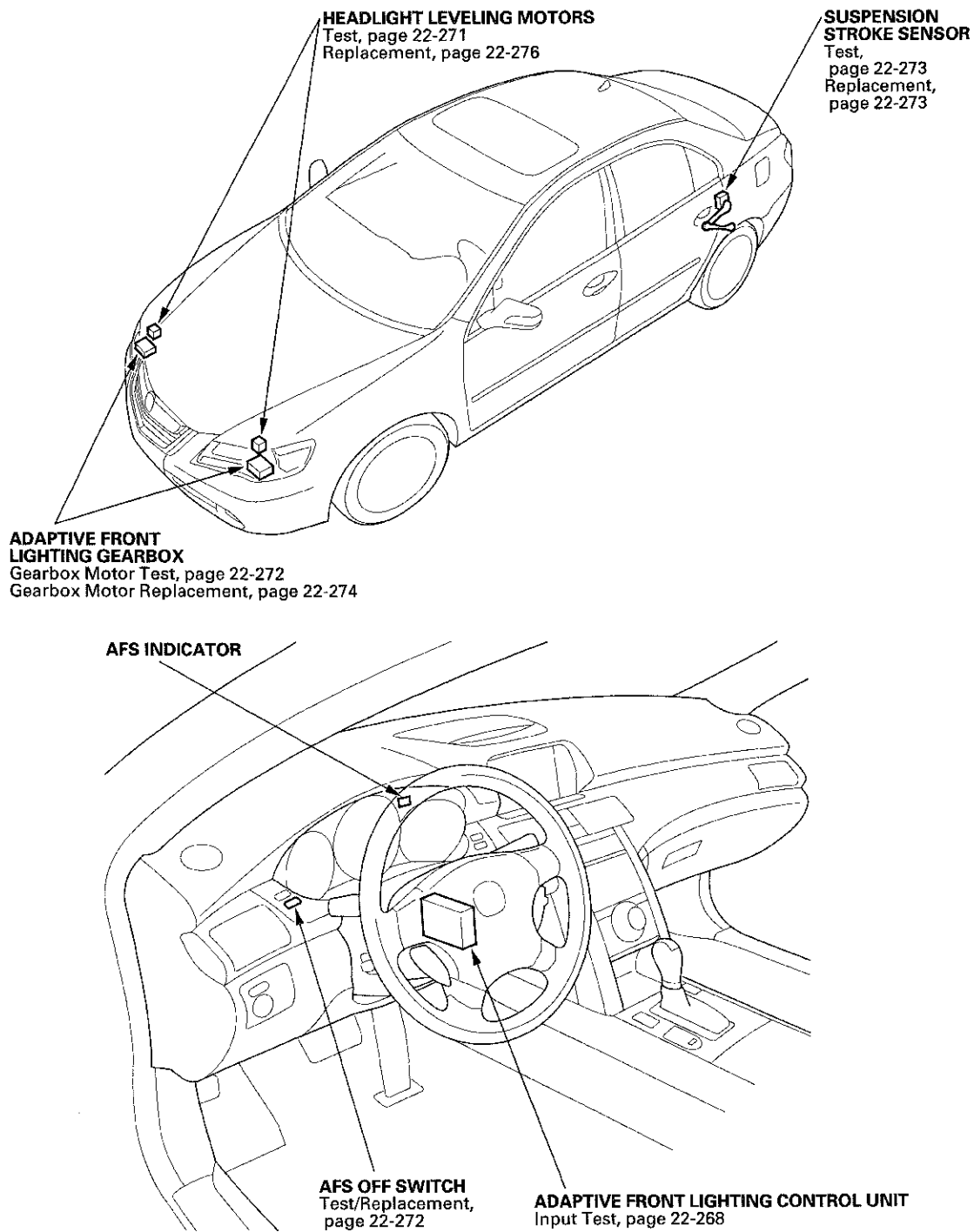


Adaptive Front Lighting System

Component Location Index





System Description

The adaptive front lighting control system consists of the adaptive front lighting control unit, suspension stroke sensor, steering angle sensor, headlight leveling motors, adaptive front lighting gearbox, AFS indicator in the gauge control module, and AFS OFF switch. The function of the system is to adjust the headlights for best aiming of the headlight beams. The suspension stroke motors move the headlight aiming up and down, and the adaptive front lighting gearbox moves the headlight aiming left and right. The suspension stroke sensor sends signals regarding vertical movement via the control unit to the headlight leveling motors, and the steering angle sensor and vehicle speed pulse send signals regarding horizontal movement via the control unit to the adaptive front lighting gearboxes. Also the control unit has a fail-safe function.

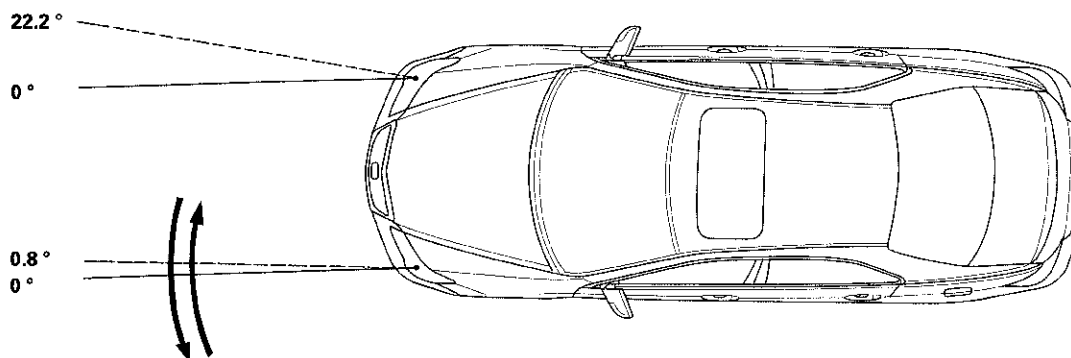
Swivel Control

The headlight swivel angle is controlled by the adaptive front lighting control unit that receives the steering angle information from the steering angle sensor via CAN line. The swivel control starts when the conditions shown are satisfied.

- Headlight switch is ON.
- AFS OFF switch is not pressed.
- Vehicle speed is over 5 mph (8 km/h).

Initialize function

When the headlight switch is ON, the swivel angle is initialized every time, whether the ignition switch is turned to ON (II) or to LOCK (0). The right headlight aiming moves right 22.2 degree and the left headlight aiming moves right 0.8 degree, then returns the headlight aiming to center and complete the initialization.

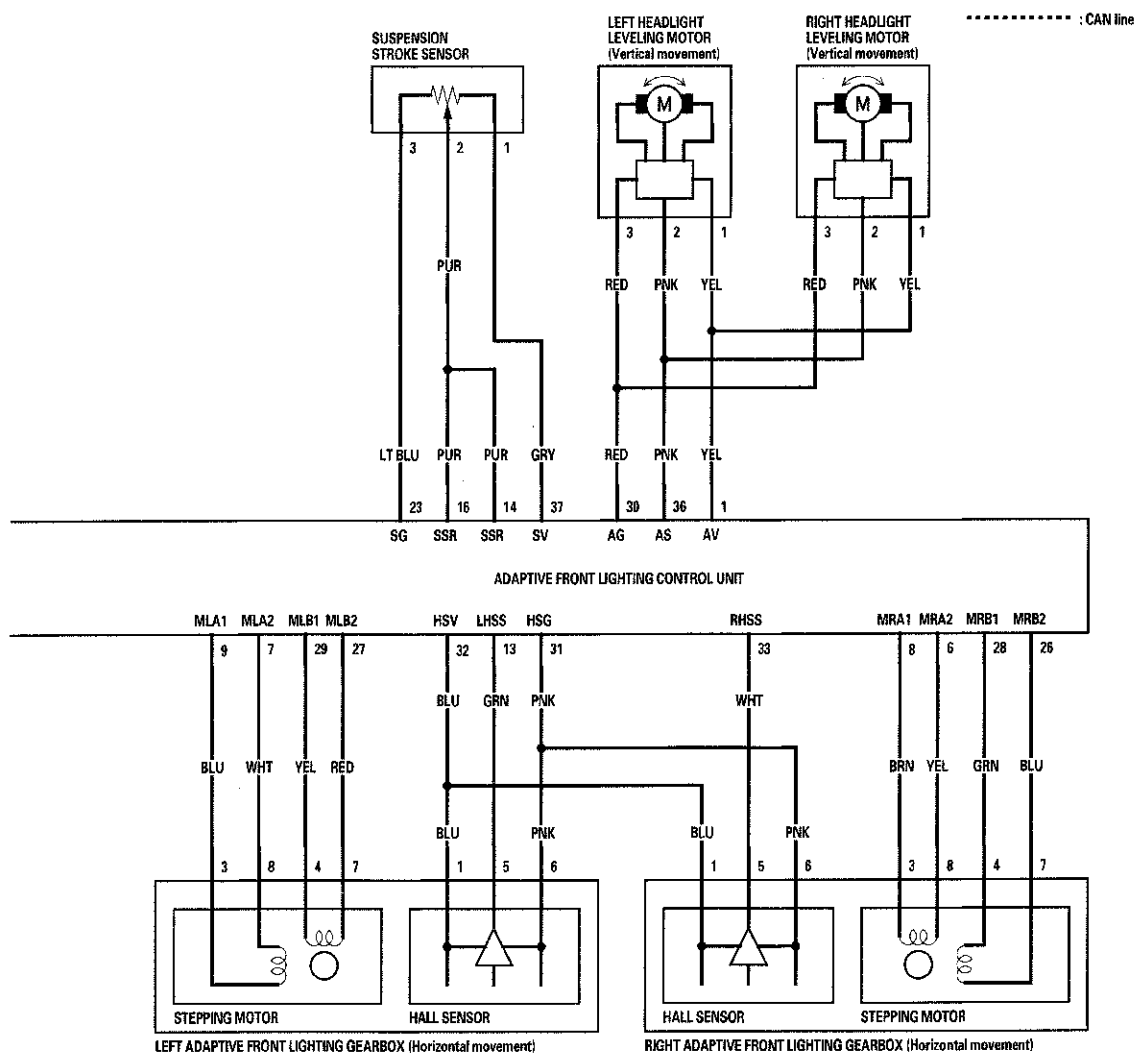


Leveling Control

The headlight leveling is controlled by the signals from the suspension stroke sensor. The leveling control starts when both the ignition switch and headlight switch are ON.

