



SERVICE INFORMATION MANUAL

BSVI

Revision 0

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VISOR

Component	: Visor
Component condition	: Vehicle on ramp and component accessible
Objective	: Visor removal
Repair cycle	: As required

Removal

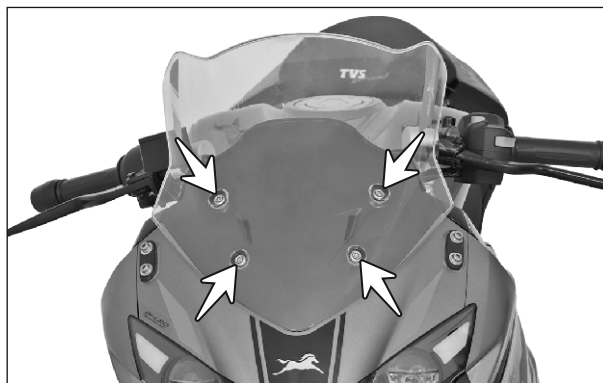
- Park the vehicle on the front paddock stand. Refer **Parking vehicle on Paddock stand** for procedure.
- Remove allen bolts (4 Nos.) from the headlamp housing assembly.

Tool	5 mm allen key
Torque	5 Nm



CAUTION

Care should be taken not to scratch or damage the visor during removal / installation.



Installation

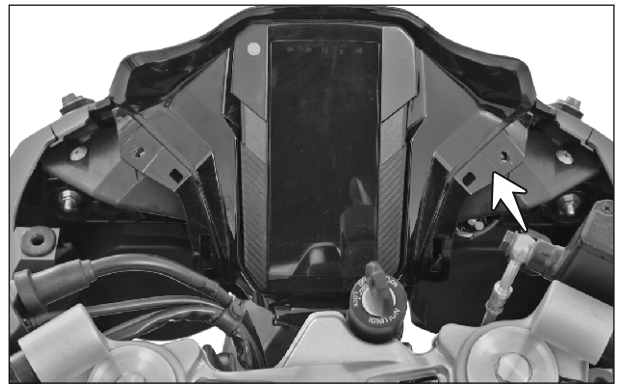
- Installation is the reverse of removal.

HOUSING INSTRUMENT CLUSTER

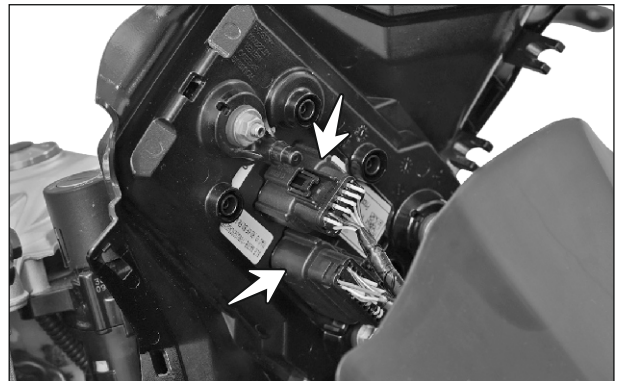
Component	: Housing Instrument cluster
Component condition	: Vehicle on ramp and component accessible
Objective	: Housing Instrument cluster removal
Repair cycle	: As required

Removal

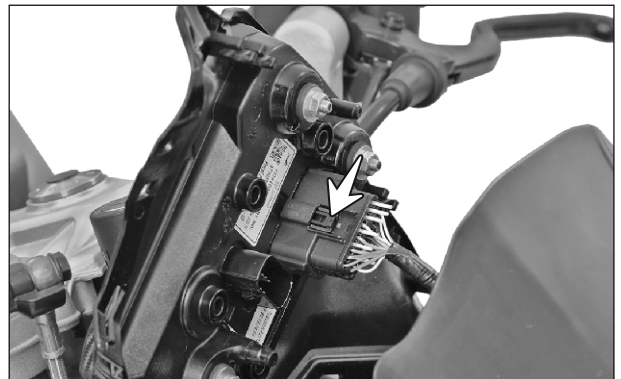
- Park the vehicle on the front paddock stand. Refer **Parking vehicle on Paddock stand** for procedure.
- Remove visor. Refer **Visor removal** for procedure.
- Remove side cowl upper LH. Refer **Side cowl upper removal** for procedure.
- Remove side cowl upper RH. Refer **Side cowl upper removal** for procedure.
- Remove Housing head lamp rear LH and RH. Refer **Housing headlamp rear** for procedure.
- Pull the instrument cluster with housing out of the headlamp assembly.



- Disconnect the couplers (2 Nos.) from the instrument cluster.

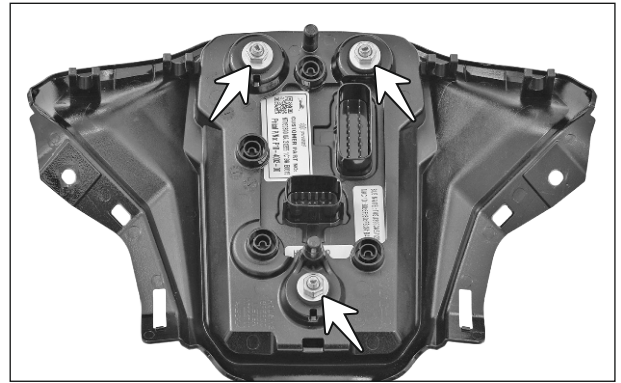


- While disconnecting the lock type coupler, be sure to release the lock before disconnecting it and push it back fully from the instrument cluster.
- Take out the cluster with housing from the headlamp assembly.



- Remove the mounting nuts (3 Nos.) and separate the cluster from the housing.

Tool	10 mm hexagonal socket or spanner
Torque	15 Nm



Installation

- Installation is the reverse of removal.
- Connect **TVS Ride Scan Tool** and run diagnosis after installation.

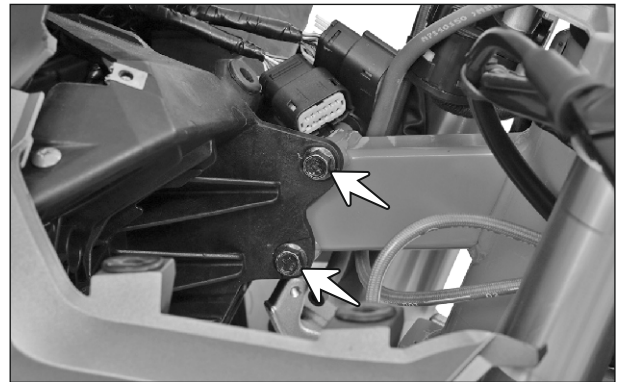
HEADLAMP ASSEMBLY

Component	: Headlamp assembly
Component condition	: Vehicle on ramp and component accessible
Objective	: Headlamp assembly removal
Repair cycle	: As required

Removal

- Park the vehicle on the front paddock stand. Refer **Parking vehicle on Paddock stand** for procedure.
- Remove visor. Refer **Visor removal** for procedure.
- Remove mirror. Refer **Mirror removal** for procedure.
- Remove side cowl upper LH. Refer **Side cowl upper removal** for procedure.
- Remove side cowl upper RH. Refer **Side cowl upper removal** for procedure.
- Remove Housing head lamp rear LH and RH. Refer **Housing headlamp rear** for procedure.
- Remove bottom cover. Refer **Bottom cover** for procedure.
- Remove engine center guard. Refer **Engine center guard removal** for procedure.
- Remove engine guard LH & RH. Refer **Engine guard removal** for procedure.
- Remove instrument cluster. Refer **Instrument cluster removal** for procedure.
- Remove the hexagonal bolts (2 Nos.).

Tool	12 mm hexagonal socket
Torque	15 Nm

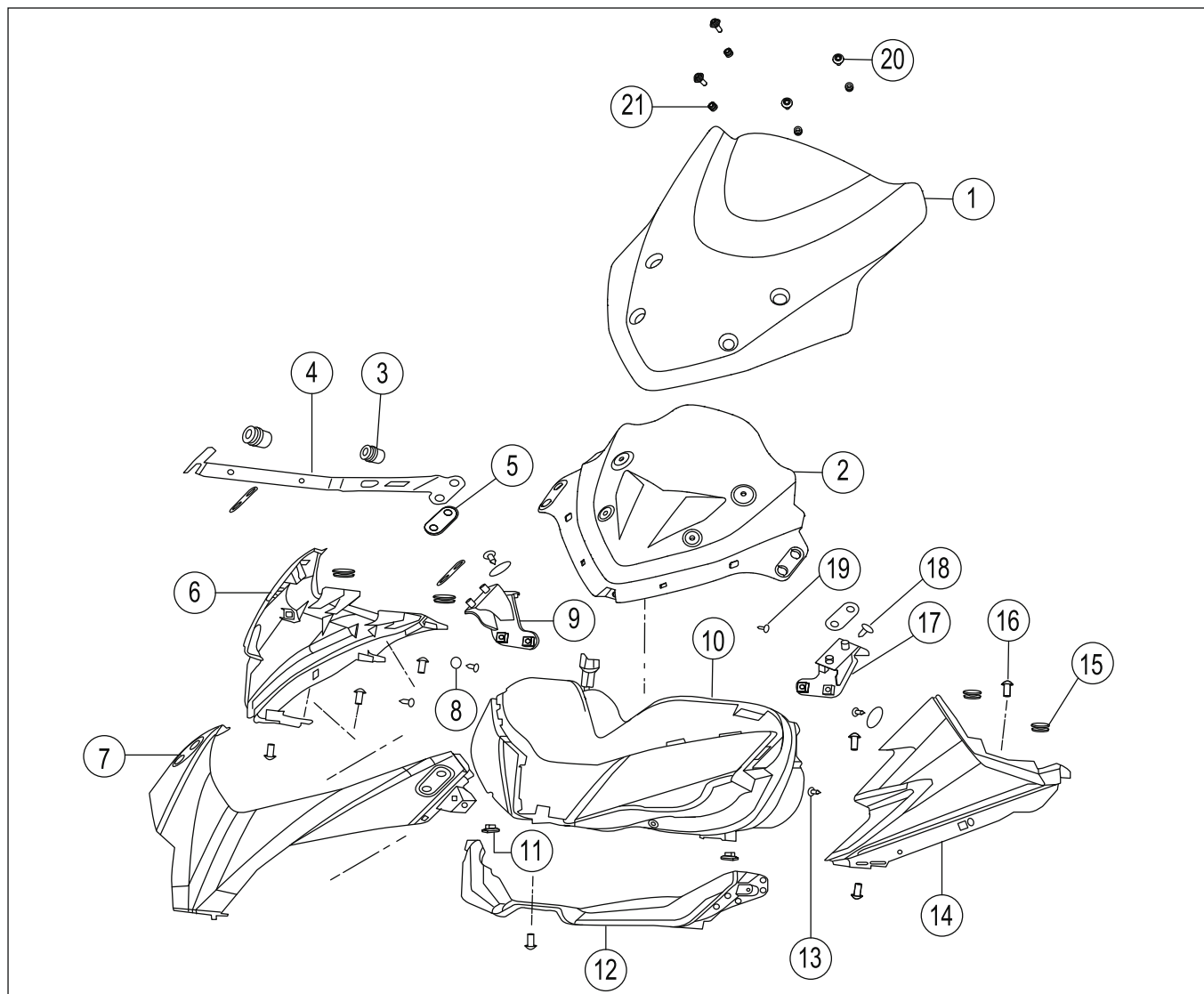


- Disconnect the headlamp connector and remove the cable strap.
- Remove the headlamp assembly from the vehicle.



HEADLAMP HOUSING COMPONENTS

Component : Headlamp housing components
 Component condition : Headlamp assembly on workbench
 Objective : Headlamp housing components replacement
 Repair cycle : As required



Item No.	Description	Item No.	Description
1	Visor headlamp	12	Housing headlamp bottom
2	Visor headlamp bottom	13	CRR flanged pan head tap screw
3	Visor grommet MTG	14	Housing headlamp front LH
4	Licence plate bracket	15	Cushion fuel tank
5	Mirror grommet	16	CRR pan head screw M6X16
6	Housing headlamp front RH	17	Mirror bracket MTG LH
7	Housing headlamp front	18	Snap rivet plastic
8	Plastic Spacer	19	Socket screw 3.5X16
9	Mirror bracket MTG RH	20	CRR pan head screw M6X16
10	Headlamp assembly	21	Grommet
11	Retainer clip M6		

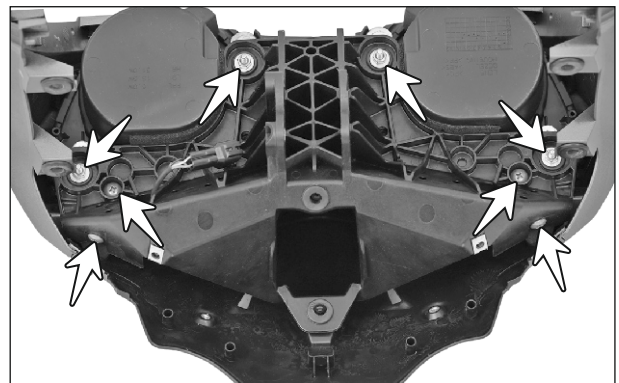
HEADLAMP ASSEMBLY AND HEADLAMP BRACKET

Component	: Headlamp assembly and Headlamp bracket
Component condition	: Vehicle on ramp and component accessible
Objective	: Headlamp assembly and Headlamp bracket removal
Repair cycle	: As required

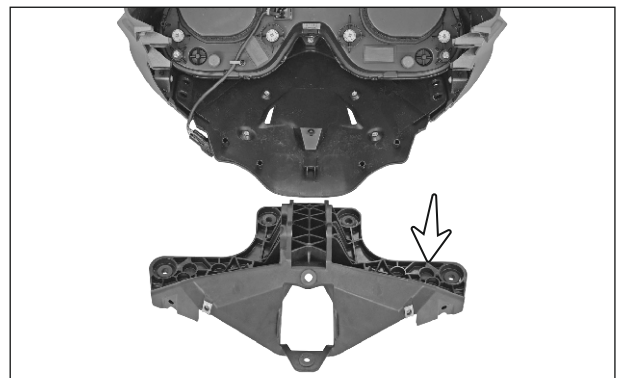
Removal

- Park the vehicle on the front paddock stand. Refer **Parking vehicle on Paddock stand** for procedure.
- Remove visor. Refer **Visor removal** for procedure.
- Remove mirror. Refer **Mirror removal** for procedure.
- Remove side cowl upper LH. Refer **Side cowl upper removal** for procedure.
- Remove side cowl upper RH. Refer **Side cowl upper removal** for procedure.
- Remove Housing head lamp rear LH and RH. Refer **Housing headlamp rear** for procedure.
- Remove bottom cover. Refer **Bottom cover** for procedure.
- Remove engine guard LH & RH. Refer **Engine guard removal** for procedure.
- Remove instrument cluster. Refer **Instrument cluster removal** for procedure.
- Remove headlamp assembly. Refer **Head lamp removal** for procedure.
- Place the headlamp assembly on workbench.
- Replace the headlamp housing components as required. Refer the exploded view for mounting fasteners.
- Remove 10 mm nuts (4 Nos.) and pan head screws (4 Nos.).

Tool	10 mm hexagonal socket / Star screw driver
Torque	10 Nm

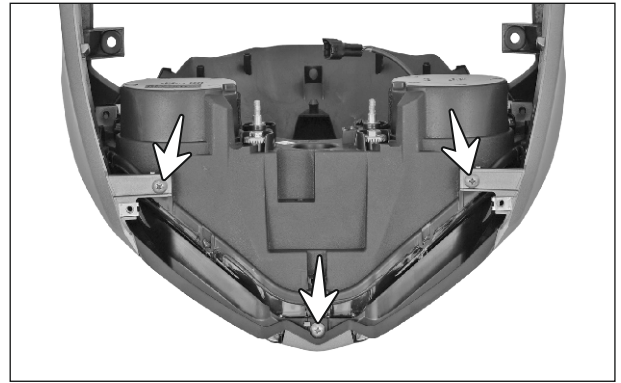


- Remove headlamp carrier.



- Remove pan head screws (3 Nos.).

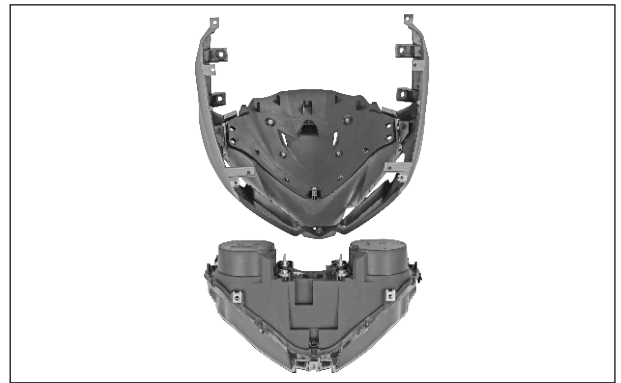
Tool	Star screw driver
Torque	5 Nm



- Gently remove the headlamp assy and replace with a new one.

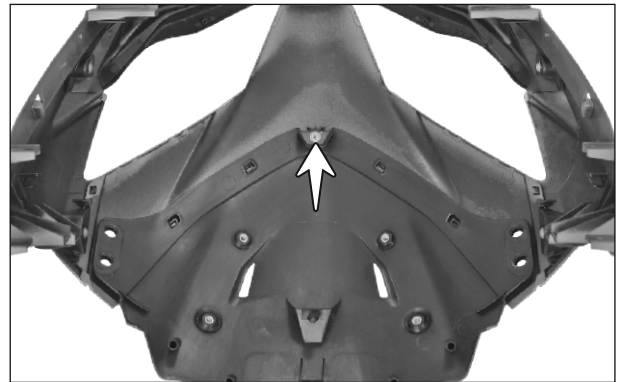
**CAUTION**

Ensure not to look directly into the headlamp, its Bi-LED headlamp may affect your vision or blind your vision temporarily.



- Remove pan head screw and separate the bracket from the headlamp housing.

Tool	Star screw driver
Torque	5 Nm

**Installation**

- Installation is the reverse of removal.

AIR FILTER HOUSING

Component	: Air filter housing
Component condition	: Vehicle on ramp and component accessible
Objective	: Air filter housing removal
Repair cycle	: As required

Removal

- Park the vehicle on the paddock stand. Refer **Parking vehicle on Paddock stand** for procedure.
- Remove the front and rear seat assembly. Refer **Seat assembly removal** for procedure.
- Remove the following cowls:
 - Refer **Bottom cover Rear** for procedure.
 - Refer **Bottom cover Front** for procedure.
 - Refer **Side cowl upper LH** for procedure.
 - Refer **Side cowl upper RH** for procedure.
 - Refer **Fuel tank cover** for procedure.
 - Refer **Side cowl LH** for procedure.
 - Refer **Side cowl RH** for procedure.
 - Refer **Engine guard Center** for procedure.
 - Refer **Engine guard LH** for procedure.
 - Refer **Engine guard RH** for procedure.
 - Refer **Headlamp housing LH** for procedure.
 - Refer **Headlamp housing RH** for procedure.
- Remove the fuel tank cover and fuel tank assembly. Refer **Fuel tank – Removal** for procedure.
- Remove radiator. Refer **Radiator - Removal** for procedure.

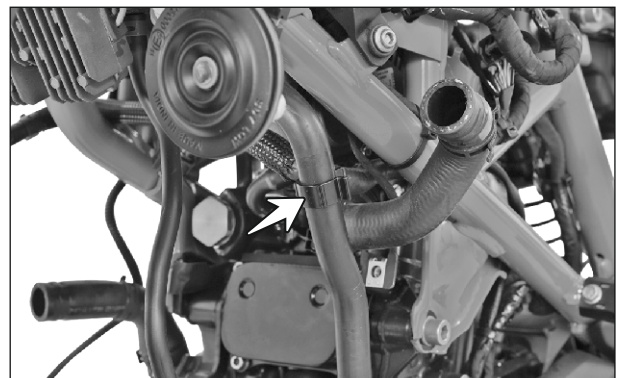
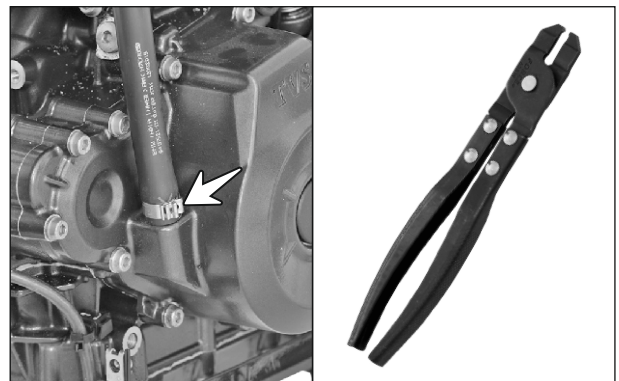


CAUTION

While removing the air filter housing, ensure not to place your hands near to the radiator fan if the battery terminals are not disconnected.

The radiator fan switches ON and OFF automatically based on the engine temperature. So, the battery terminals should always be disconnected before touching or dismantling the radiator fan.

- Disconnect negative terminal of the battery.
- Using the special tool, remove breather hose from the crankcase.
- Dislocate the breather hose from the hose clamp.

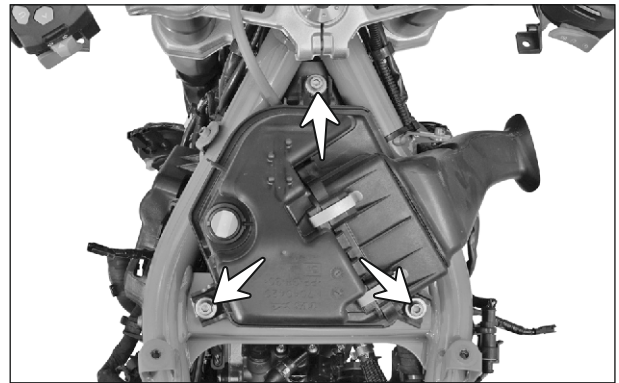


- Remove the clamp by pressing the locking pips of clamp using special tool to unfix the clamp from the air filter assembly.



- Remove the mounting screw (3 Nos.) from the air filter housing.

Tool	5 mm allen key
Torque	10 Nm



- Release the hose clip to dislocate the air filter housing from the throttle body.



- Remove the air filter housing assembly from the frame.
- Close all intakes opening with suitable plugs.



Installation

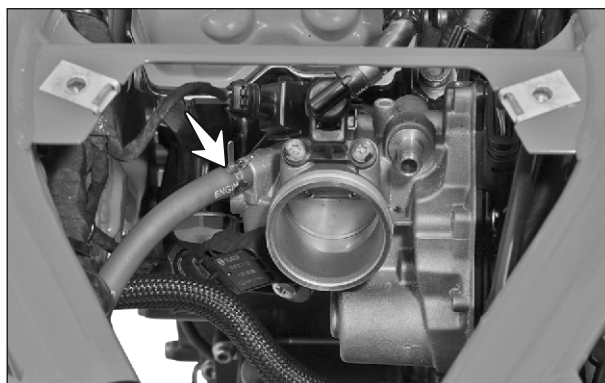
- Installation is the reverse of removal.
- Connect *TVS Ride Scan Tool* and run diagnosis after installation.

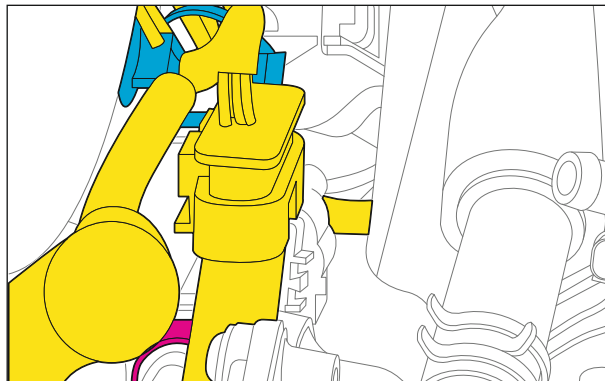
THROTTLE BODY REMOVAL

Component	: Throttle body
Component condition	: Vehicle on ramp and component accessible
Objective	: Throttle body Removal
Repair cycle	: As required

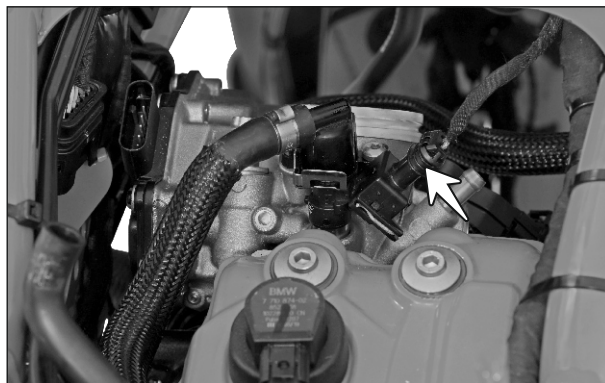
Removal

- Park the vehicle on the paddock stand. Refer **Parking vehicle on Paddock stand** for procedure.
- Remove the front and rear seat assembly. Refer **Seat assembly removal** for procedure.
- Remove the following cowls:
 - Refer **Bottom cover Rear** for procedure.
 - Refer **Bottom cover Front** for procedure.
 - Refer **Side cowl upper LH** for procedure.
 - Refer **Side cowl upper RH** for procedure.
 - Refer **Fuel tank cover** for procedure.
 - Refer **Side cowl LH** for procedure.
 - Refer **Side cowl RH** for procedure.
 - Refer **Engine guard Center** for procedure.
 - Refer **Engine guard LH** for procedure.
 - Refer **Engine guard RH** for procedure.
- Refer **Headlamp housing LH and RH** for procedure.
- Remove the fuel tank cover and fuel tank assembly. Refer **Fuel tank - Removal** for procedure.
- Remove radiator. Refer **Radiator - Removal** for procedure.
- Remove air filter housing and ducts. Refer **Air filter housing** for procedure.
- Disconnect negative terminal of the battery.
- Removal the purge valve hose from the throttle body.

