2004 Model

Vehicle Identification Number

2HN YD1 8 6 * 4 H 500001

a b c d e f g h

a. Manufacturer, Make, and Type of Vehicle
2HN: HONDA OF CANADA MFG.,
HONDA CANADA INC.
ACURA, Multipurpose passenger vehicle

b. Line, Body, and Engine Type
YD1: MDX/J35A5

c. Body Type and Transmission Type
8: 5-door/5-speed Automatic

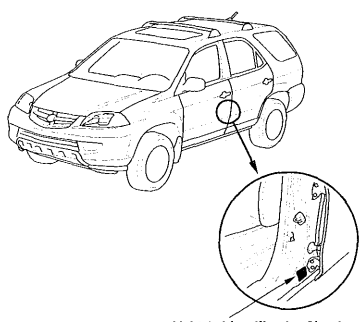
d. Vehicle Grade (Series)
U.S. Model
2: Premium
6: Touring
7: Touring with Rear Entertainment System
8: Touring with Navigation System
9: Touring with Navigation System and Rear Entertainment System
Canada Model
6: Touring
7: Touring with Rear Entertainment System
8: Touring with Navigation System
9: Touring with Navigation System and Rear Entertainment System

e. Check Digit

f. Model Year
4: 2004

g. Factory Code
H: Alliston, Ontario Factory in Canada

h. Serial Number
500001—: U.S. model
000001—: Canada model



Vehicle Identification Number and Federal Motor Vehicle Safety Standard Certification.

Vehicle Identification Number and Canadian Motor Vehicle Safety Standard Certification.

Engine Number

J35A5 - 2000001

a b

a. Engine Type
J35A5: 3.5 L SOHC VTEC Sequential Multiport Fuel-injected engine

b. Serial Number

Transmission Number

MDKA - 2000001

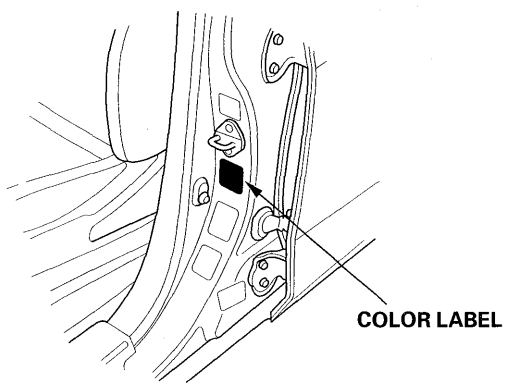
a b

a. Transmission Type
MDKA: 5-speed Automatic

b. Serial Number

Paint Code

Code	Color	U.S.	Canada
B-92P	Nighthawk Black Pearl	○	○
B-518P	Midnight Blue Pearl	○	○
NH-578	Taffeta White	○	
NH-638M	Starlight Silver Metallic	○	○
NH-662P	Sage Brush Pearl	○	○
R-519P	Redrock Pearl	○	
YR-542M	Sandstone Metallic	○	○
NH-677P	Aspen White Pearl	○	○
YR-543M	Burnished Bronze Metallic	○	



