

# General Information

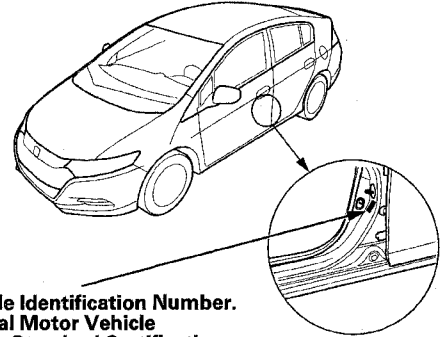
## Chassis and Paint Codes - '10 Model

### Vehicle Identification Number

J H M Z E 2 H 5 \* A S 0 0 0 0 0 1

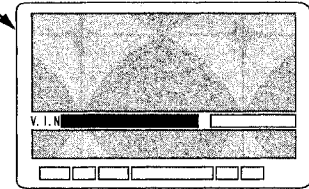
a b c d e f g h

- a. **Manufacturer, Make and Type of Vehicle**  
JHM: Honda Motor Co., Ltd.  
Honda passenger vehicle
- b. **Line, Body and Engine Type**  
ZE2: Insight/LDA3
- c. **Body Type and Transmission Type**  
H: 4-door Hatchback/CVT
- d. **Vehicle Grade (Series)**  
5: LX  
7: EX, EX with Navigation System
- e. **Check Digit**
- f. **Model Year**  
A: '10
- g. **Factory Code**  
S: Suzuka Factory in Japan
- h. **Serial Number**  
000001 —: USA models  
800001 —: Canada models



Vehicle Identification Number.  
Federal Motor Vehicle  
Safety Standard Certification.

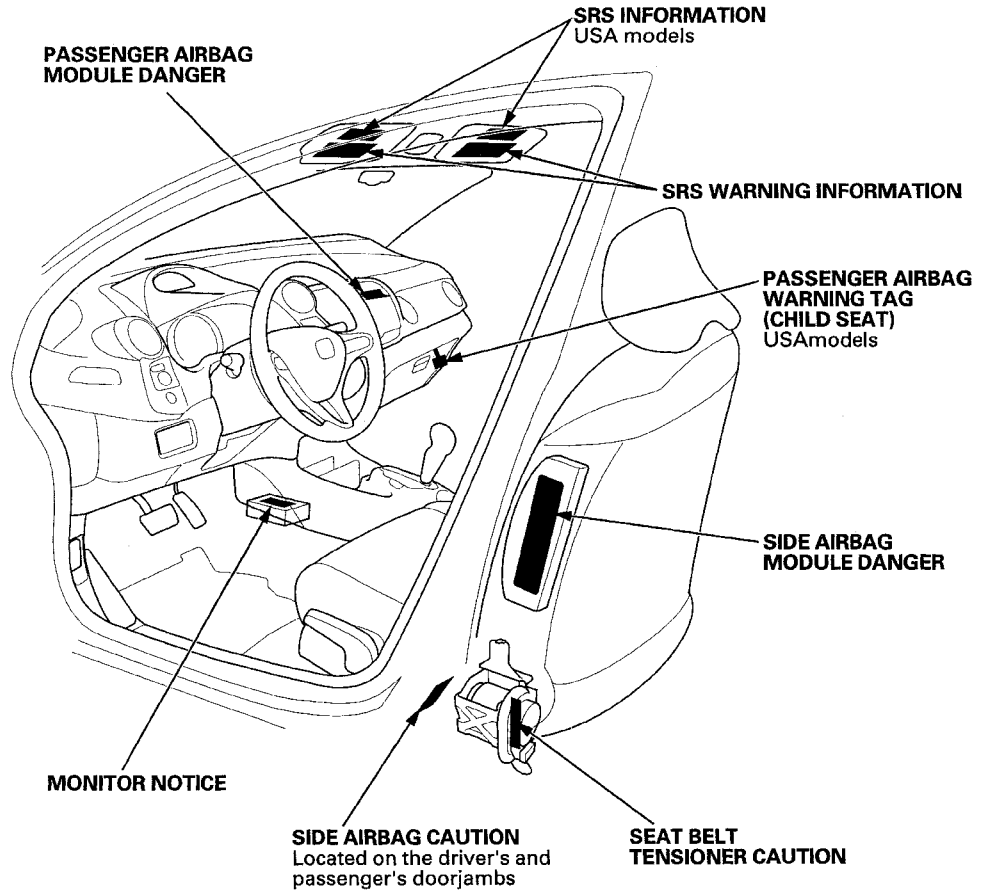
Vehicle Identification Number.  
Canadian Motor Vehicle  
Safety Standard Certification.



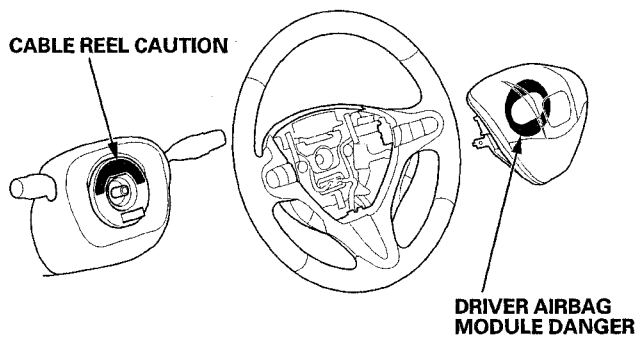


## Danger/Warning/Caution Label Locations

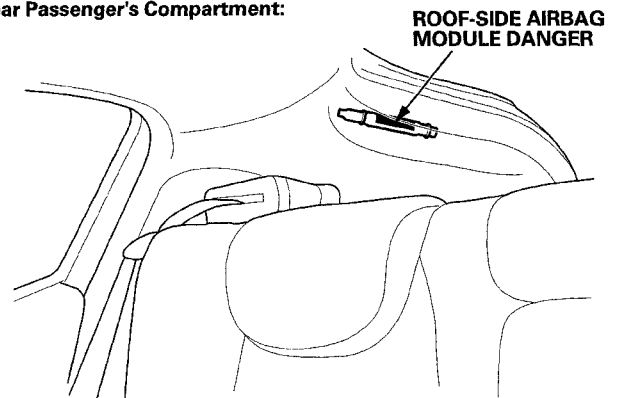
### Passenger's Compartment:



