

## 2007 Acura RL

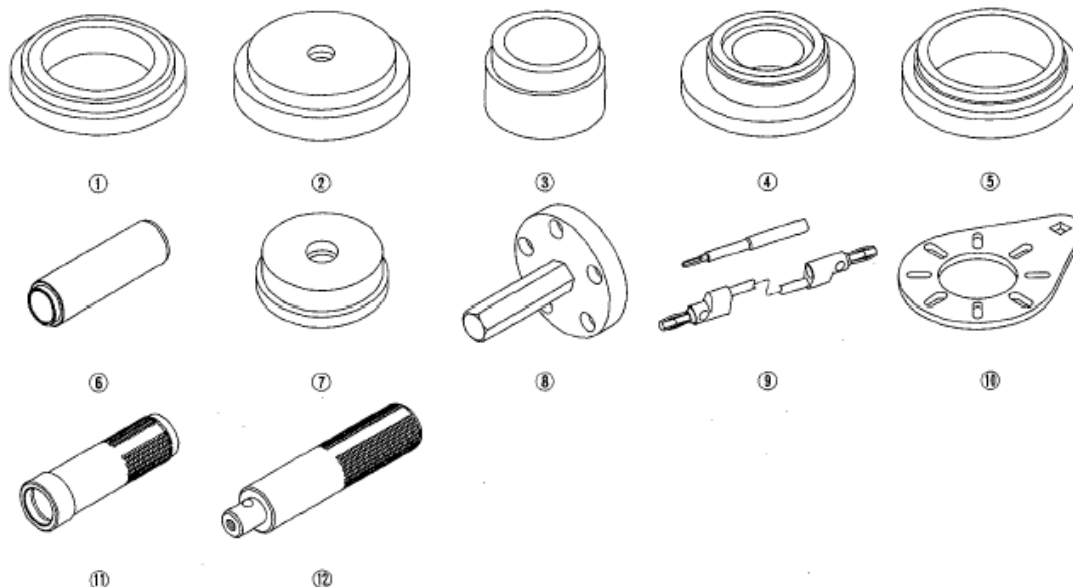
2005-08 DRIVELINE/AXLES Rear Differential - RL

### 2005-08 DRIVELINE/AXLES

#### Rear Differential - RL

## SPECIAL TOOLS

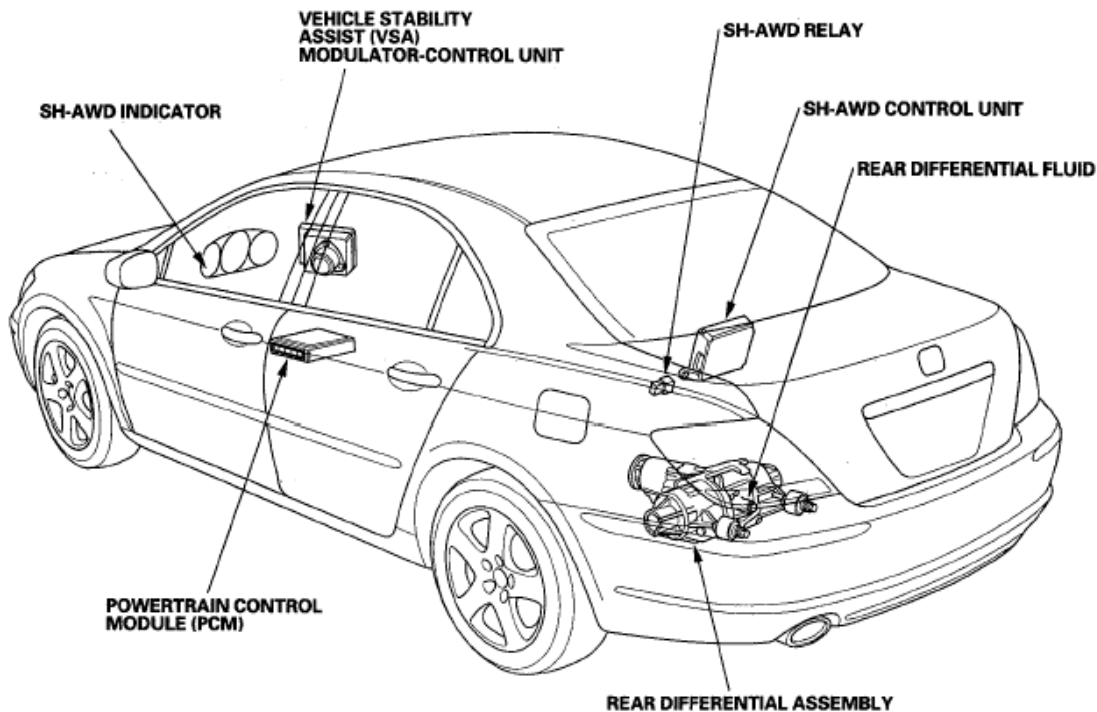
Ref. No.	Tool Number	Description	Qty
①	070AD-RJC0110	Oil Seal Driver A	1
②	070AD-RJC0120	Oil Seal Driver B	1
③	070AD-RJC0130	Oil Seal Driver C	1
④	070AD-RJC0140	Oil Seal Driver D	1
⑤	070AD-RJC0150	Oil Seal Driver E	1
⑥	070AD-PYZA100	Driver, 56 x 62 mm	1
⑦	07GAD-SD40101	Attachment, 78 x 90 mm	1
⑧	070AJ-SJAA101	Adapter, Torque Wrench	1
⑨	07SAZ-001000A	Backprobe Set	2
⑩	07XAB-0010101	Companion Flange Holder	1
⑪	07746-0030100	Inner Driver Handle 40	1
⑫	07749-0010000	Driver Handle 15 x 135L	1



**Fig. 1: Identifying Special Tools**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

## COMPONENT LOCATION INDEX



**Fig. 2: Identifying Rear Differential Component Location**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

## GENERAL TROUBLESHOOTING INFORMATION

### SH-AWD INDICATOR

The SH-AWD indicator comes on under certain conditions even if the AWD system is working normally. Here are some examples:

- When you use high-powered wireless equipment such as a CB or Ham radio in the vehicle.
- When you keep spinning the rear wheels while the vehicle is stuck in sand, mud, snow, etc.
- When the battery voltage suddenly drops below 8 volts or rises above 16 volts.

After the SH-AWD indicator comes on, it stays on until you turn the ignition switch off.

### DIAGNOSTIC TROUBLE CODE (DTC)

- The SH-AWD control unit can memorize up to seven different DTCs. The system displays the DTCs by blinking the SH-AWD indicator. Multiple DTCs are displayed in the order they occurred, beginning with the most recent.
- If the same DTC is detected more than once, the most recent DTC is written over the earlier one. Therefore, when the same problem is detected more than once, it is memorized as a single DTC.
- The DTCs are memorized in the EEPROM (non-volatile memory). Therefore, the memorized DTCs

are not cleared when the battery is disconnected or the SH-AWD control unit is disconnected.

- If there is a problem in the central processing unit (CPU) of the SH-AWD control unit, the SH-AWD indicator comes on, but no DTC is memorized.

## SELF-DIAGNOSIS

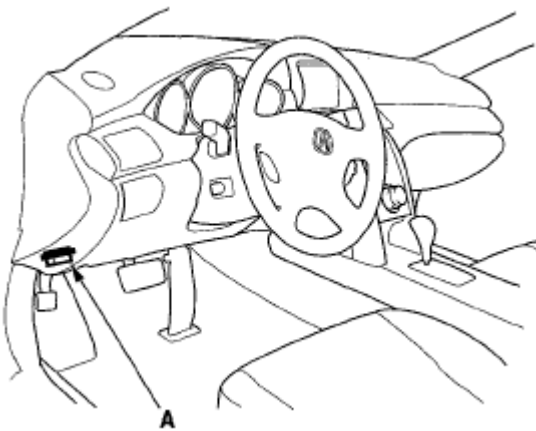
When a problem is detected by self-diagnosis, the system does the following:

- Turns the SH-AWD indicator on.
- Memorizes the DTC.
- Stops AWD control and puts the vehicle back in FWD.
- Reduces engine torque to suit the driving conditions when the abnormality was detected.

## HOW TO CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

When the SH-AWD control unit senses an abnormality in the input or output systems, the SH-AWD indicator in the gauge assembly will usually come on, and the malfunction indicator lamp (MIL), the D5 indicator, and/or the ABS indicator may also come on.

1. With the ignition switch OFF, connect the HDS to the data link connector (DLC) (A) behind the driver's dashboard lower cover.



**Fig. 3: Identifying Data Link Connector Location**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch ON (II), and follow the prompts on the HDS to display the DTC(s) on the screen. After determining the DTC(s), refer to the **DTC TROUBLESHOOTING**.

**NOTE:** See the HDS help menu for specific instruction.

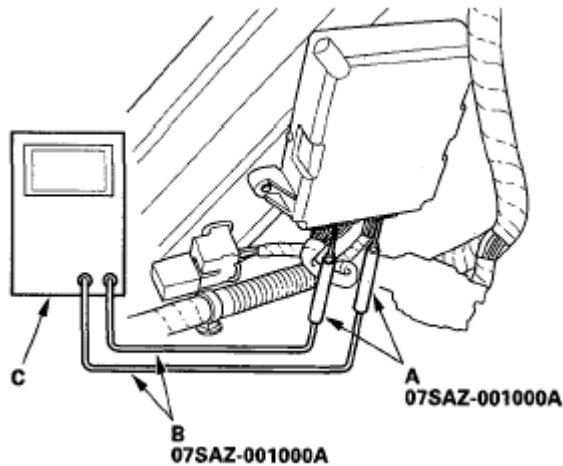
3. If there are fuel and emission DTCs, A/T DTCs, and VSA system DTCs at the same time, troubleshoot the fuel and emission DTCs first.
4. After recording the DTCs, clear all DTCs.
5. Test-drive the vehicle for several minutes in AWD mode, and check for DTCs. If the DTC returns, refer to the **DTC TROUBLESHOOTING**. If the DTC does not return, there was an intermittent problem within the circuit. Make sure all connectors and terminals in the circuit are tight.

## HOW TO TROUBLESHOOT CIRCUITS AT THE SH-AWD CONTROL UNIT

### Special Tools Required

Backprobe set 07SAZ-001000A (two required)

1. Remove the rear seat (see **REAR SEAT REMOVAL/INSTALLATION** ).
2. Remove the trunk front trim panel (see **TRIM REMOVAL/INSTALLATION - TRUNK AREA** ).
3. Inspect the circuit on the SH-AWD control unit according to the DTC Troubleshooting using the special tools and a digital multimeter or an analog circuit tester.
4. Connect the backprobe adapters (A) to the stacking patch cords (B), and connect the cords to the multimeter or an analog circuit tester (C). Using the wire insulator as a guide for the contoured-tip of the backprobe adapter, gently slide the tip into the connector from the wire side until it comes in contact with the terminal end of the wires.



**Fig. 4: Connecting Backprobe Adapters To Stacking Patch Cords**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

## UPDATING THE SH-AWD CONTROL UNIT

### Special Tools Required

- Honda diagnostic system (HDS)
- Honda interface module (HIM)
- HDS pocket tester

### NOTE:

- Use this procedure when you need to update the SH-AWD control unit in a troubleshooting procedure.
- Make sure the HDS/HIM has the latest software version.
- Before you update the SH-AWD control unit, make sure the battery in the vehicle is fully charged.
- Never turn the ignition switch OFF during the update. If there is a problem with the update, leave the ignition switch ON.
- To prevent SH-AWD control unit damage, do not operate anything

electrical (headlights, audio system, brakes, A/C, power windows, moonroof (if equipped), door locks, etc.) during the update.

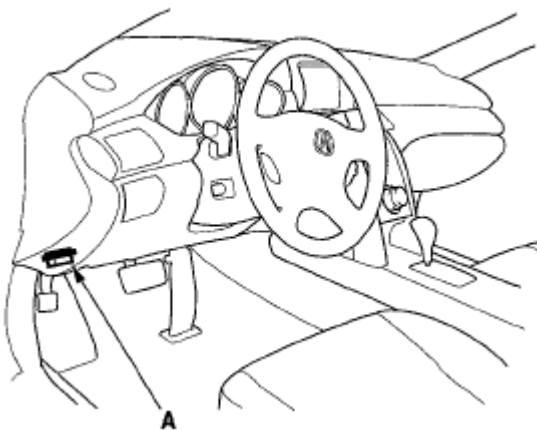
- To ensure the latest program is installed, do an SH-AWD control unit update whenever the SH-AWD control unit is substituted or replaced.
- You cannot update an SH-AWD control unit with a program it already has. It will only accept a new program.
- If you need to diagnose the Honda interface module (HIM) because the HIM's red (#3) lamp came on or was flashed during the update, leave the ignition switch in the ON (II) position when you disconnect the HIM from the data link connector (DLC). This will prevent SH-AWD control unit damage.

1. Select the update program, and follow the screen prompts to update the SH-AWD control unit.
2. If the software in the SH-AWD control unit is the latest, disconnect the HDS/HIM from the DLC, and go back to the procedure that you were doing. If the software in the SH-AWD control unit is not the latest, follow the instructions on the screen.
3. Do the SH-AWD control unit initialization.
4. Do the SH-AWD differential clutch torque memorization.
5. Do the yaw rate-lateral acceleration neutral position memorization.

### SH-AWD DIFFERENTIAL CLUTCH TORQUE MEMORIZATION

Whenever the side clutch set is replaced, the differential clutch torque memorization must be done.

1. With the ignition switch OFF, connect the HDS to the 16P DLC (A) behind the driver's dashboard lower cover.



**Fig. 5: Identifying Data Link Connector Location**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

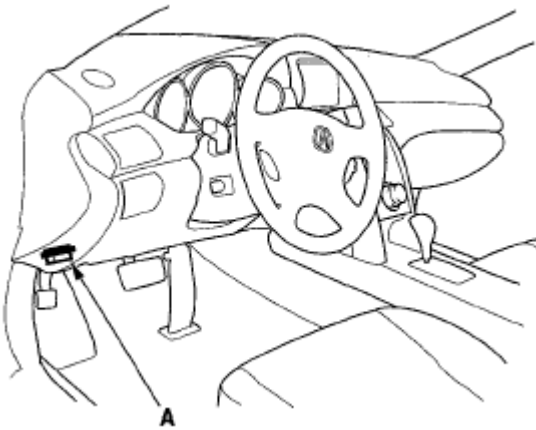
2. Turn the ignition switch ON (II).
3. From the mode menu, select miscellaneous test, then select neutral menu and follow the screen prompts.

**NOTE:** See the HDS help menu for specific instructions.

## **STEERING ANGLE NEUTRAL POSITION MEMORIZATION**

Whenever following operations are done, the steering angle neutral position memorization must be done.

- The steering wheel replacement
  - The combination switch replacement
  - Front wheel alignment
1. With the ignition switch OFF, connect the HDS to the 16P DLC (A) behind the driver's dashboard lower cover.



**Fig. 6: Identifying Data Link Connector Location**  
**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

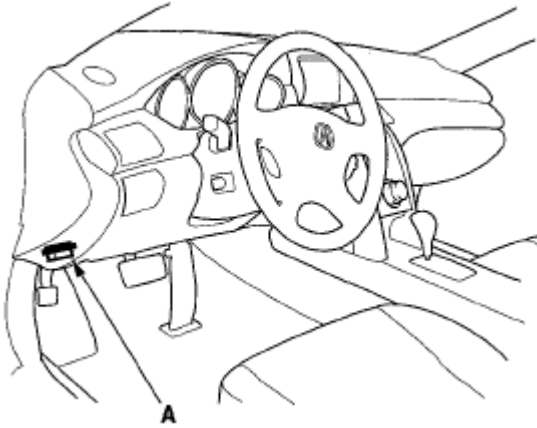
2. Turn the ignition switch ON (II).
3. From the mode menu, select miscellaneous test, then select neutral menu and follow the screen prompts.

**NOTE:**        **See the HDS help menu for specific instructions.**

## **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION NEUTRAL POSITION MEMORIZATION**

Whenever the yaw rate sensor or the lateral/longitudinal acceleration sensor is replaced, its neutral position be memorization must be done.

1. With the ignition switch OFF, connect the HDS to the 16P DLC (A) behind the driver's dashboard lower cover.



**Fig. 7: Identifying Data Link Connector Location**  
**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

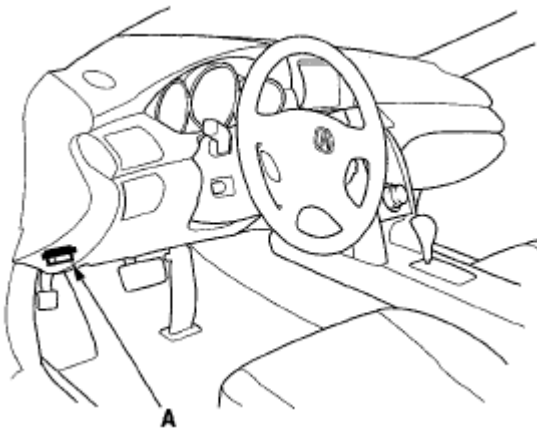
2. Turn the ignition switch ON (II).
3. From the mode menu, select miscellaneous test, then select neutral menu and follow the screen prompts.

**NOTE:** See the HDS help menu for specific instructions.

### **SH-AWD CONTROL UNIT INITIALIZATION**

Whenever the SH-AWD control unit is replaced, it must be initialized.

1. With the ignition switch OFF, connect the HDS to the 16P DLC (A) behind the driver's dashboard lower cover.



**Fig. 8: Identifying Data Link Connector Location**  
**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

2. Turn the ignition switch ON (II).
3. From the mode menu, select miscellaneous test, then select neutral menu and follow the screen prompts.

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**NOTE: See the HDS help menu for specific instructions.****DTC TROUBLESHOOTING INDEX****DTC TROUBLESHOOTING CHART**

<b>DTC (1)</b>	<b>SH-AWD Indicator Light</b>	<b>Detection Item</b>	<b>Refer to</b>
<b><u>12-1</u></b>	ON	Lateral/Longitudinal Acceleration Sensor Malfunction	
<b><u>12-2</u></b>	ON	Lateral/Longitudinal Acceleration Sensor Malfunction	
<b><u>12-3</u></b>	ON	Lateral/Longitudinal Acceleration Sensor Malfunction	
<b><u>14-1</u></b>	ON	Lateral/Longitudinal Acceleration Sensor Neutral Position	
<b><u>14-2</u></b>	ON	Lateral/Longitudinal Acceleration Sensor Neutral Position	
<b><u>16-1</u></b>	ON	Steering Angle Sensor Signal	
<b><u>19-1</u></b>	ON	Steering Angle Sensor (Open)	
<b><u>19-2</u></b>	ON	Steering Angle Sensor (Short)	
<b><u>19-3</u></b>	ON	Steering Angle Sensor Malfunction	
<b><u>19-4</u></b>	ON	Steering Angle Sensor Circuit	
<b><u>27-1</u></b>	ON	Hypoid Gear Speed Sensor (Open or Short)	
<b><u>27-2</u></b>	ON	Hypoid Gear Speed Sensor Malfunction	
<b><u>33-1</u></b>	ON	Yaw Rate Sensor Malfunction	
<b><u>33-2</u></b>	ON	Yaw Rate Sensor Malfunction	
<b><u>33-3</u></b>	ON	Yaw Rate Sensor Malfunction	
<b><u>35-1</u></b>	ON	Yaw Rate Sensor Neutral Position	
<b><u>35-2</u></b>	ON	Yaw Rate Sensor Neutral Position	
<b><u>41-1</u></b>	ON	Loss of Communication with PCM	
<b><u>41-2</u></b>	ON	Loss of Communication with VSA Modulator-Control Unit	
<b><u>41-3</u></b>	ON	Loss of Communication with Gauge Assembly	
<b><u>42-1</u></b>	ON	Differential Oil Temperature Sensor (Open)	
<b><u>42-2</u></b>	ON	Differential Oil Temperature Sensor (Short)	
<b><u>43-1</u></b>	ON	Differential Oil Temperature Sensor Circuit	
<b><u>44-11</u></b>	ON	SH-AWD Control Unit	
<b><u>44-12</u></b>	ON	SH-AWD Relay Stuck ON	

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<b><u>44-21</u></b>	ON	SH-AWD Control Unit	
<b><u>44-31</u></b>	ON	SH-AWD Relay Stuck OFF	
<b><u>44-32</u></b>	ON	SH-AWD Control Unit Power Supply Stuck ON	
<b><u>44-41</u></b>	ON	SH-AWD Control Unit Power Supply Stuck OFF	
<b><u>44-50</u></b>	ON	SH-AWD Control Unit Power Supply Voltage Low	
<b><u>46-1</u></b>	ON	SH-AWD Control Unit Internal Power Supply Circuit (Open or Short)	
<b><u>52-3</u></b>	ON	Left Clutch Electromagnetic Coil Current Malfunction	
<b><u>53-1</u></b>	ON	Left Clutch Electromagnetic Coil (Open)	
<b><u>53-2</u></b>	ON	Left Clutch Electromagnetic Coil (Short)	
<b><u>53-3</u></b>	ON	Left Clutch Electromagnetic Coil (Open)	
<b><u>53-4</u></b>	ON	Left Clutch Electromagnetic Coil (Short)	
<b><u>56-3</u></b>	ON	Right Clutch Electromagnetic Coil Current Malfunction	
<b><u>57-1</u></b>	ON	Right Clutch Electromagnetic Coil (Open)	
<b><u>57-2</u></b>	ON	Right Clutch Electromagnetic Coil (Short)	
<b><u>57-3</u></b>	ON	Right Clutch Electromagnetic Coil (Open)	
<b><u>57-4</u></b>	ON	Right Clutch Electromagnetic Coil (Short)	
<b><u>59-1</u></b>	ON	SH-AWD Control Unit Power Supply Monitor Circuit	
<b><u>61-1</u></b>	ON	Shift Solenoid Valve (Open)	
<b><u>61-2</u></b>	ON	Shift Solenoid Valve (Short)	
<b><u>74-1</u></b>	ON	One Way Clutch Malfunction	
<b><u>75-1</u></b>	ON	Acceleration Device Malfunction (Stuck OFF)	
<b><u>75-2</u></b>	ON	Acceleration Device Malfunction (Stuck ON)	
<b><u>76-1</u></b>	ON	Rear Differential Fluid Overheats	
77-1	ON	The Functional Abnormalities of Fuel Emission or Automatic-Transmission	Go to <b><u>DTC TROUBLESHOOTING INDEX</u></b> and <b><u>SYMPTOM TROUBLESHOOTING INDEX</u></b>
77-2	ON	The Functional Abnormalities of VSA Modulator-Control Unit	Go to <b><u>DTC TROUBLESHOOTING INDEX</u></b> and <b><u>SYMPTOM TROUBLESHOOTING INDEX</u></b>

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77-3	ON	The Functional Abnormalities of Gauge Assembly	Go to <b><u>DTC TROUBLESHOOTING</u></b>
<del>78-XX</del>	ON	SH-AWD Control Unit Self-diagnostic Malfunction	
<b><u>81-1</u></b>	ON	Left Search Coil Sensor Malfunction	
<b><u>81-2</u></b>	ON	Left Search Coil Sensor (Open or Short)	
<b><u>81-3</u></b>	ON	Left Clutch Electromagnetic Coil Magnetic Flux Characteristic	
<b><u>82-1</u></b>	ON	Right Search Coil Sensor Malfunction	
<b><u>82-2</u></b>	ON	Right Search Coil Sensor (Open or Short)	
<b><u>82-3</u></b>	ON	Right Search Coil Sensor Magnetic Flux Characteristic	
(1) DTCs are indicated by the SH-AWD indicator when the 16P data link connector (DLC) is connected to the HDS.			

**SYMPTOM TROUBLESHOOTING INDEX**

**NOTE:** Most problems in the unit are to be diagnosed by identifying noises from the gears or bearings. Care should be taken during diagnosis not to confuse differential noises with those from other drivetrain components.

**SYMPTOM TROUBLESHOOTING CHART**

Symptom	Diagnostic Procedure	Also check for
The SH-AWD indicator does not go off, and no DTCs are stored	Symptom troubleshooting (see <b><u>THE SH-AWD INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED</u></b> ).	
The SH-AWD indicator does not come on	Symptom troubleshooting (see <b><u>THE SH-AWD INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED</u></b> ).	
Gear or bearing noises	<ul style="list-style-type: none"> <li>• Fluid level too low.</li> <li>• Incorrect or worn out fluid.</li> <li>• Damaged or chipped gears.</li> <li>• Incorrect side case clearance.</li> <li>• Incorrect tire size (rolling circumference).</li> </ul>	<ul style="list-style-type: none"> <li>• Add fluid</li> <li>• Drain and fill the differential</li> <li>• Replace the differential carrier assembly</li> <li>• Side case clearance adjustment</li> </ul>
Rear differential overheats	<ul style="list-style-type: none"> <li>• Fluid level too low.</li> <li>• Incorrect fluid type.</li> <li>• Incorrect tire size (rolling circumference).</li> </ul>	<ul style="list-style-type: none"> <li>• Add fluid</li> <li>• Drain and fill the differential</li> </ul>

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Rear differential leaks fluid	<ul style="list-style-type: none"><li>• Fluid level too high.</li><li>• Clogged breather hose.</li><li>• Worn or damaged oil seal.</li><li>• Damaged sealing washer.</li><li>• Loose mounting bolts or inadequate sealing.</li></ul>	<ul style="list-style-type: none"><li>• lower to proper level</li><li>• Clean or replace</li><li>• Replace the oil seal</li><li>• Replace the sealing washer</li><li>• Recheck torque or apply sealant</li></ul>
Rear differential screeches, whines, moans, or squeaks	<ul style="list-style-type: none"><li>• Fluid level too low.</li><li>• Incorrect or worn out fluid.</li><li>• Incorrect tire rolling circumference.</li><li>• Damaged oil pump.</li></ul>	<ul style="list-style-type: none"><li>• Add fluid</li><li>• Drain and fill the differential</li><li>• Adjust tire pressure or replace tires</li><li>• Replace the differential carrier assembly</li></ul>
Noise during acceleration, or when accelerating from a full stop	<ul style="list-style-type: none"><li>• Incorrect side case clearance.</li><li>• Incorrect pre-load.</li><li>• Incorrect of backlash of hypoid gear.</li><li>• Damaged or chipped gears.</li><li>• Incorrect tire size (rolling circumference).</li></ul>	<ul style="list-style-type: none"><li>• Side case clearance adjustment</li><li>• Pre-load adjustment</li><li>• Replace the differential carrier assembly</li><li>• Replace the differential carrier assembly</li></ul>
HDS does not communicate with the SH-AWD control unit or the vehicle	Troubleshooting the DLC circuit; '05-07 models (see <b>'05-07 MODELS</b> ), '08 model (see <b>'08 MODEL</b> ).	

## SYSTEM DESCRIPTION

### SH-AWD SYSTEM

#### Outline

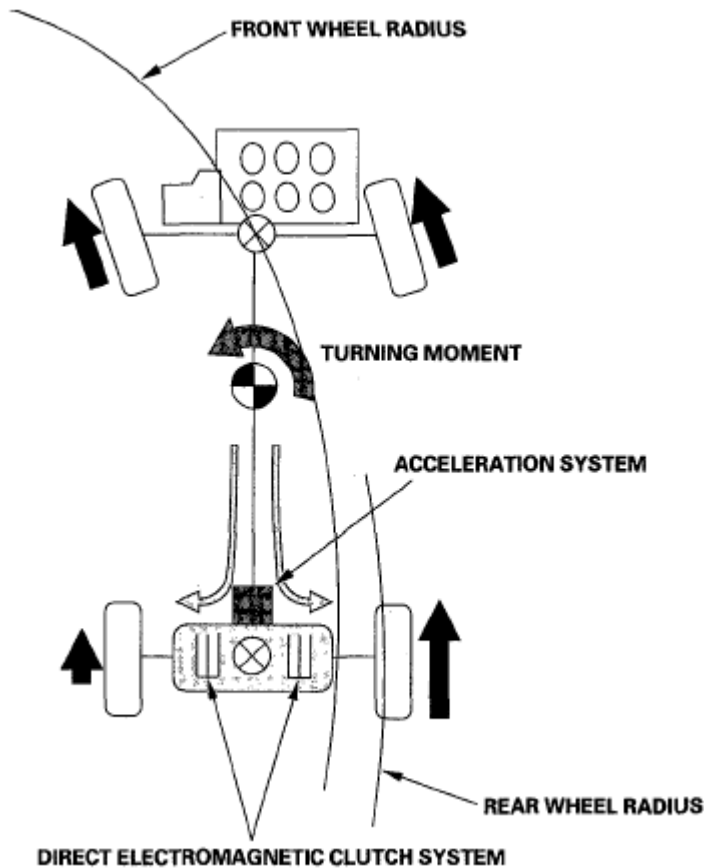
This vehicle is equipped with a Super Handling All-wheel Drive (SH-AWD) rear differential system. This system uses electromagnetic clutches, an acceleration system, and the SH-AWD control unit to control front to rear torque distribution and independent left to right rear torque distribution. This allows the system to function both as a limited slip differential and as a torque distribution system to improve standing start performance, straight-line stability, climbing, and cornering ability.

SH-AWD features include

- Independent torque distribution to the front and rear wheels, and to the left and right wheels for neutral handling when cornering.
- Controls differential (inside/outside) wheel speed in a turn to increase cornering stability.
- Limited slip differential function for better acceleration.

### Operation

In a normal turn the radius of the front wheels is shorter than the radius that the rear wheels travel. If the front and rear wheels are driven at the same speed, full power is not transmitted. The SH-AWD system monitors the speed of the front wheels and increases the speed of the outside rear wheel proportionally to accelerate it around the larger radius. This improves stability and steering response. On slippery surfaces this provides the improved traction of a 4-wheel drive system.



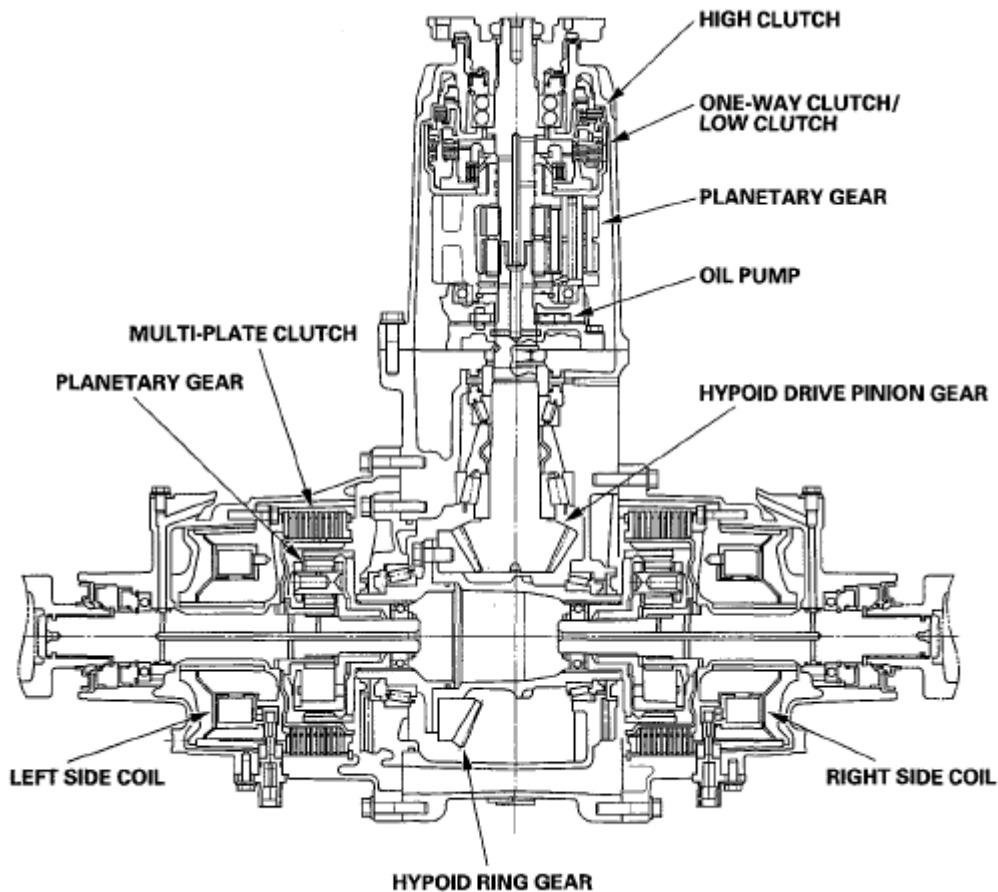
**Fig. 9: Direct Electromagnetic Clutch System**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

### Construction

1. The differential assembly has a conventional hypoid ring and pinion gear set.
2. The acceleration system consists of the high clutch, the one-way clutch/low clutch, the planetary gear set, and the oil pump. When accelerating straight ahead, the one-way clutch and the low clutch applies the driving force to the rear wheels. During normal straight ahead driving, only the low clutch applies driving force to the rear wheels. When turning, the high clutch connects the acceleration planetary gear to the differential. This speeds up the rear wheels to compensate for the different paths the front and rear wheels take. When decelerating, the differential drives the oil pump to generate hydraulic

pressure.

3. The direct electromagnetic clutch system consists of the coils, the planetary gear sets, and the multi-plate clutches that are installed in the side cases on either side of the differential carrier. When driving straight ahead, both rear wheels rotate at the same speed. When turning, current is applied to the appropriate outside wheel main coil to engage the clutch. The amount of current passed through the electromagnetic clutch controls the amount of driving force to the outside wheel.



**Fig. 10: Cross-Sectional View Of Rear Differential**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

## SH-AWD 4WD CONTROL SYSTEM

### Control System

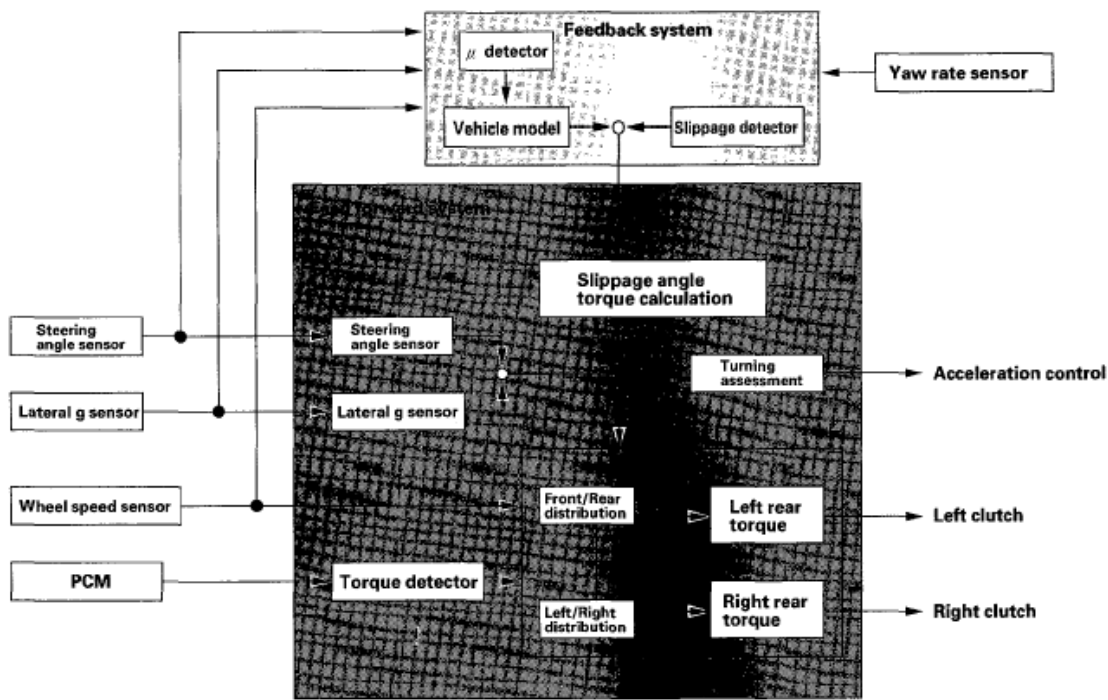
The SH-AWD control system consists of a SH-AWD control unit, the PCM, the VSA modulator-control unit, and various sensors and switches that detect the steering angle, the lateral G force, the yaw, and the vehicle speed. An oil temperature sensor and a speed sensor are located on in the rear differential. The control units exchange information via the CAN communication lines. The SH-AWD control unit has a self-diagnostic function. If a malfunction is detected, the SH-AWD control unit turns on the SH-AWD indicator in the gauge assembly and the system goes into fail-safe mode. When in fail-safe mode, the vehicle disable the SH-AWD differential. The vehicle defaults to front wheel drive, and the PCM reduces available engine output.

### Driving Force Control

The driving force control distributes the power based on the driver's inputs. It distributes torque to the front and rear wheels based on the throttle opening and the available engine torque output. When turning, torque is applied to the rear wheels independently based on the lateral G input and the direction of the turn. This generates an inward yaw movement to help steer the vehicle around the turn.

### Feedback Control

In low traction conditions, where a wheel will spin or the vehicle tends to skid, the amount of torque is distributed to match the traction available.

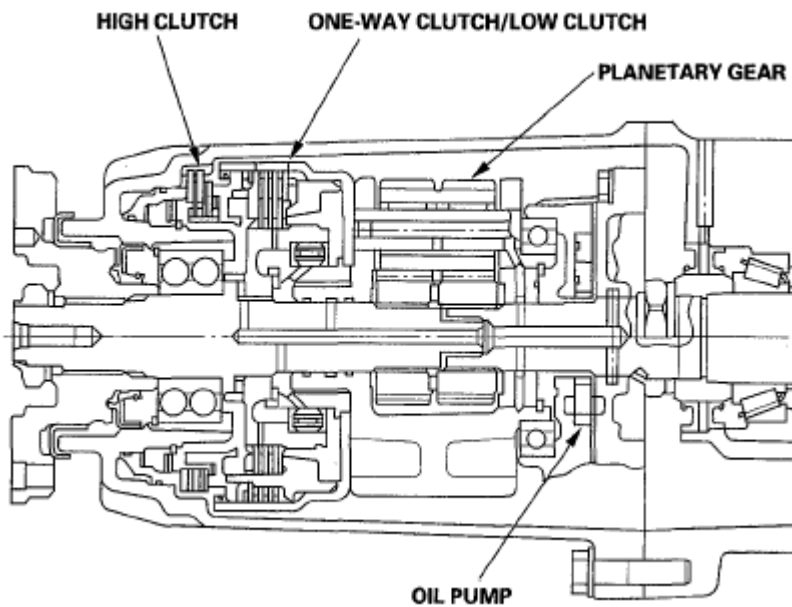


**Fig. 11: SH-AWD 4WD Control System Diagram**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

### ACCELERATION SYSTEM

#### Construction

The acceleration system consists of the one-way clutch/low clutch, the high clutch, the planetary gear, and the oil pump.