Standards and Service Limits

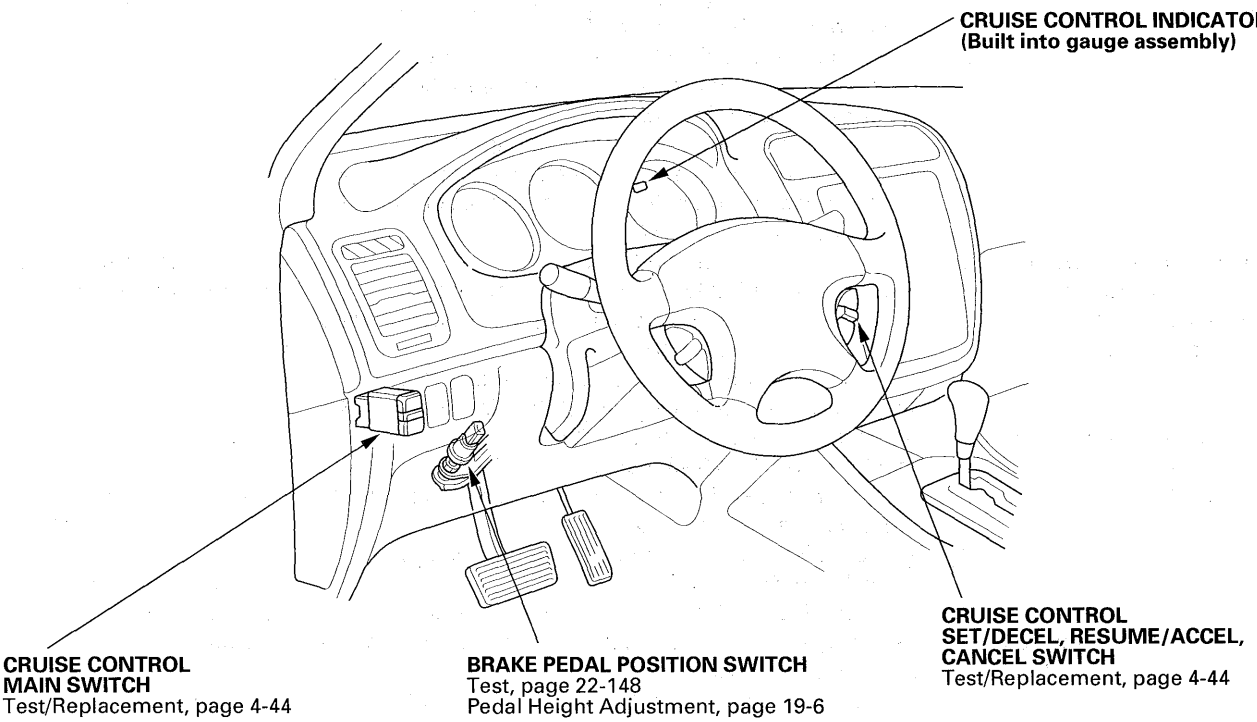
Engine Electrical

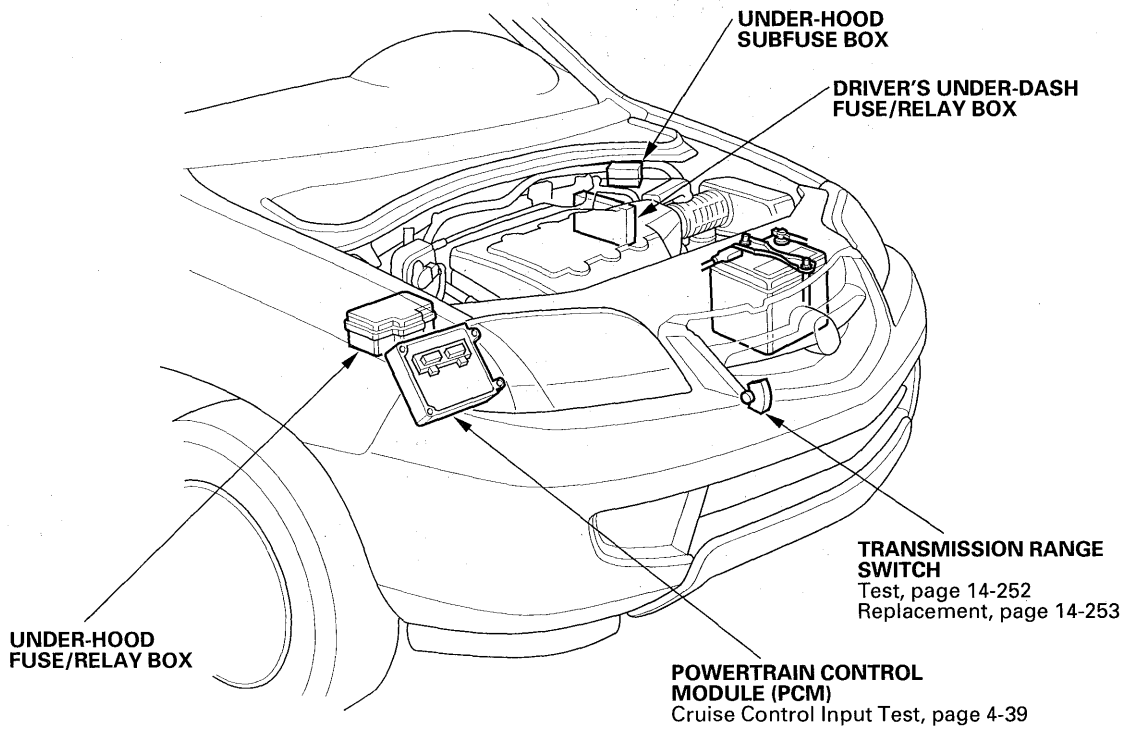
Item	Measurement	Qualification	Standard or New	Service Limit
Ignition coil	Rated voltage		12 V	
	Firing order		1—4—2—5—3—6	
Spark plug	Type		NGK: IZFR5K11 DENSO: SKJ16DR-M11	
	Gap		1.0—1.1 mm (0.039—0.043 in.)	———
Ignition timing	At idle Check the *red* mark	In N or P position	10±2 ° BTDC	
Drive belt	Tension		Auto tensioner	
Alternator	Output	At 13.5 V and normal engine temperature	130 A	
	Coil (rotor) resistance	At 68 °F (20 °C)	2.3—2.7 kΩ	
	Slip ring O.D.		14.2—14.4 mm (0.56—0.57 in.)	13.8 mm (0.54 in.)
	Brush length		10.5 mm (0.41 in.)	1.5 mm (0.06 in.)
	Brush spring tension		2.94—3.53 N (0.30—0.36 kgf, 0.66—0.80 lbf)	
Starter	Output		1.6 kW	
	Commutator mica depth		0.4—0.6 mm (0.016—0.024 in.)	0.20 mm (0.008 in.)
	Commutator runout		0.05 mm (0.002 in.) max.	0.1 mm (0.004 in.)
	Commutator O.D.		29.3—29.5 mm (1.154—1.161 in.)	28.8 mm (1.134 in.)
	Brush length		7.7—8.0 mm (0.30—0.31 in.)	0.9 mm (0.04 in.)
	Brush spring tension (new)		15.9—19.5 N (1.62—1.99 kgf, 3.57—4.39 lbf)	

Engine Assembly

Item	Measurement	Qualification	Standard or New	Service Limit
Compression	Pressure	Minimum	930 kPa (9.5 kgf/cm², 135 psi)	———
	Check the engine with the starter cranking	Maximum variation	200 kPa (2.0 kgf/cm², 28 psi)	———

Component Location Index



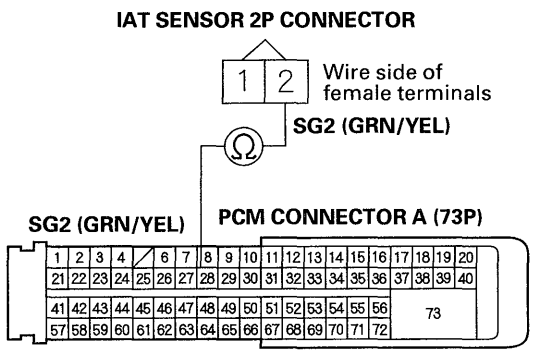


12. Turn the ignition switch OFF.

13. Jump the SCS line with the HDS.

14. Disconnect PCM connector A (73P).

15. Check for continuity between PCM connector terminal A28 and IAT sensor 1 2P connector terminal No. 2.



Terminal side of female terminals

Is there continuity?

YES—Go to step 27.