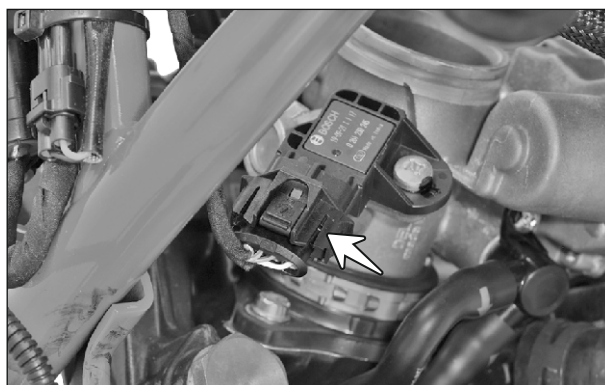




- Disconnect the fuel injector coupler from the throttle body.

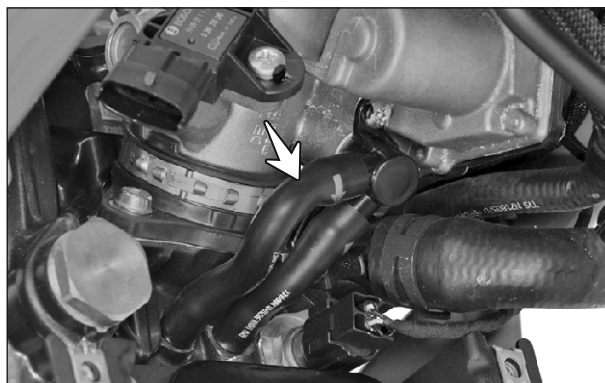


- Disconnect the T-MAP sensor coupler from the throttle body.

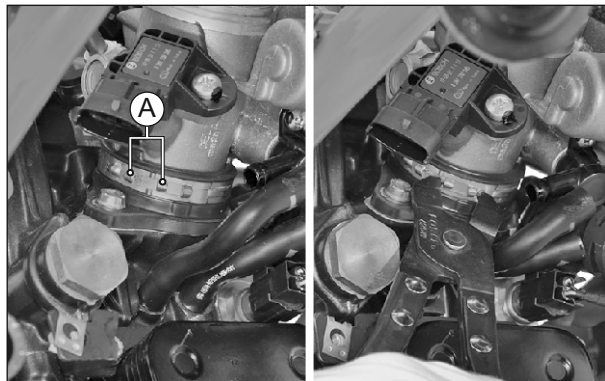


Clamp Disassembly Sequence

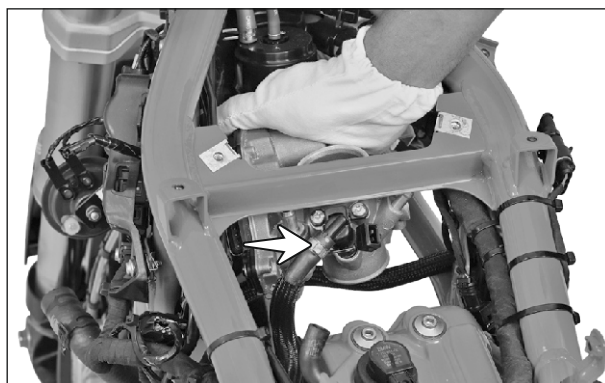
- Remove the turbulence hose from the throttle body for easy access of the locking pip in the clamp by the tool.



- Remove the clamp by pressing the locking pips (A) using special tool to unfix the clamp from the throttle body.

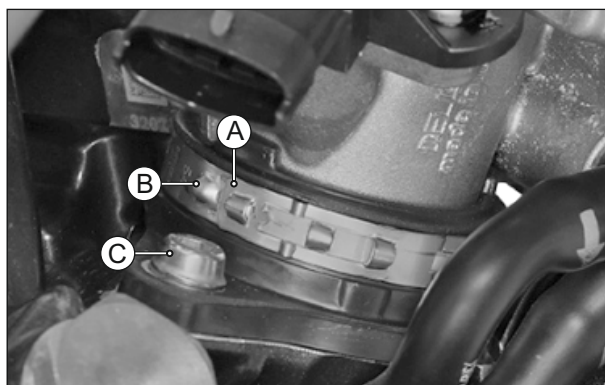


- Remove the throttle body assembly from the cylinder head.



Clamp Assembly Sequence

- While reassembling the throttle body assembly to the cylinder head, orient the clamp in such a way that the open end (A) faces towards the LH side (when viewed by the operator).
- Rotate the clamp such that the first locking pip (B) of the clamp is aligned with intake pipe mounting bolt (C).
- Then fix the clamp using the special tool.

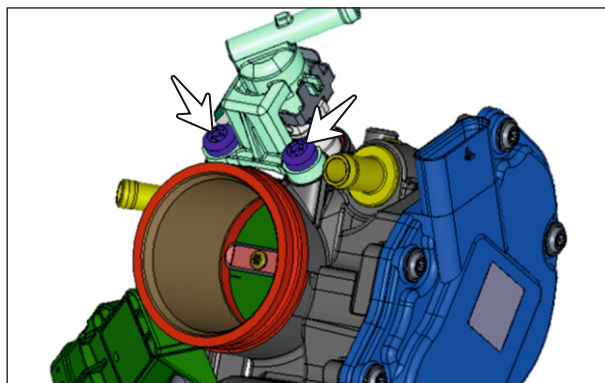


Injector Removal

- In case it is required to remove the injector for servicing or replacement, hold the throttle body assembly rigidly and loosen the cap injector screws (2 Nos.).

Tool	Torx 25 with center projection
Torque	$4.5 \pm 0.5 \text{ Nm}$

- Remove the cap injector, injector and clip sub-assembly from the throttle body assembly.



- Remove the clip injector by pulling it back.

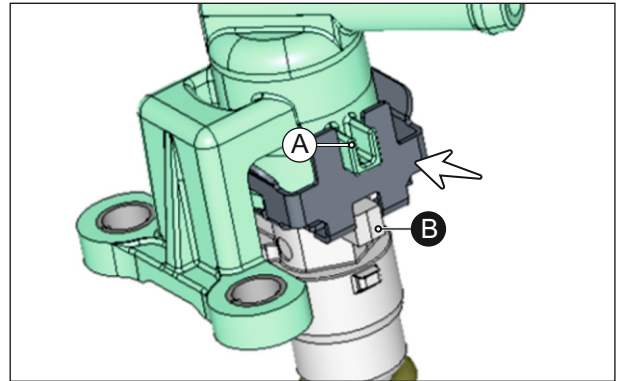
**NOTE**

While assembling, ensure to align the pip of cap injector (A) and pip of injector (B) in the same side and then assemble the clip.

- Remove the injector from cap.
- Replace the injector with a new one if required.

Installation

- Installation is the reverse of removal.
- In case of removal and reinstallation of the injector, replace the 'O' rings with new ones without causing any damage to the injector sealing surfaces.
- Wet the circumference of the 'O' rings with clean, silicon-free mineral white oil without additives. Ensure the oil does not contaminate the insides of the injector or the orifice holes.
- Connect **TVS Ride Scan Tool** and run diagnosis after installation.

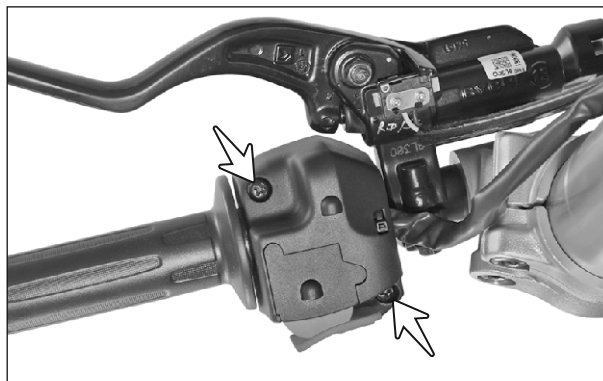


CONTROL SWITCH RH - REPLACEMENT

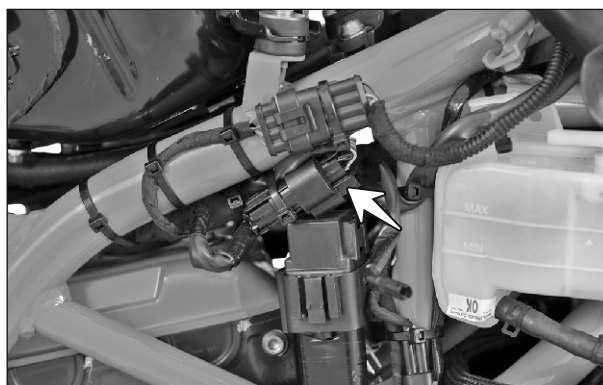
Component	: Control switch RH
Component condition	: Vehicle on ramp and component accessible
Objective	: Control switch RH Replacement
Repair cycle	: As required

Removal

- Park the vehicle on the paddock stand. Refer **Parking vehicle on Paddock stand** for procedure.
- Remove engine guard RH. Refer **Engine guard RH** for procedure.
- Remove throttle grip.
- Remove the pan head screws (2 Nos.).



- Disconnect the control switch connector.
- Remove the cable straps.
- Remove the control switch and the wires as a set.
- Replace the control switch and the wires as a set.
- During installation, re-route the wiring as before using new cable straps.



NOTE

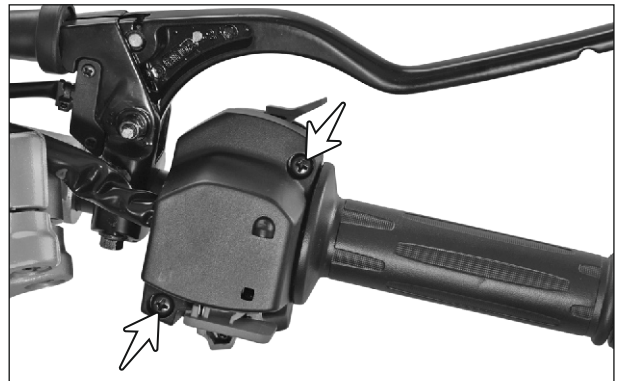
After installation, turn the handle fully towards left and right and check for free movement and flexibility of the wires.

CONTROL SWITCH LH - REPLACEMENT

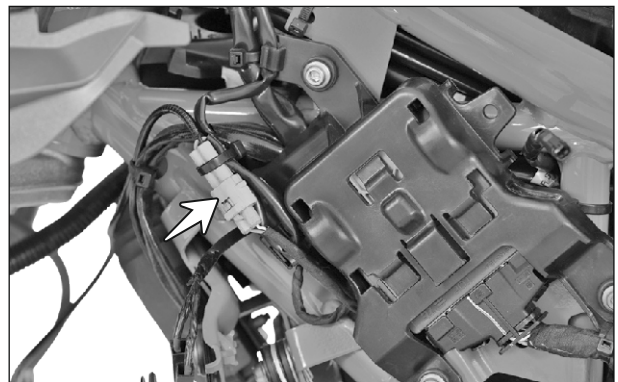
Component	: Control switch LH
Component condition	: Vehicle on ramp and component accessible
Objective	: Control switch LH Replacement
Repair cycle	: As required

Removal

- Park the vehicle on the paddock stand. Refer **Parking vehicle on Paddock stand** for procedure.
- Remove engine guard LH. Refer **Engine guard LH** for procedure.
- Remove throttle grip.
- Remove the pan head screws (2 Nos.).




- Disconnect the control switch connector.
- Remove the cable straps.
- Remove the control switch and the wires as a set.
- Replace the control switch and the wires as a set.
- During installation, re-route the wiring as before using new cable straps.



NOTE

After installation, turn the handle fully towards left and right and check for free movement and flexibility of the wires.

ELECTRONIC CONTROL UNIT (ECU)

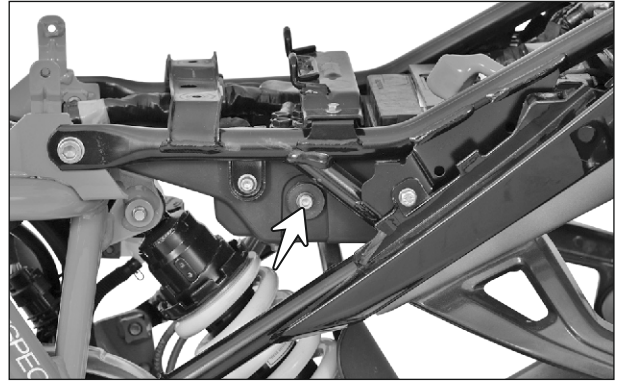
- A BSVI ECU can be identified by the presence of a flight  symbol below the TVS logo.
- "ETC", which stands for, 'Electronic Throttle Control', is written below the flight symbol.
- Part number of the ECU is written towards the right of 'ETC'.

ECU - Part Number	
BSVI	N7060230
BSIV	N7060200



ABS

- The battery holder is provided with two holes in the latest version of the vehicle.
- Out of which, for the Bosch HECU, the lower hole is to be used for the HECU mounting.



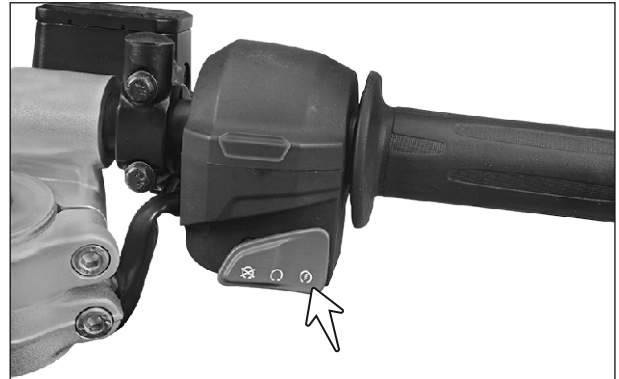
ENGINE KILL SWITCH CUM ELECTRIC STARTER SWITCH

Component	: Engine kill switch cum Electric starter switch
Component condition	: Vehicle on ramp and component accessible
Objective	: Engine kill switch cum Electric starter switch Inspection
Repair cycle	: As required

- Engine kill switch cum Electric starter switch is located at the right side handle bar assembly on the switch assembly handle RH.
- Turn on the ignition switch.
- Disconnect the switch assembly handle RH coupler from main wiring harness.
- Check the voltage between wires ORBI and BIW.
- Check the voltage between wires Bgr and BIW.

Tool	Multimeter
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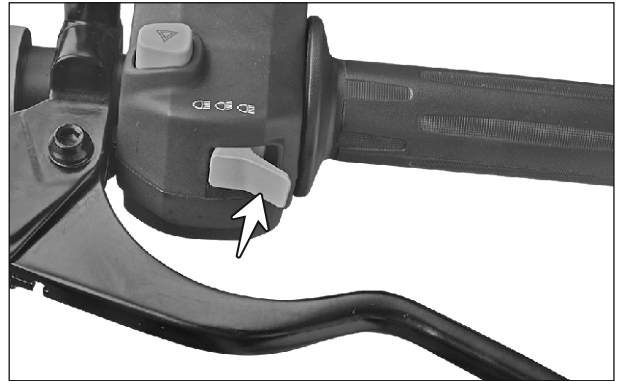
- Use **TVS Ride Scan Tool** for diagnosis.



SWITCH BEAM CONTROL CUM PASS-BY SWITCH

Component	: Switch beam control cum Pass-by switch
Component condition	: Vehicle on ramp and component accessible
Objective	: Switch beam control cum Pass-by switch Inspection
Repair cycle	: As required

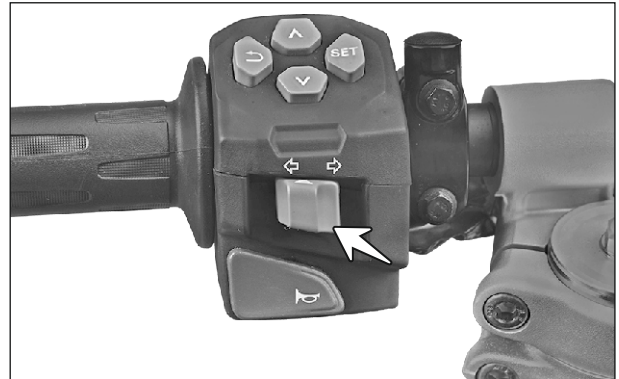
- Switch beam control cum Pass-by switch is provided on the switch assembly handle LH on the left side of the handle bar.
- Check the switch for continuity with the multimeter.
- Set multimeter at DC 20V range.
- Disconnect the Switch beam control cum Pass-by switch connector.
- Switch on the ignition. Connect multimeter '+ve' lead to Orange with White Tracer (OrW) of Switch beam control cum Pass-by switch and '-ve' lead to battery negative terminal or body ground.
- The voltage should be 12.0 ± 0.5 Volt in static condition or Ignition ON condition.
- The voltage should be 14.1 to 14.65 in engine ON condition.
- If the voltage is not to the specification, check Fuse (10A).
- If the voltage is not to the specification, replace the switch.



TURN SIGNAL LAMP SWITCH

Component	: Turn signal lamp switch
Component condition	: Vehicle on ramp and component accessible
Objective	: Turn signal lamp switch Inspection
Repair cycle	: As required

- Set multimeter at DC 20V range.
- Disconnect the Turn signal lamp switch connector.
- Switch on the ignition. Connect multimeter '+ve' lead to Green with Black Tracer wire (GB) of beam control switch and '-ve' lead to battery negative terminal or body ground.
- The Voltage should be 12.0 ± 0.5 Volt
- If the voltage is not to the specification check Fuse 10A.
- Switch on the ignition Connect multimeter '+ ve' lead to Violet with Black Tracer wire (VB) of beam control switch and '-ve' lead to battery negative terminal or body ground.
- The Voltage should be 12.0 ± 0.5 Volt.
- If the voltage is not to the specification, check Fuse (10A).
- Connect the turn signal lamp switch connector with Ignition on.
- Check the voltage with multimeter.
- Use **TVS Ride Scan Tool** for diagnosis.



Switch Position	GB	VB
Slide Right	$0/12.0 \pm 0.5$ Volt	$0/12.0 \pm 5$ Volt
Slide Left	$0/12.0 \pm 0.5$ Volt	$0/12.0 \pm 0.5$ Volt
Off Position	12.0 ± 0.5 Volt	12.0 ± 0.5 Volt

EXHAUST SYSTEM - REMOVAL AND INSTALLATION

Component	: Exhaust system
Component condition	: Vehicle on ramp and component accessible
Objective	: Exhaust system - removal and installation
Repair cycle	: As required



CAUTION

Touching hot surfaces such as O2 sensor and other exhaust system components while removal might lead to serious burns.

IGNITION COIL

Component	: Ignition coil
Component condition	: Vehicle on ramp and component accessible
Objective	: Ignition coil Removal
Repair cycle	: As required



CAUTION

Use the recommended **NGK Make Spark Plug (LMAR9D -J)** only.



WARNING

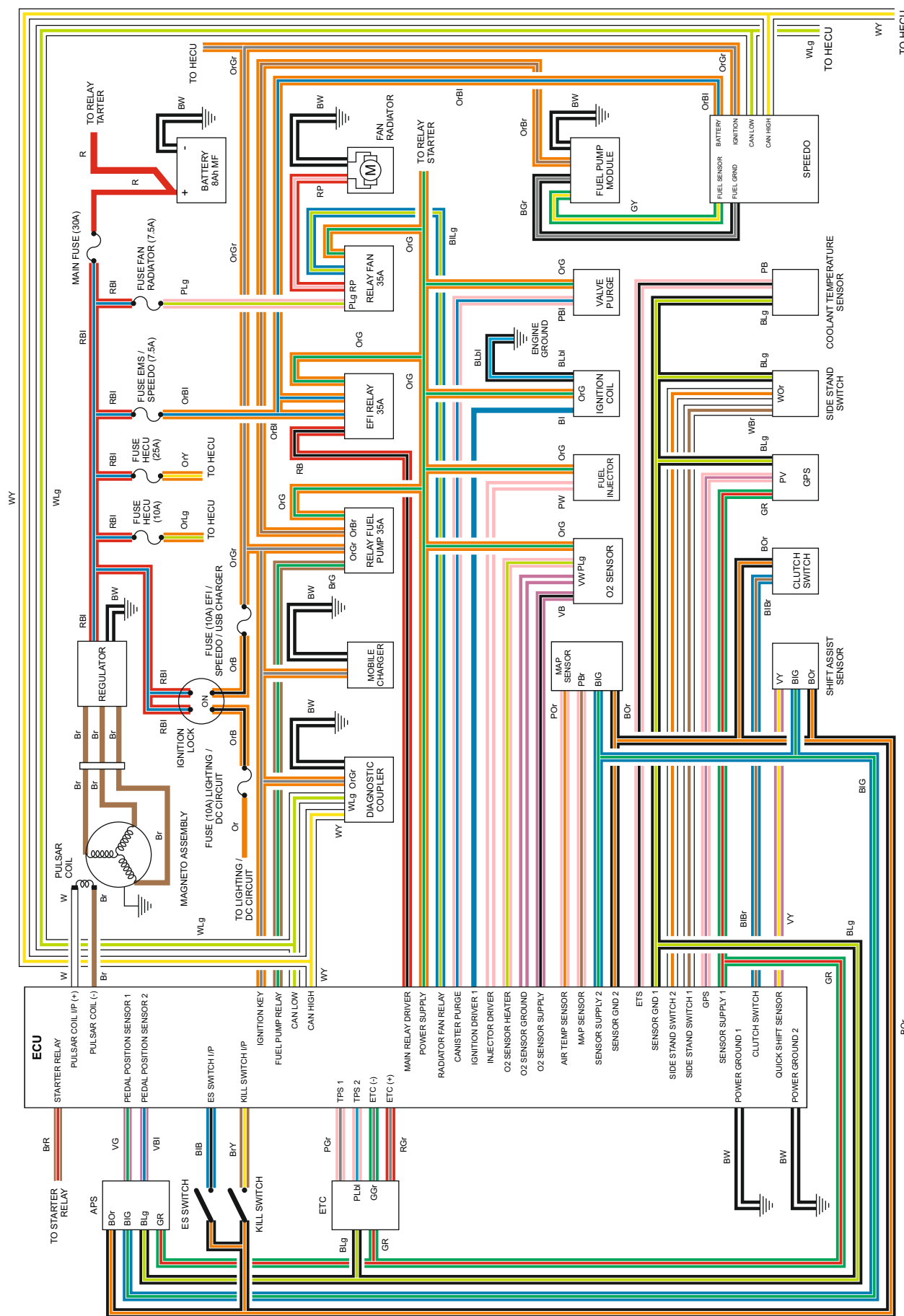
Ignition coil removal and direct testing to engine surface should only be done with the ignition lock in OFF position in order to avoid risk of high voltage electric shocks.

Do not clean or adjust the gap of spark plug. If any malfunction is observed in spark plug, replace it.

Neglecting the replacement of spark plug will lead to difficulty in starting and poor performance.

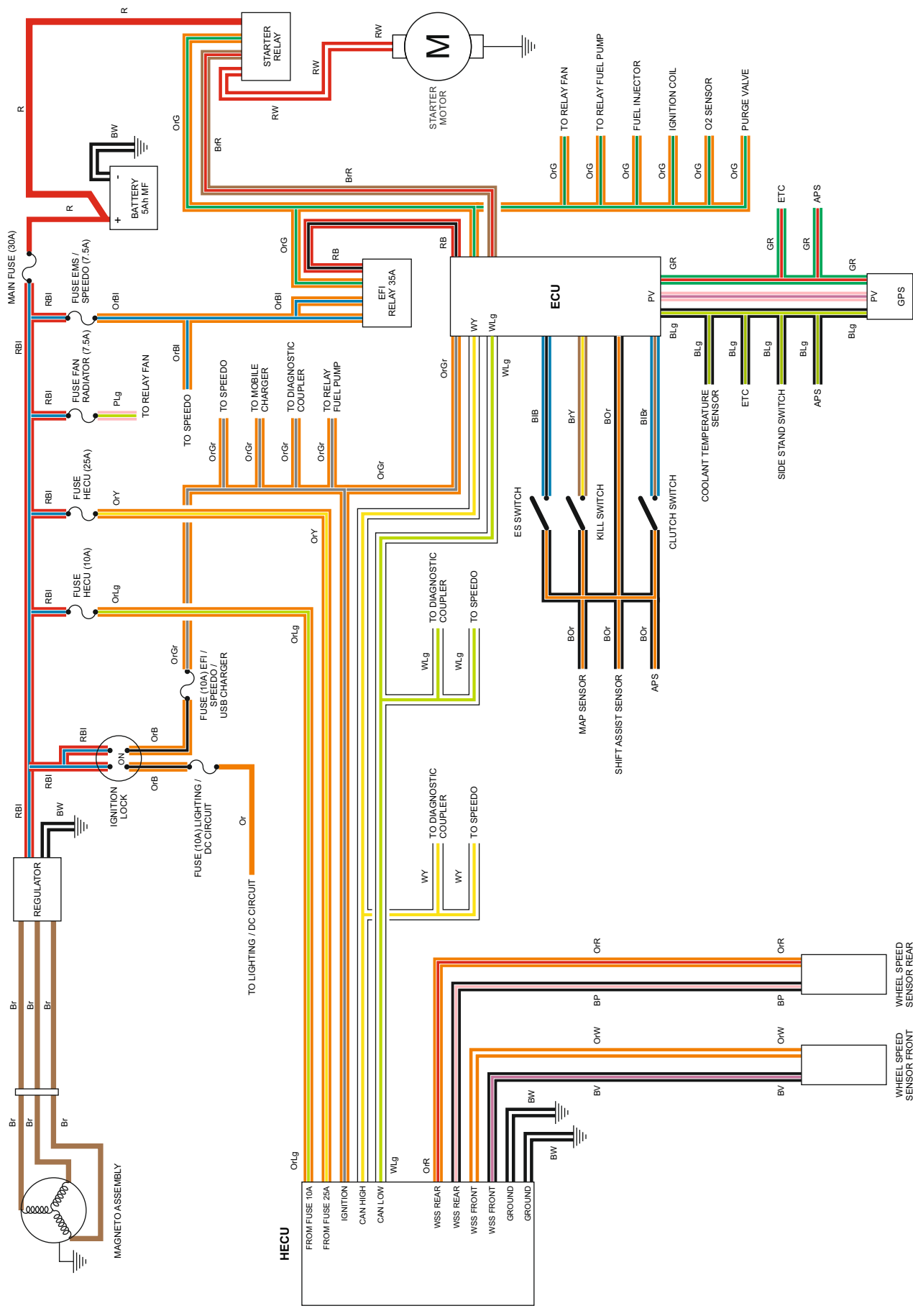
Before removing the spark plug clean the surroundings of spark plug to prevent any foreign materials falling inside the cylinder bore.