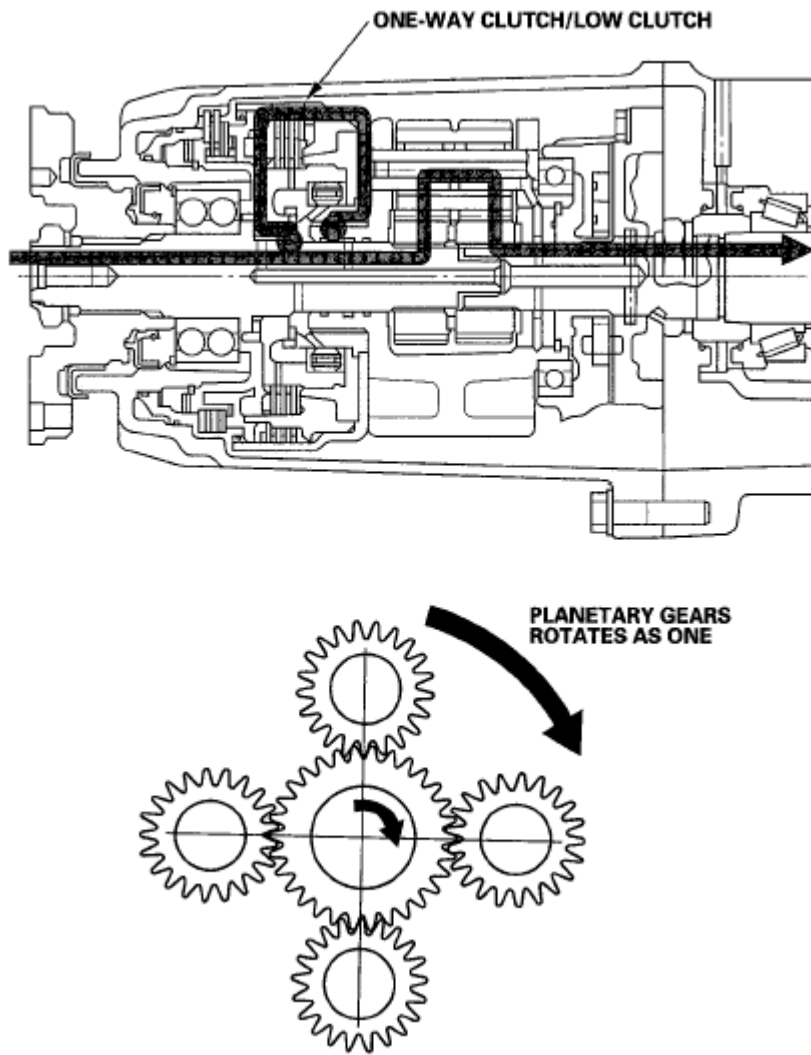


**Fig. 12: Acceleration System Construction Diagram**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

### Operation

#### Acceleration and deceleration in a straight line

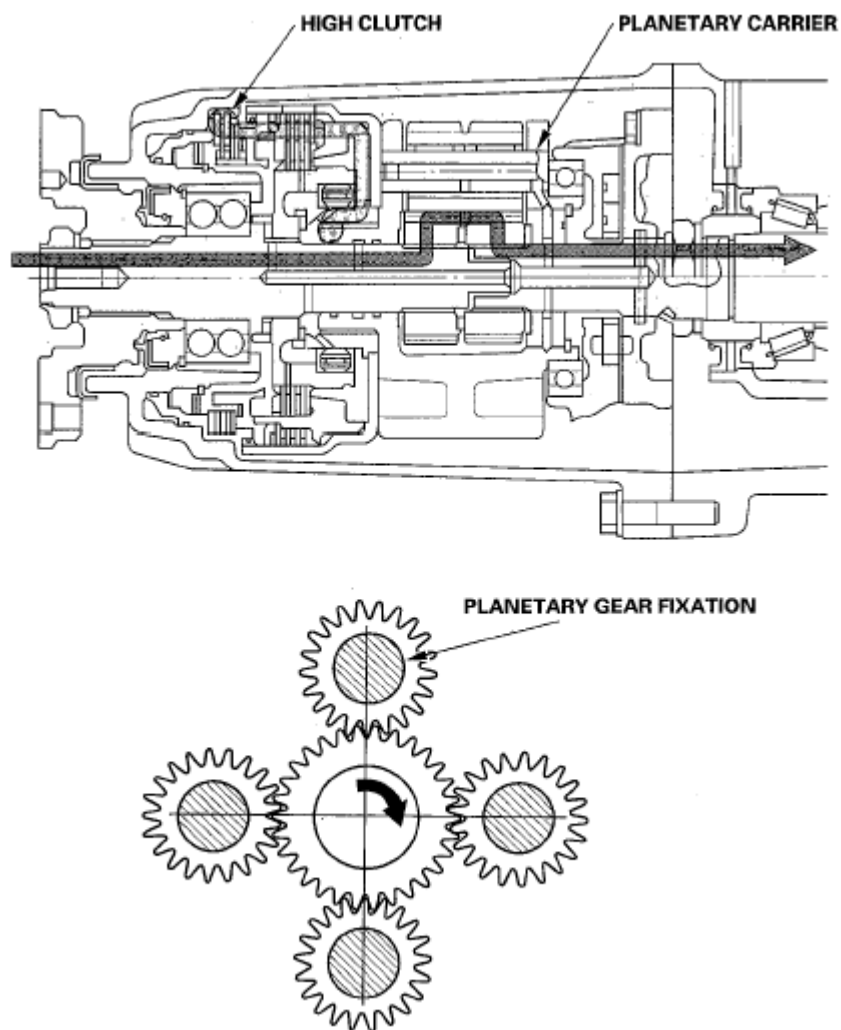
1. The one-way clutch/low clutch connects the propeller shaft to the planetary gear carrier. The high clutch is disengaged by spring force.
2. The propeller shaft, the planetary gear carrier, and the pinion gear all rotate at the same speed.



**Fig. 13: Acceleration And Deceleration In Straight Line Diagram**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

**Acceleration system in a corner**

1. Hydraulic pressure from the solenoid valve engages the high clutch.
2. The high clutch locks the planetary gears to the propeller shaft, and the driving force is increased to both rear wheels.
3. The high clutch mechanically releases the low clutch.

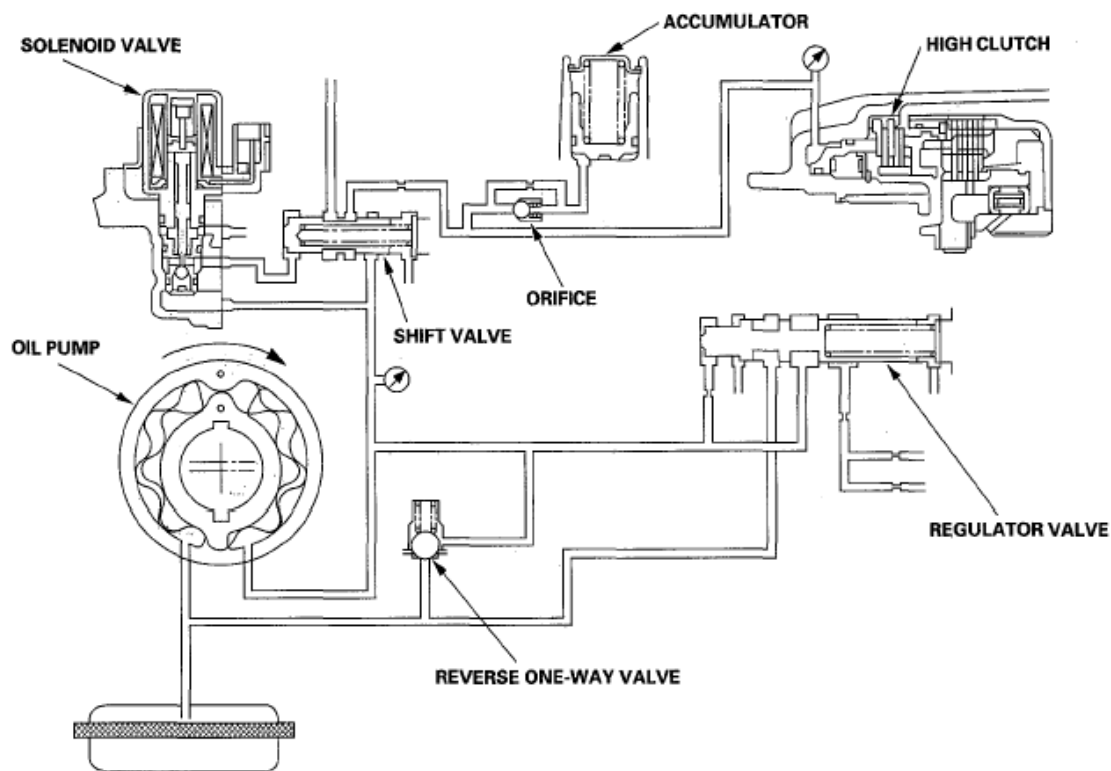


**Fig. 14: Acceleration System In Corner Diagram**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

## **ACCELERATION SYSTEM HYDRAULIC PRESSURE CONTROL**

### **Construction**

The hydraulic pressure system consists of the solenoid valve, the oil pump, the reverse one-way valve, the regulator valve, the shift valve, the accumulator, and the orifices.

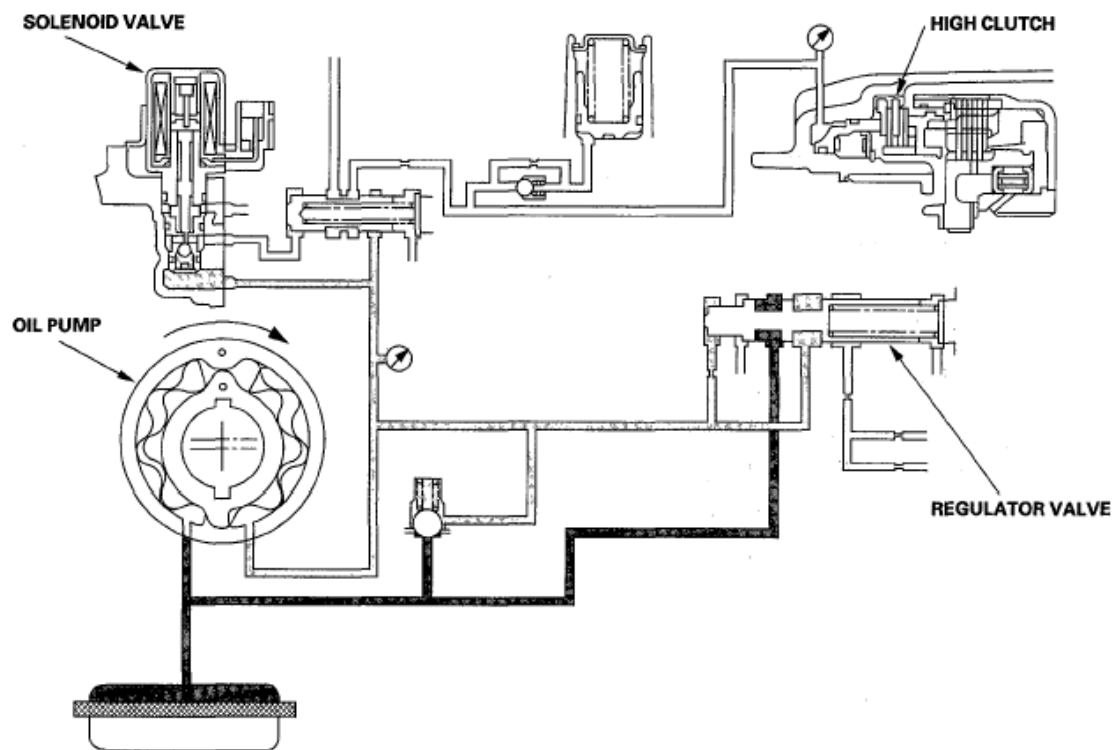


**Fig. 15: Acceleration System Hydraulic Pressure Control System Diagram**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

### Operation

#### Driving in a straight line

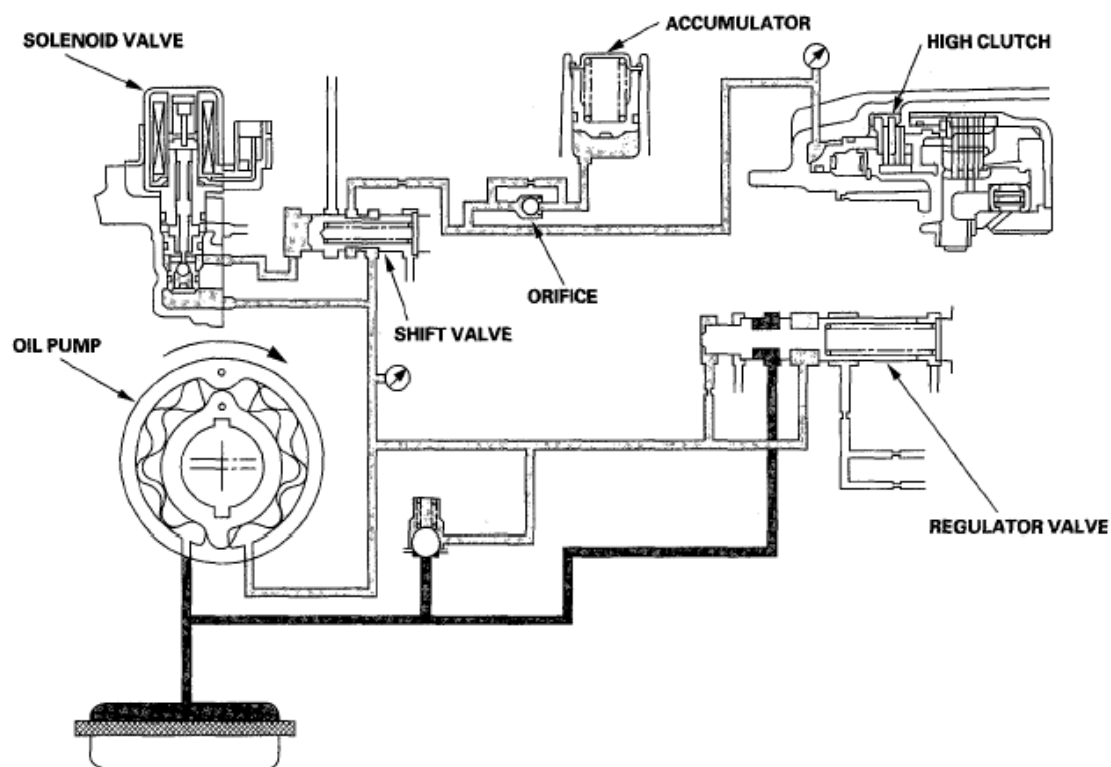
The pressure regulator valve regulates the hydraulic pressure generated by the oil pump. Because the solenoid valve is off, hydraulic pressure is not applied to the high clutch piston, and it remains disengaged. If the hydraulic pressure overcomes the pressure regulator valve, the pressure is relieved from the pump circuit to reduce pump drive losses.



**Fig. 16: Acceleration System Hydraulic Pressure Control Diagram - Straight Line**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

#### Cornering

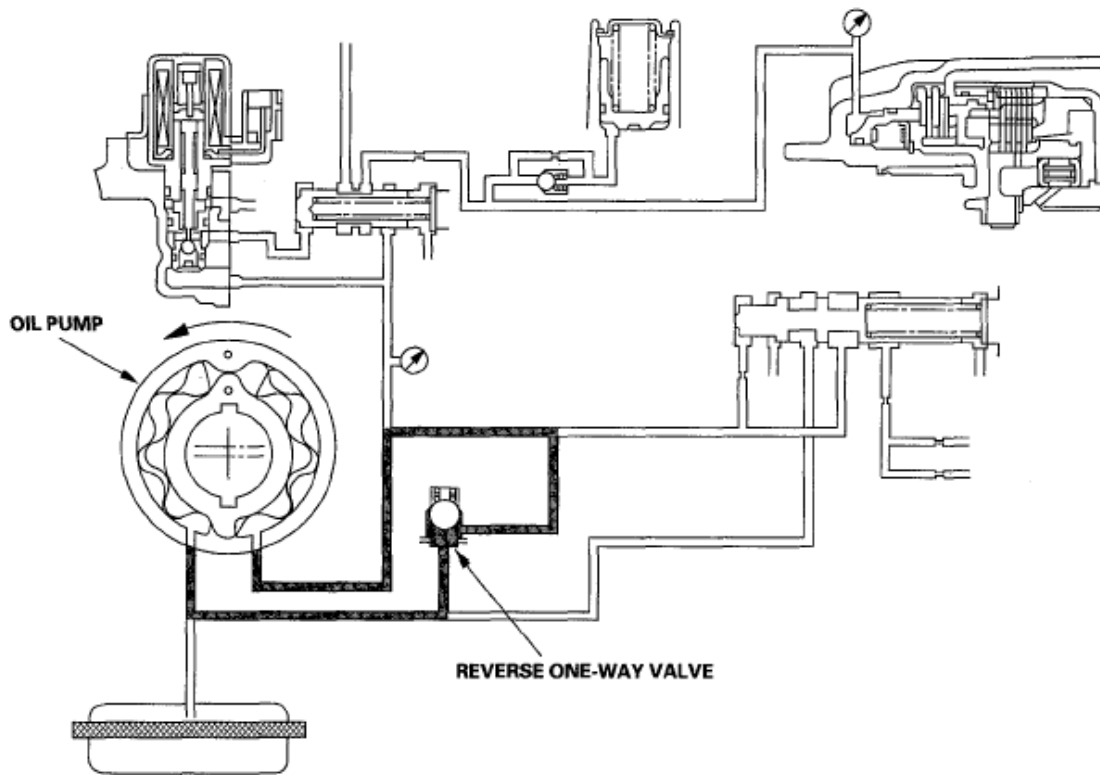
The solenoid valve is energized, applying hydraulic pressure to the high clutch piston via the shift valve to engage the high clutch. An accumulator and an orifice are installed between the shift valve and the high clutch piston to reduce the fluctuations in hydraulic pressure.



**Fig. 17: Acceleration System Hydraulic Pressure Control Diagram - Cornering**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

#### When backing up

The reverse rotation of the propeller shaft causes the oil pump to rotate in reverse. This opens the reverse one-way valve and allows the oil to circulate in the pump and valve body without draining the system. This prevents aeration of the oil which can delay the response of the differential.



**Fig. 18: Acceleration System Hydraulic Pressure Control Diagram - When Backing Up**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

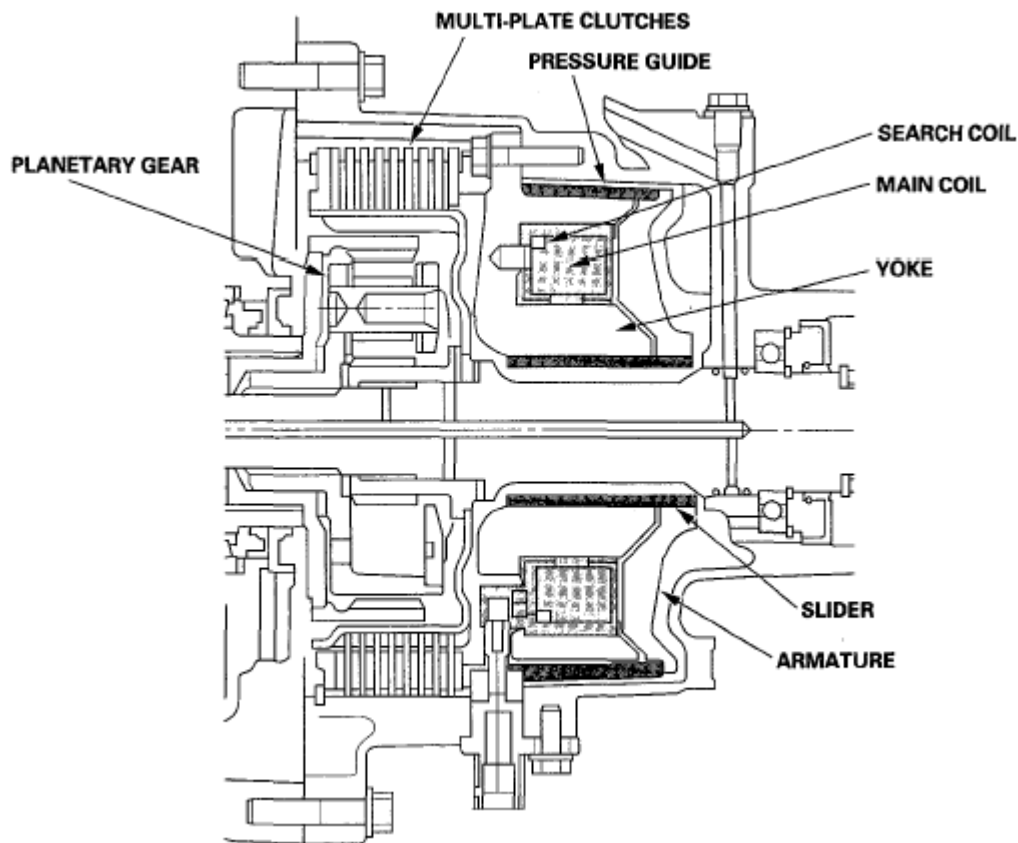
## ELECTROMAGNETIC CLUTCH SYSTEM

### Construction

The electromagnetic clutch system is incorporated into the side case assemblies on both sides of the differential case. The system consists of the multi-plate clutches, the planetary gears, the pressure guides, the solenoid coil assembly (the search coil and the main coil), the armature assembly (the slider and the armature), and the yoke.

### ELECTROMAGNETIC CLUTCH COMPONENTS REFERENCE

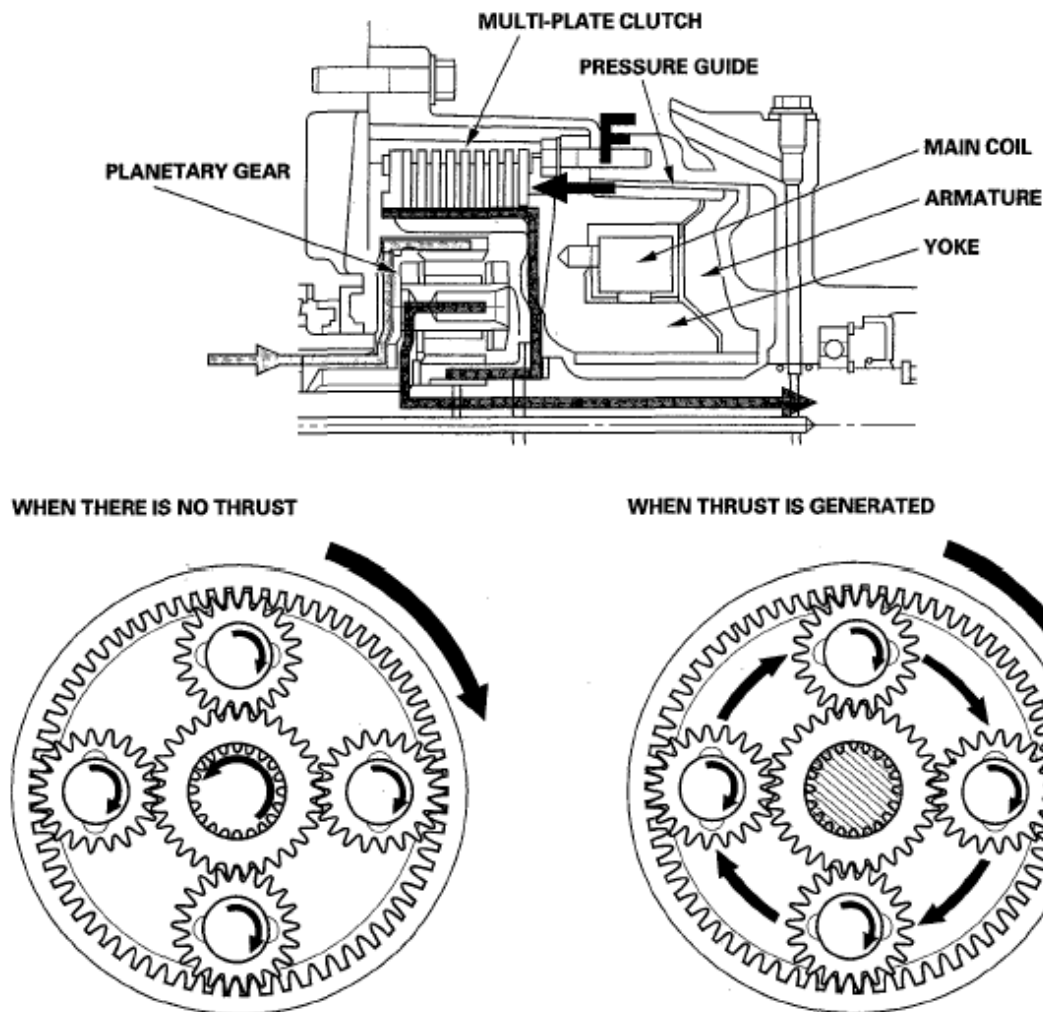
Components	Purpose
Multi-plate clutches	Convert thrust into torque, absorb wheel speed differences
Planetary gears	Magnify and convey clutch torque
Pressure guides	Reduce fluctuations in pressure
Search coils	Detect magnetic flux
Main coils	Generates magnetic fields
Slider	Centers the armature
Armature	Generates magnetic flux to generate thrust
Yoke	Generates magnetic flux to clamping force



**Fig. 19: Electromagnetic Clutch System Construction Diagram**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

### Operation

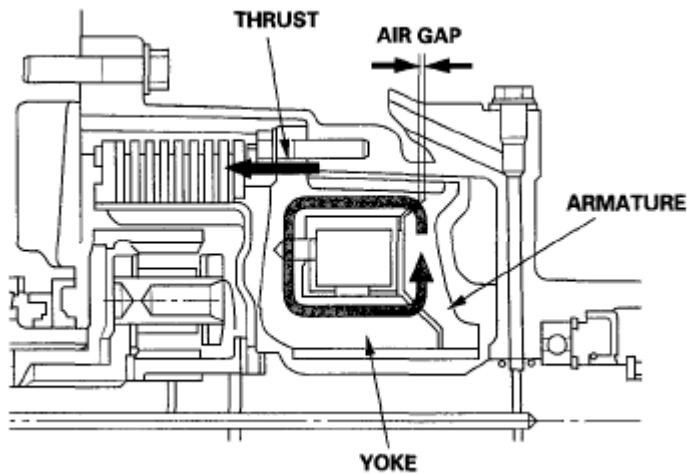
The SH-AWD control unit receives inputs from the PCM and the VSA modulator-control unit on the driving conditions via the CAN. The SH-AWD control unit sends signals to the main coils, which engage the electromagnetic clutches that connect the planetary gear set. This increases the torque applied to the rear wheels. The amount of current sent to the clutch is continuously varied as driving conditions change.



**Fig. 20: Electromagnetic Clutch System Operation Diagram**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

### SEARCH COIL DETECTION SYSTEM

As the clutch disks wear, the air gap between the pressure guides and the multi-plate clutches increases. The increase in air gap changes the magnetic field generated by the main coil and the yoke. The search coil detects these changes in the magnetic field, then the SH-AWD control unit uses predetermined maps to compensate for the changes to maintain precise control and smooth clutch engagement.



**Fig. 21: Search Coil Detection System Diagram**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

### SH-AWD SYSTEM OPERATION LIST

MODE ELEMENT	FORWARD								BACKWARD			
	STRAIGHT		STRAIGHT (LSD)		LEFT TURN (DIRECT)		LEFT TURN (SPEED INCREASER)		STRAIGHT		STRAIGHT (LSD)	
	ACCEL-ERATION	DECEL-ERATION	ACCEL-ERATION	DECEL-ERATION	ACCEL-ERATION	DECEL-ERATION	ACCEL-ERATION	DECEL-ERATION	ACCEL-ERATION	DECEL-ERATION	ACCEL-ERATION	DECEL-ERATION
1 HIGH CLUTCH	—	—	—	—	—	—	ON	ON	—	—	—	—
2 LOW CLUTCH	ON	ON	ON	ON	ON	ON	—	—	ON	ON	ON	ON
3 LEFT ELECTRO-MAGNETIC CLUTCH	MID	LOW	HIGH	LOW	LOW	LOW	LOW	LOW	MID	LOW	HIGH	LOW
4 RIGHT ELECTRO-MAGNETIC CLUTCH	MID	LOW	HIGH	LOW	HIGH	LOW	LOW	LOW	MID	LOW	HIGH	LOW

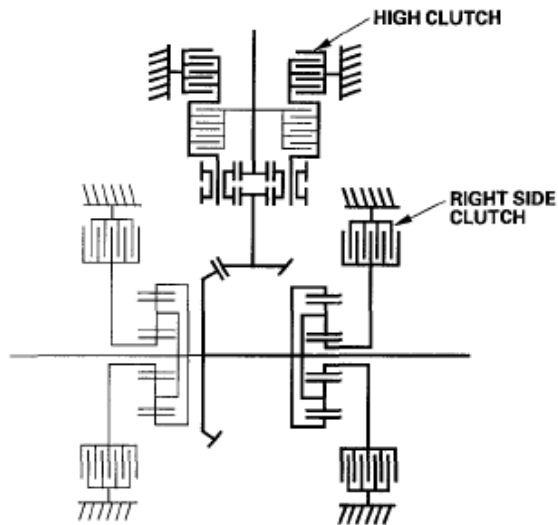
**Fig. 22: SH-AWD System Operation List**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- When turning to the right, the magnitudes of 3 and 4 are transposed when compared with the left turn shown.
- Conditions of turn (direct coupling): For the turns with a lateral G of less than 0.075G when turning at a vehicle speed less than 30 km/h or over 120 km/h.
- Conditions of turn (speed acceleration): For the turns with a lateral G of more than 0.075G when turning at a vehicle speed between 30 to 120 km/h.
- Soft: 0-392 N.m (0-40 kgf.m)

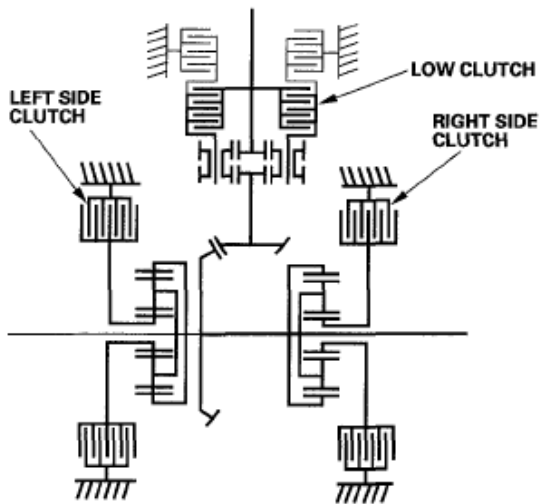
Medium: 392-785 N.m (40-80 kgf.m)

Hard: 785-981 N.m (80-100 kgf.m)

CORNERING ACCELERATION (LEFT TURN)



STRAIGHT AHEAD (or BACK WARD) ACCELERATION

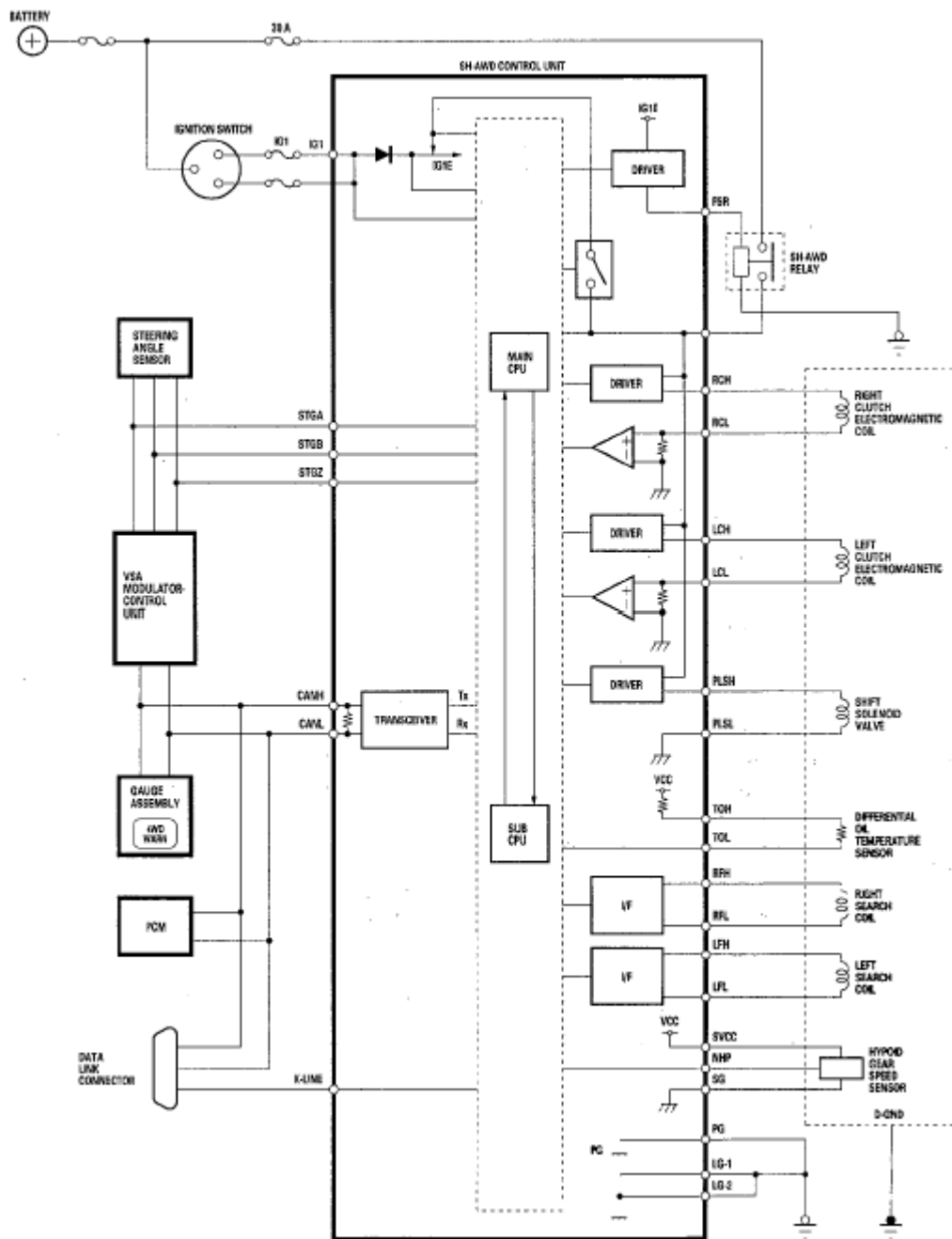


**Fig. 23: SH-AWD System Diagram**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

## ELECTRIC CONTROL SYSTEM

### SH-AWD Control Unit Electrical Connections



**Fig. 24: SH-AWD Control Unit Electrical Connections Diagram**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

### SH-AWD CONTROL UNIT INPUTS AND OUTPUTS

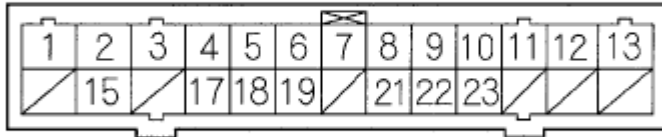
The SH-AWD control unit terminal voltages and the measuring conditions for the SH-AWD control system.

