Appendix

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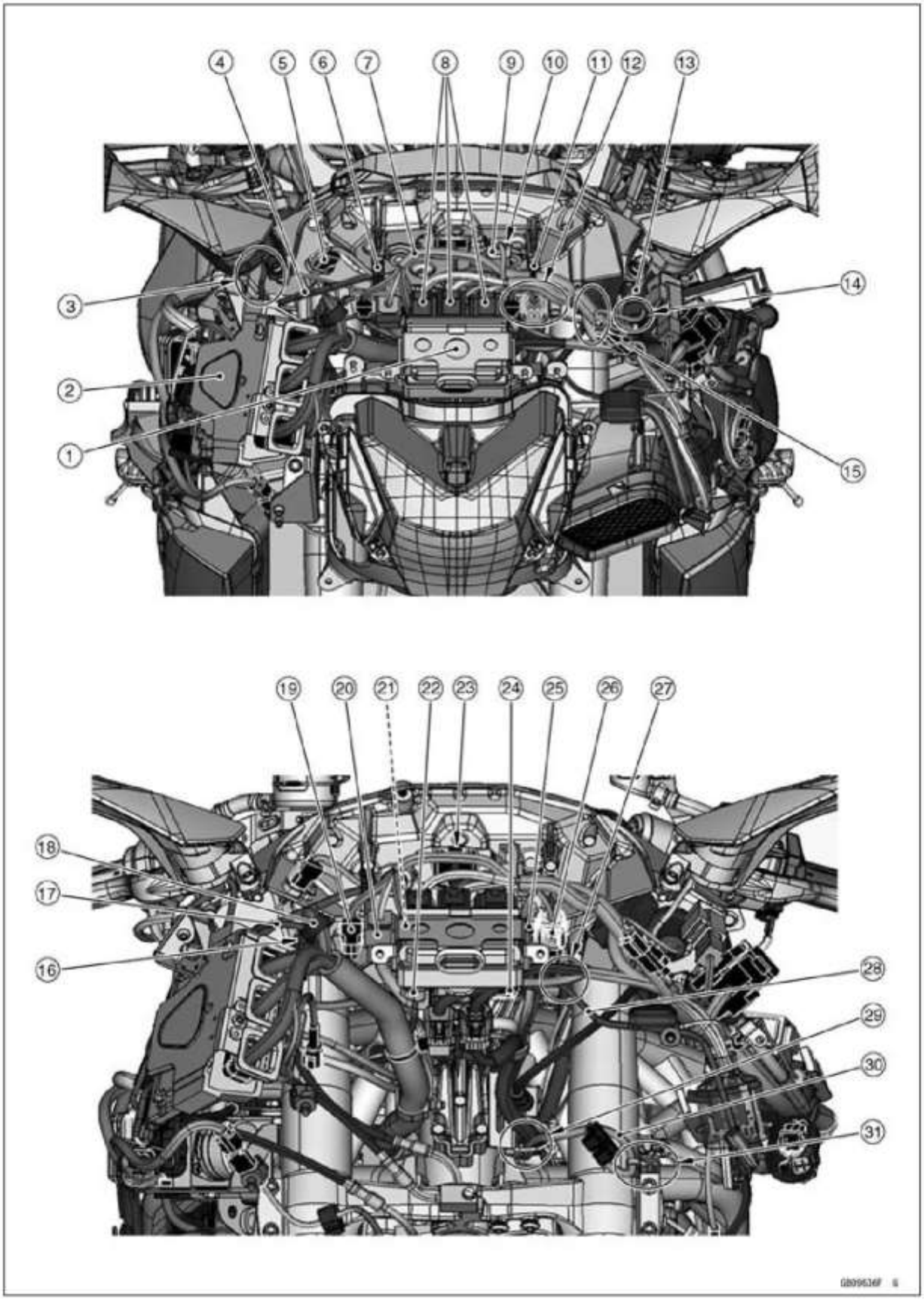
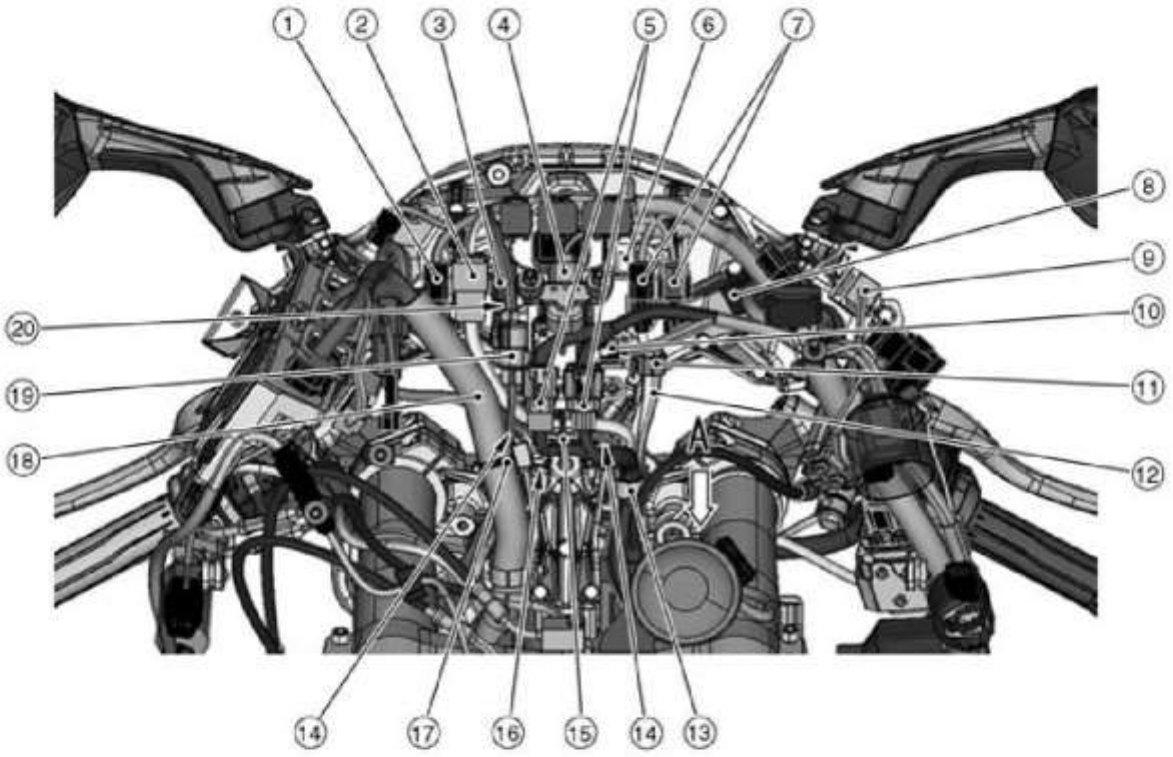
Cable, Wire, and Hose Routing

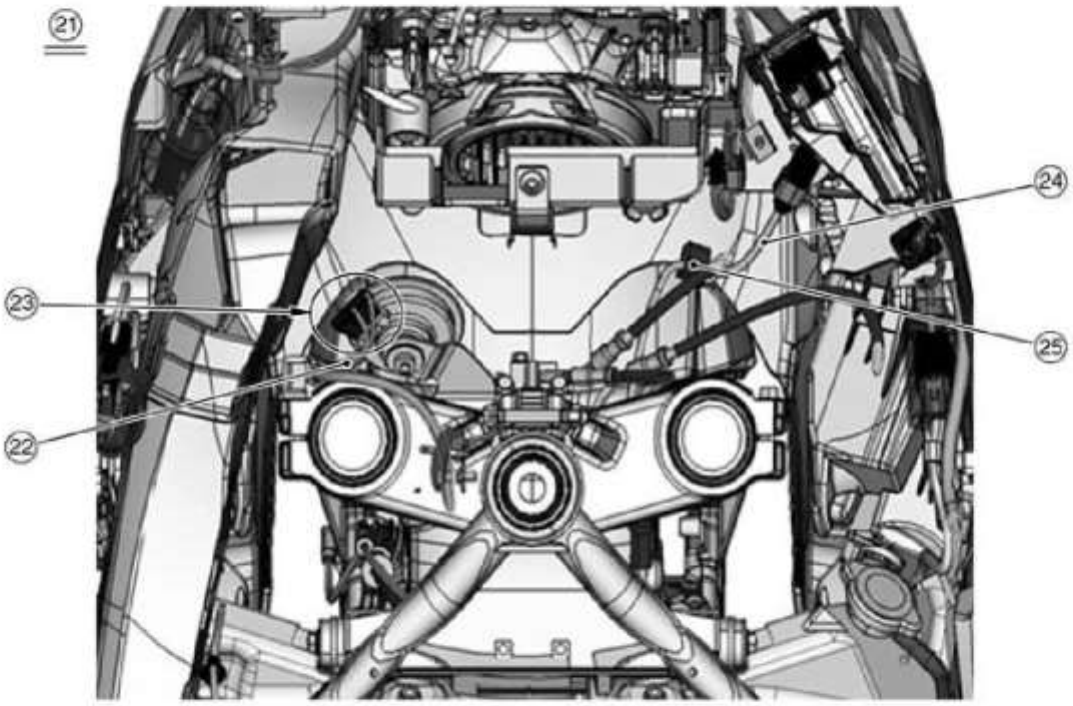


Cable, Wire, and Hose Routing

1. Relay Box
2. ECU
3. Run the front right turn signal light lead to the back of the right switch housing lead, and run it between the ECU bracket and meter bracket.
4. Front Right Turn Signal Light Lead
5. Outside Temperature Sensor Connector
6. Clamp (Hold the outside temperature sensor lead and front right turn signal light lead.)
7. Main Harness
8. Relay Box Lead Connectors
9. Electronic Cruise Control Cancel Switch (Clutch) Lead Connector
10. Run the electronic cruise control cancel switch (clutch) lead to the above the main harness.
11. Clamp (Hold the main harness. Install it to the meter cover.)
12. Run the left grip heater lead and electronic cruise control cancel switch (clutch) lead to the front side of the main harness.
13. Front Left Turn Signal Light Lead
14. Run the front left turn signal light lead to the back of the accessory socket (DC 12 V) lead (equipped models).
15. Run the accessory socket (DC 12 V) lead (equipped models) to the above the main harness.
16. Right Switch Housing Lead Connector
17. Front Fork Stroke Sensor Lead
18. Clamp (Hold the front fork stroke sensor lead and right switch housing lead.)
19. Immobilizer Antenna Connector (Equipped Models)
20. Ignition Switch Lead Connector
21. Right Grip Heater Lead Connector (Equipped Models)
22. Brake/Electronic Cruise Control Cancel Switch Lead Connector
23. Meter Unit Lead Connector
24. IMU Connector
25. Left Grip Heater Lead Connector (Equipped Models)
26. Grip Heater Switch Lead Connector (Equipped Models)
27. Run the front fork solenoid coil lead to the under the left switch housing lead and IMU lead.
28. Front Fork Solenoid Coil Lead
29. Run the horn lead through the bracket guide, and insert the attached clamp of the horn lead into the bracket.
30. Horn Lead
31. Clamp (Hold the horn lead, and insert it from the inside of the vehicle into the bracket.)

Cable, Wire, and Hose Routing





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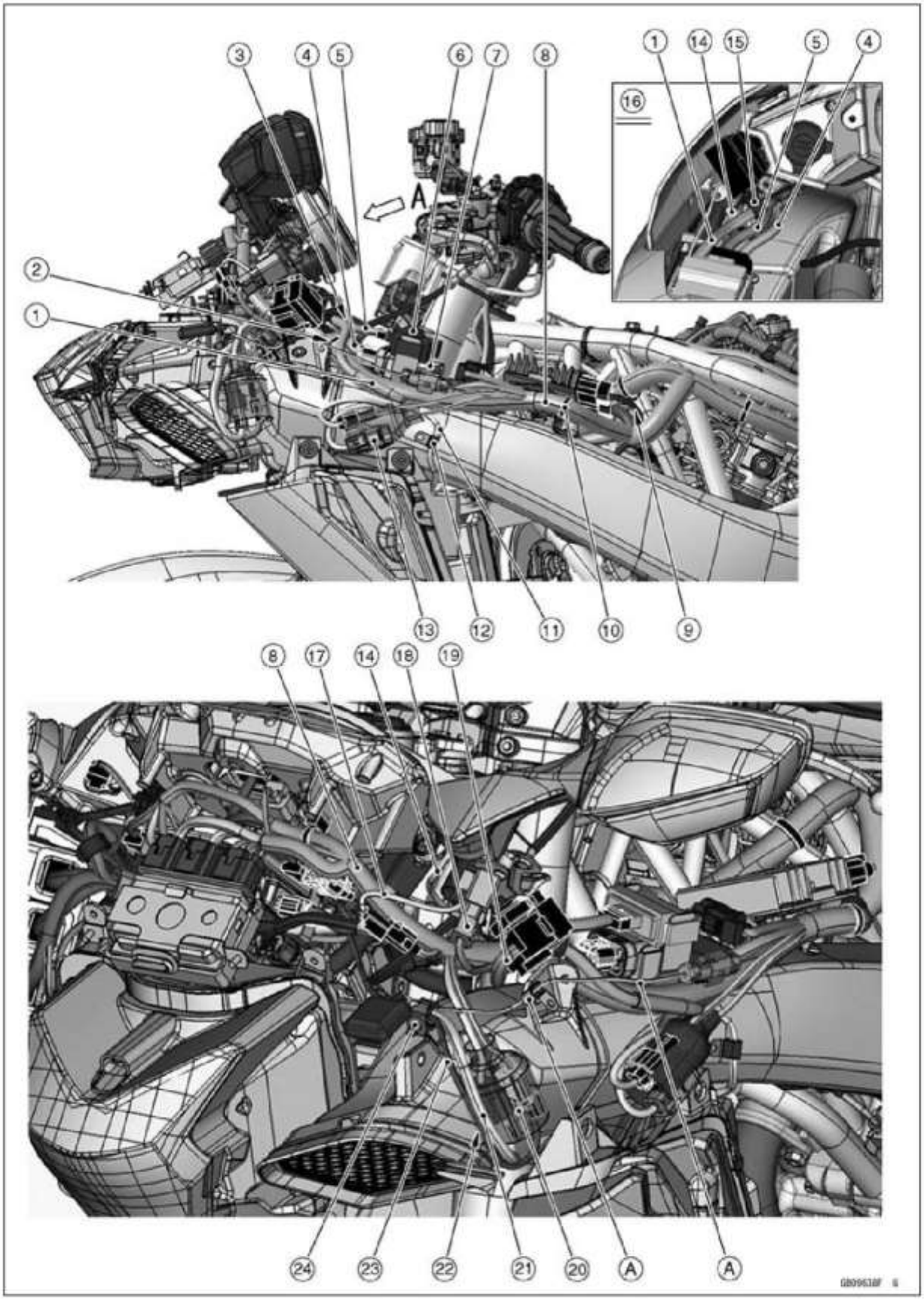
Cable, Wire, and Hose Routing

1. Immobilizer Antenna Connector (Equipped Models)
2. Ignition Switch Lead Connector
3. Right Grip Heater Lead Connector (Equipped Models)
4. Vehicle-down Sensor Connector
5. Left Switch Housing Lead Connectors
6. Electronic Cruise Control Cancel Switch (Clutch) Lead Connector
7. Left Grip Heater Lead Connectors (Equipped Models)
8. Joint Connector with Dust Cover (Position it in this place.)
9. Cornering Light Relay
10. IMU Connector
11. Clamp (Hold the left grip heater lead (equipped models), starter lockout switch lead and electronic cruise control cancel switch (clutch) lead.)
12. Starter Lockout Switch Lead
13. Clamp (Hold the left switch housing lead (tape position), left grip heater lead (tape position) (equipped models), ignition switch lead (tape position), immobilizer antenna lead (tape position) (equipped models), starter lockout switch lead (tape position) and electronic cruise control cancel switch (clutch) lead.)
14. Run the ignition switch lead and immobilizer antenna lead (equipped models) between the meter bracket and connector bracket.
15. Clamp (Hold the left switch housing lead, ignition switch lead and immobilizer antenna lead (equipped models) as shown.)
16. Cross Rib
17. Clamp (Hold the main harness, and install it to the rib of the meter cover. Align the cross rib and clamp edge as shown.)
18. Main Harness
19. Brake/Electronic Cruise Control Cancel Switch Lead
20. Run the brake/electronic cruise control cancel switch lead to the front of the right grip heater lead connector.
21. Viewed from A
22. Horn Lead
23. Connect the horn lead terminals to the horn as shown.
24. Front Wheel Rotation Sensor Lead
25. Clamp (Hold the front wheel rotation sensor lead. Install it to the inner fairing.)

Cable, Wire, and Hose Routing



Cable, Wire, and Hose Routing

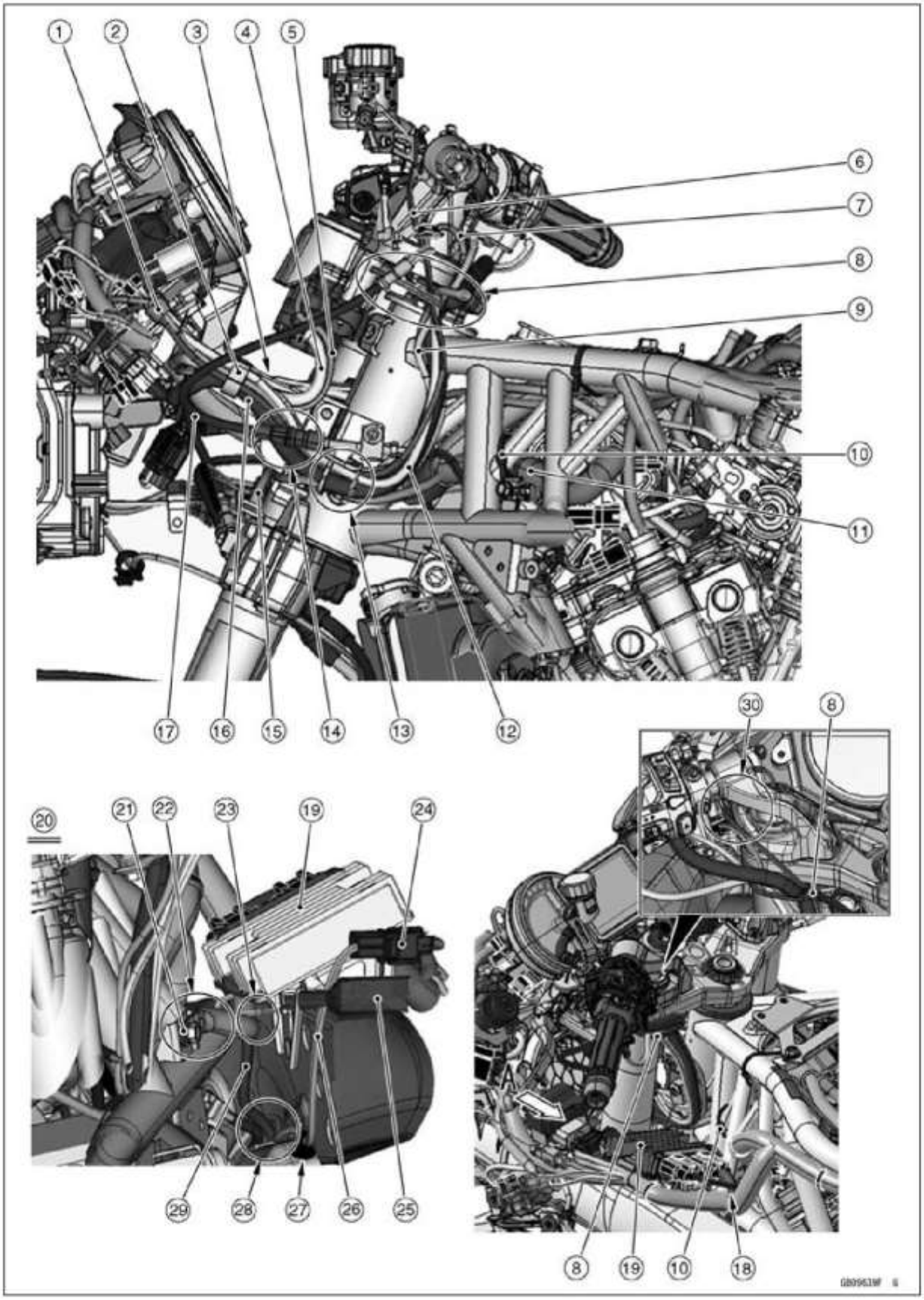
NOTE

○*Some of the figures are shown using the figure of ETC equipped model.*

A: This model is not ETC equipped model.