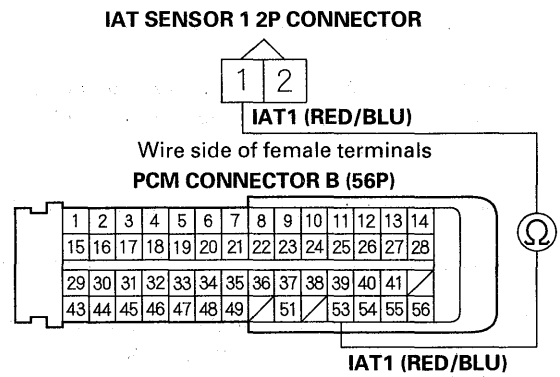
NO—Repair open in the wire between the PCM (A28) and IAT sensor 1, then go to step 22.

16. Turn the ignition switch OFF.

17. Jump the SCS line with the HDS.

18. Disconnect PCM connector B (56P).

19. Check for continuity between PCM connector terminal B53 and IAT sensor 1 2P connector terminal No. 1.



Terminal side of female terminals

Is there continuity?

YES—Go to step 27.

NO—Repair open in the wire between the PCM (B53) and IAT sensor 1, then go to step 22.

20. Turn the ignition switch OFF.

21. Replace IAT sensor 1 (see page 11-238).

22. Reconnect all connectors.

23. Turn the ignition switch ON (II).

24. Reset the PCM with the HDS.

25. Do the PCM idle learn procedure (see page 11-291).

(cont'd)

Symptom	Probable cause(s)	Notes
The A/T does not shift	1. Input shaft (mainshaft) speed sensor defective 2. Output shaft (countershaft) speed sensor defective 3. Modulator valve defective	• Check the D5 indicator, and check for loose connectors. • Check the line pressure.
Erratic shifting: fails to shift in D5, D4, and D3; starts off in 5th	1. Shift solenoid valve B defective 2. Shift valve B defective	• Check the D5 indicator, and check for loose connectors. • Inspect the O-ring, and check the shift solenoid valve for seizure.
Erratic shifting: fails to shift in 2; starts off in 4th	1. Shift solenoid valve B defective 2. Shift valve B defective	• Check the D5 indicator, and check for loose connectors. • Inspect the O-ring, and check the shift solenoid valve for seizure.
Erratic shifting: fails to shift in D5, D4, D3, and 1; starts off in 3rd	1. Shift solenoid valve A defective 2. Shift valve A defective	• Check the D5 indicator, and check for loose connectors. • Inspect the O-ring, and check the shift solenoid valve for seizure.
Erratic shifting: fails to shift in 2; starts off in 1st	1. Shift solenoid valve A defective 2. Shift valve A defective	• Check the D5 indicator, and check for loose connectors. • Inspect the O-ring, and check the shift solenoid valve for seizure.
Excessive shock or flares on all upshifts and downshifts	1. A/T clutch pressure control solenoid valve A defective 2. Input shaft (mainshaft) speed sensor defective 3. Output shaft (countershaft) speed sensor defective 4. ATF temperature sensor defective 5. CPC valve A defective 6. Foreign material in separator plate orifice	• Check the D5 indicator, and check for loose connectors. • Inspect the A/T clutch pressure control solenoid valve body gasket and ATF feed pipes for wear and damage. If the A/T clutch pressure control solenoid valve is stuck, inspect the CPC valves. • Inspect the sensor O-rings.
Excessive shock or flares on 1-2 upshift or 2-1 downshift	1. Foreign material in separator plate orifice 2. 2nd accumulator defective 3. 2nd check ball stuck 4. 2nd clutch defective	• Check the 1st and 2nd clutch pressures. • Inspect the clutch piston, clutch check valve, and O-rings. Check the spring retainer for wear and damage. Inspect the clutch end-plate-to-top-disc clearance. If the clearance is out of tolerance, inspect the clutch discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clutch end plate clearance.

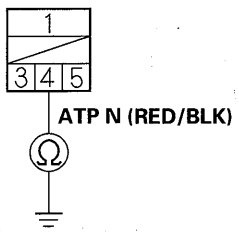
(cont'd)

Reverse Lock System Circuit Troubleshooting (cont'd)

12. Shift the shift lever out of the N position.

13. Check for continuity between the No. 4 terminal of the shift lock relay harness connector and body ground.

SHIFT LOCK RELAY HARNESS CONNECTOR



Wire side of female terminals

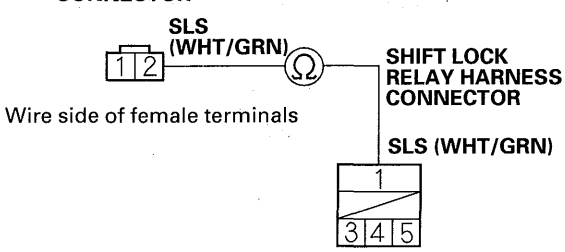
Is there continuity?

YES—Repair short to ground in the wire between the No. 4 terminal of the shift lock relay and the transmission range switch. ■

NO—Go to step 14.

14. Check for continuity between the No. 1 terminal of the shift lock relay harness connector and the No. 2 terminal of the shift lock solenoid connector.

SHIFT LOCK SOLENOID CONNECTOR



Wire side of female terminals

Wire side of female terminals

Is there continuity?

YES—Check for loose terminal fit in the connectors. Repair the reverse lock mechanism. ■

NO—Repair open in the wire between the No. 1 terminal of the shift lock relay and the shift lock solenoid connector. ■

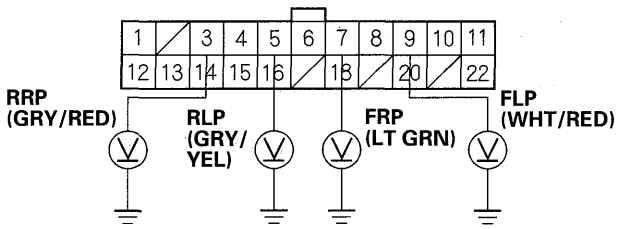
BACK

DTC Troubleshooting (cont'd)

6. Measure the voltage between the A3, A5, A7, and A9 terminals of the VTM-4 control unit and body ground while rotating the appropriate wheel one rotation a second.

