

General Information

Chassis and Paint Codes

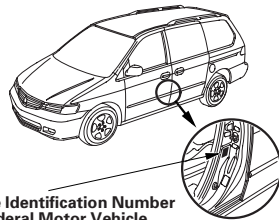
1999 Model

Vehicle Identification Number

2HK RL1 8 4 * X H 500001

a b c d e f g h

- a. Manufacturer, Make, and Type of Vehicle**
2HJ: HONDA OF CANADA MFG.,
HONDA CANADA INC.
HONDA Light duty truck
2HK: HONDA OF CANADA MFG.,
HONDA CANADA INC.
HONDA Multipurpose passenger vehicle
- b. Line, Body, and Engine Type**
RL1: ODYSSEY/J35A1
- c. Body Type and Transmission Type**
8: 5-door/4-speed Automatic
- d. Vehicle Grade (Series)**
U.S. model
1: VAN
4: LX
5: LX
6: EX
Canada model
4: LX with bench seat
5: LX with captain's seat
6: EX
- e. Check Digit**
- f. Model Year**
X: 1999
- g. Factory Code**
H: 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

J35A1 - 1000001

a b

- a. Engine Type**
J35A1: 3.5 l SOHC VTEC Sequential Multiport Fuel-injected engine
- b. Serial Number**

Transmission Number

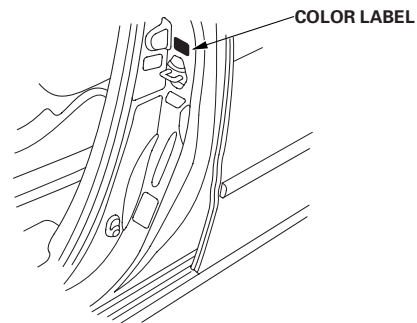
B7TA - 6700001

a b

- a. Transmission Type**
B7TA: 4-speed Automatic
- b. Serial Number**

Paint Code

Code	Color	U.S.	Canada
B-89P	Deep Velvet Blue Pearl	○	○
G-87P	Dark Emerald Pearl	○	○
G-501M	Granite Green Metallic	○	○
NH-615M	Canyon Stone Silver Metallic	○	○
YR-520M	Mesa Beige Metallic	○	○



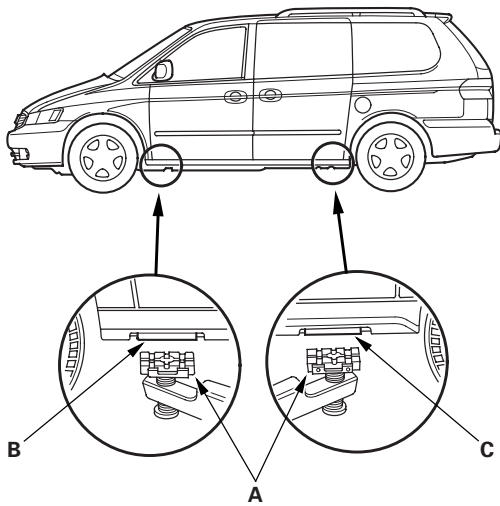


Lift and Support Points

NOTE: If you are going to remove heavy components such as suspension or the fuel tank from the rear of the vehicle, first support the front of the vehicle with tall safety stands. When substantial weight is removed from the rear of the vehicle, the center of gravity can change and cause the vehicle to tip forward on the hoist.

Frame Hoist

1. Position the hoist lift blocks (A), or safety stands, under the vehicle's front support points (B) and rear support points (C).



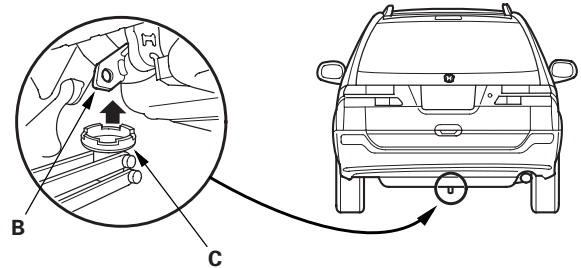
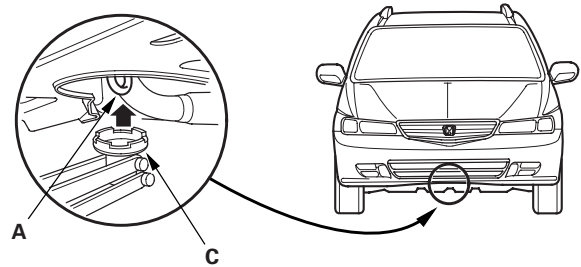
2. Raise the hoist a few inches, and rock the vehicle gently to be sure it is firmly supported.
3. Raise the hoist to full height, and inspect the lift points for solid contact with the lift blocks.

Safety Stands

To support the vehicle on safety stands, use the same support points (B and C) as for a frame hoist. Always use safety stands when working on or under any vehicle that is supported only by a jack.

Floor Jack

1. When lifting the front of the vehicle, set the parking brake. When lifting the rear of the vehicle, put the shift lever in the P position.
2. Block the wheels that are not being lifted.
3. Position the floor jack under the front jacking bracket (A) or rear jacking bracket (B), center the jack lift platform (C), on the jacking bracket and jack up the vehicle high enough to fit the safety stands under it.

