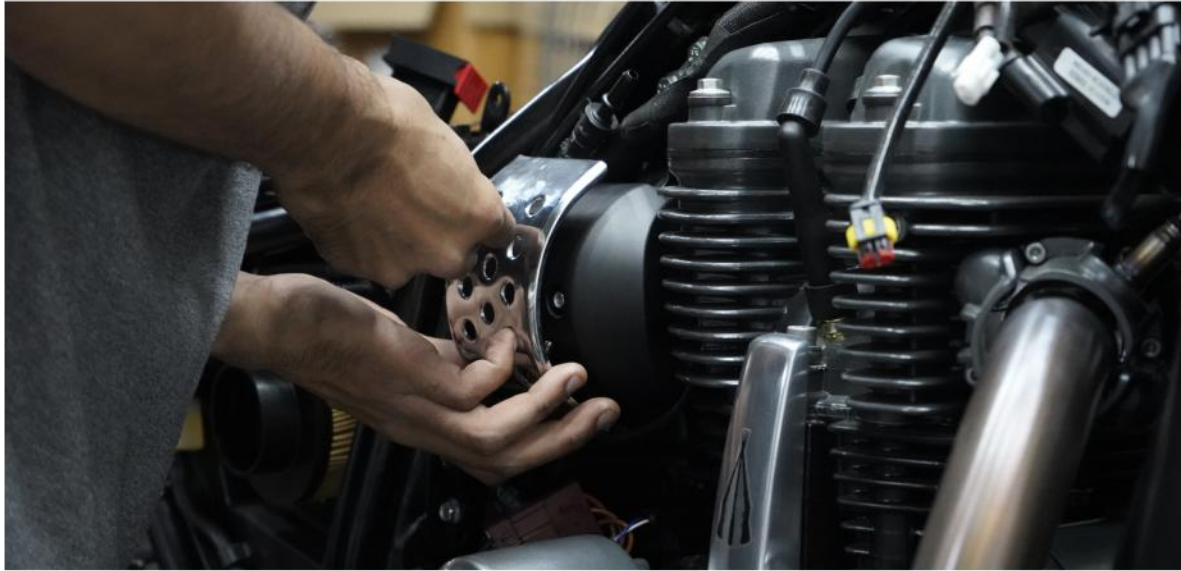


Image 23



Image 24

3.4.1 Locate the stock crankshaft position sensor connector on the bike. Usually located right back to the engine. Refer to Image 25 and Image 26 below.



image 25

3.4.2 Connect the PowerTRONIC female CKP connector to the stock male connector. Refer to Image 26



Image 26

3.5 Throttle position sensor connector (Right 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 ,Disconnect the stock TPS connector Refer to Image 27.