1. Run the water-proof joint to the outside of the main harness as shown.
2. Clamp (Hold the main harness, and install it to the front intake duct.)
3. Run the grip heater controller lead (equipped models) and immobilizer amplifier (equipped models) to the inside of the clamp [2]
4. Grip Heater Controller Lead (Equipped Models)
5. Immobilizer Amplifier Lead (Equipped Models)
6. Immobilizer Amplifier (Equipped Models)
7. Grip Heater Controller (Equipped Models)
8. Main Harness
9. Run the alternator lead to the outside of the frame at this portion. Run it to the upside of the main harness.
10. Clamp (Hold the main harness, and install it to the regulator/rectifier bracket.)
11. Left Cornering Light Lead
12. Clamp (Hold the left cornering light lead.)
13. Position the left cornering light lead connector.
14. Front Left Turn Signal Light Lead
15. Clamp (Hold the water-proof joint and front left turn signal light lead. Run the front left turn signal light lead to the outside of the leads [1, 4, 5].)
16. Viewed from A
17. Run the accessory socket (DC 12 V) lead (equipped models) to the outside the front left turn signal light lead, and run it to the back of the main harness.
18. Run the cornering light relay lead to the under the main harness as shown.
19. Run the fuse box lead (1) to the under the main harness as shown.
20. Dust Cover (Cover the headlight lead connector, left city light lead connector and front fork solenoid coil lead.)
21. Headlight Lead
22. Left City Light Lead
23. Front Fork Solenoid Coil Lead
24. Clamp (Hold the headlight lead, left city light lead and front fork solenoid coil lead.)

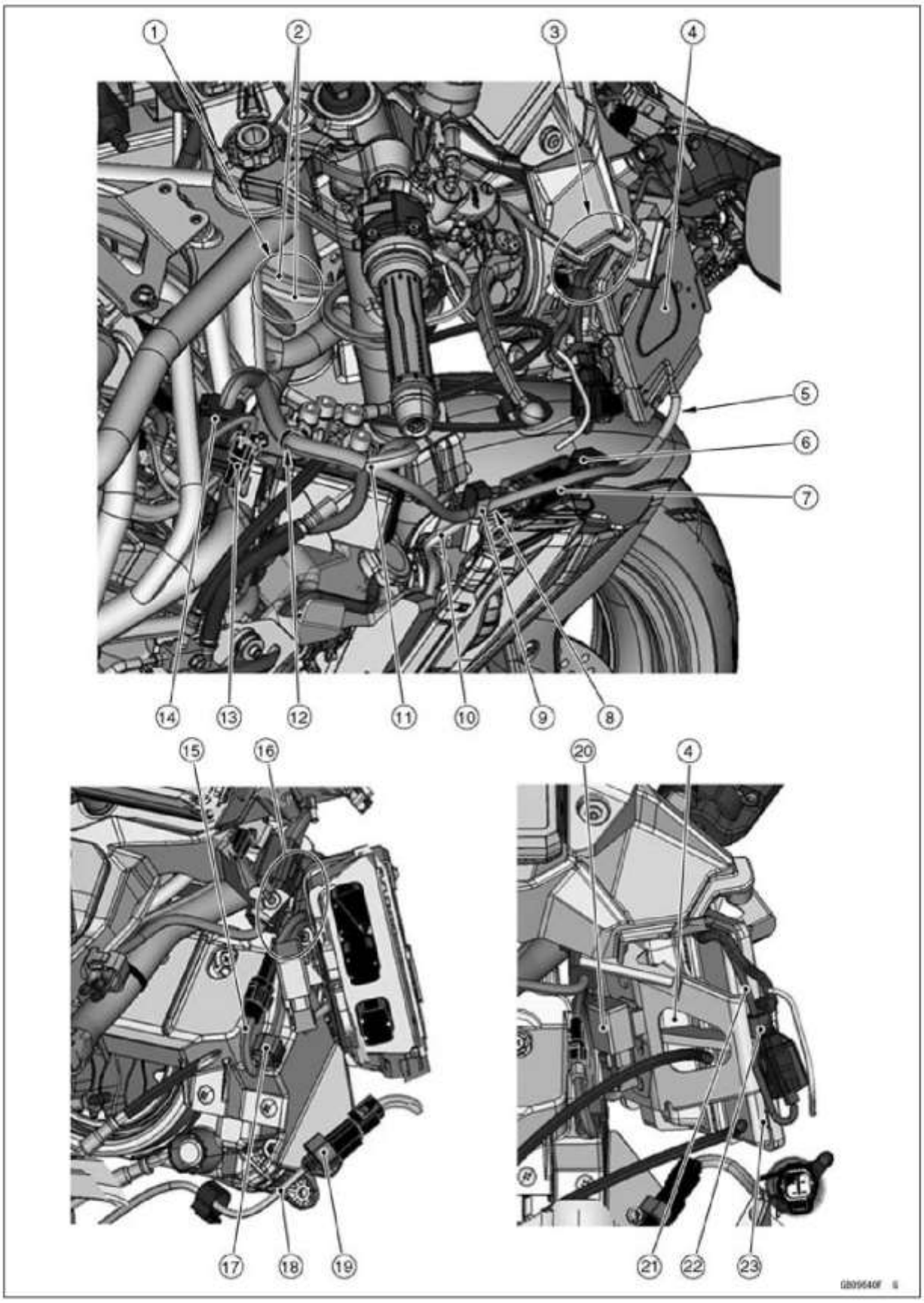
Cable, Wire, and Hose Routing



Cable, Wire, and Hose Routing

1. Clamp (Hold the left grip heater lead, electronic cruise control cancel switch (clutch) lead, starter lockout switch lead and front fork solenoid coil lead.)
2. Clamp (Hold the left switch housing lead (tape position), left grip heater lead (tape position) (equipped models), ignition switch lead (tape position), immobilizer antenna lead (tape position) (equipped models), starter lockout switch lead (tape position), electronic cruise control cancel switch (clutch) lead and front fork solenoid coil lead (mark position).)
3. Do not sag the lead so as not to interfere with the horn lead.
4. Ignition Switch Lead
5. Immobilizer Antenna Lead (Equipped Models)
6. Front Fork Solenoid Coil Lead
7. Starter Lockout Switch Lead
8. Band (Hold the starter lockout switch lead, electronic cruise control cancel switch (clutch) lead, left grip heater lead (equipped models), left switch housing lead and front fork solenoid coil lead. Run the front fork solenoid coil lead to the most inside of the leads.)
9. Electronic Cruise Control Cancel Switch (Clutch) Lead
10. Clamp (Hold the main harness to the frame at tape position.)
11. Run the main harness to the outside of the purge valve (for supercharger).
12. Left Grip Heater Lead (Equipped Models)
13. Guide (Hold the horn lead, starter lockout switch lead, electronic cruise control cancel switch (clutch) lead, left grip heater lead (equipped models), left switch housing lead and front fork solenoid coil lead.)
14. Run the clutch hose to the most outside of the leads.
15. Horn Lead
16. Left Switch Housing Lead Connector
17. Clutch Hose
18. Run the alternator lead to the outside of the frame at this portion. Run it to the upside of the main harness.
19. Regulator/Rectifier
20. Viewed from A
21. Frame Grounds
22. Run the frame grounds to under the regulator/rectifier.
23. Run the frame grounds to under the bracket. Do not pinch the frame grounds between the frame and bracket.
24. Camshaft Position Sensor Lead Connector (Install it to the regulator/rectifier bracket.)
25. Joint Connector with Dust Cover (Position it in this place.)
26. Camshaft Position Sensor Lead
27. Clamp (Hold the camshaft position sensor lead, and install it to the radiator cover.)
28. Run the camshaft position sensor lead to the outside of the alternator lead.
29. Alternator Lead
30. Run the front fork solenoid coil lead from the front side of the vehicle. Run it through the gap between the handlebar holder, front master cylinder and front brake light switch.

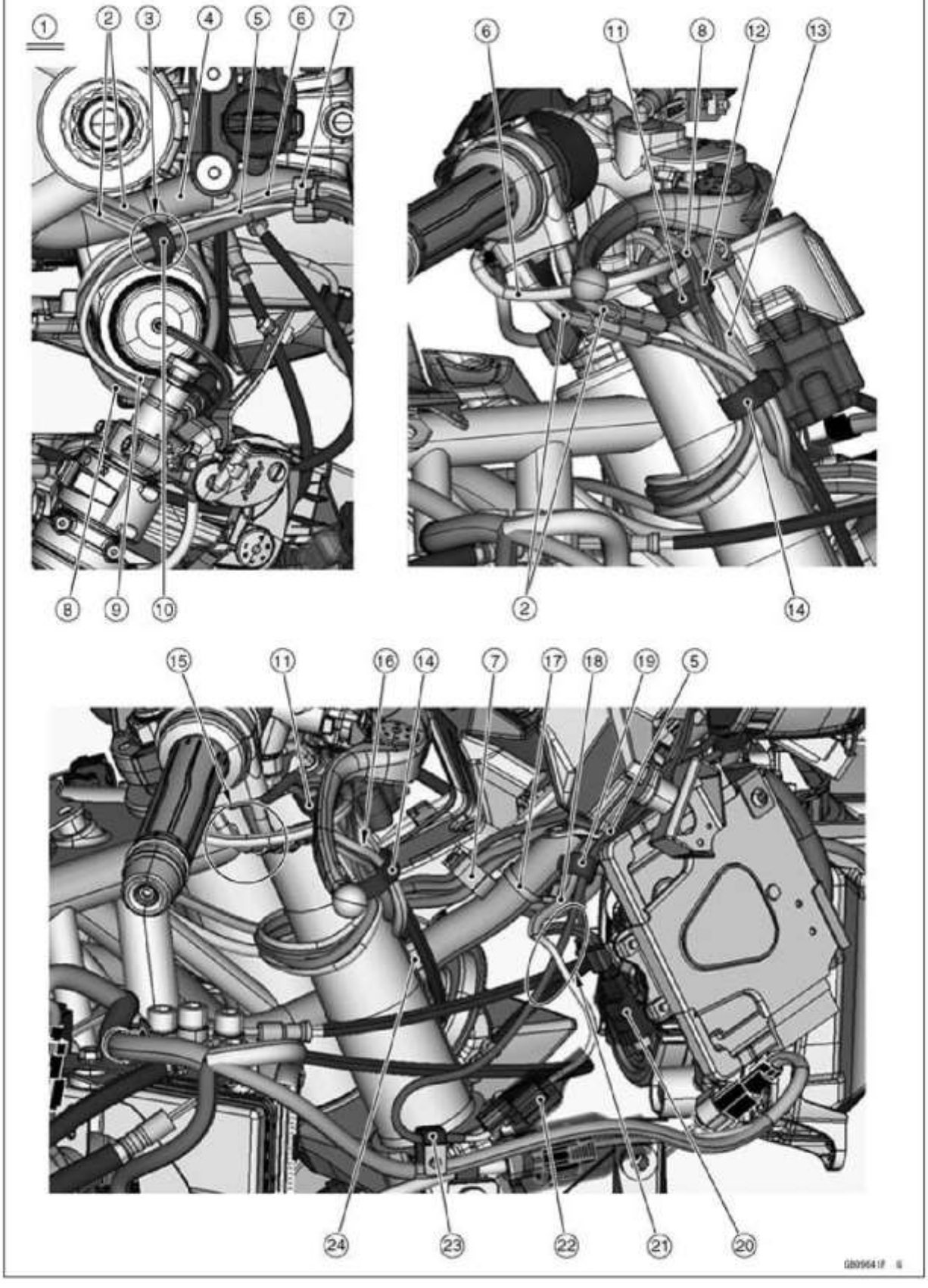
Cable, Wire, and Hose Routing



Cable, Wire, and Hose Routing

1. Run the throttle cables to the inside of the frame at this portion.
2. Throttle Cables
3. Run the front right turn signal light lead between the ECU bracket and meter bracket, and turn it to backward.
4. ECU
5. Run the front wheel rotation sensor lead to the front lower side of the ECU, and turn it to backward.
6. Clamp (Hold the right cornering light lead and main harness as shown.)
7. Position the right cornering light lead connector.
8. Clamp (Hold the right cornering light lead as shown.)
9. Clamp (Hold the right cornering light lead and main harness (tape position) as shown.)
10. Right Cornering Light Lead
11. Main Harness
12. Clamp (Hold the main harness. Install it to the bracket.)
13. Crankshaft Sensor Lead Connector
14. Engine Subharness Connector
15. Right City Light Lead
16. Run the right city light lead between the ECU and bracket, and run it to backward.
17. Clamp (Hold the right city light lead.)
18. Front Wheel Rotation Sensor Lead
19. Clamp (Hold the front wheel rotation sensor lead.)
20. ETV Actuator Relay
21. Front Right Turn Signal Light Lead
22. Clamp (Hold the rubber boot constriction part and the front right turn signal light lead.)
23. Rubber Boot

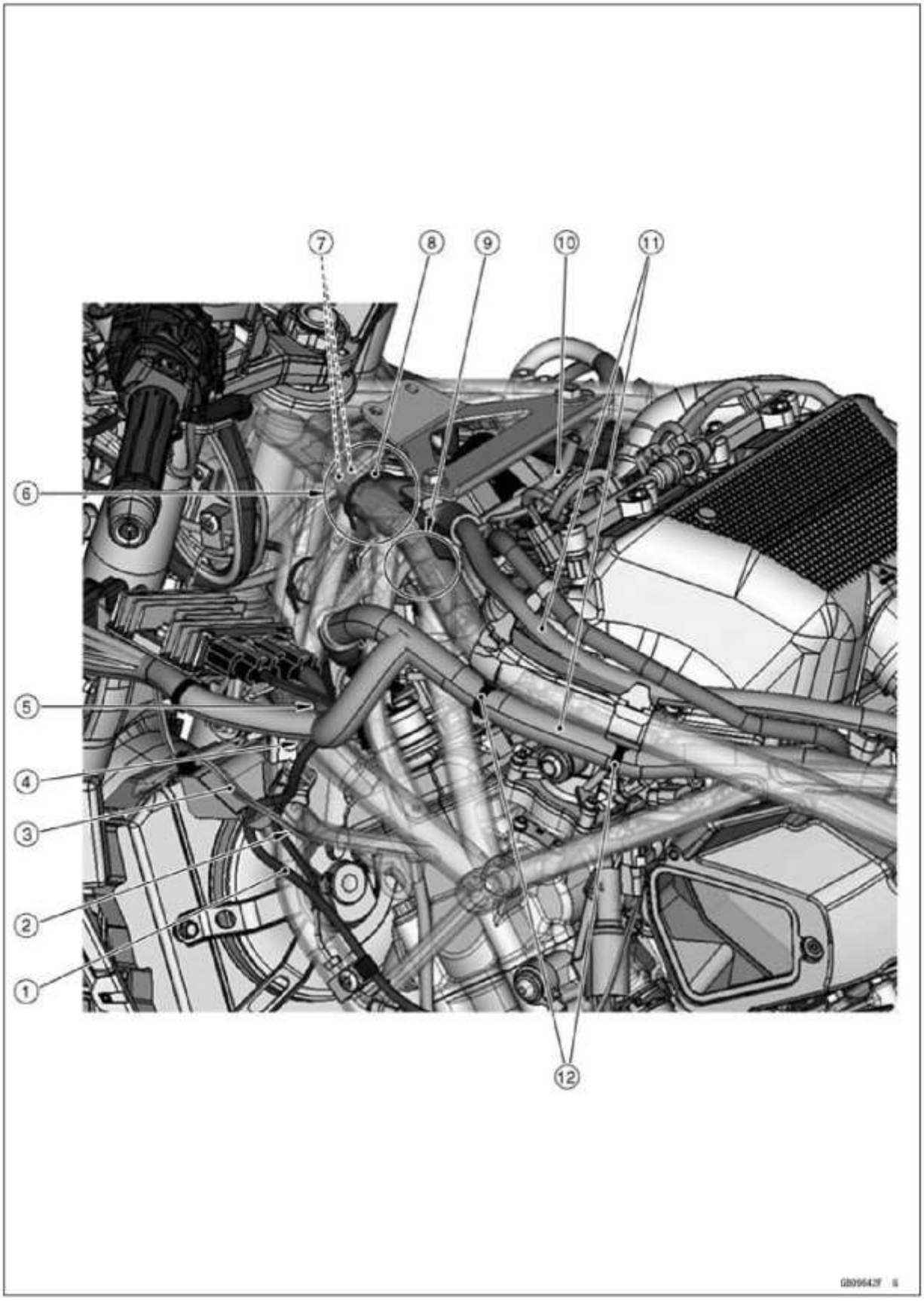
Cable, Wire, and Hose Routing



Cable, Wire, and Hose Routing

1. Viewed from Top
2. Throttle Cables
3. Run the throttle cables between the main harness and four leads.
4. Main Harness
5. Front Fork Stroke Sensor Lead
6. Right Grip Heater Lead (Equipped Models)
7. Clamp (Hold the right grip heater lead (equipped models), right switch housing lead, brake/electronic cruise control cancel switch lead and front fork stroke sensor lead (mark position) and install the clamp to the meter cover.)
8. Brake/Electronic Cruise Control Cancel Switch Lead
9. Right Switch Housing Lead
10. Clamp (Hold the right grip heater lead (equipped models), right switch housing lead, brake/electronic cruise control cancel switch lead and front fork stroke sensor lead and front fork solenoid coil lead.)
11. Clamp (Hold the brake hose, right switch housing lead, right grip heater lead (equipped models) and front fork stroke sensor lead (mark position) as shown.)
12. Run the brake/electronic cruise control cancel switch lead to the front of the clamp.
13. Brake Hose
14. Clamp (Hold the brake hose, throttle cables in turn from front side the vehicle. Hold the brake/electronic cruise control cancel switch lead, right switch housing lead, right grip heater lead (equipped models) and front fork stroke sensor lead as shown.)
15. Run the right grip heater lead (equipped models) to the outside of the throttle cables at this portion.
16. Run the throttle cables to the back of the brake hose.
17. Clamp (Hold the main harness and install the clamp to the meter cover.)
18. Branch Harness (to Front Fork Stroke Sensor and Front Right Turn Signal Light)
19. Clamp (Hold the front fork stroke sensor lead, front right turn signal light lead and branch harness [18].)
20. Front Right Turn Signal Light Lead Connector
21. Run the front fork stroke sensor lead and branch harness [18] in turn from outside the vehicle as shown.
22. Front Fork Stroke Sensor Lead Connector
23. Clamp (Hold the main harness (tape position), right cornering light lead and front fork stroke sensor lead.)
24. Clamp (Hold the main harness and install the clamp to the meter cover.)

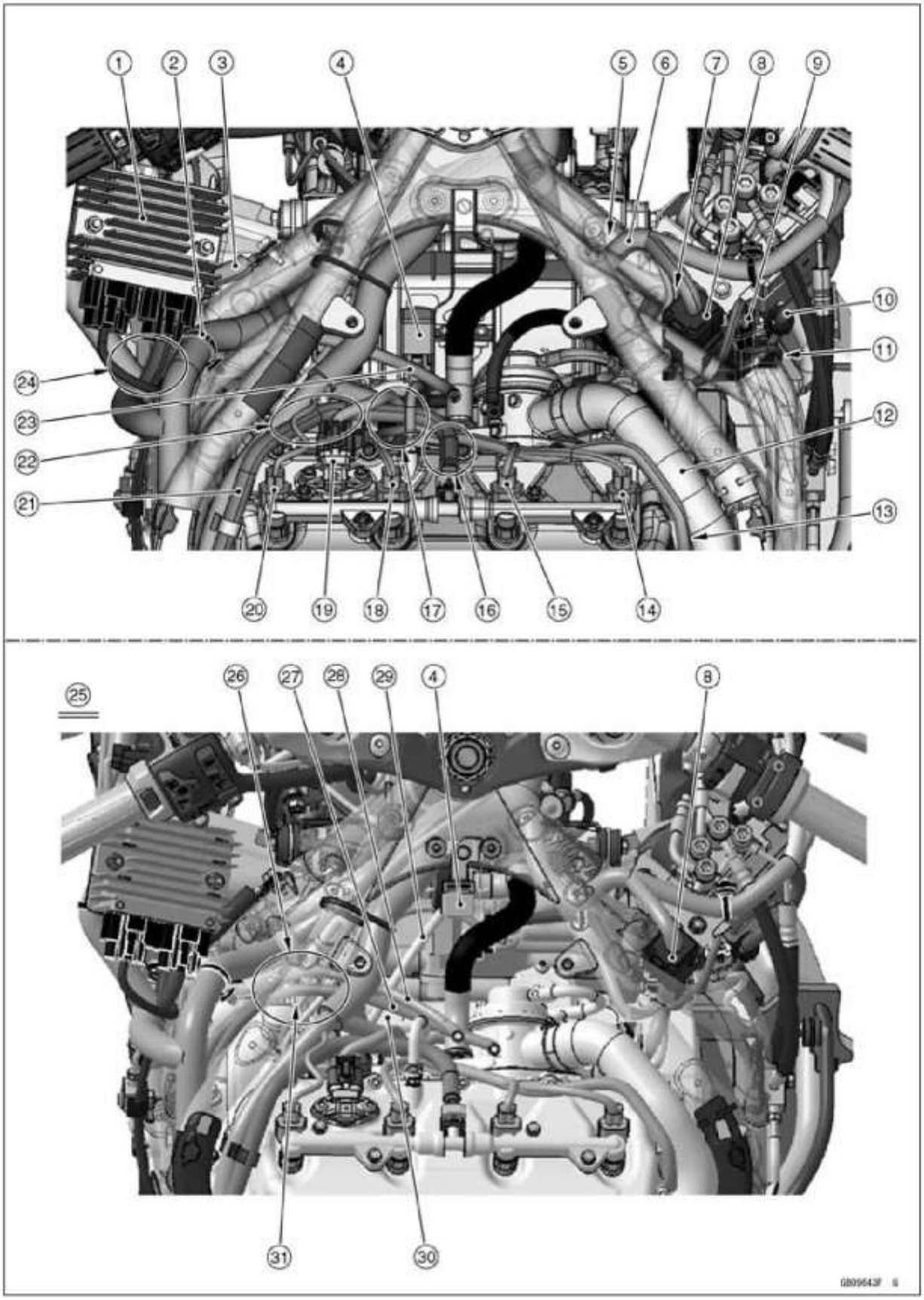
Cable, Wire, and Hose Routing



Cable, Wire, and Hose Routing

1. Alternator Lead
2. Run the camshaft position sensor lead to the outside of the main harness in this position.
3. Camshaft Position Sensor Lead
4. Run the alternator lead to the inside of the main harness in this position.
5. Run the alternator lead to the outside of the main harness in this position.
6. Run the throttle cables to the outside of the main harness, and run it under the clamp.
7. Throttle Cables
8. Band (Hold the main harness (tape position) to the frame in this position.)
9. Run the fuel tank drain hose under the main harness, and run it to above the throttle cables.
10. Fuel Tank Drain Hose
11. Main Harness
12. Clamps (Hold the main harness. Install it to the frame.)