## 2007 Acura RL

2005-08 DRIVELINE/AXLES Rear Differential - RL

### SH-AWD Control Unit Connector Terminal Locations

A (26P)



Terminal side of male terminals

**Fig. 25: Identifying SH-AWD Control Unit Connector Terminals**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

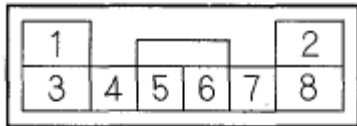
### CONNECTOR TERMINALS REFERENCE CHART

Terminal number	Wire color	Signal	Description	Measuring Conditions/Terminal Voltage
A1	RED	PLSH	Drives shift solenoid (positive)	With solenoid off: about 0 V With solenoid on: battery voltage
A2	WHT	NHP	Detects hypoid speed sensor signal	With ignition switch ON (II): about 0 V or about 5.0 V
A3	ORN	FSR	Drives SH-AWD relay	With ignition switch ON (II): about 0 V or battery voltage
A4	GRN	LFH	Detects left search coil signal (positive)	With ignition switch ON (II): about 2.5 V
A5	BRN	SG	Hypoid gear sensor ground	With ignition switch ON (II): about 0 V
A6	YEL	RFH	Detects right search coil signal (positive)	With ignition switch ON (II): about 2.5 V
A8	BLU	STGZ	Detects steering angle sensor signal (positive)	With ignition switch ON (II), turn steering wheel very slowly: about 0.5 V to 4.5 V
A9	WHT	TOH	Power supply for differential fluid temperature sensor	With ignition switch ON (II): about 4.7 V to 5.0 V
A10	BLK	CANL	CAN communication signal	With ignition switch ON (II): about 2.5 V or 3.5 V
All	WHT	CANH	CAN communication signal	With ignition switch ON (II): about 2.5 V or 3.5 V
A12	BLK	LG1	Ground	With ignition switch ON (II): about 0 V
A13	BLU	IG1	Power supply for activating the system	With ignition switch ON (II): battery voltage
A15	LT BLU	K-LINE	Communication line SH-AWD control unit-to-DLC	With ignition switch ON (II): about 0 V or battery voltage
A17	RED	LFL	Detects left search coil signal (negative)	With ignition switch ON (II): about 0 V
A18	PNK	SVCC	Power supply for hypoid gear sensors	With ignition switch ON (II): about 5.0 V
A19	RED	RFL	Detects right search coil signal (negative)	With ignition switch ON (II): about 0 V
A21	PUR	STGB	Detects steering angle sensor	With ignition switch ON (II), turn steering

**2007 Acura RL**

2005-08 DRIVELINE/AXLES Rear Differential - RL

			signal	wheel very slowly: about 1.0 V to 4.0 V
A22	GRN	STGA	Detects steering angle sensor signal	With ignition switch ON (II), turn steering wheel very slowly: about 1.0 V to 4.0 V
A23	BLK	TOL	Detects differential fluid temperature sensor (negative)	With ignition switch ON (II): about 0.2 V to 4.7 V (Depending on ATF temperature)

**SH-AWD Control Unit Connector Terminal Locations****B (8P)**

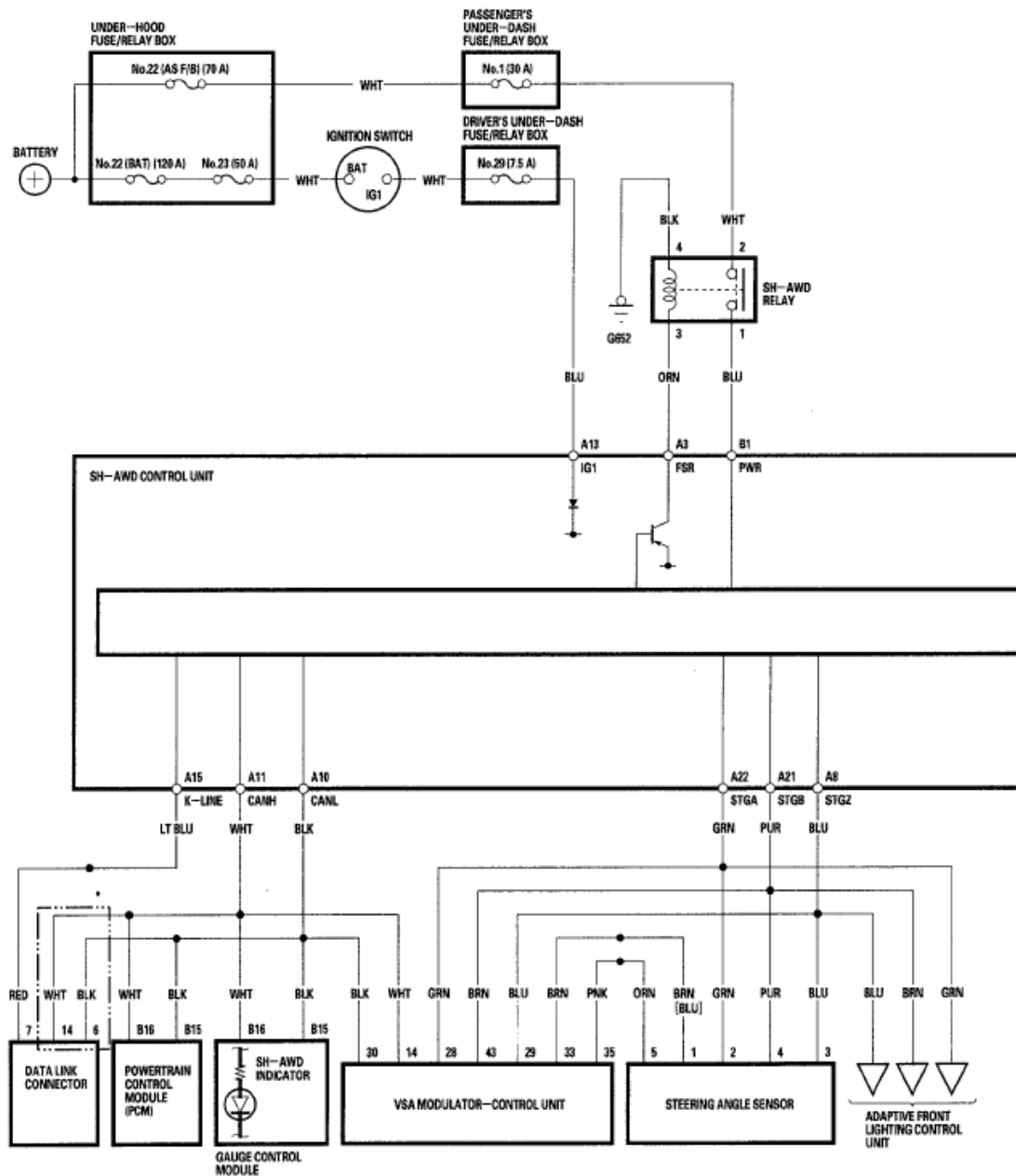
Terminal side of male terminals

**Fig. 26: Identifying SH-AWD Control Unit Connector Terminals**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

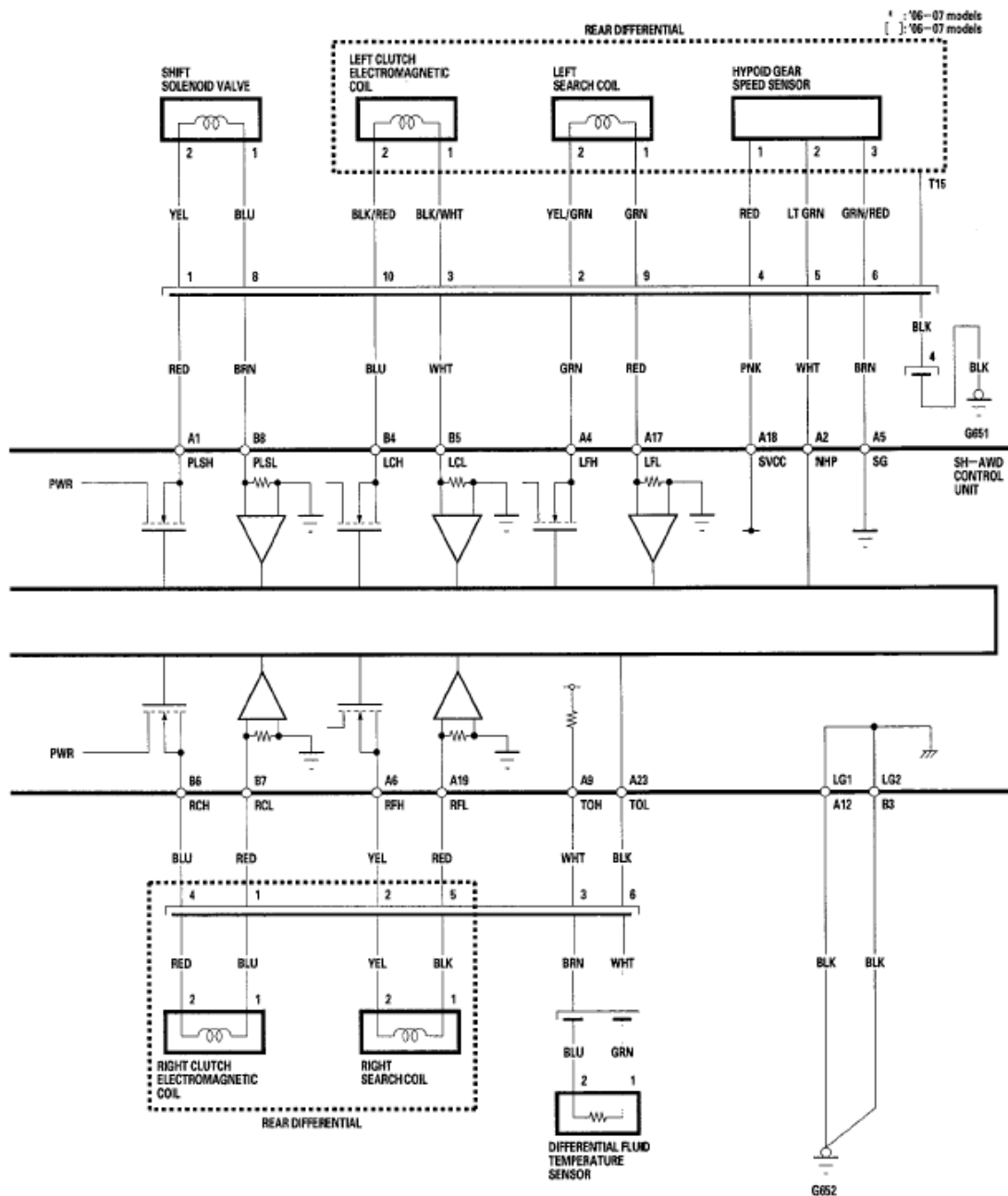
**CONNECTOR TERMINALS REFERENCE CHART**

Terminal number	Wire color	Signal	Description	Measuring Conditions/Terminal Voltage
B1	BLU	PWR	Power supply for SH-AWD control unit	With ignition switch ON (II): battery voltage
B2	BLK	PG	Ground	With ignition switch ON (II): about 0 V
B3	BLK	LG2	Ground	With ignition switch ON (II): about 0 V
B4	BLU	LCH	Drives left clutch electromagnetic coil (negative)	With clutch off: about 0 V With clutch on: battery voltage
B5	WHT	LCL	Drives left clutch electromagnetic coil (positive)	With ignition switch ON (II): about 0 V
B6	BLU	RCH	Drives right clutch electromagnetic coil (negative)	With clutch off: about 0 V With clutch on: battery voltage
B7	RED	RCL	Drives right clutch electromagnetic coil (positive)	With ignition switch ON (II): about 0 V
B8	BRN	PLSL	Drives shift solenoid (negative)	With ignition switch ON (II): about 0 V

**CIRCUIT DIAGRAM**



**Fig. 27: SH-AWD Control Unit - Circuit Diagram (1 Of 2)**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.



**Fig. 28: SH-AWD Control Unit - Circuit Diagram (2 Of 2)**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

## DTC TROUBLESHOOTING

### DTC 12-1,12-2,12-3: LATERAL/LONGITUDINAL ACCELERATION SENSOR MALFUNCTION

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see '05-07 MODELS ), '08 model (see '08 MODEL ).

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

*Are any VSA System DTCs indicated?*

**YES** - Go to the indicated DTCs troubleshooting.

**NO** - Go to step 4.

4. Place the vehicle on a flat surface and compare the lateral G sensor and the lateral G sensor neutral position data in the DATA LIST with the HDS.

*Is there difference between those two within 0.2 V?*

**YES** - Replace the yaw rate-lateral/longitudinal acceleration sensor (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT** ).

**NO** - Do the yaw rate-lateral/longitudinal acceleration neutral position memorization (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION NEUTRAL POSITION MEMORIZATION** ).

#### **DTC 14-1,14-2: LATERAL/LONGITUDINAL ACCELERATION SENSOR NEUTRAL POSITION**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Start the engine.
5. Check for DTCs with the HDS.

*Is DTC 14-1 and/or 14-2 indicated?*

**YES** - Go to step 6.

**NO** - Intermittent failure, the system is OK at this time.

6. Place the vehicle on a flat surface.
7. Check the lateral/longitudinal acceleration sensor A/D value in the DATA LIST with the HDS.

*Is there about 2.2-2.8 V?*

**YES** - Go to step 8.

**NO** - Check the yaw rate-lateral/longitudinal acceleration sensor installation (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT** ).

8. Check for yaw rate-lateral/longitudinal acceleration neutral position memorization with the HDS.

*Is the value "OK"?*

**YES** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

**NO** - Do the yaw rate-lateral/longitudinal acceleration neutral position memorization (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION NEUTRAL POSITION MEMORIZATION** ).

## DTC 16-1: STEERING ANGLE SENSOR SIGNAL

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Check the steering angle sensor in the DATA LIST with the HDS.

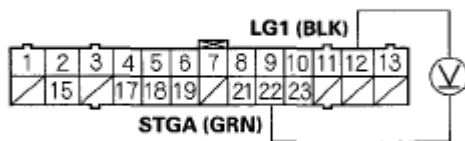
*When the steering wheel is turned slowly, does the value change?*

**YES** - Intermittent failure, the system is OK at this time.

**NO** - Go to step 4.

4. Turn the ignition switch OFF.
5. Disconnect SH-AWD control unit connector A (26P).
6. Turn the ignition switch ON (II). Measure the voltage between SH-AWD control unit connector terminals A12 and A22.

### SH-AWD CONTROL UNIT CONNECTOR A (26P)



Wire side of female terminals

**Fig. 29: Measuring Voltage Between SH-AWD Control Unit Connector Terminals A12 And A22**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

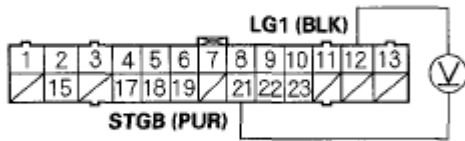
*Does the voltage change from about 1.5 V to 4.0 V when the steering wheel is turned slowly?*

**YES** - Go to step 7.

**NO** - Go to step 8.

7. Measure the voltage between SH-AWD control unit connector terminals A12 and A21.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**



Wire side of female terminals

**Fig. 30: Measuring Voltage Between SH-AWD Control Unit Connector Terminals A12 And A21**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Does the voltage change from about 1.5 V to 4.0 V when the steering wheel is turned slowly?*

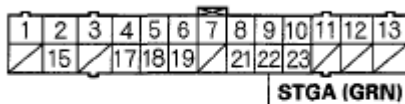
**YES** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

**NO** - Go to step 11.

8. Turn the ignition switch OFF.
9. Disconnect the steering angle sensor 5P connector.
10. Check for continuity between SH-AWD control unit connector terminal A22 and steering angle sensor 5P connector terminal No. 2.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**

Wire side of female terminals



**STEERING ANGLE SENSOR 5P CONNECTOR**

Wire side of female terminals

**Fig. 31: Checking Continuity Between SH-AWD Control Unit Connector Terminal A22 And Steering Angle Sensor 5P Connector Terminal No. 2**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

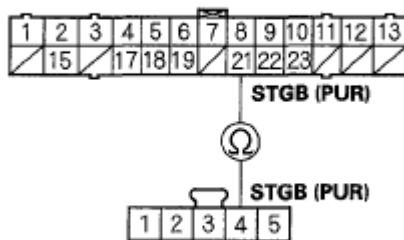
**YES** - Check for DTCs in the VSA system. If there are VSA system DTCs, go to the indicated DTCs troubleshooting. If no DTCs are indicated, intermittent failure, the system is OK at this time. Check for loose connector terminals at the SH-AWD control unit and repair if necessary.

**NO** - Repair open in the wire between SH-AWD control unit connector A and the steering angle sensor connector.

11. Turn the ignition switch OFF.
12. Disconnect the steering angle sensor 5P connector.
13. Check for continuity between SH-AWD control unit connector terminal A21 and steering angle sensor 5P connector terminal No. 4.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**

Wire side of female terminals



**STEERING ANGLE SENSOR 5P CONNECTOR**

Wire side of female terminals

**Fig. 32: Checking Continuity Between SH-AWD Control Unit Connector Terminal A21 And Steering Angle Sensor 5P Connector Terminal No. 4**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Check for DTCs in the VSA system. If there are VSA system DTCs, go to the indicated DTCs troubleshooting. If no DTCs are indicated, intermittent failure, the system is OK at this time. Check for loose connector terminals at the SH-AWD control unit and repair if necessary.

**NO** - Repair open in the wire between SH-AWD control unit connector A and the steering angle sensor connector.

**DTC 19-1: STEERING ANGLE SENSOR (OPEN)**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see '**05-07 MODELS** '), '08 model (see '**08 MODEL** ').
3. Clear the DTC with the HDS.
4. Start the engine.
5. Check for DTCs with the HDS.

*Is DTC 19-1 indicated?*

**YES** - Go to step 6.

**NO** - Intermittent failure, the system is OK at this time. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.

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

*Are any VSA System DTCs indicated?*

**YES** - Go to the indicated DTCs troubleshooting.

**NO** - Repair open in the wire between SH-AWD control unit connector A and the steering angle sensor connector. Check for loose connector terminals at the SH-AWD control unit and repair if necessary.

## **DTC 19-2: STEERING ANGLE SENSOR (SHORT)**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Start the engine.
5. Check for DTCs with the HDS.

*Is DTC 19-2 indicated?*

**YES** - Go to step 6.

**NO** - Intermittent failure, the system is OK at this time.

6. Check the counter value of the steering angle sensor with the HDS.

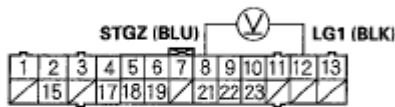
*Does the counter value change according to the steering wheel angle?*

**YES** - Go to step 7.

**NO** - Go to step 16.

7. Turn the ignition switch OFF.
8. Disconnect SH-AWD control unit connector A (26P).
9. Turn the ignition switch ON (II).
10. Measure the voltage between SH-AWD control unit connector terminals A8 and A12.

SH-AWD CONTROL UNIT CONNECTOR A (26P)



Wire side of female terminals

**Fig. 33: Measuring Voltage Between SH-AWD Control Unit Connector Terminals A8 And A12**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

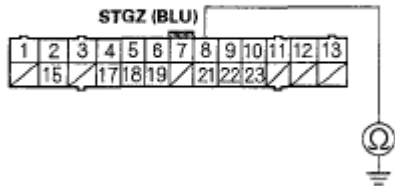
*Is there 0.3 V or more when the steering wheel is in the neutral position (straight ahead)?*

**YES** - Go to step 11.

**NO** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

11. Turn the ignition switch ON (II).
12. Disconnect the steering sensor 5P connector.
13. Check for continuity between SH-AWD control unit connector terminal A8 and body ground.

SH-AWD CONTROL UNIT CONNECTOR A (26P)



Wire side of female terminals

**Fig. 34: Checking Continuity Between SH-AWD Control Unit Connector Terminal A8 And Body Ground**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

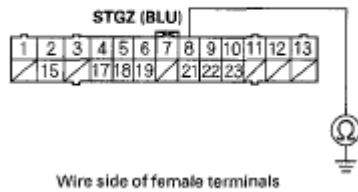
*Is there continuity?*

**YES** - Go to step 14.

**NO** - Check for DTCs in the VSA system. If there are VSA system DTCs, go to the indicated DTCs troubleshooting. If no DTCs are indicated, intermittent failure, the system is OK at this time. Check for loose connector terminals at the SH-AWD control unit, and repair if necessary.

14. Disconnect the AFS control unit 40P connector.
15. Check for continuity between SH-AWD control unit connector terminal A8 and body ground.

SH-AWD CONTROL UNIT CONNECTOR A (26P)



**Fig. 35: Checking Continuity Between SH-AWD Control Unit Connector Terminal A8 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

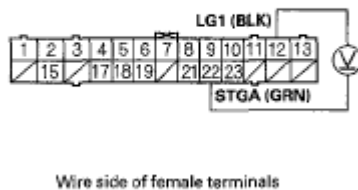
*Is there continuity?*

**YES** - Repair short in the wire between SH-AWD control unit connector A and the AFS control unit 40P connector.

**NO** - Check for DTCs in the VSA system. If there are VSA system DTCs, go to the indicated DTCs troubleshooting. If no DTCs are indicated, intermittent failure, the system is OK at this time. Check for loose connector terminals at the SH-AWD control unit, and repair if necessary.

16. Turn the ignition switch OFF.
17. Disconnect SH-AWD control unit connector A (26P).
18. Turn the ignition switch ON (II).
19. Measure the voltage between SH-AWD control unit connector terminals A12 and A22.

SH-AWD CONTROL UNIT CONNECTOR A (26P)



**Fig. 36: Measuring Voltage Between SH-AWD Control Unit Connector Terminals A12 And A22**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Does the output voltage change from 1.5-4 V according to the steering wheel angle?*

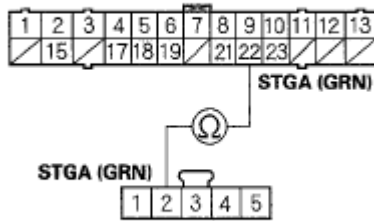
**YES** - Go to step 26.

**NO** - Go to step 20.

20. Turn the ignition switch OFF.
21. Disconnect the steering sensor 5P connector.
22. Check for continuity between SH-AWD control unit connector terminal A22 and steering angle sensor 5P connector terminal No. 2.

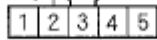
**SH-AWD CONTROL UNIT CONNECTOR A (26P)**

Wire side of female terminals



**STEERING ANGLE SENSOR 5P CONNECTOR**

Wire side of female terminals



**Fig. 37: Checking Continuity Between SH-AWD Control Unit Connector Terminal A22 And Steering Angle Sensor 5P Connector Terminal No. 2**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

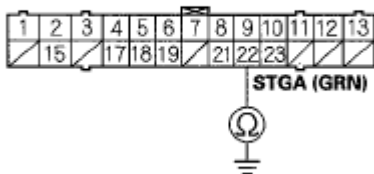
*Is there continuity?*

**YES** - Go to step 23.

**NO** - Repair open in the wire between SH-AWD control unit connector A and the steering angle sensor connector.

23. Check for continuity between SH-AWD control unit connector terminal A22 and body ground.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**



Wire side of female terminals

**Fig. 38: Checking Continuity Between SH-AWD Control Unit Connector Terminal A22 And Body Ground**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

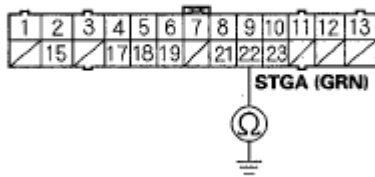
*Is there continuity?*

**YES** - Go to step 24.

**NO** - Check for DTCs in the VSA system. If there are VSA system DTCs, go to the indicated DTCs troubleshooting. If no DTCs are indicated, intermittent failure, the system is OK at this time. Check for loose connector terminals at the SH-AWD control unit, and repair if necessary.

24. Disconnect the AFS control unit 40P connector.
25. Check for continuity between SH-AWD control unit connector terminal A22 and body ground.

SH-AWD CONTROL UNIT CONNECTOR A (26P)



Wire side of female terminals

**Fig. 39: Checking Continuity Between SH-AWD Control Unit Connector Terminal A22 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

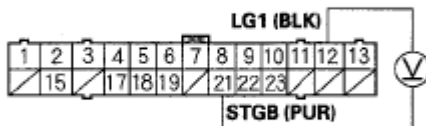
*Is there continuity?*

**YES** - Repair short in the wire between SH-AWD control unit connector A and the AFS control unit 40P connector.

**NO** - Check for DTCs in the VSA system. If there are VSA system DTCs, go to the indicated DTCs troubleshooting. If no DTCs are indicated, intermittent failure, the system is OK at this time. Check for loose connector terminals at the SH-AWD control unit, and repair if necessary.

26. Measure the voltage between SH-AWD control unit connector terminal A12 and A21.

SH-AWD CONTROL UNIT CONNECTOR A (26P)



Wire side of female terminals

**Fig. 40: Measuring Voltage Between SH-AWD Control Unit Connector Terminal A12 And A21**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Does the output voltage change from 0-5V according to the steering wheel angle?*

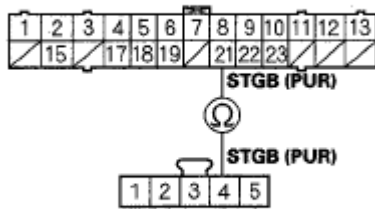
**YES** - Go to step 33.

**NO** - Go to step 27.

27. Turn the ignition switch OFF.
28. Disconnect the steering angle sensor 5P connector.
29. Check for continuity between SH-AWD control unit connector terminal A21 and steering angle sensor 5P connector terminal No. 4.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**

Wire side of female terminals



**STEERING ANGLE SENSOR 5P CONNECTOR**

Wire side of female terminals

**Fig. 41: Checking Continuity Between SH-AWD Control Unit Connector Terminal A21 And Steering Angle Sensor 5P Connector Terminal No. 4**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

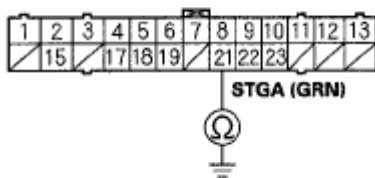
*Is there continuity?*

**YES** - Go to step 30.

**NO** - Repair open in the wire between SH-AWD control unit connector A and the steering angle sensor.

30. Check for continuity between SH-AWD control unit connector terminal A21 and body ground.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**



Wire side of female terminals

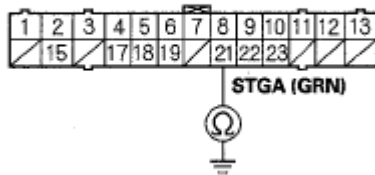
**Fig. 42: Checking Continuity Between SH-AWD Control Unit Connector Terminal A21 And Body Ground**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Go to step 31.

**NO** - Check for DTCs in the VSA system. If there are VSA system DTCs, go to the indicated DTCs troubleshooting. If no DTCs are indicated, intermittent failure, the system is OK at this time. Check for loose connector terminals at the SH-AWD control unit, and repair if necessary.

31. Disconnect the AFS control unit 40P connector.
32. Check for continuity between SH-AWD control unit connector terminal A21 and body ground.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**

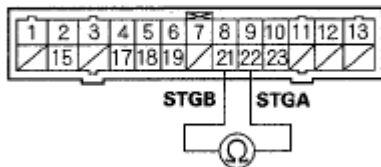
Wire side of female terminals

**Fig. 43: Checking Continuity Between SH-AWD Control Unit Connector Terminal A21 And Body Ground****Courtesy of AMERICAN HONDA MOTOR CO., INC.***Is there continuity?*

**YES** - Repair short in the wire between SH-AWD control unit connector A and the AFS control unit 40P connector.

**NO** - Check for DTCs in the VSA system. If there are VSA system DTCs, go to the indicated DTCs troubleshooting. If no DTCs are indicated, intermittent failure, the system is OK at this time. Check for loose connector terminals at the SH-AWD control unit, and repair if necessary.

33. Check for continuity between SH-AWD control unit connector terminals A21 and A22.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**

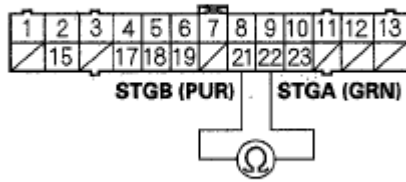
Wire side of female terminals

**Fig. 44: Checking Continuity Between SH-AWD Control Unit Connector Terminals A21 And A22****Courtesy of AMERICAN HONDA MOTOR CO., INC.***Is there continuity?*

**YES** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

**NO** - Go to step 34.

34. Check for continuity between SH-AWD control unit connector terminals A21 and A22.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**

Wire side of female terminals

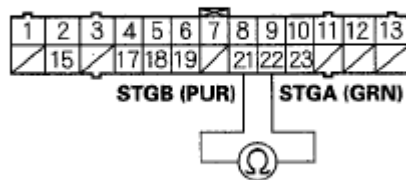
**Fig. 45: Checking Continuity Between SH-AWD Control Unit Connector Terminals A21 And A22**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?***YES** - Go to step 35.

**NO** - Check for DTCs in the VSA system. If there are VSA system DTCs, go to the indicated DTCs troubleshooting. If no DTCs are indicated, intermittent failure, the system is OK at this time. Check for loose connector terminals at the SH-AWD control unit, and repair if necessary.

35. Disconnect the AFS control unit 40P connector.
36. Check for continuity between SH-AWD control unit connector terminals A21 and A22.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**

Wire side of female terminals

**Fig. 46: Checking Continuity Between SH-AWD Control Unit Connector Terminals A21 And A22**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Repair short in the wire between the steering angle sensor 5P connector and the AFS control unit 40P connector.

**NO** - Check for DTCs in the VSA system. If there are VSA system DTCs, go to the indicated DTCs troubleshooting. If no DTCs are indicated, intermittent failure, the system is OK at this time. Check for loose connector terminals at the SH-AWD control unit, and repair if necessary.

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC-circuit; '05-07 models (see '05-07 MODELS '), '08 model (see '08 MODEL ').
3. Clear the DTC with the HDS.
4. Start the engine.
5. Turn the steering wheel slowly from lock to lock.
6. Check for DTCs with the HDS.

*Is DTC 19-3 indicated?*

**YES** - Go to step 7.

**NO** - Intermittent failure, the system is OK at this time.

7. Check for bent suspension components and proper wheel alignment.

*Are there any abnormalities?*

**YES** - Repair as needed, and recheck.

**NO** - Go to step 8.

8. Raise the vehicle, and make sure it is securely supported.
9. Start the engine.
10. Move the shift lever to D, and raise the vehicle speed to at least 19 mph (30 km/h). Turn the steering wheel 45° to the right of straight, then 45° to the left of straight, then straight ahead.
11. Slow the vehicle speed to a stop with the brakes, then move the shift lever to P.
12. Check the steering angle sensor value with the HDS.

*Is it with the  $\pm 3^\circ$ ?*

**YES** - Intermittent failure, the system is OK at this time.

**NO** - Do the SH-AWD steering angle neutral position memorization procedure (see STEERING ANGLE NEUTRAL POSITION MEMORIZATION ).

#### DTC 19-4: STEERING ANGLE SENSOR CIRCUIT

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see '05-07 MODELS '), '08 model (see '08 MODEL ').

3. Clear the DTC with the HDS.
4. Start the engine.
5. Turn the steering wheel slowly from lock to lock.
6. Check for DTCs with the HDS.

*Is DTC 19-4 indicated?*

**YES** - Go to step 7.

**NO** - Intermittent failure, the system is OK at this time.

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

*Is DTC 27 indicated?*

**YES** - Go to VSA system DTC 27 Troubleshooting, refer to **DTC TROUBLESHOOTING INDEX** .

**NO** - Substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ) and recheck.

#### **DTC 27-1: HYPOID GEAR SPEED SENSOR (OPEN OR SHORT)**

**NOTE:**        **Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION ).**

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Turn the ignition switch OFF.
5. Raise the vehicle, make sure it is securely supported, and allow all four wheels to rotate freely.
6. Start the engine.
7. Shift to D position, and raise the vehicle speed to 19 mph (30 km/h).
8. Check for DTCs with the HDS.

*Is DTC 27-1 indicated?*

**YES** - Go to step 9.

**NO** - Intermittent failure, the system is OK at this time.

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

*Are any VSA System DTCs indicated?*

**YES** - Go to the indicated DTCs troubleshooting.

**NO** - Go to step 10.

10. Raise the vehicle speed to 19 mph (30 km/h) again.
11. Check a hypoid gear speed sensor value in the DATA LIST with the HDS.

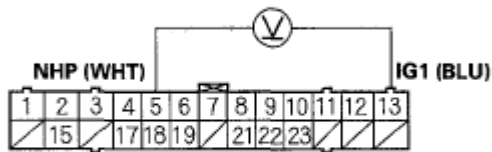
*Is a hypoid gear speed sensor value shown?*

**YES** - Check the hypoid gear speed sensor installation. If it is installed properly, substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ) and recheck.

**NO** - Go to step 12.

12. Raise the vehicle speed to 19 mph (30 km/h) again.
13. Measure the voltage between SH-AWD control unit connector terminals A5 and A13.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**



Wire side of female terminals

**Fig. 47: Measuring Voltage Between SH-AWD Control Unit Connector Terminals A5 And A13**  
**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

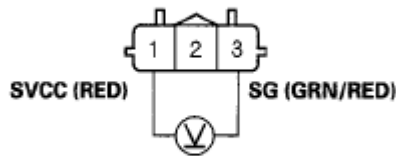
*Does the voltage change when the propeller shaft is rotated?*

**YES** - Substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ) and recheck.

**NO** - Go to step 14.

14. Turn the ignition switch OFF.
15. Disconnect the hypoid gear speed sensor 3P connector.
16. Turn the ignition switch ON (II).
17. Measure the voltage between hypoid gear speed sensor 3P connector terminals No. 1 and No. 3.

**HYPOID GEAR SPEED SENSOR 3P CONNECTOR**



Wire side of female terminals

**Fig. 48: Measuring Voltage Between Hypoid Gear Speed Sensor 3P Connector Terminals No. 1 And No. 3**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there 4.0 V or more?*

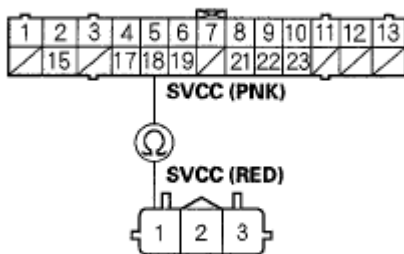
**YES** - Go to step 23.

**NO** - Go to step 18.

18. Turn the ignition switch OFF.
19. Disconnect SH-AWD control unit connector A (26P).
20. Check for continuity between SH-AWD control unit connector terminal A18 and hypoid gear speed sensor 3P connector terminal No. 1.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**

Wire side of female terminals



**HYPOID GEAR SPEED SENSOR 3P CONNECTOR**

Wire side of female terminals

**Fig. 49: Checking Continuity Between SH-AWD Control Unit Connector Terminal A18 And Hypoid Gear Speed Sensor Terminal No. 1**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

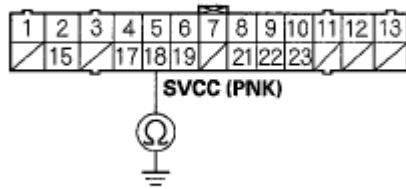
*Is there continuity?*

**YES** - Go to step 21.

**NO** - Repair open in the wire between SH-AWD control unit connector A and the hypoid gear speed sensor connector.

21. Check for continuity between SH-AWD control unit connector terminal A18 and body ground.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**



Wire side of female terminals

**Fig. 50: Checking Continuity Between SH-AWD Control Unit Connector Terminal A18 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

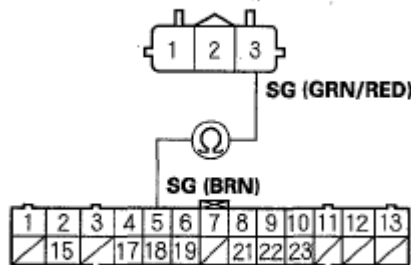
**YES** - Repair short to body ground in the wire between SH-AWD control unit connector A and the hypoid gear speed sensor connector.

**NO** - Go to step 22.

22. Check for continuity between SH-AWD control unit connector terminal A5 and hypoid gear speed sensor 3P connector terminal No. 3.

**HYPOID GEAR SPEED SENSOR 3P CONNECTOR**

Wire side of female terminals



**SH-AWD CONTROL UNIT CONNECTOR A (26P)**

Wire side of female terminals

**Fig. 51: Checking Continuity Between SH-AWD Control Unit Connector Terminal A5 And Hypoid Gear Speed Sensor Terminal No. 3**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

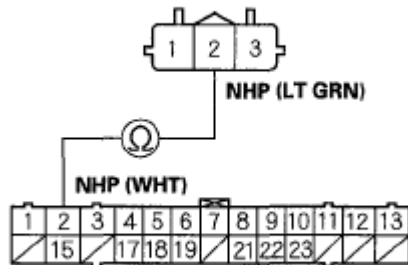
**YES** - Substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT**) and recheck.

**NO** - Repair open in the wire between SH-AWD control unit connector A and the hypoid gear speed sensor connector.

23. Check for continuity between SH-AWD control unit connector terminal A2 and hypoid gear speed sensor 3P connector terminal No. 2.

**HYPOID GEAR SPEED SENSOR 3P CONNECTOR**

Wire side of female terminals

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**

Wire side of female terminals

**Fig. 52: Checking Continuity Between SH-AWD Control Unit Connector Terminal A2 And Hypoid Gear Speed Sensor Terminal No. 2**

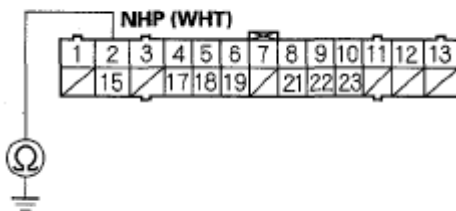
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Go to step 24.

**NO** - Repair open in the wire between SH-AWD control unit connector A and the hypoid gear speed sensor connector.

24. Check for continuity between SH-AWD control unit connector terminal A2 and body ground.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**

Wire side of female terminals

**Fig. 53: Checking Continuity Between SH-AWD Control Unit Connector Terminal A2 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Repair short to body ground in the wire between SH-AWD control unit connector A and the hypoid gear speed sensor connector.

**NO** - Replace the hypoid gear speed sensor (see **HYPOID GEAR SPEED SENSOR REPLACEMENT** ).

## DTC 27-2: HYPOID GEAR SPEED SENSOR MALFUNCTION

**NOTE:** Before you troubleshoot, review the general troubleshooting information

**(see GENERAL TROUBLESHOOTING INFORMATION ).**

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see '**05-07 MODELS** '), '08 model (see '**08 MODEL** ').
3. Clear the DTC with the HDS.
4. Turn the ignition switch OFF.
5. Raise the vehicle, make sure it is securely supported, and allow the all four wheels to rotate freely.
6. Start the engine.
7. Shift to D position, and raise the vehicle speed to 19 mph (30 km/h).
8. Check for DTCs with the HDS.

*Is DTC 27-2 indicated?*

**YES** - Go to step 9.

**NO** - Intermittent failure, the system is OK at this time.

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

*Are any VSA System DTCs indicated?*

**YES** - Go to the indicated DTCs troubleshooting.

**NO** - Go to step 10.

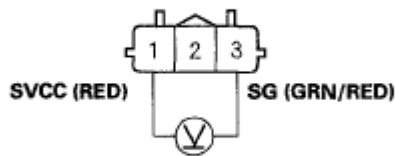
10. Raise the vehicle speed to 19 mph (30 km/h) again.
11. Check a the hypoid gear speed sensor value with the HDS.

*Is a hypoid gear speed sensor value shown?*

**YES** - Substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ) and recheck.

**NO** - Go to step 12.

12. Turn the ignition switch OFF.
13. Disconnect the hypoid gear speed sensor 3P connector.
14. Turn the ignition switch ON (II).
15. Measure the voltage between hypoid gear speed sensor 3P connector terminals No. 1 and No. 3.