EMS CIRCUIT



[illegible]

SELF START / HECU CIRCUIT

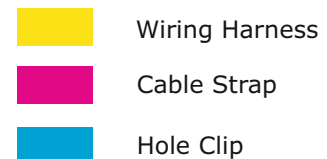


ELECTRICAL SYSTEM PARTS

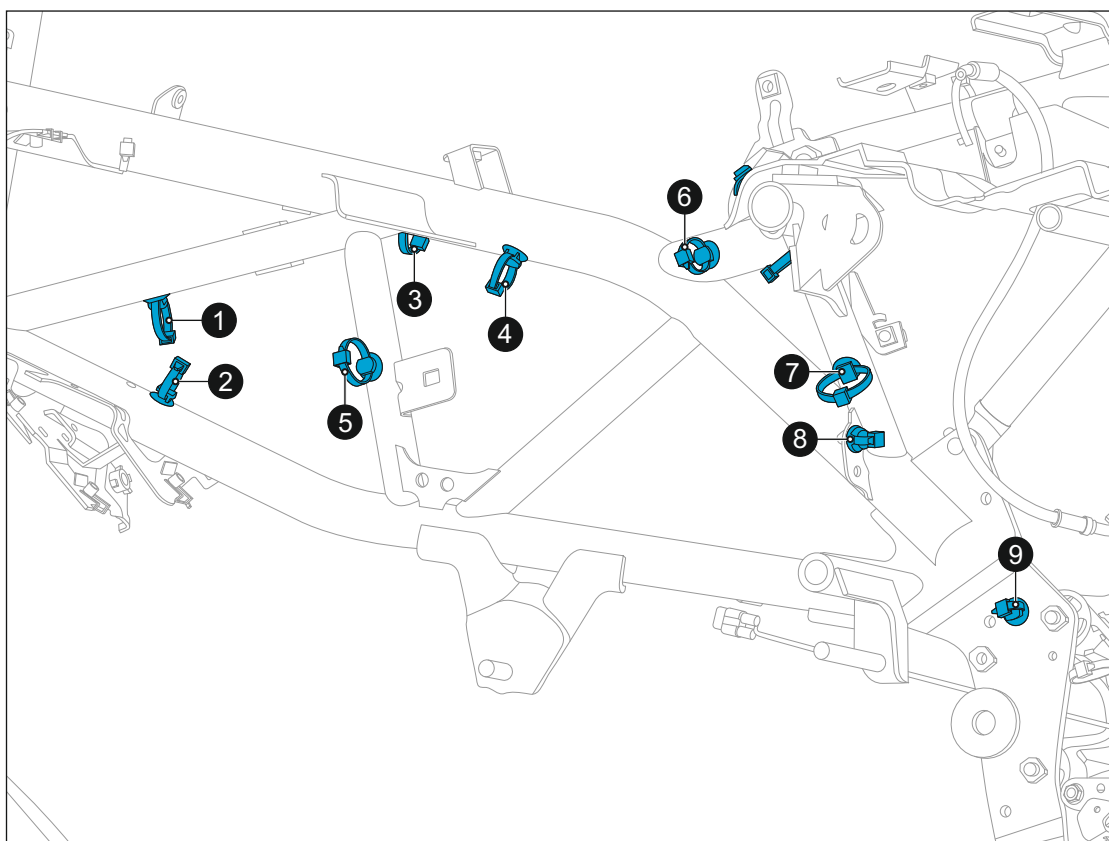
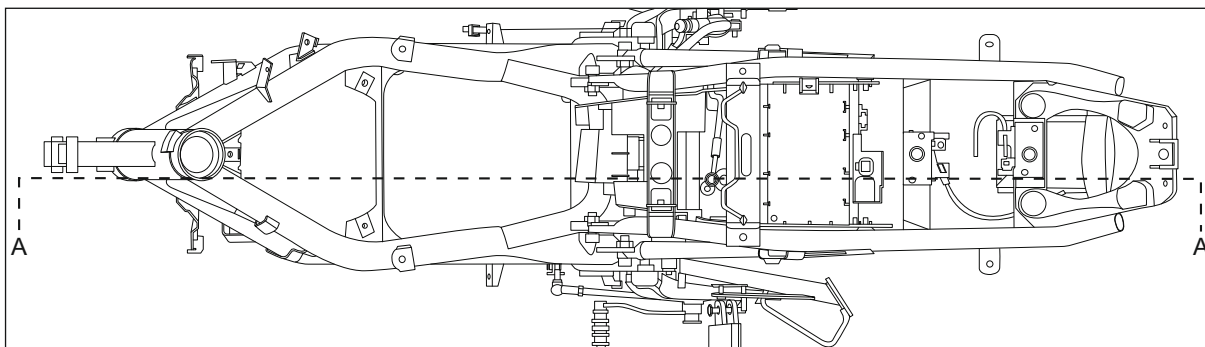


TVS Apache RR 310 consists of the following electrical components:

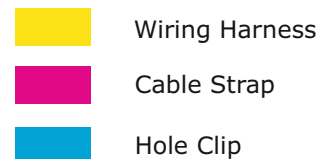
1. Speedometer
2. Front TSL R
3. Control switch RH
4. Starter relay
5. Fuel injector
6. Battery
7. Tail lamp
8. Rear TSL R
9. Number plate
10. Rear TSL L
11. Rear wheel speed sensor
12. Low current relay
13. Oxygen sensor
14. GPS
15. Side stand switch
16. Shift assist sensor
17. Magneto
18. Starter motor
19. Cooling fan
20. Horn
21. Front TSL L
22. Front wheel speed sensor
23. Control switch LH



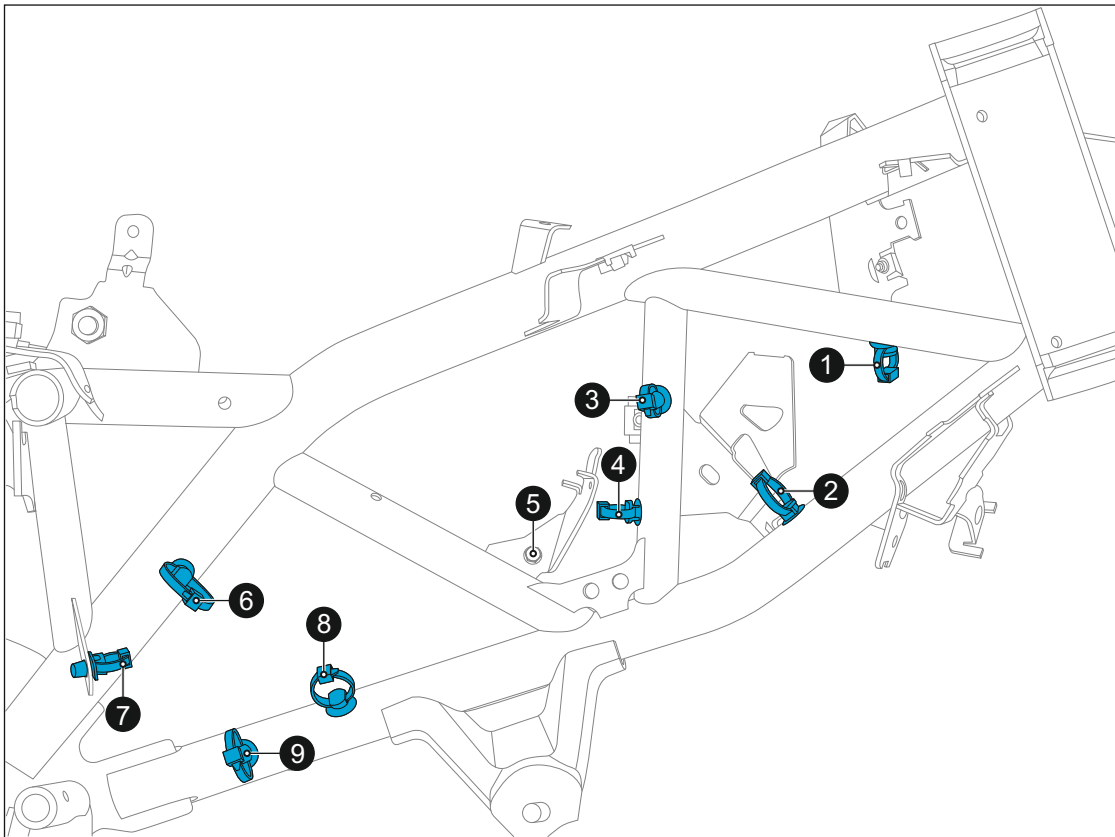
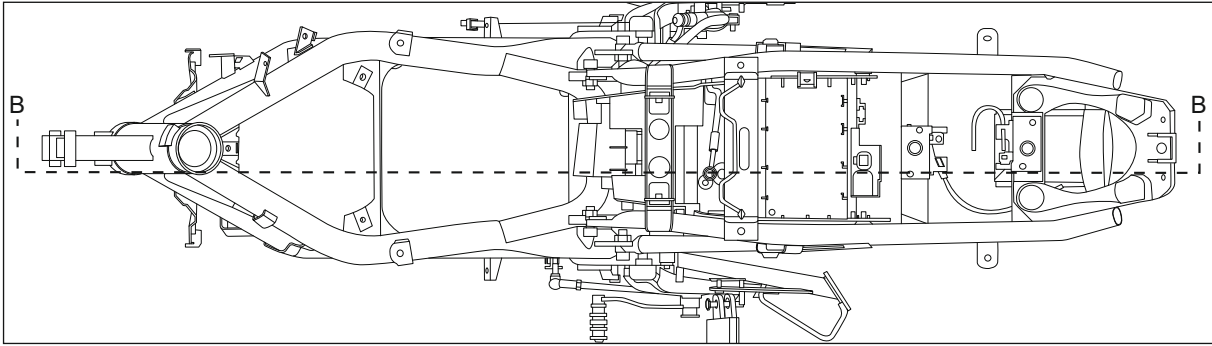
HOLE CLIPS WITH CABLE STRAP LOCATION ON FRAME RH SIDE



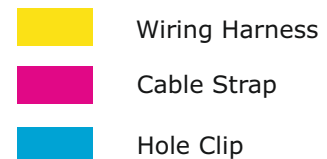
- The frame is sectioned along the line A-A with respect to vehicle centre plane and viewed from the vehicle LH side.
- 1. Hole clip 1 with Cable strap 1
- 2. Hole clip 2 with Cable strap 2
- 3. Hole clip 3 with Cable strap 3
- 4. Hole clip 4 with Cable strap 4
- 5. Hole clip 5 with Cable strap 5
- 6. Hole clip 6 with Cable strap 6
- 7. Hole clip 7 with Cable strap 7
- 8. Hole clip 8 with Cable strap 8
- 9. Hole clip 9 with Cable strap 9



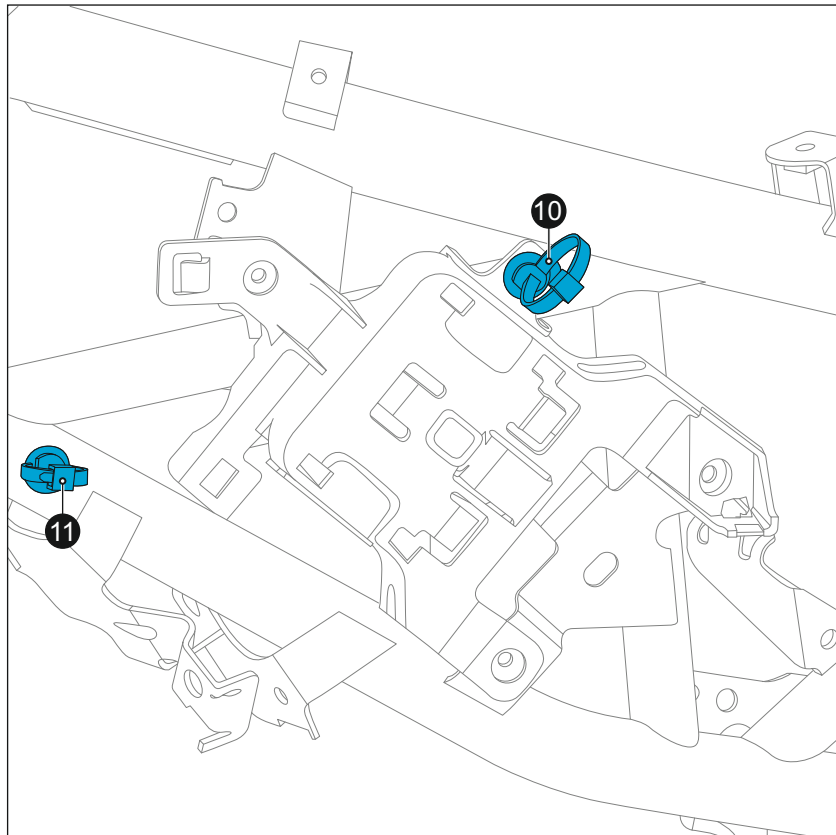
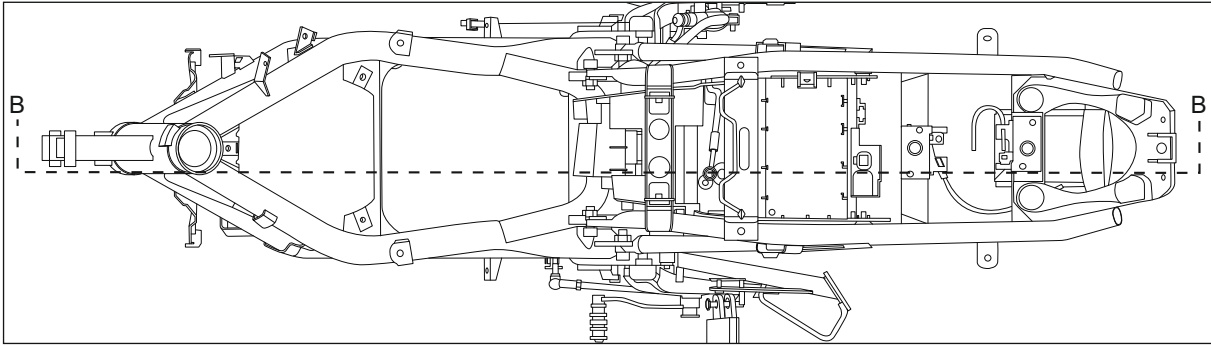
HOLE CLIPS WITH CABLE STRAP LOCATION ON FRAME LH SIDE



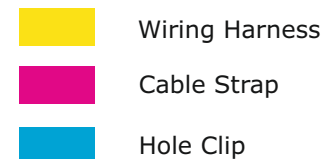
- The frame is sectioned along the line B-B with respect to vehicle centre plane and viewed from the vehicle RH side.
1. Hole clip 1 with Cable strap 1
 2. Hole clip 2 with Cable strap 2
 3. Hole clip 3 with Cable strap 3
 4. Hole clip 4 with Cable strap 4
 5. Hole clip 5 with Cable strap 5
 6. Hole clip 6 with Cable strap 6
 7. Hole clip 7 with Cable strap 7
 8. Hole clip 8 with Cable strap 8
 9. Hole clip 9 with Cable strap 9



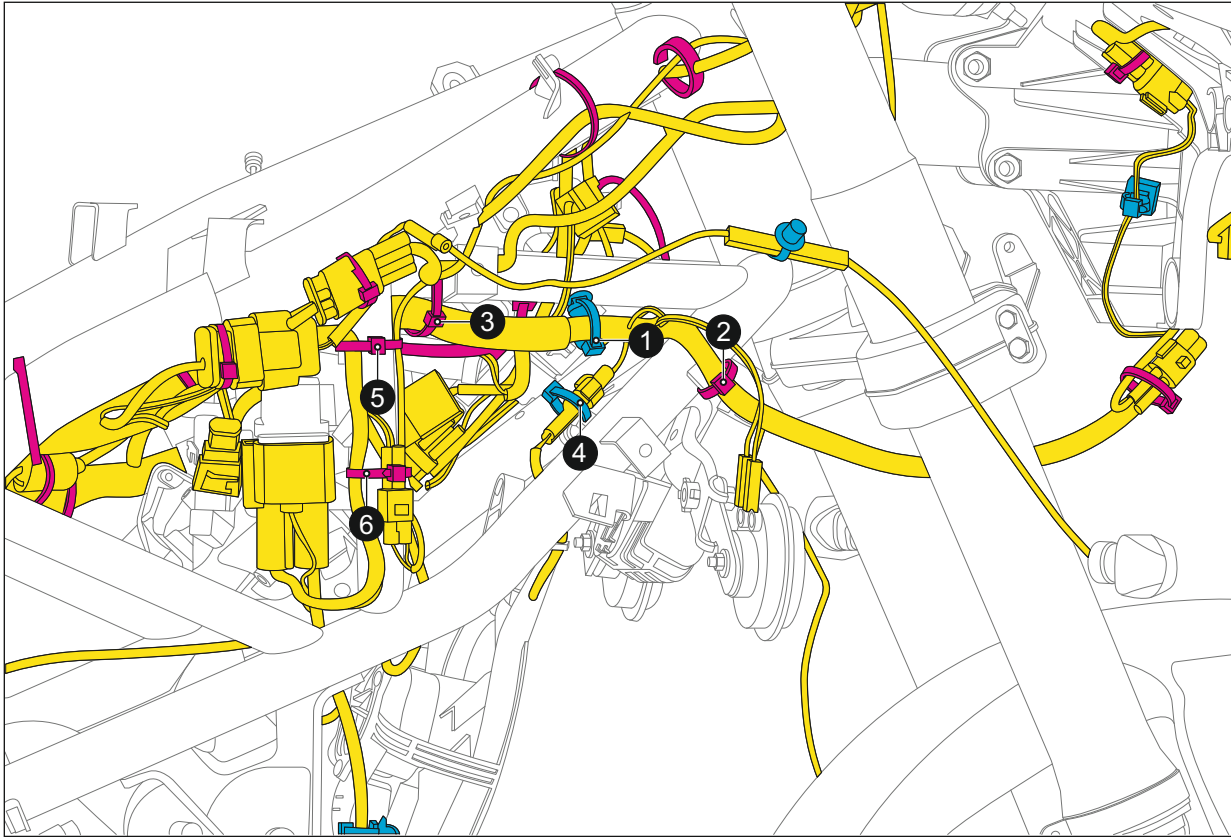
HOLE CLIPS WITH CABLE STRAP LOCATION ON FRAME LH SIDE



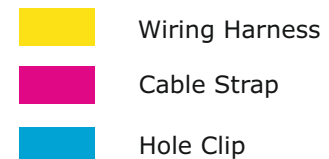
- The frame is sectioned along the line B-B with respect to vehicle centre plane and viewed from the vehicle RH side.
- 10. Hole clip 10 with Cable strap 10
- 11. Hole clip 11 with Cable strap 11



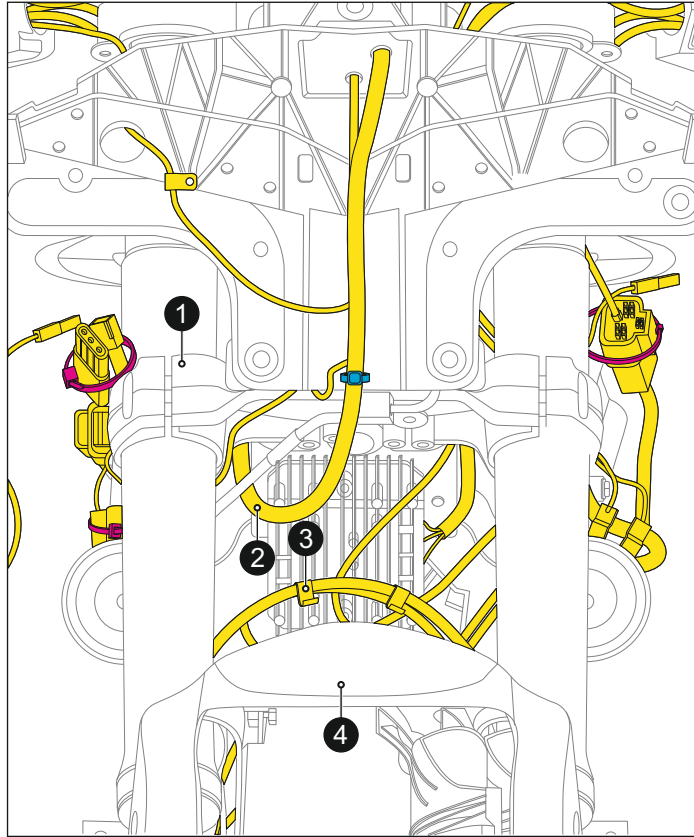
WIRING ROUTING ON FRAME RH SIDE



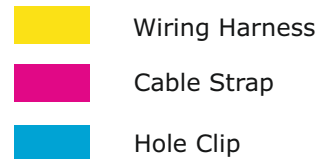
- Tie the main wiring harness with frame using hole clip with cable strap (1), cable strap (2 & 3).
- Tie the cooling fan coupler and extra wires from the component side with the frame using hole clip with cable strap (4).
- Tie the starter relay branch from the wiring harness and the front brake switch and the front brake switch coupler with the frame using the cable strap (5). Put the cable strap on the male portion of the connector as shown.
- Tie the starter relay branch from the wiring harness and the front brake switch wires from the component side with the frame using cable strap (6).
- Assemble the control switch RH coupler above the starter relay as shown.
- Route all the wires in the shown direction.



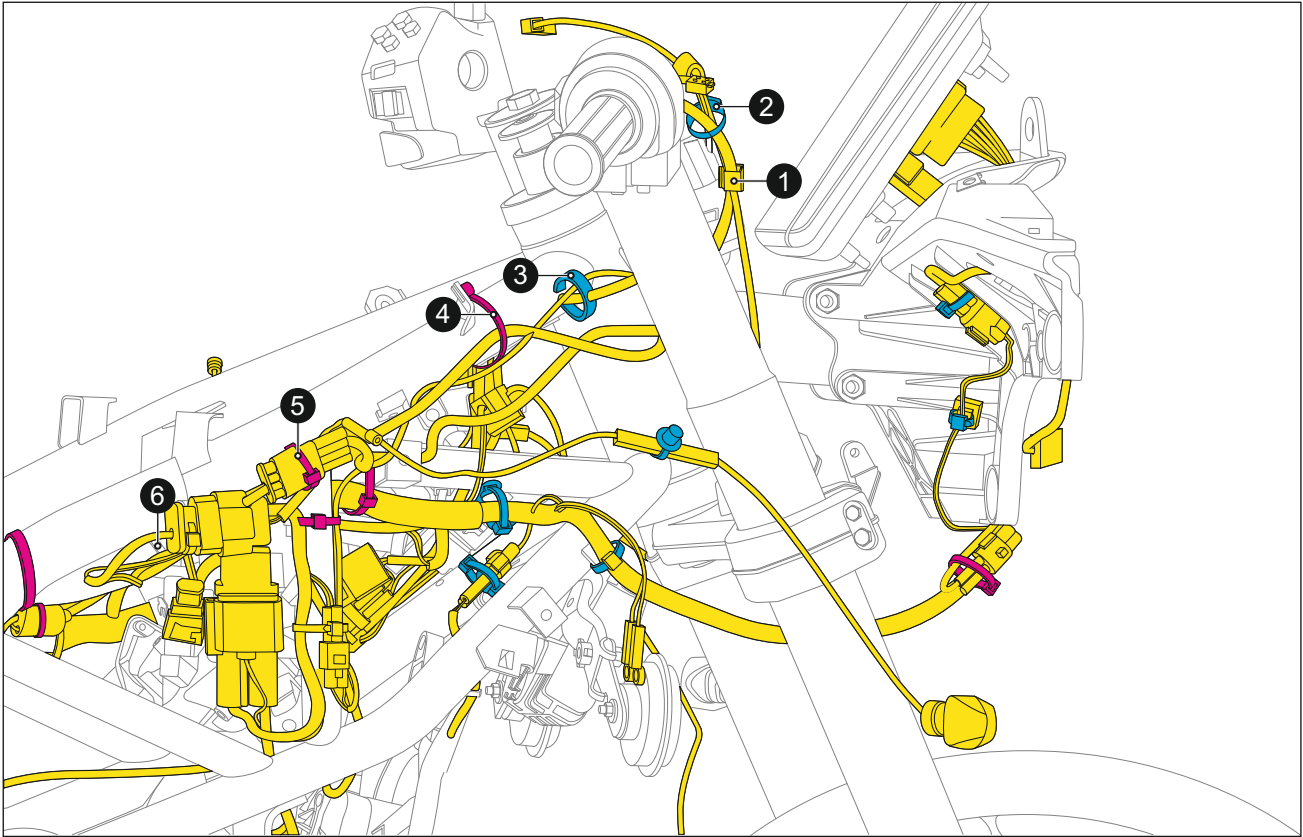
WIRING ROUTING ON FRAME RH SIDE



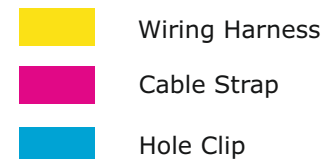
- Route the wiring harness (2) below the lower bracket (1) and above the bundy tube lower (3) as shown.
- Route all the wires in the shown direction.