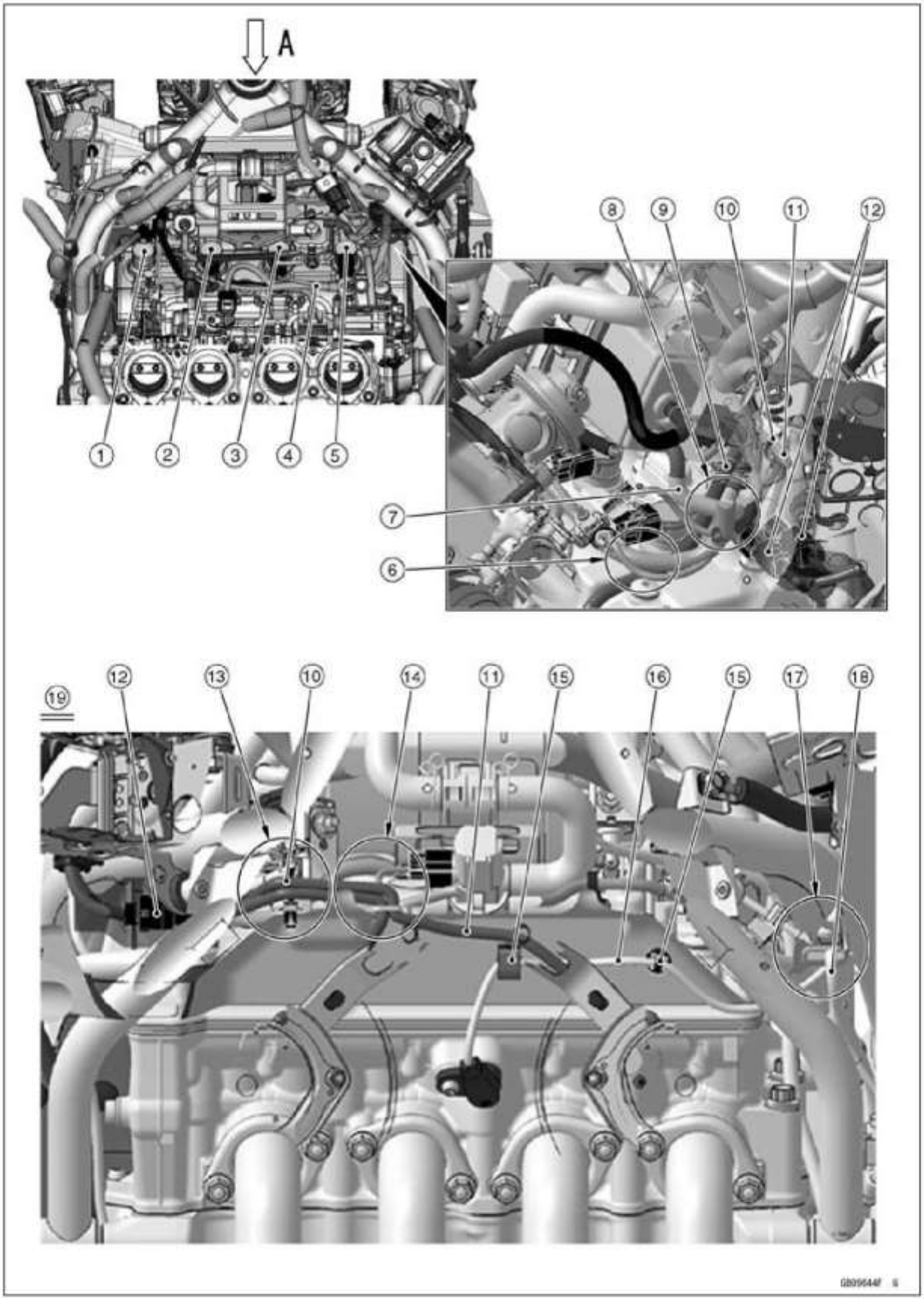
Cable, Wire, and Hose Routing



Cable, Wire, and Hose Routing

1. Regulator/Rectifier
2. Clamp (Hold the main harness to the frame.)
3. Frame Grounds
4. Accessory Relay
5. Run the main harness (to engine subharness) to the outside of the frame at this portion.
6. Main Harness (to engine subharness)
7. Run the purge valve lead connector to the inside of the frame at this portion.
8. Engine Subharness Connector
9. Crankshaft Sensor Lead Connector
10. Radiator Fan Motor Lead
11. Run the crankshaft sensor lead to the rear side of the radiator fan motor lead.
12. Blow-off Valve Hose
13. Run the throttle position sensor/ETV actuator lead to the inside of the blow-off valve hose at this portion.
14. Secondary Fuel Injector Lead #4
15. Secondary Fuel Injector Lead #3
16. Run the secondary fuel hose above the secondary fuel injector lead.
17. Run the secondary fuel injector lead #2 to the left side of the purge valve hose (air intake chamber ~ purge valve). Run it to the under the secondary fuel hose.
18. Secondary Fuel Injector Lead #2
19. Air Intake Chamber Pressure/Temperature Sensor Lead
20. Secondary Fuel Injector Lead #1
21. Secondary Fuel Hose
22. Run the secondary injector lead #1 and air intake chamber pressure/temperature sensor lead above the secondary fuel hose.
23. Fuel Tank Drain Hose
24. Run the frame grounds to the under the regulator/rectifier.
25. Other than Evaporative Emission Control System Equipped Models
26. Run the fuel tank drain hose and fuel tank breather hose in order from the front side of the vehicle.
27. Fuel Tank Breather
28. Hose Fuel Tank Drain Hose
29. Accessory Relay Lead
30. Run the accessory relay under the fuel tank drain hose and fuel tank breather hose.
31. Run the fuel tank drain hose and fuel tank breather hose upper the throttle cables.

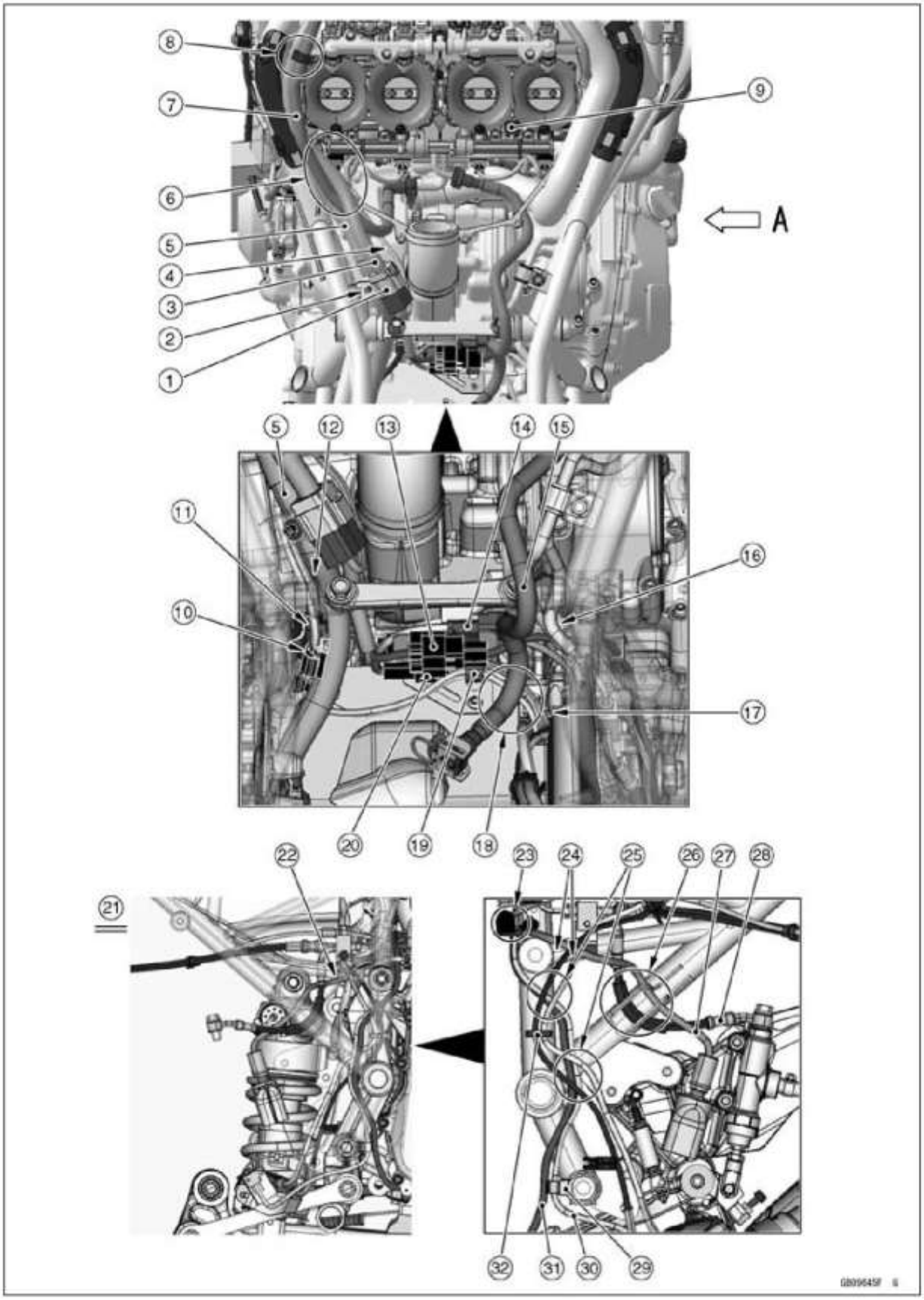
Cable, Wire, and Hose Routing



Cable, Wire, and Hose Routing

1. Stick Coil #1
2. Stick Coil #2
3. Stick Coil #3
4. Engine Subharness Connector
5. Stick Coil #4
6. Run the engine subharness to the upside of the purge valve hose (equipped models).
7. Breather Hose
8. Run the breather hose to the outside of the purge valve hose (equipped models).
9. Purge Valve Hose (Equipped Models)
10. Clamp (Hold the radiator fan motor lead at the tape position.)
11. Radiator Fan Motor Lead
12. Radiator Fan Motor Lead Connectors
13. Run the radiator fan motor lead to the front side of the bracket.
14. Run the radiator fan motor lead upward through the hole of the radiator cover.
15. Clamps (Hold the camshaft position sensor lead. Install it to the radiator cover.)
16. Camshaft Position Sensor Lead
17. Run the alternator lead through the slot of the radiator cover.
18. Alternator Lead
19. Viewed from A

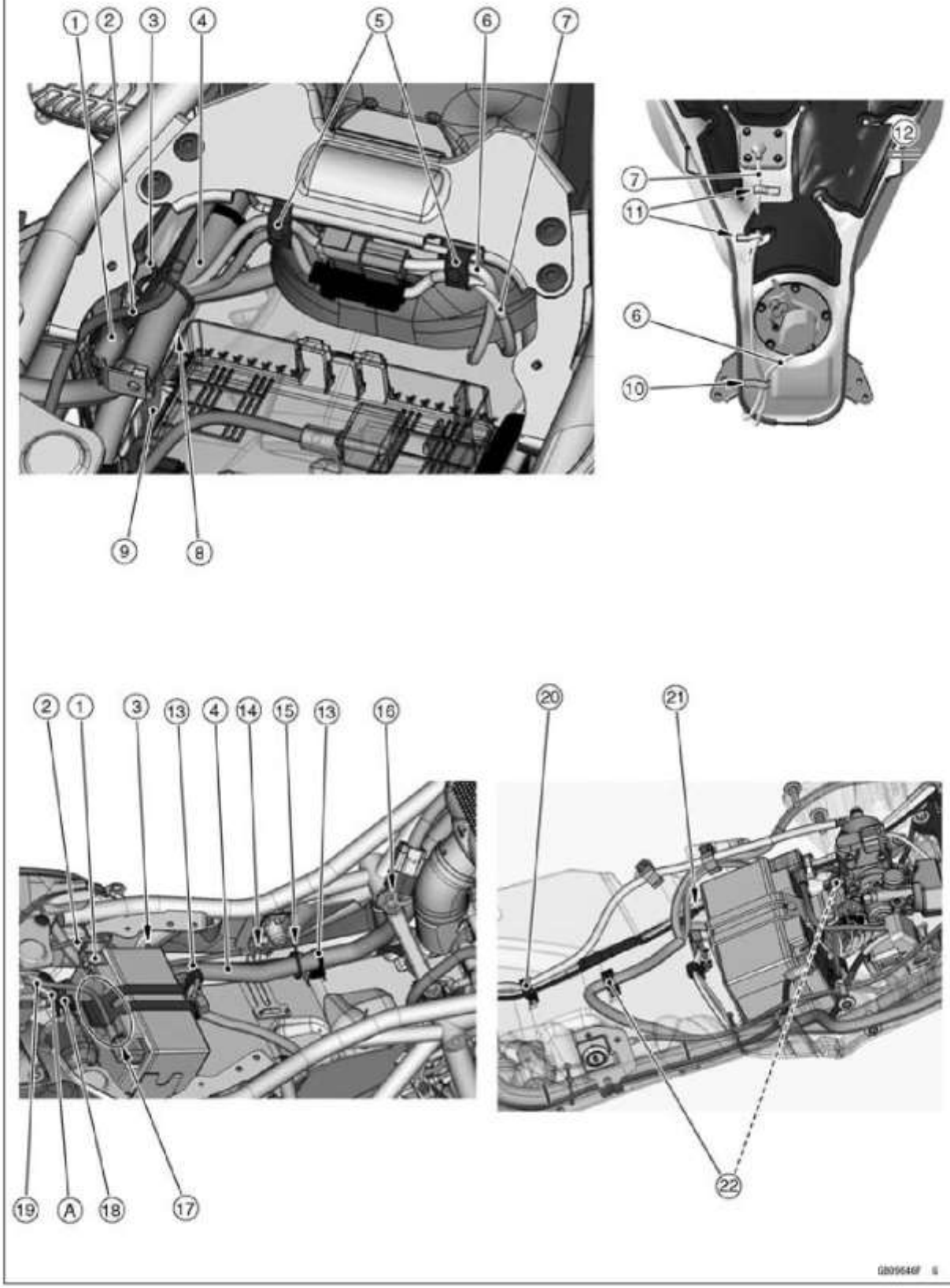
Cable, Wire, and Hose Routing



Cable, Wire, and Hose Routing

1. Install the main harness (to injector subharness) connector to the frame.
2. Clamp (Hold the main harness to the frame.)
3. Main Harness (to injector subharness)
4. Run the injector subharness lead under the secondary fuel hose.
5. Main Harness
6. Run the main harness (to injector subharness) to the inside and upside of the secondary fuel hose as shown.
7. Secondary Fuel Hose
8. Clamp (Hold the main harness (tape position) and secondary fuel hose as shown.)
9. Water Temperature Sensor
10. Rear Shock Absorber Stroke Sensor Lead
11. Rear Shock Absorber Solenoid Coil Lead
12. Run the rear shock absorber stroke sensor lead and rear shock absorber solenoid coil lead to the outside of the main harness.
13. Oxygen Sensor Lead Connector (Install it to the bracket.)
14. Electronic Cruise Control Cancel Switch (Rear Brake) Lead Connector (Install it to the bracket.)
15. Primary Fuel Hose
16. Run the oxygen sensor lead to the front side of the brake pipe.
17. Run the rear brake light switch lead, rear shock absorber stroke sensor lead and rear shock absorber solenoid coil lead under the exhaust butterfly valve cables.
18. Run the rear brake light switch lead, electronic cruise control cancel switch (rear brake) lead, oxygen sensor lead, rear wheel rotation sensor lead, rear shock absorber solenoid coil lead and rear shock absorber stroke sensor lead to the front side of the primary fuel hose.
19. Clamp (Hold the rear brake light switch lead, rear shock absorber solenoid coil lead and rear shock absorber stroke sensor lead .)
20. Rear Wheel Rotation Sensor Lead Connector (Install it to the bracket.)
21. Viewed from A
22. Run the rear shock absorber spring preload adjustor hose, rear shock absorber stroke sensor lead and rear shock absorber solenoid coil lead to the inside of the rear brake light switch lead.
23. Clamp (Hold the electronic cruise control cancel switch (rear brake) lead and oxygen sensor lead.)
24. Run the exhaust butterfly valve cables to the rear side of the frame pipe.
25. Run the electronic cruise control cancel switch (rear brake) lead and oxygen sensor lead to the outside of the exhaust butterfly valve cables.
26. Run the rear brake light switch lead to the inside of the brake hose. Run the rear brake light switch lead to the rear side of the brake hose.
27. Rear Brake Light Switch Lead
28. Brake Hose
29. Clamp (Hold the electronic cruise control cancel switch (rear brake) lead as shown.)
30. Electronic Cruise Control Cancel Switch (Rear Brake) Lead
31. Oxygen Sensor Lead
32. Clamp (Hold the exhaust butterfly valve cables.)

Cable, Wire, and Hose Routing



Cable, Wire, and Hose Routing

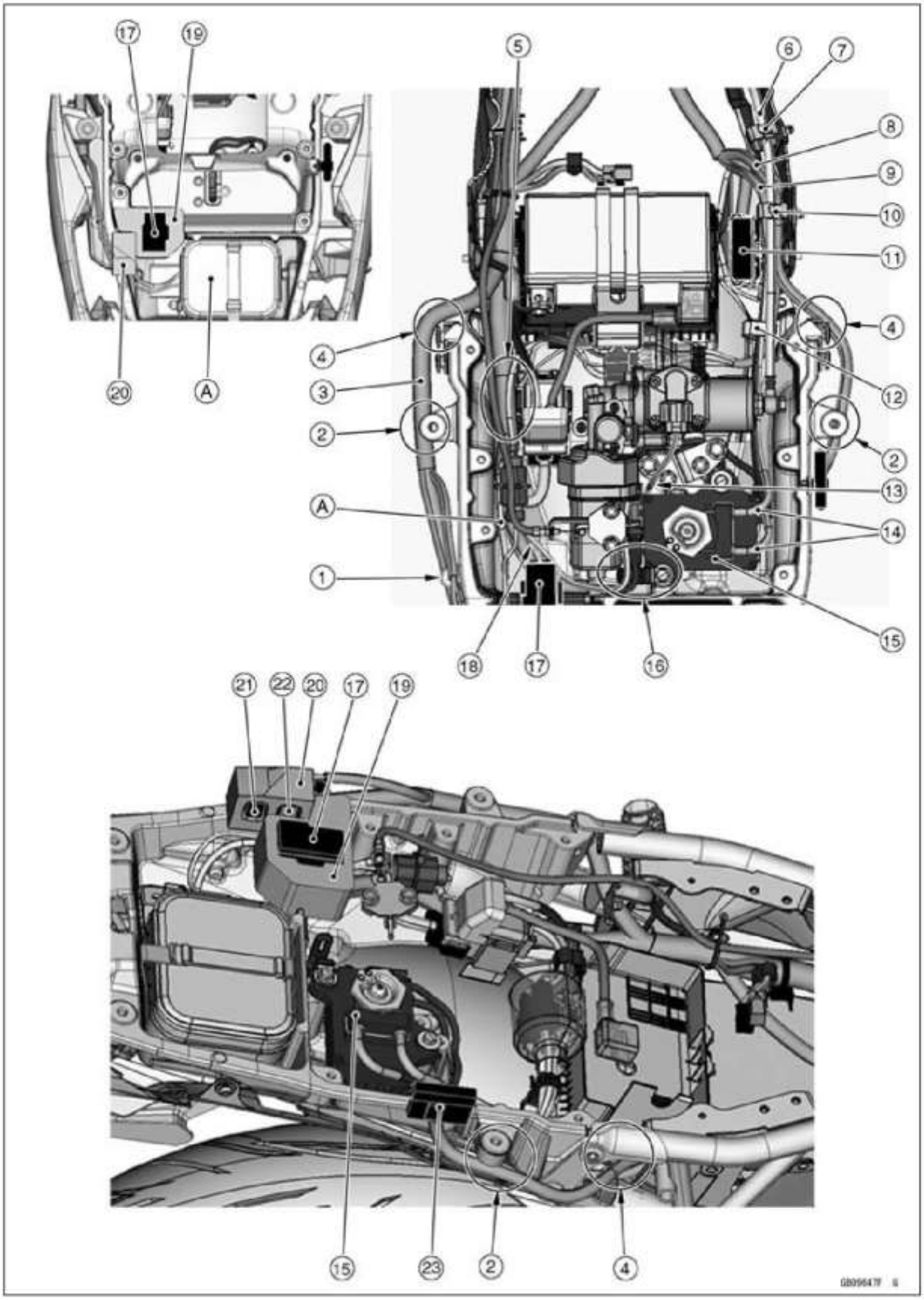
NOTE

○*Some of the figures are shown using the figure of ETC equipped model.*

A: This model is not ETC equipped model.