Fail-safe Function

If a malfunction occurs to any of the sensors, B-CAN line or control unit, the adaptive front lighting control system moves to fail-safe mode. In this case, the system stops control and the AFS indicator in the gauge control module blinks to show the malfunction. If the swivel control has a malfunction, the headlight aiming stays centered. If the leveling control has a malfunction, the headlight aiming stays at 0.6 degree under the present position.



Adaptive Front Lighting System

DTC Troubleshooting

DTC B2105: Adaptive Front Lighting Control Unit Lost Communication With Gauge Control Module (STEERING Message)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC B2105 indicated?

YES—Go to step 5.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

5. Check for DTCs with the HDS.

Are DTCs B2106, B2107, and B2108 also indicated?

YES—Replace the adaptive front lighting control unit, and do the adaptive front lighting control unit learning procedure (see page 22-265). ■

NO—Do the gauge control module input test (see page 22-155). ■

DTC B2106: Adaptive Front Lighting Control Unit Lost Communication With Gauge Control Module (A/T Message)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC B2106 indicated?

YES—Go to step 5.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

5. Check for DTCs with the HDS.

Are DTCs B1008, B1061, and B1808 also indicated?

YES—Do the gauge control module input test (see page 22-155). ■

NO—Replace the adaptive front lighting control unit, and do the adaptive front lighting control unit learning procedure (see page 22-265). ■



DTC B2107: Adaptive Front Lighting Control Unit Lost Communication With MICU (MICU Message)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC B2107 indicated?

YES—Go to step 5.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

5. Check for DTCs with the HDS.

Are DTCs B1055, B1157, B1255, B1605, B1806, and B2155 also indicated?

YES—Do the MICU input test (see page 22-152). ■

NO—Replace the adaptive front lighting control unit, and do the adaptive front lighting control unit learning procedure (see page 22-265). ■

DTC B2108: Adaptive Front Lighting Control Unit Lost Communication With Combination Switch Control Unit (HLSW Message)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC B2108 indicated?

YES—Go to step 5.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

5. Check for DTCs with the HDS.

Are DTCs B1007, B1062, and B1155 also indicated?

YES—Do the combination switch control unit input test (see page 22-382). ■

NO—Replace the adaptive front lighting control unit, and do the adaptive front lighting control unit learning procedure (see page 22-265). ■

Adaptive Front Lighting System

DTC Troubleshooting (cont'd)

DTC B2127: Steering Angle Sensor Malfunction

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Check for DTCs with the HDS.

Is DTC B2127 indicated?

YES—Go to step 4.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

4. Check for DTCs in the VSA system with the HDS.

Are any DTCs indicated?

YES—Go to the VSA indicated DTC's troubleshooting (see page 19-65). ■

NO—Go to step 5.

5. Check for DTCs with the HDS.

Is DTC B2105 indicated?

YES—Troubleshoot DTC B2105. ■

NO—Replace the adaptive front lighting control unit. ■

DTC B2131: Steering Angle Sensor MAX Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Check for DTCs with the HDS.

Is DTC B2131 indicated?

YES—Go to step 4.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

4. Check for DTCs in the VSA system with the HDS.

Are any DTCs indicated?

YES—Go to the VSA indicated DTC's troubleshooting (see page 19-65). ■

NO—Go to step 5.

5. Check for DTCs with the HDS.

Is DTC B1170 indicated?

YES—Troubleshoot DTC B1170. ■

NO—Go to step 6.

6. Check for DTCs with the HDS.

Is DTC B2105 indicated?

YES—Troubleshoot DTC B2105. ■

NO—Replace the adaptive front lighting control unit. ■



DTC B2135: A/T Reverse Signal Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Connect the HDS to the data link connector.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Check for A/T system DTCs with the HDS.

Is there any DTC other than B2135 indicated?

YES—Go to the indicated DTC troubleshooting. ■

NO—Go to step 4.

4. Clear the DTC with the HDS.
5. Turn the ignition switch to LOCK (0) and then back to ON (II).
6. Check for DTCs with the HDS.

Is the DTC B2135 indicated?

YES—Go to step 7.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

7. Shift the lever from P to R position.
8. Select TEST MODE menu from the HDS, and enter DATA LIST.
9. Check the ON/OFF information of the AT SHIFT R POSITION in the DATA LIST.

Is the information indicated ON?

YES—Replace the adaptive front lighting control unit, and do the adaptive front lighting control unit learning procedure (see page 22-265). ■

NO—Do the MICU input test and check power, ground, and the B-CAN line (see page 22-152). ■

Adaptive Front Lighting System

DTC Troubleshooting (cont'd)

DTC B2136: Left Adaptive Front Lighting Gearbox Motor Signal Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Turn the headlight switch ON.
4. Select BODY ELECTRICAL menu from the HDS.
5. Select AFS from the HDS, then enter TEST MODE MENU.
6. Select FUNCTION TEST, then select ADAPTIVE FRONT LIGHTING.
7. Select HEADLIGHT-LEFT/RIGHT and HEADLIGHT-UP/DOWN with the HDS, and move the adaptive front lighting gearbox motor.
8. Check for the DTC with the HDS.

Is DTC B2136 indicated?

YES—Go to step 9.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

9. Turn the ignition switch to LOCK (0).

10. Test the left adaptive front lighting gearbox (see page 22-272).

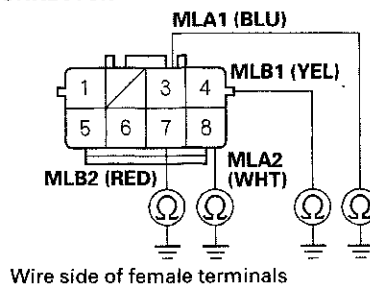
Is the left adaptive front lighting gearbox OK?

YES—Go to step 11.

NO—Replace the left adaptive front lighting gearbox. ■

11. Disconnect the adaptive front lighting control unit 40P connector.
12. Disconnect the left adaptive front lighting gearbox 8P connector.
13. Check for continuity between body ground and left adaptive front lighting gearbox 8P connector terminals No. 3, No. 4, No. 7, and No. 8 individually.

LEFT ADAPTIVE FRONT LIGHTING GEARBOX 8P CONNECTOR



Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Replace the adaptive front lighting control unit, and do the adaptive front lighting control unit learning procedure (see page 22-265). ■



DTC B2137: Right Adaptive Front Lighting Gearbox Motor Signal Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Turn the headlight switch ON.
4. Select BODY ELECTRICAL menu from the HDS.
5. Select AFS from the HDS, then enter TEST MODE menu.
6. Select FUNCTION TEST, then select ADAPTIVE FRONT LIGHTING.
7. Select HEADLIGHT-LEFT/RIGHT and HEADLIGHT-UP/DOWN with the HDS, and move adaptive front lighting gearbox motor.
8. Check for the DTC with the HDS.

Is DTC B2137 indicated?

YES—Go to step 9.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

9. Turn the ignition switch to LOCK (0).

10. Test the right adaptive front lighting gearbox (see page 22-272).

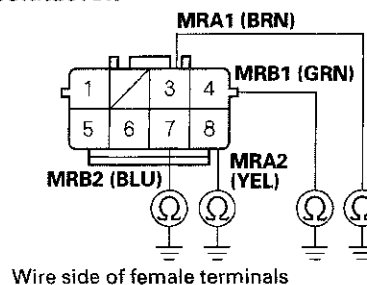
Is the right adaptive front lighting gearbox OK?

YES—Go to step 11.

NO—Replace the right adaptive front lighting gearbox. ■

11. Disconnect the adaptive front lighting control unit 40P connector.
12. Disconnect the right adaptive front lighting gearbox 8P connector.
13. Check for continuity between body ground and right adaptive front lighting gearbox 8P connector terminals No. 3, No. 4, No. 7, and No. 8 individually.

RIGHT ADAPTIVE FRONT LIGHTING GEARBOX 8P CONNECTOR



Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Replace the adaptive front lighting control unit, and do the adaptive front lighting learning procedure (see page 22-265). ■

Adaptive Front Lighting System

DTC Troubleshooting (cont'd)

DTC B2139: Headlight Leveling Motor Power Supply Circuit Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

- 1. Clear the DTCs with the HDS.
- 2. Turn the ignition switch to LOCK (0) and then back to ON (II).
- 3. Turn the headlight switch ON.
- 4. Check for DTCs with the HDS.

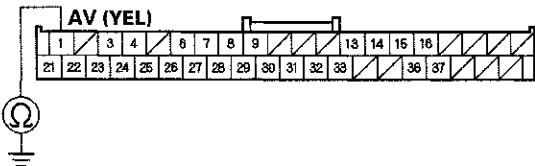
Is DTC B2139 indicated?

YES—Go to step 5.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

- 5. Turn the ignition switch to LOCK (0).
- 6. Disconnect the adaptive front lighting control unit 40P connector.
- 7. Disconnect the left and right headlight leveling motor 3P connectors.
- 8. Check for continuity between adaptive front lighting control unit 40P connector terminal No. 1 and body ground.

