*CRUISE CANCEL SWITCH

NOTE:

- The VIIIA and IIICM models are equipped with the Airbag system.
  Items or titles marked with an asterisk (*) include or are related to Airbag components. Always refer to "PRECAUTIONS AND PROCEDURES" (page 25-4 of Service Manual) in the AIRBAG SYSTEM section.

CLUTCH

NOTE:

- The lower switch is the clutch cruise cancel switch.

Disconnect the clutch switch wire connectors and check for continuity between the switch terminals.

There should be continuity with the clutch lever squeezed and no continuity with the lever released.

Turn the ignition switch to ON and push the cruise main switch to ON.
Measure the voltage between the Black/yellow wire terminal (+) and ground (–).
There should be battery voltage.

FRONT BRAKE

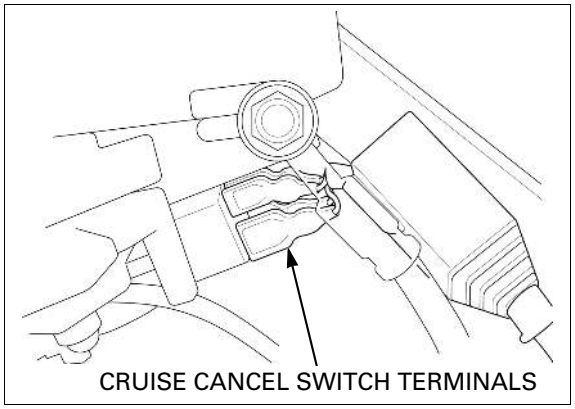
NOTE:

- The lower (large) terminals are the cruise cancel switch terminals.

Disconnect the front brake switch connectors and check for continuity between the switch terminals.

There should be no continuity with the front brake lever squeezed and continuity with the lever released.

Turn the ignition switch to ON and push the cruise main switch to ON.
Measure the voltage between the Black/yellow wire terminal (+) and ground (–).
There should be battery voltage.



THROTTLE GRIP

Remove the air cleaner housing (page 6-65 of Service Manual).

'06 model (except VIIIA) only:

Remove the wire band.

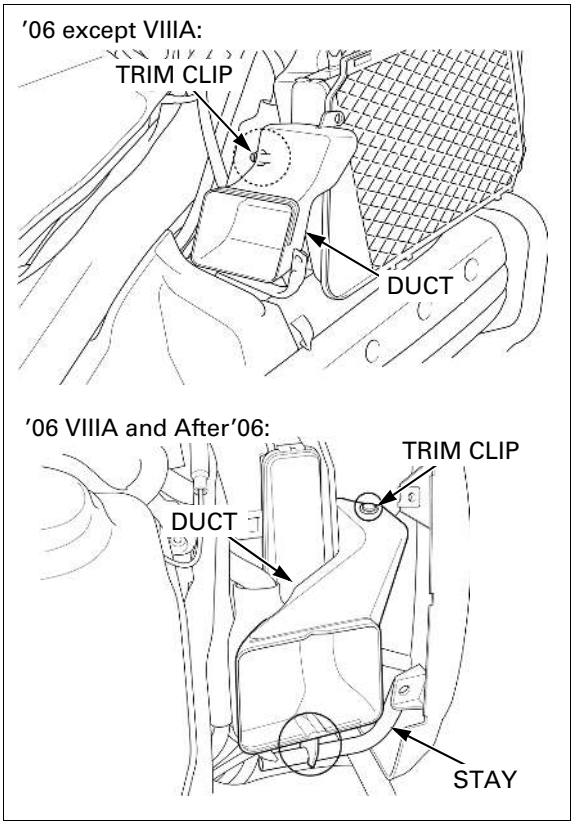
Disconnect the throttle grip cruise cancel switch connector.
Check for continuity between the switch side connector pins.
There should be continuity with the throttle grip in any position.
Turn the throttle grip to open the throttle, hold the throttle drum then close the throttle grip. There should be no continuity.

Turn the ignition switch to ON and push the cruise main switch to ON.
Measure the voltage between the Green/white wire without the brown tube terminal (+) of the wire harness side connector and ground (–).
There should be battery voltage.

REAR BRAKE

Except VIIIA and IIICM: Remove the top shelter (page 3-22 of Service Manual).

VIIIA and IIICM models: Remove the right top shelter (page 3-23 of Service Manual).

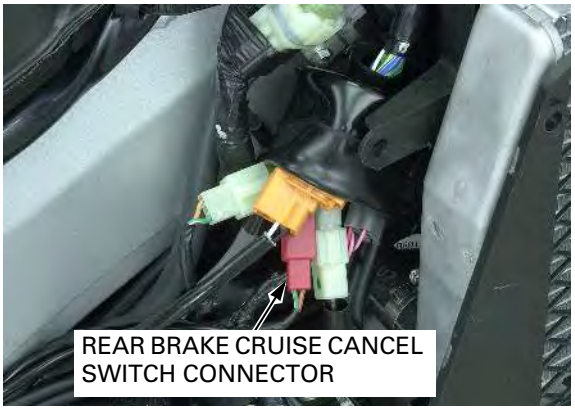


Remove the trim clip and the right ventilation air duct.

Disconnect the rear brake cruise cancel switch connector and check for continuity between the switch side connector pins.

There should be no continuity with the rear brake pedal depressed and continuity with the pedal released.

Turn the ignition switch to ON and push the cruise main switch to ON.
Measure the voltage between the Green/white wire terminal (+) of the wire harness side connector and ground (–).
There should be battery voltage.



*CRUISE ACTUATOR

NOTE:

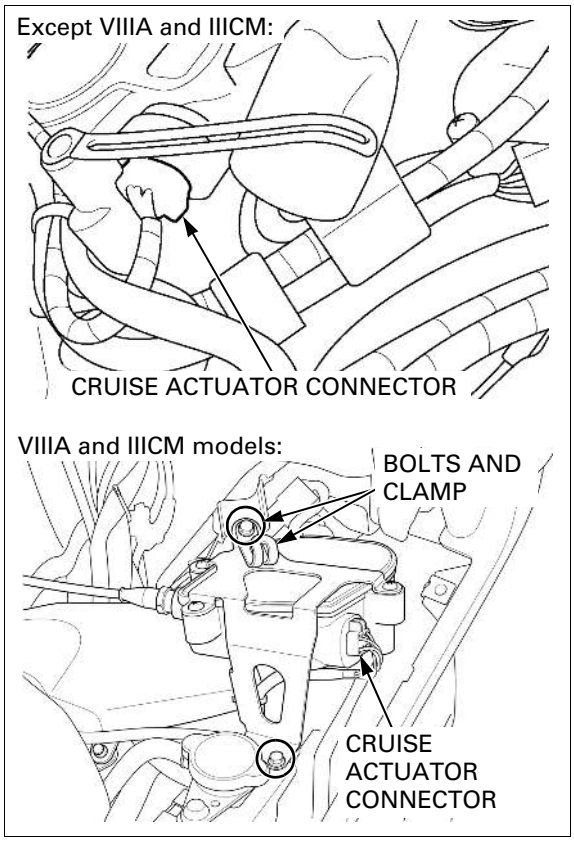
- The VIIIA and IIICM models are equipped with the Airbag system.
  Items or titles marked with an asterisk (*) include or are related to Airbag components. Always refer to "PRECAUTIONS AND PROCEDURES" (page 25-4 of Service Manual) in the AIRBAG SYSTEM section.