**HYPOID GEAR SPEED SENSOR 3P CONNECTOR**

Wire side of female terminals

**Fig. 54: Measuring Voltage Between Hypoid Gear Speed Sensor 3P Connector Terminals No. 1 And No. 3**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there 4.0 V or more for at least 30 seconds?*

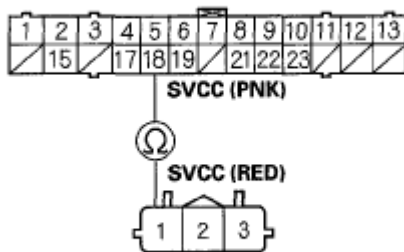
**YES** - Go to step 16.

**NO** - Go to step 19.

16. Turn the ignition switch OFF.
17. Disconnect SH-AWD control unit connector A (26P).
18. Check for continuity between SH-AWD control unit connector terminal A18 and hypoid gear speed sensor 3P connector terminal No. 1.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**

Wire side of female terminals

**HYPOID GEAR SPEED SENSOR 3P CONNECTOR**

Wire side of female terminals

**Fig. 55: Checking Continuity Between SH-AWD Control Unit Connector Terminal A18 And Hypoid Gear Speed Sensor Terminal No. 1**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

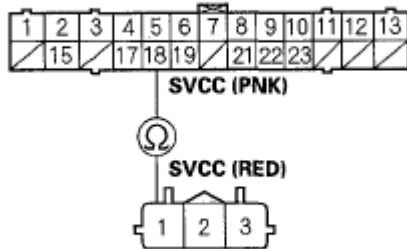
**YES** - Replace the hypoid gear speed sensor (see **HYPOID GEAR SPEED SENSOR REPLACEMENT** ).

**NO** - Repair open in the wire between SH-AWD control unit connector A and the hypoid gear speed sensor connector.

19. Turn the ignition switch OFF.

20. Disconnect SH-AWD control unit connector A (26P).
21. Check for continuity between SH-AWD control unit connector terminal A18 and hypoid gear speed sensor 3P connector terminal No. 1.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**  
Wire side of female terminals



**HYPOID GEAR SPEED SENSOR 3P CONNECTOR**  
Wire side of female terminals

**Fig. 56: Checking Continuity Between SH-AWD Control Unit Connector Terminal A18 And Hypoid Gear Speed Sensor Terminal No. 1**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

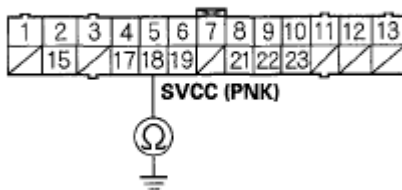
*Is there continuity?*

**YES** - Go to step 22.

**NO** - Repair open in the wire between SH-AWD control unit connector A and the hypoid gear speed sensor connector.

22. Check for continuity between SH-AWD control unit connector terminal A18 and body ground.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**



Wire side of female terminals

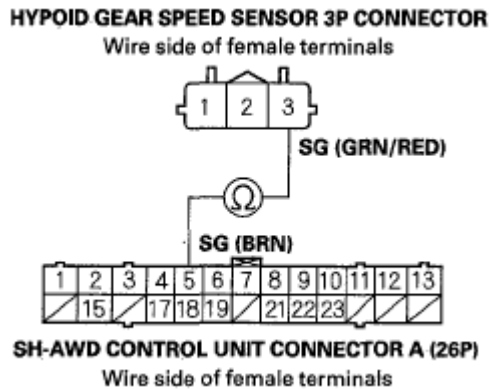
**Fig. 57: Checking Continuity Between SH-AWD Control Unit Connector Terminal A18 And Body Ground**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Repair short to body ground in the wire between SH-AWD control unit connector A and the hypoid gear speed sensor connector.

**NO** - Go to step 23.

23. Check for continuity between SH-AWD control unit connector terminal A5 and hypoid gear speed sensor 3P connector terminal No. 3.



**Fig. 58: Checking Continuity Between SH-AWD Control Unit Connector Terminal A5 And Hypoid Gear Speed Sensor Terminal No. 3**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ) and recheck.

**NO** - Repair open in the wire between SH-AWD control unit connector A and the hypoid gear speed sensor connector.

### DTC 33-1, 33-2, 33-3: YAW RATE SENSOR MALFUNCTION

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Check for DTCs in the VSA system with the HDS.

*Are any VSA System DTCs indicated?*

**YES** - Go to the indicated DTCs troubleshooting.

**NO** - Go to step 4.

4. Place the vehicle on a flat surface and compare the yaw rate sensor and the yaw rate sensor neutral position data in the DATA LIST with the HDS.

*Is there difference between two within 0.1 V?*

**YES** - Replace the yaw rate-lateral/longitudinal acceleration sensor (see **YAW RATE-**

**LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT** ).

**NO** - Do the yaw rate-lateral/longitudinal acceleration neutral position memorization (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION NEUTRAL POSITION MEMORIZATION** ).

**DTC 35-1, 35-2: YAW RATE SENSOR NEUTRAL POSITION**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Start the engine.
5. Check for DTCs with the HDS.

*Is DTC 35-1 and/or 35-2 indicated?*

**YES** - Go to step 6.

**NO** - Intermittent failure, the system is OK at this time.

6. Place the vehicle on a flat surface.
7. Check the lateral/longitudinal acceleration sensor A/D value in the DATA LIST with the HDS.

*Is there 2.2-2.8 V?*

**YES** - Go to step 8.

**NO** - Check the yaw rate-lateral/longitudinal acceleration sensor installation (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT** ).

8. Do the yaw rate-lateral/longitudinal acceleration neutral position memorization (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION NEUTRAL POSITION MEMORIZATION** ).

*Is the value "OK"?*

**YES** - Troubleshooting is complete; the vehicle is repaired.

**NO** - Replace the yaw rate sensor (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION SENSOR REPLACEMENT** ).

**DTC 41-1: LOSS OF COMMUNICATION WITH PCM**

**NOTE:** Before you troubleshoot, review the general troubleshooting information

**(see GENERAL TROUBLESHOOTING INFORMATION ).**

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see '**05-07 MODELS** '), '08 model (see '**08 MODEL** ').
3. Clear the DTC with the HDS.
4. Start the engine.
5. Check for DTCs with the HDS.

*Is DTC 41-1 indicated?*

**YES** - Go to step 6.

**NO** - Intermittent failure, the system is OK at this time.

6. Check the No. 29 (7.5 A) fuse in the driver's under-dash fuse/relay box.

*Is the fuse OK?*

**YES** - Go to step 7.

**NO** - Replace the fuse and recheck.

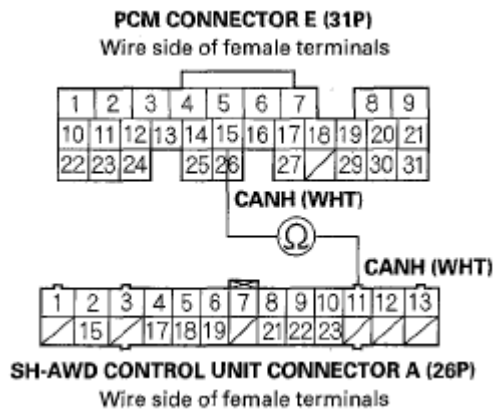
7. Check for PGM-FI System DTCs with the HDS.

*Are any DTCs indicated?*

**YES** - Go to the indicated DTCs troubleshooting.

**NO** - Go to step 8.

8. Turn the ignition switch OFF.
9. Disconnect SH-AWD control unit connector A (26P).
10. Disconnect PCM connector E (31P).
11. Check for continuity between SH-AWD control unit connector terminal A11 and PCM connector terminal E15.



**Fig. 59: Checking Continuity Between SH-AWD Control Unit Connector Terminal A11 And PCM Connector Terminal E15**

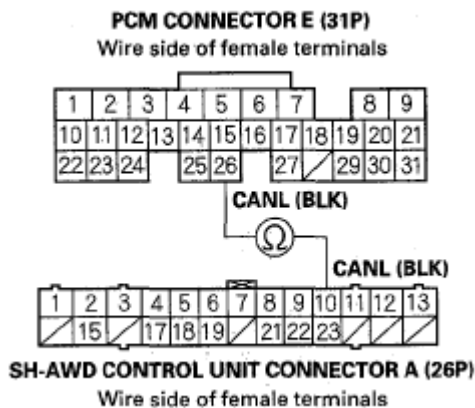
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Go to step 12.

**NO** - Repair open in the wire between SH-AWD control unit connector A and PCM connector E.

12. Check for continuity between SH-AWD control unit connector terminal A10 and PCM connector terminal E26.



**Fig. 60: Checking Continuity Between SH-AWD Control Unit Connector Terminal A10 And PCM Connector Terminal E26**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Check for loose connector terminals at the SH-AWD control unit, the PCM, and G602. If all connections are OK, replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

**NO** - Repair open in the wire between SH-AWD control unit connector A and PCM connector E.

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS**), '08 model (see **'08 MODEL**).
3. Clear the DTC with the HDS.
4. Start the engine.
5. Check for DTCs with the HDS.

*Is DTC 41-2 indicated?*

**YES** - Go to step 6.

**NO** - Intermittent failure, the system is OK at this time.

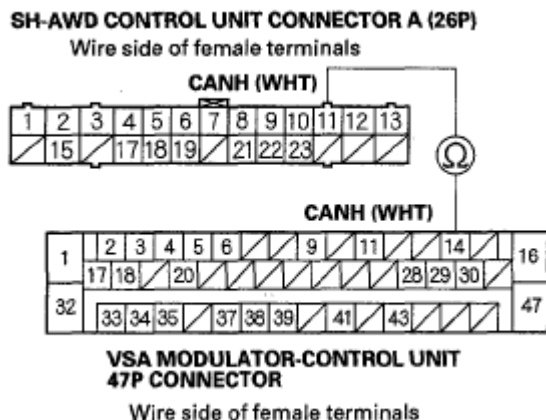
6. Check for DTCs in the VSA system with the HDS.

*Are any VSA System DTCs indicated?*

**YES** - Go to the indicated DTCs troubleshooting.

**NO** - Go to step 7.

7. Turn the ignition switch OFF.
8. Disconnect SH-AWD control unit connector A (26P).
9. Disconnect the VSA modulator-control unit 47P connector.
10. Check for continuity between SH-AWD control unit connector terminal A11 and VSA modulator-control unit 47P connector terminal No. 14.



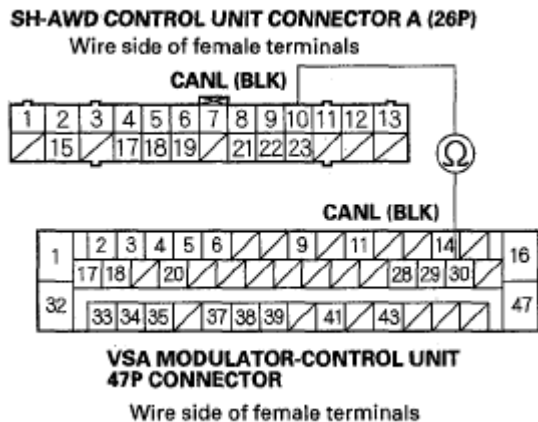
**Fig. 61: Checking Continuity Between SH-AWD Control Unit Connector Terminal A11 And VSA Modulator-Control Unit Terminal No. 14**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Go to step 11.

**NO** - Repair open in the wire between SH-AWD control unit connector A and the VSA modulator-control unit connector.

11. Check for continuity between SH-AWD control unit connector terminal A10 and VSA modulator-control unit 47P connector terminal No. 30.



**Fig. 62: Checking Continuity Between SH-AWD Control Unit Connector Terminal A10 And VSA Modulator-Control Unit Terminal No. 30**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Check for loose connector terminals at the SH-AWD control unit, the VSA modulator-control Unit, and G602. If all connections are OK, replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

**NO** - Repair open in the wire between SH-AWD control unit connector A and the VSA modulator-control unit connector.

### DTC 41-3: LOSS OF COMMUNICATION WITH GAUGE ASSEMBLY

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Start the engine.
5. Check for DTCs with the HDS.

*Is DTC 41-3 indicated?*

**YES** - Go to step 6.

**NO** - The system is OK at this time.

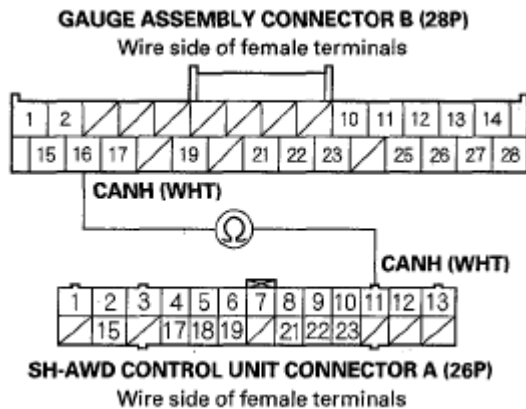
6. Check for gauge control system DTCs with the HDS.

*Are any DTCs indicated?*

**YES** - Go to the indicated DTCs troubleshooting.

**NO** - Go to step 7.

7. Turn the ignition switch OFF.
8. Disconnect SH-AWD control unit connector A (26P).
9. Disconnect gauge assembly connector B (28P).
10. Check for continuity between SH-AWD control unit connector terminal A11 and gauge assembly connector terminal B16.



**Fig. 63: Checking Continuity Between SH-AWD Control Unit Connector Terminal A11 And Gauge Assembly Connector Terminal B16**

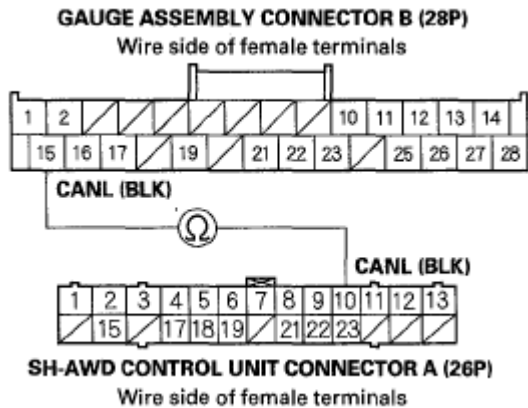
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Go to step 11.

**NO** - Repair open in the wire between SH-AWD control unit connector A and gauge assembly connector B.

11. Check for continuity between SH-AWD control unit connector terminal A10 and gauge assembly connector terminal B15.



**Fig. 64: Checking Continuity Between SH-AWD Control Unit Connector Terminal A10 And Gauge Assembly Connector Terminal B15**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Check for loose connector terminals at the SH-AWD control unit, the gauge assembly, and G602. If all connections are OK, replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

**NO** - Repair open in the wire between SH-AWD control unit connector A and gauge assembly connector B.

#### DTC 42-1: DIFFERENTIAL OIL TEMPERATURE SENSOR (OPEN)

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

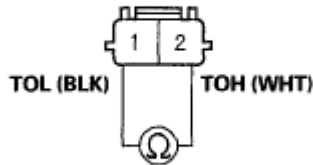
1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Turn the ignition switch OFF.
5. Turn the ignition switch ON (II).
6. Check for DTCs with the HDS.

*Is DTC 42-1 indicated?*

**YES** - Go to step 7.

**NO** - Intermittent failure, the system is OK at this time.

7. Turn the ignition switch OFF.
8. Disconnect the rear differential oil temperature sensor 2P connector and SH-AWD connector A (26P).
9. Check for continuity between rear differential oil temperature sensor 2P connector terminals No. 1 and No. 2.

**REAR DIFFERENTIAL OIL TEMPERATURE  
SENSOR 2P CONNECTOR**

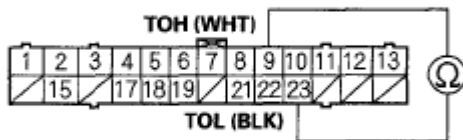
Wire side of female terminals

**Fig. 65: Checking Continuity Between Rear Differential Oil Temperature Sensor 2P Connector Terminals No. 1 And No. 2**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?***YES** - Repair short in the wire between rear differential oil temperature sensor 2P connector terminals No. 1 and No. 2.**NO** - Go to step 10.

10. Connect the rear differential oil temperature sensor 2P connector.
11. Measure the resistance between SH-AWD control unit connector terminals A9 and A23.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**

Wire side of female terminals

**Fig. 66: Measuring Resistance Between SH-AWD Control Unit Connector Terminals A9 And A23**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there 520 ohms to 3.5 kohms, with the rear differential fluid at normal temperature?***YES** - Substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ) and recheck.**NO** - Replace the rear differential oil temperature sensor (see **REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR REPLACEMENT** ).**DTC 42-2: DIFFERENTIAL OIL TEMPERATURE SENSOR (SHORT)****NOTE:** Before you troubleshoot, review the general troubleshooting information

(see GENERAL TROUBLESHOOTING INFORMATION ).

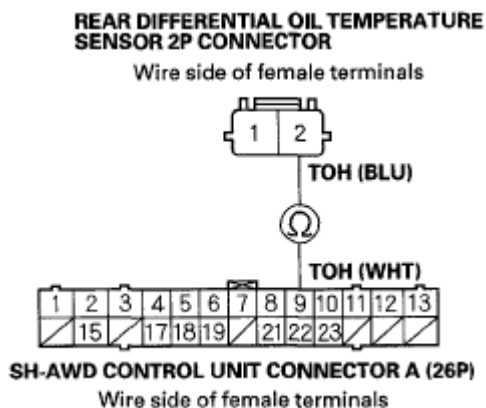
1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see '05-07 MODELS '), '08 model (see '08 MODEL ').
3. Clear the DTC with the HDS.
4. Turn the ignition switch OFF.
5. Turn the ignition switch ON (II).
6. Check for DTCs with the HDS.

*Is DTC 42-2 indicated?*

**YES** - Go to step 7.

**NO** - Intermittent failure, the system is OK at this time.

7. Turn the ignition switch OFF.
8. Disconnect the rear differential oil temperature sensor 2P connector.
9. Disconnect SH-AWD control unit connector A (26P).
10. Check for continuity between SH-AWD control unit connector terminal A9 and rear differential oil temperature sensor 2P connector terminal No. 2.



**Fig. 67: Checking Continuity Between Terminal A9 And Rear Differential Oil Temperature Sensor 2P Connector Terminal No. 2**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

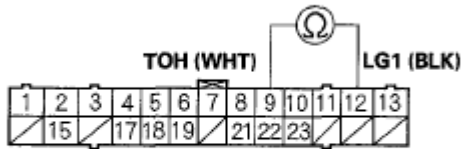
*Is there continuity?*

**YES** - Go to step 11.

**NO** - Repair open in the wire between SH-AWD control unit connector A and the rear differential oil temperature sensor connector.

11. Check for continuity between SH-AWD control unit connector terminals A9 and A12.

SH-AWD CONTROL UNIT CONNECTOR A (26P)



Wire side of female terminals

**Fig. 68: Checking Continuity Between SH-AWD Control Unit Connector Terminals A9 And A12**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

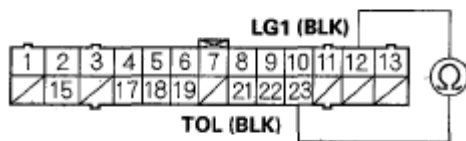
*Is there continuity?*

**YES** - Repair short in the wire between SH-AWD control unit connector A and the rear differential oil temperature sensor connector.

**NO** - Go to step 12.

12. Check for continuity between SH-AWD control unit connector terminals A12 and A23.

SH-AWD CONTROL UNIT CONNECTOR A (26P)



Wire side of female terminals

**Fig. 69: Checking Continuity Between SH-AWD Control Unit Connector Terminals A12 And A23**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

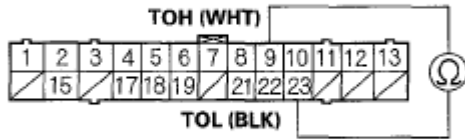
*Is there continuity?*

**YES** - Repair short in the wire between SH-AWD control unit connector A and the rear differential oil temperature sensor connector.

**NO** - Go to step 13.

13. Reconnect the rear differential oil temperature sensor 2P connector.
14. Measure the resistance between SH-AWD control unit connector terminals A9 and A23.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**



Wire side of female terminals

**Fig. 70: Measuring Resistance Between SH-AWD Control Unit Connector Terminals A9 And A23**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there 520 ohms to 3.5 kohms with the rear differential fluid at normal temperature?*

**YES** - Substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ) and recheck.

**NO** - Replace the rear differential oil temperature sensor (see **REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR REPLACEMENT** ).

**DTC 43-1: DIFFERENTIAL OIL TEMPERATURE SENSOR CIRCUIT**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Check for DTCs with the HDS.

*Is DTC 42-1 or 42-2 indicated?*

**YES** - Go to the indicated DTCs troubleshooting.

**NO** - Go to step 4.

4. Clear the DTC with the HDS.
5. Start the engine.
6. Let the engine idle 1 minute.
7. Check for DTCs with the HDS.

*Is DTC 43-1 indicated?*

**YES** - Repair short or open in the wire between SH-AWD control unit connector A and the rear differential oil temperature sensor connector.

**NO** - Intermittent failure, the system is OK at this time.

**DTC 44-11: SH-AWD CONTROL UNIT**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Turn the ignition switch ON (II).
5. Check for DTCs with the HDS.

*Is DTC 44-1 Vindicated?*

**YES** - Substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ) and recheck.

**NO** - Intermittent failure, the system is OK at this time.

**DTC 44-12: SH-AWD RELAY STUCK ON**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Start the engine.
5. Check for DTCs with the HDS.

*Is DTC 44-12 indicated?*

**YES** - Go to step 6.

**NO** - Intermittent failure, the system is OK at this time.

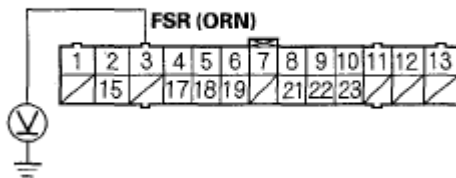
6. Turn the ignition switch OFF.
7. Test the SH-AWD relay (see **POWER RELAY TEST** ).

*Is SH-AWD relay OK?*

**YES** - Go to step 8.

**NO** - Replace the SH-AWD relay (see **SH-AWD RELAY REPLACEMENT** ).

8. Disconnect SH-AWD control unit connector A (26P).
9. Turn the ignition switch ON (II).
10. Measure the voltage between SH-AWD control unit connector terminal A3 and body ground.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**

Wire side of female terminals

**Fig. 71: Measuring Voltage Between SH-AWD Control Unit Connector Terminal A3 And Body Ground**

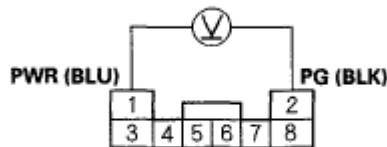
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there battery voltage?*

**YES** - Replace the wire harness (see **REAR DIFFERENTIAL DISASSEMBLY/REASSEMBLY** ).

**NO** - Go to step 11.

11. Disconnect SH-AWD control unit connector B (8P).
12. Measure the voltage between SH-AWD control unit connector terminals B1 and B2.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**

Wire side of female terminals

**Fig. 72: Measuring Voltage Between SH-AWD Control Unit Connector Terminals B1 And B2**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there battery voltage?*

**YES** - Repair the wire harness.

**NO** - Substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ) and recheck.

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see '05-07 MODELS ), '08 model (see '08 MODEL ).
3. Clear the DTC with the HDS.
4. Turn the ignition switch OFF.
5. Turn the ignition switch ON (II).
6. Check for DTCs with the HDS.

*Is DTC 44-21 indicated?*

**YES** - Replace the SH-AWD control unit (see SH-AWD CONTROL UNIT REPLACEMENT ).

**NO** - Intermittent failure, the system is OK at this time.

#### DTC 44-31: SH-AWD RELAY STUCK OFF

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION ).

1. Make sure the battery is fully charged and the charging system is working properly.
2. Turn the ignition switch OFF.
3. Check these fuse:
  - No. 22 (70 A) fuse in the under-hood fuse/relay box.
  - No. 1 (30 A) fuse in the passenger's under-hood fuse/relay box.

*Are the fuses OK?*

**YES** - Go to step 4.

**NO** - Repair short to ground in the wire between the fuse and the SH-AWD relay, then replace the fuse and recheck.

4. Turn the ignition switch ON (II).
5. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see '05-07 MODELS ), '08 model (see '08 MODEL ).
6. Clear the DTC with the HDS.
7. Start the engine.
8. Check for DTCs with the HDS.

*Is DTC 44-31 indicated?*

**YES** - Go to step 9.

**NO** - Intermittent failure, the system is OK at this time.

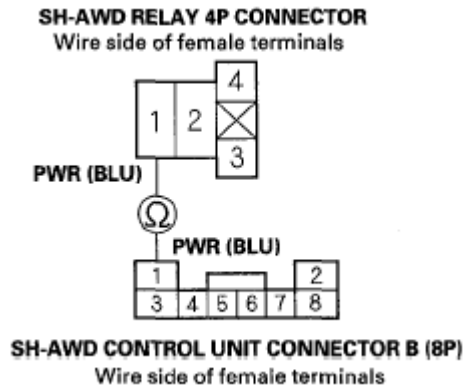
9. Turn the ignition switch OFF.
10. Test the SH-AWD relay (see **POWER RELAY TEST** ).

*Is the SH-AWD relay OK?*

**YES** - Go to step 11.

**NO** - Replace the SH-AWD relay (see **SH-AWD RELAY REPLACEMENT** ).

11. Disconnect SH-AWD control unit connector B (8P).
12. Check for continuity between SH-AWD relay 4P connector terminal No. 1 and SH-AWD control unit connector terminal B1.



**Fig. 73: Checking Continuity Between SH-AWD Relay 4P Connector Terminal No. 1 And SH-AWD Control Unit Connector Terminal B1**

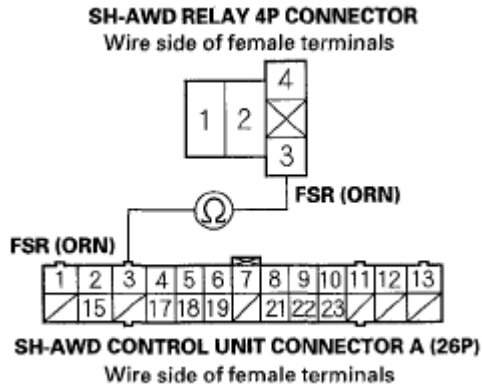
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Go to step 13.

**NO** - Repair open in the wire between SH-AWD control unit connector A and the SH-AWD relay.

13. Check for continuity between SH-AWD relay 4P connector terminal No. 3 and SH-AWD control unit connector terminal A3.



**Fig. 74: Checking Continuity Between SH-AWD Relay 4P Connector Terminal No. 3 And SH-AWD Control Unit Connector Terminal A3**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

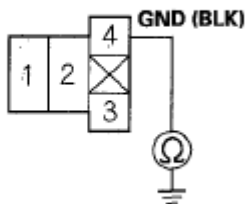
*Is there continuity?*

**YES** - Go to step 14.

**NO** - Repair open in the wire between SH-AWD control unit connector A and the SH-AWD relay.

14. Check for continuity between SH-AWD relay 4P connector terminal No. 4 and body ground.

**SH-AWD RELAY 4P CONNECTOR**



Wire side of female terminals

**Fig. 75: Checking Continuity Between SH-AWD Relay 4P Connector Terminal No. 4 And Body Ground**

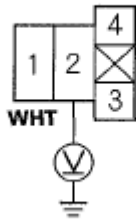
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Go to step 15.

**NO** - Repair open in the wire between the SH-AWD relay and body ground.

15. Measure the voltage between SH-AWD relay 4P connector terminal No. 2 and body ground.

**SH-AWD RELAY 4P CONNECTOR**

Wire side of female terminals

**Fig. 76: Measuring Voltage Between SH-AWD Relay 4P Connector Terminal No. 2 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there battery voltage?*

**YES** - Check for loose connector terminals at the SH-AWD control unit. If the connections are OK, substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ) and recheck.

**NO** - Repair open in the wire between the No. 1 fuse in the auxiliary under-hood fuse box and the SH-AWD relay.

**DTC 44-32: SH-AWD CONTROL UNIT POWER SUPPLY STUCK ON**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Start the engine.
5. Check for DTCs with the HDS.

*Is DTC 44-32 indicated?*

**YES** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

**NO** - Intermittent failure, the system is OK at this time.

**DTC 44-41: SH-AWD CONTROL UNIT POWER SUPPLY STUCK OFF**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't,

troubleshoot the DLC circuit; '05-07 models (see '**05-07 MODELS** '), '08 model (see '**08 MODEL** ').

3. Clear the DTC with the HDS.
4. Start the engine.
5. Check for DTCs with the HDS.

*Is DTC 44-41 indicated?*

**YES** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

**NO** - Intermittent failure, the system is OK at this time.

### **DTC 44-50: SH-AWD CONTROL UNIT POWER SUPPLY VOLTAGE LOW**

**NOTE:**        **Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).**

1. Make sure the battery is fully charged and the charging system is working properly.
2. Turn the ignition switch OFF.
3. Check these fuse:
  - No. 22 (70 A) fuse in the under-hood fuse/relay box.
  - No. 1 (30 A) fuse in the passenger's under-dash fuse/relay box.

*Are the fuses OK?*

**YES** - Go to step 4.

**NO** - Repair short to ground in the wire between the fuse and the SH-AWD relay, then replace the fuse and recheck.

4. Turn the ignition switch ON (II).
5. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see '**05-07 MODELS** '), '08 model (see '**08 MODEL** ').
6. Clear the DTC with the HDS.
7. Start the engine.
8. Check for DTCs with the HDS.

*Is DTC 44-50 indicated?*

**YES** - Go to step 9.

**NO** - Intermittent failure, the system is OK at this time.

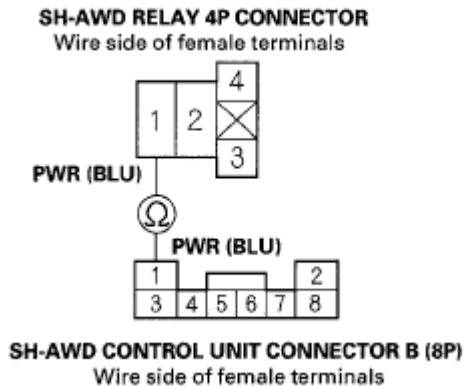
9. Turn the ignition switch OFF.
10. Test the SH-AWD relay (see **POWER RELAY TEST** ).

*Is the SH-AWD relay OK?*

**YES** - Go to step 11.

**NO** - Replace the SH-AWD relay (see **SH-AWD RELAY REPLACEMENT** ).

11. Disconnect SH-AWD control unit connector A (26P) and connector B (8P).
12. Check for continuity between SH-AWD control unit connector terminal B1 and SH-AWD relay 4P connector terminal No. 1.



**Fig. 77: Checking Continuity Between SH-AWD Control Unit Connector Terminal B1 And SH-AWD Relay 4P Connector Terminal No. 1**

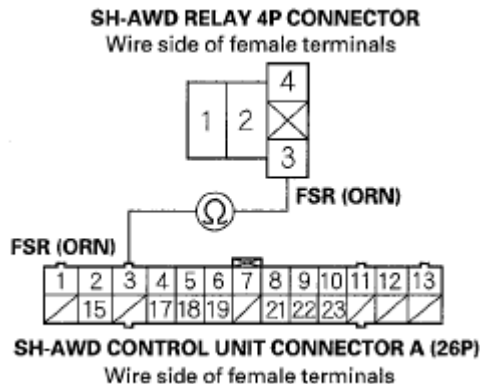
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Go to step 13.

**NO** - Repair open in the wire between SH-AWD control unit connector A and the SH-AWD relay connector.

13. Check for continuity between SH-AWD control unit connector terminal A3 and SH-AWD relay 4P connector terminal No. 3.



**Fig. 78: Checking Continuity Between SH-AWD Control Unit Connector Terminal A3 And SH-AWD Relay 4P Connector Terminal No. 3**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

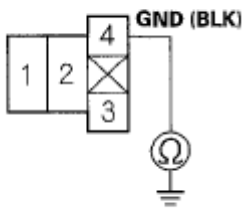
*Is there continuity?*

**YES** - Go to step 14.

**NO** - Repair open in the wire between SH-AWD control unit connector A and the SH-AWD relay connector.

14. Check for continuity between SH-AWD relay 4P connector terminal No. 4 and body ground.

**SH-AWD RELAY 4P CONNECTOR**



Wire side of female terminals

**Fig. 79: Checking Continuity Between SH-AWD Relay 4P Connector Terminal No. 4 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

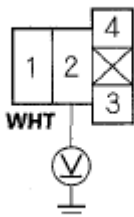
*Is there continuity?*

**YES** - Go to step 15.

**NO** - Repair open in the wire between the SH-AWD relay and body ground.

15. Measure the voltage between SH-AWD relay 4P connector terminal No. 2 and body ground.

**SH-AWD RELAY 4P CONNECTOR**



Wire side of female terminals

**Fig. 80: Measuring Voltage Between SH-AWD Relay 4P Connector Terminal No. 2 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there battery voltage?*

**YES** - Check for loose connector terminals at the SH-AWD control unit. If the connections are OK, substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT**) and recheck.

**NO** - Repair open in the wire between the No. 1 fuse in the passenger's under-hood fuse/relay box and the SH-AWD relay.

### **DTC 46-1: SH-AWD CONTROL UNIT INTERNAL POWER SUPPLY CIRCUIT (OPEN OR SHORT)**

**NOTE:**        **Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION ).**

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see '**05-07 MODELS** '), '08 model (see '**08 MODEL** ').
3. Clear the DTC with the HDS.
4. Turn the ignition switch OFF.
5. Turn the ignition switch ON (II).
6. Check for DTCs with the HDS.

*Is DTC 46-1 indicated?*

**YES** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

**NO** - Intermittent failure, the system is OK at this time.

### **DTC 52-3: LEFT CLUTCH ELECTROMAGNETIC COIL CURRENT MALFUNCTION**

**NOTE:**        **Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION ).**

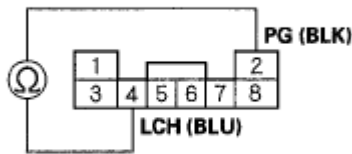
1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see '**05-07 MODELS** '), '08 model (see '**08 MODEL** ').
3. Clear the DTC with the HDS.
4. Do the clutch function test with the HDS.
5. Check for DTCs with the HDS.

*Is DTC 52-3 indicated?*

**YES** - Go to step 6.

**NO** - Intermittent failure, the system is OK at this time.

6. Turn the ignition switch OFF.
7. Disconnect SH-AWD control unit connector B (8P).
8. Check for continuity between SH-AWD control unit connector terminals B2 and B4.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**

Wire side of female terminals

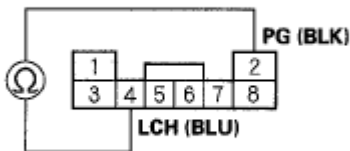
**Fig. 81: Checking Continuity Between SH-AWD Control Unit Connector Terminals B2 And B4**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Go to step 9.

**NO** - Go to step 11.

9. Disconnect the left clutch electromagnetic coil connector, then check for continuity between SH-AWD control unit connector terminals B2 and B4.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**

Wire side of female terminals

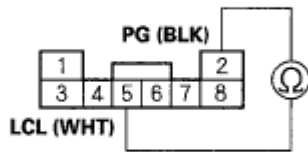
**Fig. 82: Checking Continuity Between SH-AWD Control Unit Connector Terminals B2 And B4**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Repair short to ground in the wire between the SH-AWD control unit and the left clutch electromagnetic coil.

**NO** - Go to step 10.

10. Check for continuity between SH-AWD control unit connector terminals B2 and B5.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**

Wire side of female terminals

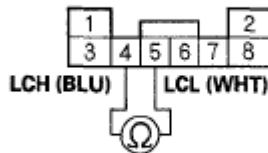
**Fig. 83: Checking Continuity Between SH-AWD Control Unit Connector Terminals B2 And B5**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Repair short to ground in the wire between the SH-AWD control unit and the left clutch electromagnetic coil.

**NO** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).

11. Check for continuity between SH-AWD control unit connector terminals B4 and B5.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**

Wire side of female terminals

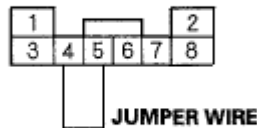
**Fig. 84: Checking Continuity Between SH-AWD Control Unit Connector Terminals B4 And B5**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Check for loose connector terminals at the SH-AWD control unit and repair if necessary. If the connections are OK, substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ) and recheck.

**NO** - Go to step 12.

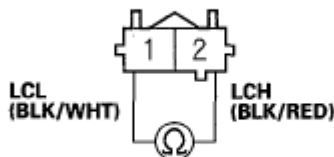
12. Connect a jumper wire between SH-AWD control unit connector terminals B4 and B5. Disconnect the left clutch electromagnetic coil 2P connector, then check for continuity between left clutch electromagnetic coil 2P connector terminals No. 1 and No. 2.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**

Wire side of female terminals

**Fig. 85: Connecting Jumper Wire Between SH-AWD Control Unit Connector Terminals B4 And B5**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

**LEFT CLUTCH ELECTROMAGNETIC COIL 2P CONNECTOR**

Wire side of female terminals

**Fig. 86: Checking Continuity Between Left Clutch Electromagnetic Coil 2P Connector Terminals No. 1 And No. 2**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).

**NO** - Repair open in the wire between the SH-AWD control unit and the left clutch electromagnetic coil.

**DTC 53-1: LEFT CLUTCH ELECTROMAGNETIC COIL (OPEN)**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Do the clutch function test with the HDS.
5. Check for DTCs with the HDS.