Appropriate wheel	Appropriate Terminal
Left-front	A9
Right-front	A7
Left-rear	A5
Right-rear	A3

VTM-4 CONTROL UNIT CONNECTOR A (22P)



Wire side of female terminals

Are all four readings 2 V to 3 V?

YES—Check for loose terminal fit in the VTM-4 control unit. If it is normal, replace the VTM-4 control unit. ■

NO—Check for loose wires or poor connections between the VTM-4 control unit and the VSA modulator-control unit. If it is normal, replace the VSA modulator-control unit. ■

DTC 37-1, 38-1: Engine RPM Signal Circuit

1. Clear the DTCs (see page 15-7).
2. Test-drive the vehicle, and watch the VTM-4 indicator.

   Does the VTM-4 indicator come on?

   YES—Go to step 3.

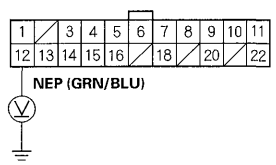
   NO—The system is OK at this time. ■
3. Watch the MIL.

   Does the MIL come on?

   YES—Check the fuel and emission system for DTCs (see page 11-3). ■

   NO—Go to step 4.
4. Disconnect connector A (22P) from the VTM-4 control unit.
5. Measure the voltage between the A12 terminal of the VTM-4 control unit and body ground with the engine running.

VTM-4 CONTROL UNIT CONNECTOR A (22P)



Wire side of female terminals

Condition	Voltage
Ignition switch ON (II)	Above 8 V
Engine running at 1,000 rpm	5—8 V

Is the voltage correct?

YES—Go to step 13.

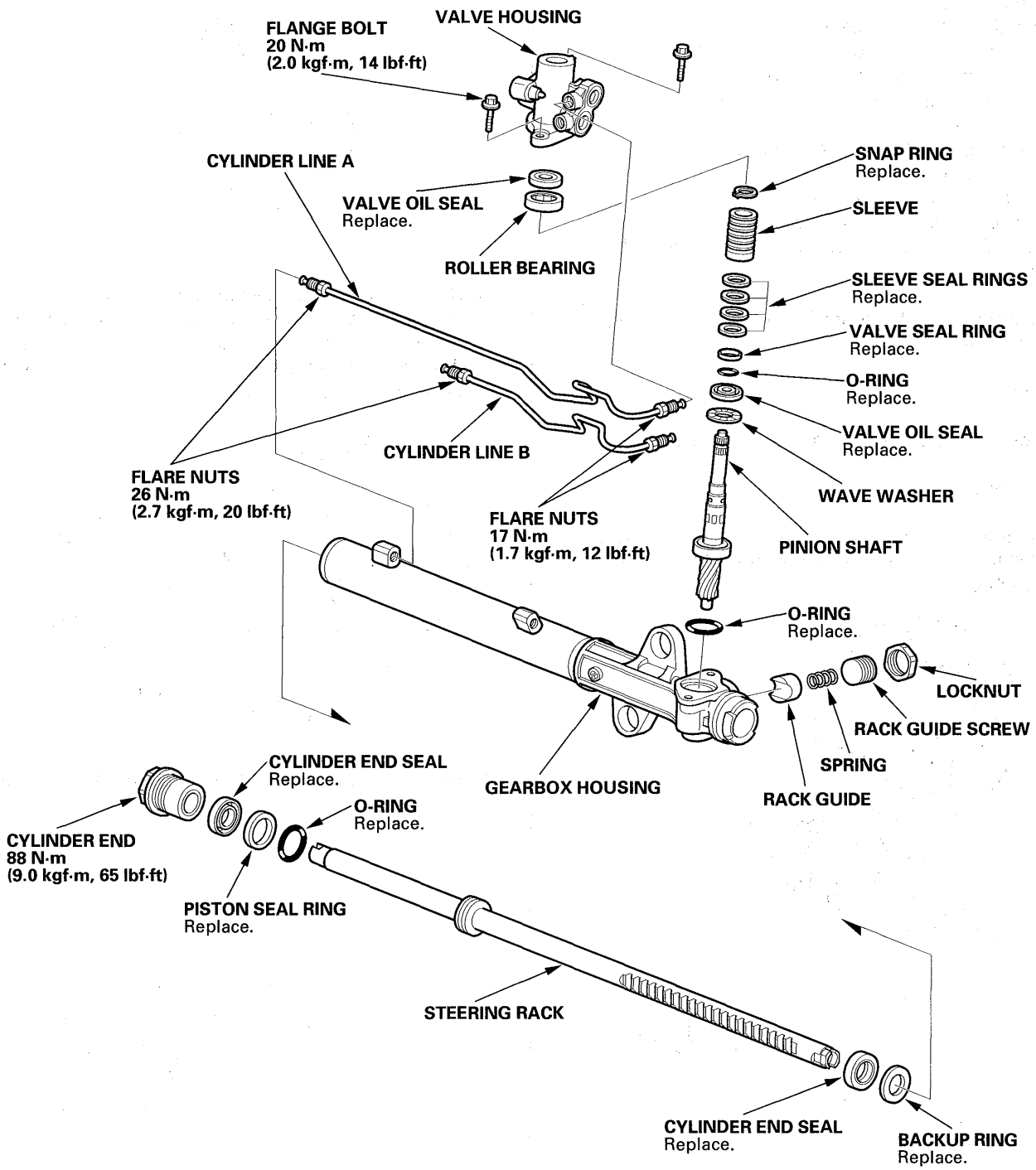
NO—Go to step 6.