INSPECTION

Except VIIIA and IIICM: Remove the top shelter (page 3-22 of Service Manual).

VIIIA and IIICM models: Remove the right upper panel switch (page 15-29 of Service Manual).
Remove the two actuator mounting bolts and clamp.

Disconnect the cruise actuator 6P black connector.
Check the connector for loose contacts or corroded terminals.



ACTUATOR CLUTCH

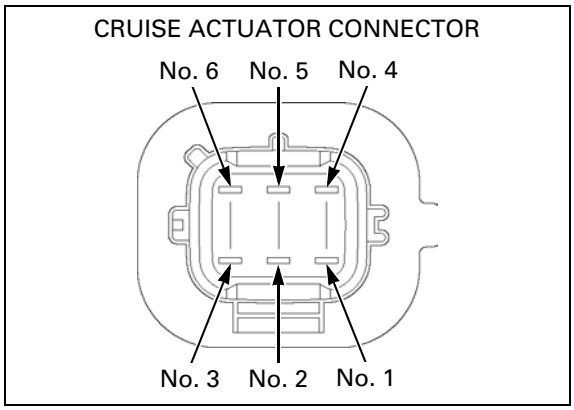
Connect a 12-V battery (+) terminal to the No. 6 terminal of the cruise actuator connector and battery (–) terminal to the No. 3 terminal.

The cruise actuator clutch should click.

ACTUATOR MOTOR

Measure the motor coil resistances between the No. 5 and No. 6 terminals, the No. 3 and No. 6 terminals, and the No. 2 and No. 6 terminals.