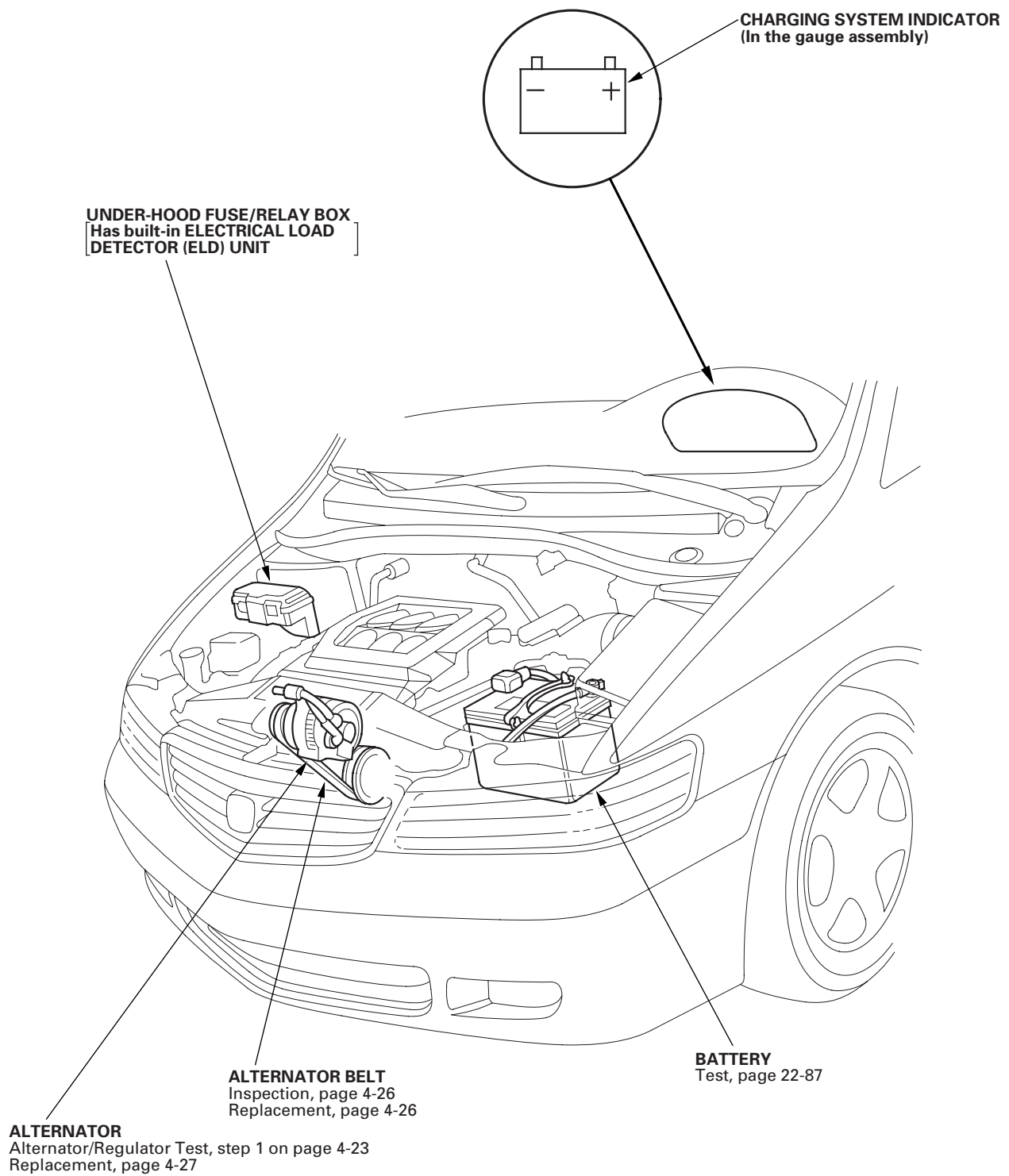


4. Position the safety stands under the support points and adjust them so the vehicle will be level.
5. Lower the vehicle onto the stands.

Charging System



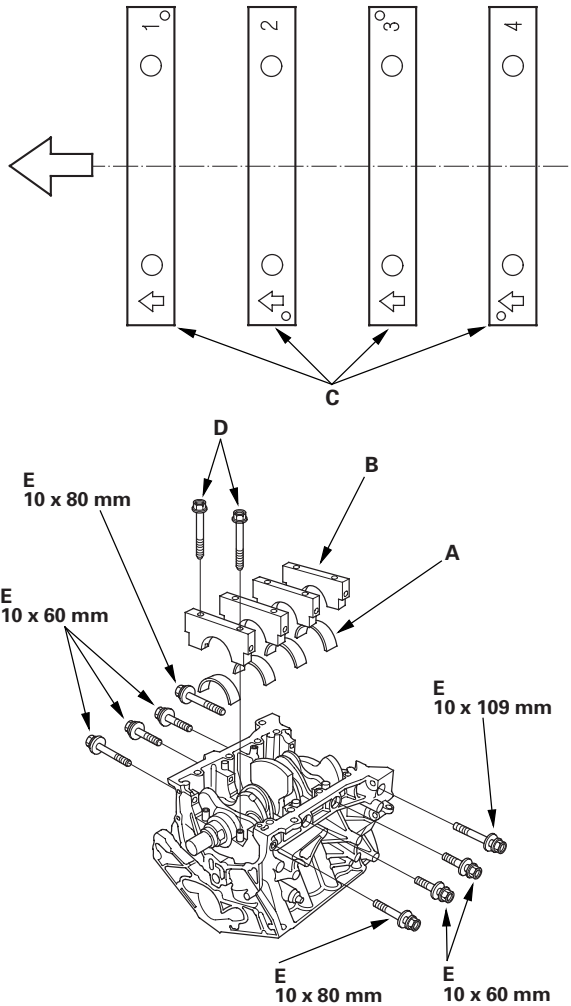
Component Location Index



Engine Block

Crankshaft and Piston Installation (cont'd)

10. Install the bearings (A) and bearing caps (B) with the arrow (C) facing the timing belt end of the engine.

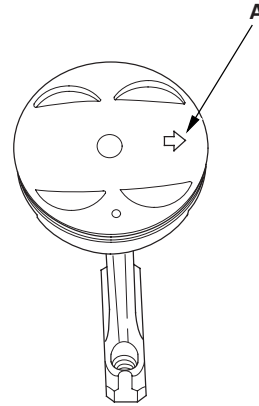


11. Apply new engine oil to the bolt threads and flange, then install the bearing cap bolts (D) and bearing cap side bolts (E).

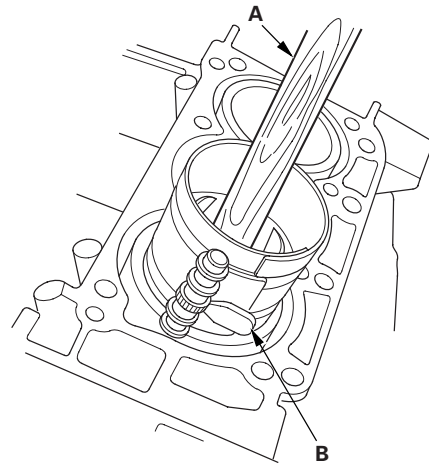
12. Set the crankshaft to Bottom Dead Center (BDC) for the cylinder you are working on.

13. Remove the connecting rod caps. Install the ring compressor, and check that the bearing is securely in place.

14. Install the piston with the arrow (A) facing the timing belt side of the engine.



15. Position the piston in the cylinder, and tap it in using the wooden handle of a hammer (A). Maintain downward force on the ring compressor (B) to prevent the rings from expanding before entering the cylinder bore.