6. Turn the ignition switch OFF.
7. Disconnect PCM connector B (56P) and gauge assembly connector A (30P).

BACK

Steering Gearbox Overhaul

Exploded View



(cont'd)

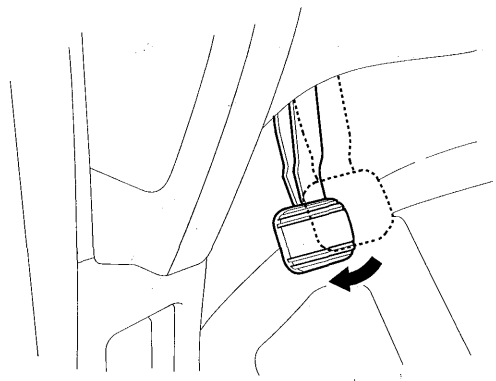
Parking Brake Shoe Lining Break-in

NOTE: Do brake linings surface break-in when replacing shoes with new brake linings and/or new brake drum/disc.

⚠ WARNING

Do this operation in a safe area.

1. Park the vehicle on a firm, level surface.
2. Do the major parking brake adjustment (see page 19-7).
3. Press the parking brake pedal five clicks.

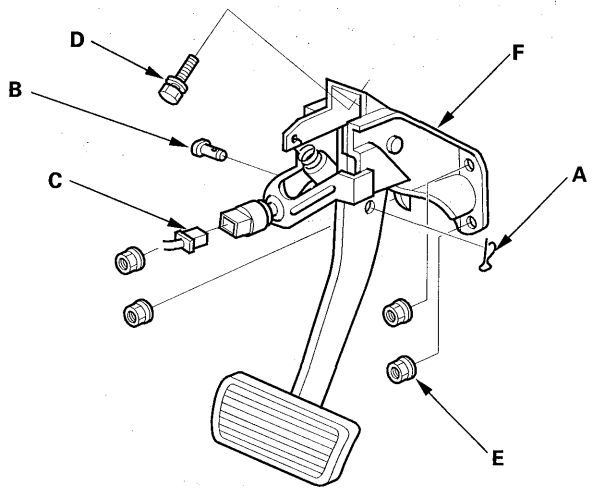


4. Drive the vehicle for 1/4 mile (400 m) at 31 mph (50 km/h).
5. Stop the vehicle, and release the parking brake for 5—10 minutes to allow the brake disc/drum to cool.
6. Repeat steps 3 through 5.
7. Check the parking brake pedal adjustment (see page 19-7).

Brake Pedal Replacement

1. Remove the lock pin (A) and pin (B).

   NOTE: Use a new lock pin whenever in stalling.



2. Disconnect the brake pedal position switch connector (C).
3. Remove the brake pedal bracket mounting bolt (D) and nuts (E).
4. Remove the brake pedal with bracket (F).
5. Install in the reverse order of removal.
6. Do the brake pedal and brake pedal position switch adjustment (see page 19-6).

BACK

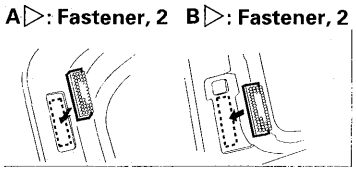
Rear Window Replacement (cont'd)

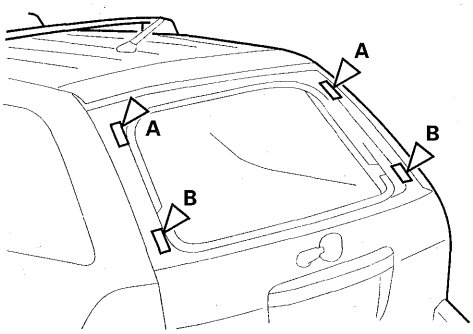
11. Attach the corner fasteners (A, B) with adhesive tape A to the tailgate as shown.

Adhesive tape A: **Thickness 0.6 mm (0.023 in.)**
Width 9.5 mm (0.37 in.)

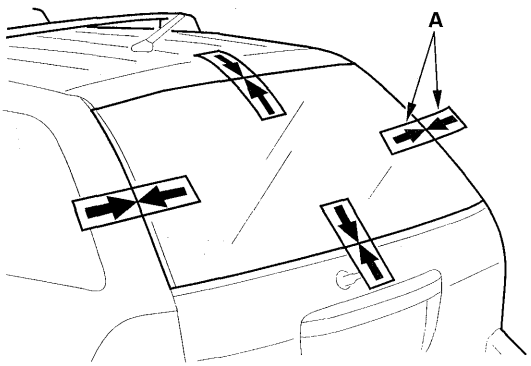
Fastener Locations

A▷: Fastener, 2 B▷: Fastener, 2





12. Set the rear window in the opening, and center it. Make alignment marks (A) across the rear window, tailgate, and body with a grease pencil at the four points shown. Be careful not to touch the rear window where adhesive will be applied.