### Steering Wheel:



### Rear Passenger's Compartment:

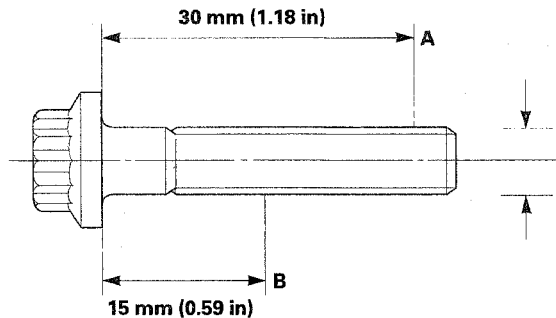


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# Engine Block

## Connecting Rod Bolt Inspection

1. Measure the diameter of each connecting rod bolt at point A and point B with a micrometer.



2. Calculate the difference in diameter between point A and point B.

**Point A – Point B = Difference in Diameter**

**Difference in Diameter:**  
**Specification: 0–0.05 mm**  
**(0–0.002 in)**

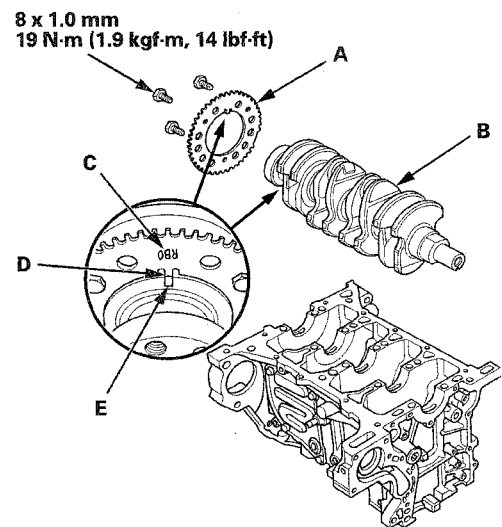
3. If the difference in diameter is out of tolerance, replace the connecting rod bolt.

## Crankshaft Installation

### Special Tools Required

- Driver Handle, 15 x 135L 07749-0010000
- Oil Seal Driver Attachment, 96 mm 07ZAD-PNAA100

1. Check the main bearing clearance with plastigage (see page 7-6).
2. Check the connecting rod bearing clearance with plastigage (see page 7-8).
3. Install the bearing halves in the engine block and the connecting rods.
4. Apply new engine oil to the main bearings and the rod bearings.
5. Install the CKP pulse plate (A) on the crankshaft (B); face the marked side (C) toward the transmission, and align the tab (D) on the CKP pulse plate with the groove (E) on the crankshaft.



6. Hold the crankshaft so rod journal No. 2 and rod journal No. 3 are straight up, and lower the crankshaft into the engine block.



35. Do an engine compression and a cylinder leakdown test (see page 6-6).

*Did the engine pass both tests?*

**YES**—Go to step 36.

**NO**—Repair the engine, then go to step 49.

36. Do the VTEC rocker arm test (see page 6-7).

*Did the engine pass the test?*

**YES**—Go to step 37.

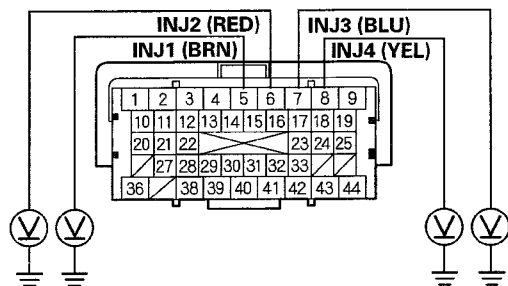
**NO**—Repair the VTEC rocker arm (see page 6-31), then go to step 49.

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

38. Measure the voltage between body ground and the appropriate PCM connector terminal of the problem cylinder (see table).

PROBLEM CYLINDER	DTC	PCM TERMINAL	WIRE COLOR
No. 1	P0301	C5	BRN
No. 2	P0302	C6	RED
No. 3	P0303	C7	BLU
No. 4	P0304	C8	YEL

PCM CONNECTOR C (44P)



Terminal side of female terminals

*Is there battery voltage?*

**YES**—Go to step 43.

**NO**—Go to step 39.

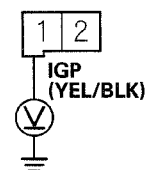
39. Turn the ignition switch to LOCK (0).

40. Disconnect the injector 2P connector from the problem cylinder.

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

42. Measure the voltage between injector 2P connector terminal No. 1 and body ground.

INJECTOR 2P CONNECTOR



Wire side of female terminals

*Is there battery voltage?*

**YES**—Go to step 43.

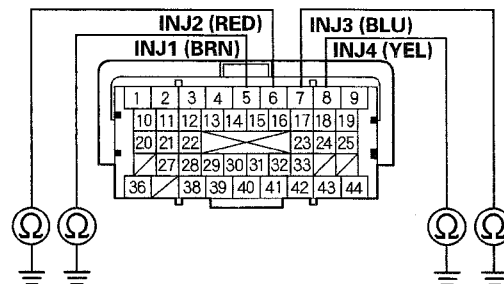
**NO**—Repair an open in the wire between the injector and PGM-FI main relay 1, then go to step 49.

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

44. Check for continuity between body ground and the appropriate PCM connector terminal of the problem cylinder (see table).

PROBLEM CYLINDER	DTC	PCM TERMINAL	WIRE COLOR
No. 1	P0301	C5	BRN
No. 2	P0302	C6	RED
No. 3	P0303	C7	BLU
No. 4	P0304	C8	YEL

PCM CONNECTOR C (44P)



Terminal side of female terminals

*Is there continuity?*

**YES**—Repair a short in the wire between the PCM and the injector, then go to step 49.

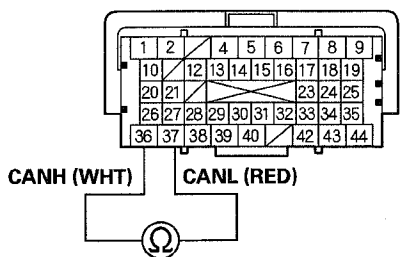
**NO**—Go to step 45.

(cont'd)



19. Disconnect the VSA modulator-control unit 47P connector (with VSA) or ABS modulator-control unit 47P connector (with ABS).
20. Reconnect MCM connector A (31P).
21. Measure the resistance between PCM connector terminals A36 and A37.

PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there about 108 – 132 kΩ?

**YES**—Go to step 22.

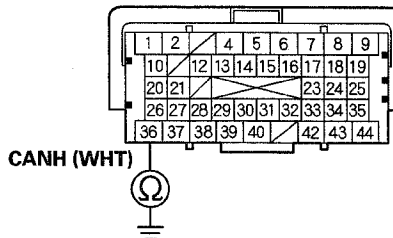
**NO**—Substitute a known-good MCM (see page 12-185). If the HDS identifies the vehicle, replace the original MCM (see page 12-185). ■

22. Disconnect these connectors:

- Gauge control module 32P (see page 22-314)
- VSA modulator-control unit 47P (with VSA) (see page 19-158)
- Yaw rate-lateral acceleration sensor 4P (with VSA) (see page 19-155)
- ABS modulator-control unit 47P (with ABS) (see page 19-95)
- EPS control unit C (16P) (see page 17-65)
- SRS unit A (39P) (see page 24-206)
- MCM A (31P) (see page 12-185)
- TPMS control unit 20P (see page 18-71)

23. Check for continuity between PCM connector terminal A36 and body ground.

PCM CONNECTOR A (44P)



Terminal side of female terminals

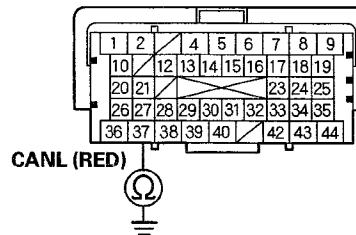
Is there continuity?

**YES**—Repair a short in the wire between PCM terminal A36 and the gauge control module, the VSA modulator-control unit, the yaw rate-lateral acceleration sensor, the ABS modulator-control unit, the EPS control unit, the SRS unit, the TPMS control unit, the MCM, or the DLC. ■

**NO**—Go to step 24.

24. Check for continuity between PCM connector terminal A37 and body ground.

PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

**YES**—Repair a short in the wire between PCM terminal A37 and the gauge control module, the VSA modulator-control unit, the yaw rate-lateral acceleration sensor, the ABS modulator-control unit, the EPS control unit, the SRS unit, the TPMS control unit, the MCM, or the DLC. ■

**NO**—Go to step 25.

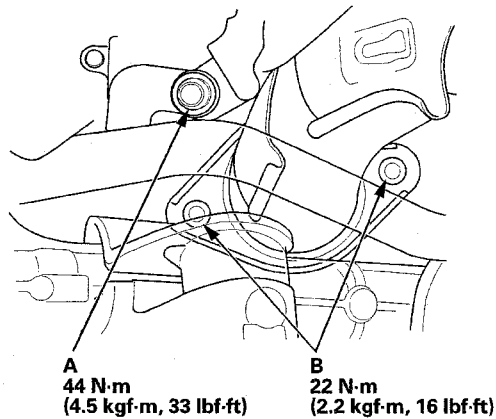
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# Catalytic Converter System

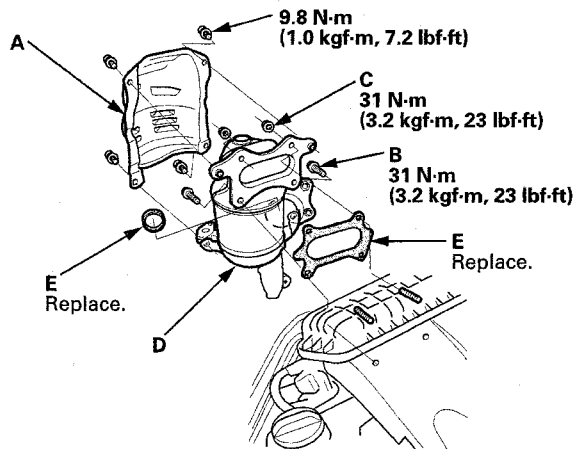
## Warm Up TWC Removal/Installation

NOTE: If the warm up TWC is damaged internally, inspect the under-floor TWC for debris.

1. Raise the vehicle on a lift.
2. Remove the bolts (A, B).



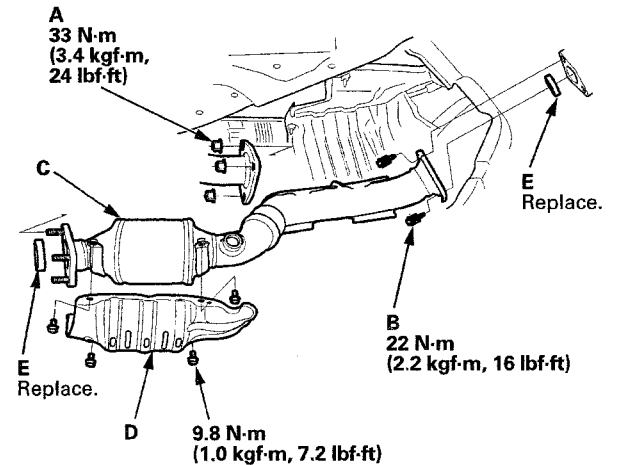
3. Remove the cowl cover and the under-cowl panel (see page 20-151).
4. Remove the EGR pipe (see page 11-333).
5. Remove the A/F sensor (Sensor 1) (see page 11-204).
6. Remove the cover (A).



7. Remove the bolts (B) and the nuts (C).
8. Remove the WU-TWC (D).
9. Install the parts in the reverse order of removal with new gaskets (E).

## Under-Floor TWC Removal/Installation

1. Raise the vehicle on a lift.
2. Remove secondary HO2S (Sensor 2) (see page 11-204).
3. Remove the nuts (A) and the bolts (B).