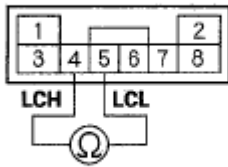
*Is DTC 53-1 indicated?*

**YES** - Go to step 6.

**NO** - Intermittent failure, the system is OK at this time.

6. Turn the ignition switch OFF.
7. Disconnect SH-AWD control unit connector B (8P).
8. Check for continuity between SH-AWD control unit connector terminals B4 and B5.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**



Terminal side of male terminals

**Fig. 87: Checking Continuity Between SH-AWD Control Unit Connector Terminals B4 And B5**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

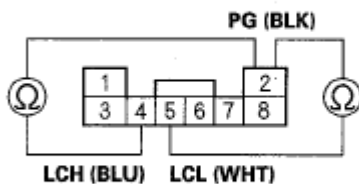
*Is there continuity?*

**YES** - Go to step 9.

**NO** - Go to step 10.

9. Check for continuity between SH-AWD control unit connector terminals B2 and B4, and between terminals B2 and B5.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**



Wire side of female terminals

**Fig. 88: Checking Continuity Between SH-AWD Control Unit Connector Terminals B2 And B4, And Between Terminals B2 And B5**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

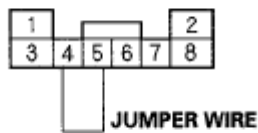
*Is there continuity?*

**YES** - Repair short to ground in the wire between the SH-AWD control unit and the left clutch electromagnetic coil.

**NO** - Go to step 11.

10. Connect a jumper wire between SH-AWD control unit connector terminals B4 and B5. Disconnect the left clutch electromagnetic coil 2P connector, then check for continuity between left clutch electromagnetic coil 2P connector terminals No. 1 and No. 2.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**

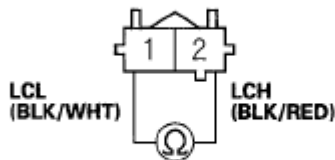


Wire side of female terminals

**Fig. 89: Connecting Jumper Wire Between SH-AWD Control Unit Connector Terminals B4 And B5**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

**LEFT CLUTCH ELECTROMAGNETIC COIL 2P CONNECTOR**



Wire side of female terminals

**Fig. 90: Checking Continuity Between Left Clutch Electromagnetic Coil 2P Connector Terminals No. 1 And No. 2**

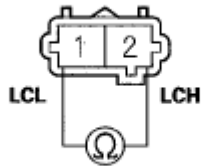
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).

**NO** - Repair open in the wire between the SH-AWD control unit and the left clutch electromagnetic coil.

11. Measure the resistance between left clutch electromagnetic coil 2P connector terminals No. 1 and No. 2.

**LEFT CLUTCH ELECTROMAGNETIC COIL 2P CONNECTOR**

Terminal side of male terminals

**Fig. 91: Measuring Resistance Between Left Clutch Electromagnetic Coil 2P Connector Terminals No. 1 And No. 2**

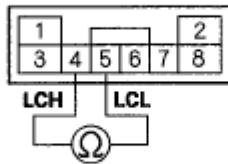
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there 1.5 ohms or more?***YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).**NO** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).**DTC 53-2: LEFT CLUTCH ELECTROMAGNETIC COIL (SHORT)****NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Do the clutch coil load test with the HDS.
5. Check for DTCs with the HDS.

*Is DTC 53-2 indicated?***YES** - Go to step 6.**NO** - Intermittent failure, the system is OK at this time.

6. Turn the ignition switch OFF.
7. Disconnect SH-AWD control unit connector B (8P).
8. Check for continuity between SH-AWD control unit connector terminals B4 and B5.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**

Terminal side of male terminals

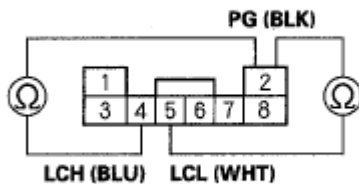
**Fig. 92: Checking Continuity Between SH-AWD Control Unit Connector Terminals B4 And B5**  
**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

*Is there continuity?*

**YES** - Go to step 9.

**NO** - Go to step 10.

9. Check for continuity between SH-AWD control unit connector terminals B2 and B4, and between terminals B2 and B5.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**

Wire side of female terminals

**Fig. 93: Checking Continuity Between SH-AWD Control Unit Connector Terminals B2 And B4, And Between Terminals B2 And B5**  
**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

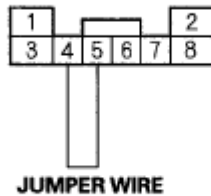
*Is there continuity?*

**YES** - Repair short to ground in the wire between the SH-AWD control unit and the left clutch electromagnetic coil.

**NO** - Go to step 11.

10. Connect a jumper wire between SH-AWD control unit connector terminals B4 and B5. Disconnect the left clutch electromagnetic coil 2P connector, then check for continuity between left clutch electromagnetic coil 2P connector terminals No. 1 and No. 2.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**

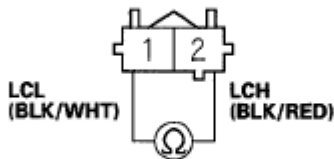


Wire side of female terminals

**Fig. 94: Connecting Jumper Wire Between SH-AWD Control Unit Connector Terminals B4 And B5**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

**LEFT CLUTCH ELECTROMAGNETIC COIL 2P CONNECTOR**



Wire side of female terminals

**Fig. 95: Checking Continuity Between Left Clutch Electromagnetic Coil 2P Connector Terminals No. 1 And No. 2**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

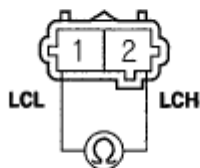
*Is there continuity?*

**YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).

**NO** - Repair open in the wire between the SH-AWD control unit and the left clutch electromagnetic coil.

11. Measure the resistance between left clutch electromagnetic coil 2P connector terminals No. 1 and No. 2.

**LEFT CLUTCH ELECTROMAGNETIC COIL 2P CONNECTOR**



Wire side of male terminals

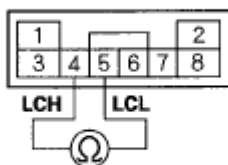
**Fig. 96: Measuring Resistance Between Left Clutch Electromagnetic Coil 2P Connector**

**Terminals No. 1 And No. 2****Courtesy of AMERICAN HONDA MOTOR CO., INC.***Is there 0.6 ohms or less?***YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).**NO** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).**DTC 53-3: LEFT CLUTCH ELECTROMAGNETIC COIL (OPEN)****NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Do the clutch function test with the HDS.
5. Check for DTCs with the HDS.

*Is DTC 53-3 indicated?***YES** - Go to step 6.**NO** - Intermittent failure, the system is OK at this time.

6. Turn the ignition switch OFF.
7. Disconnect SH-AWD control unit connector B (8P).
8. Check for continuity between SH-AWD control unit connector terminals B4 and B5.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**

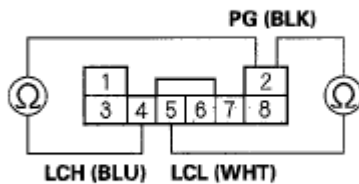
Terminal side of male terminals

**Fig. 97: Checking Continuity Between SH-AWD Control Unit Connector Terminals B4 And B5**  
**Courtesy of AMERICAN HONDA MOTOR CO., INC.***Is there continuity?***YES** - Go to step 9.

**NO** - Go to step 10.

9. Check for continuity between SH-AWD control unit connector terminals B2 and B4, and between terminals B2 and B5.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**



Wire side of female terminals

**Fig. 98: Checking Continuity Between SH-AWD Control Unit Connector Terminals B2 And B4, And Between Terminals B2 And B5**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

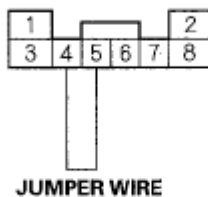
*Is there continuity?*

**YES** - Repair short to ground in the wire between the SH-AWD control unit and the left clutch electromagnetic coil.

**NO** - Go to step 11.

10. Connect a jumper wire between SH-AWD control unit connector terminals B4 and B5. Disconnect the left clutch electromagnetic coil 2P connector, then check for continuity between left clutch electromagnetic coil 2P connector terminals No. 1 and No. 2.

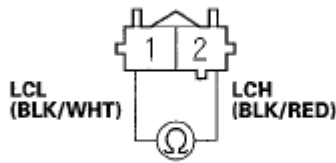
**SH-AWD CONTROL UNIT CONNECTOR B (8P)**



Wire side of female terminals

**Fig. 99: Connecting Jumper Wire Between SH-AWD Control Unit Connector Terminals B4 And B5**

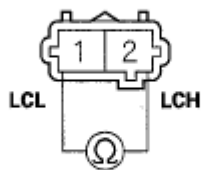
Courtesy of AMERICAN HONDA MOTOR CO., INC.

**LEFT CLUTCH ELECTROMAGNETIC COIL 2P CONNECTOR**

Wire side of female terminals

**Fig. 100: Checking Continuity Between Left Clutch Electromagnetic Coil 2P Connector Terminals No. 1 And No. 2****Courtesy of AMERICAN HONDA MOTOR CO., INC.***Is there continuity?***YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).**NO** - Repair open in the wire between the SH-AWD control unit and the left clutch electromagnetic coil.

11. Measure the resistance between left clutch electromagnetic coil 2P connector terminals No. 1 and No. 2.

**LEFT CLUTCH ELECTROMAGNETIC COIL 2P CONNECTOR**

Wire side of male terminals

**Fig. 101: Measuring Resistance Between Left Clutch Electromagnetic Coil 2P Connector Terminals No. 1 And No. 2****Courtesy of AMERICAN HONDA MOTOR CO., INC.***Is there 1.5 ohms or more?***YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).**NO** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).**DTC 53-4: LEFT CLUTCH ELECTROMAGNETIC COIL (SHORT)**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see '**05-07 MODELS** '), '08 model (see '**08 MODEL** ').
3. Clear the DTC with the HDS.
4. Do the clutch test with the HDS.
5. Check for DTCs with the HDS.

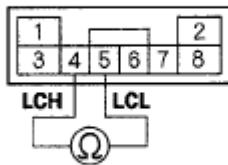
*Is DTC 53-4 indicated?*

**YES** - Go to step 6.

**NO** - Intermittent failure, the system is OK at this time.

6. Turn the ignition switch OFF.
7. Disconnect SH-AWD control unit connector B (8P).
8. Check for continuity between SH-AWD control unit connector terminals B4 and B5.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**



Terminal side of male terminals

**Fig. 102: Checking Continuity Between SH-AWD Control Unit Connector Terminals B4 And B5**

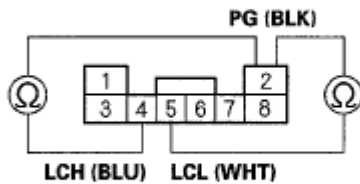
**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

*Is there continuity?*

**YES** - Go to step 9.

**NO** - Go to step 10.

9. Check for continuity between SH-AWD control unit connector terminals B2 and B4, and between terminals B2 and B5.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**

Wire side of female terminals

**Fig. 103: Checking Continuity Between SH-AWD Control Unit Connector Terminals B2 And B4, And Between Terminals B2 And B5**

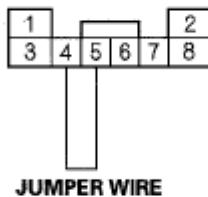
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Repair short to ground in the wire between the SH-AWD control unit and the left clutch electromagnetic coil.

**NO** - Go to step 11.

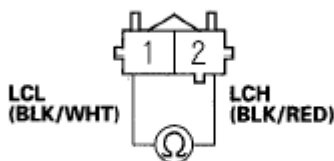
10. Connect a jumper wire between SH-AWD control unit connector terminals B4 and B5. Disconnect the left clutch electromagnetic coil 2P connector, then check for continuity between left clutch electromagnetic coil 2P connector terminals No. 1 and No. 2.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**

Wire side of female terminals

**Fig. 104: Connecting Jumper Wire Between SH-AWD Control Unit Connector Terminals B4 And B5**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

**LEFT CLUTCH ELECTROMAGNETIC COIL 2P CONNECTOR**

Wire side of female terminals

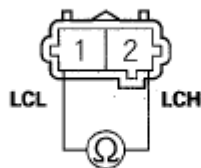
**Fig. 105: Checking Continuity Between Left Clutch Electromagnetic Coil 2P Connector Terminals No. 1 And No. 2****Courtesy of AMERICAN HONDA MOTOR CO., INC.**

*Is there continuity?*

**YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).

**NO** - Repair open in the wire between the SH-AWD control unit and the left clutch electromagnetic coil.

11. Measure the resistance between left clutch electromagnetic coil 2P connector terminals No. 1 and No. 2.

**LEFT CLUTCH ELECTROMAGNETIC COIL 2P CONNECTOR**

Wire side of male terminals

**Fig. 106: Measuring Resistance Between Left Clutch Electromagnetic Coil 2P Connector Terminals No. 1 And No. 2****Courtesy of AMERICAN HONDA MOTOR CO., INC.**

*Is there 0.6 ohms or less?*

**YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).

**NO** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

**DTC 56-3: RIGHT CLUTCH ELECTROMAGNETIC COIL CURRENT MALFUNCTION**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Do the clutch coil load test with the HDS.
5. Check for DTCs with the HDS.

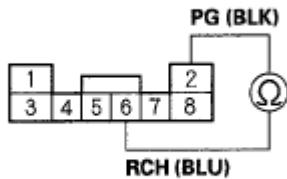
*Is DTC 56-3 indicated?*

**YES** - Go to step 6.

**NO** - Intermittent failure, the system is OK at this time.

6. Turn the ignition switch OFF.
7. Disconnect SH-AWD control unit connector B (8P).
8. Check for continuity between SH-AWD control unit connector terminals B2 and B6.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**



Wire side of female terminals

**Fig. 107: Checking Continuity Between SH-AWD Control Unit Connector Terminals B2 And B6**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

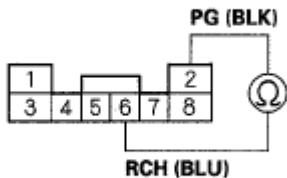
*Is there continuity?*

**YES** - Go to step 9.

**NO** - Go to step 11.

9. Disconnect the right clutch electromagnetic coil connector, then check for continuity between SH-AWD control unit connector terminals B2 and B6.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**



Wire side of female terminals

**Fig. 108: Checking Continuity Between SH-AWD Control Unit Connector Terminals B2 And B6**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

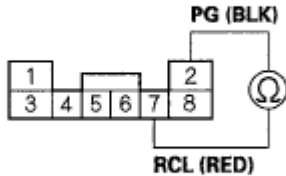
*Is there continuity?*

**YES** - Repair short to ground in the wire between the SH-AWD control unit and the right clutch electromagnetic coil.

**NO** - Go to step 10.

10. Check for continuity between SH-AWD control unit connector terminals B2 and B7.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**



Wire side of female terminals

**Fig. 109: Checking Continuity Between SH-AWD Control Unit Connector Terminals B2 And B7**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

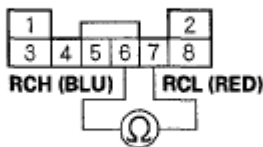
*Is there continuity?*

**YES** - Repair short to ground in the wire between the SH-AWD control unit and the right clutch electromagnetic coil.

**NO** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).

11. Check for continuity between SH-AWD control unit connector terminals B6 and B7.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**



Wire side of female terminals

**Fig. 110: Checking Continuity Between SH-AWD Control Unit Connector Terminals B6 And B7**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

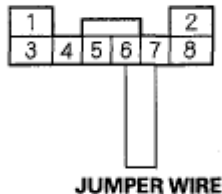
**YES** - Check for loose connector terminals at the SH-AWD control unit and repair if necessary. If the connections are OK, substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ) and recheck.

**NO** - Go to step 12.

12. Connect a jumper wire between SH-AWD control unit connector terminals B6 and B7. Disconnect the

right clutch electromagnetic coil 2P connector, then check for continuity between right clutch electromagnetic coil 2P connector terminals No. 1 and No. 2.

#### SH-AWD CONTROL UNIT CONNECTOR B (8P)

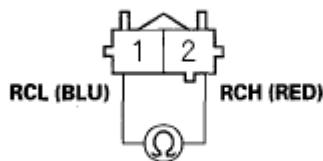


Wire side of female terminals

**Fig. 111: Connecting Jumper Wire Between SH-AWD Control Unit Connector Terminals B6 And B7**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

#### RIGHT CLUTCH ELECTROMAGNETIC COIL 2P CONNECTOR



Wire side of female terminals

**Fig. 112: Checking Continuity Between Right Clutch Electromagnetic Coil 2P Connector Terminals No. 1 And No. 2**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).

**NO** - Repair open in the wire between the SH-AWD control unit and the right clutch electromagnetic coil.

#### DTC 57-1: RIGHT CLUTCH ELECTROMAGNETIC COIL (OPEN)

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Do the clutch function test with the HDS.

5. Check for DTCs with the HDS.

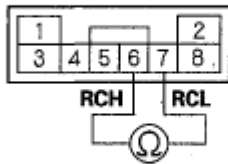
*Is DTC 57-1 indicated?*

**YES** - Go to step 6.

**NO** - Intermittent failure, the system is OK at this time.

6. Turn the ignition switch OFF.
7. Disconnect SH-AWD control unit connector B (8P).
8. Check for continuity between SH-AWD control unit connector terminals B6 and B7.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**



Terminal side of male terminals

**Fig. 113: Checking Continuity Between SH-AWD Control Unit Connector Terminals B6 And B7**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

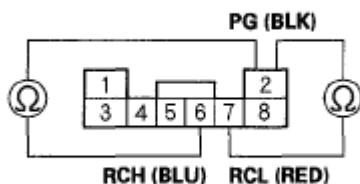
*Is there continuity?*

**YES** - Go to step 9.

**NO** - Go to step 10.

9. Check for continuity between SH-AWD control unit connector terminals B2 and B6, and between terminals B2 and B7.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**



Wire side of female terminals

**Fig. 114: Checking Continuity Between SH-AWD Control Unit Connector Terminals B2 And B6, And Between Terminals B2 And B7**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

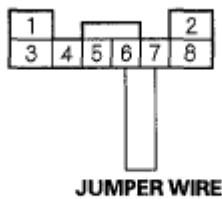
*Is there continuity?*

**YES** - Repair short to ground in the wire between the SH-AWD, control unit and the right clutch electromagnetic coil.

**NO** - Go to step 11.

10. Connect a jumper wire between SH-AWD control unit connector terminals B6 and B7. Disconnect the right clutch electromagnetic coil 2P connector, then check for continuity between right clutch electromagnetic coil 2P connector terminals No. 1 and No. 2.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**

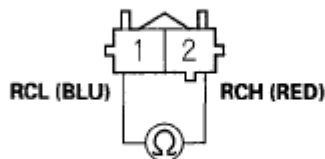


Wire side of female terminals

**Fig. 115: Connecting Jumper Wire Between SH-AWD Control Unit Connector Terminals B6 And B7**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

**RIGHT CLUTCH ELECTROMAGNETIC COIL 2P CONNECTOR**



Wire side of female terminals

**Fig. 116: Checking Continuity Between Right Clutch Electromagnetic Coil 2P Connector Terminals No. 1 And No. 2**

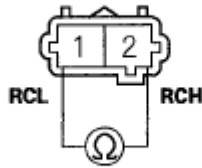
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).

**NO** - Repair open in the wire between the SH-AWD control unit and the right clutch electromagnetic coil.

11. Measure the resistance between right clutch electromagnetic coil 2P connector terminals No. 1 and No. 2.

**RIGHT CLUTCH ELECTROMAGNETIC COIL 2P CONNECTOR**

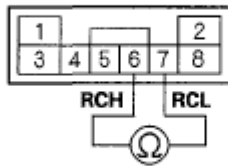
Wire side of male terminals

**Fig. 117: Measuring Resistance Between Right Clutch Electromagnetic Coil 2P Connector Terminals No. 1 And No. 2****Courtesy of AMERICAN HONDA MOTOR CO., INC.***Is there 1.5 ohms or more?***YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).**NO** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).**DTC 57-2: RIGHT CLUTCH ELECTROMAGNETIC COIL (SHORT)****NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Do the clutch function test with the HDS.
5. Check for DTCs with the HDS.

*Is DTC 57-2 indicated?***YES** - Go to step 6.**NO** - Intermittent failure, the system is OK at this time.

6. Turn the ignition switch OFF.
7. Disconnect SH-AWD control unit connector B (8P).
8. Check for continuity between SH-AWD control unit connector terminals B6 and B7.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**

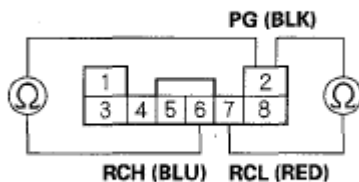
Terminal side of male terminals

**Fig. 118: Checking Continuity Between SH-AWD Control Unit Connector Terminals B6 And B7**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?***YES** - Go to step 9.**NO** - Go to step 10.

9. Check for continuity between SH-AWD control unit connector terminals B2 and B6, and between terminals B2 and B7.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**

Wire side of female terminals

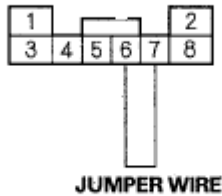
**Fig. 119: Checking Continuity Between SH-AWD Control Unit Connector Terminals B2 And B6, And Between Terminals B2 And B7**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?***YES** - Repair short to ground in the wire between the SH-AWD control unit and the right clutch electromagnetic coil.**NO** - Go to step 11.

10. Connect a jumper wire between SH-AWD control unit connector terminals B6 and B7. Disconnect the right clutch electromagnetic coil 2P connector, then check for continuity between right clutch electromagnetic coil 2P connector terminals No. 1 and No. 2.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**

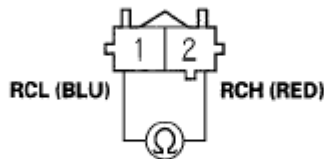


Wire side of female terminals

**Fig. 120: Connecting Jumper Wire Between SH-AWD Control Unit Connector Terminals B6 And B7**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

**RIGHT CLUTCH ELECTROMAGNETIC COIL 2P CONNECTOR**



Wire side of female terminals

**Fig. 121: Checking Continuity Between Right Clutch Electromagnetic Coil 2P Connector Terminals No. 1 And No. 2**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

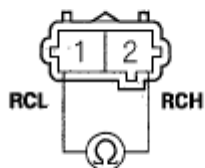
*Is there continuity?*

**YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).

**NO** - Repair open in the wire between the SH-AWD control unit and the right clutch electromagnetic coil.

11. Measure the resistance, between right clutch electromagnetic coil 2P connector terminals No. 1 and No. 2.

**RIGHT CLUTCH ELECTROMAGNETIC COIL 2P CONNECTOR**



Wire side of male terminals

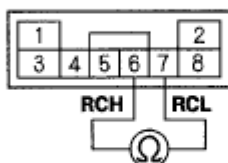
**Fig. 122: Measuring Resistance, Between Right Clutch Electromagnetic Coil 2P Connector**

**Terminals No. 1 And No. 2****Courtesy of AMERICAN HONDA MOTOR CO., INC.***Is there 0.6 ohms or less?***YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).**NO** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).**DTC 57-3: RIGHT CLUTCH ELECTROMAGNETIC COIL (OPEN)****NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Do the clutch function test with the HDS.
5. Check for DTCs with the HDS.

*Is DTC 57-3 indicated?***YES** - Go to step 6.**NO** - Intermittent failure, the system is OK at this time.

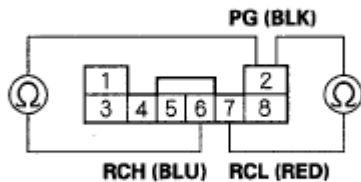
6. Turn the ignition switch OFF.
7. Disconnect SH-AWD control unit connector B (8P).
8. Check for continuity between SH-AWD control unit connector terminals B6 and B7.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)****Terminal side of male terminals****Fig. 123: Checking Continuity Between SH-AWD Control Unit Connector Terminals B6 And B7****Courtesy of AMERICAN HONDA MOTOR CO., INC.***Is there continuity?***YES** - Go to step 9.

**NO** - Go to step 10.

9. Check for continuity between SH-AWD control unit connector terminals B2 and B6, and between terminals B2 and B7.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**



Wire side of female terminals

**Fig. 124: Checking Continuity Between SH-AWD Control Unit Connector Terminals B2 And B6, And Between Terminals B2 And B7**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

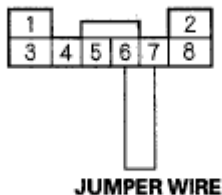
*Is there continuity?*

**YES** - Repair short to ground in the wire between the SH-AWD control unit and the right clutch electromagnetic coil.

**NO** - Go to step 11.

10. Connect a jumper wire between SH-AWD control unit connector terminals B6 and B7. Disconnect the right clutch electromagnetic coil 2P connector, then check for continuity between right clutch electromagnetic coil 2P connector terminals No. 1 and No. 2.

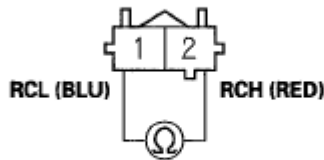
**SH-AWD CONTROL UNIT CONNECTOR B (8P)**



Wire side of female terminals

**Fig. 125: Connecting Jumper Wire Between SH-AWD Control Unit Connector Terminals B6 And B7**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

**RIGHT CLUTCH ELECTROMAGNETIC COIL 2P CONNECTOR**

Wire side of female terminals

**Fig. 126: Checking Continuity Between Right Clutch Electromagnetic Coil 2P Connector Terminals No. 1 And No. 2**

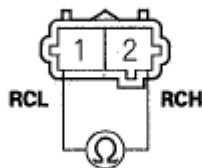
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).

**NO** - Repair open in the wire between the SH-AWD control unit and the right clutch electromagnetic coil.

11. Measure the resistance between right clutch electromagnetic coil 2P connector terminals No. 1 and No. 2.

**RIGHT CLUTCH ELECTROMAGNETIC COIL 2P CONNECTOR**

Wire side of male terminals

**Fig. 127: Measuring Resistance Between Right Clutch Electromagnetic Coil 2P Connector Terminals No. 1 And No. 2**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there 1.5 ohms or more?*

**YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).

**NO** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

**DTC 57-4: RIGHT CLUTCH ELECTROMAGNETIC COIL (SHORT)**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see '**05-07 MODELS** '), '08 model (see '**08 MODEL** ').
3. Clear the DTC with the HDS.
4. Do the clutch function test with the HDS.
5. Check for DTCs with the HDS.

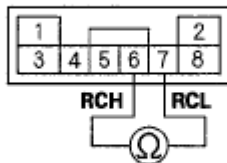
*Is DTC 57-4 indicated?*

**YES** - Go to step 6.

**NO** - Intermittent failure, the system is OK at this time.

6. Turn the ignition switch OFF.
7. Disconnect SH-AWD control unit connector B (8P).
8. Check for continuity between SH-AWD control unit connector terminals B6 and B7.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**



Terminal side of male terminals

**Fig. 128: Checking Continuity Between SH-AWD Control Unit Connector Terminals B6 And B7**

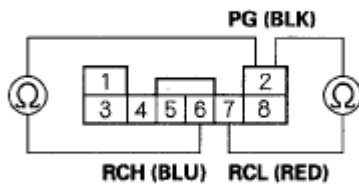
**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

*Is there continuity?*

**YES** - Go to step 9.

**NO** - Go to step 10.

9. Check for continuity between SH-AWD control unit connector terminals B2 and B6, and between terminals B2 and B7.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**

Wire side of female terminals

**Fig. 129: Checking Continuity Between SH-AWD Control Unit Connector Terminals B2 And B6, And Between Terminals B2 And B7**

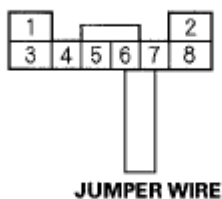
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Repair short to ground in the wire between the SH-AWD control unit and the right clutch electromagnetic coil.

**NO** - Go to step 11.

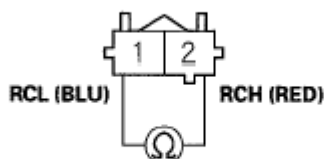
10. Connect a jumper wire between SH-AWD control unit connector terminals B6 and B7. Disconnect the right clutch electromagnetic coil 2P connector, then check for continuity between right clutch electromagnetic coil 2P connector terminals No. 1 and No. 2.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**

Terminal side of female terminals

**Fig. 130: Connecting Jumper Wire Between SH-AWD Control Unit Connector Terminals B6 And B7**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

**RIGHT CLUTCH ELECTROMAGNETIC COIL 2P CONNECTOR**

Wire side of female terminals

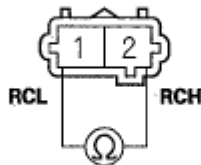
**Fig. 131: Checking Continuity Between Right Clutch Electromagnetic Coil 2P Connector Terminals No. 1 And No. 2****Courtesy of AMERICAN HONDA MOTOR CO., INC.**

*Is there continuity?*

**YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).

**NO** - Repair open in the wire between the SH-AWD control unit and the right clutch electromagnetic coil.

11. Measure the resistance between right clutch electromagnetic coil 2P connector terminals No. 1 and No. 2.

**RIGHT CLUTCH ELECTROMAGNETIC COIL 2P CONNECTOR**

Wire side of male terminals

**Fig. 132: Measuring Resistance Between Right Clutch Electromagnetic Coil 2P Connector Terminals No. 1 And No. 2****Courtesy of AMERICAN HONDA MOTOR CO., INC.**

*Is there 0.6 ohms or less?*

**YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).

**NO** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

**DTC 59-1: SH-AWD CONTROL UNIT POWER SUPPLY MONITOR CIRCUIT**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Start the engine.
5. Check for DTCs with the HDS.

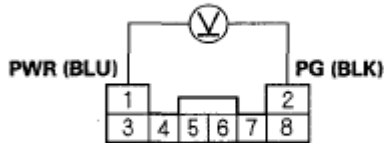
*Is DTC 59-1 indicated?*

**YES** - Go to step 6.

**NO** - Intermittent failure, the system is OK at this time.

6. Measure the voltage between SH-AWD control unit connector terminals B1 and B2.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**



Wire side of female terminals

**Fig. 133: Measuring Voltage Between SH-AWD Control Unit Connector Terminals B1 And B2**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there 18 V or more?*

**YES** - Check the charging system (see **CHARGING SYSTEM INDICATOR CIRCUIT TROUBLESHOOTING** ).

**NO** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

**DTC 61-1: SHIFT SOLENOID VALVE (OPEN)**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

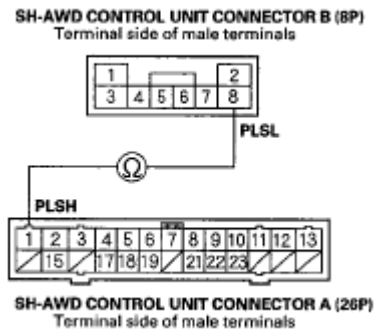
1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Do the shift solenoid valve function test with the HDS.
5. Check for DTCs with the HDS.

*Is DTC 61-1 indicated?*

**YES** - Go to step 6.

**NO** - Intermittent failure, the system is OK at this time.

6. Turn the ignition switch OFF.
7. Disconnect SH-AWD control unit connectors A (26P) and B (8P).
8. Check for continuity between SH-AWD control unit connector terminals A1 and B8.



**Fig. 134: Checking Continuity Between SH-AWD Control Unit Connector Terminals A1 And B8**

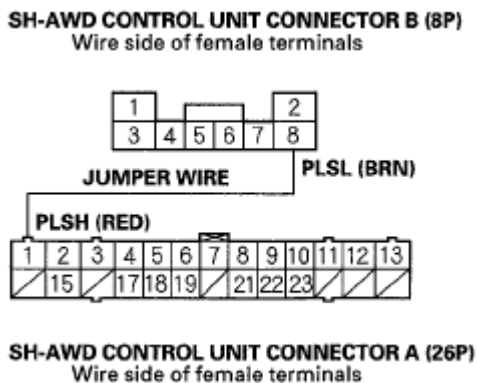
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there 15-20 ohms?*

**YES** - Check for loose connector terminals at the SH-AWD control unit, and repair if necessary. If the connections are OK, substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ) and recheck.

**NO** - Go to step 9.

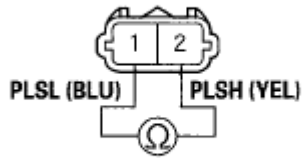
9. Connect a jumper wire between SH-AWD control unit connector terminals A1 and B8. Disconnect the shift solenoid valve 2P connector, then check for continuity between shift solenoid valve 2P connector terminals No. 1 and No. 2.



**Fig. 135: Connecting Jumper Wire Between SH-AWD Control Unit Connector Terminals A1 And B8**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

**SHIFT SOLENOID VALVE 2P CONNECTOR**



Terminal side of male terminals

**Fig. 136: Checking Continuity Between Shift Solenoid Valve 2P Connector Terminals No. 1 And No. 2**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Replace the shift solenoid valve (see **REAR DIFFERENTIAL DISASSEMBLY/REASSEMBLY** ).

**NO** - Repair open in the wire between the SH-AWD control unit and the shift solenoid valve.

**DTC 61-2: SHIFT SOLENOID VALVE (SHORT)**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Do the shift solenoid valve function test with the HDS.
5. Check for DTCs with the HDS.

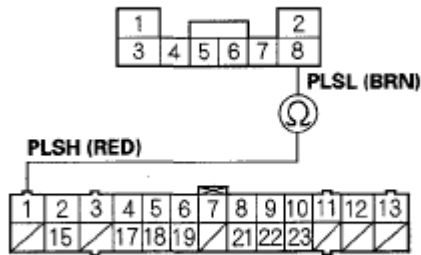
*Is DTC 61-2 indicated?*

**YES** - Go to step 6.

**NO** - Intermittent failure, the system is OK at this time.

6. Turn the ignition switch OFF.
7. Disconnect SH-AWD control unit connectors A (26P) and B (8P).
8. Measure the resistance between SH-AWD control unit connector terminals A1 and B8.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**  
Wire side of female terminals



**SH-AWD CONTROL UNIT CONNECTOR A (26P)**  
Wire side of female terminals

**Fig. 137: Measuring Resistance Between SH-AWD Control Unit Connector Terminals A1 And B8**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

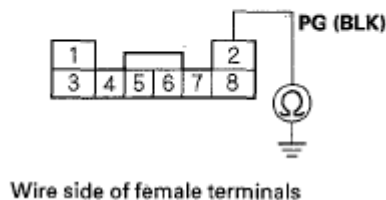
*Is there 15-20 ohms?*

**YES** - Go to step 9.

**NO** - Go to step 10.

9. Check for continuity between SH-AWD control unit connector terminal B2 and body ground.

**SH-AWD CONTROL UNIT CONNECTOR B (8P)**



**Fig. 138: Checking Continuity Between SH-AWD Control Unit Connector Terminal B2 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

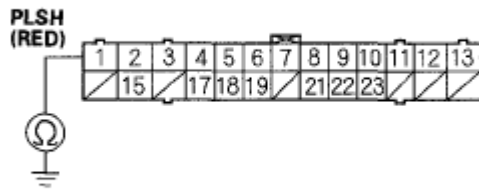
*Is there continuity?*

**YES** - Check for loose connector terminals at the SH-AWD control unit, and repair if necessary. If the connections are OK, substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ) and recheck.

**NO** - Repair open in the wire between the SH-AWD control unit and body ground.

10. Check for continuity between SH-AWD control unit connector terminal A1 and body ground.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**



Wire side of female terminals

**Fig. 139: Checking Continuity Between SH-AWD Control Unit Connector Terminal A1 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

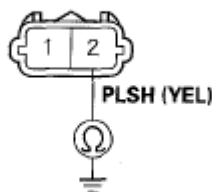
*Is there continuity?*

**YES** - Go to step 11.

**NO** - Substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ) and recheck.

11. Disconnect the shift solenoid valve 2P connector, then check for continuity between shift solenoid valve 2P connector terminal No. 2 and body ground.

**SHIFT SOLENOID VALVE 2P CONNECTOR**



Terminal side of male terminals

**Fig. 140: Checking Continuity Between Shift Solenoid Valve 2P Connector Terminal No. 2 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Repair short to ground in the wire between the SH-AWD control unit and body ground.

**NO** - Replace the shift solenoid valve (see **REAR DIFFERENTIAL DISASSEMBLY/REASSEMBLY** ).

**DTC 74-1: ONE WAY CLUTCH MALFUNCTION**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

## 2007 Acura RL

### 2005-08 DRIVELINE/AXLES Rear Differential - RL

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see '**05-07 MODELS**'), '08 model (see '**08 MODEL**').
3. Check for DTC 27-1 and DTC 27-2 with the HDS.

*Are DTC 27-1 and DTC 27-2 indicated at the same time?*

**YES** - Go to the **DTC 27-1** and/or **27-2** troubleshooting first, then recheck.

**NO** - Go to step 4.

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

*Are any VSA system DTCs indicated?*

**YES** - Go to the indicated DTCs troubleshooting.

**NO** - Replace the rear differential center case (see **CENTER CASE REPLACEMENT**).

#### **DTC 75-1: ACCELERATION DEVICE MALFUNCTION (STUCK OFF)**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION**).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see '**05-07 MODELS**'), '08 model (see '**08 MODEL**').
3. Check for DTC 27-1 and DTC 27-2 with the HDS.

*Are DTC 27-1 and DTC 27-2 indicated at the same time?*

**YES** - Go to the **DTC 27-1** and/or **27-2** troubleshooting first, then recheck.

**NO** - Go to step 4.

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

*Are any VSA system DTCs indicated?*

**YES** - Go to the indicated DTCs troubleshooting.

**NO** - Go to step 5.

5. Clear the DTC with the HDS.
6. Start the engine.
7. Do the shift solenoid valve function test with the HDS.
8. Check for DTCs with the HDS.