ADAPTIVE FRONT LIGHTING CONTROL UNIT 40P CONNECTOR



Wire side of female terminals

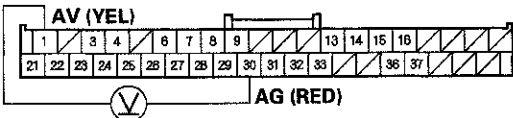
Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Go to step 9.

- 9. Reconnect the adaptive front lighting control unit 40P connector.
- 10. Turn the ignition switch to ON (II).
- 11. Measure the voltage between adaptive front lighting control unit 40P connector terminals No. 1 and No. 30.

ADAPTIVE FRONT LIGHTING CONTROL UNIT 40P CONNECTOR



Wire side of female terminals

Is there about 5 V?

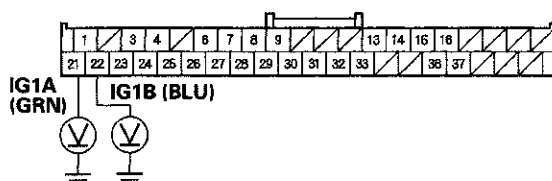
YES—Do the headlight leveling motor test (see page 22-271). ■

NO—Go to step 12.



12. Measure the voltage between body ground and adaptive front lighting control unit 40P connector terminals No. 21 and No. 22 individually.

**ADAPTIVE FRONT LIGHTING CONTROL UNIT
40P CONNECTOR**



Wire side of female terminals

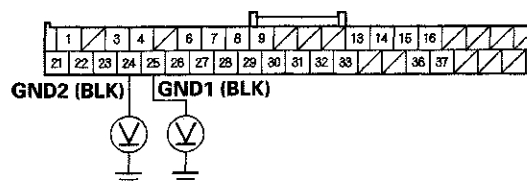
Is there battery voltage?

YES—Go to step 13.

NO—Check the No. 11 (7.5 A) and No. 29 (7.5 A) fuses in the driver's under-dash fuse/relay box. If the fuses are OK, check for an open in the wire between the driver's under-dash fuse/relay box and the adaptive front lighting control unit. If one of the fuses is blown, replace the fuse and check for a short in the wire between the driver's under-dash fuse/relay box and the adaptive front lighting control unit. ■

13. Measure the voltage between body ground and adaptive front lighting control unit 40P connector terminals No. 24 and No. 25 individually.

**ADAPTIVE FRONT LIGHTING CONTROL UNIT
40P CONNECTOR**



Wire side of female terminals

Is there less than 0.2 V?

YES—Replace the adaptive front lighting control unit, and do the adaptive front lighting control unit learning procedure (see page 22-265). ■

NO—Repair poor ground (G401) or an open in the wire. ■

Adaptive Front Lighting System

DTC Troubleshooting (cont'd)

DTC B2140: Headlight Leveling Motor Signal Circuit Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Turn the headlight switch ON.
4. Check for DTCs with the HDS.

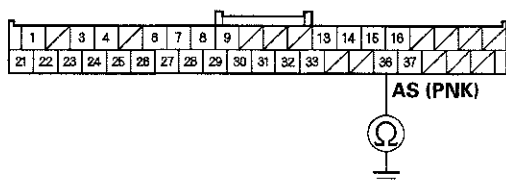
Is DTC B2140 indicated?

YES—Go to step 5.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

5. Turn the ignition switch to LOCK (0).
6. Disconnect the adaptive front lighting control unit 40P connector.
7. Disconnect the left and right headlight leveling motor 3P connectors.
8. Check for continuity between adaptive front lighting control unit 40P connector terminal No. 36 and body ground.

ADAPTIVE FRONT LIGHTING CONTROL UNIT 40P CONNECTOR



Wire side of female terminals

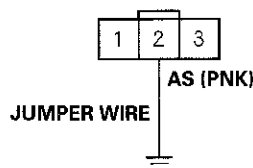
Is there continuity?

YES—Repair short to ground in the wire. ■

NO—Go to step 9.

9. Connect headlight leveling motor 3P connector terminal No. 2 to body ground with a jumper wire.

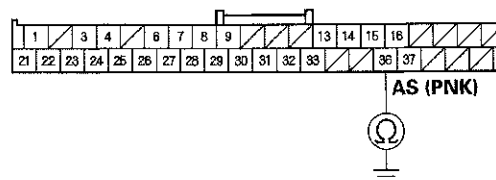
HEADLIGHT LEVELING MOTOR 3P CONNECTOR



Wire side of female terminals

10. Check for continuity between adaptive front lighting control unit 40P connector terminal No. 36 and body ground.

ADAPTIVE FRONT LIGHTING CONTROL UNIT 40P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Go to step 11.

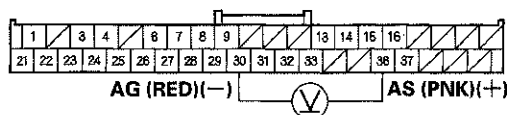
NO—Repair an open in the wire. ■

11. Reconnect the adaptive front lighting control unit 40P connector.
12. Reconnect both headlight leveling motor 3P connectors.



13. Turn the ignition switch to ON (II).
14. Measure the voltage between adaptive front lighting control unit 40P connector terminals No. 36 (+) and No. 30 (—).

**ADAPTIVE FRONT LIGHTING CONTROL UNIT
40P CONNECTOR**



Wire side of female terminals

Is there about 0.5—4.5 V?

YES—Replace the adaptive front lighting control unit, and do the adaptive front lighting control unit learning procedure (see page 22-265). ■

NO—Do the headlight leveling motor test (see page 22-271). ■

**DTC B2141: Suspension Stroke Sensor
Output Error**

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Turn the headlight switch ON.
4. Check for DTCs with the HDS.

Is DTC B2141 indicated?

YES—Go to step 5.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

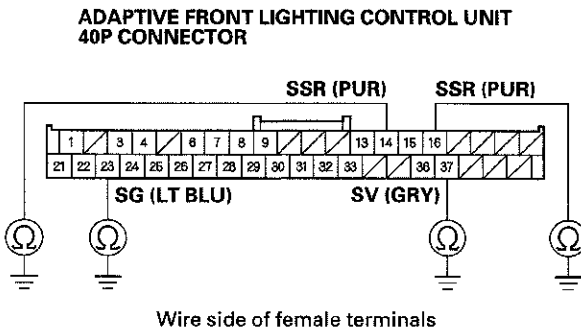
5. Turn the ignition switch to LOCK (0).
6. Disconnect the adaptive front lighting control unit 40P connector.

(cont'd)

Adaptive Front Lighting System

DTC Troubleshooting (cont'd)

7. Disconnect the suspension stroke sensor 3P connector.
8. Check for continuity between body ground and adaptive front lighting control unit 40P connector terminals No. 14, No. 16, No. 23, and No. 37 individually.



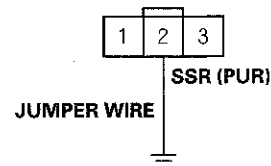
Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Go to step 9.

9. Connect suspension stroke sensor 3P connector No. 2 terminal to body ground with a jumper wire.

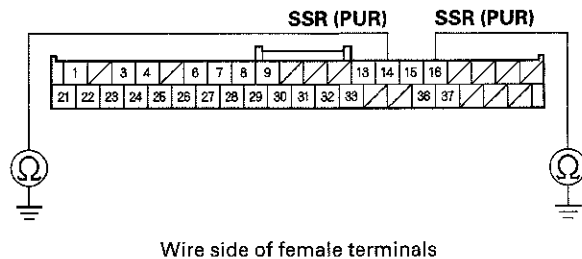
SUSPENSION STROKE SENSOR 3P CONNECTOR



Wire side of female terminals

10. Check for continuity between body ground and adaptive front lighting control unit 40P connector terminal No. 14 and No. 16.

ADAPTIVE FRONT LIGHTING CONTROL UNIT 40P CONNECTOR



Is there continuity?

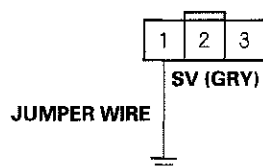
YES—Go to step 11.

NO—Repair an open in the wire. ■



11. Connect suspension stroke sensor 3P connector terminal No. 1 to body ground with a jumper wire.

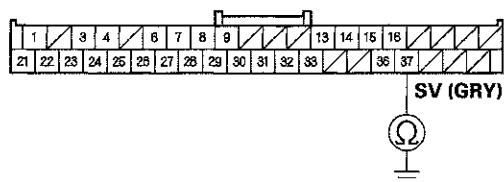
SUSPENSION STROKE SENSOR 3P CONNECTOR



Wire side of female terminals

12. Check for continuity between adaptive front lighting control unit 40P connector terminal No. 37 and body ground.

ADAPTIVE FRONT LIGHTING CONTROL UNIT 40P CONNECTOR



Wire side of female terminals

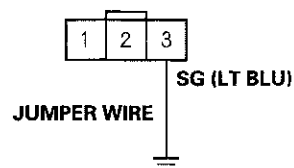
Is there continuity?

YES—Go to step 13.

NO—Repair an open in the wire. ■

13. Connect suspension stroke sensor 3P connector terminal No. 3 to body ground with a jumper wire.

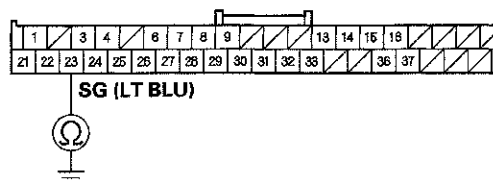
SUSPENSION STROKE SENSOR 3P CONNECTOR



Wire side of female terminals

14. Check for continuity between adaptive front lighting control unit 40P connector terminal No. 23 and body ground.

ADAPTIVE FRONT LIGHTING CONTROL UNIT 40P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Go to step 15.