STANDARD: 3 – 5Ω



10. SUSPENSION LEVEL CONTROL SYSTEM (SLCS)

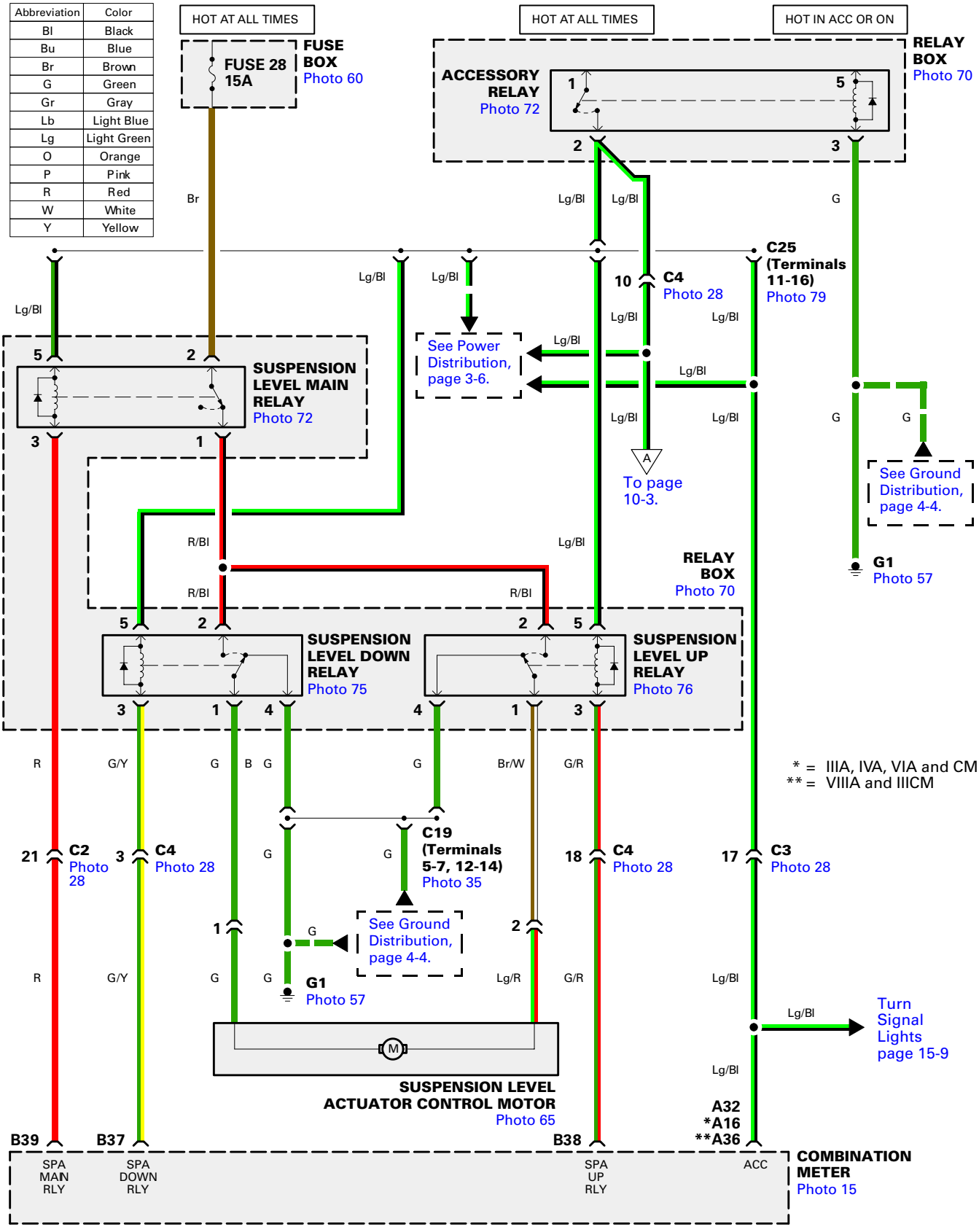
CIRCUIT SCHEMATIC 10-2

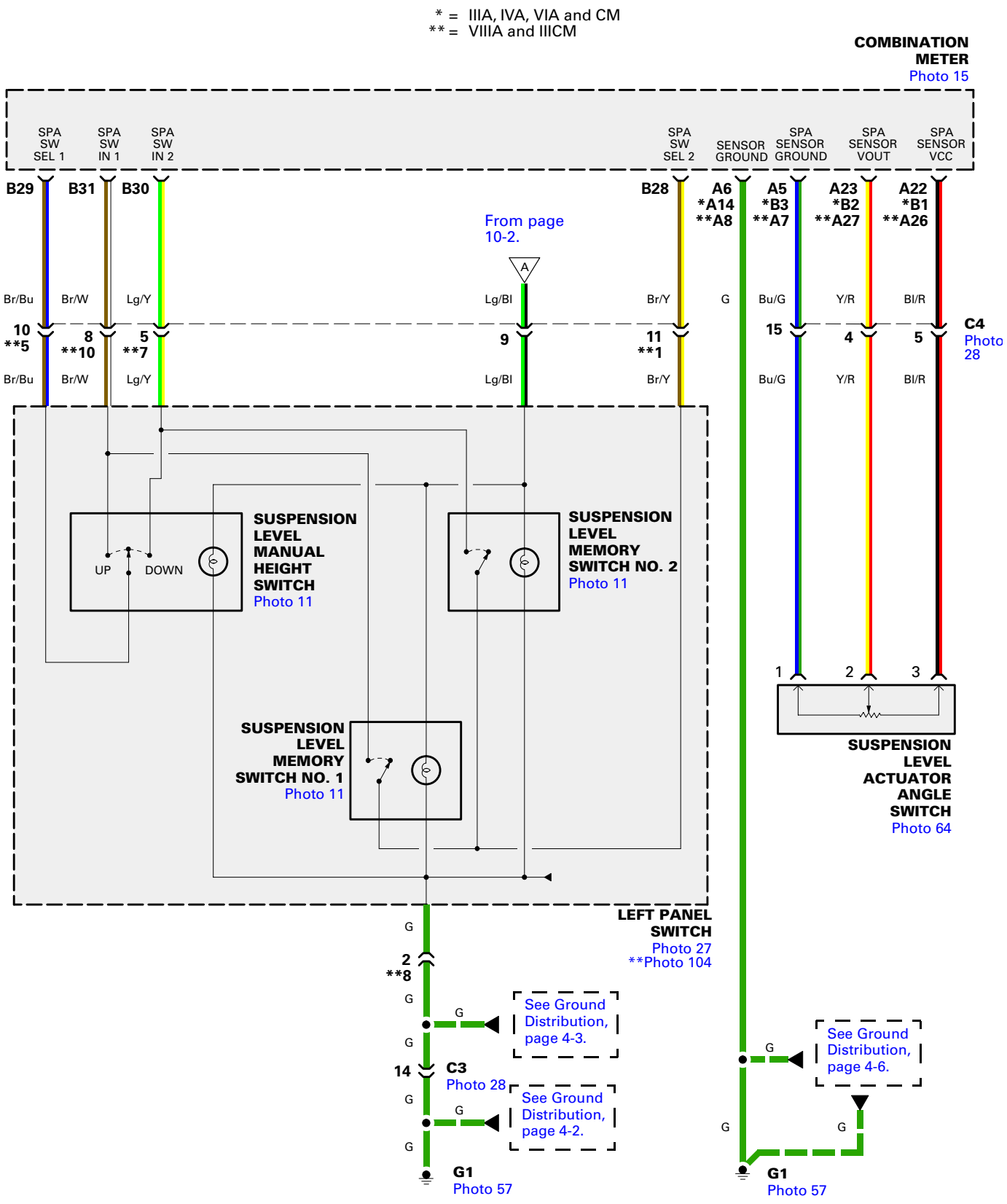
HOW THE CIRCUIT WORKS 10-4

TROUBLESHOOTING 10-5

SUSPENSION LEVEL RELAY 10-12

CIRCUIT SCHEMATIC




* = IIIA, IVA, VIA and CM
** = VIIIA and IIICM
COMBINATION METER
Photo 15
SPA SW SEL 1
SPA SW IN 1
SPA SW IN 2
SPA SW SEL 2
SENSOR GROUND
SPA SENSOR GROUND
SPA SENSOR VOUT
SPA SENSOR VCC
B29
B31
B30
B28
A6 *A14 **A8
A5 *B3 **A7
A23 *B2 **A27
A22 *B1 **A26
From page 10-2.
A
Br/Bu
Br/W
Lg/Y
Lg/Bl
Br/Y
G
Bu/G
Y/R
Bl/R
10 **5
8 **10
5 **7
9
11 **1
15
4
5
C4
Photo 28
SUSPENSION LEVEL MANUAL HEIGHT SWITCH
Photo 11
UP
DOWN
SUSPENSION LEVEL MEMORY SWITCH NO. 2
Photo 11
SUSPENSION LEVEL MEMORY SWITCH NO. 1
Photo 11
1
2
3
SUSPENSION LEVEL ACTUATOR ANGLE SWITCH
Photo 64
LEFT PANEL SWITCH
Photo 27
**Photo 104
2 **8
14
C3
Photo 28
See Ground Distribution, page 4-3.
See Ground Distribution, page 4-2.
See Ground Distribution, page 4-6.
G1
Photo 57
G1
Photo 57

HOW THE CIRCUIT WORKS

The suspension level control system (SLCS) allows the operator to adjust the rear suspension height; and optimizes handling characteristics over a wide range of road and riding conditions. The SLCS can be adjusted to any one of 26 positions using the manual height switch, or to one of two preset heights using the memory switches. In order for the SLCS to be adjusted, the vehicle must be fully stopped, the transmission in neutral, with the ignition switch turned to ON or ACC and the reverse switch pushed to OFF.