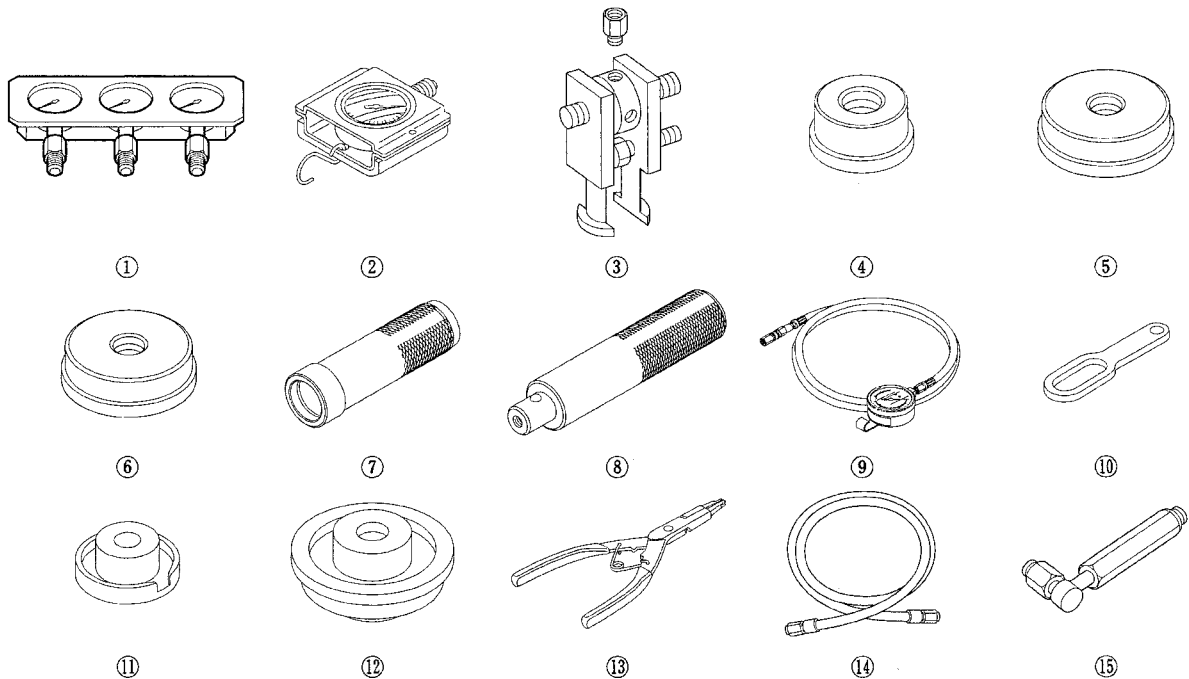


4. Remove the under-floor TWC (C).
5. Remove the cover (D).
6. Install the parts in the reverse order of removal with new gaskets (E).

# CVT

## Special Tools

Ref.No.	Tool Number	Description	Qty
①	07406-0020401 or 07406-0020400	A/T Oil Pressure Gauge Set	1
②	07406-0070301	A/T Low Pressure Gauge w/Panel	1
③	07736-A01000B	Adjustable Bearing Puller, 20—40 mm	1
④	07746-0010200	Bearing Driver Attachment, 37 x 40 mm	1
⑤	07746-0010500	Bearing Driver Attachment, 62 x 68 mm	1
⑥	07746-0010600	Bearing Driver Attachment, 72 x 75 mm	1
⑦	07746-0030100	Driver Handle, 40 mm I.D.	1
⑧	07749-0010000	Driver Handle, 15 x 135L	1
⑨	07AAJ-PLYA100	A/T High Pressure Gauge	1
⑩	07AAK-SNAA120	Universal Lifting Eyelet	1
⑪	07JAD-PH80101	Oil Seal Driver Attachment, 58 mm	1
⑫	07JAD-PN00100	Oil Seal Driver Attachment, 64 X 72 mm	1
⑬	07LGC-0010100	Snap Ring Pliers	1
⑭	07MAJ-PY4011A	A/T Pressure Hose, 2,210 mm	1
⑮	07MAJ-PY40120	A/T Pressure Adapter	1
⑯	07NAD-PX40100	Bearing Driver Attachment, 78 x 80 mm	1
⑰	07TAE-P4V0110	Reverse Brake Spring Compressor	1
⑱	07TAE-P4V0120	Start Clutch Remover	1
⑲	07TAE-P4VA131	Start Clutch Installer	1

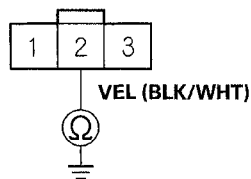


# CVT

## DTC Troubleshooting (cont'd)

23. Check for continuity between vehicle speed sensor connector terminal No. 2 and body ground.

### VEHICLE SPEED SENSOR CONNECTOR



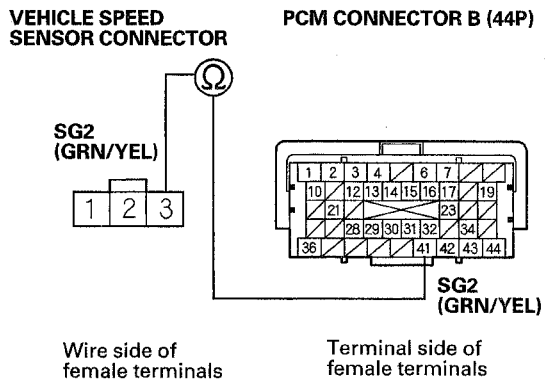
Wire side of female terminals

*Is there continuity?*

**YES**—Repair a short to body ground in the wire between PCM connector terminal B34 and the vehicle speed sensor connector, then go to step 26.

**NO**—Go to step 24.

24. Check for continuity between PCM connector terminal B41 and vehicle speed sensor connector terminal No. 3.



Wire side of female terminals

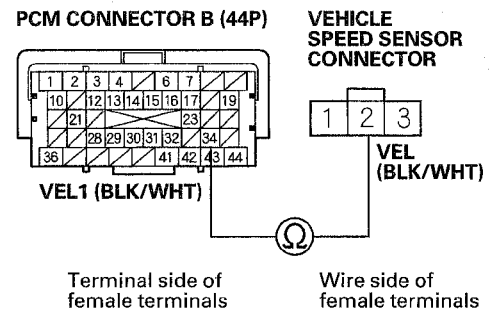
Terminal side of female terminals

*Is there continuity?*

**YES**—Go to step 25.

**NO**—Repair an open in the wire between the vehicle speed sensor connector and PCM connector terminal B41, then go to step 26.

25. Check for continuity between PCM connector terminal B34 and vehicle speed sensor connector terminal No. 2.



Terminal side of female terminals

Wire side of female terminals

*Is there continuity?*

**YES**—Go to step 32.

**NO**—Repair an open in the wire between PCM connector terminal B34 and the vehicle speed sensor connector, then go to step 26.