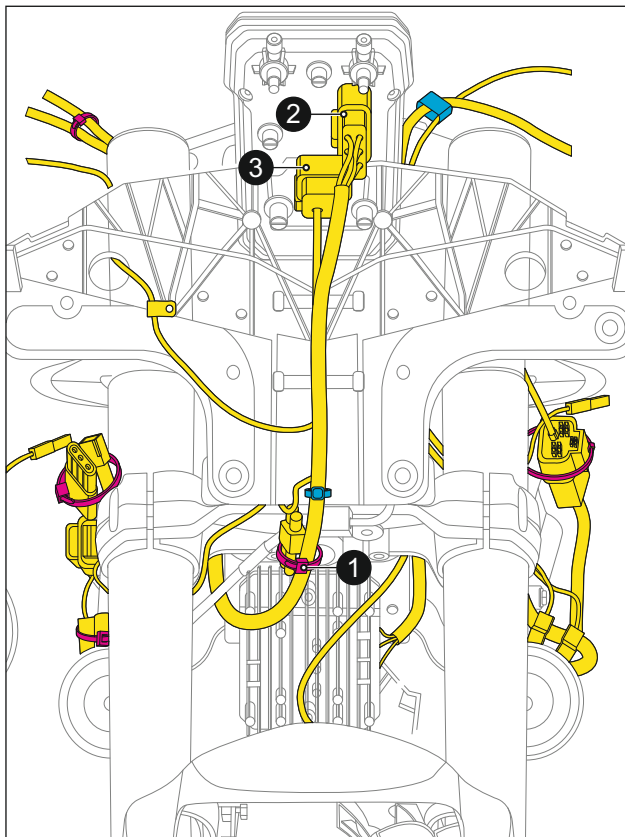
IGNITION, CONTROL SWITCH AND SPEEDOMETER ROUTING



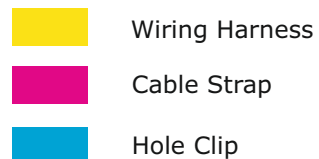
- Use rubber strap (1) for tying component side wires of control switch RH and front brake switch with brake hose. Position the rubber strap (1) just below the metal portion of the brake hose as shown.
- Use cable strap (2) for tying ignition lock, control switch and brake switch wires together.
- Use omega clip (3) to hold the ignition lock, control switch and brake switch wires with the frame.
- Use cable strap (4) for tying ignition lock, control switch and brake switch wires with the frame. Ensure the strap is fastened slightly loosely to avoid wire crush and free wire movement.
- Tie ignition lock coupler with the frame using hole clip with cable strap (5).
- Tie wiring harness with the frame using hole clip with cable strap (6).



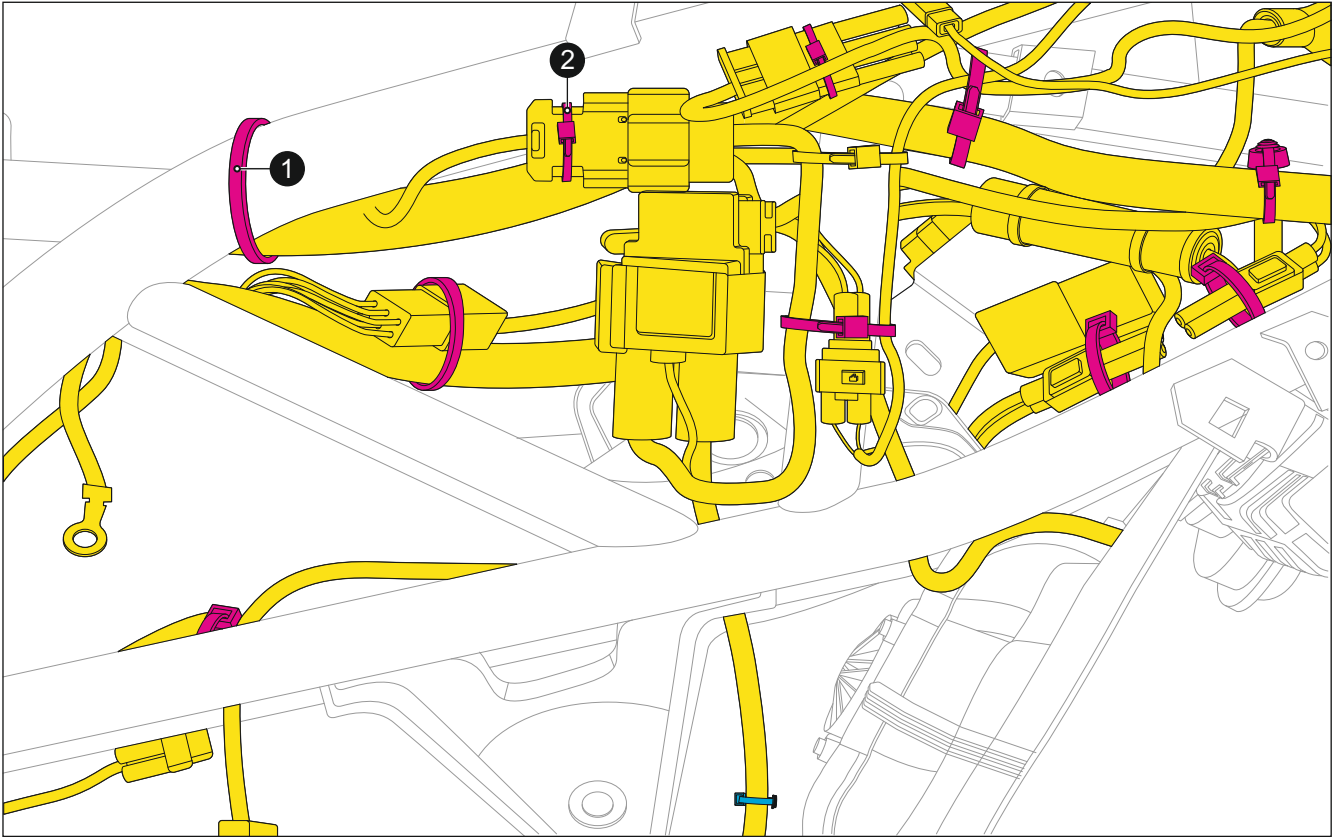
IGNITION, CONTROL SWITCH AND SPEEDOMETER ROUTING



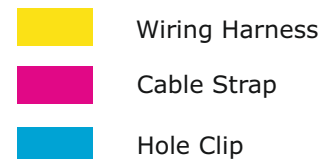
- Use cable strap (1) to tie the USB charger wire along with the wiring harness.
- Connect the speedometer connectors (2 & 3) as shown.



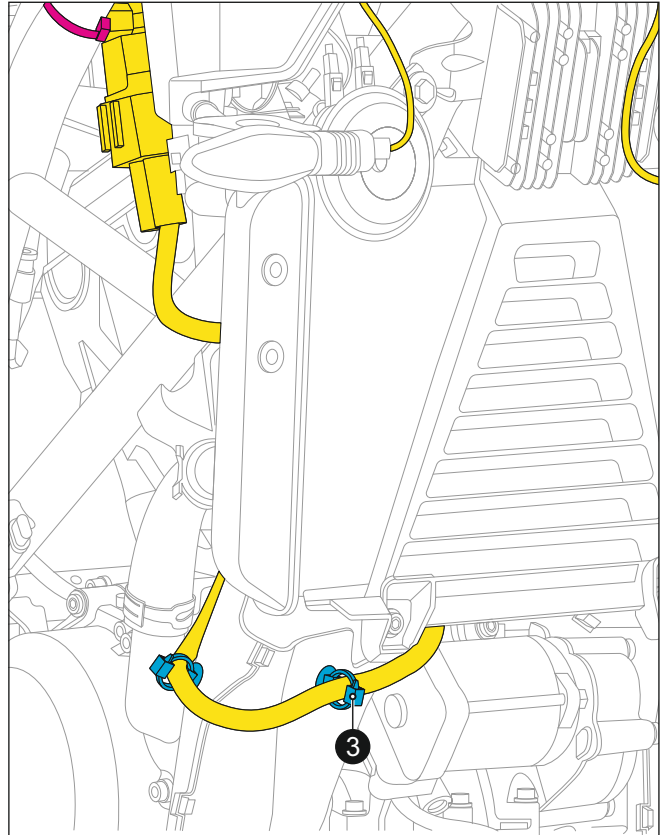
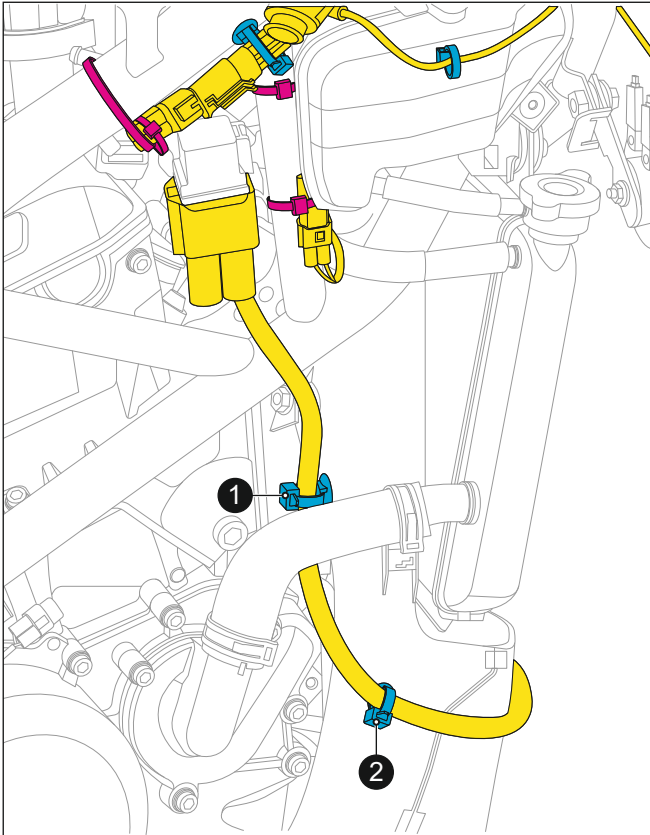
IGNITION, BRAKE, CONTROL SWITCH AND STARTER MOTOR ROUTING



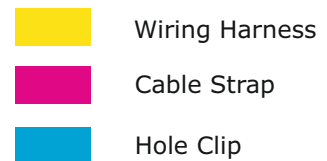
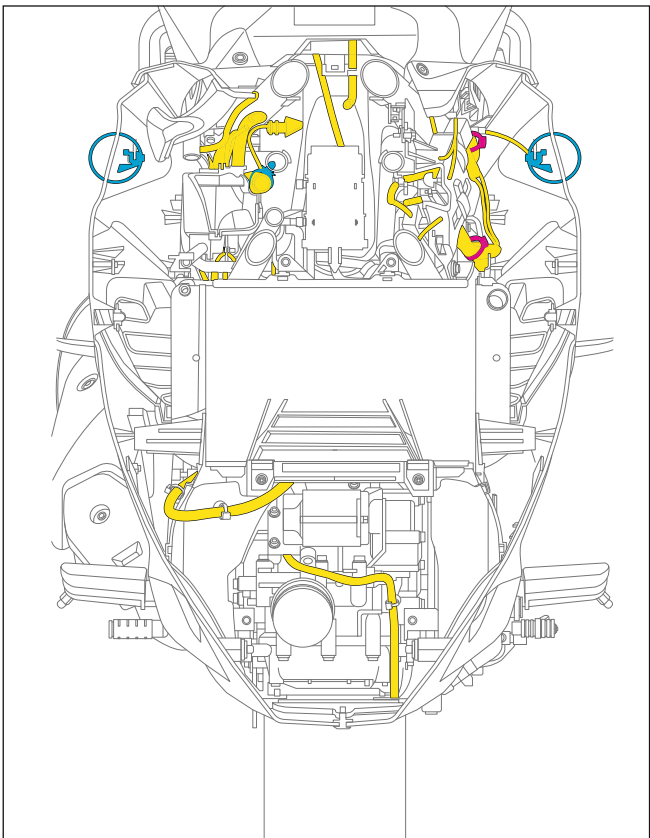
- Place the extra length of ignition lock cable in the reservoir area without disturbing any nearby parts.
- Use cable strap (1) for tying wiring harness with frame. Ensure the wiring harness does not come in contact with the engine head.
- Use cable strap (2) for tying T-MAP sensor wire routing as shown.



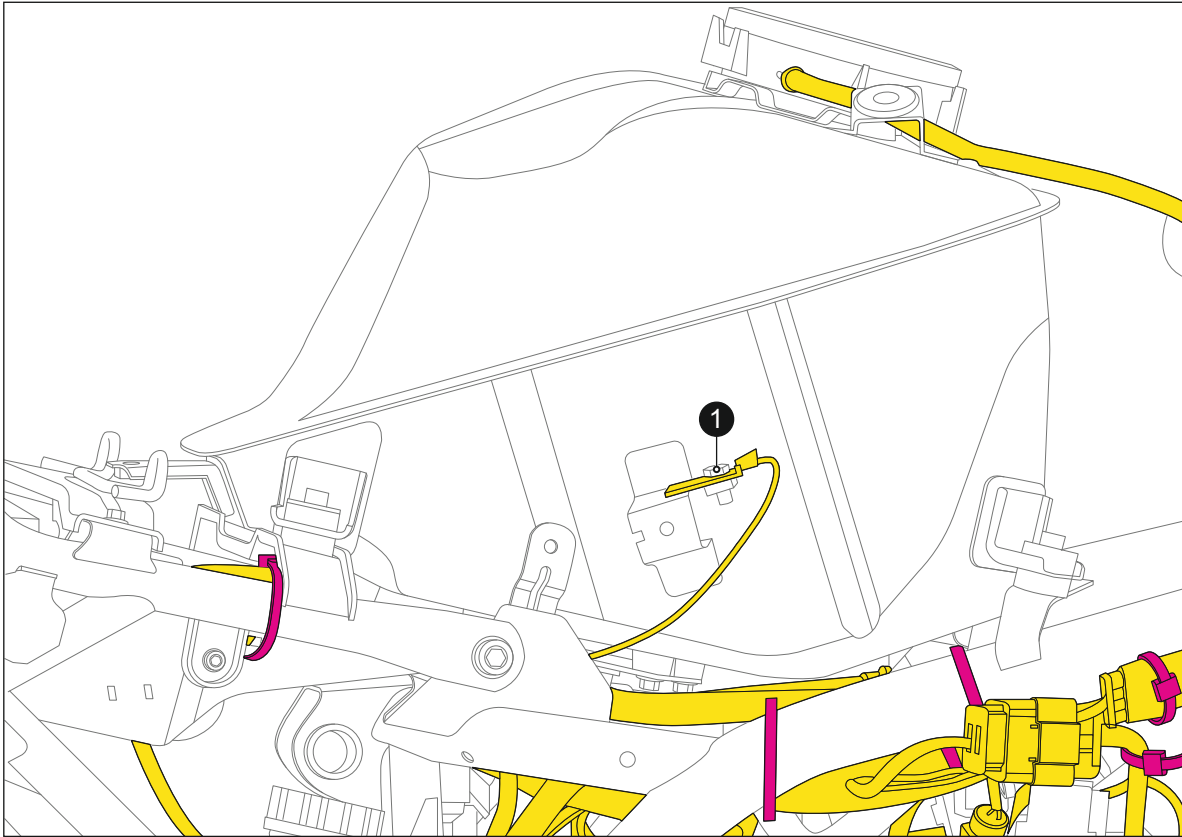
STARTER MOTOR ROUTING



- Fix the hole clips (1, 2 & 3) along with the wiring harness to the radiator ducts as shown.



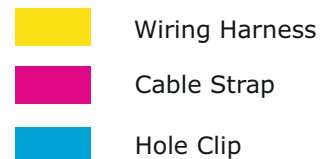
FUEL TANK GROUNDING



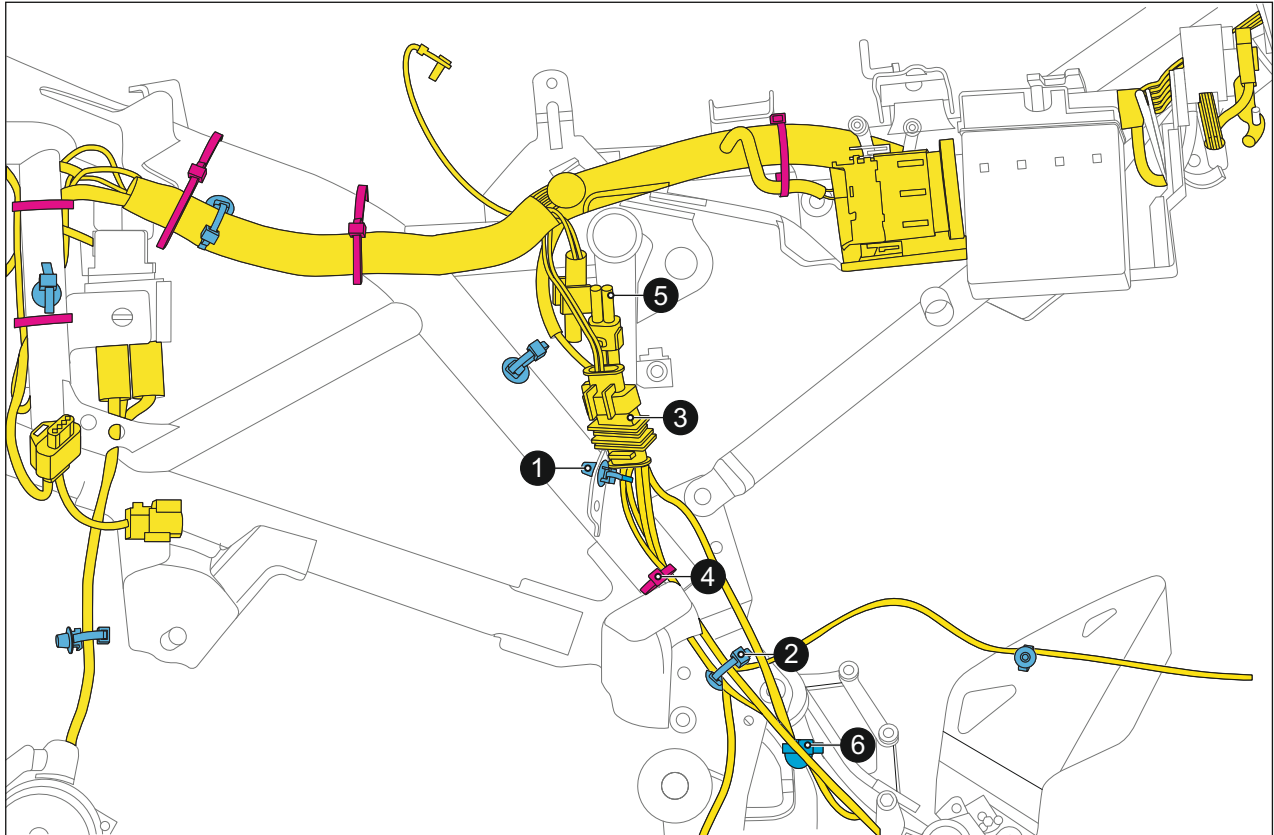
- Mount the fuel tank ground wires on the fuel tank bracket as shown.

1. Bolt (M6x12)

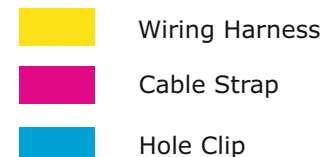
Tightening torque: 6 ± 0.7 Nm



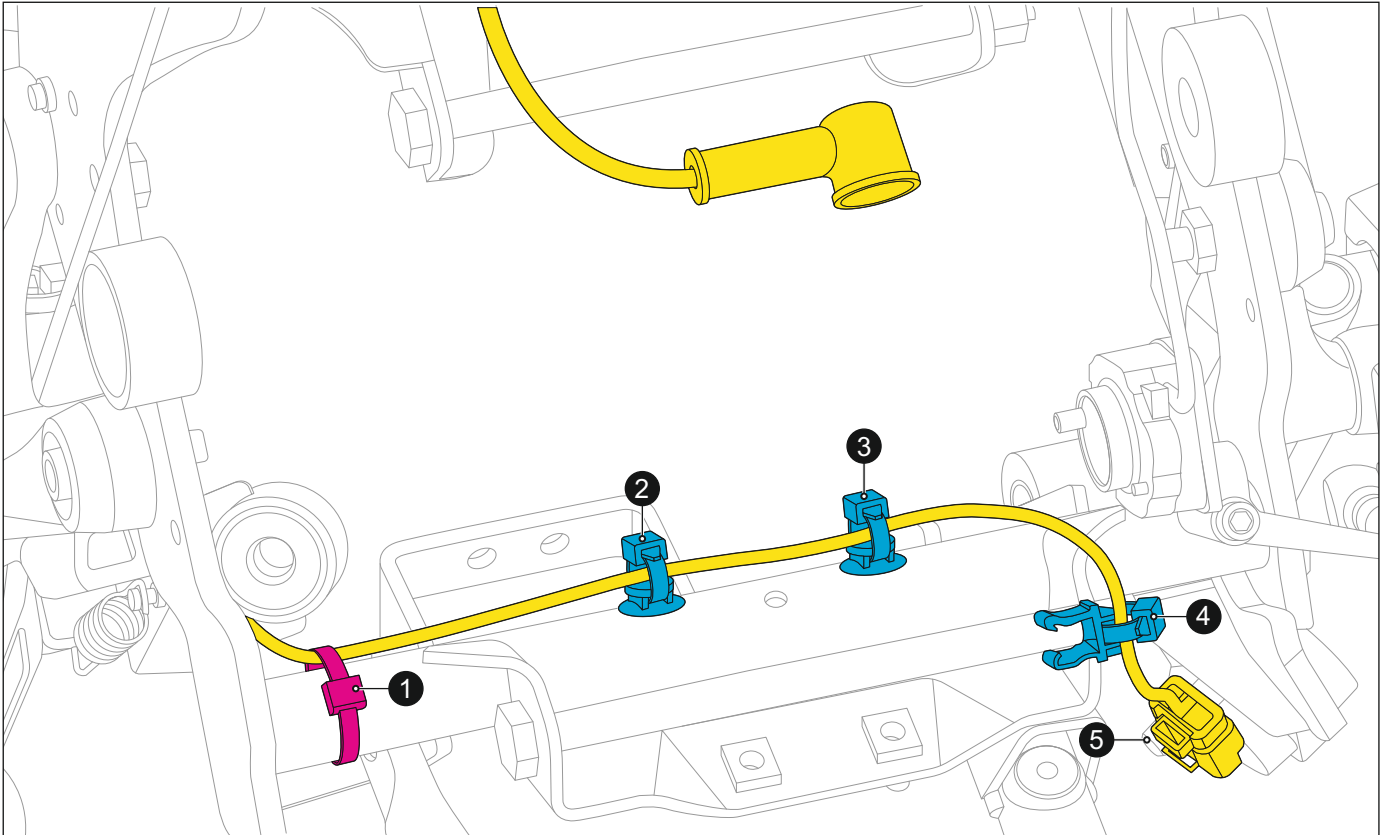
HOLE CLIPS WITH CABLE STRAPS LOCATION ON FRAME LH SIDE



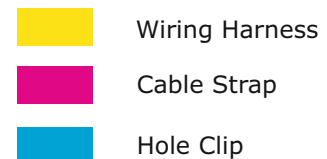
- Use hole clip with cable strap (1) for tying lambda sensor and rear wheel speed sensor wires together.
- Use hole clip with cable strap (2) for tying rear stop switch (dark green), rear wheel speed sensor (light green) and side stand switch wires.
- Use hole clip with cable strap (3) to hold rear stop switch, rear wheel speed sensor, side stand switch and lambda sensor connectors.
- Use cable strap (4) to tie rear stop switch, rear wheel speed sensor and side stand switch.
- Use cable strap (5) to tie rear stop switch coupler, rear wheel speed sensor coupler and lambda sensor coupler with the frame.
- Use hole clip with cable strap (6) to tie rear stop switch wires.
- Route all the wires as per the instructions and as shown.