NO—Repair an open in the wire. ■

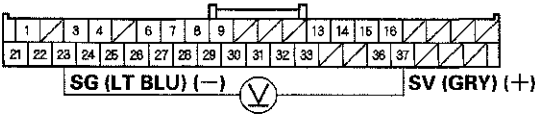
(cont'd)

Adaptive Front Lighting System

DTC Troubleshooting (cont'd)

- 15. Reconnect the adaptive front lighting control unit 40P connector.
- 16. Turn the ignition switch to ON (II).
- 17. Measure the voltage between adaptive front lighting control unit 40P connector terminals No. 37 (+) and No. 23 (−).

ADAPTIVE FRONT LIGHTING CONTROL UNIT
40P CONNECTOR



Wire side of female terminals

Is there about 4.5–5.5 V?

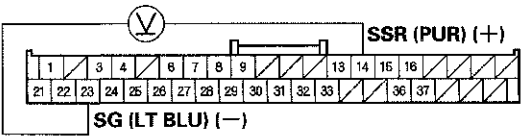
YES—Go to step 18.

NO—Go to step 22.

- 18. Turn the ignition switch to LOCK (0).

- 19. Reconnect the suspension stroke sensor 3P connector.
- 20. Turn the ignition switch to ON (II).
- 21. Measure the voltage between adaptive front lighting control unit 40P connector terminals No. 14 (+) and No. 23 (−).

ADAPTIVE FRONT LIGHTING CONTROL UNIT
40P CONNECTOR



Wire side of female terminals

Is there about 0.5–4.5 V?

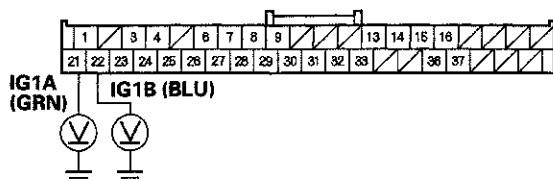
YES—Replace the adaptive front lighting control unit, and do the adaptive front lighting control unit learning procedure (see page 22-265). ■

NO—Replace the suspension stroke sensor (see page 22-273). ■



22. Measure the voltage between body ground and adaptive front lighting control unit 40P connector terminals No. 21 and No. 22 individually.

**ADAPTIVE FRONT LIGHTING CONTROL UNIT
40P CONNECTOR**



Wire side of female terminals

Is there battery voltage?

YES—Replace the adaptive front lighting control unit, and do the adaptive front lighting control unit learning procedure (see page 22-265). ■

NO—Check the No. 11 (7.5 A) and No. 29 (7.5 A) fuses in the driver's under-dash fuse/relay box. If the fuses are OK, check for an open in the wire between the driver's under-dash fuse/relay box and the adaptive front lighting control unit. If one of the fuses is blown, replace the fuse and check for a short in the wire between the driver's under-dash fuse/relay box and the adaptive front lighting control unit. ■

DTC B2142: Adaptive Front Lighting Control Unit Sub CPU Communication Error

DTC B2143: Adaptive Front Lighting Control Unit Sub CPU Memory Error

DTC B2144: Adaptive Front Lighting Control Unit Sub CPU EEPROM Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Check for DTCs with the HDS.

Are DTCs B2142, B2143, and/or B2144 indicated?

YES—Replace the adaptive front lighting control unit, and do the adaptive front lighting control unit learning procedure (see page 22-265). ■

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

Adaptive Front Lighting System

DTC Troubleshooting (cont'd)

DTC B2145: Left Adaptive Front Lighting Gearbox Motor Swing Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Turn the headlight switch ON.
4. Turn the steering wheel to the left or to the right 90 degrees or more from the center position.
5. Select BODY ELECTRICAL menu from the HDS.
6. While maintaining communication with the HDS, test-drive in a straight line for 98.4 feet (30 m) at least 16 mph (25 km/h).
7. Check the AFS indicator in the gauge control module.

Does the AFS indicator come on?

YES—Go to step 10.

NO—Go to step 8.
8. Select ADAPTIVE FRONT LIGHTING from the HDS, and enter DATA LIST.
9. Check the STEERING ANGLE LEARN information in the DATA LIST.

Is the steering angle learn finished?

YES—Go to step 10.

NO—Go to step 6, and repeat the procedure.
10. Test-drive at 7 mph (10 km/h) for at least 3 minutes.

11. Check for DTCs with the HDS.

Are any other DTCs indicated with B2145?

YES—Troubleshoot the indicated DTC. ■

NO—Go to step 12.

12. Select FUNCTION TEST from the HDS.
13. Select ADAPTIVE FRONT LIGHTING, and check the headlights operation.

NOTE: The left headlight should move 20 degrees to the left then return, and the right headlight should move 20 degrees to the right then return.

Do the headlights operate normally?

YES—Go to step 14.

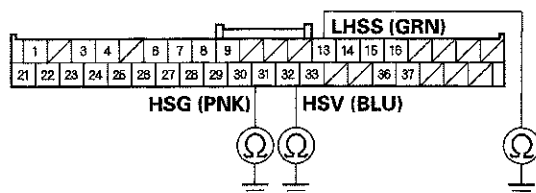
NO—Go to step 29.

14. Turn the ignition switch to LOCK (0).
15. Disconnect the adaptive front lighting control unit 40P connector.
16. Disconnect the left and right adaptive front lighting gearbox 8P connectors.



17. Check for continuity between body ground and adaptive front lighting control unit 40P connector terminals No. 13, No. 31, and No. 32 individually.

**ADAPTIVE FRONT LIGHTING CONTROL UNIT
40P CONNECTOR**



Wire side of female terminals

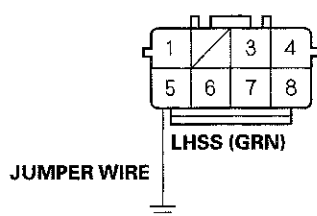
Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Go to step 18.

18. Connect left adaptive front lighting gearbox 8P connector terminal No. 5 to body ground with a jumper wire.

**LEFT ADAPTIVE FRONT LIGHTING GEARBOX
8P CONNECTOR**

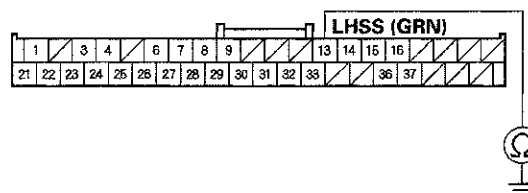


JUMPER WIRE

Wire side of female terminals

19. Check for continuity between adaptive front lighting control unit 40P connector terminal No. 13 and body ground.

**ADAPTIVE FRONT LIGHTING CONTROL UNIT
40P CONNECTOR**



Wire side of female terminals

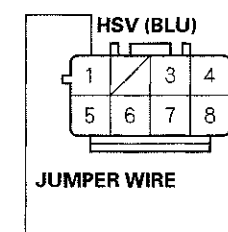
Is there continuity?

YES—Go to step 20.

NO—Repair an open in the wire. ■

20. Connect left adaptive front lighting gearbox 8P connector terminal No. 1 to body ground with a jumper wire.

**LEFT ADAPTIVE FRONT LIGHTING GEARBOX
8P CONNECTOR**



JUMPER WIRE

Wire side of female terminals

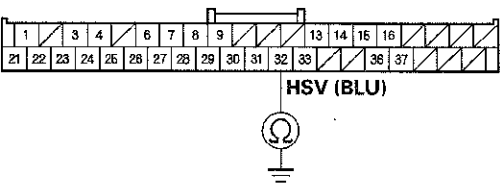
(cont'd)

Adaptive Front Lighting System

DTC Troubleshooting (cont'd)

21. Check for continuity between adaptive front lighting control unit 40P connector terminal No. 32 and body ground.

ADAPTIVE FRONT LIGHTING CONTROL UNIT
40P CONNECTOR



Wire side of female terminals

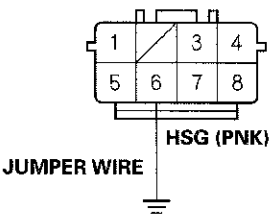
Is there continuity?

YES—Go to step 22.

NO—Repair an open in the wire. ■

22. Connect left adaptive front lighting gearbox 8P connector terminal No. 6 to body ground with a jumper.

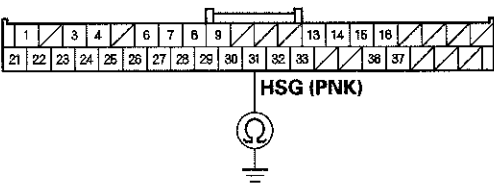
LEFT ADAPTIVE FRONT LIGHTING GEARBOX
8P CONNECTOR



Wire side of female terminals

23. Check for continuity between adaptive front lighting control unit 40P connector terminal No. 31 and body ground.

ADAPTIVE FRONT LIGHTING CONTROL UNIT
40P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Go to step 24.

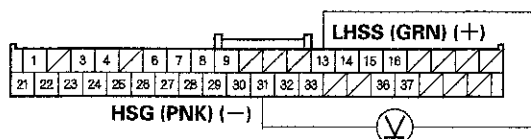
NO—Repair an open in the wire. ■

24. Reconnect all connectors.
25. Turn the ignition switch to ON (II).
26. Do the adaptive front lighting control unit learning procedure (see page 22-265).
27. Turn the steering wheel to the center position, and hold it in that position.



28. Measure the voltage between adaptive front lighting control unit 40P connector terminals No. 13 (+) and No. 31 (–).

**ADAPTIVE FRONT LIGHTING CONTROL UNIT
40P CONNECTOR**



Wire side of female terminals

Is there about 0.8–1.5 V?