16. Stop after the ring compressor pops free, and check the connecting rod-to-crank journal alignment before pushing the piston into place.

Fuel and Emissions Systems

System Descriptions (cont'd)

PCM Inputs and Outputs at Connector D (16P) – '99-00 Models

1 LC		2 SHB	3 SHC			5 VBSOL
6 ATPR	7 SHA	8 ATPD3	9 ATPD4	10 NC	11 NM	12 NMSG
13 OP2SW	14 ATP2	15 ATP1		16 NCSG		

Wire side of female terminals

NOTE: Standard battery voltage is 12 V.

Terminal number	Wire color	Terminal name	Description	Signal
1	YEL	LC (LOCK-UP CONTROL SOLENOID VALVE)	Drives lock-up control solenoid valve	With lock-up ON: battery voltage With lock-up OFF: 0 V
2	GRN/WHT	SHB (SHIFT CONTROL SOLENOID VALVE B)	Drives shift control solenoid valve B	With engine running in 1st, 2nd gears: battery voltage With engine running in 3rd, 4th gears: about 0 V
3	GRN	SHC (SHIFT CONTROL SOLENOID VALVE C)	Drives shift control solenoid valve C	With engine running in 1st and 3rd gears: battery voltage With the engine running in 2nd and 4th gears: 0 V
5	BLK/YEL	VBSOL (BATTERY VOLTAGE FOR SOLENOID VALVE)	Power source of solenoid valve	With ignition switch ON (II): battery voltage
6	WHT	ATPR (AT GEAR POSITION SWITCH)	Detects A/T gear position switch signal	In R position: 0 V In any other position: battery voltage
7	BLU/YEL	SHA (SHIFT CONTROL SOLENOID VALVE A)	Drives shift control solenoid valve A	With engine running in 2nd, 3rd gears: battery voltage With engine running in 1st, 4th gears: about 0 V
8	PNK	ATPD3 (AT GEAR POSITION SWITCH)	Detects A/T gear position switch signal	In D3 position: 0 V In any other position: battery voltage
9	YEL	ATPD4 (AT GEAR POSITION SWITCH)	Detects A/T gear position switch signal	In D4 position: 0 V In any other position: about 5 V
10	BLU	NC (COUNTERSHAFT SPEED SENSOR)	Detects output shaft (countershaft) speed sensor signals	With ignition switch ON (II), and front wheels rotating: pulses
11	RED	NM (MAINSHAFT SPEED SENSOR)	Detects input shaft (mainshaft) speed sensor signals	With engine running: pulses
12	WHT	NMSG (MAINSHAFT SPEED SENSOR GROUND)	Ground for input shaft (mainshaft) speed sensor	
13	BLU/BLK	OP2SW (2ND OIL PRESSURE SWITCH)	Detects 2nd oil pressure switch	With ignition switch ON (II): battery voltage
14	BLU	ATP2 (AT GEAR POSITION SWITCH)	Detects A/T gear position switch signal	In 2 position: 0 V In any other position: battery voltage
15	BRN	ATP1 (AT GEAR POSITION SWITCH)	Detects A/T gear position switch signal	In 1 position: 0 V In any other position: battery voltage
16	GRN	NCSG (COUNTERSHAFT SPEED SENSOR GROUND)	Ground for output shaft (countershaft) speed sensor	

PGM-FI System

DTC Troubleshooting (cont'd)

DTC P0132 – '99-00, '02-04 Models: Primary HO2S (Sensor 1) Circuit High Voltage

NOTE: Information marked with an asterisk (*) applies to '02-04 models.

1. Reset the PCM (see page 11-4).
2. Start the engine. Hold the engine at 3,000 rpm with no load (in Park or neutral) until the radiator fan comes on.
3. Check the primary HO2S (Sensor 1) output voltage with the scan tool or the HDS.

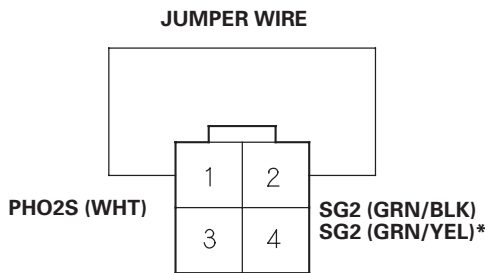
Does the voltage stay at 1.0 V or more?

YES— Go to step 4.

NO— Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the primary HO2S (Sensor 1) and the PCM. ■

4. Turn the ignition switch OFF.
5. Disconnect the primary HO2S (Sensor 1) 4P connector.
6. Connect primary HO2S (Sensor 1) 4P connector terminals No. 1 and No. 2 with a jumper wire.

**PRIMARY HO2S (SENSOR 1)
4P CONNECTOR**



Wire side of female terminals

7. Turn the ignition switch ON (II).
8. Check the primary HO2S (Sensor 1) output voltage with the scan tool or the HDS.

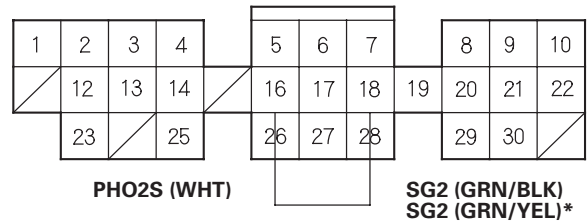
Is there 1.0 V or more?

YES— Go to step 9.

NO— Replace the primary HO2S (Sensor 1). ■

9. Turn the ignition switch OFF.
10. Connect PCM connector terminals C16 and C18 with a jumper wire.

PCM CONNECTOR C (31P)



JUMPER WIRE

Wire side of female terminals

11. Turn the ignition switch ON (II).
12. Check the primary HO2S (Sensor 1) output voltage with the scan tool or the HDS.

Is there 1.0 V or more?