26. Reconnect all connectors.

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

28. Clear the DTC with the HDS.

29. Start the engine, disable the VSA by pressing the VSA OFF button (if equipped), run the vehicle with the shift lever in D, until the vehicle speed reaches 37 mph (60 km/h), then slow down and stop the wheels.

30. Check for Pending or Confirmed DTCs with the HDS.

*Is DTC P0502 indicated?*

**YES**—Check for poor connections or loose terminals between the vehicle speed sensor and the PCM, then go to step 1.

**NO**—Go to step 31.

31. Monitor the OBD STATUS for P0502 in the DTCs MENU with the HDS.

*Does the HDS indicate PASSED?*

**YES**—Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 30, go to the indicated DTC's troubleshooting. ■

**NO**—If the HDS indicates FAILED, check for poor connections or loose terminals between the vehicle speed sensor and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 29.

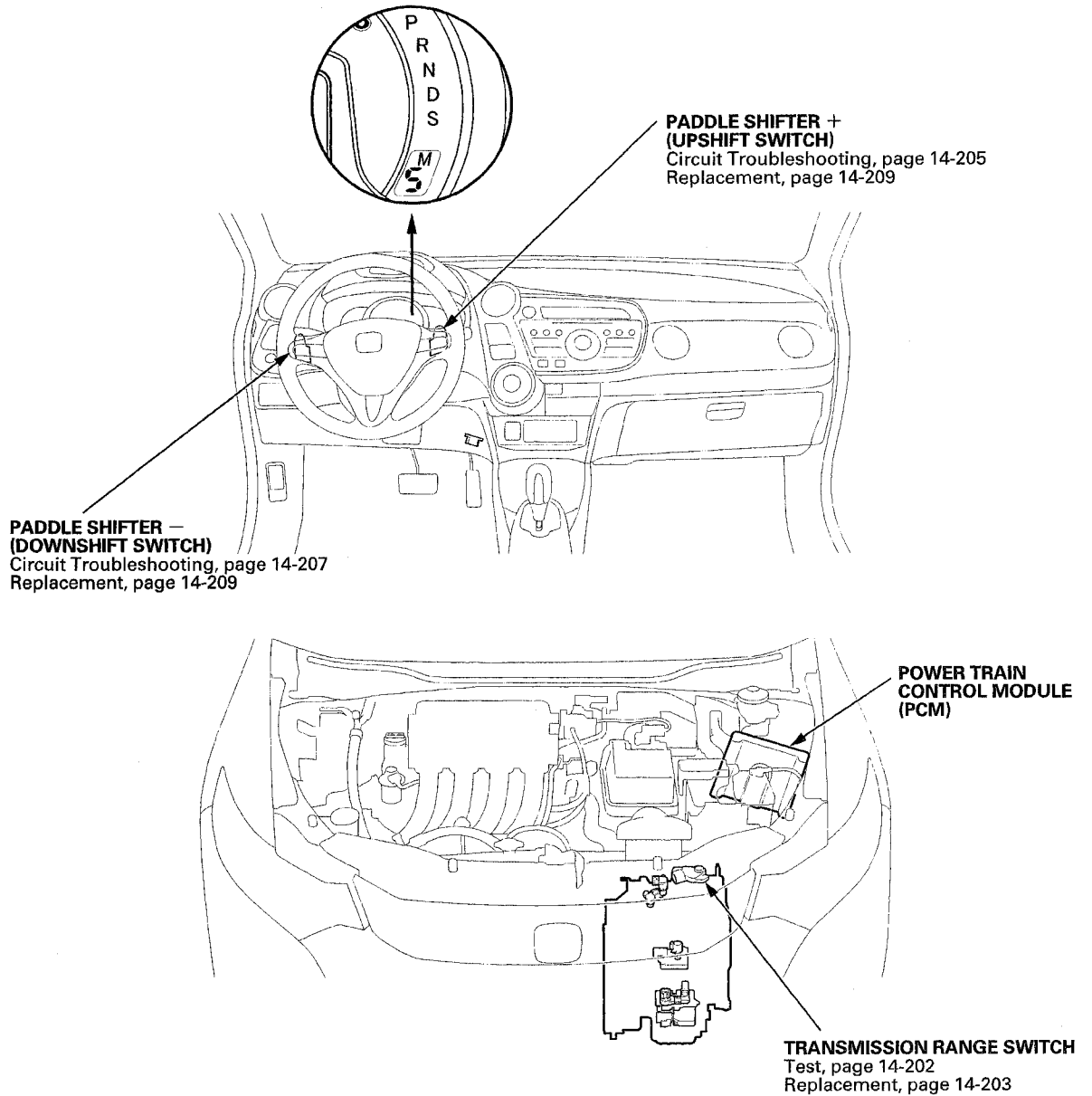


# A/T Gear Position Indicator

## Component Location Index

### Five - position Transmission

**A/T GEAR POSITION INDICATOR**  
F-CAN Communication Circuit  
Troubleshooting, page 22-300  
Gauge Control Module Self-diagnostic Function  
Indicator Drive Circuit Check, page 22-290



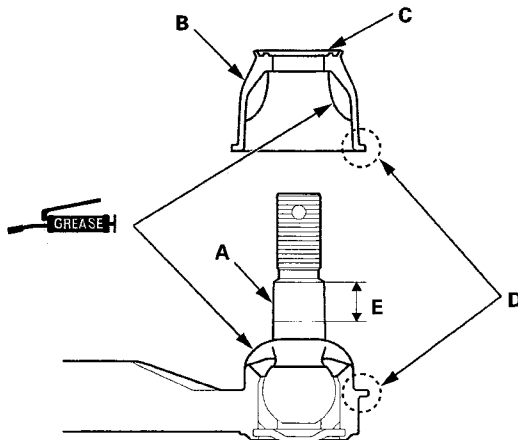
# Steering

## Tie-Rod End Ball Joint Boot Replacement

### Special Tools Required

Driver, 33.5 mm 07AAD-SAAA100

1. Disconnect the tie-rod end ball joint from the knuckle (see page 18-11).
2. Remove the tie-rod end from the rack end.
3. Remove the ball joint boot from the tie-rod end, and wipe the old grease off the ball pin.
4. Pack the lower area of the ball pin (A) with fresh multipurpose grease.