YES—Replace the adaptive front lighting control unit, and do the adaptive front lighting control unit learning procedure (see page 22-265). ■

NO—Faulty hall sensor, replace the left adaptive front lighting gearbox (see page 22-274). ■

29. Turn the ignition switch to LOCK (0).
30. Disconnect the left adaptive front lighting gearbox 8P connector.
31. Test the left adaptive front lighting gearbox (see page 22-272).

Is the left adaptive front lighting gearbox OK?

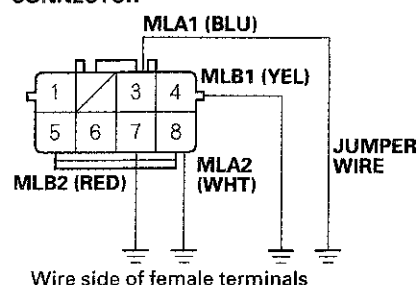
YES—Go to step 32.

NO—Replace the left adaptive front lighting gearbox (see page 22-274). ■

32. Disconnect the adaptive front lighting control unit 40P connector.

33. Connect left adaptive front lighting gearbox 8P connector terminals No. 3, No. 4, No. 7, and No. 8 to body ground with jumper wires.

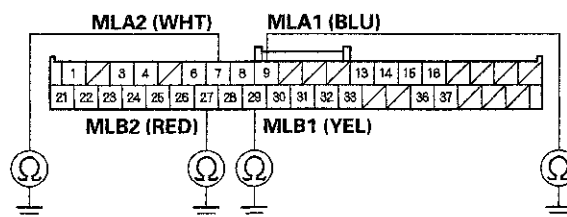
**LEFT ADAPTIVE FRONT LIGHTING GEARBOX
8P CONNECTOR**



Wire side of female terminals

34. Check for continuity between body ground and adaptive front lighting control unit 40P connector terminals No. 7, No. 9, No. 27, and No. 29 individually.

**ADAPTIVE FRONT LIGHTING CONTROL UNIT
40P CONNECTOR**



Wire side of female terminals

Is there continuity?

YES—Replace the adaptive front lighting control unit, and do the adaptive front lighting control unit learning procedure (see page 22-265). ■

NO—Repair an open in the wire. ■

Adaptive Front Lighting System

DTC Troubleshooting (cont'd)

DTC B2146: Right Adaptive Front Lighting Gearbox Motor Swing Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Turn the headlight switch ON.
4. Turn the steering wheel to the left or to the right 90 degrees or more from the center position.
5. Select BODY ELECTRICAL menu from the HDS.
6. While maintaining communication with the HDS, test-drive in a straight line for 98.4 feet (30 m) at least 16 mph (25 km/h).

7. Check the AFS indicator in the gauge control module.

Does the AFS indicator come on?

YES—Go to step 10.

NO—Go to step 8.

8. Select AFS from the HDS, and enter DATA LIST.
9. Check the STEERING ANGLE LEARN information in the DATA LIST.

Is the steering angle learn finished?

YES—Go to step 10.

NO—Go to step 6, and repeat the procedure.

10. Test-drive at 7 mph (10 km/h) for at least 3 minutes.

11. Check for DTCs with the HDS.

Are any other DTCs indicated with B2146?

YES—Troubleshoot the indicated DTC. ■

NO—Go to step 12.

12. Select FUNCTION TEST from the HDS.

13. Select ADAPTIVE FRONT LIGHTING, and check the headlights operation.

NOTE: The left headlight should move 20 degrees to the left side and return, and the right headlight should move 20 degrees to the right side and return.

Do the headlights operate normally?

YES—Go to step 14.

NO—Go to step 29.

14. Turn the ignition switch to LOCK (0).

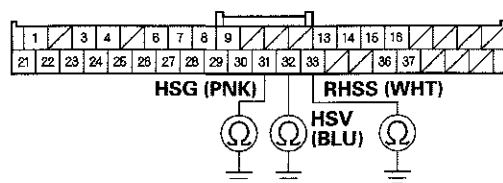
15. Disconnect the adaptive front lighting control unit 40P connector.

16. Disconnect the left and right adaptive front lighting gearbox 8P connectors.



17. Check for continuity between body ground and adaptive front lighting control unit 40P connector terminals No. 31, No. 32, and No. 33 individually.

**ADAPTIVE FRONT LIGHTING CONTROL UNIT
40P CONNECTOR**



Wire side of female terminals

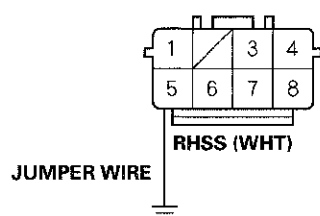
Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Go to step 18.

18. Connect right adaptive front lighting gearbox 8P connector No. 5 terminal to body ground with a jumper wire.

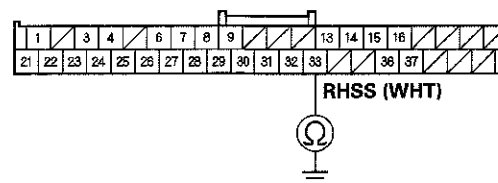
**RIGHT ADAPTIVE FRONT LIGHTING GEARBOX
8P CONNECTOR**



Wire side of female terminals

19. Check for continuity between adaptive front lighting control unit 40P connector terminal No. 33 and body ground.

**ADAPTIVE FRONT LIGHTING CONTROL UNIT
40P CONNECTOR**



Wire side of female terminals

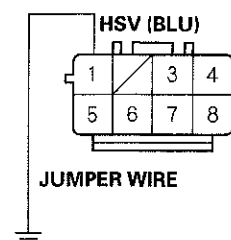
Is there continuity?

YES—Go to step 20.

NO—Repair an open in the wire. ■

20. Connect right adaptive front lighting gearbox 8P connector No. 1 terminal to body ground with a jumper wire.

**RIGHT ADAPTIVE FRONT LIGHTING GEARBOX
8P CONNECTOR**



Wire side of female terminals

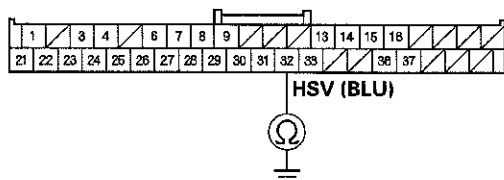
(cont'd)

Adaptive Front Lighting System

DTC Troubleshooting (cont'd)

21. Check for continuity between adaptive front lighting control unit 40P connector terminal No. 32 and body ground.

**ADAPTIVE FRONT LIGHTING CONTROL UNIT
40P CONNECTOR**



Wire side of female terminals

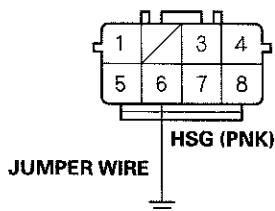
Is there continuity?

YES—Go to step 22.

NO—Repair an open in the wire. ■

22. Connect right adaptive front lighting gearbox 8P connector terminal No. 6 to body ground with a jumper wire.

**RIGHT ADAPTIVE FRONT LIGHTING GEARBOX
8P CONNECTOR**

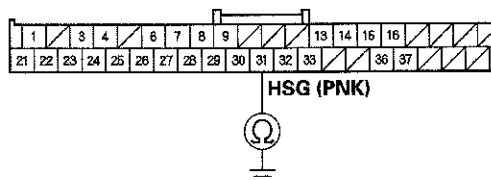


JUMPER WIRE

Wire side of female terminals

23. Check for continuity between adaptive front lighting control unit 40P connector terminal No. 31 and body ground.

**ADAPTIVE FRONT LIGHTING CONTROL UNIT
40P CONNECTOR**



Wire side of female terminals

Is there continuity?

YES—Go to step 24.

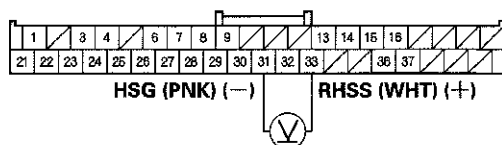
NO—Repair an open in the wire. ■

24. Reconnect all connectors.
25. Turn the ignition switch to ON (II).
26. Do the adaptive front lighting control unit learning procedure (see page 22-265).
27. Turn the steering wheel to the center position, and hold it in that position.



28. Measure the voltage between adaptive front lighting control unit 40P connector terminals No. 33 (+) and No. 31 (−).

**ADAPTIVE FRONT LIGHTING CONTROL UNIT
40P CONNECTOR**



Wire side of female terminals

Is there about 0.8–1.5 V?

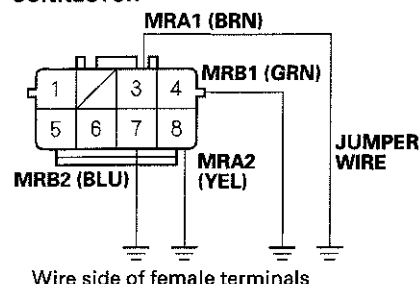
YES—Replace the adaptive front lighting control unit, and do the adaptive front lighting learning procedure (see page 22-265). ■

NO—Faulty hall sensor, replace the right adaptive front lighting gearbox (see page 22-274). ■

29. Turn the ignition switch to LOCK (0).
30. Disconnect the right adaptive front lighting gearbox 8P connector.
31. Test the right adaptive front lighting gearbox (see page 22-272).
- Is the right adaptive front lighting gearbox OK?*
- YES**—Go to step 32.
- NO**—Replace the right adaptive front lighting gearbox (see page 22-274). ■
32. Disconnect the adaptive front lighting control unit 40P connector.

33. Connect right adaptive front lighting gearbox 8P connector terminals No. 3, No. 4, No. 7, and No. 8 to body ground with jumper wires.