YES— Substitute a known-good PCM and recheck (see page 11-5). If the symptom/indication goes away, replace the original PCM. ■

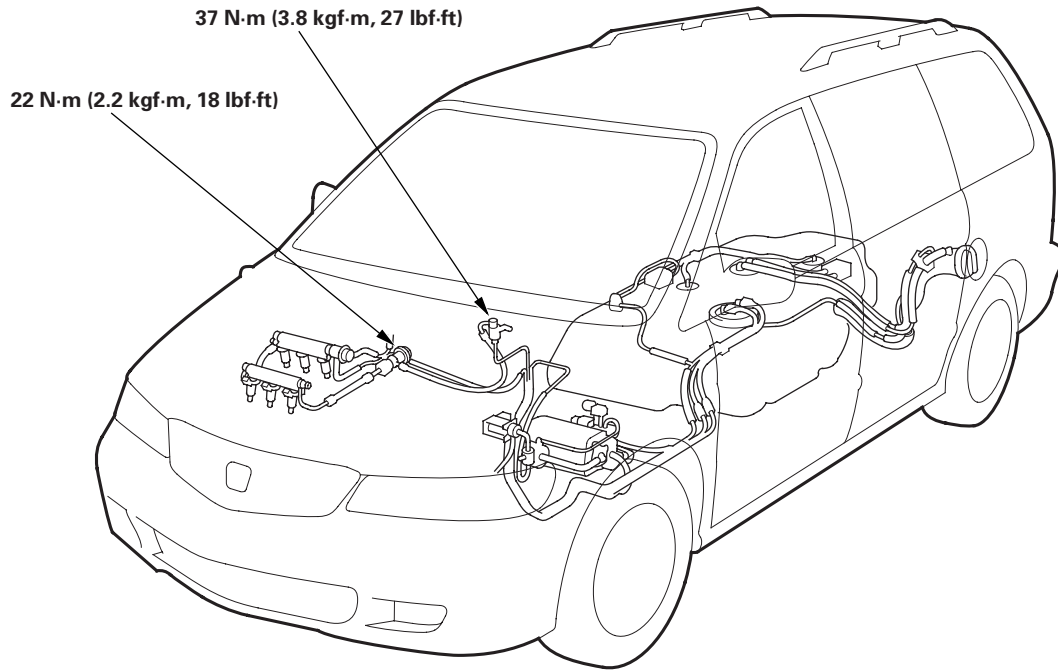
NO— Repair open in the wire between the PCM (C16, C18) and the primary HO2S (Sensor 1). ■



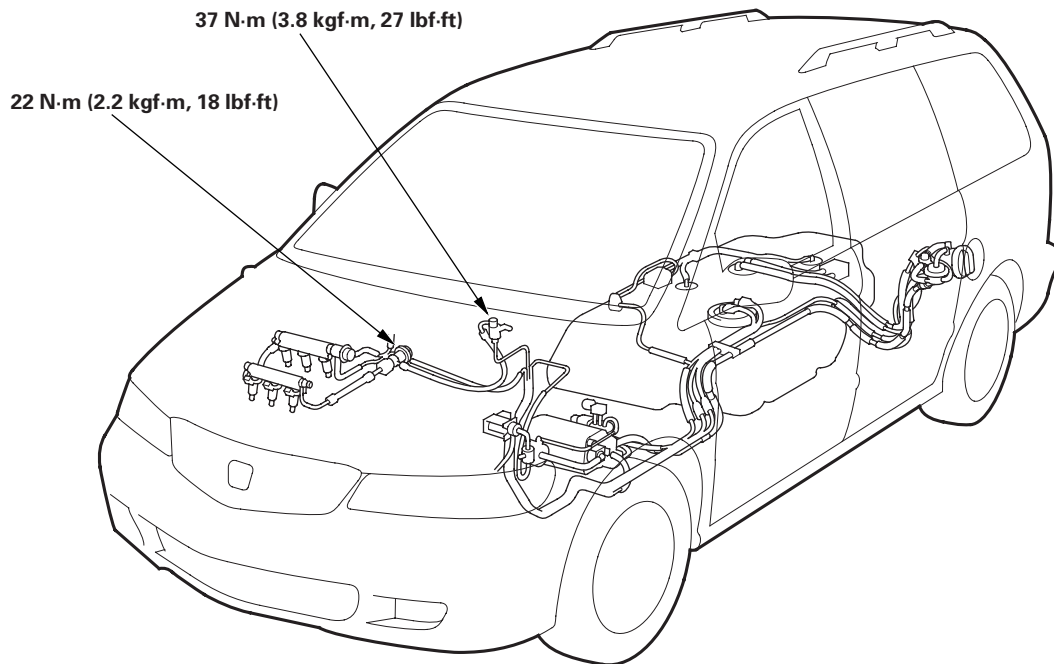
Fuel Line Inspection

Check the fuel system lines, hoses, and fuel filter for damage, leaks, and deterioration. Replace any damaged parts.

'99-00 models



'01 model



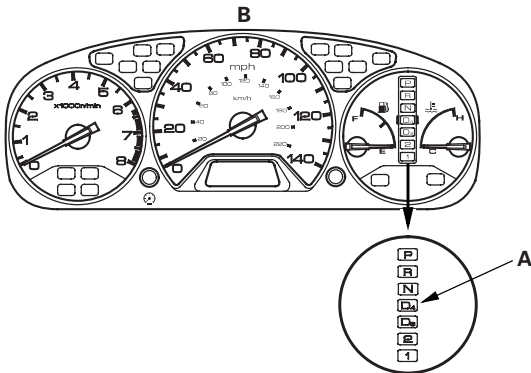
(cont'd)

Automatic Transmission

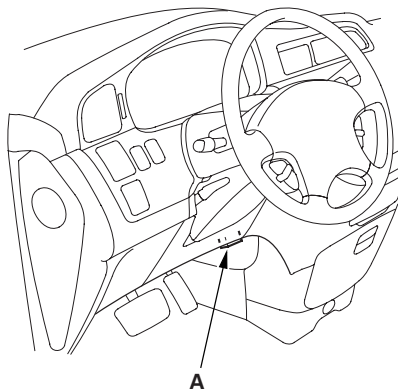
General Troubleshooting Information (cont'd)

How to Check for DTCs with the SCS Mode (retrieving the flash codes)

When the PCM senses an abnormality in the input or output system, the D4 indicator (A) in the gauge assembly (B) will usually blink.

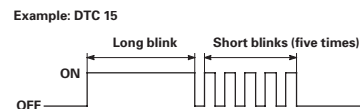
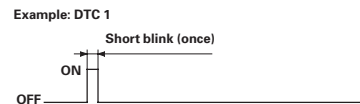


When the D4 indicator has been reported on, connect the HDS to the DLC (A) (located under the steering column lower cover). Turn the ignition switch ON (II), select Honda System, and SCS mode, then the D4 indicator will indicate the DTC.