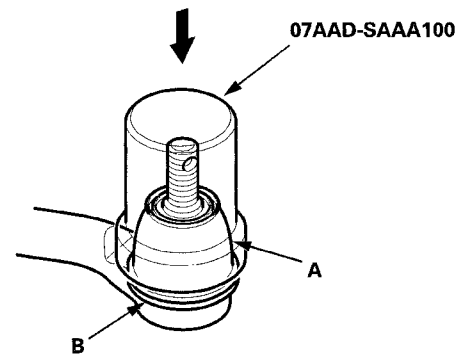


5. Pack the interior of the new tie-rod ball joint boot (B) and lip (C) with fresh multipurpose grease.

Note these items when installing new grease:

- Keep grease off the boot mounting area (D) and the tapered section (E) of the ball pin.
- Do not allow dust, dirt, or other foreign materials to enter the boot.

6. Install the new tie-rod end ball joint boot (A) using the 33.5 mm driver. The boot must not have a gap at the boot installation sections (B). After installing the boot, check the ball pin tapered section for grease contamination, and wipe it if necessary.



7. Install the tie-rod end to the rack end.
8. Connect the tie-rod end ball joint to the knuckle (see page 18-11).
9. Check the wheel alignment, and adjust it if necessary (see page 18-5).

# Conventional Brake Components

## Master Cylinder Replacement

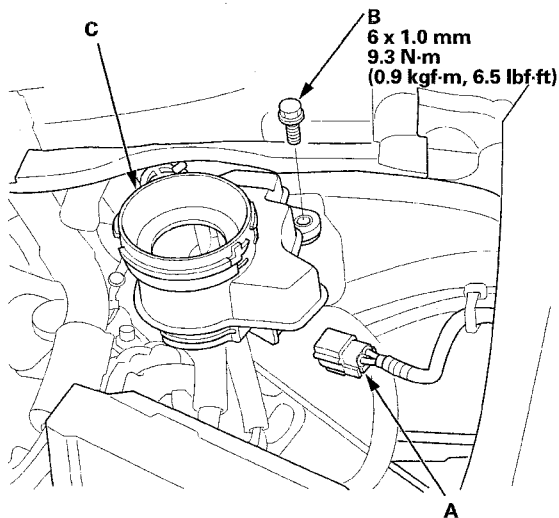
### NOTICE

Do not spill brake fluid on the vehicle; it may damage the paint. If brake fluid gets on the paint, wash it off immediately with water.

### NOTE:

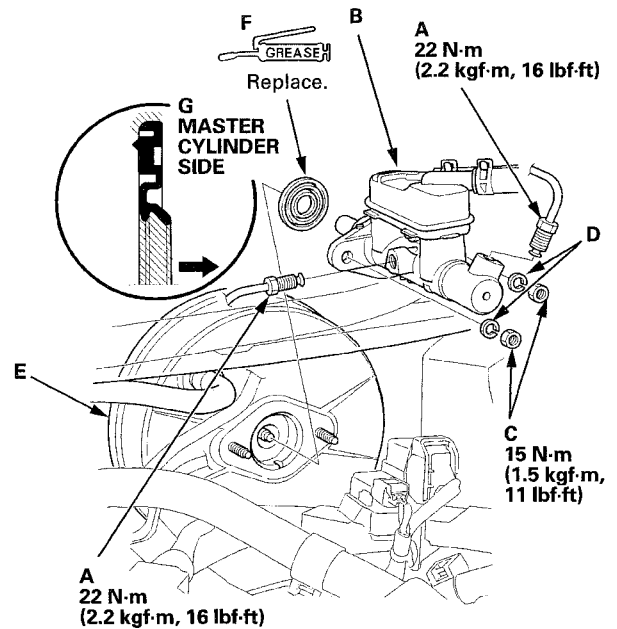
- Be careful not to damage or bend the brake lines during removal and installation.
- Plug the ends of the hoses and joints to prevent spilling brake fluid.

1. Remove the air cleaner (see page 11-314).
2. Remove the reservoir tank cap, then remove the brake fluid from the reservoir tank with a syringe.
3. Disconnect the brake fluid level switch connector (A).



4. Remove the reservoir tank mounting bolt (B) from the bracket (C).

5. Disconnect the brake lines (A) from the master cylinder (B). To prevent spills, cover the hose joints with rags or shop towels.



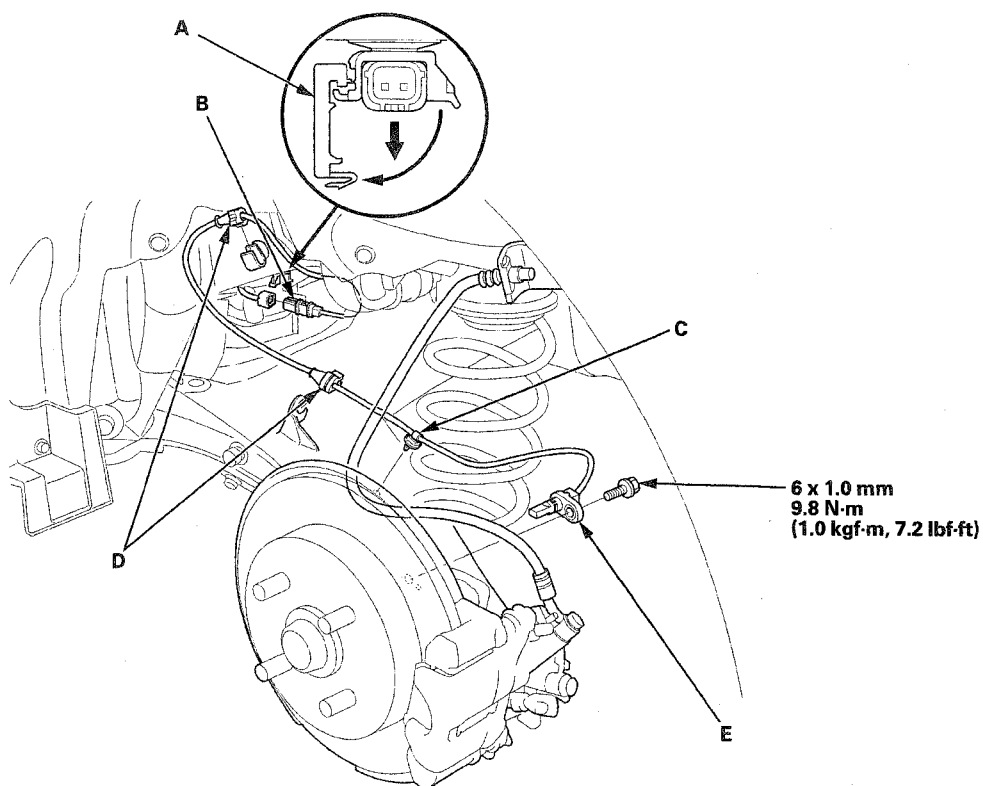
6. Remove the master cylinder mounting nuts (C) and washers (D).
7. Remove the master cylinder from the brake booster (E). Be careful not to bend or damage the brake lines when removing the master cylinder.
8. Remove the rod seal (F) from the master cylinder.