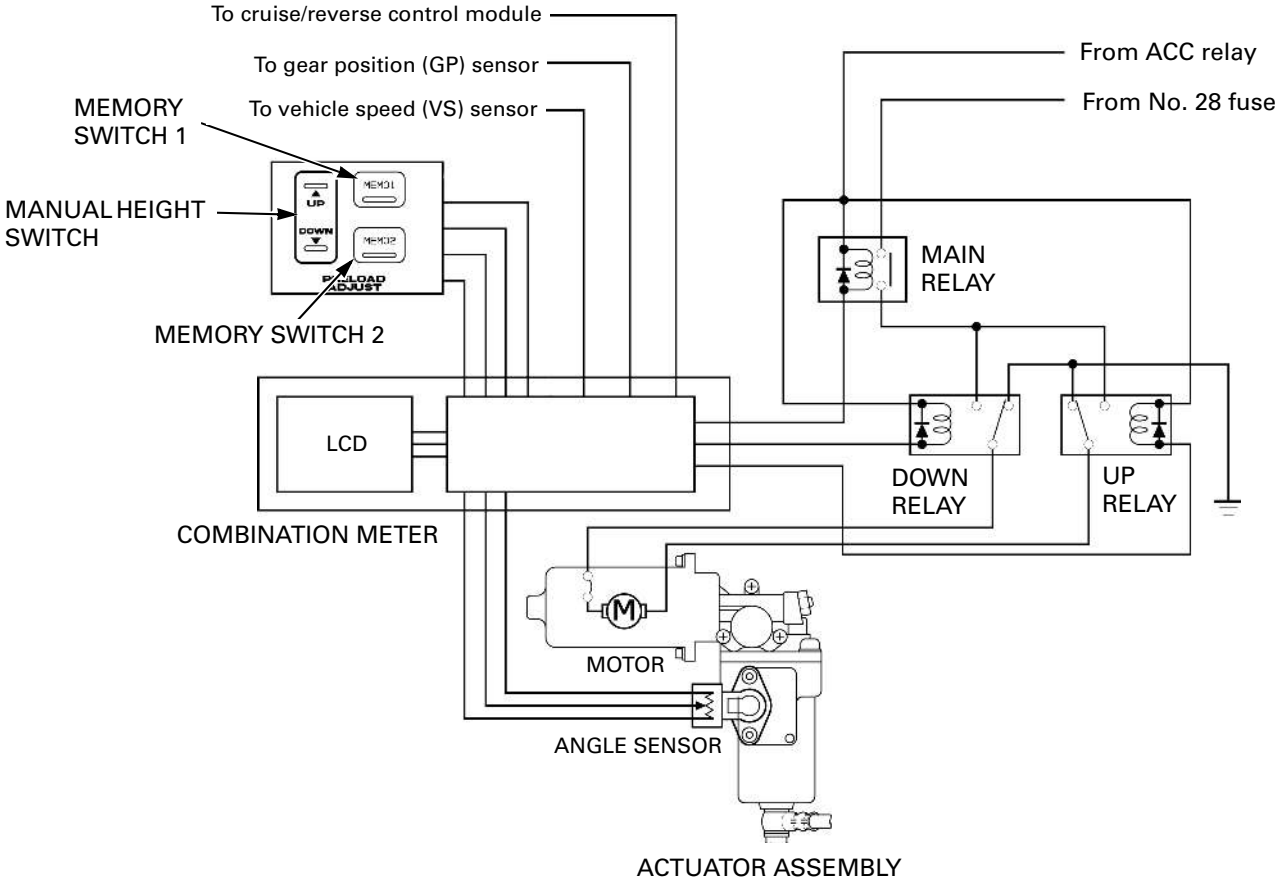
System voltage is supplied by the accessory relay to the suspension level control unit on the Light green/black circuit. When all operational criteria for SLCS adjustment have been met, the suspension level control unit energizes the suspension level main relay. When the manual height switch is pushed UP, the control unit energizes the suspension level up relay, providing power to the actuator motor. When the manual height switch is pushed DOWN, the control unit energizes the suspension level down relay, providing power to run the actuator motor in the opposite direction. When one of the memory switches is activated, the control unit energizes the appropriate relay to run the actuator control motor until the actuator angle sensor signal matches the signal that was stored in memory.

SHOCK ABSORBER SPRING PRE-LOAD ADJUSTMENT SYSTEM

NOTE:

- This electric shock absorber spring pre-load adjustment system functions with the following conditions:
  - The ignition switch is turned to ON or ACC.
  - The motorcycle is stopped.
  - The transmission is in neutral.
  - The reverse system is off.
- If the transmission is shifted, the reverse system is on or the motorcycle moves above 1 km/h when the system is controlling the spring pre-load, the system will stop controlling and the pre-load position indicator bar will blink for 3 seconds.
- The spring pre-load system has 26 positions (from 0 to 25) for different road or riding conditions.

CIRCUIT DIAGRAM



TROUBLESHOOTING

BEFORE TROUBLESHOOTING

- Check that the battery is fully charged and in good condition.
- Check for a blown No. 28 fuse.
- Check that the audio system functions properly.
- Check that the neutral indicator comes on when the ignition switch is turned to ON with the transmission in neutral.
- Check that the reverse shift switch is pushed to OFF (the reverse indicator stays off).
- All connector diagrams in the troubleshooting are viewed from the terminal side.

Suspension level actuator operates and the pre-load position varies between 0 and 25 on the multi-display with the manual height switch but the suspension level does not vary

- Pre-load adjustment hydraulic system leakage; replace the shock absorber as an assembly (page 15-18 of Service Manual).

NOTE:

- If the "SUS ADJ ERROR" indication appears on the multi-display when the ignition switch is turned to ON, it will go off after 30 seconds.

Suspension level actuator does not operate with the manual height switch

1. **Suspension System Error Indicator Inspection**

   Turn the ignition switch to ON or ACC and operate the manual height switch.
   Check that the "SUS ADJ ERROR" indication blinks on the multi-display.

   Does "SUS ADJ ERROR" blink on the multi-display?

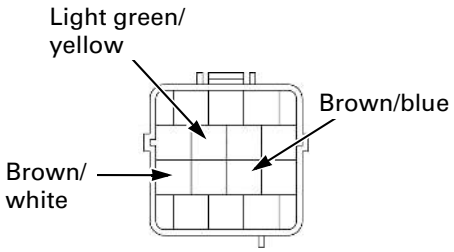
   YES – GO TO STEP 5.

   NO – GO TO STEP 2.

2. Manual Height Switch Operation Inspection

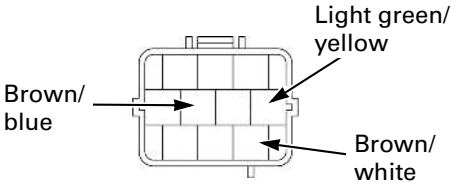
Turn the ignition switch to OFF.
Remove the left fairing pocket (page 3-17 of Service Manual).
Disconnect the left panel switch connector (gray).
Check for continuity between the wire terminals of the switch side connector in each manual height switch position.