If the D4 indicator and the MIL come on at the same time, or if a driveability problem is suspected, follow this procedure:

1. Connect the HDS to the DLC. (See the HDS user's manual for specific instructions.)
2. Turn the ignition switch ON (II), select Honda System, and then SCS mode, then observe the D4 indicator in the gauge assembly. Codes 1 through 9 are indicated by individual short blinks. Code 10 and above are indicated by a series of long and short blinks. One long blink equals 10 short blinks. Add the long and short blinks together to determine the code.



3. Record all fuel and emissions DTCs and A/T DTCs.
4. If there is a fuel and emissions DTC, first check the fuel and emissions system as indicated by the DTC (except DTC 70, DTC 70 means there is one or more A/T DTCs, and no problems were detected in the fuel and emissions circuit of the PCM).
5. Clear the DTC and data.

NOTE: You can also reset the memory by removing the No. 13 fuse in the passenger's under-dash fuse/relay box for more than 10 seconds. If you do, you need to do the following:

- Get the customer's radio and navigation (if equipped) anti-theft code, and write down the radio and navigation presets.
- Enter the radio and navigation (if equipped) anti-theft code, reset the preset stations, and set the clock.
- Do the idle learn procedure (see page 11-202).

6. Drive the vehicle for several minutes under the same conditions as those indicated by the freeze data or at speeds over 30 mph (50 km/h), and then recheck for DTC. If the A/T DTC returns, go to the DTC Troubleshooting Index. If the DTC does not return, there was an intermittent problem within the circuit. Make sure all pins and terminals in the circuit are tight.

Automatic Transmission

DTC Troubleshooting (cont'd)

2001 Model

DTC P0740: Problem in Lock-up Control System

NOTE:

- Record all freeze data and review General Troubleshooting Information (see page 14-3) before you troubleshoot.
- Keep replacement solenoid valves on hand:
 - Torque converter clutch solenoid valve-shift solenoid valve A
 - A/T clutch pressure control solenoid valves A and B

1. Check whether the scan tool or the HDS indicates another code.

Does the scan tool or the HDS indicate another code?

YES—Perform the Troubleshooting Flowchart for the indicated Code(s). Recheck for code P0740 after troubleshooting. ■

NO—Go to step 2.

NOTE: Do not continue with this troubleshooting until the causes of any other DTCs have been corrected.

2. Measure the line pressure (see page 14-128).

Is the line pressure within the service limit?

YES—Go to step 3.

NO—Replace the transmission. ■

3. Replace the torque converter clutch solenoid and A/T clutch pressure control solenoid valve set:

- Refer to Torque Converter Clutch Solenoid Valve-Shift Solenoid Valve A Replacement (see page 14-130).
- Refer to A/T Clutch Pressure Control Solenoid Valves A and B Replacement (see page 14-133).

4. Clear the DTC with the scan tool or the HDS.
5. Using the scan tool, check to be sure that the engine coolant temperature is 176°F (80°C) or above.
6. Drive the vehicle under the same conditions as those indicated by the freeze data for more than 1 minute, or drive the vehicle at 55 mph (88 km/h) with TPS voltage 0.8 V for more than 1 minute.
7. Recheck for code P0740.

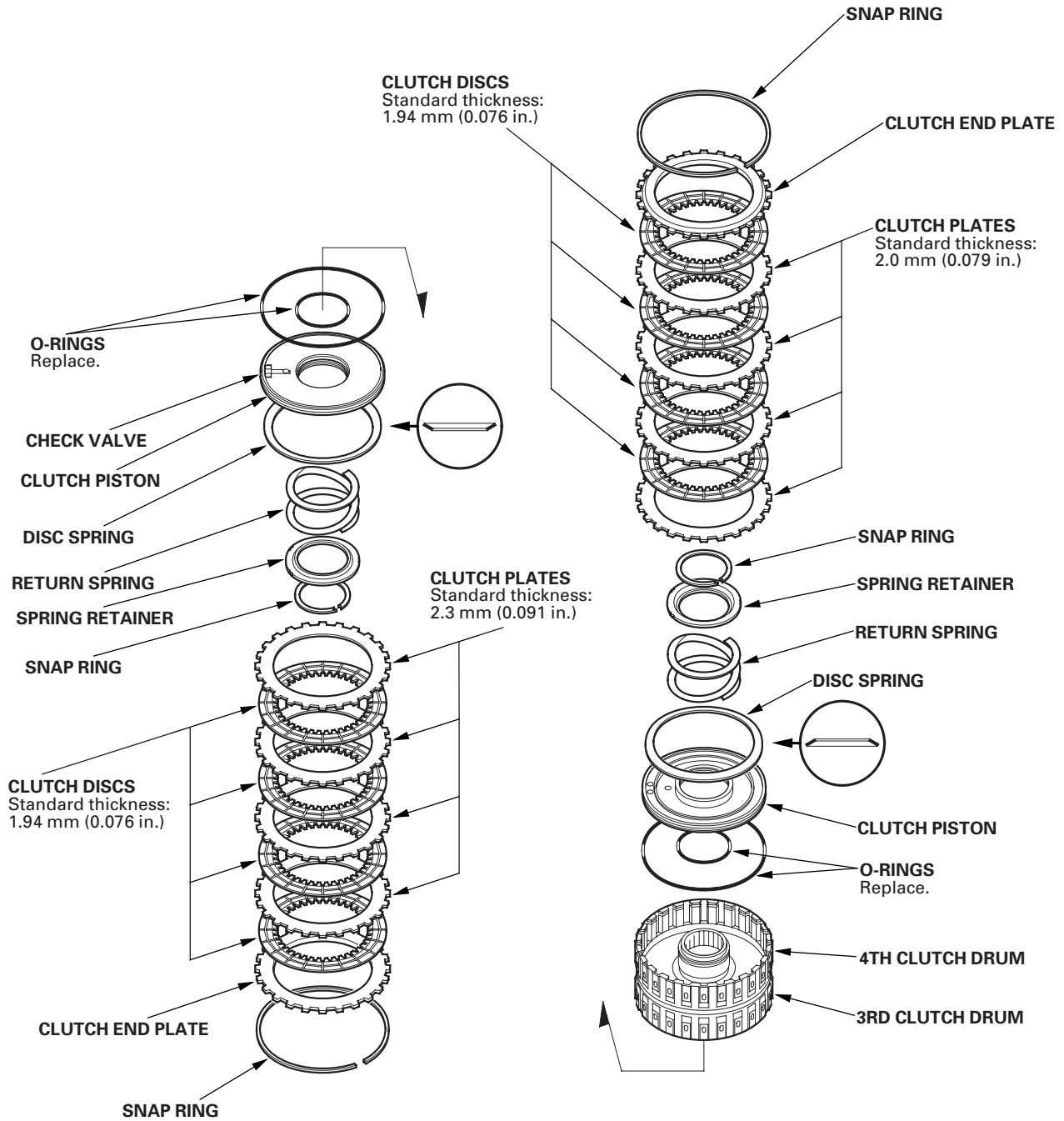
Does the scan tool or the HDS indicate code P0740?