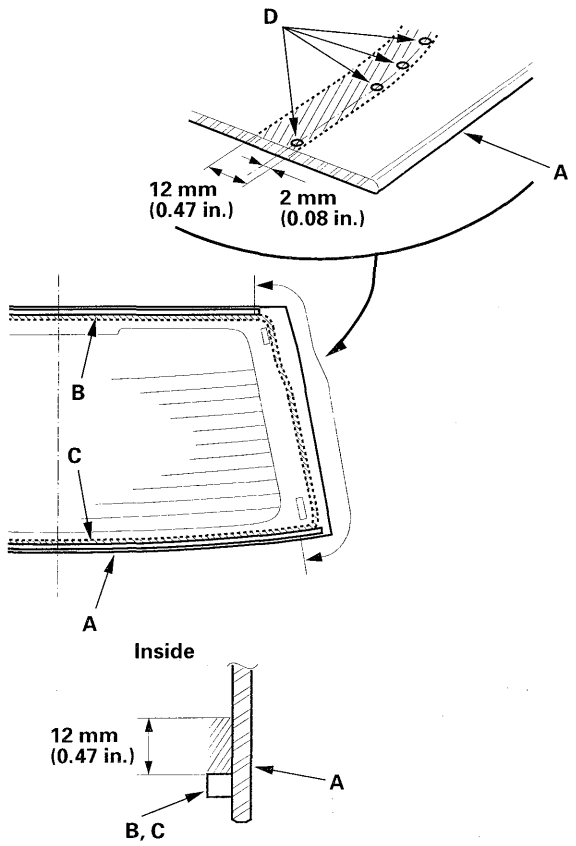


13. Remove the rear window.

14. With a sponge, apply a light coat of glass primer to the edge of the rear window (A) along the upper rubber dam (B) and lower rubber dam (C) as shown, then lightly wipe it off with gauze or cheesecloth:

- With the printed dots (D) on the rear window as a guide, apply the glass primer to both side portions of the rear window.
- Do not apply body primer to the rear window, and do not get tailgate and glass primer sponges mixed up.
- Never touch the primed surfaces with your hands. If you do, the adhesive may not bond to the rear window properly, causing a leak after the rear window is installed.
- Keep water, dust, and abrasive materials away from the primed surfaces.

: **Apply glass primer here.**



BACK

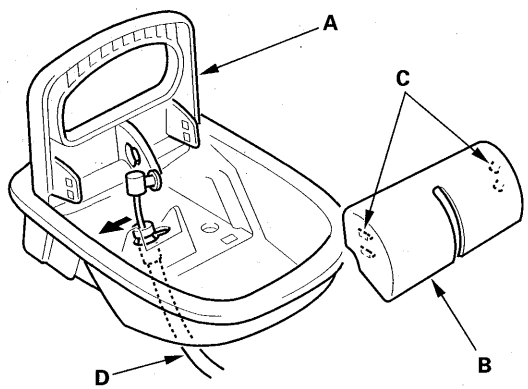
Third Row Seat-back Recline Cable Replacement

Special Tools Required
KTC trim tool set SOJATP2014 *
* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:
- Use the appropriate tool from the KTC trim tool set to avoid damage when prying components.
- Take care not to kink the cable.

1. Remove the third row seat back recline lever (see page 20-119).

2. While holding the lever (A) open, carefully pry out the cover (B) with a flat-tip screwdriver to release the tabs (C), then remove it.



3. Disconnect the recline cable (D).

4. Install the third row seat-back recline cable in the reverse order of removal, and make sure the cable is connected securely.

Third Row Seat Cover Replacement

Special Tools Required
KTC trim tool set SOJATP2014 *
* Available through the American Honda Tool and Equipment Program; call 888-424-6857

NOTE:
- Take care not to scratch the interior trim.
- Use the appropriate tool from the KTC trim tool set to avoid damage when prying components.
- Take care not to tear the seams or damage the seat covers.
- Put on gloves to protect your hands.

Seat-back Cover

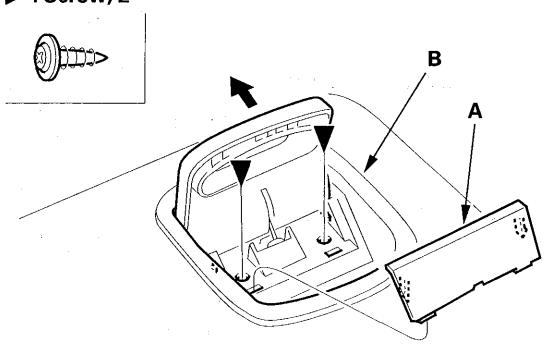
1. Remove both front mounting bolts, then lift the seat cushion up (see step 1 on page 20-118).

2. Remove the pivot bolt cover and pivot bolt from both sides, then remove the seat cushion (see page 20-119).

3. Pry out the lid (A), and remove the screws securing the third row seat-back recline lever (B).

Fastener Locations

▶ : Screw, 2



BACK

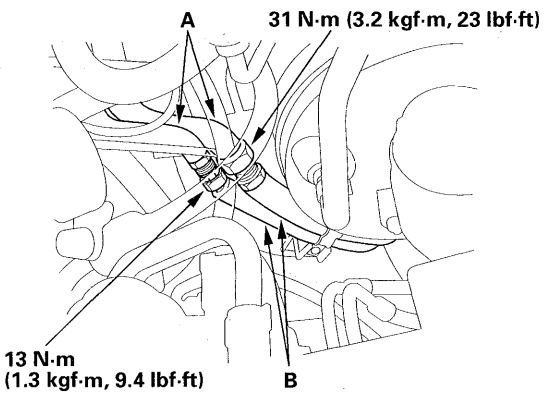
Rear A/C Line Replacement (cont'd)

Installation

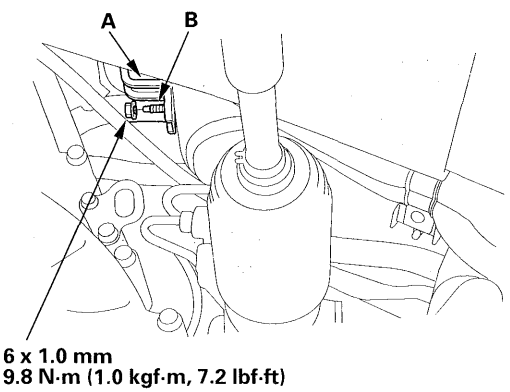
NOTE:
- Take care not to bend the replacement A/C lines during installation.
- Be careful not to bend or snag the brake lines, wire harness, or other components when installing the replacement A/C lines.

1. Route the lower replacement rear A/C lines (suction line, then receiver line) from the top of the engine compartment down to the rear evaporator connections. Do not connect the lines yet.