Except VIIIA and IIICM:



LEFT PANEL SWITCH CONNECTOR

VIIIA and IIICM models:



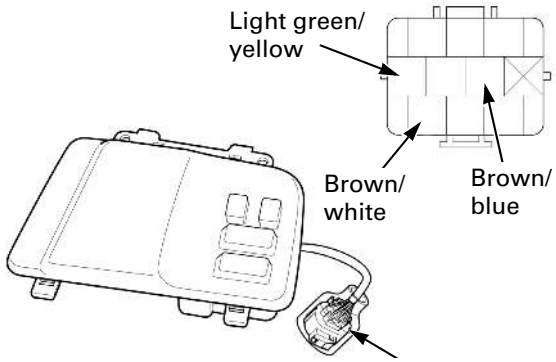
LEFT PANEL SWITCH CONNECTOR

VIIIA and IIICM models:

Turn the ignition switch to OFF.
Remove the right upper panel switch (page 15-29 of Service Manual).
Check for continuity between the wire terminals of the switch gray connector in each manual height switch position.

Continuity should exist between the color coded wires as follows:

Color / Position	Brown/ white	Brown/ blue	Light green/ yellow
UP	○	○	
FREE			
DOWN		○	○



LEFT PANEL SWITCH CONNECTOR

Is the switch normal?

NO – Faulty manual height switch; replace the panel switch assembly (page 15-29 of Service Manual).

YES – GO TO STEP 3.

3. Manual Height Switch line Short Circuit Inspection

Remove the combination meter (page 21-24 of Service Manual).
Check for continuity between the following wire terminal of the left panel switch connector and ground.

– Light green/yellow
– Brown/white

Is there continuity?

YES – Short circuit in the fairing sub-wire harness.

NO – GO TO STEP 4.

4. Manual Height Switch line Open Circuit Inspection

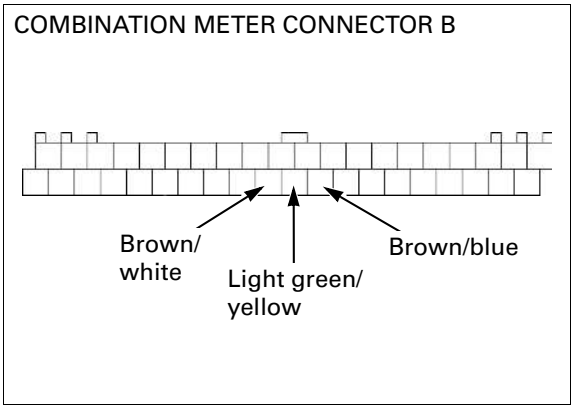
Check the following wires for continuity between the left panel switch connector (Except VIIIA and IIICM: 14P Gray / VIIIA and IIICM: 10P Gray) and combination meter connector B.

– Light green/yellow
– Brown/white
– Brown/blue

Is there continuity?

NO – Open circuit in the fairing sub-wire harness.

YES – • Loose or poor contact of the left panel switch or combination meter connector B.
• Faulty combination meter; replace the combination meter (page 21-24 of Service Manual).



5. Angle Sensor Power Input and Ground Line Inspection at Combination Meter

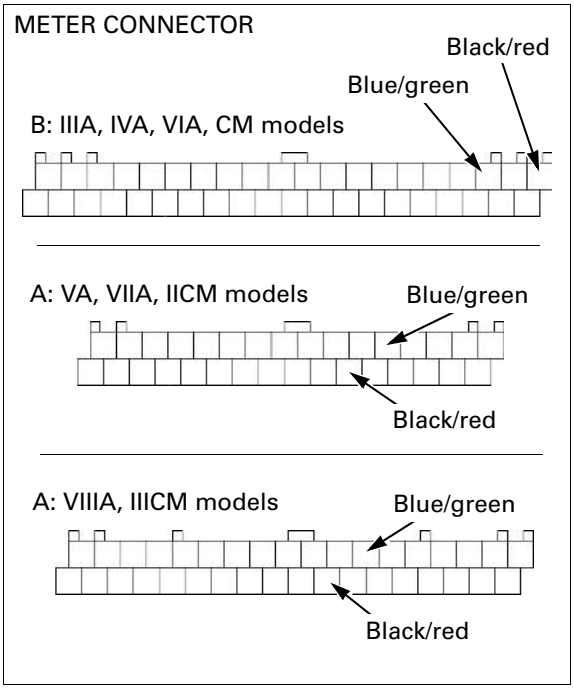
Turn the ignition switch to OFF.
Remove the combination meter (page 21-24 of Service Manual).
Measure the angle sensor resistance between the Black/red and Blue/green wire terminals of the combination meter gray connector.

STANDARD: 4.0 – 6.0 kΩ (20°C/68°F)

Is the resistance within the specified value?

NO – GO TO STEP 8.

YES – GO TO STEP 6.



6. Angle Sensor Signal Line Inspection at Combination Meter

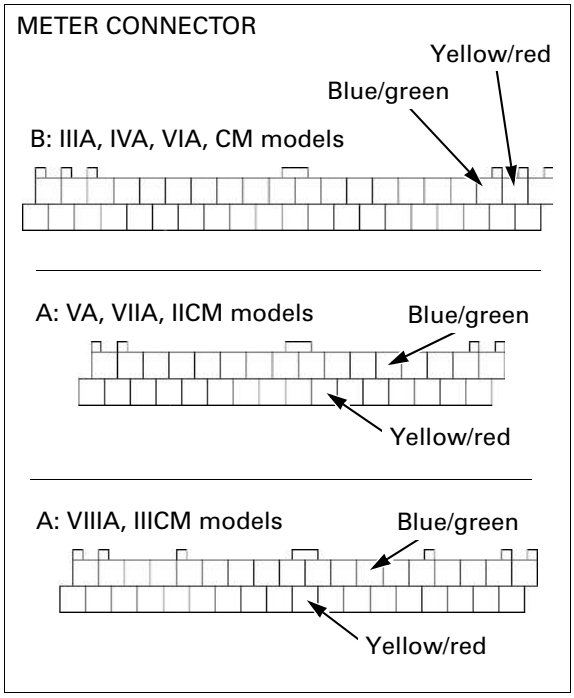
Measure the angle sensor resistance between the Yellow/red and Blue/green wire terminals of the combination meter gray connector.

STANDARD: 0.4 – 5.4 kΩ (20°C/68°F)

Is the resistance within the specified value?

NO – GO TO STEP 9.