YES—Inspect the O-ring on the torque converter. If the O-ring is missing, replace the O-ring. If the O-ring is damaged or OK, replace the transmission and torque converter. ■

NO—The system is OK at this time. ■



3RD/4TH CLUTCH





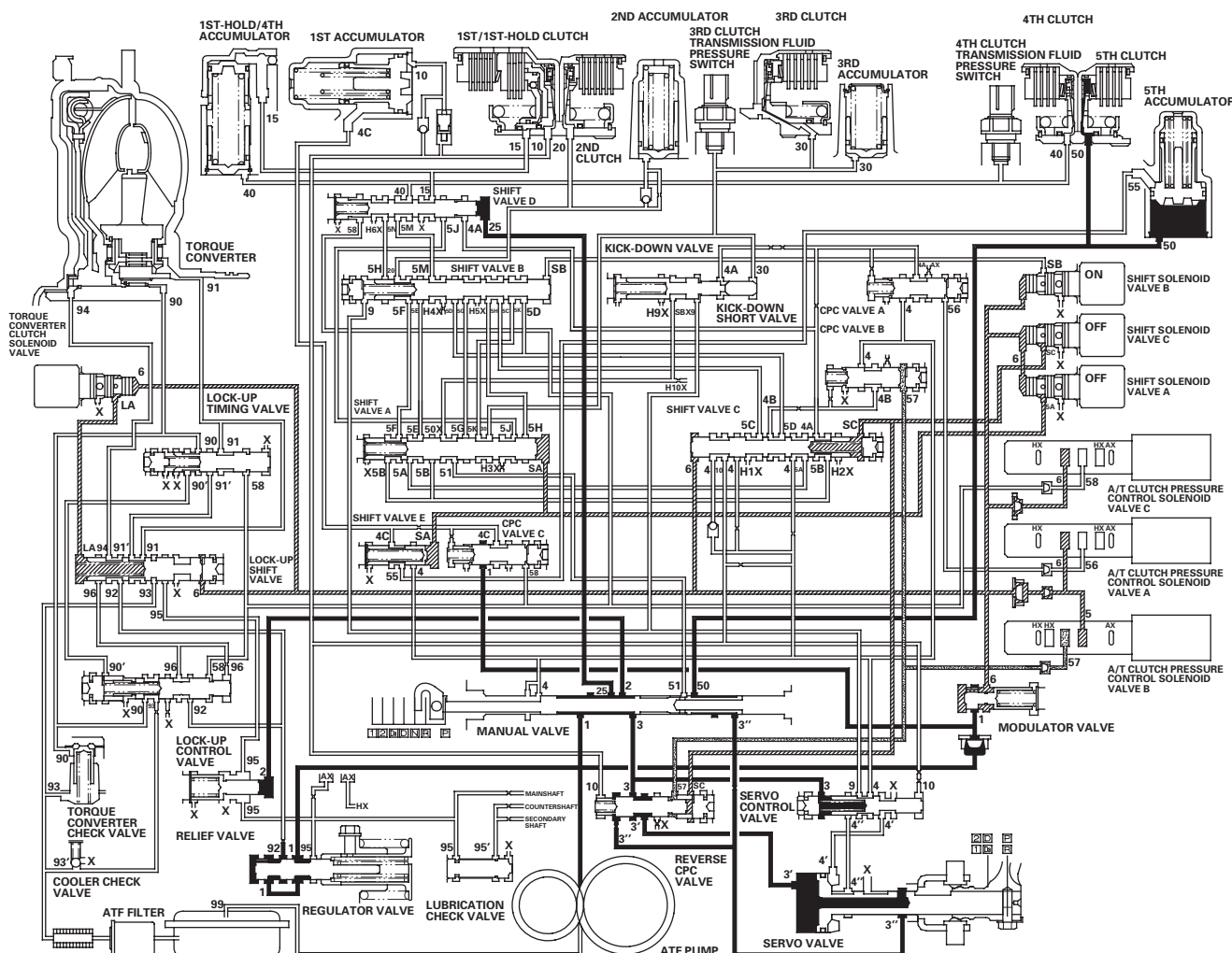
R Position: Driving in reverse gear

The PCM turns shift solenoid valve C OFF. Shift solenoid valve A keeps OFF and B keeps ON. Shift solenoid valve C is turned OFF, and SH C pressure (SC) is applied to the right side of the reverse CPC valve. Then the reverse CPC valve moves to the left side, creating full line pressure. Line pressure to the 5th clutch is the same as when shifting to the R position, and 5th clutch pressure increases. The 5th clutch is engaged with line pressure mode.

Reverse Inhibitor Control

When the R position is selected while the vehicle is moving forward at speeds over 6 mph (10 km/h), the PCM outputs to turn shift solenoid valves A and C ON; and shift solenoid valve B keeps ON. The reverse CPC valve is moved to right side and covers the port to stop the line pressure (3') to the servo valve. The line pressure (3') is not applied to the servo valve, and the 5th clutch pressure (50) is not applied to the 5th clutch. As a result, power is not transmitted to the reverse position.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.



(cont'd)

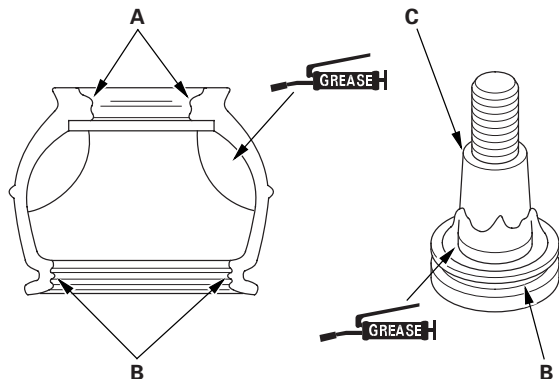
Front Suspension

Ball Joint Boot Replacement

Special Tools Required

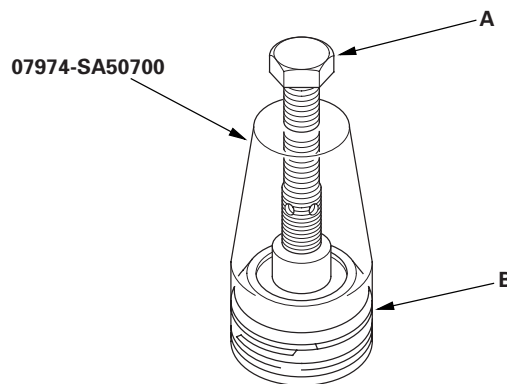
Ball joint boot clip guide 07974-SA50700

1. Remove the boot clip and the boot.
2. Pack the interior of the boot and lip (A) with grease. Do not contaminate the lower collar of the boot (B) with grease.