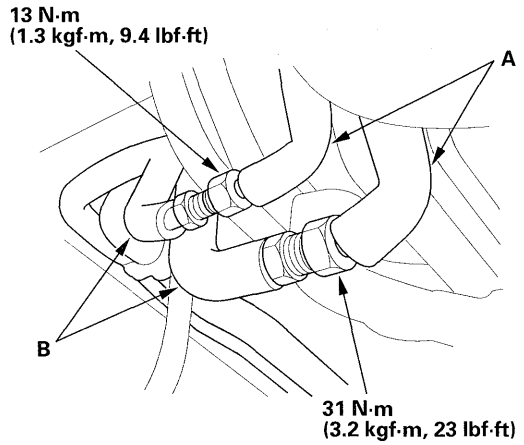
2. Route the upper replacement A/C lines along the engine compartment bulkhead, and loosely connect the upper lines (A) to the lower lines (B). Do not tighten the connections yet.



3. Install the A/C line bracket (A) on the lower replacement A/C line. Slide the bracket onto its mounting stud (B), but do not install the 6 mm flange nut yet.



4. Apply a few drops of refrigerant oil to the connections, then connect the lower lines (A) to the rear evaporator lines (B). Do not tighten the connections yet.

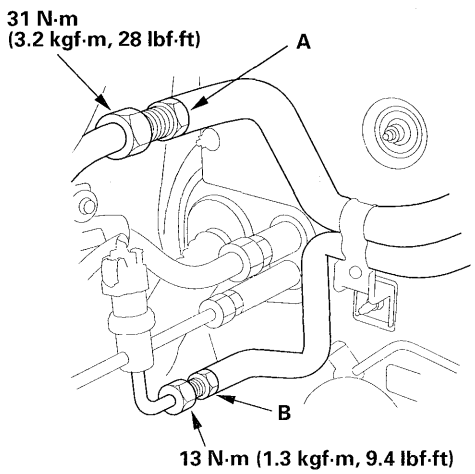


5. Install the screw in the A/C line clamp (next to the steering gearbox) on the lower A/C lines.

6. Install the 6 mm flange nut onto the A/C line clamp/ bracket mounting stud, and tighten it.

7. Tighten the lower A/C lines at the rear evaporator connections.

8. Apply a few drops of refrigerant oil to the connections, then connect the rear A/C suction line (A) and receiver line (B) to the front evaporator lines. Do not tighten the connections yet.



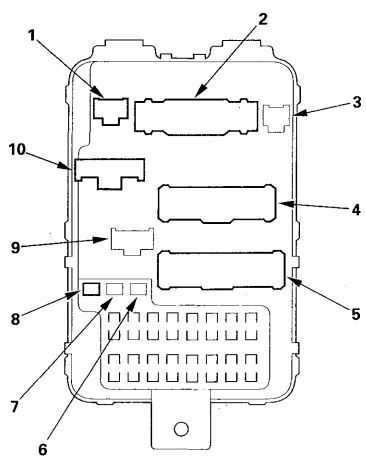
9. Install the screws into the two A/C line clamps along the engine compartment bulkhead.

BACK

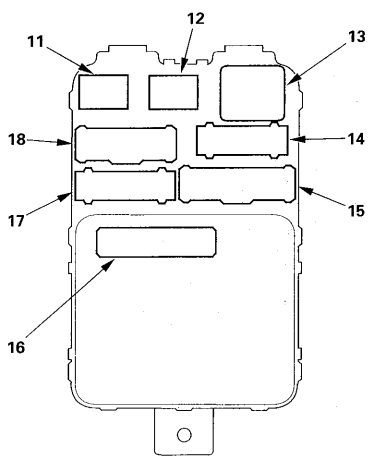
Connector to Fuse/Relay Box Index (cont'd)

Passenger's Under-dash Fuse/Relay Box

Socket	Ref	Terminal	Connects to
A	10	3	Right engine compartment wire harness • '03-04 models (see page 22-18) • '05-06 models (see page 22-22)
Accessory power socket relay	12	4	
B	4	18	Right engine compartment wire harness • '03-04 models (see page 22-18) • '05-06 models (see page 22-22)
C	5	20	Right side wire harness • '03 model (see page 22-48) • '04-06 models (see page 22-50)
D	9	4	Not used
Diode	6	———	(for A/C)
Diode	7	———	Right rear door courtesy light
Diode	8	———	Front passenger's door courtesy light
E	2	20	Front passenger's door wire harness (see page 22-65)
F	3	———	Not used
G	15	18	Dashboard wire harness A • '03 model (see page 22-40) • '04 model (see page 22-42) • '05-06 models (see page 22-44)
H	17	18	Dashboard wire harness A • '03 model (see page 22-40) • '04 model (see page 22-42) • '05-06 models (see page 22-44)
J	18	16	Dashboard wire harness B (see page 22-30)
K	1	3	Right side wire harness • '03 model (see page 22-48) • '04-06 models (see page 22-50)
Passenger's multiplex control unit connector A	16	24	(Plugs directly into the fuse box)
Power window relay	11	4	
Rear window defogger relay	13	4	
S	14	16	Dashboard wire harness B (see page 22-30)



(View of front side)



(View of back side)

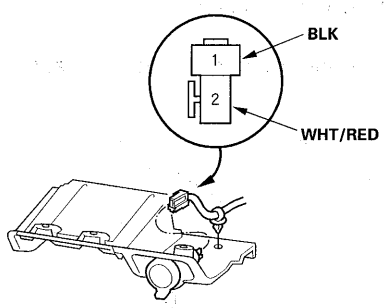
BACK

Front Accessory Power Socket Test/Replacement

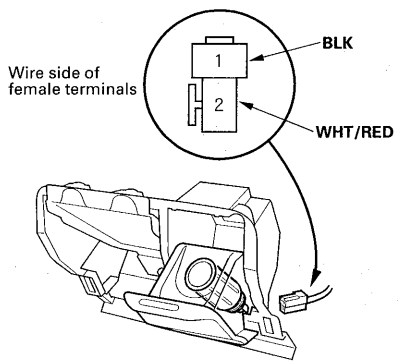
1. Remove the center lower cover (see page 20-84).