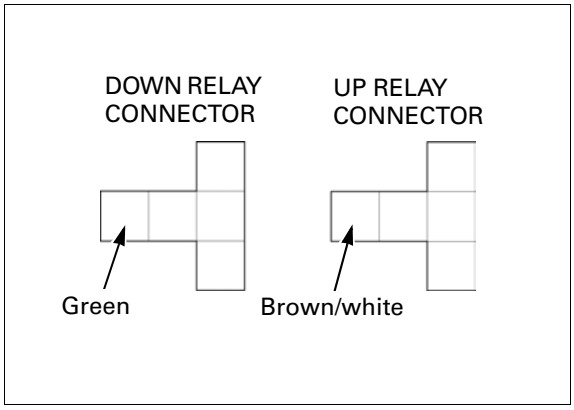
YES – GO TO STEP 7.



7. Actuator Motor Operation Inspection at Suspension Level Relays

Remove the suspension level UP and DOWN relays (page 10-12).
Check the actuator motor operation by connecting a fully charged 12-V battery.

- If the angle sensor resistance measured on the previous step is 2.5 kΩ or more:
  Connect the battery positive (+) terminal to the UP relay connector Brown/white wire terminal and the battery negative (–) terminal to the DOWN relay connector Green wire terminal within 3 seconds (max. 3 seconds).
- If the angle sensor resistance measured on the previous step is 2.5 kΩ or less:
  Connect the battery positive (+) terminal to the DOWN relay connector Green wire terminal and the battery negative (–) terminal to the UP relay connector Brown/white wire terminal within 3 seconds (max. 3 seconds).



NOTE:

- Do not connect the battery to the connector terminals for more than 3 seconds.

Does the actuator motor operate when connected as described above?

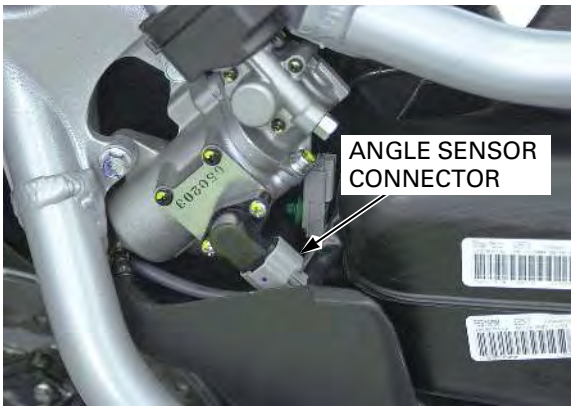
NO – GO TO STEP 12.

YES – GO TO STEP 10.

8. Angle Sensor Power Input and Ground Line Inspection at Angle Sensor

Remove the right side cover (page 3-7 of Service Manual).
Disconnect the angle sensor connector.
Measure the angle sensor resistance between the Black/red and Blue/green wire terminals of the sensor side connector.

STANDARD: 4.0 – 6.0 kΩ (20°C/68°F)



Is the resistance within the specified value?

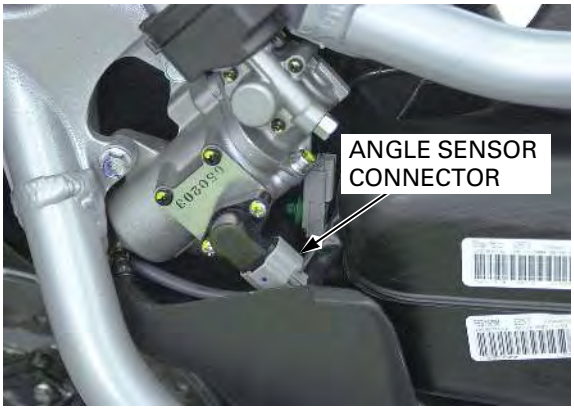
NO – Faulty angle sensor; replace the shock absorber assembly (page 15-18 of Service Manual).

YES –
- Open or short circuit in the Black/red and Blue/green wires between the combination meter and angle sensor.
- Loose or poor contact of the angle sensor connector.

9. Angle Sensor Signal Line Inspection at Angle Sensor

Remove the right side cover (page 3-7 of Service Manual).
Disconnect the angle sensor connector.
Measure the angle sensor resistance between the Yellow/red and Blue/green wire terminals of the sensor side connector.

STANDARD: 0.4 – 5.4 kΩ (20°C/68°F)



Is the resistance within the specified value?

NO – Faulty angle sensor; replace the shock absorber assembly (page 15-18 of Service Manual).

YES –
- Open or short circuit in the Yellow/red wire between the combination meter and angle sensor.
- Loose or poor contact of the angle sensor connector.

10. Suspension Level Relays Inspection

Check the suspension level relays and their circuits (page 10-12).

Does the relays and circuit check OK?

NO –
- Faulty suspension level relay(s).
- Open circuit in the wire harness.
- Loose or poor contact of the related connectors.

YES – GO TO STEP 11.

11. Suspension Level Relay Control Line Inspection

Turn the ignition switch to ON or ACC.
Measure the voltage between the following wire terminal (+) of the combination meter connector B and ground (–).

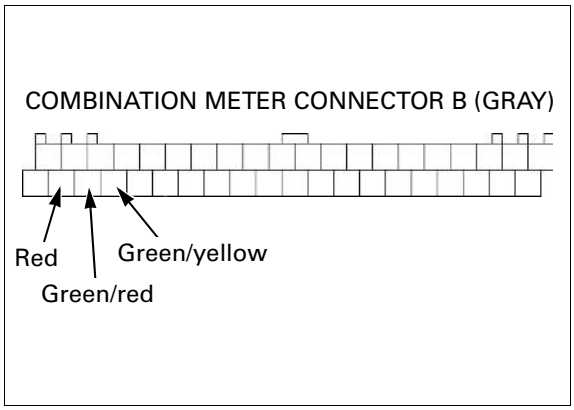
– Red
– Green/red
– Green/yellow

There should be battery voltage.

Is battery voltage present?

NO – • Open or short circuit in the wire harness between the combination meter and suspension level relays.
• Loose or poor contact of the related connectors.

YES – Faulty combination meter; replace the meter assembly (page 21-24 of Service Manual).