3. Wipe the grease off the tapered portion of the shaft (C), and pack fresh grease into the base. Do not let dirt or other foreign materials get into the boot.
4. Install the boot onto the ball joint, then squeeze it gently to force out any air.

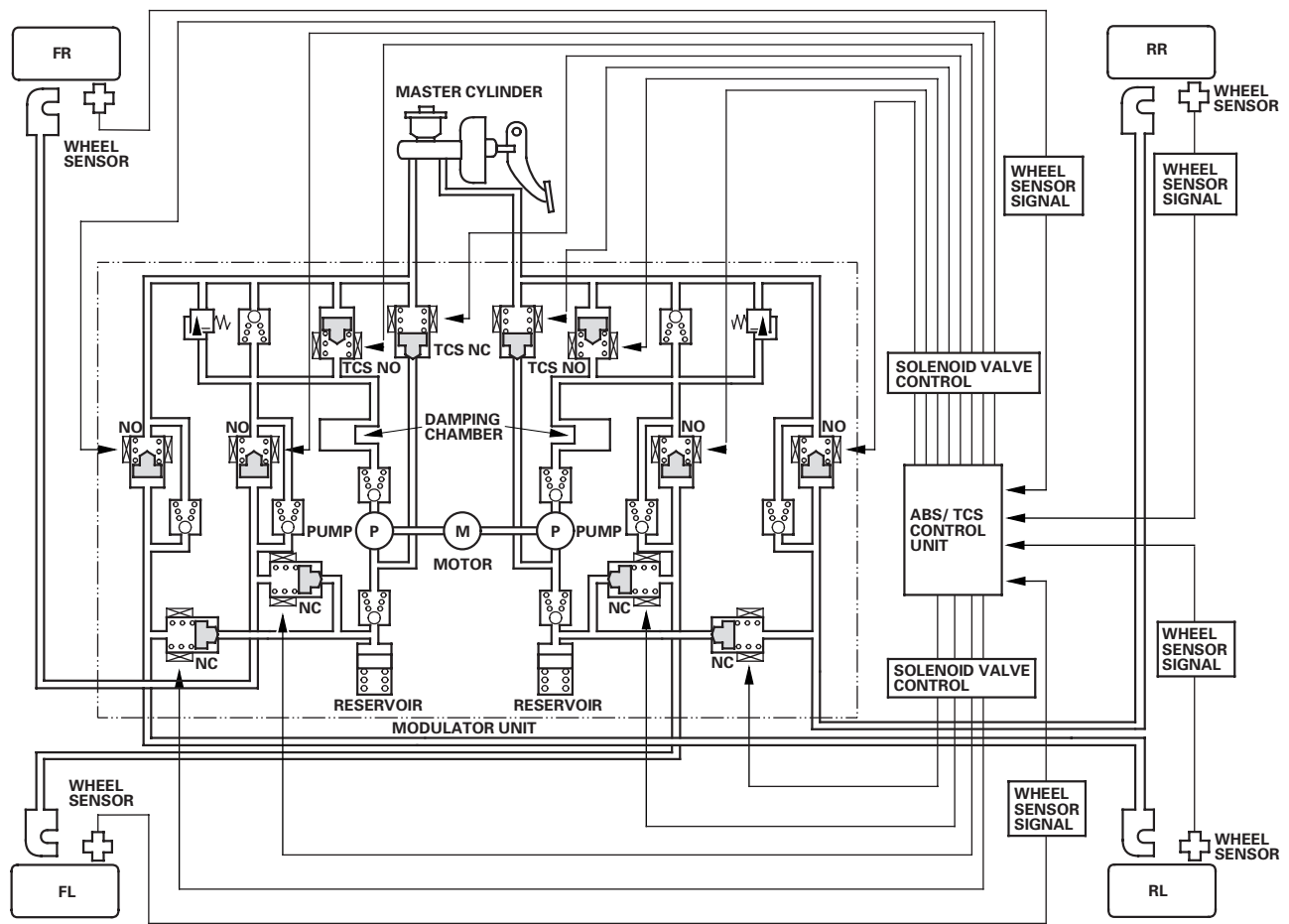
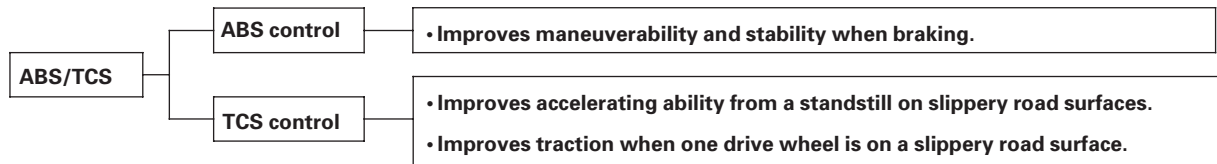
5. For a lower ball joint, adjust the special tool with the adjusting bolt (A) until its base is just above the groove around the bottom of the boot. Then slide the clip (B) over the tool and into position on the boot.



6. For an upper ball joint, just hold the tool over the joint, then slide the clip over the tool and into position on the boot.
7. After installing a boot, wipe any grease off the exposed portion of the ball joint shaft.

Outline

This system consists of the ABS/TCS control unit, the modulator unit, four wheel sensors, and the PCM. The system integrates the ABS (Anti-lock Brake System) and the TCS (Traction Control System) and controls both systems using the brakes.



NO: Normally Open
NC: Normally Closed

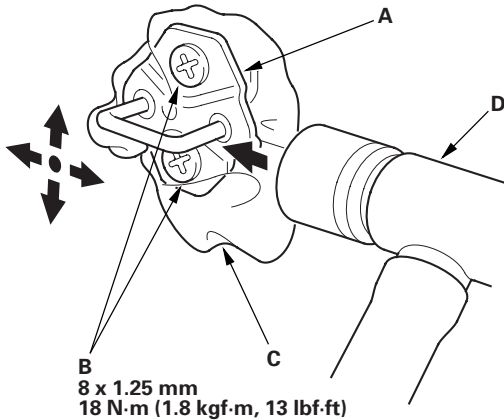
(cont'd)



Front Door Striker Adjustment

Make sure the door latches securely without slamming it. If necessary, adjust the striker (A): The striker nuts are fixed, but the striker can be adjusted slightly up or down, and in or out.