1. Battery Negative (–) Cable
2. Seat Lock Cable
3. Clamp (Hold the main harness, battery negative (–) cable, seat lock cable and starter motor cable.)
4. Main Harness
5. Clamps (Hold the fuel pump lead and fuel level sensor lead.)
6. Fuel Pump Lead
7. Fuel Level Sensor Lead
8. Run the starter motor cable under the harness from the clamp position.
9. Starter Motor Cable
10. Clamp (Hold the fuel pump lead and fuel level sensor lead.)
11. Clamps (Hold the fuel level sensor lead.)
12. Viewed from Bottom
13. Clamps (Hold the main harness. Install it to the rib of the rear fender.)
14. Run the battery negative (–) cable and starter motor cable to the outside of the rib of the rear fender.
15. Clamp (Hold the main harness, battery negative (–) cable and starter motor cable.)
16. Run the injector subharness above the main harness.
17. Run the battery positive (+) cable above the battery band.)
18. Clamp (Hold the battery positive (+) cable.)
19. Battery Positive (+) Cable
20. Clamp (Hold the exhaust butterfly valve cables.)
21. Run the exhaust butterfly valve cables above the main harness.
22. Clamps (Hold the main harness.)

Cable, Wire, and Hose Routing



Cable, Wire, and Hose Routing

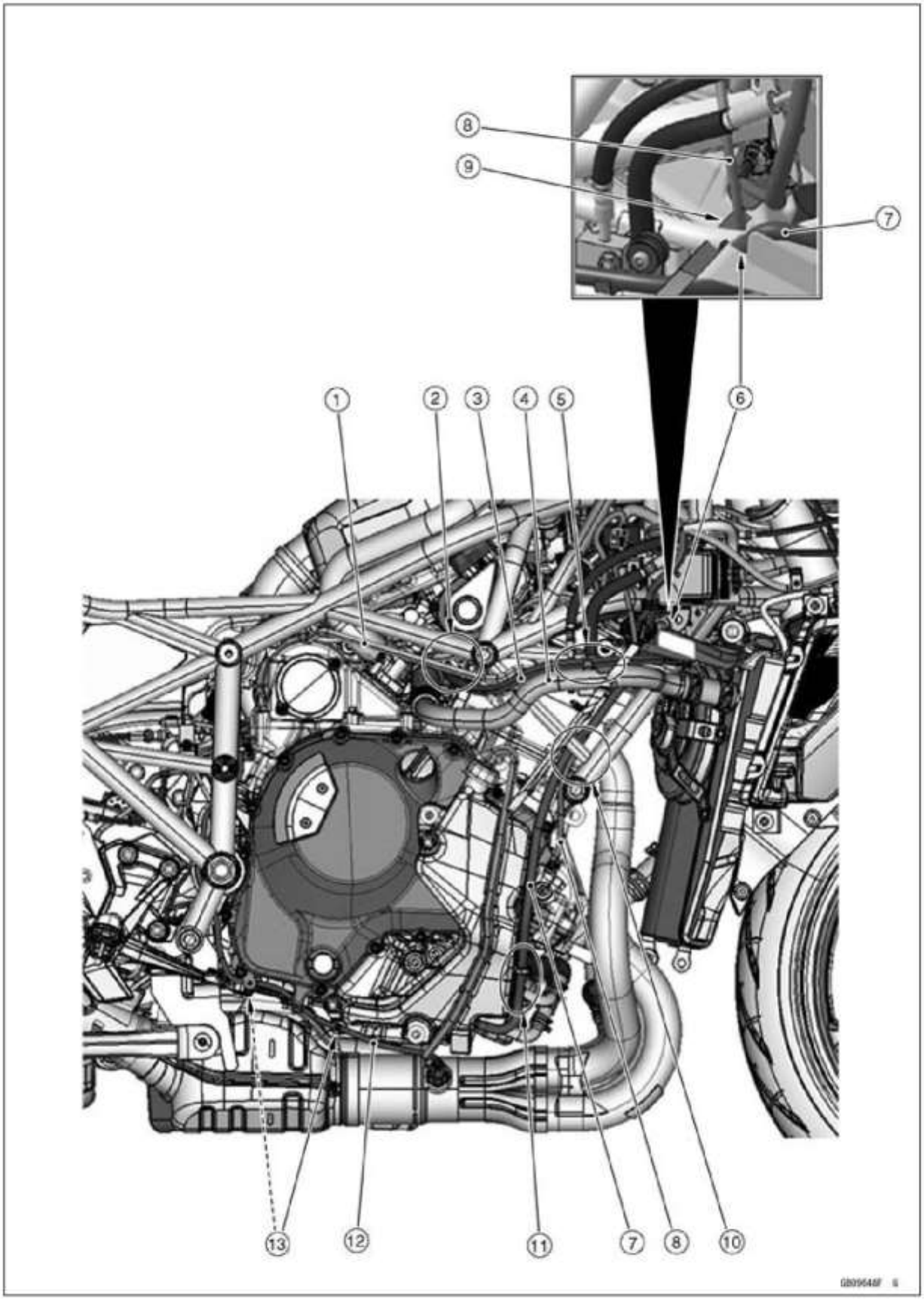
NOTE

○*Some of the figures are shown using the figure of ETC equipped model.*

A: This model is not ETC equipped model.

1. Clamp (Hold the main harness. Install it to the rear frame.)
2. Run the main harness under the grab rail.
3. Main Harness
4. Run the main harness to the outside of the frame at this portion.
5. Run the seat lock cable above the other leads.
6. Rear Shock Absorber Spring Preload Actuator Hose
7. Clamp (Hold the rear shock absorber spring preload actuator hose.)
8. Fuse Box Lead (to main harness)
9. Battery Positive (+) Cable (to main harness)
10. Clamp (Hold the rear shock absorber preload actuator hose, battery positive (+) cable and fuse box lead. Run the rear shock absorber preload actuator hose to the above the battery positive (+) cable and fuse box lead.)
11. KECS ECU Connector
12. Clamp (Hold the exhaust butterfly valve cables.)
13. Run the rear shock absorber spring preload position sensor lead under the exhaust battery valve cables and rear shock absorber spring preload actuator lead.
14. Exhaust Butterfly Valve Cables
15. Exhaust Butterfly Valve Actuator
16. Clamps (Hold the exhaust butterfly valve actuator lead and rear shock absorber spring preload actuator lead.)
17 Fuse Box (2)
18 Run the rear shock absorber spring preload actuator lead under the main harness.
19. Pad (Install it between the rear frame and seat lock bracket as shown.)
20. Pad (Install it between the rear frame and seat cover as shown.)
21. ABS Kawasaki Self-Diagnosis System Connector
22. Immobilizer (Equipped Models)/Kawasaki Diagnostic System Connector
23. Fuse Box (4) (Insert the tab of the fuse box into the rear frame.)

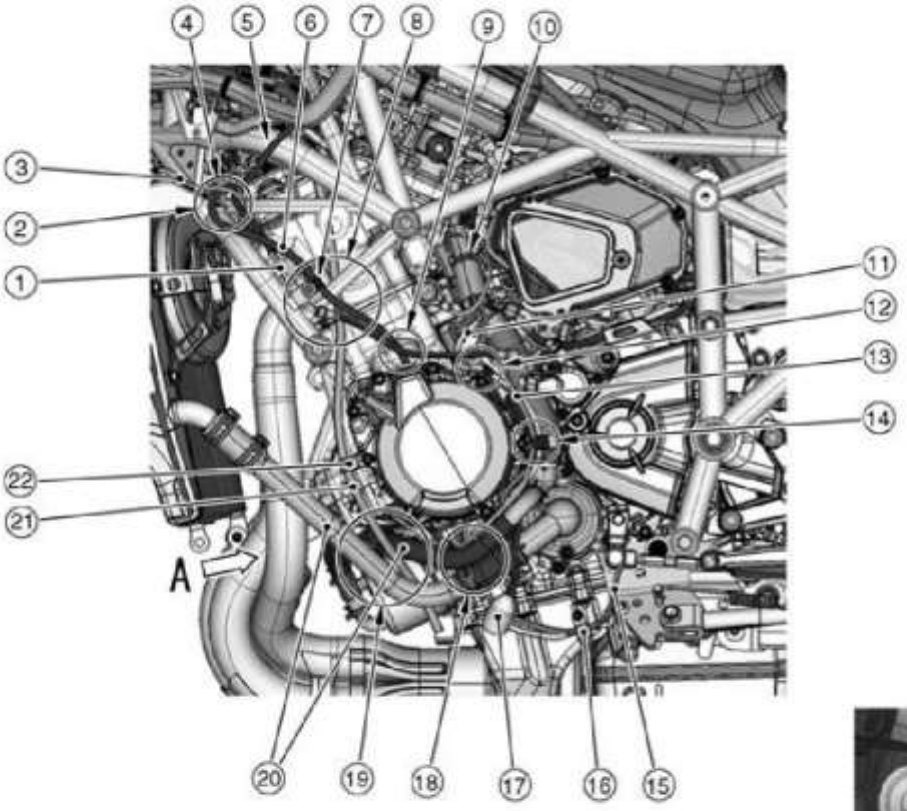
Cable, Wire, and Hose Routing

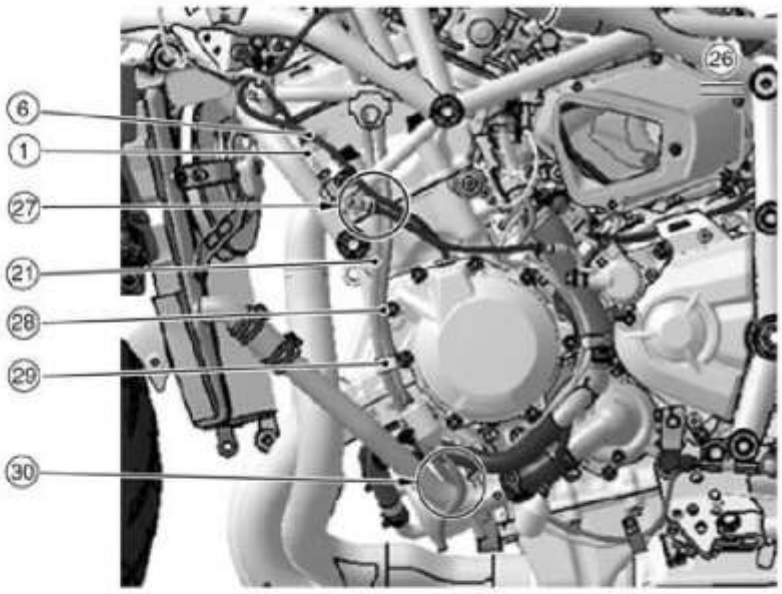


Cable, Wire, and Hose Routing

1. Brake Pipe
2. Run the air bleeder hose under the brake pipe.
3. Air Bleeder Hose
4. Water Hose
5. Run the air bleeder hose to the inside of the water hose bracket, and run it into the hole of the radiator pad.
6. Run the radiator overflow hose to the inside of brake pipe and air bleeder hose, and run it into the hole of the radiator cover.
7. Radiator Overflow Hose
8. Crankshaft Sensor Lead
9. Run the crankshaft sensor lead to the inside of the frame pipe.
10. Run the crankshaft sensor lead and radiator overflow hose to the inside of the frame pipe.
11. Run the radiator overflow hose through the hooks of the coolant reserve tank.
12. Oxygen Sensor Lead
13. Clamps (Hold the oxygen sensor lead to the bracket.)

Cable, Wire, and Hose Routing





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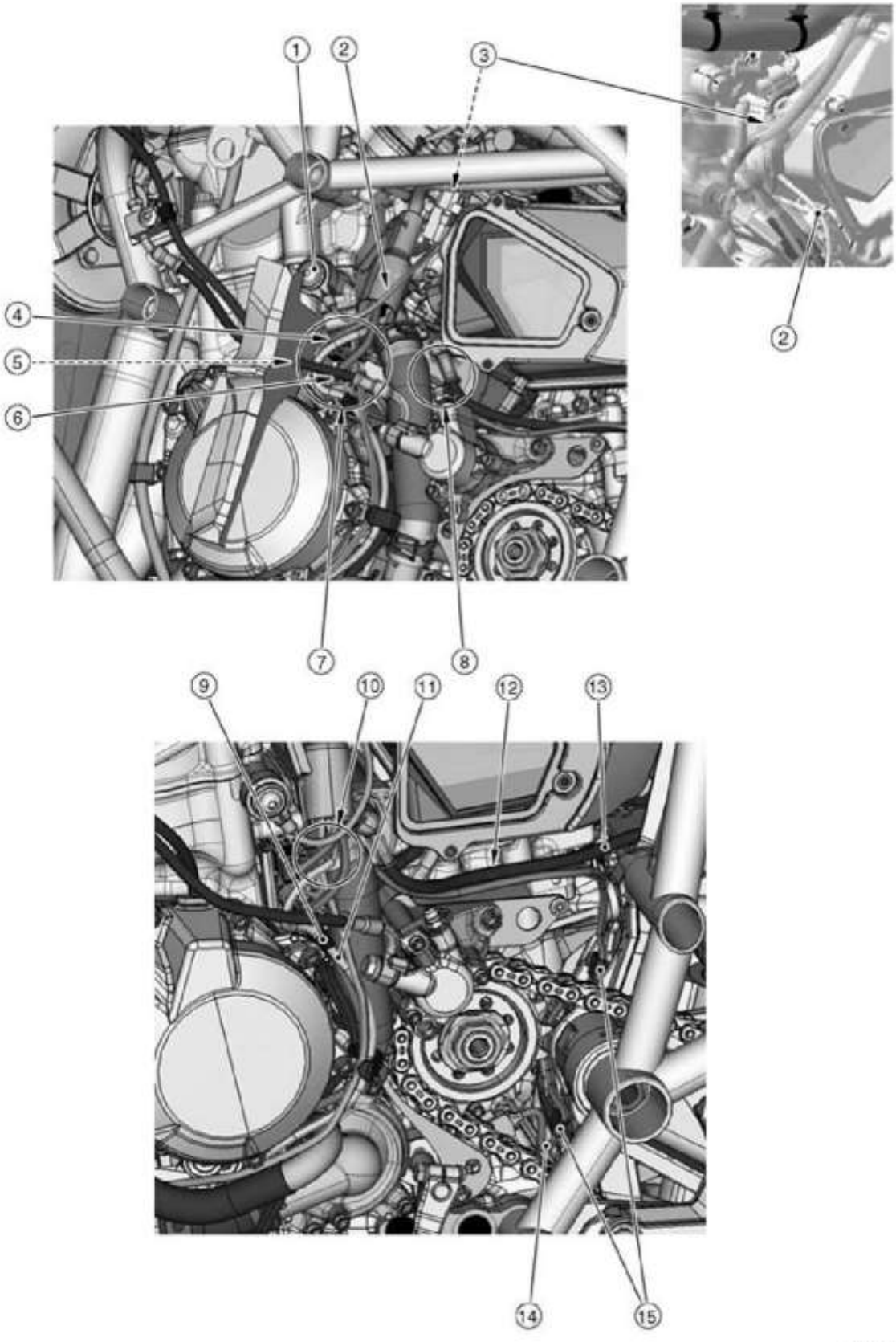
Cable, Wire, and Hose Routing

1. Clutch Hose
2. Run the camshaft position sensor lead to the rear side of the clutch hose, and run it to the outside of the alternator lead.
3. Camshaft Position Sensor Lead
4. Run the alternator lead through the notch of the radiator cover.
5. Run the alternator lead to the outside of the frame.
6. Alternator Lead
7. Clamp (Hold the alternator lead.)
8. Run the fuel tank drain hose to the outside of the frame, and run it to the inside of the clutch hose and alternator lead.
9. Run the clutch hose to the outside of the alternator lead.
10. Clamp (Hold the constricted part of the dust cover.)
11. Side Stand Switch Lead
12. Clamp (Hold the side stand switch lead.)
13. Oil Pressure Switch Lead
14. Clamp (Hold the quick shifter sensor lead, oil pressure switch lead and side stand switch lead.)
15. Quick Shifter Sensor Lead
16. Clamp (Hold the quick shifter sensor lead and side stand switch lead. Hold the quick shifter sensor lead at the taped portion.)
17. Air Cleaner Drain Tank (Put the air cleaner drain tank as shown.)
18. Run the quick shifter sensor lead and side stand switch lead to the inside of the water hose.
19. Run the fuel tank drain hose between the water hoses.
20. Water Hoses
21. Fuel Tank Drain Hose
22. Clamp (Hold the fuel tank drain hose.)
23. Viewed from A
24. Oil Pressure Switch
25. About 120°
26. Other than Evaporative Emission Control System Equipped Models
27. Run the fuel tank drain hose and fuel tank breather hose to the outside of the frame, and run them to the inside of the clutch hose and alternator lead.
28. Fuel Tank Breather Hose
29. Clamp (Hold the fuel tank drain hose and fuel tank breather hose.)
30. Run the fuel tank breather hose to the outside of the water hose.