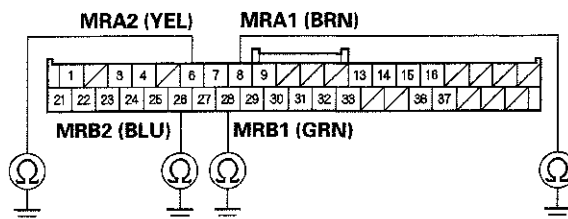
**RIGHT ADAPTIVE FRONT LIGHTING GEARBOX
8P CONNECTOR**



Wire side of female terminals

34. Check for continuity between body ground and adaptive front lighting control unit 40P connector terminals No. 6, No. 8, No. 26, and No. 28 individually.

**ADAPTIVE FRONT LIGHTING CONTROL UNIT
40P CONNECTOR**



Wire side of female terminals

Is there continuity?

YES—Replace the adaptive front lighting control unit, and do the adaptive front lighting learning procedure (see page 22-265). ■

NO—Repair an open in the wire. ■

Adaptive Front Lighting System

Adaptive Front Lighting Control Unit Learning Procedure Index

Do the appropriate adaptive front lighting control unit learning procedure when any of the related parts of the adaptive front lighting system are removed or replaced.

- When the adaptive front lighting control unit is replaced (a brand new adaptive front lighting control unit is installed) (see page 22-265).
- When adaptive front lighting control unit is replaced (a known-good adaptive front lighting control unit is installed) (see page 22-265).
- When the suspension stroke sensor is replaced (see page 22-266).
- When the suspension stroke sensor is removed, or the suspension stroke sensor is disassembled (see page 22-266).
- When a headlight is replaced (see page 22-266).
- When an adaptive front lighting gearbox is replaced (see page 22-266).
- When the AFS OFF switch is replaced (see page 22-267).
- When the combination light switch is replaced (see page 22-267).
- When an HID unit is replaced (see page 22-267).
- When an HID bulb is replaced (see page 22-267).



Adaptive Front Lighting Control Unit Learning Procedure

When the adaptive front lighting control unit is replaced (a brand new adaptive front lighting control unit is installed)

NOTE: If the AFS indicator is blinking, check the DTCs.

1. Remove all baggage from the vehicle.
2. Turn the ignition switch to ON (II).
3. Make sure the AFS indicator does not turn off. (If the AFS indicator turns off, the adaptive front lighting control unit is not a new or previously learned unit.)
4. Turn the ignition switch to LOCK (0) and then back to ON (II).
5. Within 5 seconds, turn the headlight switch ON/OFF or to passing three times.
6. Make sure the AFS indicator blinks in a 1 second cycle. (If the indicator does not blink, return to step 2.)
7. Turn the headlights ON, and make sure the headlights move while the AFS control unit runs the initialization function (see page 22-239).
8. Turn the steering wheel to the left or to the right 90 degrees or more from the center position.
9. Test-drive, with only the driver in the vehicle, in a straight line for 98.4 feet (30 m) at least 16 mph (25 km/h).
10. Make sure the AFS indicator turns off. (If the indicator does not turn off, repeat the steps 8 and 9.)
11. Adjust the headlights (see page 22-219).

When the adaptive front lighting control unit is replaced (a known-good adaptive front lighting control unit is installed)

NOTE: If the AFS indicator is blinking, check the DTCs.

1. Remove all baggage from the vehicle.
2. Connect the HDS to the data link connector, and short the SCS line.
3. Turn the ignition switch to ON (II).
4. Make sure the AFS indicator turns off after 2 seconds. (If the AFS indicator does not turn off, the adaptive front lighting control unit must be brand new.)
5. Turn the ignition switch to LOCK (0) and then back to ON (II).
6. Within 5 seconds, turn the headlight switch ON/OFF or to passing three times.
7. Turn the headlights ON, and make sure the headlights move while the AFS control unit runs the initialization function (see page 22-239). (If the headlights do not move, return to step 2.)
8. Release the SCS short command with the HDS.
9. Turn the steering wheel to the left or to the right 90 degrees or more from the center position.
10. With the HDS communicating with the BODY ELECTRICAL, test-drive, with only the driver in the vehicle, in a straight line for 98.4 feet (30 m) at least 16 mph (25 km/h).
11. Select AFS from the HDS, and enter DATA LIST.
12. Make sure the STEERING CENTER LEARN information in the DATA LIST is finished. (If the learn is not completed, repeat the steps 9 and 10.)
13. Adjust the headlights (see page 22-219).

Adaptive Front Lighting System

Adaptive Front Lighting Control Unit Learning Procedure (cont'd)

When the suspension stroke sensor is removed or replaced, or the suspension stroke sensor link is disassembled

NOTE: If the AFS indicator is blinking, check the DTCs.

1. Remove all baggage from the vehicle.
2. Connect the HDS to the data link connector, and short the SCS line.
3. Turn the ignition switch to ON (II).
4. Make sure the AFS indicator turns off after 2 seconds. (If the AFS indicator stays on and does not turn off, the AFS control unit has been replaced with a brand new control unit.)
5. Turn the ignition switch to LOCK (0) and then back to ON (II).
6. Within 5 seconds, turn the headlight switch ON/OFF or to passing three times.
7. Turn the headlights ON, and make sure the headlights move while the AFS control unit runs the initialization function (see page 22-239). (If the headlights do not move, return to step 2.)
8. Release the SCS short command with the HDS.
9. Adjust the headlights (see page 22-219).

When the headlight is replaced, or when the adaptive front lighting gearbox is replaced

1. Remove all baggage from the vehicle.
2. Turn the ignition switch to ON (II).
3. Turn the headlights ON.
4. Connect the HDS to the data link connector.
5. Select AFS from the HDS, and enter FUNCTION TEST.
6. Make sure both headlights swing about 20 degrees left and right by the forced operation with the HDS.
7. Make sure both headlights move up and down by the forced operation with the HDS.
8. Check the combination light switch.
9. Adjust the headlights (see page 22-219).



When the AFS OFF switch or combination light switch is replaced

NOTE: If the AFS indicator is blinking, check the DTCs.

1. Turn the ignition switch to ON (II).
2. Turn the headlights ON.
3. Turn the AFS OFF switch OFF, and make sure the AFS indicator comes on. (If the AFS indicator does not come on, check for an open in the wire or poor connections at the switch connector.)

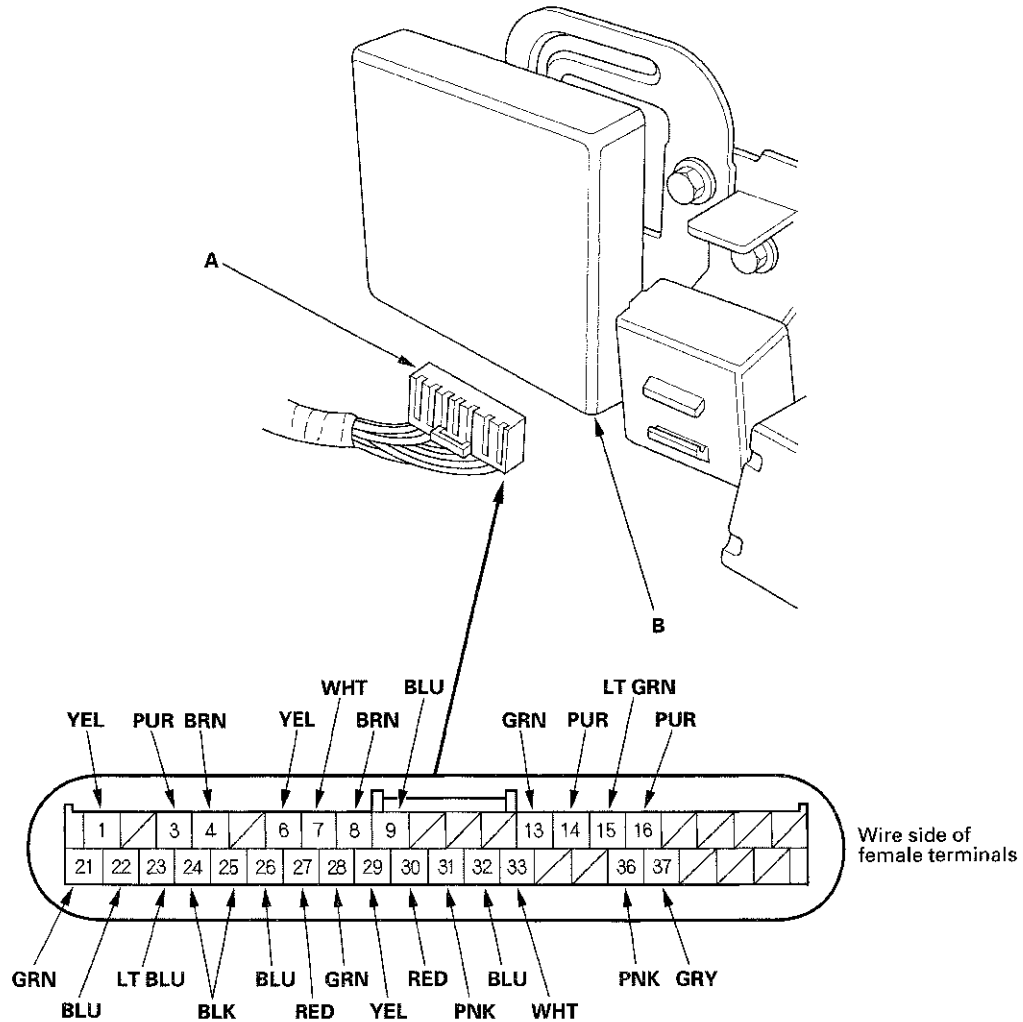
When an HID unit or HID bulb is replaced

1. Turn the combination light switch ON, and make sure the headlights come on.
2. If a headlight was removed, adjust the headlights (see page 22-219).