NOTE: During installation, set the new rod seal onto the master cylinder with its grooved side (G) toward the master cylinder.

9. Install the master cylinder in the reverse order of removal, and note these items:
  - Coat the inner bore lip and the outer circumference of the new rod seal with the shin-etsu silicone grease (P/N 08798-9013).
  - Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.
  - Check the brake pedal height and free play after installing the master cylinder, and adjust it if necessary (see page 19-6).
10. Bleed the brake system (see page 19-9).
11. Spin the wheels to check for brake drag.

## Rear

1. Turn the ignition switch to LOCK (0).
2. Remove the rear wheels.
3. Release the connector holding clamps (A), then disconnect the wheel sensor connector (B).



4. Remove the clip (C) and the wire guide grommets (D).
5. Remove the bolt and the wheel speed sensor (E).
6. Install the wheel speed sensor in the reverse order of removal, and note these items:
  - Do not twist the sensor wires.
  - If the wheel speed sensor comes in contact with the hub bearing unit, it is faulty.
  - Make sure there is no debris in the sensor mounting hole.
7. Start the engine, and make sure the ABS and the VSA indicators go off.
8. Test-drive the vehicle, and make sure the ABS and the VSA indicators do not come on.

# Frame

## Frame Repair Chart

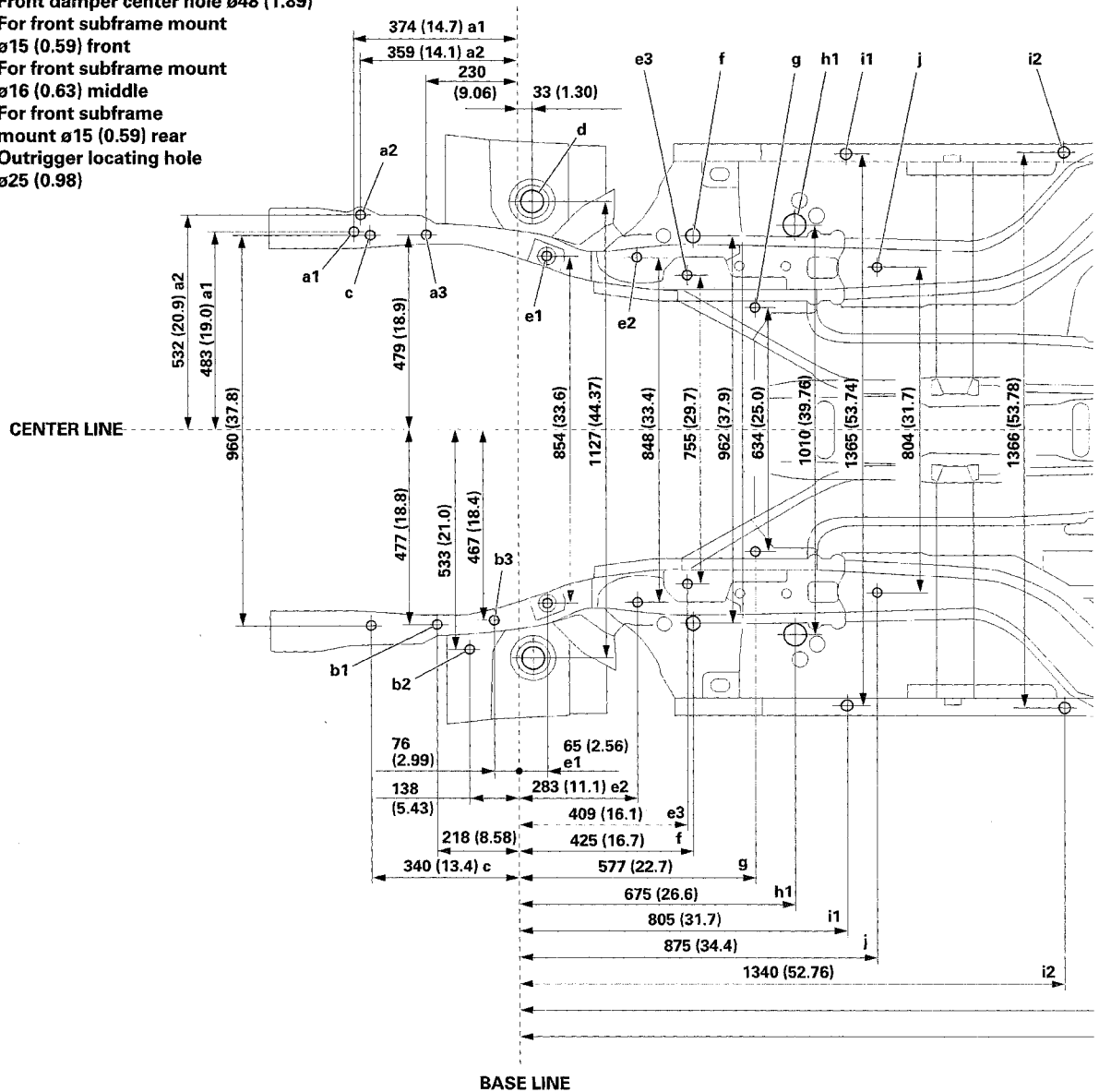
Top View

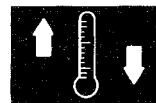
Unit: mm (in)

ø: Inner diameter

- a1 For engine side mount ø15 (0.59) front
- a2 For engine side mount ø13 (0.51) outer
- a3 For engine side mount ø15 (0.59) rear
- b1 For transmission mount ø15 (0.59) front
- b2 For transmission mount ø15 (0.59) wheelwell side
- b3 For transmission mount ø15 (0.59) rear
- c Front side frame locating hole ø16 (0.63)
- d Front damper center hole ø48 (1.89)
- e1 For front subframe mount ø15 (0.59) front
- e2 For front subframe mount ø16 (0.63) middle
- e3 For front subframe mount ø15 (0.59) rear
- f Outrigger locating hole ø25 (0.98)

- g Floor side crossmember locating hole ø10 (0.39)
- h1 Front floor locating hole ø50 (1.97) front
- i1 Inside sill locating hole ø25 (0.98) front
- i2 Inside sill locating hole ø25 (0.98) rear
- j Front floor frame locating hole ø25 (0.98)





## System Evacuation

### Special Tools Required

Compact Electronic Vacuum Gauge Robinair ROB14777, commercially available

\*This tool is available through the Honda Tool and Equipment Program; call 888-424-6857

### CAUTION

- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapor.