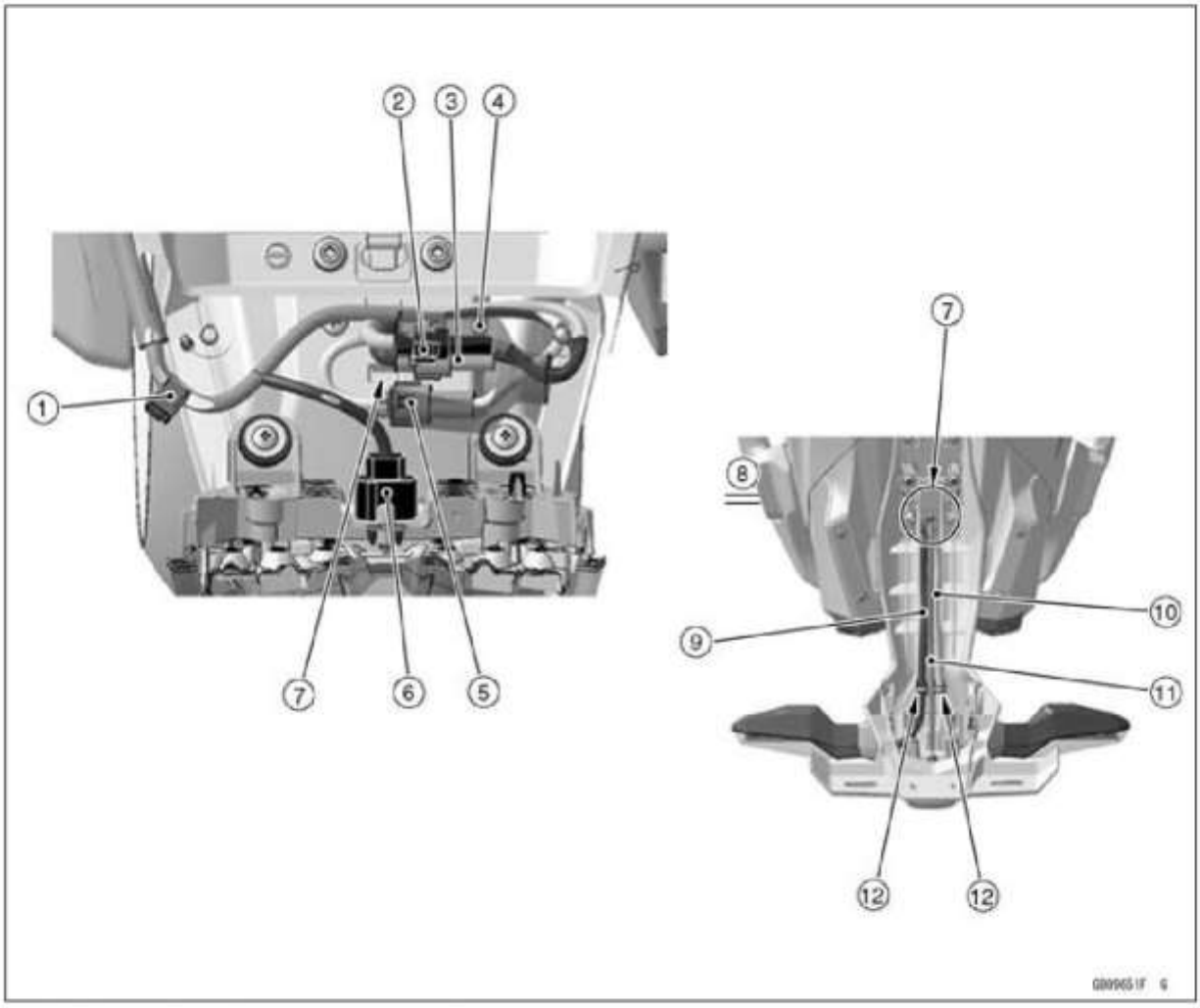
Cable, Wire, and Hose Routing



Cable, Wire, and Hose Routing

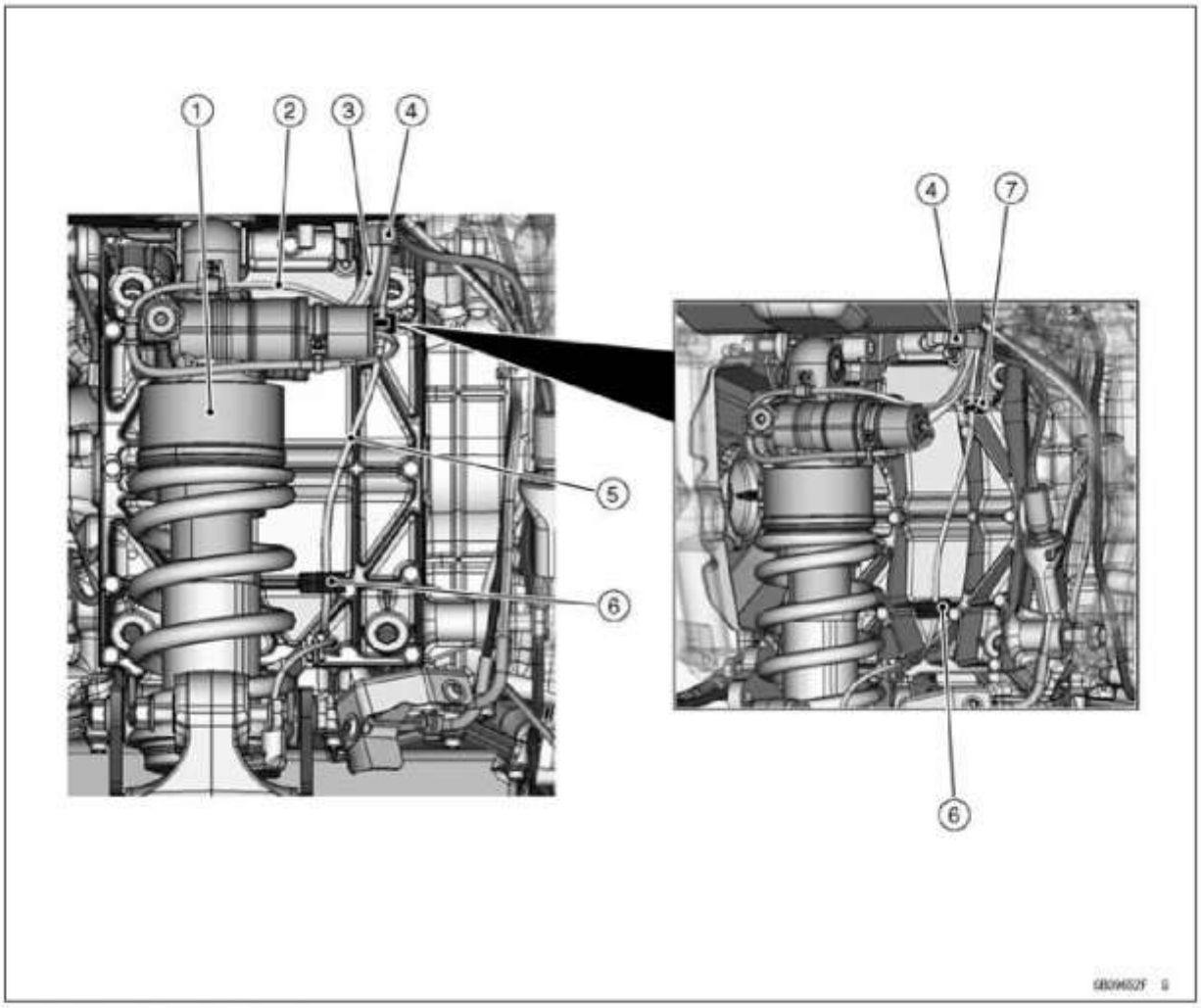
1. Knock Sensor
2. Run the knock sensor lead to the outside of the other leads.
3. Knock Sensor Lead Connector (Run it to the inside of the main harness. Insert it to the bracket.)
4. Gear Position Sensor Lead Connector
5. Run the clutch hose into the hole of the pad.
6. Quick Shifter Sensor Lead Connector
7. Run the clutch hose under the quick shifter sensor lead connector. Do not interfere with the clutch hose to the quick shifter sensor lead connector.
8. Run the gear position sensor lead to the inside of the water hose, and insert it to the bracket.
9. Clamp (Hold the side stand switch lead.)
10. Do not twist or stretch the leads around the connectors.
11. Side Stand Switch Lead
12. Run the gear position sensor lead and starter motor cable to the inside of the engine sprocket cover.
13. Starter Motor Cable
14. Gear Position Sensor Lead
15. Clamps (Hold the gear position sensor lead.)

Cable, Wire, and Hose Routing



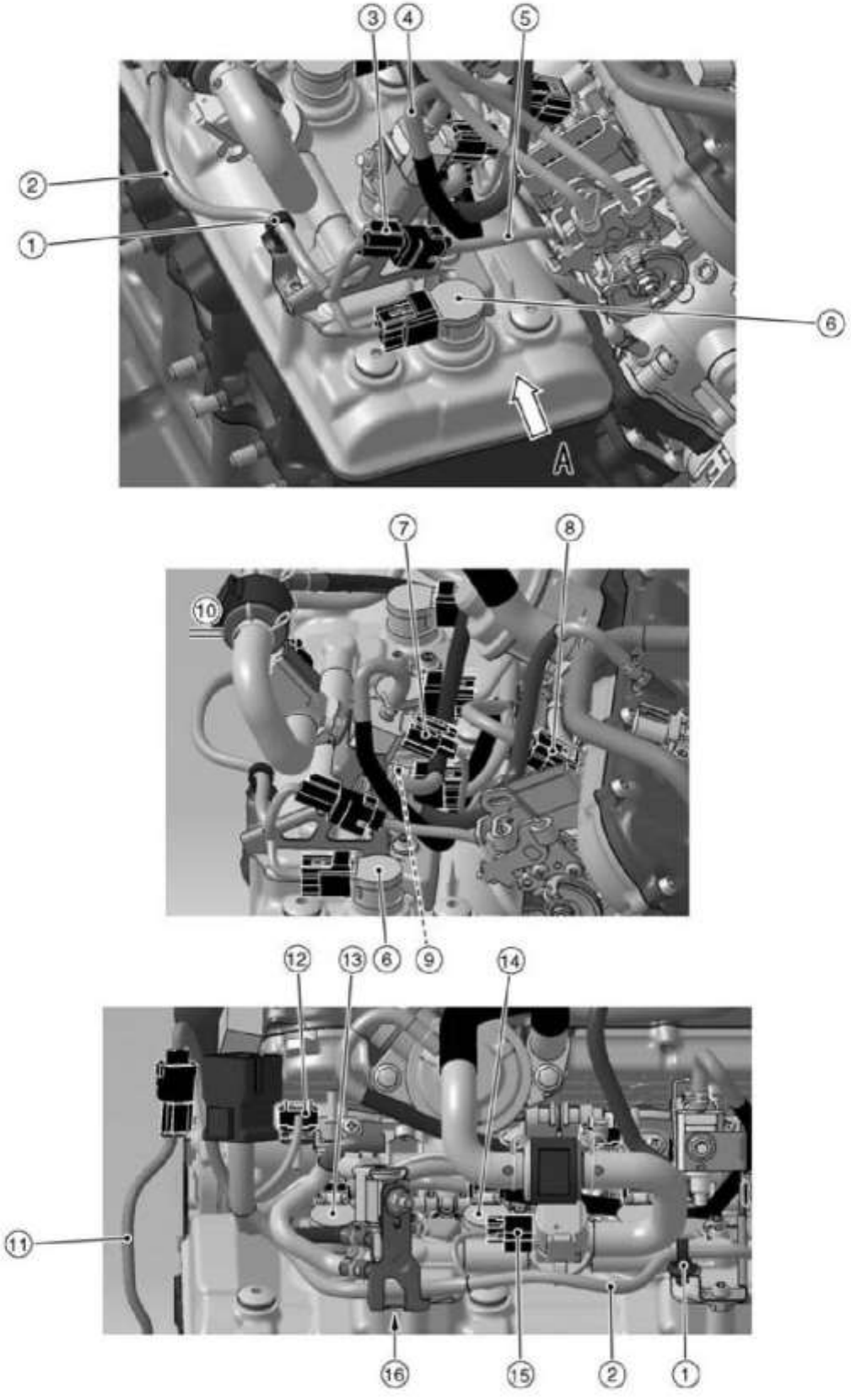
1. Clamp (Hold the main harness.)
2. Rear Left Turn Signal Light Lead Connector
3. Rear Right Turn Signal Light Lead Connector
4. Dust Cover
5. License Plate Light Lead Connector
6. Brake/Tail Light Lead Connector
7. Run the rear turn signal light leads and license plate light lead through the hole of the rear fender.
8. Viewed from Bottom
9. Rear Left Turn Signal Light Lead
10. Rear Right Turn Signal Light Lead
11. License Plate Light Lead
12. Clamps (Hold the rear turn signal light leads. Install it to the rib of the flap.)

Cable, Wire, and Hose Routing



1. Rear Shock Absorber
2. Rear Shock Absorber Solenoid Coil Lead
3. Rear Shock Absorber Spring Preload Adjustor Hose
4. Clamp (Hold the rear shock absorber solenoid coil lead, rear shock absorber stroke sensor lead and rear shock absorber spring preload adjustor hose. Fuse the open side of the clamp to front side, and install it to the rear fender.)
5. Rear Shock Absorber Stroke Sensor Lead
6. Clamp (Hold the rear shock absorber stroke sensor lead)
7. Clamp (Hold the rear shock absorber stroke sensor lead to the swingarm bracket at mark position as shown.)

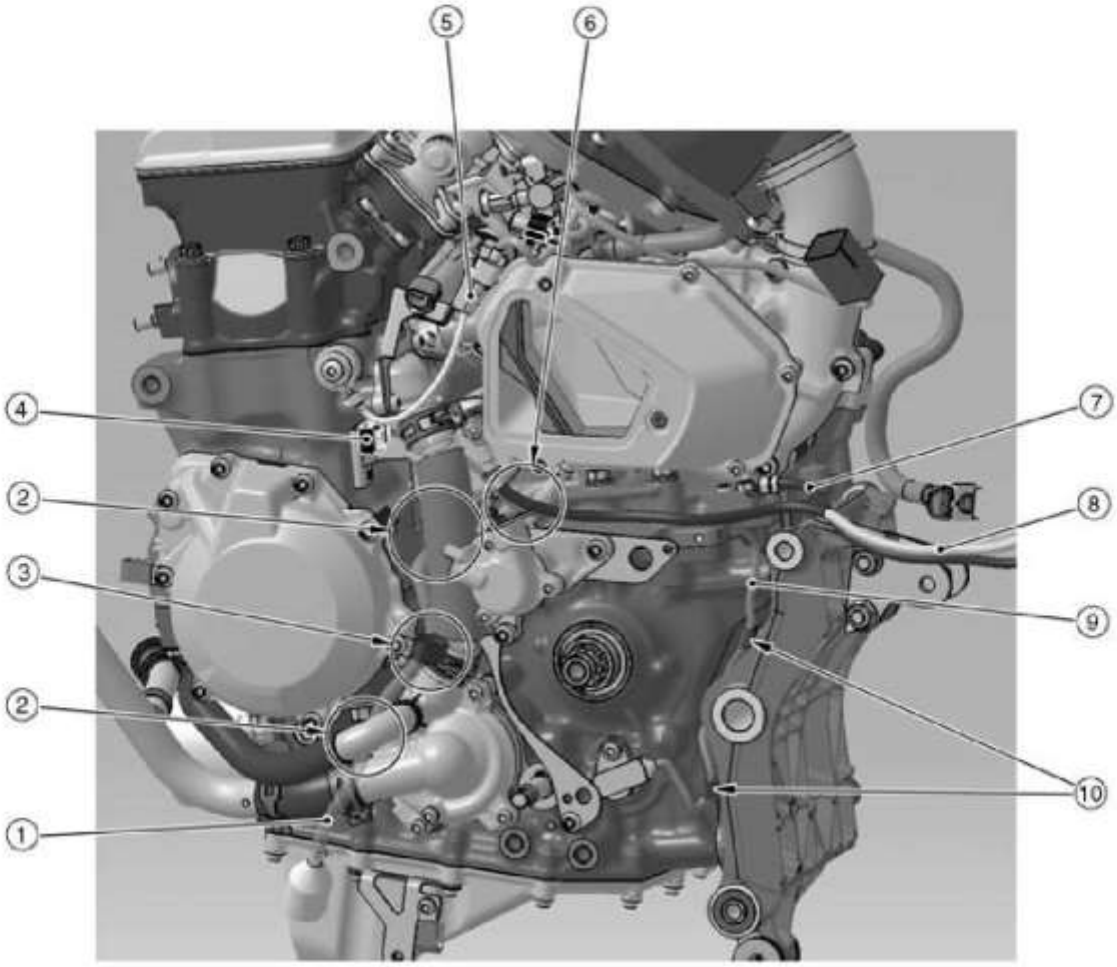
Cable, Wire, and Hose Routing



Cable, Wire, and Hose Routing

1. Clamp (Hold the engine subharness. Install it to the bracket.)
2. Engine Subharness
3. Electronic Cruise Control Cancel Switch (Throttle) Lead Connector
4. Purge Valve Hose (Purge Valve ~ Throttle Body Assy)
5. Electronic Cruise Control Cancel Switch (Throttle) Lead
6. Stick Coil #1
7. Purge Valve (for supercharger) Connector
8. Intake Air Pressure Sensor Lead Connector
9. Stick Coil #2
10. Viewed from A
11. Crankshaft Sensor Lead
12. Atmospheric Pressure Sensor Lead Connector
13. Stick Coil #4
14. Stick Coil #3
15. Air Switching Valve Lead Connector
16. Run the engine subharness under the purge valve.

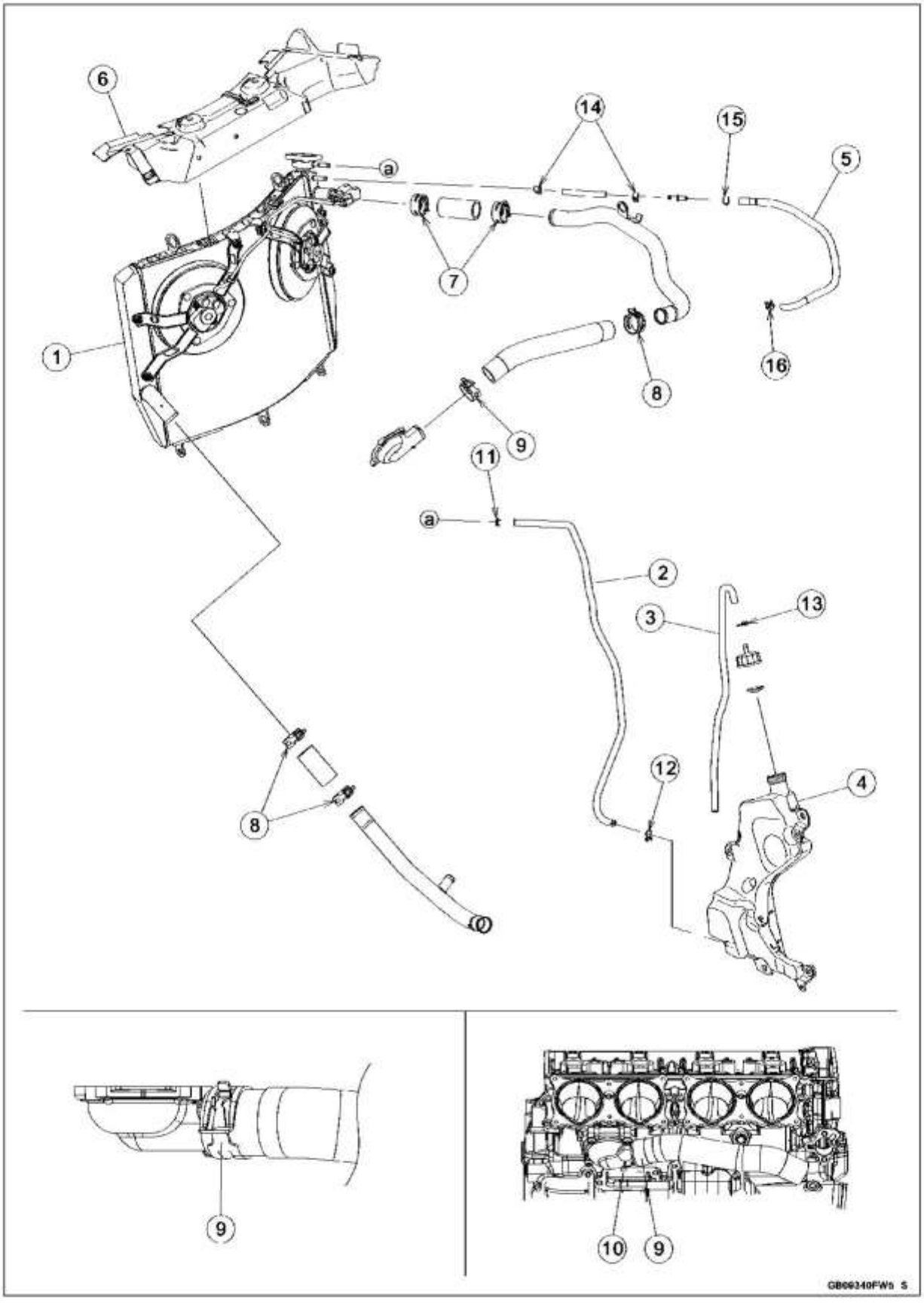
Cable, Wire, and Hose Routing



Cable, Wire, and Hose Routing

1. Air Cleaner Drain Hose
2. Run the air cleaner drain hose through the back of the water hose.
3. Run the air cleaner drain hose through the back of the clamp.
4. Gear Position Sensor Lead Connector (Install it to the upper side of the bracket.)
5. Knock Sensor Lead Connector (Install it to the bracket.)
6. Run the starter motor cable, gear position sensor lead and air cleaner drain hose in order from the left side of the engine.
7. Battery Negative (–) Cable
8. Starter Motor Cable
9. Gear Position Sensor Lead
10. Clamps (Hold the gear position sensor lead.)