Adaptive Front Lighting System

Control Unit Input Test

1. Remove the driver's dashboard undercover (see page 20-100), and the driver's dashboard lower cover (see page 20-100).
2. Disconnect the 40P connector (A) from the adaptive front lighting control unit (B).



3. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose, or corroded, repair them as necessary and recheck the system.
 - If the terminals look OK, go to step 4.



4. With the connector still disconnected, do these input tests at the following connector.

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, go to step 5.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
23	LT BLU	Under all conditions	Measure resistance between terminals No. 37 and No. 23: There should be at least 3.5—6.5 Ω .	• Faulty suspension stroke sensor • An open in the wire
37	GRY			
14	PUR	Under all conditions	Measure resistance between terminals No. 14 and No. 23: There should be at least 0.5—4.5 Ω .	• Faulty suspension stroke sensor • An open in the wire
23	LT BLU			
16	PUR	Under all conditions	Measure resistance between terminals No. 16 and No. 23: There should be at least 0.5—4.5 Ω .	• Faulty suspension stroke sensor • An open in the wire
23	LT BLU			
6	YEL	Under all conditions	Measure resistance between terminals No. 6 and No. 8: There should be at least 7.8—9.4 Ω .	• Faulty right adaptive front lighting gearbox • An open in the wire
8	BRN			
7	WHT	Under all conditions	Measure resistance between terminals No. 7 and No. 9: There should be at least 7.8—9.4 Ω .	• Faulty left adaptive front lighting gearbox • An open in the wire
9	BLU			
26	BLU	Under all conditions	Measure resistance between terminals No. 26 and No. 28: There should be at least 7.8—9.4 Ω .	• Faulty right adaptive front lighting gearbox • An open in the wire
28	GRN			
27	RED	Under all conditions	Measure resistance between terminals No. 27 and No. 29: There should be at least 7.8—9.4 Ω .	• Faulty left adaptive front lighting gearbox • An open in the wire
29	YEL			

(cont'd)

Adaptive Front Lighting System

Control Unit Input Test (cont'd)

5. Reconnect the 40P connector to the adaptive front lighting control unit, and do these input tests at the following connector.

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, the control unit must be faulty; replace it.

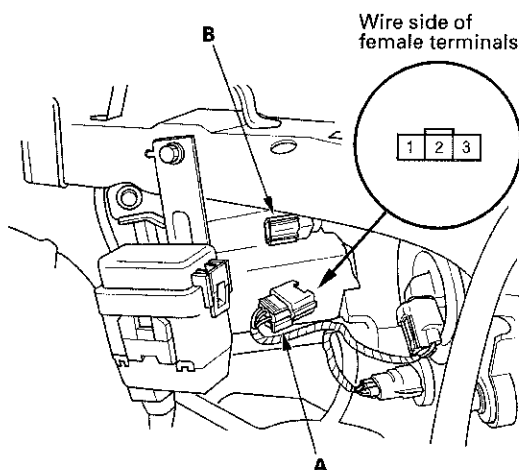
Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
24	BLK	Ignition switch ON (II)	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G401) • An open in the wire
25				
21	GRN	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. 11 (15 A) fuse in the driver's under-dash fuse/relay box • An open in the wire
22	BLU	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. 29 (7.5 A) fuse in the driver's under-dash fuse/relay box • An open in the wire
1	YEL	Ignition switch ON (II) and headlight switch ON	Measure the voltage between terminals No. 1 (+) and No. 30 (—): There should be battery voltage.	• Faulty headlight leveling motor • An open in the wire
30	RED			
36	PNK	Ignition switch ON (II) and headlight switch ON	Measure the voltage between terminals No. 36 (+) and No. 30 (—): There should be at least 2—12 V (voltage should vary depending on leveling motor position).	• Faulty headlight leveling motor • An open in the wire
30	RED			
13	GRN	Ignition switch ON (II) and headlight switch ON	Measure the voltage between terminals No. 13 (+) and No. 31 (—): There should be at least 0.5—4.5 V.	• Faulty left adaptive front lighting gearbox • An open in the wire
31	PNK			
33	WHT	Ignition switch ON (II) and headlight switch ON	Measure the voltage between terminals No. 33 (+) and No. 31 (—): There should be at least 0.5—4.5 V.	• Faulty right adaptive front lighting gearbox • An open in the wire
31	PNK			
32	BLU	Ignition switch ON (II) and headlight switch ON	Measure the voltage between terminals No. 32 (+) and No. 31 (—): There should be at least 4.5—5.5 V.	• Faulty adaptive front lighting gearbox • An open in the wire
31	PNK			
3	PUR	AFS OFF switch pushed	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • Faulty AFS OFF switch • An open in the wire
		AFS OFF switch released	Measure the voltage to ground: There should be at least 5 V.	• Faulty AFS OFF switch • A short to ground in the wire



Headlight Leveling Motor Test

NOTE: Before testing, check the No. 11 (7.5 A) and No. 29 (7.5 A) fuses in the driver's under-dash fuse/relay box.

1. Disconnect the 3P connector (A) from the headlight leveling motor (B).



2. Check for continuity between headlight leveling motor 3P connector terminal No. 3 and body ground. There should be continuity.
 - If there is continuity, go to step 3.
 - If there is no continuity, check for:
 - Faulty adaptive front lighting control unit.
 - An open in the wire between the adaptive front lighting control unit and the headlight leveling motor.
 - Poor ground (G 401).

3. Turn the ignition switch to ON (II).

4. Measure the voltage between headlight leveling motor 3P connector terminal No. 1 and body ground. There should be battery voltage.

- If there is battery voltage, go to step 5.
- If there is no voltage, check for:
 - Faulty adaptive front lighting control unit.
 - An open in the wire between the adaptive front lighting control unit and the headlight leveling motor.

5. Turn the headlight switch ON.

6. Measure the voltage between headlight leveling motor 3P connector terminal No. 2 and body ground. There should be about 3–13 V.

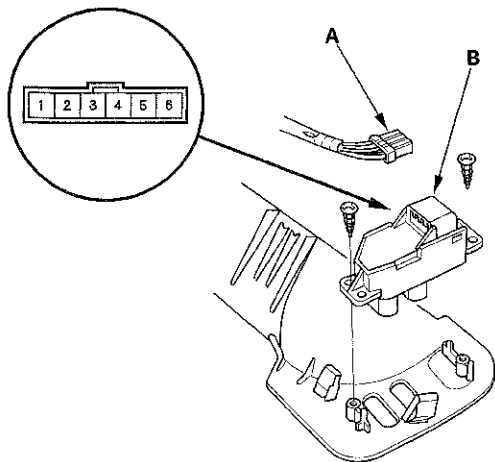
NOTE: The voltage will vary depending on the vehicle position.

- If there is battery voltage, replace the headlight leveling motor (see page 22-276).
- If there is no voltage, check for:
 - Faulty adaptive front lighting control unit.
 - An open in the wire between the adaptive front lighting control unit and the headlight leveling motor.

Adaptive Front Lighting System

AFS OFF Switch Test/Replacement

- 1. Remove the instrument fascia (see page 20-99).
- 2. Disconnect the 6P connector (A) from the AFS OFF switch (B).



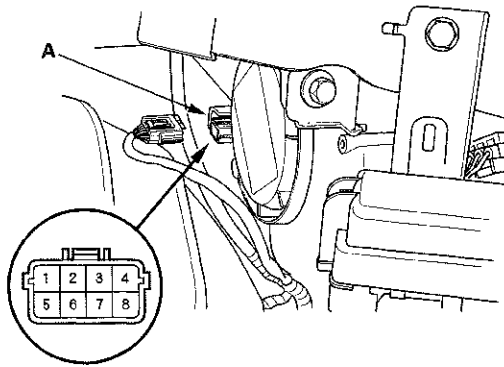
- 3. Check for continuity between terminals in each switch position according to the table.

Terminal	5	6	1	2
Position				
ON	○	○	⊕	⊖
OFF			⊕	⊖

- 4. If the continuity is not as specified, remove the screws and replace the switch.
- 5. After replacement, do the adaptive front lighting control unit learning procedure (see page 22-265).

Adaptive Front Lighting Gearbox Test

- 1. Disconnect the adaptive front lighting gearbox 8P connector (A) from the headlight.

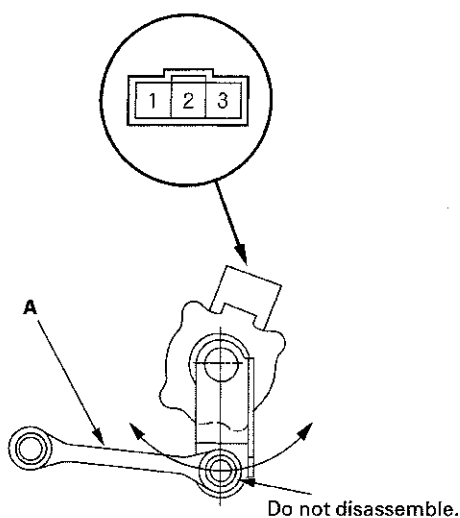


- 2. Measure the resistance between adaptive front lighting gearbox 8P connector terminals No. 4 and No. 7, and between terminals No. 3 and No. 8. There should be about 4.5—5.5 Ω.
- 3. If the resistance is not as specified, replace the adaptive front lighting gearbox.
- 4. After replacement, do the adaptive front lighting control unit learning procedure (see page 22-265).