*Is DTC 75-1 indicated?*

**YES** - Go to step 9.

**NO** - Intermittent failure, the system is OK at this time.

9. Check the acceleration ratio in the DATA LIST with the HDS.

*Is the acceleration ratio between 0.94 and 0.98?*

**YES** - Go to step 10.

**NO** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

10. Check the rear differential fluid level.

*Is the fluid level OK?*

**YES** - Go to step 11.

**NO** - Adjust the fluid to the proper level (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT** ).

11. Check the rear differential fluid pressure.

*Is there pressure when it is accelerating?*

**YES** - Replace the rear differential center case (see **CENTER CASE REPLACEMENT** ).

**NO** - Replace the shift solenoid valve (see **REAR DIFFERENTIAL DISASSEMBLY/REASSEMBLY** ).

## **DTC 75-2: ACCELERATION DEVICE MALFUNCTION (STUCK ON)**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Check for DTC 27-1 and DTC 27-2 with the HDS.

*Are DTC 27-1 and DTC 27-2 indicated at the same time?*

**YES** - Go to the **DTC 27-1** and/or **27-2** troubleshooting first, then recheck.

**NO** - Go to step 4.

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

*Are any VSA system DTCs indicated?*

**YES** - Go to the indicated DTCs troubleshooting.

**NO** - Go to step 5.

5. Clear the DTC with the HDS.
6. Start the engine.
7. Do the shift solenoid valve function test with the HDS.
8. Check for DTCs with the HDS.

*Is DTC 75-2 indicated?*

**YES** - Go to step 9.

**NO** - Intermittent failure, the system is OK at this time.

9. Check the acceleration ratio with the HDS.

*Is the acceleration ratio between 0.94 and 0.98?*

**YES** - Go to step 10.

**NO** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

10. Check the rear differential fluid pressure.

*Is there pressure when it is accelerating?*

**YES** - Replace the rear differential center case (see **CENTER CASE REPLACEMENT** ).

**NO** - Replace the shift solenoid valve (see **REAR DIFFERENTIAL DISASSEMBLY/REASSEMBLY** ).

## **DTC 76-1: REAR DIFFERENTIAL FLUID OVERHEATS**

### **NOTE:**

- When the temperature of the rear differential fluid is abnormally high, the SH-AWD indicator comes on. This is not necessarily a problem, but DTC 76-1 will be stored.
- Check the rear differential fluid level (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT** ). If it's low, refill it, clear the DTC, and recheck.
- Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).

3. Clear the DTC with the HDS.
4. Start the engine.
5. Test-drive under these conditions:
  - Vehicle speed at 25 mph (40 km/h) or more
  - Engine speed less than 2500 RPM for at least 30 seconds.
6. Check for DTCs with the HDS.

*Is DTC 76-1 indicated?*

**YES** - Go to step 7.

**NO** - Intermittent failure, the system is OK at this time.

7. Check for DTC 27-1 and DTC 27-2 with the HDS.

*Are DTC 27-1 and DTC 27-2 indicated at the same time?*

**YES** - Go to the **DTC 27-1** and/or **27-2** troubleshooting first, then recheck.

**NO** - Go to step 8.

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

*Are any VSA system DTCs indicated?*

**YES** - Go to the indicated DTCs troubleshooting.

**NO** - Go to step 9.

9. Check for rear brake drag.

*Do the rear brakes drag?*

**YES** - Fix the rear brakes (see **COMPONENT LOCATION INDEX** ).

**NO** - Go to step 10.

10. Raise the vehicle.
11. Raise the vehicle speed to 19 mph (30 km/h).
12. Check the hypoid gear speed sensor value with the HDS.

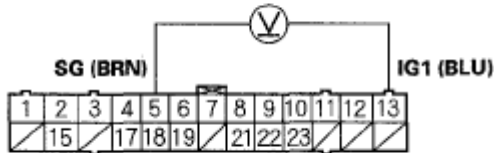
*Is the hypoid gear speed sensor value shown?*

**YES** - Check the hypoid gear speed sensor installation. If it is installed properly, replace the rear differential center case (see **CENTER CASE REPLACEMENT** ).

**NO** - Go to step 13.

13. Raise the vehicle speed to 19 mph (30 km/h).
14. Measure the voltage between SH-AWD control unit connector terminals A5 and A13.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**



Wire side of female terminals

**Fig. 141: Measuring Voltage Between SH-AWD Control Unit Connector Terminals A5 And A13**  
**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

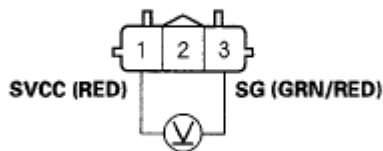
*Does the voltage change when the propeller shaft is rotated?*

**YES** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

**NO** - Go to step 15.

15. Turn the ignition switch OFF.
16. Disconnect the hypoid gear speed sensor 3P connector.
17. Turn the ignition switch ON (II).
18. Measure the voltage between hypoid gear speed sensor 3P connector terminals No. 1 and No. 3.

**HYPOID GEAR SPEED SENSOR 3P CONNECTOR**



Wire side of female terminals

**Fig. 142: Measuring Voltage Between Hypoid Gear Speed Sensor 3P Connector Terminals No. 1**  
**And No. 3**  
**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

*Is there 4.0 V or more?*

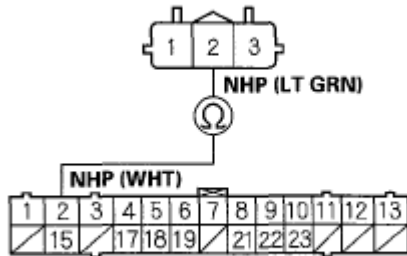
**YES** - Go to step 19.

**NO** - Go to step 22.

19. Turn the ignition switch OFF.

20. Disconnect SH-AWD control unit connector A (26P).
21. Check for continuity between SH-AWD control unit connector terminal A2 and hypoid gear speed sensor 3P connector terminal No. 2.

**HYPOID GEAR SPEED SENSOR 3P CONNECTOR**  
Wire side of female terminals



**SH-AWD CONTROL UNIT CONNECTOR A (26P)**  
Wire side of female terminals

**Fig. 143: Checking Continuity Between SH-AWD Control Unit Connector Terminal A2 And Hypoid Gear Speed Sensor Terminal No. 2**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

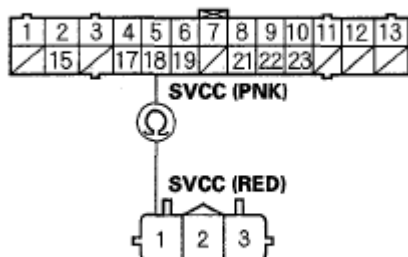
*Is there continuity?*

**YES** - Replace the hypoid gear speed sensor (see **HYPOID GEAR SPEED SENSOR REPLACEMENT** ).

**NO** - Repair open in the wire between SH-AWD control unit connector A and the hypoid gear speed sensor connector.

22. Turn the ignition switch OFF.
23. Disconnect SH-AWD control unit connector A (26P).
24. Check for continuity between SH-AWD control unit connector terminal A18 and hypoid gear speed sensor 3P connector terminal No. 1.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**  
Wire side of female terminals



**HYPOID GEAR SPEED SENSOR 3P CONNECTOR**  
Wire side of female terminals

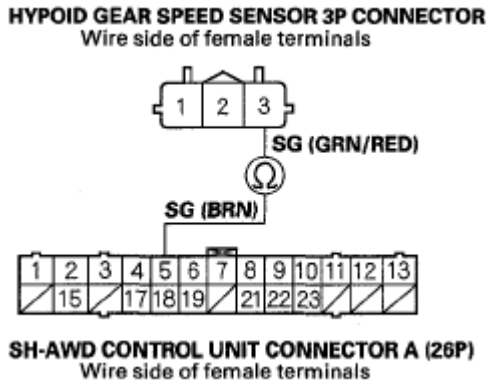
**Fig. 144: Checking Continuity Between SH-AWD Control Unit Connector Terminal A18 And Hypoid Gear Speed Sensor Terminal No. 1**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Go to step 25.

**NO** - Repair open in the wire between SH-AWD control unit connector A and the hypoid gear speed sensor connector.

25. Check for continuity between SH-AWD control unit connector terminal A5 and hypoid gear speed sensor 3P connector terminal No. 3.



**Fig. 145: Checking Continuity Between SH-AWD Control Unit Connector Terminal A5 And Hypoid Gear Speed Sensor Terminal No. 3**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

**NO** - Repair open in the wire between SH-AWD control unit connector A and the hypoid gear speed sensor connector.

## **DTC 78-XX (78-3 TO 78-23): SH-AWD CONTROL UNIT SELF-DIAGNOSTIC MALFUNCTION**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Turn the ignition switch OFF.
5. Turn the ignition switch ON (II).
6. Check for DTCs with the HDS.

*Is DTC 78-xx indicated?*

**YES** - Replace the SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

**NO** - Intermittent failure, the system is OK at this time.

**DTC 81-1: LEFT SEARCH COIL SENSOR MALFUNCTION**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see '05-07 MODELS ), '08 model (see '08 MODEL ).
3. Clear the DTC with the HDS.
4. Turn the ignition switch OFF.
5. Turn the ignition switch ON (II).
6. Check for DTCs with the HDS.

*Is DTC 81-1 indicated?*

**YES** - Replace the rear differential side case (see SIDE CASE REPLACEMENT ).

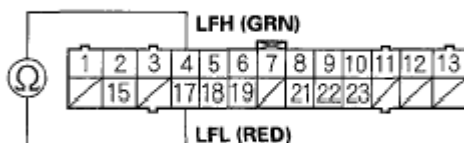
**NO** - Intermittent failure, the system is OK at this time.

**DTC 81-2: LEFT SEARCH COIL SENSOR (OPEN OR SHORT)**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see GENERAL TROUBLESHOOTING INFORMATION ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see '05-07 MODELS ), '08 model (see '08 MODEL ).
3. Turn the ignition switch OFF.
4. Disconnect SH-AWD control unit connector A (26P).
5. Check for continuity between SH-AWD control unit connector terminals A4 and A17.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**



Wire side of female terminals

**Fig. 146: Checking Continuity Between SH-AWD Control Unit Connector Terminals A4 And A17**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

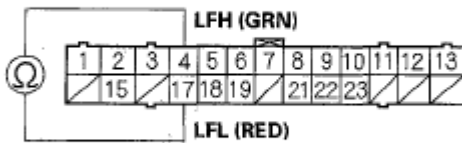
*Is there continuity?*

**YES** - Go to step 6.

**NO** - Go to step 8.

6. Measure the resistance between SH-AWD control unit connector terminals A4 and A17.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**



Wire side of female terminals

**Fig. 147: Measuring Resistance Between SH-AWD Control Unit Connector Terminals A4 And A17**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

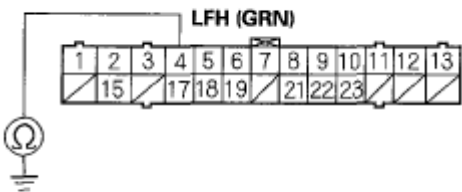
*Is there 2.0 ohms or more?*

**YES** - Go to step 7.

**NO** - Go to step 9.

7. Check for continuity between SH-AWD control unit connector terminal A4 and body ground.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**



Wire side of female terminals

**Fig. 148: Checking Continuity Between SH-AWD Control Unit Connector Terminal A4 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

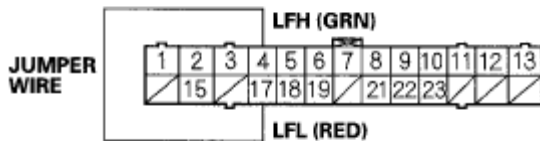
**YES** - Repair short in the wire between SH-AWD control unit connector terminal A4 and body ground.

**NO** - Check for loose connector terminals at the SH-AWD control unit and repair if necessary. If the connections are OK, substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL**

**UNIT REPLACEMENT** ) and recheck.

8. Connect a jumper wire between SH-AWD control unit connector terminals A4 and A17. Disconnect the left search coil 2P connector, then check for continuity between left search coil 2P connector terminals No. 1 and No. 2.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**

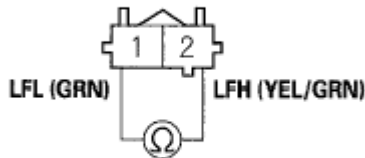


Wire side of female terminals

**Fig. 149: Connecting Jumper Wire Between SH-AWD Control Unit Connector Terminals A4 And A17**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

**LEFT SEARCH COIL 2P CONNECTOR**



Wire side of female terminals

**Fig. 150: Checking Continuity Between Left Search Coil 2P Connector Terminals No. 1 And No. 2**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

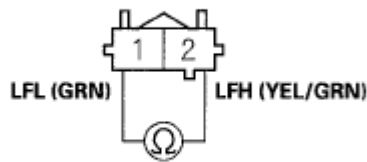
*Is there continuity?*

**YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).

**NO** - Repair open in the wire between left search coil 2P connector terminals No. 1 and No. 2.

9. Disconnect the left search coil 2P connector, then check for continuity between left search coil 2P connector terminals No. 1 and No. 2.

## LEFT SEARCH COIL 2P CONNECTOR



Wire side of female terminals

**Fig. 151: Checking Continuity Between Left Search Coil 2P Connector Terminals No. 1 And No. 2**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Repair short in the wire between SH-AWD control unit connector A and the left search coil connector.

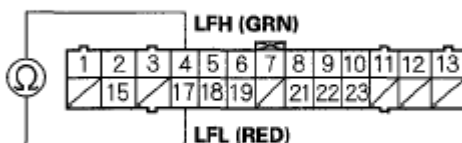
**NO** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).

### DTC 81-3: LEFT CLUTCH ELECTROMAGNETIC COIL MAGNETIC FLUX CHARACTERISTIC

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Turn the ignition switch OFF.
4. Disconnect SH-AWD control unit connector A (26P).
5. Measure the resistance between SH-AWD control unit connector terminals A4 and A17.

## SH-AWD CONTROL UNIT CONNECTOR A (26P)



Wire side of female terminals

**Fig. 152: Measuring Resistance Between SH-AWD Control Unit Connector Terminals A4 And A17**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there 2.0 ohms or less?*

**YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).

**NO** - Go to step 6.

6. Clear the DTC with the HDS.
7. Do the SH-AWD differential clutch torque memorization (see **SH-AWD DIFFERENTIAL CLUTCH TORQUE MEMORIZATION** ).
8. Test-drive the vehicle at a speed of more than 1 mph (2 km/h) for at least 1 second.
9. Check for DTCs with the HDS.

*Is DTC 81-1, 81-2, 82-1, and/or 82-2 indicated?*

**YES** - Go to the indicated DTCs troubleshooting.

**NO** - Intermittent failure, the system is OK at this time.

#### **DTC 82-1: RIGHT SEARCH COIL SENSOR MALFUNCTION**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Clear the DTC with the HDS.
4. Turn the ignition switch OFF.
5. Turn the ignition switch ON (II).
6. Check for DTCs with the HDS.

*Is DTC 82-1 indicated?*

**YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).

**NO** - Intermittent failure, the system is OK at this time.

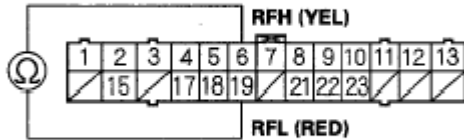
#### **DTC 82-2: RIGHT SEARCH COIL SENSOR (OPEN OR SHORT)**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see **'05-07 MODELS** ), '08 model (see **'08 MODEL** ).
3. Turn the ignition switch OFF.
4. Disconnect SH-AWD control unit connector A (26P).

5. Check for continuity between SH-AWD control unit connector terminals A6 and A19.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**



Wire side of female terminals

**Fig. 153: Checking Continuity Between SH-AWD Control Unit Connector Terminals A6 And A19**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

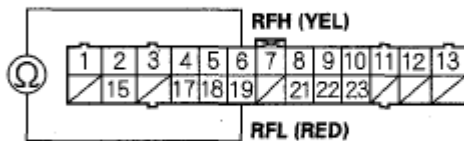
*Is there continuity?*

**YES** - Go to step 6.

**NO** - Go to step 8.

6. Measure the resistance between SH-AWD control unit connector terminals A6 and A19.

**SH-AWD CONTROL UNIT CONNECTOR A (26P)**



Wire side of female terminals

**Fig. 154: Measuring Resistance Between SH-AWD Control Unit Connector Terminals A6 And A19**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

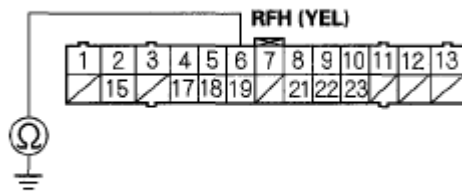
*Is there 2.0 ohms or more?*

**YES** - Go to step 7.

**NO** - Go to step 9.

7. Check for continuity between SH-AWD control unit connector terminal A6 and body ground.

## SH-AWD CONTROL UNIT CONNECTOR A (26P)



Wire side of female terminals

**Fig. 155: Checking Continuity Between SH-AWD Control Unit Connector Terminal A6 And Body Ground**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

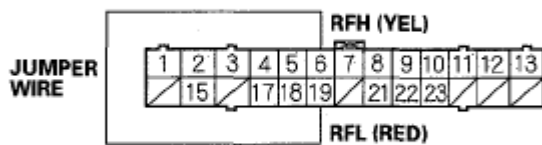
*Is there continuity?*

**YES** - Repair short in the wire between SH-AWD control unit connector terminal A6 and body ground.

**NO** - Check for loose connector terminals at the SH-AWD control unit and repair if necessary. If the connections are OK, substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ) and recheck.

8. Connect a jumper wire between SH-AWD control unit connector terminals A6 and A19. Disconnect the right search coil sensor 2P connector, then check for continuity between right search coil sensor 2P connector terminals No. 1 and No. 2.

## SH-AWD CONTROL UNIT CONNECTOR A (26P)

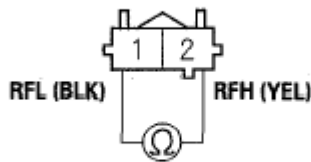


Wire side of female terminals

**Fig. 156: Connecting Jumper Wire Between SH-AWD Control Unit Connector Terminals A6 And A19**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

## RIGHT SEARCH COIL SENSOR 2P CONNECTOR



Wire side of female terminals

**Fig. 157: Checking Continuity Between Right Search Coil Sensor 2P Connector Terminals No. 1 And No. 2**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

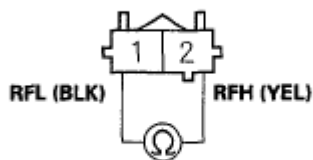
*Is there continuity?*

**YES** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).

**NO** - Repair open in the wire between right search coil sensor connector terminals No. 1 and No. 2.

9. Disconnect the right search coil sensor 2P connector, then check for continuity between right search coil sensor 2P connector terminals No. 1 and No. 2.

## RIGHT SEARCH COIL SENSOR 2P CONNECTOR



Wire side of female terminals

**Fig. 158: Checking Continuity Between Right Search Coil Sensor 2P Connector Terminals No. 1 And 2**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there continuity?*

**YES** - Repair short to ground in the wire between SH-AWD control unit connector A and the right search coil sensor connector.

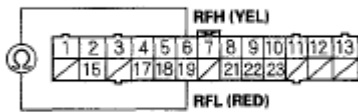
**NO** - Replace the rear differential side case (see **SIDE CASE REPLACEMENT** ).

**DTC 82-3: RIGHT SEARCH COIL SENSOR MAGNETIC FLUX CHARACTERISTIC**

**NOTE:** Before you troubleshoot, review the general troubleshooting information (see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see '['05-07 MODELS](#)'), '08 model (see '['08 MODEL](#)').
3. Turn the ignition switch OFF.
4. Disconnect SH-AWD control unit connector A (26P).
5. Measure the resistance between SH-AWD control unit connector terminals A6 and A19.

SH-AWD CONTROL UNIT CONNECTOR A (26P)



Wire side of female terminals

**Fig. 159: Measuring Resistance Between SH-AWD Control Unit Connector Terminals A6 And A19**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

*Is there 2.0 ohms or less?*

**YES** - Replace the rear differential side case (see [SIDE CASE REPLACEMENT](#)).

**NO** - Go to step 6.

6. Clear the DTC with the HDS.
7. Do the SH-AWD differential clutch torque memorization (see [SH-AWD DIFFERENTIAL CLUTCH TORQUE MEMORIZATION](#)).
8. Test-drive the vehicle at a speed of more than 1 mph (2 km/h) for at least 1 second.
9. Check for DTCs with the HDS.

*Is DTC 81-1, 81-2, 82-1, and/or 82-2 indicated?*

**YES** - Go to the indicated DTCs troubleshooting.

**NO** - Intermittent failure, the system is OK at this time.

## SYMPTOM TROUBLESHOOTING

### THE SH-AWD INDICATOR DOES NOT GO OFF, AND NO DTCS ARE STORED

#### NOTE:

- Before you troubleshoot, review the general troubleshooting information (see [GENERAL TROUBLESHOOTING INFORMATION](#)).
- Make sure the No. 1 (30 A) fuse in the under-hood fuse/relay box is OK.
- Make sure there are no loose connector terminals at the SH-AWD control unit.

- **Make sure the charging system is OK.**
- **Make sure the PGM-FI system and the A/T system is not in the middle of updating.**

1. Test the battery (see **BATTERY TEST** ). Charge or replace the battery if necessary.
2. From the mode menu, select DATA LIST and check the COMPLETE MEMORIZATION with the HDS.

*Does the data list show "complete"?*

**YES** - Go to step 3.

**NO** - Do the SH-AWD system memorization procedures for each of the following, then go to step 3.

- Differential clutch torque (see **SH-AWD DIFFERENTIAL CLUTCH TORQUE MEMORIZATION** )
  - Steering angle neutral position (see **STEERING ANGLE NEUTRAL POSITION MEMORIZATION** )
  - Yaw rate-lateral/longitudinal acceleration (see **YAW RATE-LATERAL/LONGITUDINAL ACCELERATION NEUTRAL POSITION MEMORIZATION** )
  - Control unit initialization (see **SH-AWD CONTROL UNIT INITIALIZATION** )
3. Check for DTCs in the VSA system with the HDS.

*Are any steering angle sensor DTCs indicated?*

**YES** - Go to the indicated DTCs troubleshooting.

**NO** - Go to step 4.

4. Start the engine.
5. Check the SH-AWD indicator value with the HDS.

*Is the SH-AWD indicator value OFF?*

**YES** - Go to the gauge control system DTC troubleshooting (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A** ).

**NO** - Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT** ), or substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

## THE SH-AWD INDICATOR DOES NOT COME ON

**NOTE:** Before you troubleshoot, review the general troubleshooting information

(see **GENERAL TROUBLESHOOTING INFORMATION** ).

1. Turn the ignition switch ON (II).
2. Make sure the HDS communicates with the vehicle and the SH-AWD control unit. If it doesn't, troubleshoot the DLC circuit; '05-07 models (see '**05-07 MODELS** '), '08 model (see '**08 MODEL** ').
3. Check the SH-AWD indicator.

*Does the SH-AWD indicator come on and go off?*

**YES** - Intermittent failure, the system is OK at this time.

**NO** - Go to step 4.

4. Turn the ignition switch OFF.
5. Disconnect SH-AWD control unit connectors A (26P) and B (8P).
6. Turn the ignition switch ON (II).
7. Check the SH-AWD indicator.

*Does the SH-AWD indicator come on?*

**YES** - Update the SH-AWD control unit if it does not have the latest software (see **UPDATING THE SH-AWD CONTROL UNIT** ), or substitute a known-good SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ) and recheck. If the symptom/indication goes away with the updated SH-AWD control unit, troubleshooting is complete. If the symptom/indication goes away with a known-good SH-AWD control unit, replace the original SH-AWD control unit (see **SH-AWD CONTROL UNIT REPLACEMENT** ).

**NO** - Go to the gauge control system DTC troubleshooting (see **TROUBLESHOOTING - B-CAN SYSTEM DIAGNOSIS TEST MODE A** ).

## **SH-AWD FUNCTION TEST**

### **Special Tools Required**

Adapter, torque wrench 070AJ-SJAA101

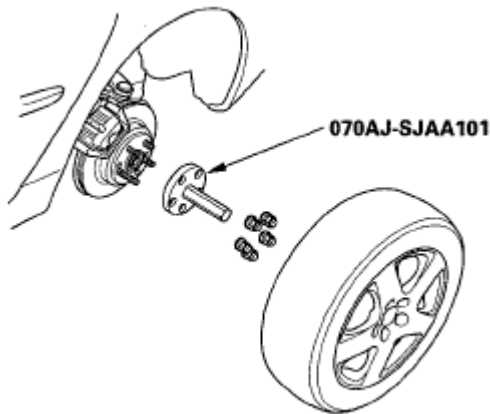
### **DIRECT ELECTROMAGNETIC CLUTCH TEST**

#### **NOTE:**

- **No DTC was detected.**
- **The shift lever is in N.**
- **The SH-AWD control unit had been initialized.**
- **The tire pressures are at the specified value.**
- **Tire wear is the same between the left and right tires.**

1. Check that the differential oil temperature is over 20°C (68°F) with the HDS. If it is below 20°C (68°F), raise the temperature by driving the vehicle in circles or by constantly turning.

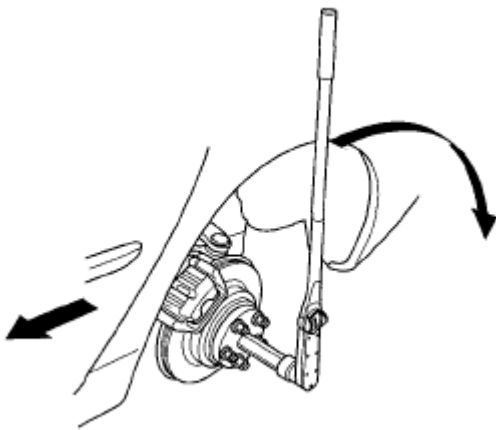
2. Raise the vehicle, and make sure it is securely supported.
3. Remove the rear wheels.
4. Connect the HDS to the DLC.
5. Do the direct electromagnetic clutch test with the HDS.
6. Install the special tool on the rear wheel hub.



**Fig. 160: Identifying Special Tool**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install a torque wrench on the special tool as shown on the HDS. Write down the torque value while slowly rotating the rear hub with the torque wrench as shown. (Turn the hub no more than 90 degrees in 7 to 10 seconds.)

**NOTE:** Use a torque wrench capable of measuring up to 50 kgf.m (360 lbf.ft) such as a commercially available Snap-on torque wrench TE352FUE.



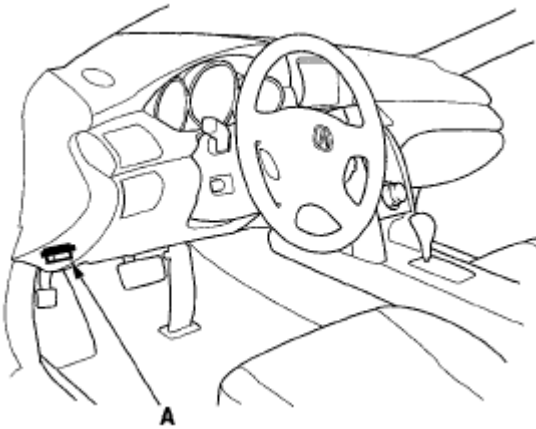
**Fig. 161: Installing Torque Wrench**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Enter the torque value into the HDS, and wait for the test to finish.
  - If the result shows the clutch driving force is normal, the clutch assembly is OK.
  - If the result shows the clutch driving force is abnormal, replace the differential oil, and retest. If the result still shows the clutch driving force is abnormal, replace the rear differential side case.

**ACCELERATION DEVICE TEST****NOTE:**

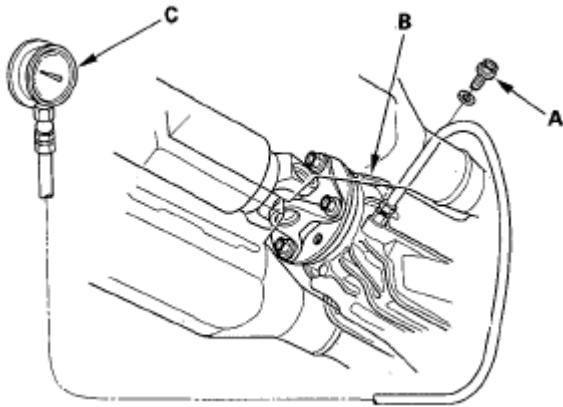
- **No DTC is detected.**
- **The SH-AWD control unit has been initialized.**
- **The shift lever is in P.**

1. Raise the vehicle, and make sure it is securely supported.
2. Connect the HDS to the DLC (A).



**Fig. 162: Identifying Data Link Connector Location**  
**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

3. Do the acceleration device test with the HDS.
4. Look at the results displayed on the HDS.
  - If the acceleration ratio is lower than the normal value when decelerating is displayed, replace the rear differential center case.
  - If the acceleration ratio is higher than the normal value when decelerating is displayed, go to step 5.
  - If the acceleration ratio is lower than the normal value when accelerating is displayed, go to step 10.
  - If the acceleration ratio is higher than the normal value when accelerating is displayed, replace the SH-AWD control unit.
5. Remove the 6 mm bolt (A) from the differential (B) as shown.



**Fig. 163: Connecting Pressure Gauge To The Differential**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

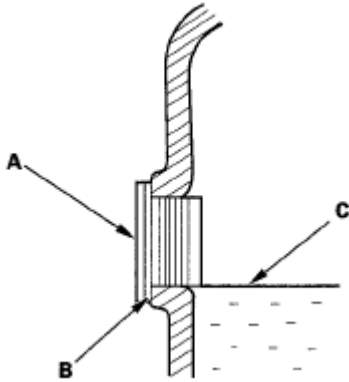
6. Connect the pressure gauge (C) to the adapter, and install the assembly into the differential (B). Route the hose under the vehicle toward the front door.
7. Do the acceleration device test. When you get to the "Keep the speed constant between 22 and 28 mph" screen in the test, write down the pressure indicated on the pressure gauge. Complete the test.
  - If the hydraulic pressure was over  $8.0 \text{ kg/cm}^2$ , go to step 8.
  - If the hydraulic pressure was below  $8.0 \text{ kg/cm}^2$ , replace the rear differential center case.
8. Replace the shift solenoid.
9. Do the acceleration device test.
  - If Normal is displayed, the problem has been fixed.
  - If the acceleration ratio is higher than the normal value when accelerating is displayed, replace the rear differential assembly.
10. Check the differential oil level. If the oil level was low, add oil as needed, then go to step 12. If the oil level was OK, go to step 11.
11. Do the acceleration device test. After the shift solenoid test (a portion of the acceleration device test) is complete, continue the acceleration device test. When you get to the "Keep the speed constant between 22 and 28 mph" screen, write down the pressure indicated on the pressure gauge. Complete the test.
  - If the hydraulic pressure was less than  $8.0 \text{ kg/cm}^2$ , go to step 12.
  - If the hydraulic pressure was over  $8.0 \text{ kg/cm}^2$ , replace the rear differential assembly.
12. Do the acceleration device test. Look at the results displayed on the HDS.
  - If Normal is displayed, the problem has been fixed.
  - If "Acceleration device is abnormal" is displayed, go to step 13.
13. Replace the shift solenoid, then do the acceleration device test.
  - If Normal is displayed, the problem has been fixed.
  - If "Acceleration device is abnormal" is displayed, replace the rear differential assembly.

## REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT

### INSPECTION

**Clutch and Hypoid Chambers**

1. Park the vehicle on level ground, and turn the ignition switch to LOCK (0).
2. Use solvent and a brush to wash any oil and dirt off the differential fluid inspection oil filler plugs.
3. Remove each filler plug (A) and the sealing washer (B), then check the condition of the fluid, and make sure the fluid is at the proper level (C).



**Fig. 164: Identifying Filler Plug And Sealing Washer**  
**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

4. The fluid level must reach up the bottom of the filler plug hole. If it is below the hole, add the recommended fluid until it runs out, then reinstall the filler plug with a new sealing washer.

**REPLACEMENT****Clutch Chamber**

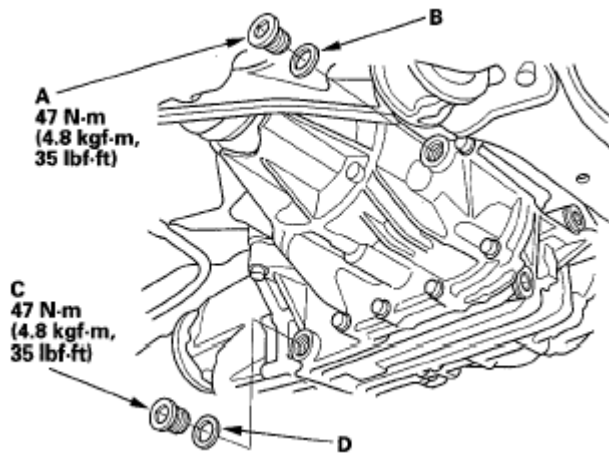
1. Park the vehicle on level ground, and turn the ignition switch to LOCK (0).
2. Remove the filler plug (A) and the sealing washer (B).

**Fluid Capacity**

**2.66 L (2.81 US qt) at fluid change**

**3.11 L (3.29 US qt) at overhaul**

**Recommended fluid: Honda ATF-Z1**



**Fig. 165: Identifying Filler Plug, Sealing Washer And Drain Plug With Torque Specifications**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the drain plug (C) and the sealing washer (D), and drain the fluid.
4. Reinstall the drain plug with a new sealing washer.
5. Add fluid until it reaches the bottom of the filler plug hole.
6. Reinstall the filler plug with a new sealing washer.

#### Hypoid Chamber

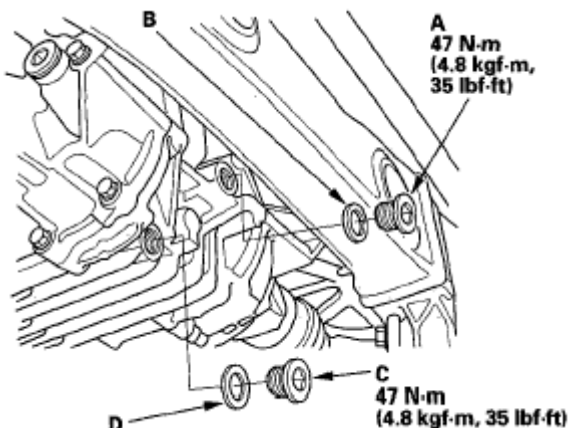
1. Park the vehicle on level ground, and turn the ignition switch to LOCK (0).
2. Remove the filler plug (A) and the sealing washer (B).

#### Fluid Capacity

**0.73 L (0.77 US qt) at fluid change**

**0.75 L (0.79 US qt) at overhaul**

**Recommended fluid: Honda ATF-Z1**

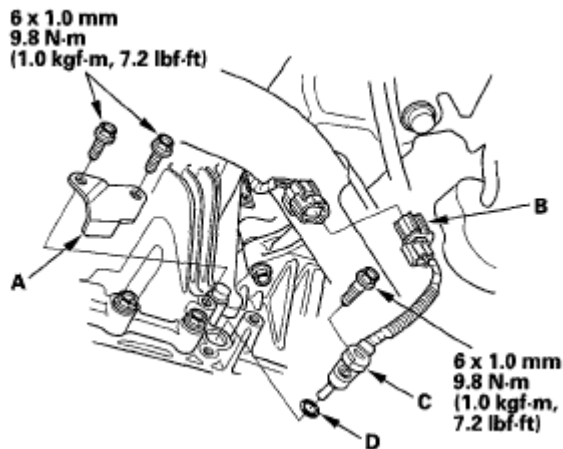


**Fig. 166: Identifying Filler Plug, Drain Plug And Sealing Washer With Torque Specifications**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the drain plug (C) and the sealing washer (D), and drain the fluid.
4. Reinstall the drain plug with a new sealing washer.
5. Add fluid until it reaches the bottom of the filler plug hole.
6. Reinstall the filler plug with a new sealing washer.

## REAR DIFFERENTIAL FLUID TEMPERATURE SENSOR REPLACEMENT

1. Drain the differential fluid (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT** ).
2. Remove the differential fluid temperature sensor cover (A), then disconnect the differential fluid temperature sensor connector (B).

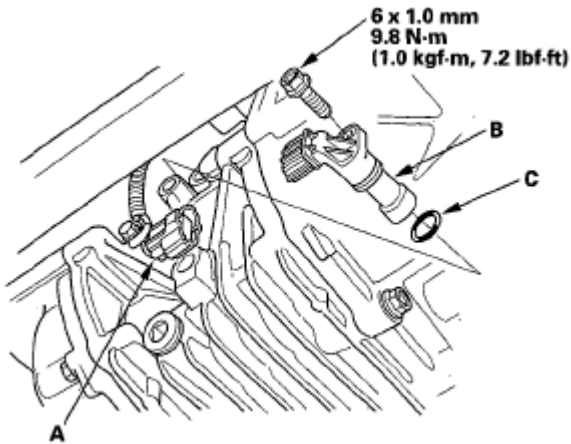


**Fig. 167: Identifying Differential Fluid Temperature Sensor With Torque Specifications**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the differential fluid temperature sensor (C).
4. Install the differential fluid temperature sensor with a new O-ring (D) in the reverse order of removal.
5. Refill the differential fluid (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT** ).

## HYPOID GEAR SPEED SENSOR REPLACEMENT

1. Disconnect the hypoid gear speed sensor connector (A).



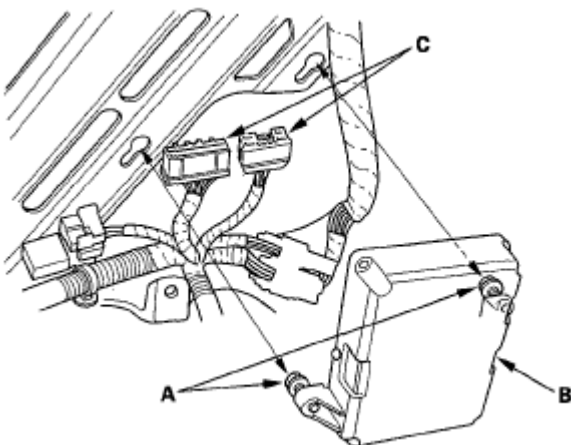
**Fig. 168: Identifying Hypoid Gear Speed Sensor With Torque Specifications**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the hypoid gear speed sensor (B).
3. Install the hypoid gear speed sensor with a new O-ring (C) in the reverse order of removal.