2. Disconnect the 2P connector from the front accessory power socket.

With RES:



Without RES:



3. Inspect the connector 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. Turn the ignition switch to ACC (I), and check for voltage between the No. 2 terminal and body ground. There should be battery voltage.

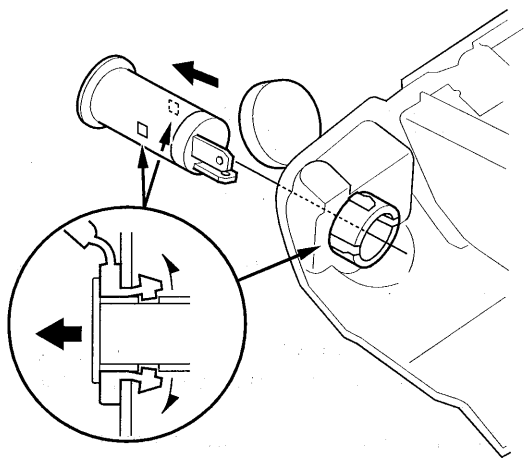
   - If there is battery voltage, go to step 5.
   - If there is no battery voltage, check for:
     - Blown No. 8 (7.5 A) fuse in the driver's under-dash fuse/relay box.
     - Blown No. 9 (15 A) fuse in the passenger's under-dash fuse/relay box.
     - Faulty accessory power socket relay.
     - Poor ground (G501, G651).
     - An open in the wire.

5. Check for continuity between the No. 1 terminal and body ground. There should be continuity.

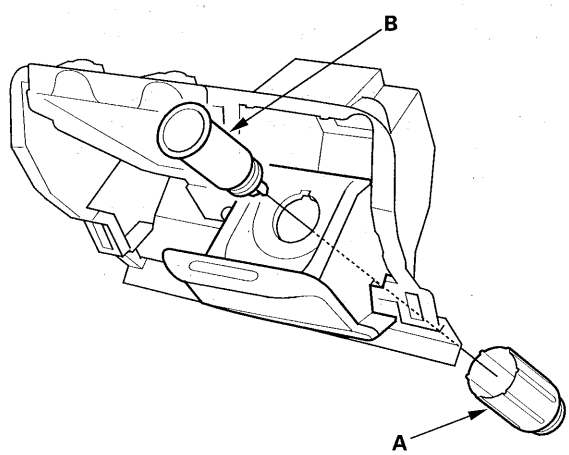
   - If there is continuity, go to step 6.
   - If there is no continuity, check for:
     - Poor ground (G501).
     - An open in the wire.

6. With RES: Remove the socket (A).
   Without RES: Remove the socket (A) and housing (B).

With RES:



Without RES:



7. Install the power socket in the reverse order of removal.

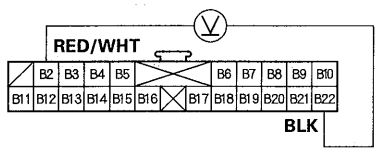
BACK

Power Mirror Position Sensor Troubleshooting

NOTE: Before troubleshooting, check the No. 5 (20 A) and No. 13 (7.5 A) in the passenger's under-dash fuse/relay box and the No. 4 (7.5 A) fuse in the driver's under-dash fuse/relay box and test the power mirrors (see page 22-241).

1. Turn the ignition switch ON (II).
2. Check for voltage between the B2 and B22 terminals of the passenger's multiplex control unit with the power mirror switch pressed UP or LEFT.

PASSENGER'S MULTIPLEX CONTROL UNIT CONNECTOR B



Wire side of female terminals

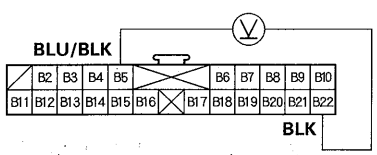
Is there battery voltage?

YES—Go to step 3.

NO—Repair open in the RED/WHT or BLK wire. ■

3. Move the selector switch to RIGHT.
4. Check for voltage between the B5 and B22 terminals with the power mirror switch pressed to the RIGHT or DOWN.

PASSENGER'S MULTIPLEX CONTROL UNIT CONNECTOR B



Wire side of female terminals

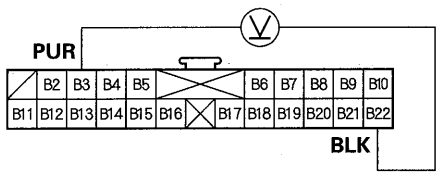
Is there battery voltage?

YES—Go to step 5.

NO—Repair open in the BLU/BLK wire. ■

5. Check for voltage between the B3 and B22 terminals with the power mirror switch pressed to the LEFT or DOWN.

PASSENGER'S MULTIPLEX CONTROL UNIT CONNECTOR B



Wire side of female terminals

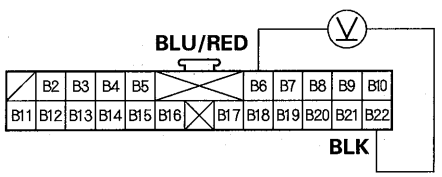
Is there battery voltage?

YES—Go to step 6.

NO—Repair open in the PUR wire. ■

6. Move the selector switch to the LEFT.
7. Check for voltage between the B6 and B22 terminals with the power mirror switch pressed to the RIGHT or DOWN.

PASSENGER'S MULTIPLEX CONTROL UNIT CONNECTOR B



Wire side of female terminals

Is there battery voltage?

YES—Go to step 8.

NO—Repair open in the BLU/RED wire. ■