Suspension Stroke Sensor Test

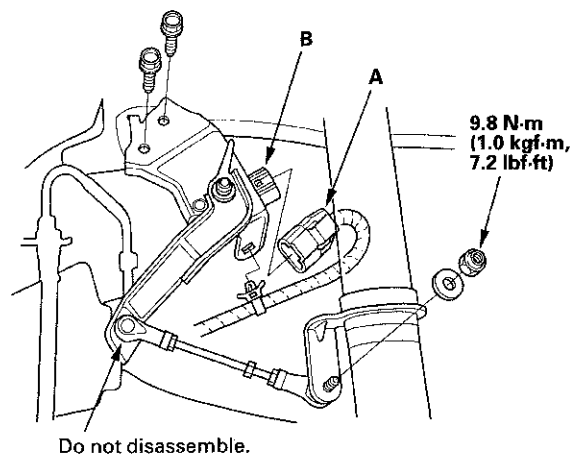
1. Remove the suspension stroke sensor (see page 22-273).
2. Measure the resistance between suspension stroke sensor 3P connector terminals No. 1 and No. 3. There should be about 3.5—6.5 k Ω .
3. Measure the resistance between suspension stroke sensor 3P connector terminals No. 2 and No. 3 with the linkage (A) moved. There should be about 0.5—4.5 k Ω .



4. If the resistance is not as specified, replace the suspension stroke sensor (see page 22-273).
5. After replacement, do the adaptive front lighting control unit learning procedure (see page 22-265).

Suspension Stroke Sensor Replacement

1. Lift the vehicle, and support it with safety stands (see page 1-8).
2. Disconnect the 3P connector (A) from the suspension stroke sensor (B).



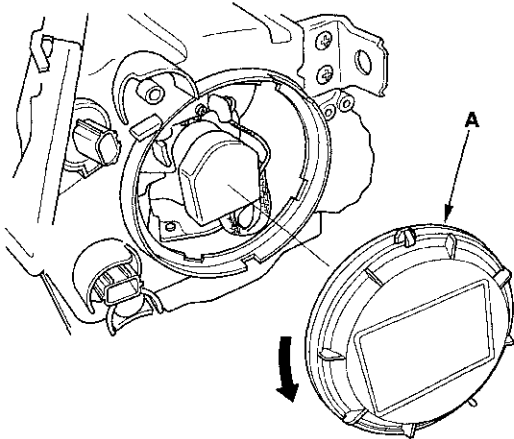
3. Remove the bolts and nut, then remove the suspension stroke sensor.
4. Install the sensor in the reverse order of removal.
5. After replacement, do the adaptive front lighting control unit learning procedure (see page 22-265).

Adaptive Front Lighting System

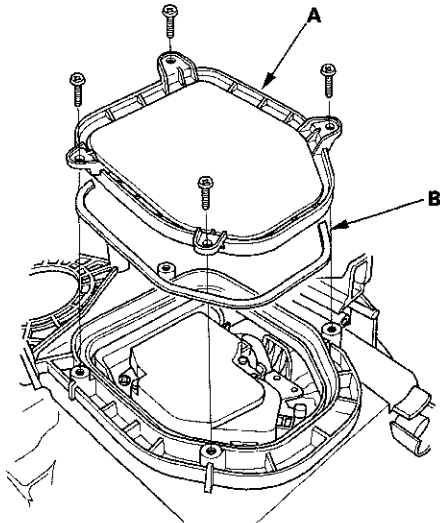
Adaptive Front Lighting Gearbox Replacement

Removal

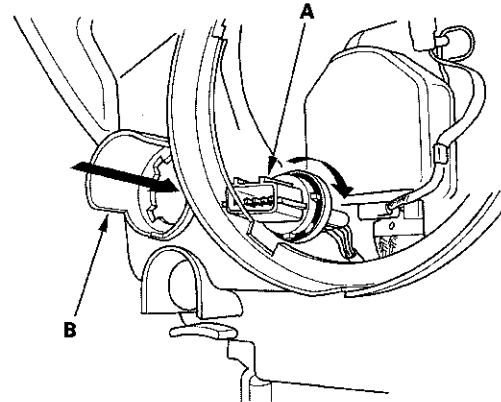
1. Remove the headlight assembly (see page 22-220).
2. Remove the HID unit from the headlight (see page 22-223).
3. Turn the cover (A) 45 ° counterclockwise to remove it from the headlight housing.



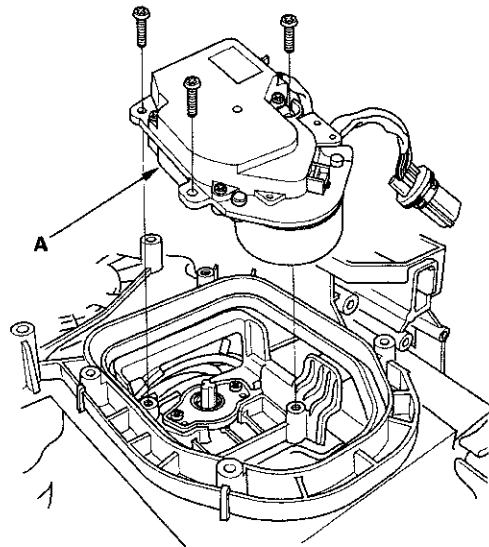
4. Remove the screws and the adaptive front lighting gearbox cover (A) and gasket (B).



5. Turn the adaptive front lighting gearbox connector (A) 45 ° clockwise, and push the connector into the headlight housing (B).

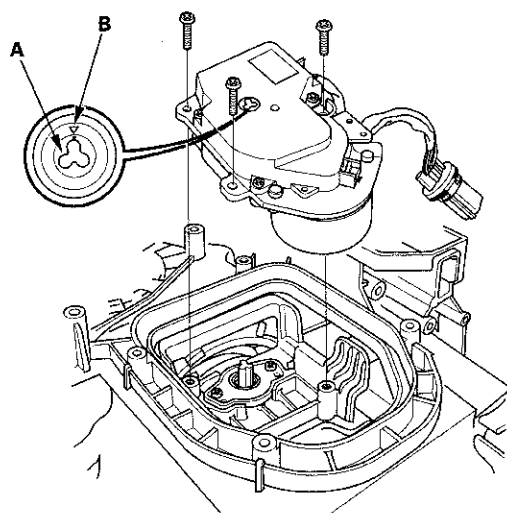


6. Remove the three screws and the adaptive front lighting gearbox (A).

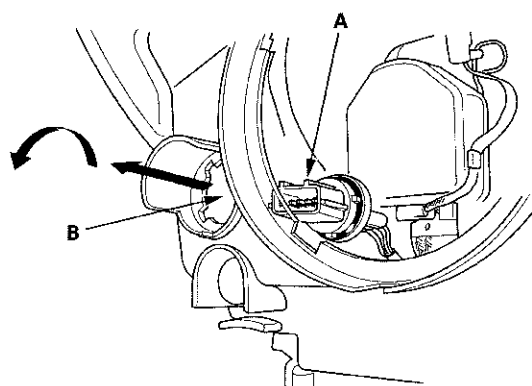


Installation

1. Align the gearbox cam (A) with the mark (B) on the gearbox, then install the gearbox in the reverse order of removal.

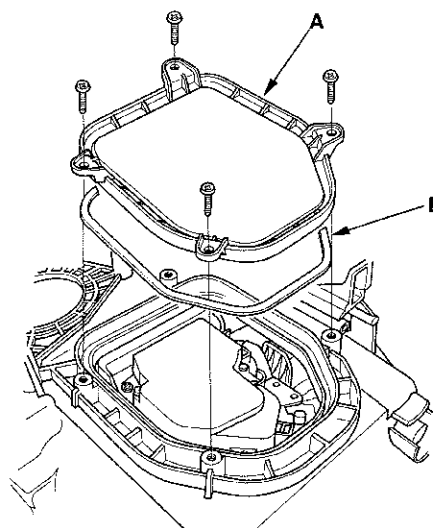


2. Route the adaptive front lighting gearbox connector (A) through the hole (B) in the reverse order of removal.



3. Install the adaptive front lighting gearbox cover (A).

NOTE: Check the gasket (B) of the gearbox cover, and replace it if it is destroyed or compressed.

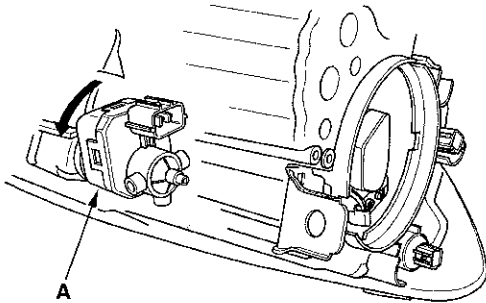


4. After installation, do the adaptive front lighting control unit learning procedure (see page 22-265).

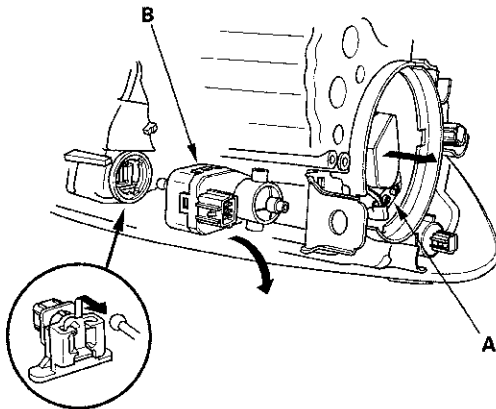
Adaptive Front Lighting System

Headlight Leveling Motor Replacement

1. Remove the headlight assembly (see page 22-220).
2. Turn the HID light cover 45 ° counterclockwise to remove it from the headlight housing (see step 4 on page 22-221).
3. Turn the headlight leveling motor (A) 45 ° clockwise.



4. Pull the headlight reflector (A) slightly, and remove the headlight leveling motor (B).



5. Install the parts in the reverse order of removal.
6. After installation, do the adaptive front lighting control unit learning procedure (see page 22-265).