12. Actuator Motor Operation Inspection at Actuator Motor

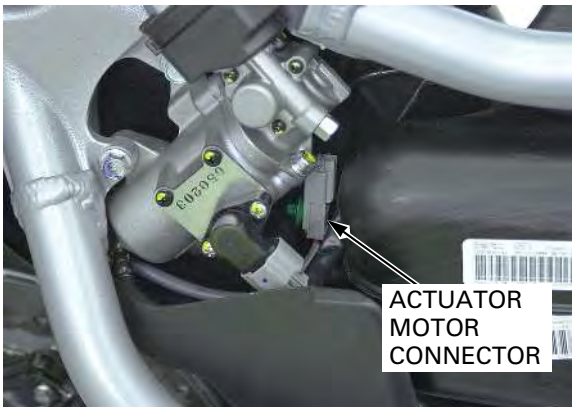
Remove the right saddlebag (page 3-31 of Service Manual).
Release the actuator motor connector from the rear fender and disconnect it.
Check the actuator motor operation by connecting the fully charged 12-V battery.

- If the angle sensor resistance is 2.5 kΩ or more:
  Connect the battery positive (+) terminal to the Light green/red wire terminal of the actuator motor connector and the battery negative (–) terminal to the Green wire terminal within 3 seconds (max. 3 seconds).
- If the angle sensor resistance is 2.5 kΩ or less:
  Connect the battery positive (+) terminal to the Green wire terminal of the actuator motor connector and the battery negative (–) terminal to the Light green/red wire terminal within 3 seconds (max. 3 seconds).

Does the actuator motor operate when connected as described above?

NO – Faulty actuator motor; replace the shock absorber assembly (page 15-18 of Service Manual).

YES – Open circuit in the Brown/white and Green wires between the suspension level relays and actuator motor connector.

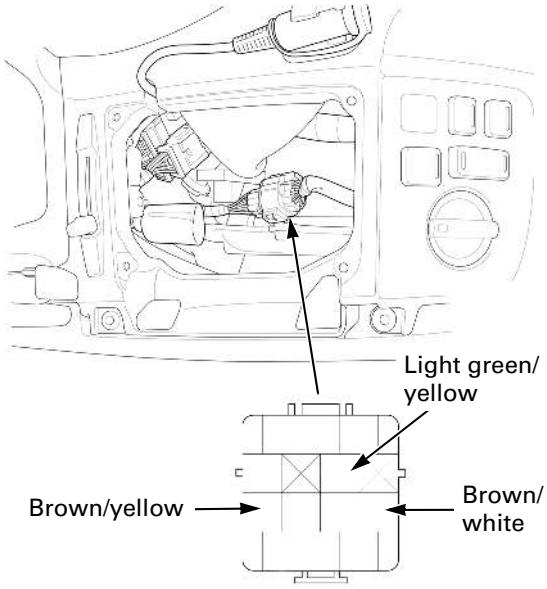


Suspension level cannot be memorized with the memory switch

1. Memory Switch 1 and 2 Operation Inspection

Except VIIIA and IIICM:

Remove the left fairing pocket (page 3-17 of Service Manual).
Disconnect the left panel switch connector (gray).
Check for continuity between the wire terminals of the switch side connector in either MEMO 1 or MEMO 2 switch positions.

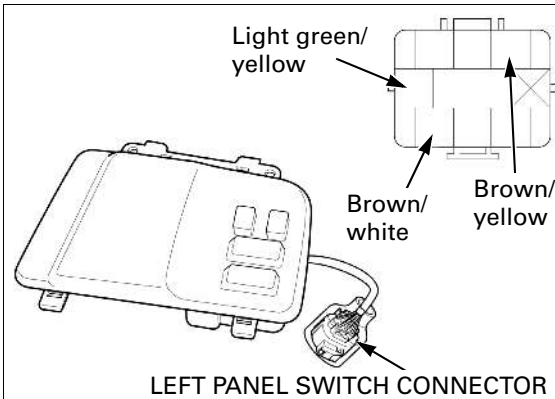


LEFT PANEL SWITCH CONNECTOR

VIIIA and IIICM models:

Remove the right upper panel switch (page 15-29 of Service Manual).
Check for continuity between the wire terminals of the switch gray connector in either MEMO 1 or MEMO 2 switch positions.

Continuity should exist between the color coded wires as follows:



LEFT PANEL SWITCH CONNECTOR

MEMORY SWITCH 1

Color / Position	Brown/ yellow	Brown/ white
PUSH	○	○
FREE		

MEMORY SWITCH 2

Color / Position	Brown/ yellow	Light green/ yellow
PUSH	○	○
FREE		

Is the switch normal?

NO – Faulty memory switch; replace the panel switch assembly (page 15-29 of Service Manual).

YES – GO TO STEP 2.

2. **Memory Switch 1 and 2 Control Line Short Circuit inspection**

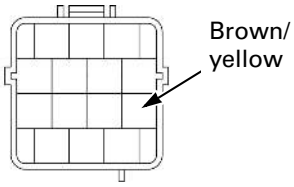
   Remove the combination meter (page 21-24 of Service Manual).
   Check for continuity between the Brown/yellow wire terminal of the left panel switch connector (gray) and ground.

   Is there continuity?

   YES – Short circuit in the fairing sub-wire harness.

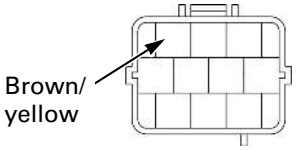
   NO – GO TO STEP 3.

Except VIIIA and IIICM:



LEFT PANEL SWITCH
HARNESS SIDE CONNECTOR

VIIIA and IIICM models:



LEFT PANEL SWITCH
HARNESS SIDE CONNECTOR

3. **Memory Switch 1 and 2 Control Line Continuity inspection**

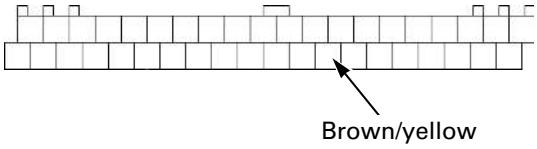
   Check the Brown/yellow wire for continuity between the left panel switch connector (Except VIIIA and IIICM: 14P Gray / VIIIA and IIICM: 10P Gray) and combination meter connector B (gray).

   Is there continuity?

   NO – Open circuit in the fairing sub-wire harness.

   YES – • Loose or poor contact of the left panel switch connector or combination meter connector B (gray).
   • Faulty combination meter; replace the combination meter (page 21-24 of Service Manual).