## SH-AWD CONTROL UNIT REPLACEMENT

**NOTE:** The SH-AWD control unit must be initialized (see SH-AWD DIFFERENTIAL CLUTCH TORQUE MEMORIZATION ) after replacement, otherwise the SH-AWD system will not function.

1. Remove the rear seat (see REAR SEAT REMOVAL/INSTALLATION ).
2. Remove the trunk front trim panel (see TRIM REMOVAL/INSTALLATION - TRUNK AREA ).
3. Loosen the SH-AWD control unit mounting bolts (A), then remove the SH-AWD control unit (B).

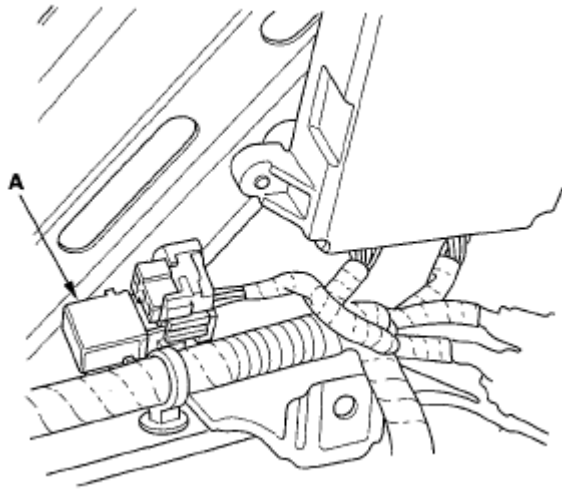


**Fig. 169: Identifying SH-AWD Control Unit Mounting Bolts**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the SH-AWD control unit connectors (C).
5. Install the SH-AWD control unit in the reverse order of removal.

## SH-AWD RELAY REPLACEMENT

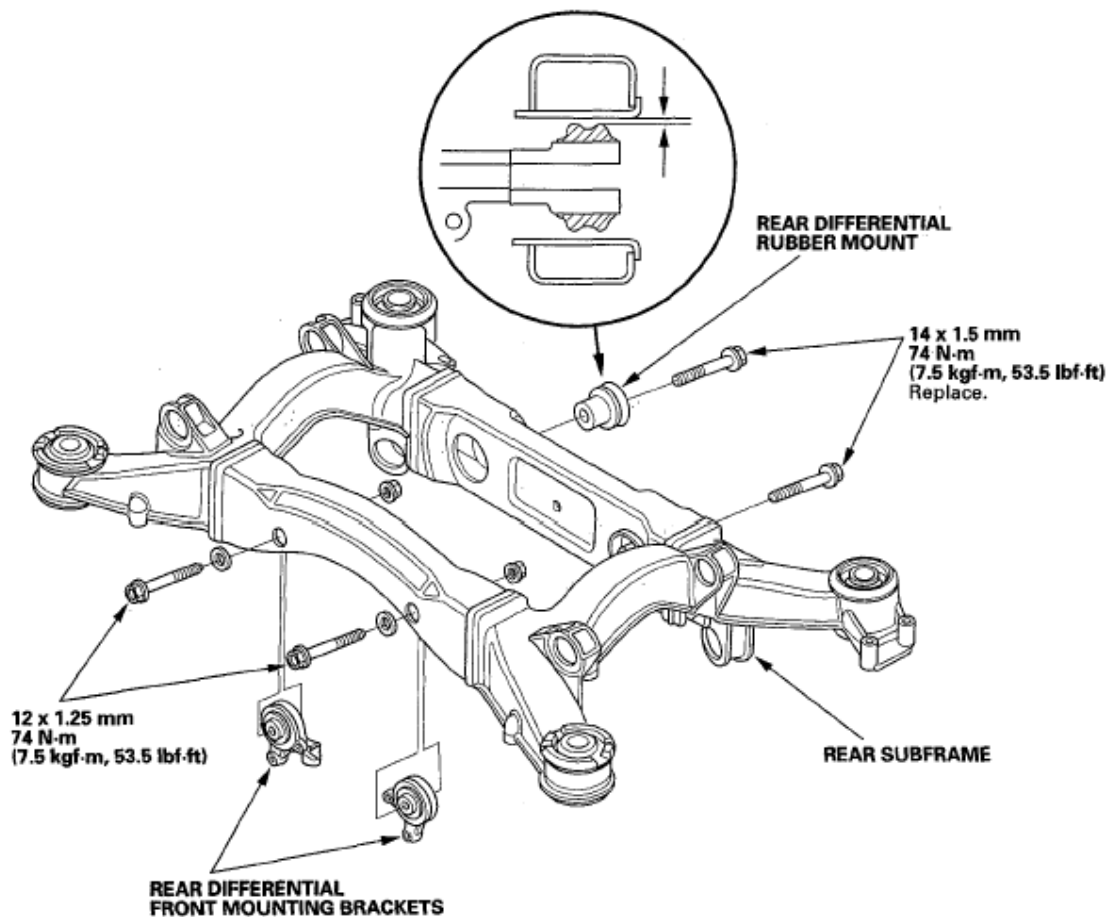
1. Remove the rear seat (see **REAR SEAT REMOVAL/INSTALLATION** ).
2. Remove the trunk front trim panel (see **TRIM REMOVAL/INSTALLATION - TRUNK AREA** ).
3. Remove the SH-AWD relay (A).



**Fig. 170: Identifying SH-AWD Relay**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the SH-AWD relay in the reverse order of removal.

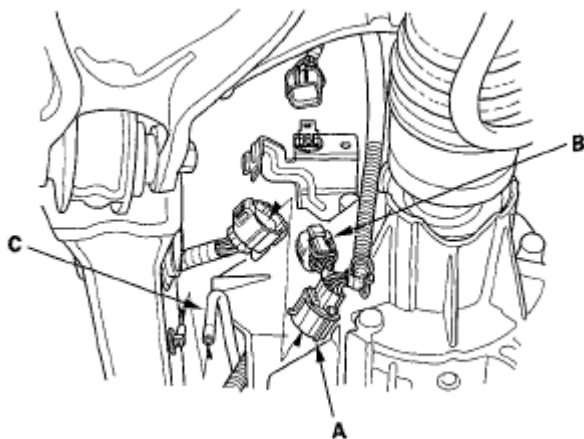
## REAR DIFFERENTIAL MOUNT REPLACEMENT



**Fig. 171: Identifying Rear Differential Mount With Torque Specifications**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

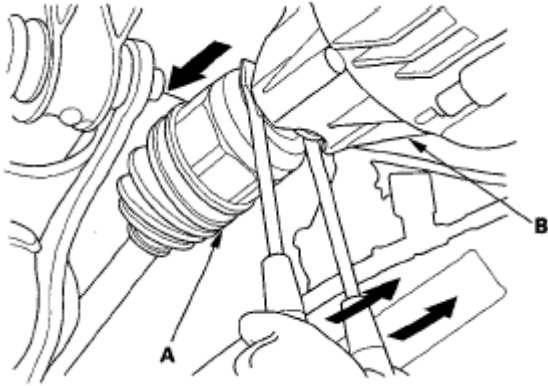
## REAR DIFFERENTIAL REMOVAL

1. Drain the differential fluid (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT** ).
2. Remove the propeller shaft (see **PROPELLER SHAFT REMOVAL** ).
3. Disconnect the rear differential harness connectors (A, B).



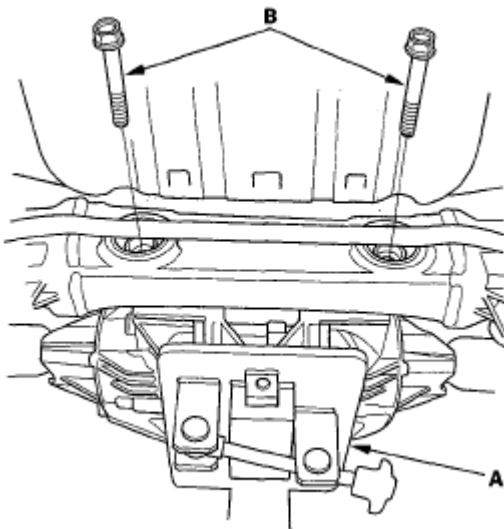
**Fig. 172: Identifying Rear Differential Harness Connectors**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Disconnect the breather hose (C).
5. Using a pair of screwdrivers, pry out both inboard joints (A) from the differential (B).



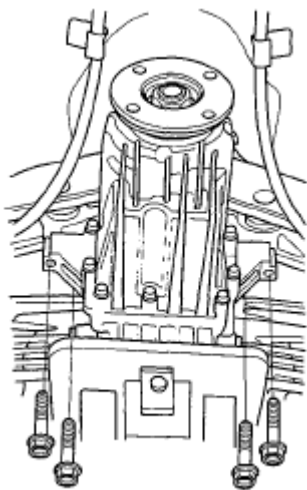
**Fig. 173: Identifying Differential And Inboard Joints**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Place the transmission jack under the rear differential (A).



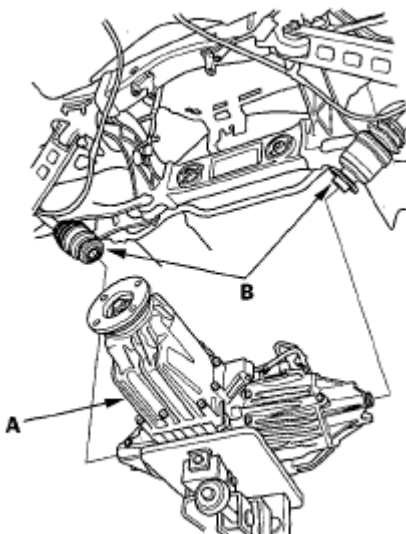
**Fig. 174: Identifying Transmission Jack Under Rear Differential And Mounting Bolts**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Remove the differential's rear mounting bolts (B).
8. Remove the differential's front mounting bolts.



**Fig. 175: Identifying Differential's Front Mounting Bolts**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

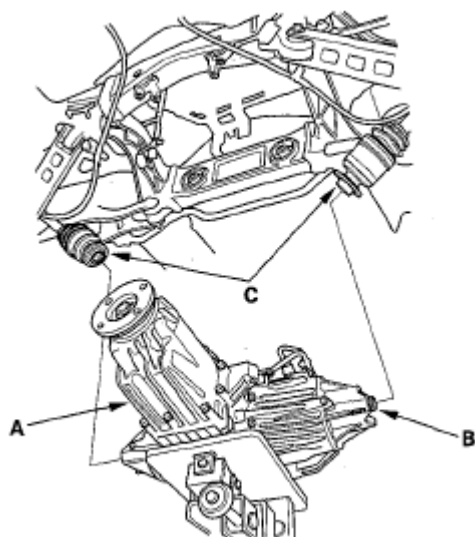
9. As you lower the rear differential (A) with the transmission jack, remove the rear driveshafts (B) from the rear differential.



**Fig. 176: Identifying Rear Differential And Driveshafts**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

## REAR DIFFERENTIAL INSTALLATION

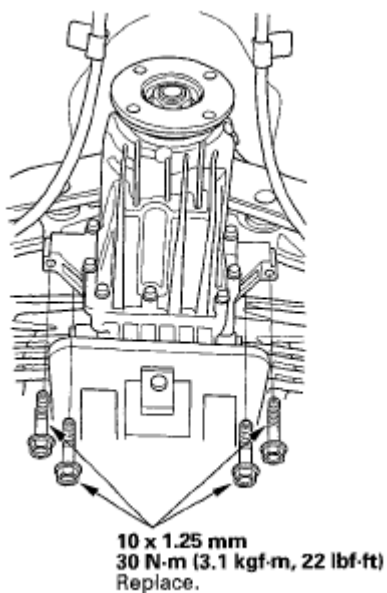
1. Raise the rear differential (A) with the transmission jack.



**Fig. 177: Identifying Rear Differential**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

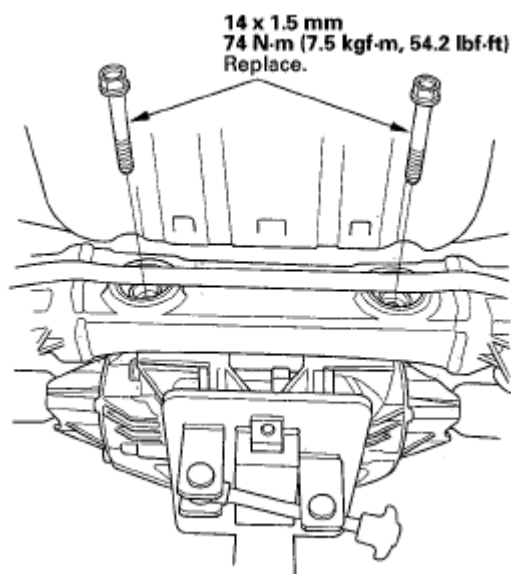
2. If the original differential is being reinstalled, replace the set rings (B).
3. Apply multipurpose grease to the splines of the rear driveshafts (C), then install the rear driveshafts to the rear differential.
4. Install the new front mounting bolts.



**Fig. 178: Identifying Front Mounting Bolts With Torque Specifications**

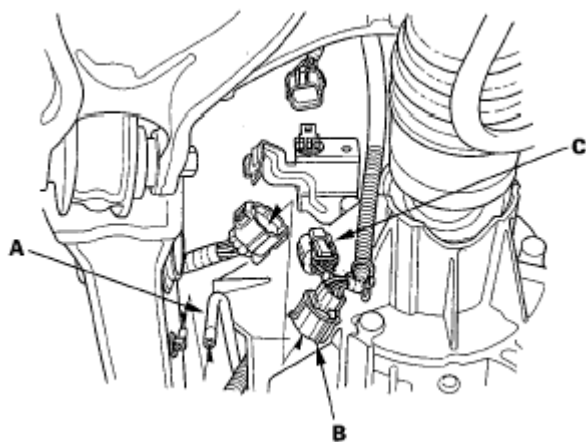
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the new rear mounting bolts.



**Fig. 179: Identifying Rear Mounting Bolts With Torque Specifications**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

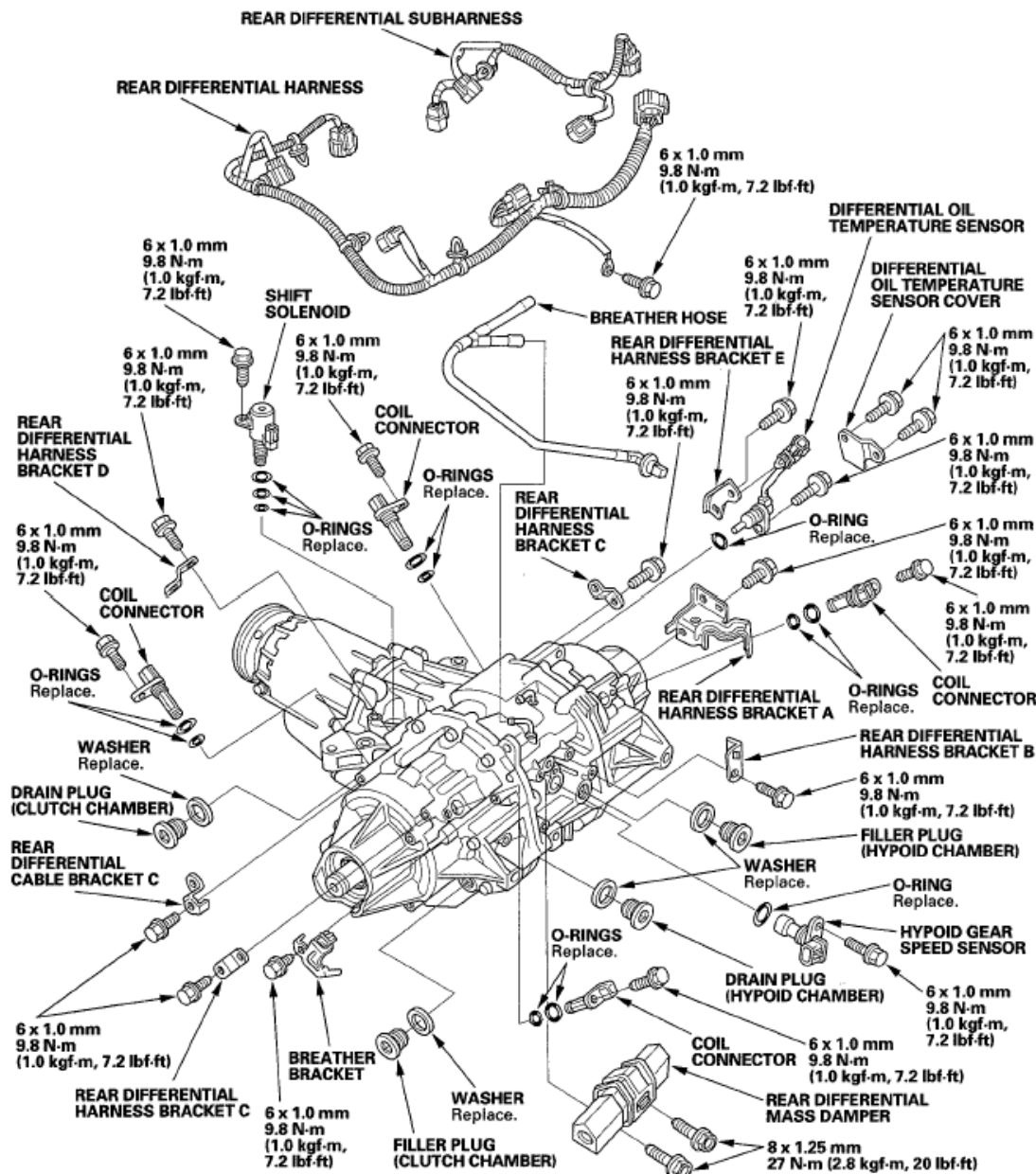
6. Connect the breather hose (A).



**Fig. 180: Identifying Breather Hose And Rear Differential Harness Connectors**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Connect the rear differential harness connectors (B) and (C).
8. Install the propeller shaft (see **PROPELLER SHAFT INSTALLATION** ).
9. Refill the differential fluid (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT** ).

## REAR DIFFERENTIAL DISASSEMBLY/REASSEMBLY



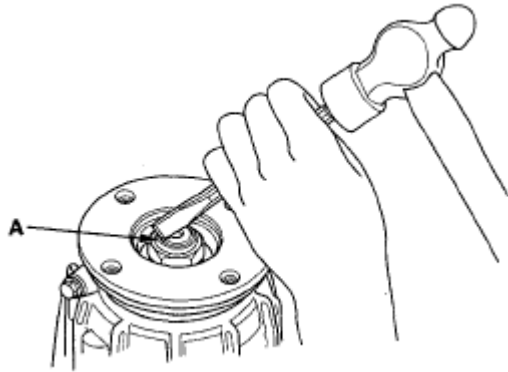
**Fig. 181: Identifying Rear Differential Components With Torque Specifications**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

## FRONT CASE OIL SEAL REPLACEMENT

### Special Tools Required

- Companion flange holder 07XAB-0010101
- Oil seal driver D 070AD-RJC0140
- Inner driver handle 40 07746-0030100

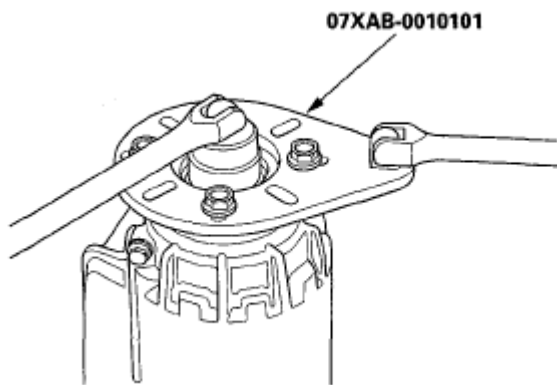
1. Remove the rear differential (see **REAR DIFFERENTIAL REMOVAL** ).
2. Raise the locknut tab (A) from the groove of the input shaft, making sure that the tab completely clears the groove to prevent damaging the input shaft.



**Fig. 182: Raising Locknut Tab**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

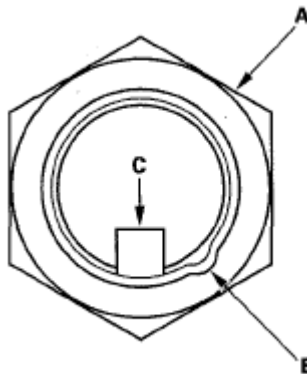
3. Install the companion flange holder on the companion flange.



**Fig. 183: Identifying Companion Flange Holder**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

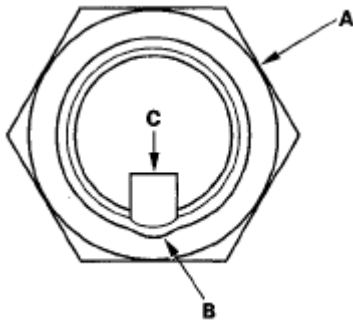
4. Loosen the locknut (A) counterclockwise so that its tab (B) comes out from the groove (C) in the input shaft.



**Fig. 184: Identifying Locknut With Tab And Groove**

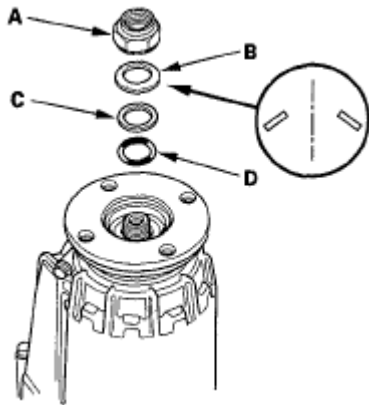
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Tighten the locknut (A) until its tab (B) aligns with the groove (C).



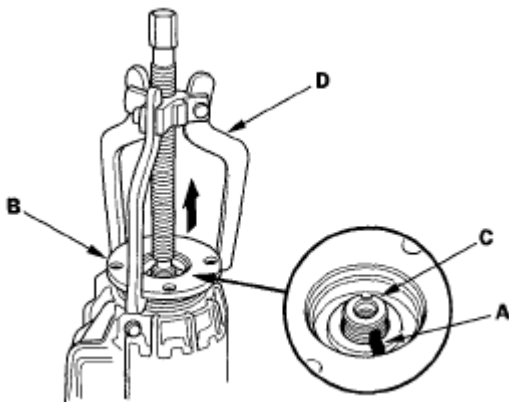
**Fig. 185: Identifying Locknut With Tab And Groove**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove any dirt from inside of the groove in the input shaft, then loosen the locknut.
7. Remove the 22 mm locknut (A), the 22 mm spring washer (B), the 23 mm back-up ring (C), and the 23 mm O-ring (D).



**Fig. 186: Identifying Locknut, Spring Washer And Back-Up-Ring**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

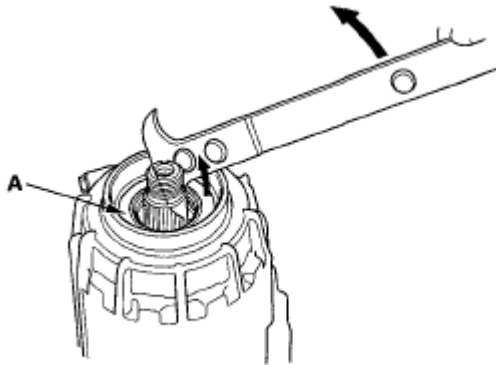
8. Make a reference mark (A) across the companion flange (6) and the input shaft (C).



**Fig. 187: Identifying Reference Mark Across Companion Flange And Input Shaft**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

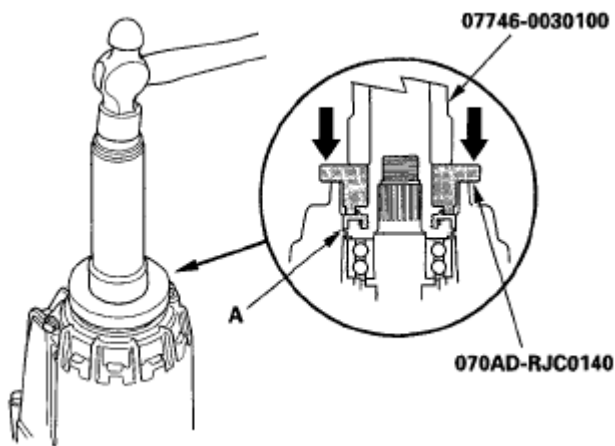
9. Remove the companion flange with a commercially available puller (D).

10. Remove the front case oil seal (A) with a commercially available seal remover.



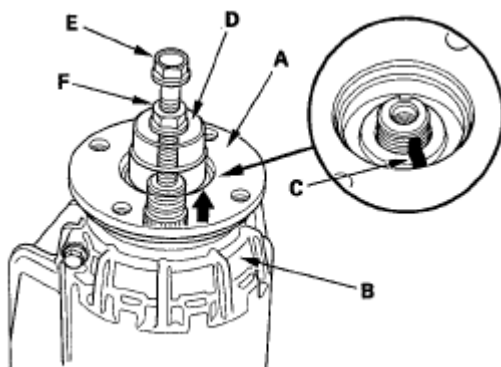
**Fig. 188: Removing Front Case Oil Seal**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the new front case oil seal (A) with the driver and driver handle.



**Fig. 189: Installing Front Case Oil Seal**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

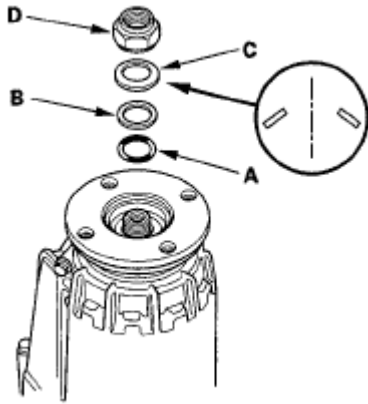
12. Set the companion flange (A) onto the front case (B) by aligning the reference mark (C), then install the 36 mm socket (D), the 8 mm flange bolt (E), and the 8 mm nut (F) as shown.



**Fig. 190: Setting Companion Flange Onto Front Case**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Tighten the 8 mm nut, then install the companion flange.
14. Install the new 23 mm O-ring (A), the 23 mm backup ring (B), the 22 mm spring washer (C), and the new 22 mm locknut (D).

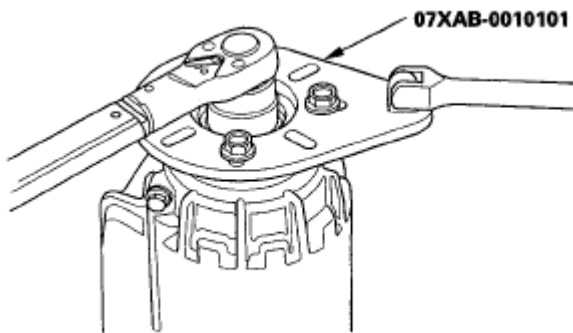
**NOTE:** Apply ATF to the 23 mm O-ring.



**Fig. 191: Identifying Locknut, Spring Washer And O-Ring**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

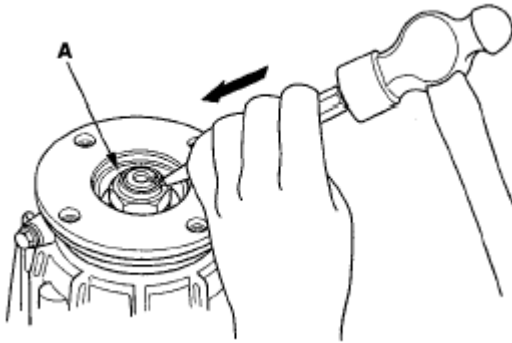
15. Install the companion flange holder to the companion flange, then tighten the new 22 mm locknut to the specified torque.

**TORQUE: 118 N.m (12.0 kgf.m, 87 lbf.ft)**



**Fig. 192: Identifying Companion Flange Holder**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Stake the locknut tab (A) into the groove in the input shaft.



**Fig. 193: Staking Locknut Tab**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

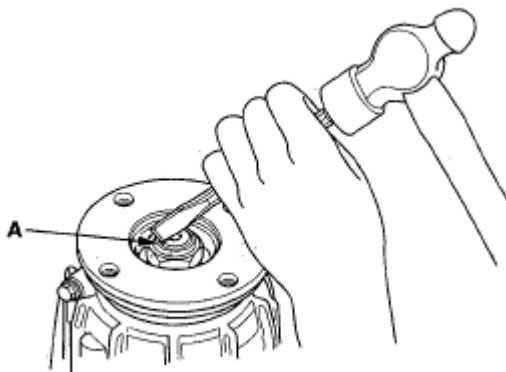
17. Install the rear differential (see **REAR DIFFERENTIAL INSTALLATION** ).

## CENTER CASE FRONT OIL SEAL REPLACEMENT

### Special Tools Required

- Companion flange holder 07XAB-0010101
- Oil seal driver E 070AD-RJC0150
- Inner driver handle 40 07746-0030100

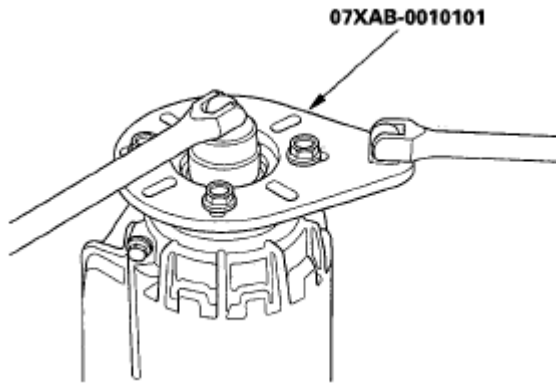
1. Remove the rear differential (see **REAR DIFFERENTIAL REMOVAL** ).
2. Raise the locknut tab (A) from the groove of the input shaft, making sure that the tab completely clears the groove to prevent damaging the input shaft.



**Fig. 194: Raising Locknut Tab**

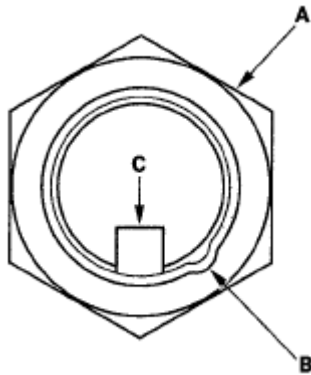
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Install the companion flange holder on the companion flange.



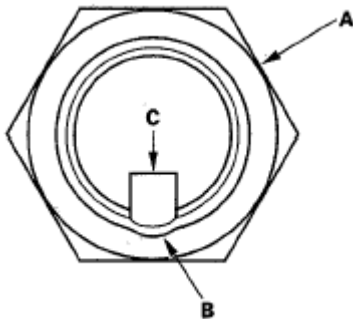
**Fig. 195: Identifying Companion Flange Holder**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Loosen the locknut (A) counterclockwise so that its tab (B) comes out from the groove (C) in the input shaft.



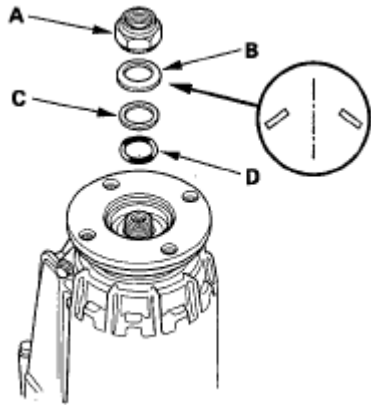
**Fig. 196: Identifying Locknut With Tab And Groove**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Tighten the locknut (A) until its tab (B) aligns with the groove (C).



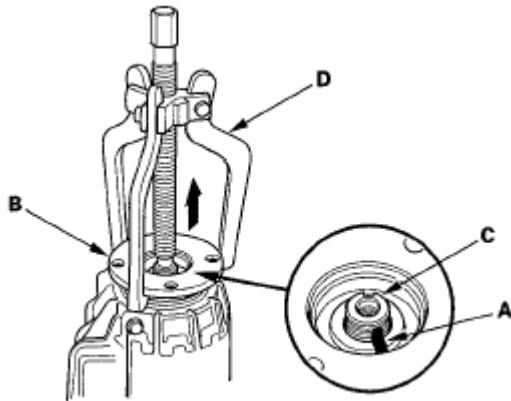
**Fig. 197: Identifying Locknut With Tab And Groove**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Remove any dirt from inside of the groove in the input shaft, then loosen the locknut.
7. Remove the 22 mm locknut (A), the 22 mm spring washer (B), the 23 mm back-up ring (C), and the 23 mm O-ring (D).



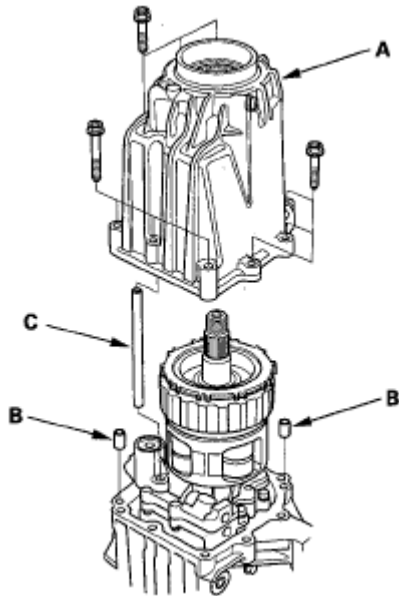
**Fig. 198: Identifying Locknut, Spring Washer And O-Ring**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

8. Make a reference mark (A) across the companion flange (B) and the input shaft (C).



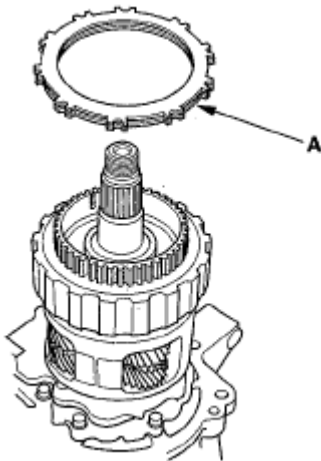
**Fig. 199: Identifying Reference Mark Across Companion Flange And Input Shaft**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

9. Remove the companion flange with a commercially available puller (D).
10. Remove the three 8 x 50 mm flange bolts and the six 8 x 35 mm flange bolts in a crisscross pattern in several steps, then remove the front case (A), the 8 x 14 mm dowel pins (B), and the 8 x 130 mm pipe (C).



**Fig. 200: Identifying Front Case, Pipe And Bolts**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

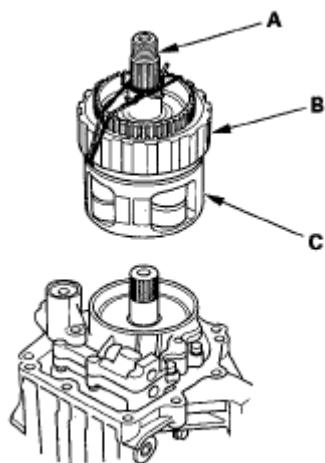
11. Remove the high clutch (A).



**Fig. 201: Identifying High Clutch**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

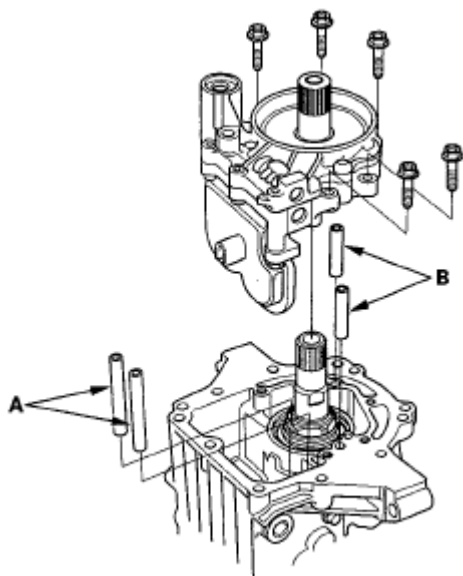
12. Secure the input shaft (A), low clutch (B), and planetary carrier (C) together as an assembly with a piece of wire, then remove the assembly.

**NOTE:** Do not remove the input shaft from the low clutch and planetary carrier, because aligning the input shaft splines with the other components may be difficult.



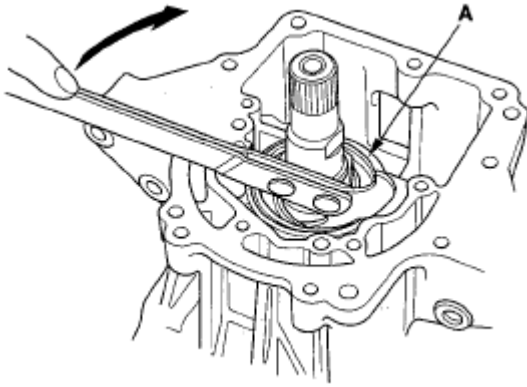
**Fig. 202: Identifying Input Shaft, Low Clutch And Planetary Carrier**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Remove the two 8 x 51.5 mm pipes (A), and the two 8 x 35 mm pipes (B).



**Fig. 203: Identifying Pipes**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

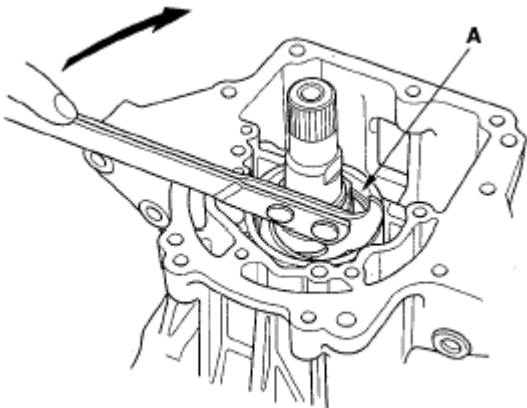
14. Remove the 45 x 67 x 6.5 mm oil seal (A) with a commercially available seal remover.