1. Loosen the screws (B), then insert a shop towel (C) between the body and striker.



2. Lightly tighten the screws.
3. Wrap the striker with a shop towel, then adjust the striker by tapping it with a plastic hammer (D). Do not tap the striker too hard.
4. Loosen the screws, and remove the shop towel.
5. Lightly tighten the screws.
6. Hold the outer handle out, and push the door against the body to be sure the striker allows a flush fit. If the door latches properly, tighten the screws and recheck.

Sliding Door Removal/Installation

NOTE:

- Have an assistant help you when removing and installing the door.
- Use seat covers to avoid damaging any surfaces.
- Take care not to scratch the center rail and body.
- Take care not to drop and damage the door.
- Put on gloves to protect your hands.

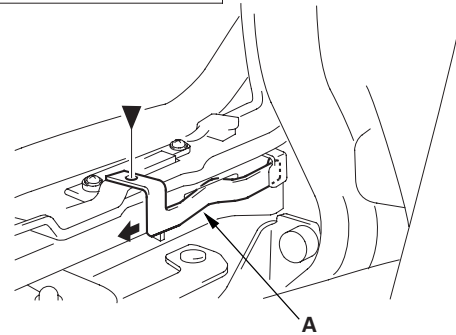
1. Place the vehicle on a firm, level surface when removing and installing the door.
2. Remove the sliding door sill trim (see page 20-58).
3. Remove the bolt, and remove the lower roller plate (A) (manual sliding door) or stop spring (A) (power sliding door).

Fastener Location

► : Bolt, 1



6 x 1.0 mm
8 N·m
(0.8 kgf·m,
6 lbf·ft)



4. Pull the sliding door backward fully.

(cont'd)

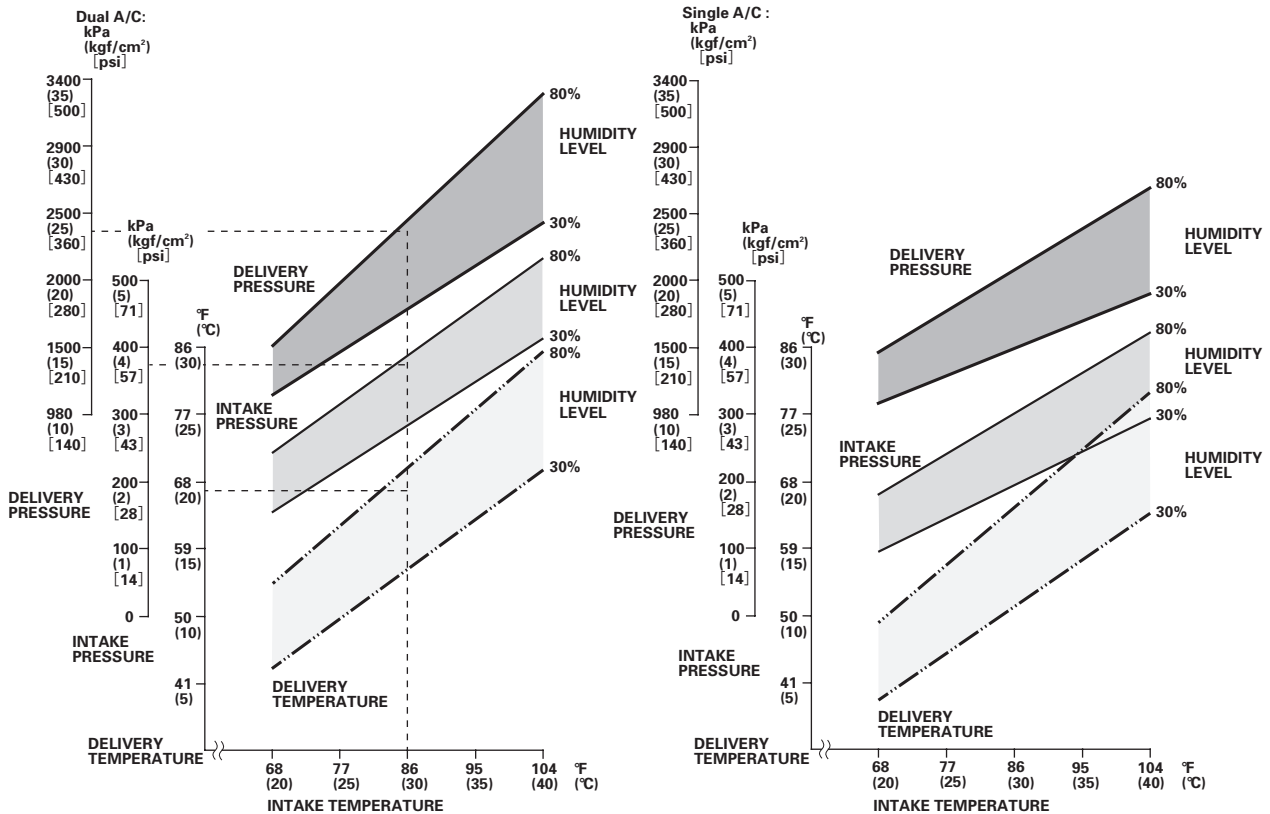


8. To complete the charts:

- Mark the delivery temperature along the vertical line.
- Mark the intake temperature (ambient air temperature) along the bottom line.
- Draw a line straight up from the air temperature to the humidity.
- Mark a point 10 % above and 10 % below the humidity level.
- From each point, draw a horizontal line across the delivery temperature.
- The delivery temperature should fall between the 2 lines.
- Complete the low-side pressure test and high-side pressure test in the same way.
- Any measurements outside the line may indicate the need for further inspection.

Example Intake temperature (dry): 86°F (30°C) Humidity level 70 %
 Intake temperature (wet): 77.9°F (25.5°C)
 Intake pressure: 360 kPa (3.67 kgf/cm²) (52.2 psi)
 Delivery temperature: 67.3°F (19.6°C)
 Delivery pressure: 2295 kPa (23.4 kgf/cm²) (332.8 psi)

Results: Within normal range



(cont'd)