COMBINATION METER CONNECTOR B (GRAY)



SUSPENSION LEVEL RELAY

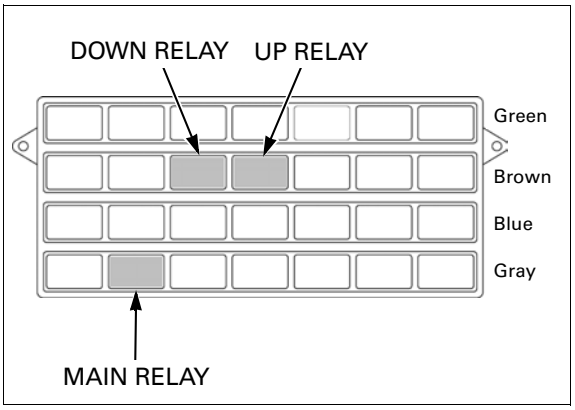
SYSTEM INSPECTION

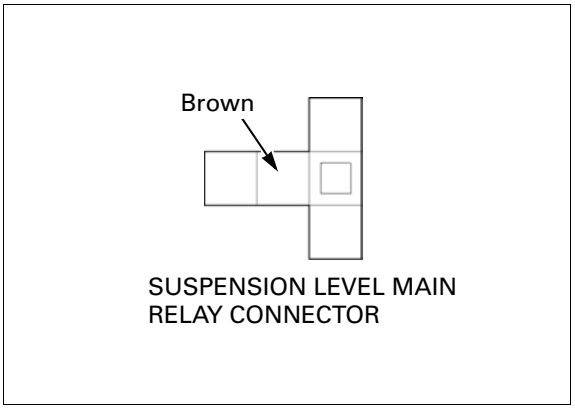
Check that the audio system and multi-display functions properly.
Shift the transmission into neutral and make sure the reverse system is off.

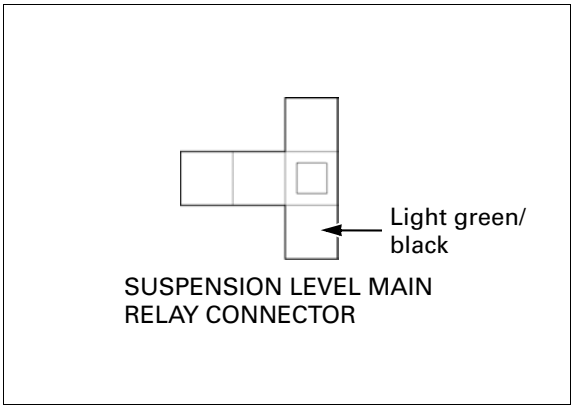
Remove the seat (page 3-8 of Service Manual).

Remove the two screws and remove the relay box.
Remove the relay blocks from the relay box.

1. Turn the ignition switch to OFF and exchange the suspension level main relay with a known-good one.
   Turn the ignition switch to ON or ACC and operate the manual height switch.
   - If the suspension level actuator operates, replace the suspension level main relay with a new one.
   - If the suspension level actuator does not operate, GO TO STEP 2.
2. Turn the ignition switch to OFF, and exchange the suspension level UP relay with a known-good one.
   Turn the ignition switch to ON or ACC and operate the manual height switch.
   - If the suspension level actuator operates, replace the suspension level UP relay with a new one and check again using the original suspension level main relay.
   - If the suspension level actuator does not operate, GO TO STEP 3.
3. Turn the ignition switch to OFF, and exchange the suspension level DOWN relay with a known-good one.
   Turn the ignition switch to ON or ACC and operate the manual height switch.
   - If the suspension level actuator operates, replace the suspension level DOWN relay with a new one and check again using the original suspension level main relay and UP relay.
   - If the suspension level actuator does not operate, GO TO STEP 4.
4. Turn the ignition switch to OFF and remove the suspension level main relay.
   Measure the voltage between the Brown wire terminal (+) of the suspension level main relay connector and ground (–).
   - If there is battery voltage, GO TO STEP 5.
   - If there is no voltage, check for an open circuit in the Brown wire between the suspension level main relay and fuse box (No. 28 fuse).
5. Turn the ignition switch to ON or ACC.
   Measure the voltage between the Light green/black wire terminal (+) of each suspension level main relay connector and ground (–).
   - If there is battery voltage, GO TO STEP 6.
   - If there is no voltage, check for an open circuit in the Light green/black wire between the suspension level main relay and ACC relay.

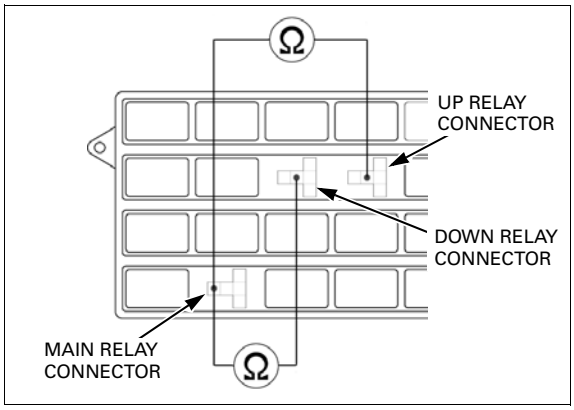






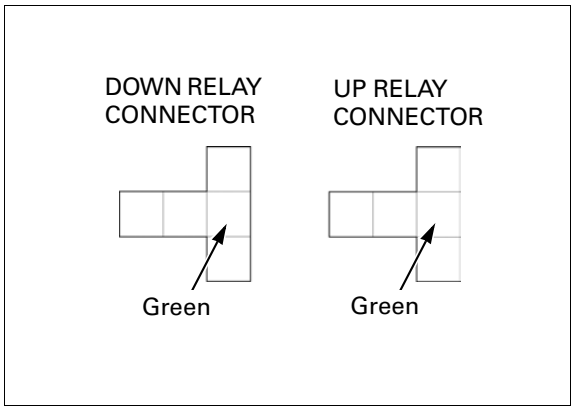
6. Turn the ignition switch to OFF.
   Remove the suspension level UP and DOWN relays.
   Check the Red/black wires for continuity between the suspension level main relay and UP relay, and between the main relay and DOWN relay.

- If there is continuity, GO TO STEP 7.
- If there is no continuity, repair an open circuit in the Red/black wire.



7. Check the actuator motor ground circuit for continuity between each Green wire terminal of the UP and DOWN relay connectors and ground.

- If there is continuity, GO TO STEP 8.
- If there is no continuity, repair an open circuit in the Green wire (actuator motor ground circuit).



8. Turn the ignition switch to ON or ACC.
   Measure the voltage between each Light green/black wire terminal (+) of the suspension level UP and DOWN relay connectors and ground (–).

- If there is battery voltage, follow the trouble-shooting flow chart on (page 15-11 of Service Manual).
- If there is no voltage, check for an open circuit in the Light green/black wire between the suspension level UP and DOWN relay and ACC relay.