#### NOTE:

- If accidental system discharge occurs, ventilate the work area before resuming service.
- Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.
- Do not allow moisture to contaminate the A/C system oil. Moisture in the oil is difficult to remove, and it can damage the A/C compressor.
- Using a compact electronic vacuum gauge may decrease the required evacuation time because you can measure actual moisture level with this tool.

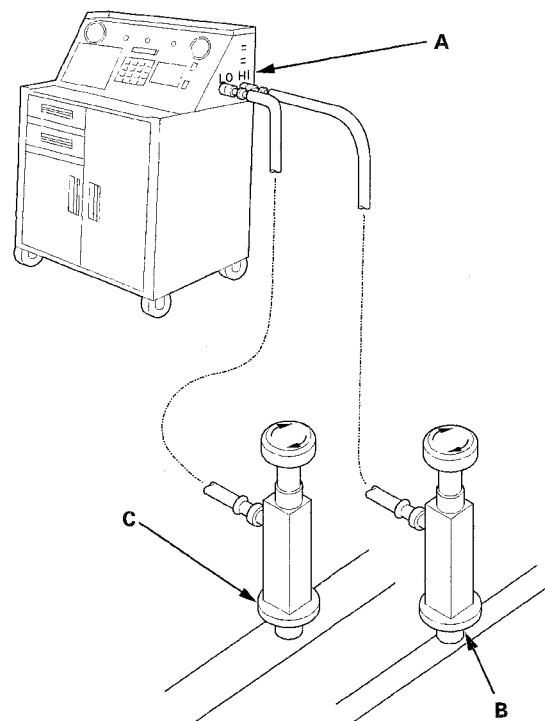
A more efficient way to measure moisture removal is with a special tool called a compact electronic vacuum gauge, measuring vacuum levels in microns.

Connect the tool according to the manufacturers instructions, and allow the vacuum pump to run until the gauge reads 500 microns.

Shut off and isolate the vacuum pump, then observe the gauge reading:

- If the vacuum level remains stable for at least 3 minutes, all moisture in the system has been removed.
  - A slow increase in the micron reading means there is still moisture boiling out of the system. Restart the vacuum pump and continue evacuating.
  - A quick increase of micron levels indicates a leak is present in the system or your service equipment. Determine the cause and correct the leak before continuing.
1. When an A/C System has been opened to the atmosphere, such as during installation or repair, it must be evacuated using an R-134a refrigerant recovery/recycling/charging station. If the system has been open for several days, the receiver/dryer should be replaced, refrigerant oil should be drained and replaced with new oil, and the system should be evacuated for several hours.

2. Connect an R-134a refrigerant recovery/recycling/charging station (A) to the high-pressure service port (B) and the low-pressure service port (C), as shown, following the equipment manufacturer's instructions. Recover the refrigerant, if any, from the A/C system (see page 21-112).



3. Evacuate the system. The vacuum pump should run for a minimum of 30 minutes to eliminate all moisture from the system. When the suction gauge reads  $-93.3 \text{ kPa}$  ( $-700 \text{ mmHg}$ ,  $-27.55 \text{ inHg}$ ) for at least 30 minutes, close all valves, and turn off the vacuum pump.
4. If the suction gauge does not reach approximately  $-93.3 \text{ kPa}$  ( $-700 \text{ mmHg}$ ,  $-27.55 \text{ inHg}$ ) in 15 minutes, there is probably a large leak in the system. Partially charge the system, and check for leaks (see page 21-81).

# Exterior Lights

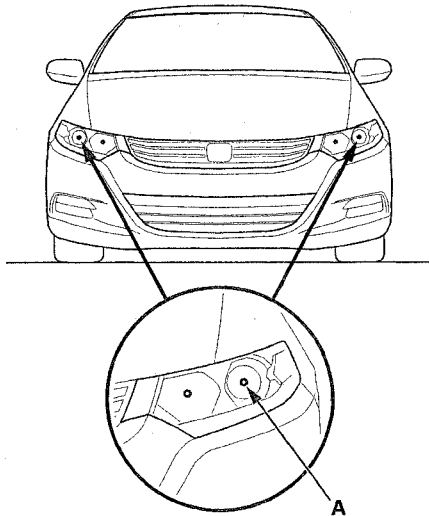
## Headlight Adjustment

### ⚠ CAUTION

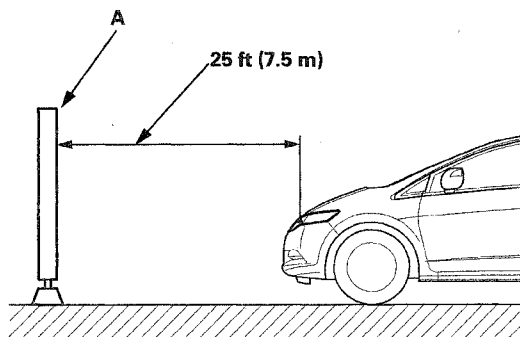
Headlights become very hot during use; do not touch them or any attaching hardware immediately after they have been turned off.

Before adjusting the headlights:

- Park the vehicle on a level surface.
  - Make sure the tire pressures are correct.
  - The driver or someone who weighs the same should sit in the driver's seat (or an equivalent amount of weight).
  - Unload the vehicle.
1. Clean the outer lens so that you can see the center (A) of the headlights.



2. Park the vehicle in front of a wall or a screen (A).



3. Turn the low beams on.

4. Determine if the headlights are aimed properly.

Vertical adjustment:

Measure the height of the headlights (A).

Adjust the cut line (B) to the light's height.