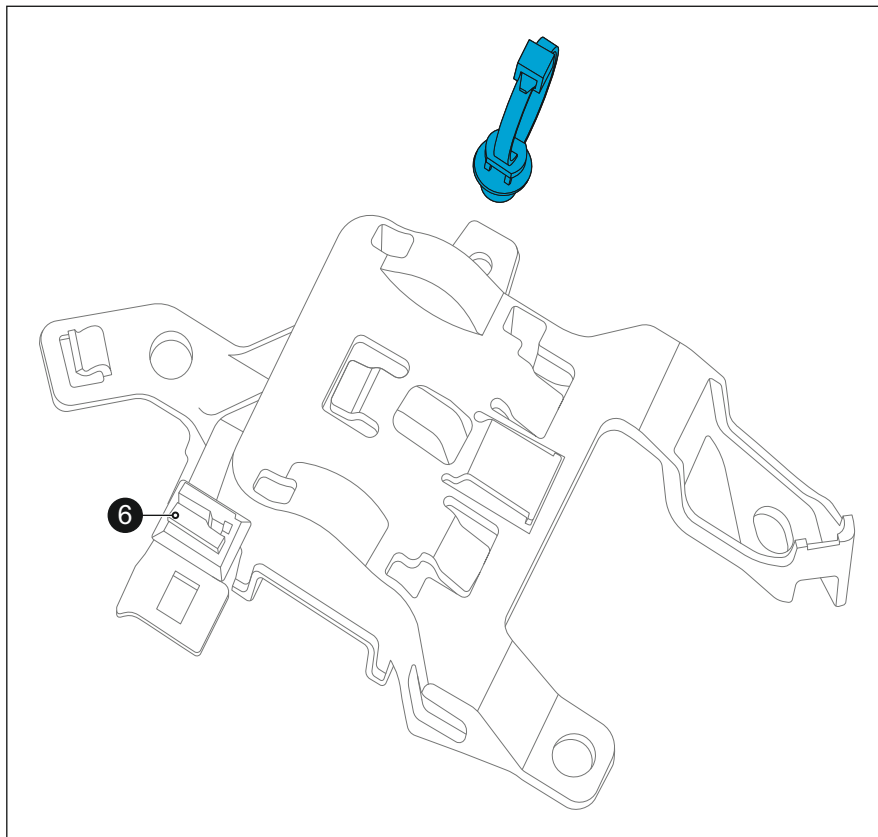
SIDE STAND SWITCH ROUTING AND ECU BRACKET SUB-ASSEMBLY



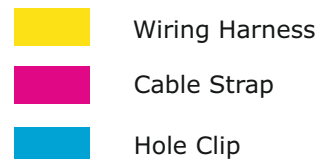
- Use cable strap (1) for tying sensor and side stand switch wire with frame.
 - Insert the hole clips (2 & 3) and edge clip (4) along with wiring harness to the frame holes and frame bracket as shown.
 - Assemble the hole clip with cable strap on the ECU bracket sub-assembly.
5. Bolt (M6x16)
Tightening torque: 6 Nm
Apply Loctite 243 blue on the thread locker.



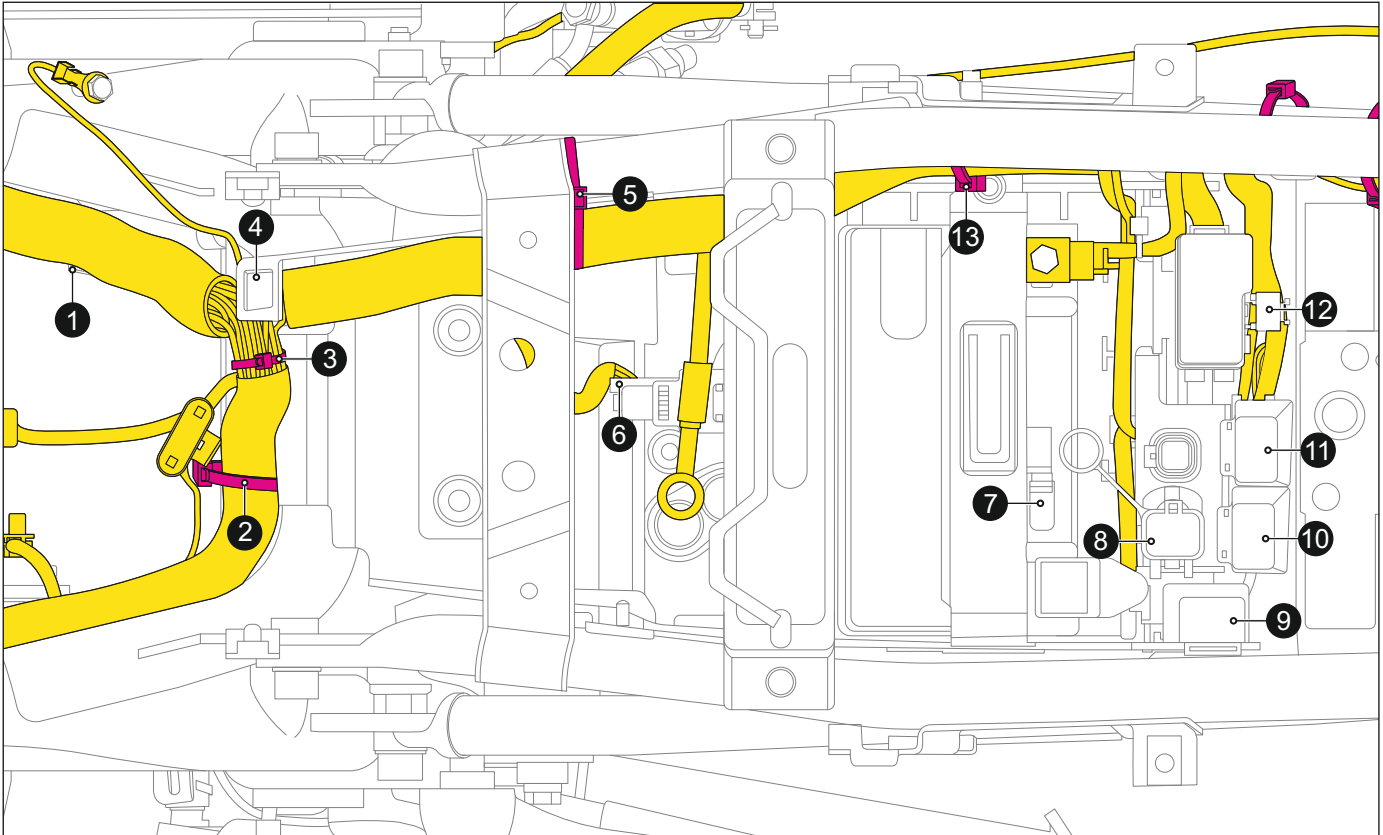
SIDE STAND SWITCH ROUTING AND ECU BRACKET SUB-ASSEMBLY



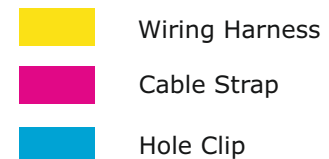
- Assemble the snap clip (6) and hole clip with cable strap on the ECU bracket sub-assembly.



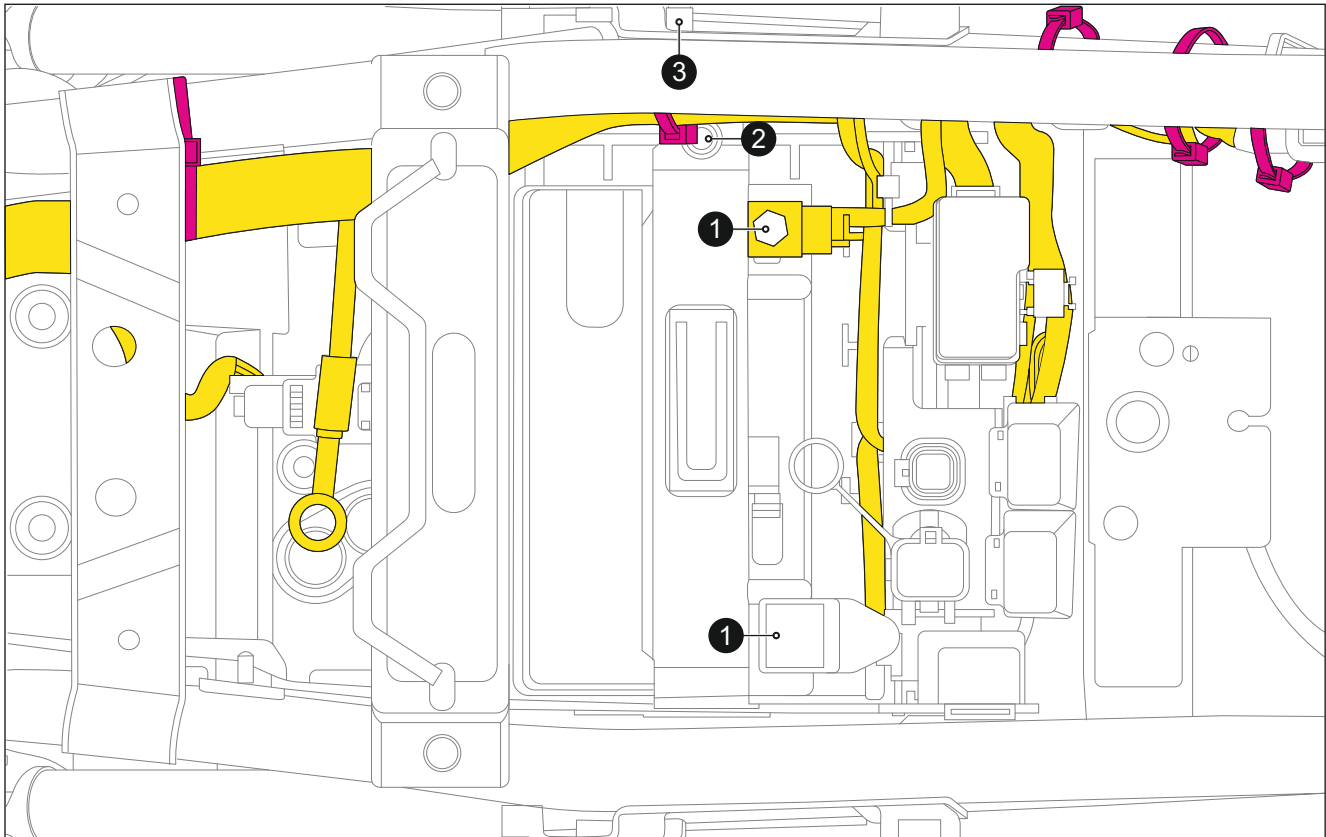
BATTERY, RELAY, WIRING HARNESS ROUTING



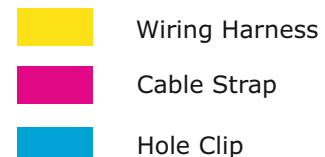
- Tie the main wiring harness with the frame using hole clip with cable strap (1).
- Tie the main wiring harness with the battery box using cable strap (2 & 3).
- Fix the wiring harness at the first fixation point (4).
- Tie the main wiring harness with the frame using cable strap (5).
- Route the HECU (6) wires below the frame bridge bracket as shown.
- Assemble the fuse puller (7), diagnostic connector (8), fuel pump relay (9), EFI relay (10), cooling fan relay (11) and fuse box (12) on the battery box as shown.
- Insert the hole clip along with wiring harness into battery box as shown.
- Route the main wiring harness through the gap provided on the battery band to frame as shown.



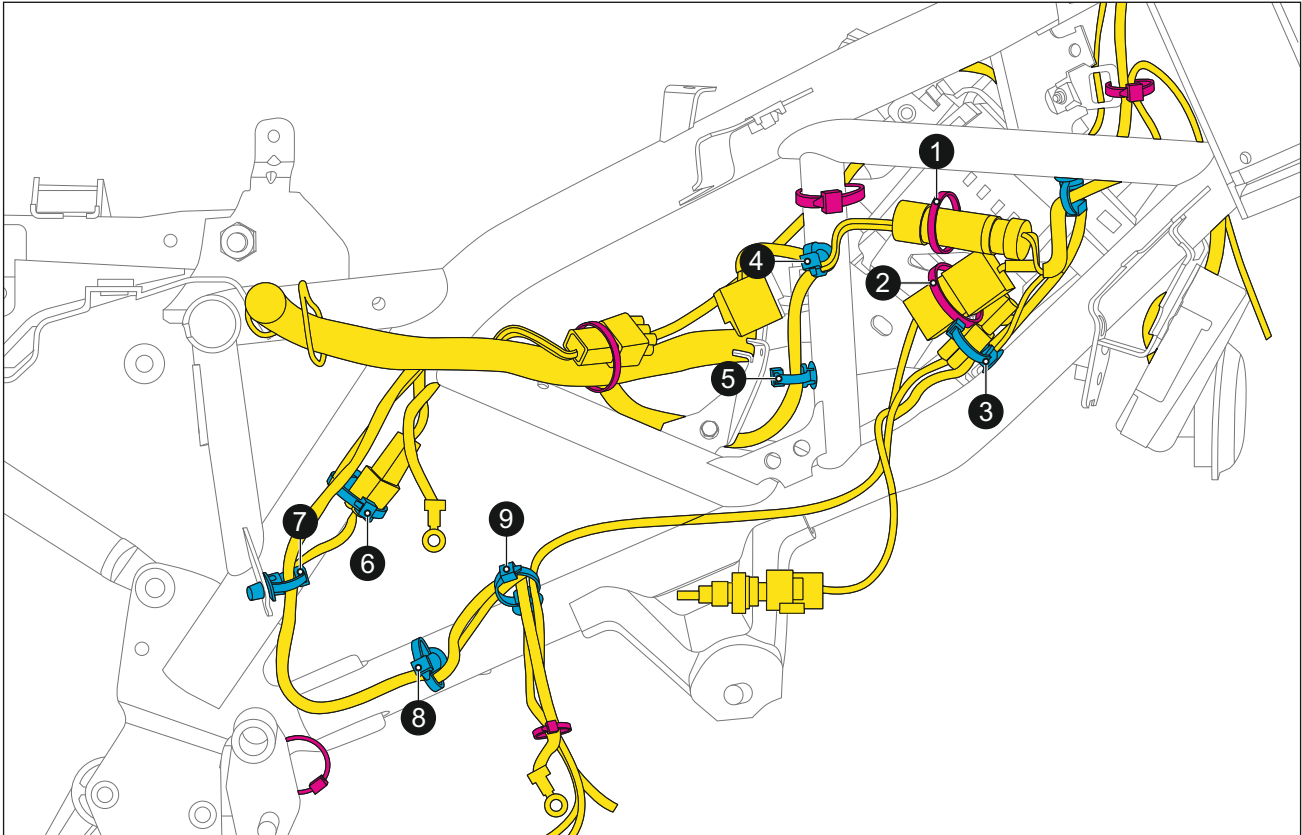
ASSEMBLY SEQUENCE OF BATTERY TERMINAL AND WIRE ROUTING



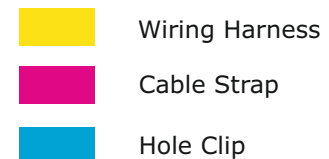
1. Battery terminals
Tightening torque: 1.75 ± 0.25 Nm
2. Battery band bolt (M5x20)
Tightening torque: 2 ± 0.3 Nm
 - Align the fasteners towards top direction as shown.
 - Apply petroleum jelly (1-2g) on both the terminals.
 - Assemble the negative terminal first and then the assemble the positive terminal to the battery. For removing, disconnect the positive terminal first and then the negative terminal.
 - Route the battery positive wire first and then route the negative wire. Bending of battery terminals are strictly prohibited.
 - Route the diagnostic connector wires through the gap available between fuse box and diagnostic mounting. Align the battery cable positive terminal as shown.
 - Insert the hole clip (3) along with wiring harness in to the battery box as shown.



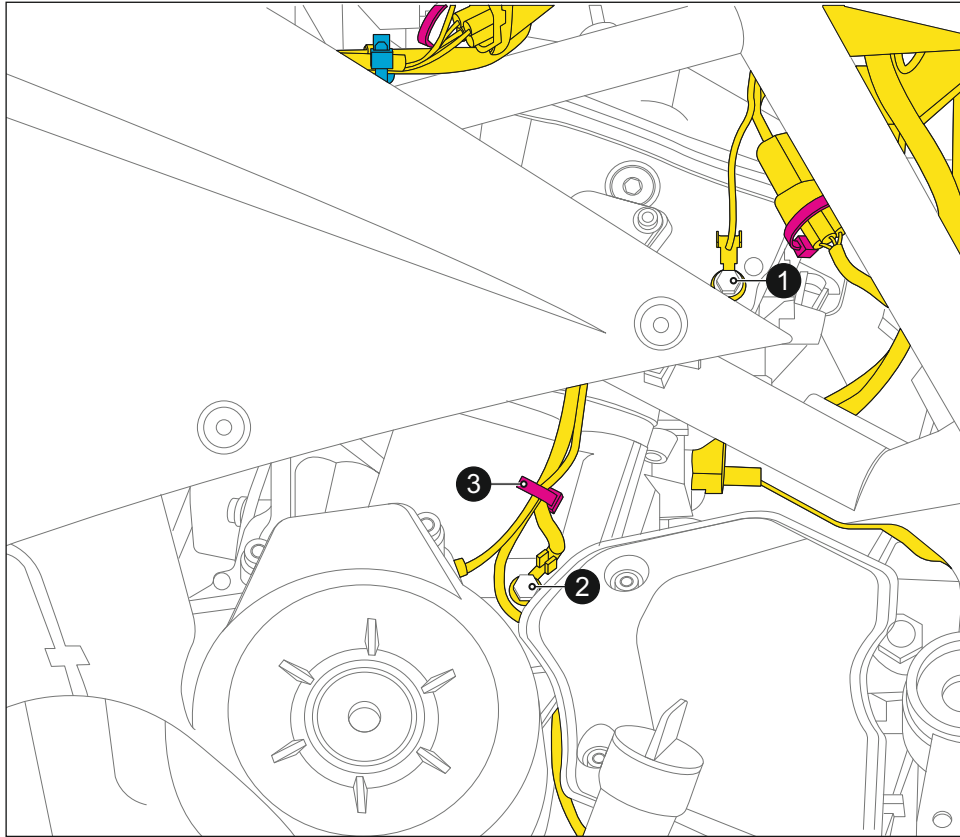
WIRING ROUTING ON FRAME LH SIDE



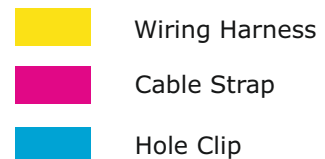
- Tie the regulator coupler with frame bracket using the cable straps (1 & 2) as shown.
- Tie the pulsar coil with the frame using hole clip with cable strap (3).
- Tie the wiring harness regulator branch using hole clip with cable strap (4 & 5).
- Tie the GPS coupler and engine ground wire with the frame using the hole clip with cable strap (6).
- Tie the GPS wire from component side and engine ground wire from wiring harness using hole clips with cable straps (7 & 8).
- Tie the GPS, magneto wires from the component side and engine ground wire using the hole clip with cable strap (9).



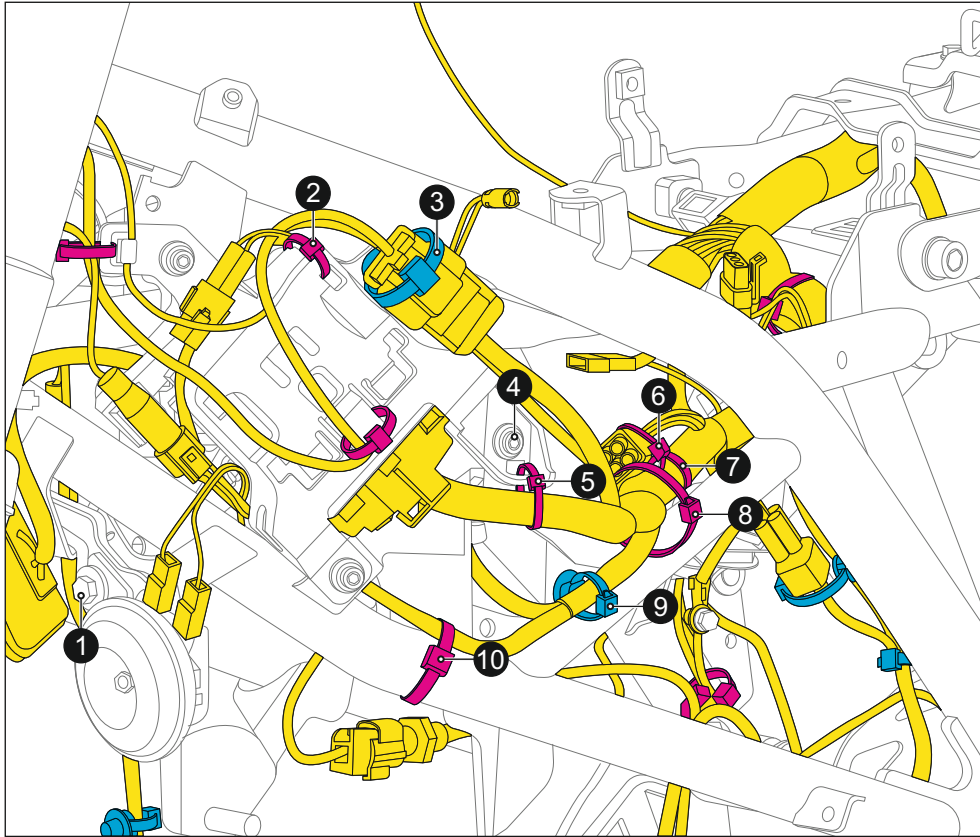
WIRING ROUTING ON FRAME LH SIDE



1. Bolt (M6x10)
Tightening torque: 6 ± 1 Nm
2. Bolt (M6x10)
Tightening torque: 10 ± 1.5 Nm
- Tie the GPS, magneto wires from components side and engine ground wire using the cable strap (3).



WIRING ROUTING ON FRAME LH SIDE



1. Bolt (M8x16)

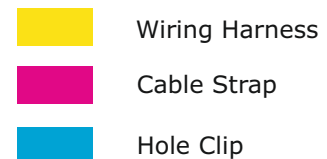
Tightening torque: 12 ± 2 Nm

- Use cable strap (2) to tie the clutch switch wires along with the ECU bracket as shown.
- Use hole clip with cable strap (3) to mount the switch LH connector with the ECU bracket.

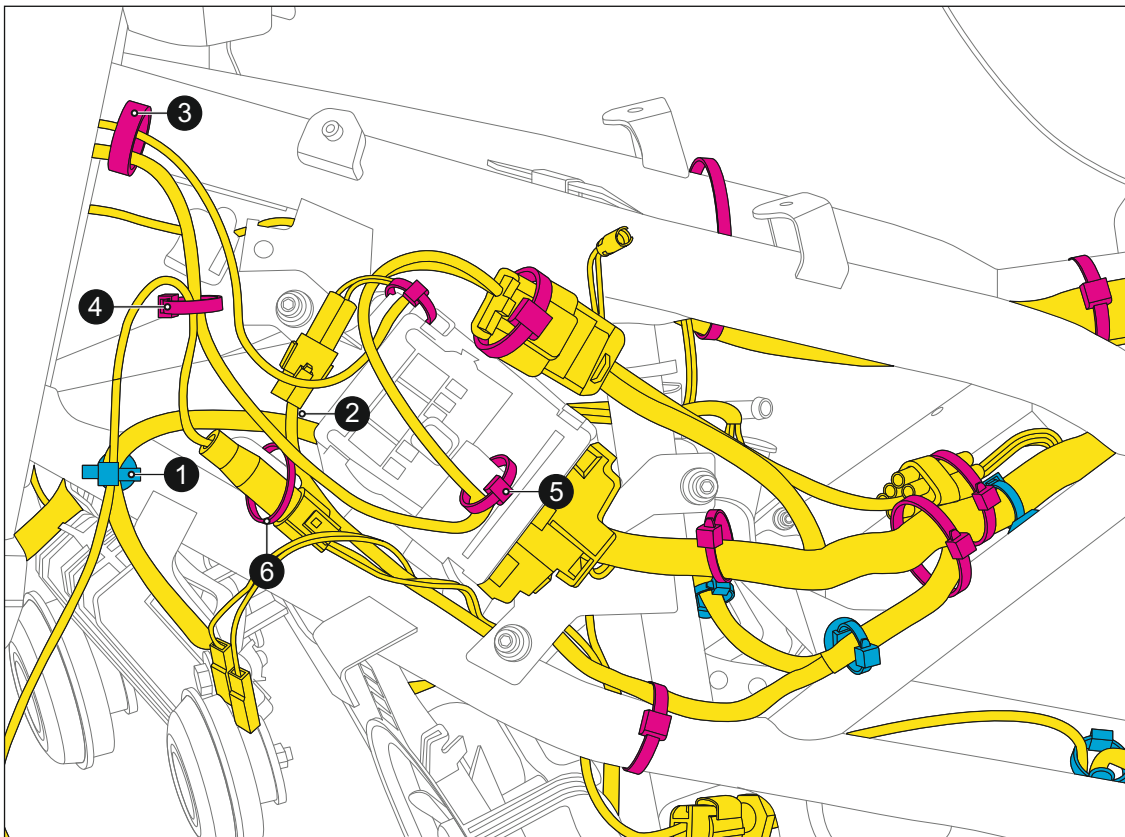
4. Bolt (M5x20)

Tightening torque: 6 ± 1 Nm

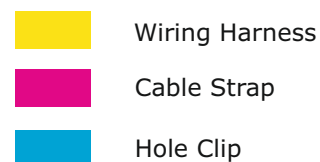
- Use cable strap (5) to tie the ECU branch wires from wiring harness along with the ECU bracket.
- Use cable strap (6 & 8) to fix control switch coupler with wiring harness in the positions shown.
- Insert hole clip (7) along with the wiring harness into the frame bracket as shown.
- Use hole clip with cable strap (9) to mount wiring harness and control switch component side cable.
- Use cable strap (10) to tie wiring harness and magneto cable from component side with the frame.
- Mount the ECU with bracket on frame using M5 bolts (3 Nos.) and route all the wires as per the routing shown.