Image 27

3.5.2 Connect the PowerTRONIC male TPS connector to stock female connector. Refer to Image 28 .



Image 28

3.6 Ground Terminal Connector

3.6.1 Identify the Ground terminal connector labelled GND. Refer to Image 29



image 29

3.6.2 Connect the ground terminal connector to the negative terminal of the battery. Refer the Image 30.

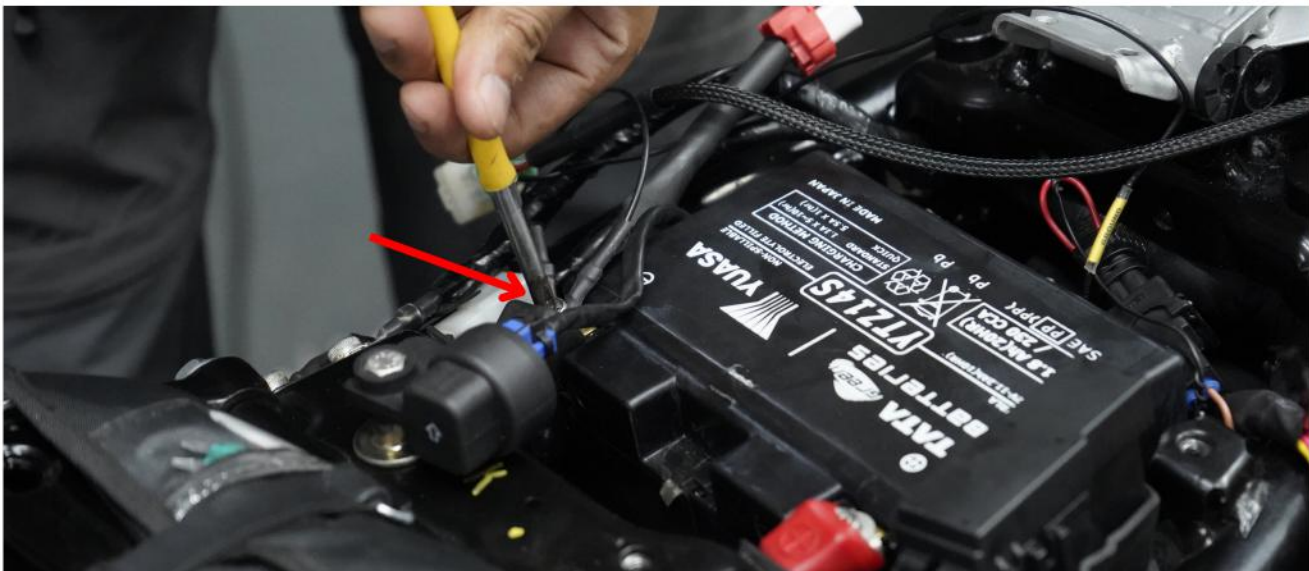


Image 30

3.7 Map switch connector

3.7.1 connect the map switch, refer to Image 31 and Image 32



Image 31



Image 32

3.7.2 select the suitable position for the map switch to mount on the handle bar refer image 33



image 33

Remove two 10mm bolts with the help of 10T, to keep the PowerTRONIC ECU safely. refer image 34 and image 35



Image 34

The highlighted area is to keep the ECU safely

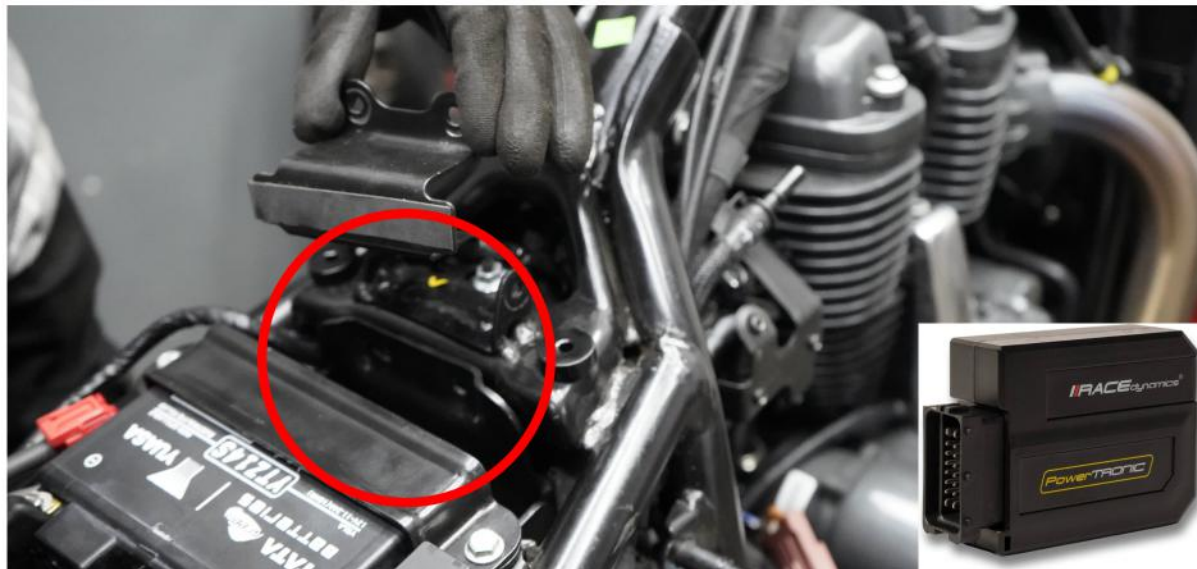


Image 35

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 zip ties provided.

3.8 Testing with the stock coupler

3.8.1 Attach the fuel tank

3.8.2 You can verify the connections by attaching the stock coupler. Refer to Image 36 Refer to the detailed Stock coupler test document.



Image 36

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

3.9 Attaching the panels fairing etc Attach the panels, and fairing as removed from the bike.