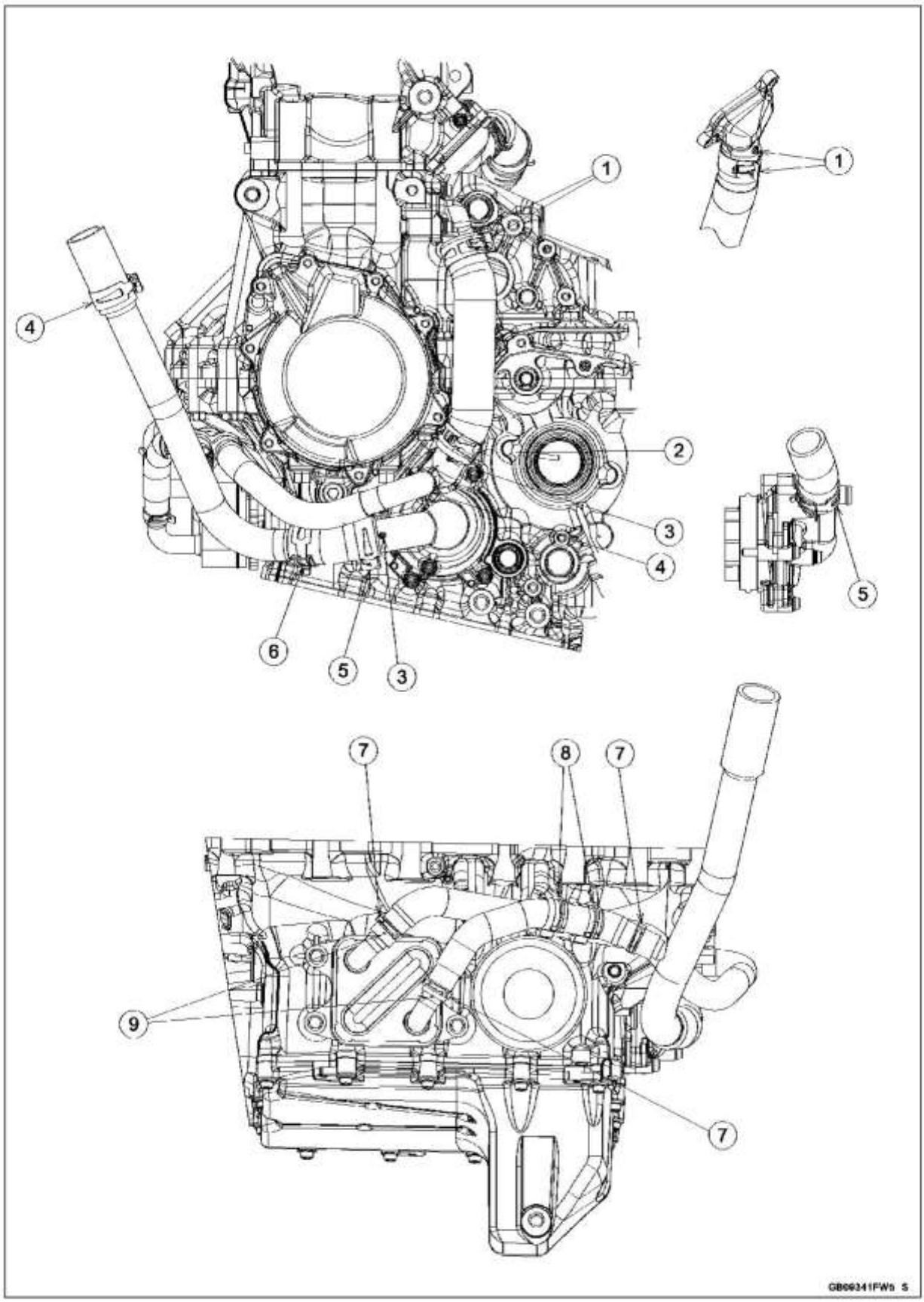
Cable, Wire, and Hose Routing



Cable, Wire, and Hose Routing

1. Radiator
2. Radiator Overflow Hose
3. Reserve Tank Overflow Hose
4. Coolant Reserve Tank
5. Air Bleeder Hose
6. Radiator Cover
7. Clamps (Hold the water hose. Face their knobs to right side of the vehicle.)
8. Clamps (Hold the water hoses. Face their knobs to the top.)
9. Clamp (Hold the water hose. Face its knob to the engine as shown.)
10. Align the paint mark of the water hose with the projection of the thermostat housing cover.
11. Clamp (Hold the radiator overflow hose. Face its knob to right side of the vehicle.)
12. Clamp (Hold the radiator overflow hose. Face its knob to the bottom.)
13. Clamp (Hold the reserve tank overflow hose. Face its knob to the right side of the vehicle.)
14. Clamps (Hold the water hose. Face their knobs to the right side of the vehicle.)
15. Clamp (Hold the air bleeder hose. Face its knob to the right side of the vehicle.)
16. Clamp (Hold the air bleeder hose. Face its knob to the bottom.)

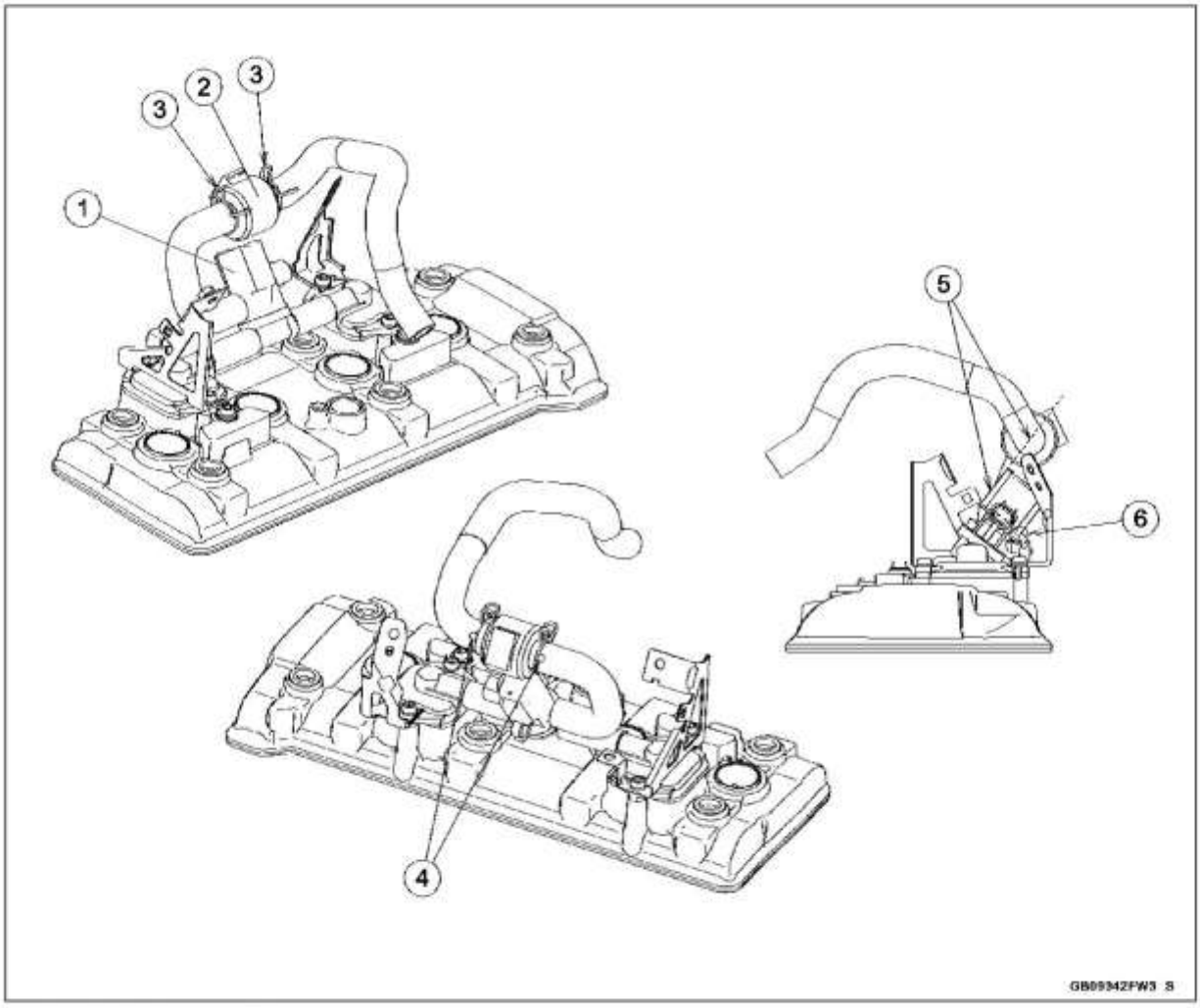
Cable, Wire, and Hose Routing



Cable, Wire, and Hose Routing

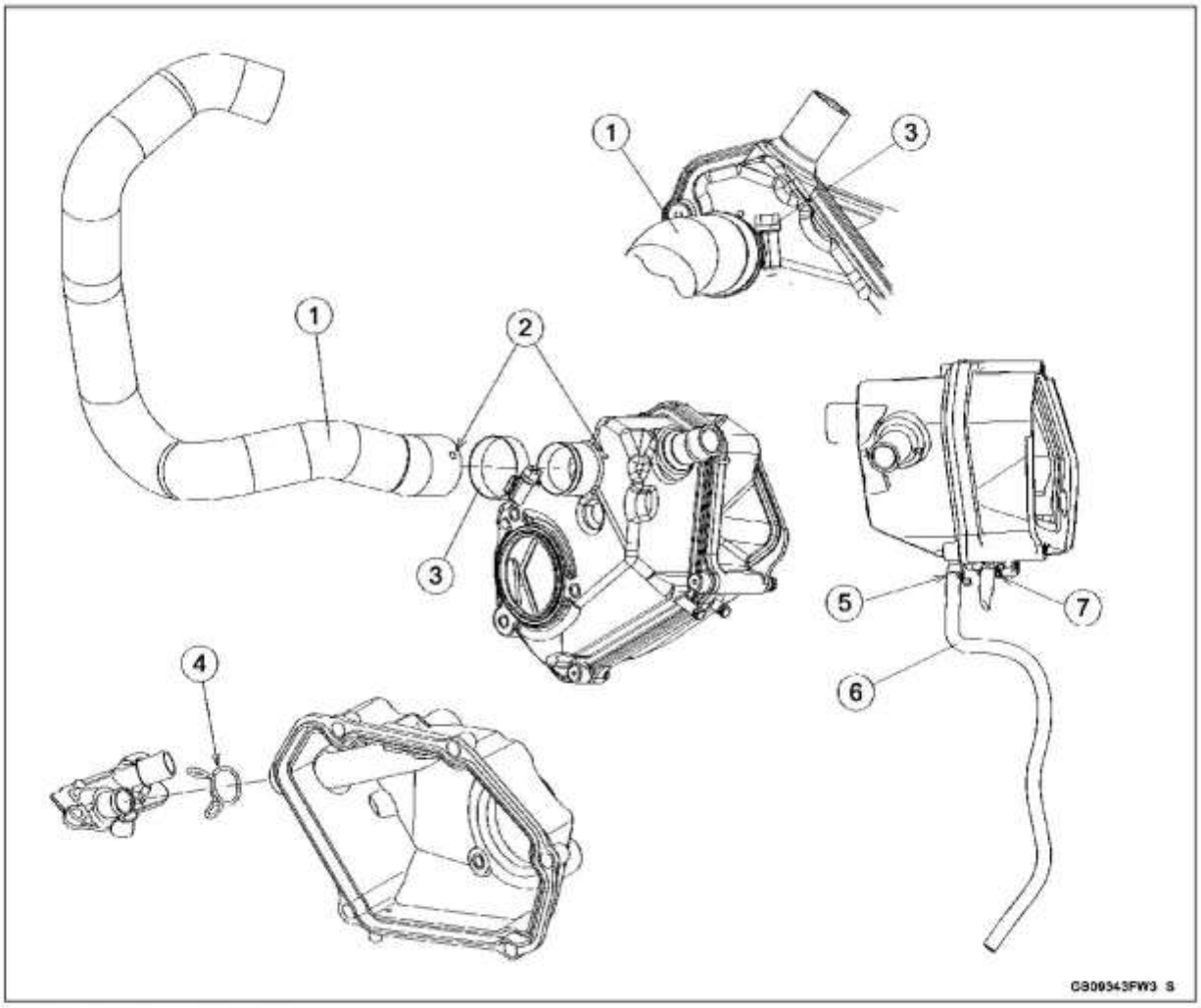
1. Clamp (Hold the water hose. Align its knob with the projection of the water hose fitting cover.)
2. Clamp (Hold the water hose. Face its knob to left side of the vehicle.)
3. Align the paint mark of the water hose with the projection of the water pump cover.
4. Clamps (Hold the water hose. Face their knobs backward.)
5. Clamp (Hold the water hose. Face its outside knob to the bottom.)
6. Clamp (Hold the water hose. Face the center of the knob to the bottom.)
7. Clamp (Hold the water hose. Face their knob forward.)
8. Clamps (Hold the water hoses. Install the clamps from the top.)
9. Face the paint mark of the water hoses forward.

Cable, Wire, and Hose Routing



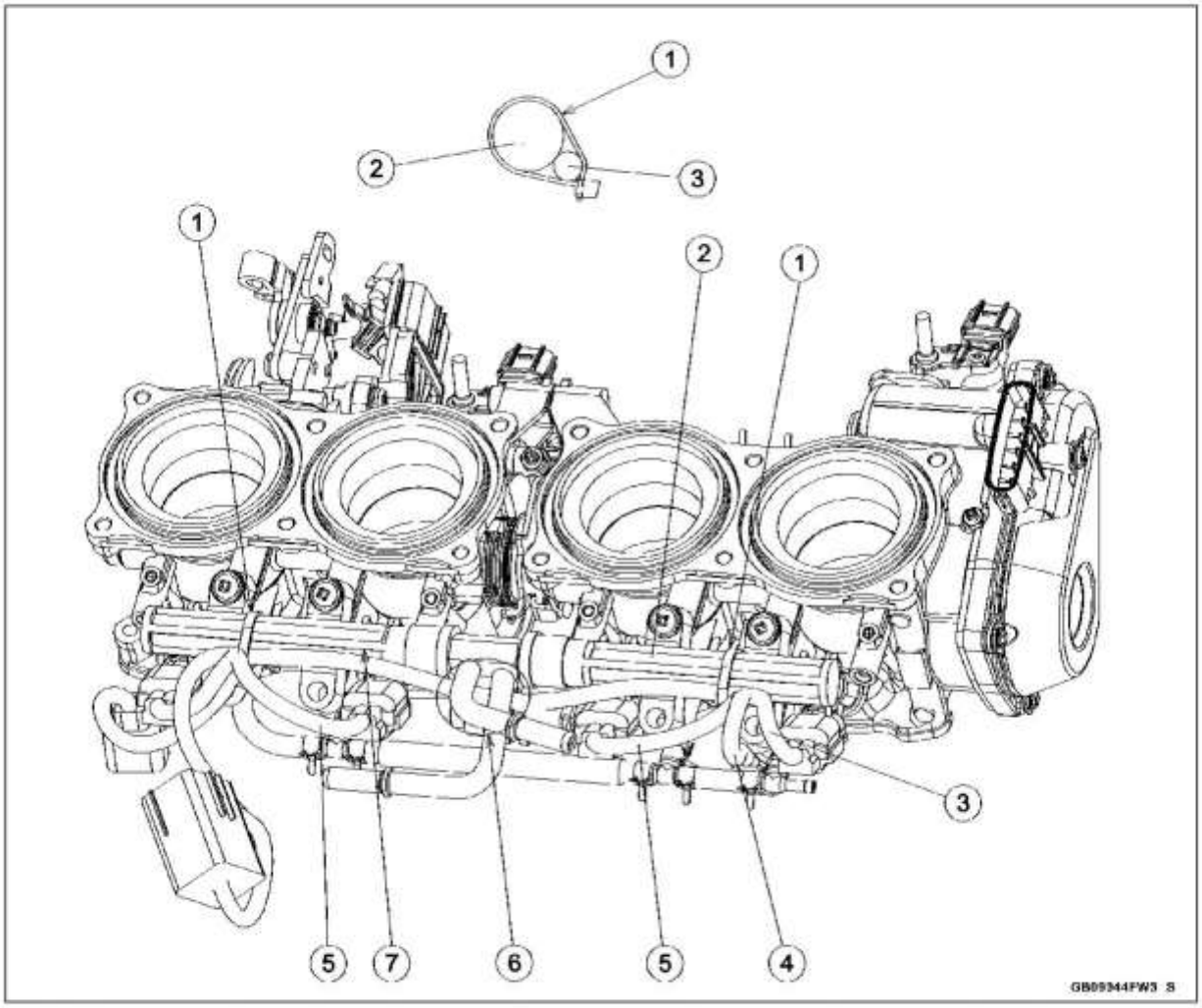
1. Air Switching Valve
2. Air Switching Valve Filter
3. Face the clamp knobs upward.
4. Align the paint marks of the air switching valve hoses.
5. Adjust the assembly angle so that the air switching valve face and air switching valve filter center coincide.
6. Adjust the assembly angle so that the angle of the air switching valve matches the center of the bolt.

Cable, Wire, and Hose Routing



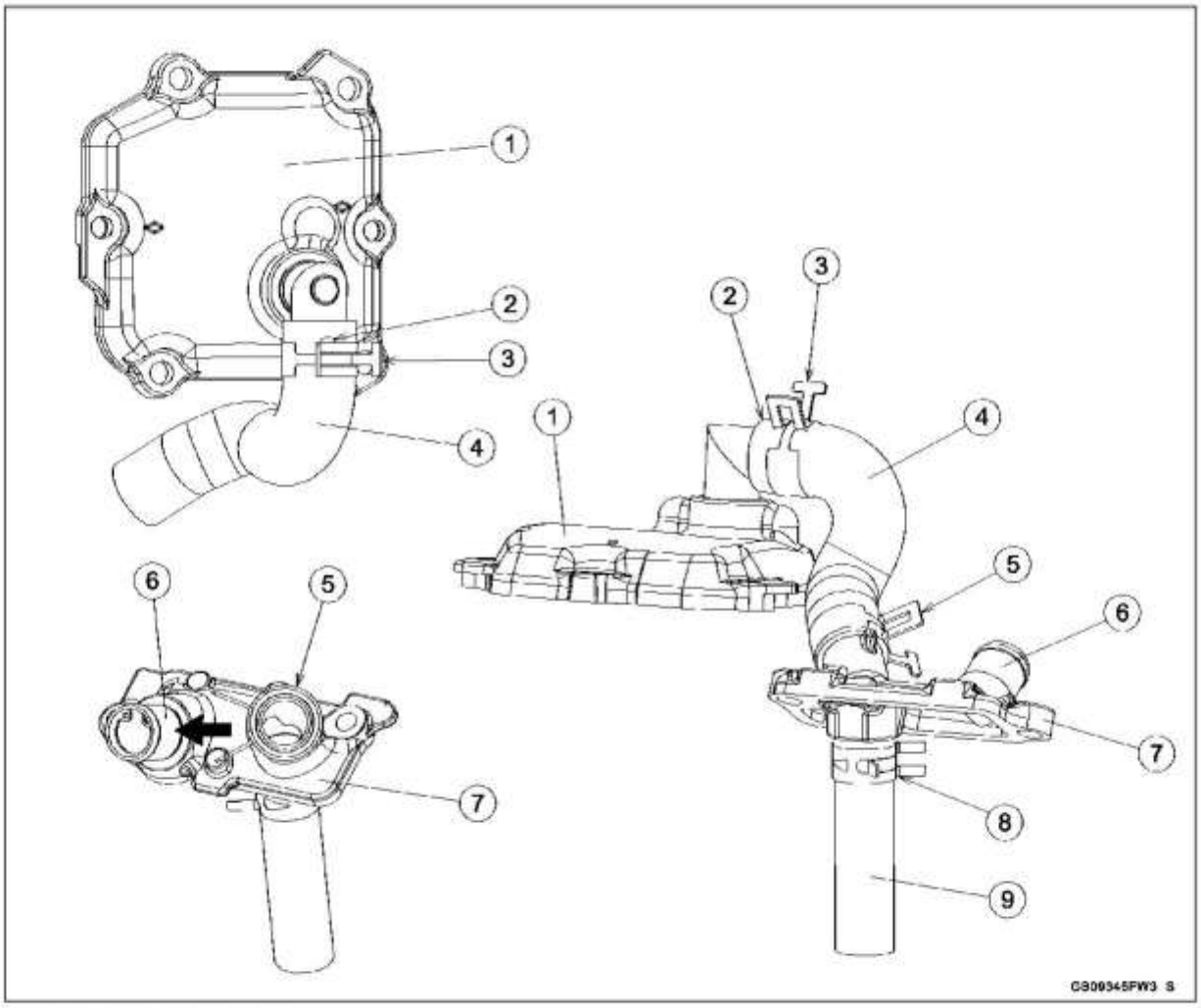
1. Blow-Off Valve Hose
2. Align the paint mark with the projection of the air cleaner housing.
3. Clamp (Hold the blow-off valve hose as shown.)
4. Clamp (Hold the breather hose so that the clamp faces to left side.)
5. Clamp (Hold the air cleaner drain hose. Face its knob to left side of the engine.)
6. Air Cleaner Drain Hoses
7. Clamp (Hold the air cleaner drain hose cap. Face its knob to left side of the engine.)