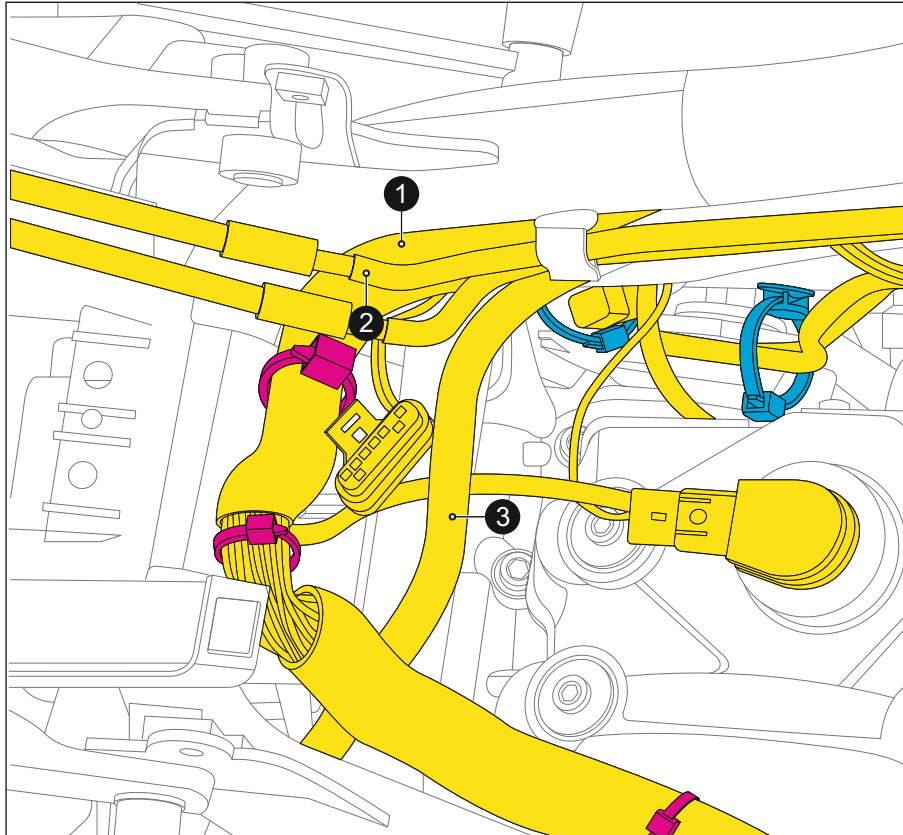
CONTROL SWITCH LH & FUEL PUMP WIRE ROUTING



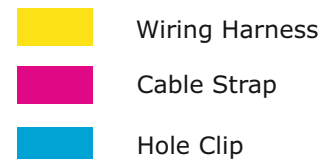
- Use hole clip with cable strap (1) to tie regulator and front wheel speed sensor wires from component side.
- Use hole clip with cable strap (2) to tie control switch and regulator wires.
- Use omega clip (3) to tie control switch LH wires and clutch switch wires.
- Use cable strap (4 & 5) to tie control switch LH wires and front wheel speed sensor wires along with ECU bracket as shown.
- Fix front wheel speed sensor on the snap clip (6) available in the ECU bracket as shown.



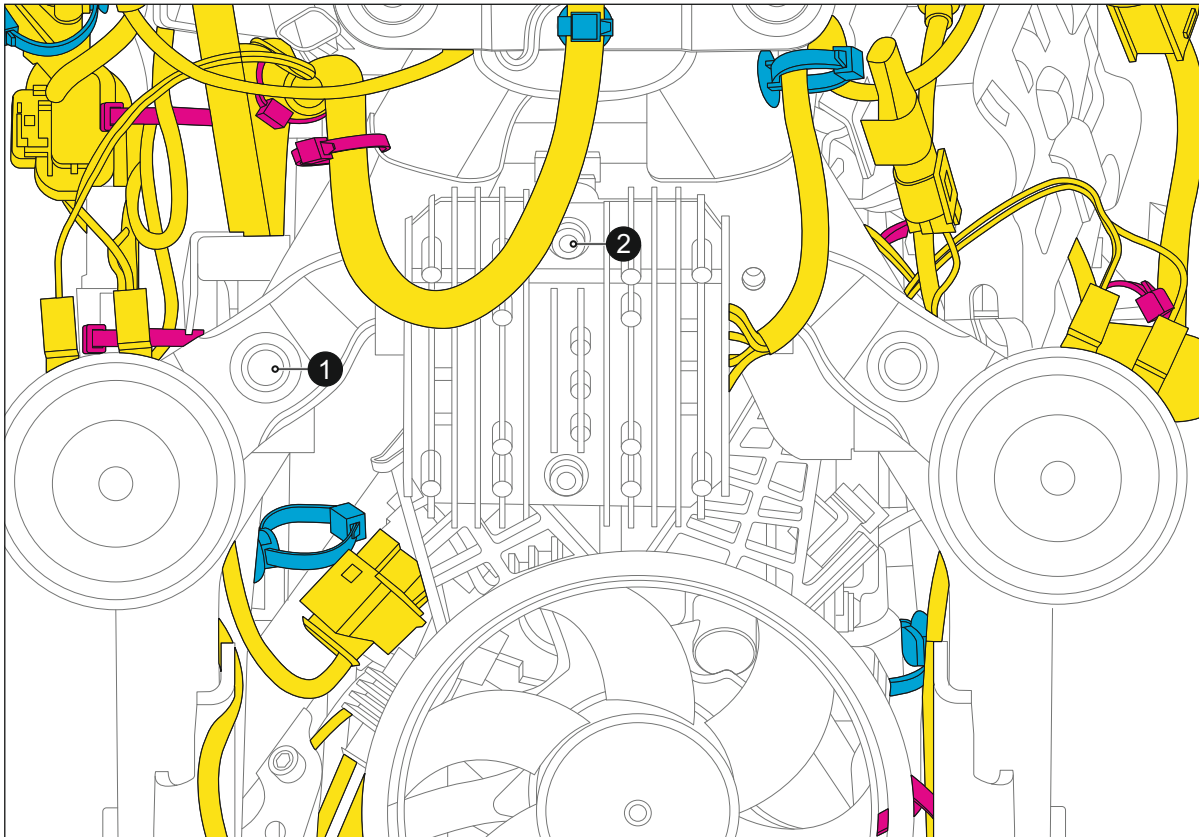
CONTROL SWITCH LH & FUEL PUMP WIRE ROUTING



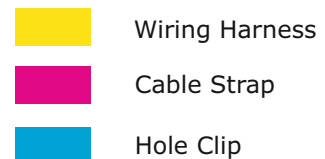
1. Wiring harness
2. Bundy tube
3. Clutch cable



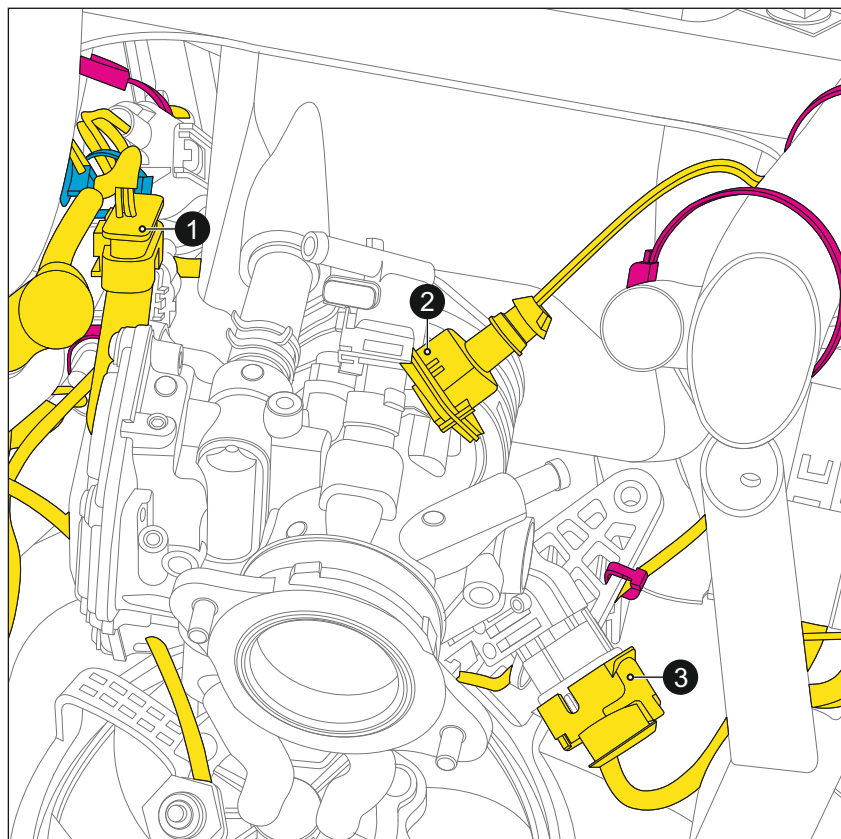
HORN AND REGULATOR MOUNTING



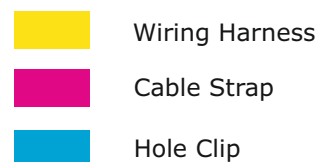
1. Bolt (M8x16)
Tightening torque: 12 ± 2 Nm
 1. Bolt (M6x25)
Tightening torque: 10 ± 2 Nm
- Mount the horn LH & RH on frame bracket using fasteners.
 - Check if the horn terminal is locked by pulling the wire, not by holding housing.
 - Mount the regulator on frame bracket using bolts (2 Nos.) as shown.



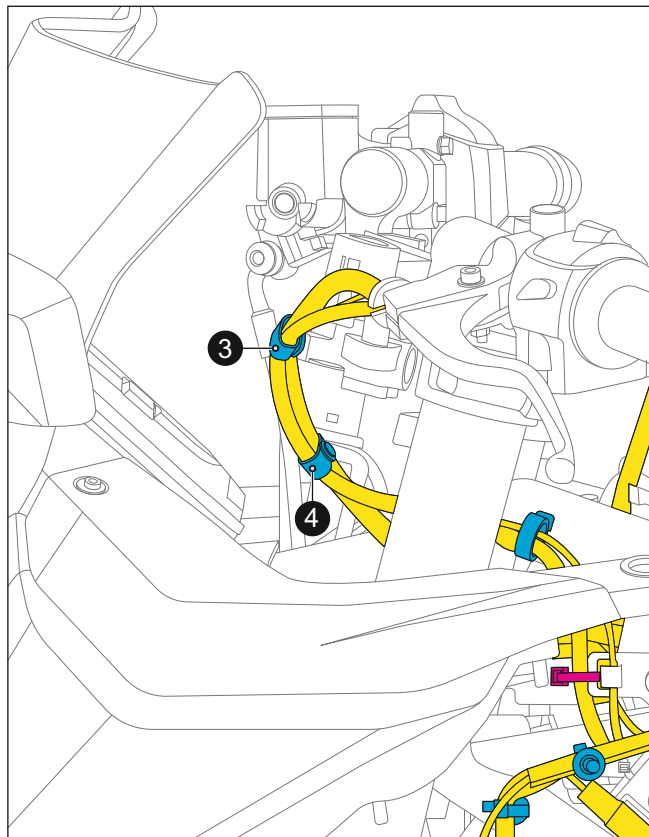
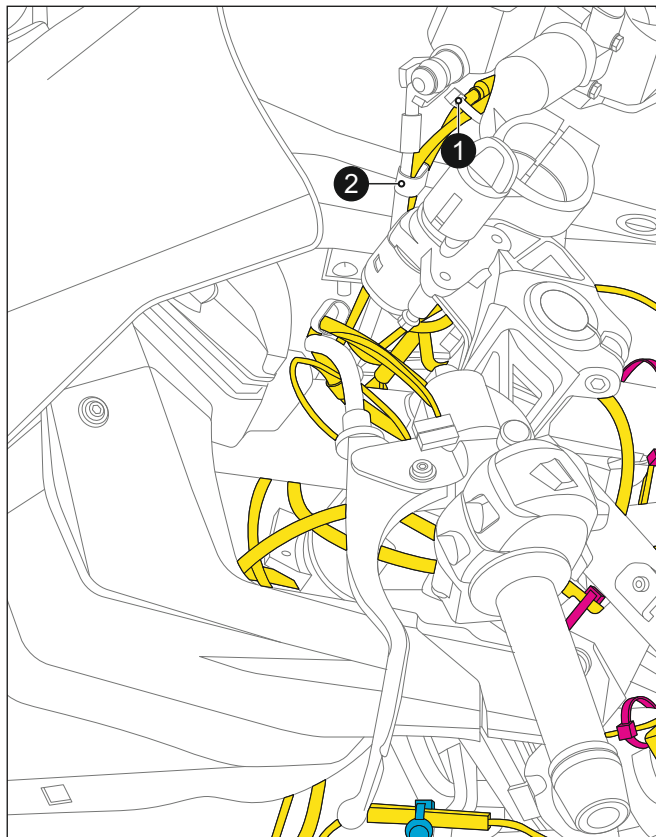
ETB CONNECTOR, FUEL INJECTOR AND TMAP SENSOR WIRE ROUTING



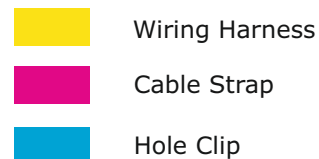
- Assemble the ETB connector (1), fuel injector (2) and TMAP sensor (3) wire with mating connectors from wiring harness.



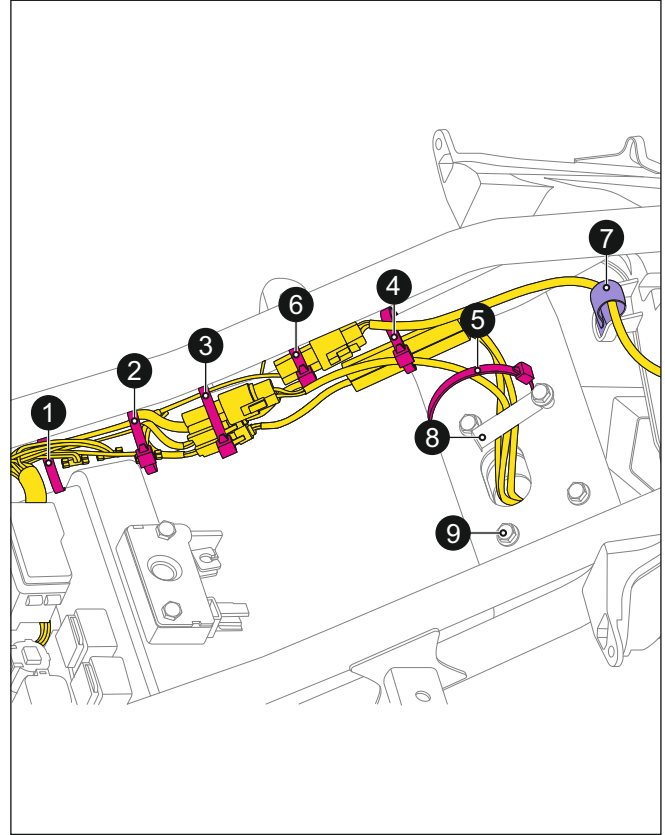
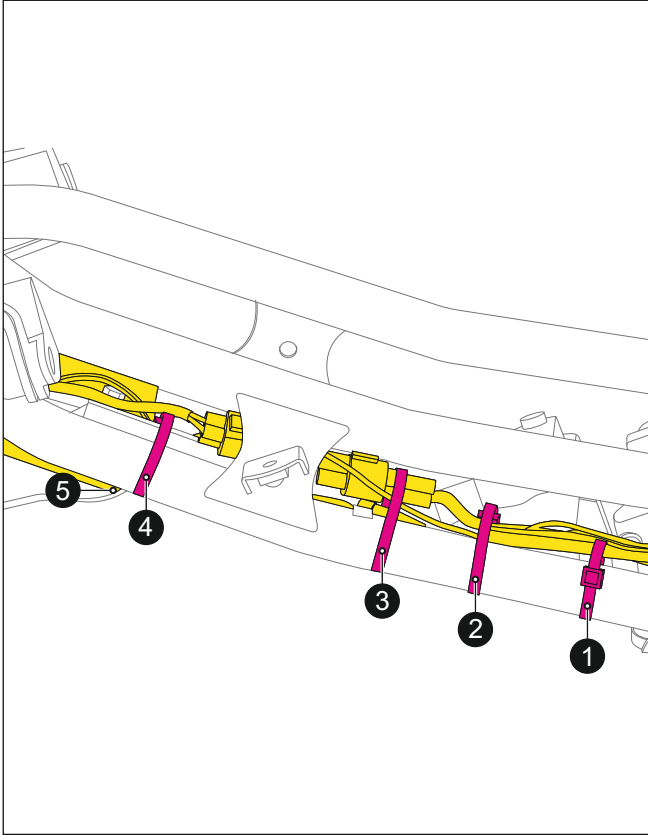
WIRE ROUTING ALONG WITH CLUTCH AND BRAKE CABLES



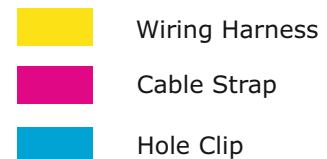
- Tie control switch and brake switch wires using cable strap (1).
- Tie control switch RH and front brake switch component side wires with brake hose using rubber strap (2). Position the rubber strap (2) just below the metal portion of the brake hose as shown.
- Tie control switch LH and clutch switch component side wires with throttle cable using rubber straps (3 & 4). Position the rubber strap (3) just below the metal portion of the throttle cable. Position the rubber strap (4) 60 to 70 mm away from the rubber strap (3) as shown.



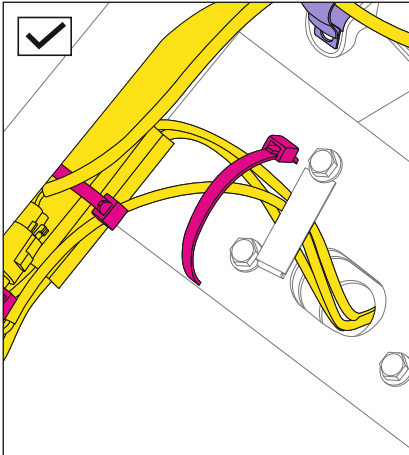
WIRE ROUTING REAR AREA



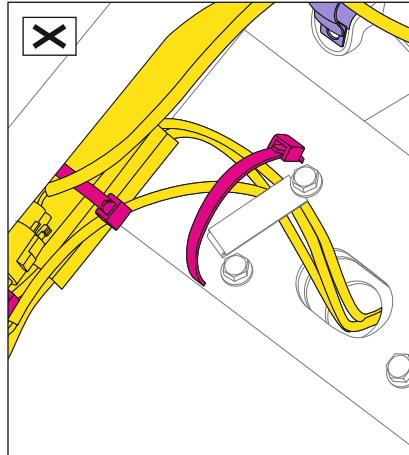
- Tie main wiring harness along with the frame using cable straps (1 & 2).
 - Tie rear TSL LH & RH and number plate lamp connector along with frame using cable strap (3) as shown.
 - Tie TSL's PCBs, number plate lamp component side wires with frame using cable strap (4) as shown.
 - Tie TSL LH & RH, number plate lamp wires from component side along with frame bracket using cable strap (5) as shown.
 - Tie tail lamp connector with frame bracket using hole clip with cable strap (6) as shown.
 - Route the tail lamp wire to clamp (7) provided on tail lamp assembly as shown.
 - Use clamp (8) to avoid wire rubbing with tool kit.
9. Hexagonal flange bolt (M6x1x25)
Tightening torque: 6 ± 1 Nm
- Ensure the assembly is performed as per the shown orientation.



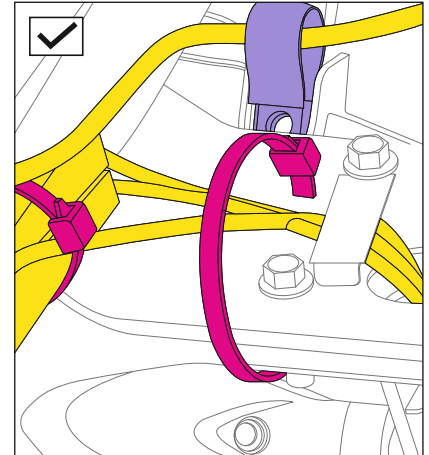
WIRE ROUTING REAR AREA



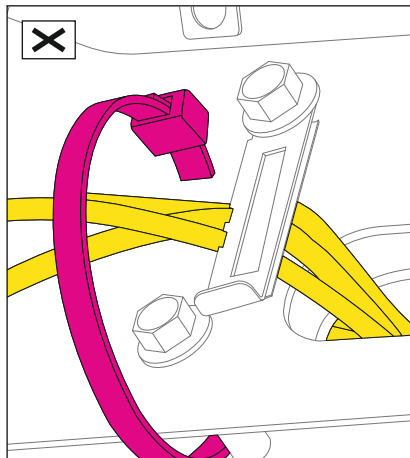
Assemble the clamp flap on the RH side of the bolt as shown.



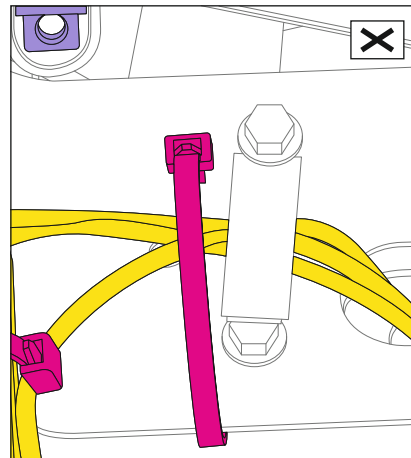
Clamp flap assembled above / on the bolt.



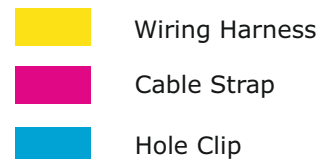
Clamp flap should be facing downwards as shown.



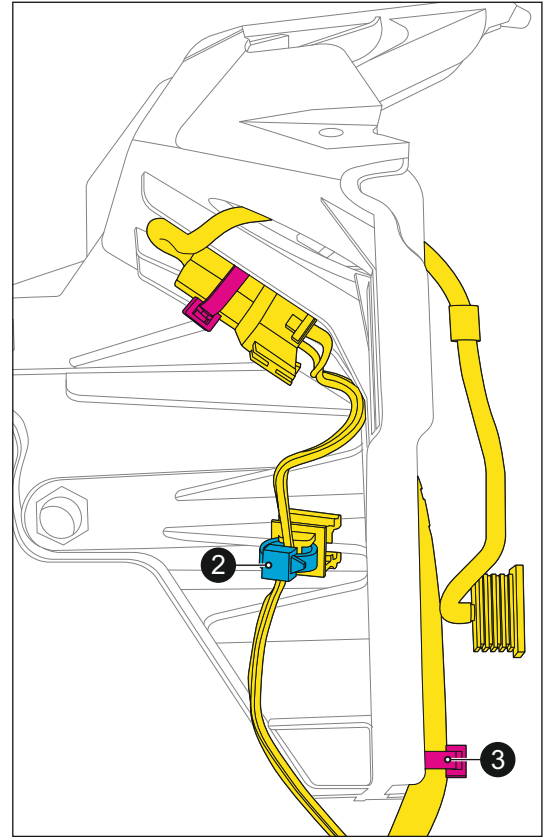
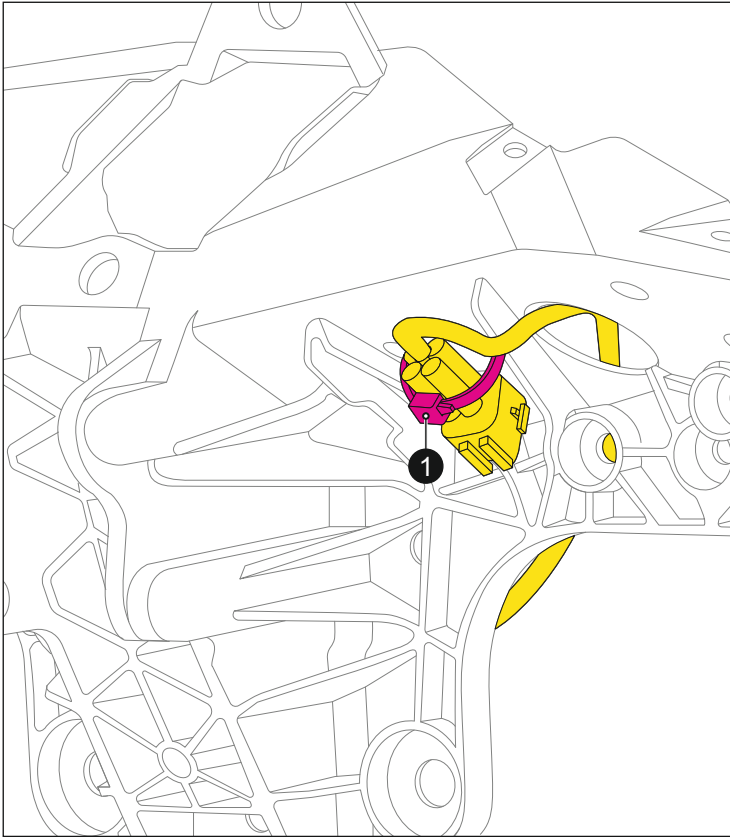
Clamp flap should not be facing upwards.



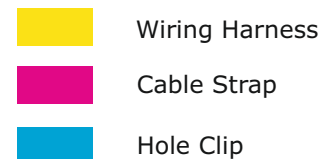
Assemble the clamp flap on the RH side of the bolt.