**Fig. 204: Removing Oil Seal**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

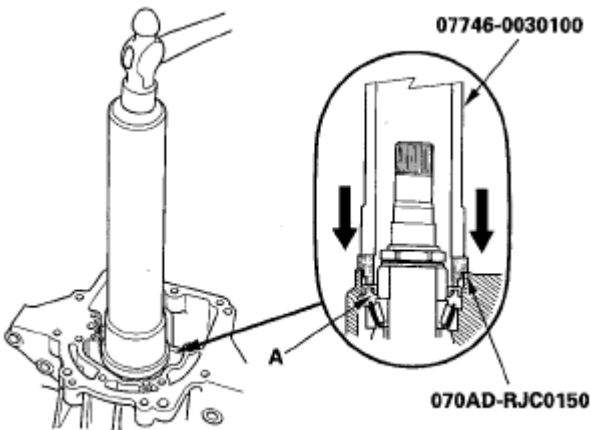
15. Remove the 45 x 65 x 6.5 mm oil seal (A) with a commercially available seal remover.



**Fig. 205: Removing Oil Seal**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

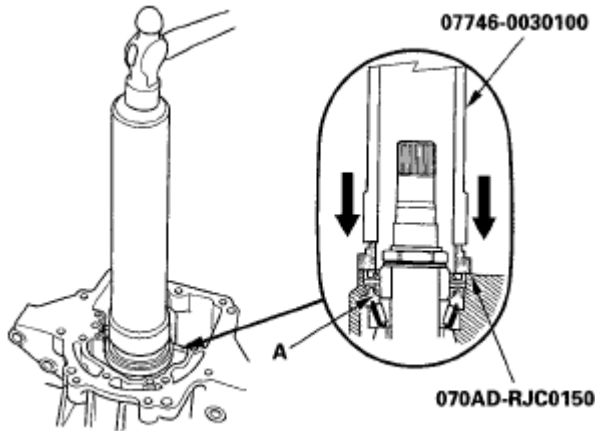
16. Install a new 45 x 65 x 6.5 mm oil seal (A) with the driver and driver handle.



**Fig. 206: Installing Oil Seal**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

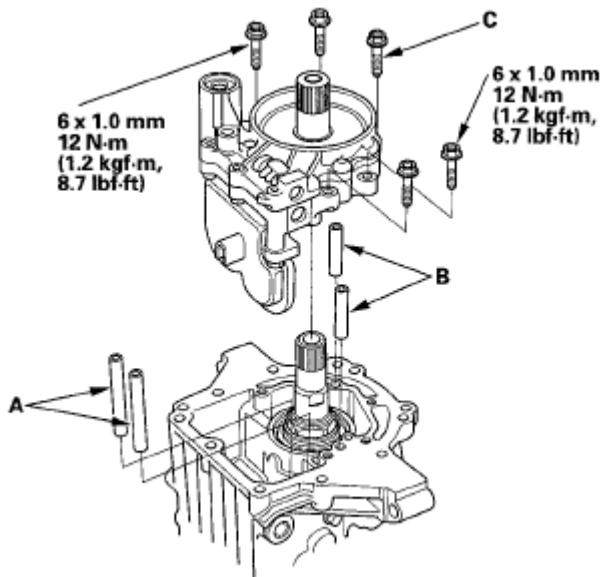
17. Install a new 45 x 67 x 6.5 mm oil seal (A) with the driver and driver handle.



**Fig. 207: Installing Oil Seal**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

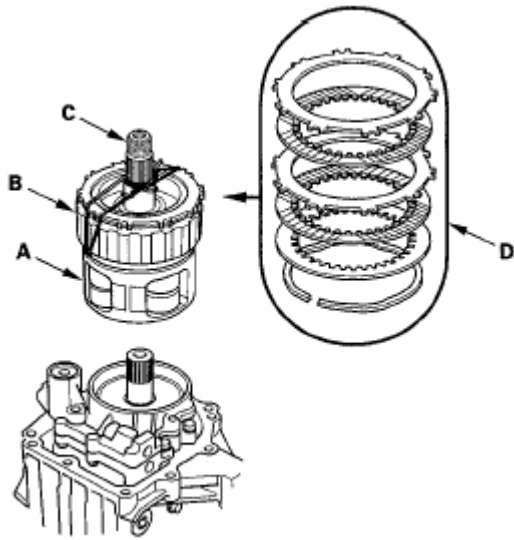
18. Install the two 8 x 51.5 mm pipes (A), the two 8 x 35 mm pipes (B), and the planetary carrier (C).



**Fig. 208: Identifying Pipes And Planetary Carrier With Torque Specifications**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

19. Install the planetary carrier (A), low clutch (B) and input shaft (C) as an assembly, then remove the wire.

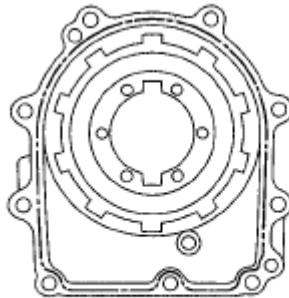


**Fig. 209: Identifying Planetary Carrier, Low Clutch And Input Shaft**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

20. Install the high clutch (D).
21. Remove the dirt and oil from the sealing surface. Apply liquid gasket (P/N 08718-0001) to the sealing surface. Make sure you seal the entire circumference of the bolt holes to prevent oil leakage.

**NOTE:**

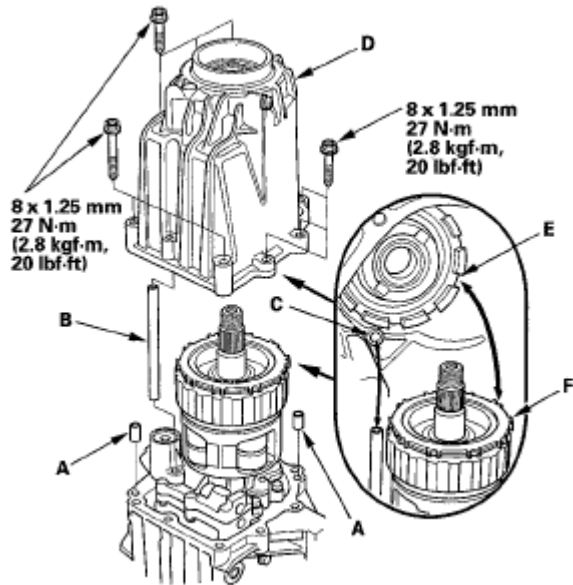
- You must assemble the housings with you do in 5 minutes after applying the liquid gasket. If not, the sealing surface must be cleaned, and the liquid gasket reapplied.
- Allow it to cure at least 30 minutes after assembly before filling the differential with fluid.



----- Apply liquid gasket along the broken line  
 and around all bolt holes.

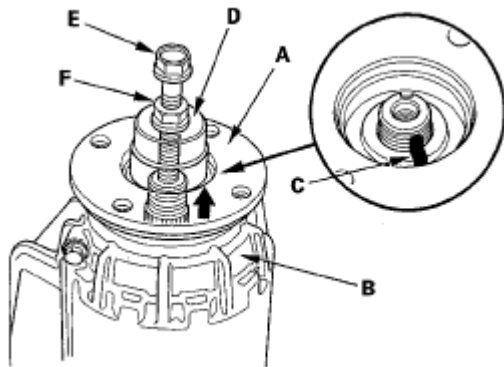
**Fig. 210: Identifying Liquid Gasket Applying Area**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

22. Install the two 8 x 14 mm dowel pins (A) and the 8 x 130 mm pipe (B).



**Fig. 211: Identifying Front Case, Dowel Pins And High Clutch Tabs With Torque Specifications**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

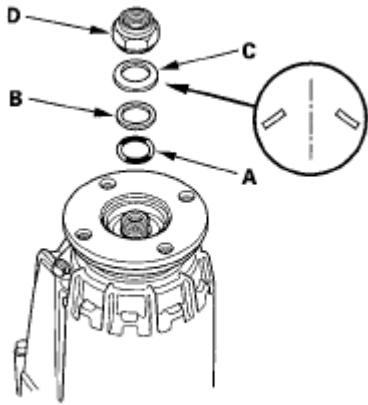
23. Align the hole (C) of the front case (D) with the 8 x 130 mm pipe. Align the groove (E) of the front case with the high clutch tabs (F), then install the front case onto the center case.
24. Set the companion flange (A) onto the front case (B) by aligning the reference mark (C), then install the 36 mm socket (D), the 8 mm flange bolt (E), and the 8 mm nut (F) as shown.



**Fig. 212: Setting Companion Flange Onto Front Case**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

25. Tighten the 8 mm nut, then install the companion flange.
26. Install the new 23 mm O-ring (A), the 23 mm backup ring (B), the 22 mm spring washer (C), and the new 22 mm locknut (D).

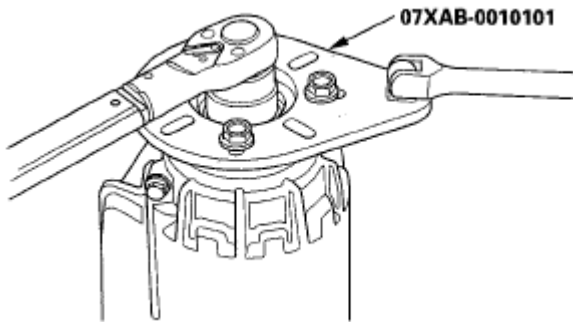
**NOTE:** Apply ATF to the 23 mm O-ring.



**Fig. 213: Identifying Locknut, O-Ring And Spring Washer**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

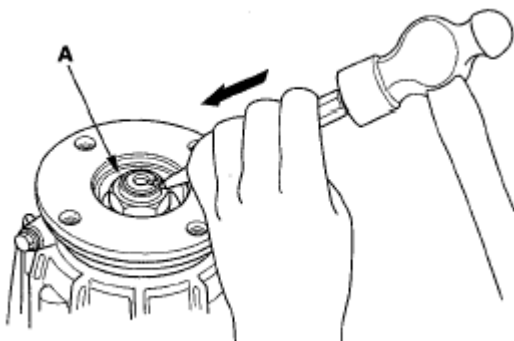
27. Install the companion flange holder to the companion flange, then tighten the new 22 mm locknut to the specified torque.

**TORQUE: 118 N.m (12.0 kgf.m, 87 lbf.ft)**



**Fig. 214: Identifying Companion Flange Holder**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

28. Stake the locknut tab (A) into the groove in the input shaft.



**Fig. 215: Staking Locknut Tab Into Groove In Input Shaft**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

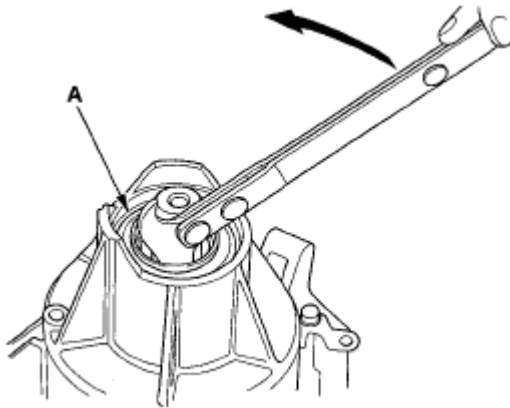
29. Install the rear differential (see **REAR DIFFERENTIAL INSTALLATION** ).

## SIDE CASE OIL SEAL REPLACEMENT

### Special Tools Required

- Oil seal driver C 070AD-RJC0130
- Driver, 56 x 62 mm 070AD-PYZA100

1. Remove the rear differential (see **REAR DIFFERENTIAL REMOVAL** ).
2. Remove the 40 x 72 x 7.5 mm dust seal (A) with a commercially available seal remover.

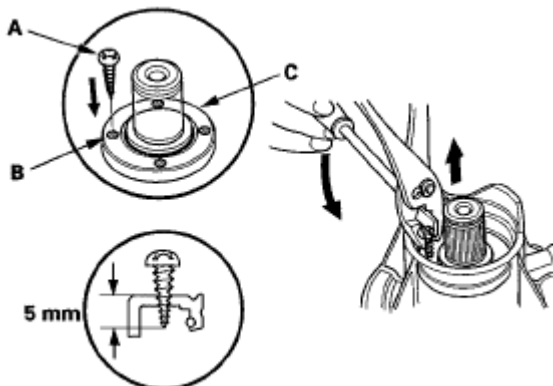


**Fig. 216: Removing Dust Seal**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the thrust washer.
4. Install a 6 mm screw (P/N 93901-16580) (A) at each • mark (4 places, 90 degrees apart) (B) of 35.5 x 70 x 9 mm oil seal (C), then remove the 35.5 x 70 x 9 mm oil seal as shown.

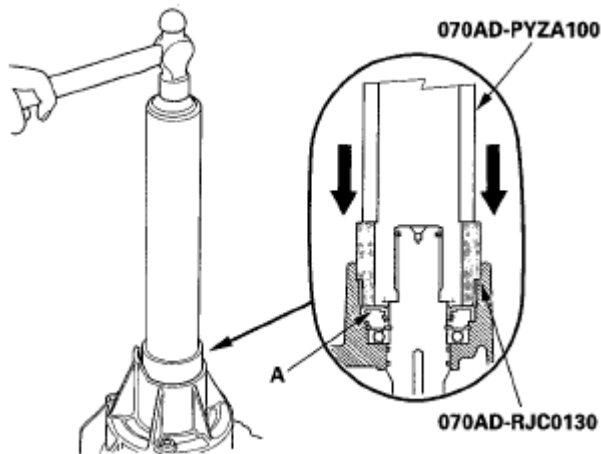
**NOTE:** Do not thread the 6 mm screws into the 35.5 x 70 x 9 mm oil seal more than 5 mm (0.197 in.).



**Fig. 217: Removing Oil Seal**

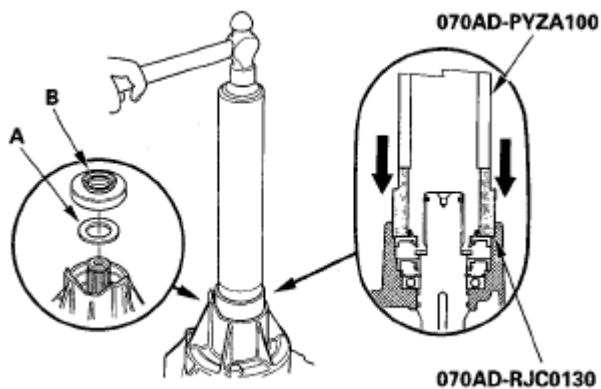
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the new 35.5 x 70 x 9 mm oil seal (A) with the drivers.

**Fig. 218: Installing Oil Seal**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the thrust washer (A), then install the new 40 x 72 x 7.5 mm dust seal (B) with the drivers.

**Fig. 219: Installing Dust Seal**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

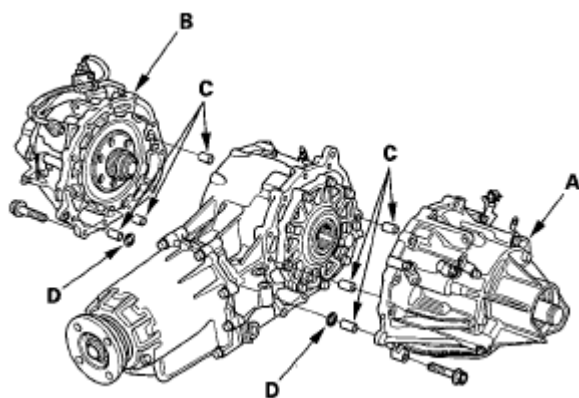
7. Install the rear differential (see **REAR DIFFERENTIAL INSTALLATION** ).

## CENTER CASE SIDE OIL SEAL REPLACEMENT

### Special Tools Required

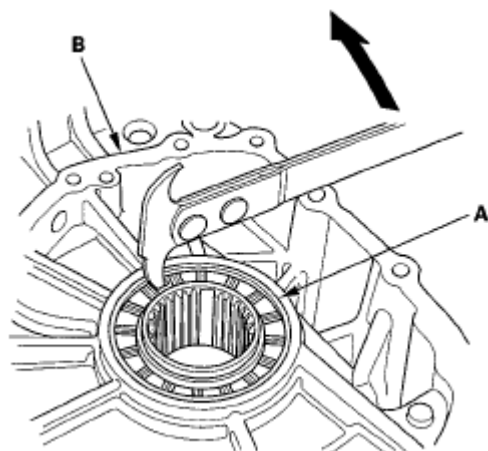
- Oil seal driver A 070AD-RJC0110
- Oil seal driver B 070AD-RJC0120
- Driver handle 15 x 135L 07749-0010000
- Attachment, 78 x90 mm 07GAD-SD40101

1. Remove the rear differential (see **REAR DIFFERENTIAL REMOVAL** ).
2. Remove the left side case (A), the right side case (B), the six 8 x 14 mm dowel pins (C), and the two O-rings (D).



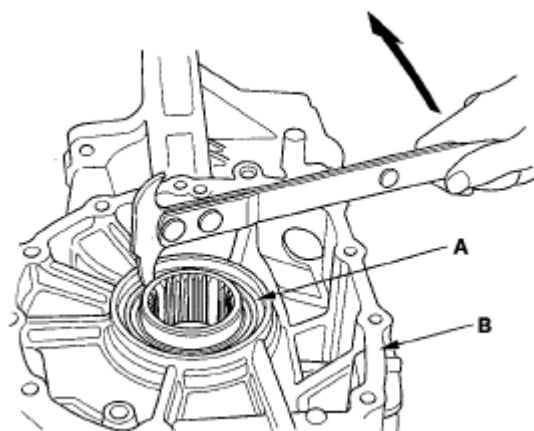
**Fig. 220: Identifying Left Side Case And Right Side Case With Dowel Pins**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the 60 x 89 x 6.5 mm oil seal (A) from the right side center case (B) with a commercially available seal remover.



**Fig. 221: Removing Oil Seal**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

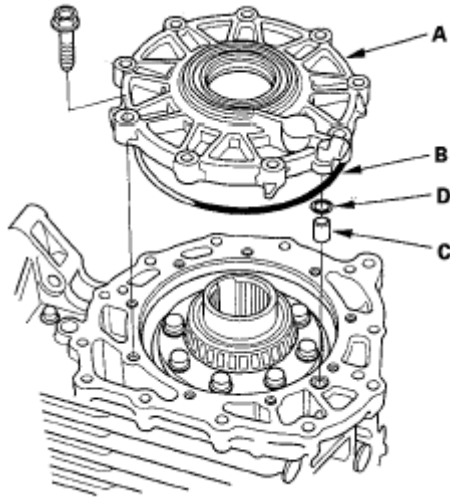
4. Remove the 60 x 80 x 6.5 mm oil seal (A) from the left side center case (B) with a commercially available seal remover.



**Fig. 222: Removing Oil Seal**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

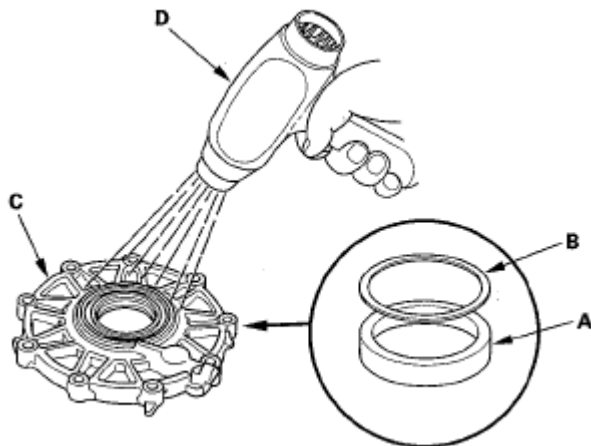
5. Remove the differential carrier cover (A), the 156 x 3.5 mm O-ring (B), the 8x14 mm dowel pin (C), and the 7.7 x 2.3 mm O-ring (D).

**Fig. 223: Identifying Differential Carrier Cover, Dowel Pin And O-Ring**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

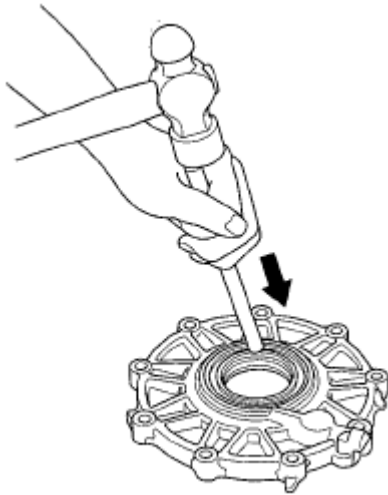
6. Remove the 70 x 100 x 20 mm bearing outer race (A) and 100 mm shim (B) from the differential carrier cover (C) by heating the differential carrier cover to about 212°F (100°C) with a heat gun (D). Do not heat the differential carrier cover in excess of 212°F (100°C).

**NOTE:** Let the differential carrier cover cool to room temperature before installing the bearing outer race.

**Fig. 224: Heating Differential Carrier Cover**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

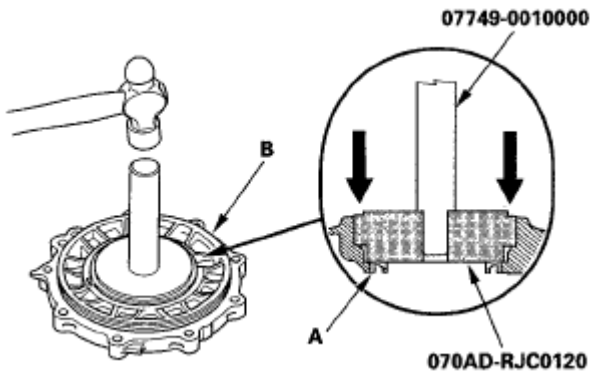
7. Remove the 60 x 89 x 6.5 mm oil seal and the 60 x 80 x 6.5 mm oil seal from the differential carrier cover.



**Fig. 225: Removing Oil Seal**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

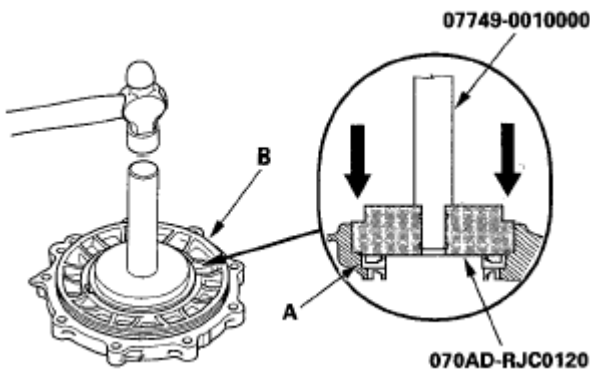
8. Install the new 60 x 80 x 6.5 mm oil seal (A) into the differential carrier cover (B) with the driver and driver handle.



**Fig. 226: Installing Oil Seal**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

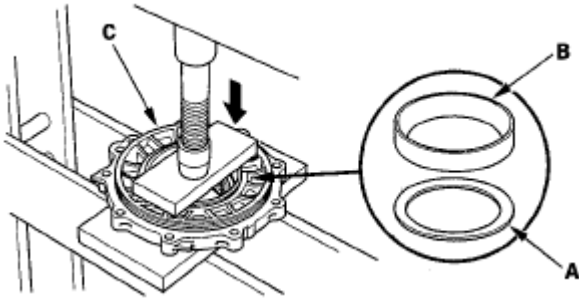
9. Install the new 60 x 89 x 6.5 mm oil seal (A) into the differential carrier cover (B) with the driver and driver handle.



**Fig. 227: Installing Oil Seal**

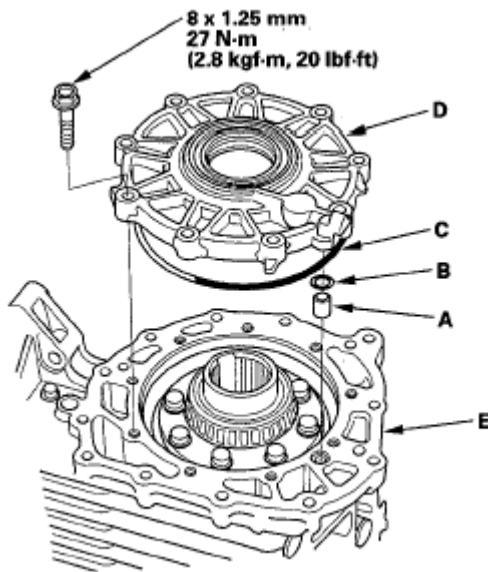
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Install the 100 mm shim (A) and the 70 x 100 x 20 mm bearing outer race (B) into the differential carrier cover (C) with a press.



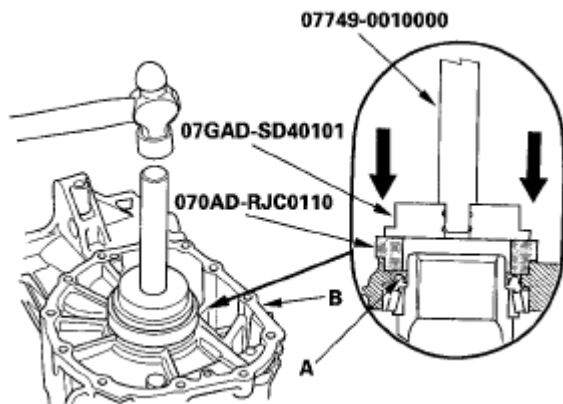
**Fig. 228: Installing Shim And Bearing Outer Race**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Install the 8 x 14 mm dowel pin (A), the new 7.7 x 2.3 mm O-ring (B), the new 156 x 3.5 mm O-ring (C), and the differential carrier cover (D) onto the center case (E).



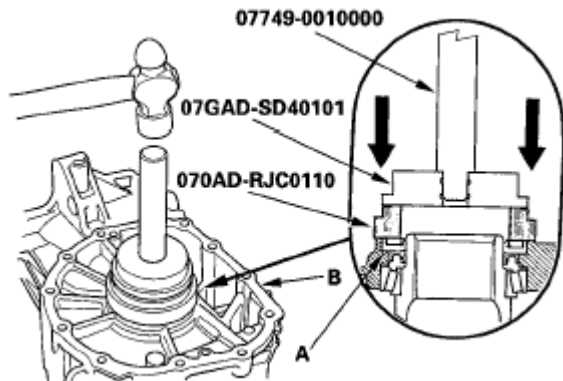
**Fig. 229: Identifying Differential Carrier Cover, Center Case And Dowel Pin With Torque Specifications**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Install the new 60 x 80 x 6.5 mm oil seal (A) into the right side center case (B) with the driver and driver handle, and attachment.



**Fig. 230: Installing Oil Seal Into Right Side Center Case**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Install the new 60 x 89 x 6.5 mm oil seal (A) into the left side center case (B) using the driver and driver handle, and attachment.



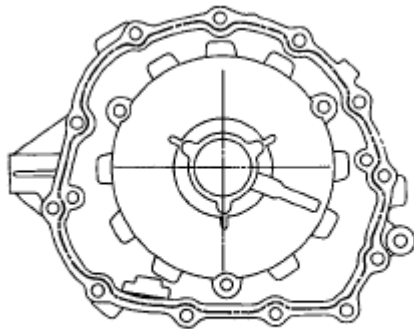
**Fig. 231: Installing Oil Seal Into Left Side Center Case**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

14. Remove the dirt and oil from the sealing surfaces. Apply liquid gasket (P/N 08718-0001) to the sealing surface. Make sure you seal the entire circumference of the bolt holes to prevent oil leakage.

**NOTE:**

- You must assemble the housings with you do in 5 minutes after applying the liquid gasket. If not, the sealing surface must be cleaned, and the liquid gasket reapplied.
- Allow it to cure at least 30 minutes after assembly before filling the differential with fluid.

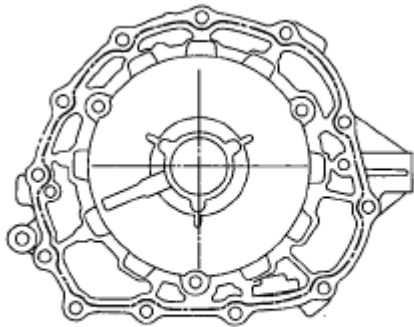
Left side case



— — — — — Apply liquid gasket along the broken line and around all bolt holes.

**Fig. 232: Identifying Liquid Gasket Applying Area To Left Side Case**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

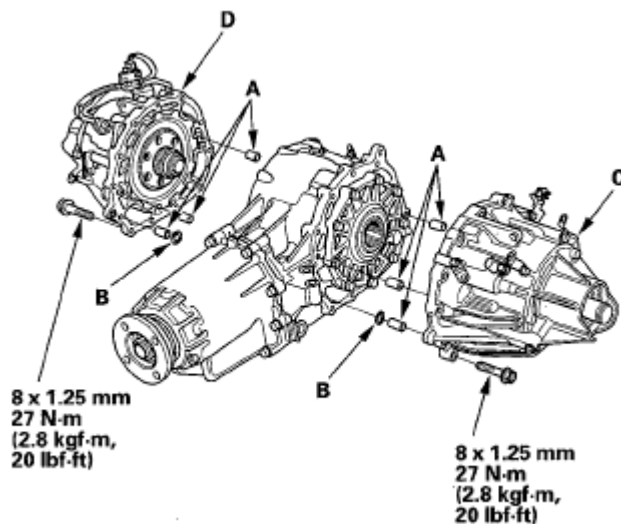
**Right side case**



— — — — — Apply liquid gasket along the broken line and around all bolt holes.

**Fig. 233: Identifying Liquid Gasket Applying Area To Right Side Case**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

15. Install the six 8x14 mm dowel pins (A), the new 7.7 x 2.3 mm O-rings (B), the left side case (C), and the right side case (D).



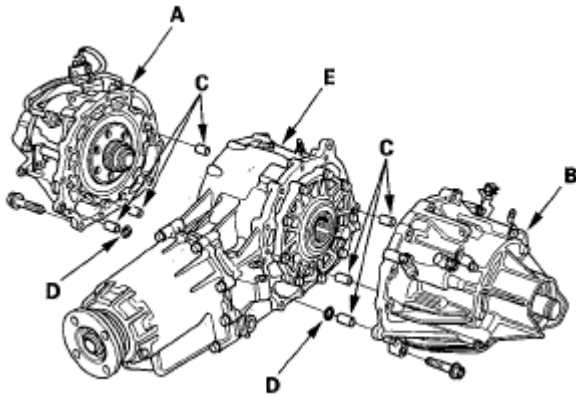
**Fig. 234: Identifying Left Side Case, And Right Side Case With Dowel Pins With Torque Specifications**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

16. Install the rear differential (see **REAR DIFFERENTIAL INSTALLATION** ).

## CENTER CASE REPLACEMENT

1. Remove the rear differential (see **REAR DIFFERENTIAL REMOVAL** ).
2. Remove the rear differential right side case (A), the rear differential left side case (B); the six 8 x 14 mm dowel pins (C), and the O-rings (D) from the rear differential center case (E).



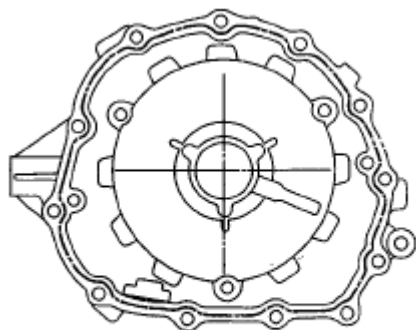
**Fig. 235: Identifying Rear Differential Right Side Case And Rear Differential Left Side Case**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Replace the new rear differential center case.
4. Remove the dirt and oil from the sealing surfaces. Apply liquid gasket (P/N 08718-0001) to the sealing surface. Make sure you seal the entire circumference of the bolt holes to prevent oil leakage.

**NOTE:**

- You must assemble the housings with you do in 5 minutes after applying the liquid gasket. If not, the sealing surface must be cleaned, and the liquid gasket reapplied.
- Allow it to cure at least 30 minutes after assembly before filling the differential with fluid.

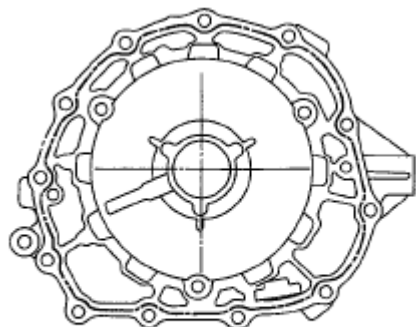
Left side case



Apply liquid gasket along the broken line and around all bolt holes.

**Fig. 236: Identifying Liquid Gasket Applying Area To Left Side Case**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

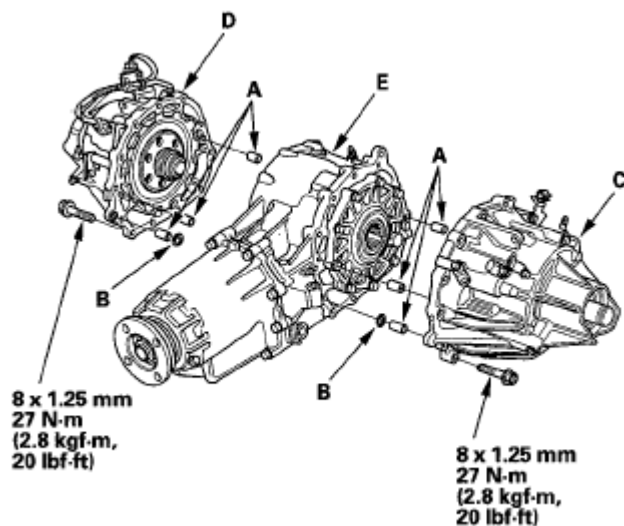
Right side case



Apply liquid gasket along the broken line and around all bolt holes.

**Fig. 237: Identifying Liquid Gasket Applying Area To Right Side Case**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Install the six 8 x 14 mm dowel pins (A), the new O-rings (B), the rear differential left side case (C), and the rear differential right side case (D) on the rear differential center case (E).



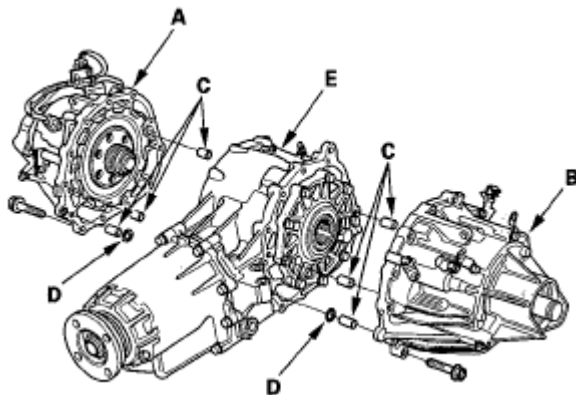
**Fig. 238: Identifying Rear Differential Left Side Case And Rear Differential Right Side Case With Torque Specifications**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Install the rear differential (see **REAR DIFFERENTIAL INSTALLATION** ).
7. Test-drive the vehicle.
8. Check the differential fluid (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT** ).

## SIDE CASE REPLACEMENT

1. Remove the rear differential (see **REAR DIFFERENTIAL REMOVAL** ).
2. Remove the rear differential right side case (A), the rear differential left side case (B), the 8x14 mm dowel pins (C), and the O-rings (D) from the rear differential center case (E).



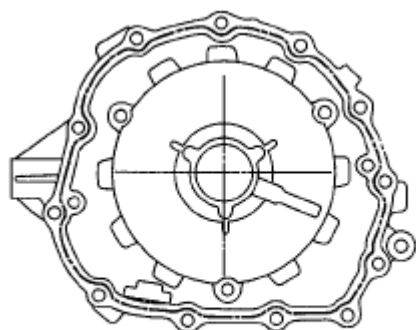
**Fig. 239: Identifying Rear Differential Right Side Case And Rear Differential Left Side Case**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Replace the new rear differential left side case and the new rear differential right side case.
4. Remove the dirt and oil from the sealing surfaces. Apply liquid gasket (P/N 08718-0001) to the sealing surface. Make sure you seal the entire circumference of the bolt holes to prevent oil leakage.

**NOTE:**

- You must assemble the housings with you do in 5 minutes after applying the liquid gasket. If not, the sealing surface must be cleaned, and the liquid gasket reapplied.
- Allow it to cure at least 30 minutes after assembly before filling the differential with fluid.

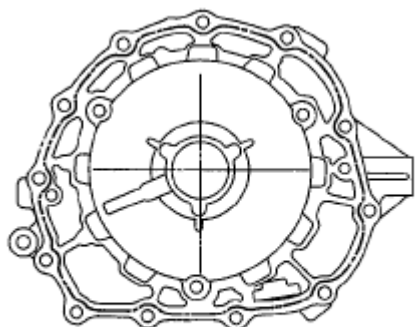
Left side case



— Apply liquid gasket along the broken line and around all bolt holes.

**Fig. 240: Identifying Liquid Gasket Applying Area To Left Side Case**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

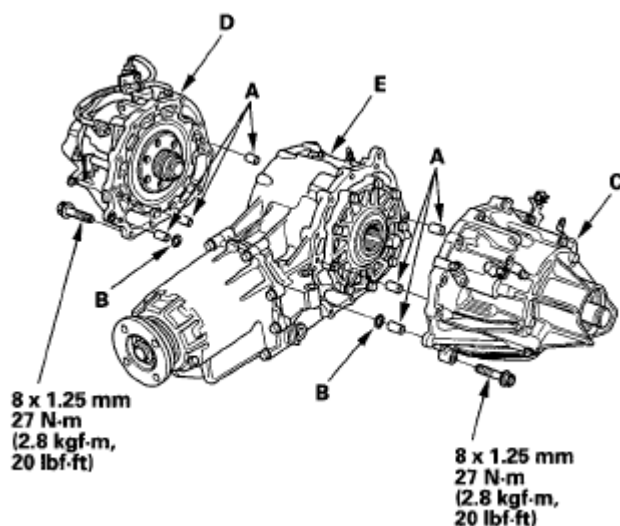
Right side case



— Apply liquid gasket along the broken line and around all bolt holes.

**Fig. 241: Identifying Liquid Gasket Applying Area To Right Side Case**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Install the six 8 x 14 mm dowel pins (A), the new O-rings (B), the rear differential left side case (C), the rear differential right side case (D) on the rear differential center case (E).



**Fig. 242: Identifying Rear Differential Left Side Case And Rear Differential Right Side Case With Torque Specifications**

**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

6. Install the rear differential (see **REAR DIFFERENTIAL INSTALLATION** ).
7. Test-drive the vehicle.
8. Check the differential fluid (see **REAR DIFFERENTIAL FLUID INSPECTION AND REPLACEMENT** ).