Cable, Wire, and Hose Routing



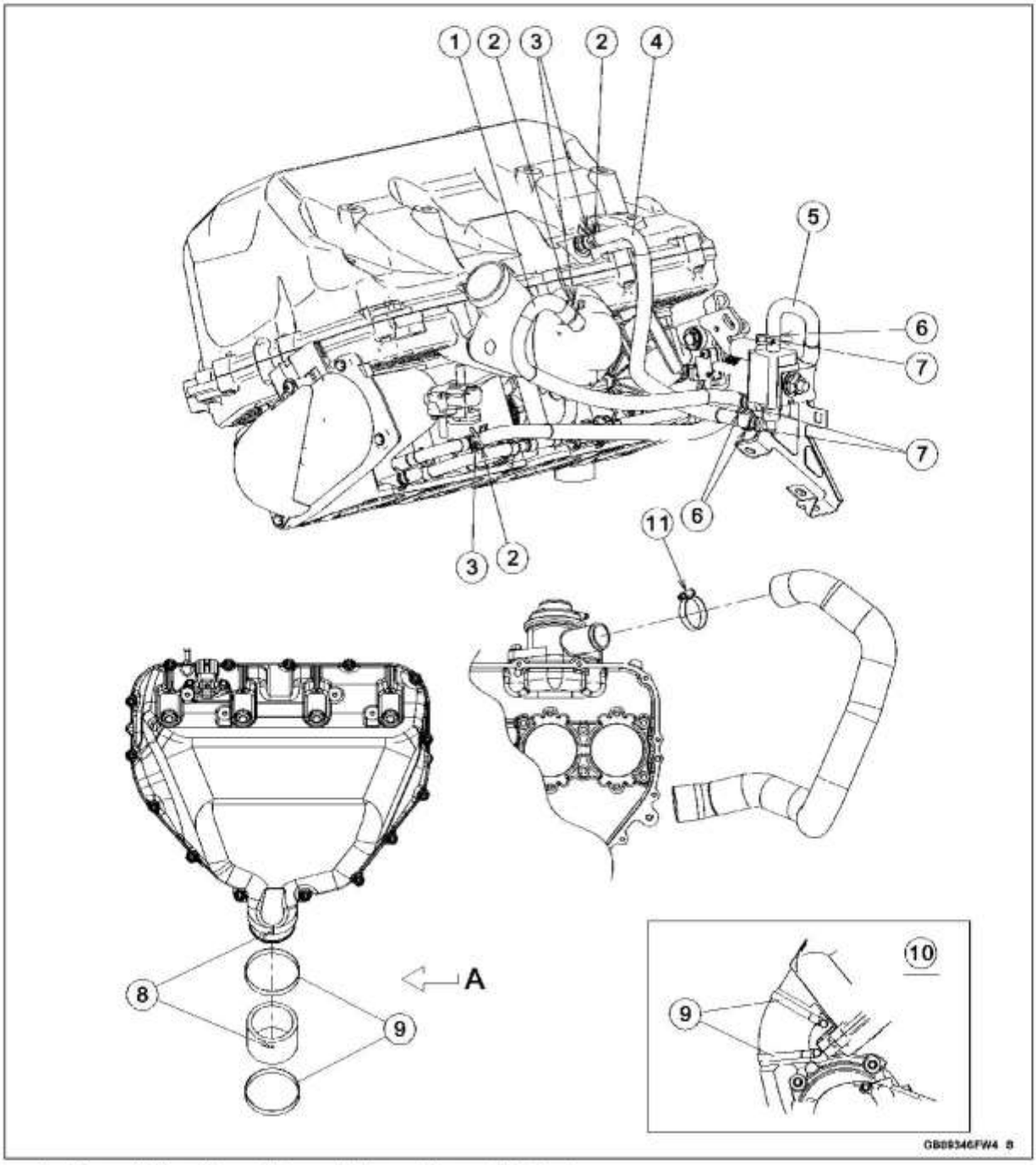
1. Bands (Hold the delivery pipe and subharness. Install them to the tape positions.)
2. Delivery Pipe
3. Subharness
4. Water Temperature Sensor Lead
5. Tape (to Primary Fuel Injector #2 and #3)
6. Run the subharness under the delivery pipes.
7. Do not run the subharness above the position of this rib.

Cable, Wire, and Hose Routing



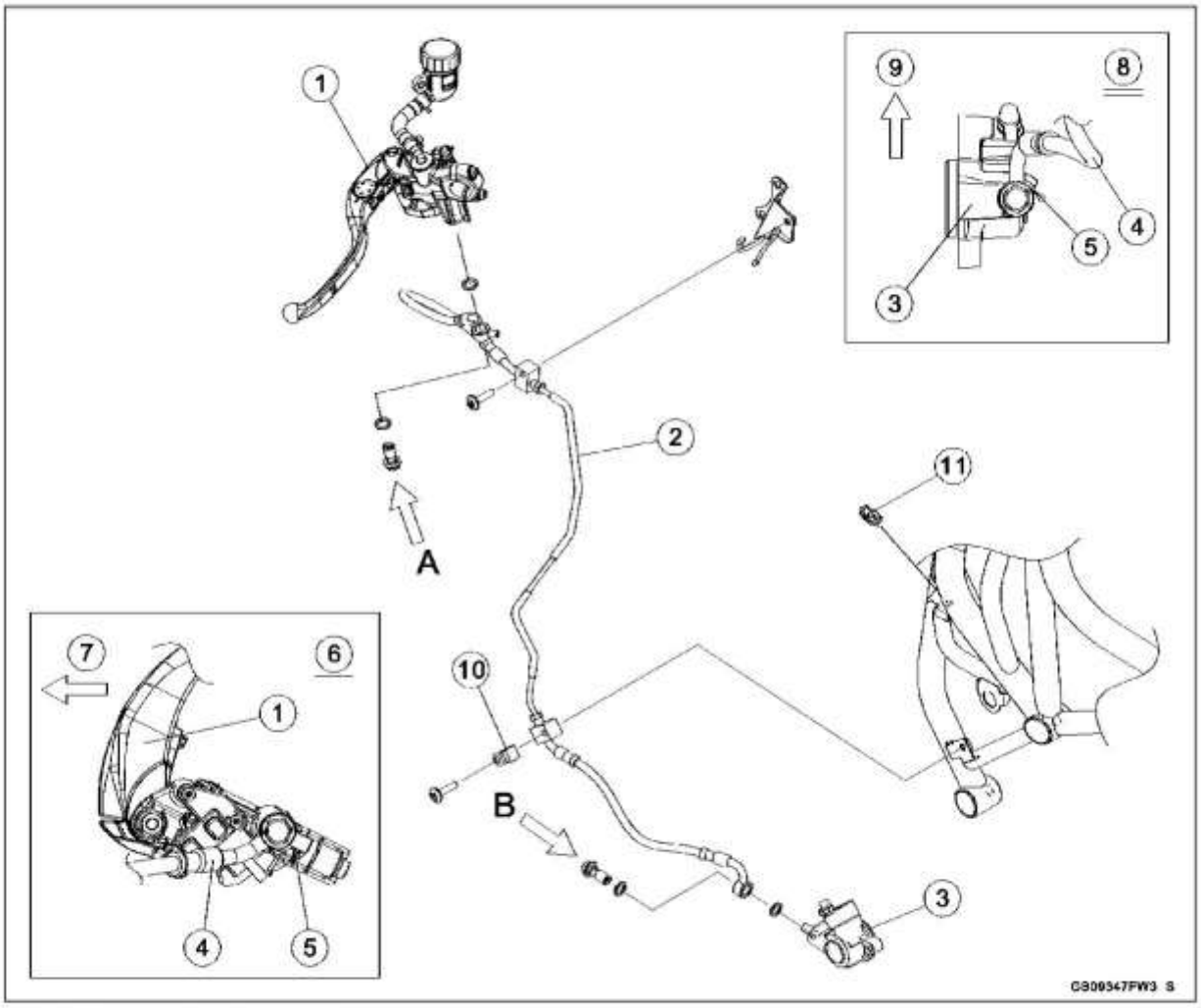
1. Right Breather Cover
2. Install the breather hose so that the paint mark faces vertically to the mating surface.
3. Clamp (Hold the breather hose as shown.)
4. Breather Hose (to Left Breather Cover)
5. Clamp (Hold the breather hose so that the clamp faces to the hose fitting.)
6. Hose Fitting
7. Left Breather Cover
8. Clamp (Hold the breather hose so that the clamp faces to the left side.)
9. Breather Hose (to Crankcase)

Cable, Wire, and Hose Routing



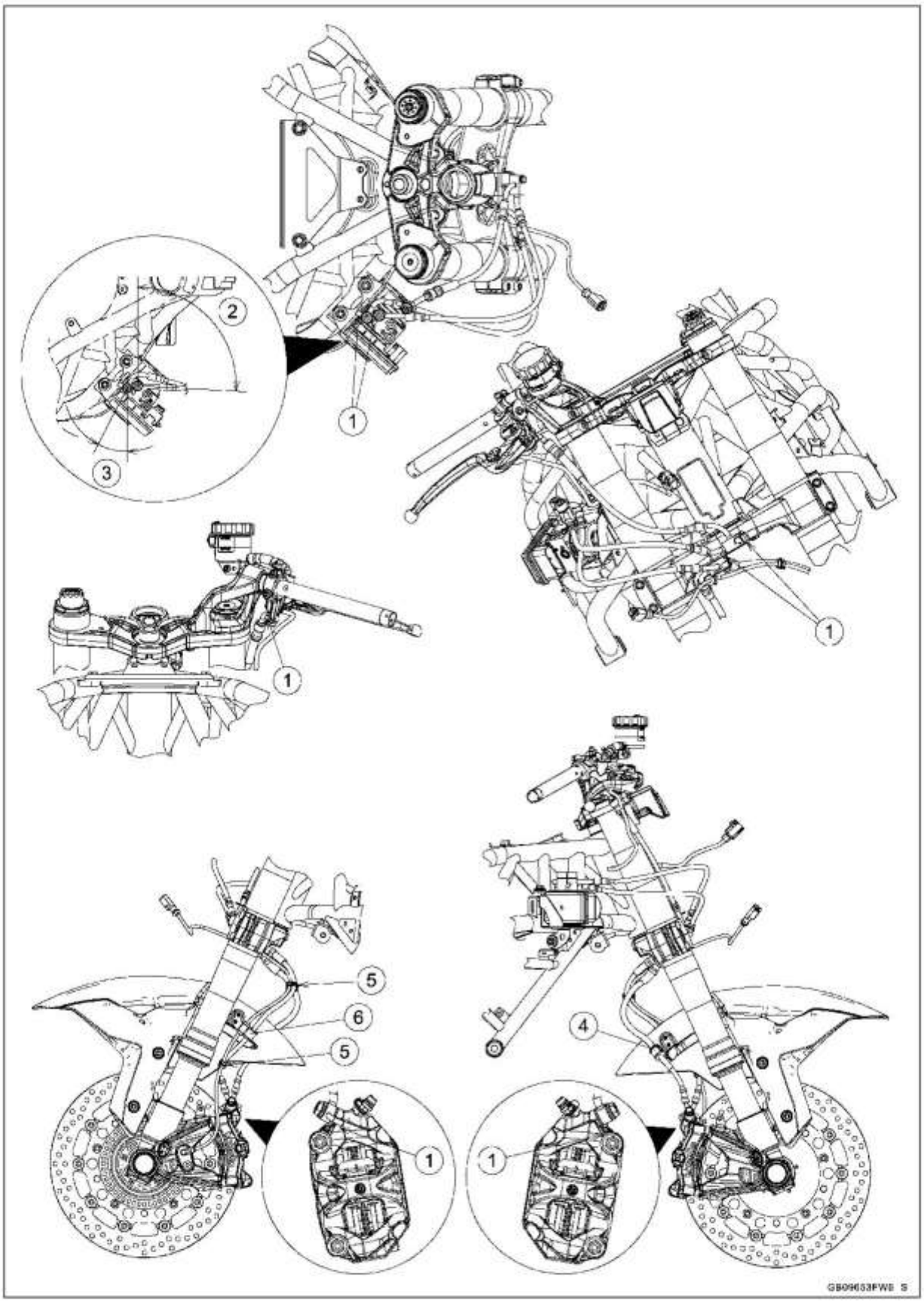
1. Purge Valve Hose (Purge Valve ~ Blow-off Valve)
2. Clamps (Face their knobs upward.)
3. White Paints (Face the white paints upward.)
4. Purge Valve Hose (Air Intake Chamber ~ Purge Valve)
5. Purge Valve Hose (Purge Valve ~ Throttle Body Assy)
6. Clamps (Face their knobs to the right side of the engine.)
7. Yellow Paints (Face the yellow paints to the left side of the engine.)
8. Align the paint mark with the projection of the air intake chamber upper housing.
9. Clamps (Hold the air intake hose as shown.)
10. Viewed from A
11. Clamp (Hold the blow-off valve hose as shown.)

Cable, Wire, and Hose Routing



1. Clutch Master Cylinder
2. Clutch Hose
3. Clutch Slave Cylinder
4. Install the clutch hose so that it touches to the stopper.
5. Stopper
6. Viewed from A
7. Front Side
8. Viewed from B
9. Upper Side
10. Clamp (Hold the clutch hose as shown.)
11. Clamp (Hold the clutch hose.)

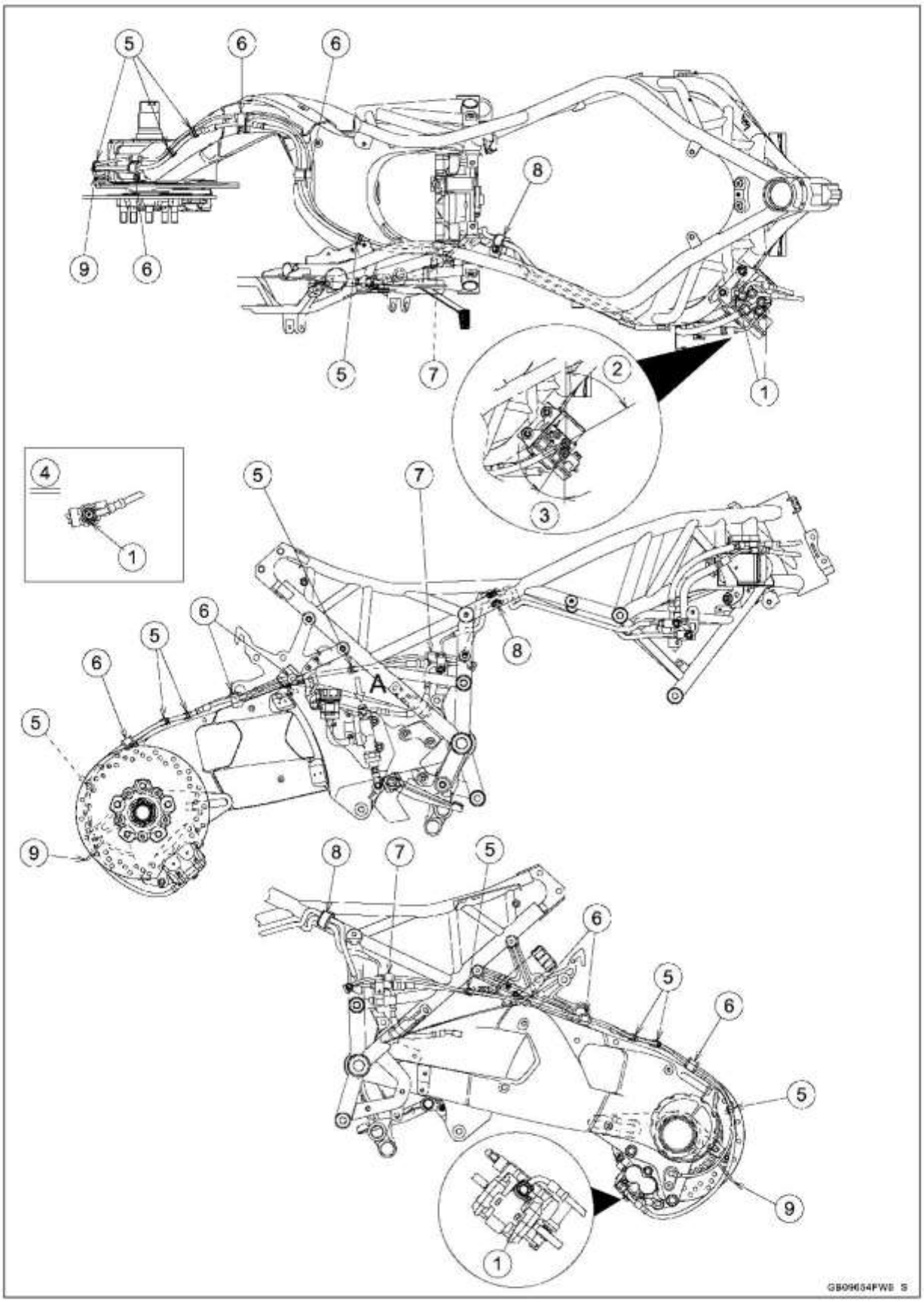
Cable, Wire, and Hose Routing



Cable, Wire, and Hose Routing

1. Touch the front brake hose fitting to the stopper.
2. About 96.1°
3. About 27.2°
4. Clamp (Hold the front brake hose.)
5. Clamps (Hold the front brake hose and tape position of the front wheel rotation sensor lead.)
6. Clamp (Hold the front brake hose and front wheel rotation sensor lead.)

Cable, Wire, and Hose Routing

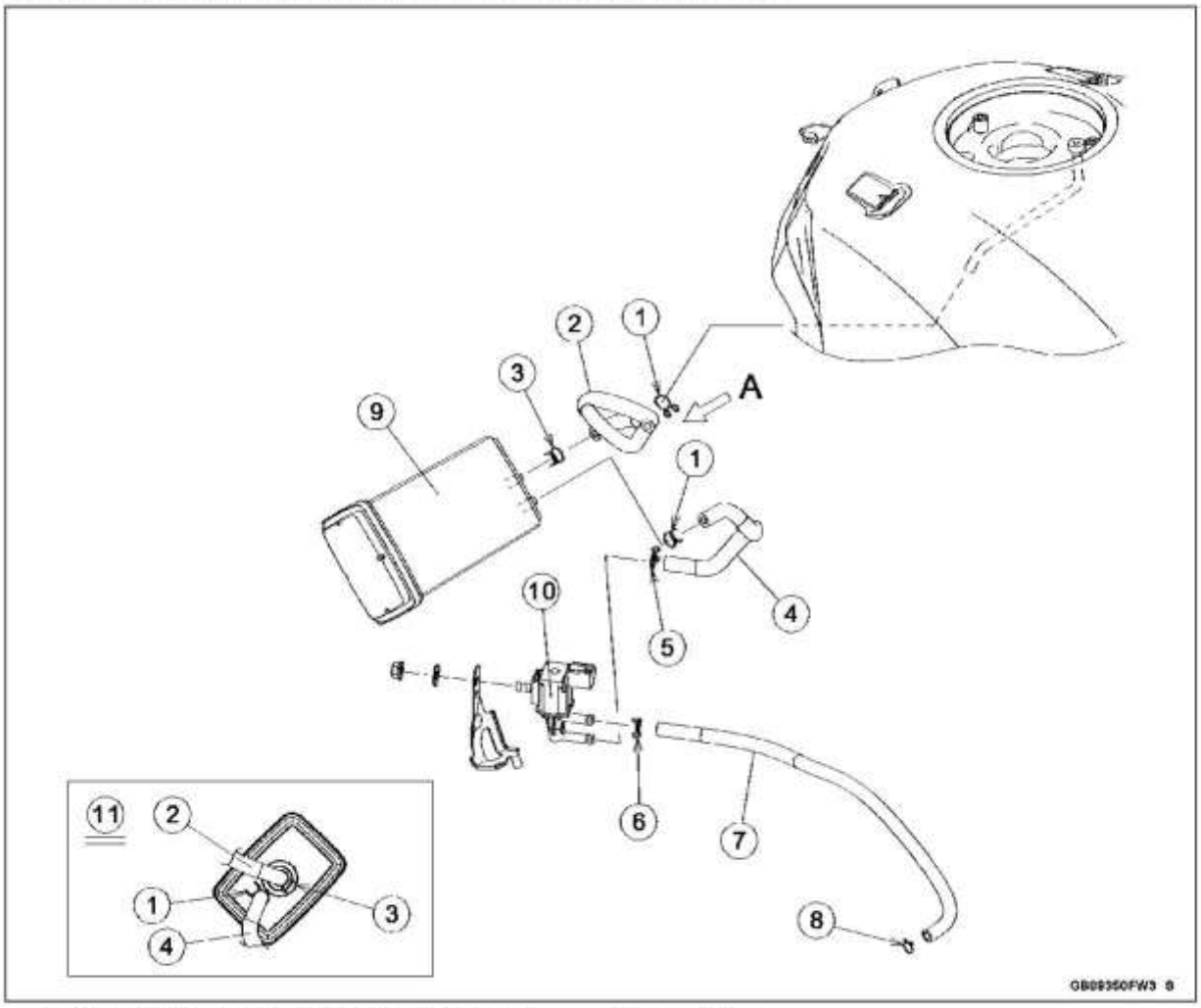


Cable, Wire, and Hose Routing

1. Touch the rear brake hose fitting to the stopper.
2. About 60.4°
3. About 33°
4. Viewed from A
5. Clamps (Hold the rear brake hose and tape position of the rear wheel rotation sensor lead.)
6. Clamps (Hold the brake hose and rear wheel rotation sensor lead.)
7. Clamp (Hold the rear wheel rotation sensor lead.)
8. Clamp (Hold the brake hoses.)
9. Clamp (Hold the brake hose.)