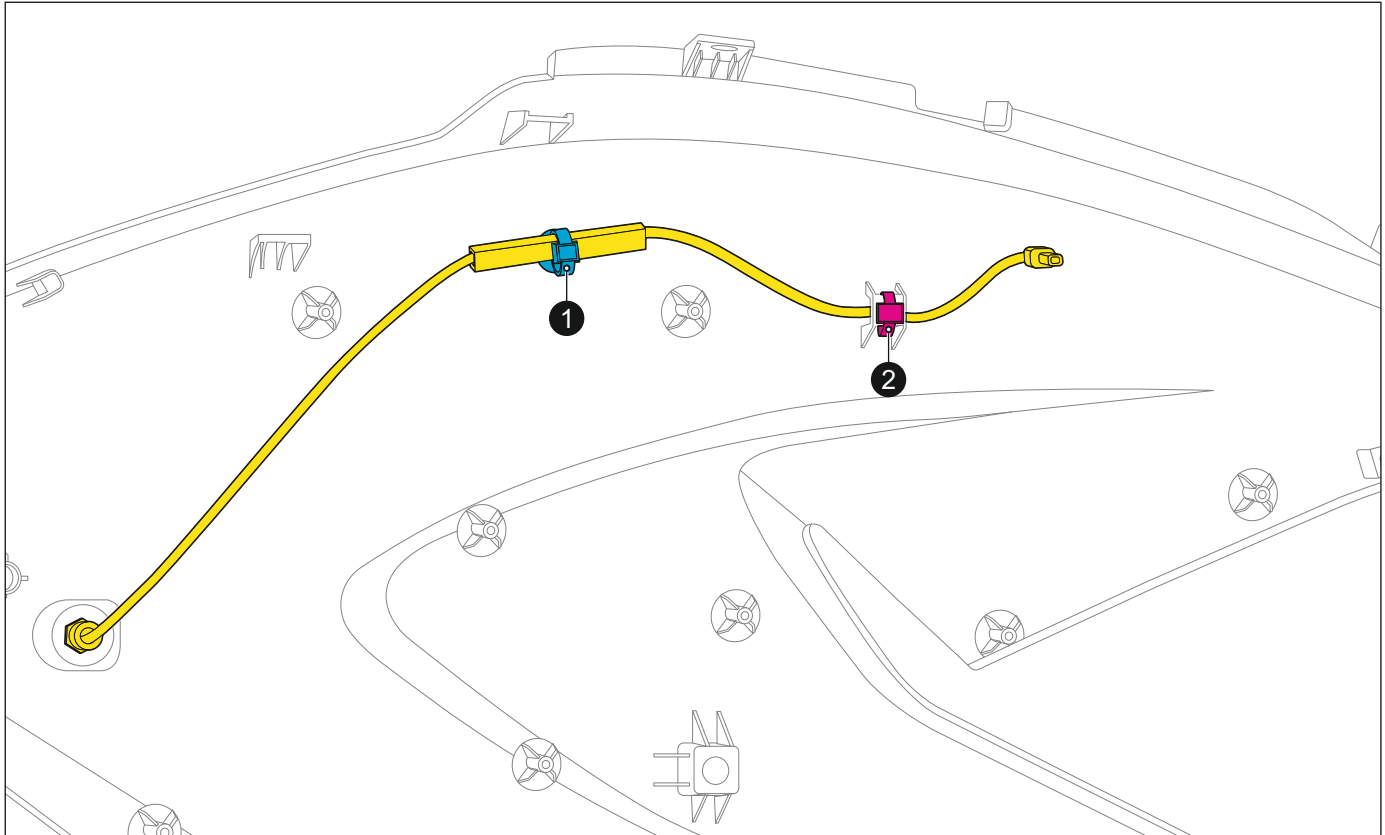
HEAD LAMP STAY SUB-ASSEMBLY AND WIRE ROUTING



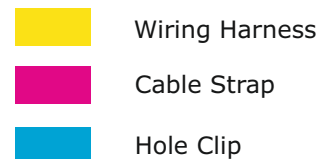
- Assemble cable strap (1) at headlamp stay sub-assembly as shown.
- Insert edge clip (2) along with wiring harness into the headlamp stay rip as shown.
- Insert hole clip (3) along with wiring harness into the headlamp stay hole as shown.
- While aligning the headlamp connector, ensure that component side (male) coupler is towards the top and the wiring harness side (female) coupler is towards the bottom.



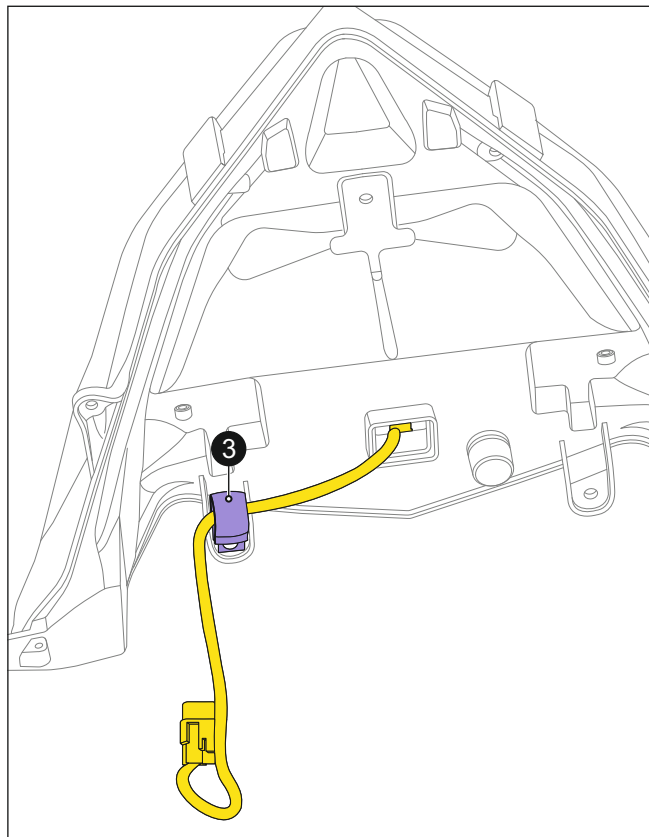
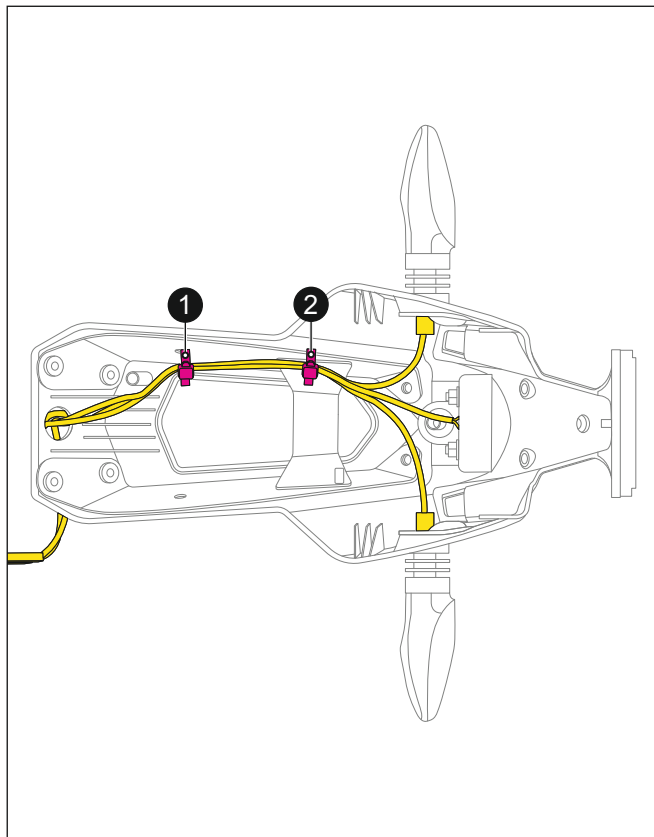
FRONT TSL LH & RH ROUTING AT SUB-ASSEMBLY STAGE



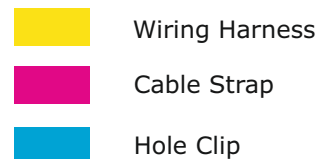
- Fix PCB in TSL wire using hole clip with cable strap (1) as shown.
- Fix the wire using cable strap (2) at the position shown.



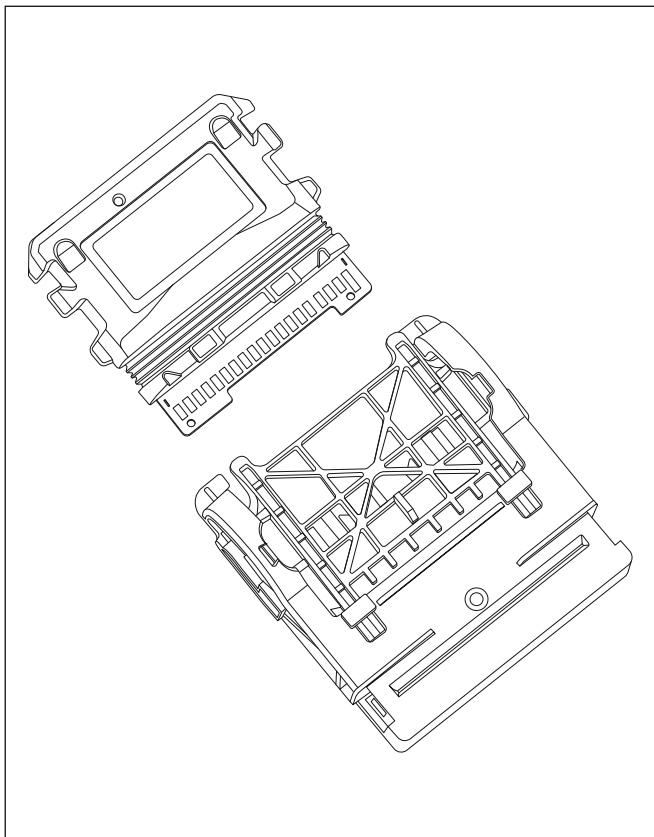
REAR FENDER SUB-ASSEMBLY AND WIRE ROUTING



- Tie TSL LH & RH wires and number plate lamp wires at fender sub-assembly stage using cable straps (1 & 2) at the position shown.
- Route the tail lamp wire on flexible clamp (3) as a sub-assembly as shown.

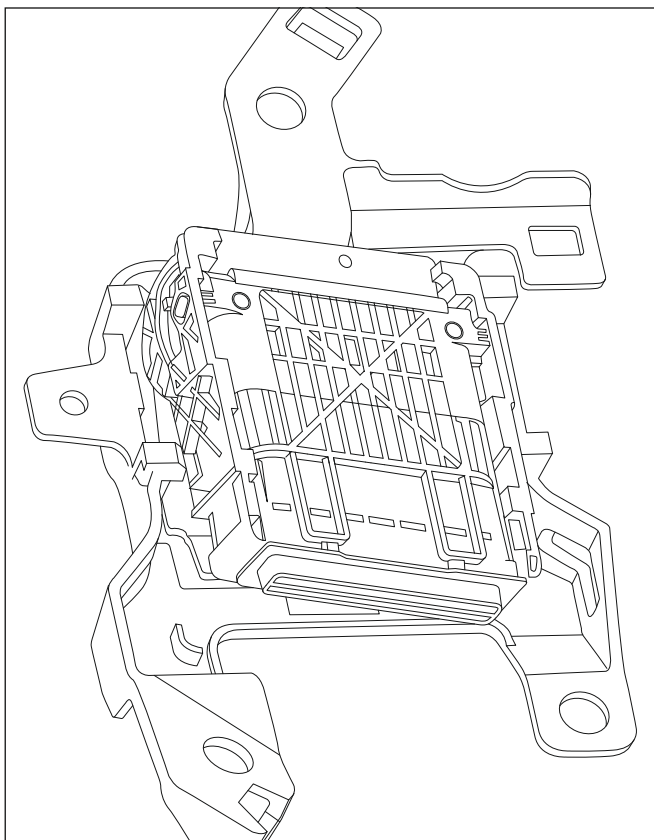


ECU BRACKET SUB-ASSEMBLY



STEP-1

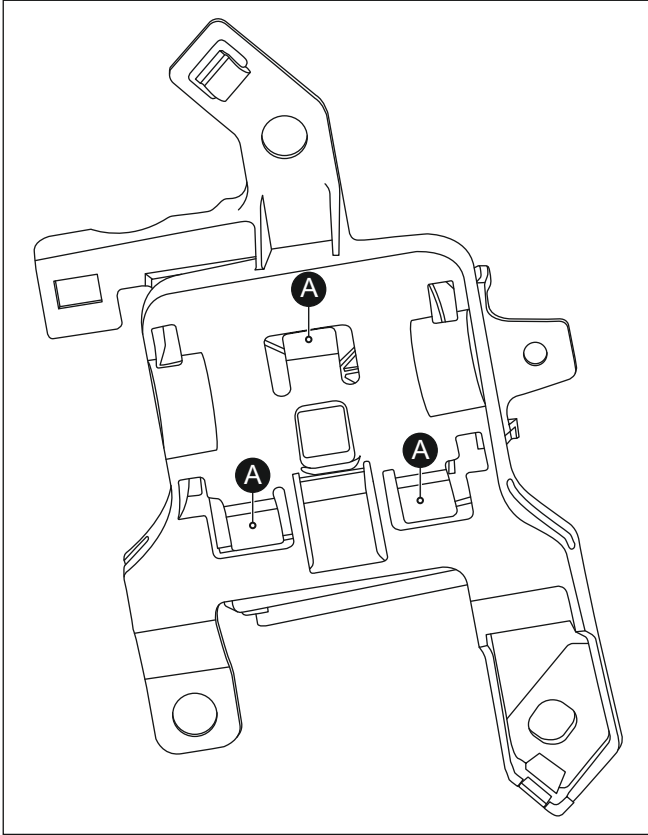
- Ensure correct orientation of ECU and connector while reassembling. Sticker on ECU and 'FRONT' text on the connector should be facing the same direction.
- Ensure the direction of both the pips is matching and then assemble the ECU to the connector.
- Care should be taken not touch the ECU pads during assembly.



STEP-2

- First insert the LH side of the ECU to the connector and then press the connector into the bracket.

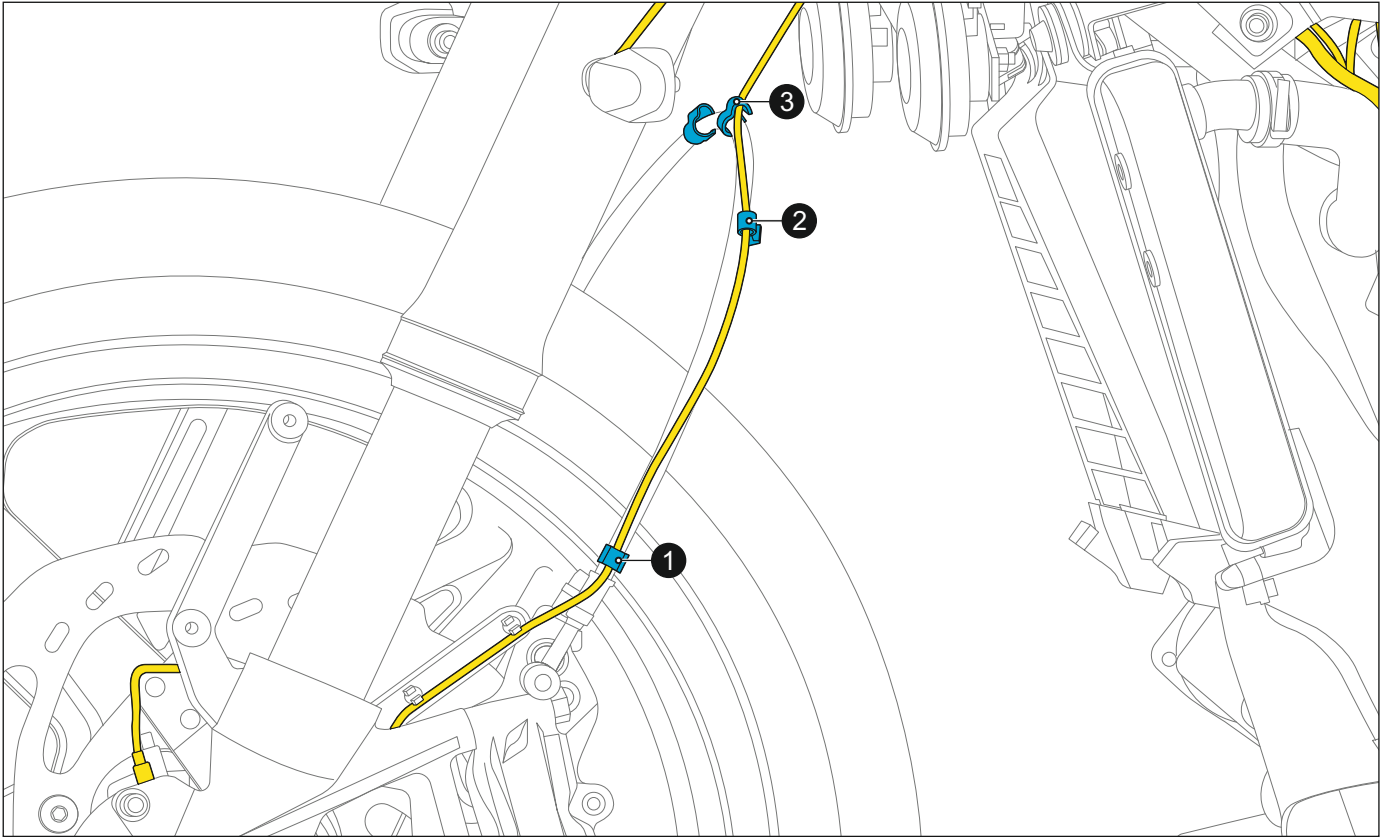
ECU BRACKET SUB-ASSEMBLY



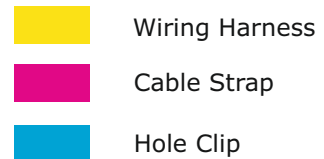
STEP-3

- Match the three rips (A) with the ECU connector.
- Ensure a click sound is heard after closing the ECU connector.
- Follow BOSCH Assembly and Handling instructions.

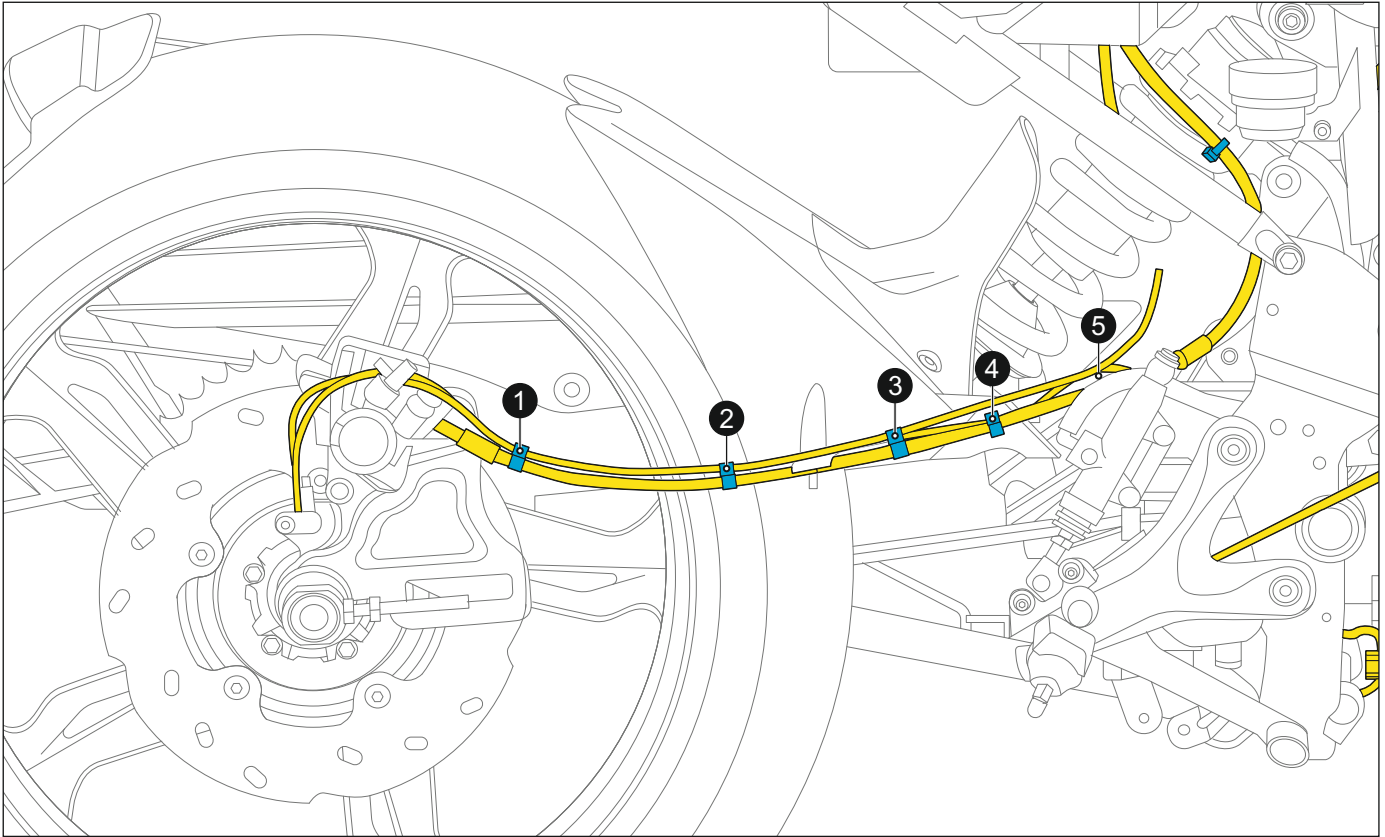
FRONT WHEEL SPEED SENSOR ROUTING



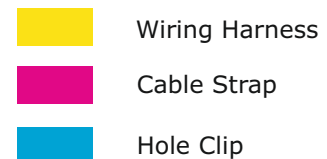
- Route the front wheel speed sensor cable along with bundy tube using cable guides (1, 2 & 3) as shown.



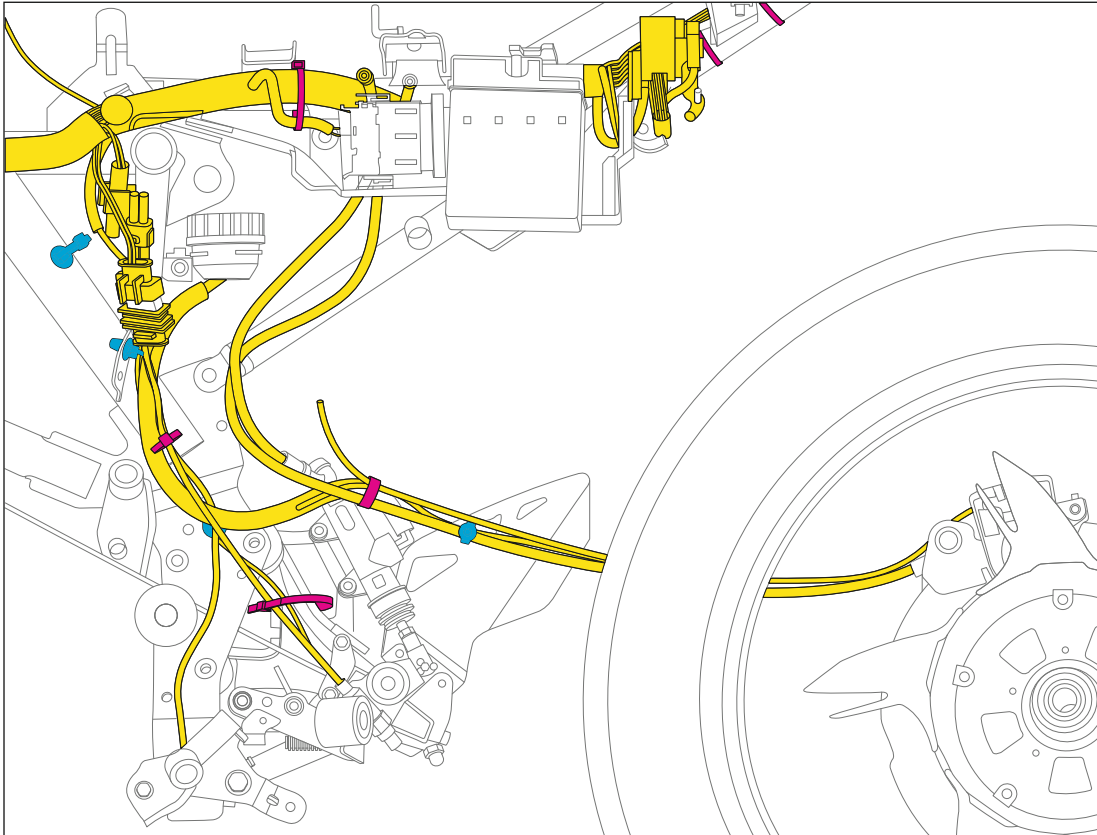
REAR WHEEL SPEED SENSOR ROUTING



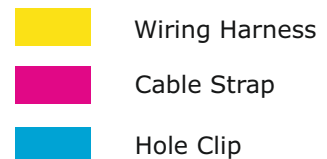
- Route the rear wheel speed sensor cable along with bundy tube using cable guides (5 Nos.) as shown.



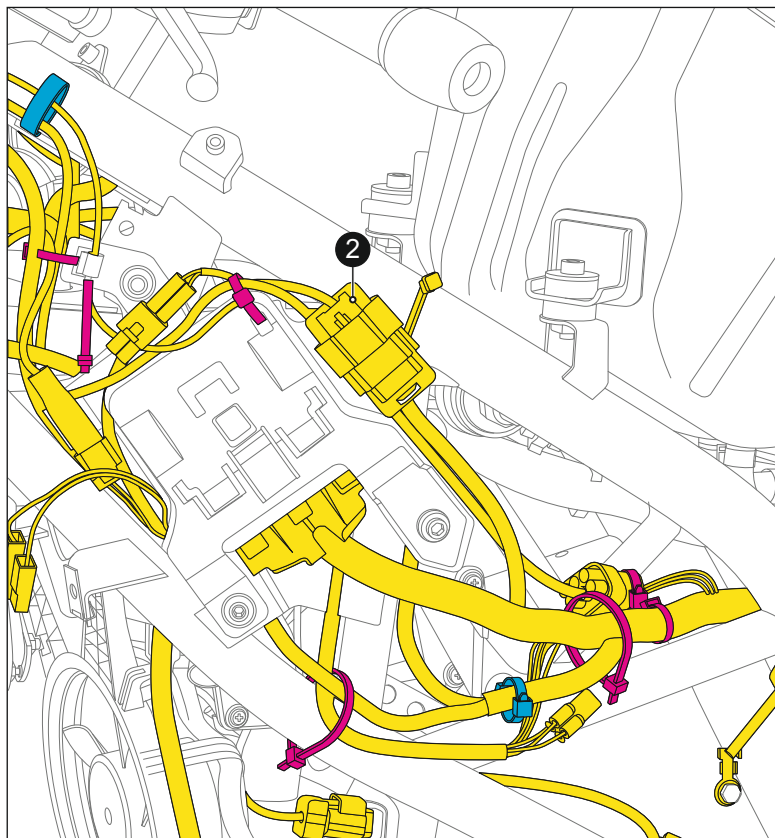
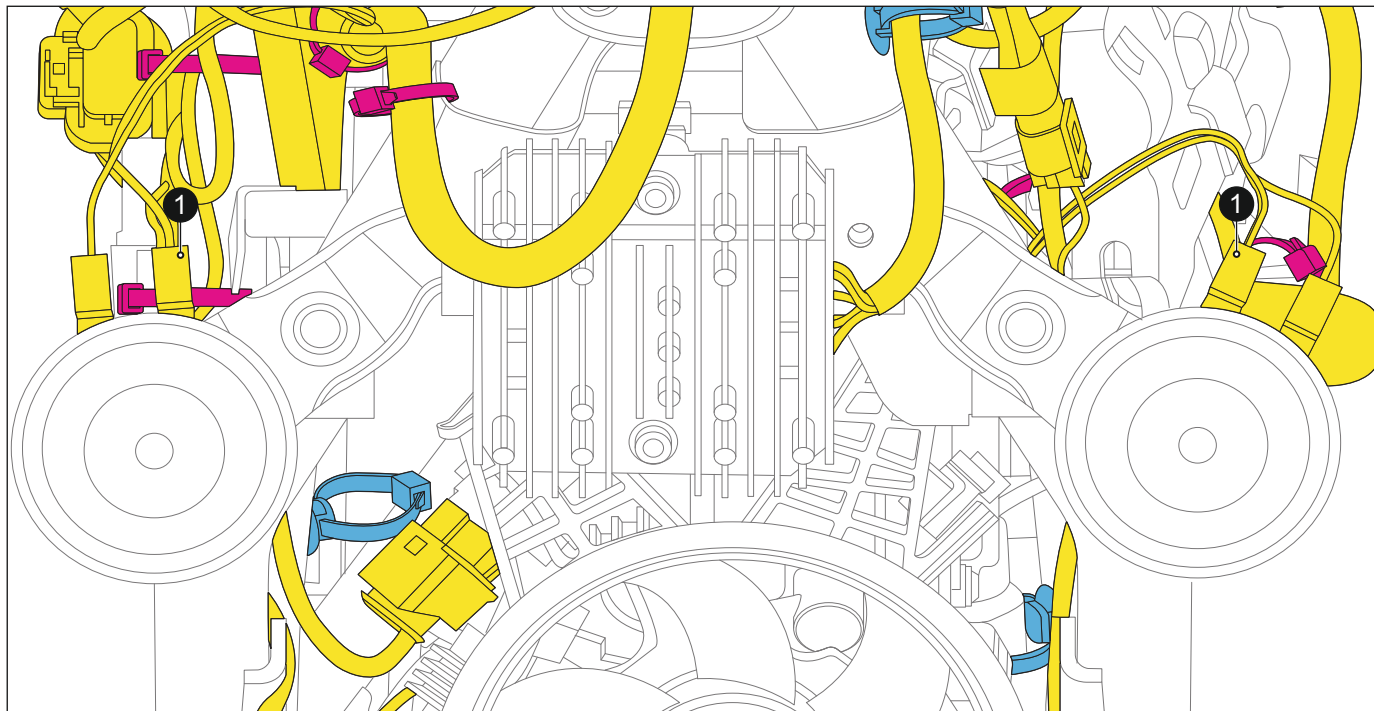
REAR WHEEL SPEED SENSOR ROUTING



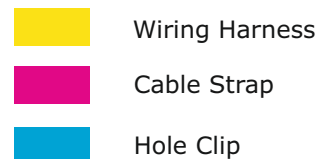
- Assemble the speed sensor with the mating connector as shown.



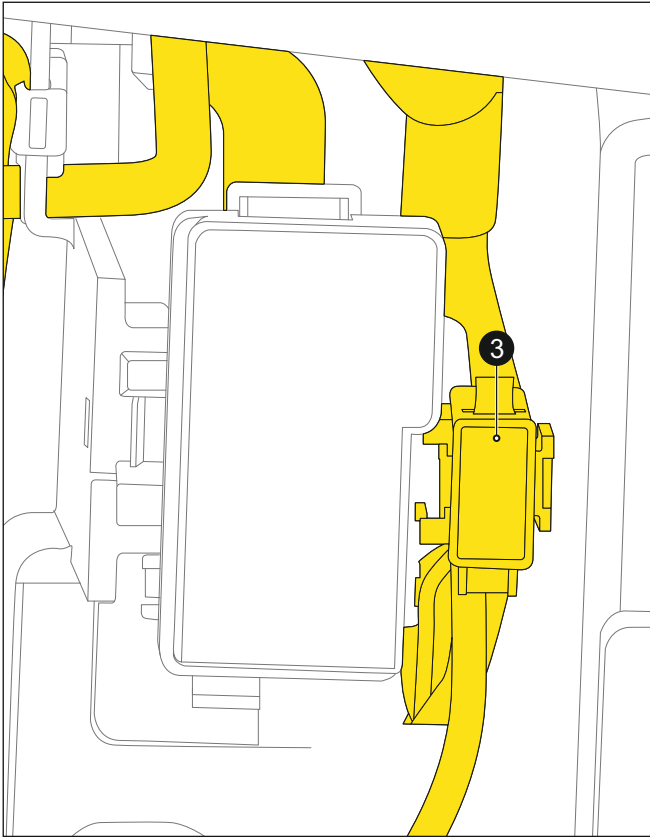
CONNECTOR CHANGE DETAILS



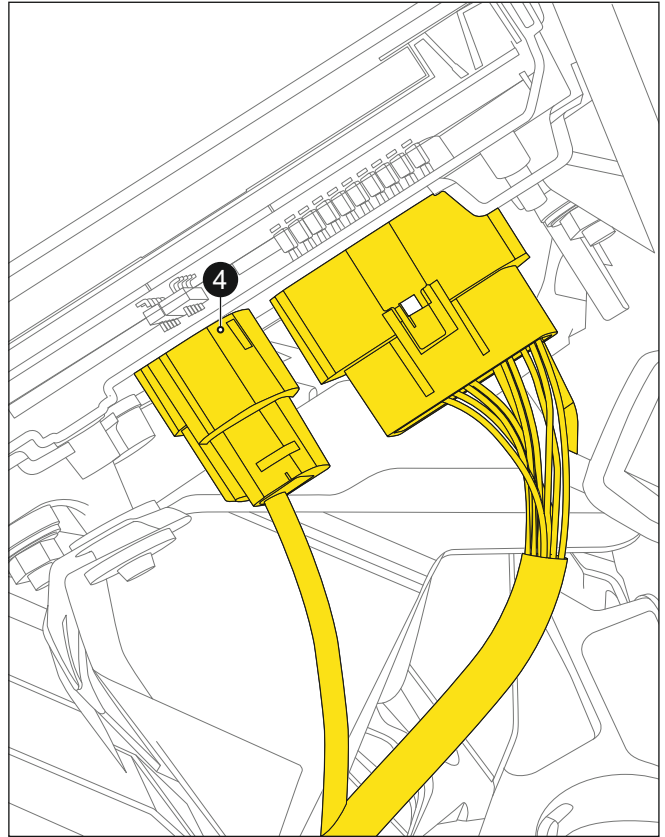
1. Horn terminal changed to TTP-1904.
2. Control switch LH connector changed to Delphi 10 pole connector and 90 series 6 pole connector.






CONNECTOR CHANGE DETAILS



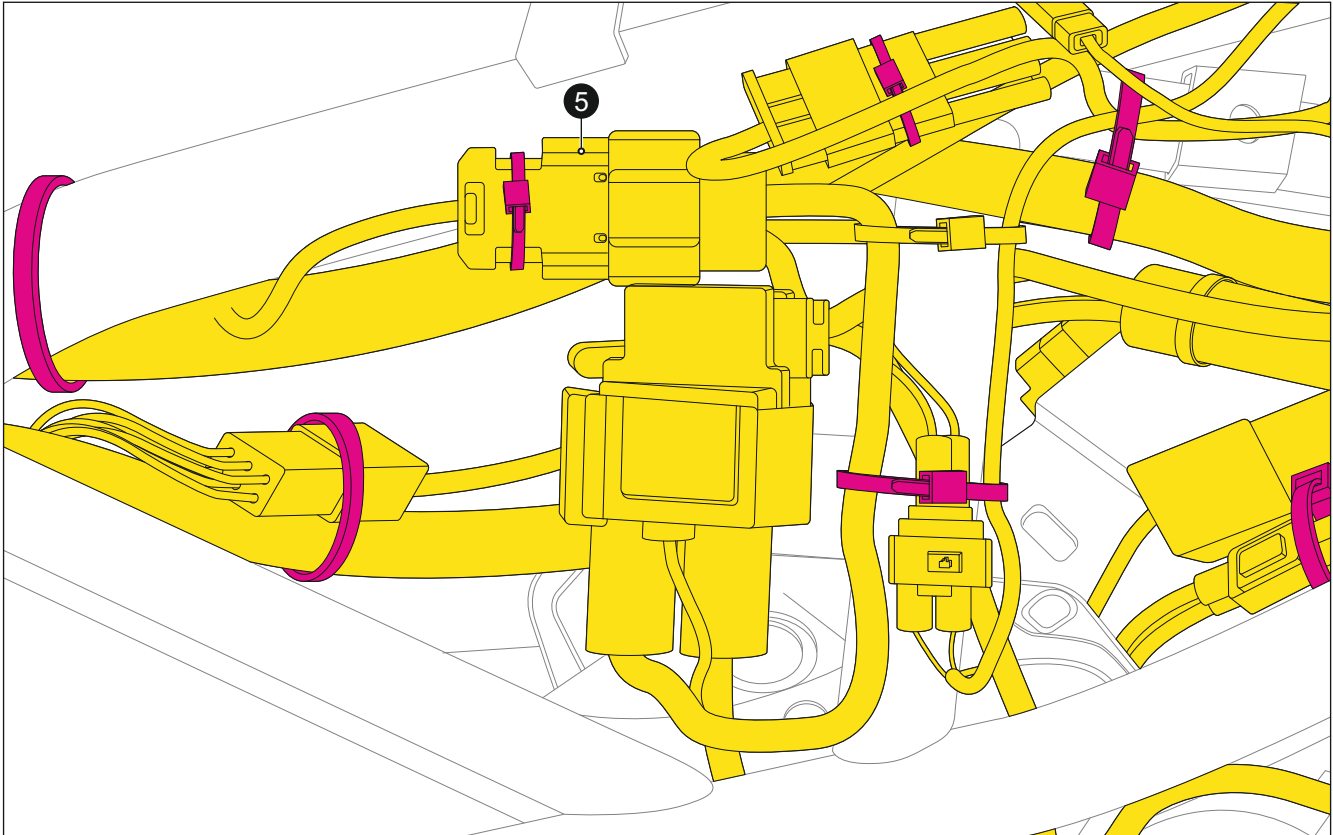
3. Single fuse added with existing fuse box.



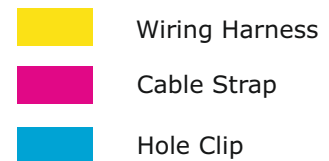
4. Molex 12 pin connector added in speedometer.

-  Wiring Harness
-  Cable Strap
-  Hole Clip

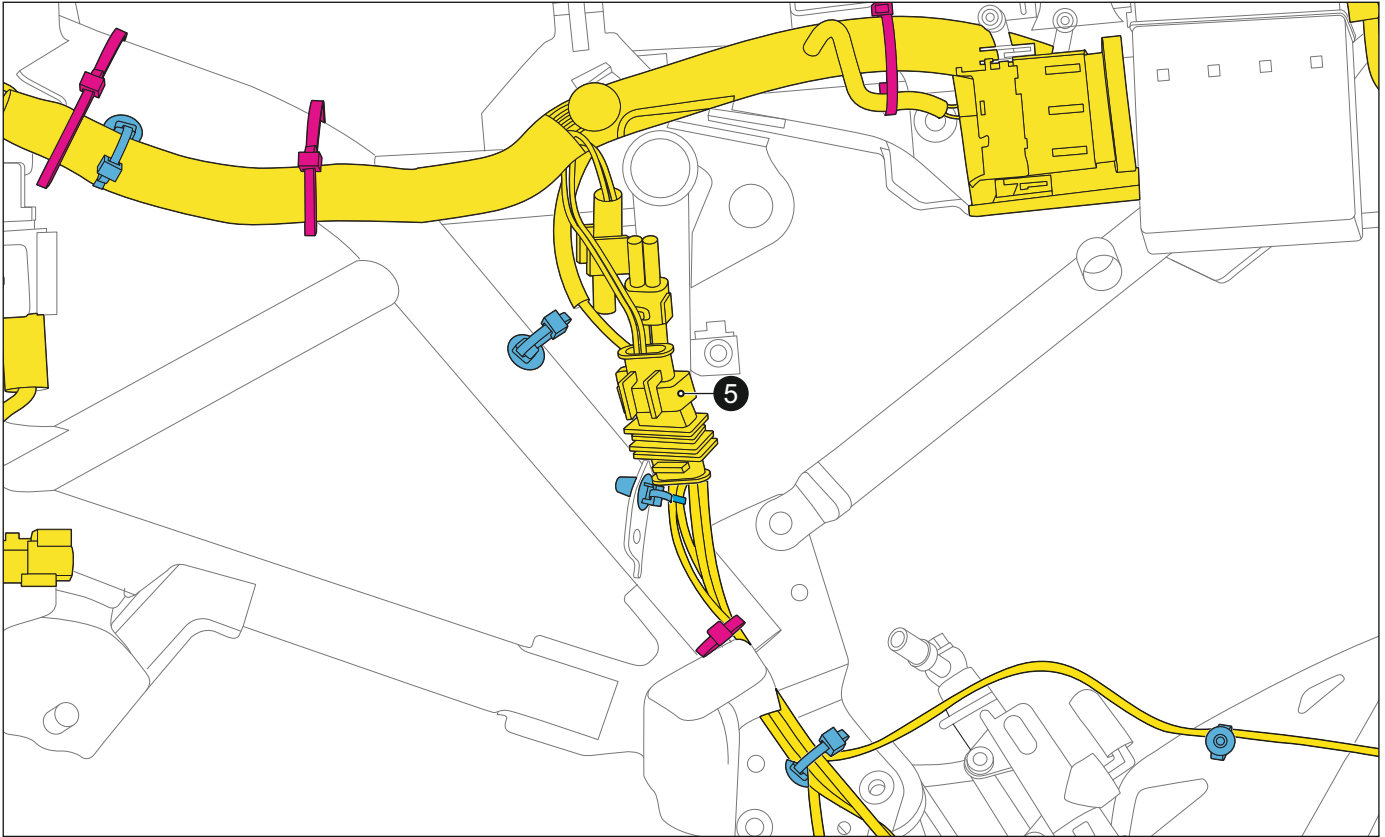
CONNECTOR CHANGE DETAILS



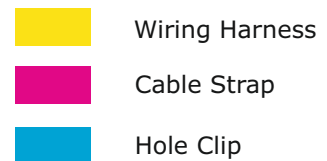
5. Control switch LH connector changed to Delphi 10 pole connector.



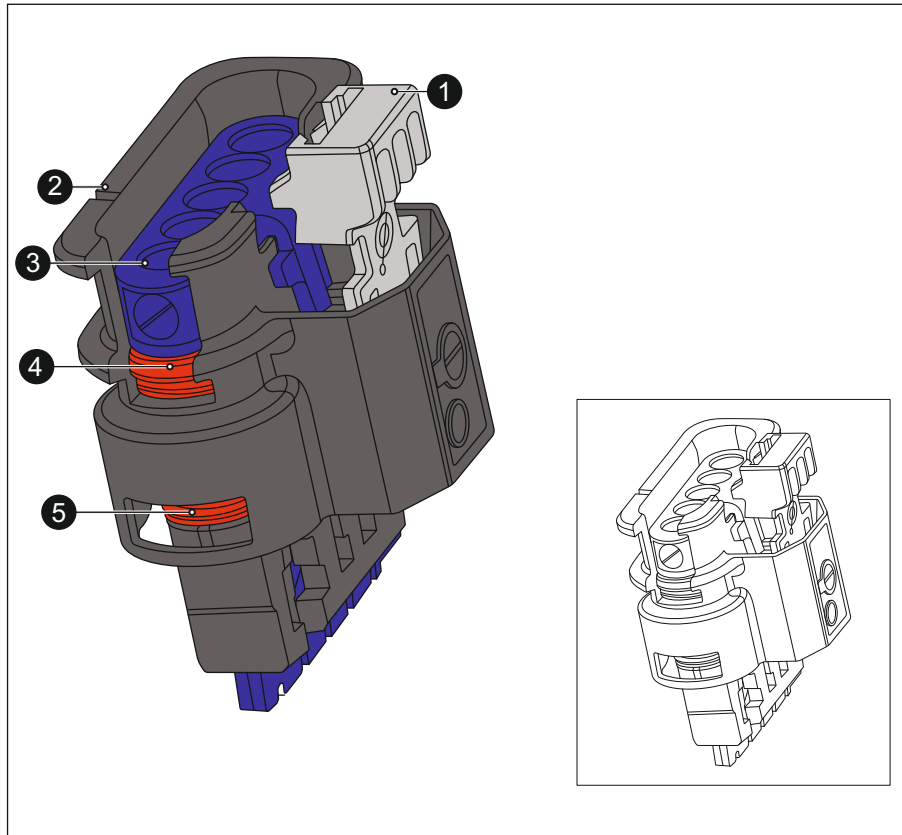
CONNECTOR CHANGE DETAILS



5. Oxygen sensor connector changed to BOSCH 4 pole connector.

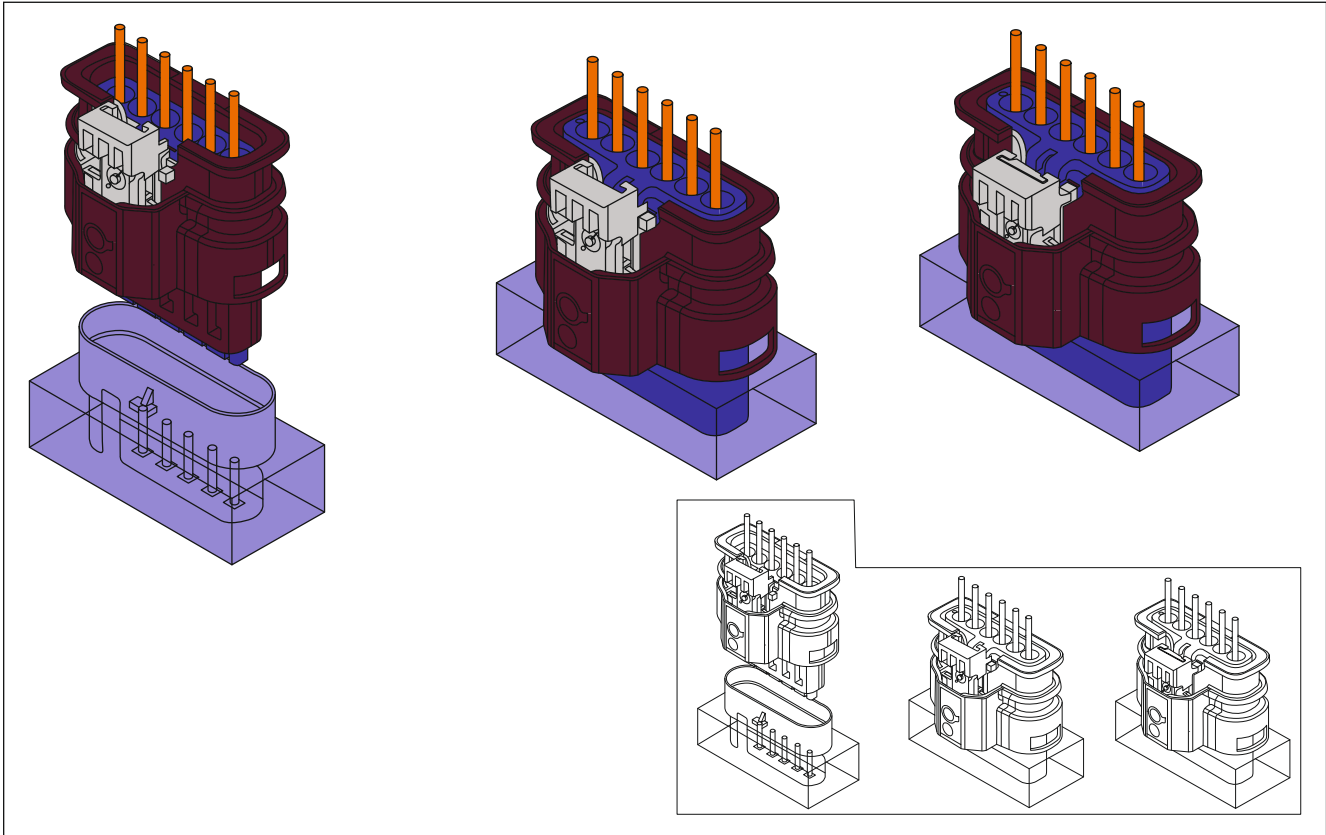


ETC CONNECTOR INITIAL CONDITION



1. CPA in pre-locked position
2. Protective shroud in pre-locked position
3. Female housing
4. Seal
5. Seal

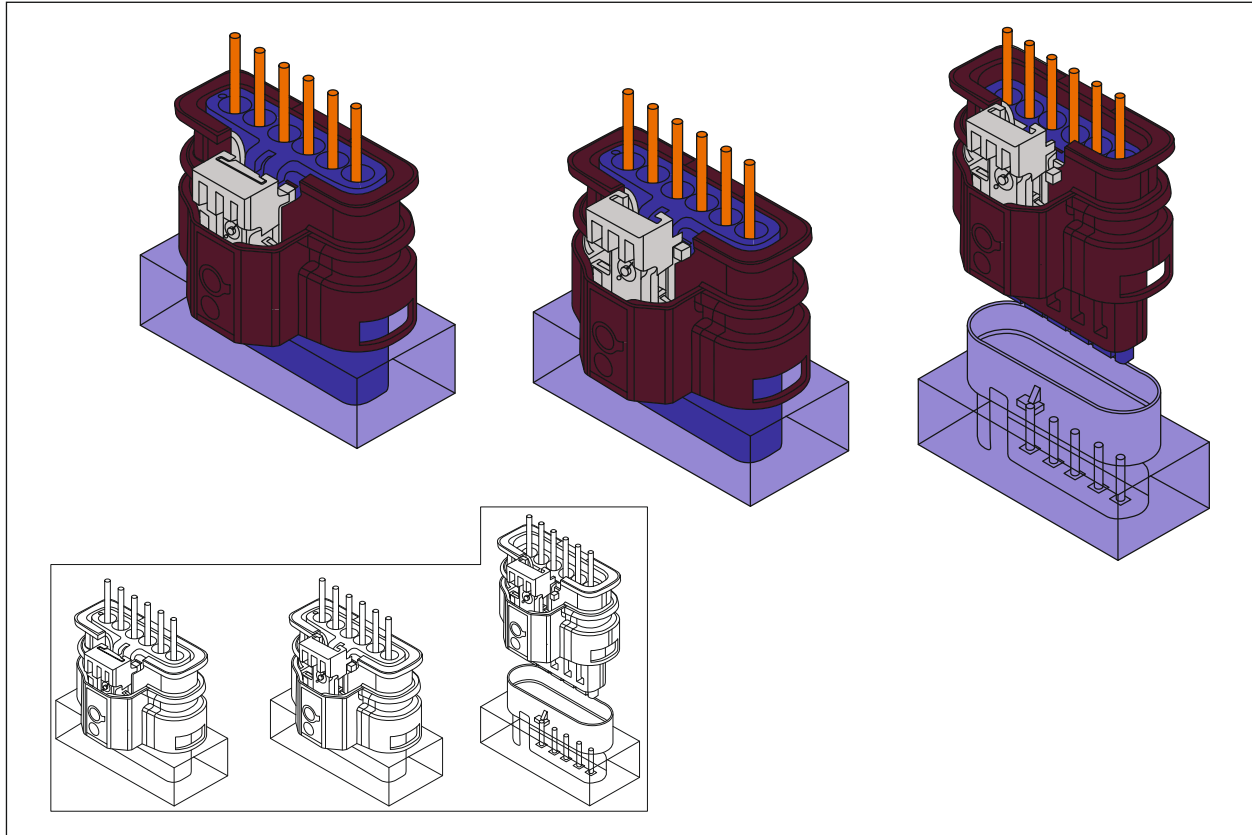
ETC CONNECTOR ASSEMBLY PROCEDURE



Steps:

1. Push the housing on the socket.
2. The housing is in the final locked position. The CPA is deflected by the contact housing and can now be pushed into the final locked position.
3. The CPA is in its final locked position.
4. Top of the protective shroud and contact housing should be in the same plane.

ETC CONNECTOR DISASSEMBLY PROCEDURE



Steps:

1. Push CPA from locked position in pre-locked position.
2. Push the locking hock in illustrated direction.
3. Press and hold the locking hock by pulling the housing in cable outlet direction.



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