Cable, Wire, and Hose Routing

Evaporative Emission Control System Equipped Models



1. Clamps (Face their knobs to the rear side of the vehicle.)
2. Install the breather hose (to fuel tank) so that the blue paint mark faces to canister side.
3. Clamp (Face its knob to the front side of the vehicle.)
4. Install the breather hose (to purge valve) so that the green paint mark faces to purge valve.
5. Clamp (Hold the breather hose (to purge valve) so that the clamp faces to right side.)
6. Clamp (Hold the purge valve hose (to throttle body assy) so that the clamp faces to left side.)
7. Install the purge valve hose (to throttle body assy) so that the green tape side to purge valve.
8. Clamp (Hold the purge valve hose (to throttle body assy) so that the clamp faces to upper side.)
9. Canister
10. Purge Valve
11. Viewed from A

Troubleshooting Guide

NOTE

○*Refer to the Fuel System chapter for most of DFI trouble shooting guide.*

○*This is not an exhaustive list, giving every possible cause for each problem listed. It is meant simply as a rough guide to assist the troubleshooting for some of the more common difficulties.*

Engine Doesn't Start, Starting Difficulty:

Starter motor not rotating:
- Ignition switch not on and engine start/stop switch to engine stop position
- Starter lockout switch or gear position sensor trouble
- Starter motor trouble
- Battery voltage low
- Starter circuit relay not contacting or operating
- Engine start/stop switch not contacting
- Starter system wiring shorted or open
- Ignition switch trouble
- Engine start/stop switch trouble
- Main or ignition fuse blown

Starter motor rotating but engine doesn't turn over:
- Vehicle-down sensor (DFI) coming off
- Immobilizer system trouble (Equipped Models)
- Starter clutch trouble
- Starter idle gear trouble

Engine won't turn over:
- Valve seizure
- Valve lifter seizure
- Cylinder, piston seizure
- Crankshaft seizure
- Connecting rod small end seizure
- Connecting rod big end seizure
- Transmission gear or bearing seizure
- Camshaft seizure
- Starter idle gear seizure
- Balancer bearing seizure

No fuel flow:
- No fuel in tank
- Fuel pump trouble
- Fuel tank air vent obstructed
- Fuel filter clogged
- Fuel line clogged

No spark; spark weak:
- Vehicle-down sensor (DFI) coming off
- Ignition switch not on
- Clutch lever not pulled in or gear not in neutral
- Battery voltage low
- Immobilizer system trouble (Equipped Models)
- Spark plug dirty, broken, or gap maladjusted
- Spark plug incorrect
- Stick coil shorted or not in good contact
- Stick coil trouble
- ECU trouble
- Camshaft position sensor trouble
- Gear position sensor, starter lockout switch, or side stand switch trouble
- Crankshaft sensor trouble
- Ignition switch or engine start/stop switch shorted
- Starter system wiring shorted or open
- Main or ignition fuse blown

Fuel/air mixture incorrect:
- Air passage clogged
- Air cleaner clogged, poorly sealed, or missing
- Leak from oil filler plug, crankcase breather hose or air cleaner drain hose.

Compression Low:
- Spark plug loose
- Cylinder head not sufficiently tightened down
- Cylinder, piston worn
- Piston ring bad (worn, weak, broken, or sticking)
- Piston ring/groove clearance excessive
- Cylinder head gasket damaged
- Cylinder head warped
- Valve spring broken or weak
- No valve clearance
- Valve not seating properly (valve bent, worn, or carbon accumulation on the seating surface)

Poor Running at Low Speed:

Spark weak:
- Battery voltage low
- Immobilizer system trouble (Equipped Models)
- Stick coil trouble
- Stick coil shorted or not in good contact
- Spark plug dirty, broken, or maladjusted
- Spark plug incorrect
- ECU trouble
- Camshaft position sensor trouble
- Crankshaft sensor trouble

Fuel/air mixture incorrect:
- Air passage clogged
- Air cleaner clogged, poorly sealed, or missing
- Fuel tank air vent obstructed
- Fuel pump trouble
- Fuel to injector insufficient
- Supercharger malfunction
- Fuel line clogged

Throttle body assy holder loose
Throttle body assy loose
Air intake chamber loose
Air cleaner housing loose

Compression low:
Spark plug loose
Cylinder head not sufficiently tightened down
No valve clearance
Cylinder, piston worn
Piston ring bad (worn, weak, broken, or sticking)
Piston ring/groove clearance excessive
Cylinder head gasket damaged
Cylinder head warped
Valve spring broken or weak
Valve not seating properly (valve bent, worn, or carbon accumulation on the seating surface)
Camshaft cam worm

Other:
ECU trouble
Engine oil viscosity too high
Drive train trouble
Brake dragging
Clutch slipping
Engine overheating
Air suction valve trouble
Air switching valve trouble

Poor Running or No Power at High Speed:

Firing incorrect:
Spark plug dirty, broken, or maladjusted
Spark plug incorrect
Stick coil shorted or not in good contact trouble
Stick coil trouble
ECU trouble

Fuel/air mixture incorrect:
Air cleaner clogged, poorly sealed, or missing
Air cleaner housing loose
Water or foreign matter in fuel
Throttle body assy holder loose
Throttle body assy loose
Air intake chamber loose
Fuel to injector insufficient
Fuel tank air vent obstructed
Fuel line clogged
Fuel pump trouble
Supercharger malfunction

Compression low:
Spark plug loose
Cylinder head not sufficiently tightened down
No valve clearance
Cylinder, piston worn
Piston ring bad (worn, weak, broken, or sticking)
Piston ring/groove clearance excessive
Cylinder head gasket damaged
Cylinder head warped
Valve spring broken or weak
Valve not seating properly (valve bent, worn, or carbon accumulation on the seating surface.)

Knocking:
Carbon built up in combustion chamber
Fuel poor quality or incorrect
Spark plug incorrect
ECU trouble

Miscellaneous:
Throttle valve won't fully open
Brake dragging
Clutch slipping
Engine overheating
Engine oil level too high
Engine oil viscosity too high
Drive train trouble
Camshaft cam worm
Air suction valve trouble
Air switching valve trouble
Catalytic converter melt down due to muffler overheating (KLEEN)

Overheating:

Firing incorrect:
Spark plug dirty, broken, or maladjusted
Spark plug incorrect
ECU trouble

Muffler overheating:
For KLEEN, do not run the engine even if with only one cylinder misfiring or poor running (Request the nearest service facility to correct it)
For KLEEN, do not push-start with a dead battery (Connect another full-charged battery with jumper cables, and start the engine using the electric starter)
For KLEEN, do not start the engine under misfire due to spark plug fouling or poor connection of the stick coil
For KLEEN, do not coast the motorcycle with the ignition switch off (Turn the ignition switch on and run the engine)
ECU trouble

Fuel/air mixture incorrect:
Throttle body assy holder loose
Throttle body assy loose
Air intake chamber loose
Air cleaner housing loose
Air cleaner poorly sealed, or missing
Air cleaner clogged

Troubleshooting Guide

Compression high:
Carbon built up in combustion chamber
Engine load faulty:
Clutch slipping
Engine oil level too high
Engine oil viscosity too high
Drive train trouble
Brake dragging
Lubrication inadequate:
Engine oil level too low
Engine oil poor quality or incorrect
Oil cooler incorrect:
Oil cooler clogged
Water temperature meter incorrect:
Water temperature meter broken
Water temperature sensor broken
Coolant incorrect:
Coolant level too low
Coolant deteriorated
Wrong coolant mixed ratio
Cooling system component incorrect:
Radiator fin damaged
Radiator clogged
Thermostat trouble
Radiator cap trouble
Radiator fan relay trouble
Fan motor broken
Fan blade damaged
Water pump not turning
Water pump impeller damaged

Over Cooling:

Water temperature meter incorrect:
Water temperature meter broken
Water temperature sensor broken
Cooling system component incorrect:
Thermostat trouble

Clutch Operation Faulty:

Clutch slipping:
Friction plate worn or warped
Steel plate worn or warped
Clutch spring broken or weak
Clutch hub or housing unevenly worn
Clutch master cylinder trouble
Clutch slave cylinder trouble
Clutch not disengaging properly:
Clutch plate warped or too rough
Clutch spring compression uneven
Engine oil deteriorated
Engine oil viscosity too high
Engine oil level too high
Clutch housing frozen on drive shaft
Clutch hub nut loose
Clutch hub spline damaged
Clutch friction plate installed wrong
Clutch slave cylinder trouble
Clutch fluid deteriorated
Clutch fluid leakage
Air in clutch fluid line
Clutch master cylinder primary or secondary cup damage
Clutch master cylinder scratched inside

Gear Shifting Faulty:

Doesn't go into gear; shift pedal doesn't return:
Clutch not disengaging
Shift fork bent or seized
Gear positioning lever binding
Shift return spring weak or broken
Shift return spring pin loose
Shift mechanism arm spring broken
Shift mechanism arm broken
Shift pawl broken
Jumps out of gear:
Shift fork ear worn, bent
Shifter groove worn
Gear dogs and/or dog holes worn
Shift drum groove worn
Gear positioning lever spring weak or broken
Shift fork guide pin worn
Drive shaft, output shaft, and/or gear splines worn
Overshifts:
Gear positioning lever spring weak or broken
Shift mechanism arm spring broken

Abnormal Engine Noise:

Knocking:
ECU trouble
Carbon built up in combustion chamber
Fuel poor quality or incorrect
Spark plug incorrect
Overheating
Piston slap:
Cylinder/piston clearance excessive
Cylinder, piston worn
Connecting rod bent
Piston pin, piston pin hole worn
Valve noise:
Valve clearance incorrect
Valve spring broken or weak
Camshaft bearing worn
Valve lifter worn
Other noise:
Connecting rod small end clearance excessive
Connecting rod big end clearance excessive
Piston ring/groove clearance excessive
Piston ring worn, broken, or stuck

Piston ring groove worn
Piston seizure, damage
Cylinder head gasket leaking
Exhaust pipe leaking at cylinder head connection
Crankshaft runout excessive
Engine mount loose
Crankshaft bearing worn
Primary gear worn or chipped
Camshaft chain tensioner trouble
Camshaft chain, sprocket, guide worn
Air suction valve damaged
Air switching valve damaged
Alternator rotor loose
Catalytic converter melt down due to muffler overheating (KLEEN)
Exhaust butterfly valve cable loose
Balancer gear worn or chipped
Balancer shaft position maladjusted
Balancer bearing worn
Balancer rubber damper damaged
Supercharger chain tensioner noise

Abnormal Drive Train Noise:

Clutch noise:
Clutch damper weak or damaged
Clutch housing/friction plate clearance excessive
Clutch housing gear worn
Wrong installation of outside friction plate

Transmission noise:
Bearings worn
Transmission gear worn or chipped
Metal chips jammed in gear teeth
Engine oil insufficient

Drive line noise:
Drive chain adjusted improperly
Drive chain worn
Rear and/or engine sprocket worn
Chain lubrication insufficient

Abnormal Frame Noise:

Front fork noise:
Oil insufficient or too thin
Spring weak or broken

Rear shock absorber noise:
Shock absorber damaged

Disc brake noise:
Pad installed incorrectly
Pad surface glazed
Disc warped
Caliper trouble

Other noise:
Bracket, nut, bolt, etc. not properly mounted or tightened

Red Oil Pressure Warning Indicator Light (LED) Doesn't Go OFF:

Engine oil pump damaged
Engine oil screen clogged
Engine oil filter clogged
Engine oil level too low
Engine oil viscosity too low
Camshaft bearing worn
Crankshaft bearing worn
Oil pressure switch damaged
Wiring faulty
Relief valve stuck open
O-ring at the oil passage in the crankcase damaged

Exhaust Smokes Excessively:

White smoke:
Piston oil ring worn
Cylinder worn
Valve oil seal damaged
Valve guide worn
Engine oil level too high

Black smoke:
Air cleaner clogged

Brown smoke:
Air cleaner housing loose
Air cleaner poorly sealed or missing

Handling and/or Stability Unsatisfactory:

Handlebars hard to turn:
Cable routing incorrect
Hose routing incorrect
Wiring routing incorrect
Steering stem nut too tight
Steering stem bearing damaged
Steering stem bearing lubrication inadequate
Steering stem bent
Tire air pressure too low

Handlebars shakes or excessively vibrates:
Tire worn
Swingarm pivot bearing worn
Rim warped, or not balanced
Wheel bearing worn
Handlebar holder clamp bolt loose
Handlebar bolt loose
Steering stem nut loose
Front, rear axle runout excessive
Engine mounting bolt loose

Handlebars pulls to one side:
Frame bent
Swingarm bent or twisted
Swingarm pivot shaft runout excessive
Steering maladjusted
Front fork bent

Troubleshooting Guide

Shock absorption unsatisfactory:
(Too hard)
Front fork oil excessive
Front fork oil viscosity too high
Rear shock absorber adjustment too hard
Tire air pressure too high
Front fork bent
KECS malfunction
(Too soft)
Tire air pressure too low
Front fork oil insufficient and/or leaking
Front fork oil viscosity too low
Rear shock adjustment too soft
Front fork, rear shock absorber spring weak
Rear shock absorber oil leaking
KECS malfunction

Brake Doesn't Hold:

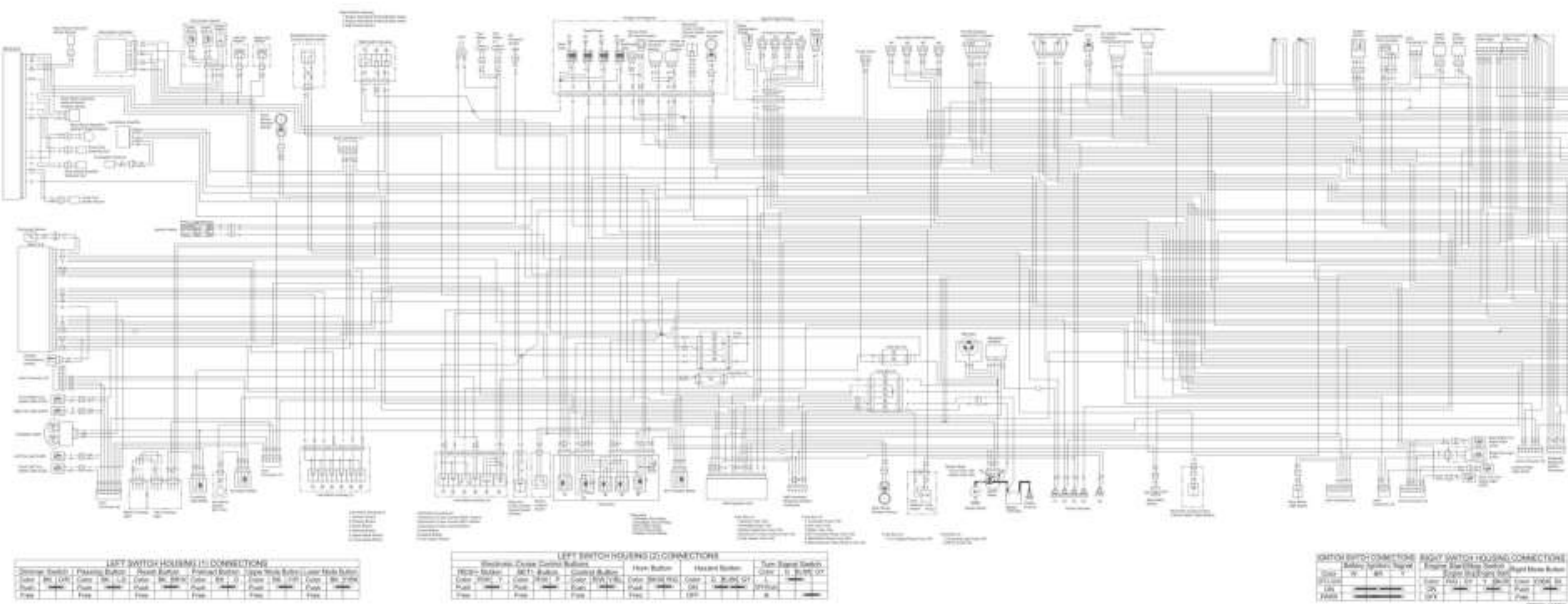
Air in the brake line
Pad or disc worn
Brake fluid leakage
Disc warped
Contaminated pad
Brake fluid deteriorated
Master cylinder trouble

Battery Trouble:

Battery discharged:
Charge insufficient
Battery faulty (too low terminal voltage)
Battery cable making poor contact
Load excessive (e.g., bulb of excessive wattage)
Ignition switch trouble
Alternator trouble
Wiring faulty
Regulator/rectifier trouble

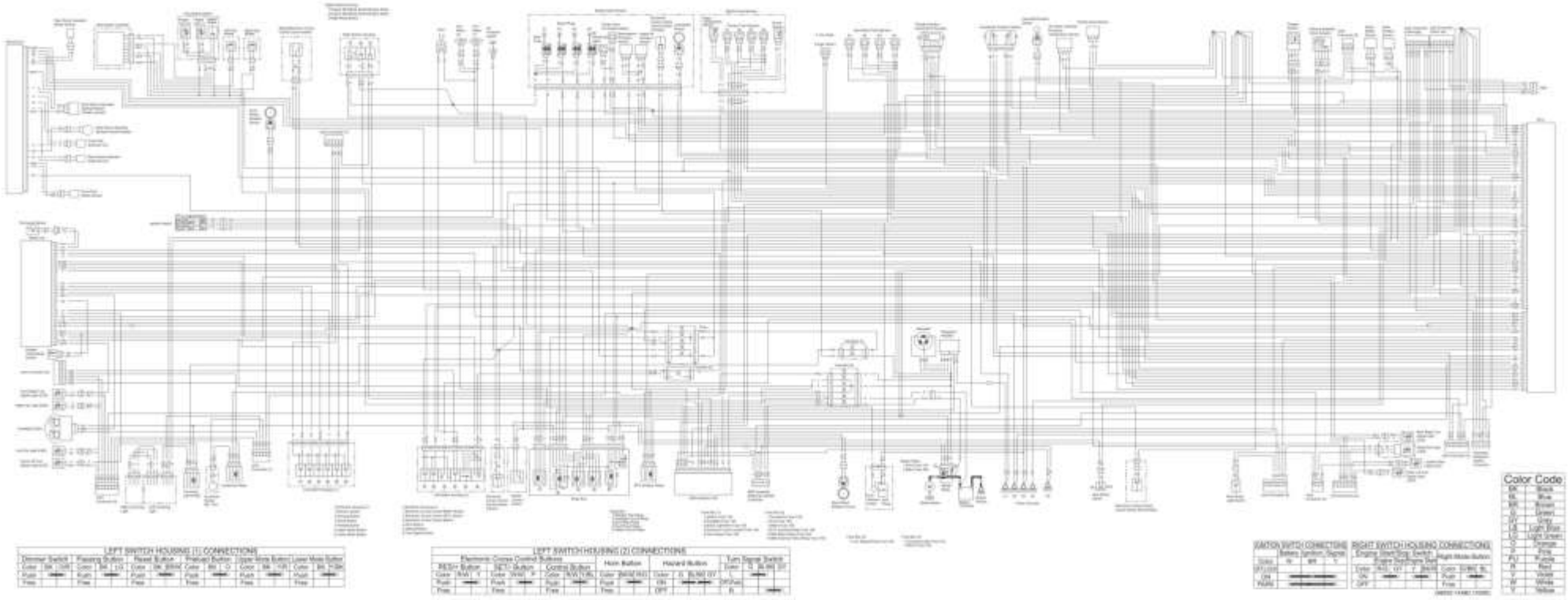
Battery overcharged:
Alternator trouble
Regulator/rectifier trouble
Battery faulty

with Immobilizer



Color Code	
BK	Black
BL	Blue
BR	Brown
G	Green
GY	Gray
LB	Light Blue
LG	Light Green
O	Orange
P	Pink
PU	Purple
R	Red
V	Violet
W	White
Y	Yellow

without Immobilizer



LEFT SWITCH HOUSING (1) CONNECTIONS

Dimmer Switch		Passing Button		Reset Button		Preset Button		Digital Mode Button		Lower Mode Button	
Color	BK / LGR	Color	BK / LG	Color	BK /BRW	Color	BR / O	Color	BK / YE	Color	BK / LBK
Push		Push		Push		Push		Push		Push	
Free		Free		Free		Free		Free		Free	

LEFT SWITCH HOUSING (2) CONNECTIONS

Electronic Cruise Control Buttons								Horn Button		Hazard Button			Turn Signal Switch		
RES+ Button			SET- Button			Cancel Button									
Color	W/R	Y	Color	W/R	P	Color	W/R	LBL	Color	W/GE	W/O	Color	Y	BL/WE	GY
Push			Push			Push			Push			ON			
Free			Free			Free			Free			OFF	OFF(Tab)		R

EATON SWITCH CONNECTIONS		
	Battery	Ignition Signal
Color	GL	WR
OFF / LOW		
ON		
HIGH		

RIGHT SWITCH HOUSING CONNECTIONS							
	Engine Start/Stop Switch				Right Mode Button		
	Engine Start		Engine Stop				
Color	W/G	GY	Y	BK/YE	Color	G/WC	BL
ON					Push		
OFF					Free		

Color Code	
BK	Black
BL	Blue
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GY	Gray
LBL	Light Blue
LG	Light Green
O	Orange
P	Pink
PU	Purple
R	Red
W	White
Y	Yellow

MODEL APPLICATION

□:This digit in the frame number changes from one machine to another.

Year	Model	Beginning Frame No.
2021	ZX1002DM	JKBZXVD1□MA005001
2020	ZX1002DL	JKBZXVD1□LA003001 JKBZXT02ADA009001
2019	ZX1002DK	JKBZXVD1□KA000001 JKBZXT02ADA000001

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